Outlook

RV: [EXTERNAL\EXTERNE:] RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Desde Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Fecha Jue 04/12/2025 15:51
Para Andrea Margarita Torres Castillo <amtorres@inm.gov.co>

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
Subdirección de Metrología Física
Instituto Nacional de Metrología
Teléfono: (57-1) 2542222 Ext: 1612
Av. Cra 50 No 26-55 Int. 2 CAN
Bogotá, D.C., Colombia
www.inm.gov.co

CELEBRANDO 150 Años de la Convención del Metro

Sabías que... "Con una tonelada de papel que no utilicemos evitamos la tala de 17 árboles nuevos, ahorramos agua en un 86%, energía en un 62.5% y disminuimos la contaminación".

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De: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Enviado: jueves, 4 de diciembre de 2025 13:59
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>; Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>; Andrea Margarita Torres Castillo <amtorres@inm.gov.co>; Oscar Francisco Torres Montaño <oftorres@inm.gov.co>
Asunto: RE: [EXTERNAL\EXTERNE:] RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hello Jorge,

Shipping and Receiving at NRC will be unavailable from 24 December 2025 until 1 January 2026 inclusive. Normally this should not present a problem as deliveries will be held by the logistics services until NRC business resumes on 2 January 2026, although I'm not entirely certain what happens in the event that there is communication required with NRC customs staff as they will not be in the office either.

If you would like to perfectly safe, I would suggest arranging for the package to be delivered to NRC on or after 2 January 2026.

Best Regards,
Greg

:.

Greg Reain

Research Officer
Metrology
National Research Council Canada / Government of Canada
greg.reain@nrc-cnrc.gc.ca / Tel: 613-998-5648

Agent de recherche
Métrologie

Conseil national de recherches Canada / Gouvernement du Canada
greg.reain@cnrc-nrc.gc.ca / Tél.: 613-998-5648

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: December 2, 2025 2:33 PM
To: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Cc: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>; Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>; Andrea Margarita Torres Castillo <amtorres@inm.gov.co>; Oscar Francisco Torres Montaño <oftorres@inm.gov.co>
Subject: RE: [EXTERNAL\EXTERNE:] RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**
Dear Ian, Greg and Sylvain

I hope you're well.
We are currently preparing the shipment of your gauge blocks. With the holidays approaching, we wanted to check when would be the best time for you to receive them.
Please let us know your preferred delivery window.

Best Regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
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De: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Enviado: miércoles, 29 de octubre de 2025 16:04
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>; Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>
Asunto: RE: [EXTERNAL\EXTERNE:] RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hello Jorge,
Thanks for the update. I'm sorry to hear that you are experiencing difficulties. We remain ready to accept your gauge blocks whenever you are able to have them delivered.

Regards,
Greg

:.

Greg Reain

Research Officer
Metrology
National Research Council Canada / Government of Canada
greg.reain@nrc-cnrc.gc.ca / Tel: 613-998-5648

Agent de recherche
Métrologie
Conseil national de recherches Canada / Gouvernement du Canada
greg.reain@cnrc-nrc.gc.ca / Tél.: 613-998-5648

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: October 29, 2025 3:59 PM
To: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Cc: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>; Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>
Subject: [EXTERNAL\EXTERNE:] RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Attention This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.

Dear Ian, Greg and Sylvain
I hope this email finds you well. I am writing to inform you that we are experiencing a delay with our shipment of gauge blocks due to an issue with our customs broker in Colombia. We are actively working to resolve this and are still aiming for delivery to the NRC in November.
Best Regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
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Teléfono: (57-1) 2542222 Ext: 1612
Av. Cra 50 No 26-55 Int. 2 CAN
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CELEBRANDO 150 Años de la Convención del Metro

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De: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Enviado: miércoles, 15 de octubre de 2025 10:27
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>; Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>
Asunto: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hello Jorge,
Examining the photos that you sent and the results your wringing tests, I see nothing that would prevent us from performing measurements on these blocks. There are no obvious discontinuities or raised areas visible in the fringe patterns, so that is encouraging. My recommendation would be to end them to us for calibration with the ret of the set.

Best Regards,
Greg

:.

