Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

1833

Accredited to ISO/IEC 17025:2017

Cranage EMC Testing Ltd

Issue No: 051 **Issue date:** 09 June 2025

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Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Industrial, Scientific, Medical, and Information Technology Equipment Household Appliances, Electric Tools and Toys Uninterruptible Power Systems and Components Fire, Intruder and Social Alarm Systems and Components Electrically Powered Wheelchairs, Scooters and their Chargers Residual Current-Operated Protective Devices (RCD's) for Household and Similar Use Electrical Lighting and similar Equipment Electrical Equipment for Measurement, Control, and Laboratory Use Road Traffic Control Systems Low Voltage Power Supplies Electronic Equipment used in the National Grid System for Monitoring, Protection and Control Arc Welding Equipment Industrial, Scientific, Medical, and Electrically Powered Industrial Trucks and their Chargers	**1 EMC Tests** 1.1 Conducted Emissions: Continuous disturbances 9 kHz to 30 MHz (dBμV) 150 kHz to 30 MHz (dBμA)	EN 55011:2009 inc A1 EN 55011: 2016 + A1:2017 + A11:2020 EN 55014-1:2006 inc A2:2011 EN IEC 55014-1:2021 EN 55015:2006 inc A2:2009 EN 55015:2013 inc A1:2015 EN 55022:2010 EN 55032:2015 FCC CFR 47:Part 15B/C FCC CFR 47 Part 18 ANSI C63.4:2003 ANSI C63.4:2009 CISPR 16-2-1: 2014 inc A1: 2017 EN 55016-2-1: 2014 inc A1: 2017

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As listed on Page 2	**1 EMC Tests**	
	1.2 Conducted Emissions: Discontinuous (click) disturbances 150 kHz to 30 MHz (dBμV)	EN 55014-1:2006 inc A2:2011 EN IEC 55014-1:2021
	1.3 Radiated Emissions: Disturbance Power 30 MHz to 300 MHz (dBpW)	EN 55014-1:2006 inc A2:2011 EN IEC 55014-1:2021 CISPR 16-2-2: 2010 EN 55016-2-2: 2011
	1.4 Radiated Emissions: Magnetic Field 9 kHz - 30 MHz (dBuA)	EN 55015:2006 inc A2:2009 EN 55015:2013 inc A1:2015
	1.5 Radiated Emissions Electric Field 30 MHz to 6 GHz	EN 55011:2009 inc A1 EN 55011:2016 + A1:2017 + A11:2020 EN 55014-1:2006 inc A2:2011 EN IEC 55014-1:2021 EN 55022:2010 EN 55032:2015 FCC CFR 47:Part 15B/C FCC CFR 47 Part 18 ANSI C63.4:2003 ANSI C63.4:2009 EN 55015:2006 inc A2:2009 EN 55015:2013 inc A1:2015 CISPR 16-2-3: 2016 EN 55016-2-3: 2017
	1.6 Electrostatic Discharge up to 15 kV	EN 61000-4-2:1995 including Amendment A1:1999 and A2:2001 EN 61000-4-2:2009

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
As listed on Page 2	**1 EMC Tests** (continued) 1.7 Radiated RF Immunity 10 Vm^{-1} 80 MHz to 2.7 GHz	EN 61000-4-3:1996 including Amendment A1:1998 EN 61000-4-3:2002 including Amendment A1:2002 EN 61000-4-3:2006 including Amendment A1:2008 EN 61000-4-3:2006 inc A2:2010
	1.8 Immunity to Fast Transients/ Bursts up to 4 kV	EN 61000-4-4:1995 including Amendment A1:2001 & A2:2001 EN 61000-4-4:2004 EN 61000-4-4: 2004 +A1: 2010 EN 61000-4-4: 2012
	1.9 Surge test 1.2/50 μs to 8/20 μs waveform up to 10 kV maximum	EN 61000-4-5:1995 including Amendment A1:2001 EN 61000-4-5:2006 EN 61000-4-5:2015 EN 61000-4-5:2015 including Amendment A1:2017 EN 61730-1:2007
	1.10 Conducted RF Immunity 150 kHz to 230 MHz up to 10 Vrms	EN 61000-4-6:1996 including Amendment A1:2001 EN 61000-4-6:2007 EN 61000-4-6:2009 EN 61000-4-6: 2014
	1.11 Voltage Dips, Interruptions and Variations ……..Equipment 16 to 32 A ……..DC Input Power Ports	EN 61000-4-11:1994 EN 61000-4-11:2004 EN IEC 61000-4-11:2020 EN 61000-4-34:2007 including Amendment A1:2009 EN 61000-4-29:2001
	1.12 Power Frequency Magnetic Field	EN 61000-4-8:1993 + A1:2001 EN 61000-4-8:2010

