



CERTIFICATE OF ACCREDITATION

This is to attest that

UL VERIFICATION SERVICES INC. DBA LUMINAIRE TESTING LABORATORY

7036 SNOWDRIFT ROAD
ALLENTOWN, PENNSYLVANIA 18106, U.S.A.

Testing Laboratory TL-527

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 December 15, 2023



A handwritten signature in black ink that reads "Raj Nathan".

President

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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UL VERIFICATION SERVICES INC. DBA LUMINAIRE TESTING LABORATORY

www.ul.com

Contact Name Jeff Lockner

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Accredited to ISO/IEC 17025:2017

Effective Date December 15, 2023

Performance	
10 CFR 430 Appendix V1 to Subpart B - Uniform Test Method for Measuring the Energy Consumption of Ceiling Fan Light Kits	
10 CFR Appendix W to Subpart B of Part 430, Uniform Test Method for Measuring the Energy Consumption of Compact Fluorescent Lamps	
10 CFR 430 Appendix BB to Subpart B - Uniform Test Method for Measuring the Input Power, Lumen Output, Lamp Efficacy, Correlated Color Temperature (CCT), Color Rendering Index (CRI), Power Factor, Time to Failure, and Standby Mode Power of Integrated Light-Emitting Diode (LED) Lamps	
81 FR 43403 - Energy Conservation Program: Test Procedures for Integrated Light-Emitting Diode Lamps	
ANSI C78.5-2003	Specifications for performance of self-ballasted compact fluorescent lamps
ANSI C78.375-1997	American national standard for fluorescent lamps—guide for electrical measurements
ANSI C78.376-2001	Electric lamps- specifications for the chromaticity of fluorescent lamps
ANSI C78.377-2015, 2017	Electric lamps – specifications for the chromaticity of solid state lighting (SSL) products
ANSI C78.389-2004	Electric lamps, high intensity discharge, methods of measuring characteristics
ANSI C82.2-2002	Fluorescent lamp ballasts--methods of measurement
ANSI C82.6-2005	Ballast for high intensity discharge lamps- methods of measurement
ANSI C82.11-2002	High-frequency fluorescent lamp ballasts
ANSI C82.77-2014, 2021	Harmonic emission limits – related power quality requirements for lighting
ANSI/IEEE C62.41.1-2002	IEEE Guide on the surge environment in low-voltage (1000 V and Less) AC power circuits
ANSI/IEEE C62.41.2-2002	IEEE Guide on the surge environment in low-voltage (1000 V and Less) AC power circuits
ANSI/IES LM-20:2020	Photometry of Reflector Type Lamps
ANSI/IES LM-58:2020	Spectroradiometric Measurement Methods for Light Sources
ANSI/IES LM-82:2020	Characterization of Optical and Electrical Properties of Solid-State Lighting Products as a Function of Temperature

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ANSI/IES LM-84:2020	Measuring Optical Radiation Maintenance of LED Lamps, Light Engines, and Luminaires
ANSI/IES TM-21:2021	Projecting Long-Term Lumen, Photon, and Radiant Flux Maintenance Of LED Light Sources
ANSI/IES TM-28:2020	Projecting Long-Term Luminous Flux Maintenance of LED Lamps and Luminaires
ANSI/PLATO FL 1 2019	Flashlight Basic Performance Standard
ANSI/UL 153-2005	Portable electric luminaires – Sections 124-128A only
ANSI/UL 1574-2004	Track lighting systems – Section 54 only
ANSI/UL 1598-2008	Luminaires – normal temperature tests only (sections 19.7 and 19.10-16)
ANSI/UL 1598C	Light-emitting diode (LED) retrofit luminaire conversion kits
CIE 13.3-1995	Method of measuring and specifying color rendering of light sources
CIE 15-2004	Colorimetry standard
CIE 18.2-1983	Basis of physical photometry (E)
CIE 63	The spectroradiometric measurement of light sources (E)
CIE 84-1989	Measurement of luminous flux
CIE 154	The maintenance of outdoor lighting systems
CIE S 025/E:2015	Test method for LED lamps, LED luminaires and LED modules
EN 13032-4	Light and lighting - measurement and presentation of photometric data of lamps and luminaires. LED lamps, modules and luminaires
EN 50294:1998 A1:2001, A2:2003 Measurement Method of Total Input Power of Ballast-Lamp Circuits	
ENERGY STAR elevated temperature life test method Sept. 2015	
ENERGY STAR ambient temperature life test method Sept. 2015	
ENERGY STAR elevated temperature light output ratio method Sept. 2015	
ENERGY STAR start time test method Sept. 2015 and 2017	
ENERGY STAR run up time test method Sept. 2015	
ENERGY STAR Test Method for Decorative Light Strings, December 2011 (Annex A)	
IEC 60081	Amendment 4 Ed 5.0 double-capped fluorescent lamps - performance specifications
IEC 60901	Single-capped fluorescent lamps - performance specifications
IEC 60921	Ballasts for tubular fluorescent lamps – Performance requirements
IEC 61347-2-3-AM2 Ed 1.0 b.2006 part 2-3	Particular requirements for A.C. supplied electronic ballasts for fluorescent lamps
IEC 62262	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)
IEC 62301 Ed. 2.0 B-2011	Household electrical appliances – measurement of standby power

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IEC 62384	DC or AC supplied electronic control gear for LED modules – Performance requirements
IEC 62442-1	Energy performance of lamp controlgear – Part 1: Controlgear for fluorescent lamps – Method of measurement to determine the total input power of controlgear circuits and the efficiency of controlgear
IEC/TS 62504	General lighting – LEDs and LED modules – Terms and definitions
IEC/EN 62612	Self-ballasted LED lamps for general lighting services with supply voltages > 50 V - performance requirements
IEC 626632	Non-integrated LED lamps - Part 2: Performance requirements
IEC/PAS 62707-1	LED - Binning - Part 1: General requirements and white grid
IEC 62717	LED modules for general lighting - performance requirements
IEC/EN 62722-1	Luminaire performance - general requirements
IEC 62722-2-1	Luminaire performance - particular requirements for LED luminaires
IES LM-9-1999 2009	Approved method for the electrical and photometric measurements of fluorescent lamps
IES LM-10-1996	Photometric testing of outdoor fluorescent luminaires
IES LM-16-1993	Practical guide to colorimetry of light sources
IES LM-20-2013	Photometry of reflector type lamps
IES LM-31-1995	Photometric testing of roadway luminaires using incandescent filament and HID lamps
IES LM-35-2002	Photometric testing of floodlights using high intensity discharge or incandescent filament lamps
IES LM-40-2010	Approved method for life testing of fluorescent lamps
IES LM-41-2014	Approved method for photometric testing of indoor fluorescent luminaries
IES LM-45-2000	Approved method for electrical and photometric measurements of general service incandescent filament lamps
IES LM-46-2004	Photometric testing of indoor luminaires using high intensity discharge or incandescent filament lamps
IES LM-47-2001 2012	Approved method of life testing for high intensity discharge (HID) lamps
IES LM-49-2012	Approved method of life testing for incandescent filament lamps
IES LM-51-2013	Approved method for the electrical and photometric measurements of high intensity discharge lamps
IES LM-58-2013	Spectroradiometric measurement methods for light sources
IES LM-65-2014	Approved method for life testing of single-ended compact fluorescent lamps
IES LM-66-2014	Electrical and photometric measurements of single-ended compact fluorescent lamps
IES LM-79-2008	Approved method for electrical and photometric measurements of solid-state lighting products

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IES LM-79-2019	Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products
IES LM-82-2012	Characterization of LED light engines and LED lamps for electrical and photometric properties as a function of temperature
IES TM-21-11	Projecting Long Term Lumen Maintenance of LED Light Sources
IES TM-28-14	Projecting Long-Term Luminous Flux Maintenance of LED Lamps and Luminaires
L2(AP)005	Cone lumen measurement
NEMA 77:2017	Temporal Light Artifacts: Test Methods and Guidance for Acceptance Criteria
SASO 2870:2018	Energy efficiency, functionality and labeling requirements for lighting products part 1
SASO 2902:2018	Energy Efficiency, Functionality and Labelling Requirements for Lighting Products Part 2
SASO 2927:2019	Energy Efficiency Functionality and Labeling Requirements for Lighting Products – Part 3: Street Lighting
Environmental Testing	
ANSI C136.31-2018	Roadway and Area Lighting Equipment — Luminaire Vibration
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM D4169	Standard Practice for Performance Testing of Shipping Containers and Systems
IEC 60068-1	Environmental testing – Part 1: General and guidance
IEC 60529	Degrees of protection provided by enclosures (IP Code)
ISO 4628-2	Paints and Varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 2: Assessment of degree of blistering
ISO 4628-4	Paints and Varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 4: Assessment of degree of cracking
ISO 9227	Corrosion tests in artificial atmospheres - Salt spray tests
ISO 10289	Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates – Rating of test specimens and manufactured articles
Automotive (Exclusions: Sealing, Stability/Wind, Weathering Tests)	
CMVSS 108	Lamps, Reflective devices, and Associated Equipment
FMVSS 49 CFR 571.108	Lamps, Reflective Devices, and Associated Equipment
SAE J95	Headlamps for Industrial Equipment
SAE J96	Flashing Warning Lamp for Industrial Equipment
SAE J131	Motorcycle Turn Signal Lamps
SAE J222	Front Position Lamp
SAE J278	Snowmobile Stop Lamp

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SAE J279	Snowmobile Tail (Rear Position) Lamp
SAE J280	Snowmobile Headlamps
SAE J292	Snowmobile and Snowmobile Cutter Lamps, Reflective Devices, and Associated Equipment
SAE J572	Requirements for Sealed Lighting Unit for Construction and Industrial Machines
SAE J573	Signal and Marking Light Sources
SAE J575	Test Methods and Equipment for Lighting Devices for Use on Vehicles Less than 2032 mm in Overall Width
SAE J578	Chromaticity Requirements for Ground Vehicle Lamps and Lighting Equipment
SAE J581	Auxiliary High Beam Lamps
SAE J582	Auxiliary Low Beam Lamps
SAE J583	Front Fog Lamp
SAE J584	Motorcycle Headlamps
SAE J585	Tail Lamps (Rear Position Lamps) for Use on Motor Vehicles Less than 2032 mm in Overall Width
SAE J586	Stop Lamps for Use on Motor Vehicles Less than 2032 mm in Overall Width
SAE J587	License Plate Illumination Devices (Rear Registration Plate Illumination Devices)
SAE J588	Turn Signal Lamps for Use on Motor Vehicles Less than 2032 mm in Overall Width
SAE J591	Spot Lamps
SAE J592	Sidemarkers Lamps for Use on Road Vehicles Less than 2032 mm in Overall Width
SAE J593	Backup Lamp (Reversing Lamp)
SAE J594	Reflex Reflectors
SAE J598	Sealed Lighting Units for Construction, Industrial and Forest Machinery
SAE J852	Front Cornering Lamps for Use on Motor Vehicles
SAE J914	Side Turn Signal Lamps for Vehicles Less than 12 m in Length
SAE J974	Flashing Warning Lamp for Agricultural Equipment
SAE J1306	Motorcycle Auxiliary Front Lamps
SAE J1319	Fog Tail Lamp (Rear Fog Light) Systems
SAE J1373	Rear Cornering Lamps for Use on Motor Vehicles Less than 9.1 m in Overall Length
SAE J1383	Performance Requirements for Replaceable Bulb Motor Vehicle Headlamps
SAE J1395	Front and Rear Turn Signal Lamps for Use on Motor Vehicles 2032 Mm Or More in Overall Width

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SAE J1398	Stop Lamps for Use on Motor Vehicles 2032 mm or More in Overall Width
SAE J1424	Cargo Lamps for Use on Vehicles Under 5443 kg (12 000 lb) GVWR
SAE J1432	Rear High Mounted Stop Lamps and Rear High Mounted Turn Signal Lamps for Use on Vehicles 2032 mm or More in Overall Width
SAE J1623	Off-Highway Vehicle Headlamps
SAE J1735	Harmonized Vehicle Headlamp Performance Requirements
SAE J1889	LED Signal and Marking Lighting Devices
SAE J1957	Center High Mounted Stop Lamp Standard for Vehicles Less than 2032 mm Overall Width
SAE J1967	Retroreflective Materials for Vehicle Conspicuity
SAE J2039	Side Turn Signal Lamp for Long Vehicles
SAE J2040	Tail Lamps (Rear Position Lamps) for Use on Vehicles 2032 mm or More in Overall Width
SAE J2041	Reflex Reflectors for Use on Vehicles 2032 mm or More in Overall Width
SAE J2042	Clearance, Sidemarker, and Identification Lamps for On-Road Vehicles 2032 mm or More in Overall Width
SAE J2087	Daytime Running Lamp
SAE J2139	Tests for Signal and Marking Devices Used on Vehicles 2032 mm or More in Overall Width
SAE J2261	Stop Lamps and Front- and Rear-Turn Signal Lamps for Use on Motor Vehicles 2032 mm or More in Overall Width
SAE J2560	Halogen Light Source Performance Requirements for Motor Vehicle Forward Lighting
SAE J2595	Performance Requirements for Sealed Beam Motor Vehicle Headlamps
SAE J2650	Performance Requirements for Road Illumination Devices using Light Emitting Diode (LED) Sources

IEC: International Electrotechnical Commission

IEEE: Institute of Electrical and Electronics Engineers

IES: Illuminating Engineering Society

CIE: International Commission on Illumination

UL: Underwriters Laboratories