



中国认可
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检测
TESTING
CNAS L0310



Environment Test Report

Product Name: Solar Inverter

Product Model: SUN2000-12K-MB0, SUN2000-15K-MB0,
SUN2000-17K-MB0, SUN2000-20K-MB0,
SUN2000-25K-MB0, SUN2000-15K-MB0-
ZH, SUN2000-17K-MB0-ZH, SUN2000-
20K-MB0-ZH, SUN2000-25K-MB0-ZH,

Report Number: SYBH (H) 10290528

Reliability Laboratory of Huawei Technologies Co., Ltd.

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Notice

1. The laboratory has passed the accreditation by China National Accreditation Service for Conformity Assessment (CNAS). The accreditation number is L0310.
2. The laboratory has passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01 & 2174.02 & 2174.03.
3. The laboratory (Reliability Lab of Huawei Technologies Co., Ltd) is also named as “Global Compliance and Testing Center of Huawei Technologies Co., Ltd”, the both names have coexisted since 2009.
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5. The test report is invalid if there is any evidence of erasure or falsification.
6. The test report is only valid for the test samples.
7. The samples and sample information are provided and responsible by the customer.
8. Content of the test report, in part or in full, cannot be used for publicity or promotional purposes without prior written approval from the laboratory.
9. If any question about this report, please contact the laboratory (PublicGCTC@huawei.com).

Applicant: Huawei Digital Power Technologies Co., Ltd.
Address: Office 01, 39th Floor, Block A, Antuoshan Headquarters Towers,
 33 Antuoshan 6th Road, Futian District, Shenzhen, 518043, P.R.C.
Product Name: Solar Inverter
Product Model: SUN2000-12K-MB0, SUN2000-15K -MB0, SUN2000-17K-MB0,
 SUN2000-20K-MB0, SUN2000-25K-MB0, SUN2000-15K-MB0-
 ZH, SUN2000-17K-MB0-ZH, SUN2000-20K-MB0-ZH,
 SUN2000-25K-MB0-ZH,

Date of Receipt Sample: 2023-04-17
Start Date of Test: 2023-04-17
End Date of Test: 2023-04-20

Test Result: Pass

Approved by : 2023-04-25 Zhao Meijuan *Zhao Meijuan*
 Date Name Signature

Reviewed by: 2023-04-24 Du huan *Du huan*
 Date Name Signature

Prepared by: 2023-04-23 Li Jifei *Li Jifei*
 Date Name Signature

Modification Record

No.	Last Report No.	Modification Description
1	N/A	First report

CONTENTS

1	General Information	6
1.1	Standard Compliance	6
1.2	Test Location	6
1.3	Testing Environment Condition	6
2	Test Results	7
2.1	Test Items and Results	7
2.2	Test Instruments	7
2.3	Auxiliary Equipments	7
3	Product Specification	8
3.1	Main Product Specification	8
3.2	Product Configuration and Test Setup	8
	Simulated Solar Radiation at Ground Level.....	8
4	Detailed Test Data	11
4.1	Acoustic Test	11
4.2	Simulated Solar Radiation at Ground Level	12
5	Test Photos.....	13
5.1	Climatic Test Photos.....	13
5.2	Acoustic Test Photos	14
	Appendix Abbreviations.....	19

1 General Information

1.1 Standard Compliance

Test Methods:

IEC 60068-2-5: 2018

ISO 7779: 2018

NB/T 32004—2018

GB/T 37409-2019

Note:

1.GB/T 37409-2019 has not been accredited by CNAS and A2LA.

1.2 Test Location

Test Location 1:

Reliability Laboratory of Huawei Technologies Co., Ltd.

Address:

No.2, New City Avenue, Songshan Lake Sci. & Tech. Industry
Park, Dongguan, Guangdong, 523808, P.R.C

1.3 Testing Environment Condition

Ambient Temperature:

+20.7°C~+25.5°C

Relative Humidity:

45.8%RH~62.5%RH

Atmospheric Pressure:

101.0kpa

2 Test Results

2.1 Test Items and Results

Table 1 Test items and results

SN	Test Item	Standard Compliance	Test Parameter	Sample No.	Result	Location
1.	Acoustic test	NB/T 32004 GB/T 37409 ISO7779	SUN2000-25K -MB0: 1. Typical working conditions (25.0kw): Lpmax≤50db(A) 2. Maximum power condition (27.5kw):Lpmax≤55db(A)	102882 57-1#	Pass	Location 1
2.			SUN2000-17K -MB0: 1. Typical working conditions (17.0kw): Lpmax≤45db(A) 2. Maximum power condition (18.7kw):Lpmax≤50db(A)	102882 57-2#	Pass	Location 1
3.	Simulated solar radiation at ground level	IEC60068-2-5	+45℃, 1090 W/m ² (Procedure Sa 1),24h cycle, 8h irradiation and 16h darkness, 3 cycles in total.	102905 28-1#	Pass	Location 1

