Bucaramanga, 3 de diciembre de 2020.

Señores
Municipio de Bucaramanga

Referencia: **SI-LP-006-2020 Objeto: AMPLIACIÓN DEL ALUMBRADO PÚBLICO EN ZONAS RURALES DEL MUNICIPIO DE BUCARAMANGA.**

Asunto: Subsanación de documentos anexos formato 10

Cordial Saludo.

Luis Alfredo león rodríguez identificado con cedula de ciudadanía No. 5.697.305 de Onzaga Santander, representante legal de **ASOINGENIERIA DEL ORIENTE SAS**, con Nit 804.003.583-2, hago entrega de los anexos solicitados del formato 10 para la subsanación del proceso de la referencia.

Agradeciendo la atención a mi solicitud

Atentamente,

LUIS ALFREDO LEÓN RODRIGUEZ
R.L. ASOINGENIERIA DEL ORIENTE SAS.
C.C. 5.697.305

MegaLed

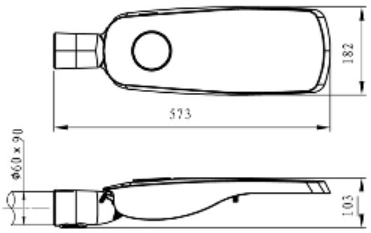


D-180S



DESCRIPCIÓN

Cuerpo:	**Aluminio fundido a presión**
Sistema Óptico:	**Lentes de distribución de luz modulares, difusor con vidrio templado súper blanco**
Placa montaje:	**Placa de acero galvanizado**
Acabado:	**Procesamiento de pulverización electrostática antienvejecimiento superficial, súper resistencia a la corrosión.**
Altura montaje:	**3 a 14 m**
Fijación:	**Ajuste superior o lateral de Ø60 mm, el ángulo puede ser ajustable.**
Color:	**Gris mate RAL 9007, (cualquier otro color disponible bajo pedido).**
Fuente de luz:	**Blanco cálido de 3.000 °K a 6.500 °K**







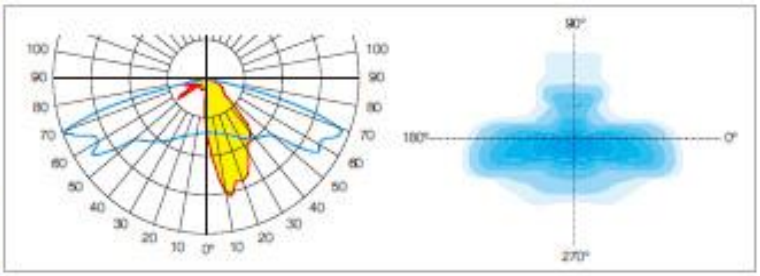


MegaLed

DISTRIBUCIONES DE LUZ

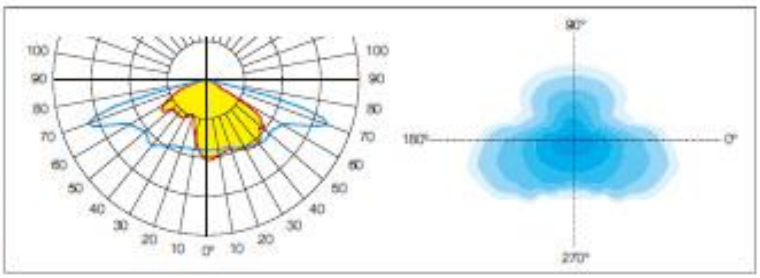
T2A





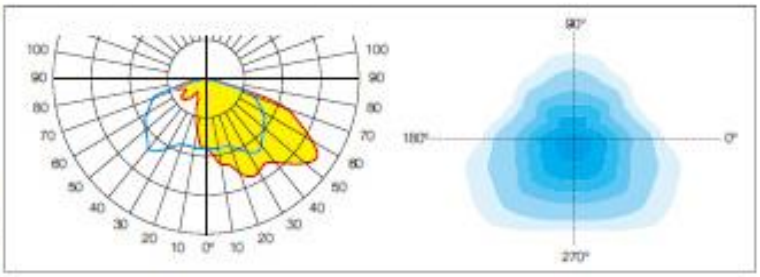
T3A





T4A





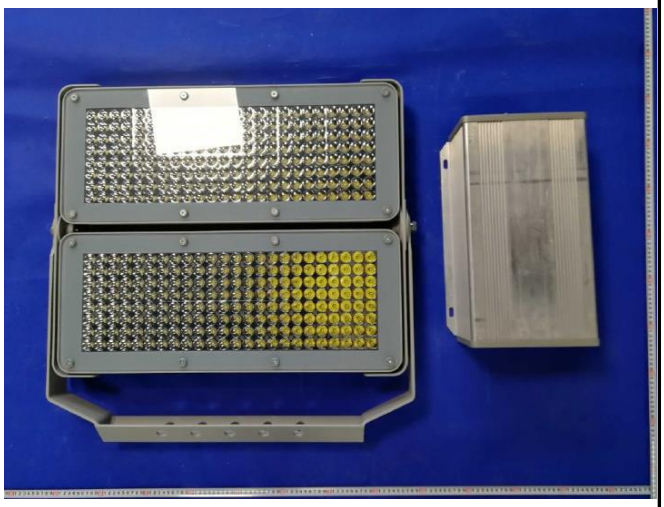
CARACTERÉSTICAS TÉCNICAS D-180S

REFERENCIA	D-180S	D-180S	D-180S
Grado de Protección IP	IP 66	IP 66	IP 66
Grado de Protección IK	IK 0.8	IK 0.8	IK 0.8
Fuente de Luz	LED ALTA EFICIENCIA Blanco Cálido de 3.000 °K a 6.500 °K CRI > 75 6.250 Lm a 12.500 Lm	LED ALTA EFICIENCIA Blanco Cálido de 3.000 °K a 6.500 °K CRI > 75 12.500 Lm a 25.000 Lm	LED ALTA EFICIENCIA Blanco Cálido de 3.000 °K a 6.500 °K CRI > 75 25.000 Lm a 50.000 Lm
POTENCIA	50 W a 100 W	100 W a 200 W	200 W a 400W
Voltaje / Frecuencia	100-277V / 50-60 Hz	100-277V / 50-60 Hz	100-277V / 50-60 Hz
Garantía	10 Años	10 Años	10 Años
Dimensiones	500×386×110	660×470×115	660×470×115
Peso aprox.	9,2 Kg	13,3 Kg	13,3 Kg
Unidades por caja	1	1	1

Prüfbericht-Nr.: *Test Report No.*:	50293432 001	**Auftrags-Nr.:** *Order No.*:	244171479	**Seite 1 von 13** *Page 1 of 13*
Kunden-Referenz-Nr.: *Client Reference No.*:	--	**Auftragsdatum:** *Order date*:	10.09.2019	

Auftraggeber: *Client*:	**Ningbo King-Bridge Lighting Technology Co., Ltd.** NO.8 Xingfu Road. Xinqiao Industry Zone, Yangming Street, Yuyao, 315400 Zhejiang Province, China
Prüfgegenstand: *Test item*:	LED luminaire
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	TG-163LLED1200
Auftrags-Inhalt: *Order content*:	Test report
Prüfgrundlage: *Test specification*:	IEC 62722-2-1:2014 for use in conjunction with IEC 62722-1:2014

