



中国认可
国际互认
检测
TESTING
CNAS L0207

报告编号
Reference No

CT25-01177-1

检测报告

Test Report

样品名称
Name of sample 8.7/15kV冷缩式防水户外终端
8.7/15kV cold shrinkable waterproof outdoor termination

样品型号
Type of sample GHD-15FWLS

委托方
Consigner 航大电气有限公司
ZGHD ELECTRIC CO.,LTD.

试验类型
Kind of test 委托试验
Commission test

上海国缆检测股份有限公司

SHANGHAI NATIONAL CENTER OF TESTING AND INSPECTION
FOR ELECTRIC CABLE AND WIRE CO.,LTD

国家电线电缆质量检验检测中心

CHINA NATIONAL CENTRE OF TESTING AND INSPECTION
FOR ELECTRIC CABLE AND WIRE

上海国缆检测股份有限公司
国家电线电缆质量检验检测中心
检测报告

Shanghai National Center of Testing and Inspection for Electric Cable and Wire Co.,Ltd
China National Centre of Testing and Inspection for Electric Cable and Wire
Test Report

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试验类型 Kind of test	委托试验 Commission test	报告编号 Reference No.	CT25-01177-1		
样品名称 Name of sample	8.7/15kV冷缩式防水户外终端 8.7/15kV cold shrinkable waterproof outdoor termination				
型号规格 Type and Size	GHD-15FWLS 3×400	检测日期 Date of test	2025-03-28 ~ 2025-05-12		
委托方 Consigner	名称 Name	航大电气有限公司 ZGHD ELECTRIC CO.,LTD.			
	地址 Address	浙江省乐清市乐清湾港区乐商创业园 Yueshang Pioneer Park, Yueqing Bay Port Area, Yueqing City, Zhejiang Province			
	电话号码 Tel.	13764387888	邮政编码 P.C.	325600	单位编号 Unit No.
生产单位 Manufacturer	名称 Name	航大电气有限公司 ZGHD ELECTRIC CO.,LTD.			
	地址 Address	浙江省乐清市乐清湾港区乐商创业园 Yueshang Pioneer Park, Yueqing Bay Port Area, Yueqing City, Zhejiang Province			
	电话号码 Tel.	13764387888	邮政编码 P.C.	325600	单位编号 Unit No.
来样方式 Delivering mode	送样 Supplied by consigner	接收状态 Sample state at receiving	正常 Normal	收样日期 Receiving date	2025-03-26
检测依据 Test standard	见第2页 See page 2				
判定依据 Verdict standard	见第2页 See page 2				
检测结论 Conclusion	该样品所测项目符合委托方技术要求。 The items tested for the sample comply with the technical specification provided by consigner.				
备注 Note	1.样品的名称和型号规格由委托方提供。The name and type and size of the sample are provided by consigner. 2.所有试验项目在本中心试验基地-上海市杨浦区军工路1000号开展。 The test items have been carried out at our test base No. 1000, Jungong Road, Yangpu district, Shanghai.				
主检 Tested by	申永涛 Shen Yongtao 申永涛	审核 Checked by	贺金红 He Jinhong 贺金红	批准 Approved by	李闯 Li Chuang 李闯
日期 Date	2025-05-12	日期 Date	2025.05.12	日期 Date	2025.5.12

型号和规格 Type and size	GHD-15FWLS 3×400	报告编号 Reference No.	CT25-01177-1
检测依据： Test standard: 1. GB/T 12706.4—2020 额定电压1kV($U_m=1.2$kV)到35kV($U_m=40.5$kV)挤包绝缘电力电缆及附件 第4部分：额定电压6kV($U_m=7.2$kV)到35kV($U_m=40.5$kV)电力电缆附件试验要求 Power cables with extruded insulation and their accessories for rated voltages from 1kV($U_m=1.2$kV) up to 35kV ($U_m=40.5$kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6kV($U_m=7.2$kV) up to 35kV ($U_m=40.5$kV) 2. IEC 60502-4:2010 额定电压1kV($U_m=1.2$kV)到30kV($U_m=36$kV)挤包绝缘电力电缆及附件 第4部分：额定电压6kV($U_m=7.2$kV)到30kV($U_m=36$kV)电力电缆附件试验要求 Power cables with extruded insulation and their accessories for rated voltages from 1 kV ($U_m=1.2$ kV) up to 30 kV ($U_m=36$ kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6 kV ($U_m=7.2$ kV) up to 30 kV ($U_m=36$ kV)			
判定依据： Verdict standard: 委托方技术要求. Technical specification provided by consigner.			

型号和规格 Type and size	GHD-15FWLS 3×400	报告编号 Reference No.	CT25-01177-1
1.样品描述 Sample description 本试验共有1个试验回路，具体如下： Tests are carried out on one test loop, and details as follows: 1.1 试验回路 Test loop 试验回路包含一套8.7/15kV冷缩式防水户外终端（一套测试样品），一套8.7/15kV冷缩式防水户内终端，一套8.7/15kV冷缩式防水中间接头和一根三芯长度8米的电力电缆，电缆的型号规格为YJV22-8.7/15 3×400。 The test loop comprises one 8.7/15kV cold shrinkable waterproof outdoor termination (one test sample), one 8.7/15kV cold shrinkable waterproof indoor termination, one 8.7/15kV cold shrinkable waterproof straight joint and one 8m three cores cable. Type and size of the cable is YJV22-8.7/15 3×400. 2. 试验程序 Test sequences 2.1 试验回路按照委托方要求进行裕度试验。 Test loop is tested according to margin tests required by consigner. 2.2 试验项目中检验（检查）项目结果“无异常”，是指试验后无以下任一现象： The “no abnormality” in test result of examination in test item means the any of following phenomena shall not appear after testing: (I) 填充物和/或带材或管件有裂纹； cracking in the filling media and/or tape or tube components; (II) 主要密封部位有贯穿性潮湿通道； a moisture path across a primary seal; (III) 腐蚀和/或漏电痕迹、电蚀，最后导致附件的损坏； corrosion and/or tracking and/or erosion which would, in time, lead to failure of the accessory; (IV) 任何绝缘材料渗漏。 Leakage of any insulating material.			