2.2 Test Instruments

Table 2 List of test instruments

Test Instrument	Model	Manufacturer	Asset Number	Calibration Date	Calibration Interval (month)
Solar radiation chamber	DDA-12600-P20B85-T-W-1	Douwin	A201210528 8	2022-08-31	12
DG-C002 Semi-anechoic chamber	7.2m*6.6m*5.2 m	BSWA TECH	A171228146	2023-04-10	12
MF04 M386-05	MF04 M386-05	Mueller-BBM	A110619907	2023-04-10	12
Acoustic sensor	MPA201	BSWA TECH	A161217152	2022-12-31	12
Acoustic sensor	MPA201	BSWA TECH	A161217150	2022-12-31	12
Acoustic sensor	MPA201	BSWA TECH	A161217153	2022-12-31	12
Acoustic sensor	MPA201	BSWA TECH	A161217149	2022-12-31	12
Acoustic sensor	MPA201	BSWA TECH	A121112375	2022-12-31	12
Tape measure	5.5m	RUBICON	JL2205011	2022-05-09	12

2.3 Auxiliary Equipments

Table 3 List of test auxiliary instruments

Name	Model	Manufacturer	Asset Number	Calibration Date	Calibration Interval (month)
PV power supply	IT6018CW-1500-40	ITECH	A2112170549	2022-11-18	12
DC power supply	IT6018CW-1500-40	ITECH	A2112101000	2022-11-18	12

3 Product Specification

3.1 Main Product Specification

Table 4 Main product specification

Sample No.	10288257-1#,10288257-2#,10290528-1#
Rated Input Voltage	600V d.c.
Rated Power	SUN2000-12K-MB0: 12kw SUN2000-15K -MB0: 15kw SUN2000-17K -MB0: 17kw SUN2000-20K -MB0: 20kw SUN2000-25K -MB0: 25kw SUN2000-15K -MB0-ZH: 15kw SUN2000-17K -MB0-ZH: 17kw SUN2000-20K -MB0-ZH: 20Kw SUN2000-25K-MB0-ZH: 25kw
Dimensions of the Sample	546.0mm (W) x 460.0mm (D) x 228.0mm (H)
Weight of the Sample	21.0kg
Sample Assembly Level	Frame
Quantity of the Sample	3 sets

3.2 Product Configuration and Test Setup

3.2.1 Product Configuration

The hardware of different models is the same. The difference lies in the software current limiting point and output power. The SUN2000-25KTL-MB0 series is the European inverter model, and the SUN2000-25KTL-MB0-ZH series is the China inverter model.

Table 5 Comparison table of test model and sample number

Test item	Test model	Sample No.
Simulated Solar Radiation at Ground Level	SUN2000-25K -MB0	10290528-1#
Acoustic Test	SUN2000-25K -MB0	10288257-1#
Acoustic Test	SUN2000-17K -MB0	10288257-2#

型号 Model: SUN2000-12K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入额定电流 I_{sc}: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage:
220/230 V a.c., 230/240 V a.c., 240/241.5 V a.c.; 3(N)~+~⊕
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 12 kW
额定视在功率 a.c. Output Rated Apparent Power: 12 kVA
最大视在功率 a.c. Max. Output Apparent Power: 13.2 kVA
额定输出电流 a.c. Output Rated Current:
18.2 A(380 V a.c.)/17.3 A(400 V a.c.)/16.7 A(415 V a.c.)
最大输出电流 a.c. Max. Output Current:
20.2 A(380 V a.c.)/19.1 A(400 V a.c.)/18.5 A(415 V a.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 ~ +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电磁故障保护 AFCI: TYPE I

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华为数字能源技术有限公司 中国制造
Huawei Digital Power Technologies Co., Ltd. MADE IN CHINA
Huawei Digital Power Antuoshan Headquarters, Shenzhen 518043, P.R.C.

型号 Model: SUN2000-15K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入额定电流 I_{sc}: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage:
220/230 V a.c., 230/240 V a.c., 240 V/415 V a.c.; 3(N)~+~⊕
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 15 kW
额定视在功率 a.c. Output Rated Apparent Power: 15 kVA
最大视在功率 a.c. Max. Output Apparent Power: 16.5 kVA
额定输出电流 a.c. Output Rated Current:
22.8 A(380 V a.c.)/21.7 A(400 V a.c.)/20.9 A(415 V a.c.)
最大输出电流 a.c. Max. Output Current:
25.2 A(380 V a.c.)/23.9 A(400 V a.c.)/23.1 A(415 V a.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 ~ +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电磁故障保护 AFCI: TYPE I

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Huawei Digital Power Technologies Co., Ltd. MADE IN CHINA
Huawei Digital Power Antuoshan Headquarters, Shenzhen 518043, P.R.C.