Wareneingangsdatum: Date of receipt:	10.10.2018
Prüfmuster-Nr.: *Test sample No.*:	A000979825-036
Prüfzeitraum: *Testing period*:	15.10.2018-30.03.2019
Ort der Prüfung: *Place of testing*:	Shanghai Xingshang Photoelectric Technology. Co., LTD
Prüflaboratorium: *Testing laboratory*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfergebnis*: *Test result**:	Pass



geprüft von / *tested by*:			**kontrolliert von /** *reviewed by*:		
17.09.2019	Fernando Dai /PE	Fernando Dai	17.09.2019	Jimmy Wang /Reviewer	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*

The LED luminaires are equipped the LED module “LED Module TG-163LLED1200”.
The LED module “LED Module TG-163LLED1200” are tested according to IEC 62717:2014, AMD1:2015, details refer to test report 50293360 001.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery*:	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

V04

TEST REPORT
IEC 62722-2-1
Luminaire Performance
Part 2: Particular requirements:
Section One – LED luminaires

Report Number..... :	**50293432 001**
Date of issue..... :	**See cover page**
Total number of pages..... :	**See cover page**
Name of Testing Laboratory preparing the Report..... :	**TÜV Rheinland (Shanghai) Co., Ltd.** No. 177, 178, Lane 777 West Guangzhong Road Jing'an District Shanghai CHINA
Applicant's name..... :	**Ningbo King-Bridge Lighting Technology Co., Ltd.**
Address..... :	NO.8 Xingfu Road. Xinqiao Industry Zone, Yangming Street, Yuyao, 315400 Zhejiang Province, China
Test specification:	
Standard..... :	IEC 62722-2-1:2014 for use in conjunction with IEC 62722-1:2014
Test procedure..... :	Test report
Non-standard test method..... :	N/A
Test Report Form No..... :	IEC62722_2_1C
Test Report Form(s) Originator ... :	DEKRA Certification B.V.
Master TRF..... :	Dated 2018-01-23

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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description.....:	LED luminaire
Trade Mark.....:	N/A
Manufacturer.....:	**Ningbo King-Bridge Lighting Technology Co., Ltd.** NO.8 Xingfu Road. Xinqiao Industry Zone, Yangming Street, Yuyao, 315400 Zhejiang Province, China
Model/Type reference.....:	TG-163LLED1200
Ratings.....:	100-240V~, 50-60Hz, 1200W, 6500K

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**Testing Laboratory:**	**TÜV Rheinland (Shanghai) Co., Ltd.**	
Testing location/ address.....:		No. 177, 178, Lane 777 West Guangzhong Road Jing'an District Shanghai CHINA	
Tested by (name, function, signature).....:		See cover page	
Approved by (name, function, signature)..:		See cover page	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:		N/A	
Tested by (name, function, signature).....:		N/A	
Approved by (name, function, signature)..:		N/A	
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:		N/A	
Tested by (name + signature).....:		N/A	
Witnessed by (name, function, signature).:		N/A	
Approved by (name, function, signature)..:		N/A	
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:		N/A	
Tested by (name, function, signature).....:		N/A	
Witnessed by (name, function, signature).:		N/A	
Approved by (name, function, signature)..:		N/A	
Supervised by (name, function, signature):		N/A	

List of Attachments (including a total number of pages in each attachment):

Attachment 1: Light distribution test result (1# sample), 1 page.

Attachment 2: photo documents, 2 pages.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
IEC 62722-2-1:2014 for use in conjunction with **IEC 62722-1:2014** All related tests are performed in **Shanghai Xingshang Photoelectric Technology. Co., LTD**	**Shanghai Xingshang Photoelectric Technology. Co., LTD** 1/F., Building 5, No.1600, Guoquan North Road, Yangpu District, Shanghai, P. R. China

Summary of compliance with National Differences (List of countries addressed):

N/A

Copy of marking plate:

N/A

Test item particulars.....:	LED luminaire
Classification of installation and use.....:	IP66
Supply Connection.....:	Continuous
.....:	
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing ..... :	
Date of receipt of test item..... :	10.10.2019
Date (s) of performance of tests ..... :	15.10.2019-30.03.2019

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

The tests results presented in this report relate only to the object tested.
This report shall not be reproduced except in full without the written approval of the testing laboratory.

List of test equipment must be kept on file and available for review.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....:	**Ningbo King-Bridge Lighting Technology Co., Ltd.** NO.8 Xingfu Road. Xinqiao Industry Zone, Yangming Street, Yuyao, 315400 Zhejiang Province, China

General product information and other remarks:

1. LED luminaire, type: TG-163LLED1200, for general lighting use.
2. 100-240V~, 50-60Hz, 1200W, 6500K.
3. The LED luminaires are equipped the LED module "LED Module TG-163LLED1200".
4. The LED module "LED Module TG-163LLED1200" are tested according to IEC 62717:2014, AMD1:2015, details refer to test report 50293360 001.

IEC 62722-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL REQUIREMENTS**		
	Safety requirement of luminaire considered	Standard 60598-2-5 Yes ☒ No ☐	P
	Light source and components delivered with the luminaire shall comply with the requirements of the appropriate IEC performance standards		P
	Performance requirement of IEC/PAS 62722-1 considered		P
	Type of LED luminaires	Type A ☒ Type B ☐ Type C ☐	P
	The LED luminaire shall be so designed and constructed that it can start and operate satisfactorily at voltages between 92% and 106% of rated supply voltage		P
4	**PRODUCT INFORMATION**		
	- Rated input power (W) .....:	1200W	P
	- Photometric code.....:	765/779	P
	- Rated luminous flux (lm) .....:	145200	P
	- Rated median useful life (h) and the associated rated lumen maintenance factor (x) .....:	Rated life: 50000h Rated lumen maintenance factor: 90%	P
	- Rated abrupt failure value (%) .....:	3%	P
	- Lumen maintenance code.....:	9	P
	- Rated chromaticity co-ordinate values both initial and maintained.....:	Initial: 7 Maintained: 7	P
	- Rated correlated colour temperature (CCT in K)..:	6500K	P
	- Rated colour rendering index (CRI).....:	70	P
	- Rated ambient temperature (t_q) related to performance for a luminaire (°C) .....:	25°C	P
	- Rated LED luminaire luminous efficacy (in lm/W)..:	121lm/W	P
	- Ageing time, if different from 0 h (h).....:	0h	P
6	**TEST CONDITIONS**		
6.1	Test conditions for testing electrical and photometric characteristics, lumen maintenance and life comply with annex A		P
	Sample size.....:	1 pc	P
	LED luminaires with dimming control		N/A
	LED luminaires with adjustable CCT		N/A

