SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL

Valid To: July 31, 2025 Certificate Number: 5376.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Electromagnetic Compatibility (EMC), Telecommunication, Exposure and SAR , and Electrical Safety Tests:

Test Technology:	**Test Method(s)[1,3]:**
Emissions	
Conducted and Radiated	CFR 47 FCC Part 15B (using ANSI C63.4-2014); CFR 47 FCC Part 18 (using FCC OST/MP-5); EN 55011; EN 55014-1; EN 55032; EN 55015; EN IEC 55015; EN 61326-1; CISPR 11; CISPR 15; CISPR 32; CISPR 14-1; CISPRJ 32; CISPRJ 15; AS/NZS CISPR 11; AS/NZS CISPR 14.1; AS/NZS CISPR 32; AS/NZS CISPR 15; ICES-001; ICES-003; ICES-005; J55014-1; IEC/EN 61000-6-3; IEC/EN 61000-6-4; EN IEC 61000-6-4; IEC/EN 60601-1-2; IEC/EN 60730-1; IEC/EN 60730-2-9; IEC/EN 60730-2-9; IEC/EN 60669-2-1; IEC/EN 60669-1
Current Harmonics	IEC 61000-3-2; EN 61000-3-2; EN IEC 61000-3-2
Voltage Fluctuations & Flicker	IEC 61000-3-3; EN 61000-3-3
Immunity	
Electrostatic Discharge (ESD)	IEC/EN 61000-4-2
Radiated Immunity (up to 6 GHz, 10V/m)	IEC/EN 61000-4-3
Electrical Fast Transient/Burst	IEC/EN 61000-4-4

Test Technology:	**Test Method(s)[1,3]:**
Surge	IEC/EN 61000-4-5
Conducted Immunity	IEC/EN 61000-4-6
Power Frequency Magnetic Field	IEC/EN 61000-4-8
Voltage Dips, Short Interruptions Line Voltage Variations	IEC/EN 61000-4-11; EN IEC 61000-4-11; SANS 61000-4-11
Generic Standards	IEC/EN 61000-6-1; EN IEC 61000-6-1; IEC/EN 61000-6-2; EN IEC 61000-6-2; IEC/EN 61000-6-3; IEC/EN 61000-4-4
Product Family Standards and Industry Standards	CISPR 24; EN 55024; CISPR 35; EN 55035; CISPR 20; EN 55020; EN 55103-2; IEC/EN 61547; IEC/EN 61326-1; IEC/EN 61326-2-6; CISPR 14-2; EN 55014-2; IEC/EN 60601-1-2; IEC/EN 60730-1; IEC/EN 60730-2-9; EN IEC 60730-2-9; IEC/EN 60669-1; IEC/EN 60669-2-1
Telecommunication Standards	ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-7; ETSI EN 301 489-17; ETSI EN 301 489-34; ETSI EN 300 386
RF Exposure (MPE calculation only)	AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014; IEC/EN 62479; EN 50663; EN 50385; IEC/EN 62311; RSS-102 measurement (RF Exposure)
Radio Frequency Test	
Unlicensed Radio – FCC	CFR 47 FCC Part 15; Subpart C (using ANSI C63.10); CFR 47 FCC Part 15; Subpart E (using ANSI C63.10, FCC KDB 905462**)**
Canada	RSS-210; RSS-213; RSS-216; RSS-247; RSS-248; RSS-GEN
European Union (EU)	ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 330; ETSI EN 300 440; ETSI EN 300 328; ETSI EN 301 893; ETSI EN 303 417; ETSI EN 301 357; ETSI EN 303 340
Australia	Radio Communications (Short Range Devices) Standards AS/NZS 4268

Electrical Safety Testing

Test Technology:	**Test Method(s)[3]:**
Household Appliance	
Household and similar electrical appliances – Safety – Part 1: General Requirements	IEC/EN 60335-1/AS/NZS 60335.1
Part 2-2: Particular requirements for vacuum cleaners and water-suction cleaning appliances	IEC/EN 60335-2-2/AS NZS 60335.2.2
Part 2-3: Particular requirements for electric irons	IEC/EN 60335-2-3/AS NZS 60335.2.3
Part 2-8: Particular requirements for shavers, hair clippers and similar appliances	IEC/EN 60335-2-8/AS/NZS 60335.2.8
Part 2-9: Particular requirements for grills, toasters, and similar portable cooking appliances	IEC/EN 60335-2-9/AS NZS 60335.2.9
Part 2-10: Particular requirements for floor treatment machines and wet scrubbing machines	IEC/EN 60335-2-10/AS NZS 60335.2.10
Part 2-12: Particular requirements for warming plates and similar appliances	IEC/EN 60335-2-12/AS/NZS 60335.2.12
Part 2-13: Particular requirements for deep fat fryers, frying pans and similar appliances	IEC/EN 60335-2-13/AS NZS 60335.2.13
Part 2-14: Particular requirements for kitchen machines	IEC/EN 60335-2-14/AS/NZS 60335.2.14
Part 2-15: Particular requirements for appliances for heating liquids	IEC/EN 60335-2-15/AS/NZS 60335.2.15
Part 2-23: Particular requirements for appliances for skin or hair care	IEC/EN 60335-2-23/AS/NZS 60335.2.23
Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice-makers	IEC/EN 60335-2-24/AS/NZS 60335.2.24
Part 2-26: Particular requirements for clocks	IEC/EN 60335-2-26/AS/NZS 60335.2.26
Part 2-27: Particular requirements for appliances for skin exposure to optical radiation	IEC/EN 60335-2-27/AS/NZS 60335.2.27

