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| Intercomparisons on calibration of industrial weighing instruments | Issue 1            |             |
| Approved by<br>Håkan Källgren                                      | Date<br>2022-10-07 | Page 1 ( 4) |

## Content

|   |   |
|---|---|
| ILC weighing instruments 2022:1 .....   | 2 |
| Participants in the intercomparison.....  | 2 |
| Description of the weighing capacity and expected uncertainty in the intercomparison..... | 2 |
| Time schedule and detailed documented instructions.....                                   | 2 |
| Calibration points.....   | 3 |
| Statistical analyses that will be used.....   | 3 |
| Reporting .....   | 3 |
| Price for participation .....   | 4 |

|  |                    |             |
|--|--------------------|-------------|
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| Approved by<br>Håkan Källgren                                      | Date<br>2022-10-07 | Page 2 ( 4) |

## ILC weighing instruments 2022:1

Swedish Metrology and Quality AB (SMQ) is organising this intercomparison on calibrations:

1. Calibration on an industrial weighing instrument 30 kg
2. Calibration on a weighing instrument 1 500 kg (u-shaped)
3. Calibration on a weighing instrument 5 000 kg (square 1,5\*1,5 m)

Participants may choose the objects they want to calibrate and up to which capacity they are able to calibrate (e.g., 3 000 kg on the 5 000 kg instrument)

This concept of the intercomparison on calibration has been decided by the advisory group specially related to this calibration areas. No subcontractors are involved in the intercomparison.

### Participants in the intercomparison

There are three categories of laboratories that can participate in this comparison:

- Accredited laboratories
- Laboratories that will apply for accreditation.
- Laboratories that want to evaluate their calibration quality.

The result of the intercomparison will establish a base for the CMC values in calibrations for the laboratories.

The number of participants is minimum 8 and maximum 18.

### Description of the weighing capacity and expected uncertainty in the intercomparison.

Possible uncertainty values CMC) are:

| Capacity | Possible CMC value |
|----------|--------------------|
| 30 kg    | 0,1 g              |
| 1500 kg  | 200 g              |
| 5 000 kg | 200 g              |

A reference value will be established as a base for calculations

### Time schedule and detailed documented instructions

The time schedule for calibration will be established in cooperation with the participants during the period 2022-12-05---16 (week 49-50)

A detailed time schedule and technical instructions together with the reporting protocol in form of an excel document will be sent to the participants who have registered to the ILC.

Each participant will have access to the instruments for maximum 4 hours and use its own method for calibration.

|  |                    |             |
|--|--------------------|-------------|
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**Observe that the participating laboratory shall inform the organiser in advance if they have a licence to drive a forklift.**

Preliminary data from the calibration shall be given to the organiser by using the excel forms established by the organiser. The final calibrating certificate can have the form you are used to and shall be sent as pdf-file..

### Calibration site

Företagsvägen 29 building 6  
232 37 Arlöv (close to Malmö)  
Sweden

The organiser will be present during the work.

### Calibration points

The participants shall calibrate according to their own method and use their reference equipment or rented weights.

The principles of EURAMET calibration guide 18 will be used to establish the reference values as described in chapter 5.2 alternative 2 continuously increasing by steps without unloading between the separate steps.

The calibration points that will be included in the report will be:

| 30 kg instrument, kg | 1500 kg instrument, kg | 5000 kg instrument, kg |
|----------------------|------------------------|------------------------|
| 1                    | 20                     | 50                     |
| 5                    | 50                     | 500                    |
| 10                   | 500                    | 1000                   |
| 20                   | 1000                   | 2000                   |
| 30                   | 1500                   | 3000                   |
|                      |                        | 5000                   |
| Eccentricity         | Eccentricity           | Eccentricity           |
| Not in the report    | 500                    | Not in the report      |

There shall be no adjustment made except zeroing

### Statistical analyses that will be used

The organiser establishes an assigned reference value to be used in the calculation of En-numbers.

The formula is described in ISO/IEC 17043:2010 annex B.

### Reporting

The participants shall hand over a filled in excel sheet (provided by the organiser) to the organiser before leaving the site and shall send the calibration certificate to the organiser within one week after the calibrations are finished.

|  |                    |             |
|--|--------------------|-------------|
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A draft report will be sent to the participants within 4 weeks from the time when the last participant has reported the results in a calibration certificate.

The participant shall comment on the draft report within two weeks after receiving the draft report.

A participant not following the described reporting rules without giving reasons will be excluded from the report.

A participant may decide to leave the work before the draft report is distributed to the participants.

The participant may appeal to the full report if there are major faults in the report.

The inter-comparison report will be anonymously, and the participants will get an identification code related to the results in a separate e-mail.

### Price for participation

Price for laboratories:

- Basic price 1350 EUR
- In addition, 260 EUR on calibration of 30 kg instrument
- In addition, 260 EUR on calibration of 2 000 kg instrument
- In addition, 260 EUR on calibration of 5 000 kg instrument

The basic price shall be paid at the registration

If the laboratory decides not to fulfil their part of the agreement the basic price shall be paid.