

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Cranage EMC Testing Ltd</h3> <p>Issue No: 027 Issue date: 21 January 2014</p>	
	<p>Stable Court Oakley Nr Market Drayton Shropshire TF9 4AG</p>	<p>Contact: Mark Richens Tel: +44 (0)1630 658568 Fax: +44 (0)1630 658921 E-Mail: mark@cranage.co.uk Website: www.cranage.co.uk</p>
<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>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</p>	<p>1 EMC Tests</p> <p>1.1 Conducted Emissions: Continuous disturbances 9 kHz to 30 MHz (dBμV) 150 kHz to 30 MHz (dBμA)</p>	<p>EN 55011:1998 including Amendment A1:1999 and A2:2002 EN 55011-1:2007 inc A2:2007 EN 55011:2009 EN 55011:2009 inc A1 EN 55014-1:2001 including Amendment A1:2001 and A2:2002 EN 55014-1:2006 EN 55014-1:2006 inc A1:2009 EN 55014-1:2006 inc A2:2011 EN 55015:2001 including Amendment A1:2001 and A2:2002 EN 55015:2006 including A1:2007 EN 55015:2006 inc A2:2009 EN 55022:1998 including Amendment A1:2001 and A2:2003 EN 55022:2006 EN 55022:2006 inc A1:2007 EN 55022:2010 FCC CFR 47:Part 15B/C FCC CFR 47 Part 18 ANSI C63.4:2003 ANSI C63.4:2009</p>



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As listed on Page 1	1 EMC Tests	
	1.2 Conducted Emissions: Discontinuous (click) disturbances 150 kHz to 30 MHz (dB μ V)	EN 55014-1:2001 including Amendment A1:2001 and A2:2002 EN 55014-1:2006 EN 55014-1:2006 inc A1:2009 EN 55014-1:2006 inc A2:2011
	1.3 Radiated Emissions: Disturbance Power 30 MHz to 300 MHz (dBpW) And	EN 55014-1:2001 A1 + A2 including Amendment A1:2001 and A2:2002 EN 55014-1:2006 EN 55014-1:2006 inc A1:2009 EN 55014-1:2006 inc A2:2011
	1.4 Radiated Emissions: Magnetic Field 9 kHz - 30 MHz (dBuA)	EN 55015:2000 including Amendment A1:2001 and A2:2002 EN 55015:2006 including A1:2007 EN 55015:2006 inc A2:2009
	1.5 Radiated Emissions Electric Field 30 MHz to 6 GHz	EN 55011:1998 including Amendment A1:1999 and A2:2002 EN 55011-1:2007 EN 55011:2009 EN 55011:2009 inc A1 EN 55014-1:2001 including Amendment A1:2001 and A2:2002 EN 55014-1:2006 EN 55014-1:2006 inc A1:2009 EN 55014-1:2006 inc A2:2011 EN 55022:1998 including Amendment A1:2001 and A2:2003 EN 55022:2006 EN 55022:2006 inc A1:2007 EN 55022:2010 FCC CFR 47:Part 15B/C FCC CFR 47 Part 18 ANSI C63.4:2003 ANSI C63.4:2009 EN 55015:2006 including A1:2007 EN 55015:2006 inc A2:2009



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	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
	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 A2:2011
	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
	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 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
	1.11 Voltage Dips, Interruptions and Variations	EN 61000-4-11:1994 EN 61000-4-11:2004
	1.12 Power Frequency Magnetic Field	EN 61000-4-8: 1993 INC. A1 (2001) EN 61000-4-8: 2010
	1.13 Oscillatory waves immunity	EN 61000-4-12:1995 including Amendment A1: 2002 EN 61000-4-12:2006 EN 61000-4-18:2007 EN 61000-4-18:2007 + A1:2010



