

校准证书

CALIBRATION CERTIFICATE

证书编号:

Certificate No.



J202603113982-02-0001

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委托方

Client

INTERNATIONAL TESTING LLC

联络信息

Contact Inf.

TASHKENT CITY, SHAYKHANTAKHUR DISTRICT,
ZAFARABAD MFY, ZAFARABAD STREET, 83

仪器名称

Description

瞬态过压测试仪 Transient Over-voltages Tester

型号/规格

Model/Type

SUG335

制造厂

Manufacturer

LISUN GROUP

出厂编号

Serial No.

管理号

Asset No.

接收日期

Receipt Date

2026年03月30日

Y M D

校准日期

Cal. Date

2026年04月02日

Y M D

发布日期

Issued Date

2026年04月02日

Y M D

批准

Approved by

宋硕

宋硕

审核

Inspected by

焦一鹏

焦一鹏

校准

Calibrated by

赵大星

赵大星

证书专用章

(Stamp)

总部地址(Headquarters Add.): 广东省广州市番禺区石碁镇创运路8号

No.8, Chuangyun Road, Shiqi Town, Panyu District, Guangzhou, Guangdong, China

实验室地址(Add.of the Lab): 江苏省无锡市新吴区宁韵路8号

No.8,Ningyun Road,,Xinwu District,Wuxi,Jiangsu,China

联系电话(Tel.):400-602-0999

邮政编码(Postcode):511450

网站(Website):http:// www.grgtest.com

电子邮件(E-mail):grgtest@grgtest.com



扫一扫验真伪

校验码: 352710

校准说明 DIRECTIONS OF CALIBRATION

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1.本实验室的质量管理体系符合ISO/IEC 17025:2017标准的要求,校准结果均可溯源至国际单位制(SI)单位。
(The quality system is in accordance with ISO/IEC 17025:2017,the calibration results are traceable to the International System of Units (SI).)

2.本结果仅对本次校准样品有效。未经实验室批准,不得部分复制。如有疑问请在15个工作日内反馈。
(The result is only valid for the calibrated sample.The certificate shall not be reproduced except in full,without the written approval of our laboratory .please feedback to us within 15 days if you have any question.)

3.本证书编号具有唯一性,后缀若带有“-Gx”的证书为替换证书,自发出后原证书即刻作废,修改后的证书以客户端内容为准。(Each certificate has a unique number. The suffix of "-Gx" 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.The modified certificate shall be based on the client content.)

4.证书中最大允许误差、判定结果仅供参考,其中“P”代表“合格”,“F”代表“不合格”,“N/A”代表“不适用”。使用人员应结合实际测量需求,评估测量不确定度对符合性评定的影响。(MPE & judgement result in the datasheet is only for reference , "P" is "Pass", "F" is "Fail" and "N/A" is "Not Applicable".Whereas users should evaluate the effects of MU of calibration results on conformance assessment by actual measurement.)

5.校准地点、环境条件(Place and environmental conditions of the calibration):

地点: 无锡计量电子室
Place

温度: 21.5°C 相对湿度: 61%
Temperature Relative Humidity

6.建议复校时间间隔: 1年,送校单位也可按实际使用情况自主决定。

Suggested calibration interval is 1 year or it can be altered depending on the actual usage of the user.

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网站证书附件。(Reference document and accredited scope by CNAS for calibration, beyond which isn't accredited. Please see the attachment of certificate on CNAS website for details.)

