# RELIABLE TECHNICAL SERVICES

(Division of Reliable Technocare Pvt. Ltd.)

"RELIABLE HOUSE" 497/2834-35, Sant Tukaram Nagar,
Pimpri, Pune - 411018. MH, India. Telefax : 020-27421170
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Email : reliable1010@gmail.com/reliabletechnocare@gmail.com
Web. : www.reliable.world


RIR CERTIFICATION
ISO 9001:2015
ACCREDITED BY IAS, USA MSC B-127

CC-2927

## CALIBRATION CERTIFICATE

| | | | |
|---|---|---|---|
| **1.CUSTOMER** | :- | Page No. | :- 1 of 1 |
| **Vishwaraj Hospital** | | NABL Accreditation No. | :- CC-2927 |
| Solapur Road,Rajbaug, | | Certificate No. | :- 22.02.02.002 |
| Loni kalbhor,Pune - 412201 | | Date of Received | :- 02.02.2022 |
| Temperature (°C) | :- 23.3 | Date of Calibration | :- 02.02.2022 |
| Relative Humidity (%RH) | :- 49.1 | Next Calibration Due On | :- 01.02.2023 |
| Condition of Item | :- OK | Location of calibration | :- In lab |
| Atmospheric Pressure | :- 944.7 mbar | Calibration method No. | :- RTS-WI-19 |
| | | Date of Issue | :- 03.02.2022 |
| | | ULR No. | :- CC292722000001160F |

**2. Description of Item**

| | | | |
|---|---|---|---|
| Name | :- Micro-Pipette | Range | :- 10 to 100 µl |
| Id/Sr No | :- PW03608 | Resolution | :- 0.2 µl |
| Make | :- Thermo Scientific | | |

**3.Detail of Equipment used for calibration**

| | |
|---|---|
| Name | :- WEIGHING BALANCE |
| Certificate No. | :- 21.11.IH.002 |
| Certified By | :- RTS |
| ID/Sr. No. | :- RTS-WBL-08 |
| Range | :- 5.1 g |
| Uncertainty | :- ±0.004 mg |
| Calibration Validity | :- 01.11.2022 |

**Discipline** :- Mechanical Calibration **Group** 0 Mass and Volume-Volume

**4.Calibration Results** :-

| Sr.No. | Volume in µl | Observed mean volume at 27 °C (ref. Temp) µl | Systematic Error µl | Random Error µl | Expanded Uncertainty ± µl |
|---|---|---|---|---|---|
| 1 | 10.0 | 10.048 | 0.048 | 0.006 | 0.06 |
| 2 | 50.0 | 50.296 | 0.296 | 0.004 | 0.06 |
| 3 | 100.0 | 100.564 | 0.564 | 0.007 | 0.06 |

**Note:**

1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor k=2, which corresponds to a coverage probability of approximately 95% for normal distribution

2) Barometric Pressure 950 mbar. Volumes are reported at 20°C.

3) This certificate refers only to the particular item submitted for calibration.

4) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.

5) Calibration point were selected as per customer specifications.

6) This certificate shall not be reproduced, except in full unless written permission for the publication of an approved abstract has been obtained from the Technical Manager of "Reliable Technical Services, Pune".

7) The Standard used are traceable to National / International Standard.

8)Calibration of volumetric measures done by any accredited laboratories is meant for scientific and industrial purpose only.