型号和规格 Type and size		GHD-15FWLS 3×400		报告编号 Reference No.	CT25-01177-1
序号 No.	检测项目 Test Items	单位 Unit	技术要求 Requirements	检测结果 Test Results	单项评定 Verdict
1	交流耐压试验(54kV, 5min) AC voltage test (54kV, 5min)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
2	直流耐压试验 (负极性, 48kV, 15min) DC voltage test (Negative polarity, 48kV, 15min)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
3	空气中恒压负荷循环试验 (22kV。加热循环至少 8h, 导体稳定在 95℃~100℃至少 2h, 自然冷却至少 3h, 共 60 次热循环) Heating cycles voltage test in air (22kV. The duration of heating cycle is at least 8h. During heating period, conductor temperature is stabilized for at least 2h at 95℃~100℃, natural cooling at least 3h, total 60heating cycles)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
4	局部放电试验(20kV, 95~100℃) Partial discharge test (20kV, 95~100℃)	pC	≤10	≤1.6 (灵敏度 sensitivity: 1.0)	P
5	局部放电试验(20kV) Partial discharge test (20kV)	pC	≤10	≤1.7 (灵敏度 sensitivity: 1.0)	P
6	冲击电压试验 (125kV, 正负极性各 10 次) Impulse voltage test (125kV, 10 positive and 10 negative impulses)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
7	交流耐压试验(54kV, 5min) AC voltage test (54kV, 5min)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
8	检验 (检查) Examination		/	样品无异常 No abnormality on the sample	N

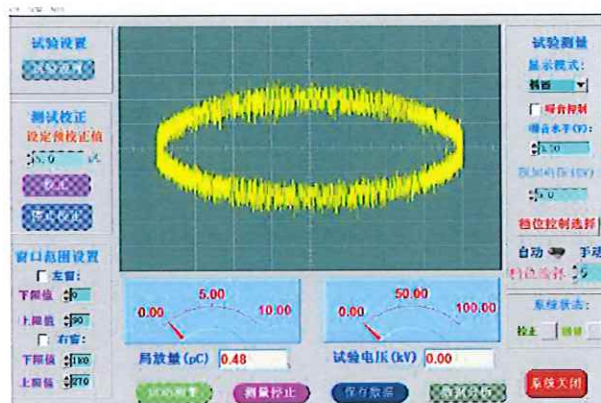
注: “单项评定”符号含义: P: 检测结果符合要求; F: 检测结果不符合要求; N: 检测结果不要求判定。

Note: “P” means this item does meet the requirement, “F” means this item does not meet the requirement, “N” means this item does not require to the verdict.

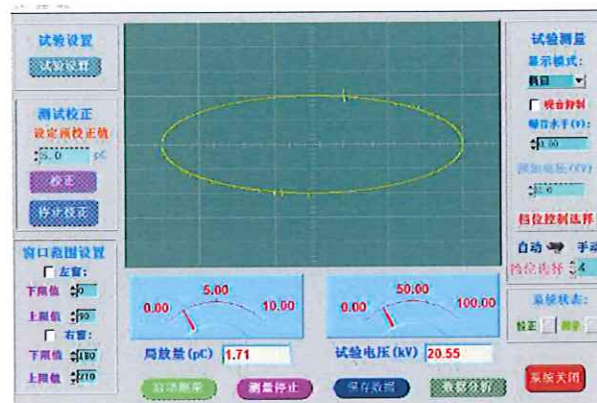
型号和规格 Type and size	GHD-15FWLS 3×400	报告编号 Reference No.	CT25-01177-1
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附录A 样品局部放电试验图形

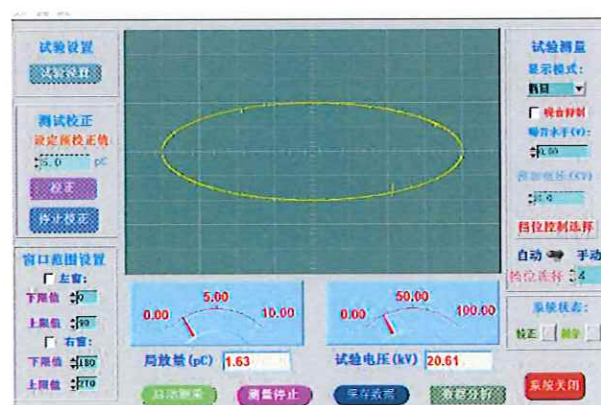
Annex A Oscillograms of partial discharges on the sample



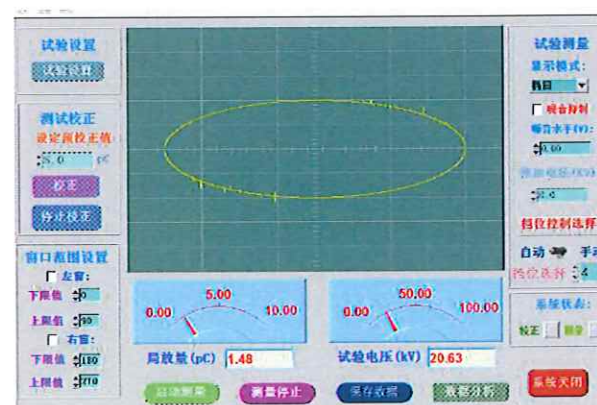
A1: 局部放电试验背景噪声
The background noise during partial discharge test



A2: 红芯在20kV下局部放电试验图形
The oscillogram of partial discharge of red core at 20kV



A3: 黄芯在20kV下局部放电试验图形
The oscillogram of partial discharge of yellow core at 20kV



A4: 绿芯在20kV下局部放电试验图形
The oscillogram of partial discharge of green core at 20 kV

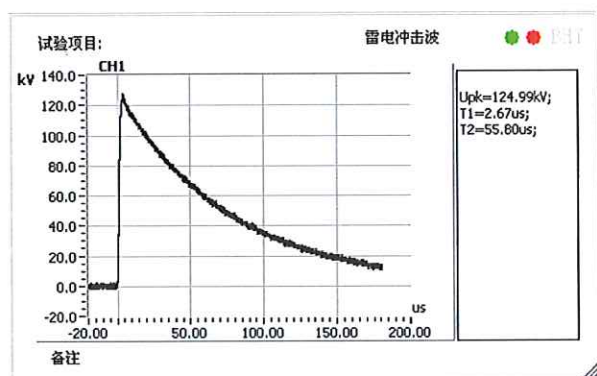
型号和规格 Type and size	GHD-15FWLS 3×400	报告编号 Reference No.	CT25-01177-1
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附录B 样品冲击电压试验实际耐受电压值及其波形图(125kV, 允许±3%偏差)
Annex B The values and oscillograms of impulse voltages on the sample (125kV, ±3% tolerance)

温度: 23℃, 相对湿度: 32%, 大气压力: 103.1kPa
Ambient temperature: 23℃, Relative humidity: 32%, Atmosphere: 103.1kPa

