

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p>UKAS CALIBRATION</p> <p>0581</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Arab British Dynamics</h3> <p>Issue No: 016 Issue date: 21 January 2009</p>	
	<p>PO Box 3 Sakar Factory Heliopolis 11361 Egypt</p>	<p>Contact: Mrs Omneya Abou Zied Tel: +20-2-2692124 Fax: +20-2-2688726 E-Mail: abd.quality@aoi.com.eg Website:</p>
<p>Calibration performed by the Organisation at the locations specified below</p>		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
<p>Address</p> <p>PO Box 2444 Horria-Heliopolis 11361 Egypt</p>	<p>Local contact</p> <p>Mrs Omneya Abou Zied</p>	<p>Permanent laboratory</p>
<p>Calibration:</p> <p>Electrical Temperature Pressure</p>		

Site activities performed away from the locations listed above:

Location details	Activity	Location code
<p>Customers' sites or premises</p> <p>The customers' site or premises must be suitable for the nature of the particular calibrations undertaken and will be the subject of contract review arrangements between the laboratory and the customer.</p>	<p>Calibration:</p> <p>Temperature Pressure</p>	<p>Customers' sites</p>



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DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty ($k=2$)	Remarks	Location Code	
ELECTRICAL CALIBRATION					
DC VOLTAGE					
Measurement	Up to 200 mV 200 mV to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1000 V	14 ppm + 0.8 μ V 7.8 ppm + 0.65 μ V 7.5 ppm + 2.5 μ V 12 ppm + 46 μ V 12 ppm + 0.5 mV		Permanent laboratory	
Generation	Up to 220 mV 220 mV to 2.2 V 2.2 V to 11 V 11 V to 22 V 22 V to 220 V 220 V to 1100 V	11 ppm + 0.6 μ V 6.3 ppm + 1 μ V 4.2 ppm + 3 μ V 4.2 ppm + 4.7 μ V 6.1 ppm + 47 μ V 8 ppm + 470 μ V			
DC RESISTANCE					
Measurement	Up to 20 Ω 20 Ω to 200 Ω 200 Ω to 2 k Ω 2 k Ω to 20 k Ω 20 k Ω to 200 k Ω 200 k Ω to 2 M Ω 2 M Ω to 20 M Ω 20 M Ω to 200 M Ω	30 ppm + 46 $\mu\Omega$ 14 ppm + 130 $\mu\Omega$ 13 ppm + 1.3 m Ω 14 ppm + 13 m Ω 20 ppm + 130 m Ω 27 ppm + 2.3 Ω 46 ppm + 120 Ω 480 ppm + 12 k Ω			
Generation	10 Ω 100 Ω 1 k Ω 10 k Ω 100 k Ω 1 M Ω 10 M Ω 100 M Ω	29 ppm 13 ppm 11 ppm 10 ppm 13 ppm 25 ppm 60 ppm 130 ppm			
DC CURRENT					
Measurement	Up to 200 μ A 200 μ A to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A	68 ppm + 0.23 nA 61 ppm + 4.7 nA 61 ppm + 47 nA 120 ppm + 1.2 μ A 180 ppm + 23 μ A			
Generation	Up to 220 μ A 220 μ A to 2.2 mA 2.2 mA to 22 mA 22 mA to 220 mA 220 mA to 2.2 A	50 ppm + 7 nA 43 ppm + 10 nA 43 ppm + 74 nA 54 ppm + 1 μ A 140 ppm + 15 μ A			