Test Technology:	**Test Method(s)[3]:**
Part 2-28: Particular requirements for sewing machines	IEC/EN 60335-2-28/AS/NZS 60335.2.28
Part 2-29: Particular requirements for battery chargers	IEC/EN 60335-2-29/AS/NZS 60335.2.29
Part 2-30: Particular requirements for room heaters	IEC/EN 60335-2-30/AS/NZS 60335.2.30
Part 2-41: Particular requirements for pumps	IEC/EN 60335-2-41/AS/NZS 60335.2.41
Part 2-43: Particular clothes dryers and towel rails	IEC/EN 60335-2-43/AS/NZS 60335.2.43
Part 2-45: Particular requirements for portable heating tools and similar appliances	IEC/EN 60335-2-45/AS/NZS 60335.2.45
Part 2-52: Particular requirements for oral hygiene appliances	IEC/EN 60335-2-52/AS/NZS 60335.2.52
Part 2-54: Particular requirements for surface-cleaning appliances for household use employing liquids or steam	IEC/EN 60335-2-54/AS/NZS 60335.2.54
Part 2-59: Particular requirements for insect killers	IEC/EN 60335-2-59/AS/NZS 60335.2.59
Part 2-65:Particular requirements for air-cleaning appliances	IEC/EN 60335-2-65/AS/NZS 60335.2.65
Part 2-75: Particular requirements for commercial dispensing appliances and vending machines	IEC/EN 60335-2-75/AS/NZS 60335.2.75
Part 2-80: Particular requirements for fans	IEC/EN 60335-2-80/AS/NZS 60335.2.80
Part 2-85: Particular requirements for fabric steamers	IEC/EN 60335-2-85/AS/NZS 60335.2.85
Part 2-97: Particular requirements for drives for shutters, awnings, blinds and similar equipment	IEC/EN 60335-2-97/AS/NZS 60335.2.97
Part 2-98: Particular requirements for humidifiers	IEC/EN 60335-2-98/AS/NZS 60335.2.98
Part 2-101:Particular requirements for vaporizers	IEC/EN 60335-2-101/AS/NZS 60335.2.101

Test Technology:	**Test Method(s)[3]:**
Part 2-114: Particular requirements for self-balancing personal transport devices for use with batteries containing alkaline or other non-acid electrolytes	IEC 60335-2-114/AS/NZS 60335.2.114
Household and similar electrical appliances - Safety - Part 2-115: Particular requirements for skin beauty care appliances	IEC 60335-2-115/AS/NZS 60335.2.115
Household and similar electrical appliances - Safety - Part 2-116: Particular requirements for furniture with electrically motorized parts	IEC 60335-2-116/AS/NZS 60335.2.116
Luminaries and Related Products	
Luminaries – Part 1: General requirements and tests	IEC/EN 60598-1/AS/NZS 60598.1
Part 2-1: Particular requirements – Fixed general purpose luminaries	IEC/EN 60598-2-1/AS/NZS 60598.2.1
Part 2-2: Particular requirements – Recessed luminaires	IEC/EN 60598-2-2/AS/NZS 60598.2.2
Part 2-3: Particular requirements – Luminaires for road and street lighting	IEC/EN 60598-2-3/AS/NZS 60598.2.3
Part 2-4: Particular requirements – Portable general purpose luminaires	IEC/EN 60598-2-4/AS/NZS 60598.2.4
Part 2-5: Particular requirements – Floodlights	IEC/EN 60598-2-5/AS/NZS 60598.2.5
Part 2-17: Particular requirements - Luminaires for stage lighting, television and film studios (outdoor and indoor)	IEC/EN IEC 60598-2-17/AS NZS 60598.2.17
Part 2-20: Particular requirements – Lighting chains	IEC/EN 60598-2-20/AS/NZS 60598.2.20
Self-ballasted LED-lamps for general lighting services by voltage >50 V - Safety specifications	IEC/EN 62560/AS/NZS 62560
Lamp control gear- Part 1: General and safety requirements	IEC/EN 61347-1/AS/NZS 61347.1