IEC 62722-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	LED luminaires of geometry and variable length		N/A
6.2	**Luminaires with LED modules in compliance with IEC 62717 (Type A)**		**P**
	Thermal test according 12.4 of IEC 60598-1	See table 6.2	P
	LED module operates within its temperature limit t_p		P
6.3	**Luminaires with LED modules not in compliance with IEC 62717 (Type B)**		**N/A**
6.3.1	Test duration: 25% of rated life up to a maximum of 6000 h		N/A
6.3.2	Creation of module families to reduce test effort		N/A
6.3.2.1	General – cl 6.2.1 of IEC 62717 applied		N/A
6.3.2.2	Variations within family – cl 6.2.2 of IEC 62717 applied		N/A
6.3.2.3	Compliance testing of family members – cl 6.2.3 of IEC 62717 applied		N/A
7	**INPUT POWER (See table 7, 8.1 & 8.3)**		
	Initial power consumed by LED luminaire not exceeds rated power by more than 10 %.....:	Max. -1,92%	P
8	**PHOTOMETRIC PERFORMANCE (See table)**		
8.1	**Luminous flux (See table 7, 8.1 & 8.3)**		**P**
	Initial luminous flux not less than rated luminous flux by more than 10 %.....:	Min. 1,52%	P
8.2	**Luminous intensity distribution, peak intensity and beam angle (See table 8.2)**		**P**
8.2.3	Luminous intensity distribution	Under consideration	N/A
8.2.4	Initial peak intensity of LED luminaire (directional type only) not less than 75% of rated intensity .....:	Min. 105,46%	P
8.2.5	Beam angle value of LED luminaire (directional type only) not deviates by more than 25% of rated value.:	Max. 6,67%	P
8.3	**Luminaire luminous efficacy (See table 7, 8.1 & 8.3)**		**P**
	Efficacy of LED luminaire not less than 80% of rated efficacy.....:	Min. 100,43%	P
9	**CHROMATICITY CO-ORDINATES, CORRELATED COLOUR TEMPERATURE AND COLOUR RENDERING**		
9.1	Measured chromaticity co-ordinate values of a LED luminaire (the initial value and maintained value) are within the chromaticity co-ordinate tolerance category	See table 9.1	N/A
9.2	Measured CCT within the value as declared	See table 9.2 & 9.3	N/A

IEC 62722-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.3	Measured CRI not decreased by more than 3 points from rated CRI value for initial CRI values	See table 9.2 & 9.3	N/A
	Measured CRI not decreased by more than 4 points from rated CRI value for maintained CRI values	See table 9.2 & 9.3	N/A
10	**LED LUMINAIRE LIFE**		
10.2	Measured flux value at 25% of rated life (with a maximum duration of 6000 h) not less than the maximum lumen maintenance value related to the rated life	See table 10.2	N/A
	Measured lumen maintenance corresponds with “lumen maintenance code”		N/A
	All the LED modules within a sample comply		N/A
10.3	Temperature cycling test		N/A
	Alternative test used	☐ Alternative test 1 (10K/min) ☐ Alternative test 2 (1K/min)	-
	LED luminaire operates and luminous flux stays within the claimed lumen maintenance code for a period of at least 15 minutes		N/A
	LED luminaire show no physical effects		N/A
	Supply switching test		N/A
	LED luminaire operates and luminous flux stays within the claimed lumen maintenance code for a period of at least 15 minutes		N/A
	Accelerated operation life test		N/A
	LED luminaire remains alight for at least 15 minutes after cooling down to room temperature		N/A

IEC 62722-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

6.2	TABLE: Heating Test		P
	Test voltage (V).....:	230V~	—
	Test current (A).....:	5,19	—
	Ambient (t_q) (°C).....:	50	—

Thermocouple Locations	Max. temperature measured, (°C)	Max. temperature limit, (°C)
LED module (t_p)	77,7	80
Supplementary information: N/A		

7, 8.1 & 8.3	TABLE: Input Power & Photometric Performance					
Sample	**Measured power (W)**	**Rated power (W)**	**Measured luminous flux (lm)**	**Rated luminous flux (lm)**	**Calculated efficacy (lm/W)**	**Rated efficacy (lm/W)**
TG-163LLED1200	1177,0	1200	142986	145200	121,52	121
Supplementary information: N/A						

8.2	TABLE: Peak Intensity and Beam Angle				
Sample	**Measured peak intensity**	**Rated peak intensity**	**Measured beam angle (°)**	**Rated beam angle (°)**	**Comments**
TG-163LLED1200	1370987	1300000	14	15	-
Supplementary information: N/A					

9.1	TABLE: Chromaticity Co-ordinates				N/A
Sample	**Initial chromaticity co-ordinates**		**Maintained chromaticity co-ordinates**		**Comments**
	x	**y**	**x**	**y**	
-	-	-	-	-	-
Supplementary information:					

9.2 & 9.3	TABLE: CCT and CRI				N/A
Sample	**Measured CCT (K)**	**Rated CCT (K)**	**Initial CRI**	**Maintained CRI**	**Rated CRI**
-	-	-	-	-	-
Supplementary information:					

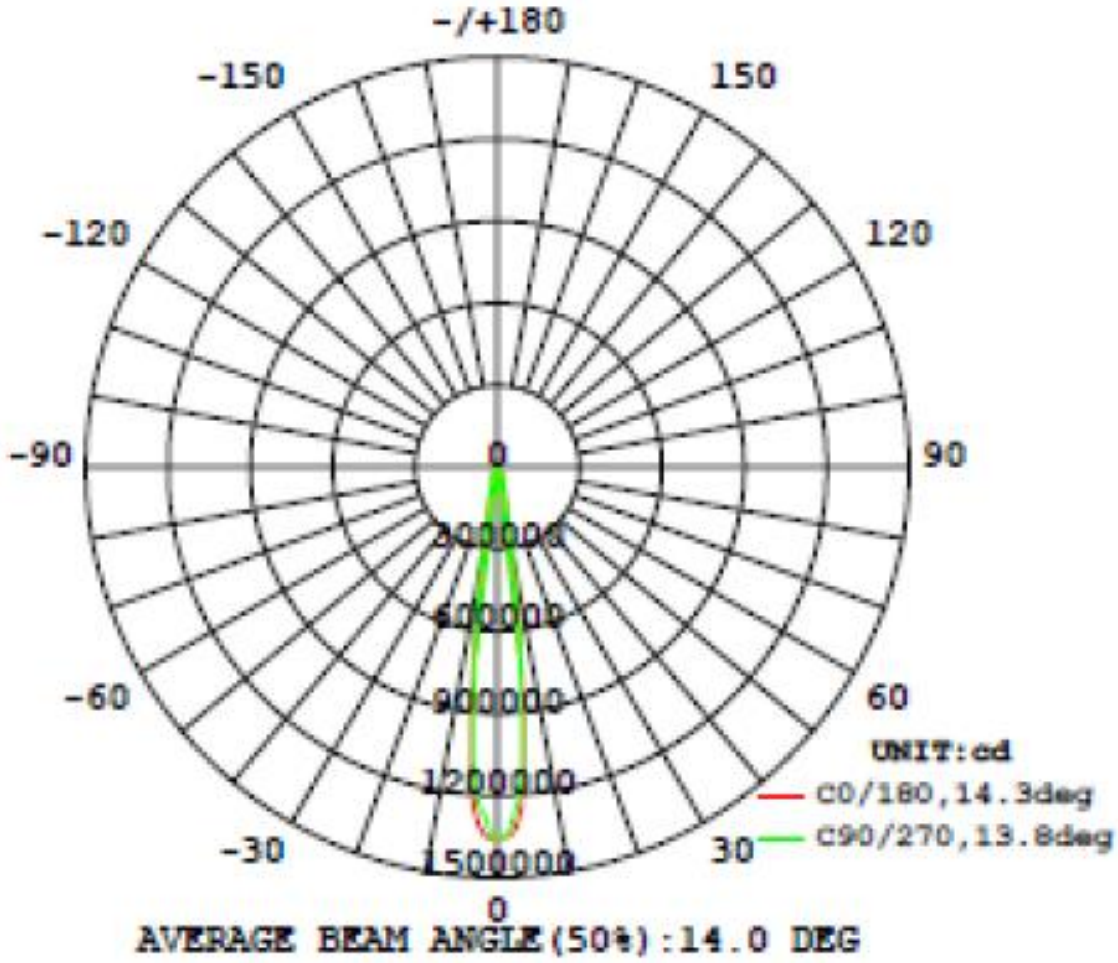
IEC 62722-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