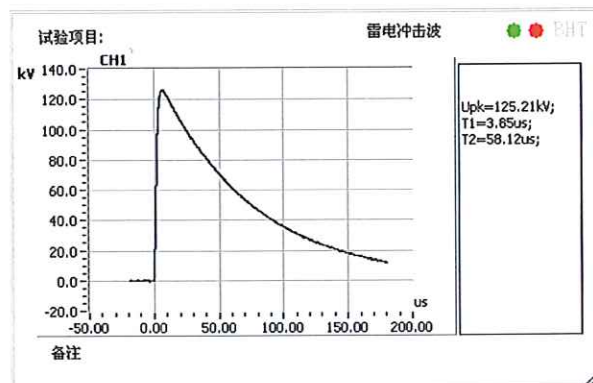
kV

+	124.99	124.57	124.83	124.58	123.93	124.41	124.51	124.68	125.54	125.21
—	125.94	125.31	126.34	125.76	125.93	126.54	126.15	126.12	125.60	125.88



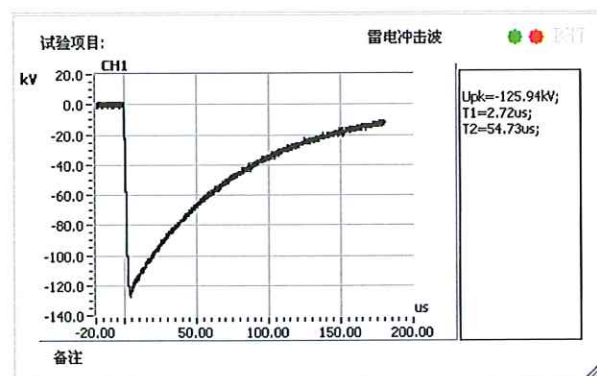
正极性第1次

The 1st positivity lightning impulse waveform



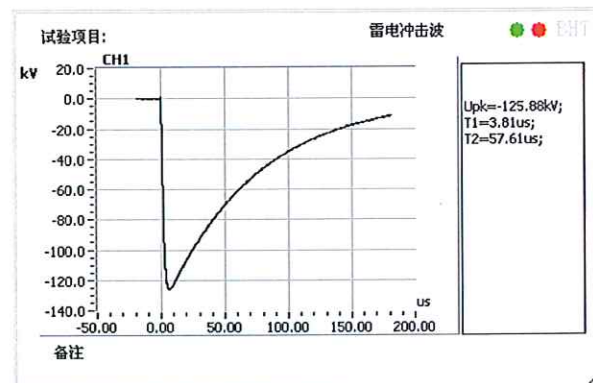
正极性第10次

The 10th positivity lightning impulse waveform



负极性第1次

The 1st negative lightning impulse waveform



负极性第10次

The 10th negative lightning impulse waveform

型号和规格 Type and size	GHD-15FWLS 3×400	报告编号 Reference No.	CT25-01177-1
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附录C 试验照片 Annex C Photos about testing



C1: 样品外观
The appearance of the sample



C2: 样品局部放电试验
Partial discharge test on the sample



C3: 冲击电压试验
Impulse voltage test

型号和规格 Type and size	GHD-15FWLS 3×400	报告编号 Reference No.	CT25-01177-1
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附录 D 试验电缆的标识 Annex D Identification of test cable

额定电压 $U_0/U(U_m)$ Rated voltage	8.7/15(17.5) kV	
结构: Construction	芯数 Core number	三芯 Three-core
	屏蔽结构 Screened	分相屏蔽 Individually screened
导体: Conductor	材料 Material	铜 Copper
	形状 Shape	紧压圆形绞合 Stranded compacted circular
	截面 Cross-sectional area	400mm ²
	外径 Overall diameter	22.6mm
绝缘: Insulation	材料 Material	交联聚乙烯 XLPE
	厚度 Thickness	4.5mm
	外径 Overall diameter	33mm
屏蔽: Screen	绝缘屏蔽厚度 Thickness of insulation screen	0.8mm
	绝缘屏蔽是否可剥离 Strippability for insulation screen	可剥离 Strippable
	绝缘屏蔽外径 Overall diameter of insulation screen	34.6mm
	金属屏蔽 Metallic screen	铜带屏蔽 Copper tape
铠装: Armour	结构和材料 Construction and Material	双层钢带 Two steel tapes
外护套: Oversheath	材料 Material	聚氯乙烯 PVC
	外径 Overall diameter	91.2mm
电缆标示: Cable marking	YJV22-8.7/15 3×400	



中国认可
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报告编号
Reference No

CT25-01177-2

检测报告

Test Report

样品名称 8.7/15kV冷缩式防水户内终端
Name of sample 8.7/15kV cold shrinkable waterproof indoor termination

样品型号 GHD-15FNLS
Type of sample

委托方 航大电气有限公司
Consigner ZGHD ELECTRIC CO.,LTD.

试验类型 委托试验
Kind of test Commission test

上海国缆检测股份有限公司

SHANGHAI NATIONAL CENTER OF TESTING AND INSPECTION
FOR ELECTRIC CABLE AND WIRE CO.,LTD

国家电线电缆质量检验检测中心

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试验类型 Kind of test	委托试验 Commission test	报告编号 Reference No.	CT25-01177-2		
样品名称 Name of sample	8.7/15kV冷缩式防水户内终端 8.7/15kV cold shrinkable waterproof indoor termination				
型号规格 Type and Size	GHD-15FNLS 3×400		检测日期 Date of test	2025-03-28 ~ 2025-05-12	
委托方 Consigner	名称 Name	航大电气有限公司 ZGHD ELECTRIC CO.,LTD.			
	地址 Address	浙江省乐清市乐清湾港区乐商创业园 Yueshang Pioneer Park, Yueqing Bay Port Area, Yueqing City, Zhejiang Province			
	电话号码 Tel.	13764387888	邮政编码 P.C.	325600	单位编号 Unit No.
生产单位 Manufacturer	名称 Name	航大电气有限公司 ZGHD ELECTRIC CO.,LTD.			
	地址 Address	浙江省乐清市乐清湾港区乐商创业园 Yueshang Pioneer Park, Yueqing Bay Port Area, Yueqing City, Zhejiang Province			
	电话号码 Tel.	13764387888	邮政编码 P.C.	325600	单位编号 Unit No.
来样方式 Delivering mode	送样 Supplied by consigner	接收状态 Sample state at receiving	正常 Normal	收样日期 Receiving date	2025-03-26
检测依据 Test standard	见第2页 See page 2				
判定依据 Verdict standard	见第2页 See page 2				
检测结论 Conclusion	该样品所测项目符合委托方技术要求。 The items tested for the sample comply with the technical specification provided by consigner.				
备注 Note	1.样品的名称和型号规格由委托方提供。The name and type and size of the sample are provided by consigner. 2.所有试验项目在本中心试验基地-上海市杨浦区军工路1000号开展。 The test items have been carried out at our test base No. 1000, Jungong Road, Yangpu district, Shanghai.				
主检 Tested by	申永涛 Shen Yongtao 申永涛	审核 Checked by	贺金红 He Jinhong 贺金红	批准 Approved by	李闯 Li Chuang 李闯
日期 Date	2025-05-12	日期 Date	2025.05.12	日期 Date	2025.5.12