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Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty ($k=2$)	Remarks	Location Code
AC VOLTAGE Measurement	2 mV to 200 mV 10 Hz to 40 Hz 40 Hz to 100 Hz 100 Hz to 2 kHz 2 kHz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 200 mV to 2 V 10 Hz to 40 Hz 40 Hz to 100 Hz 100 Hz to 2 kHz 2 kHz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 1 MHz 2 V to 20 V 10 Hz to 40 Hz 40 Hz to 100 Hz 100 Hz to 2 kHz 2 kHz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 1 MHz 20 V to 200 V 10 Hz to 40 Hz 40 Hz to 100 Hz 100 Hz to 2 kHz 2 kHz to 10 kHz 10 kHz to 30 kHz 30 kHz to 100 kHz 100 kHz to 300 kHz 200 V to 1000 V 40 Hz to 100 Hz 100 Hz to 1 kHz	300 ppm + 4.6 μ V 280 ppm + 4.6 μ V 270 ppm + 2.5 μ V 280 ppm + 5 μ V 510 ppm + 9 μ V 920 ppm + 23 μ V 210 ppm + 23 μ V 190 ppm + 23 μ V 160 ppm + 23 μ V 180 ppm + 23 μ V 300 ppm + 46 μ V 610 ppm + 230 μ V 0.37% + 2.3 mV 1.2% + 23 mV 220 ppm + 0.23 mV 190 ppm + 0.24 mV 160 ppm + 0.24 mV 180 ppm + 0.24 mV 300 ppm + 0.5 mV 610 ppm + 2.3 mV 0.35% + 23 mV 1.2% + 230 mV 210 ppm + 3 mV 190 ppm + 3 mV 160 ppm + 3 mV 180 ppm + 3 mV 300 ppm + 4.7 mV 630 ppm + 23 mV 0.37% + 230 mV 190 ppm + 23 mV 190 ppm + 12 mV		Permanent Laboratory



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Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty ($k=2$)	Remarks	Location Code
AC VOLTAGE Generation	Up to 220 mV 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 220 mV to 2.2 V 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 2.2 V to 22 V 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 22 V to 220 V 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 220 V to 1100 V 50 Hz to 1 kHz	110 ppm + 8 μ V 110 ppm + 8 μ V 250 ppm + 8 μ V 550 ppm + 20 μ V 110 ppm + 18 μ V 57 ppm + 9 μ V 90 ppm + 12 μ V 140 ppm + 35 μ V 110 ppm + 170 μ V 54 ppm + 58 μ V 88 ppm + 120 μ V 130 ppm + 230 μ V 110 ppm + 1.7 mV 63 ppm + 0.7 mV 95 ppm + 1.2 mV 190 ppm + 2.9 mV 95 ppm + 4.1 mV		Permanent laboratory
AC POWER at 50 Hz	5 W, 10 W and 40 W, 50 Ω load 20 W, 60 W and 80 W, 100 Ω load 30 W, 60 W and 90 W, 100 Ω load 60 W and 180 W, 200 Ω load 60 W, 90 W and 180 W, 300 Ω load 70 W and 100 W, 400 Ω load	0.58 W 1.2 W 3.5 W 3.5 W 3.5 W 5.8 W	The AC Power capability is for the calibration of Bio-Tek RF302 electro-surgery analysers.	



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AC CURRENT				Permanent laboratory
Measurement	2 μ A to 200 μ A 50 Hz to 300 Hz 300 Hz to 5 kHz	250 ppm + 23 nA 280 ppm + 23 nA		
	200 μ A to 2 mA 50 Hz to 300 Hz 300 Hz to 1 kHz 1 kHz to 5 kHz	250 ppm + 230 nA 280 ppm + 230 nA 640 ppm + 230 nA		
	2 mA to 20 mA 50 Hz to 300 Hz 300 Hz to 1 kHz 1 kHz to 5 kHz	250 ppm + 2.3 μ A 250 ppm + 2.3 μ A 640 ppm + 2.3 μ A		
	20 mA to 200 mA 50 Hz to 300 Hz 300 Hz to 1 kHz 1 kHz to 5 kHz	250 ppm + 23 μ A 250 ppm + 23 μ A 640 ppm + 23 μ A		
	200 mA to 2 A 50 Hz to 300 Hz 300 Hz to 1 kHz 1 kHz to 5 kHz	600 ppm + 0.46 mA 600 ppm + 0.46 mA 0.18% + 0.9 mA		
Generation	Up to 220 μ A 50 Hz to 1 kHz 1 kHz to 5 kHz	150 ppm + 9 nA 420 ppm + 14 nA		
	220 μ A to 2.2 mA 50 Hz to 1 kHz 1 kHz to 5 kHz	160 ppm + 41 nA 350 ppm + 130 nA		
	2.2 mA to 22 mA 50 Hz to 1 kHz 1 kHz to 5 kHz	150 ppm + 410 nA 350 ppm + 640 nA		
	22 mA to 220 mA 50 Hz to 1 kHz 1 kHz to 5 kHz	150 ppm + 3 μ A 350 ppm + 4 μ A		
	220 mA to 2.2 A 50 Hz to 1 kHz 1 kHz to 5 kHz	320 ppm + 41 μ A 0.11% + 93 μ A		



