校 准 证 书

CALIBRATION CERTIFICATE

证书编号：J202408090103-0001 第 1 页 共 5 页

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委 托 方 Client	Danesh Control Farda Reseach and Lab Company		
联络信息 Contact Inf.	No. 20, Sahand Azaran Industrial Town, The beginning os Basmenj Road, Police office of Tehran Road, Tabriz, East Azerbaijan Province, Iran		
仪器名称 Description	Impulse Voltage Tester（冲击电压测试仪）		
型号/规格 Model/Type	SUG335	**制 造 厂** Manufacturer	LISUNGROUP
出厂编号 Serial No.	LSG3352495	**管 理 号** Asset No.	------
接收日期 Receipt Date	2024年08月30日 Y M D	**校准日期** Cal. Date	2024年09月02日 Y M D
发布日期 Issued Date	2024年09月02日 Y M D		

批 准 Approved by 张磊

审 核 Inspected by 焦一鹏

校 准 Calibrated by 彭敬恒

证书专用章 (Stamp)

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扫一扫验真伪
校验码：141004

校　准　说　明
DIRECTIONS OF CALIBRATION

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。(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.)

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　Wuxi Metrology Electronics Room

温度：　21℃　　相对湿度：51%
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.)

IEC 61000-4-5-2014 电磁兼容第4-5部分 试验和测量技术 浪涌(冲击)抗扰度试验(Electromagnetic compatibility(EMC)-Part 4-5:Testing and measurement techniques-Surge immunity test) 开路电压：(0.5 ~40)kV 短路电流：(0.25~50)kA 上升时间：1ns~5s

校　准　说　明
DIRECTIONS OF CALIBRATION

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	J202406051047-0003 2025-06-04	广电计量检测集团股份有限公司	V: ±1% , t: ±0.01%
高压探头	C066608	J202408086916-0003 2025-08-16	广电计量检测集团股份有限公司	MPE：±3%

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

示波器/Oscilloscope(C023849)→多功能校准器（多功能校准源、标准功率源、示波器校准仪）（6027905）→精密交直流同轴分流器（05155847）→100 kHz 以下交流电流基准装置（中国计量科学研究院/NIM）；
高压探头(C066608)→交直流高压源系统(标准电压互感器)/Standard potential transformer(007300)→交直流高压源系统(标准电压互感器)/Standard potential transformer(007300) ;高压探头(C066608)→交直流高压源系统(直流标准电阻分压器)/DC standard resistor divider(190810)→交直流高压源系统(直流标准电阻分压器)/DC standard resistor divider(190810) ;

校 准 结 果
RESULTS OF CALIBRATION

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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):

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)
0.5	0.51	-0.01	3.5	± 0.05	P
1.0	1.00	0.00	3.5	± 0.10	P
2.0	2.05	-0.05	3.5	± 0.20	P
4.0	4.08	-0.08	3.5	± 0.40	P
6.0	6.04	-0.04	3.5	± 0.60	P
8.0	8.08	-0.08	3.5	± 0.80	P
10.0	10.16	-0.16	3.5	± 1.00	P
12.0	12.30	-0.30	3.5	± 1.20	P
-0.5	-0.49	-0.01	3.5	± 0.05	P
-1.0	-0.98	-0.02	3.5	± 0.10	P
-2.0	-1.95	-0.05	3.5	± 0.20	P
-4.0	-3.89	-0.11	3.5	± 0.40	P
-6.0	-5.84	-0.16	3.5	± 0.60	P
-8.0	-7.77	-0.23	3.5	± 0.80	P
-10.0	-9.72	-0.28	3.5	± 1.00	P
-12.0	-11.70	-0.30	3.5	± 1.20	P

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

电压 Voltage (kV)	标称值 Nominal (μs)	实测值 Measured (μs)	误差 Error (μs)	不确定度 $U_{rel}(k=2)$ (%)	允许误差 MPE (μs)	结论 Conclusion (Pass/Fail)
0.5	1.2	1.24	-0.04	5.5	± 0.36	P
1.0	1.2	1.18	0.02	5.5	± 0.36	P
2.0	1.2	1.09	0.11	5.5	± 0.36	P
4.0	1.2	1.04	0.16	5.5	± 0.36	P
6.0	1.2	1.06	0.14	5.5	± 0.36	P
8.0	1.2	1.12	0.08	5.5	± 0.36	P
10.0	1.2	1.09	0.11	5.5	± 0.36	P
12.0	1.2	1.10	0.10	5.5	± 0.36	P
-0.5	1.2	1.19	0.01	5.5	± 0.36	P
-1.0	1.2	1.10	0.10	5.5	± 0.36	P
-2.0	1.2	1.06	0.14	5.5	± 0.36	P
-4.0	1.2	1.04	0.16	5.5	± 0.36	P
-6.0	1.2	1.17	0.03	5.5	± 0.36	P
-8.0	1.2	1.08	0.12	5.5	± 0.36	P
10.0	1.2	1.10	0.10	5.5	± 0.36	P
12.0	1.2	1.17	0.03	5.5	± 0.36	P

校　准　结　果
RESULTS OF CALIBRATION

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

电压 Voltage (kV)	标称值 Nominal (μs)	实测值 Measured (μs)	误差 Error (μs)	不确定度 $U_{rel}(k=2)$ (%)	允许误差 MPE (μs)	结论 Conclusion (Pass/Fail)
0.5	50	58	-8	5.5	± 10	P
1.0	50	57	-7	5.5	± 10	P
2.0	50	57	-7	5.5	± 10	P
4.0	50	58	-8	5.5	± 10	P
6.0	50	59	-9	5.5	± 10	P
8.0	50	58	-8	5.5	± 10	P
10.0	50	58	-8	5.5	± 10	P
12.0	50	57	-7	5.5	± 10	P
-0.5	50	58	-8	5.5	± 10	P
-1.0	50	58	-8	5.5	± 10	P
-2.0	50	59	-9	5.5	± 10	P
-4.0	50	60	-10	5.5	± 10	P
-6.0	50	57	-7	5.5	± 10	P
-8.0	50	60	-10	5.5	± 10	P
-10.0	50	60	-10	5.5	± 10	P
-12.0	50	60	-10	5.5	± 10	P

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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