

Accuracy Calibration Certificate

Mettler Toledo B.V.
Franklinstraat 5
4004JK Tiel
0344-638222



Accuracy Calibration Certificate

Customer

Company: Tieleman Bulk Handling
Address: Hoek en Bos 1a
City: KLOOSTERZANDE
Zip / Postal: 4587 LC
Contact: Hr Tieleman

Weighing Device

Manufacturer: Mettler Toledo
Model: IND310-9018S
Serial No.: 0045246-6EJ
Class: III
Location: -; BG; -
Instrument Type: Weighing Instrument
Asset Number: -
Terminal Model: N/A
Terminal Serial No.: N/A
Terminal Asset No.: N/A

Range	Max. Capacity	Readability (d)	Verification Scale Interval (e)
1	60000 kg	20 kg	20 kg

Procedure

Calibration Guideline: EURAMET cg-18 v. 4.0
METTLER TOLEDO Work Instruction: WIKA/02

This calibration certificate contains measurements for As Found calibration. No As Left calibration was performed because the device was not modified after As Found calibration. Therefore, results for As Left correspond to As Found.

In accordance with EURAMET cg-18, the test loads were selected to reflect the specific use of the weighing device or to accommodate specific calibration conditions.

Substitution loads were used to perform the Error of Indication test.

	Temperature
As Found	Start: 17,4°C End: 17,4°C

As Found Calibration Date: 05-jul-2016
As Left Calibration Date: N/A
Next Calibration Date: 31-jul-2017

Service Technician: 
Piet van Leeuwen

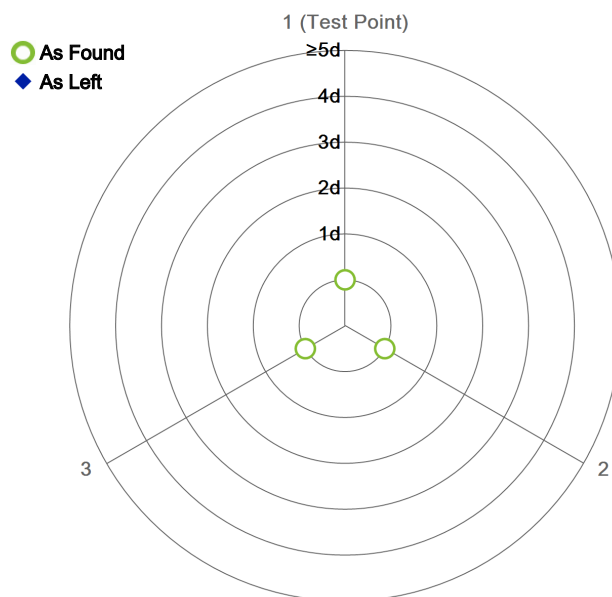
Measurement Results

Repeatability

Test Load: 39500 kg

	As Found	As Left
1	39500 kg	N/A
2	39500 kg	N/A
3	39500 kg	N/A

Standard Deviation	0 kg	N/A
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The "d" in the graph represents the readability of the range/interval in which the test was performed.

The results of this graph are based upon the absolute values of the differences from the mean value.

