Air System Sizing Summary for 101 P1-A34

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**101 P1-A34**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2423.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.6**	Tons	Load occurs at	**Jun 1400**	
Total coil load	**19.6**	MBH	OA DB / WB	**69.3 / 55.5**	°F
Sensible coil load	**18.6**	MBH	Entering DB / WB	**64.7 / 51.4**	°F
Coil CFM at Jun 1400	**1151**	CFM	Leaving DB / WB	**44.3 / 43.0**	°F
Max block CFM	**1151**	CFM	Coil ADP	**42.0**	°F
Sum of peak zone CFM	**1151**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.948**		Resulting RH	**45**	%
CFM/Ton	**704.8**		Design supply temp.	**46.0**	°F
ft²/Ton	**1483.8**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.1**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.7**	MBH	Load occurs at	**Dec 0800**	
Coil CFM at Dec 0800	**1151**	CFM	BTU/(hr·ft²)	**6.5**	
Max coil CFM	**1151**	CFM	Ent. DB / Lvg DB	**44.2 / 61.5**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1151**	CFM	Fan motor BHP	**0.24**	BHP
Standard CFM	**843**	CFM	Fan motor kW	**0.19**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**150**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 101 P1-A34

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name **101 P1-A34**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2423.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1151	1151	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	11.2	Jul 1800	12.7	2423.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
101 Archivo 34	1	11.2	Jul 1800	1151	12.7	2423.0	0.48

Air System Design Load Summary for 101 P1-A34

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400 COOLING OA DB / WB 69.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	1487 ft²	2754	-	1487 ft²	9470	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	235 ft²	64	-	235 ft²	1032	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1938 W	6614	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	484	698	-	2185	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**9916**	**698**	**-**	**12688**	**0**
Zone Conditioning	-	9959	698	-	12180	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1151 CFM	0	-	1151 CFM	0	-
Ventilation Load	150 CFM	203	319	150 CFM	965	0
Supply Fan Load	1151 CFM	658	-	1151 CFM	-658	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**10820**	**1017**	**-**	**12487**	**0**
Central Cooling Coil	-	18578	1017	-	0	0
Central Heating Coil	-	-7758	-	-	12487	-
>> Total Conditioning	**-**	**10820**	**1017**	**-**	**12487**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.3	0.00963	150	400	203	319
Ventilation Reclaim	Outlet	66.1	0.00850	150	400	377	591
Vent - Return Mixing	Outlet	64.7	0.00797	1151	430	-	-
Central Cooling Coil	Outlet	44.3	0.00771	1151	430	18578	1017
Central Heating Coil	Outlet	52.8	0.00771	1151	430	7758	-
Supply Fan	Outlet	53.5	0.00771	1151	430	658	-
Cold Supply Duct	Outlet	53.5	0.00771	1151	430	-	-
Zone Air	-	64.4	0.00789	1151	435	9959	698
Return Plenum	Outlet	64.4	0.00789	1151	435	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	9916	Cooling	9959	64.4	1151	435	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	150	400	-965	0
Ventilation Reclaim	Outlet	54.1	0.00340	150	400	-1793	0
Vent - Return Mixing	Outlet	61.2	0.00340	1151	465	-	-
Central Cooling Coil	Outlet	61.2	0.00340	1151	465	0	0
Central Heating Coil	Outlet	74.9	0.00340	1151	465	12487	-
Supply Fan	Outlet	75.6	0.00340	1151	465	658	-
Cold Supply Duct	Outlet	75.6	0.00340	1151	465	-	-
Zone Air	-	62.2	0.00340	1151	475	-12180	0
Return Plenum	Outlet	62.2	0.00340	1151	475	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-12688	Heating	-12180	62.2	1151	475	0	0

Air System Sizing Summary for -101 S1-A1

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

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Air System Information

Air System Name	**-101 S1-A1**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1464.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.1**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**769**	CFM	Leaving DB / WB	**44.7 / 43.5**	°F
Max block CFM	**769**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**769**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.981**		Resulting RH	**45**	%
CFM/Ton	**748.7**		Design supply temp.	**46.0**	°F
ft²/Ton	**1426.0**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.4**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.3**	MBH	Load occurs at	**Dec 0600**	
Coil CFM at Dec 0600	**769**	CFM	BTU/(hr·ft²)	**7.0**	
Max coil CFM	**769**	CFM	Ent. DB / Lvg DB	**44.4 / 61.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**769**	CFM	Fan motor BHP	**0.16**	BHP
Standard CFM	**563**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.53**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.08**	CFM/ft²			

Zone Sizing Summary for -101 S1-A1

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

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07:44PM

Air System Information

Air System Name ..... **-101 S1-A1**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1464.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	769	769	0.53	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.4	Jul 1500	3.5	1464.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S101 Archivo 1	1	4.4	Jul 1500	769	3.5	1464.0	0.53

Air System Design Load Summary for -101 S1-A1

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1464 ft²	0	-	1464 ft²	0	-
Partitions	795 ft²	290	-	795 ft²	3499	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1171 W	3996	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4286**	**0**	**-**	**3499**	**0**
Zone Conditioning	-	4065	0	-	3438	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	769 CFM	0	-	769 CFM	0	-
Ventilation Load	110 CFM	166	238	110 CFM	722	0
Supply Fan Load	769 CFM	440	-	769 CFM	-440	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4671**	**238**	**-**	**3720**	**0**
Central Cooling Coil	-	12082	238	-	0	0
Central Heating Coil	-	-7411	-	-	3720	-
>> Total Conditioning	**-**	**4671**	**238**	**-**	**3720**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	166	238
Ventilation Reclaim	Outlet	66.3	0.00848	110	400	309	440
Vent - Return Mixing	Outlet	64.6	0.00795	769	454	-	-
Central Cooling Coil	Outlet	44.7	0.00786	769	454	12082	238
Central Heating Coil	Outlet	56.9	0.00786	769	454	7411	-
Supply Fan	Outlet	57.7	0.00786	769	454	440	-
Cold Supply Duct	Outlet	57.7	0.00786	769	454	-	-
Zone Air	-	64.3	0.00786	769	463	4065	0
Return Plenum	Outlet	64.3	0.00786	769	463	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4286	Cooling	4065	64.3	769	463	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-722	0
Ventilation Reclaim	Outlet	54.4	0.00340	110	400	-1340	0
Vent - Return Mixing	Outlet	61.5	0.00340	769	454	-	-
Central Cooling Coil	Outlet	61.5	0.00340	769	454	0	0
Central Heating Coil	Outlet	67.6	0.00340	769	454	3720	-
Supply Fan	Outlet	68.3	0.00340	769	454	440	-
Cold Supply Duct	Outlet	68.3	0.00340	769	454	-	-
Zone Air	-	62.7	0.00340	769	463	-3438	0
Return Plenum	Outlet	62.7	0.00340	769	463	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3499	Heating	-3438	62.7	769	463	0	0

Air System Sizing Summary for 102 P1-A35

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

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Air System Information

Air System Name	**102 P1-A35**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2769.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.9**	Tons	Load occurs at	**Jun 1400**	
Total coil load	**22.4**	MBH	OA DB / WB	**69.3 / 55.5**	°F
Sensible coil load	**21.2**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1400	**1315**	CFM	Leaving DB / WB	**44.1 / 42.9**	°F
Max block CFM	**1315**	CFM	Coil ADP	**41.9**	°F
Sum of peak zone CFM	**1315**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.947**		Resulting RH	**45**	%
CFM/Ton	**704.0**		Design supply temp.	**46.0**	°F
ft²/Ton	**1482.2**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.1**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.0**	MBH	Load occurs at	**Dec 0400**	
Coil CFM at Dec 0400	**1315**	CFM	BTU/(hr·ft²)	**5.4**	
Max coil CFM	**1315**	CFM	Ent. DB / Lvg DB	**44.4 / 58.9**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1315**	CFM	Fan motor BHP	**0.28**	BHP
Standard CFM	**964**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 102 P1-A35

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

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07:44PM

Air System Information

Air System Name **102 P1-A35**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2769.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1315	1315	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	9.2	Aug 1600	5.9	2769.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
102 Archivo 35	1	9.2	Aug 1600	1315	5.9	2769.0	0.48

Air System Design Load Summary for 102 P1-A35

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400 COOLING OA DB / WB 69.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	375 ft²	425	-	375 ft²	2386	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	229 ft²	62	-	229 ft²	1006	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2215 W	7558	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	554	812	-	2498	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8598**	**812**	**-**	**5890**	**0**
Zone Conditioning	-	8666	812	-	5427	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1315 CFM	0	-	1315 CFM	0	-
Ventilation Load	170 CFM	235	368	170 CFM	1112	0
Supply Fan Load	1315 CFM	752	-	1315 CFM	-752	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**9653**	**1180**	**-**	**5787**	**0**
Central Cooling Coil	-	21238	1180	-	0	0
Central Heating Coil	-	-11585	-	-	5787	-
>> Total Conditioning	**-**	**9653**	**1180**	**-**	**5787**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.3	0.00963	170	400	235	368
Ventilation Reclaim	Outlet	66.1	0.00848	170	400	437	682
Vent - Return Mixing	Outlet	64.6	0.00794	1315	431	-	-
Central Cooling Coil	Outlet	44.1	0.00768	1315	431	21238	1180
Central Heating Coil	Outlet	55.3	0.00768	1315	431	11585	-
Supply Fan	Outlet	56.0	0.00768	1315	431	752	-
Cold Supply Duct	Outlet	56.0	0.00768	1315	431	-	-
Zone Air	-	64.3	0.00786	1315	435	8666	812
Return Plenum	Outlet	64.3	0.00786	1315	435	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8598	Cooling	8666	64.3	1315	435	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1112	0
Ventilation Reclaim	Outlet	54.4	0.00340	170	400	-2066	0
Vent - Return Mixing	Outlet	61.6	0.00340	1315	466	-	-
Central Cooling Coil	Outlet	61.6	0.00340	1315	466	0	0
Central Heating Coil	Outlet	67.1	0.00340	1315	466	5787	-
Supply Fan	Outlet	67.8	0.00340	1315	466	752	-
Cold Supply Duct	Outlet	67.8	0.00340	1315	466	-	-
Zone Air	-	62.6	0.00340	1315	476	-5427	0
Return Plenum	Outlet	62.6	0.00340	1315	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-5890	Heating	-5427	62.6	1315	476	0	0

Air System Sizing Summary for -102 S1-A2

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-102 S1-A2**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1453.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.2**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.0**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**763**	CFM	Leaving DB / WB	**44.7 / 43.5**	°F
Max block CFM	**763**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**763**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.981**		Resulting RH	**45**	%
CFM/Ton	**748.5**		Design supply temp.	**46.0**	°F
ft²/Ton	**1425.7**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.4**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.2**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**763**	CFM	BTU/(hr·ft²)	**7.0**	
Max coil CFM	**763**	CFM	Ent. DB / Lvg DB	**44.4 / 61.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**763**	CFM	Fan motor BHP	**0.16**	BHP
Standard CFM	**559**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.53**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.08**	CFM/ft²			

Zone Sizing Summary for -102 S1-A2

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-102 S1-A2**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1453.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	763	763	0.53	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.4	Jul 1500	3.5	1453.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S102 Archivo 2	1	4.4	Jul 1500	763	3.5	1453.0	0.53

Air System Design Load Summary for -102 S1-A2

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1453 ft²	0	-	1453 ft²	0	-
Partitions	792 ft²	288	-	792 ft²	3484	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1162 W	3966	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4254**	**0**	**-**	**3484**	**0**
Zone Conditioning	-	4034	0	-	3503	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	763 CFM	0	-	763 CFM	0	-
Ventilation Load	110 CFM	166	238	110 CFM	721	0
Supply Fan Load	763 CFM	436	-	763 CFM	-436	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4637**	**238**	**-**	**3788**	**0**
Central Cooling Coil	-	11992	238	-	0	0
Central Heating Coil	-	-7356	-	-	3788	-
>> Total Conditioning	**-**	**4637**	**238**	**-**	**3788**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	166	238
Ventilation Reclaim	Outlet	66.3	0.00848	110	400	309	440
Vent - Return Mixing	Outlet	64.6	0.00795	763	453	-	-
Central Cooling Coil	Outlet	44.7	0.00786	763	453	11992	238
Central Heating Coil	Outlet	56.9	0.00786	763	453	7356	-
Supply Fan	Outlet	57.7	0.00786	763	453	436	-
Cold Supply Duct	Outlet	57.7	0.00786	763	453	-	-
Zone Air	-	64.3	0.00786	763	462	4034	0
Return Plenum	Outlet	64.3	0.00786	763	462	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4254	Cooling	4034	64.3	763	462	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-721	0
Ventilation Reclaim	Outlet	54.4	0.00340	110	400	-1340	0
Vent - Return Mixing	Outlet	61.5	0.00340	763	453	-	-
Central Cooling Coil	Outlet	61.5	0.00340	763	453	0	0
Central Heating Coil	Outlet	67.8	0.00340	763	453	3788	-
Supply Fan	Outlet	68.5	0.00340	763	453	436	-
Cold Supply Duct	Outlet	68.5	0.00340	763	453	-	-
Zone Air	-	62.7	0.00340	763	462	-3503	0
Return Plenum	Outlet	62.7	0.00340	763	462	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3484	Heating	-3503	62.7	763	462	0	0

Air System Sizing Summary for 103 P1-A36

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**103 P1-A36**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2818.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.9**	Tons	Load occurs at	**Jun 1400**	
Total coil load	**22.8**	MBH	OA DB / WB	**69.3 / 55.5**	°F
Sensible coil load	**21.6**	MBH	Entering DB / WB	**64.5 / 51.3**	°F
Coil CFM at Jun 1400	**1339**	CFM	Leaving DB / WB	**44.1 / 42.9**	°F
Max block CFM	**1339**	CFM	Coil ADP	**41.9**	°F
Sum of peak zone CFM	**1339**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.948**		Resulting RH	**45**	%
CFM/Ton	**704.4**		Design supply temp.	**46.0**	°F
ft²/Ton	**1482.9**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.1**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.3**	MBH	Load occurs at	**Feb 0700**	
Coil CFM at Feb 0700	**1339**	CFM	BTU/(hr·ft²)	**5.4**	
Max coil CFM	**1339**	CFM	Ent. DB / Lvg DB	**44.5 / 59.0**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1339**	CFM	Fan motor BHP	**0.28**	BHP
Standard CFM	**981**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 103 P1-A36

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name **103 P1-A36**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2818.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1339	1339	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	9.3	Aug 1600	5.9	2818.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
103 Archivo 36	1	9.3	Aug 1600	1339	5.9	2818.0	0.48

Air System Design Load Summary for 103 P1-A36

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400 COOLING OA DB / WB 69.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	375 ft²	425	-	375 ft²	2386	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	229 ft²	62	-	229 ft²	1006	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2254 W	7692	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	563	827	-	2542	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8742**	**827**	**-**	**5934**	**0**
Zone Conditioning	-	8813	827	-	5901	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1339 CFM	0	-	1339 CFM	0	-
Ventilation Load	170 CFM	235	368	170 CFM	1116	0
Supply Fan Load	1339 CFM	765	-	1339 CFM	-765	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**9814**	**1195**	**-**	**6252**	**0**
Central Cooling Coil	-	21609	1195	-	0	0
Central Heating Coil	-	-11796	-	-	6252	-
>> Total Conditioning	**-**	**9814**	**1195**	**-**	**6252**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.3	0.00963	170	400	235	368
Ventilation Reclaim	Outlet	66.1	0.00848	170	400	437	682
Vent - Return Mixing	Outlet	64.5	0.00794	1339	431	-	-
Central Cooling Coil	Outlet	44.1	0.00768	1339	431	21609	1195
Central Heating Coil	Outlet	55.3	0.00768	1339	431	11796	-
Supply Fan	Outlet	56.0	0.00768	1339	431	765	-
Cold Supply Duct	Outlet	56.0	0.00768	1339	431	-	-
Zone Air	-	64.3	0.00786	1339	436	8813	827
Return Plenum	Outlet	64.3	0.00786	1339	436	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8742	Cooling	8813	64.3	1339	436	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1116	0
Ventilation Reclaim	Outlet	54.4	0.00340	170	400	-2072	0
Vent - Return Mixing	Outlet	61.6	0.00340	1339	468	-	-
Central Cooling Coil	Outlet	61.6	0.00340	1339	468	0	0
Central Heating Coil	Outlet	67.6	0.00340	1339	468	6252	-
Supply Fan	Outlet	68.3	0.00340	1339	468	765	-
Cold Supply Duct	Outlet	68.3	0.00340	1339	468	-	-
Zone Air	-	62.7	0.00340	1339	478	-5901	0
Return Plenum	Outlet	62.7	0.00340	1339	478	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-5934	Heating	-5901	62.7	1339	478	0	0

Air System Sizing Summary for -103 S1-A3

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-103 S1-A3**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1456.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.0**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**764**	CFM	Leaving DB / WB	**44.7 / 43.5**	°F
Max block CFM	**764**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**764**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.980**		Resulting RH	**45**	%
CFM/Ton	**748.5**		Design supply temp.	**46.0**	°F
ft²/Ton	**1425.7**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.4**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**9.5**	MBH	Load occurs at	**Nov 0800**	
Coil CFM at Nov 0800	**764**	CFM	BTU/(hr·ft²)	**6.5**	
Max coil CFM	**764**	CFM	Ent. DB / Lvg DB	**44.4 / 60.1**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**764**	CFM	Fan motor BHP	**0.16**	BHP
Standard CFM	**560**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.53**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.08**	CFM/ft²			

Zone Sizing Summary for -103 S1-A3

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-103 S1-A3**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1456.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	764	764	0.53	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	3.8	Jul 1500	1.6	1456.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S103 Archivo 3	1	3.8	Jul 1500	764	1.6	1456.0	0.53

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1456 ft²	0	-	1456 ft²	0	-
Partitions	801 ft²	-242	-	801 ft²	1562	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1165 W	3974	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**3732**	**0**	**-**	**1562**	**0**
Zone Conditioning	-	3514	0	-	1325	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	764 CFM	0	-	764 CFM	0	-
Ventilation Load	110 CFM	168	239	110 CFM	724	0
Supply Fan Load	764 CFM	437	-	764 CFM	-437	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4119**	**239**	**-**	**1612**	**0**
Central Cooling Coil	-	12016	239	-	0	0
Central Heating Coil	-	-7897	-	-	1612	-
>> Total Conditioning	**-**	**4119**	**239**	**-**	**1612**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	168	239
Ventilation Reclaim	Outlet	66.2	0.00847	110	400	312	444
Vent - Return Mixing	Outlet	64.6	0.00794	764	453	-	-
Central Cooling Coil	Outlet	44.7	0.00785	764	453	12016	239
Central Heating Coil	Outlet	57.8	0.00785	764	453	7897	-
Supply Fan	Outlet	58.5	0.00785	764	453	437	-
Cold Supply Duct	Outlet	58.5	0.00785	764	453	-	-
Zone Air	-	64.3	0.00785	764	462	3514	0
Return Plenum	Outlet	64.3	0.00785	764	462	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	3732	Cooling	3514	64.3	764	462	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-724	0
Ventilation Reclaim	Outlet	54.5	0.00340	110	400	-1345	0
Vent - Return Mixing	Outlet	61.6	0.00340	764	453	-	-
Central Cooling Coil	Outlet	61.6	0.00340	764	453	0	0
Central Heating Coil	Outlet	64.2	0.00340	764	453	1612	-
Supply Fan	Outlet	65.0	0.00340	764	453	437	-
Cold Supply Duct	Outlet	65.0	0.00340	764	453	-	-
Zone Air	-	62.8	0.00340	764	462	-1325	0
Return Plenum	Outlet	62.8	0.00340	764	462	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-1562	Heating	-1325	62.8	764	462	0	0

Air System Sizing Summary for 104 P1-A37

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**104 P1-A37**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2827.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.9**	Tons	Load occurs at	**Jun 1400**	
Total coil load	**22.9**	MBH	OA DB / WB	**69.3 / 55.5**	°F
Sensible coil load	**21.7**	MBH	Entering DB / WB	**64.5 / 51.3**	°F
Coil CFM at Jun 1400	**1343**	CFM	Leaving DB / WB	**44.1 / 42.9**	°F
Max block CFM	**1343**	CFM	Coil ADP	**41.9**	°F
Sum of peak zone CFM	**1343**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.948**		Resulting RH	**45**	%
CFM/Ton	**704.4**		Design supply temp.	**46.0**	°F
ft²/Ton	**1483.0**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.1**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.4**	MBH	Load occurs at	**Feb 0700**	
Coil CFM at Feb 0700	**1343**	CFM	BTU/(hr·ft²)	**5.5**	
Max coil CFM	**1343**	CFM	Ent. DB / Lvg DB	**44.6 / 59.1**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1343**	CFM	Fan motor BHP	**0.28**	BHP
Standard CFM	**984**	CFM	Fan motor kW	**0.23**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 104 P1-A37

