

CERTIFICATE OF ACCREDITATION

This is to attest that

LABTEST CERTIFICATION, INC.

3255 PEPPER LANE LAS VEGAS, NEVADA 89120, U.S.A.

Testing Laboratory TL-500

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date April 19, 2022



President

Visit www.iasonline.org for current accreditation information.

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

LABTEST CERTIFICATION, INC.

www.labtestcert.com

Contact Name Rajinder Atwal

Contact Phone +1-604-247-0444

Accredited to ISO/IEC 17025:2017

Effective Date April 19, 2022

Heating/Cooling	
ANSI Z21.1	Household cooking gas appliances
ANSI Z21.10.1	Gas water heaters, volume 1, storage water heaters with input ratings of 75,000 BTU per hour or less
ANSI Z21.10.3	Gas-fired water heaters, volume III, storage water heaters with input ratings above 75,000 Btu per hour, circulating and instantaneous
ANSI Z21.50	Vented gas fireplaces
ANSI Z21.57	Recreational vehicle cooking gas appliances
ANSI Z21.58	Outdoor cooking gas appliances
ANSI Z21.77	Manually operated piezo-electric spark gas ignition systems and components
ANSI Z21.86	Vented gas-fired space heating appliances
ANSI Z21.88	Vented gas fireplace heaters
ANSI Z21.89	Outdoor cooking specialty gas appliances
ANSI Z21.97	Outdoor decorative gas appliances
ANSI Z83.11	Gas food service equipment
ANSI Z83.26	Gas-fired outdoor infrared patio heater
ANSI Z83.7	Gas-Fired construction heaters
ANSI/ASHRAE-93	Methods of testing to determine the thermal performance of solar collectors (limited to conducting [outdoors under natural sunlight] of only liquid- based, glazed solar collectors only, excluding sections: 7.2 air as the transfer fluid, 7.3 indoor testing with a solar irradiance simulator)
ANSI/CAN Z21.42	Gas-fired illuminating appliances
ASNI/CSA Z83.18	Recirculating direct gas-fired heating and forced ventilation appliances for commercial and industrial applications
ASHRAE 95	Methods of testing to determine the thermal performance of solar domestic water heating systems (excluding sections 7.9 and 8.2)
CSA 1.1	Household cooking gas appliances
CSA 1.6	Outdoor cooking gas appliances
CSA 1.8	Gas food service equipment





International Accreditation Service, Inc.

CSA 1.18	Outdoor cooking specialty gas appliances
CSA 2.14	Gas-Fired construction heaters
CSA 2.22	Vented gas fireplaces
CSA 2.32	Vented gas-fired space heating appliances
CSA 2.33	Vented gas fireplace heaters
CSA 2.37	Gas-fired outdoor infrared patio heater
CSA 2.41	Outdoor decorative gas appliances
CSA 4.1	Gas water heaters, volume 1, storage water heaters with input ratings of 75,000 BTU per hour or less
CSA 4.23	Gas water heaters, volume 1, storage water heaters with input ratings of 75,000 BTU per hour or less
CSA 6.23	Manually operated piezo-electric spark gas ignition systems and components
CSA F378 Series-11	Solar collectors (limited to conducting [outdoors under natural sunlight] of only liquid-based, glazed solar collectors according F378.1-11, glazed and unglazed liquid heating solar collectors - test methods, (i.e., F378.1-11 specifies testing according to ISO 9806-1 for glazed solar collectors and ISO 9806-3 for unglazed collectors)
CSA F379.1-09	Packaged solar domestic hot water systems (liquid-to- liquid heat transfer) (excluding sections 8.7.7.2 and 8.7.7.3)
ICC 901	Solar thermal collector standard
ISO 9806	Solar energy – solar thermal collectors – test methods (approved for outdoor testing under natural sunlight, excluding section 9 steady-state efficiency test using a solar irradiance simulator)
NSF/ANSI 2	Food equipment
NSF/ANSI 4	Commercial cooking, rethermalization, and powered hot food holding and transport equipment
NSF/ANSI 8	Commercial powered food preparation equipment
SRCC 100	Solar thermal collector standard
SRCC 400	Solar pool and spa heating systems standard
UL 147	Hand-held torches
UL 499	Standard for electric heating appliances
Fire	
ASTM E108	Standard Test Methods for Fire Tests of Roof Coverings
NFPA 160	Standard for the Use of Flame Effects Before an Audience
NFPA 211	Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances
NFPA 256	Standard Methods of Fire Tests of Roof Coverings



