



校准证书

Calibration Certificate

证书编号 GXfs2021-00058  
Certificate No.

客户名称 Client	力汕电子科技（上海）有限公司 LISUN ELECTRONICS (SHANGHAI) CO., LTD
器具名称 Instrument	卤素灯 VIS-NIR Tungsten Halogen Lamp
型号/规格 Type/Model	REF-500VIS-NIR
出厂编号 Serial No.	CAL202012003
生产厂商 Manufacturer	/
联络信息 Contact Information	上海市嘉定区沪宜公路 1101 号 1 幢 113 室 ROOM 113-1, NO. 1101, HUYI ROAD, JIADING DISTRICT, SHANGHAI
校准日期 Date of Calibration	2021-01-06
接收日期 Date of Receiving	2020-12-28

批准人: 代彩虹  
Approved by



发布日期: 2021 年 2 月 26 日  
Date of Issue

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# 中国计量科学研究院



证书编号 GXfs2021-00058  
Certificate No.

中国计量科学研究院（NIM）是国家最高的计量科学研究中心和国家级法定计量技术机构。1999年授权签署了国际计量委员会（CIPM）《国家计量基(标)准和国家计量院签发的校准与测量证书互认协议》（CIPM MRA）。The National Institute of Metrology (NIM) is China's national metrology institute (NMI) and a state-level legal metrology institute. NIM is China's signatory to the Mutual Recognition of National Measurement Standards and of Calibration and Measurement Certificates Issued by National Metrology Institutes (CIPM MRA) which is arranged by the International Committee of Weights and Measures (CIPM).

质量管理体系符合 ISO/IEC17025 标准，通过中国合格评定国家认可委员会（CNAS）和亚太计量规划组织（APMP）联合评审的校准和测量能力（CMCs）在国际计量局（BIPM）关键比对数据库中公布。NIM's quality management system meets requirements of the ISO/IEC 17025. Its Calibration and Measurement Capabilities (CMCs) that are peer reviewed both by China National Accreditation Service for Conformity Assessment (CNAS) and the Asia Pacific Metrology Programme (APMP) are published in the International Bureau of Weights and Measures (BIPM) Key Comparison Database (KCDB).

2011年，NIM 和 CNAS 就认可领域的技术评价活动签署了谅解备忘录，承认 NIM 的计量支撑作用和出具的校准/检测结果的溯源效力。NIM and CNAS signed a Memorandum of Understanding (MOU) for Recognition of Technical Assessment in Laboratory Accreditation Field in 2011, in which CNAS recognizing the technical supporting role of NIM in laboratory accreditation and the traceability of NIM's calibration / test results.

校准结果不确定度的评估和表述均符合 JJF1059 系列标准的要求。The evaluation and expression of uncertainty of the calibration results are in line with the requirements of JJF1059 series standards.

校准所依据/参照的技术文件（代号、名称）Reference documents (Code,Name)

参照 JJG 384-2002 光谱辐射照度标准灯

Verification Regulation of Spectral Irradiance Standard Lamp, JJG384-2002

校准环境条件及地点 Calibration place and environment

温度 Temperature: (23.2±1.0) °C

地点 Location: 和-13-108

湿度 Humidity: (30±2) % RH

其它 Others: 暗室

校准使用的计量基（标）准装置(含标准物质)/主要仪器

Reference Standards (Including the Reference Material) / Instruments used

名称 Name	测量范围 Measurement Range	不确定度/ 准确度等级 Uncertainty/Accu	证书编号 Certificate No.	证书有效期至 Due Date (YYYY-MM-DD)
光谱辐射照度标准灯	250nm-2500nm	250nm-400nm: $U_{rel}=(3.0-1.3)\%$ ( $k=2$ ); 400nm~800nm: $U_{rel}=(1.3-1.2)\%$ ( $k=2$ ); 800nm~2500nm: $U_{rel}=(1.2-4.0)\%$ ( $k=2$ )	GXfs2020-02547	2022-01-19



## 校准结果 Calibration Results

被测标准灯的光谱辐射照度值：  
Spectral irradiance of the lamp:

波长 $\lambda$ nm	光谱辐射照度值 Spectral irradiance $\mu\text{W}/(\text{cm}^2\cdot\text{nm})$	测量不确定度 The uncertainty of test results %( $k=2$ )	波长 $\lambda$ nm	光谱辐射照度值 Spectral irradiance $\mu\text{W}/(\text{cm}^2\cdot\text{nm})$	测量不确定度 The uncertainty of test results %( $k=2$ )
380	4.418E-02	3.3	620	9.126E-01	3.0
390	6.459E-02	3.1	630	9.573E-01	3.0
400	8.651E-02	3.0	640	1.002E+00	3.0
410	1.103E-01	3.0	650	1.045E+00	3.0
420	1.350E-01	3.0	660	1.088E+00	3.0
430	1.582E-01	3.0	670	1.127E+00	3.0
440	1.877E-01	3.0	680	1.165E+00	3.0
450	2.180E-01	3.0	690	1.204E+00	3.0
460	2.459E-01	3.0	700	1.241E+00	3.0
470	2.775E-01	3.0	710	1.279E+00	3.0
480	3.125E-01	3.0	720	1.317E+00	3.0
490	3.506E-01	3.0	730	1.356E+00	3.0
500	3.886E-01	3.0	740	1.394E+00	3.0
510	4.267E-01	3.0	750	1.432E+00	3.0
520	4.677E-01	3.0	760	1.470E+00	3.0
530	5.096E-01	3.0	770	1.506E+00	3.0
540	5.531E-01	3.0	780	1.541E+00	3.0
550	5.969E-01	3.0	790	1.573E+00	3.0
560	6.429E-01	3.0	800	1.604E+00	3.0
570	6.866E-01	3.0	900	1.793E+00	3.4
580	7.306E-01	3.0	1000	1.840E+00	3.6
590	7.769E-01	3.0	1100	1.782E+00	3.8
600	8.221E-01	3.0	1200	1.678E+00	4.0
610	8.671E-01	3.0	1300	1.541E+00	4.1



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被测标准灯的光谱辐射照度值：  
Spectral irradiance of the lamp:

波长 $\lambda$ nm	光谱辐射照度值 Spectral irradiance $\mu\text{W}/(\text{cm}^2 \cdot \text{nm})$	测量不确定度 The uncertainty of test results %( $k=2$ )	波长 $\lambda$ nm	光谱辐射照度值 Spectral irradiance $\mu\text{W}/(\text{cm}^2 \cdot \text{nm})$	测量不确定度 The uncertainty of test results %( $k=2$ )
1400	1.401E+00	4.3	2000	6.707E-01	5.3
1500	1.262E+00	4.4	2100	5.906E-01	5.4
1600	1.119E+00	4.6	2200	5.081E-01	5.5
1700	9.831E-01	4.8	2300	4.447E-01	5.6
1800	8.703E-01	4.9	2400	3.916E-01	5.9
1900	7.666E-01	5.0	2500	3.391E-01	6.0

说明：

Notes:

1. 校准距离：出光口凸起最前端与测量平面之间的距离为 500mm。  
Calibration distance: 500mm (between the front surface and the test plane)
2. 校准设备：采用标准灯校准的光谱辐射计，其量值溯源至国家光谱辐射照度基准。  
Calibration equipment: Spectroradiometer calibrated by the standard lamp, which was traced back to national primary standard of spectral irradiance.
3. 被测灯工作电流：4.065 A，工作电压：22.4V，被测灯稳定时间：20 min。  
The lamp was operated in constant current mode-4.065A, and the working voltage was 22.4V. The lamp was stabilized for 20 min before measurement.
4. 直流稳压电源电压随时间的漂移小于  $5 \times 10^{-5} / \text{h}$ 。  
The voltage instability of the power supply is smaller than  $5 \times 10^{-5} / \text{h}$ .

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校准结果  
Calibration Results

<p><b>建议 Suggestion:</b> 根据客户要求和校准规范的规定,通常情况下 <u>24</u> 个月校准一次。当灯的累计使用时间超过 50h 时,应当重新标定。 According to the client or the calibration specification, the recommended calibration cycle is <u>24</u> months. When the accumulated service time of the lamp exceeds 50h, it shall be recalibrated.</p>
<p><b>声明 Statement:</b> 1. 我院仅对加盖“中国计量科学研院校准专用章”的完整证书负责。 NIM is ONLY responsible for the complete certificate with the calibration stamp of NIM. 2. 本证书的校准结果仅对所校准的计量器具有效。 The certificate is ONLY valid for the calibrated instrument. 3. 本证书用中英文两种语言表达,准确含义以中文为准。 The certificate is reported in both English and Chinese, with the Chinese version as standard.</p>

校准员:  
Calibrated by

吴志峰

核验员:  
Checked by

王彦飞