



PowerLab Ltd
Christchurch

Client Number 32

PO Box 31034, Ilam, Christchurch, 8444
5 Sheffield Crescent, Burnside, Christchurch, 8053

Telephone 021 046-0445

www.powerlab.co.nz

Authorised Representative

Mr Ian Dix
Laboratory Quality Manager

Programme

Electrical Testing Laboratory

Accreditation Number 42

Initial Accreditation Date 3 November 1976

Conformance Standard

ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories

Laboratory Services Summary

- 3.01 Conductors and Resistance Alloys
- 3.02 Resistors, Resistance Boxes and Potential Dividers
- 3.03 Insulators and Insulating Materials
- 3.30 Electric Machines and Auxiliary Apparatus
- 3.31 Circuit Switching and Rupturing Devices
- 3.35 Cables and Feeders
- 3.40 High Voltage Testing
- 3.41 Radio communication Equipment
- 3.42 Electromagnetic Compatibility Testing
- 3.45 High Power and High Current Testing
- 3.60 Environmental Tests
- 3.80 Approval Tests on Electrical Appliances
- 5.97 High Voltage Measurements

Approved Signatories

Mr Vinesh Chand	3.41, 3.42
Mr Ian Dix	3.01, 3.02, 3.03, 3.40(a,b), 3.80, 5.97
Mr Keith Manson	3.01, 3.02, 3.03, 3.30, 3.31, 3.35, 3.40, 3.45, 5.97
Mr Brent Pearson	3.80 (60335-1, -2-23, -2-89; 60598-1, -2-1; 60529 only)
Mr Michael Renner	3.80 (60335-1, -2-8, -2-23, -2-32; 60598-1, -2-1 and 62477 only)
Mr Richard Noel Sawers	3.41, 3.42
Mr Manuel Shimasaki	3.41, 3.42, 3.60, 3.80 (excluding 60335.2.76)

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CERTIFICATE OF ACCREDITATION



Mr Schalk van der Merwe	3.41, 3.42
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Calibration and Measurement Capability (CMC) Uncertainties are expressed as an expanded uncertainty with a level of confidence of approximately 95 % ($k = 2$) ^{Note1}.

Measurement results are traceable to the International System of Units (SI) via an unbroken chain of comparisons to the New Zealand National Standards or to the National Standards of other Signatories to the CIPM MRA.

Unless stated elsewhere in this schedule, measurements are performed at the premises of the accredited laboratory.

Environmental testing (3.60), Electrical safety testing (3.80), Radio testing (3.41), and EMC testing (3.42) is also carried out at the premises of Independent Test Laboratories (ITL) at 218A Annex Road Christchurch and the OATS at Birdling Flats Christchurch in accordance with the accredited PowerLab management system procedures.

3.01 Conductors and Resistance Alloys

Refer to 3.02 for range

3.02 Resistors, Resistance Boxes and Potential Dividers

The measurement of resistance for testing purposes (not calibration)

Range	CMC Uncertainty
100 $\mu\Omega$ to 1 G Ω	0.5 % of reading

3.03 Insulators and Insulating Materials

Tests to published specifications

(a) Electrical strength tests

Up to 6.6 kV	1 % of reading
Above 6.6 kV	3 % of reading
Up to 15 kV, short-circuit current >200 mA	
Above 15 kV refer to 3.40	

(b) Insulation resistance tests

Refer to 3.02 for range

(c) Surface and volume resistivity tests

Resistivity tests	5 % of reading
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Includes testing of liquids to ASTM D1125

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(f) Direct voltage tests

Refer to 3.40

(g) Alternating voltage tests

Refer to (a)

(i) Dielectric dispersion coefficient

Dielectric tests

Refer to 3.40

Test of ac 50 Hz or dc equipment to published specifications

3.30 Electric Machines and Auxiliary Apparatus

(a) Motors, generators and other rotating machines

Comparative measurements of insulation tan ϕ , capacitance and partial discharge measurements on rotating machines

3.31 Circuit Switching and Rupturing Devices

(a) Circuit breakers and controllers

(c) Switches and isolators

(e) Fuses and fuse links (semi-enclosed)