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
As listed on Page 2	**1 EMC Tests** (continued)	
	1.13 Pulse Magnetic Field	EN 61000-4-9:1993 + A1:2001 EN 61000-4-9:2016
	1.14 Oscillatory Magnetic Field	EN 61000-4-10:1993 + A1:2001 EN 61000-4-10:2017
	1.15 Oscillatory waves immunity	EN 61000-4-12:1995 including Amendment A1: 2002 EN 61000-4-12:2006 EN 61000-4-12:2017 EN 61000-4-18:2007 EN 61000-4-18:2007 + A1:2010 EN 61000-4-18:2019
	1.16 Harmonics	EN 61000-3-2:2006 inc A2:2009 EN 61000-3-2:2014 EN 61000-3-2:2019
	1.17 Flicker	EN 61000-3-3:2008 EN 61000-3-3:2013 inc A1:2019

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
As listed on Page 2	**1 EMC Tests** (continued) 1.18 Generic and Product Standards These Generic and Product specific tests are included in this schedule but limited to those referred basic standards that are explicitly listed in Sections 1.1 to 1.17. Note: International Standards EN, ENV and IEC, listed in this Schedule, that have been adopted nationally as BS EN, DD ENV and BS IEC and are technically identical can be considered as being included in this Schedule.	EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 inc A1:2011 EN 61000-6-4:2007 inc A1:2011 EN 61326-1:2013 EN IEC 61326-1: 2021 EN 61543:1996 including Amendment A1:2003 EN 50293: 2012 ISO 7176-21:2003 EN 12184:1999 EN 50091-2:1996 EN 50199:1996 EN 55024:2010 EN 61204-3:2001 EN 61547:2009 EN 62493:2010 EN 50121-3-2:2000 EN 50121-4:2000 EN 50121-5:2000 EN 50130-4:2011 EN 12895:2000 EN 55014-2:1997 including A2:2008 EN 55014-2:2015 EN IEC 55014-2:2021 EN 61800-3:1997 including Amendment 1:2001 NGTS 3.24.15:Issue 1 EN 60601-1-2:2007 EN 60601-1-2:2015 EN/IEC 60601-1-2:2015 + A1:2021 EN 60974-10:2003

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Section 2:	**2 Electrical Safety Tests**	
Measurement, Control and Laboratory Equipment	2.4 Safety Tests	EN 61010-1:2010 + A1: 2019 excluding: - Annex H Annex G 11.7: Fluid pressure tests 12: Radiation measurements 13.1: Poisonous and liberated gasses
Equipment for heating of materials	Safety tests	EN 61010-2-010:2014
Testing and measuring circuits	Safety tests	EN 61010-2-030:2021 + A11:2021 IEC 61010-2-030:2017 excluding: - Short circuit testing above 18kVA
In-vitro diagnostic (IVD) medical equipment	Safety tests	EN 61010-2-101: 2017
Safety requirements for electrical equipment for measurement, control and laboratory use. Particular requirements for laboratory equipment for mixing and stirring	Safety tests	EN IEC 61010-2-051:2021

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Section 2 (continued)	**2 Electrical Safety Tests** (continued) 2.5 Safety Tests	
Audio/video, information and communication technology equipment - Part 1: Safety requirements	Safety Tests	IEC 62368-1: 2018 EN IEC 62368-1: 2024 + A11: 2024 excluding the following clauses 5.4.1.10.2, 5.4.4.6.5, 7.6, 8.5.5, 10, Annex C, Annex G.15, Annex M.7 and M.8, Annex T.9, Annex U and Annex Y.4 EN IEC 62368-3:2020
Fire hazard Testing: Glow wire testing: apparatus and common test procedure	Safety tests	EN IEC 60695-2-10:2021