Calibrated By

V. Salunke

Calibration Engineer
V.Salunke

RELIABLE TECHNICAL SERVICES PUNE

Approved By

Sm

Technical Manager
SACHIN A. MHASAWADE

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## CALIBRATION CERTIFICATE

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| **1.CUSTOMER** | :- | Page No. | :- 1 of 1 |
| **Vishwaraj Hospital** | | NABL Accreditation No. | :- CC-2927 |
| Solapur Road,Rajbaug, | | Certificate No. | :- 22.02.02.001 |
| Loni kalbhor,Pune - 412201 | | Date of Received | :- 02.02.2022 |
| Temperature (°C) | :- 23.2 | Date of Calibration | :- 02.02.2022 |
| Relative Humidity (%RH) | :- 50.3 | Next Calibration Due On | :- 01.02.2023 |
| Condition of Item | :- OK | Location of calibration | :- In lab |
| Atmospheric Pressure | :- 945.2 mbar | Calibration method No. | :- RTS-WI-19 |
| | | Date of Issue | :- 03.02.2022 |
| | | ULR No. | :- CC292722000001159F |

**2. Description of Item**

| | | | |
|---|---|---|---|
| Name | :- Micro-Pipette | Range | :- 100 to 1000 µl |
| Id/Sr No | :- QW11353 | Resolution | :- 1 µl |
| Make | :- Thermo Scientific | | |

**3.Detail of Equipment used for calibration**

| | |
|---|---|
| Name | :- WEIGHING BALANCE |
| Certificate No. | :- 21.11.IH.002 |
| Certified By | :- RTS |
| ID/Sr. No. | :- RTS-WBL-08 |
| Range | :- 5.1 g |
| Uncertainty | :- ±0.004 mg |
| Calibration Validity | :- 01.11.2022 |

**Discipline** :- Mechanical Calibration **Group** Mass and Volume-Volume

**4.Calibration Results** :-

| Sr.No. | Volume in µl | Observed mean volume at 27 °C (ref. Temp) µl | Systematic Error µl | Random Error µl | Expanded Uncertainty ± µl |
|---|---|---|---|---|---|
| 1 | 100 | 100.562 | 0.562 | 0.005 | 0.06 |
| 2 | 500 | 503.311 | 3.311 | 0.006 | 0.08 |
| 3 | 1000 | 1004.600 | 4.600 | 0.004 | 0.08 |

**Note:**

1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor $k$=2, which corresponds to a coverage probability of approximately 95% for normal distribution

2) Barometric Pressure 950 mbar. Volumes are reported at 20°C.

3) This certificate refers only to the particular item submitted for calibration.

4) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.

5) Calibration point were selected as per customer specifications.

6) This certificate shall not be reproduced, except in full unless written permission for the publication of an approved abstract has been obtained from the Technical Manager of "Reliable Technical Services, Pune".

7) The Standard used are traceable to National / International Standard.

8)Calibration of volumetric measures done by any accredited laboratories is meant for scientific and industrial purpose only.

Calibrated By

V. Salunke

Calibration Engineer
V.Salunke

RELIABLE TECHNICAL SERVICES PUNE

Approved By

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Technical Manager
SACHIN A. MHASAWADE

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## CALIBRATION CERTIFICATE

**1.CUSTOMER** :-
**Vishwaraj Hospital**
Solapur Road,Rajbaug,
Loni kalbhor,Pune - 412201
Temperature (°C) :- 23.7
Relative Humidity (%RH) :- 49.2
Condition of Item :- OK
Atmospheric Pressure :- 944.4 mbar

Page No. :- 1 of 1
NABL Accreditation No. :- CC-2927
Certificate No. :- 22.01.31.001
Date of Received :- 31.01.2022
Date of Calibration :- 31.01.2022
Next Calibration Due On :- 30.01.2023
Location of calibration :- In lab
Calibration method No. :- RTS-WI-19
Date of Issue :- 31.01.2022
ULR No. :- CC292722000000201F

**2. Description of Item**

Name :- Micro-Pipette
Id. No :- MW17749
Make :- Thermoscientific

Range :- 100 to 1000 µl
Resolution :- 5 µl
Location :- Pathology

**3.Detail of Equipment used for calibration**

Name :- WEIGHING BALANCE
Certificate No. :- 21.11.IH.002
Certified By :- RTS
ID/Sr. No. :- RTS-WBL-08
Range :- 5.1 g
Uncertainty :- ±0.004 mg
Calibration Validity :- 01.11.2022