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	1.14 Harmonics	EN 61000-3-2:2006 inc A2:2009
	1.15 Flicker	EN 61000-3-3:2008
	1.16 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 1.12.	EN 61000-6-1: 2001 including A1:2006 EN 61000-6-1: 2007 EN 61000-6-2: 2001 EN 61000-6-2: 2005 EN 61000-6-3:2001 including Amendment 1:2004 EN 6100-6-3:2007 EN 6100-6-3:2007 inc A1:2011 EN 61000-6-4:2001 EN 61000-6-4:2007 EN 61000-6-4:2007 inc A1:2011 EN 61326:1998 including Amendment A1:1998, A2:2001 & A3:2003 EN 61326-1:2006 EN 61543:1996 including Amendment A1:2003 EN 50293:2001 ISO 7176-21:2003 EN 12184:1999 EN 50091-2:1996 EN 50199:1996 EN 55024:1998+A2:2003 EN 55024:2010 EN 61204-3:2001 EN 61547:1995 Inc A1 EN 61547:2009 EN 62493:2010 EN 50121-3-2:2000 EN 50121-4:2000 EN 50121-5:2000 EN 50130-4:1995 including Amendments A1:1998 & A2:2003 EN 50130-4:2011 EN 12895:2000 EN 55014-2:1997 including A2:2008



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As listed on Page 1	<p>1 EMC Tests (cont'd)</p> <p>1.16 Generic and Product Standards (cont'd)</p>	<p>EN 61800-3:1997 including Amendment 1:2001 NGTS 3.24.15:Issue 1 EN 60601-1-2:2001 EN 60601-1-2:2007 EN 60974-10:2003 EN 55014-2:1997 including Amendment A1:2001</p>
<p>Section 2:</p> <p>Low voltage surge protection devices</p>	<p>2 Electrical Safety Tests</p> <p>2.1 Combination wave test</p> <p>1.2/50 μs to 8/20 μs waveform U_{oc} 2 kV up to 10 kV maximum</p>	<p>EN 61643-11:2012 For the following clause only Clause 7.5.4, Limiting voltage with the combination wave</p>
Information Technology Equipment including electrical business equipment	2.2 Safety Tests	<p>EN 60950-1:2001 Amd A11, excluding:- Clause 2.10.3.4: Transient voltage measurement Clause 2.10.6.6: Abrasion resistance test Clause 4.2.8: CRT implosion test Clause 4.3.12: Flammable liquids test Clause 4.3.13: Radiation tests Clause 7.3.2: Surge test Clause 7.3.3: Impulse test Annex A: Flammability tests</p> <p>EN 60950-1:2006, Amd A12 excluding:- 2.10.3.4: Transient voltage measurement 2.10.6.6: Abrasion resistance test 4.2.8: CRT implosion test 4.3.12: Flammable liquids test 4.3.13: Radiation tests Annex A: Flammability tests</p>
Remote Power Feeding	2.3 Safety Tests	EN 60950-21:2003



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Section 2 (cont'd) Large Data Storage Equipment	2 Electrical Safety Tests (cont'd) 2.4 Safety Tests	EN 60950-23:2006
Measurement, Control and Laboratory Equipment	2.5 Safety Tests	EN 61010-1:2001 inc Amd A1 excluding:- 6.7.1.2: Tracking tests 9.2.1: Flammability tests 11.7: Pressure equipment tests 12: Radiation measurements 13.2.3: CRT implosion test 14.8: Flammability test on pcb's 16.2: Short circuit testing above 18 kVA EN 61010-1:2010 excluding:- 6.7.2.1: Tracking and coating tests 9.3.1: Flammability tests 11.7: Fluid pressure tests 12: Radiation measurements 13.2.3: CRT implosion test 14.8: Flammability test on pcb's EN.61010-2-10:2003 EN 61010-2-30:2010 Excluding:- Short circuit testing above 18kVA