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Section 2 (continued)	**2 Electrical Safety Tests** (continued)	
Fire hazard Testing: Glow wire testing of end products	2.6 Safety Tests	EN IEC 60695-2-11: 2021
Fire hazard Testing: Glow wire testing of materials for flammability index (GWFI)	Safety tests	EN IEC 60695-2-12:2021
Fire hazard Testing: Glow wire testing of materials for ignition temperature (GWIT)	Safety tests	EN IEC 60695-2-13:2021
Fire hazard testing: Ball Pressure test	Safety tests	EN 60695-10-2:2014
Fire hazard testing: Needle flame test	Safety tests	EN 60695-11-5:2017
Fire hazard testing: 50 W Horizontal & vertical flame test	Safety tests	EN60695-11-10:2013
Fire hazard testing: 500 W flame test methods	Safety tests	EN 60695-11-20:2015
Materials used for various electrical and electronic products Tracking Index Tests	Safety tests	EN IEC 60112:2020 Excluding Clause 7.3, Test Solution C.
Household and Similar Electrical Appliances General requirements	2.7 Electrical safety Safety tests on Single Phase Equipment only	EN 60335-1:2012 + + A16: 2023 IEC 60335-1:2020 EN IEC 60335-1: 2023 + A11: 2023 excluding: - 22.32: Oxygen bomb test 22.46: software class B and C 22.47: Back siphonage 32: Radiation, toxicity and similar hazards Annex R - Software Annex U - Appliances intended for remote communication through public networks

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Section 2 (continued) Household and Similar Electrical Appliances Vacuum cleaners and water suction cleaning devices Excluding: - Tests on motorised cleaning heads	**2 Electrical Safety Tests** (continued) 2.8 Electrical safety	EN IEC 60335-2-2: 2023 + A11: 2023 IEC 60335-2-2:2019 Excluding: - Non-SELV power hoses
Particular requirements for battery chargers	2.12 Electrical safety	EN IEC 60335-2-29:2021 +A1:2021 (Excluding 21.105, Additional tests for vibration).
Household and similar electrical appliances - safety - particular requirements for room heaters	2.13 Electrical safety	EN 60335-2-30:2010 + A11:2012 + A12:2020 (Excluding 22.110) (Excluding 21.105, Additional tests for vibration).
Household and similar electrical appliances. Safety. Particular requirements for clothes dryers and towel rails	2.16 Electrical safety	EN 60335-2-43: 2020 + A11: 2020
Household and similar electrical appliances. Safety. Particular requirements for floor treatment machines for commercial use	2.20 Electrical safety	EN 60335-2-67:2012 IEC 60335-2-67:2021 excluding: 16.3 Current carrying hoses 21.102 Current carrying hoses 21.103 Current carrying hoses 21.104 Current carrying hoses 21.105 Current carrying hoses 21.106 Current carrying hoses Annex BB - LPG Annex DD - vibration measurements

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Section 2 (continued)	**2 Electrical Safety Tests** (continued)	
Household and similar electrical appliances. Safety. Particular requirements for spray extraction machines, for commercial use	2.21 Electrical safety	EN 60335-2-68:2012 IEC 60335-2-68:2021 excluding: - 21.102 Current carrying hoses 21.103 Current carrying hoses 21.104 Current carrying hoses Annex BB - vibration measurements
Household and similar electrical appliances. Safety. Particular requirements for wet and dry vacuum cleaners, including power brush for commercial use.	2.22 Electrical safety	EN 60335-2-69: 2012 IEC 60335-2-69:2016 IEC 60335-2-69: 2021 excluding: Current carrying hoses ANNEX AA ANNEX CC ANNEX DD ANNEX FF Annex GG
Automatic machines for floor treatment for commercial and industrial use	2.23 Electrical safety	EN 60335-2-72:2012 IEC 60335-2-72:2016 IEC 60335-2-72: 2021 excluding: - Non-electrical powered machines Hoppers, FOPS and internal combustion machines.
High pressure cleaners and steam cleaners	2.24 Electrical safety	EN 60335-2-80:2003, A1 & A2
Enclosures for electrical equipment	2.27 Safety Tests	EN 60529: 1992 + A2: 2013

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Section 2 (continued)	**INGRESS PROTECTION TESTS** IP1X Protected against solid objects greater than 50 mm diameter IP2X Protected against solid objects greater than 12 mm diameter IP3X Protected against solid objects greater than 2.5 mm diameter IP4X Protected against solid objects greater than 1.0 mm diameter IP5X Dust Protected Excluding: Objects greater than 1000 x 1000 x 1000mm IP6X Dust Tight Excluding: Objects greater than 1000 x 1000 x 1000mm IPX1 Protected against dripping water IPX2 Protected against dripping water when tilted up to 15° IPX3 Protected against spraying water IPX4 Protected against splashing water IPX5 Protected against water jets IPX6 Protected against heavy seas IPX7 Protected against the effects of immersion Excluding: Objects greater than Ø 400 x 950 mm IPX8 Protected against submersion Excluding: Objects greater than Ø 400 x 950 mm	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Section 2 (continued) Road Vertical Signs – Variable message traffic signs	Electrical, Thermal, EMC, Mechanical & Environmental	BS EN12966:2005 +A1:2009 (Withdrawn) Clause 8, 9, 10 and 11 excluding 9.3 BS EN 12966:2014 + A1:2018 EN 12966:2014 Clauses 4.5 and 5 only, excluding clauses 4.5.2.5.5 & 5.5
Section 3 Luminaires up to 1000V	**Safety - Electrical, Mechanical and Thermal Tests** Safety tests	 EN 60598-1:2015 +A1: 2018 excluding: - Clauses 4.20, 4.24, 4.26
Recessed luminaires	Safety tests	IEC / BS EN 60598-2-2:2012
Portable luminaires	Safety tests	EN 60598-2-4:2018