型号 Model: SUN2000-17K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入额定电流 I_{sc}: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage:
220/230 V a.c., 230/240 V a.c., 240/415 V a.c.; 3(N)~+~⊕
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 17 kW
额定视在功率 a.c. Output Rated Apparent Power: 17 kVA
最大视在功率 a.c. Max. Output Apparent Power: 18.7 kVA
额定输出电流 a.c. Output Rated Current:
25.8 A(380 V a.c.)/24.5 A(400 V a.c.)/23.7 A(415 V a.c.)
最大输出电流 a.c. Max. Output Current:
28.8 A(380 V a.c.)/27.1 A(400 V a.c.)/26.1 A(415 V a.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 ~ +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电磁故障保护 AFCI: TYPE I

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Huawei Digital Power Antuoshan Headquarters, Shenzhen 518043, P.R.C.

a) SUN2000-12K-MB0

型号 Model: SUN2000-20K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c., 240/415 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 20 kW
额定视在功率 a.c. Output Rated Apparent Power: 20 kVA
最大视在功率 a.c. Max. Output Apparent Power: 22 kVA
额定输出电流 a.c. Output Rated Current: 30.4 A(380 Va.c.)/28.9 A(400 Va.c.)/27.8 A(415 Va.c.)
最大输出电流 a.c. Max. Output Current: 33.8 A(380 Va.c.)/31.9 A(400 Va.c.)/30.8 A(415 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

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b) SUN2000-15K-MB0

型号 Model: SUN2000-25K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c., 240/415 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 25 kW
额定视在功率 a.c. Output Rated Apparent Power: 25 kVA
最大视在功率 a.c. Max. Output Apparent Power: 27.5 kVA
额定输出电流 a.c. Output Rated Current: 38.0 A(380 Va.c.)/36.1 A(400 Va.c.)/34.6 A(415 Va.c.)
最大输出电流 a.c. Max. Output Current: 42.0 A(380 Va.c.)/39.9 A(400 Va.c.)/38.5 A(415 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

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c) SUN2000-17K-MB0

型号 Model: SUN2000-17K-MB0-ZH
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 17 kW
额定视在功率 a.c. Output Rated Apparent Power: 17 kVA
最大视在功率 a.c. Max. Output Apparent Power: 18.7 kVA
额定输出电流 a.c. Output Rated Current: 28.8 A(380 Va.c.)/27.2 A(400 Va.c.)
最大输出电流 a.c. Max. Output Current: 28.8 A(380 Va.c.)/27.1 A(400 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

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d) SUN2000-20K-MB0

型号 Model: SUN2000-20K-MB0-ZH
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 20 kW
额定视在功率 a.c. Output Rated Apparent Power: 20 kVA
最大视在功率 a.c. Max. Output Apparent Power: 22 kVA
额定输出电流 a.c. Output Rated Current: 30.4 A(380 Va.c.)/28.9 A(400 Va.c.)
最大输出电流 a.c. Max. Output Current: 33.8 A(380 Va.c.)/31.9 A(400 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

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e) SUN2000-25K-MB0

型号 Model: SUN2000-25K-MB0-ZH
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 25 kW
额定视在功率 a.c. Output Rated Apparent Power: 25 kVA
最大视在功率 a.c. Max. Output Apparent Power: 27.5 kVA
额定输出电流 a.c. Output Rated Current: 38.0 A(380 Va.c.)/36.1 A(400 Va.c.)
最大输出电流 a.c. Max. Output Current: 42.0 A(380 Va.c.)/39.9 A(400 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

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f) SUN2000-17K-MB0-ZH

型号 Model: SUN2000-15K-MB0-ZH
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 15 kW
额定视在功率 a.c. Output Rated Apparent Power: 15 kVA
最大视在功率 a.c. Max. Output Apparent Power: 16.5 kVA
额定输出电流 a.c. Output Rated Current: 22.8 A(380 Va.c.)/21.7 A(400 Va.c.)
最大输出电流 a.c. Max. Output Current: 25.2 A(380 Va.c.)/23.9 A(400 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

合格证 QC PASS

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g) SUN2000-20K-MB0-ZH

型号 Model: SUN2000-20K-MB0-ZH
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 20 kW
额定视在功率 a.c. Output Rated Apparent Power: 20 kVA
最大视在功率 a.c. Max. Output Apparent Power: 22 kVA
额定输出电流 a.c. Output Rated Current: 30.4 A(380 Va.c.)/28.9 A(400 Va.c.)
最大输出电流 a.c. Max. Output Current: 33.8 A(380 Va.c.)/31.9 A(400 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