Test Technology:	**Test Method(s)[3]:**
Lamp control gear - Part 2-11: Particular requirements for miscellaneous electronic circuits used with luminaires.	IEC/EN 61347-2-11/AS/NZS 61347.2.11
Part 2-13: Particular requirements for DC or AC supplied electronic control gear for LED modules	IEC/EN 61347-2-13/AS 61347.2.13
LED modules for general lighting - Safety specifications	IEC/EN 62031
Photobiological safety of lamps and lamp systems	IEC/EN 62471
Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires	IEC TR 62778
Audio/Video Equipment Safety	
Audio, video and similar electronic apparatus – Safety requirements	IEC/EN 60065/AS/NZS 60065
Audio/video, information and communication technology equipment - Part 1: Safety requirements	IEC/EN 62368-1/AS/NZS 62368.1/UL 62368-1/CSA C22.2 NO. 62368-1
ITE Equipment Safety	
Information technology equipment – Safety – Part I: General Requirements	IEC/EN 60950-1/AS/NZS 60950.1
SAFE appliance	
Safety of power transformers, power supply units and similar —Part 1: General requirements	IEC/EN 61558-1/AS/NZS 61558.1
Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	IEC/EN 61558-2-6/AS/NZS 61558.2.6
Part 2-7: Particular requirements and tests for transformers and power supplies for toys	IEC/EN 61558-2-7/AS/NZS 61558.2.7
Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units	IEC/EN 61558-2-16/AS/NZS 61558.2.16

Test Technology:	**Test Method(s)[3]:**
MEAS equipment	
Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements	IEC/EN 61010-1/AS 61010.1
Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes	IEC/EN 61010-2-081
Battery Testing	
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems	IEC/EN/UL 62133-2
Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications - Part 1: Nickel systems	IEC/EN 62133-1
Primary batteries - Part 4: Safety of lithium batteries	IEC/EN 60086-4
General Efficiency Test	
Uniform Test Method for Measuring the Energy Consumption of Battery Chargers	Appendix Y to Subpart B, 10 CFR Part 430 – ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS, 20 CCR Title 20, Uniform Test Method for Measuring the Energy Consumption of Battery Chargers
Uniform Test Method for Measuring the Energy Consumption of External Power Supplies	Appendix Z to Subpart B, 10 CFR Part 430 – ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS, 20 CCR Title 20, Public Utilities and Energy, Uniform Test Method for Measuring the Energy Consumption of External Power Supplies

On the following types of materials and products: Household Appliance, Lighting, Audio/Video Equipment, Information Technology Equipment (ITE), SAFE appliance, MEAS equipment

Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1:[2]

Rule Subpart/Technology	**Test Method**	**Maximum Frequency**
Unintentional Radiators Part 15B	ANSI C63.4:2014	40000 MHz
Industrial, Scientific, and Medical Equipment Part 18	FCC MP-5:1986	40000 MHz
Intentional Radiators Part 15C	ANSI C63.10:2013	40000 MHz
U-NII without DFS Intentional Radiators Part 15E	ANSI C63.10:2013	40000 MHz
U-NII with DFS Intentional Radiators Part 15E	FCC KDB 905462 D02 (v02) U-NII DFS Compliance Procedures New Rules v02 (April 8, 2016)	40000 MHz

[1] When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA *R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories*.

[2]Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC website (https://apps.fcc.gov/oetcf/eas/) for a listing of FCC approved laboratories.

[3] Exclusions Tables

Standard	Clause	Test/Remarks
IEC/EN 61000-4-6	6.2.3.2	Current clamp
IEC/EN/ 60950-1	1.5.9	Surge suppressors Humidity conditioning (dimensions exceed 1m×1m×1m sample)
	2.10.3.9	Measurement of transient levels
	4.2.8	Cathode ray tubes
	4.2.9	High pressure lamps
	4.2.12	Flammable liquids
	4.2.13.2	Ionizing radiation
	4.3.13.3	Effect of UV radiation on materials
IEC/EN/ 60950-1	4.3.13.4	Human exposure to UV radiation
	4.3.13.5.1	Laser (including laser diodes)
	4.5	Three phase voltage supply systems
	4.6.2	Bottom of fire enclosure (Distillate fuel oil as described in Annex A.3.2)
	6.2.2.1	Impulse Test (Test generator reference 1 of table N.1)
	7.4.2	Voltage surge test (Test generator reference 3 of table N.1)
	7.4.3	Impulse test (Test generator reference 1 of table N.1)

Standard	Clause	Test/Remarks
IEC/EN/ 60950-1 (*cont.*)	Annex A.3	Hot flaming oil test
	Annex G	Alternative method for determining minimum clearance
	Annex H	Ionizing radiation
	Annex M	Criteria for telephone ringing signals;
	Annex N	Impulse test generators
	Annex Q	Voltage dependent resistors (VDRs)
	Annex T	Guidance on protection against ingress of water
	Annex Y	Ultraviolet light conditioning test
	Annex CC	Evaluation of integrated circuit (IC) current limiters;
	Annex Zx	Protection against excessive sound pressure from personal music players
IEC/EN 60065	6.1	Ionizing Radiation
	6.2	Laser radiation
	7	Three phase voltage supply system
	8.17	Endurance test for wound components
	13.3.4	Transient voltages [Test generator according to Annex K (1.2 /50 us and 10/700 us)]
	14.2	Resistors (Discharge Test. Surge Test Apparatus acc. Fig 5a. Measurement device for resistance. Test according to IEC 60068-2-78)
	14.3	Capacitor and RC-units (Test according to IEC 60384-1, sub clause 4.38 and IEC 60384-14)
	16.3	Flexible cords
	18	Mechanical strength of picture tubes and protection against the effects of Implosion
	Annex H	Insulating winding wires (Test equipment according to IEC 60851-3, IEC 60851-5 and IEC 60851-6)
	Annex Zx	Protection against excessive sound pressure from personal music players
IEC/EN 62368-1/ AS/NZS 62368.1/UL 62368-1/CSA 62368-1	--	Three phase equipment;
	8.5.5.2	High pressure lamps
	10	Radiation
	Annex C	Ultra-violet radiation
	Annex G	Components
	Annex H	Criteria for telephone ringing signals
	Annex I	Overvoltage categories
	Annex K	Safety interlocks
	Annex S.3.2	Hot flaming oil test
	Annex U	Cathode ray tubes
IEC/EN 60598-1	4.28	Fixing of thermal sensing controls
	4.20	Rough service luminaires – Vibration requirements
IEC/EN 61347-1	13	Thermal endurance test for windings of ballasts
IEC/EN 60335	14	Transient overvoltages
	22.32	Oxygen bomb test for Rubber
	22.46 & Annex R	Software evaluation
	Annex J	Coated printed circuit boards
	Annex T	UV-C radiation effect on non-metallic materials

Standard	Clause	Test/Remarks
IEC/EN 60335-2-2	21.101	Crush test for current-carrying hose
	21.102	Abrasion test for current-carrying hose
	21.103	Flexing test for current-carrying hose
	21.104	Torsion test for current-carrying hose
	21.105	Bent test in cold condition
IEC/EN 60335-2-24	21.101	Vibration test for camping or similar use appliance
	22.107	Refrigerant leakage test
	22.108	Refrigerant leakage test
	22.109	Refrigerant leakage test
	Annex CC	Non-sparking “n” electrical apparatus
EN 60335-2-52	22.Z103	Chemical corrosive test
	Annex AA	Aging test for elastomeric parts
IEC/EN 60335-2-54	21.101	Crush test for current-carrying hose
	21.102	Abrasion test for current-carrying hose
	21.103	Flexing test for current-carrying hose
	21.104	Torsion test for current-carrying hose
IEC/EN 60335-2-59	32	UV radiation
IEC/EN 60335-2-65	32.101	Ozone concentration
	32.102	UV radiation
	Annex AA	UV radiation conditioning
IEC/EN 60335-2-75	Annex AA	Aging test for elastomeric parts
IEC/EN 61558-1	14.3.3	Vibration test
	16.5	Appliance used in vehicles and railway applications
	20.8	Tests for thermal cut-outs
	20.9	Test for thermal-links
	Annex K	Insulated winding wires
IEC/EN 61558-2-6	6.103	Only for appliance with rated supply frequency of 50-60Hz
IEC/EN 61558-2-7	6.103	Only for appliance with rated supply frequency of 50-60Hz
IEC/EN 61558-2-16	6.103	Only for appliance with rated supply frequency of 50-60Hz
	18.102	Insulation above working voltage 750 V peak
	Annex K	Insulated winding wires
IEC/EN 61010-1	10.5.3	Insulating materials -Vicat (ISO 306 method A)
	12.2.1	Ionizing radiation
	12.3	UV Radiation
	12.5.1	Sound pressure level
	12.5.2	Ultrasonic pressure
	12.6	Laser sources
	13.2.3	High vacuum devices
	Annex H	Qualification of conformal coating for protection against pollution
	General	3 phase power supply

Accredited Laboratory

A2LA has accredited

EUROFINS ELECTRICAL TESTING SERVICE (SHENZHEN) CO., LTD.

Shenzhen, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 6th day of July 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 5376.01
Valid to July 31, 2025

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.