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Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty ($k=2$)	Remarks	Location Code
Temperature indicators, calibration by electrical simulation				Permanent laboratory
Base metal thermocouple	-200°C to 1600°C	0.32°C	Including cold junction compensation	
Noble metal thermocouple	0°C to 1760°C	1.3°C	Including cold junction compensation	
Temperature simulators, calibration by electrical simulation				
Base metal thermocouple	-200°C to 1600°C	0.32°C	Including cold junction compensation	
Noble metal thermocouple	0°C to 1760°C	1.3°C	Including cold junction compensation	
TEMPERATURE				
Resistance thermometers	-20 °C up to 50 °C above 50 °C up to 150 °C	0.05 °C 0.15 °C		
Thermocouples	-20 °C up to 200 °C above 200 °C up to 1000 °C	0.20 °C 1.2 °C		
Liquid -in-glass thermometer	-20 °C up to 50 °C above 50 °C up to 200 °C	0.06 °C + ¼ Division 0.08 °C + ¼ Division		
Temperature indicators and recorders with temperature sensors	Range as for sensor	As for sensor plus:- Digital - 1 lsd Analogue - 0.5 scale division		
Block calibrators	-20°C up to 200°C above 200°C up to 1000°C	0.12°C 1.5°C		



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PRESSURE						
<u>Gas Pressure (gauge)</u>						
Calibration of pressure indicating instruments and gauges	-100 kPa to -10 kPa 10 kPa to 50 kPa 50 kPa to 2.5 MPa	0.02% 0.015% 0.012%	Calibrations of devices with an electrical output may be undertaken	Permanent laboratory		
<u>Hydraulic Pressure (gauge)</u>						
Calibration of pressure indicating instruments and gauges	50 kPa to 600 kPa 600 kPa to 6 MPa 6 MPa to 120 MPa	0.012% + 85 Pa 0.011% + 1.5 kPa 0.011% + 23 kPa				
TEMPERATURE						
Temperature controlled, incubators, sterilizers, ovens, environmental chambers (inclusive of associated, controllers and recorders all with sensors)	-20°C to 200°C above 200°C to 1000°C	0.15°C 1.8°C		Customers' sites		
Temperature indicators and recorders with temperature sensors	-20°C to 200°C above 200°C to 1000°C	0.15°C 1.8°C				
Block calibrators	-20°C to 200°C above 200°C up to 1000°C	0.12°C 1.5°C				
PRESSURE						
<u>Gas Pressure (gauge)</u>						
Calibration of pressure indicating instruments and gauges	-100 kPa to 0 kPa 0 kPa to 100 kPa 100 kPa to 500 kPa	0.8 kPa 0.4 kPa 0.9 kPa		Customers' sites		
<u>Hydraulic Pressure (gauge)</u>						
Calibration of pressure indicating instruments and gauges	0 kPa to 1 MPa 1 MPa to 2.5 MPa 2.5 MPa to 5 MPa 5 MPa to 10 MPa 10 MPa to 16 MPa 16 MPa to 25 MPa 25 MPa to 40 MPa 40 MPa to 60 MPa	7 kPa 7 kPa 11 kPa 35 kPa 50 kPa 75 kPa 75 kPa 170 kPa				
END						