合格证 QC PASS

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h) SUN2000-25K-MB0-ZH
Figure 1. EUT Nameplate



Figure 2. EUT Appearance

i) SUN2000-15K-MB0-ZH

型号 Model: SUN2000-15K-MB0-ZH
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage: 220/380 Va.c., 230/400 Va.c.; 3(N)~+@
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 15 kW
额定视在功率 a.c. Output Rated Apparent Power: 15 kVA
最大视在功率 a.c. Max. Output Apparent Power: 16.5 kVA
额定输出电流 a.c. Output Rated Current: 22.8 A(380 Va.c.)/21.7 A(400 Va.c.)
最大输出电流 a.c. Max. Output Current: 25.2 A(380 Va.c.)/23.9 A(400 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: -25 - +60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-Ion
防护等级 Enclosure: IP66
保护等级 Protection Class: I
电涌故障保护 AFCI: TYPE I

合格证 QC PASS

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3.2.2 Test Setup

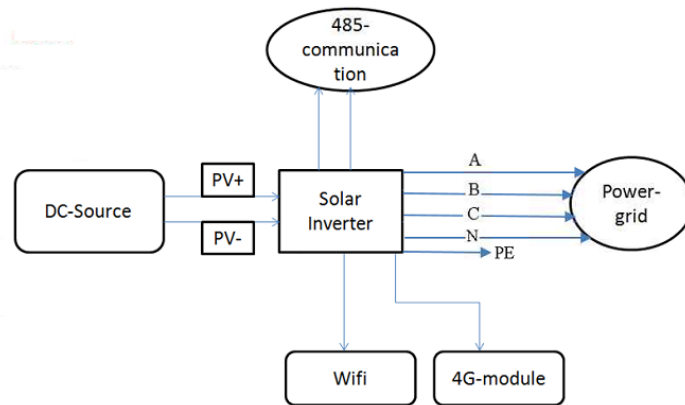


Figure 3. Test setup

3.2.3 Board List

Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list, but not means all the functional boards listed below shall be installed in one unit .

Table 6 Board list

Board Name	Hardware Version	Description	Quantity
ENDAPWRE	VER.C	Power board	1
END2CTLE	VER.A	Control board	1
END1AUPZ	VER.B	AC auxiliary power supply board	1

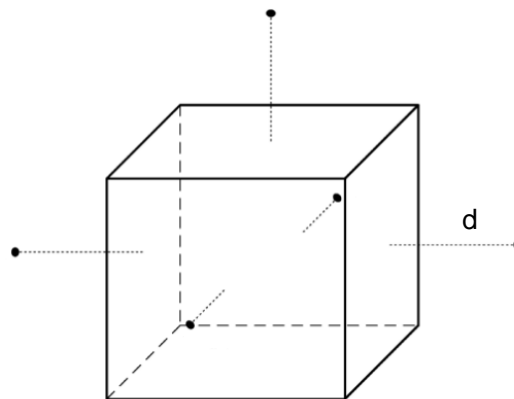
4 Detailed Test Data

4.1 Acoustic Test

4.1.1 Test Procedure

- 1) Put the sample in the center of the hemi-anechoic room.
- 2) The locations of microphones are lay as the following figure.
- 3) Measure the background noise.
- 4) Power on the EUT, then adjust fan speed.
- 5) Record the data of the measurement points, and then calculate the sound power level.

$d=1m$



The locations of microphones(5 points)

4.1.2 Detailed Test Data

- 1) Sound pressure level produced by equipment while the rotational speed of air moving devices within the equipment under test be set to the speed that the devices would run at rated power.

Table 7 Detailed test data of acoustic test (SUN2000-25K -MB0)

Test Item	Measurement Point	Sound Pressure Level (dB(A))			
Output power		25.0kw	27.5 kw		
Input voltage		600V	530V	600V	800V
Step 0	1	40.9	42.5	40.9	44.5
	2	38.7	40.9	39.2	41.1
	3	33.5	34.6	32.3	37.0
	4	38.9	39.0	36.4	42.7
	5	38.7	39.5	37.4	41.6
Background noise		20.0dB(A)	20.0dB(A)	20.0dB(A)	20.0dB(A)
Max A-weighted sound pressure level		40.9 dB(A)	42.5 dB(A)	40.9 dB(A)	44.5dB(A)
Qualification criterion		≤50dB(A)	≤55dB(A)	≤55dB(A)	≤55dB(A)