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name **104 P1-A37**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2827.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1343	1343	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	9.3	Aug 1600	6.0	2827.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
104 Archivo 37	1	9.3	Aug 1600	1343	6.0	2827.0	0.48

Air System Design Load Summary for 104 P1-A37

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400 COOLING OA DB / WB 69.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	376 ft²	426	-	376 ft²	2394	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	230 ft²	62	-	230 ft²	1010	-
Overhead Lighting	2262 W	7716	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	565	829	-	2550	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8770**	**829**	**-**	**5953**	**0**
Zone Conditioning	-	8841	829	-	5920	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1343 CFM	0	-	1343 CFM	0	-
Ventilation Load	170 CFM	235	368	170 CFM	1116	0
Supply Fan Load	1343 CFM	768	-	1343 CFM	-768	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**9844**	**1197**	**-**	**6268**	**0**
Central Cooling Coil	-	21678	1197	-	0	0
Central Heating Coil	-	-11833	-	-	6268	-
>> Total Conditioning	**-**	**9844**	**1197**	**-**	**6268**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.3	0.00963	170	400	235	368
Ventilation Reclaim	Outlet	66.1	0.00848	170	400	437	682
Vent - Return Mixing	Outlet	64.5	0.00794	1343	432	-	-
Central Cooling Coil	Outlet	44.1	0.00768	1343	432	21678	1197
Central Heating Coil	Outlet	55.3	0.00768	1343	432	11833	-
Supply Fan	Outlet	56.0	0.00768	1343	432	768	-
Cold Supply Duct	Outlet	56.0	0.00768	1343	432	-	-
Zone Air	-	64.3	0.00786	1343	436	8841	829
Return Plenum	Outlet	64.3	0.00786	1343	436	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8770	Cooling	8841	64.3	1343	436	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1116	0
Ventilation Reclaim	Outlet	54.4	0.00340	170	400	-2072	0
Vent - Return Mixing	Outlet	61.7	0.00340	1343	469	-	-
Central Cooling Coil	Outlet	61.7	0.00340	1343	469	0	0
Central Heating Coil	Outlet	67.6	0.00340	1343	469	6268	-
Supply Fan	Outlet	68.3	0.00340	1343	469	768	-
Cold Supply Duct	Outlet	68.3	0.00340	1343	469	-	-
Zone Air	-	62.7	0.00340	1343	479	-5920	0
Return Plenum	Outlet	62.7	0.00340	1343	479	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-5953	Heating	-5920	62.7	1343	479	0	0

Air System Sizing Summary for -104 S1-A4

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-104 S1-A4**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1468.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.4**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.1**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**771**	CFM	Leaving DB / WB	**44.7 / 43.5**	°F
Max block CFM	**771**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**771**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.981**		Resulting RH	**45**	%
CFM/Ton	**748.7**		Design supply temp.	**46.0**	°F
ft²/Ton	**1426.2**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.4**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.3**	MBH	Load occurs at	**Dec 0500**	
Coil CFM at Dec 0500	**771**	CFM	BTU/(hr·ft²)	**7.0**	
Max coil CFM	**771**	CFM	Ent. DB / Lvg DB	**44.4 / 61.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**771**	CFM	Fan motor BHP	**0.16**	BHP
Standard CFM	**565**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.53**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.07**	CFM/ft²			

Zone Sizing Summary for -104 S1-A4

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-104 S1-A4**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1468.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	771	771	0.53	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.4	Jul 1500	3.5	1468.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S104 Archivo 4	1	4.4	Jul 1500	771	3.5	1468.0	0.53

Air System Design Load Summary for -104 S1-A4

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1468 ft²	0	-	1468 ft²	0	-
Partitions	796 ft²	290	-	796 ft²	3503	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1174 W	4007	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4297**	**0**	**-**	**3503**	**0**
Zone Conditioning	-	4076	0	-	3085	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	771 CFM	0	-	771 CFM	0	-
Ventilation Load	110 CFM	166	238	110 CFM	718	0
Supply Fan Load	771 CFM	441	-	771 CFM	-441	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4683**	**238**	**-**	**3362**	**0**
Central Cooling Coil	-	12114	238	-	0	0
Central Heating Coil	-	-7431	-	-	3362	-
>> Total Conditioning	**-**	**4683**	**238**	**-**	**3362**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	166	238
Ventilation Reclaim	Outlet	66.3	0.00848	110	400	309	440
Vent - Return Mixing	Outlet	64.6	0.00795	771	454	-	-
Central Cooling Coil	Outlet	44.7	0.00786	771	454	12114	238
Central Heating Coil	Outlet	56.9	0.00786	771	454	7431	-
Supply Fan	Outlet	57.7	0.00786	771	454	441	-
Cold Supply Duct	Outlet	57.7	0.00786	771	454	-	-
Zone Air	-	64.3	0.00786	771	463	4076	0
Return Plenum	Outlet	64.3	0.00786	771	463	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4297	Cooling	4076	64.3	771	463	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-718	0
Ventilation Reclaim	Outlet	54.3	0.00340	110	400	-1333	0
Vent - Return Mixing	Outlet	61.4	0.00340	771	454	-	-
Central Cooling Coil	Outlet	61.4	0.00340	771	454	0	0
Central Heating Coil	Outlet	66.9	0.00340	771	454	3362	-
Supply Fan	Outlet	67.6	0.00340	771	454	441	-
Cold Supply Duct	Outlet	67.6	0.00340	771	454	-	-
Zone Air	-	62.6	0.00340	771	463	-3085	0
Return Plenum	Outlet	62.6	0.00340	771	463	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3503	Heating	-3085	62.6	771	463	0	0

Air System Sizing Summary for 105 P1-A38

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**105 P1-A38**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2715.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**22.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**20.8**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1290**	CFM	Leaving DB / WB	**44.2 / 42.9**	°F
Max block CFM	**1290**	CFM	Coil ADP	**41.9**	°F
Sum of peak zone CFM	**1290**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.947**		Resulting RH	**45**	%
CFM/Ton	**703.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1480.4**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.1**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**14.9**	MBH	Load occurs at	**May 0900**	
Coil CFM at May 0900	**1290**	CFM	BTU/(hr·ft²)	**5.5**	
Max coil CFM	**1290**	CFM	Ent. DB / Lvg DB	**44.1 / 58.7**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1290**	CFM	Fan motor BHP	**0.27**	BHP
Standard CFM	**945**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 105 P1-A38

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name **105 P1-A38**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2715.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1290	1290	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	9.6	Oct 2100	13.5	2715.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
105 Archivo 38	1	9.6	Oct 2100	1290	13.5	2715.0	0.48

Air System Design Load Summary for 105 P1-A38

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	1571 ft²	-206	-	1571 ft²	10004	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	235 ft²	86	-	235 ft²	1036	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2172 W	7411	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	592	794	-	2449	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**7883**	**794**	**-**	**13488**	**0**
Zone Conditioning	-	7728	794	-	13111	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1290 CFM	0	-	1290 CFM	0	-
Ventilation Load	170 CFM	257	367	170 CFM	1097	0
Supply Fan Load	1290 CFM	737	-	1290 CFM	-737	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8722**	**1161**	**-**	**13471**	**0**
Central Cooling Coil	-	20847	1161	-	0	0
Central Heating Coil	-	-12125	-	-	13471	-
>> Total Conditioning	**-**	**8722**	**1161**	**-**	**13471**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	257	367
Ventilation Reclaim	Outlet	66.3	0.00848	170	400	477	680
Vent - Return Mixing	Outlet	64.6	0.00794	1290	430	-	-
Central Cooling Coil	Outlet	44.2	0.00769	1290	430	20847	1161
Central Heating Coil	Outlet	56.1	0.00769	1290	430	12125	-
Supply Fan	Outlet	56.8	0.00769	1290	430	737	-
Cold Supply Duct	Outlet	56.8	0.00769	1290	430	-	-
Zone Air	-	64.3	0.00786	1290	434	7728	794
Return Plenum	Outlet	64.3	0.00786	1290	434	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	7883	Cooling	7728	64.3	1290	434	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1097	0
Ventilation Reclaim	Outlet	54.1	0.00340	170	400	-2037	0
Vent - Return Mixing	Outlet	61.2	0.00340	1290	464	-	-
Central Cooling Coil	Outlet	61.2	0.00340	1290	464	0	0
Central Heating Coil	Outlet	74.4	0.00340	1290	464	13471	-
Supply Fan	Outlet	75.1	0.00340	1290	464	737	-
Cold Supply Duct	Outlet	75.1	0.00340	1290	464	-	-
Zone Air	-	62.3	0.00340	1290	473	-13111	0
Return Plenum	Outlet	62.3	0.00340	1290	473	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-13488	Heating	-13111	62.3	1290	473	0	0

Air System Sizing Summary for -105 S1-A6

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-105 S1-A6**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1486.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.1**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**13.6**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**13.1**	MBH	Entering DB / WB	**64.9 / 51.5**	°F
Coil CFM at Jun 1500	**825**	CFM	Leaving DB / WB	**44.7 / 43.5**	°F
Max block CFM	**825**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**825**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.965**		Resulting RH	**45**	%
CFM/Ton	**728.0**		Design supply temp.	**46.0**	°F
ft²/Ton	**1311.4**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**9.2**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.4**	MBH	Load occurs at	**Jan 0500**	
Coil CFM at Jan 0500	**825**	CFM	BTU/(hr·ft²)	**10.4**	
Max coil CFM	**825**	CFM	Ent. DB / Lvg DB	**43.2 / 66.9**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**825**	CFM	Fan motor BHP	**0.17**	BHP
Standard CFM	**604**	CFM	Fan motor kW	**0.14**	kW
Actual max CFM/ft²	**0.56**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**220**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.15**	CFM/ft²			

Zone Sizing Summary for -105 S1-A6

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-105 S1-A6**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1486.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	825	825	0.56	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	5.3	Jul 1500	11.1	1486.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S105 Archivo 6	1	5.3	Jul 1500	825	11.1	1486.0	0.56

Air System Design Load Summary for -105 S1-A6

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1486 ft²	0	-	1486 ft²	0	-
Partitions	2280 ft²	870	-	2280 ft²	11096	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1189 W	4056	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4926**	**0**	**-**	**11096**	**0**
Zone Conditioning	-	4252	0	-	10592	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	825 CFM	0	-	825 CFM	0	-
Ventilation Load	220 CFM	332	475	220 CFM	1408	0
Supply Fan Load	825 CFM	472	-	825 CFM	-472	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**5056**	**475**	**-**	**11528**	**0**
Central Cooling Coil	-	13123	475	-	0	0
Central Heating Coil	-	-8066	-	-	11528	-
>> Total Conditioning	**-**	**5056**	**475**	**-**	**11528**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	220	400	332	475
Ventilation Reclaim	Outlet	66.3	0.00848	220	400	617	880
Vent - Return Mixing	Outlet	64.9	0.00803	825	425	-	-
Central Cooling Coil	Outlet	44.7	0.00786	825	425	13123	475
Central Heating Coil	Outlet	57.1	0.00786	825	425	8066	-
Supply Fan	Outlet	57.8	0.00786	825	425	472	-
Cold Supply Duct	Outlet	57.8	0.00786	825	425	-	-
Zone Air	-	64.3	0.00786	825	433	4252	0
Return Plenum	Outlet	64.3	0.00786	825	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4926	Cooling	4252	64.3	825	433	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	220	400	-1408	0
Ventilation Reclaim	Outlet	54.0	0.00340	220	400	-2614	0
Vent - Return Mixing	Outlet	59.9	0.00340	825	425	-	-
Central Cooling Coil	Outlet	59.9	0.00340	825	425	0	0
Central Heating Coil	Outlet	77.6	0.00340	825	425	11528	-
Supply Fan	Outlet	78.3	0.00340	825	425	472	-
Cold Supply Duct	Outlet	78.3	0.00340	825	425	-	-
Zone Air	-	62.1	0.00340	825	433	-10592	0
Return Plenum	Outlet	62.1	0.00340	825	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-11096	Heating	-10592	62.1	825	433	0	0

Air System Sizing Summary for 107 P1-A39

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

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07:44PM

Air System Information

Air System Name	**107 P1-A39**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**881.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**7.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**6.8**	MBH	Entering DB / WB	**65.0 / 51.6**	°F
Coil CFM at Jun 1500	**418**	CFM	Leaving DB / WB	**44.3 / 43.1**	°F
Max block CFM	**418**	CFM	Coil ADP	**42.0**	°F
Sum of peak zone CFM	**418**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.934**		Resulting RH	**45**	%
CFM/Ton	**685.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1442.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.3**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**5.7**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**418**	CFM	BTU/(hr·ft²)	**6.4**	
Max coil CFM	**418**	CFM	Ent. DB / Lvg DB	**44.2 / 61.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**418**	CFM	Fan motor BHP	**0.09**	BHP
Standard CFM	**307**	CFM	Fan motor kW	**0.07**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.12**	CFM/ft²			

Zone Sizing Summary for 107 P1-A39

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name **107 P1-A39**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **881.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	418	418	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	3.5	Jul 2200	4.4	881.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
107 Archivo 39	1	3.5	Jul 2200	418	4.4	881.0	0.48

Air System Design Load Summary for 107 P1-A39

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	400 ft²	486	-	400 ft²	2550	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	233 ft²	85	-	233 ft²	1025	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	705 W	2405	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	192	253	-	795	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**3167**	**253**	**-**	**4370**	**0**
Zone Conditioning	-	3056	253	-	4261	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	418 CFM	0	-	418 CFM	0	-
Ventilation Load	110 CFM	162	233	110 CFM	710	0
Supply Fan Load	418 CFM	239	-	418 CFM	-239	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**3458**	**485**	**-**	**4732**	**0**
Central Cooling Coil	-	6843	485	-	0	0
Central Heating Coil	-	-3386	-	-	4732	-
>> Total Conditioning	**-**	**3458**	**485**	**-**	**4732**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	162	233
Ventilation Reclaim	Outlet	66.3	0.00851	110	400	301	431
Vent - Return Mixing	Outlet	65.0	0.00806	418	416	-	-
Central Cooling Coil	Outlet	44.3	0.00772	418	416	6843	485
Central Heating Coil	Outlet	54.5	0.00772	418	416	3386	-
Supply Fan	Outlet	55.2	0.00772	418	416	239	-
Cold Supply Duct	Outlet	55.2	0.00772	418	416	-	-
Zone Air	-	64.5	0.00790	418	422	3056	253
Return Plenum	Outlet	64.5	0.00790	418	422	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	3167	Cooling	3056	64.5	418	422	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-710	0
Ventilation Reclaim	Outlet	54.2	0.00340	110	400	-1319	0
Vent - Return Mixing	Outlet	60.2	0.00340	418	426	-	-
Central Cooling Coil	Outlet	60.2	0.00340	418	426	0	0
Central Heating Coil	Outlet	74.5	0.00340	418	426	4732	-
Supply Fan	Outlet	75.2	0.00340	418	426	239	-
Cold Supply Duct	Outlet	75.2	0.00340	418	426	-	-
Zone Air	-	62.3	0.00340	418	435	-4261	0
Return Plenum	Outlet	62.3	0.00340	418	435	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-4370	Heating	-4261	62.3	418	435	0	0

Air System Sizing Summary for -107 S1-A7

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-107 S1-A7**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1870.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.9**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**10.6**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**10.3**	MBH	Entering DB / WB	**64.8 / 51.5**	°F
Coil CFM at Jun 1500	**655**	CFM	Leaving DB / WB	**44.8 / 43.6**	°F
Max block CFM	**655**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**655**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.976**		Resulting RH	**45**	%
CFM/Ton	**742.1**		Design supply temp.	**46.0**	°F
ft²/Ton	**2120.2**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**5.7**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**9.5**	MBH	Load occurs at	**Dec 0600**	
Coil CFM at Dec 0600	**655**	CFM	BTU/(hr·ft²)	**5.1**	
Max coil CFM	**655**	CFM	Ent. DB / Lvg DB	**44.4 / 62.7**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**655**	CFM	Fan motor BHP	**0.14**	BHP
Standard CFM	**479**	CFM	Fan motor kW	**0.11**	kW
Actual max CFM/ft²	**0.35**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**120**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -107 S1-A7

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-107 S1-A7**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1870.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	655	655	0.35	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	5.9	Jul 1500	6.7	1870.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S107 Archivo 7	1	5.9	Jul 1500	655	6.7	1870.0	0.35

Air System Design Load Summary for -107 S1-A7

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1870 ft²	0	-	1870 ft²	0	-
Partitions	1530 ft²	557	-	1530 ft²	6730	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1496 W	5104	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**5661**	**0**	**-**	**6730**	**0**
Zone Conditioning	-	5284	0	-	6481	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	655 CFM	0	-	655 CFM	0	-
Ventilation Load	120 CFM	178	255	120 CFM	777	0
Supply Fan Load	655 CFM	374	-	655 CFM	-374	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**5836**	**255**	**-**	**6884**	**0**
Central Cooling Coil	-	10329	255	-	0	0
Central Heating Coil	-	-4493	-	-	6884	-
>> Total Conditioning	**-**	**5836**	**255**	**-**	**6884**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	120	400	178	255
Ventilation Reclaim	Outlet	66.3	0.00850	120	400	330	472
Vent - Return Mixing	Outlet	64.8	0.00800	655	443	-	-
Central Cooling Coil	Outlet	44.8	0.00789	655	443	10329	255
Central Heating Coil	Outlet	53.5	0.00789	655	443	4493	-
Supply Fan	Outlet	54.2	0.00789	655	443	374	-
Cold Supply Duct	Outlet	54.2	0.00789	655	443	-	-
Zone Air	-	64.5	0.00789	655	453	5284	0
Return Plenum	Outlet	64.5	0.00789	655	453	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	5661	Cooling	5284	64.5	655	453	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	120	400	-777	0
Ventilation Reclaim	Outlet	54.2	0.00340	120	400	-1443	0
Vent - Return Mixing	Outlet	60.9	0.00340	655	443	-	-
Central Cooling Coil	Outlet	60.9	0.00340	655	443	0	0
Central Heating Coil	Outlet	74.2	0.00340	655	443	6884	-
Supply Fan	Outlet	74.9	0.00340	655	443	374	-
Cold Supply Duct	Outlet	74.9	0.00340	655	443	-	-
Zone Air	-	62.4	0.00340	655	453	-6481	0
Return Plenum	Outlet	62.4	0.00340	655	453	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-6730	Heating	-6481	62.4	655	453	0	0

Air System Sizing Summary for 108 P1-A40

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**108 P1-A40**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**881.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**7.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**6.8**	MBH	Entering DB / WB	**65.0 / 51.6**	°F
Coil CFM at Jun 1500	**418**	CFM	Leaving DB / WB	**44.3 / 43.1**	°F
Max block CFM	**418**	CFM	Coil ADP	**42.0**	°F
Sum of peak zone CFM	**418**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.934**		Resulting RH	**45**	%
CFM/Ton	**685.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1442.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.3**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**5.7**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**418**	CFM	BTU/(hr·ft²)	**6.4**	
Max coil CFM	**418**	CFM	Ent. DB / Lvg DB	**44.2 / 61.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**418**	CFM	Fan motor BHP	**0.09**	BHP
Standard CFM	**307**	CFM	Fan motor kW	**0.07**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.12**	CFM/ft²			

Zone Sizing Summary for 108 P1-A40

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name **108 P1-A40**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **881.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	418	418	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	3.5	Jul 2200	4.4	881.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
108 Archivo 40	1	3.5	Jul 2200	418	4.4	881.0	0.48

