

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

Unit : X

Department : QC

Month and year : November 2024

Balance Code No. : Balance-131313

Capacity (gm) : 350.000

Make : METTLER TOLEDO

Model : MS303S

Std. Weight Box ID. : WBI_1

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	0.020	± 0.002	0.018 - 0.022
Middle(1)	30.000	± 1.000	29.000 - 31.000
Middle(2)	40.000	- 1.500 + 1.123	38.500 - 41.123
Upper	50.000	- 10.000 + 2.000	40.000 - 52.000

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
05.11.2024	10:21	OK	Nil	Lower	0.020	0.019	Ok	Dipti(D)	yogita(123)
				Middle(1)	30.000	30.019	Ok	Dipti(D)	yogita(123)
				Middle(2)	40.000	40.019	Ok	Dipti(D)	yogita(123)
				Upper	50.000	50.019	Ok	Dipti(D)	yogita(123)

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2. Uncertainty test:

Sr. No.	Standard Weight (gm)	Reading displayed on the balance (gm)	Remarks
1	0.020	0.019	Ok
2	0.020	0.019	Ok
3	0.020	0.019	Ok
4	0.020	0.019	Ok
5	0.020	0.019	Ok
6	0.020	0.019	Ok
7	0.020	0.019	Ok
8	0.020	0.019	Ok
9	0.020	0.019	Ok
10	0.020	0.019	Ok
Mean		0.019	-
Standard Deviation (S.D.)		0.0000	-

Uncertainty =
$$\frac{3 \times \text{S.D.}}{\text{Standard Weight (gm)}} = 0.150$$

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

Remark : Not Complies

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3. Repeatability test:

Sr. No.	Standard Weight (gm)	Reading displayed on the balance (gm)	Remarks
1	0.020	0.019	Ok
2	0.020	0.019	Ok
3	0.020	0.018	Ok
4	0.020	0.018	Ok
5	0.020	0.018	Ok
6	0.020	0.018	Ok
7	0.020	0.018	Ok
8	0.020	0.018	Ok
9	0.020	0.018	Ok
10	0.020	0.020	Ok
Mean		0.018	-
Standard Deviation (S.D.)		0.0007	-

Repeatability (%) = $\frac{2 \times (0.41 \times d)}{\text{Standard weight (gm)}}$ X 100 = 4.10

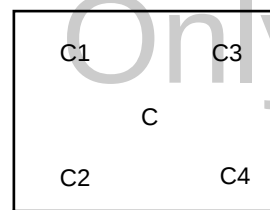
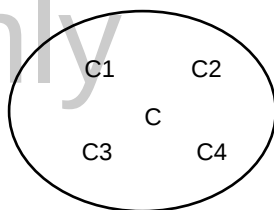
Acceptance criteria : Repeatability is NMT 0.10 %

Remark : Not 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	0.020	C	0.020	-----	Ok
2	0.020	C1	0.021	0.001	Ok
3	0.020	C2	0.022	0.002	Ok
4	0.020	C3	0.022	0.002	Ok
5	0.020	C4	0.020	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: Dipti (D)

Checked By:
(Quality Assurance)

Date : 05.11.2024

Date :