Table 8 Detailed test data of acoustic test (SUN2000-17K -MB0)

Test Item	Measurement Point	Sound Pressure Level (dB(A))			
Output power		17.0kw	18.7 kw		
Input voltage		600V	440V	600V	800V
Step 0	1	32.0	35.7	33.9	35.8
	2	30.5	35.0	34.3	35.0
	3	26.8	28.0	27.5	28.1

	4	30.1	33.1	30.8	32.8
	5	28.8	33.2	29.8	33.1
Background noise		20.0dB(A)	20.0dB(A)	20.0dB(A)	20.0dB(A)
Max A-weighted sound pressure level		32.0 dB(A)	35.7 dB(A)	33.9 dB(A)	35.8 dB(A)
Qualification criterion		≤45dB(A)	≤50dB(A)	≤50dB(A)	≤50dB(A)

4.2 Simulated Solar Radiation at Ground Level

4.2.1 Test Procedure and Test Curve

- 1) Before test, check the mechanical and electronic performance.
- 2) Turn off the power of the EUT and put it in the middle of the chamber.
- 3) Turn on the power of the EUT, increase the solar to 1090W/m² and keep the irradiation the for 8h. The temperature within the chamber shall start to rise 2 h before the irradiation, rises to +45°C at the rate of 1°C/min. keep the chamber at +45°C.
- 4) Check the electric performance during the +45°C, 1090W/m² test condition.
- 5) When the irradiation time reaches 8h, turn off the solar and decrease the temperature to +25°C at a rate of 1°C/min. keep at +25°C until the EUT is exposed to 16 darkness in one cycle.
- 6) Repeat steps 3) to 5), twice.
- 7) Check the mechanical and electronic performance.

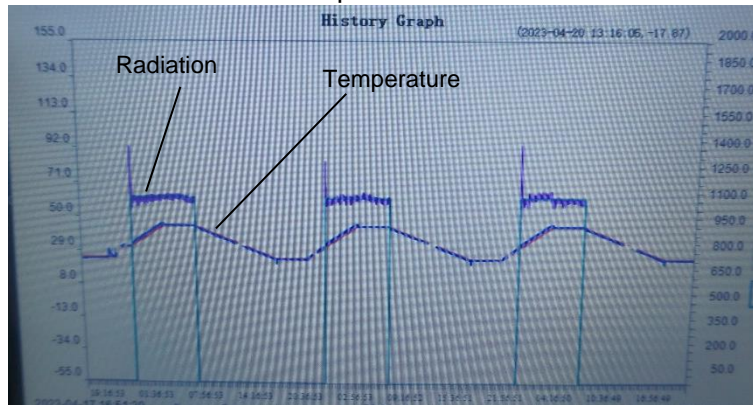


Figure 4. Test curve of simulated solar radiation at ground level

4.2.2 Detailed Test Data

Table 9 Detailed test data of simulated solar radiation at ground level

SN	Check Item	Check Sub-item	Qualification Criterion	Initial Measurement Result	Intermediate Measurement Result	Final Measurement Result
1	Mechanical performance	Connectors	Not broken	Not broken	Not broken	Not broken
		surfaces	No nick	No nick	No nick	No nick
		Components	No distortion or damage	No distortion or damage	No distortion or damage	No distortion or damage
2	Electrical performance	Device maintenance	All boards can be loaded with software and be maintained successfully	All boards can be loaded with software and be maintained successfully	All boards can be loaded with software and be maintained successfully	All boards can be loaded with software and be maintained successfully