Air System Design Load Summary for 108 P1-A40

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	400 ft²	486	-	400 ft²	2550	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	233 ft²	85	-	233 ft²	1025	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	705 W	2405	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	192	253	-	795	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**3167**	**253**	**-**	**4370**	**0**
Zone Conditioning	-	3056	253	-	4261	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	418 CFM	0	-	418 CFM	0	-
Ventilation Load	110 CFM	162	233	110 CFM	710	0
Supply Fan Load	418 CFM	239	-	418 CFM	-239	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**3458**	**485**	**-**	**4732**	**0**
Central Cooling Coil	-	6843	485	-	0	0
Central Heating Coil	-	-3386	-	-	4732	-
>> Total Conditioning	**-**	**3458**	**485**	**-**	**4732**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	162	233
Ventilation Reclaim	Outlet	66.3	0.00851	110	400	301	431
Vent - Return Mixing	Outlet	65.0	0.00806	418	416	-	-
Central Cooling Coil	Outlet	44.3	0.00772	418	416	6843	485
Central Heating Coil	Outlet	54.5	0.00772	418	416	3386	-
Supply Fan	Outlet	55.2	0.00772	418	416	239	-
Cold Supply Duct	Outlet	55.2	0.00772	418	416	-	-
Zone Air	-	64.5	0.00790	418	422	3056	253
Return Plenum	Outlet	64.5	0.00790	418	422	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	3167	Cooling	3056	64.5	418	422	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-710	0
Ventilation Reclaim	Outlet	54.2	0.00340	110	400	-1319	0
Vent - Return Mixing	Outlet	60.2	0.00340	418	426	-	-
Central Cooling Coil	Outlet	60.2	0.00340	418	426	0	0
Central Heating Coil	Outlet	74.5	0.00340	418	426	4732	-
Supply Fan	Outlet	75.2	0.00340	418	426	239	-
Cold Supply Duct	Outlet	75.2	0.00340	418	426	-	-
Zone Air	-	62.3	0.00340	418	435	-4261	0
Return Plenum	Outlet	62.3	0.00340	418	435	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-4370	Heating	-4261	62.3	418	435	0	0

Air System Sizing Summary for 109 P1-A41

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**109 P1-A41**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**881.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**7.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**6.8**	MBH	Entering DB / WB	**65.0 / 51.6**	°F
Coil CFM at Jun 1500	**418**	CFM	Leaving DB / WB	**44.3 / 43.1**	°F
Max block CFM	**418**	CFM	Coil ADP	**42.0**	°F
Sum of peak zone CFM	**418**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.934**		Resulting RH	**45**	%
CFM/Ton	**685.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1442.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.3**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**5.7**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**418**	CFM	BTU/(hr·ft²)	**6.4**	
Max coil CFM	**418**	CFM	Ent. DB / Lvg DB	**44.2 / 61.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**418**	CFM	Fan motor BHP	**0.09**	BHP
Standard CFM	**307**	CFM	Fan motor kW	**0.07**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.12**	CFM/ft²			

Zone Sizing Summary for 109 P1-A41

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name **109 P1-A41**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **881.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	418	418	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	3.5	Jul 2200	4.4	881.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
109 Archivo 41	1	3.5	Jul 2200	418	4.4	881.0	0.48

Air System Design Load Summary for 109 P1-A41

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	400 ft²	486	-	400 ft²	2550	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	233 ft²	85	-	233 ft²	1025	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	705 W	2405	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	192	253	-	795	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**3167**	**253**	**-**	**4370**	**0**
Zone Conditioning	-	3056	253	-	4261	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	418 CFM	0	-	418 CFM	0	-
Ventilation Load	110 CFM	162	233	110 CFM	710	0
Supply Fan Load	418 CFM	239	-	418 CFM	-239	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**3458**	**485**	**-**	**4732**	**0**
Central Cooling Coil	-	6843	485	-	0	0
Central Heating Coil	-	-3386	-	-	4732	-
>> Total Conditioning	**-**	**3458**	**485**	**-**	**4732**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	162	233
Ventilation Reclaim	Outlet	66.3	0.00851	110	400	301	431
Vent - Return Mixing	Outlet	65.0	0.00806	418	416	-	-
Central Cooling Coil	Outlet	44.3	0.00772	418	416	6843	485
Central Heating Coil	Outlet	54.5	0.00772	418	416	3386	-
Supply Fan	Outlet	55.2	0.00772	418	416	239	-
Cold Supply Duct	Outlet	55.2	0.00772	418	416	-	-
Zone Air	-	64.5	0.00790	418	422	3056	253
Return Plenum	Outlet	64.5	0.00790	418	422	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	3167	Cooling	3056	64.5	418	422	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-710	0
Ventilation Reclaim	Outlet	54.2	0.00340	110	400	-1319	0
Vent - Return Mixing	Outlet	60.2	0.00340	418	426	-	-
Central Cooling Coil	Outlet	60.2	0.00340	418	426	0	0
Central Heating Coil	Outlet	74.5	0.00340	418	426	4732	-
Supply Fan	Outlet	75.2	0.00340	418	426	239	-
Cold Supply Duct	Outlet	75.2	0.00340	418	426	-	-
Zone Air	-	62.3	0.00340	418	435	-4261	0
Return Plenum	Outlet	62.3	0.00340	418	435	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-4370	Heating	-4261	62.3	418	435	0	0

Air System Sizing Summary for -109 S1-Mapoteca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-109 S1-Mapoteca**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1056.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.7**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**8.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**7.8**	MBH	Entering DB / WB	**64.8 / 51.5**	°F
Coil CFM at Jun 1500	**493**	CFM	Leaving DB / WB	**44.8 / 43.6**	°F
Max block CFM	**493**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**493**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.973**		Resulting RH	**45**	%
CFM/Ton	**738.7**		Design supply temp.	**46.0**	°F
ft²/Ton	**1583.5**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**8.5**	MBH	Load occurs at	**Jan 0600**	
Coil CFM at Jan 0600	**493**	CFM	BTU/(hr·ft²)	**8.0**	
Max coil CFM	**493**	CFM	Ent. DB / Lvg DB	**43.3 / 64.9**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**493**	CFM	Fan motor BHP	**0.10**	BHP
Standard CFM	**361**	CFM	Fan motor kW	**0.08**	kW
Actual max CFM/ft²	**0.47**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**100**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.09**	CFM/ft²			

Zone Sizing Summary for -109 S1-Mapoteca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-109 S1-Mapoteca**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1056.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	493	493	0.47	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	3.6	Jul 1500	6.6	1056.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S109 Mapoteca	1	3.6	Jul 1500	493	6.6	1056.0	0.47

Air System Design Load Summary for -109 S1-Mapoteca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1056 ft²	0	-	1056 ft²	0	-
Partitions	1365 ft²	521	-	1365 ft²	6626	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	845 W	2882	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**3403**	**0**	**-**	**6626**	**0**
Zone Conditioning	-	2852	0	-	6186	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	493 CFM	0	-	493 CFM	0	-
Ventilation Load	100 CFM	149	214	100 CFM	639	0
Supply Fan Load	493 CFM	282	-	493 CFM	-282	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**3283**	**214**	**-**	**6543**	**0**
Central Cooling Coil	-	7789	214	-	0	0
Central Heating Coil	-	-4506	-	-	6543	-
>> Total Conditioning	**-**	**3283**	**214**	**-**	**6543**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	100	400	149	214
Ventilation Reclaim	Outlet	66.3	0.00849	100	400	277	396
Vent - Return Mixing	Outlet	64.8	0.00800	493	433	-	-
Central Cooling Coil	Outlet	44.8	0.00788	493	433	7789	214
Central Heating Coil	Outlet	56.4	0.00788	493	433	4506	-
Supply Fan	Outlet	57.1	0.00788	493	433	282	-
Cold Supply Duct	Outlet	57.1	0.00788	493	433	-	-
Zone Air	-	64.4	0.00788	493	441	2852	0
Return Plenum	Outlet	64.4	0.00788	493	441	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	3403	Cooling	2852	64.4	493	441	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	100	400	-639	0
Ventilation Reclaim	Outlet	54.0	0.00340	100	400	-1186	0
Vent - Return Mixing	Outlet	60.4	0.00340	493	433	-	-
Central Cooling Coil	Outlet	60.4	0.00340	493	433	0	0
Central Heating Coil	Outlet	77.2	0.00340	493	433	6543	-
Supply Fan	Outlet	77.9	0.00340	493	433	282	-
Cold Supply Duct	Outlet	77.9	0.00340	493	433	-	-
Zone Air	-	62.1	0.00340	493	441	-6186	0
Return Plenum	Outlet	62.1	0.00340	493	441	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-6626	Heating	-6186	62.1	493	441	0	0

Air System Sizing Summary for 110 P1-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**110 P1-Zona de trabajo**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**762.0** ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1200**	
Total coil load	**7.4**	MBH	OA DB / WB	**66.1 / 54.4**	°F
Sensible coil load	**7.1**	MBH	Entering DB / WB	**64.4 / 51.1**	°F
Coil CFM at Jun 1200	**450**	CFM	Leaving DB / WB	**44.3 / 43.1**	°F
Max block CFM	**450**	CFM	Coil ADP	**42.1**	°F
Sum of peak zone CFM	**450**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.970**		Resulting RH	**45**	%
CFM/Ton	**733.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1241.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**9.7**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**6.8**	MBH	Load occurs at	**Dec 0500**	
Coil CFM at Dec 0500	**450**	CFM	BTU/(hr·ft²)	**8.9**	
Max coil CFM	**450**	CFM	Ent. DB / Lvg DB	**44.2 / 63.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**450**	CFM	Fan motor BHP	**0.10**	BHP
Standard CFM	**330**	CFM	Fan motor kW	**0.08**	kW
Actual max CFM/ft²	**0.59**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.00**	CFM/ft²			

Zone Sizing Summary for 110 P1-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **110 P1-Zona de trabajo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **762.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	450	450	0.59	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.1	Jul 2200	6.1	762.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
110 Zona de Trabajo	1	4.1	Jul 2200	450	6.1	762.0	0.59

Air System Design Load Summary for 110 P1-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1200 COOLING OA DB / WB 66.1 °F / 54.4 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	683 ft²	995	-	683 ft²	4351	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	231 ft²	-41	-	231 ft²	1014	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	610 W	2080	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	61	222	-	687	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**3094**	**222**	**-**	**6052**	**0**
Zone Conditioning	-	3173	222	-	5809	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	450 CFM	0	-	450 CFM	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	450 CFM	257	-	450 CFM	-257	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**3431**	**222**	**-**	**5552**	**0**
Central Cooling Coil	-	7142	222	-	0	0
Central Heating Coil	-	-3712	-	-	5552	-
>> Total Conditioning	**-**	**3431**	**222**	**-**	**5552**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1200

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	66.1	0.00963	0	400	0	0
Ventilation Reclaim	Outlet	66.1	0.00963	0	400	0	0
Vent - Return Mixing	Outlet	64.4	0.00787	450	516	-	-
Central Cooling Coil	Outlet	44.3	0.00772	450	516	7142	222
Central Heating Coil	Outlet	54.7	0.00772	450	516	3712	-
Supply Fan	Outlet	55.4	0.00772	450	516	257	-
Cold Supply Duct	Outlet	55.4	0.00772	450	516	-	-
Zone Air	-	64.4	0.00787	450	516	3173	222
Return Plenum	Outlet	64.4	0.00787	450	516	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	3094	Cooling	3173	64.4	450	516	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	0	400	0	0
Ventilation Reclaim	Outlet	39.0	0.00340	0	400	0	0
Vent - Return Mixing	Outlet	62.1	0.00340	450	800	-	-
Central Cooling Coil	Outlet	62.1	0.00340	450	800	0	0
Central Heating Coil	Outlet	77.7	0.00340	450	800	5552	-
Supply Fan	Outlet	78.4	0.00340	450	800	257	-
Cold Supply Duct	Outlet	78.4	0.00340	450	800	-	-
Zone Air	-	62.1	0.00340	450	800	-5809	0
Return Plenum	Outlet	62.1	0.00340	450	800	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-6052	Heating	-5809	62.1	450	800	0	0

Air System Sizing Summary for -110 S1-A8

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-110 S1-A8**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1859.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**4.4**	Tons	Load occurs at	**Jul 1400**	
Total coil load	**53.2**	MBH	OA DB / WB	**70.3 / 55.5**	°F
Sensible coil load	**53.0**	MBH	Entering DB / WB	**64.4 / 51.1**	°F
Coil CFM at Jul 1400	**3407**	CFM	Leaving DB / WB	**44.7 / 43.5**	°F
Max block CFM	**3407**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**3407**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.996**		Resulting RH	**45**	%
CFM/Ton	**768.1**		Design supply temp.	**46.0**	°F
ft²/Ton	**419.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**28.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**73.5**	MBH	Load occurs at	**Dec 0500**	
Coil CFM at Dec 0500	**3407**	CFM	BTU/(hr·ft²)	**39.5**	
Max coil CFM	**3407**	CFM	Ent. DB / Lvg DB	**43.1 / 70.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**3407**	CFM	Fan motor BHP	**0.72**	BHP
Standard CFM	**2496**	CFM	Fan motor kW	**0.57**	kW
Actual max CFM/ft²	**1.83**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**120**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -110 S1-A8

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-110 S1-A8**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1859.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	3407	3407	1.83	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	10.6	Jul 1500	45.8	1859.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S110 Archivo 8	1	10.6	Jul 1500	3407	45.8	1859.0	1.83

Air System Design Load Summary for -110 S1-A8

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 70.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1859 ft²	0	-	1859 ft²	0	-
Partitions	10154 ft²	4587	-	10154 ft²	45823	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1487 W	5074	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**9662**	**0**	**-**	**45823**	**0**
Zone Conditioning	-	6272	0	-	43129	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	3407 CFM	0	-	3407 CFM	0	-
Ventilation Load	120 CFM	200	228	120 CFM	765	9
Supply Fan Load	3407 CFM	1948	-	3407 CFM	-1948	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8420**	**228**	**-**	**41946**	**9**
Central Cooling Coil	-	53000	228	-	0	0
Central Heating Coil	-	-44580	-	-	41945	-
>> Total Conditioning	**-**	**8420**	**228**	**-**	**41945**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

July DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	70.3	0.00941	120	400	200	228
Ventilation Reclaim	Outlet	66.4	0.00839	120	400	371	422
Vent - Return Mixing	Outlet	64.4	0.00787	3407	670	-	-
Central Cooling Coil	Outlet	44.7	0.00785	3407	670	53000	228
Central Heating Coil	Outlet	61.3	0.00785	3407	670	44580	-
Supply Fan	Outlet	62.0	0.00785	3407	670	1948	-
Cold Supply Duct	Outlet	62.0	0.00785	3407	670	-	-
Zone Air	-	64.3	0.00785	3407	679	6272	0
Return Plenum	Outlet	64.3	0.00785	3407	679	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	9662	Cooling	6272	64.3	3407	679	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	120	400	-765	-9
Ventilation Reclaim	Outlet	54.0	0.00344	120	400	-1421	-16
Vent - Return Mixing	Outlet	61.7	0.00346	3407	670	-	-
Central Cooling Coil	Outlet	61.7	0.00346	3407	670	0	0
Central Heating Coil	Outlet	77.3	0.00346	3407	670	41945	-
Supply Fan	Outlet	78.0	0.00346	3407	670	1948	-
Cold Supply Duct	Outlet	78.0	0.00346	3407	670	-	-
Zone Air	-	62.0	0.00346	3407	679	-43129	0
Return Plenum	Outlet	62.0	0.00346	3407	679	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-45823	Heating	-43129	62.0	3407	679	0	0

Air System Sizing Summary for -113 S1-A5

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-113 S1-A5**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1913.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.3**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**16.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**15.8**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1004**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**1004**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**1004**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.984**		Resulting RH	**45**	%
CFM/Ton	**752.8**		Design supply temp.	**46.0**	°F
ft²/Ton	**1433.8**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.4**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.1**	MBH	Load occurs at	**Jan 2200**	
Coil CFM at Jan 2200	**1004**	CFM	BTU/(hr·ft²)	**7.9**	
Max coil CFM	**1004**	CFM	Ent. DB / Lvg DB	**44.2 / 63.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1004**	CFM	Fan motor BHP	**0.21**	BHP
Standard CFM	**736**	CFM	Fan motor kW	**0.17**	kW
Actual max CFM/ft²	**0.53**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**120**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -113 S1-A5

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-113 S1-A5**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1913.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1004	1004	0.53	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	6.4	Jul 1500	9.9	1913.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S113 Archivo 5	1	6.4	Jul 1500	1004	9.9	1913.0	0.53

Air System Design Load Summary for -113 S1-A5

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1913 ft²	0	-	1913 ft²	0	-
Partitions	2242 ft²	816	-	2242 ft²	9862	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1530 W	5222	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**6038**	**0**	**-**	**9862**	**0**
Zone Conditioning	-	5338	0	-	9576	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1004 CFM	0	-	1004 CFM	0	-
Ventilation Load	120 CFM	181	258	120 CFM	776	0
Supply Fan Load	1004 CFM	574	-	1004 CFM	-574	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**6093**	**258**	**-**	**9777**	**0**
Central Cooling Coil	-	15752	258	-	0	0
Central Heating Coil	-	-9658	-	-	9777	-
>> Total Conditioning	**-**	**6093**	**258**	**-**	**9777**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	120	400	181	258
Ventilation Reclaim	Outlet	66.3	0.00848	120	400	336	479
Vent - Return Mixing	Outlet	64.6	0.00794	1004	467	-	-
Central Cooling Coil	Outlet	44.8	0.00787	1004	467	15752	258
Central Heating Coil	Outlet	56.9	0.00787	1004	467	9658	-
Supply Fan	Outlet	57.6	0.00787	1004	467	574	-
Cold Supply Duct	Outlet	57.6	0.00787	1004	467	-	-
Zone Air	-	64.4	0.00787	1004	476	5338	0
Return Plenum	Outlet	64.4	0.00787	1004	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	6038	Cooling	5338	64.4	1004	476	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	120	400	-776	0
Ventilation Reclaim	Outlet	54.2	0.00340	120	400	-1441	0
Vent - Return Mixing	Outlet	61.4	0.00340	1004	467	-	-
Central Cooling Coil	Outlet	61.4	0.00340	1004	467	0	0
Central Heating Coil	Outlet	73.7	0.00340	1004	467	9777	-
Supply Fan	Outlet	74.4	0.00340	1004	467	574	-
Cold Supply Duct	Outlet	74.4	0.00340	1004	467	-	-
Zone Air	-	62.4	0.00340	1004	476	-9576	0
Return Plenum	Outlet	62.4	0.00340	1004	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-9862	Heating	-9576	62.4	1004	476	0	0

Air System Sizing Summary for -114 S1-A9

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-114 S1-A9**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1782.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**1.1**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**13.5**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**13.3**	MBH	Entering DB / WB	**64.7 / 51.4**	°F
Coil CFM at Jun 1500	**846**	CFM	Leaving DB / WB	**44.9 / 43.6**	°F
Max block CFM	**846**	CFM	Coil ADP	**42.7**	°F
Sum of peak zone CFM	**846**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.983**		Resulting RH	**45**	%
CFM/Ton	**751.1**		Design supply temp.	**46.0**	°F
ft²/Ton	**1581.2**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.3**	MBH	Load occurs at	**Feb 0400**	
Coil CFM at Feb 0400	**846**	CFM	BTU/(hr·ft²)	**5.8**	
Max coil CFM	**846**	CFM	Ent. DB / Lvg DB	**44.5 / 59.9**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**846**	CFM	Fan motor BHP	**0.18**	BHP
Standard CFM	**620**	CFM	Fan motor kW	**0.14**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -114 S1-A9

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-114 S1-A9**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1782.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	846	846	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	5.3	Jul 1500	3.3	1782.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S114 Archivo 9	1	5.3	Jul 1500	846	3.3	1782.0	0.48

Air System Design Load Summary for -114 S1-A9

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1782 ft²	0	-	1782 ft²	0	-
Partitions	753 ft²	274	-	753 ft²	3312	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1426 W	4864	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**5138**	**0**	**-**	**3312**	**0**
Zone Conditioning	-	4481	0	-	3336	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	846 CFM	0	-	846 CFM	0	-
Ventilation Load	110 CFM	162	232	110 CFM	723	0
Supply Fan Load	846 CFM	484	-	846 CFM	-484	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**5127**	**232**	**-**	**3575**	**0**
Central Cooling Coil	-	13292	232	-	0	0
Central Heating Coil	-	-8165	-	-	3575	-
>> Total Conditioning	**-**	**5127**	**232**	**-**	**3575**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	162	232
Ventilation Reclaim	Outlet	66.4	0.00851	110	400	300	429
Vent - Return Mixing	Outlet	64.7	0.00798	846	465	-	-
Central Cooling Coil	Outlet	44.9	0.00790	846	465	13292	232
Central Heating Coil	Outlet	57.1	0.00790	846	465	8165	-
Supply Fan	Outlet	57.8	0.00790	846	465	484	-
Cold Supply Duct	Outlet	57.8	0.00790	846	465	-	-
Zone Air	-	64.5	0.00790	846	475	4481	0
Return Plenum	Outlet	64.5	0.00790	846	475	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	5138	Cooling	4481	64.5	846	475	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-723	0
Ventilation Reclaim	Outlet	54.4	0.00340	110	400	-1343	0
Vent - Return Mixing	Outlet	61.7	0.00340	846	465	-	-
Central Cooling Coil	Outlet	61.7	0.00340	846	465	0	0
Central Heating Coil	Outlet	67.0	0.00340	846	465	3575	-
Supply Fan	Outlet	67.7	0.00340	846	465	484	-
Cold Supply Duct	Outlet	67.7	0.00340	846	465	-	-
Zone Air	-	62.7	0.00340	846	475	-3336	0
Return Plenum	Outlet	62.7	0.00340	846	475	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3312	Heating	-3336	62.7	846	475	0	0