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Section 2 (cont'd) Domestic Electronic Equipment	2 Electrical Safety Tests (cont'd) 2.6 Safety Tests	EN 60065:2002 inc Amds A1 & A12 excluding:- 6.1: Ionising radiation 6.2: Laser radiation 7.2: Heat resistance of insulation 8.1.8: Endurance test of wound components 10.3.2: Dielectric strength of sheet insulation 12.1.2: vibration test 13.4: Tracking test 14.2: RFI capacitor testing 16.3: Endurance test of flexible cords 18: CRT implosion test 20: Flammability tests
Connectors	2.7 Safety Tests	EN 60320-1: 2001, clause 23.7 only (pull and torque tests on connectors)
Fire hazard Testing : Glow wire Test	2.8 Safety Tests	EN 60695-2-11: 2001
Household and Similar Electrical Appliances General requirements	2.9 Electrical safety Safety tests on Single Phase Equipment only	EN 60335-1:2002 inc Amds A1, A2 A11 and A12 EN 60335-1:2012 excluding: 22.32: Oxygen bomb test 22.46: software class B and C 22.47: Back siphonage 24.5: Capacitors 29.2: Tracking test
Household and Similar Electrical Appliances Vacuum cleaners and water suction cleaning devices Excluding:- Tests on motorised cleaning heads	2.10 Electrical safety	EN 60335-2-2:2003 Amds A1 & A2 EN 60335-2-2:2010 Amd A11 excluding: non-SELV power hoses



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Section 2 (cont'd)	2 Electrical Safety Tests (cont'd)	
Appliances for heating liquids	2.11 Electrical safety	EN 60335-2-15:2002, Amd 1 & 2
Particular requirements for appliances for skin or hair care	2.12 Electrical safety	EN 60335-2-23: 2003 inc Amds A1 and A11 excluding: helmet-type hairdryers
Commercial electric forced convection ovens, steam cookers and steam-convection ovens	2.13 Electrical safety	EN 60335-2-42:2003 Amd A11 excluding: 30.101: Horizontal burning test
Portable heating tools and similar appliances	2.14 Electrical safety	EN 60335-2-45:2002 Amd A2
Surface-cleaning appliances employing liquids	2.15 Electrical safety	EN 60335-2-54:2003 inc Amds A1, A2 and A11 EN 60335-2-54:2008 excluding: 21.101 to 21.105: Current carrying hoses
Automatic machines for floor treatment for commercial and industrial use	2.16 Electrical safety	EN 60335-2-72:1998 inc Amd 1 EN 60335-2-72:2009 excluding: Ride-on machines 22.35: Insulation tests
High pressure cleaners and steam cleaners	2.17 Electrical safety	EN 60335-2-79:2004inc Amds1 & 2 EN 60335-2-79:2009 excluding: Non-electrical power source machines 22.35: Insulation tests
Fans	2.18 Electrical safety	EN 60335-2-80:2003, Amds 1 & 2
Fabric steamers	2.19 Electrical safety	EN 60335-2-85:2003, Amds 1



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Section 2 (cont'd)	2 Electrical Safety Tests (cont'd)	
Gas, oil and solid fuel-burning appliances having electrical connections	2.20 Electrical safety	EN 60335-2-102:2006 + A1: 2010
Enclosures for electrical equipment	3.0 Safety Tests	EN 60529:1992
	<p>INGRESS PROTECTION TESTS</p> <p>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 800 x 800 x 800mm IP6X Dust Tight Excluding: Objects greater than 800 x 800 x 800mm 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</p>	



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Section 3	Safety - Electrical, Mechanical and Thermal Tests	
Luminaires up to 1000V	Safety tests	IEC / BS EN 60598-1:2008 Excluding: Clauses 4.20, 4.24, 4.26, 12.5.1, 13.3.1 and 13.4.1
Fixed luminaires	Safety tests	BS 4533:Section 102.1:1990 IEC / EN 60598-2-1:1989
Recessed luminaires	Safety tests	IEC / BS EN 60598-2-2:2012
Road and street lighting	Safety tests	IEC / BS EN 60598-2-3:+A1 2012
Portable luminaires	Safety tests	IEC / BS EN 60598-2-4:1998
Luminaires with built in transformers for filament lamps	Safety tests	IEC / BS EN 60598-2-6:1994
Flood lights	Safety tests	IEC / BS EN 60598-2-5:1998
Ground recessed luminaires	Safety tests	IEC / BS EN 60598-2-13:2006 Excluding: Clause 13.6.1 and 13.6.2
Luminaires in clinical areas of hospitals and health care buildings	Safety tests	IEC / BS EN 60598-2-25:1998
Stage and studio luminaires	Safety tests	BS 4533-1-2.17:1990 IEC / BS EN 60598-2-17:1989