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Section 4		
Self ballasted LED lamps >50 for general lighting	dc supplies up to 250V ac supplies up to 1000V	EN IEC 62031:2020 +A11: 2021
Section 5	**Electrical testing**	
Medical electrical equipment Part 1: General requirements for basic safety and essential performance	Safety tests	EN 60601-1:2006 + A2:2021 Excluding: - Clause 8.8.4.2, 9.5.2, 9.6.3, 9.7.5, 10.1, 10.4, 11.2.2 11.2.3, 15.4.3.4, Annex G and Annex L Excluding: Clause 12.2 and 12.3 IEC 60601-1:2005 + A2:2020
Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment	Safety tests	IEC/EN 60601-1-11: 2015
Medical electrical equipment Part 2-10: Particular requirements for the safety of nerve and muscle stimulators	Safety tests	EN 60601-2-10:2015 + A1:2016 IEC 60601-2-10:2012 + A1:2016
Electrical equipment for connection to Unmetered Supplies	Voltage Current Power Volt-amperes Resistance Efficiency	ELEXON testing procedure for issue of a charge code for new apparatus

NOTE: - Where EN standards have exact equivalents in BS, BS EN or IEC Standards; these are also included in the accreditation.

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EMC Facilities:

EUT Size (m)	EUT Weight (kg)	EUT Power
CUBE: 0.9(w) x 2.0(h) x 2.0(l)	500	240/415V AC 50Hz 32A 120V(32A)/208V(16A) AC 60Hz
FCC: 1.2(w) x 2.2(h) x 1.6(l)	80	
ESD: 1.2(w) x 2.2(h) x 1.6(l)	80	
SAC: 1.15(w) x 2.15(h) x 2.2(l)	500	240/415V AC 50Hz up to 160A 120V(32A)/208V(16A) AC 60Hz

Safety Facilities:

Max EUT Size (m): 3.9(width) x 3.7(height) x 5(length)

Max EUT Weight: 2000kg

Temperature and Humidity chambers

EUT Size (m)	EUT Weight (kg)
1.43(w) x 2(h) x 0.78(l)	250
0.4(w) x 0.48(h) x 0.36(l)	40
0.4(w) x 0.4(w) x 0.4(l)	80
1(w) x 1(h) x 1(l)	40
0.6(w) x 0.6(h) x 0.6(d)	40

Environmental chambers

Test	EUT Size (m)	EUT Weight (kg)
Dust Ingress	0.8(w) x 0.8(h) x 0.8(l)	80
Water Ingress (spray/droplets)	0.4(w) x 0.4(h) x 0.4(l)	40
Water ingress (jet hose)	1(w) x 1.5(h) x 1(l)	2000
Water ingress (immersion)	0.4(dia) x 0.95(l)	150
Salt Spray	0.8(w) x 0.5(h) x 1.2(l)	20
Solar Simulation	Spectral distribution diameter = 60cm Test volume (m) = 1.1(w) x 1(h) x 1.1(d)	80

AC Electrical Power Supplies

Single Phase	Three-Phase	Split-Phase
35kVA 50Hz 100/200/220/230/240V	115kVA 50Hz 415V	4kVA 50Hz 110(55/55) 460(230/230)V
4kVA 60Hz 110/120/200/220/277/347V	70kVA 50Hz 100/200/380/400V	
4kVA 50/60/400Hz 0 to 300V	4kVA 60Hz 110/208/220/400/440/480/600V	4kVA 60Hz 240(120/120)V

DC Electrical Power Supplies

Voltage	Current
0 to 40V(70V)	up to 200A(10A)
0 to 3000V	up to 3A

Utilities

Water & Drainage	Natural Gas	Test Gases	Air
up to 6bar	$6m^3$/hour at 22mbar	BOC to order	300l/min at 8bar

END