Air System Sizing Summary for -116 S1-A26

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-116 S1-A26**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2469.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**18.7**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**18.4**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1173**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**1173**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**1173**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.983**		Resulting RH	**45**	%
CFM/Ton	**751.3**		Design supply temp.	**46.0**	°F
ft²/Ton	**1581.7**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**12.7**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**1173**	CFM	BTU/(hr·ft²)	**5.1**	
Max coil CFM	**1173**	CFM	Ent. DB / Lvg DB	**44.5 / 58.1**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1173**	CFM	Fan motor BHP	**0.25**	BHP
Standard CFM	**859**	CFM	Fan motor kW	**0.20**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**150**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -116 S1-A26

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-116 S1-A26**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2469.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1173	1173	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	7.0	Jul 1600	2.5	2469.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S116 Archivo 26	1	7.0	Jul 1600	1173	2.5	2469.0	0.48

Air System Design Load Summary for -116 S1-A26

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	2469 ft²	0	-	2469 ft²	0	-
Partitions	456 ft²	183	-	456 ft²	2453	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1975 W	6739	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**6922**	**0**	**-**	**2453**	**0**
Zone Conditioning	-	6624	0	-	2303	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1173 CFM	0	-	1173 CFM	0	-
Ventilation Load	150 CFM	225	322	150 CFM	991	0
Supply Fan Load	1173 CFM	671	-	1173 CFM	-671	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**7520**	**322**	**-**	**2623**	**0**
Central Cooling Coil	-	18409	322	-	0	0
Central Heating Coil	-	-10889	-	-	2623	-
>> Total Conditioning	**-**	**7520**	**322**	**-**	**2623**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	150	400	225	322
Ventilation Reclaim	Outlet	66.3	0.00849	150	400	419	597
Vent - Return Mixing	Outlet	64.6	0.00795	1173	468	-	-
Central Cooling Coil	Outlet	44.8	0.00787	1173	468	18409	322
Central Heating Coil	Outlet	56.5	0.00787	1173	468	10889	-
Supply Fan	Outlet	57.2	0.00787	1173	468	671	-
Cold Supply Duct	Outlet	57.2	0.00787	1173	468	-	-
Zone Air	-	64.4	0.00787	1173	477	6624	0
Return Plenum	Outlet	64.4	0.00787	1173	477	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	6922	Cooling	6624	64.4	1173	477	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	150	400	-991	0
Ventilation Reclaim	Outlet	54.5	0.00340	150	400	-1840	0
Vent - Return Mixing	Outlet	61.8	0.00340	1173	468	-	-
Central Cooling Coil	Outlet	61.8	0.00340	1173	468	0	0
Central Heating Coil	Outlet	64.6	0.00340	1173	468	2623	-
Supply Fan	Outlet	65.3	0.00340	1173	468	671	-
Cold Supply Duct	Outlet	65.3	0.00340	1173	468	-	-
Zone Air	-	62.9	0.00340	1173	477	-2303	0
Return Plenum	Outlet	62.9	0.00340	1173	477	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2453	Heating	-2303	62.9	1173	477	0	0

Air System Sizing Summary for -117 S1-A27

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-117 S1-A27**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2768.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**21.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**20.6**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1315**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**1315**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**1315**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.983**		Resulting RH	**45**	%
CFM/Ton	**751.1**		Design supply temp.	**46.0**	°F
ft²/Ton	**1581.3**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**14.3**	MBH	Load occurs at	**Dec 0900**	
Coil CFM at Dec 0900	**1315**	CFM	BTU/(hr·ft²)	**5.2**	
Max coil CFM	**1315**	CFM	Ent. DB / Lvg DB	**44.6 / 58.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1315**	CFM	Fan motor BHP	**0.28**	BHP
Standard CFM	**963**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -117 S1-A27

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-117 S1-A27**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2768.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1315	1315	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	7.8	Jul 1600	2.5	2768.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S117 Archivo 27	1	7.8	Jul 1600	1315	2.5	2768.0	0.48

Air System Design Load Summary for -117 S1-A27

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	2768 ft²	0	-	2768 ft²	0	-
Partitions	229 ft²	100	-	229 ft²	1455	-
Ceiling	229 ft²	83	-	229 ft²	1006	-
Overhead Lighting	2214 W	7555	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**7739**	**0**	**-**	**2462**	**0**
Zone Conditioning	-	7511	0	-	2820	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1315 CFM	0	-	1315 CFM	0	-
Ventilation Load	170 CFM	254	364	170 CFM	1129	0
Supply Fan Load	1315 CFM	752	-	1315 CFM	-752	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8517**	**364**	**-**	**3197**	**0**
Central Cooling Coil	-	20642	364	-	0	0
Central Heating Coil	-	-12125	-	-	3197	-
>> Total Conditioning	**-**	**8517**	**364**	**-**	**3197**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	254	364
Ventilation Reclaim	Outlet	66.3	0.00849	170	400	472	674
Vent - Return Mixing	Outlet	64.6	0.00796	1315	466	-	-
Central Cooling Coil	Outlet	44.8	0.00788	1315	466	20642	364
Central Heating Coil	Outlet	56.5	0.00788	1315	466	12125	-
Supply Fan	Outlet	57.2	0.00788	1315	466	752	-
Cold Supply Duct	Outlet	57.2	0.00788	1315	466	-	-
Zone Air	-	64.4	0.00788	1315	476	7511	0
Return Plenum	Outlet	64.4	0.00788	1315	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	7739	Cooling	7511	64.4	1315	476	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1129	0
Ventilation Reclaim	Outlet	54.6	0.00340	170	400	-2096	0
Vent - Return Mixing	Outlet	61.9	0.00340	1315	466	-	-
Central Cooling Coil	Outlet	61.9	0.00340	1315	466	0	0
Central Heating Coil	Outlet	65.0	0.00340	1315	466	3197	-
Supply Fan	Outlet	65.7	0.00340	1315	466	752	-
Cold Supply Duct	Outlet	65.7	0.00340	1315	466	-	-
Zone Air	-	63.0	0.00340	1315	476	-2820	0
Return Plenum	Outlet	63.0	0.00340	1315	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2462	Heating	-2820	63.0	1315	476	0	0

Air System Sizing Summary for -118 S1-A28

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-118 S1-A28**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2768.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**21.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**20.6**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1315**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**1315**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**1315**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.983**		Resulting RH	**45**	%
CFM/Ton	**751.1**		Design supply temp.	**46.0**	°F
ft²/Ton	**1581.3**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**14.3**	MBH	Load occurs at	**Dec 0900**	
Coil CFM at Dec 0900	**1315**	CFM	BTU/(hr·ft²)	**5.2**	
Max coil CFM	**1315**	CFM	Ent. DB / Lvg DB	**44.6 / 58.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1315**	CFM	Fan motor BHP	**0.28**	BHP
Standard CFM	**963**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -118 S1-A28

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-118 S1-A28**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2768.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1315	1315	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	7.8	Jul 1600	2.5	2768.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S118 Archivo 28	1	7.8	Jul 1600	1315	2.5	2768.0	0.48

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	2768 ft²	0	-	2768 ft²	0	-
Partitions	458 ft²	184	-	458 ft²	2462	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2214 W	7555	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**7739**	**0**	**-**	**2462**	**0**
Zone Conditioning	-	7511	0	-	2820	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1315 CFM	0	-	1315 CFM	0	-
Ventilation Load	170 CFM	254	364	170 CFM	1129	0
Supply Fan Load	1315 CFM	752	-	1315 CFM	-752	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8517**	**364**	**-**	**3197**	**0**
Central Cooling Coil	-	20642	364	-	0	0
Central Heating Coil	-	-12125	-	-	3197	-
>> Total Conditioning	**-**	**8517**	**364**	**-**	**3197**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	254	364
Ventilation Reclaim	Outlet	66.3	0.00849	170	400	472	674
Vent - Return Mixing	Outlet	64.6	0.00796	1315	466	-	-
Central Cooling Coil	Outlet	44.8	0.00788	1315	466	20642	364
Central Heating Coil	Outlet	56.5	0.00788	1315	466	12125	-
Supply Fan	Outlet	57.2	0.00788	1315	466	752	-
Cold Supply Duct	Outlet	57.2	0.00788	1315	466	-	-
Zone Air	-	64.4	0.00788	1315	476	7511	0
Return Plenum	Outlet	64.4	0.00788	1315	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	7739	Cooling	7511	64.4	1315	476	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1129	0
Ventilation Reclaim	Outlet	54.6	0.00340	170	400	-2096	0
Vent - Return Mixing	Outlet	61.9	0.00340	1315	466	-	-
Central Cooling Coil	Outlet	61.9	0.00340	1315	466	0	0
Central Heating Coil	Outlet	65.0	0.00340	1315	466	3197	-
Supply Fan	Outlet	65.7	0.00340	1315	466	752	-
Cold Supply Duct	Outlet	65.7	0.00340	1315	466	-	-
Zone Air	-	63.0	0.00340	1315	476	-2820	0
Return Plenum	Outlet	63.0	0.00340	1315	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2462	Heating	-2820	63.0	1315	476	0	0

Air System Sizing Summary for -119 S1-A29

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-119 S1-A29**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2768.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**21.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**20.6**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1315**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**1315**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**1315**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.983**		Resulting RH	**45**	%
CFM/Ton	**751.1**		Design supply temp.	**46.0**	°F
ft²/Ton	**1581.3**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**14.3**	MBH	Load occurs at	**Dec 0900**	
Coil CFM at Dec 0900	**1315**	CFM	BTU/(hr·ft²)	**5.2**	
Max coil CFM	**1315**	CFM	Ent. DB / Lvg DB	**44.6 / 58.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1315**	CFM	Fan motor BHP	**0.28**	BHP
Standard CFM	**963**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -119 S1-A29

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-119 S1-A29**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2768.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1315	1315	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	7.8	Jul 1600	2.5	2768.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S119 Archivo 29	1	7.8	Jul 1600	1315	2.5	2768.0	0.48

Air System Design Load Summary for -119 S1-A29

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	2768 ft²	0	-	2768 ft²	0	-
Partitions	458 ft²	184	-	458 ft²	2462	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2214 W	7555	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**7739**	**0**	**-**	**2462**	**0**
Zone Conditioning	-	7511	0	-	2820	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1315 CFM	0	-	1315 CFM	0	-
Ventilation Load	170 CFM	254	364	170 CFM	1129	0
Supply Fan Load	1315 CFM	752	-	1315 CFM	-752	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8517**	**364**	**-**	**3197**	**0**
Central Cooling Coil	-	20642	364	-	0	0
Central Heating Coil	-	-12125	-	-	3197	-
>> Total Conditioning	**-**	**8517**	**364**	**-**	**3197**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	254	364
Ventilation Reclaim	Outlet	66.3	0.00849	170	400	472	674
Vent - Return Mixing	Outlet	64.6	0.00796	1315	466	-	-
Central Cooling Coil	Outlet	44.8	0.00788	1315	466	20642	364
Central Heating Coil	Outlet	56.5	0.00788	1315	466	12125	-
Supply Fan	Outlet	57.2	0.00788	1315	466	752	-
Cold Supply Duct	Outlet	57.2	0.00788	1315	466	-	-
Zone Air	-	64.4	0.00788	1315	476	7511	0
Return Plenum	Outlet	64.4	0.00788	1315	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	7739	Cooling	7511	64.4	1315	476	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1129	0
Ventilation Reclaim	Outlet	54.6	0.00340	170	400	-2096	0
Vent - Return Mixing	Outlet	61.9	0.00340	1315	466	-	-
Central Cooling Coil	Outlet	61.9	0.00340	1315	466	0	0
Central Heating Coil	Outlet	65.0	0.00340	1315	466	3197	-
Supply Fan	Outlet	65.7	0.00340	1315	466	752	-
Cold Supply Duct	Outlet	65.7	0.00340	1315	466	-	-
Zone Air	-	63.0	0.00340	1315	476	-2820	0
Return Plenum	Outlet	63.0	0.00340	1315	476	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2462	Heating	-2820	63.0	1315	476	0	0

Air System Sizing Summary for -120 S1-A30

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-120 S1-A30**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2681.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.7**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**20.4**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**20.0**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1273**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**1273**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**1273**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.982**		Resulting RH	**45**	%
CFM/Ton	**750.4**		Design supply temp.	**46.0**	°F
ft²/Ton	**1579.7**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**16.6**	MBH	Load occurs at	**Dec 0500**	
Coil CFM at Dec 0500	**1273**	CFM	BTU/(hr·ft²)	**6.2**	
Max coil CFM	**1273**	CFM	Ent. DB / Lvg DB	**44.4 / 60.9**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1273**	CFM	Fan motor BHP	**0.27**	BHP
Standard CFM	**933**	CFM	Fan motor kW	**0.21**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -120 S1-A30

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-120 S1-A30**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2681.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1273	1273	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	7.9	Jul 1700	6.9	2681.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S120 Archivo 30	1	7.9	Jul 1700	1273	6.9	2681.0	0.48

Air System Design Load Summary for -120 S1-A30

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	2681 ft²	0	-	2681 ft²	0	-
Partitions	1157 ft²	490	-	1157 ft²	6898	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2145 W	7318	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**7808**	**0**	**-**	**6898**	**0**
Zone Conditioning	-	7418	0	-	6935	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1273 CFM	0	-	1273 CFM	0	-
Ventilation Load	170 CFM	256	366	170 CFM	1113	0
Supply Fan Load	1273 CFM	728	-	1273 CFM	-728	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8402**	**366**	**-**	**7320**	**0**
Central Cooling Coil	-	20000	366	-	0	0
Central Heating Coil	-	-11599	-	-	7320	-
>> Total Conditioning	**-**	**8402**	**366**	**-**	**7320**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	256	366
Ventilation Reclaim	Outlet	66.3	0.00849	170	400	475	677
Vent - Return Mixing	Outlet	64.6	0.00795	1273	462	-	-
Central Cooling Coil	Outlet	44.8	0.00787	1273	462	20000	366
Central Heating Coil	Outlet	56.3	0.00787	1273	462	11599	-
Supply Fan	Outlet	57.0	0.00787	1273	462	728	-
Cold Supply Duct	Outlet	57.0	0.00787	1273	462	-	-
Zone Air	-	64.4	0.00787	1273	472	7418	0
Return Plenum	Outlet	64.4	0.00787	1273	472	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	7808	Cooling	7418	64.4	1273	472	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1113	0
Ventilation Reclaim	Outlet	54.4	0.00340	170	400	-2067	0
Vent - Return Mixing	Outlet	61.5	0.00340	1273	462	-	-
Central Cooling Coil	Outlet	61.5	0.00340	1273	462	0	0
Central Heating Coil	Outlet	68.8	0.00340	1273	462	7320	-
Supply Fan	Outlet	69.5	0.00340	1273	462	728	-
Cold Supply Duct	Outlet	69.5	0.00340	1273	462	-	-
Zone Air	-	62.6	0.00340	1273	472	-6935	0
Return Plenum	Outlet	62.6	0.00340	1273	472	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-6898	Heating	-6935	62.6	1273	472	0	0

Air System Sizing Summary for -121 S1-Zone de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-121 S1-Zone de trabajo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**726.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**0.2**	Tons	Load occurs at	**Jun 1700**	
Total coil load	**2.4**	MBH	OA DB / WB	**68.2 / 55.1**	°F
Sensible coil load	**2.4**	MBH	Entering DB / WB	**64.3 / 36.6**	°F
Coil CFM at Jun 1700	**345**	CFM	Leaving DB / WB	**55.5 / 32.2**	°F
Max block CFM	**345**	CFM	Coil ADP	**54.5**	°F
Sum of peak zone CFM	**345**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**1.000**		Resulting RH	**0**	%
CFM/Ton	**1717.4**		Design supply temp.	**46.0**	°F
ft²/Ton	**3615.5**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**3.3**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**3.3**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**345**	CFM	BTU/(hr·ft²)	**4.5**	
Max coil CFM	**345**	CFM	Ent. DB / Lvg DB	**62.3 / 74.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**345**	CFM	Fan motor BHP	**0.07**	BHP
Standard CFM	**253**	CFM	Fan motor kW	**0.06**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.00**	CFM/ft²			

Zone Sizing Summary for -121 S1-Zone de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-121 S1-Zone de trabajo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **726.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	345	345	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	2.3	Jul 1600	3.5	726.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S121 Zona de Trabajo	1	2.3	Jul 1600	345	3.5	726.0	0.48

Air System Design Load Summary for -121 S1-Zone de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1700 COOLING OA DB / WB 68.2 °F / 55.1 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	726 ft²	0	-	726 ft²	0	-
Partitions	623 ft²	257	-	623 ft²	3516	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	581 W	1982	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**2239**	**0**	**-**	**3516**	**0**
Zone Conditioning	-	2212	0	-	3467	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	345 CFM	0	-	345 CFM	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	345 CFM	197	-	345 CFM	-197	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**2410**	**0**	**-**	**3269**	**0**
Central Cooling Coil	-	2410	0	-	0	0
Central Heating Coil	-	0	-	-	3269	-
>> Total Conditioning	**-**	**2410**	**0**	**-**	**3269**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1700

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	68.2	0.00963	0	400	0	0
Ventilation Reclaim	Outlet	68.2	0.00963	0	400	0	0
Vent - Return Mixing	Outlet	64.3	0.00000	345	800	-	-
Central Cooling Coil	Outlet	55.5	0.00000	345	800	2410	0
Central Heating Coil	Outlet	55.5	0.00000	345	800	0	-
Supply Fan	Outlet	56.2	0.00000	345	800	197	-
Cold Supply Duct	Outlet	56.2	0.00000	345	800	-	-
Zone Air	-	64.3	0.00000	345	800	2212	0
Return Plenum	Outlet	64.3	0.00000	345	800	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	2239	Cooling	2212	64.3	345	800	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	0	400	0	0
Ventilation Reclaim	Outlet	39.0	0.00340	0	400	0	0
Vent - Return Mixing	Outlet	62.3	0.00000	345	800	-	-
Central Cooling Coil	Outlet	62.3	0.00000	345	800	0	0
Central Heating Coil	Outlet	74.3	0.00000	345	800	3269	-
Supply Fan	Outlet	75.1	0.00000	345	800	197	-
Cold Supply Duct	Outlet	75.1	0.00000	345	800	-	-
Zone Air	-	62.3	0.00000	345	800	-3467	0
Return Plenum	Outlet	62.3	0.00000	345	800	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3516	Heating	-3467	62.3	345	800	0	0

Air System Sizing Summary for -122 S1-A31

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-122 S1-A31**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**863.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**6.8**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**6.5**	MBH	Entering DB / WB	**64.9 / 51.6**	°F
Coil CFM at Jun 1500	**410**	CFM	Leaving DB / WB	**44.8 / 43.6**	°F
Max block CFM	**410**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**410**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.965**		Resulting RH	**45**	%
CFM/Ton	**728.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1533.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.8**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**5.6**	MBH	Load occurs at	**Dec 0400**	
Coil CFM at Dec 0400	**410**	CFM	BTU/(hr·ft²)	**6.5**	
Max coil CFM	**410**	CFM	Ent. DB / Lvg DB	**44.4 / 61.6**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**410**	CFM	Fan motor BHP	**0.09**	BHP
Standard CFM	**300**	CFM	Fan motor kW	**0.07**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.13**	CFM/ft²			

Zone Sizing Summary for -122 S1-A31

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-122 S1-A31**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **863.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	410	410	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	2.6	Jul 1600	2.5	863.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S122 Archivo 31	1	2.6	Jul 1600	410	2.5	863.0	0.48