5 Test Photos

5.1 Climatic Test Photos



Figure 5. Photograph of EUT appearance



Figure 6. Photograph of test configure



Figure 7. Photograph of test connection

5.2 Acoustic Test Photos

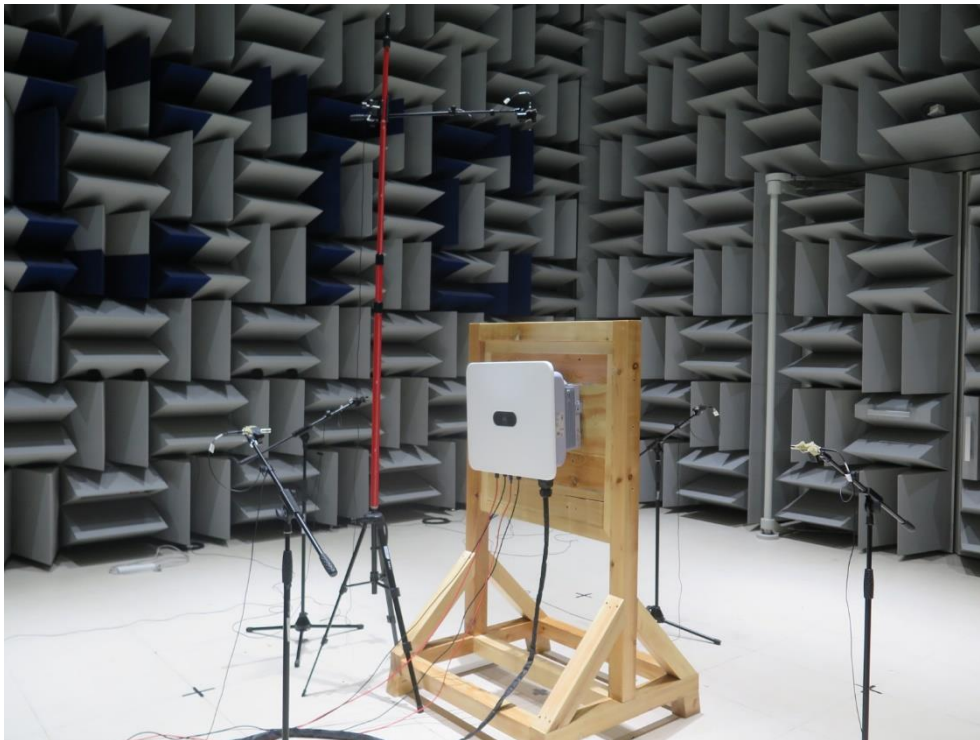


Figure 8. Photograph of Acoustic test

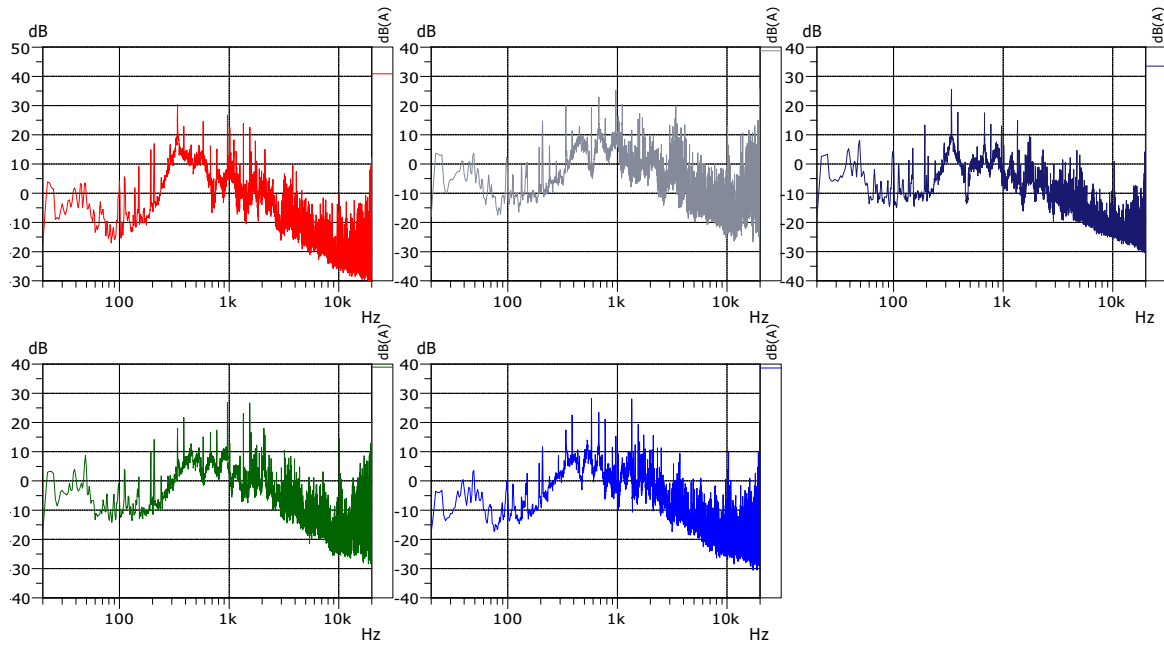


Figure 9. Acoustic spectra graph(25.0kw)