型号和规格 Type and size	GHD-15FNLS 3×400	报告编号 Reference No.	CT25-01177-2
检测依据： Test standard: 1. GB/T 12706.4—2020 额定电压1kV($U_m=1.2$kV)到35kV($U_m=40.5$kV)挤包绝缘电力电缆及附件 第4部分：额定电压6kV($U_m=7.2$kV)到35kV($U_m=40.5$kV)电力电缆附件试验要求 Power cables with extruded insulation and their accessories for rated voltages from 1kV($U_m=1.2$kV) up to 35kV ($U_m=40.5$kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6kV($U_m=7.2$kV) up to 35kV ($U_m=40.5$kV) 2. IEC 60502-4:2010 额定电压1kV($U_m=1.2$kV)到30kV($U_m=36$kV)挤包绝缘电力电缆及附件 第4部分：额定电压6kV($U_m=7.2$kV)到30kV($U_m=36$kV)电力电缆附件试验要求 Power cables with extruded insulation and their accessories for rated voltages from 1 kV ($U_m=1.2$ kV) up to 30 kV ($U_m=36$ kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6 kV ($U_m=7.2$ kV) up to 30 kV ($U_m=36$ kV)			
判定依据： Verdict standard: 委托方技术要求. Technical specification provided by consigner.			

型号和规格 Type and size	GHD-15FNLS 3×400	报告编号 Reference No.	CT25-01177-2
1.样品描述 Sample description 本试验共有1个试验回路，具体如下： Tests are carried out on one test loop, and details as follows: 1.1 试验回路 Test loop 试验回路包含一套8.7/15kV冷缩式防水户外终端，一套8.7/15kV冷缩式防水户内终端(一套测试样品)，一套8.7/15kV冷缩式防水中间接头和一根三芯长度8米的电力电缆，电缆的型号规格为YJV22-8.7/15 3×400。 The test loop comprises one 8.7/15kV cold shrinkable waterproof outdoor termination, one 8.7/15kV cold shrinkable waterproof indoor termination (one test sample), one 8.7/15kV cold shrinkable waterproof straight joint and one 8m three cores cable. Type and size of the cable is YJV22-8.7/15 3×400. 2. 试验程序 Test sequences 2.1 试验回路按照委托方要求进行裕度试验。 Test loop is tested according to margin tests required by consigner. 2.2 试验项目中检验（检查）项目结果“无异常”，是指试验后无以下任一现象： The “no abnormality” in test result of examination in test item means the any of following phenomena shall not appear after testing: (I) 填充物和/或带材或管件有裂纹； cracking in the filling media and/or tape or tube components; (II) 主要密封部位有贯穿性潮湿通道； a moisture path across a primary seal; (III) 腐蚀和/或漏电痕迹、电蚀，最后导致附件的损坏； corrosion and/or tracking and/or erosion which would, in time, lead to failure of the accessory; (IV) 任何绝缘材料渗漏。 Leakage of any insulating material.			

型号和规格 Type and size		GHD-15FNLS 3×400		报告编号 Reference No.	CT25-01177-2
序号 No.	检测项目 Test Items	单位 Unit	技术要求 Requirements	检测结果 Test Results	单项评定 Verdict
1	交流耐压试验(54kV, 5min) AC voltage test (54kV, 5min)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
2	直流耐压试验 (负极性, 48kV, 15min) DC voltage test (Negative polarity, 48kV, 15min)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
3	空气中恒压负荷循环试验 (22kV。加热循环至少 8h, 导体稳定在 95℃~100℃至少 2h, 自然冷却至少 3h, 共 60 次热循环) Heating cycles voltage test in air (22kV. The duration of heating cycle is at least 8h. During heating period, conductor temperature is stabilized for at least 2h at 95℃~100℃, natural cooling at least 3h, total 60 heating cycles)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
4	局部放电试验(20kV, 95~100℃) Partial discharge test (20kV, 95~100℃)	pC	≤10	≤1.6 (灵敏度 sensitivity: 1.0)	P
5	局部放电试验(20kV) Partial discharge test (20kV)	pC	≤10	≤1.7 (灵敏度 sensitivity: 1.0)	P
6	冲击电压试验 (125kV, 正负极性各 10 次) Impulse voltage test (125kV, 10 positive and 10 negative impulses)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
7	交流耐压试验(54kV, 5min) AC voltage test (54kV, 5min)		不击穿或闪络 No breakdown or flashover	三芯均未击穿或闪络 No breakdown or flashover on three cores	P
8	检验 (检查) Examination		/	样品无异常 No abnormality on the sample	N

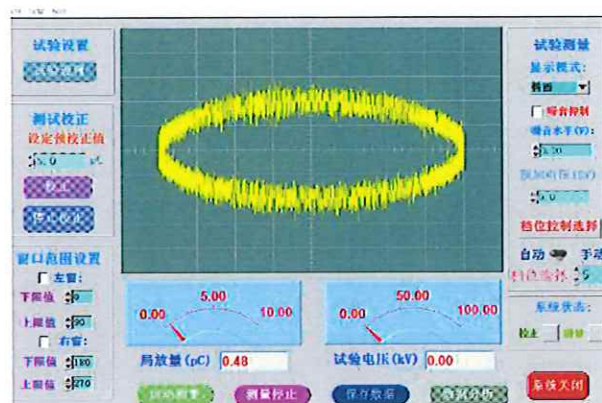
注: “单项评定”符号含义: P: 检测结果符合要求; F: 检测结果不符合要求; N: 检测结果不要求判定。

Note: “P” means this item does meet the requirement, “F” means this item does not meet the requirement, “N” means this item does not require to the verdict.