Eccentricity

Test Load: 12000 kg

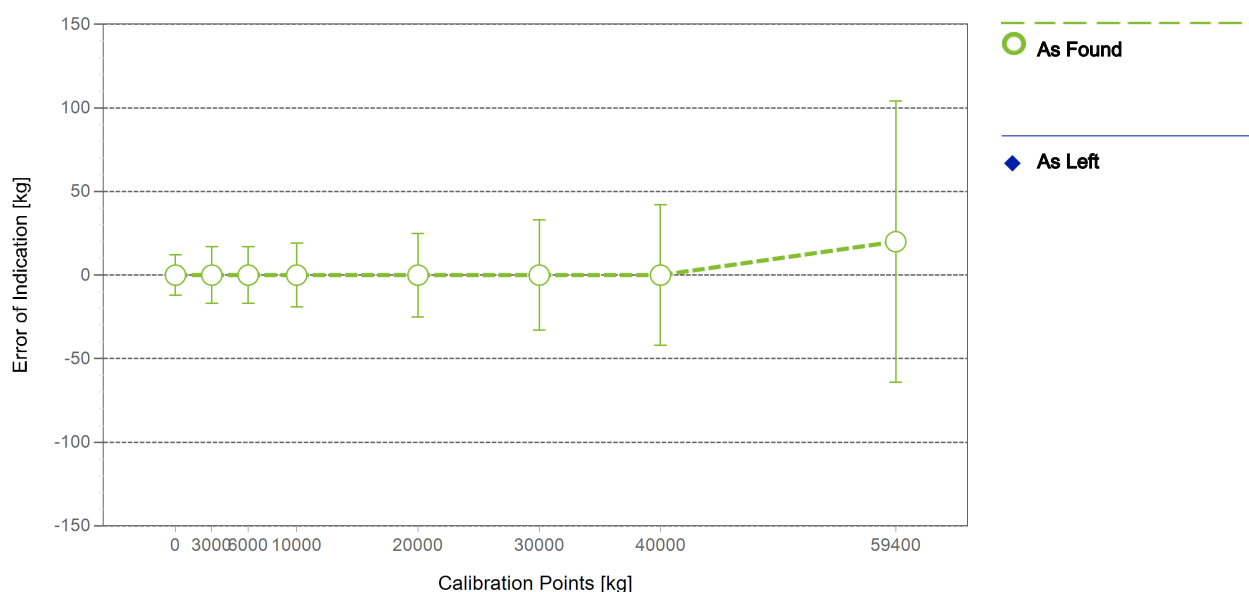
Position	As Found	As Left
1	12000 kg	N/A
2	12000 kg	N/A
3	12000 kg	N/A
4	12000 kg	N/A
5	12020 kg	N/A
6	12000 kg	N/A

Maximum Deviation	20 kg	N/A
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Error of Indication

As Found

	Substitution Load	Standard Load	Test Load	Indication	Error of Indication	Expanded Uncertainty	k
1	N/A	0 kg	0 kg	0 kg	0 kg	12 kg	2
2	N/A	400 kg	400 kg	400 kg	0 kg	16 kg	2
3	N/A	3000 kg	3000 kg	3000 kg	0 kg	17 kg	2
4	N/A	6000 kg	6000 kg	6000 kg	0 kg	17 kg	2
5	N/A	10000 kg	10000 kg	10000 kg	0 kg	19 kg	2
6	N/A	20000 kg	20000 kg	20000 kg	0 kg	25 kg	2
7	N/A	30000 kg	30000 kg	30000 kg	0 kg	33 kg	2
8	N/A	40000 kg	40000 kg	40000 kg	0 kg	42 kg	2
Substitution Load				39400 kg	N/A		
9	39400 kg	20000 kg	59400 kg	59420 kg	20 kg	84 kg	2



The uncertainty stated is the expanded uncertainty at calibration obtained by multiplying the standard combined uncertainty by the coverage factor k – which can be larger than 2 according to EURAMET cg-18. The value of the measurand lies within the assigned range of values with a probability of approximately 95%.

The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.

Test Equipment

All weights used for metrological testing are traceable to national or international standards. The weights were calibrated and certified by an accredited calibration laboratory.

Weight Set 1: OIML F2

Weight Set No.:	S58-S59	Date of Issue:	14-okt-2015
Certificate Number:	M150465	Calibration Due Date:	14-okt-2017

Weight Set 2: OIML F1

Weight Set No.:	720	Date of Issue:	14-okt-2015
Certificate Number:	M150467	Calibration Due Date:	14-okt-2017

Weight Set 3: OIML F1

Weight Set No.:	0008I	Date of Issue:	14-okt-2015
Certificate Number:	M150464	Calibration Due Date:	14-okt-2017

Weight Set 4: OIML M1

Weight Set No.:	209/222	Date of Issue:	16-okt-2015
Certificate Number:	M150466	Calibration Due Date:	16-okt-2017

Weight Set 5: OIML M1

Weight Set No.:	Mammoet	Date of Issue:	13-jan-2016
Certificate Number:	19602/1601	Calibration Due Date:	02-nov-2016

Weight Set 6: OIML M1

Weight Set No.:	Mammoet *	Date of Issue:	13-jul-2015
Certificate Number:	19620/1601	Calibration Due Date:	13-jul-2016

Thermometer

Equipment No.:	Testo 110	Date of Issue:	23-sep-2015
Certificate Number:	1507937	Calibration Due Date:	23-sep-2016

Remarks

Onderzocht als een Geregeld Weeginstrument (NEN 45501)
Voldoet aan de Metrologiewet
Verzegelingen OK
Herhaalbaarheid OK
Tarraproef OK
Nulstelinrichting OK
Tarra inrichting OK
Beweeglijkheid OK
Opschriften OK
Geen beïnvloeding van tocht / trilling / temperatuur
(De Klantspecificaties zijn IJkspecificaties)

The user should re-verify the performance of the equipment on site with appropriate standards prior to use.