**Discipline** :- Mechanical Calibration **Group** :- Mass and Volume-Volume

**4.Calibration Results** :-

| Sr.No. | Volume in µl | Observed mean volume at 27 °C (ref. Temp) µl | Systematic Error µl | Random Error µl | Expanded Uncertainty ± µl |
|---|---|---|---|---|---|
| 1 | 100 | 100.674 | 0.674 | 0.004 | 0.06 |
| 2 | 500 | 502.702 | 2.702 | 0.007 | 0.08 |
| 3 | 1000 | 1006.642 | 6.642 | 0.007 | 0.08 |

**Note:**
1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor $k$ =2, which corresponds to a coverage probability of approximately 95% for normal distribution
2) Barometric Pressure 950 mbar. Volumes are reported at 20°C.
3) This certificate refers only to the particular item submitted for calibration.
4) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.
5) Calibration point were selected as per customer specifications.
6) This certificate shall not be reproduced, except in full unless written permission for the publication of an approved abstract has been obtained from the Technical Manager of "Reliable Technical Services, Pune".
7) The Standard used are traceable to National / International Standard.
8)Calibration of volumetric measures done by any accredited laboratories is meant for scientific and industrial purpose only.

Calibrated By
V. Salunke
Calibration Engineer
V. Salunke

RELIABLE TECHNICAL SERVICES ★ PUNE ★

Approved By
Technical Manager
SACHIN A. MHASAWADE

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## CALIBRATION CERTIFICATE

**1.CUSTOMER** :-
**Vishwaraj Hospital**
Solapur Road,Rajbaug,
Loni kalbhor,Pune - 412201
Temperature (°C) :- 23.5
Relative Humidity (%RH) :- 49.1
Condition of Item :- OK
Atmospheric Pressure :- 944.9 mbar

Page No. :- 1 of 1
NABL Accreditation No. :- CC-2927
Certificate No. :- 22.01.31.002
Date of Received :- 31.01.2022
Date of Calibration :- 31.01.2022
Next Calibration Due On :- 30.01.2023
Location of calibration :- In lab
Calibration method No. :- RTS-WI-19
Date of Issue :- 31.01.2022
ULR No. :- CC292722000000202F

**2. Description of Item**

Name :- Micro-Pipette
Id. No :- MW17530
Make :- Thermoscientific

Range :- 10 to 100 µl
Resolution :- 1 µl
Location :- Pathology

**3.Detail of Equipment used for calibration**

Name :- WEIGHING BALANCE
Certificate No. :- 21.11.IH.002
Certified By :- RTS
ID/Sr. No. :- RTS-WBL-08
Range :- 5.1 g
Uncertainty :- ±0.004 mg
Calibration Validity :- 01.11.2022

**Discipline** :- Mechanical Calibration **Group** :- Mass and Volume-Volume

**4.Calibration Results** :-

| Sr.No. | Volume in µl | Observed mean volume at 27 °C (ref. Temp) µl | Systematic Error µl | Random Error µl | Expanded Uncertainty ± µl |
|---|---|---|---|---|---|
| 1 | 10 | 10.047 | 0.047 | 0.005 | 0.06 |
| 2 | 50 | 50.258 | 0.258 | 0.005 | 0.06 |
| 3 | 100 | 100.637 | 0.637 | 0.006 | 0.06 |

**Note:**

1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor k=2, which corresponds to a coverage probability of approximately 95% for normal distribution
2) Barometric Pressure 950 mbar. Volumes are reported at 20°C.
3) This certificate refers only to the particular item submitted for calibration.
4) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.
5) Calibration point were selected as per customer specifications.
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8)Calibration of volumetric measures done by any accredited laboratories is meant for scientific and industrial purpose only.

