



# 校准证书

CALIBRATION CERTIFICATE



证书编号:

Certificate No.



扫一扫验真伪

2WB22122235444-0005

委托方:

Client

湖南三一智慧新能源设计有限公司

委托方地址:

Address

湖南省邵阳市邵阳经济开发区管理委员会蜂巢创客大楼

仪器/样品名称:

Description

全自动界面张力测试仪

型号/规格:

Model/Type

HM301

制造厂商:

Manufacturer

武汉国电华美电气设备有限公司

出厂编号:

Serial No.

2212045

管理号:

Asset No.

样品接收日期:

Date of Receipt

2022-12-28

Y M D

结果:

Conclusion

所校准项目合格(Passed at Calibration Items)

校准日期:

Date of Calibration

2022-12-28

Y M D

建议下次校准日期:

Due Date

2023-12-27

Y M D

校准:

Calibration by

潘星

审核:

Inspected by

谭喜

授权签字人:

Approved Signatory

方文潮

证书专用章  
(Stamp)

本实验室地址: 广东省广州市番禺区石碁镇农科所南街8号 @力赛计量实验室

Address: No.8.South Street Shi Ji Institute Guangzhou.Guangdong.China

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投诉电话(CT): 020-31104772

传真(Fax): 020-31134076

邮政编码(Post): 511400

公司网址(Web): www.lisaitest.com

电子邮件(E-mail): cal@lisaitest.com





# 校准说明

## DIRECTIONS OF CALIBRATION

证书编号:  
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本机构质量管理体系符合ISO/IEC17025标准要求。

The quality system is in accordance with ISO/IEC17025.

1. 证书内页中"P"代表"合格","F"代表"不合格","N/A"代表"不适用"。

In the datasheet,"P" represents "Pass" and "F" represents "Fail" and "N/A" represents "Not Applicable".

2. 本证书编号具有唯一性, 后缀若带有"A~Z"的证书为替换证书, 自发出后原证书即刻作废。

Each certificate has a unique number,The suffix of "A~Z" will be added to the number as a replacement of the old version. The original certificate will be officially invalid once the new certificate number is issued.

3. 环境条件。(Environmental condition during the calibration).

温度(Temperature): 22°C 相对湿度 (Relative Humidity): 51 %

4. 校准地点。(Place of the Calibration).

客户现场(3楼车间)

5. 未加盖“证书报告专用章”无效,报告无校准或检测、审核、授权签字人签章无效。

The report is invalid without the official stamp, report is invalid without 'report stamp', The report is invalid without the signatures of Approval and Reviewer.

6. 样品及生产/研制方的相关信息由委托方提供并由委托方承担相应责任。

The information of the samples and the manufacturer/developer shall be provided by the applicants and applicant shall bear the corresponding responsibilities.

7. 本次校准的技术依据及CNAS认可范围, 超出范围的内容未被认可。详细认可范围请查看CNAS网站中注

册编号为L7127的证书附件。(Reference documents and accredited scope by CNAS for the Calibration beyond which isn't accredited. Please see the attachment of certificate No.L7127 on CNAS website for details.)

JJF 1464-2014 界面张力仪校准规范 C.S.for interfacial tension instrument

8. 本次校准使用的主要计量标准器具。(Main standards of measurement used in the Calibration).

名称 Description	出厂编号 Serial No.	证书号/有效期 Certificate No./ Due Date	溯源机构 Traceability Institute	技术特征 Technique Character
数显卡尺	K17H055842	3WC22100819800-2060 / 2023-10-09	广州力赛计量检测有限公司(LiSai Metrology)	U=0.01mm (k=2)
E2等级砝码(24个)	S958	22LY822004302-001 / 2023-04-05	武汉市计量测试检定(研究)所	E2等级





# 广州力赛计量检测有限公司

GUANGZHOU LISAI CALIBRATION AND TESTING CO.,LTD



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L7127

证书编号:  
Certificate No.



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1、外观以及一般性检查: 正常  
In view of External and Generality check : Pass

## 2、零点漂移(Zero drift):

实测值 Measured (mN/m)	允差 MPE (mN/m)	结论 Conclusion (Pass/Fail)
0.10	0.2	P

## 3、回零误差(Zero error):

实测值 Measured (%FS)	允差 MPE (%FS)	结论 Conclusion (Pass/Fail)
0.1	± 0.1	P

## 4、张力的校准(Tension of the calibration):

砝码质量 Mass (g)	理论值 Theoretical (mN/m)	平均示值 Average (mN/m)	示值误差 Error (%)	不确定度 Uncertainty (%)	允差 MPE (%)	结论 Conclusion (Pass/Fail)
0.500	40.74	40.56	-0.4	0.2	± 0.5	P
1.000	81.48	81.57	0.1	0.2	± 0.5	P

## 5、计算常数(Calculation constant):

名称 Designation	参数 Parameter	实测值1 (mm)	实测值2 (mm)	实测值3 (mm)	平均值 (mm)	计算常数S (mm)	不确定度 (%)
铂金板	底面宽t	19.50	19.55	19.52	19.52	19.90	0.2
	底面长l	0.37	0.39	0.38	0.38		

注: 理论张力值F公式:  $F=m \times g / 2S$

铂金板的计算常数S公式:  $S=t+l$

m---砝码质量,g;

g---校准地点重力加速度,  $m/s^2$ ;

S---铂金板的计算常数,mm。





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附： 关于测量结果不确定度的说明：

appendix: Directions of uncertainty in the calibration

1.依据(Reference document)

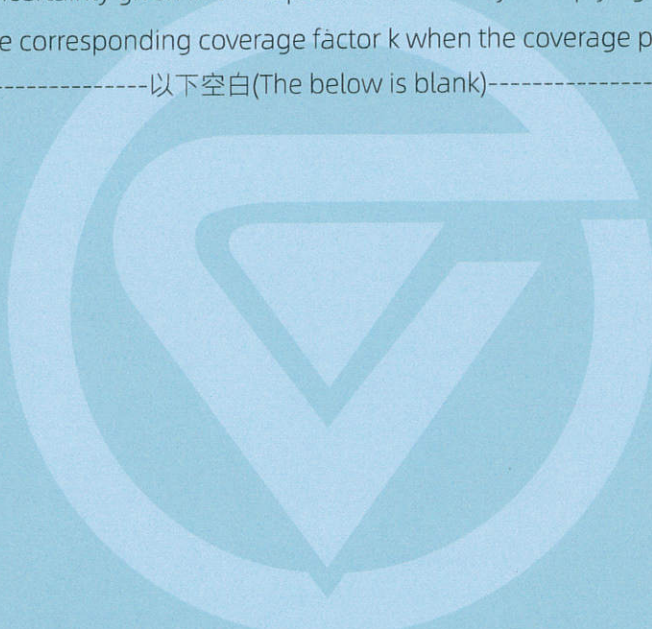
JJF 1059.1-2012测量不确定度评定与表示

(JJF 1059.1-2012 Evaluation and Expression of Uncertainty in Measurement)

2.本报告给出的扩展不确定度是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得到的。

The expanded uncertainty given in this report is obtained by multiplying the combined standard uncertainty by the corresponding coverage factor k when the coverage probability of about 95%.

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# LISAI