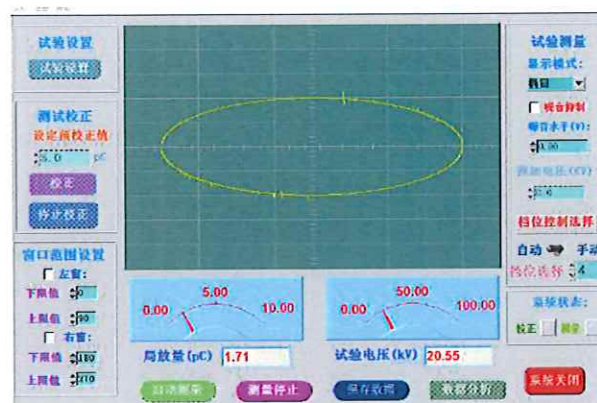
型号和规格 Type and size	GHD-15FNLS 3×400	报告编号 Reference No.	CT25-01177-2
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附录A 样品局部放电试验图形

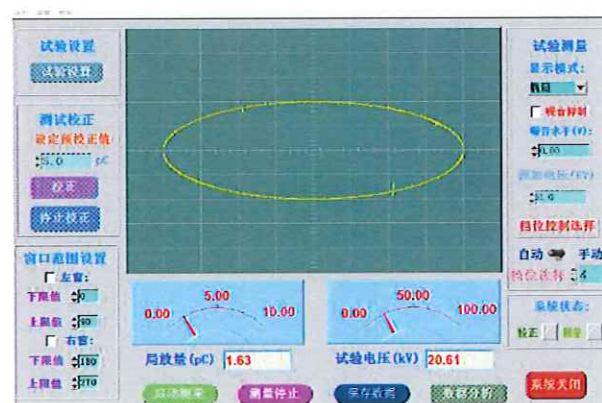
Annex A Oscillograms of partial discharges on the sample



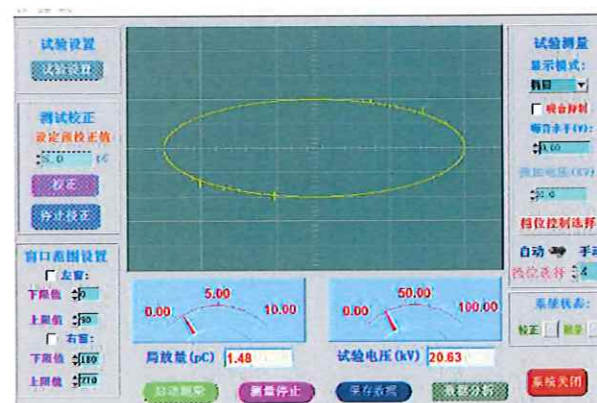
A1: 局部放电试验背景噪声
The background noise during partial discharge test



A2: 红芯在20kV下局部放电试验图形
The oscillogram of partial discharge of red core at 20kV



A3: 黄芯在20kV下局部放电试验图形
The oscillogram of partial discharge of yellow core at 20kV



A4: 绿芯在20kV下局部放电试验图形
The oscillogram of partial discharge of green core at 20 kV

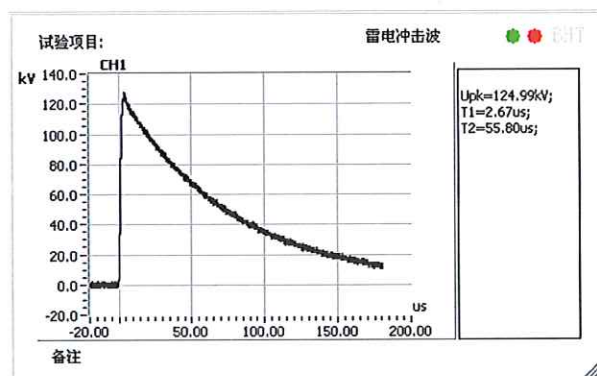
型号和规格 Type and size	GHD-15FNLS 3×400	报告编号 Reference No.	CT25-01177-2
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附录B 样品冲击电压试验实际耐受电压值及其波形图(125kV, 允许±3%偏差)
Annex B The values and oscillograms of impulse voltages on the sample (125kV, ±3% tolerance)

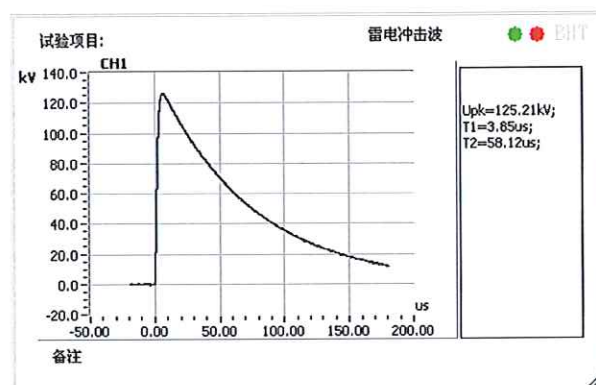
温度: 23℃, 相对湿度: 32%, 大气压力: 103.1kPa
Ambient temperature: 23℃, Relative humidity: 32%, Atmosphere: 103.1kPa

kV

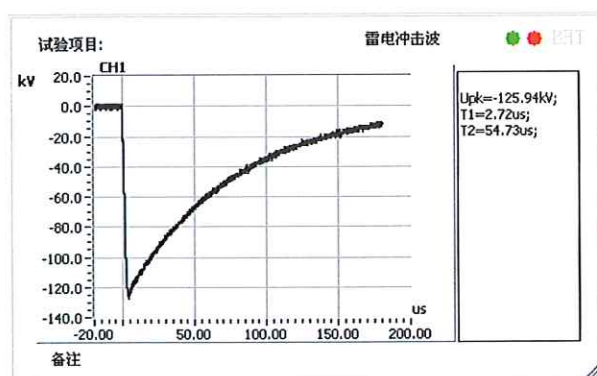
+	124.99	124.57	124.83	124.58	123.93	124.41	124.51	124.68	125.54	125.21
-	125.94	125.31	126.34	125.76	125.93	126.54	126.15	126.12	125.60	125.88



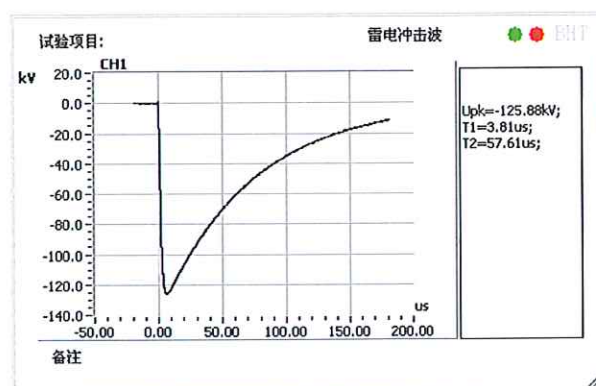
正极性第1次
The 1st positivity lightning impulse waveform



正极性第10次
The 10th positivity lightning impulse waveform



负极性第1次
The 1st negative lightning impulse waveform



负极性第10次
The 10th negative lightning impulse waveform

型号和规格 Type and size	GHD-15FNLS 3×400	报告编号 Reference No.	CT25-01177-2
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附录C 试验照片 Annex C Photos about testing



C1: 样品外观
The appearance of the sample



C2: 样品局部放电试验
Partial discharge test on the sample



C3: 冲击电压试验
Impulse voltage test

型号和规格 Type and size	GHD-15FNLS 3×400	报告编号 Reference No.	CT25-01177-2
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附录 D 试验电缆的标识 Annex D Identification of test cable