Calibrated By

V. Salunke

Calibration Engineer
V. Salunke

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Approved By

Technical Manager
SACHIN A. MHASAWADE

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CC-2927

## CALIBRATION CERTIFICATE

**1.CUSTOMER** :-
**Vishwaraj Hospital**
Solapur Road,Rajbaug,
Loni kalbhor,Pune - 412201
Temperature (°C) :- 23.8
Relative Humidity (%RH) :- 49.9
Condition of Item :- OK
Atmospheric Pressure :- 944.6 mbar

Page No. :- 1 of 1
NABL Accreditation No. :- CC-2927
Certificate No. :- 22.01.31.003
Date of Received :- 31.01.2022
Date of Calibration :- 31.01.2022
Next Calibration Due On :- 30.01.2023
Location of calibration :- In lab
Calibration method No. :- RTS-WI-19
Date of Issue :- 31.01.2022
ULR No. :- CC292722000000203F

**2. Description of Item**

Name :- Micro-Pipette
Id. No :- MW19503
Make :- Thermoscientific

Range :- 1000 µl
Resolution :- Fixed
Location :- Pathology

**3.Detail of Equipment used for calibration**

Name :- WEIGHING BALANCE
Certificate No. :- 21.11.IH.002
Certified By :- RTS
ID/Sr. No. :- RTS-WBL-08
Range :- 5.1 g
Uncertainty :- ±0.004 mg
Calibration Validity :- 01.11.2022

**Discipline** :- Mechanical Calibration **Group** :- Mass and Volume-Volume

**4.Calibration Results** :-

| Sr.No. | Volume in µl | Observed mean volume at 27 °C (ref. Temp) µl | Systematic Error µl | Random Error µl | Expanded Uncertainty ± µl |
|---|---|---|---|---|---|
| 1 | 1000 | 1005.952 | 5.952 | 0.008 | 0.08 |

**Note:**

1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor k=2, which corresponds to a coverage probability of approximately 95% for normal distribution
2) Barometric Pressure 950 mbar. Volumes are reported at 20°C.
3) This certificate refers only to the particular item submitted for calibration.
4) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.
5) Calibration point were selected as per customer specifications.
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Calibration Engineer
V. Salunke

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## CALIBRATION CERTIFICATE

**1.CUSTOMER** :-
**Vishwaraj Hospital**
Solapur Road,Rajbaug,
Loni kalbhor,Pune - 412201
Temperature (°C) :- 23.5
Relative Humidity (%RH) :- 49.3
Condition of Item :- OK
Atmospheric Pressure :- 944.9 mbar

Page No. :- 1 of 1
NABL Accreditation No. :- CC-2927
Certificate No. :- 22.01.31.004
Date of Received :- 31.01.2022
Date of Calibration :- 31.01.2022
Next Calibration Due On :- 30.01.2023
Location of calibration :- In lab
Calibration method No. :- RTS-WI-19
Date of Issue :- 31.01.2022
ULR No. :- CC292722000000204F

**2. Description of Item**

Name :- Micro-Pipette
Id. No :- 4538400893
Make :- VI221

Range :- 145 µl
Resolution :- Fixed
Location :- Microbiology

**3.Detail of Equipment used for calibration**

Name :- WEIGHING BALANCE
Certificate No. :- 21.11.IH.002
Certified By :- RTS
ID/Sr. No. :- RTS-WBL-08
Range :- 5.1 g
Uncertainty :- ±0.004 mg
Calibration Validity :- 01.11.2022

**Discipline** :- Mechanical Calibration **Group** :- Mass and Volume-Volume

**4.Calibration Results** :-

| Sr.No. | Volume in µl | Observed mean volume at 27 °C (ref. Temp) µl | Systematic Error µl | Random Error µl | Expanded Uncertainty ± µl |
|---|---|---|---|---|---|
| 1 | 145 | 145.710 | 0.710 | 0.003 | 0.08 |

**Note:**

1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor k=2, which corresponds to a coverage probability of approximately 95% for normal distribution
2) Barometric Pressure 950 mbar. Volumes are reported at 20°C.
3) This certificate refers only to the particular item submitted for calibration.
4) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.
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V Salunke
Calibration Engineer
V. Salunke