10.2	**TABLE: Lumen Maintenance**		**N/A**
	Test voltage (V) ..... :	-	**—**
	Test current (A) ..... :	-	**—**
	Ambient (t_q) (°C) ..... :	-	**—**
	LED Module temperature (t_p) (°C) ..... :	-	**—**

Sample	Lumen 0hr (lm)	Lumen 1000hr (lm)	Lumen 2000hr (lm)	Lumen 3000hr (lm)	Lumen 4000hr (lm)	Lumen 5000hr (lm)	Lumen 6000hr (lm)
-	-	-	-	-	-	-	-

Supplementary information:

Attachment 1: Light distribution test result (1# sample)



Attachment 2: photo documents



Overview



LED module



Open view



LED driver

Choose certainty.
Add value.

Technical Report No. 704021712536-00

Rev. 00

Dated 2018-02-08

Client:	Ningbo King-Bridge Lighting Technology Co.,Ltd. No.8 Xingfu Road, Xinqiao Industry Zone, Yangming Street, 315400, Yuyao, Zhejiang Province, People's Republic of China
Manufacturing place:	Ningbo King-Bridge Lighting Technology Co.,Ltd. No.8 Xingfu Road, Xinqiao Industry Zone, Yangming Street, 315400, Yuyao, Zhejiang Province, People's Republic of China
Test subject:	Product: LED Floodlight Type: TG-163SLED; TG-163LLED; TG-161LLED; TG-161MLED; TG-161SLED; TG-161S1LED
Test specification:	IEC 60598-2-3:2002 + A1:2011 & IEC 60598-1:2014
Purpose of examination:	• According to client's requirement for above mentioned model - IK09 test - IP66 test
Test result:	**PASS**

TPS_GCN_F_09.20E – Rev. 1 2012-10-29

Telephone : +86 021 61410123
Telefax : +86 021 61408600

http://www.tuv-sud.cn

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
TÜV SÜD Group

No.88 Heng Tong Road, Shanghai 200070, P.R.China.

1 Description of the test subject

.

1.1 Technical Data

Rated voltage: 100-240V~
Rated frequency: 50/60Hz
Rated power: TG-163SLED: 600W; TG-163LLED: 1200W; TG-161LLED: 480W; TG-161MLED: 300W; TG-161SLED: 200W; TG-161S1LED: 100W
Protection Class: Class I
Degree of protection: IP66

2 Order

2.1 Date of Purchase Order, Customer's Reference

2017-11-16

Receipt of Test Sample, Location

2017-11-16

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

No. 1999, Duhui Road, Shanghai, 201108, P. R. China

2.2 Date of Testing

2017-11-16 to 2018-02-05

2.3 Location of Testing

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Telephone : +86 021 61410123
Telefax : +86 021 61408600

http://www.tuv-sud.cn

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
TÜV SÜD Group

No.88 Heng Tong Road, Shanghai 200070, P.R.China.

2.4 Points of Non-compliance or Exceptions of the Test Procedure

None

3 Test specification

Test methods: According to IEC 60598-2-3:2002 + A1:2011 & IEC 60598-1:2014.

We pick up the TG-163LLED with highest wattage and largest dimension as typical test sample.

1. Impact energy was shown as blow:

IK code	IK00	IK01	IK02	IK03	IK04	IK05	IK06	IK07	IK08	IK09	IK10
Impact energy, J	*	0,14	0,2	0,35	0,5	0,7	1	2	5	10	20

* Not protected according to this standard.

NOTE 1 When higher impact energy is required, the value of 50 J is recommended.

NOTE 2 A characteristic group numeral of two figures has been chosen to avoid confusion with some national standards which used a single numeral for a specific impact energy.

2. Requirement of IP test:

IP Level 1st Digit		IP Level 2nd Digit De	
0	Not protected	0	Not protected
1	Protected against solid foreign objects of 50 mm diameter and greater	1	Protected against vertically falling water drops
2	Protected against solid foreign objects of 12,5 mm diameter and greater	2	Protected against vertically falling water drops when enclosure is tilted up to 15 °
3	Protected against solid foreign objects of 2,5 mm diameter and greater	3	Protected against water sprayed at an angle up to 60 ° on either side of the vertical
4	Protected against solid foreign objects of 1,0 mm diameter and greater	4	Protected against water splashed against the component from any direction
5	Protected from the amount of dust that would interfere with normal operation	5	Protected against water projected in jets from any direction
6	Dust tight	6	Protected against water projected in powerful jets from any direction
		7	Protected against temporary immersion in water
		8	Protected against continuous immersion in water, or as specified by the user

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Telefax : +86 021 61408600

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TÜV SÜD Group

No.88 Heng Tong Road, Shanghai 200070, P.R.China.

4 Deviations

N/A

5 Instruction manual

N/A

6 Photograph







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TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
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TÜV SÜD Certification and Testing (China)Co.,Ltd. Shanghai Branch
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TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
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TEST REPORT
IES LM-79-08
TÜV SÜD Test Report for
Electrical and Photometric Measurments of Solid-State Lighting Products

Report reference No. ..... :	70.402.18.355.16-02
Date of issue ..... :	2018-11-01
Project handler..... ..... :	Mr. Tianchen ZHANG
Testing laboratory..... :	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
Address ..... :	No. 151 Hengtong Road, 200070, Shanghai, P.R.China.
Testing procedure ..... :	☐ TMP ☐ WMTL ☐ SMTL ☐ LTR
Testing location ..... :	No. 1999, Duhui Road, Shanghai, 201108, P. R. China
Client ..... :	Ningbo King-Bridge Lighting Technology Co., Ltd.
Client number..... :	001704
Address ..... :	No.8 Xingfu Road, Xinqiao Industry Zone, Yangming Street, 315400 Yuyao, Zhejiang Province, PEOPLE'S REPUBLIC OF CHINA
Contact person..... :	Mr. Dongliang HU
Standard..... :	This TÜV SÜD test program is based on the following requirements: IES LM-79-08
TRF originated by..... :	TÜV SÜD Product Service GmbH, Mr. Kenneth Lau
Copyright blank test report..... :	This test report is based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by TÜV SÜD Product Service GmbH. TUV SUD Group takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.
Test procedure ..... :	☐ TÜV Mark ☒ without certification
Non-standard test method..... :	N/A
National deviations ..... :	N/A
Number of pages (Report) ..... :	13
Number of pages (Attachments)..... :	N/A

