



华南国家计量测试中心
广东省计量科学研究院
SOUTH CHINA NATIONAL CENTER OF METROLOGY
GUANGDONG INSTITUTE OF METROLOGY



中国认可
国际互认
校准
CALIBRATION
CNAS L0730

校准证书

CALIBRATION CERTIFICATE

证书编号 HGX202020073
Certificate No.

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委托方 深圳市三恩时科技有限公司
Client

委托方联络信息 深圳市南山区西丽松白路1026号南岗第二工业
园8栋4楼
Contact Information

计量器具名称 分光测色仪 (色差计)
Description

型号规格 TS7700

Model/Type

制造厂 3nh

Manufacturer

出厂编号 980896

Serial No.

设备编号

Equipment No.

接收日期 2020 年 03 月 26 日
Date of Receipt Y M D

结果 见校准结果
Results Shown in the results of calibration

校准日期 2020 年 04 月 02 日
Date of Calibration Y M D

批准人 许俊斌
Approved Signatory

核 验 刘瑜
Reviewed by

校 准 朱启乐
Calibrated by

证书专用章
Stamp



扫一扫查真伪

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证书真伪查询: www.scm.com.cn; www.mtsp.com Certificate AuthenticityIdentify: www.scm.com.cn; www.mtsp.com

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说 明

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DIRECTIONS

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1. 本中心是国家市场监督管理总局在华南地区设立的国家法定计量检定机构, 本中心的质量管理体系符合 ISO/IEC 17025:2017 标准的要求。

This laboratory is the National Legal Metrological Verification Institution in southern China set up by the State Administration for Market Regulation. The quality system is in accordance with ISO/IEC 17025:2017.

2. 本中心所出具的数据均可溯源至国家计量基准和国际单位制(SI)。

All data issued by this laboratory are traceable to national primary standards and International System of Units (SI).

3. 校准地点、环境条件:

Place and environmental conditions of the calibration:

地点 本院光学理化室

温度 (23±2) °C

相对湿度 (60±5) %

Place (Optics & Phy.-Chemistry Lab.)

Temperature

R.H.

4. 本次校准的技术依据:

Reference documents for the calibration:

JJG 595-2002 测色色差计检定规程 V.R. of Colorimeters and Colour Difference Meters

5. 本次校准所使用的主要计量标准器具:

Major standards of measurement used in the calibration:

| 设备名称/型号规格 Name of Equipment /Model/Type | 编号 Serial No. | 证书号/有效期/溯源单位 Certificate No./Due Date /Traceability to | 计量特性 Metrological Characteristic |
|---|------------------|--|--|
| 标准色板 Colour Standard Plates /陶瓷 | BTS913 | GXfs2019-3182 /2020-09-25 /国家计量院 | $U(Y)=2.0(k=2)$ |

- 注: 1. 本证书校准结果只与受校准仪器有关。 The results relate only to the items calibrated.
Note: 2. 未经本机构书面批准, 不得部分复制此证书。 This certificate shall not be reproduced except in full, without the written approval of our laboratory.
3. “委托方”、“委托方联络信息”由委托方提供, “制造厂”、“型号规格”、“出厂编号”以及“设备编号”为仪器上标注。 The information Client and Contact Information are provided by client, and the Manufacturer, Model/Type, Serial No. and Equipment No. are marked on the items.
4. 本次校准日期视为发布日期。 The calibration date is the date of issue of the certificate.



校准结果 RESULTS OF CALIBRATION

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1. 校准结果: 见表1。

The results of calibration: shown in table 1:

表 1
Table 1

| 颜色 Colour | 标准值 Reference Value | | | 示值 Indication Value | | | 示值误差 Error of Indication | | |
|------------------------|------------------------|--------|---------------|------------------------|--------|----------------------|-----------------------------|------------|------------|
| | Y_0 | x_0 | y_0 | Y | x | y | ΔY | Δx | Δy |
| 红 | 14.80 | 0.4690 | 0.3340 | 14.71 | 0.4692 | 0.3316 | 0.1 | 0.000 | 0.002 |
| 绿 | 23.30 | 0.2916 | 0.4047 | 23.14 | 0.2927 | 0.4091 | 0.2 | 0.001 | 0.004 |
| 蓝 | 5.69 | 0.2554 | 0.2342 | 5.62 | 0.2524 | 0.2305 | 0.1 | 0.003 | 0.004 |
| 黄 | 62.14 | 0.4514 | 0.4645 | 62.05 | 0.4524 | 0.4648 | 0.1 | 0.001 | 0.000 |
| 白 | 88.74 | 0.3187 | 0.3364 | 88.10 | 0.3186 | 0.3364 | 0.6 | 0.000 | 0.000 |
| 复现性 Reproducibility | | | | | | 重复性 Repeatability | | | |
| $\Delta I(Y)$ | $\Delta I(x)$ | | $\Delta I(y)$ | $s(Y)$ | $s(x)$ | | $s(y)$ | | |
| 0.0 | 0.000 | | 0.000 | 0.0 | 0.000 | | 0.000 | | |

说明:

Note:

1. 结论: 以上校准结果符合JJG 595-2002 (准确度: 二级) 技术要求。

Conclusion: The data of instrument calibrated above comply with the technical characteristics in JJG 595-2002 (for accuracy Garde 2).

校准结果符合性判断依据JJF1094-2002《测量仪器特性评定》之5.3.1和JJG 595-2002。

Decision rules of conformity are JJF1094-2002 *Evaluation of Characteristics of Measuring Instruments* (5.3.1) and JJG 595-2002.

2. 照明与观测条件: D65 10° d/0 SCI。

The condition of illuminance & observation:

3. 示值误差测量结果的扩展不确定度: $U(Y)=2.2$, $U(x)=U(y)=0.007$, $k=2$ 。

The expanded uncertainty of error of indication: $U(Y)=2.2$, $U(x)=U(y)=0.007$, $k=2$ 。

4. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度评定与表示》评定,

由合成标准不确定度乘以包含概率约为95%时对应的包含因子 k 得到。

The expanded uncertainty given in this certificate is evaluated according to JJF 1059.1-2012

“Evaluation and Expression of Uncertainty in Measurement”, which is obtained by multiplying the combined



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standard uncertainty by the coverage factor k corresponding to the coverage probability of about 95%.

5. 按规程规定:

According to the verification regulation:

一级色差计:

重复性: $s(Y)$ 不超过0.3, $s(x)$ 和 $s(y)$ 不超过0.001。

复现性: $\Delta I(Y)$ 不超过1.0, $\Delta I(x)$ 和 $\Delta I(y)$ 不超过0.002。

示值误差: ΔY 不超过1.5, Δx 和 Δy 不超过0.020。

Grade 1 colorimeters and color difference meters' MPE:

Repeatability: $s(Y)$: 0.3, $s(x)$ and $s(y)$: 0.001.

Reproducibility: $\Delta I(Y)$: 1.0, $\Delta I(x)$ and $\Delta I(y)$: 0.002.

Error of Indication: ΔY : 1.5, Δx and Δy : 0.020.

二级色差计:

重复性: $s(Y)$ 不超过0.5, $s(x)$ 和 $s(y)$ 不超过0.003。

复现性: $\Delta I(Y)$ 不超过2.0, $\Delta I(x)$ 和 $\Delta I(y)$ 不超过0.006。

示值误差: ΔY 不超过3.0, Δx 和 Δy 不超过0.025。

Grade 2 colorimeters and color difference meters' MPE:

Repeatability: $s(Y)$: 0.5, $s(x)$ and $s(y)$: 0.003.

Reproducibility: $\Delta I(Y)$: 2.0, $\Delta I(x)$ and $\Delta I(y)$: 0.006.

Error of Indication: ΔY : 3.0, Δx and Δy : 0.025.

6. 按照所依据技术文件的规定, 建议复校时间间隔不超过1年。

According to the demand of reference document, next calibration is proposed within 1 year.