

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>Accredited to ISO/IEC 17025:2005</b>	<b>Cranage EMC Testing Ltd</b>	
	<b>Issue No: 035 Issue date: 16 June 2017</b>	
	<b>Stable Court Oakley Nr Market Drayton Shropshire TF9 4AG</b>	<b>Contact: Mark Richens Tel: +44 (0) 1630 658568 Fax: +44 (0) 1630 658921 E-Mail: mark@cranage.co.uk Website: www.cranage.co.uk</b>
<b>Testing performed by the Organisation at the locations specified</b>		

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<b>Address</b> Stable Court Oakley Nr Market Drayton Shropshire TF9 4AG	<b>Local contact</b> Mark Richens Tel: +44 (0) 1630 658568 Fax: +44 (0) 1630 658921 E-Mail: mark@cranage.co.uk Website: www.cranage.co.uk	EMC testing  A
<b>Address</b> Wallace Way Tern Valley Business Park Market Drayton Shropshire TF9 3AG	<b>Local contact</b> Mark Richens Tel: +44 (0) 1630 658568 Fax: +44 (0) 1630 658921 E-Mail: mark@cranage.co.uk Website: www.cranage.co.uk	Electrical, Mechanical and Thermal Safety Testing EMC Testing  B



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
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	<b>1 EMC Tests</b>  1.1 Conducted Emissions: Continuous disturbances 9 kHz to 30 MHz (dB $\mu$ V) 150 kHz to 30 MHz (dB $\mu$ A)	EN 55011:2009 inc A1 EN 55014-1:2006 inc A2:2011 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	A, B



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As listed on Page 2	<b>1 EMC Tests</b>		
	1.2 Conducted Emissions: Discontinuous (click) disturbances 150 kHz to 30 MHz (dB $\mu$ V)	EN 55014-1:2006 inc A2:2011	A, B
	1.3 Radiated Emissions: Disturbance Power 30 MHz to 300 MHz (dBpW)	EN 55014-1:2006 inc A2:2011	A, B
	1.5 Radiated Emissions Electric Field  30 MHz to 6 GHz (A) 30 MHz to 1 GHz (B)	EN 55011:2009 inc A1 EN 55014-1:2006 inc A2:2011 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	A, B
	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	A, B
1.7 Radiated RF Immunity 10 Vm <sup>-1</sup> (A), 3 Vm <sup>-1</sup> (B) 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	A, B	



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As listed on Page 2	<b>1 EMC Tests (cont'd)</b>		
	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	A, B
	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 61730-1:2007	A, B
	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	A, B
	1.11 Voltage Dips, Interruptions and Variations	EN 61000-4-11:1994 EN 61000-4-11:2004	A, B
	1.12 Power Frequency Magnetic Field	EN 61000-4-8:1993 + A1:2001 EN 61000-4-8:2010	A, B
	1.13 Pulse Magnetic Field	EN 61000-4-9:1993 + A1:2001	A, B



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As listed on Page 2	<b>1 EMC Tests (cont'd)</b>		
	1.14 Oscillatory Magnetic Field	EN 61000-4-10:1993 + A1:2001	A, B
	1.15 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	A, B
	1.16 Harmonics	EN 61000-3-2:2006 inc A2:2009 EN 61000-3-2:2014	A, B
	1.17 Flicker	EN 61000-3-3:2008 EN 61000-3-3:2013	A, B



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As listed on Page 2	<p><b>1 EMC Tests (cont'd)</b></p> <p>1.18 Generic and Product Standards</p> <p>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.</p>	<p>EN 61000-6-1: 2007</p> <p>EN 61000-6-2: 2005</p> <p>EN 6100-6-3:2007 inc A1:2011</p> <p>EN 61000-6-4:2007 inc A1:2011</p> <p>EN 61326-1: 2013</p> <p>EN 61543:1996 including Amendment A1:2003</p> <p>EN 50293: 2012</p> <p>ISO 7176-21:2003</p> <p>EN 12184:1999</p> <p>EN 50091-2:1996</p> <p>EN 50199:1996</p> <p>EN 55024:2010</p> <p>EN 61204-3:2001</p> <p>EN 61547:2009</p> <p>EN 62493:2010</p> <p>EN 50121-3-2:2000</p> <p>EN 50121-4:2000</p> <p>EN 50121-5:2000</p> <p>EN 50130-4:2011</p> <p>EN 12895:2000</p> <p>EN 55014-2:1997 including A2:2008</p> <p>EN 61800-3:1997 including Amendment 1:2001</p> <p>NGTS 3.24.15:Issue 1</p> <p>EN 60601-1-2:2007</p> <p>EN 60974-10:2003</p>	A, B