Greg Reain

Research Officer
Metrology
National Research Council Canada / Government of Canada
greg.reain@nrc-cnrc.gc.ca / Tel: 613-998-5648

Agent de recherche
Métrologie
Conseil national de recherches Canada / Gouvernement du Canada
greg.reain@cnrc-nrc.gc.ca / Tél.: 613-998-5648

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: October 8, 2025 9:36 PM
To: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Cc: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>; Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>
Subject: EXT: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

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IMG_20251008_115222.jpg

IMG_20251008_115231.jpg

IMG_20251008_115353.jpg

IMG_20251008_115359.jpg

Dear Gregory
Attached you will find the fringe patterns from the two sides of the gauge blocks. Additionally, we tested the wringing capability of the gauge, and it appears to be satisfactory. If you observe anything concerning in the pictures, we would be grateful if you could let us know.
Best Regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
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De: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Enviado: miércoles, 8 de octubre de 2025 11:30
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>; Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>
Asunto: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hello Jorge,
It is difficult to discern from the photograph whether or not it will be possible to wring an auxiliary plate to the surface of the gauge in order to calibrate it. If you have an optical flat in very good condition you can examine the surface of the gauge block for defects by bringing the optical flat into close contact with the gauge surface and observe the resulting fringe pattern. Both surfaces must of course be absolutely clean and dust-free.

You can of course still send the gauge block to us and we can make a determination as to it's suitability for calibration here in our lab. Often the final determination cannot be made until calibration is attempted – sometimes gauges that look bad calibrate very well, sometimes the opposite is true. If it is relatively minor damage then often it is possible to recondition the surface using a gauge block stone to lightly displace any raised surface defects, thus restoring the surface to a sufficiently flat condition such that wringing is again possible. We can discuss a suitable course of action at that time if it cannot be calibrated.

Regards,
Greg

:.

Greg Reain

Research Officer
Metrology
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Agent de recherche
Métrologie
Conseil national de recherches Canada / Gouvernement du Canada
greg.reain@cnrc-nrc.gc.ca / Tél.: 613-998-5648

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: October 8, 2025 12:03 PM
To: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>; Nickerson, Amanda <Amanda.Nickerson@nrc-cnrc.gc.ca>; Dulude, Julie <Julie.Dulude@nrc-cnrc.gc.ca>
Subject: EXT: RE: RE: RE: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**

Dear Sylvain,

We would like to raise a technical question regarding the calibration service for our 500 mm gauge block. As you will see in the attached figure, we have recently discovered some marks on the gauge block. Please advise whether it would be possible to calibrate the gauge block using interferometry.
Best regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
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De: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Enviado: lunes, 22 de septiembre de 2025 12:02
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>; Nickerson, Amanda <Amanda.Nickerson@nrc-cnrc.gc.ca>; Dulude, Julie <Julie.Dulude@nrc-cnrc.gc.ca>
Asunto: RE: RE: RE: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hi Jorge,

Our finance team will provide you with the requested payment information and invoice soon.

Best regards,

Annamarie Sylvain

Business Services Officer, Metrology Research Centre
National Research Council Canada / Government of Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tel: 343-576-7371

Agente des services d'affaires, Centre de recherche en métrologie
Conseil national de recherches Canada / Gouvernement du Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tél: 343-576-7371

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: September 22, 2025 12:27 PM
To: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>; Nickerson, Amanda <Amanda.Nickerson@nrc-cnrc.gc.ca>
Subject: EXT: RE: RE: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**

Dear Sylvain
I hope this email finds you well. We are arranging payment for the service, but we need the information for the wire transfer. Could you please send us the SWIFT code, account number and any other information required?
Best regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
Subdirección de Metrología Física
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De: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Enviado: viernes, 19 de septiembre de 2025 13:18

Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>; Nickerson, Amanda <Amanda.Nickerson@nrc-cnrc.gc.ca>
Asunto: RE: RE: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hi Jorge,

The invoice is issued on completion of the calibration service. I will notify our finance team that you would like the invoice to be provided in CAD.

The technical lead, Greg Reain, will provide you with the approximate date the gauge blocks need to arrive to the NRC for the calibration.

