

FULL SCALE CALIBRATION AND ZERO ERROR RECORD
(Analytical and Precision Weighing Balance)

Unit : X

Department : QC

Balance Code No. : BAL-005

Make : METTLER TOLEDO

Std. Weight Box ID. : WB-002

Month and year : September 2025

Capacity (a) (g) : 300.000

Model : ML203

Least Count (e) (g) 0.001

Tolerance: +/- Least count of the balance OR +/- 0.1 % of Standard weight whichever is higher.

Standard weights for calibration (g)		Tolerance (g)	Accuracy Limits(Std wt +/- Tolerance) (g)
Lower(20.e)/(5% of a)/Minimum capacity of the checkweigher / weighing balance	10.000	± 2.000	8.000 - 12.000
Middle-I(20% of a)	20.000	- 2.000 + 3.000	18.000 - 23.000
Middle-II(50% of a)	30.000	- 3.000 + 2.000	27.000 - 32.000
Upper(80% of a)	40.000	- 2.000 + 4.000	38.000 - 44.000

- Note:**
1. Adjust zero error before starting the weighing operation.
 2. Check against standard weights daily before starting the activity.
 3. If more than one standard weight is used for verification then record the standard weight / identification No. of all individual weights used for verification. (E.g. For verification of 200g, if three weights viz. 50g, 50g & 100g is used then record standard weight/identification No. of all the three weights)

Date	Time	Spirit Level (Ok/ Not Ok)	Zero Error	Standard weights kept on the balance (g)		Readings shown (g)	Remark	Performed by	Checked By
02.09.2025	09:32	OK	Nil	Lower(20.e)/(5% of a)/Minimum capacity of the checkweigher / weighing balance	10.000	10.000	Ok	kuldeep(Z)	Sail(12)
				Middle-I(20% of a)	20.000	20.000	Ok	kuldeep(Z)	Sail(12)
				Middle-II(50% of a)	30.000	30.000	Ok	kuldeep(Z)	Sail(12)
				Upper(80% of a)	40.000	41.000	Ok	kuldeep(Z)	Sail(12)

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2. Uncertainty test:

Sr. No.	Standard Weight (g)	Reading displayed on the balance (g)	Remarks
1	10.000	11.000	Ok
2	10.000	11.000	Ok
3	10.000	11.000	Ok
4	10.000	11.000	Ok
5	10.000	11.000	Ok
6	10.000	11.000	Ok
7	10.000	11.000	Ok
8	10.000	11.000	Ok
9	10.000	11.000	Ok
10	10.000	11.000	Ok
Mean		11.000	-
Standard Deviation (S.D.)		0.0000	-

Uncertainty = $\frac{3 \times \text{S.D.}}{\text{Standard Weight (g)}}$ = 0.000

Acceptance criteria : Value of uncertainty should be NMT 0.001 g.

Remark : Complies

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3. Repeatability test:

Sr. No.	Standard Weight (g)	Reading displayed on the balance (g)	Remarks
1	10.000	11.000	Ok
2	10.000	11.000	Ok
3	10.000	11.000	Ok
4	10.000	11.000	Ok
5	10.000	11.000	Ok
6	10.000	11.000	Ok
7	10.000	11.000	Ok
8	10.000	11.000	Ok
9	10.000	11.000	Ok
10	10.000	11.000	Ok
11	10.000	11.000	Ok
12	10.000	11.000	Ok
13	10.000	11.000	Ok
14	10.000	11.000	Ok
Mean		11.000	-
Standard Deviation (S.D.)		0.0000	-

Repeatability (%) = $\frac{2 \times (0.41 \times d)}{\text{Standard weight (g)}} \times 100 = 0.01$

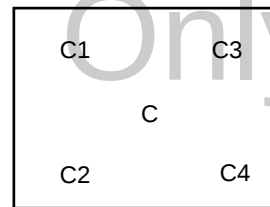
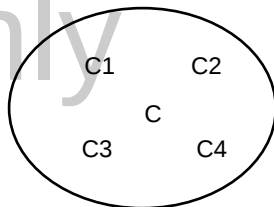
Acceptance criteria : Repeatability is NMT 0.10 %

Remark : Complies

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4. Eccentricity test :

Note: Adjust zero error before commencing the weighing operation .



Sr No.	Standard Weight (g)	Position	Reading displayed by the balance (g)	Deviation from center =X-C	Remark
1	10.000	C	11.000	-----	Ok
2	10.000	C1	11.000	0.000	Ok
3	10.000	C2	11.000	0.000	Ok
4	10.000	C3	11.000	0.000	Ok
5	10.000	C4	11.000	0.000	Ok

Where, X=C1, C2, C3, C4 i.e. different corners of the balance.

Acceptance criteria : Deviation is not more than 0.05%.

Remark: Complies

Comment: _____

Calibration Done By: kuldeep (Z)

Checked By:
(Quality Assurance)

Date & Time: 02.09.2025 & 09:32:18

Date & Time: