



CERTIFICATE OF ACCREDITATION

This is to attest that

SHENZHEN HUAK TESTING TECHNOLOGY CO., LTD.

1-2/F., BUILDING B2, JUNFENG ZHONGCHENG ZHIZAO INNOVATION PARK, HEPING COMMUNITY, FUHAI STREET, BAO'AN DISTRICT
SHENZHEN 518000, PEOPLE'S REPUBLIC OF CHINA

Testing Laboratory TL-950

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 August 11, 2020



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.

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

SHENZHEN HUAK TESTING TECHNOLOGY CO., LTD.

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Accredited to ISO/IEC 17025:2017

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| Electrical | |
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| ANSI C78.377 | Electric Lamps – Specifications for the Chromaticity of Solid-State Lighting Products |
| CIE 13.3 | CRI |
| CIE 15 | Chromaticity coordinates |
| CIE 18.2 | Luminance |
| CIE 18.2 | The basis of physical photometry |
| CIE 63 | Spectral power distribution |
| CIE 84 | General conditions of luminous flux measurement; L2(AP)005 for cone luminous Flux |
| CIE 97 | Lamp survival factor |
| EN 50294 | Measurement Method of Total Input Power of Ballast-Lamp Circuits |
| IEC 60081 | Double-capped fluorescent lamps - Performance specifications |
| IEC 60529 | Degrees of protection provided by enclosures (IP Code) |
| IEC 60598-1 | Luminaires - Part 1: General requirements and tests |
| IEC 60598-2-3 | Luminaires - Part 2-3: Particular requirements -Luminaires for road and street lightings |
| IEC 60901 | Single-capped fluorescent lamps - Performance specifications |
| IEC 60921 | Ballasts for tubular fluorescent lamps - Performance requirements |
| IEC 61000-3-2 | Electromagnetic compatibility (EMC) - Part 3-2: Limits -Limits for harmonic current emissions (equipment input current ≤ 16 A per phase) |
| IEC 61000-3-2 | Lamp power factor (only for lamps with integrated controlgear) |
| IEC 61140 | Protection against electric shock - Common aspects for installation and equipment |
| IEC 61547 | Equipment for general lighting purposes - EMC immunity requirements |

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| IEC 61643-11 | Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods |
| IEC 62262 | Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code) |
| IEC 62384 | DC or AC supplied electronic control gear for LED modules - Performance requirements |
| IEC 62471 | Specific effective UV radiant power |
| IEC 62612 | Self-ballasted LED lamps for general lighting services with supply voltages > 50 V – Performance requirements |
| IEC 62717 | LED modules for general lighting - Performance requirements |
| IEC 62722-1 | Luminaire performance - Part 1: General requirements |
| IEC 62722-2-1 | Luminaire performance - Part 2-1: Particular requirements for LED luminaires |
| IEC/TR 61341 | Method of measurement of centre beam intensity and beam angle(s) of reflector lamps |
| IES LM-9 | Electrical and Photometric Measurements of Fluorescent Lamps |
| IES LM-10 | Photometric Testing of Outdoor Fluorescent Luminaires |
| IES LM-41 | Photometric Testing of Indoor Fluorescent Luminaires |
| IES LM-66 | Electrical and Photometric Measurements of Single-Based Fluorescent Lamps |
| IES LM-79 | Electrical and Photometric Measurements of Solid-State Lighting Products |
| IES LM-80 | Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays and Modules |
| IES LM-82 | Characterization of LED Light Engines and LED Lamps for Electrical and Photometric Properties as a Function of Temperature |
| IES LM-84 | Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires |
| IES TM-21 | Projecting Long Term Lumen Maintenance of LED Light Sources |
| IES TM-28 | Projecting Long-Term Luminous Flux Maintenance of LED Lamps and Luminaries |
| 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 |

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| ISO 10289 | Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates — Rating of test specimens and manufactured articles subjected to corrosion tests |
| ISTMT | In-SITU Temperature Measurement Testing (ISTMT) |
| L2(AP)005 | Cone luminous flux |
| prEN 13032-4 | Light and lighting - Measurement and presentation of photometric data of lamps and luminaires Part 4: LED light sources and luminaires |
| SASO 2870 | Energy Efficiency, Functionality and Labeling Requirements for Lighting Products – Part 1 |
| SASO 2902 | Energy Efficiency, Functionality and Labelling Requirements for Lighting Products - Part 2 |
| SASO 2927 | Energy Efficiency Functionality and Labelling Requirements for Lighting Products - Part 3: Street lighting |
| SASO EN 13032-4 | Light and lighting - Measurement and presentation of photometric data of lamps and luminaires Part 4: LED light sources and luminaires |
| SASO GSO IEC 60901 | Single-capped fluorescent lamps - Performance Standard |
| SASO GSO IEC 60969 | CFLi Performance requirements |
| SASO IEC 62554 | Basics of luminous flux |
| SASO IEC/PAS 62707-1 | LED - Binning - Part 1: General requirements and white grid |
| SASO IEC/PAS 62717 | LED Modules Performance specifications |
| SASO IEC/TS 62504 | General lighting – LEDs and LED modules – Terms and definitions |
| SASO standard to be adopted (Project IEC 62663-2) | Non-ballasted LED lamps – Performance Requirements based on |