International Accreditation Service, Inc.

NFPA 1126	Standard for the Use of Pyrotechnics Before a Proximate Audience
UL 790	Standard test methods for fire tests of roof coverings
Electrical	·
BS 60601-1	Medical electrical equipment, part 1: general requirements for safety
BS 60950-1	Information technology equipment - safety - part 1: general requirements
BS 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use part -1: general requirements
CSA-C22.2 No. 250	Luminaires
CSA-C22.2 No. 250.13	Light emitting diode (LED) equipment for lighting applications
CSA-C22.2 No. 60601-1	Medical electrical equipment, part 1: general requirements for safety
CSA-C22.2 No. 60950-1	Information technology equipment – safety – part 1: general requirements
CSA-C22.2 No. 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use part -1: general requirements
CSA C22.2 No. 61730-1	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction
CSA C22.2 No. 61730-2	Photovoltaic (PV) Module Safety Qualification – Part 2: Requirements for Testing (Exclude Cl. 10.18)
EN 60601-1	Medical electrical equipment, part 1: general requirements for safety
EN 60950-1	Information technology equipment - safety - part 1: general requirements
EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use part -1: general requirements
EN IEC 61730-1	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction
EN IEC 61730-2	Photovoltaic (PV) Module Safety Qualification – Part 2: Requirements for Testing (Exclude Cl. 10.18)
IEC 60601-1	Medical electrical equipment, part 1: general requirements for safety
IEC 60950-1	Information technology equipment – safety – part 1: general requirements
IEC 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use part -1: general requirements
IEC 61853-1	Photovoltaic (PV) module performance testing and energy rating – part 1: Irradiance and temperature performance measurements and power rating
UL 234	Standard for Low Voltage Lighting Fixtures for Use in Recreational Vehicles
UL 1310	Class 2 power units
UL 1598	Luminaires
UL 1703	Flat-plate photovoltaic modules and panels
UL 8750	Light emitting diode (LED) equipment for lighting applications





International Accreditation Service, Inc.

UL 60601-1	Medical electrical equipment, part 1: general requirements for safety
UL 60950-1	Information technology equipment – safety – part 1: general requirements
UL 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use part -1: general requirements
UL 61730-1	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction
UL 61730-2	Photovoltaic (PV) Module Safety Qualification – Part 2: Requirements for Testing (Exclude CI. 10.18)
Lighting Standards	
C22.2 NO. 12	Portable Luminaires
C22.2 NO. 37	Decorative lighting products
C22.2 NO. 89	Swimming-pool luminaires, submersible luminaires, and accessories
C22.2 NO. 166	Stage and studio luminaires
C22.2 NO. 207	Portable and stationary electric signs and displays
C22.2 NO. 250.1	Retrofit kits for luminaire conversion
C22.2 NO. 250.4	Portable luminaires
C22.2 NO. 250.570	Track lighting
C22.2 NO. 250.7	Extra-low voltage landscape lighting systems
C22.2 No. 256	Direct Plug-In Nightlights
C22.2 NO. 1993	Self-ballasted lamps and lamp adapters
CAN/CSA-C22.2 NO. 61347- 2-13	Lamp control gear - part 2-13: particular requirements for DC or AC supplied electronic control gear for LED modules
CAN/CSA-C22.2 NO. 62031	LED modules for general lighting - Safety specifications Consolidated Edition
CAN/CSA-C22.2 NO. 62560	Self-ballasted LED-lamps for general lighting services > 50 V safety specs
CAN/CSA-E61347-1	Lamp control gear - part 1: general and safety requirements
CAN/CSA-E61347-2-3	Lamp control gear - part 2-3: particular requirements for A.C. supplied electronic ballasts for fluorescent lamps
UL 48	Standard for electric signs
UL 153	Standard for Portable Electric Luminaires
UL 379	Standard for Power Units for Fountain, Swimming Pool, and Spa Luminaires
UL 676	Standard for Underwater Luminaires and Submersible Junction Boxes
UL 844	Standard for Luminaires for Use in Hazardous (Classified) Locations
UL 1104	Standard for Marine Navigation Lights
UL 1149	Standard for Low Voltage Marine Lighting Fixtures
UL 1196	Standard for Floating Water lights