Air System Design Load Summary for -122 S1-A31

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	863 ft²	0	-	863 ft²	0	-
Partitions	457 ft²	183	-	457 ft²	2457	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	690 W	2356	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**2539**	**0**	**-**	**2457**	**0**
Zone Conditioning	-	2274	0	-	2588	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	410 CFM	0	-	410 CFM	0	-
Ventilation Load	110 CFM	163	234	110 CFM	722	0
Supply Fan Load	410 CFM	234	-	410 CFM	-234	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**2671**	**234**	**-**	**3076**	**0**
Central Cooling Coil	-	6521	234	-	0	0
Central Heating Coil	-	-3850	-	-	3076	-
>> Total Conditioning	**-**	**2671**	**234**	**-**	**3076**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	163	234
Ventilation Reclaim	Outlet	66.3	0.00850	110	400	303	433
Vent - Return Mixing	Outlet	64.9	0.00805	410	424	-	-
Central Cooling Coil	Outlet	44.8	0.00789	410	424	6521	234
Central Heating Coil	Outlet	56.7	0.00789	410	424	3850	-
Supply Fan	Outlet	57.4	0.00789	410	424	234	-
Cold Supply Duct	Outlet	57.4	0.00789	410	424	-	-
Zone Air	-	64.4	0.00789	410	433	2274	0
Return Plenum	Outlet	64.4	0.00789	410	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	2539	Cooling	2274	64.4	410	433	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-722	0
Ventilation Reclaim	Outlet	54.4	0.00340	110	400	-1341	0
Vent - Return Mixing	Outlet	60.5	0.00340	410	424	-	-
Central Cooling Coil	Outlet	60.5	0.00340	410	424	0	0
Central Heating Coil	Outlet	70.0	0.00340	410	424	3076	-
Supply Fan	Outlet	70.7	0.00340	410	424	234	-
Cold Supply Duct	Outlet	70.7	0.00340	410	424	-	-
Zone Air	-	62.7	0.00340	410	433	-2588	0
Return Plenum	Outlet	62.7	0.00340	410	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2457	Heating	-2588	62.7	410	433	0	0

Air System Sizing Summary for -123 S1-A32

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name	**-123 S1-A32**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**863.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**6.8**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**6.5**	MBH	Entering DB / WB	**64.9 / 51.6**	°F
Coil CFM at Jun 1500	**410**	CFM	Leaving DB / WB	**44.8 / 43.6**	°F
Max block CFM	**410**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**410**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.965**		Resulting RH	**45**	%
CFM/Ton	**728.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1533.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.8**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**5.6**	MBH	Load occurs at	**Dec 0400**	
Coil CFM at Dec 0400	**410**	CFM	BTU/(hr·ft²)	**6.5**	
Max coil CFM	**410**	CFM	Ent. DB / Lvg DB	**44.4 / 61.6**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**410**	CFM	Fan motor BHP	**0.09**	BHP
Standard CFM	**300**	CFM	Fan motor kW	**0.07**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.13**	CFM/ft²			

Zone Sizing Summary for -123 S1-A32

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

Air System Information

Air System Name ..... **-123 S1-A32**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **863.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	410	410	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	2.6	Jul 1600	2.5	863.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S123 Archivo 32	1	2.6	Jul 1600	410	2.5	863.0	0.48

Air System Design Load Summary for -123 S1-A32

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:44PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	863 ft²	0	-	863 ft²	0	-
Partitions	457 ft²	183	-	457 ft²	2457	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	690 W	2356	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**2539**	**0**	**-**	**2457**	**0**
Zone Conditioning	-	2274	0	-	2588	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	410 CFM	0	-	410 CFM	0	-
Ventilation Load	110 CFM	163	234	110 CFM	722	0
Supply Fan Load	410 CFM	234	-	410 CFM	-234	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**2671**	**234**	**-**	**3076**	**0**
Central Cooling Coil	-	6521	234	-	0	0
Central Heating Coil	-	-3850	-	-	3076	-
>> Total Conditioning	**-**	**2671**	**234**	**-**	**3076**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	163	234
Ventilation Reclaim	Outlet	66.3	0.00850	110	400	303	433
Vent - Return Mixing	Outlet	64.9	0.00805	410	424	-	-
Central Cooling Coil	Outlet	44.8	0.00789	410	424	6521	234
Central Heating Coil	Outlet	56.7	0.00789	410	424	3850	-
Supply Fan	Outlet	57.4	0.00789	410	424	234	-
Cold Supply Duct	Outlet	57.4	0.00789	410	424	-	-
Zone Air	-	64.4	0.00789	410	433	2274	0
Return Plenum	Outlet	64.4	0.00789	410	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	2539	Cooling	2274	64.4	410	433	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-722	0
Ventilation Reclaim	Outlet	54.4	0.00340	110	400	-1341	0
Vent - Return Mixing	Outlet	60.5	0.00340	410	424	-	-
Central Cooling Coil	Outlet	60.5	0.00340	410	424	0	0
Central Heating Coil	Outlet	70.0	0.00340	410	424	3076	-
Supply Fan	Outlet	70.7	0.00340	410	424	234	-
Cold Supply Duct	Outlet	70.7	0.00340	410	424	-	-
Zone Air	-	62.7	0.00340	410	433	-2588	0
Return Plenum	Outlet	62.7	0.00340	410	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2457	Heating	-2588	62.7	410	433	0	0

Air System Sizing Summary for -124 S1-A33

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-124 S1-A33**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**863.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**6.8**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**6.5**	MBH	Entering DB / WB	**64.9 / 51.6**	°F
Coil CFM at Jun 1500	**410**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**410**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**410**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.965**		Resulting RH	**45**	%
CFM/Ton	**727.9**		Design supply temp.	**46.0**	°F
ft²/Ton	**1532.5**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**7.8**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**5.3**	MBH	Load occurs at	**Dec 0400**	
Coil CFM at Dec 0400	**410**	CFM	BTU/(hr·ft²)	**6.1**	
Max coil CFM	**410**	CFM	Ent. DB / Lvg DB	**44.3 / 60.6**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**410**	CFM	Fan motor BHP	**0.09**	BHP
Standard CFM	**300**	CFM	Fan motor kW	**0.07**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.13**	CFM/ft²			

Zone Sizing Summary for -124 S1-A33

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-124 S1-A33**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **863.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	410	410	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	2.6	Jul 1500	2.0	863.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S124 Archivo 33	1	2.6	Jul 1500	410	2.0	863.0	0.48

Air System Design Load Summary for -124 S1-A33

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	863 ft²	0	-	863 ft²	0	-
Partitions	457 ft²	166	-	457 ft²	2009	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	690 W	2356	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**2522**	**0**	**-**	**2009**	**0**
Zone Conditioning	-	2347	0	-	1949	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	410 CFM	0	-	410 CFM	0	-
Ventilation Load	110 CFM	165	236	110 CFM	721	0
Supply Fan Load	410 CFM	234	-	410 CFM	-234	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**2746**	**236**	**-**	**2435**	**0**
Central Cooling Coil	-	6522	236	-	0	0
Central Heating Coil	-	-3776	-	-	2435	-
>> Total Conditioning	**-**	**2746**	**236**	**-**	**2435**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	165	236
Ventilation Reclaim	Outlet	66.3	0.00849	110	400	306	437
Vent - Return Mixing	Outlet	64.9	0.00804	410	424	-	-
Central Cooling Coil	Outlet	44.8	0.00787	410	424	6522	236
Central Heating Coil	Outlet	56.4	0.00787	410	424	3776	-
Supply Fan	Outlet	57.1	0.00787	410	424	234	-
Cold Supply Duct	Outlet	57.1	0.00787	410	424	-	-
Zone Air	-	64.4	0.00787	410	433	2347	0
Return Plenum	Outlet	64.4	0.00787	410	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	2522	Cooling	2347	64.4	410	433	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-721	0
Ventilation Reclaim	Outlet	54.4	0.00340	110	400	-1338	0
Vent - Return Mixing	Outlet	60.4	0.00340	410	424	-	-
Central Cooling Coil	Outlet	60.4	0.00340	410	424	0	0
Central Heating Coil	Outlet	67.9	0.00340	410	424	2435	-
Supply Fan	Outlet	68.7	0.00340	410	424	234	-
Cold Supply Duct	Outlet	68.7	0.00340	410	424	-	-
Zone Air	-	62.7	0.00340	410	433	-1949	0
Return Plenum	Outlet	62.7	0.00340	410	433	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2009	Heating	-1949	62.7	410	433	0	0

Air System Sizing Summary for -125 S1-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-125 S1-Zona de trabajo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**759.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.2**	Tons	Load occurs at	**Jul 1600**	
Total coil load	**2.6**	MBH	OA DB / WB	**70.3 / 55.5**	°F
Sensible coil load	**2.6**	MBH	Entering DB / WB	**64.3 / 36.6**	°F
Coil CFM at Jul 1600	**361**	CFM	Leaving DB / WB	**55.3 / 32.1**	°F
Max block CFM	**361**	CFM	Coil ADP	**54.3**	°F
Sum of peak zone CFM	**361**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**1.000**		Resulting RH	**0**	%
CFM/Ton	**1687.7**		Design supply temp.	**46.0**	°F
ft²/Ton	**3553.0**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**3.4**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**3.1**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**361**	CFM	BTU/(hr·ft²)	**4.0**	
Max coil CFM	**361**	CFM	Ent. DB / Lvg DB	**62.4 / 73.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**361**	CFM	Fan motor BHP	**0.08**	BHP
Standard CFM	**264**	CFM	Fan motor kW	**0.06**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.00**	CFM/ft²			

Zone Sizing Summary for -125 S1-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-125 S1-Zona de trabajo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **759.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	361	361	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	2.4	Jul 1600	3.3	759.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S125 Zona de Trabajo	1	2.4	Jul 1600	361	3.3	759.0	0.48

Air System Design Load Summary for -125 S1-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 70.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	759 ft²	0	-	759 ft²	0	-
Partitions	623 ft²	330	-	623 ft²	3278	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	607 W	2072	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**2401**	**0**	**-**	**3278**	**0**
Zone Conditioning	-	2357	0	-	3266	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	361 CFM	0	-	361 CFM	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	361 CFM	206	-	361 CFM	-206	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**2563**	**0**	**-**	**3060**	**0**
Central Cooling Coil	-	2563	0	-	0	0
Central Heating Coil	-	0	-	-	3060	-
>> Total Conditioning	**-**	**2563**	**0**	**-**	**3060**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

July DESIGN COOLING DAY, 1600

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	70.3	0.00941	0	400	0	0
Ventilation Reclaim	Outlet	70.3	0.00941	0	400	0	0
Vent - Return Mixing	Outlet	64.3	0.00000	361	800	-	-
Central Cooling Coil	Outlet	55.3	0.00000	361	800	2563	0
Central Heating Coil	Outlet	55.3	0.00000	361	800	0	-
Supply Fan	Outlet	56.0	0.00000	361	800	206	-
Cold Supply Duct	Outlet	56.0	0.00000	361	800	-	-
Zone Air	-	64.3	0.00000	361	800	2357	0
Return Plenum	Outlet	64.3	0.00000	361	800	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	2401	Cooling	2357	64.3	361	800	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	0	400	0	0
Ventilation Reclaim	Outlet	39.0	0.00340	0	400	0	0
Vent - Return Mixing	Outlet	62.4	0.00000	361	800	-	-
Central Cooling Coil	Outlet	62.4	0.00000	361	800	0	0
Central Heating Coil	Outlet	73.2	0.00000	361	800	3060	-
Supply Fan	Outlet	73.9	0.00000	361	800	206	-
Cold Supply Duct	Outlet	73.9	0.00000	361	800	-	-
Zone Air	-	62.4	0.00000	361	800	-3266	0
Return Plenum	Outlet	62.4	0.00000	361	800	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3278	Heating	-3266	62.4	361	800	0	0

Air System Sizing Summary for -201 S2-A11

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-201 S2-A11**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1457.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**10.1**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**9.6**	MBH	Entering DB / WB	**64.9 / 51.5**	°F
Coil CFM at Jun 1500	**597**	CFM	Leaving DB / WB	**44.5 / 43.3**	°F
Max block CFM	**597**	CFM	Coil ADP	**42.3**	°F
Sum of peak zone CFM	**597**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.953**		Resulting RH	**45**	%
CFM/Ton	**711.4**		Design supply temp.	**46.0**	°F
ft²/Ton	**1735.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.9**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**7.8**	MBH	Load occurs at	**Dec 0500**	
Coil CFM at Dec 0500	**597**	CFM	BTU/(hr·ft²)	**5.3**	
Max coil CFM	**597**	CFM	Ent. DB / Lvg DB	**44.3 / 60.7**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**597**	CFM	Fan motor BHP	**0.13**	BHP
Standard CFM	**438**	CFM	Fan motor kW	**0.10**	kW
Actual max CFM/ft²	**0.41**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.08**	CFM/ft²			

Zone Sizing Summary for -201 S2-A11

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-201 S2-A11**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1457.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	597	597	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.5	Jul 1500	3.5	1457.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S201 Archivo 11	1	4.5	Jul 1500	597	3.5	1457.0	0.41

Air System Design Load Summary for -201 S2-A11

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1457 ft²	0	-	1457 ft²	0	-
Partitions	621 ft²	226	-	621 ft²	2733	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1166 W	3977	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	183	239	-	756	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4386**	**239**	**-**	**3489**	**0**
Zone Conditioning	-	3918	239	-	3218	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	597 CFM	0	-	597 CFM	0	-
Ventilation Load	110 CFM	161	231	110 CFM	716	0
Supply Fan Load	597 CFM	342	-	597 CFM	-342	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4420**	**470**	**-**	**3593**	**0**
Central Cooling Coil	-	9607	470	-	0	0
Central Heating Coil	-	-5186	-	-	3593	-
>> Total Conditioning	**-**	**4420**	**470**	**-**	**3593**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	161	231
Ventilation Reclaim	Outlet	66.4	0.00851	110	400	299	428
Vent - Return Mixing	Outlet	64.9	0.00802	597	427	-	-
Central Cooling Coil	Outlet	44.5	0.00779	597	427	9607	470
Central Heating Coil	Outlet	55.5	0.00779	597	427	5186	-
Supply Fan	Outlet	56.2	0.00779	597	427	342	-
Cold Supply Duct	Outlet	56.2	0.00779	597	427	-	-
Zone Air	-	64.5	0.00791	597	434	3918	239
Return Plenum	Outlet	64.5	0.00791	597	434	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4386	Cooling	3918	64.5	597	434	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-716	0
Ventilation Reclaim	Outlet	54.3	0.00340	110	400	-1330	0
Vent - Return Mixing	Outlet	61.0	0.00340	597	443	-	-
Central Cooling Coil	Outlet	61.0	0.00340	597	443	0	0
Central Heating Coil	Outlet	68.6	0.00340	597	443	3593	-
Supply Fan	Outlet	69.3	0.00340	597	443	342	-
Cold Supply Duct	Outlet	69.3	0.00340	597	443	-	-
Zone Air	-	62.5	0.00340	597	452	-3218	0
Return Plenum	Outlet	62.5	0.00340	597	452	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3489	Heating	-3218	62.5	597	452	0	0

Air System Sizing Summary for -202 S2-A12

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-202 S2-A12**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1453.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**9.6**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**9.4**	MBH	Entering DB / WB	**64.7 / 51.4**	°F
Coil CFM at Jun 1500	**596**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**596**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**596**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.976**		Resulting RH	**45**	%
CFM/Ton	**741.7**		Design supply temp.	**46.0**	°F
ft²/Ton	**1809.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**7.1**	MBH	Load occurs at	**Dec 0600**	
Coil CFM at Dec 0600	**596**	CFM	BTU/(hr·ft²)	**4.9**	
Max coil CFM	**596**	CFM	Ent. DB / Lvg DB	**44.4 / 59.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**596**	CFM	Fan motor BHP	**0.13**	BHP
Standard CFM	**436**	CFM	Fan motor kW	**0.10**	kW
Actual max CFM/ft²	**0.41**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.08**	CFM/ft²			

Zone Sizing Summary for -202 S2-A12

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-202 S2-A12**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1453.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	596	596	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.3	Jul 1500	2.7	1453.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S202 Archivo 12	1	4.3	Jul 1500	596	2.7	1453.0	0.41

Air System Design Load Summary for -202 S2-A12

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1453 ft²	0	-	1453 ft²	0	-
Partitions	619 ft²	225	-	619 ft²	2721	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1162 W	3966	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4191**	**0**	**-**	**2721**	**0**
Zone Conditioning	-	4093	0	-	2918	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	596 CFM	0	-	596 CFM	0	-
Ventilation Load	110 CFM	165	236	110 CFM	725	0
Supply Fan Load	596 CFM	341	-	596 CFM	-341	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4599**	**236**	**-**	**3302**	**0**
Central Cooling Coil	-	9403	236	-	0	0
Central Heating Coil	-	-4804	-	-	3302	-
>> Total Conditioning	**-**	**4599**	**236**	**-**	**3302**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	165	236
Ventilation Reclaim	Outlet	66.3	0.00849	110	400	306	436
Vent - Return Mixing	Outlet	64.7	0.00799	596	442	-	-
Central Cooling Coil	Outlet	44.8	0.00788	596	442	9403	236
Central Heating Coil	Outlet	55.0	0.00788	596	442	4804	-
Supply Fan	Outlet	55.7	0.00788	596	442	341	-
Cold Supply Duct	Outlet	55.7	0.00788	596	442	-	-
Zone Air	-	64.4	0.00788	596	452	4093	0
Return Plenum	Outlet	64.4	0.00788	596	452	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4191	Cooling	4093	64.4	596	452	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-725	0
Ventilation Reclaim	Outlet	54.5	0.00340	110	400	-1346	0
Vent - Return Mixing	Outlet	61.2	0.00340	596	442	-	-
Central Cooling Coil	Outlet	61.2	0.00340	596	442	0	0
Central Heating Coil	Outlet	68.3	0.00340	596	442	3302	-
Supply Fan	Outlet	69.0	0.00340	596	442	341	-
Cold Supply Duct	Outlet	69.0	0.00340	596	442	-	-
Zone Air	-	62.8	0.00340	596	452	-2918	0
Return Plenum	Outlet	62.8	0.00340	596	452	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2721	Heating	-2918	62.8	596	452	0	0

Air System Sizing Summary for -203 S2-A13

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-203 S2-A13**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2818.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.9**	Tons	Load occurs at	**Jun 1400**	
Total coil load	**22.8**	MBH	OA DB / WB	**69.3 / 55.5**	°F
Sensible coil load	**21.6**	MBH	Entering DB / WB	**64.5 / 51.3**	°F
Coil CFM at Jun 1400	**1339**	CFM	Leaving DB / WB	**44.1 / 42.9**	°F
Max block CFM	**1339**	CFM	Coil ADP	**41.9**	°F
Sum of peak zone CFM	**1339**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.947**		Resulting RH	**45**	%
CFM/Ton	**704.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1482.5**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.1**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.6**	MBH	Load occurs at	**Dec 0900**	
Coil CFM at Dec 0900	**1339**	CFM	BTU/(hr·ft²)	**5.5**	
Max coil CFM	**1339**	CFM	Ent. DB / Lvg DB	**44.5 / 59.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1339**	CFM	Fan motor BHP	**0.28**	BHP
Standard CFM	**981**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -203 S2-A13

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-203 S2-A13**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2818.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1339	1339	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	9.2	Aug 1600	5.8	2818.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
203 Archivo 44	1	9.2	Aug 1600	1339	5.8	2818.0	0.48

Air System Design Load Summary for -203 S2-A13

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400 COOLING OA DB / WB 69.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	393 ft²	445	-	393 ft²	2503	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	393 ft²	-149	-	393 ft²	766	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2254 W	7692	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	563	829	-	2542	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8552**	**829**	**-**	**5811**	**0**
Zone Conditioning	-	8620	829	-	5828	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1339 CFM	0	-	1339 CFM	0	-
Ventilation Load	170 CFM	236	369	170 CFM	1116	0
Supply Fan Load	1339 CFM	765	-	1339 CFM	-765	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**9622**	**1198**	**-**	**6179**	**0**
Central Cooling Coil	-	21611	1198	-	0	0
Central Heating Coil	-	-11989	-	-	6179	-
>> Total Conditioning	**-**	**9622**	**1198**	**-**	**6179**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.3	0.00963	170	400	236	369
Ventilation Reclaim	Outlet	66.1	0.00848	170	400	438	684
Vent - Return Mixing	Outlet	64.5	0.00793	1339	431	-	-
Central Cooling Coil	Outlet	44.1	0.00767	1339	431	21611	1198
Central Heating Coil	Outlet	55.4	0.00767	1339	431	11989	-
Supply Fan	Outlet	56.2	0.00767	1339	431	765	-
Cold Supply Duct	Outlet	56.2	0.00767	1339	431	-	-
Zone Air	-	64.3	0.00785	1339	436	8620	829
Return Plenum	Outlet	64.3	0.00785	1339	436	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8552	Cooling	8620	64.3	1339	436	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1116	0
Ventilation Reclaim	Outlet	54.4	0.00340	170	400	-2072	0
Vent - Return Mixing	Outlet	61.7	0.00340	1339	468	-	-
Central Cooling Coil	Outlet	61.7	0.00340	1339	468	0	0
Central Heating Coil	Outlet	67.5	0.00340	1339	468	6179	-
Supply Fan	Outlet	68.2	0.00340	1339	468	765	-
Cold Supply Duct	Outlet	68.2	0.00340	1339	468	-	-
Zone Air	-	62.7	0.00340	1339	478	-5828	0
Return Plenum	Outlet	62.7	0.00340	1339	478	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-5811	Heating	-5828	62.7	1339	478	0	0