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Section 2:</b>  Low voltage surge protection devices   Information Technology Equipment including electrical business equipment   Remote Power Feeding  Large Data Storage Equipment	<b>2 Electrical Safety Tests</b>  2.1 Combination wave test  1.2/50 $\mu$ s to 8/20 $\mu$ s waveform U <sub>oc</sub> 2 kV up to 10 kV maximum	EN 61643-11:2012 For the following clause only Clause 7.5.4, Limiting voltage with the combination wave	B
	2.2 Safety Tests	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 4.2.8: CRT implosion test Clause 4.3.13: Radiation tests Clause 7.3.2: Surge test Clause 7.3.3: Impulse test Annex A: Flammability tests  EN 60950-1:2006, + A1 + A2 + A11 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	B
	2.3 Safety Tests	EN 60950-21:2003	B
	2.4 Safety Tests	EN 60950-23:2006	B



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<b>Section 2 (cont'd)</b>	<b>2 Electrical Safety Tests (cont'd)</b>		
Measurement, Control and Laboratory Equipment	2.5 Safety Tests	EN 61010-1:2001 inc Amd A1 excluding:- 6.7.1.2: Tracking tests 11.7: Pressure equipment tests 12: Radiation measurements 13.2.3: CRT implosion test  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	B
Equipment for heating of materials	Safety tests	EN.61010-2-10:2003 EN61010-2-10:2014	
Testing and measuring circuits	Safety tests	EN 61010-2-030:2010 excluding:- Short circuit testing above 18kVA	
In-vitro diagnostic (IVD) medical equipment	Safety tests	EN 61010-2-101: 2014	



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<b>Section 2 (cont'd)</b>  Domestic Electronic Equipment	<b>2 Electrical Safety Tests (cont'd)</b>  2.6 Safety Tests	EN 60065:2002 inc Amds A1 & A12 EN 60065:2014 excluding:- 6.1: Ionising radiation 6.2: Laser radiation 6.3 UV measurements 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	B
Connectors  Fire hazard Testing : Glow wire testing: apparatus and common test procedure	2.7 Safety Tests  Safety tests	EN 60320-1: 2001, clause 23.7 only (pull and torque tests on connectors)  EN 60695-2-10:2013	B



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<b>Section 2 (cont'd)</b>	<b>2 Electrical Safety Tests (cont'd)</b>		
Fire hazard Testing : Glow wire testing of end products	2.8 Safety Tests	EN 60695-2-11: 2014	B
Fire hazard Testing : Glow wire testing of materials for flammability index (GWFI)	Safety tests	EN 60695-2-12:2010 + A1	
Fire hazard Testing : Glow wire testing of materials for ignition temperature (GWIT)	Safety tests	EN 60695-2-13:2010 + A1	
Fire hazard testing: Ball Pressure test	Safety tests	EN 60695-10-2:2014	
Fire hazard testing: Needle flame test	Safety tests	EN 60695-11-5:2005	
Fire hazard testing: 50W Horizontal & vertical flame test	Safety tests	EN60695-11-10:2013	
Fire hazard testing: 500 W flame test methods	Safety tests	EN 60695-11-20:1999 EN 60695-11-20:2015	
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 +A11:2014 excluding:- 22.32: Oxygen bomb test 22.46: software class B and C 22.47: Back siphonage 24.5: Capacitors 29.2: Tracking test	B



