

Calibration Certificate of Test Weights

Unique Lab Report No : CC321321000000001F
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Certificate No. : NC-001
Certificate Issue Date : February 10, 2021
Calibration Due Date : --

Customer Name : **NSTAR Corp**
34, Pelican Estate
Road No 5
Kathwada GIDC, Kathwada
Ahmedabad - 382430

Instrument Detail : **Calibration Weights set**

Instrument Condition : Satisfactory at the time of receipt
Date of Receipt : February 4, 2021
Inward Reference No : NC-001
Density - Ref. Weights : Austenitic Stainless Steel
(Density from certificate)
Density - Test Weights : Austenitic Stainless Steel
Assumed Density - (8000 ± 50) kg/m³
Shape of Weights : 1 mg to 500 mg - Wire Weights
1/10/100 mg - Triangle Shape
2/20/200 mg - Square Shape
5/50/500 mg - Pentagon Shape
1 g to 200 g - Cylindrical Knob Shape

Make : NSTAR
Model : NC-001-0.2K-E1-ASS
Range of Capacity : 1 mg to 200 g
Accuracy Class : E1
Serial Number : 00001
Equipment ID : ----
Stabilization Time (hrs) : 138:00
Avg. Temperature : 25.3 °C
Avg. Humidity : 42.65 % Rh
Avg. Pressure : 1008.3 mbar
Location : At Laboratory

Important Remarks :

- 01 Environmental conditions mentioned in the certificate was observed during the calibration.
Temperature change is limited to : ± 0.3 °C per hour with a maximum of ± 0.5 °C per 12 hours
Relative Humidity change is limited to : 40 % to 60 % with a maximum of ± 5 % per 4 hours
- 02 The weights listed on this calibration report have been compared to reference mass standards that are traceable to the SI through the Zwiebel, France (COFRAC Accreditation) under Test certificate number : Z2027233, Z2027234.
- 03 This certificate is issued for the items submitted to and calibrated by NSTAR Corp Metrology Department. The weights calibrated in this report have been calibrated in accordance with Laboratory Procedure NC-SOP-001. The calibration performed meets the criteria as described in the current revisions of NABL 129 and OIML R-111.
- 04 Nstar Corp Metrology Department have not performed any adjustments and repairs of test instruments before calibrations. The results shown are as it was received and observed or calibrated.
- 05 The calibration certificate issued for weights/mass used for scientific or industrial purpose only.
- 06 This certificate of calibration shall not be reproduced except in full, without the written approval of Nstar Corp. This certificate of calibration must not be used by the customer to claim product endorsement by NABL, NPL, COFRAC and similar government agencies.

Approved By:
Mr. Naitik Patel



NSTAR Corp

34, Pelican Estate, Road No 5, Kathwada GIDC,
Kathwada, Ahmedabad - 382430, Gujarat, India

+91 7567 222 900
sales@calibrationweights.in
www.calibrationweights.in

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* Results of Calibration *

Identification/ Serial no.	Nominal mass value	Conventional Mass value (g)	Correction (g)	Tolerance Limit (MPE) (±) (g)	Expanded Uncertainty (U) (±) (g)	Calibration By	Calibration Date
	1 mg	0.000 999 2	-0.000 000 8	0.000 003	0.000 001 0	Pratik Patel	10-02-2021
*	2 mg	0.002 001 8	0.000 001 8	0.000 003	0.000 001 0	Pratik Patel	10-02-2021
	2 mg	0.001 999 6	-0.000 000 4	0.000 003	0.000 001 0	Pratik Patel	10-02-2021
	5 mg	0.004 998 1	-0.000 001 9	0.000 003	0.000 001 0	Pratik Patel	10-02-2021
	10 mg	0.010 000 3	0.000 000 3	0.000 003	0.000 001 0	Pratik Patel	10-02-2021
*	20 mg	0.020 000 4	0.000 000 4	0.000 003	0.000 001 0	Pratik Patel	10-02-2021
	20 mg	0.019 998 9	-0.000 001 1	0.000 003	0.000 001 0	Pratik Patel	10-02-2021
	50 mg	0.050 001 3	0.000 001 3	0.000 004	0.000 001 3	Pratik Patel	10-02-2021
	100 mg	0.100 002 1	0.000 002 1	0.000 005	0.000 001 6	Pratik Patel	10-02-2021
*	200 mg	0.200 001 7	0.000 001 7	0.000 006	0.000 002 0	Pratik Patel	10-02-2021
	200 mg	0.200 002 9	0.000 002 9	0.000 006	0.000 002 0	Pratik Patel	10-02-2021
	500 mg	0.499 996 0	-0.000 004 0	0.000 008	0.000 002 6	Pratik Patel	10-02-2021
	1 g	1.000 001 9	0.000 001 9	0.000 010	0.000 003 0	Pratik Patel	10-02-2021
*	2 g	2.000 000 1	0.000 000 1	0.000 012	0.000 004 0	Pratik Patel	10-02-2021
	2 g	2.000 003 2	0.000 003 2	0.000 012	0.000 004 0	Pratik Patel	10-02-2021
	5 g	5.000 003 0	0.000 003 0	0.000 016	0.000 005 0	Pratik Patel	10-02-2021
	10 g	10.000 001	0.000 000 9	0.000 020	0.000 006 6	Pratik Patel	10-02-2021
*	20 g	20.000 003	0.000 002 7	0.000 025	0.000 008	Pratik Patel	10-02-2021
	20 g	20.000 010	0.000 009 9	0.000 025	0.000 008	Pratik Patel	10-02-2021
	50 g	49.999 991	-0.000 009 0	0.000 030	0.000 010	Pratik Patel	10-02-2021
	100 g	99.999 979	-0.000 020 6	0.000 050	0.000 016	Pratik Patel	10-02-2021
*	200 g	200.000 00	0.000 003 0	0.000 100	0.000 032	Pratik Patel	10-02-2021
	200 g	199.999 97	-0.000 029 0	0.000 100	0.000 032	Pratik Patel	10-02-2021

Report :

Mass values of all the above stated weights are within the maximum permissible errors of accuracy class as per OIML R-111.

OIML E1

The reported uncertainty is at coverage factor $k=2$ which corresponds to a coverage probability of approximately 95% for a normal distribution. The contribution of uncertainty originating from the mass standards and balances used, the weighing process and the air buoyancy correction are taken into account.

The reported Expanded Uncertainty (U) for the Nominal mass value is 1/3 of the maximum permissible error (MPE) for the above stated accuracy class as defined by the document quoted in reference.

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* Masters Used for Calibration *


Identification/ Serial no.	Nominal mass value	Standards Used	Traceability Certificate No.	Calibration Due Date	Mass Comparator / Balance(s) Used	Procedure
NC-EQP-001	1 mg	OIML E1 class weights certified by Zwiebel, France, Cofrac Accreditation	Z2027234	25-08-2023	6.1 g X 0.1 µg	NC-SOP-001 Substitution ABBA 5 Cycles
	2 mg					
	5 mg					
	10 mg					
	20 mg					
	50 mg					
	100 mg					
	200 mg					
	500 mg					
	1 g C17		Z2027233			
	2 g C61					
	5 g B72					
10 g B68						
20 g C67						
50 g C8						
100 g B96	100 g X 1 µg					
200 g C92						
					1 kg X 10 µg	



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Mr. Naitik Patel
Authorised Signatory

NSTAR Corp

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Kathwada, Ahmedabad - 382430, Gujarat, India

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