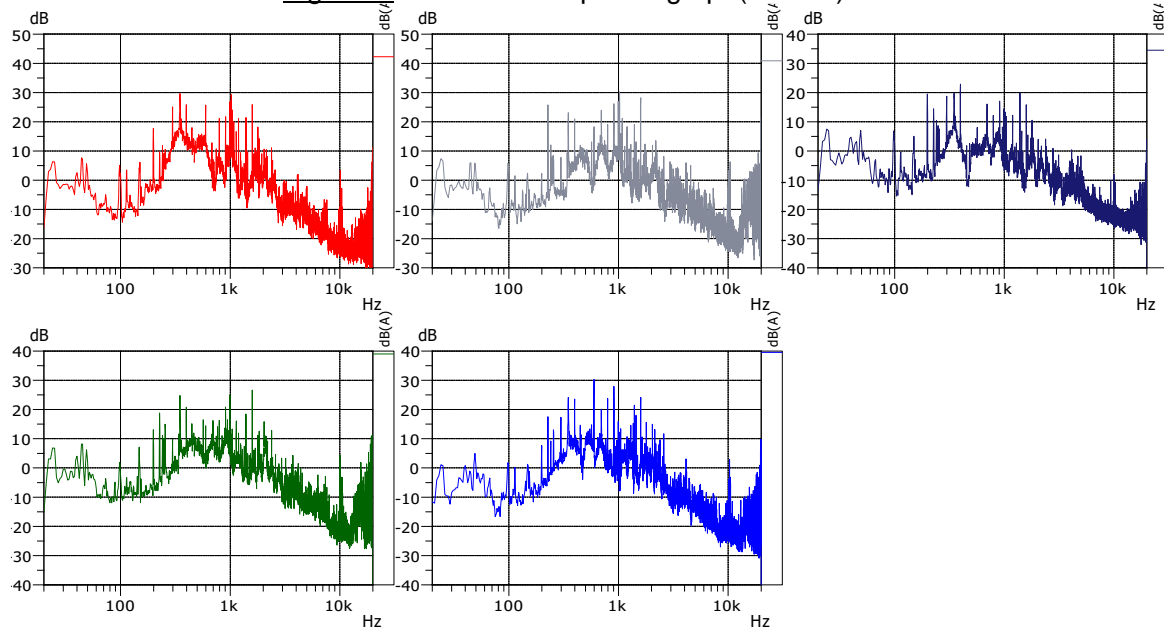


Figure 10. Acoustic spectra graph(27.5kw,530V)

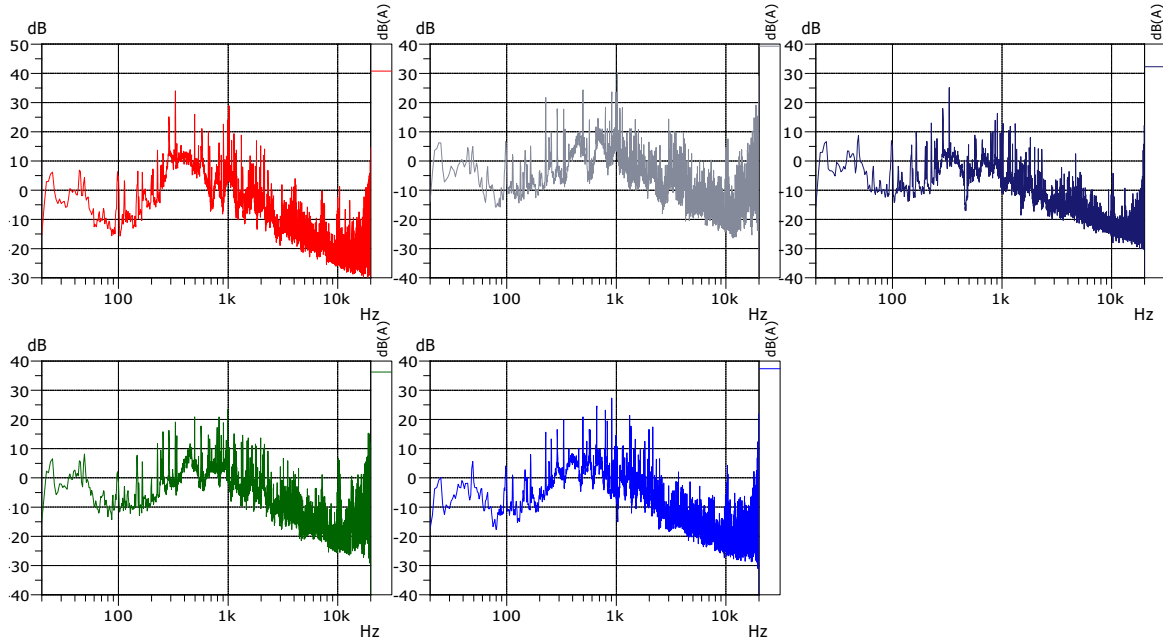


Figure 11. Acoustic spectra graph(27.5kw,600V)