Compiled by.... : Approved by ....:

(+ signature) Mr. Tianchen ZHANG (+ signature) Ms. Lucy LU

Test sample ..... :	1 pre-production sample from factory
Type of test object ..... :	LED Luminaire
Trade mark ..... :	N/A
Model and/or type reference ..... :	TG-163LLED1200-384
Rating(s) ..... :	100-240VAC, 50-60Hz, 1200W, 6500K
Manufacturer ..... :	Ningbo King-Bridge Lighting Technology Co., Ltd.
Manufacturer number ..... :	001704
Address ..... :	No.8 Xingfu Road, Xinqiao Industry Zone, Yangming Street, 315400 Yuyao, Zhejiang Province, PEOPLE'S REPUBLIC OF CHINA
Sub-contractors/ tests (clause) ..... :	N/A
Name ..... :	N/A

Order description ..... :

☐	Complete test according to TRF
☒	Partial test according to manufacturer's specifications
☐	Preliminary test
☐	Spot check
☐	Other:

Date of order ..... :	2018-07-25
Date of receipt of test item .....:	2018-10-10
Date(s) of performance of test..... :	2018-10-15

Test item particulars (delared):

Lamp cap installed :	N/A
Rated Votage: (V)	100-240VAC
Rated Power: (W):	1200W
Rated Power Factor :	N/A
Rated Luminous Flux : (lm)	N/A
Rated CCT : (K)	6500
Rated CRI :	N/A
Dimmable	Yes

Attachments:

1. Test Equipment List

General remarks:

"(see remark #)" refers to a remark appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report a comma is used as the decimal separator.
The test results presented in this report relate only to the object tested.
This report shall not be reproduced except in full without the written approval of the testing laboratory.

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch is an accredited Test Laboratory (A2LA Lab Cert. No.: 3745.01) to IESNA LM-79-08 by A2LA (American Association for Laboratory Accreditation).	Cert. No.: 3745.01

Summary of testing:

☐ deviation(s) found

☒ no deviations found

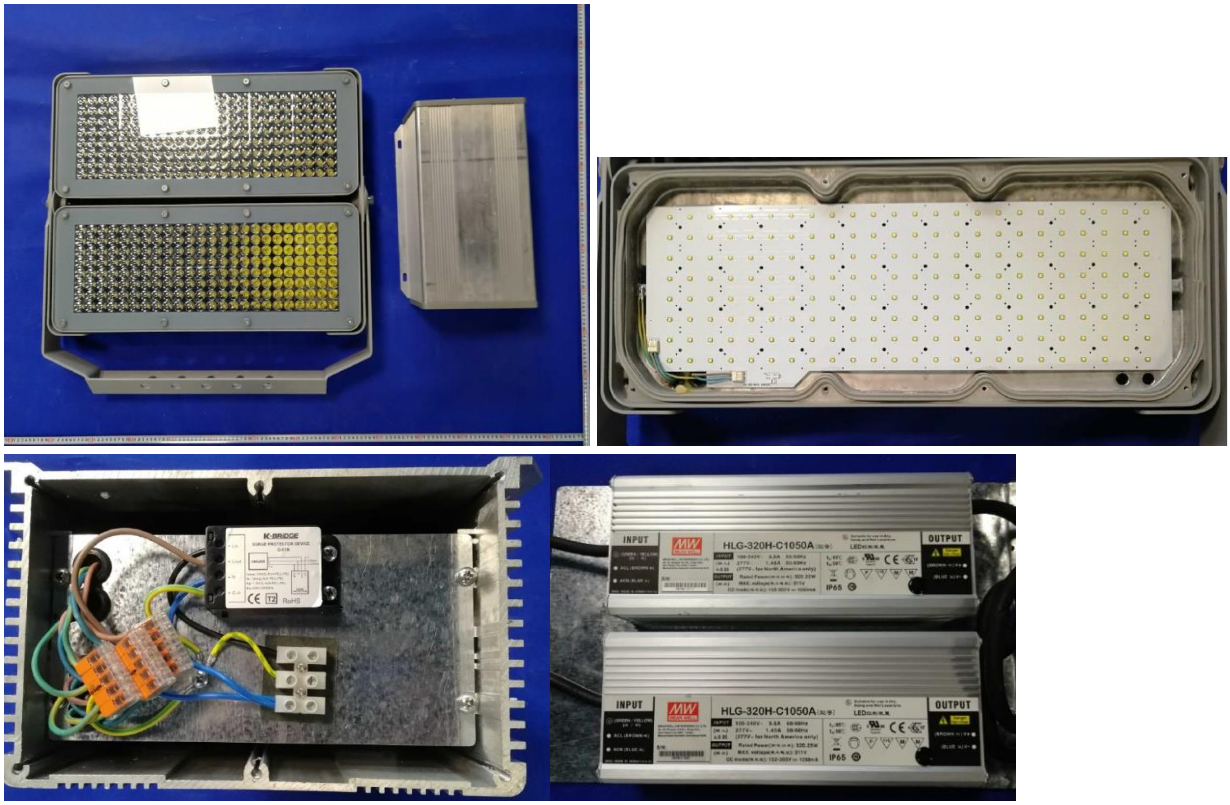
The specifications are met .

Model:	TG-163LLED1200-384	
	Integrating Sphere	Goniophotometer
Input Voltage (VAC)	230.03	230.0
Input Current (Amps)	5.199	5.192
Input Frequency (Hz)	50	50
Power Factor	0.984	0.9851
Input Power (Watts)	1176.50	1177.0
Luminous Efficacy (Lumens/Watt)	-	121.52
Luminous Flux (Lumens)	-	142986
Beam angle (°)	-	14.0
CCT (K)	6330	-
CRI	71.5	-
ISTMT (In-Situ Temp Test) (°C)	-	-

Copy of marking plate:

NOT Provided

Picture of the product:



Picture of In-Situ Temp Test

N/A

Characteristic data

Dimmension:

Luminaire: 615mm*825mm*106mm; External driver: 278mm*455.2mm*155mm

Weight: 49kg (with external driver)

Purpose of the product

LED Luminaire for for generally lighting purpose.

