



NABL

National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

CERTIFICATE OF ACCREDITATION

HI-TECH CALIBRATION SERVICES

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

No.209, VGP Nagar, Muggapair West, Chennai, Tamil Nadu

in the discipline of

MECHANICAL CALIBRATION

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number C-1263

Issue Date 06/09/2016



Valid Until 10/09/2017

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

Avijit Das
Program Manager

Anil Relia
Director

Prof. S. K. Joshi
Chairman



NABL

SCOPE OF ACCREDITATION

Laboratory	Hi Tech Calibration Services, No. 209, VGP Nagar, Mugappair West, Chennai, Tamil Nadu		
Accreditation Standard	ISO/IEC 17025:2005		
Discipline	Mechanical Calibration	Issue Date	06.09.2016
Certificate Number	C-1263	Valid Until	10.09.2017
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Quantity Measured / Instrument	Range/ Frequency	* Calibration Measurement Capability (\pm)	Remarks
I. PRESSURE INDICATING DEVICES			
1. PRESSURE - PNEUMATIC [#] (Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder, Magnehelic Gauge, Level Gauge, Manometer)	0 to 0.25 bar 0 to 0.6 bar 0 to 2 bar 0 to 25 bar	0.000065 bar 0.00011 bar 0.00055 bar 0.0021 bar	Using Pressure Calibrator by Comparison Method, as per DKD-R 6-1
2. PRESSURE - HYDRAULIC [#] (Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder)	0 to 70 bar 0 to 400 bar 0 to 1000 bar	0.021 bar 0.046 bar 0.16 bar	Using Pressure Calibrator by Comparison Method, as per DKD-R 6-1
3. VACUUM - PNEUMATIC [#] (Vacuum Gauge, Vacuum Indicator, Vacuum Calibrator, Vacuum Transmitter, Vacuum Transducer, Vacuum Switch, Vacuum Recorder)	(-) 0.6 bar to 0 bar (-) 0.95 bar to 0 bar	0.00012 bar 0.00014 bar	Using Pressure Calibrator by Comparison Method, as per ISO - 3567 & ISO - 27893

Vishal Shukla
Convenor

Avijit Das
Program Manager



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II. ACCELERATION AND SPEED			
1. RPM [#] (Indicator of Centrifuge, RPM Meter, RPM Source)	200 RPM to 14000 RPM	11 RPM	Using Digital Tachometer by Comparison Method Procedure based on SANAS TR 45-01
III. WEIGHTS			
1. WEIGHTS ^S			
Accuracy Class F1 and Coarser	1 mg	0.007 mg	Using E1 Class Standard Weights and Electronic Balance (Readability 0.01 / 0.1 mg) Procedure based on OIML R111
	2 mg	0.007 mg	
	5 mg	0.007 mg	
	10 mg	0.009 mg	
	20 mg	0.009 mg	
	50 mg	0.009 mg	
	100 mg	0.009 mg	
	200 mg	0.009 mg	
	500 mg	0.009 mg	
Accuracy Class E2 and Coarser	1 g	0.009 mg	
	2 g	0.009 mg	
	5 g	0.011 mg	
	10 g	0.014 mg	
	20 g	0.015 mg	
	50 g	0.02 mg	
	100 g	0.07 mg	
	200 g	0.075 mg	
Accuracy Class F1 and Coarser	500 g	0.7 mg	Using E1 Class Standard Weights and Electronic Balance (Readability 1 mg) as per OIML R111

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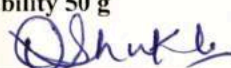
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Quantity Measured / Instrument	Range/ Frequency	* Calibration Measurement Capability (\pm)	Remarks
	1 kg	0.8 mg	Using E2 Class Standard Weights and Electronic Balance (Readability 1 mg) as per OIML R111
	2 kg	0.008 g	Using E2 Class Standard Weights and Electronic Balance (Readability 0.01 g) as per OIML R111
	5 kg	0.008g	
	10 kg	0.07 g	Using E2 Class Standard Weights and Electronic Balance (Readability 0.1 g) as per OIML R111
Accuracy Class F2 and Coarser	20 kg	0.07 g	Using E2 Class Standard Weights and Electronic Balance (Readability 0.1 g) as per OIML R111
Accuracy Class M1 and Coarser	50 kg	0.7 g	Using F2 Class Standard Weights and Electronic Balance (Readability 1 g) As per OIML R111