额定电压 $U_0/U(U_m)$ Rated voltage	8.7/15(17.5) kV	
结构: Construction	芯数 Core number	三芯 Three-core
	屏蔽结构 Screened	分相屏蔽 Individually screened
导体: Conductor	材料 Material	铜 Copper
	形状 Shape	紧压圆形绞合 Stranded compacted circular
	截面 Cross-sectional area	400mm ²
	外径 Overall diameter	22.6mm
绝缘: Insulation	材料 Material	交联聚乙烯 XLPE
	厚度 Thickness	4.5mm
	外径 Overall diameter	33mm
屏蔽: Screen	绝缘屏蔽厚度 Thickness of insulation screen	0.8mm
	绝缘屏蔽是否可剥离 Strippability for insulation screen	可剥离 Strippable
	绝缘屏蔽外径 Overall diameter of insulation screen	34.6mm
	金属屏蔽 Metallic screen	铜带屏蔽 Copper tape
铠装: Armour	结构和材料 Construction and Material	双层钢带 Two steel tapes
外护套: Oversheath	材料 Material	聚氯乙烯 PVC
	外径 Overall diameter	91.2mm
电缆标示: Cable marking	YJV22-8.7/15 3×400	



220008343840



报告编号
Reference No.



CT25-01177-3

中国认可
国际互认
检测
TESTING
CNAS L0207

检测报告

Test Report

样品名称
Name of sample 8.7/15kV冷缩式防水中间接头
8.7/15kV cold shrinkable waterproof straight joint

样品型号
Type of sample GHD-15FJLS

委托方
Consigner 航大电气有限公司
ZHGD ELECTRIC CO.,LTD.

试验类型
Kind of test 委托试验
Commission test

上海国缆检测股份有限公司

SHANGHAI NATIONAL CENTER OF TESTING AND INSPECTION
FOR ELECTRIC CABLE AND WIRE CO.,LTD

国家电线电缆质量检验检测中心

CHINA NATIONAL CENTRE OF TESTING AND INSPECTION
FOR ELECTRIC CABLE AND WIRE

上海国缆检测股份有限公司
国家电线电缆质量检验检测中心
检测报告

Shanghai National Center of Testing and Inspection for Electric Cable and Wire Co.,Ltd
China National Centre of Testing and Inspection for Electric Cable and Wire
Test Report

共 9 页 第 1 页
Page 1 of 9

试验类型 Kind of test		委托试验 Commission test		报告编号 Reference No.		CT25-01177-3	
样品名称 Name of sample		8.7/15kV冷缩式防水中间接头 8.7/15kV cold shrinkable waterproof straight joint					
型号规格 Type and Size		GHD-15FJLS 3×400		检测日期 Date of test		2025-03-28 ~ 2025-05-12	
委托方 Consigner	名称 Name	航大电气有限公司 ZGHD ELECTRIC CO.,LTD.					
	地址 Address	浙江省乐清市乐清湾港区乐商创业园 Yueshang Pioneer Park, Yueqing Bay Port Area, Yueqing City, Zhejiang Province					
	电话号码 Tel.	13764387888	邮政编码 P.C.	325600	单位编号 Unit No.	700993	
生产单位 Manufacturer	名称 Name	航大电气有限公司 ZGHD ELECTRIC CO.,LTD.					
	地址 Address	浙江省乐清市乐清湾港区乐商创业园 Yueshang Pioneer Park, Yueqing Bay Port Area, Yueqing City, Zhejiang Province					
	电话号码 Tel.	13764387888	邮政编码 P.C.	325600	单位编号 Unit No.	700993	
来样方式 Delivering mode		送样 Supplied by consigner	接收状态 Sample state at receiving	正常 Normal	收样日期 Receiving date	2025-03-26	
检测依据 Test standard		见第2页 See page 2					
判定依据 Verdict standard		见第2页 See page 2					
检测结论 Conclusion		该样品所测项目符合委托方技术要求。 The items tested for the sample comply with the technical specification provided by consigner.					
备注 Note		1.样品的名称和型号规格由委托方提供。The name and type and size of the sample are provided by consigner. 2.所有试验项目在本中心试验基地-上海市杨浦区军工路1000号开展。 The test items have been carried out at our test base No. 1000, Jungong Road, Yangpu district, Shanghai.					
主检 Tested by	申永涛 Shen Yongtao	审核 Checked by	贺金红 He Jinhong	批准 Approved by	李闯 Li Chuang		
日期 Date	2025-05-12	日期 Date	2025.05.12	日期 Date	2025.5.12		

型号和规格 Type and size	GHD-15FJLS 3×400	报告编号 Reference No.	CT25-01177-3
检测依据： Test standard: 1. GB/T 12706.4—2020 额定电压1kV($U_m=1.2$kV)到35kV($U_m=40.5$kV)挤包绝缘电力电缆及附件 第4部分：额定电压6kV($U_m=7.2$kV)到35kV($U_m=40.5$kV)电力电缆附件试验要求 Power cables with extruded insulation and their accessories for rated voltages from 1kV($U_m=1.2$kV) up to 35kV ($U_m=40.5$kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6kV($U_m=7.2$kV) up to 35kV ($U_m=40.5$kV) 2. IEC 60502-4:2010 额定电压1kV($U_m=1.2$kV)到30kV($U_m=36$kV)挤包绝缘电力电缆及附件 第4部分：额定电压6kV($U_m=7.2$kV)到30kV($U_m=36$kV)电力电缆附件试验要求 Power cables with extruded insulation and their accessories for rated voltages from 1 kV ($U_m=1.2$ kV) up to 30 kV ($U_m=36$ kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6 kV ($U_m=7.2$ kV) up to 30 kV ($U_m=36$ kV)			
判定依据： Verdict standard: 委托方技术要求. Technical specification provided by consigner.			

型号和规格 Type and size	GHD-15FJLS 3×400	报告编号 Reference No.	CT25-01177-3
1.样品描述 Sample description 本试验共有1个试验回路，具体如下： Tests are carried out on one test loop, and details as follows: 1.1 试验回路 Test loop 试验回路包含一套8.7/15kV冷缩式防水户外终端，一套8.7/15kV冷缩式防水户内终端，一套8.7/15kV冷缩式防水中间接头(一套测试样品)和一根三芯长度8米的电力电缆，电缆的型号规格为YJV22-8.7/15 3×400。 The test loop comprises one 8.7/15kV cold shrinkable waterproof outdoor termination, one 8.7/15kV cold shrinkable waterproof indoor termination, one 8.7/15kV cold shrinkable waterproof straight joint (one test sample) and one 8m three cores cable. Type and size of the cable is YJV22-8.7/15 3×400. 2. 试验程序 Test sequences 2.1 试验回路按照委托方要求进行裕度试验。 Test loop is tested according to margin tests required by consigner. 2.2 试验项目中检验（检查）项目结果“无异常”，是指试验后无以下任一现象： The “no abnormality” in test result of examination in test item means the any of following phenomena shall not appear after testing: (I) 填充物和/或带材或管件有裂纹； cracking in the filling media and/or tape or tube components; (II) 主要密封部位有贯穿性潮湿通道； a moisture path across a primary seal; (III) 腐蚀和/或漏电痕迹、电蚀，最后导致附件的损坏； corrosion and/or tracking and/or erosion which would, in time, lead to failure of the accessory; (IV) 任何绝缘材料渗漏。 Leakage of any insulating material.			