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| **Vishwaraj Hospital** | | NABL Accreditation No. | :- CC-2927 |
| Solapur Road,Rajbaug, | | Certificate No. | :- 22.01.31.005 |
| Loni kalbhor,Pune - 412201 | | Date of Received | :- 31.01.2022 |
| Temperature (°C) | :- 23.5 | Date of Calibration | :- 31.01.2022 |
| Relative Humidity (%RH) | :- 49.8 | Next Calibration Due On | :- 30.01.2023 |
| Condition of Item | :- OK | Location of calibration | :- In lab |
| Atmospheric Pressure | :- 945.3 mbar | Calibration method No. | :- RTS-WI-19 |
| | | Date of Issue | :- 31.01.2022 |
| | | ULR No. | :- CC292722000000205F |

**2. Description of Item**

| | | | |
|---|---|---|---|
| Name | :- Micro-Pipette | Range | :- 280 µl |
| Id. No | :- 19028558 | Resolution | :- Fixed |
| Make | :- VI222 | | |
| | | Location | :- Microbiology |

**3.Detail of Equipment used for calibration**

| | |
|---|---|
| Name | :- WEIGHING BALANCE |
| Certificate No. | :- 21.11.IH.002 |
| Certified By | :- RTS |
| ID/Sr. No. | :- RTS-WBL-08 |
| Range | :- 5.1 g |
| Uncertainty | :- ±0.004 mg |
| Calibration Validity | :- 01.11.2022 |

**Discipline** :- Mechanical Calibration **Group** :- Mass and Volume-Volume

**4.Calibration Results** :-

| Sr.No. | Volume in µl | Observed mean volume at 27 °C (ref. Temp) µl | Systematic Error µl | Random Error µl | Expanded Uncertainty ± µl |
|---|---|---|---|---|---|
| 1 | 280 | 281.451 | 1.451 | 0.006 | 0.08 |

**Note:**

1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor k=2, which corresponds to a coverage probability of approximately 95% for normal distribution

2) Barometric Pressure 950 mbar. Volumes are reported at 20°C.

3) This certificate refers only to the particular item submitted for calibration.

4) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.

5) Calibration point were selected as per customer specifications.

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Calibration Engineer
V. Salunke

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Approved By

Technical Manager
SACHIN A. MHASAWADE

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(Division of Reliable Technocare Pvt. Ltd.)
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# CALIBRATION CERTIFICATE

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|---|---|---|---|
| **1.CUSTOMER** | :- | Page No. | :- 1 of 2 |
| **Reliable Technical Services** | | NABL Accreditation No. | :- CC-2927 |
| (A DIVISION OF RELIABLE TECHNOCARE PVT. LTD.) | | Certificate No. | :- 21.11.IH.002 |
| Reliable House', 497/2834-35, Sant Tukaram Nagar,Pimpri, Pune-411 018 | | Date of Received | :- -- |
| Temperature (°C) | :- 22.5 | Date of Calibration | :- 02.11.2021 |
| Relative Humidity (%RH) | :- 53 | Next Calibration Due On | :- 01.11.2022 |
| Location of calibration | :- In Lab | Calibration method No. | :- RTS-WI-18 |
| Condition of Item | :- OK | Date of Issue | :- 02.11.2021 |
| | | ULR No. | :- CC292721000005544F |

**2. Description of Item**

| | | | |
|---|---|---|---|
| Name | :- Weighing Balance | Max. Capacity | :- 5.1 g |
| Id. No | :- RTS-WBL-08 | Resolution 'd' | :- 0.000001g |
| Make/Model | :- Radwag/MYA5.4Y | Class | :- Class I |
| Type | :- Digital | Value 'e' | :- 0.001 g |
| Sr. No. | :- 580744 | | |