Air System Sizing Summary for -204 S2-A14

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-204 S2-A14**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1462.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**9.7**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**9.5**	MBH	Entering DB / WB	**64.7 / 51.4**	°F
Coil CFM at Jun 1500	**599**	CFM	Leaving DB / WB	**44.8 / 43.6**	°F
Max block CFM	**599**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**599**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.976**		Resulting RH	**45**	%
CFM/Ton	**741.9**		Design supply temp.	**46.0**	°F
ft²/Ton	**1809.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**7.2**	MBH	Load occurs at	**Dec 0400**	
Coil CFM at Dec 0400	**599**	CFM	BTU/(hr·ft²)	**4.9**	
Max coil CFM	**599**	CFM	Ent. DB / Lvg DB	**44.4 / 59.5**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**599**	CFM	Fan motor BHP	**0.13**	BHP
Standard CFM	**439**	CFM	Fan motor kW	**0.10**	kW
Actual max CFM/ft²	**0.41**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.08**	CFM/ft²			

Zone Sizing Summary for -204 S2-A14

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-204 S2-A14**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1462.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	599	599	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.3	Jul 1500	2.7	1462.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S204 Archivo 14	1	4.3	Jul 1500	599	2.7	1462.0	0.41

Air System Design Load Summary for -204 S2-A14

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1462 ft²	0	-	1462 ft²	0	-
Partitions	622 ft²	226	-	622 ft²	2736	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1170 W	3991	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4217**	**0**	**-**	**2736**	**0**
Zone Conditioning	-	4086	0	-	2513	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	599 CFM	0	-	599 CFM	0	-
Ventilation Load	110 CFM	164	235	110 CFM	720	0
Supply Fan Load	599 CFM	343	-	599 CFM	-343	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4593**	**235**	**-**	**2891**	**0**
Central Cooling Coil	-	9460	235	-	0	0
Central Heating Coil	-	-4867	-	-	2891	-
>> Total Conditioning	**-**	**4593**	**235**	**-**	**2891**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	164	235
Ventilation Reclaim	Outlet	66.3	0.00849	110	400	305	436
Vent - Return Mixing	Outlet	64.7	0.00799	599	443	-	-
Central Cooling Coil	Outlet	44.8	0.00788	599	443	9460	235
Central Heating Coil	Outlet	55.1	0.00788	599	443	4867	-
Supply Fan	Outlet	55.8	0.00788	599	443	343	-
Cold Supply Duct	Outlet	55.8	0.00788	599	443	-	-
Zone Air	-	64.4	0.00788	599	453	4086	0
Return Plenum	Outlet	64.4	0.00788	599	453	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4217	Cooling	4086	64.4	599	453	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-720	0
Ventilation Reclaim	Outlet	54.4	0.00340	110	400	-1337	0
Vent - Return Mixing	Outlet	61.1	0.00340	599	443	-	-
Central Cooling Coil	Outlet	61.1	0.00340	599	443	0	0
Central Heating Coil	Outlet	67.2	0.00340	599	443	2891	-
Supply Fan	Outlet	67.9	0.00340	599	443	343	-
Cold Supply Duct	Outlet	67.9	0.00340	599	443	-	-
Zone Air	-	62.6	0.00340	599	453	-2513	0
Return Plenum	Outlet	62.6	0.00340	599	453	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-2736	Heating	-2513	62.6	599	453	0	0

Air System Sizing Summary for -205 S2-Fototeca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-205 S2-Fototeca**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2715.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**22.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**20.8**	MBH	Entering DB / WB	**64.6 / 51.3**	°F
Coil CFM at Jun 1500	**1290**	CFM	Leaving DB / WB	**44.2 / 43.0**	°F
Max block CFM	**1290**	CFM	Coil ADP	**41.9**	°F
Sum of peak zone CFM	**1290**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.948**		Resulting RH	**45**	%
CFM/Ton	**703.6**		Design supply temp.	**46.0**	°F
ft²/Ton	**1481.2**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**8.1**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.2**	MBH	Load occurs at	**May 0900**	
Coil CFM at May 0900	**1290**	CFM	BTU/(hr·ft²)	**5.6**	
Max coil CFM	**1290**	CFM	Ent. DB / Lvg DB	**44.1 / 59.0**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1290**	CFM	Fan motor BHP	**0.27**	BHP
Standard CFM	**945**	CFM	Fan motor kW	**0.22**	kW
Actual max CFM/ft²	**0.48**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -205 S2-Fototeca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-205 S2-Fototeca**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2715.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	1290	1290	0.48	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	9.3	Oct 2100	13.3	2715.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
205 Archivo 46	1	9.3	Oct 2100	1290	13.3	2715.0	0.48

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	1576 ft²	-207	-	1576 ft²	10037	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	405 ft²	-122	-	405 ft²	789	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2172 W	7411	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	592	788	-	2449	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**7673**	**788**	**-**	**13275**	**0**
Zone Conditioning	-	7161	788	-	12815	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1290 CFM	0	-	1290 CFM	0	-
Ventilation Load	170 CFM	254	364	170 CFM	1096	0
Supply Fan Load	1290 CFM	737	-	1290 CFM	-737	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8153**	**1152**	**-**	**13174**	**0**
Central Cooling Coil	-	20843	1152	-	0	0
Central Heating Coil	-	-12691	-	-	13174	-
>> Total Conditioning	**-**	**8153**	**1152**	**-**	**13174**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	254	364
Ventilation Reclaim	Outlet	66.3	0.00849	170	400	473	675
Vent - Return Mixing	Outlet	64.6	0.00796	1290	430	-	-
Central Cooling Coil	Outlet	44.2	0.00770	1290	430	20843	1152
Central Heating Coil	Outlet	56.7	0.00770	1290	430	12691	-
Supply Fan	Outlet	57.4	0.00770	1290	430	737	-
Cold Supply Duct	Outlet	57.4	0.00770	1290	430	-	-
Zone Air	-	64.4	0.00788	1290	434	7161	788
Return Plenum	Outlet	64.4	0.00788	1290	434	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	7673	Cooling	7161	64.4	1290	434	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1096	0
Ventilation Reclaim	Outlet	54.1	0.00340	170	400	-2036	0
Vent - Return Mixing	Outlet	61.2	0.00340	1290	464	-	-
Central Cooling Coil	Outlet	61.2	0.00340	1290	464	0	0
Central Heating Coil	Outlet	74.1	0.00340	1290	464	13174	-
Supply Fan	Outlet	74.9	0.00340	1290	464	737	-
Cold Supply Duct	Outlet	74.9	0.00340	1290	464	-	-
Zone Air	-	62.3	0.00340	1290	473	-12815	0
Return Plenum	Outlet	62.3	0.00340	1290	473	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-13275	Heating	-12815	62.3	1290	473	0	0

Air System Sizing Summary for -208 S2-A16

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-208 S2-A16**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1870.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.1**	MBH	Entering DB / WB	**64.7 / 51.4**	°F
Coil CFM at Jun 1500	**767**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**767**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**767**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.979**		Resulting RH	**45**	%
CFM/Ton	**746.4**		Design supply temp.	**46.0**	°F
ft²/Ton	**1820.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.3**	MBH	Load occurs at	**Dec 0600**	
Coil CFM at Dec 0600	**767**	CFM	BTU/(hr·ft²)	**5.5**	
Max coil CFM	**767**	CFM	Ent. DB / Lvg DB	**44.3 / 61.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**767**	CFM	Fan motor BHP	**0.16**	BHP
Standard CFM	**562**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.41**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**120**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -208 S2-A16

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-208 S2-A16**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1870.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	767	767	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	5.8	Jul 1500	5.3	1870.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S208 Archivo 16	1	5.8	Jul 1500	767	5.3	1870.0	0.41

Air System Design Load Summary for -208 S2-A16

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1870 ft²	0	-	1870 ft²	0	-
Partitions	1195 ft²	435	-	1195 ft²	5255	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1496 W	5104	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**5539**	**0**	**-**	**5255**	**0**
Zone Conditioning	-	5188	0	-	4767	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	767 CFM	0	-	767 CFM	0	-
Ventilation Load	120 CFM	180	258	120 CFM	779	0
Supply Fan Load	767 CFM	438	-	767 CFM	-438	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**5807**	**258**	**-**	**5108**	**0**
Central Cooling Coil	-	12068	258	-	0	0
Central Heating Coil	-	-6261	-	-	5108	-
>> Total Conditioning	**-**	**5807**	**258**	**-**	**5108**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	120	400	180	258
Ventilation Reclaim	Outlet	66.3	0.00849	120	400	334	477
Vent - Return Mixing	Outlet	64.7	0.00797	767	452	-	-
Central Cooling Coil	Outlet	44.8	0.00787	767	452	12068	258
Central Heating Coil	Outlet	55.1	0.00787	767	452	6261	-
Supply Fan	Outlet	55.8	0.00787	767	452	438	-
Cold Supply Duct	Outlet	55.8	0.00787	767	452	-	-
Zone Air	-	64.4	0.00787	767	462	5188	0
Return Plenum	Outlet	64.4	0.00787	767	462	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	5539	Cooling	5188	64.4	767	462	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	120	400	-779	0
Ventilation Reclaim	Outlet	54.2	0.00340	120	400	-1446	0
Vent - Return Mixing	Outlet	61.2	0.00340	767	452	-	-
Central Cooling Coil	Outlet	61.2	0.00340	767	452	0	0
Central Heating Coil	Outlet	69.6	0.00340	767	452	5108	-
Supply Fan	Outlet	70.3	0.00340	767	452	438	-
Cold Supply Duct	Outlet	70.3	0.00340	767	452	-	-
Zone Air	-	62.4	0.00340	767	462	-4767	0
Return Plenum	Outlet	62.4	0.00340	767	462	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-5255	Heating	-4767	62.4	767	462	0	0

Air System Sizing Summary for -211 S2-Mapoteca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-211 S2-Mapoteca**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1056.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**7.1**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**6.9**	MBH	Entering DB / WB	**64.9 / 51.5**	°F
Coil CFM at Jun 1500	**433**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**433**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**433**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.967**		Resulting RH	**45**	%
CFM/Ton	**730.2**		Design supply temp.	**46.0**	°F
ft²/Ton	**1781.0**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.7**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**6.5**	MBH	Load occurs at	**Dec 0200**	
Coil CFM at Dec 0200	**433**	CFM	BTU/(hr·ft²)	**6.2**	
Max coil CFM	**433**	CFM	Ent. DB / Lvg DB	**44.1 / 63.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**433**	CFM	Fan motor BHP	**0.09**	BHP
Standard CFM	**317**	CFM	Fan motor kW	**0.07**	kW
Actual max CFM/ft²	**0.41**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.10**	CFM/ft²			

Zone Sizing Summary for -211 S2-Mapoteca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-211 S2-Mapoteca**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1056.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	433	433	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	3.5	Jul 1500	5.2	1056.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S211 Mapoteca	1	3.5	Jul 1500	433	5.2	1056.0	0.41

Air System Design Load Summary for -211 S2-Mapoteca

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1056 ft²	0	-	1056 ft²	0	-
Partitions	1066 ft²	406	-	1066 ft²	5174	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	845 W	2882	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**3289**	**0**	**-**	**5174**	**0**
Zone Conditioning	-	3020	0	-	4870	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	433 CFM	0	-	433 CFM	0	-
Ventilation Load	110 CFM	165	236	110 CFM	705	0
Supply Fan Load	433 CFM	248	-	433 CFM	-248	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**3433**	**236**	**-**	**5327**	**0**
Central Cooling Coil	-	6879	236	-	0	0
Central Heating Coil	-	-3446	-	-	5327	-
>> Total Conditioning	**-**	**3433**	**236**	**-**	**5327**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	165	236
Ventilation Reclaim	Outlet	66.3	0.00849	110	400	307	438
Vent - Return Mixing	Outlet	64.9	0.00803	433	429	-	-
Central Cooling Coil	Outlet	44.8	0.00787	433	429	6879	236
Central Heating Coil	Outlet	54.8	0.00787	433	429	3446	-
Supply Fan	Outlet	55.6	0.00787	433	429	248	-
Cold Supply Duct	Outlet	55.6	0.00787	433	429	-	-
Zone Air	-	64.4	0.00787	433	438	3020	0
Return Plenum	Outlet	64.4	0.00787	433	438	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	3289	Cooling	3020	64.4	433	438	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-705	0
Ventilation Reclaim	Outlet	54.0	0.00340	110	400	-1309	0
Vent - Return Mixing	Outlet	60.1	0.00340	433	429	-	-
Central Cooling Coil	Outlet	60.1	0.00340	433	429	0	0
Central Heating Coil	Outlet	75.6	0.00340	433	429	5327	-
Supply Fan	Outlet	76.4	0.00340	433	429	248	-
Cold Supply Duct	Outlet	76.4	0.00340	433	429	-	-
Zone Air	-	62.1	0.00340	433	438	-4870	0
Return Plenum	Outlet	62.1	0.00340	433	438	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-5174	Heating	-4870	62.1	433	438	0	0

Air System Sizing Summary for -212 S2-A17

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-212 S2-A17**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1859.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.0**	MBH	Entering DB / WB	**64.7 / 51.4**	°F
Coil CFM at Jun 1500	**762**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**762**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**762**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.979**		Resulting RH	**45**	%
CFM/Ton	**746.3**		Design supply temp.	**46.0**	°F
ft²/Ton	**1820.2**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.8**	MBH	Load occurs at	**Dec 0600**	
Coil CFM at Dec 0600	**762**	CFM	BTU/(hr·ft²)	**5.8**	
Max coil CFM	**762**	CFM	Ent. DB / Lvg DB	**44.4 / 62.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**762**	CFM	Fan motor BHP	**0.16**	BHP
Standard CFM	**558**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.41**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**120**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -212 S2-A17

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-212 S2-A17**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1859.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	762	762	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	5.7	Jul 1500	6.2	1859.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S212 Archivo 17	1	5.7	Jul 1500	762	6.2	1859.0	0.41

Air System Design Load Summary for -212 S2-A17

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1859 ft²	0	-	1859 ft²	0	-
Partitions	1207 ft²	474	-	1207 ft²	6210	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1487 W	5074	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**5548**	**0**	**-**	**6210**	**0**
Zone Conditioning	-	5203	0	-	5741	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	762 CFM	0	-	762 CFM	0	-
Ventilation Load	120 CFM	180	258	120 CFM	776	0
Supply Fan Load	762 CFM	436	-	762 CFM	-436	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**5819**	**258**	**-**	**6081**	**0**
Central Cooling Coil	-	11998	258	-	0	0
Central Heating Coil	-	-6179	-	-	6081	-
>> Total Conditioning	**-**	**5819**	**258**	**-**	**6081**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	120	400	180	258
Ventilation Reclaim	Outlet	66.3	0.00849	120	400	335	477
Vent - Return Mixing	Outlet	64.7	0.00797	762	451	-	-
Central Cooling Coil	Outlet	44.8	0.00787	762	451	11998	258
Central Heating Coil	Outlet	55.0	0.00787	762	451	6179	-
Supply Fan	Outlet	55.8	0.00787	762	451	436	-
Cold Supply Duct	Outlet	55.8	0.00787	762	451	-	-
Zone Air	-	64.4	0.00787	762	461	5203	0
Return Plenum	Outlet	64.4	0.00787	762	461	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	5548	Cooling	5203	64.4	762	461	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	120	400	-776	0
Ventilation Reclaim	Outlet	54.2	0.00340	120	400	-1441	0
Vent - Return Mixing	Outlet	61.1	0.00340	762	451	-	-
Central Cooling Coil	Outlet	61.1	0.00340	762	451	0	0
Central Heating Coil	Outlet	71.2	0.00340	762	451	6081	-
Supply Fan	Outlet	71.9	0.00340	762	451	436	-
Cold Supply Duct	Outlet	71.9	0.00340	762	451	-	-
Zone Air	-	62.4	0.00340	762	461	-5741	0
Return Plenum	Outlet	62.4	0.00340	762	461	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-6210	Heating	-5741	62.4	762	461	0	0

Air System Sizing Summary for -215 S2-A15

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-215 S2-A15**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1926.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.1**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**13.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.6**	MBH	Entering DB / WB	**64.9 / 51.6**	°F
Coil CFM at Jun 1500	**790**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**790**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**790**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.964**		Resulting RH	**45**	%
CFM/Ton	**726.3**		Design supply temp.	**46.0**	°F
ft²/Ton	**1771.4**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.8**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**11.8**	MBH	Load occurs at	**Dec 0800**	
Coil CFM at Dec 0800	**790**	CFM	BTU/(hr·ft²)	**6.1**	
Max coil CFM	**790**	CFM	Ent. DB / Lvg DB	**44.4 / 63.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**790**	CFM	Fan motor BHP	**0.17**	BHP
Standard CFM	**578**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.41**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**220**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.11**	CFM/ft²			

Zone Sizing Summary for -215 S2-A15

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-215 S2-A15**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1926.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	790	790	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	6.2	Jul 1500	7.7	1926.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S215 Archivo 15	1	6.2	Jul 1500	790	7.7	1926.0	0.41

Air System Design Load Summary for -215 S2-A15

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1913 ft²	0	-	1913 ft²	0	-
Partitions	1751 ft²	637	-	1751 ft²	7702	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1541 W	5257	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**5895**	**0**	**-**	**7702**	**0**
Zone Conditioning	-	5461	0	-	6945	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	790 CFM	0	-	790 CFM	0	-
Ventilation Load	220 CFM	330	472	220 CFM	1417	0
Supply Fan Load	790 CFM	452	-	790 CFM	-452	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**6243**	**472**	**-**	**7910**	**0**
Central Cooling Coil	-	12575	472	-	0	0
Central Heating Coil	-	-6332	-	-	7910	-
>> Total Conditioning	**-**	**6243**	**472**	**-**	**7910**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	220	400	330	472
Ventilation Reclaim	Outlet	66.3	0.00849	220	400	613	875
Vent - Return Mixing	Outlet	64.9	0.00804	790	421	-	-
Central Cooling Coil	Outlet	44.8	0.00787	790	421	12575	472
Central Heating Coil	Outlet	54.9	0.00787	790	421	6332	-
Supply Fan	Outlet	55.6	0.00787	790	421	452	-
Cold Supply Duct	Outlet	55.6	0.00787	790	421	-	-
Zone Air	-	64.4	0.00787	790	429	5461	0
Return Plenum	Outlet	64.4	0.00787	790	429	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	5895	Cooling	5461	64.4	790	429	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	220	400	-1417	0
Ventilation Reclaim	Outlet	54.1	0.00340	220	400	-2631	0
Vent - Return Mixing	Outlet	60.0	0.00340	790	421	-	-
Central Cooling Coil	Outlet	60.0	0.00340	790	421	0	0
Central Heating Coil	Outlet	72.6	0.00340	790	421	7910	-
Supply Fan	Outlet	73.4	0.00340	790	421	452	-
Cold Supply Duct	Outlet	73.4	0.00340	790	421	-	-
Zone Air	-	62.3	0.00340	790	429	-6945	0
Return Plenum	Outlet	62.3	0.00340	790	429	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-7702	Heating	-6945	62.3	790	429	0	0

Air System Sizing Summary for -216 S2-A19

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-216 S2-A19**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1429.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**9.9**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**9.7**	MBH	Entering DB / WB	**64.8 / 51.5**	°F
Coil CFM at Jun 1500	**614**	CFM	Leaving DB / WB	**44.9 / 43.6**	°F
Max block CFM	**614**	CFM	Coil ADP	**42.7**	°F
Sum of peak zone CFM	**614**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.977**		Resulting RH	**45**	%
CFM/Ton	**742.8**		Design supply temp.	**46.0**	°F
ft²/Ton	**1727.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.9**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**7.9**	MBH	Load occurs at	**Dec 0400**	
Coil CFM at Dec 0400	**614**	CFM	BTU/(hr·ft²)	**5.5**	
Max coil CFM	**614**	CFM	Ent. DB / Lvg DB	**44.3 / 60.6**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**614**	CFM	Fan motor BHP	**0.13**	BHP
Standard CFM	**450**	CFM	Fan motor kW	**0.10**	kW
Actual max CFM/ft²	**0.43**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.08**	CFM/ft²			