Best regards,

Annamarie Sylvain

Business Services Officer, Metrology Research Centre
National Research Council Canada / Government of Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tel: 343-576-7371

Agente des services d'affaires, Centre de recherche en métrologie
Conseil national de recherches Canada / Gouvernement du Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tél: 343-576-7371

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: September 19, 2025 1:15 PM
To: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>; Nickerson, Amanda <Amanda.Nickerson@nrc-cnrc.gc.ca>
Subject: EXT: RE: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**

Dear Sylvain
I hope this mail finds you well, just for clarification, Do you need the payment before the arriving of the gauge blocks to the NRC?
Additionally, In order to avoid changes on the value to be paid we are going to work with the CAD. Finally for the calibration in which week do you need the gauge block arrive to NRC?
Best Regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
Subdirección de Metrología Física
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CELEBRANDO 150 Años de la Convención del Metro

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De: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Enviado: jueves, 18 de septiembre de 2025 8:51
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>; Nickerson, Amanda <Amanda.Nickerson@nrc-cnrc.gc.ca>
Asunto: RE: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hi Jorge,

Here's a copy of the quote with the price in US Dollars. Please be advised the price in USD is only provided as an estimate based on the current conversion rate of the Bank of Canada and the final price stated on the invoice may differ from this amount.

I have attached the email sent by my colleague to you on September 9th with the agreement for signature.

Let me know should you have any questions.

Best regards,

Annamarie Sylvain

Business Services Officer, Metrology Research Centre
National Research Council Canada / Government of Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tel: 343-576-7371

Agente des services d'affaires, Centre de recherche en métrologie
Conseil national de recherches Canada / Gouvernement du Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tél: 343-576-7371

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: September 16, 2025 12:59 PM
To: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Subject: EXT: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**

Dear Sylvain,
Yes, A customs agent, acting on behalf of our metrology institute, will be responsible for collecting the standards in Colombia, transporting them to the NRC facilities, and subsequently returning them to Colombia.
Finally, could you please send me the quotation in US dollars? Has your parent sent the agreement document, because I haven't received it?
Best Regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
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De: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Enviado: miércoles, 10 de septiembre de 2025 11:48
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Asunto: RE: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

Hi Jorge,

Can you confirm if you intend the hand-deliver and collect the gauges in-person? Please note that all shipping costs to and from the NRC are to be paid by the client. I am including our standard shipping instructions below for international shipments for your reference. This information can also be found here: Information on requesting instrument calibration services - National Research Council Canada

Options for arranging shipping from outside Canada:

- A common carrier (for packages of accepted size, dimension and weight)
- A temporary admission carnet (ATA Carnet)
- An appropriate freight forwarder that can handle all shipping logistics, including customs clearance, or uses the services of a designated Canadian customs broker

Shipping through a common carrier (FedEx, UPS, DHL Express, etc.)
Ensure that the shipment complies with all Canadian customs and importation requirements (see Canada Border Services Agency guides above).
Steps:

- Request a power of attorney (POA) package from the carrier
- If you are not registered with the Canada Revenue Agency, register for a Business Number to become a non-resident importer:
  - How to register for a Canadian Business Number
- Apply for or use an existing CBSA Assessment and Revenue Management (CARM) system account to pay duties and taxes
- Have the carrier clear the shipment on your behalf under Delivered Duty Paid (DDP) Incoterms rules. **Do not list the NRC as the importer of record.**

NOTE: All fees, including freight, customs clearance services, duties and taxes, are billed to your carrier account number
Using an ATA Carnet, if eligible
You may be able to use an ATA Carnet as your internationally recognized customs document for the temporary importation of your instrument or standard.
To verify whether your country is eligible for an ATA Carnet and to view country-specific advisories, consult the ATA Carnet list. You can also refer to your country's chamber of commerce website for additional ATA Carnet information.
Note that only a freight forwarder can be used with an ATA Carnet.
To complete an ATA Carnet application online, consult the Canadian Chamber of Commerce ATA Carnet application page.
Shipping through a freight forwarder with a designated Canadian customs broker
If you are going to make arrangements with a freight forwarder in the country of origin, that freight forwarder must have a Canadian customs broker who can arrange for entry of your shipment and for transportation to the NRC.
The freight forwarder must also arrange for return transportation from the NRC to the port of exit.

Please let us know should you have any questions.

Best regards,

Annamarie Sylvain

Business Services Officer, Metrology Research Centre
National Research Council Canada / Government of Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tel: 343-576-7371

Agente des services d'affaires, Centre de recherche en métrologie

Conseil national de recherches Canada / Gouvernement du Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tél: 343-576-7371

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: September 5, 2025 9:44 PM
To: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Subject: EXT: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**

Dear Sylvain
I am sorry for the delay,
Invoicing Contact

Shipping Contact: Jorge Luis Galvis Arroyave and Margarita Torres

Invoicing Address: Ak. 50 #26 - 55 Int. 2, Bogotá, Colombia

Shipping Address: Ak. 50 #26 - 55 Int. 2, Bogotá, Colombia (From NRC to INM)

Delivery service/Carrier name: Margarita Torres Castillo amtorres@inm.gov.co

Delivery account number: Since we will deliver and collect directly, we will not use a delivery service.