型号和规格 Type and size		GHD-15FJLS 3×400		报告编号 Reference No.	CT25-01177-3
序号 No.	检测项目 Test Items	单位 Unit	技术要求 Requirements	检测结果 Test Results	单项评定 Verdict
1	交流耐压试验(54kV, 5min) AC voltage test (54kV, 5min)		不击穿 No breakdown	三芯均未击穿 No breakdown on three cores	P
2	直流耐压试验 (负极性, 48kV, 15min) DC voltage test (Negative polarity, 48kV, 15min)		不击穿 No breakdown	三芯均未击穿 No breakdown on three cores	P
3	水中恒压负荷循环试验 (22kV。加热循环至少 8h， 95℃～100℃至少 2h，自然冷 却至少 3h，共 60 次热循环。 中间接头整体浸水，水面高出 中间接头 1m，离中间接头 100mm 处，在电缆上开 50mm 宽的圆环，剥除环内金属屏蔽 外部所有护层及填充。) Heating cycles test under water (22kV. Heating cycle at least 8h, 95℃～100℃ at least 2h, natural cooling at least 3h, total 60 heating cycles. While the straight joints were immersed in water, the height of the water was 1m above the test object. Expose the cores of the cable at the entry to the accessory by removing an annulus of the oversheath, together with any bedding or filling material for a distance of 50 mm, at a point which will be within the water and between 100mm from the exterior of the joint.)		不击穿 No breakdown	三芯均未击穿 No breakdown on three cores	P
4	局部放电试验(20kV, 95～100℃) Partial discharge test (20kV, 95～ 100℃)	pC	≤10	≤1.6 (灵敏度 sensitivity: 1.0)	P
5	局部放电试验(20kV) Partial discharge test (20kV)	pC	≤10	≤1.7 (灵敏度 sensitivity: 1.0)	P

注：“单项评定”符号含义：P：检测结果符合要求；F：检测结果不符合要求；N：检测结果不要求判定。

Note: “P” means this item does meet the requirement, “F” means this item does not meet the requirement, “N” means this item does not require to the verdict.

型号和规格 Type and size		GHD-15FJLS 3×400		报告编号 Reference No.		CT25-01177-3	
序号 No.	检测项目 Test Items	单位 Unit	技术要求 Requirements	检测结果 Test Results	单项评定 Verdict		
6	冲击电压试验 (125kV, 正负极性各 10 次) Impulse voltage test (125kV, 10 positive and 10 negative impulses)		不击穿或闪络 No breakdown or flashover	三芯均未击穿 No breakdown on three cores	P		
7	交流耐压试验(54kV, 5min) AC voltage test (54kV, 5min)		不击穿或闪络 No breakdown or flashover	三芯均未击穿 No breakdown on three cores	P		
8	检验（检查）Examination		/	样品无异常 No abnormality on the sample	N		
以下为试验图形和照片 Following oscillograms and photos about testing							

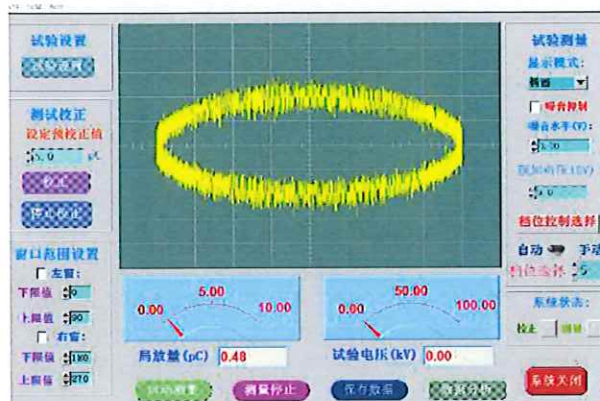
注：“单项评定”符号含义：P：检测结果符合要求；F：检测结果不符合要求；N：检测结果不要求判定。

Note: "P" means this item does meet the requirement, "F" means this item does not meet the requirement, "N" means this item does not require to the verdict.

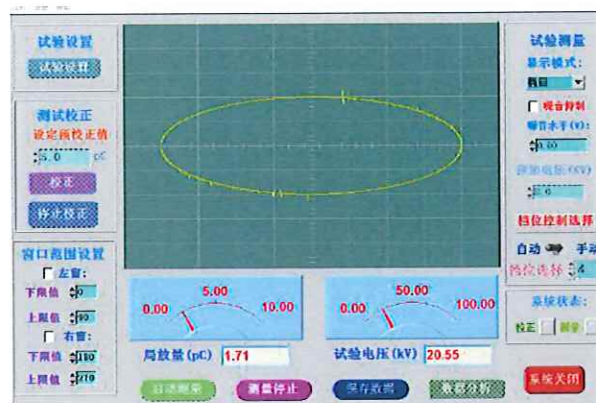
型号和规格 Type and size	GHD-15FJLS 3×400	报告编号 Reference No.	CT25-01177-3
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附录A 样品局部放电试验图形

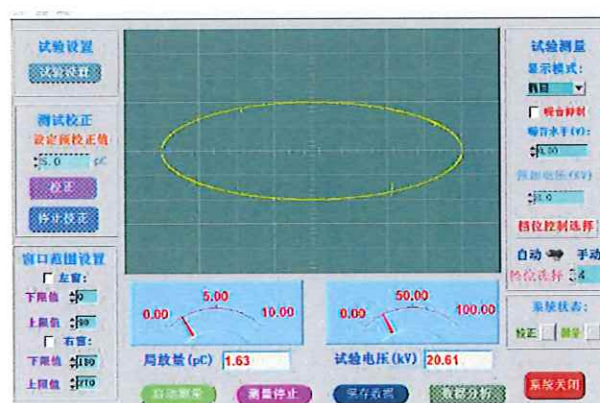
Annex A Oscillograms of partial discharges on the sample