Measurement capabilities in (a), (c) and (e) above as for 3.45

3.35 Cables and Feeders

(a) Conductor resistance tests

(b) Insulation resistance tests

(c) Capacitance tests

(d) Direct voltage tests

(e) Alternating voltage tests

(g) Partial discharge tests

(h) Dielectric tests

Refer to 3.02, 3.03 and 3.40 for range of measurements and uncertainties

3.40 High Voltage Testing

Tests to published specifications, including CISPR 18-2

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General Capabilities
 0 kV ac to 300 kV ac, 10 A short circuit current, Impulse generation up to 600 kV @ 150 kV,
 50 Hz peak and 30 kJ

	CMC Uncertainty
(a) Direct voltage tests	
Up to 100 kV	3 % of reading
(b) Alternating voltage tests	
Up to 300 kV	3 % of reading
(c) Impulse voltage tests	
Up to 600 kV	3 % of reading
(d) Impulse current tests	
Up to 40 kA	3 % of reading
(e) Partial discharge tests	
Comparative partial discharge	
Up to 200 kV	3 % of test voltage
(f) Dielectric tests	
Comparative dielectric tests	
Comparative partial discharge	
Up to 200 kV	3 % of test voltage
Capacitance from 100 pF to 22,000 µF	
Dissipation factor from 1/10,000 to 11	

3.41 Radio communication Equipment

- (a) Receiving equipment
- (b) Transmitting equipment

In accordance with the following standards

AS/NZS 4268

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3.42 Electromagnetic Compatibility Testing

Determination of radio interference and immunity characteristics of industrial, scientific, marine, information technology and medical radio frequency equipment, household appliances and similar apparatus, fluorescent lamps and luminaires in accordance with the following classes of test

(a) Radiated emissions

Radiated Electric Field (E-Field) Emissions:

30 MHz to 1 GHz:	OATS (Open Area Test Site) at 3 m or 10 m
1 GHz to 18 GHz:	OATS (Open Area Test Site) at 3 m
1 GHz to 18 GHz:	FAR (Fully Anechoic Room) at 3 m

Maximum EUT size (H x W x D) m:	OATS: 0.8 x 1.5 x 1.5
	FAR: 0.55 x 1.5 x 1.5

Radiated Magnetic (H-Field) Field Emissions:

9 kHz to 30 MHz:	0.5 m Active Loop
9 kHz to 30 MHz:	2.0 m Triple Loop (Van Veen Loop)

(b) Radiated susceptibility

Using a fully anechoic room (3 m) over the range 80 MHz to 2.7 GHz

(c) Conducted emissions

Up to 32 A, 1/3 phase, over the range 9 kHz to 30 MHz
 Harmonic current emissions at 240 V a.c., 16 A per phase, from DC to 40th harmonic
 Local oscillator voltage measurement from 30 MHz to 2150 MHz
 Video RF output measurement from 30 MHz to 2150 MHz

(d) Conducted susceptibility

Up to 25 A, 1/3 phase, over the range 150 kHz to 230 MHz
 CDN and clamp injection methods to 10 V e.m.f.

(e) Transient testing

Electrostatic Discharge 16.5 kV air discharge, 8 kV contact discharge
 Electrical Fast Transients ±200 V to 4.8 kV, 100 Hz to 1000 kHz
 Surge ±200 V to 4.4 kV, ±100 A to 2.2 kA
 Power Magnetic Field, 1 A/m to 40 A/m continuous, 1 A/m to 1200 A/m pulsed
 Dips & Interrupts, (0, 40, 70, 80) %, 16 A continuous, peak inrush current 500 A

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In accordance with the following standard test methods:

ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

In accordance with the following IEC standards or equivalent national standards such as: AS, EN, IS, NZS, etc.

IEC CISPR 11 / AS/NZS CISPR 11	
IEC CISPR 12 / AS/NZS CISPR 12	
IEC CISPR 14-1 / AS/NZS CISPR 14.1	
IEC CISPR 14-2 / AS/NZS CISPR 14.2	
IEC CISPR 15 / AS/NZS CISPR 15	
IEC CISPR 22 / AS/NZS CISPR 22	
IEC CISPR 24 / AS/NZS CISPR 24	
IEC CISPR 32 / AS/NZS CISPR 32	
IEC 61000-6-1 / AS/NZS 61000.6.1	
IEC 61000-6-2 / AS/NZS 61000.6.2	
IEC 61000-6-3 / AS/NZS 61000.6.3	
IEC 61000-6-4 / AS/NZS 61000.6.4	
IEC 61000-3-2 / AS/NZS 61000.3.2	
IEC 61000-4-2 / AS/NZS IEC 61000.4.2	
IEC 61000-4-3 / AS/NZS IEC 61000.4.3	
IEC 61000-4-4 / AS/NZS IEC 61000.4.4	
IEC 61000-4-5 / AS/NZS 61000.4.5	
IEC 61000-4-6 / AS/NZS IEC 61000.4.6	
IEC 61000-4-8 / AS/NZS 61000.4.8	
IEC 61000-4-11 / AS/NZS 61000.4.11	
IEC 61000-4-13 / AS/NZS 61000.4.13	
IEC 60601-1-2 / AS IEC 60601.1.2 / EN 60601-1-2	Medical electrical equipment
IEC 62599-2	Immunity requirements for components of fire and security alarm systems

All facilities and equipment comply with either the relevant requirements of CISPR 16, or the applicable test standard.

3.45 High Power and High Current Testing

Including high current tests on energy meter for the standards listed in 3.80 below

(a)	Power frequency current	CMC Uncertainty
	Temperature rise tests	0.5 %
	Short circuit tests	4 %

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Power factor	4 %
(i) Temperature rise tests Temperature (ambient plus equipment)	
Liquid in glass thermometry -5 °C to 50 °C for liquids and ambient	0.2 °C
Thermocouple thermometry -15 °C to 100 °C Up to 200 °C	3 °C 3 % of reading
Change in resistance thermometry	1 % of reading

3.60 Environmental Tests

- (a) Cold tests
- (b) Dry heat tests
- (c) Damp heat tests
- (d) Impact tests
- (k) Change of temperature tests
Over the range -40 °C to 180 °C and 10 %rh to 90 %rh in accordance with the following standards (or national variations, such as BS EN, etc.):

IEC 60068-2-1 / AS 60068.2.1	Test A: Cold
IEC 60068-2-2 / AS 60068.2.2	Test B: Dry heat
IEC 60068-2-14 AS 60068.2.14	Test N: Change of temperature
IEC 60068-2-30 AS 60068.2.30	Test Db: Damp heat, cyclic (12 h + 12 h cycle)
IEC 60068-2-75 / AS 60068.2.75	Test Eh: Hammer tests

3.80 Approval Tests on Electrical Appliances

- (a) General requirements to AS/NZS 3100* plus amendments
- (c) General requirements to AS/NZS 3350.1 plus amendments or AS/NZS 60335.1 plus amendments
- (e) IP ratings to AS 60529* / IEC 60529
- (f) Fire hazard testing of electrotechnical products to AS/NZS 60695 / IEC 60695 series*
- (m) Other tests * and other IEC equivalents

Excluding arc-tracking tests, tests for flammable refrigerants using capillary tube and gas bottle and gas concentration measurement equipment, and tests that require apparatus for salt mist, water pressure, water vapour, vacuum pressure, UV luminance measurement, measurement of radiation energy, and crushing or abrasion tests of current carrying hoses.

Australian Standards

AS 60529	Degrees of protection provided by enclosures (IP Code)
AS 61010.1	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements (excluding clauses 6.7.1.3 CTI test, 9.3.1/14.7 Flammability tests, 10.5.3 Vicat test of insulating materials, 11.7

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AS 62477.1 Fluid pressure and leakage, 12.2.1 Ionizing radiation, 12.3 UV radiation, 12.4 Microwave radiation, 12.5.1 Sound pressure level, 12.5.2 Ultrasonic pressure, 12.6 Laser sources, 13.2.3 High vacuum devices and Annex H Qualification of conformal coating for protection against pollution)
 Safety requirements for power electronic converter systems and equipment – Part 1: General (excluding clauses for testing sonic pressure and sound level testing, impulse voltage tests, vibration tests and salt mist tests)

Australian / New Zealand Standards

- AS/NZS 3105 Electrical portable outlet devices
- AS/NZS 3127 Cord-line switches
- AS/NZS 3133 Air-break switches
- AS/NZS 3136 Electrical equipment for spa and swimming pools
- AS/NZS 3190 Residual current devices (current-operated earth-leakage devices)
- AS/NZS 3191 PVC electric flexible cords (excluding ageing, tensile strength and elongation tests)
- AS/NZS 3199 Cord extension sets
- AS/NZS 5000 PVC electric flexible cords (excluding ageing, tensile strength and elongation tests)
- AS/NZS 60335.1 Safety of household and similar electrical appliances – General requirements
- AS/NZS 60335.2.2 Vacuum cleaners and water suction cleaning appliances (excluding clauses 21.101 and 21.102)
- AS/NZS 60335.2.3 Electric irons (excluding clause 22.7)
- AS/NZS 60335.2.8 Shavers, hair clippers and similar appliances
- AS/NZS 60335.2.9 Grills, toasters and similar portable cooking appliances (excluding clause 31)
- AS/NZS 60335.2.13 Deep fat fryers, frying pans and similar appliances
- AS/NZS 60335.2.14 Kitchen machines
- AS/NZS 60335.2.15 Appliances for heating liquids (excluding clause 22.7)
- AS/NZS 60335.2.17 Blankets, pads, clothing and similar flexible heating appliances (pads and wraps only)
- AS/NZS 60335.2.21 Storage water heaters (excluding clause 22.47)
- AS/NZS 60335.2.23 Appliances for skin or hair care
- AS/NZS 60335.2.24 Refrigerating appliances and ice-cream appliances and ice-makers (excluding clauses 11.102, 15.105, 22.103, 22.108, 22.112, 22.113-22.118, 31, & Annex EE, FF & GG)
- AS/NZS 60335.2.29 Battery chargers
- AS/NZS 60335.2.30 Room heaters
- AS/NZS 60335.2.32 Massage appliances
- AS/NZS 60335.2.34 Motor-compressors (excluding Annex AA running overload test, & clause 22.7)
- AS/NZS 60335.2.40 Electrical heat pumps, air-conditioners and dehumidifiers (excluding clauses 22.108, 22.112, 22.113-22.118, 31, & Annex EE, FF & GG)
- AS/NZS 60335.2.41 Pumps
- AS/NZS 60335.2.45 Portable heating tools and similar appliances
- AS/NZS 60335.2.53 Sauna heating appliances and infrared cabins
- AS/NZS 60335.2.59 Insect killers (excluding clauses 31 and 32)
- AS/NZS 60335.2.60 Whirlpool baths

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AS/NZS 60335.2.65	Air-cleaning appliances (excluding clause 32)
AS/NZS 60335.2.69	Wet and dry vacuum cleaners, including power brush, for industrial and commercial use (excluding clauses 21.102 and 21.103)
AS/NZS 60335.2.73	Fixed immersion heaters
AS/NZS 60335.2.74	Portable immersion heaters
AS/NZS 60335.2.76	Electric fence energisers
AS/NZS 60335.2.80	Fans
AS/NZS 60335.2.82	Amusement machines and personal service machines
AS/NZS 60335.2.85	Fabric steamers
AS/NZS 60335.2.89	Commercial refrigerating appliances with incorporated or remote refrigerant condensing unit or compressor (excluding clauses 22.103, 22.106-22.108, 22.7)
AS/NZS 60335.2.95	Drives for vertically moving garage doors for residential use (excluding clause 31)
AS/NZS 60335.2.100	Hand-held mains-operated garden blowers, vacuums and blower vacuums
AS/NZS 60335.2.102	Gas, oil and solid-fuel burning appliances having electrical connections
AS/NZS 60335.2.103	Drives for gates, doors and windows (excluding clauses 31 and 32)
AS/NZS 60598.1	Luminaires – General requirements and tests
AS/NZS 60598.2.1	Fixed general purpose luminaires
AS/NZS 60598.2.2	Recessed luminaires
AS/NZS 60598.2.3	Road and street lighting
AS/NZS 60598.2.4	Portable general purpose luminaires
AS/NZS 60598.2.5	Floodlights
AS/NZS 60669.2.1	Electronic switches
AS/NZS 60695.1.1	Fire hazard testing – Guidance for assessing the fire hazard of electrotechnical products – General guidelines
AS/NZS 60695.2.10	Fire hazard testing – Glowing/hot wire based test methods – Glow wire apparatus and common test procedure
AS/NZS 60695.2.11	Fire hazard testing – Glowing/hotwire based test methods – Glow wire flammability test method for end-products
AS/NZS 60695.2.12	Fire hazard testing – Glowing/hot wire based test methods – Glow wire flammability test method for materials
AS/NZS 60695.2.13	Fire hazard testing – Glowing/hot wire based test method – Glow wire ignitability test method for materials
AS/NZS 60695.10.2	Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test
AS/NZS 60695.11.5	Fire hazard testing – Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance
AS/NZS 60947.7.1	Low-voltage switchgear and controlgear – Ancillary equipment - Terminal blocks for copper conductors
AS/NZS 60950.1	Safety of information technology equipment – General requirements
AS/NZS 61008.1	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) General Rules
AS/NZS 61347.1	Lamp control gear – General and safety requirements (excluding clause 18.5 for resistance to tracking)
AS/NZS 61347.2.11	Miscellaneous electronic circuits used with luminaires
AS/NZS IEC 61347.2.13	DC or AC supplied electronic control gear for LED modules
AS/NZS 62368.1	Audio/video, information and communication technology equipment Part 1: Safety requirements

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AS/NZS 62560 Self-ballasted LED-lamps for general lighting services by voltage > 50 V – Safety specifications

Testing conducted in accordance with the following IEC Standards or with equivalent BS EN, UL, etc. Standards

- IEC 60335-1 Safety of household and similar electrical appliances – General requirements
- IEC 60335-2-2 Vacuum cleaners and water suction cleaning appliances (excluding clauses 21.101 and 21.102)
- IEC 60335-2-3 Electric irons (excluding clause 22.7)
- IEC 60335-2-8 Shavers, hair clippers and similar appliances
- IEC 60335-2-9 Grills, toasters and similar portable cooking appliances (excluding clause 31)
- IEC 60335-2-13 Deep fat fryers, frying pans and similar appliances
- IEC 60335-2-14 Kitchen machines
- IEC 60335-2-15 Appliances for heating liquids (excluding clause 22.7)
- IEC 60335-2-17 Blankets, pads, clothing and similar flexible heating appliances (pads and wraps only)
- IEC 60335-2-21 Storage water heaters (excluding clause 22.47)
- IEC 60335-2-23 Appliances for skin or hair care
- IEC 60335-2-24 Refrigerating appliances and ice-cream appliances and ice-makers (excluding clauses 11.102, 15.105, 22.103, 22.108, 22.112, 22.113-22.118, 31, & Annex EE, FF & GG)
- IEC 60335-2-29 Battery chargers
- IEC 60335-2-30 Room heaters
- IEC 60335-2-32 Massage appliances
- IEC 60335-2-34 Motor-compressors (excluding Annex AA running overload test, & clause 22.7)
- IEC 60335-2-40 Electrical heat pumps, air-conditioners and dehumidifiers (excluding clauses 22.108, 22.112, 22.113-22.118, 31, & Annex EE, FF & GG)
- IEC 60335-2-41 Pumps
- IEC 60335-2-45 Portable heating tools and similar appliances
- IEC 60335-2-53 Sauna heating appliances and infrared cabins
- IEC 60335-2-59 Insect killers (excluding clauses 31 and 32)
- IEC 60335-2-60 Whirlpool baths
- IEC 60335-2-65 Air-cleaning appliances (excluding clause 32)
- IEC 60335-2-69 Wet and dry vacuum cleaners, including power brush, for industrial and commercial use (excluding clauses 21.102 and 21.103)
- IEC 60335-2-73 Fixed immersion heaters
- IEC 60335-2-74 Portable immersion heaters
- IEC 60335-2-76 Electric fence energisers
- IEC 60335-2-80 Fans
- IEC 60335-2-82 Amusement machines and personal service machines
- IEC 60335-2-85 Fabric steamers
- IEC 60335-2-89 Commercial refrigerating appliances with incorporated or remote refrigerant condensing unit or compressor (excluding clauses 22.103, 22.106-22.108, & 22.7)
- IEC 60335-2-95 Drives for vertically moving garage doors for residential use (excluding clause 31)
- IEC 60335-2-100 Hand-held mains-operated garden blowers, vacuums and blower vacuums
- IEC 60335-2-102 Gas, oil and solid-fuel burning appliances having electrical connections

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IEC 60335-2-103	Drives for gates, doors and windows (excluding clauses 31 and 32)
IEC 60529	Degrees of protection provided by enclosures (IP Code)
IEC 60598-1	Luminaires – General requirements and tests
IEC 60598-2-1	Fixed general purpose luminaires
IEC 60598-2-2	Recessed luminaires
IEC 60598-2-3	Road and street lighting
IEC 60598-2-4	Portable general purpose luminaires
IEC 60598-2-5	Floodlights
IEC 60669-2-1	Electronic switches
IEC 60695-1-1	Fire hazard testing – Guidance for assessing the fire hazard of electrotechnical products – General guidelines
IEC 60695-2-10	Fire hazard testing – Glowing/hot wire based tests methods – Glow wire apparatus and common test procedure
IEC 60695-2-11	Fire hazard testing – Glowing/hot wire based test methods – Glow wire flammability test method for end-products
IEC 60695-2-12	Fire hazard testing – Glowing/hot wire based test methods – Glow wire flammability test method for materials
IEC 60695-2-13	Fire hazard testing – Glowing/hot wire based test methods – Glow wire ignitability test method for materials
IEC 60695-10-2	Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test
IEC 60695-11-5	Fire hazard testing – Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance
IEC 60947-7-1	Low voltage switchgear and controlgear – Terminal blocks for copper conductors
IEC 60950-1	Safety of information technology equipment – General requirements
IEC 61008-1	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) General Rules
IEC 61008-2-1	Applicability of the general rules to RCCB's functionally independent of line voltage
IEC 61008-2-2	Applicability of the general rules to RCCB's functionally dependent on line voltage
IEC 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements (excluding clauses 6.7.1.3 CTI test, 9.3.1/14.7 Flammability tests, 10.5.3 Vicat test of insulating materials, 11.7 Fluid pressure and leakage, 12.2.1 Ionizing radiation, 12.3 UV radiation, 12.4 Microwave radiation, 12.5.1 Sound pressure level, 12.5.2 Ultrasonic pressure, 12.6 Laser sources, 13.2.3 High vacuum devices and Annex H Qualification of conformal coating for protection against pollution)
IEC 61010-2-030	Testing and measuring circuits
IEC 61347-1	Lamp control gear – General and safety requirements (excluding clause 18.5 for resistance to tracking)
IEC 61347-2-11	Miscellaneous electronic circuits used with luminaires
IEC 61347-2-13	DC or AC supplied electronic control gear for LED modules
IEC 61851-1	Electric vehicle conductive charging system – Part 1: General requirements
IEC 62262	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)
IEC 62368-1	Audio/video, information and communication technology equipment Part 1: Safety requirements

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IEC 62384	DC or AC supplied electronic control gear for LED modules – Performance Requirements
IEC 62477-1	Safety requirements for power electronic converter systems and equipment – Part 1: General (excluding clauses for testing sonic pressure and sound level testing, impulse voltage tests, vibration tests and salt mist tests)
IEC 62560	Self-ballasted LED-lamps for general lighting services by voltage > 50 V – Safety Specifications
ANSI/UL 69	Electric-Fence Controllers
Electricity metering equipment (a.c.) high current tests	
IEC 62052-31	General requirements, tests and test conditions - Product safety requirements and tests: Clauses 6.10.6.4 Endurance, 6.10.6.5 Surge voltage, 6.10.6.6 Rated safe short-time current, 6.10.6.7 Rated operational sort time current and 6.10.6.8 Rated short-circuit making capacity only
IEC 62053-11	Electromechanical meters for active energy (classes 0,5, 1 and 2): Clause 7.2 Influence of short-time overcurrents only
IEC 62053-21	Static meters for active energy (classes 1 and 2): Clause 7.2 Influence of short-time overcurrents only
IEC 62053-22	Static meters for active energy (classes 0,2 S and 0,5 S): Clause 7.2 Influence of short-time overcurrents only
IEC 62053-23	Static meters for reactive energy (classes 2 and 3): Clause 7.2 Influence of short-time overcurrents only
IEC 62055-11	Payment systems - Particular requirements - Static payment meters for active energy (classes 1 and 2): Clauses C.3 Electrical endurance, C.5 Fault current making capacity, C.6 Short-circuit current carrying capability, C.7 Minimum switched current and C.8 Dielectric tests only
NMI M 6-1	Electrical Meters: Metrological and Technical Requirements: Clause A.2.16 Short-time overcurrents (in accordance with AS 1284.1, AS 62053.21 and AS 62053.22) only
EN 50470-3	Electricity metering equipment (a.c.). Particular requirements. Static meters for active energy (class indexes A, B and C): Clauses 8.6 and 8.7.8 only
SANS 1524-1	Payment meters: Clauses 7.4 and 7.9 only
SANS 62055-31	Static payment meters for active energy (classes 1 and 2): Annex C only

5.97 High Voltage Measurements

(g) Calibration of 50 Hz, AC, DC and Impulse Voltage measuring equipment using sphere gaps to IEC 60052 and equivalent national standards over the following ranges

Range	CMC Uncertainty
50 Hz ac voltage (peak) 8 kV to 206 kV	3 %
DC voltage either polarity 8 kV to 99 kV	5 %
Negative impulse (50 % values) 8 kV to 595 kV	3 %
Positive impulse (50 % values) 11.2 kV to 600 kV	3 %

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