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<b>Section 2 (cont'd)</b>	<b>2 Electrical Safety Tests (cont'd)</b>		
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 EN 60335-2-2:2010 +A1:2013 excluding:- non-SELV power hoses	B
Particular requirements for electric irons	2.11 Electrical safety	EN 60335-2-3:2002 +A11:2010	B
Appliances for heating liquids	2.12 Electrical safety	EN 60335-2-15:2002 + A1 + A2 + A11	B
Particular requirements for appliances for skin or hair care	2.13 Electrical safety	EN 60335-2-23:2003 inc Amds A1 and A11 EN 60335-2-23:2003 +AC:2015 excluding: helmet-type hairdryers	B
Particular requirements for battery chargers	2.14 Electrical safety	EN 60335-2-29:2004 +A2:2010	B
Commercial electric forced convection ovens, steam cookers and steam-convection ovens	2.15 Electrical safety	EN 60335-2-42:2003 Amd A11	B
Portable heating tools and similar appliances	2.16 Electrical safety	EN 60335-2-45:2002 Amd A2	B



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Section 2 (cont'd)</b>	<b>2 Electrical Safety Tests (cont'd)</b>		
Surface-cleaning appliances employing liquids	2.17 Electrical safety	EN 60335-2-54:2003 inc Amds A1 and A11 EN 60335-2-54:2008 +A11 excluding:- 21.101 to 21.105: Current carrying hoses	B
Particular requirements for insect killers	2.18 Electrical safety	EN 60335-2-59:2003 + A2: 2009	B
Household and similar electrical appliances. Safety. Particular requirements for floor treatment machines for commercial use	2.19 Electrical safety	EN 60335-2-67:2012 excluding: Current carrying hoses; Combustion Engines; Annex BB; Annex DD.	B
Household and similar electrical appliances. Safety. Particular requirements for spray extraction machines, for commercial use	2.20 Electrical safety	EN 60335-2-68:2012 excluding:- Current carrying hoses Annex FF	B
Household and similar electrical appliances. Safety. Particular requirements for wet and dry vacuum cleaners, including power brush for commercial use.	2.21 Electrical safety	EN 60335-2-69: 2012 excluding: Current carrying hoses ANNEX AA ANNEX CC ANNEX DD ANNEX FF	B



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<b>Section 2 (cont'd)</b>	<b>2 Electrical Safety Tests (cont'd)</b>		
Automatic machines for floor treatment for commercial and industrial use	2.22 Electrical safety	EN.60335-2-72:2012 excluding:- Non-electrical powered machines Hoppers, FOPS and internal combustion machines.	B
High pressure cleaners and steam cleaners	2.23 Electrical safety	EN 60335-2-80:2003, Amds 1 & 2	B
Fabric steamers	2.24 Electrical safety	EN 60335-2-85:2003, Amds 1	B
Gas, oil and solid fuel-burning	2.25 Electrical safety	EN 60335-2-102:2006 + A1:2010	B
Enclosures for electrical equipment	3.0 Safety Tests		B



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<p><b>Section 2 (cont'd)</b></p>	<p><b>INGRESS PROTECTION TESTS</b></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 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</p>		<p align="center">B</p>



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<b>Section 2 (cont'd)</b>	<b>INGRESS PROTECTION TESTS (cont'd)</b>  Excluding: Objects greater than Ø 400 x 950 mm		
<b>Section 3</b>	<b>Safety - Electrical, Mechanical and Thermal Tests</b>		
Luminaires up to 1000V	Safety tests	IEC / BS EN 60598-1:2008 + A11 EN 60598-1:2015 excluding:- Clauses 4.20, 4.24, 4.26 and 13.4.1	B
Fixed luminaires	Safety tests	BS 4533:Section 102.1:1990 IEC / EN 60598-2-1:1989	B
Recessed luminaires	Safety tests	IEC / BS EN 60598-2-2:2012	B
Road and street lighting	Safety tests	IEC / BS EN 60598-2-3:+A1 2012	B
Portable luminaires	Safety tests	IEC / BS EN 60598-2-4:1998	B
Luminaires with built in transformers for filament lamps	Safety tests	IEC / BS EN 60598-2-6:1994	B
Flood lights	Safety tests	IEC / BS EN 60598-2-5:1998 EN 60598-2-5:2015	B