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

Measurement Uncertainty of the Weighing Instrument in Use

Stated is the expanded uncertainty in use with $k = 2$. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value R represents the net load indication in the unit of measure of the device.

Temperature coefficient for the evaluation of the measurement uncertainty in use: 10,0 · 10⁻⁶ / K

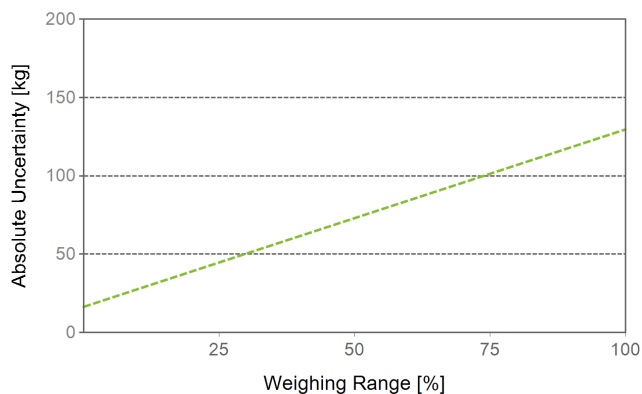
Temperature range on site for the evaluation of the measurement uncertainty in use: 20 K

Linearization of Uncertainty Equation

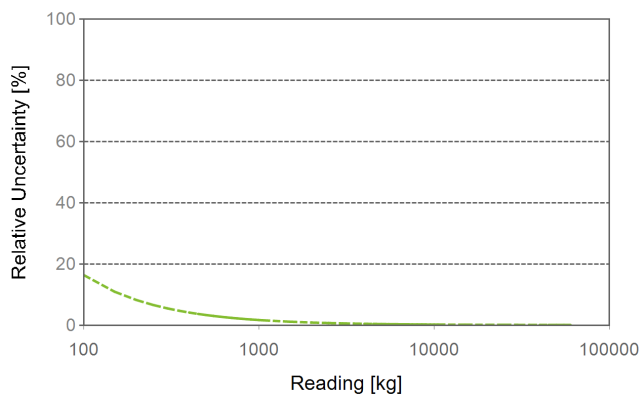
Range		As Found	As Left
1	0 kg - 60000 kg	$U_1 = 16330 \text{ g} + 1,89 \text{ g/kg} \cdot R$	N/A

Examples for Various Net Indications

Range	Net Indication	As Found		As Left	
1%	600 kg	17 kg	3,0%	N/A	N/A
10%	6000 kg	28 kg	0,47%	N/A	N/A
20%	12000 kg	39 kg	0,33%	N/A	N/A
50%	30000 kg	73 kg	0,24%	N/A	N/A
100%	60000 kg	130 kg	0,22%	N/A	N/A



As Found



As Left

OIML MPE Assessment

(In Service)

The measurements from the attached calibration certificate were assessed against the Maximum Permissible Errors defined by OIML R 76.

	As Found	As Left
Overall	✓	N/A
Repeatability	✓	N/A
Eccentricity	✓	N/A
Error of Indication	✓	N/A

Measurement Results

Repeatability

Test Load: 39500 kg

	As Found	As Left
1	39500 kg	N/A
2	39500 kg	N/A
3	39500 kg	N/A

Maximum Error	0 kg	N/A
MPE	40 kg ✓	N/A

Eccentricity

Test Load: 12000 kg

Position	As Found	As Left
2	12000 kg	N/A
3	12000 kg	N/A
4	12000 kg	N/A
5	12020 kg	N/A
6	12000 kg	N/A

Maximum Error	20 kg	N/A
MPE	40 kg ✓	N/A

The maximum error is determined as the absolute value of the largest error from the test load.

Error of Indication**As Found**

	Reference Value	Indication	Error of Indication	MPE	
1	0 kg	0 kg	0 kg	20 kg	✓
2	400 kg	400 kg	0 kg	20 kg	✓
3	3000 kg	3000 kg	0 kg	20 kg	✓
4	6000 kg	6000 kg	0 kg	20 kg	✓
5	10000 kg	10000 kg	0 kg	20 kg	✓
6	20000 kg	20000 kg	0 kg	40 kg	✓
7	30000 kg	30000 kg	0 kg	40 kg	✓
8	40000 kg	40000 kg	0 kg	40 kg	✓
9	59400 kg	59420 kg	20 kg	60 kg	✓