CIBE
WEIGHTS AND MEASURES LABORATORY

A RICE LAKE WEIGHING SYSTEMS COMPANY

Minimum Weight Certificate

FACSIMILE CERTIFICATE OF MINIMUM WEIGHT

SCALE DATA

User	CIBE
Item	Scale
Manufacturer	xyz
Model	XXXXX
Registration number	12345678
Calibration date/EC verification	yyyy-mm-dd

Field	Capacity	Division
1	810 g	0,01 g

Environment

Location of use	Average temperature during calibration (°C)
XXX	25,3

UNCERTAINTY OF USE

A – Calculation of the measurement uncertainty of the instrument in use (Euramet Guide cg-18)

Below is a possible estimate of the measurement uncertainty of the instrument in use, which is necessary for calculating the minimum weight. The estimate of the expanded measurement uncertainty is calculated using the Euramet guide cg-18 formula, is based on information that is not collected by the laboratory performing the calibration and takes into account various factors defined in advance by the user of the instrument.

The linear regression method of calibration data was used, as reported in the Euramet guide cg-18. The following parameters were used to evaluate measurement uncertainty.

1. Instrument temperature coefficient: $6*10^{-06}/K$
2. Maximum temperature variation: 10 K

Field		Equation for estimating weighing uncertainty in use
1	0 g - 810 g	U = 0,015 g + 0,011451 * R

MINIMUM WEIGHT CALCULATION

B – Minimum weight calculation (Euramet Guide cg-18)

It is the responsibility of the user of the instrument to define the value of the safety factor SF, the relative accuracy required for the measurements (Req), and to maintain the instrument with the same configuration (setting of the various parameters) that was used during calibration.

The safety factor SF is a number greater than or equal to 1 that is used to take into account the effect of environmental factors such as high levels of vibration, air currents, operator-induced influences, etc.

The net values shown in the table are the minimum weights, calculated for different safety factors SF and for different weighing accuracy values. The minimum weight values are rounded to the resolution value of the instrument. At these minimum weight values, the expanded measurement uncertainty of the weighing instrument (calculated with a coverage factor k=2) is less than or equal to 1/1, 1/2, 1/3, 1/5, or 1/10 of the required accuracy.

Tolerance requirement	1/1 (SF=1) g	1/2 (SF=2) g	1/3 (SF=3) g	1/5 (SF=5) g	1/10 (SF=10) g
0.1%	15,29	32,30	51,34	97,15	293,83
0.2%	7,45	15,29	23,56	41,54	97,15
0.5%	2,93	5,93	8,98	15,29	32,30
1%	1,46	2,93	4,42	7,45	15,29
2%	0,73	1,46	2,19	3,68	7,45
5%	0,29	0,58	0,87	1,46	2,93

Example for determining the minimum weight
The minimum weight value is found by intersecting the required accuracy value and safety factor.
Example: if the required tolerance is 1% and the SF = 2, the minimum weight is 2.93g.

Certificate issue date _____

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