JJF 1741-2019 浪涌(冲击)模拟器校准规范 (C.S of Surge Simulators) 开路电压: (0.1~40)kV 短路电流: (0.01~50)kA 时间: 1ns~5s

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8. 本次校准使用的主要测量标准(Main Standards of Measurement Used in the Calibration.):

名称 Description	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
示波器 Oscilloscope	C023849	J202505061528A- 0002 2026-05-28	广电计量检测集 团股份有限公司	V:±1% , t: ±0.01%
差分探头	20220466	J202602045712- 0035 2027-03-19	广电计量检测集 团股份有限公司	带宽:50MHz;衰减:200/2000,± 2%

9. 计量溯源性声明(Measurement traceability declaration.):

示波器/Oscilloscope(C023849)→数字多用表/Digital multimeter(MY57702015)→频率计(6E5042005)→铷原子频率标准(广东省计量科学研究院/SCM);
差分探头(20220466)→交直流高压源系统(标准电压互感器)/Standard potential transformer(007300)→数字万用表/Digital multimeter(MY57700299)→放大器(5668001)→分流器/Shunt(566579241~566579254)→分流器(中国计量科学研究院);

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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、浪涌(Surge)

2.1 开路脉冲电压的校准(Calibration of Open Circuit Voltage):

耦合方式 Coupling	标称值 Nominal	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结论 Conclusion (Pass/Fail)	
(/)	(kV)	(kV)	(kV)	(%)	(kV)	(Pass/Fail)	
2Ω	0.5	0.50	0.00	3.5	± 0.05	P	
	1.0	1.04	-0.03	3.5	± 0.10	P	
	2.0	2.06	-0.06	3.5	± 0.20	P	
	4.0	4.08	-0.08	3.5	± 0.40	P	
	6.0	6.00	0.00	3.5	± 0.60	P	
	8.0	8.15	-0.15	3.5	± 0.80	P	
	10.0	10.05	-0.05	3.5	± 1.00	P	
	12.0	12.25	-0.25	3.5	± 1.20	P	
	-0.5	-0.50	0.00	3.5	± 0.05	P	
	-1.0	-0.98	-0.03	3.5	± 0.10	P	
	-2.0	-1.97	-0.03	3.5	± 0.20	P	
	-4.0	-4.00	0.00	3.5	± 0.40	P	
	-6.0	-5.95	-0.05	3.5	± 0.60	P	
	-8.0	-7.85	-0.15	3.5	± 0.80	P	
	-10.0	-10.15	0.15	3.5	± 1.00	P	
	-12.0	-11.75	-0.25	3.5	± 1.20	P	
	12Ω	0.5	0.50	0.00	3.5	± 0.05	P
		1.0	1.01	-0.01	3.5	± 0.10	P
		2.0	2.03	-0.03	3.5	± 0.20	P
4.0		4.03	-0.03	3.5	± 0.40	P	
6.0		5.80	0.20	3.5	± 0.60	P	
8.0		7.90	0.10	3.5	± 0.80	P	
10.0		10.15	-0.15	3.5	± 1.00	P	
12.0		12.35	-0.35	3.5	± 1.20	P	
-0.5		-0.50	0.00	3.5	± 0.05	P	
-1.0		-0.99	-0.02	3.5	± 0.10	P	
-2.0		-1.98	-0.02	3.5	± 0.20	P	
-4.0		-4.06	0.06	3.5	± 0.40	P	
-6.0		-6.05	0.05	3.5	± 0.60	P	
-8.0		-7.95	-0.05	3.5	± 0.80	P	
-10.0		-9.85	-0.15	3.5	± 1.00	P	
-12.0		-11.90	-0.10	3.5	± 1.20	P	

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2.1 开路脉冲电压的校准(Calibration of Open Circuit Voltage):

耦合方式 Coupling	标称值 Nominal (kV)	实测值 Measured (kV)	误差 Error (kV)	不确定度 $U_{rel}(k=2)$ (%)	允许误差 MPE (kV)	结论 Conclusion (Pass/Fail)
40Ω	0.5	0.50	0.00	3.5	± 0.05	P
	1.0	1.00	0.00	3.5	± 0.10	P
	2.0	2.03	-0.03	3.5	± 0.20	P
	4.0	4.03	-0.03	3.5	± 0.40	P
	6.0	6.05	-0.05	3.5	± 0.60	P
	8.0	7.60	0.40	3.5	± 0.80	P
	10.0	10.15	-0.15	3.5	± 1.00	P
	12.0	12.10	-0.10	3.5	± 1.20	P
	-0.5	-0.50	0.00	3.5	± 0.05	P
	-1.0	-1.04	0.03	3.5	± 0.10	P
	-2.0	-1.97	-0.03	3.5	± 0.20	P
	-4.0	-4.01	0.01	3.5	± 0.40	P
	-6.0	-6.00	0.00	3.5	± 0.60	P
	-8.0	-7.90	-0.10	3.5	± 0.80	P
-10.0	-9.90	-0.10	3.5	± 1.00	P	
-12.0	-11.90	-0.10	3.5	± 1.20	P	
500Ω	0.5	0.50	0.00	3.5	± 0.05	P
	1.0	1.02	-0.02	3.5	± 0.10	P
	2.0	2.02	-0.02	3.5	± 0.20	P
	4.0	4.03	-0.03	3.5	± 0.40	P
	6.0	5.95	0.05	3.5	± 0.60	P
	8.0	7.65	0.35	3.5	± 0.80	P
	10.0	10.15	-0.15	3.5	± 1.00	P
	12.0	11.90	0.10	3.5	± 1.20	P
	-0.5	-0.50	0.00	3.5	± 0.05	P
	-1.0	-0.99	-0.02	3.5	± 0.10	P
	-2.0	-2.00	0.00	3.5	± 0.20	P
	-4.0	-4.02	0.02	3.5	± 0.40	P
	-6.0	-6.20	0.20	3.5	± 0.60	P
	-8.0	-7.45	-0.55	3.5	± 0.80	P
-10.0	-9.80	-0.20	3.5	± 1.00	P	
-12.0	-11.95	-0.05	3.5	± 1.20	P	

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2.2 开路电压脉冲波前时间的校准(Calibration of Open Circuit Front Time):

耦合方式 Coupling	电压 Voltage	标称值 Nominal	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结论 Conclusion (Pass/Fail)
(/)	(kV)	(μ s)	(μ s)	(μ s)	(%)	(μ s)	(Pass/Fail)
2 Ω	0.5	1.2	1.11	0.09	5.5	± 0.36	P
	1.0	1.2	1.11	0.09	5.5	± 0.36	P
	2.0	1.2	1.07	0.14	5.5	± 0.36	P
	4.0	1.2	1.09	0.11	5.5	± 0.36	P
	6.0	1.2	1.03	0.17	5.5	± 0.36	P
	8.0	1.2	1.06	0.14	5.5	± 0.36	P
	10.0	1.2	1.15	0.05	5.5	± 0.36	P
	12.0	1.2	1.08	0.12	5.5	± 0.36	P
	-0.5	1.2	1.05	0.15	5.5	± 0.36	P
	-1.0	1.2	1.08	0.12	5.5	± 0.36	P
	-2.0	1.2	1.04	0.17	5.5	± 0.36	P
	-4.0	1.2	1.09	0.11	5.5	± 0.36	P
	-6.0	1.2	1.00	0.20	5.5	± 0.36	P
	-8.0	1.2	0.89	0.31	5.5	± 0.36	P
10.0	1.2	1.12	0.08	5.5	± 0.36	P	
12.0	1.2	1.01	0.19	5.5	± 0.36	P	
12 Ω	0.5	1.2	1.12	0.08	5.5	± 0.36	P
	1.0	1.2	1.09	0.11	5.5	± 0.36	P
	2.0	1.2	1.08	0.12	5.5	± 0.36	P
	4.0	1.2	1.13	0.07	5.5	± 0.36	P
	6.0	1.2	1.12	0.08	5.5	± 0.36	P
	8.0	1.2	1.10	0.10	5.5	± 0.36	P
	10.0	1.2	1.13	0.07	5.5	± 0.36	P
	12.0	1.2	1.09	0.11	5.5	± 0.36	P
	-0.5	1.2	1.07	0.14	5.5	± 0.36	P
	-1.0	1.2	1.11	0.09	5.5	± 0.36	P
	-2.0	1.2	1.07	0.13	5.5	± 0.36	P
	-4.0	1.2	1.09	0.11	5.5	± 0.36	P
	-6.0	1.2	1.07	0.13	5.5	± 0.36	P
	-8.0	1.2	1.01	0.19	5.5	± 0.36	P
10.0	1.2	1.07	0.13	5.5	± 0.36	P	
12.0	1.2	1.05	0.15	5.5	± 0.36	P	

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2.2 开路电压脉冲波前时间的校准(Calibration of Open Circuit Front Time):

耦合方式 Coupling	电压 Voltage (kV)	标称值 Nominal (μ s)	实测值 Measured (μ s)	误差 Error (μ s)	不确定度 $U_{rel}(k=2)$ (%)	允许误差 MPE (μ s)	结论 Conclusion (Pass/Fail)
40 Ω	0.5	1.2	1.11	0.09	5.5	± 0.36	P
	1.0	1.2	1.12	0.08	5.5	± 0.36	P
	2.0	1.2	1.13	0.07	5.5	± 0.36	P
	4.0	1.2	1.10	0.10	5.5	± 0.36	P
	6.0	1.2	1.09	0.11	5.5	± 0.36	P
	8.0	1.2	1.08	0.12	5.5	± 0.36	P
	10.0	1.2	1.13	0.07	5.5	± 0.36	P
	12.0	1.2	1.09	0.11	5.5	± 0.36	P
	-0.5	1.2	1.08	0.12	5.5	± 0.36	P
	-1.0	1.2	1.12	0.09	5.5	± 0.36	P
	-2.0	1.2	1.12	0.08	5.5	± 0.36	P
	-4.0	1.2	1.13	0.07	5.5	± 0.36	P
	-6.0	1.2	1.11	0.09	5.5	± 0.36	P
	-8.0	1.2	1.06	0.14	5.5	± 0.36	P
10.0	1.2	1.05	0.16	5.5	± 0.36	P	
12.0	1.2	1.09	0.11	5.5	± 0.36	P	
500 Ω	0.5	1.2	1.11	0.09	5.5	± 0.36	P
	1.0	1.2	1.11	0.09	5.5	± 0.36	P
	2.0	1.2	1.07	0.14	5.5	± 0.36	P
	4.0	1.2	1.09	0.11	5.5	± 0.36	P
	6.0	1.2	1.03	0.17	5.5	± 0.36	P
	8.0	1.2	1.06	0.14	5.5	± 0.36	P
	10.0	1.2	1.15	0.05	5.5	± 0.36	P
	12.0	1.2	1.08	0.12	5.5	± 0.36	P
	-0.5	1.2	1.07	0.13	5.5	± 0.36	P
	-1.0	1.2	1.09	0.11	5.5	± 0.36	P
	-2.0	1.2	1.06	0.14	5.5	± 0.36	P
	-4.0	1.2	1.09	0.11	5.5	± 0.36	P
	-6.0	1.2	1.00	0.20	5.5	± 0.36	P
	-8.0	1.2	0.89	0.31	5.5	± 0.36	P
10.0	1.2	1.12	0.08	5.5	± 0.36	P	
12.0	1.2	1.01	0.19	5.5	± 0.36	P	

校准结果 RESULTS OF CALIBRATION

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2.3 开路电压脉冲半波时间的校准(Calibration of Open Circuit Time to Half Value):

