# Certificate of Accreditation



# Yadav Measurements Private Limited

## Calibration Laboratory No. 0616

## Is accredited in accordance with International Standard ISO/IEC 17025:2017 – General Requirements for the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined scope specified in the schedule to this certificate, and the operation of a management system (refer joint ISO-ILAC-IAF Communiqué dated April 2017). The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued.

The most recent issue of the schedule of accreditation, which bears the same accreditation number as this certificate, is available from www.ukas.com.

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements.

Matt Gantley, Chief Executive Officer United Kingdom Accreditation Service

Initial Accreditation: 29 April 1999 Certificate Issued: 25 January 2021



Scan QR Code to verify

# Schedule of Accreditation

issued by

**United Kingdom Accreditation Service** 

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK



## Locations covered by the organisation and their relevant activities

Laboratory locations:

| Location details  |   | Activity                                  | Location code |
|---|---|---|---------------|
| Address<br>Post Box 169<br>Plot No. F-373 – 375<br>Riico Bhamashah<br>Industrial Area<br>Kaladwas<br>Udaipur 313 003<br>India | Local contact<br>Mr B M Vyas<br>Tel: +91 294 265 0127<br>Fax: +91 294 265 0129<br>E-Mail:<br>yadav.measurements@ymllabs.com | <u>Calibration:</u><br>Electrical<br>Flow | Ρ             |

## Site activities performed away from the locations listed above:

| Location details   | Activity                | Location code |
|--|-------------------------|---------------|
| The customers' site or premises must be suitable for the nature of<br>the particular calibrations undertaken and will be the subject of<br>contract review arrangements between the laboratory and the<br>customer | Calibration: Electrical | S             |

| a h                | Schedule of Accreditation                                      |
|--------------------|--|
|                    | United Kingdom Accreditation Service                           |
| ()>∢) –            | 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK |
|                    |  |
| CALIBRATION        | Yadav Measurements Private Limited                             |
| 0616               | Issue No: 039 Issue date: 20 March 2023                        |
| Accredited to      |  |
| ISO/IEC 17025:2017 |  |

| Measured Quantity<br>Instrument or Gauge   | Range  | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)             | Remarks | Location<br>Code |
|--|--|--|---------|------------------|
| Values and uncertainties listed below are applicable for the calibration of both measurement instruments and for instruments with an output.<br>the method used is by direct comparison unless otherwise stated in the remarks column. |  |  |         |                  |
| ELECTRICAL MEASUREMENTS  |  |  |         |                  |
| Calibration of specific test equipment   |  |  |         |                  |
| EFT/B Generators   |  |  |         | Р                |
| Peak voltage into 50 $\Omega$ & 1 K $\Omega$<br>Rise and fall time<br>Burst period and duration<br>Frequency   | 0.25 kV to 7 kV<br>5 ns to 50 ns<br>15 ms to 300 ms<br>2.5 kHz, 5 kHz, 100 kHz   | 3.0 %<br>5.0 %<br>5.0 %<br>5.0 %                                   |         |                  |
| Surge generator  |  |  |         | Р                |
| Rise and fall time<br>Open circuit Voltage<br>Short circuit Current<br>Phase angle   | 0.5 µs to 700 µs<br>0.5 kV to 15 kV<br>0.2 kA to 7.5 kA<br>0 ° to 360 °  | 3.0 %<br>5.0 %<br>5.0 %<br>1.70 °                                  |         |                  |
| Damped oscillatory generator   |  |  |         | Р                |
| Voltage<br>Rise time<br>Frequency<br>Repetition rate   | 0.25 kV to 4 kV<br>1.0 ns to 1.0 s<br>100 kHz to 1 MHz<br>1.0 µs to 1.0 s  | 5.0 %<br>3.5 %<br>3.0 %<br>3.0 %                                   |         |                  |
| Ring wave generator  |  |  |         | Р                |
| Open circuit Voltage<br>Short circuit Current<br>Rise time<br>Repetition rate  | 0.25 kV to 6 kV<br>8 A to 500 A<br>0.2 μs to 1.0 μs<br>1/minute or 1/s   | 2.0 %<br>2.0 %<br>2.0 %<br>1.0 %                                   |         |                  |
| High frequency field uniformity<br>calibration in GTEM/Anechoic<br>chamber   | <u>GTEM (</u> 80 MHz to 1000<br>MHz)<br>2 V/m<br>3 V/m<br>10 V/m<br>30 V/m<br><u>GTEM (</u> 1000 MHz to 6000<br>MHz)<br>2 V/m<br>3 V/m | 0.23 V/m<br>0.69 V/m<br>2.3 V/m<br>6.9 V/m<br>0.30 V/m<br>0.96 V/m |         | S                |
|  | 10 V/m<br>30 V/m   | 3.0 V/m<br>9.0 V/m   |         |                  |

## Calibration and Measurement Capability (CMC)

|                            | Schedule of Accreditation<br>issued by<br>United Kingdom Accreditation Service<br>2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK |  |
|----------------------------|--|--|
| <b>UKAS</b><br>CALIBRATION | Yadav Measurements Private Limited   |  |
| 0616                       | Issue No: 039 Issue date: 20 March 2023  |  |
| Accredited to              |  |  |
| ISO/IEC 17025:2017         |  |  |
|                            | Calibration performed by the Organisation at the locations specified   |  |

| Measured Quantity<br>Instrument or Gauge                  | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2) | Remarks   | Location<br>Code |
|---|---|--|---|------------------|
| Three phase voltage dips and interruptions calibration    |   |  |   | Р                |
| Phase angle<br>Pulse rise/fall time<br>Voltage at no load | (0 to 360 °)<br>(0.1 to 5) μs<br>0.1 VAC to 240 VAC (P-N)<br>& 415 VAC (P-P)  | 1.70 °<br>5.0 %<br>1.0 %                               |   |                  |
| Inrush current<br>Time interval<br>Overshoot & undershoot | 30 A<br>6 ms to 5 min   | 3.0 %<br>3.0 %<br>5.0 %                                |   |                  |
| FLOW MEASUREMENTS   |   |  | Calibration of flow meters<br>using volumetric and<br>reference meter methods | Р                |
| Gas quantity passed                                       | 0.001 m <sup>3</sup> to 0.01 m <sup>3</sup><br>0.01 m <sup>3</sup> to 0.08 m <sup>3</sup><br>At flow rates of:<br>0.016 m <sup>3</sup> /hour to 6.6<br>m <sup>3</sup> /hour | 0.27 %<br>0.13 %                                       | Calibration medium: Air<br>and Methane  |                  |
| Gas volume flow-rate                                      | 0.016 m <sup>3</sup> /hour to 6.6 m <sup>3</sup> /hour<br>At quantities passed of 0.001 m <sup>3</sup> to 0.01 m <sup>3</sup><br>0.01 m <sup>3</sup> to 0.08 m <sup>3</sup> | 0.27 %<br>0.16 %                                       |   |                  |
| Gas mass flow-rate  | 0.018 kg/hour to 7.5<br>kg/hour<br>At quantities passed of<br>0.0011 kg to 0.011 kg<br>0.011 kg to 0.090 kg   | 0.32 %<br>0.20 %                                       |   |                  |
| END   |   |  |   |                  |

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## Appendix - Calibration and Measurement Capabilities

#### Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

#### Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of k = 2. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

#### Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand. Thus, for example, a measurement uncertainty of 1.5 % means  $1.5 \times 0.01 \times q$ , where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets:  $Q[a, b] = [a^2 + b^2]^{1/2}$