

Fact sheet of the interlaboratory comparison:

Mass calibration 2025: 100 kg and 2000 kg

1. Context and objectives

In 2025, the CT2M organizes an international inter-laboratory comparison in the field of mass calibration.

The objectives of this proficiency testing are:

- Evaluating the performance of participants in calibrations and monitoring the maintenance of their performance;
- Identifying problems in laboratories which may, for example, relate to test or measurement methods, the effectiveness of staff training and supervision, or the calibration of equipment;
- Improving user confidence in measurement results;
- Identifying differences in measurement results;
- Validation of measurement uncertainties.

2. Proficiency testing item

Entities subject to calibration are 100 kg and 2000 kg stainless steel masses.



The weights will be calibrated at the beginning and end of the circuit by a laboratory accredited to ISO 17025 in order to study stability. The laboratory's expanded uncertainties ($k=2$) U are:

- $U = 1.6$ g for calibration of a 100 kg mass
- $U = 33$ g for calibration of a 2000 kg mass

3. Calibration Method

The most appropriate calibration method is the comparison of the mass to be calibrated with a standard mass of equivalent nominal value, using a comparator or a balance. Numbers of repetitions and calibration cycles are left to the participant's choice. His own procedure must be used as well as his own calibration means (standards, comparators/balances).

Participants may register for one or two masses. In addition, any laboratory may participate, regardless of its uncertainty.

A detailed protocol will be provided to each participant at the beginning of the campaign.

4. Conditions for participation

The following conditions must be met in order to take part:

- ✓ Possess the resources and facilities needed to carry out the calibrations
- ✓ Provide an uncertainty associated with each result (*)
- ✓ Be located in one of the countries of the European Union or, if this is not the case, be accredited according to ISO 17025 by an accreditation body that has signed the EA Calibration MLA or the ILAC Calibration MRA for the concerned calibrations.

(*) If you wish to take part in this ILC and you are unable to provide uncertainty associated with your results, you may be assisted by CT2M in estimating your uncertainties as part of this ILC. In this case, please indicate this on the registration form.

5. Organization of the proficiency testing

Each participant must calibrate the masses within one week. All the masses will circulate successively from one participant to the other.

CT2M will provide the participants with an Excel form to register its results. For each calibrated mass, the participants must indicate at least the following results:

- ✓ Conventional value of the calibrated mass,
- ✓ Associated expanded uncertainty ($k=2$).

6. Assigned values and evaluation of performance

The aim of this inter-laboratory comparison is to assess the ability of each participant to obtain a calibration result close to the assigned value, taking into account the expanded uncertainty ($k=2$).

To meet this objective, an assigned value will be established for each mass on the basis of the results of the laboratory performing the calibrations for the stability study and the results of the participants traceable to the international system of units. The metrological traceability of the assigned value is guaranteed by the ISO 17025 accreditation of the laboratory carrying out the calibrations for the stability study and by the ISO 17025 accreditation of the participants whose results will be taken into account.

The performance score used will be the En score, which enables a comparison of the participants' results with an assigned value, taking into account the expanded uncertainties ($k=2$).

The acceptance criteria for performance scores are those described in the ISO 13528 and ISO 17043 standards.

7. Report(s)

The final report will be distributed to all participants and to the laboratory that carried out the stability study. The final report sent by the CT2M must not be distributed by participants outside their organisation. The information contained in the report may not be used by participants for scientific publications or any other communication medium.

Intermediate reports will also be issued during the circuit, if a large number of participants means that the circuit will last longer than 6 months.

8. Provisional schedule:

Key steps	Estimated deadline
End of registration	April, the 25 th , 2025
Emailing of the detail protocol and the results form	May, the 14 th , 2025
Launching of the round	May, the 26 th , 2025
Publication of the final report	Depends on number of participants

9. Price

Participation fees:

- **590 € net total** (For one mass only - 100 kg or 2000 kg)
- **890 € net total** (For both masses - 100 kg and 2000 kg)

This price includes the provision of the masses to be calibrated, of the results file to be completed and the participation protocol, transport costs to the circuit launch and the supply of interim and final reports containing the analysis of results and the evaluation of performance.

For participant located in the European Union, the transport cost of the proficiency testing items to the next participant (located in the European Union) will be borne by him, who is free to choose the carrier. For the participants located outside the European Union, the transport to and from of proficiency testing items must be organised and paid for by the participant.

Option “Individual report”: 150 € net total (in addition to the participation fees)

In addition to the full final report, you have the option of receiving a personalised individual report. This individual report will contain only your results, the assigned values, an assessment of your performance and a conclusion as to whether or not your results are acceptable.

10. Reciprocal commitments

CT2M commitments:

The CT2M undertakes to:

- guarantee the confidentiality of participants results and respect their anonymity (*),
- carrying out the performance evaluation in complete impartiality,
- organize and process the results in accordance with the reference applicable documents (ISO 17043, ISO 13528).

(*) The data obtained and generated during the inter-laboratory comparison may be consulted during internal or external audits. Auditors are systematically subject to a confidentiality agreement. For communication purposes (conferences, articles, etc.), the results may be used but in a totally anonymous manner. The

transport of the test item from one participant to another necessarily entails the partial loss of anonymity concerning the identity of the previous participant and the following participant. Registration for this inter-laboratory comparison implies acceptance of this condition.

Participant commitments:

The participants in this inter-laboratory comparison undertake to:

- respect the protocol provided for carrying out the calibrations,
- provide their results within the time limit set by the organiser by emailing the completed results file together with an accredited calibration certificate (if applicable),
- not to communicate with any other participant who may be known in order to avoid any risk of collusion,
- transmit all the necessary information of the successful completion of the inter-laboratory comparison to all the persons concerned within their laboratory,
- inform the CT2M of any malfunction.

11. Registration and contact:

To take part in the inter-laboratory comparison “ILC Masses 2025 – 100 kg and 2000 kg”, please complete the registration form “CT2M: REGISTRATION FORM - ILC Masses 2025 - 100 kg and 2000 kg_v1” by clicking on the following link: <https://forms.office.com/e/n74PZtC0e9> or by scanning the QR Code below:



For further information, please contact us:

- ✓ Email: cilmasses@ct2m.fr
- ✓ Phone: +33 (0)4 90 50 90 14

Appendix: Terms of sale

1. Invoicing

Invoicing is carried out after sending the final report or an intermediate report of the proficiency testing. **The settlement is 30 days end of month of the invoice date.**

Every registration fee is due when the campaign is started and won't be cancelled or refund.

2. Loss, degradation or elimination of the test item

In case of loss, damage or elimination of the proficiency test item by a participant, the CT2M reserves the right to claim its amount or purchase and new shipment.

→ 100 kg mass: 16 500 €

→ 2000 kg mass: 21 000 €

The CT2M cannot be held responsible for loss, disposal or non-receipt of the proficiency test item.

3. Number of participants

If the number of participants is insufficient for an appropriate statistical treatment, the CT2M reserves the right to cancel this inter-laboratory comparison.

4. Management and storage of personal data

The CT2M will use the data of the participants in order to communicate with the participant during the the ILC. These datas are also used to send them intermediate and/or final reports. The data may be used for commercial purposes: communication of new features on the website, communication on new ILC or on ILC in which a participant have already participated. The data will be kept for 5 years after the last communication. (The data listed in the quotes and reports are kept for 10 years.)

The provisions governing the management of personal data under the RGPD are available on our website.

In the event of refusal, an email should be sent to ct2m@ct2m.fr.