

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

Unit : X

Department : QC

Month and year : May 2024

Balance Code No. : BAL001

Capacity (gm) : 320.000

Make : METTLER TOLEDO

Model : ML203

Std. Weight Box ID. : WB001

Least Count (gm) : 0.001

Tolerance: +/- Least count of the balance OR +/- 0.1 % of Standard weight whichever is higher and value should be rounded off on lower side as per display capacity of balance.

Standard weights for calibration (gm)		Tolerance (gm)	Accuracy Limits(Std wt +/- Tolerance) (gm)
Lower	10.000	± 1.000	9.000 - 11.000
Middle(1)	30.000	± 1.000	29.000 - 31.000
Middle(2)	50.000	± 1.000	49.000 - 51.000
Upper	70.000	± 1.000	69.000 - 71.000

Note: 1. Adjust zero error before commencing the weighing operation.

2. Check against standard weights on quarterly.

Date	Time	Spirit Level (Ok/ Not Ok)	Zero Error	Standard weights kept on the balance (gm)		Readings shown (gm)	Remark	Performed by	Checked By
01.05.2024	09:34	OK	Nil	Lower	10.000	10.000	Ok	kuldeep(Z)	Devendra(X)
				Middle(1)	30.000	30.000	Ok	kuldeep(Z)	Devendra(X)
				Middle(2)	50.000	50.000	Ok	kuldeep(Z)	Devendra(X)
				Upper	70.000	70.000	Ok	kuldeep(Z)	Devendra(X)

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2. Uncertainty test:

Sr. No.	Standard Weight (gm)	Reading displayed on the balance (gm)	Remarks
1	10.000	10.000	Ok
2	10.000	10.000	Ok
3	10.000	10.000	Ok
4	10.000	10.000	Ok
5	10.000	10.000	Ok
6	10.000	10.000	Ok
7	10.000	10.000	Ok
8	10.000	10.000	Ok
9	10.000	10.000	Ok
10	10.000	10.000	Ok
Mean		10.000	-
Standard Deviation (S.D.)		0.000	-

Uncertainty =
$$\frac{3 \times \text{S.D.}}{\text{Standard Weight (gm)}} = 0.00$$

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

Remark : Complies

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3. Repeatability test:

Sr. No.	Standard Weight (gm)	Reading displayed on the balance (gm)	Remarks
1	30.000	30.000	Ok
2	30.000	30.000	Ok
3	30.000	30.000	Ok
4	30.000	30.000	Ok
5	30.000	30.000	Ok
6	30.000	30.000	Ok
7	30.000	30.000	Ok
8	30.000	30.000	Ok
9	30.000	30.000	Ok
10	30.000	30.000	Ok
Mean		30.000	-
Standard Deviation (S.D.)		0.000	-

Repeatability (%) = $\frac{2 \times (0.41 \times d)}{\text{Standard weight (gm)}} \times 100 = 0.00$

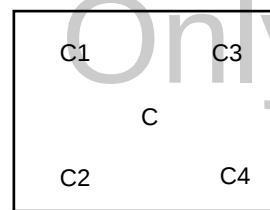
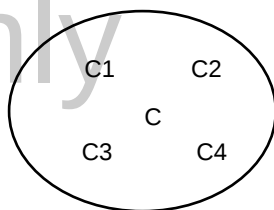
Acceptance criteria : Repeatability is NMT 0.10 %

Remark : Complies

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4. Eccentricity test :

Note: Adjust zero error before commencing the weighing operation .



Sr No.	Standard Weight (gm)	Position	Reading displayed by the balance (gm)	Deviation from center =X-C	Remark
1	50.000	C	50.000	-----	Ok
2	50.000	C1	50.000	0.000	Ok
3	50.000	C2	50.000	0.000	Ok
4	50.000	C3	50.000	0.000	Ok
5	50.000	C4	50.000	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 : 01.05.2024

Date :