耦合方式 Coupling	电压 Voltage (kV)	标称值 Nominal (μ s)	实测值 Measured (μ s)	误差 Error (μ s)	不确定度 $U_{rel}(k=2)$ (%)	允许误差 MPE (μ s)	结论 Conclusion (Pass/Fail)
2 Ω	0.5	50	47	3	5.5	± 10	P
	1.0	50	48	2	5.5	± 10	P
	2.0	50	51	-1	5.5	± 10	P
	4.0	50	52	-2	5.5	± 10	P
	6.0	50	54	-4	5.5	± 10	P
	8.0	50	51	-1	5.5	± 10	P
	10.0	50	50	0	5.5	± 10	P
	12.0	50	49	1	5.5	± 10	P
	-0.5	50	46	4	5.5	± 10	P
	-1.0	50	46	4	5.5	± 10	P
	-2.0	50	50	0	5.5	± 10	P
	-4.0	50	51	-1	5.5	± 10	P
	-6.0	50	51	-1	5.5	± 10	P
	-8.0	50	52	-2	5.5	± 10	P
-10.0	50	45	5	5.5	± 10	P	
-12.0	50	49	1	5.5	± 10	P	
12 Ω	0.5	50	49	1	5.5	± 10	P
	1.0	50	52	-2	5.5	± 10	P
	2.0	50	54	-4	5.5	± 10	P
	4.0	50	49	1	5.5	± 10	P
	6.0	50	48	2	5.5	± 10	P
	8.0	50	51	-1	5.5	± 10	P
	10.0	50	48	2	5.5	± 10	P
	12.0	50	49	1	5.5	± 10	P
	-0.5	50	53	-3	5.5	± 10	P
	-1.0	50	50	0	5.5	± 10	P
	-2.0	50	53	-3	5.5	± 10	P
	-4.0	50	56	-6	5.5	± 10	P
	-6.0	50	51	-1	5.5	± 10	P
	-8.0	50	49	1	5.5	± 10	P
-10.0	50	47	3	5.5	± 10	P	
-12.0	50	48	2	5.5	± 10	P	

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2.3 开路电压脉冲半波时间的校准(Calibration of Open Circuit Time to Half Value):

耦合方式 Coupling	电压 Voltage (kV)	标称值 Nominal (μ s)	实测值 Measured (μ s)	误差 Error (μ s)	不确定度 $U_{rel}(k=2)$ (%)	允许误差 MPE (μ s)	结论 Conclusion (Pass/Fail)
40 Ω	0.5	50	49	1	5.5	± 10	P
	1.0	50	51	-1	5.5	± 10	P
	2.0	50	51	-1	5.5	± 10	P
	4.0	50	49	1	5.5	± 10	P
	6.0	50	52	-2	5.5	± 10	P
	8.0	50	48	2	5.5	± 10	P
	10.0	50	52	-2	5.5	± 10	P
	12.0	50	53	-3	5.5	± 10	P
	-0.5	50	51	-1	5.5	± 10	P
	-1.0	50	49	1	5.5	± 10	P
	-2.0	50	47	3	5.5	± 10	P
	-4.0	50	50	0	5.5	± 10	P
	-6.0	50	53	-3	5.5	± 10	P
	-8.0	50	54	-4	5.5	± 10	P
-10.0	50	48	2	5.5	± 10	P	
-12.0	50	49	1	5.5	± 10	P	
500 Ω	0.5	50	53	-3	5.5	± 10	P
	1.0	50	48	2	5.5	± 10	P
	2.0	50	49	1	5.5	± 10	P
	4.0	50	53	-3	5.5	± 10	P
	6.0	50	52	-2	5.5	± 10	P
	8.0	50	48	2	5.5	± 10	P
	10.0	50	50	0	5.5	± 10	P
	12.0	50	49	1	5.5	± 10	P
	-0.5	50	47	3	5.5	± 10	P
	-1.0	50	50	0	5.5	± 10	P
	-2.0	50	52	-2	5.5	± 10	P
	-4.0	50	48	2	5.5	± 10	P
	-6.0	50	55	-5	5.5	± 10	P
	-8.0	50	52	-2	5.5	± 10	P
-10.0	50	52	-2	5.5	± 10	P	
-12.0	50	50	0	5.5	± 10	P	

校准结果
RESULTS OF CALIBRATION

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Notes:

结论(Conclusion): 所校项目符合技术要求

1.本报告中的扩展不确定度是由标准不确定度乘以包含概率约为95%时的包含因子 k 。

The expanded uncertainty is given in the report by the standard uncertainty multiplied by the probability of about 95% when the factor k .

2.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)

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