International Accreditation Service, Inc.

UL 1241	Standard for Junction Boxes for Swimming Pool Luminaires
UL 1573	Standard for Stage and Studio Luminaires and Connector Strips
UL 1598	Luminaires
UL 1598A	Standard for Supplemental Requirements for Luminaires for Installation on Marine Vessels
UL 1598B	Standard for Supplemental Requirements for Luminaire Reflector Kits for Installation on Previously Installed Fluorescent Luminaires
UL 1598C	Standard for Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits
UL 1786	Direct Plug-In Nightlights
UL 1838	Standard for Low Voltage Landscape Lighting Systems
Heating/Warming Sta	ndards
C22.2 No. 15	Electrically heated warming pads
C22.2 No. 64	Household cooking and liquid-heating appliances
C22.2 No. 101	Electrically heated bedding appliances for household use
C22.2 No. 110	Construction and test of electric storage-tank water heaters
C22.2 No. 164	Electric sauna heating equipment
UL 127	Standard for Factory-Built Fireplaces
UL 174	Standard for Household Electric Storage Tank Water Heaters
UL 296A	Standard for Waste Oil-Burning Air-Heating Appliances
UL 307A	Standard for Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles
UL 574	Standard for Electric Oil Heaters
ULC 627	Standard for Space Heaters for Use with Solid Fuels
UL 647	Standard for Unvented Kerosene-Fired Room Heaters and Portable Heaters
UL 731	Standard for Oil-Fired Unit Heaters
UL 732	Standard for Oil-Fired Storage Tank Water Heaters
UL 733	Standard for Oil-Fired Air Heaters and Direct-Fired Heaters
UL 737	Standard for Fireplace Stoves
UL 896	Standard for Oil-Burning Stoves
UL 1261	Standard for Electric Water Heaters for Pools and Tubs
UL 1278	Standard for Movable and Wall- or Ceiling-Hung Electric Room Heaters
UL 1480	Speakers for Fire Alarm and Signaling Systems, Including Accessories
UL 1480A	Speakers for Commercial and Professional Use
UL 1482	Standard for Solid-Fuel Type Room Heaters