IV. WEIGHING SCALE AND BALANCE

1. WEIGHING BALANCE *

Readability 0.001 mg	Upto 21 g	0.015 mg	Using E1 Class Standard Weights (Upto 1 kg), E2 Class Standard Weights (Upto 22 kg), E2 & F1 Class Standard Weights (Upto 60 kg), E2, F1 & F2 Class Standard Weights (Upto 300 kg) F1, F2 & M1 Class Standard Weights (Upto 600 kg) As per OIML R76
Readability 0.01 mg	Upto 220 g	0.053 mg	
Readability 1 mg	Upto 1 kg	0.39 mg	
Readability 10 mg	Upto 6.2 kg	0.006 g	
Readability 0.1 g	Upto 22 kg	0.011 g	
Readability 1 g	Upto 60 kg	0.2 g	
Readability 5 g	Upto 100 kg	1 g	
Readability 10 g	Upto 300 kg	2 g	
Readability 50 g	Upto 600 kg	10.5 g	


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V. VOLUME			
1. MICRO PIPETTE ^s	10 μ l to 50 μ l	0.07 μ l	Using Electronic Balance and Distilled Water with known Density by Gravimetric Method, Procedure based on ISO 8655 part 6
	50 μ l to 100 μ l	0.1 μ l	
	100 μ l to 1000 μ l	0.28 μ l	
	1 ml to 10 ml	0.64 μ l	
2. PIPETTE ^s	0.1 ml to 1 ml	0.67 μ l	Using Electronic Balance and Distilled Water with known Density by Gravimetric Method as per ISO 4787
	1 ml to 20 ml	3.08 μ l	
	20 ml to 50 ml	3.2 μ l	
3. BURETTE ^s	1 ml to 10 ml	0.84 μ l	Using Electronic Balance and Distilled Water with known Density by Gravimetric Method, as per ISO 4787
	10 ml to 50 ml	4.0 μ l	
	50 ml to 100 ml	6.0 μ l	
4. STANDARD FLASK, CONICAL FLASK, BEAKER ^s	1 ml to 10 ml	2.2 μ l	Using Electronic Balance and Distilled Water with known Density by Gravimetric Method, as per ISO 4787
	10 ml to 50 ml	5.7 μ l	
	50 ml to 100 ml	0.02 ml	
	100 ml to 500 ml	0.04 ml	
	500 ml to 1000 ml	0.07 ml	
1000 ml to 5000 ml	0.3 ml		
5. MEASURING CYLINDER ^s	1 ml to 10 ml	0.56 ml	Using Electronic Balance and Distilled Water with known Density by Gravimetric Method, as per ISO 4787
	10 ml to 50 ml	0.05 ml	
	50 ml to 100 ml	0.06 ml	
	100 ml to 1000 ml	0.13 ml	
	1000 ml to 5000 ml	0.51 ml	
5000 ml to 10000 ml	1.7 ml		

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6. MEASURING JAR ^S	1 ml to 10000 ml 10000 ml to 20000 ml 20000 ml to 50000 ml	1.2 ml 1.7 ml 5 ml	Using Electronic Balance and Distilled Water with known Density by Gravimetric Method, as per ISO 4787
7. BULK DENSITY CYLINDER ^S	3000 ml to 30000 ml	4 ml	Using Electronic Balance and Distilled Water with known Density by Gravimetric Method, as per ISO 4787

* Measurement Capability is expressed as an uncertainty (\pm) at a confidence probability of 95%

^SOnly in Permanent Laboratory

*Only for Site Calibration

[#]The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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