Currency: USD or CAD? USD

Cordialmente,

Contratista
Jorge L. Galvis A.
Subdirección de Metrología Física
Instituto Nacional de Metrología
Teléfono: (57-1) 2542222 Ext: 1612

Instituto Nacional de Metrología de Colombia

Av. Cra 50 No 26-55 Int. 2 CAN
Bogotá, D.C., Colombia
www.inm.gov.co

CELEBRANDO 150 Años de la Convención del Metro

Sabías que... "Con una tonelada de papel que no utilicemos evitamos la tala de 17 árboles nuevos, ahorramos agua en un 86%, energía en un 62.5% y disminuimos la contaminación".

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De: Sylvain, Annamarie <Annamarie.Sylvain@nrc-cnrc.gc.ca>
Enviado: miércoles, 20 de agosto de 2025 10:27
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Asunto: RE: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

No suele recibir correo electrónico de annamarie.sylvain@nrc-cnrc.gc.ca. Por qué es esto importante

Hi Jorge,

Attached is an official quotation for the requested calibrations of your gauge block sets. If you wish to move forward with the services, please let us know and we will provide you with an NRC service agreement for signature.

Best regards,

Annamarie Sylvain

Business Services Officer, Metrology Research Centre
National Research Council Canada / Government of Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tel: 343-576-7371

Agente des services d'affaires, Centre de recherche en métrologie
Conseil national de recherches Canada / Gouvernement du Canada
annamarie.sylvain@nrc-cnrc.gc.ca / Tél: 343-576-7371

From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: August 19, 2025 11:16 AM
To: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Cc: Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>
Subject: EXT: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**

Dear Greg,
I hope this mail finds you well. In concordance with your response we respectfully request the quotation for the calibration by interferometry: of the set of eight (8) long gauge blocks ranging from 125 mm to 500 mm (brand: Mitutoyo) and the set of nine (9) short gauge blocks ranging from 1 mm to 100 mm (brand: KOBA)

please find below the details of the gauge block sets:

M8 Long Gauge block set:
Brand: Mitutoyo
Model: BM1-8R-K/YJ
Sizes (mm): 125, 150, 175, 200, 250, 300, 400, 500
grade: K
Material: stainless steel

M9 Gauge Block Set:
Brand: KOBA
Model: Teiling
Sizes (mm): 1, 5, 10, 15, 20, 25, 50, 75, 100

grade: K
Material: stainless steel

Best Regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
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Sabías que... "Con una tonelada de papel que no utilicemos evitamos la tala de 17 árboles nuevos, ahorramos agua en un 86%, energía en un 62.5% y disminuimos la contaminación".

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De: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Enviado: jueves, 14 de agosto de 2025 15:48
Para: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Cc: Leroux, Ian <Ian.Leroux@nrc-cnrc.gc.ca>
Asunto: RE: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

No suele recibir correo electrónico de gregory.reain@nrc-cnrc.gc.ca. Por qué es esto importante

Hello Mr. Galvis Arroyave,

I am pleased to make your acquaintance, and thank you for your enquiry regarding our calibration services.

Regarding our calibration capabilities, the 8-piece long block set and 9-piece short block set pose no problems since these are straightforward calibrations for which we possess the relevant CMCs. I note that we will only perform calibration of central length, l_c. There are some additional considerations in order for the calibration of the 11-piece set to be compliant with the requirements of the Euramet CG/2 standard for comparator calibration. Namely, the parameters f_o and f_u for the 1.005 mm and 1.010 mm blocks must be measured in addition to the usual measurement of central length, l_c. We currently do not possess a CMC for the measurement of f_o and f_u, although somewhat coincidentally we have an identical set here for calibration at the moment and are working on a process for these measurands.