International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

UL 2764	Gas-Fired Condensing Hot Water Heating Boilers
IT Unit	
C22.2 No. 107.1	Power conversion equipment
C22.2 No. 107.2	Battery chargers
C22.2 No. 107.3	Uninterruptible power systems
C22.2 No. 128	Vending Machines (128-16, Ed.4 2016)
C22.2 No. 62368-1	Audio/video-information and communication technology equipment-part 1 safety requirements
UL 1778	Uninterruptible power systems
UL/C22.2 No. 60950-22	Information technology equipment-Safety-part 22 equipment to be installed outdoors
Appliances	
AS 4563	Commercial catering gas equipment
C22.2 No. 10	Electric floor surfacing and cleaning machines
C22.2 No. 61	Household cooking ranges
C22.2 No. 68	Motor-operated appliances (household and commercial)
C22.2 No. 109	Commercial cooking appliances
C22.2 No. 187	Electrostatic Air Cleaners
C22.2 No. 195	Motor operated food processing appliances (household and commercial)
C22.2 No. 218.1	Spas, hot tubs, and associated equipment
C22.2 No. 218.2	Hydro-massage bathtub appliances
C22.2 No. 247	Operators and systems of doors, gates, draperies and louvres
EN/BS 203-1	Gas Heated Catering Equipment
EN/BS 203-2-1	Specific requirements. Open burners and wok burners
EN/BS 203-2-2	Specific requirements. Ovens
EN/BS 203-2-3	Specific requirements. Boiling Pans
EN/BS 203-2-4	Specific requirements. Fryers
EN/BS 203-2-6	Specific requirements. Hot water heaters for beverage
EN/BS 203-2-7	Specific requirements. Salamanders and rotisseries
EN/BS 203-2-8	Specific requirements. Brat pans and paella cookers
EN/BS 203-2-9	Specific requirements. Solid tops, warming plates and griddles
EN/BS 203-2-10	Specific requirements. Chargrills
EN/BS 203-2-11	Specific requirements. Pasta cookers



INTERNATIONAL ACCREDITATION

SERVICE®

International Accreditation Service, Inc.

EN/BS 298	Automatic burner control systems for burners and appliances burning gaseous or liquid fuels
EN/BS 484	Specification for dedicated liquefied petroleum gas appliances – Independent hotplates, including those incorporating a grill for outdoor use
EN/BS 498	Specification for dedicated liquefied petroleum gas appliances – Barbecues for outdoor use contact grills included
EN/BS 13229	Inset appliances including open fires fired by solid fuels - requirement
EN/BS 13240	Room heaters fired by solid fuel - requirements and test methods
EN/ISO/BS 10239	Small craft – liquefied petroleum gas (LPG) systems appliances
EN/ISO/BS 14895	Small craft – liquid-fueled galley stoves and heating
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-1	Safety of household and similar appliances-part 1: general requirements
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-3	Household and similar electrical appliances. Safety. Particular requirements for electric irons
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-6	Household and similar electrical appliances – Safety –Part 2-6: Particular requirements for 60335-2-6 stationary cooking ranges, hobs, ovens and similar appliances
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-7	Household and similar electrical appliances. Safety. Particular requirements for washing machines
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-8	Standard for safety for household and similar electrical appliances –Part 2-8: Particular requirements for shavers, hair clippers, and similar appliances
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-9	Standard for safety for household and similar electrical appliances –Part 2-9: Particular requirements for grills, toasters, and similar portable cooking appliances
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-10	Household and similar electrical appliances. Safety. Particular requirements for floor treatment machines and wet scrubbing machines
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-11	Household and similar electrical appliances. Safety. Particular requirements for tumble dryers
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-12	Standard for safety for household and similar electrical appliances –Part 2- 12: Particular requirements for warming plates, and similar appliances
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-13	Household and similar electrical appliances - Safety - Part 2-13: Particular requirements for deep fat fryers, frying pans and similar appliances
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-14	Household and similar electrical appliances. Safety. Particular requirements for kitchen machines
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-15	Standard for safety for household and similar electrical appliances – Part 2- 15: Particular requirements for appliances for heating liquids
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-16	Household and similar electrical appliances - Safety - Part 2- 16: particular requirements for food waste disposers
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-21	Household and similar electrical appliances - Safety - Part 2-21: Particular requirements for storage water heaters





International Accreditation Service, Inc.

IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-23	Household and similar electrical appliances - Safety - Part 2-23: Particular requirements for appliances for skin or hair care
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-29	Household and similar electrical appliances - Safety - Part 2-29: Particular requirements for battery chargers
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-30	Household and similar electrical appliances - Safety - Part 2-30: Particular requirements for appliances for room heaters
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-31	Household and similar electrical appliances - Safety - Part 2-31: Particular requirements for range hoods and other cooking fume extractors
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-34	Household and similar electrical appliances - Safety - Part 2-34: Particular requirements for motor-compressors
IEC/EN/AS/UL/BS/CSA- C22.2 No 60335-2-35	Household and similar electrical appliances - Safety - Part 2-35: Particular requirements for instantaneous water heaters
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-36	Household and similar electrical appliances - Safety - Part 2-36: Particular requirements for commercial electric cooking ranges, ovens, hobs and hob elements
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-37	Household and similar electrical appliances - Safety - Part 2-37: Particular requirements for commercial electric doughnut fryers and deep fat fryers
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-38	Household and similar electrical appliances - Safety - Part 2-38: Particular requirements for commercial electric griddles and griddle grills
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-39	Household and similar electrical appliances - Safety - Part 2-39: Particular requirements for commercial electric multi-purpose cooking pans
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-41	Household and similar electrical appliances - Safety - Part 2-41: Particular requirements for pumps
IEC/EN/AS/UL/BS/CSA- C22.2 No. 60335-2-42	Household and similar electrical appliances - Safety - Part 2-42: Particular requirements for commercial electric forced convection ovens, steam cookers and steam-convection ovens
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-45	Household and similar electrical appliances. Safety. Particular requirements for portable heating tools and similar appliances
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-48	Household and similar electrical appliances. Safety. Particular requirements for commercial electric grillers and toasters
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-49	Household and similar electrical appliances. Safety. Particular requirements for commercial electric appliances for keeping food and crockery warm
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-61	Household and similar electrical appliances. Safety. Particular requirements for thermal-storage room heaters
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-65	Household and similar electrical appliances. Safety. Particular requirements for air-cleaning appliances
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-73	Household and similar electrical appliances. Safety. Particular requirements for fixed immersion heaters
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-74	Household and similar electrical appliances. Safety. Particular requirements for portable immersion heaters



International Accreditation Service, Inc.

IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-101	Household and similar electrical appliances. Safety. Particular requirements for vaporizers
IEC/EN/AS/NZS/UL/BS/CSA- C22.2 No. 60335-2-102	Household and similar electrical appliances. Safety. Particular requirements for gas, oil and solid-fuel-burning appliance having electrical connections
UL 187	Standard for Isolating Signal and Feedback Transformers for Use in Electronic Equipment
UL 197	Standard for Commercial Electric Cooking Appliances
UL 724	Standard for Indirect Fired, Oil Burning Commercial Cooking Appliances
UL 1026	Standard for Household Electric Cooking and Food Serving Appliances
UL 1100	Standard for Alcohol and Kerosene Cooking Appliances for Marine Use
UL 1101	Standard for Solidified Fuel Cooking Appliances for Marine Use
ULC 2728	Pellet Fuel Burning Cooking Appliances
MISC	
ANSI Z21.20	Automatic electrical controls-part-2-5: particular requirements for automatic electrical burner control systems
ANIS/CAN/UL/ULC 2580	Batteries for Use in Electric Vehicles (Exclude Cl. 23)
ASTM E23	Standard test method for notched bar impact testing of metallic materials – [Charpy method only]
C22.2 No. 287	Plumbing fittings incorporating electrical and/or electronic features
CAN/CSA C22.2 No. 60730- 2-5	Automatic electrical controls-part-2-5: particular requirements for automatic electrical burner control systems
ISO 148	Metallic materials - Charpy pendulum impact test
UL 22	Standard for Amusement and Gaming Machines
UL 50	Enclosures for Electrical Equipment, Non-Environmental Considerations
UL 130	Standard for Electric Heating Pads
UL 248-19	Low-Voltage Fuses - Part 19: Photovoltaic Fuses
UL 489B	Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures for Use with Photovoltaic (PV) Systems
UL 507	Standard for Electric Fans
UL 608	Standard for Burglary Resistant Vault Doors and Modular Panels
UL 867	Standard for Electrostatic Air Cleaners
UL 1431	Standard for Personal Hygiene and Health Care Appliances
UL 1484	Standard for Residential Gas Detectors
UL 1564	Standard for Industrial Battery Chargers
UL 2034	Standard for Single and Multiple Station Carbon Monoxide Alarms
UL 2202	Standard for Electric Vehicle (EV) Charging System Equipment



International Accreditation Service, Inc.