Possible test case verdicts:

- test case does not apply to the test object: ……..……: N(.A.) / not included in the order
- test object does meet the requirement……..……: P(ass)
- test object does not meet the requirement: …..……: F(ail)

Possible suffixes to the verdicts:

- suffix for detailed information for the client……..:- C(omment)
- suffix for important information for factory inspection...: - M(anufacturing)

Clause	Requirement – Test	Measuring result – Remark	Verdict
2.0	Ambient Conditions		P
2.1	Genaral		P
2.2	Air Temperature		P
2.3	Thermal Condition for Mounting SSL Products		P
2.4	Air Movement		P
3.0	Power Supply Characteristics		P
3.1	Waveshape of AC power supply		P
3.2	Voltage regulation		P
4.0	Seasoning of SSL Product		P
	No seasoning of SSL product		P
5.0	Stabilisation of SSL Product		P
	SSL product has sufficiently satbilised before measurment		P
6.0	Operation Orientation		P
	SSL product shall be stabilized and measured in intended operating orientation		P
7.0	Electrical Settings		P
	SSL product shall be operated at rated voltage		P
	SSL product with dimming capability are tested at maximum input power condition		P
	SSL product with different modes are measured in all relvant modes		N/A
8.0	Electrical Instrumenttions		P
8.1	Circuits		P
8.2	Uncertainties		P
9.0	Testmethodes for Luminous Flux measurment		P
9.1	Integrating sphere with a spectroradiometer (Sphere-spectroradiometer system)		P
9.2	Integrating sphere with a photometer head (Sphere-photometer system)		P
9.3	Goniophotometer		P
10.0	Luminous Intensity Distribution		P
	Reporting acc. to IEC LM-63		P
11.0	Luminous Efficay		P
	Calculation	See table 1	P
12.0	Test Methodes for Color Characteristics of SSL Products		P

Clause	Requirement – Test	Measuring result – Remark	Verdict
	Measurments	See table 1	P
13.0	Uncertainty statement		N/A

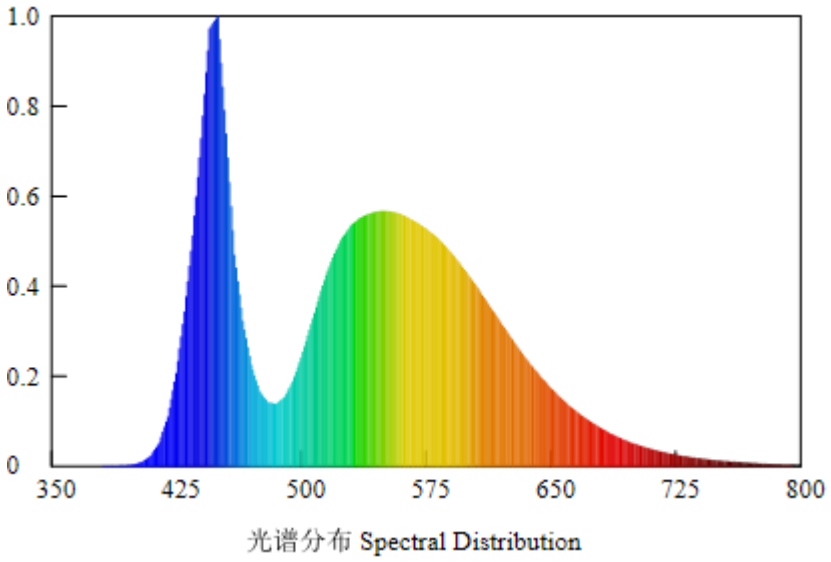
Table 1a	**Test data**		
Model:	TG-163LLED1200-384		
Rated Voltage (V):	100-240	Rated Power (W):	N/A
Rated luminous flux (lm):	-	Ambient temperature 25 ±1 (°C):	25.0
Test item		**Measured Value**	
		Integrating Sphere	Goniophotometer
Key Photometric Results			
Luminous Efficacy (Lumens/Watt)		-	121.52
Total Luminous Flux (Lumens)		-	142986
Correlated Color Temperature (CCT:K)		6330	-
Color Rendering Index (CRI)		71.5	-
Chromaticity (Chroma x / Chroma y)		0.3150 / 0.3370	-
Chromaticity (Chroma u / Chroma v)		0.1965 / 0.3172	-
Chromaticity (Chroma u' / Chroma v')		0.1965 / 0.4729	-
Duv Value		+0.00609	-
Stabilization Time (Light and Power)		60	60
Total Run Time – (Minutes)		65	70
Spacing Criteria (C/γ)		-	C:15.0° / γ:1.0°
ZL: 0-90°		-	100%
Electrical Input Results			
Input Power (Watts)		1176.50	1177.0
Input Voltage (Volts AC)		230.03	230.0
Input Current (Amps)		5.199	5.192
Input Frequency (Hertz)		50	50
Power Factor		0.984	0.9851
A-THD (Current – Total Harmonic Distortion)		-	-
Additional Information			
Ambient Temperature (°C):		25	25.0
Photometric measurement condition		-	-
Number of hours operated prior to measurement		0h	
ISTMT (In-Situ Temperature Measurement) (°C):		-	
Orientation (burning position)		Base up & center	
Photometric measurement condition		-	-

Supplementary Information:

- Absorbtion Correction used: Yes
- Stabilization was considered reached by: the variation (maximum-minimum) of at least 3 readings of the light output and electrical power over a period of 30 minutes is less than 0,5%.

Table 2	SPECTRAL FLUX GRAPH
Model	TG-163LLED1200-384

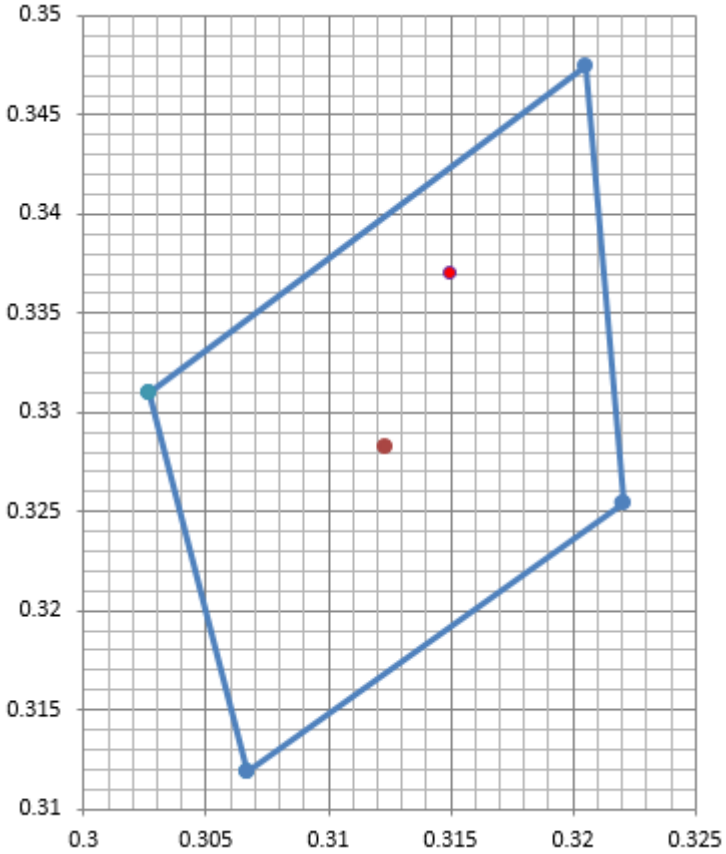
The following graph shows the spectral response curve of the radiant flux for the sample: (380nm to 780nm – calibrated range of the Spectroradiometer)



Spectral response of the Radiant Flux

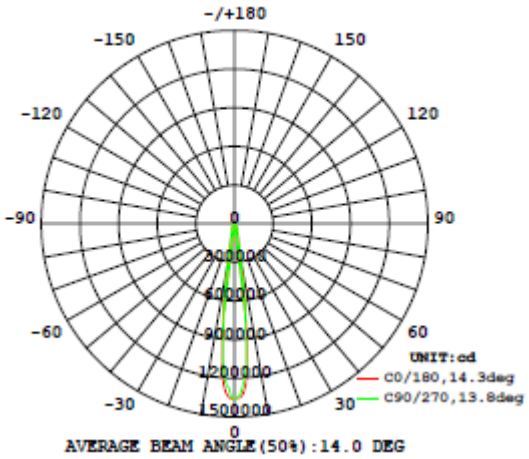
Table 3	CHROMATICITY DIAGRAM
Model	TG-163LLED1200-384

ANSI 6500K



Tristimulus values (from Table 1):
x / y = 0.3150 / 0.3370
Location is indicated by: The X point.

Table 4	LIGHT DISTRIBUTION & ZONAL FLUX DIAGRAM
Model	TG-163LLED1200-384



γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	η1m,1anp
10	270.3	275.4	262.6	276.1	264.8	284.6	265.9	277.4	0- 10	72545	72545	50.7,50.7
20	64.43	58.66	58.28	59.34	62.45	60.82	62.36	61.13	10- 20	30815	103360	72.3,72.3
30	43.43	45.41	40.42	45.79	42.39	45.78	41.83	46.14	20- 30	23255	126616	88.6,88.6
40	3.236	2.492	2.613	2.556	1.876	4.098	1.919	4.196	30- 40	14549	141164	98.7,98.7
50	0.4349	0.3804	0.4033	0.3769	0.4292	0.3758	0.4037	0.3771	40- 50	698.2	141863	99.2,99.2
60	0.2439	0.2207	0.2349	0.2161	0.2387	0.2185	0.2283	0.2196	50- 60	238.7	142101	99.4,99.4
70	0.1238	0.1082	0.1109	0.1036	0.1156	0.1005	0.1029	0.1025	60- 70	187.4	142289	99.5,99.5
80	0.0513	0.0395	0.0392	0.0358	0.0461	0.0321	0.0318	0.0341	70- 80	73.32	142362	99.6,99.6
90	0.0019	0.0015	0.0015	0.0014	0.0017	0.0014	0.0014	0.0013	80- 90	14.62	142377	99.6,99.6
100	0.0017	0.0013	0.0014	0.0014	0.0018	0.0015	0.0015	0.0016	90-100	1.618	142378	99.6,99.6
110	0.0017	0.0013	0.0014	0.0014	0.0020	0.0018	0.0016	0.0019	100-110	1.629	142380	99.6,99.6
120	0.0017	0.0019	0.0014	0.0018	0.0027	0.0102	0.0024	0.0107	110-120	1.956	142382	99.6,99.6
130	0.0093	0.0072	0.0101	0.0071	0.0413	0.0849	0.0430	0.0893	120-130	15.26	142397	99.6,99.6
140	0.0249	0.0154	0.0288	0.0139	0.0903	0.1114	0.0933	0.1158	130-140	38.90	142436	99.6,99.6
150	0.0544	0.0461	0.0768	0.0403	0.2015	0.4723	0.3195	0.4288	140-150	74.08	142510	99.7,99.7
160	0.1486	0.1651	0.2595	0.1477	0.9537	0.7477	1.478	0.8817	150-160	256.9	142767	99.8,99.8
170	0.2972	0.3345	0.3755	0.2961	0.5962	0.3956	0.7306	0.4761	160-170	183.7	142951	100,100
180	0.2509	0.1660	0.1679	0.1547	0.2682	0.2288	0.2636	0.2365	170-180	34.96	142986	100,100
DEG	LUMINOUS INTENSITY:×1000cd									UNIT:lm		

Table 5a	LUMINOUS DISTRIBUTION INTENSITY DATA
Model	TG-163LLED1200-384

Table--1 UNIT: ×1000cd

γ (DEG) \ C (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353
5	1126	1134	1122	1134	1140	1151	1133	1112	1093	1081	1097	1142	1172	1175	1157	1147	1140	1154	1121
10	270	271	273	273	274	277	280	280	271	263	265	269	274	277	275	275	273	270	265
15	102	100	96.3	92.1	89.7	90.1	91.0	93.5	93.4	93.6	93.0	91.7	90.6	90.4	90.1	91.7	95.3	99.4	98.8
20	64.4	62.2	60.0	58.8	58.3	59.0	59.0	59.0	58.4	58.3	58.5	58.7	58.9	59.5	59.1	59.1	60.3	62.5	62.5
25	50.3	49.5	49.4	49.8	50.2	50.7	50.1	48.9	47.2	46.8	47.4	48.7	50.2	51.1	50.8	50.1	49.7	49.9	49.4
30	43.4	43.4	43.8	44.8	45.1	45.7	45.2	43.3	41.3	40.4	41.6	43.4	45.3	46.0	45.6	45.0	43.8	43.1	42.4
35	24.0	24.1	24.4	25.1	25.3	25.8	24.9	23.0	21.1	20.4	21.1	22.7	24.8	25.8	25.8	25.0	24.1	23.7	22.6
40	3.24	2.11	2.15	2.36	2.53	2.45	2.10	1.89	1.80	2.61	2.64	1.83	2.13	2.55	2.56	2.28	2.10	3.12	1.88
45	0.88	0.78	0.74	0.75	0.77	0.79	0.75	0.74	0.73	0.80	0.72	0.71	0.74	0.78	0.78	0.75	0.76	0.80	0.86
50	0.43	0.37	0.37	0.37	0.38	0.38	0.38	0.37	0.36	0.40	0.36	0.36	0.37	0.38	0.37	0.38	0.38	0.38	0.43
55	0.30	0.25	0.25	0.25	0.26	0.26	0.25	0.25	0.25	0.28	0.24	0.24	0.25	0.26	0.25	0.25	0.25	0.26	0.29
60	0.24	0.21	0.21	0.22	0.22	0.22	0.22	0.21	0.21	0.23	0.21	0.21	0.21	0.22	0.21	0.21	0.22	0.21	0.24
65	0.33	0.30	0.29	0.29	0.28	0.27	0.27	0.26	0.26	0.28	0.26	0.27	0.28	0.28	0.29	0.30	0.29	0.29	0.29
70	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.11	0.10	0.10	0.11	0.10	0.10	0.10	0.11	0.11	0.12
75	0.09	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08
80	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05
85	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
130	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04
135	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.07
140	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.02	0.02	0.03	0.09
145	0.03	0.03	0.03	0.02	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.03	0.04	0.04	0.12
150	0.05	0.06	0.05	0.04	0.05	0.05	0.06	0.08	0.08	0.08	0.07	0.07	0.05	0.04	0.04	0.04	0.06	0.07	0.20
155	0.09	0.09	0.08	0.07	0.08	0.10	0.11	0.13	0.14	0.15	0.14	0.12	0.10	0.08	0.07	0.07	0.09	0.11	0.66
160	0.15	0.15	0.15	0.15	0.15	0.18	0.20	0.23	0.24	0.26	0.23	0.21	0.19	0.16	0.14	0.13	0.14	0.16	0.95
165	0.24	0.25	0.26	0.25	0.25	0.30	0.32	0.33	0.33	0.34	0.32	0.31	0.31	0.27	0.22	0.22	0.23	0.24	0.87
170	0.30	0.32	0.32	0.31	0.31	0.36	0.38	0.37	0.37	0.38	0.36	0.36	0.36	0.32	0.27	0.27	0.29	0.29	0.60
175	0.30	0.32	0.31	0.28	0.27	0.30	0.32	0.31	0.32	0.34	0.32	0.32	0.32	0.30	0.26	0.26	0.28	0.29	0.37
180	0.25	0.25	0.23	0.20	0.17	0.16	0.15	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.15	0.17	0.19	0.20	0.27