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Section 3 (cont'd)</b>			
Ground recessed luminaires	Safety tests	IEC / BS EN 60598-2-13:2006 + A1 Excluding:- Clause 13.6.1 and 13.6.2	B
Luminaires in clinical areas of hospitals and health care buildings	Safety tests	IEC / BS EN 60598-2-25:1998 + A1	B
Stage and studio luminaires	Safety tests	BS 4533-1-2.17:1990 IEC / BS EN 60598-2-17:1989+ A1 +A2	B
<b>Section 4</b>			
Supply track systems for luminaires	Safety tests	BS EN 60570:2003	B
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 + A2 EN 61347-1:2015  Excluding: Clause 18.4, 18.5 and Annex B and N4.3.2 of Annex N	B
Control gear for LED modules	Safety tests	IEC / BS EN 61347-2-13:2006 IEC / EN 61347-2-13:2014	B
Self ballasted LED lamps >50 for general lighting	dc supplies up to 250V ac supplies up to 1000V 50/60Hz	IEC / BS EN 62031:2008 + A1 EN 62031:2008 + A2: 2015 Excluding: Clause 18.4, 18.5 and 22	B



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<p><b>Section 4 (cont'd)</b></p> <p>dc and ac supplied electronic control gear for LED modules – performance requirements</p>	Safety tests	IEC / BS EN 62384:2006 + A1 2009 Excluding: Clause 11	B
<p><b>Section 5</b></p> <p>Medical electrical equipment Part 1: General requirements for basic safety and essential performance</p>	<p><b>Electrical testing</b></p> <p>Safety tests</p>	<p>EN 60601-1:2006 + A1 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</p> <p>IEC 60601-1:2005 + A1</p>	B
Medical electrical equipment Part 2-10: Particular requirements for the safety of nerve and muscle stimulators	Safety tests	EN 60601-2-10:2001 + A1 IEC 60601-2-10:2000 + A1	B
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	B
Electrical and electronic equipment measurements in relation to energy	<p><b>Voltage</b></p> <p><b>Current</b></p> <p><b>Frequency</b></p> <p><b>Active Power</b></p> <p><b>Apparent Power</b></p> <p><b>Power Factor</b></p> <p><b>Crest Factor</b></p> <p><b>Total Harmonic Distortion</b></p>	<p>POWER MEASUREMENTS FOR ERP DIRECTIVE</p> <p>COMMISSION REGULATION (EC) No 1275/2008</p> <p>Specific to Standby and off mode losses of electrical and electronic equipment (household and office).</p>	B



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<p><b>Section 5 (cont'd)</b></p>	<p><b>Electrical testing (cont'd)</b></p>	<p>EN 50564: 2011 Electrical and electronic household and office equipment – Measurement of low power consumption.</p> <p>COMMISSION REGULATION (EC) No 278/2009 Ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies.</p> <p>EN 50563: 2011 External a.c. – d.c. and a.c. power supplies – Determination of no-load power and average efficiency of active modes</p>	

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><b>EMC Facilities:</b></p> <table border="1"> <thead> <tr> <th>EUT Size (m)</th> <th>EUT Weight (kg)</th> <th>EUT Power</th> </tr> </thead> <tbody> <tr> <td>SAC1: 2(w) x 2.8(h) x 2.2(l)</td> <td>2000</td> <td rowspan="3">240/415V AC 50Hz 32A 120V(32A)/208V(16A) AC 60Hz</td> </tr> <tr> <td>SAC2: 2(w) x 2(h) x 1(l)</td> <td>500</td> </tr> <tr> <td>OATS: 3(w) x 3(h) x 3(l)</td> <td>2000</td> </tr> </tbody> </table>	EUT Size (m)	EUT Weight (kg)	EUT Power	SAC1: 2(w) x 2.8(h) x 2.2(l)	2000	240/415V AC 50Hz 32A 120V(32A)/208V(16A) AC 60Hz	SAC2: 2(w) x 2(h) x 1(l)	500	OATS: 3(w) x 3(h) x 3(l)	2000		A																																													
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