UL 2218 Standard for Impact Resistance of Prepared Roof Covering Materials UL 2231-1 Standard for Safety for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: General Requirements UL 2231-2 Standard for Safety for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Particular Requirements for Protection Devices for Use in Charging Systems UL 2271 Batteries for Use In Light Electric Vehicle (LEV) Applications UL 2580 Batteries for Use In Electric Vehicles UL 2595 General Requirements for Battery-Powered Appliances UL 2703 Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 4703 Standard for Solar Trackers UL 4703 Standard for Connectors for Use in Photovoltaic Systems UL 6703 Standard for Connectors for Use in Photovoltaic Systems UL/G5A-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial heating equipment C22.2 No. 286 EN/BS 28849 Small craft - electrically operated direct-current bilge pumps EN/SS 28849 Small craft - electrically operated direct-current bilge pumps <th></th> <th></th>		
(EV) Supply Circuits: General Requirements UL 2231-2 Standard for Safety for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Particular Requirements for Protection Devices for Use in Charging Systems UL 2271 Batteries for Use In Light Electric Vehicle (LEV) Applications UL 2271 Standard for Batteries for Use in Light Electric Vehicle (LEV) Applications UL 2580 Batteries for Use In Electric Vehicles UL 2595 General Requirements for Battery-Powered Appliances UL 2703 Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 2871 Outline of Investigation for Electric Vehicle (EV) Service and Production Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 88 Industrial control panels and assemblies Maritime Xertical Heating equip operated direct-current bilge - pumps EN/BS 28846 Small craft - electrically operated direct-current bilge pumps Flumbing Standard for Hydro-Massage tubs Hasardous Location	UL 2218	Standard for Impact Resistance of Prepared Roof Covering Materials
(EV) Supply Circuits: Particular Requirements for Protection Devices for Use in Charging Systems UL 2271 Batteries for Use In Light Electric Vehicle (LEV) Applications ULC 2271 Standard for Batteries for Use in Light Electric Vehicle (LEV) Applications UL 2580 Batteries for Use In Electric Vehicles UL 2595 General Requirements for Battery-Powered Appliances UL 2703 Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 2871 Outline of Investigation for Electric Vehicle (EV) Service and Production Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft - electrically operated direct-current bilge pumps Plumbing ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures <td>UL 2231-1</td> <td></td>	UL 2231-1	
ULC 2271 Standard for Batteries for Use in Light Electric Vehicle (LEV) Applications UL 2580 Batteries for Use In Electric Vehicles UL 2595 General Requirements for Battery-Powered Appliances UL 2703 Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 2871 Outline of Investigation for Electric Vehicle (EV) Service and Production Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 88 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps PNBnbing ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/	UL 2231-2	(EV) Supply Circuits: Particular Requirements for Protection Devices for Use
UL 2580 Batteries for Use In Electric Vehicles UL 2595 General Requirements for Battery-Powered Appliances UL 2703 Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 2871 Outline of Investigation for Electric Vehicle (EV) Service and Production Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 60730-1 C22.2 No. 88 Industrial heating equipment C22.2 No. 88 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge pumps Plumbing ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA- Explosive atmospheres - p	UL 2271	Batteries for Use In Light Electric Vehicle (LEV) Applications
UL 2595 General Requirements for Battery-Powered Appliances UL 2703 Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 2871 Outline of Investigation for Electric Vehicle (EV) Service and Production Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Photovoltaic Wire UL 6703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 60730-1 C22.2 No. 88 Industrial heating equipment C22.2 No. 88 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge pumps Plumbing ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA- Explosive atmospheres - part 0: e	ULC 2271	Standard for Batteries for Use in Light Electric Vehicle (LEV) Applications
UL 2703 Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 2871 Outline of Investigation for Electric Vehicle (EV) Service and Production Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Photovoltaic Wire UL 6703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 88 C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems Small craft - electrical devices - protection against ignition of surrounding Ifammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps Plumbing ASME A112 Series ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	UL 2580	Batteries for Use In Electric Vehicles
Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels UL 2871 Outline of Investigation for Electric Vehicle (EV) Service and Production Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Photovoltaic Wire UL 6703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 88 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/ISO/BS 8849 Small craft - electrically operated direct-current bilge- pumps Plumbing ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B45 Series CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations	UL 2595	General Requirements for Battery-Powered Appliances
Chargers UL 3703 Standard for Solar Trackers UL 4703 Standard for Photovoltaic Wire UL 6703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial Electrical controls - part 1: general requirements C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/ISO/BS 8849 Small craft - electrically operated direct-current bilge pumps Plumbing ASME A112 Series ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA	UL 2703	Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and
UL 4703 Standard for Photovoltaic Wire UL 6703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	UL 2871	
UL 6703 Standard for Connectors for Use in Photovoltaic Systems UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	UL 3703	Standard for Solar Trackers
UL/CSA-C22.2 No. 60730-1 Automatic electrical controls - part 1: general requirements Industrial Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series ASME A112 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations As/EN/IEC/NZS/UL/BS/CSA-	UL 4703	Standard for Photovoltaic Wire
Industrial C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations As/EN/IEC/NZS/UL/BS/CSA-	UL 6703	Standard for Connectors for Use in Photovoltaic Systems
C22.2 No. 88 Industrial heating equipment C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations As/EN/IEC/NZS/UL/BS/CSA-	UL/CSA-C22.2 No. 60730-1	Automatic electrical controls - part 1: general requirements
C22.2 No. 286 Industrial control panels and assemblies Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	Industrial	
Maritime ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations As/EN/IEC/NZS/UL/BS/CSA-	C22.2 No. 88	Industrial heating equipment
ABYC H-22 Electric Bilge Pump Systems EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations Explosive atmospheres - part 0: equipment - general requirements	C22.2 No. 286	Industrial control panels and assemblies
EN/BS 28846 Small craft - electrical devices - protection against ignition of surrounding flammable gases EN/BS 28849 Small craft - electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations As/EN/IEC/NZS/UL/BS/CSA-	Maritime	
flammable gases EN/BS 28849 Small craft – electrically operated direct-current bilge- pumps EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	ABYC H-22	Electric Bilge Pump Systems
EN/ISO/BS 8849 Small craft electrically operated direct-current bilge pumps Plumbing ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	EN/BS 28846	
Plumbing ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	EN/BS 28849	Small craft - electrically operated direct-current bilge- pumps
ASME A112 Series Plumbing fixtures CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	EN/ISO/BS 8849	Small craft electrically operated direct-current bilge pumps
CAN/CSA-B45 Series Plumbing fixtures CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA-	Plumbing	
CAN/CSA-B125 Series Plumbing fittings UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA- Explosive atmospheres - part 0: equipment – general requirements	ASME A112 Series	Plumbing fixtures
UL 1795 Standard for Hydro-Massage tubs Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA- Explosive atmospheres - part 0: equipment – general requirements	CAN/CSA-B45 Series	Plumbing fixtures
Hazardous Locations AS/EN/IEC/NZS/UL/BS/CSA- Explosive atmospheres - part 0: equipment – general requirements	CAN/CSA-B125 Series	Plumbing fittings
AS/EN/IEC/NZS/UL/BS/CSA- Explosive atmospheres - part 0: equipment – general requirements	UL 1795	Standard for Hydro-Massage tubs
	Hazardous Locations	
		Explosive atmospheres - part 0: equipment – general requirements





International Accreditation Service, Inc.

AS/EN/IEC/NZS/UL/BS/CSA- C22.2 No. 60079-1	Explosive atmospheres - part 1: equipment protection by flameproof enclosures "d"
AS/EN/IEC/NZS/UL/BS/CSA- C22.2 No. 60079-2	Explosive atmospheres - part 2: equipment protection by pressurized enclosure "p"
AS/EN/IEC/NZS/UL/BS/CSA- C22.2 No. 60079-6	Explosive atmospheres - part 6: equipment protection liquid immersion "o"
AS/EN/IEC/NZS/UL/BS/CSA- C22.2 No. 60079-11	Explosive atmospheres – part 11: equipment protection by type of protection "I"
AS/EN/IEC/NZS/UL/BS/CSA- C22.2 No. 60079-15	Explosive atmospheres – part 15: equipment protection by type of protection "n"
Environmental	
46 CFR 162.060-30	Testing requirements for ballast water management system (BWMS) components [Clause 1 (i, ii and iii), Clause 2 and Clause 3 only]
DNVGL-CG-0339	Environmental test specification for electrical, electronic and programmable equipment and systems (Clause 6 – Vibration only.)
IACS UR-E10 Rev7	Test specification for marine type approval (Clause 7 – Vibration only.)
IEC EN/BS 60068-2-6	Environmental testing - part 2-6: tests - test Fc: vibration (sinusoidal)
IEC EN/BS 60068-2-27	Environmental testing - part 2-27: tests - test Ea and guidance: shock
IEC EN/BS 60068-2-64	Environmental testing - part 2-64: tests - test Fh: vibration, broadband random and guidance
IEC 60529	Degrees of protection by enclosures (IP code): IPX3, IPX4, IPX5, IPX6, IPX7, IPX8, IP1X, IP2X, IP3X, IP4X, IP5X, IP6X only.
IEC EN/BS 60721-3-5	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities -Section 5: Ground vehicle installations; Table 6 – Classification of mechanical conditions and Clause A.2.6 M Mechanical conditions
IEC EN/BS 60945	Maritime navigation and radio communication equipment and systems - general requirements - methods of testing and required test results (Clause 8.7 Vibration Test Only)
IEC EN/BS 61373 Ed.2	Railway applications - Rolling stock equipment - Shock and vibration tests
JIS-D1601	Vibration testing methods for automotive parts
MIL-STD-810H	Department of Defense Test Method Standards — Environmental Engineering Considerations and Laboratory Tests – (Vibration only)
RTCA DO-160D	Environmental Conditions and Test Procedures for Airborne Equipment (Section 8: Vibration Only)
SAE J1455_201208	Recommended Environmental Practices for Electronic Equipment Design in Heavy-Duty Vehicle Applications [Sections I (Mechanical Vibration) and J (Mechanical Shock) Only]
UN/DOT 38.3	UN Manual of Tests and Criteria Transport of Dangerous Goods Part III Section 38.3: Lithium Metal and Lithium Ion Batteries



International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

ANSI:	American National Standards Institute
AS:	Australian National Standard
ASHRAE	: American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME:	American Society of Mechanical Engineers
ASTM:	American Society for Testing and Materials
CAN:	National Standard of CANADA
CGA:	Compressed Gas Association
CSA:	Canadian Standards Association
DNVGL:	Der Norske Veritas Germanischer Lloyd
DOT:	US Department of Transportation
EN:	European Norm
IEC:	International Electrotechnical Commission
IACS:	International Association of Classification Societies
ICC:	International Code Council
ISO:	International Standards Organization
NFPA:	National Fire Protection Association
JIS:	Japanese Industrial Standards
MIL:	US Military Specification
NFPA:	National Fire Protection Association
NSF:	National Sanitation Foundation
NZS:	New Zealand National Standard
RTCA:	Radio Technical Commission for Aeronautics
SAE:	Society of Automotive Engineers
UL:	Underwriters Laboratories
ULC:	Underwriters Laboratories Canada
UN:	United Nations
WDMA:	Window & Door Manufacturers Association

American Architectural Manufacturers Association

American Boat and Yacht Council

AAMA:

ABYC:

