



# Certificate of Accreditation

This is to certify that

## SPIE SERVICES NIGERIA LIMITED

55, TRANS-AMADI INDUSTRIAL LAYOUT, PORT HARCOURT, RIVERS STATE, NIGERIA

Has been assessed by the Nigeria National Accreditation System and meets the requirements of the International Standard

·-----

## ISO/IEC 17025:2017

with demonstrated technical competence in the field of



for the specific services listed on the approved Scope of Accreditation.

On behalf of the Nigeria National Accreditation System:



Issue date: May 12, 2025 Valid through: May 11, 2027

#### Scope of Accreditation

### **Calibration Laboratory**

SPIE SERVICES NIGERIA LIMITED

55, TRANS-AMADI INDUSTRIAL LAYOUT, PORT HARCOURT, RIVERS STATE, NIGERIA Issue No. 2: 12 05, 2025

Schedule NO.: CL0005

Valid to : 11 05, 2027

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)

	Measured Quantity	Range	Expanded Measurement Uncertainty (k = 2)	Remark (Calibration Method)
1	Pressure			
	Pressure Gauge / Transducer (Accuracy class 1 and above)	0 to 700 bar	0.087%	Comparison of UUT readings to that of the master/reference pressure gauge using pressure comparator in line with internal procedures and relevant standards (i.e DKD-R 6-1, DKD-R 6-2, ASTM D5720-95, ISO 4126-1, API 576
	Pressure Gauge / Transducer (Accuracy class below 1)	0 to 700 bar	0.025%	
	Pressure Recorder / Transmitter / Safety valve / switch	0 to 700 bar	0.087%	
	Vacuum Gauge	-1 to 0 bar	± 0.025%	DKD-R 6-2
2				
	Torque Wrench / torque device or meter / screw drivers	0 to 600 Nm	0.5%	Calibration of UUT using precision torque transducer with digital display in line with internal procedure and ISO 6789
3A	Electrical - Sourcing	_	_	
	DC Voltage	0mV to 200mV	15ppm + 3μV	Calibration of DC voltage measuring devices in compliance with EURAMET Cg-15
		0.2V to 200V	15ppm + 15μV	
		200V to 1000V	25ppm + 1.5mV	

Schedule No: CL0005

Issue No. 2: 12 05, 2025

	Measured Quantity	Range	Expanded Measurement Uncertainty (k = 2)	Remark (Calibration Method)
	DC Current	0μA to 200μA	80ppm + 15nA	Calibration of DC current measuring devices in compliance with EURAMET Cg-15
		0.2mA to 2mA	60ppm + 40nA	
		2mA to 20mA	60ppm + 200nA	
		20mA to 200mA	60ppm + 20µA	
		0.2A to 2A	100ppm + 35µA	
		2A to 20A	250ppm + 400μA	
		20A to 110A	0.5% + 0.05A	Using current coil
		110A to 1000A	0.5% + 0.15A	
		20 Hz to 100 kHz		Calibration of AC voltage measuring devices in compliance with EURAMET Cg-15
		1mV to 200mV	0.03% + 25μV	
		0.2V to 2V	0.02% + 80μV	
	AC Voltage	2V to 20V	0.02% + 1mV	
		40 Hz to 1 kHz		
		20V to 200V	0.03% + 15mV	
		200 V to 1000 V	0.08% + 60mV	
	AC Current	20 Hz to 5 kHz		Calibration of DC current measuring devices in compliance with EURAMET Cg-15
		10 µA to 2mA	0.05% + 0.2µA	
		2mA to 20mA	0.05% + 2µA	
		20 Hz to 500 Hz		
		0.2 A to 2A	0.1% + 200μA	
		2A to 20A	0.1% + 3mA	
		20A to 110A	0.5% + 0.2A	Using current coil
		110 A to 1000 A	0.5% + 0.7A	
	Resistance (2 wire and 4 wire)	$1\Omega$ to $100\Omega$	100ppm + 9.5mΩ	Calibration of resistance measuring

Schedule No: CL0005

Issue No. 2: 12 05, 2025

Valid to: 11 05, 2027

	Measured Quantity	Range	Expanded Measurement Uncertainty (k = 2)	Remark (Calibration Method)
		$100\Omega$ to $1000\Omega$	100ppm + 7.5mΩ	devices in compliance with EURAMET
		1k $\Omega$ to 10k $\Omega$	200ppm + 22.5mΩ	Cg-15
		10k $\Omega$ to 100k $\Omega$	100ppm + 1.025Ω	
		100k $\Omega$ to 1000k $\Omega$	100ppm + 10Ω	
		1M $\Omega$ to 10M $\Omega$	200ppm + 100Ω	
		10M $\Omega$ to 1G $\Omega$	100ppm + 10.25kΩ	
	Frequency	0.1Hz to 10MHz	20ppm	
		–180 to 850°C, (Pt–100)	0.2 °C	
		300 to 1820 °C, B type	0.1 <sup>o</sup> C	
		–200 to 1000 °C, E type	0.05 <sup>o</sup> C	
	Temperature Simulation Temperature Indicator / Controller / Recorder / Test Kit / Calibrators / Multimeter	–210 to 1200 °C, J type	0.09 °C	EURAMET Cg-15, EURAMET Cg-08, EURAMET Cg-08
		–200 to 1372 °C, K type	0.1 <sup>o</sup> C	
		–200 to 1300 °C, N type	0.1 <sup>o</sup> C	
		-50 to 1768 °C, R type	0.35 <sup>o</sup> C	
		-50 to 1768 °C, S type	0.3 <sup>o</sup> C	
		–200 to 400 °C, T type	0.09 °C	
3B	Electrical - Measure			
	DC Voltage	0mV to 100mV	50ppm + 4µV	Measure and analyze signal generated from UUT compliant to EURAMET Cg-15
		0.1V to 1V	40ppm + 8μV	
		1V to 10V	35ppm + 60µV	
		10V to 100V	45ppm + 0.7mV	
		100V to 750V	45ppm + 10mV	
	AC Voltage 3 Hz to 300 kHz	0mV to 100mV	0.06% + 40μV	Measure and analyze signal generated
		0.1V to 1V	0.15% + 500μV	from UUT in compliance to EURAMET Cg-15
		1V to 10V	0.15% + 5mV	
	Schedule No: CL0005	5 Issue No. 2: 12 05, 202	5 Valid to: 11 05, 2027	Page 4

	Measured Quantity	Range	Expanded Measurement Uncertainty (k = 2)	Remark (Calibration Method)	
		10V to 100V	0.15% + 50mV		
		100V to 750V	0.15% + 375mV		
	DC Current	0mA + 10mA	500ppm + 2µA	Measure and analyze signal generated from UUT in compliance to EURAMET Cg-15	
		10mA + 100mA	500ppm + 5µA		
	De current	0.1A + 1A	0.1% + 0.1mA		
		1A + 3A	0.12% + 0.6mA		
	AC Current	0A to 1A	0.15% + 0.5mA	Measure and analyze signal generated from UUT in compliance to EURAMET Cg-15	
	3 HZ to 5 kHz	1A to 3A	0.25% + 3mA		
		0Ω to 100Ω	100ppm + 4mΩ		
	Resistance	0.1kΩ to 10kΩ	100ppm + 10mΩ	Measure and analyze signal generated from UUT in compliance to EURAMET Cg-15	
		10kΩ to 100kΩ	100ppm + 1Ω		
		0.1MΩ to 10MΩ	100ppm + 10Ω		
		10MΩ to 100MΩ	1% + 20kΩ		
		3Hz to 10Hz	0.1%	Measure and analyze signal generated from UUT in compliance to EURAMET	
	Frequency	10Hz to 40Hz	0.03%		
		0.04kHz to 300kHz	0.01%	Cg-15	
4A	Thermal - Source				
	Temperature Gauge / Indicator / Controller, Thermometer with probe	-10 to 650 <sup>o</sup> C	0.38 <sup>o</sup> C	EURAMET Cg-11 / NIST Handbook 105-6	
	Liquid-in-glass thermometer	-10 to 650 <sup>o</sup> C	0.45 <sup>o</sup> C	NIST Handbook 105-6	
4B					
	Dry/water bath temperature calibrator	-50 to 670 <sup>o</sup> C	0.00302 °C	EURAMET Cg-13	