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Section 4		
Supply track systems for luminaires	Safety tests	BS EN 60570:2003
Lamp control gear – General and safety requirements	dc supplies up to 250V ac supplies up to 1000V 50/60Hz	IEC / BS EN 61347-1:2008 + A1 2011 Excluding: Clause 18.4, 18.5 and Annex B
Control gear for LED modules	Safety tests	IEC / BS EN 61347-2-13:2006 Excluding: Clause 15
Self ballasted LED lamps >50 for general lighting	Safety tests	IEC 62560:2009
LED modules for general lighting use	dc supplies up to 250V ac supplies up to 1000V 50/60Hz	IEC / BS EN 62031:2008 Excluding: Clause 18.4 and 18.5
dc and ac supplied electronic control gear for LED modules – performance requirements	Safety tests	IEC / BS EN 62384:2006 + A1 2009 Excluding: Clause 11
Section 5	Electrical testing	
Medical electrical equipment Part 1: General requirements for basic safety and essential performance	Safety tests	EN 60601-1:2006 Excluding: Clause 8.8.4.2, 8.9.1.7, 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 IEC 60601-1:2005
Medical electrical equipment Part 2-10: Particular requirements for the safety of nerve and muscle stimulators	Safety tests	EN 60601-2-10:2001 IEC 60601-2-10:2000



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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
Electrical and electronic equipment measurements in relation to energy	Voltage Current Frequency Active Power Apparent Power Power Factor Crest Factor Total Harmonic Distortion	POWER MEASUREMENTS FOR ERP DIRECTIVE COMMISSION REGULATION (EC) No 1275/2008 Specific to Standby and off mode losses of electrical and electronic equipment (household and office). EN 50564: 2011 Electrical and electronic household and office equipment – Measurement of low power consumption. COMMISSION REGULATION (EC) No 278/2009 Ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies. EN 50563: 2011 External a.c. – d.c. and a.c. power supplies – Determination of no-load power and average efficiency of active modes

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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	<p>EMC Facilities:-</p> <p>Semi-anechoic shielded chambers: T3 capacity: 2 m (width) x 2.8 m (height) x 3.7 m (depth) Working floor area is 3.2 m x 4.3 m Loading bay door is 2 m (w) x 2.8 m (h) Max EUT height is 2.8 m EUT weight limit 2000 kg</p> <p>T1 capacity: 2 m (width) x 2 m (height) x 3.7 m (depth)</p> <p>OATS enclosed capacity: 3 m (width) x 3 m (height) x 10 m (depth)</p>	
	<p>Safety Facilities:-</p> <p>Environmental chamber capacity: 1.43 m x 0.78 m x 2.00 m high</p> <p>Dust chamber capacity: 1 m x 1 m x 1 m</p> <p>Power supplies: Mains Psc = 1800A AC 230V 50 Hz 32A single phase AC 415V 50 Hz 32A three phase Variable DC: up to 3000 V 10 kW Variable AC: up to 300 V 3 kVA 50/60/400 Hz</p>	
<p>END</p>		



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Accreditation for the purpose of Notified Body Activity taking into account EA2/17

Directive / Regulation	Conformity Assessment procedure/ Module/article	Category of products or individual products	Essential requirements: Product specification / Properties/Standards
<p>The Low Voltage Directive 2006/95/EC</p> <p>as implemented in the UK by</p> <p>The Electrical Equipment (Safety) Regulations 1994, No 3260</p>	<p>Reports to Article 8 and Opinions to Article 9</p>	<p>Audio, Video and Similar Electronic Apparatus; Household and Similar Electrical Appliances; IT and Telecommunications Equipment; Measurement, Control and Laboratory Equipment.</p> <p>Excluding Surge Protectors and EMC LISN's and Test Probes.</p>	<p>Principal elements of the Safety Objectives requirements Annex I of the Directive and Schedule 3 of the Regulations.</p>
<p>END</p>			