Table 5b	LUMINOUS DISTRIBUTION INTENSITY DATA
Model	TG-163LLED1200-384

Table--2 UNIT: ×1000cd

γ (DEG) \ C (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353		
5	1113	1110	1109	1125	1146	1127	1098	1046	1049	1071	1095	1118	1130	1115	1096	1086	1095		
10	263	273	279	283	286	280	273	264	266	271	280	284	281	274	270	265	261		
15	98.5	96.3	94.0	93.0	93.8	95.4	98.2	98.6	99.2	100	99.6	97.4	95.7	94.3	96.2	98.8	100		
20	61.8	60.4	60.0	60.4	61.2	60.5	61.0	61.3	62.4	62.5	61.9	61.9	61.6	60.7	60.6	61.5	63.3		
25	49.9	50.1	50.7	51.4	52.0	50.7	49.8	48.6	48.7	49.5	50.7	51.9	52.2	51.4	50.8	50.2	49.9		
30	43.2	43.8	44.5	45.8	45.7	44.9	43.4	42.0	41.8	42.9	44.3	45.5	46.6	45.7	44.9	43.8	43.2		
35	23.3	24.0	25.2	26.1	26.2	25.4	24.0	22.3	22.0	23.2	24.9	26.2	26.5	26.1	25.4	24.4	23.6		
40	1.95	2.07	4.48	4.10	4.09	3.85	2.04	1.96	1.92	2.01	2.13	4.05	4.25	4.14	3.91	2.14	1.99		
45	0.78	0.74	0.75	0.76	0.77	0.75	0.72	0.73	0.79	0.73	0.72	0.75	0.77	0.76	0.75	0.75	0.78		
50	0.37	0.37	0.37	0.37	0.38	0.37	0.36	0.36	0.40	0.36	0.36	0.37	0.38	0.38	0.37	0.38	0.38		
55	0.25	0.25	0.25	0.25	0.26	0.25	0.24	0.24	0.28	0.24	0.24	0.25	0.26	0.25	0.26	0.26	0.26		
60	0.21	0.21	0.21	0.22	0.22	0.21	0.21	0.20	0.23	0.20	0.21	0.22	0.22	0.22	0.22	0.22	0.22		
65	0.28	0.27	0.27	0.27	0.25	0.25	0.24	0.23	0.26	0.25	0.26	0.26	0.26	0.28	0.28	0.28	0.29		
70	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.10	0.09	0.10	0.10	0.10	0.10	0.11	0.11	0.11		
75	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.08	0.08		
80	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.05		
85	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
120	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00		
125	0.01	0.03	0.05	0.06	0.04	0.03	0.02	0.01	0.01	0.01	0.02	0.03	0.05	0.06	0.03	0.02	0.01		
130	0.06	0.08	0.08	0.09	0.08	0.06	0.05	0.04	0.04	0.05	0.06	0.07	0.09	0.09	0.06	0.06	0.04		
135	0.09	0.10	0.10	0.10	0.10	0.09	0.08	0.07	0.07	0.07	0.08	0.10	0.11	0.10	0.08	0.08	0.06		
140	0.12	0.14	0.14	0.11	0.12	0.11	0.10	0.09	0.09	0.10	0.11	0.13	0.13	0.10	0.12	0.12	0.08		
145	0.17	0.24	0.26	0.17	0.18	0.17	0.15	0.14	0.14	0.15	0.17	0.20	0.20	0.14	0.22	0.19	0.12		
150	0.37	0.74	0.86	0.44	0.50	0.51	0.40	0.33	0.32	0.35	0.43	0.57	0.56	0.30	0.62	0.55	0.24		
155	1.22	1.70	1.70	0.65	1.00	1.35	1.21	1.05	1.01	1.11	1.34	1.56	1.23	0.39	1.13	1.24	0.77		
160	1.48	1.79	1.58	0.63	0.86	1.55	1.63	1.51	1.48	1.56	1.75	1.88	1.37	0.39	0.87	1.28	1.10		
165	1.03	1.27	1.02	0.57	0.45	0.98	1.27	1.31	1.34	1.39	1.46	1.45	1.10	0.47	0.45	0.80	0.97		
170	0.59	0.66	0.57	0.43	0.36	0.45	0.59	0.68	0.73	0.75	0.76	0.71	0.55	0.40	0.37	0.47	0.60		
175	0.36	0.36	0.34	0.32	0.30	0.32	0.35	0.38	0.42	0.44	0.43	0.41	0.35	0.32	0.31	0.33	0.36		
180	0.26	0.26	0.25	0.24	0.22	0.24	0.25	0.26	0.26	0.27	0.27	0.26	0.24	0.23	0.22	0.25	0.27		

Attachment 2: Equipment List

No.	Type	Manufacture	Model	Equipment ID	Next Calibration
1	Full-field Speed Goniophotometer	Everfine	GO-R5000	S1207714-YQ	May. 18.2019
2	High-accuracy Digital Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714a-YQ	May. 18.2019
3	High-accuracy Digital Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714b-YQ	May. 18.2019
4	High Accuracy Array Spectroradio Meter	Everfine	HAAS-2000	S1207714c-YQ	May. 18.2019
5	Standard Light Source	Everfine	D908	S1207714d-YQ	May. 18.2019
6	Digital Power Meter	Yokogawa	WT310	S1310805-YQ	May. 18.2019
7	Digital CC & CV DC Power Supply	Everfine	WY12010	S1207714f-YQ	May. 18.2019
8	Intelligent AC Power Source	Everfine	DPS1060	S1207714g-YQ	May. 18.2019
9	Image Luminance Meter	Everfine	CX-2B_WL	S1207714h-YQ	May. 18.2019
10	DC Power Supply	Everfine	WY3010	S1108624-YQ	May. 18.2019
11	Flux Reference Lamp	Everfine	D204BH	S1108625-YQ	May. 18.2019
12	luminance Source	Everfine	SLS-150	S1108626-YQ	May. 18.2019
13	Thermometer	Fluke	Fluke 52-II	S0712414-YQ	May. 18.2019
Additional info of the Standard light: - HID, Omni, 557,81W, Traceability:NIM					

-- END OF TEST REPORT --