We propose the following for set M11 –

- As we do not possess a CMC for f_o and f_u, we will make our best effort for these measurements, and offer this free of charge. We are not entirely sure what our uncertainty will be for these measurements, but it is not likely to be as good as the 20 nm, k=2 as recommended by the standard.
- Will measure central length, l_c, of each block and not difference in central length between pairs as the standard seems to require. Our uncertainties for measurements of central length for short gauges are typically between 25 nm and 30 nm at the k=2 level for gauges in good condition.
- We can offer no measurement of the 6 mm bridge block. We understand that no calibration of either 6 mm block is required by the standard, but we wish to make this clear.
- We can calibrate the normal 6 mm gauge block if you desire.

So in summary, if the aforementioned conditions meet your requirements and you wish to proceed we would be happy to prepare a quote for you. Please do let us know if you require calibration of the 6 mm block from set M11. At this point we are available to perform this calibration in October of this year.

Best regards,
Greg

:.

Greg Reain

Research Officer
Metrology
National Research Council Canada / Government of Canada
greg.reain@nrc-cnrc.gc.ca / Tel: 613-998-5648

Agent de recherche
Métrologie
Conseil national de recherches Canada / Gouvernement du Canada
greg.reain@cnrc-nrc.gc.ca / Tél.: 613-998-5648

From: MSS Dimensional Metrology / Métrologie Dimensionnelle SME (NRC/CNRC) <NRC.MSS.Dimensional-Dimensionnel.SME.CNRC@nrc-cnrc.gc.ca>
Sent: August 11, 2025 3:25 PM
To: Reain, Gregory <Gregory.Reain@nrc-cnrc.gc.ca>
Subject: FW: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

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From: Jorge Luis Galvis Arroyave <jlugalvis@inm.gov.co>
Sent: August 8, 2025 11:10 AM
To: MSS Dimensional Metrology / Métrologie Dimensionnelle SME (NRC/CNRC) <NRC.MSS.Dimensional-Dimensionnel.SME.CNRC@nrc-cnrc.gc.ca>
Cc: Lab_Longitud <lab_longitud@inm.gov.co>
Subject: EXT: Enquiry: Dimensional - Measurements - National Metrology Institute of Colombia

*****Attention*** This email originated from outside of the NRC. ***Attention*** Ce courriel provient de l'extérieur du CNRC.**

Dear Greg Reain

I hope this mail finds you well. I am Jorge Galvis from the National Metrology Institute of Colombia (INM). The INM is responsible for ensuring the reliability of national measurement standards. To fulfill this mission, it must periodically calibrate its instruments using references of the highest metrological hierarchy to maintain traceability to the International System of Units (SI). In this context, we respectfully request a quotation for the calibration of the following instruments by interferometry: a set of eight (8) long gauge blocks ranging from 125 mm to 500 mm (brand: Mitutoyo); a set of nine (9) short gauge blocks ranging from 1 mm to 100 mm (brand: KOBA); and a set of eleven (11) master blocks for calibrating mechanical comparator blocks (brand: Mitutoyo).

please find below the details of the gauge block sets:

- M8 Long Gauge block set:
  Brand: Mitutoyo
  Model: BM1-8R-K/YJ
  Sizes (mm): 125, 150, 175, 200, 250, 300, 400, 500

grade: K
Material: stainless steel

- M9 Gauge Block Set:
Brand: KOBA
Model: Teiling
Sizes (mm): 1, 5, 10, 15, 20, 25, 50, 75, 100
grade: K
Material: stainless steel

- M11 Gauge Block Set:
Brand: Mitutoyo
Model: BM1-11/YTR GBC
Sizes (mm): 0.5 , 0.5, 1 , 1.005, 1.010, 4, 4, 100, 100 ; Bridge : 6, 6
grade: K
Material: stainless steel
Bridge: Yes
example calibration of this set:

Tabelle 1

Table 1

Endmaßpaar Nummer *Gauge block pair No.*	Nennmaße *Nominal lengths* A mm	B mm
1	0,5	0,5
2	1,0	1,005
3	1,0	1,010
4	4,0	4,0
5	100,0	100,0
6	6,0	6,0*

*) Sondermaß in Brückenausführung
*) *bridge-type gauge block*

Tabelle 2 **

Table 2 *

Endmaße mit der Kennzeichnung *Gauge blocks with identification*	Nennmaß *Nominal length* mm
B	1,005
B	1,010

Best Regards

Cordialmente,

Instituto Nacional de Metrología de Colombia

Contratista
Jorge L. Galvis A.
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Teléfono: (57-1) 2542222 Ext: 1612
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Bogotá, D.C., Colombia
www.inm.gov.co

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