Zone Sizing Summary for -216 S2-A19

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-216 S2-A19**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1429.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	614	614	0.43	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	4.3	Jul 1500	3.4	1429.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S216 Archivo 19	1	4.3	Jul 1500	614	3.4	1429.0	0.43

Air System Design Load Summary for -216 S2-A19

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1429 ft²	0	-	1429 ft²	0	-
Partitions	764 ft²	278	-	764 ft²	3359	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1143 W	3901	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**4179**	**0**	**-**	**3359**	**0**
Zone Conditioning	-	3759	0	-	3176	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	614 CFM	0	-	614 CFM	0	-
Ventilation Load	110 CFM	162	232	110 CFM	718	0
Supply Fan Load	614 CFM	351	-	614 CFM	-351	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**4272**	**232**	**-**	**3542**	**0**
Central Cooling Coil	-	9694	232	-	0	0
Central Heating Coil	-	-5421	-	-	3542	-
>> Total Conditioning	**-**	**4272**	**232**	**-**	**3542**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	162	232
Ventilation Reclaim	Outlet	66.3	0.00851	110	400	301	430
Vent - Return Mixing	Outlet	64.8	0.00801	614	446	-	-
Central Cooling Coil	Outlet	44.9	0.00790	614	446	9694	232
Central Heating Coil	Outlet	56.0	0.00790	614	446	5421	-
Supply Fan	Outlet	56.7	0.00790	614	446	351	-
Cold Supply Duct	Outlet	56.7	0.00790	614	446	-	-
Zone Air	-	64.5	0.00790	614	456	3759	0
Return Plenum	Outlet	64.5	0.00790	614	456	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	4179	Cooling	3759	64.5	614	456	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-718	0
Ventilation Reclaim	Outlet	54.3	0.00340	110	400	-1333	0
Vent - Return Mixing	Outlet	61.1	0.00340	614	446	-	-
Central Cooling Coil	Outlet	61.1	0.00340	614	446	0	0
Central Heating Coil	Outlet	68.4	0.00340	614	446	3542	-
Supply Fan	Outlet	69.1	0.00340	614	446	351	-
Cold Supply Duct	Outlet	69.1	0.00340	614	446	-	-
Zone Air	-	62.6	0.00340	614	456	-3176	0
Return Plenum	Outlet	62.6	0.00340	614	456	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3359	Heating	-3176	62.6	614	456	0	0

Air System Sizing Summary for -217 S2-A18

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**-217 S2-A18**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1781.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.2**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**12.0**	MBH	Entering DB / WB	**64.7 / 51.4**	°F
Coil CFM at Jun 1500	**766**	CFM	Leaving DB / WB	**44.8 / 43.6**	°F
Max block CFM	**766**	CFM	Coil ADP	**42.6**	°F
Sum of peak zone CFM	**766**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.983**		Resulting RH	**45**	%
CFM/Ton	**750.9**		Design supply temp.	**46.0**	°F
ft²/Ton	**1746.3**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**6.9**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**9.6**	MBH	Load occurs at	**Dec 0600**	
Coil CFM at Dec 0600	**766**	CFM	BTU/(hr·ft²)	**5.4**	
Max coil CFM	**766**	CFM	Ent. DB / Lvg DB	**44.4 / 60.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**766**	CFM	Fan motor BHP	**0.16**	BHP
Standard CFM	**561**	CFM	Fan motor kW	**0.13**	kW
Actual max CFM/ft²	**0.43**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**100**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for -217 S2-A18

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name ..... **-217 S2-A18**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1781.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	766	766	0.43	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	5.2	Jul 1600	4.0	1781.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
S217 Archivo 18	1	5.2	Jul 1600	766	4.0	1781.0	0.43

Air System Design Load Summary for -217 S2-A18

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1429 ft²	0	-	1429 ft²	0	-
Partitions	722 ft²	293	-	722 ft²	3966	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1425 W	4861	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**5154**	**0**	**-**	**3966**	**0**
Zone Conditioning	-	4821	0	-	3709	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	766 CFM	0	-	766 CFM	0	-
Ventilation Load	100 CFM	148	213	100 CFM	653	0
Supply Fan Load	766 CFM	438	-	766 CFM	-438	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**5407**	**213**	**-**	**3924**	**0**
Central Cooling Coil	-	12026	213	-	0	0
Central Heating Coil	-	-6619	-	-	3924	-
>> Total Conditioning	**-**	**5407**	**213**	**-**	**3924**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	100	400	148	213
Ventilation Reclaim	Outlet	66.3	0.00850	100	400	276	394
Vent - Return Mixing	Outlet	64.7	0.00797	766	465	-	-
Central Cooling Coil	Outlet	44.8	0.00789	766	465	12026	213
Central Heating Coil	Outlet	55.8	0.00789	766	465	6619	-
Supply Fan	Outlet	56.5	0.00789	766	465	438	-
Cold Supply Duct	Outlet	56.5	0.00789	766	465	-	-
Zone Air	-	64.4	0.00789	766	475	4821	0
Return Plenum	Outlet	64.4	0.00789	766	475	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	5154	Cooling	4821	64.4	766	475	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	100	400	-653	0
Ventilation Reclaim	Outlet	54.3	0.00340	100	400	-1213	0
Vent - Return Mixing	Outlet	61.5	0.00340	766	465	-	-
Central Cooling Coil	Outlet	61.5	0.00340	766	465	0	0
Central Heating Coil	Outlet	68.0	0.00340	766	465	3924	-
Supply Fan	Outlet	68.7	0.00340	766	465	438	-
Cold Supply Duct	Outlet	68.7	0.00340	766	465	-	-
Zone Air	-	62.6	0.00340	766	475	-3709	0
Return Plenum	Outlet	62.6	0.00340	766	475	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-3966	Heating	-3709	62.6	766	475	0	0

Air System Sizing Summary for 301 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**301 P3-Archivo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2423.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**2.9**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**34.7**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**33.5**	MBH	Entering DB / WB	**64.8 / 51.5**	°F
Coil CFM at Jun 1500	**2105**	CFM	Leaving DB / WB	**44.7 / 43.4**	°F
Max block CFM	**2105**	CFM	Coil ADP	**42.4**	°F
Sum of peak zone CFM	**2105**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.967**		Resulting RH	**45**	%
CFM/Ton	**728.7**		Design supply temp.	**46.0**	°F
ft²/Ton	**838.7**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**14.3**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**32.0**	MBH	Load occurs at	**Nov 0800**	
Coil CFM at Nov 0800	**2105**	CFM	BTU/(hr·ft²)	**13.2**	
Max coil CFM	**2105**	CFM	Ent. DB / Lvg DB	**44.0 / 63.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**2105**	CFM	Fan motor BHP	**0.44**	BHP
Standard CFM	**1542**	CFM	Fan motor kW	**0.35**	kW
Actual max CFM/ft²	**0.87**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**150**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 301 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name **301 P3-Archivo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2423.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	2105	2105	0.87	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	30.0	Aug 1700	22.0	2423.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
301 Archivo	1	30.0	Aug 1700	2105	22.0	2423.0	0.87

Air System Design Load Summary for 301 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	1457 ft²	3087	-	1457 ft²	9281	-
Roof Transmission	2423 ft²	15280	-	2423 ft²	9347	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	340 ft²	-103	-	340 ft²	663	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1938 W	6614	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	662	844	-	2738	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**25540**	**844**	**-**	**22029**	**0**
Zone Conditioning	-	23971	844	-	21367	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	2105 CFM	0	-	2105 CFM	0	-
Ventilation Load	150 CFM	214	308	150 CFM	968	0
Supply Fan Load	2105 CFM	1204	-	2105 CFM	-1204	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**25389**	**1152**	**-**	**21132**	**0**
Central Cooling Coil	-	33514	1152	-	0	0
Central Heating Coil	-	-8126	-	-	21132	-
>> Total Conditioning	**-**	**25389**	**1152**	**-**	**21132**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	150	400	214	308
Ventilation Reclaim	Outlet	66.5	0.00854	150	400	397	570
Vent - Return Mixing	Outlet	64.8	0.00799	2105	465	-	-
Central Cooling Coil	Outlet	44.7	0.00783	2105	465	33514	1152
Central Heating Coil	Outlet	49.5	0.00783	2105	465	8126	-
Supply Fan	Outlet	50.3	0.00783	2105	465	1204	-
Cold Supply Duct	Outlet	50.3	0.00783	2105	465	-	-
Zone Air	-	64.7	0.00795	2105	470	23971	844
Return Plenum	Outlet	64.7	0.00795	2105	470	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	25540	Cooling	23971	64.7	2105	470	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	150	400	-968	0
Ventilation Reclaim	Outlet	54.2	0.00340	150	400	-1798	0
Vent - Return Mixing	Outlet	61.7	0.00340	2105	523	-	-
Central Cooling Coil	Outlet	61.7	0.00340	2105	523	0	0
Central Heating Coil	Outlet	74.4	0.00340	2105	523	21132	-
Supply Fan	Outlet	75.1	0.00340	2105	523	1204	-
Cold Supply Duct	Outlet	75.1	0.00340	2105	523	-	-
Zone Air	-	62.3	0.00340	2105	532	-21367	0
Return Plenum	Outlet	62.3	0.00340	2105	532	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-22029	Heating	-21367	62.3	2105	532	0	0

Air System Sizing Summary for 302 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name	**302 P3-Archivo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2820.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**3.1**	Tons	Load occurs at	**Jun 1600**	
Total coil load	**37.2**	MBH	OA DB / WB	**69.3 / 55.5**	°F
Sensible coil load	**35.9**	MBH	Entering DB / WB	**64.8 / 51.4**	°F
Coil CFM at Jun 1600	**2254**	CFM	Leaving DB / WB	**44.6 / 43.4**	°F
Max block CFM	**2254**	CFM	Coil ADP	**42.4**	°F
Sum of peak zone CFM	**2254**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.965**		Resulting RH	**45**	%
CFM/Ton	**726.8**		Design supply temp.	**46.0**	°F
ft²/Ton	**909.2**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**13.2**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**33.7**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**2254**	CFM	BTU/(hr·ft²)	**11.9**	
Max coil CFM	**2254**	CFM	Ent. DB / Lvg DB	**44.4 / 63.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**2254**	CFM	Fan motor BHP	**0.48**	BHP
Standard CFM	**1651**	CFM	Fan motor kW	**0.38**	kW
Actual max CFM/ft²	**0.80**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 302 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

Air System Information

Air System Name **302 P3-Archivo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2820.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	2254	2254	0.80	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	32.1	Aug 1700	17.0	2820.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
302 Archivo	1	32.1	Aug 1700	2254	17.0	2820.0	0.80

Air System Design Load Summary for 302 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1600 COOLING OA DB / WB 69.3 °F / 55.5 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	393 ft²	571	-	393 ft²	2503	-
Roof Transmission	2820 ft²	20010	-	2820 ft²	10879	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	301 ft²	-97	-	301 ft²	587	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2256 W	7697	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	683	951	-	3079	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**28863**	**951**	**-**	**17048**	**0**
Zone Conditioning	-	27517	951	-	17315	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	2254 CFM	0	-	2254 CFM	0	-
Ventilation Load	170 CFM	220	349	170 CFM	1110	0
Supply Fan Load	2254 CFM	1289	-	2254 CFM	-1289	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**29026**	**1300**	**-**	**17136**	**0**
Central Cooling Coil	-	35920	1300	-	0	0
Central Heating Coil	-	-6893	-	-	17136	-
>> Total Conditioning	**-**	**29026**	**1300**	**-**	**17136**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1600

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.3	0.00963	170	400	220	349
Ventilation Reclaim	Outlet	66.3	0.00854	170	400	409	648
Vent - Return Mixing	Outlet	64.8	0.00799	2254	459	-	-
Central Cooling Coil	Outlet	44.6	0.00782	2254	459	35920	1300
Central Heating Coil	Outlet	48.5	0.00782	2254	459	6893	-
Supply Fan	Outlet	49.2	0.00782	2254	459	1289	-
Cold Supply Duct	Outlet	49.2	0.00782	2254	459	-	-
Zone Air	-	64.6	0.00795	2254	463	27517	951
Return Plenum	Outlet	64.6	0.00795	2254	463	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	28863	Cooling	27517	64.6	2254	463	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1110	0
Ventilation Reclaim	Outlet	54.3	0.00340	170	400	-2061	0
Vent - Return Mixing	Outlet	62.0	0.00340	2254	514	-	-
Central Cooling Coil	Outlet	62.0	0.00340	2254	514	0	0
Central Heating Coil	Outlet	71.6	0.00340	2254	514	17136	-
Supply Fan	Outlet	72.3	0.00340	2254	514	1289	-
Cold Supply Duct	Outlet	72.3	0.00340	2254	514	-	-
Zone Air	-	62.6	0.00340	2254	523	-17315	0
Return Plenum	Outlet	62.6	0.00340	2254	523	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-17048	Heating	-17315	62.6	2254	523	0	0

Air System Sizing Summary for 303 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**303 P3-Archivo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2818.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**3.1**	Tons	Load occurs at	**Jun 1300**	
Total coil load	**37.2**	MBH	OA DB / WB	**68.0 / 55.0**	°F
Sensible coil load	**35.9**	MBH	Entering DB / WB	**64.5 / 51.3**	°F
Coil CFM at Jun 1300	**2253**	CFM	Leaving DB / WB	**44.4 / 43.2**	°F
Max block CFM	**2253**	CFM	Coil ADP	**42.2**	°F
Sum of peak zone CFM	**2253**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.964**		Resulting RH	**45**	%
CFM/Ton	**726.7**		Design supply temp.	**46.0**	°F
ft²/Ton	**909.0**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**13.2**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**33.7**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**2253**	CFM	BTU/(hr·ft²)	**11.9**	
Max coil CFM	**2253**	CFM	Ent. DB / Lvg DB	**44.3 / 63.2**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**2253**	CFM	Fan motor BHP	**0.48**	BHP
Standard CFM	**1650**	CFM	Fan motor kW	**0.38**	kW
Actual max CFM/ft²	**0.80**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 303 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name **303 P3-Archivo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2818.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	2253	2253	0.80	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	32.1	Aug 1700	17.0	2818.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
303 Archivo	1	32.1	Aug 1700	2253	17.0	2818.0	0.80

Air System Design Load Summary for 303 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1300 COOLING OA DB / WB 68.0 °F / 55.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	393 ft²	379	-	393 ft²	2503	-
Roof Transmission	2818 ft²	10873	-	2818 ft²	10871	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	301 ft²	-161	-	301 ft²	587	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2254 W	7692	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	518	987	-	3077	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**19301**	**987**	**-**	**17038**	**0**
Zone Conditioning	-	18710	987	-	16291	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	2253 CFM	0	-	2253 CFM	0	-
Ventilation Load	170 CFM	171	363	170 CFM	1100	0
Supply Fan Load	2253 CFM	1288	-	2253 CFM	-1288	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**20169**	**1349**	**-**	**16102**	**0**
Central Cooling Coil	-	35850	1349	-	0	0
Central Heating Coil	-	-15681	-	-	16102	-
>> Total Conditioning	**-**	**20169**	**1349**	**-**	**16102**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1300

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	68.0	0.00963	170	400	171	363
Ventilation Reclaim	Outlet	65.7	0.00849	170	400	317	672
Vent - Return Mixing	Outlet	64.5	0.00793	2253	458	-	-
Central Cooling Coil	Outlet	44.4	0.00775	2253	458	35850	1349
Central Heating Coil	Outlet	53.2	0.00775	2253	458	15681	-
Supply Fan	Outlet	53.9	0.00775	2253	458	1288	-
Cold Supply Duct	Outlet	53.9	0.00775	2253	458	-	-
Zone Air	-	64.4	0.00788	2253	463	18710	987
Return Plenum	Outlet	64.4	0.00788	2253	463	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	19301	Cooling	18710	64.4	2253	463	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1100	0
Ventilation Reclaim	Outlet	54.2	0.00340	170	400	-2043	0
Vent - Return Mixing	Outlet	61.8	0.00340	2253	514	-	-
Central Cooling Coil	Outlet	61.8	0.00340	2253	514	0	0
Central Heating Coil	Outlet	70.8	0.00340	2253	514	16102	-
Supply Fan	Outlet	71.5	0.00340	2253	514	1288	-
Cold Supply Duct	Outlet	71.5	0.00340	2253	514	-	-
Zone Air	-	62.4	0.00340	2253	523	-16291	0
Return Plenum	Outlet	62.4	0.00340	2253	523	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-17038	Heating	-16291	62.4	2253	523	0	0

Air System Sizing Summary for 304 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**304 P3-Archivo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2827.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**3.1**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**37.3**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**36.0**	MBH	Entering DB / WB	**64.8 / 51.5**	°F
Coil CFM at Jun 1500	**2260**	CFM	Leaving DB / WB	**44.6 / 43.4**	°F
Max block CFM	**2260**	CFM	Coil ADP	**42.4**	°F
Sum of peak zone CFM	**2260**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.965**		Resulting RH	**45**	%
CFM/Ton	**726.5**		Design supply temp.	**46.0**	°F
ft²/Ton	**908.8**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**13.2**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**33.8**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**2260**	CFM	BTU/(hr·ft²)	**11.9**	
Max coil CFM	**2260**	CFM	Ent. DB / Lvg DB	**44.4 / 63.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**2260**	CFM	Fan motor BHP	**0.48**	BHP
Standard CFM	**1656**	CFM	Fan motor kW	**0.38**	kW
Actual max CFM/ft²	**0.80**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 304 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name **304 P3-Archivo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2827.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	2260	2260	0.80	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	32.2	Aug 1700	17.1	2827.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
304 Archivo	1	32.2	Aug 1700	2260	17.1	2827.0	0.80

Air System Design Load Summary for 304 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	394 ft²	512	-	394 ft²	2511	-
Roof Transmission	2827 ft²	17828	-	2827 ft²	10906	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	301 ft²	-91	-	301 ft²	587	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2262 W	7716	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	746	952	-	3087	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**26711**	**952**	**-**	**17090**	**0**
Zone Conditioning	-	24955	952	-	17675	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	2260 CFM	0	-	2260 CFM	0	-
Ventilation Load	170 CFM	242	349	170 CFM	1111	0
Supply Fan Load	2260 CFM	1292	-	2260 CFM	-1292	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**26490**	**1300**	**-**	**17494**	**0**
Central Cooling Coil	-	36029	1300	-	0	0
Central Heating Coil	-	-9540	-	-	17494	-
>> Total Conditioning	**-**	**26490**	**1300**	**-**	**17494**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	242	349
Ventilation Reclaim	Outlet	66.5	0.00854	170	400	450	646
Vent - Return Mixing	Outlet	64.8	0.00799	2260	459	-	-
Central Cooling Coil	Outlet	44.6	0.00783	2260	459	36029	1300
Central Heating Coil	Outlet	50.0	0.00783	2260	459	9540	-
Supply Fan	Outlet	50.7	0.00783	2260	459	1292	-
Cold Supply Duct	Outlet	50.7	0.00783	2260	459	-	-
Zone Air	-	64.7	0.00795	2260	463	24955	952
Return Plenum	Outlet	64.7	0.00795	2260	463	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	26711	Cooling	24955	64.7	2260	463	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1111	0
Ventilation Reclaim	Outlet	54.3	0.00340	170	400	-2063	0
Vent - Return Mixing	Outlet	62.0	0.00340	2260	514	-	-
Central Cooling Coil	Outlet	62.0	0.00340	2260	514	0	0
Central Heating Coil	Outlet	71.8	0.00340	2260	514	17494	-
Supply Fan	Outlet	72.5	0.00340	2260	514	1292	-
Cold Supply Duct	Outlet	72.5	0.00340	2260	514	-	-
Zone Air	-	62.6	0.00340	2260	524	-17675	0
Return Plenum	Outlet	62.6	0.00340	2260	524	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-17090	Heating	-17675	62.6	2260	524	0	0