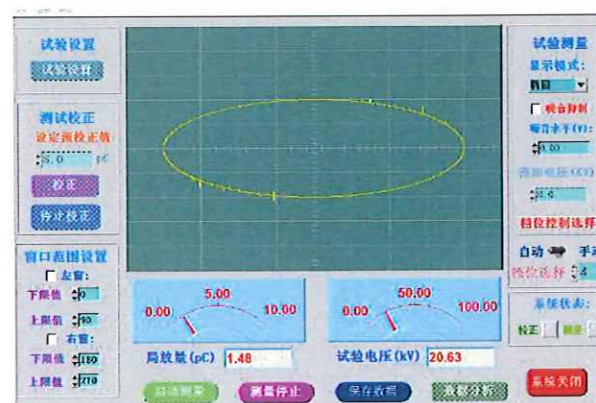
A1: 局部放电试验背景噪声
The background noise during partial discharge test



A2: 红芯在20kV下局部放电试验图形
The oscillogram of partial discharge of red core at 20kV



A3: 黄芯在20kV下局部放电试验图形
The oscillogram of partial discharge of yellow core at 20kV



A4: 绿芯在20kV下局部放电试验图形
The oscillogram of partial discharge of green core at 20 kV

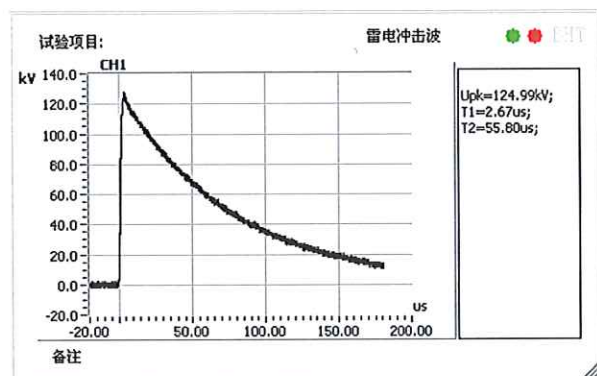
型号和规格 Type and size	GHD-15FJLS 3×400	报告编号 Reference No.	CT25-01177-3
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附录B 样品冲击电压试验实际耐受电压值及其波形图(125kV, 允许±3%偏差)
Annex B The values and oscillograms of impulse voltages on the sample (125kV, ±3% tolerance)

温度: 23℃, 相对湿度: 32%, 大气压力: 103.1kPa
Ambient temperature: 23℃, Relative humidity: 32%, Atmosphere: 103.1kPa

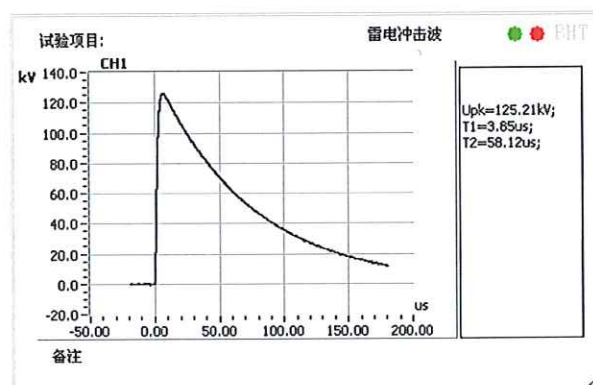
kV

+	124.99	124.57	124.83	124.58	123.93	124.41	124.51	124.68	125.54	125.21
-	125.94	125.31	126.34	125.76	125.93	126.54	126.15	126.12	125.60	125.88



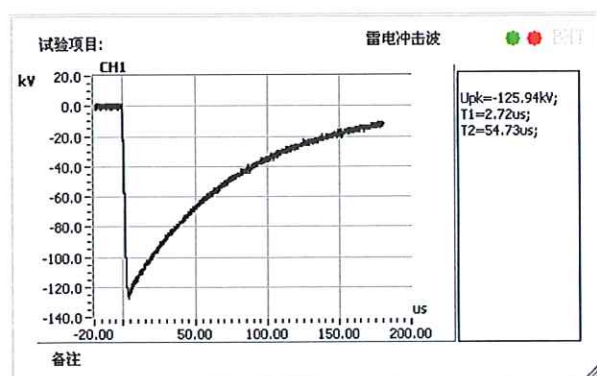
正极性第1次

The 1st positivity lightning impulse waveform



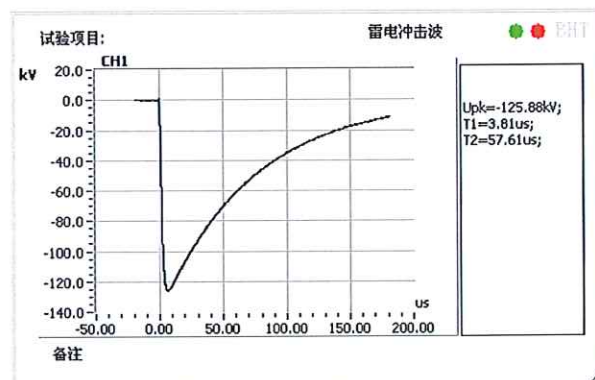
正极性第10次

The 10th positivity lightning impulse waveform



负极性第1次

The 1st negative lightning impulse waveform



负极性第10次

The 10th negative lightning impulse waveform

型号和规格 Type and size	GHD-15FJLS 3×400	报告编号 Reference No.	CT25-01177-3
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附录C 试验照片 Annex C Photos about testing



C1: 样品外观
The appearance of the sample



C2: 样品局部放电试验
Partial discharge test on the sample



C3: 冲击电压试验
Impulse voltage test

型号和规格 Type and size	GHD-15FJLS 3×400	报告编号 Reference No.	CT25-01177-3
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附录 D 试验电缆的标识 Annex D Identification of test cable

额定电压 $U_0/U(U_m)$ Rated voltage	8.7/15(17.5) kV	
结构: Construction	芯数 Core number	三芯 Three-core
	屏蔽结构 Screened	分相屏蔽 Individually screened
导体: Conductor	材料 Material	铜 Copper
	形状 Shape	紧压圆形绞合 Stranded compacted circular
	截面 Cross-sectional area	400mm ²
	外径 Overall diameter	22.6mm
绝缘: Insulation	材料 Material	交联聚乙烯 XLPE
	厚度 Thickness	4.5mm
	外径 Overall diameter	33mm
屏蔽: Screen	绝缘屏蔽厚度 Thickness of insulation screen	0.8mm
	绝缘屏蔽是否可剥离 Strippability for insulation screen	可剥离 Strippable
	绝缘屏蔽外径 Overall diameter of insulation screen	34.6mm
	金属屏蔽 Metallic screen	铜带屏蔽 Copper tape
铠装: Armour	结构和材料 Construction and Material	双层钢带 Two steel tapes
外护套: Oversheath	材料 Material	聚氯乙烯 PVC
	外径 Overall diameter	91.2mm
电缆标示: Cable marking	YJV22-8.7/15 3×400	