**3.Detail of Equipment used for calibration**

| | |
|---|---|
| Name | :- Std. Weight Box |
| Certificate No | :- NC-486 |
| Certified By | :- NSTAR |
| ID/Sr. No. | :- RTS-WB-06 |
| Range | :- 1 mg to 200 g |
| Uncertainty | :- As Per Traceability |
| Calibration Validity | :- 27.10.2023 |

Discipline :- Mechanical Calibration Group :- Mass and Volume-Weights Scale and Balance

**4.Calibration Results** :-

**i. REPEATABILITY OF MEASUREMENTS**

| LOAD | REPEATABILITY OF MEASUREMENT | MAX DIFFERENCE BETWEEN SUCCESSIVE MEASUREMENTS |
|---|---|---|
| g | g | g |
| 5 | 0.000001 | 0.000001 |
| 2.5 | 0.000000 | 0.000001 |

**ii. CORRECTION FOR BALANCE INDICATION (LINEARITY TEST)**

| LOAD | CERTIFIED MASS OF STANDARD | OBSERVED ON UUC | CORRECTION | UNCERTAINTY OF WEIGHING (±) |
|---|---|---|---|---|
| g | g | g | g | mg |
| 5 | 4.9999993 | 5.000007 | 0.000008 | 0.004 |
| 2 | 1.9999987 | 2.000005 | 0.000006 | 0.004 |
| 1 | 0.9999988 | 1.000003 | 0.000004 | 0.004 |
| 0.5 | 0.5000002 | 0.500001 | 0.000001 | 0.004 |
| 0.2 | 0.2000005 | 0.200002 | 0.000002 | 0.004 |
| 0.1 | 0.1000009 | 0.100002 | 0.000001 | 0.004 |
| 0.05 | 0.0499987 | 0.050001 | 0.000002 | 0.004 |
| 0.01 | 0.0100002 | 0.010000 | 0.000000 | 0.004 |
| 0.005 | 0.0050008 | 0.005000 | -0.000001 | 0.004 |
| 0.002 | 0.0020008 | 0.002000 | -0.000001 | 0.004 |
| 0.001 | 0.0010016 | 0.001000 | -0.000002 | 0.004 |

**The overall uncertainty of the balance is (F) 0.000012g**

**iii. OFF CENTER LOADING TEST**

A weight of 2 g was placed at the centre of the balance pan & then was moved to various positions related to the center. The maximum Error due to Off Center loading, relative to center was found to be - 0.000001 g

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KIS CERTIFICATION ISO 9001:2015 ACCREDITED BY IAS, USA

CC-2927



**iv. HYSTERESIS TEST**

The Hysteresis in the Electronic weighing Balance was found to be 0.000001 g

**Note:**

1)The reported uncertainty is the expanded uncertainty in measurement obtained by multiplying the standard uncertainty by the coverage factor $k=2$, which corresponds to a coverage probability of approximately 95% for normal distribution

2) When the sign of the correction is positive (+) the correction value should be added to the balance reading to give the correct mass value of the test weight & when it is negative (-) the correction value should be substracted from it

3) Any correction for the Air buoyancy has to be calculated assuming that the object being weighted is balanced against a hypothetical weight of density (7950 ± 140 kg/m³ ; (k=2) for Stainless Steel Weights in air of measured density

4) This certificate refers only to the particular item submitted for calibration

5) This certificate shall not be reproduced, except in full unless written permission for the publication of an approved abstract has been obtained from the Technical Manager of "Reliable technical Services, Pune".

6) The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.

7) The Standard used are traceable to National / International Standard.

8)The calibration certificate issued for weighing balance used for scientific or industrial purposes only

9) The above Errors are within the maximum permissible error as per Clause 3.5.1 table 6 of OIML Recommendation No. 76-1 Edition 2006 (E)

Calibrated By
Calibration Engineer
V. Salunke

Approved By
Technical Manager
Sachin A. Mhasawade

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