Air System Sizing Summary for 305 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**305 P3-Archivo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**2715.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**3.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**36.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**34.7**	MBH	Entering DB / WB	**64.9 / 51.5**	°F
Coil CFM at Jun 1500	**2178**	CFM	Leaving DB / WB	**44.7 / 43.5**	°F
Max block CFM	**2178**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**2178**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.965**		Resulting RH	**45**	%
CFM/Ton	**726.6**		Design supply temp.	**46.0**	°F
ft²/Ton	**905.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**13.3**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**31.4**	MBH	Load occurs at	**Dec 0800**	
Coil CFM at Dec 0800	**2178**	CFM	BTU/(hr·ft²)	**11.6**	
Max coil CFM	**2178**	CFM	Ent. DB / Lvg DB	**44.3 / 62.5**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**2178**	CFM	Fan motor BHP	**0.46**	BHP
Standard CFM	**1596**	CFM	Fan motor kW	**0.37**	kW
Actual max CFM/ft²	**0.80**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**170**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 305 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name **305 P3-Archivo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **2715.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	2178	2178	0.80	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	31.0	Aug 1700	24.1	2715.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
305 Archivo	1	31.0	Aug 1700	2178	24.1	2715.0	0.80

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	1576 ft²	-207	-	1576 ft²	10037	-
Roof Transmission	2715 ft²	17122	-	2715 ft²	10474	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	301 ft²	-91	-	301 ft²	587	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2172 W	7411	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	716	902	-	2964	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**24951**	**902**	**-**	**24063**	**0**
Zone Conditioning	-	22605	902	-	23208	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	2178 CFM	0	-	2178 CFM	0	-
Ventilation Load	170 CFM	239	344	170 CFM	1095	0
Supply Fan Load	2178 CFM	1246	-	2178 CFM	-1246	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**24090**	**1247**	**-**	**23058**	**0**
Central Cooling Coil	-	34728	1247	-	0	0
Central Heating Coil	-	-10639	-	-	23058	-
>> Total Conditioning	**-**	**24090**	**1247**	**-**	**23058**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	170	400	239	344
Ventilation Reclaim	Outlet	66.5	0.00855	170	400	443	638
Vent - Return Mixing	Outlet	64.9	0.00802	2178	457	-	-
Central Cooling Coil	Outlet	44.7	0.00785	2178	457	34728	1247
Central Heating Coil	Outlet	50.9	0.00785	2178	457	10639	-
Supply Fan	Outlet	51.6	0.00785	2178	457	1246	-
Cold Supply Duct	Outlet	51.6	0.00785	2178	457	-	-
Zone Air	-	64.7	0.00797	2178	461	22605	902
Return Plenum	Outlet	64.7	0.00797	2178	461	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	24951	Cooling	22605	64.7	2178	461	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	170	400	-1095	0
Ventilation Reclaim	Outlet	54.1	0.00340	170	400	-2034	0
Vent - Return Mixing	Outlet	61.6	0.00340	2178	509	-	-
Central Cooling Coil	Outlet	61.6	0.00340	2178	509	0	0
Central Heating Coil	Outlet	75.0	0.00340	2178	509	23058	-
Supply Fan	Outlet	75.7	0.00340	2178	509	1246	-
Cold Supply Duct	Outlet	75.7	0.00340	2178	509	-	-
Zone Air	-	62.3	0.00340	2178	518	-23208	0
Return Plenum	Outlet	62.3	0.00340	2178	518	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-24063	Heating	-23208	62.3	2178	518	0	0

Air System Sizing Summary for 306 P3-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**306 P3-Zona de trabajo**		Number of zones	**1**
Equipment Class	**SPLT AHU**		Floor Area	**732.0** ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**0.9**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**10.7**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**10.2**	MBH	Entering DB / WB	**65.1 / 51.7**	°F
Coil CFM at Jun 1500	**636**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**636**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**636**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.956**		Resulting RH	**45**	%
CFM/Ton	**714.9**		Design supply temp.	**46.0**	°F
ft²/Ton	**822.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**14.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**9.6**	MBH	Load occurs at	**Dec 0800**	
Coil CFM at Dec 0800	**636**	CFM	BTU/(hr·ft²)	**13.2**	
Max coil CFM	**636**	CFM	Ent. DB / Lvg DB	**44.1 / 63.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**636**	CFM	Fan motor BHP	**0.13**	BHP
Standard CFM	**466**	CFM	Fan motor kW	**0.11**	kW
Actual max CFM/ft²	**0.87**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.15**	CFM/ft²			

Zone Sizing Summary for 306 P3-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name ..... **306 P3-Zona de trabajo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **732.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	636	636	0.87	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	8.8	Aug 1700	8.6	732.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
306 Zona de Trabajo	1	8.8	Aug 1700	636	8.6	732.0	0.87

Air System Design Load Summary for 306 P3-Zona de trabajo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	683 ft²	324	-	683 ft²	4349	-
Roof Transmission	732 ft²	4616	-	732 ft²	2824	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	300 ft²	-91	-	300 ft²	585	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	586 W	1998	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	193	243	-	799	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**7041**	**243**	**-**	**8557**	**0**
Zone Conditioning	-	6294	243	-	8100	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	636 CFM	0	-	636 CFM	0	-
Ventilation Load	110 CFM	154	222	110 CFM	703	0
Supply Fan Load	636 CFM	364	-	636 CFM	-364	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**6812**	**465**	**-**	**8439**	**0**
Central Cooling Coil	-	10213	465	-	0	0
Central Heating Coil	-	-3401	-	-	8439	-
>> Total Conditioning	**-**	**6812**	**465**	**-**	**8439**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	154	222
Ventilation Reclaim	Outlet	66.5	0.00856	110	400	286	412
Vent - Return Mixing	Outlet	65.1	0.00807	636	432	-	-
Central Cooling Coil	Outlet	44.8	0.00786	636	432	10213	465
Central Heating Coil	Outlet	51.5	0.00786	636	432	3401	-
Supply Fan	Outlet	52.2	0.00786	636	432	364	-
Cold Supply Duct	Outlet	52.2	0.00786	636	432	-	-
Zone Air	-	64.7	0.00797	636	438	6294	243
Return Plenum	Outlet	64.7	0.00797	636	438	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	7041	Cooling	6294	64.7	636	438	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-703	0
Ventilation Reclaim	Outlet	54.0	0.00340	110	400	-1306	0
Vent - Return Mixing	Outlet	60.7	0.00340	636	441	-	-
Central Cooling Coil	Outlet	60.7	0.00340	636	441	0	0
Central Heating Coil	Outlet	77.4	0.00340	636	441	8439	-
Supply Fan	Outlet	78.2	0.00340	636	441	364	-
Cold Supply Duct	Outlet	78.2	0.00340	636	441	-	-
Zone Air	-	62.1	0.00340	636	450	-8100	0
Return Plenum	Outlet	62.1	0.00340	636	450	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-8557	Heating	-8100	62.1	636	450	0	0

Air System Sizing Summary for 307 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**307 P3-Archivo**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**873.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.1**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**11.6**	MBH	Entering DB / WB	**65.0 / 51.7**	°F
Coil CFM at Jun 1500	**721**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**721**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**721**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.958**		Resulting RH	**45**	%
CFM/Ton	**716.6**		Design supply temp.	**46.0**	°F
ft²/Ton	**868.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**13.8**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.9**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**721**	CFM	BTU/(hr·ft²)	**12.5**	
Max coil CFM	**721**	CFM	Ent. DB / Lvg DB	**43.9 / 63.1**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**721**	CFM	Fan motor BHP	**0.15**	BHP
Standard CFM	**528**	CFM	Fan motor kW	**0.12**	kW
Actual max CFM/ft²	**0.83**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.13**	CFM/ft²			

Zone Sizing Summary for 307 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name **307 P3-Archivo**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **873.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	721	721	0.83	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	10.3	Aug 1700	7.5	873.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
307 Archivo	1	10.3	Aug 1700	721	7.5	873.0	0.83

Air System Design Load Summary for 307 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	400 ft²	486	-	400 ft²	2550	-
Roof Transmission	873 ft²	5505	-	873 ft²	3368	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	300 ft²	-91	-	300 ft²	585	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	698 W	2383	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	230	288	-	953	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8514**	**288**	**-**	**7456**	**0**
Zone Conditioning	-	7777	288	-	7016	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	721 CFM	0	-	721 CFM	0	-
Ventilation Load	110 CFM	153	221	110 CFM	707	0
Supply Fan Load	721 CFM	412	-	721 CFM	-412	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8342**	**509**	**-**	**7310**	**0**
Central Cooling Coil	-	11559	509	-	0	0
Central Heating Coil	-	-3217	-	-	7310	-
>> Total Conditioning	**-**	**8342**	**509**	**-**	**7310**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	153	221
Ventilation Reclaim	Outlet	66.5	0.00856	110	400	284	410
Vent - Return Mixing	Outlet	65.0	0.00807	721	431	-	-
Central Cooling Coil	Outlet	44.8	0.00787	721	431	11559	509
Central Heating Coil	Outlet	50.4	0.00787	721	431	3217	-
Supply Fan	Outlet	51.1	0.00787	721	431	412	-
Cold Supply Duct	Outlet	51.1	0.00787	721	431	-	-
Zone Air	-	64.8	0.00798	721	436	7777	288
Return Plenum	Outlet	64.8	0.00798	721	436	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8514	Cooling	7777	64.8	721	436	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-707	0
Ventilation Reclaim	Outlet	54.1	0.00340	110	400	-1312	0
Vent - Return Mixing	Outlet	61.0	0.00340	721	455	-	-
Central Cooling Coil	Outlet	61.0	0.00340	721	455	0	0
Central Heating Coil	Outlet	73.8	0.00340	721	455	7310	-
Supply Fan	Outlet	74.5	0.00340	721	455	412	-
Cold Supply Duct	Outlet	74.5	0.00340	721	455	-	-
Zone Air	-	62.2	0.00340	721	465	-7016	0
Return Plenum	Outlet	62.2	0.00340	721	465	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-7456	Heating	-7016	62.2	721	465	0	0

Air System Sizing Summary for 308 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**308 P3-Archivo**		Number of zones	**1**	
Equipment Class	**PKG VERT**		Floor Area	**873.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**12.1**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**11.6**	MBH	Entering DB / WB	**65.0 / 51.7**	°F
Coil CFM at Jun 1500	**721**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**721**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**721**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.958**		Resulting RH	**45**	%
CFM/Ton	**716.6**		Design supply temp.	**46.0**	°F
ft²/Ton	**868.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**13.8**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.9**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**721**	CFM	BTU/(hr·ft²)	**12.5**	
Max coil CFM	**721**	CFM	Ent. DB / Lvg DB	**43.9 / 63.1**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**721**	CFM	Fan motor BHP	**0.15**	BHP
Standard CFM	**528**	CFM	Fan motor kW	**0.12**	kW
Actual max CFM/ft²	**0.83**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**110**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.13**	CFM/ft²			

Zone Sizing Summary for 308 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name **308 P3-Archivo**
Equipment Class ..... **PKG VERT**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **873.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	721	721	0.83	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	10.3	Aug 1700	7.5	873.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
308 Archivo	1	10.3	Aug 1700	721	7.5	873.0	0.83

Air System Design Load Summary for 308 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	400 ft²	486	-	400 ft²	2550	-
Roof Transmission	873 ft²	5505	-	873 ft²	3368	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	300 ft²	-91	-	300 ft²	585	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	698 W	2383	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	230	288	-	953	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8514**	**288**	**-**	**7456**	**0**
Zone Conditioning	-	7777	288	-	7016	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	721 CFM	0	-	721 CFM	0	-
Ventilation Load	110 CFM	153	221	110 CFM	707	0
Supply Fan Load	721 CFM	412	-	721 CFM	-412	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8342**	**509**	**-**	**7310**	**0**
Central Cooling Coil	-	11559	509	-	0	0
Central Heating Coil	-	-3217	-	-	7310	-
>> Total Conditioning	**-**	**8342**	**509**	**-**	**7310**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	110	400	153	221
Ventilation Reclaim	Outlet	66.5	0.00856	110	400	284	410
Vent - Return Mixing	Outlet	65.0	0.00807	721	431	-	-
Central Cooling Coil	Outlet	44.8	0.00787	721	431	11559	509
Central Heating Coil	Outlet	50.4	0.00787	721	431	3217	-
Supply Fan	Outlet	51.1	0.00787	721	431	412	-
Cold Supply Duct	Outlet	51.1	0.00787	721	431	-	-
Zone Air	-	64.8	0.00798	721	436	7777	288
Return Plenum	Outlet	64.8	0.00798	721	436	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8514	Cooling	7777	64.8	721	436	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	110	400	-707	0
Ventilation Reclaim	Outlet	54.1	0.00340	110	400	-1312	0
Vent - Return Mixing	Outlet	61.0	0.00340	721	455	-	-
Central Cooling Coil	Outlet	61.0	0.00340	721	455	0	0
Central Heating Coil	Outlet	73.8	0.00340	721	455	7310	-
Supply Fan	Outlet	74.5	0.00340	721	455	412	-
Cold Supply Duct	Outlet	74.5	0.00340	721	455	-	-
Zone Air	-	62.2	0.00340	721	465	-7016	0
Return Plenum	Outlet	62.2	0.00340	721	465	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-7456	Heating	-7016	62.2	721	465	0	0

Air System Sizing Summary for 309 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**309 P3-Archivo**		Number of zones	**1**	
Equipment Class	**PKG VERT**		Floor Area	**873.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**11.9**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**11.5**	MBH	Entering DB / WB	**64.9 / 51.5**	°F
Coil CFM at Jun 1500	**721**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**721**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**721**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.967**		Resulting RH	**45**	%
CFM/Ton	**729.0**		Design supply temp.	**46.0**	°F
ft²/Ton	**883.1**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**13.6**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.9**	MBH	Load occurs at	**Dec 0700**	
Coil CFM at Dec 0700	**721**	CFM	BTU/(hr·ft²)	**12.5**	
Max coil CFM	**721**	CFM	Ent. DB / Lvg DB	**43.9 / 63.1**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**721**	CFM	Fan motor BHP	**0.15**	BHP
Standard CFM	**528**	CFM	Fan motor kW	**0.12**	kW
Actual max CFM/ft²	**0.83**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.06**	CFM/ft²			

Zone Sizing Summary for 309 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name **309 P3-Archivo**
Equipment Class ..... **PKG VERT**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **873.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	721	721	0.83	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	10.3	Aug 1700	7.5	873.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
309 Archivo	1	10.3	Aug 1700	721	7.5	873.0	0.83

Air System Design Load Summary for 309 P3-Archivo

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	400 ft²	486	-	400 ft²	2550	-
Roof Transmission	873 ft²	5505	-	873 ft²	3368	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	300 ft²	-91	-	300 ft²	585	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	698 W	2383	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	230	288	-	953	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8514**	**288**	**-**	**7456**	**0**
Zone Conditioning	-	7777	288	-	7016	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	721 CFM	0	-	721 CFM	0	-
Ventilation Load	50 CFM	70	101	50 CFM	321	0
Supply Fan Load	721 CFM	412	-	721 CFM	-412	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**8258**	**389**	**-**	**6925**	**0**
Central Cooling Coil	-	11475	389	-	0	0
Central Heating Coil	-	-3216	-	-	6925	-
>> Total Conditioning	**-**	**8258**	**389**	**-**	**6925**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	50	400	70	101
Ventilation Reclaim	Outlet	66.5	0.00856	50	400	129	186
Vent - Return Mixing	Outlet	64.9	0.00802	721	465	-	-
Central Cooling Coil	Outlet	44.8	0.00787	721	465	11475	389
Central Heating Coil	Outlet	50.4	0.00787	721	465	3216	-
Supply Fan	Outlet	51.1	0.00787	721	465	412	-
Cold Supply Duct	Outlet	51.1	0.00787	721	465	-	-
Zone Air	-	64.8	0.00798	721	470	7777	288
Return Plenum	Outlet	64.8	0.00798	721	470	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8514	Cooling	7777	64.8	721	470	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	50	400	-321	0
Ventilation Reclaim	Outlet	54.1	0.00340	50	400	-596	0
Vent - Return Mixing	Outlet	61.6	0.00340	721	527	-	-
Central Cooling Coil	Outlet	61.6	0.00340	721	527	0	0
Central Heating Coil	Outlet	73.8	0.00340	721	527	6925	-
Supply Fan	Outlet	74.5	0.00340	721	527	412	-
Cold Supply Duct	Outlet	74.5	0.00340	721	527	-	-
Zone Air	-	62.2	0.00340	721	536	-7016	0
Return Plenum	Outlet	62.2	0.00340	721	536	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-7456	Heating	-7016	62.2	721	536	0	0

Air System Sizing Summary for 310 P3-Archivo central

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name	**310 P3-Archivo central**		Number of zones	**1**	
Equipment Class	**PKG VERT**		Floor Area	**762.0**	ft²
Air System Type	**SZCAV**		Location	**Bogota, Colombia**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.9**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**11.0**	MBH	OA DB / WB	**69.8 / 55.6**	°F
Sensible coil load	**10.6**	MBH	Entering DB / WB	**64.9 / 51.6**	°F
Coil CFM at Jun 1500	**664**	CFM	Leaving DB / WB	**44.8 / 43.5**	°F
Max block CFM	**664**	CFM	Coil ADP	**42.5**	°F
Sum of peak zone CFM	**664**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.964**		Resulting RH	**45**	%
CFM/Ton	**725.0**		Design supply temp.	**46.0**	°F
ft²/Ton	**831.6**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**14.4**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**11.0**	MBH	Load occurs at	**Jan 0900**	
Coil CFM at Jan 0900	**664**	CFM	BTU/(hr·ft²)	**14.4**	
Max coil CFM	**664**	CFM	Ent. DB / Lvg DB	**43.4 / 64.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**664**	CFM	Fan motor BHP	**0.14**	BHP
Standard CFM	**487**	CFM	Fan motor kW	**0.11**	kW
Actual max CFM/ft²	**0.87**	CFM/ft²	Fan static	**1.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**70**	CFM	CFM/person	**0.00**	CFM/person
CFM/ft²	**0.09**	CFM/ft²			

Zone Sizing Summary for 310 P3-Archivo central

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
07:46PM

Air System Information

Air System Name ..... **310 P3-Archivo central**
Equipment Class ..... **PKG VERT**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **762.0** ft²
Location ..... **Bogota, Colombia**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	664	664	0.87	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	9.5	Jul 1800	8.8	762.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
310 Archivo central	1	9.5	Jul 1800	664	8.8	762.0	0.87

Air System Design Load Summary for 310 P3-Archivo central

Project Name: 25LC002 AGNA_RA
Prepared by: Luseo Engineering

02/27/2025
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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 69.8 °F / 55.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 39.0 °F / 31.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	679 ft²	1085	-	679 ft²	4326	-
Roof Transmission	762 ft²	4805	-	762 ft²	2940	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	340 ft²	-103	-	340 ft²	663	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	610 W	2080	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	201	253	-	832	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**8069**	**253**	**-**	**8761**	**0**
Zone Conditioning	-	7385	253	-	8208	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	664 CFM	0	-	664 CFM	0	-
Ventilation Load	70 CFM	98	142	70 CFM	446	0
Supply Fan Load	664 CFM	380	-	664 CFM	-380	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**7863**	**395**	**-**	**8275**	**0**
Central Cooling Coil	-	10600	395	-	0	0
Central Heating Coil	-	-2737	-	-	8275	-
>> Total Conditioning	**-**	**7863**	**395**	**-**	**8275**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

June DESIGN COOLING DAY, 1500

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	69.8	0.00963	70	400	98	142
Ventilation Reclaim	Outlet	66.5	0.00855	70	400	182	263
Vent - Return Mixing	Outlet	64.9	0.00803	664	449	-	-
Central Cooling Coil	Outlet	44.8	0.00786	664	449	10600	395
Central Heating Coil	Outlet	50.0	0.00786	664	449	2737	-
Supply Fan	Outlet	50.7	0.00786	664	449	380	-
Cold Supply Duct	Outlet	50.7	0.00786	664	449	-	-
Zone Air	-	64.7	0.00797	664	455	7385	253
Return Plenum	Outlet	64.7	0.00797	664	455	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	8069	Cooling	7385	64.7	664	455	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	39.0	0.00340	70	400	-446	0
Ventilation Reclaim	Outlet	54.0	0.00340	70	400	-829	0
Vent - Return Mixing	Outlet	61.2	0.00340	664	484	-	-
Central Cooling Coil	Outlet	61.2	0.00340	664	484	0	0
Central Heating Coil	Outlet	76.9	0.00340	664	484	8275	-
Supply Fan	Outlet	77.6	0.00340	664	484	380	-
Cold Supply Duct	Outlet	77.6	0.00340	664	484	-	-
Zone Air	-	62.0	0.00340	664	494	-8208	0
Return Plenum	Outlet	62.0	0.00340	664	494	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 0.791 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 3477.3 BTU/(hr-CFM)
Site Altitude = 8361.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-8761	Heating	-8208	62.0	664	494	0	0