

**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 : August 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 | $\pm 2.000$     | 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  |
|------------|-------|---------------------------|------------|-------------------------------------------------------------------------------|--------|--------------------|--------|--------------|-------------|
| 26.08.2025 | 16:08 | OK                        | Nil        | Lower(20.e)/(5% of a)/Minimum capacity of the checkweigher / weighing balance | 10.000 | 10.000             | Ok     | kumkum(q)    | Abhishek(A) |
|            |       |                           |            | Middle-I(20% of a)                                                            | 20.000 | 20.000             | Ok     | kumkum(q)    | Abhishek(A) |
|            |       |                           |            | Middle-II(50% of a)                                                           | 30.000 | 30.000             | Ok     | kumkum(q)    | Abhishek(A) |
|            |       |                           |            | Upper(80% of a)                                                               | 40.000 | 40.000             | Ok     | kumkum(q)    | Abhishek(A) |

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2. Uncertainty test:

| Sr. No.                   | Standard Weight (g) | Reading displayed on the balance (g) | 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.) |                     | 0.0000                               | -       |

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

**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              | 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      |
| <b>Mean</b>                      |                     | 10.000                               | -       |
| <b>Standard Deviation (S.D.)</b> |                     | 0.0000                               | -       |

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

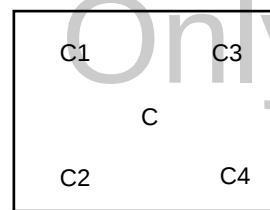
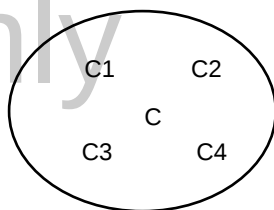
**Acceptance criteria :** Repeatability is NMT 0.10 %

**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        | 10.000                               | -----                      | Ok     |
| 2      | 10.000              | C1       | 10.000                               | 0.000                      | Ok     |
| 3      | 10.000              | C2       | 10.000                               | 0.000                      | Ok     |
| 4      | 10.000              | C3       | 10.000                               | 0.000                      | Ok     |
| 5      | 10.000              | C4       | 10.000                               | 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:** kumkum (q)

**Checked By:**  
(Quality Assurance)

**Date & Time:** 26.08.2025 & 16:08:45

**Date & Time:**