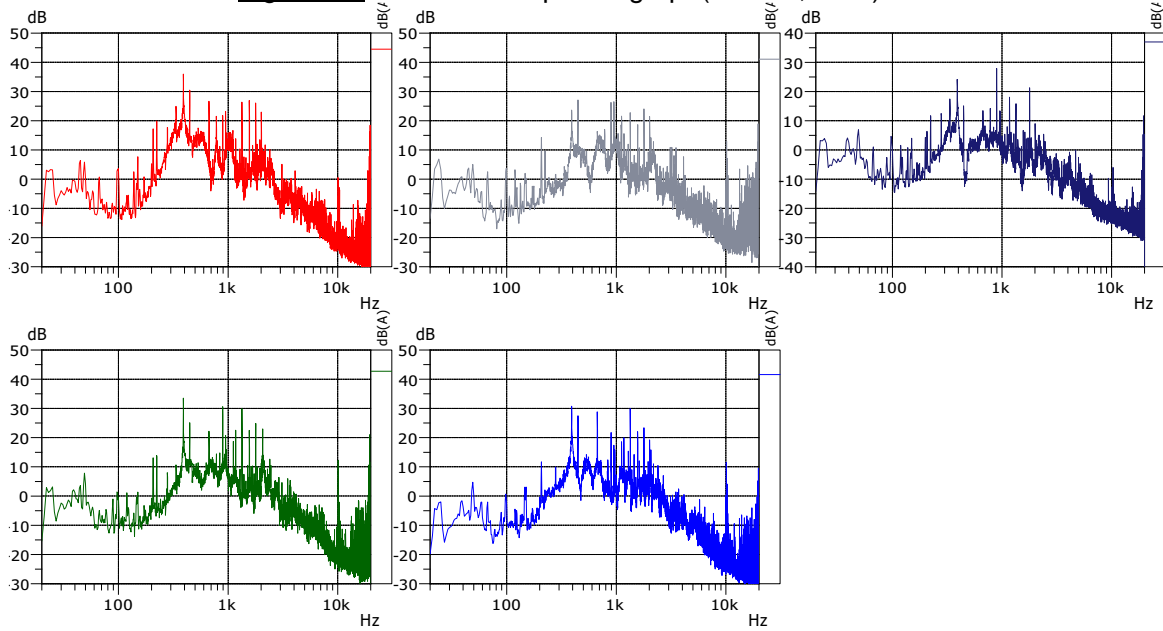


Figure 12. Acoustic spectra graph(27.5kw,800V)

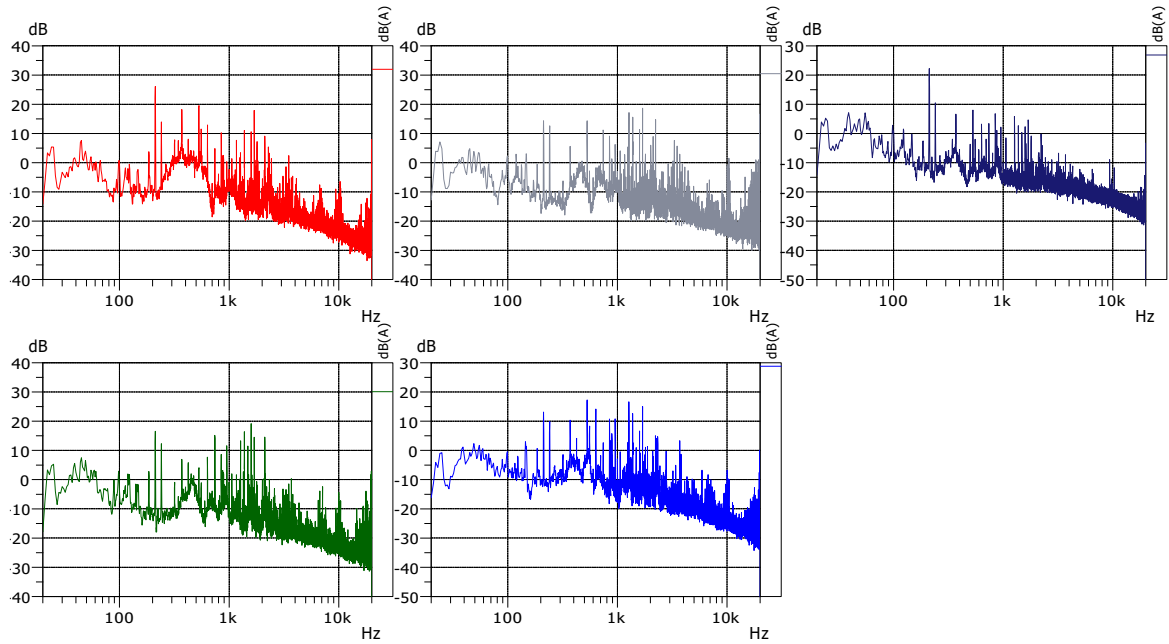


Figure 13. Acoustic spectra graph(17.0kw)

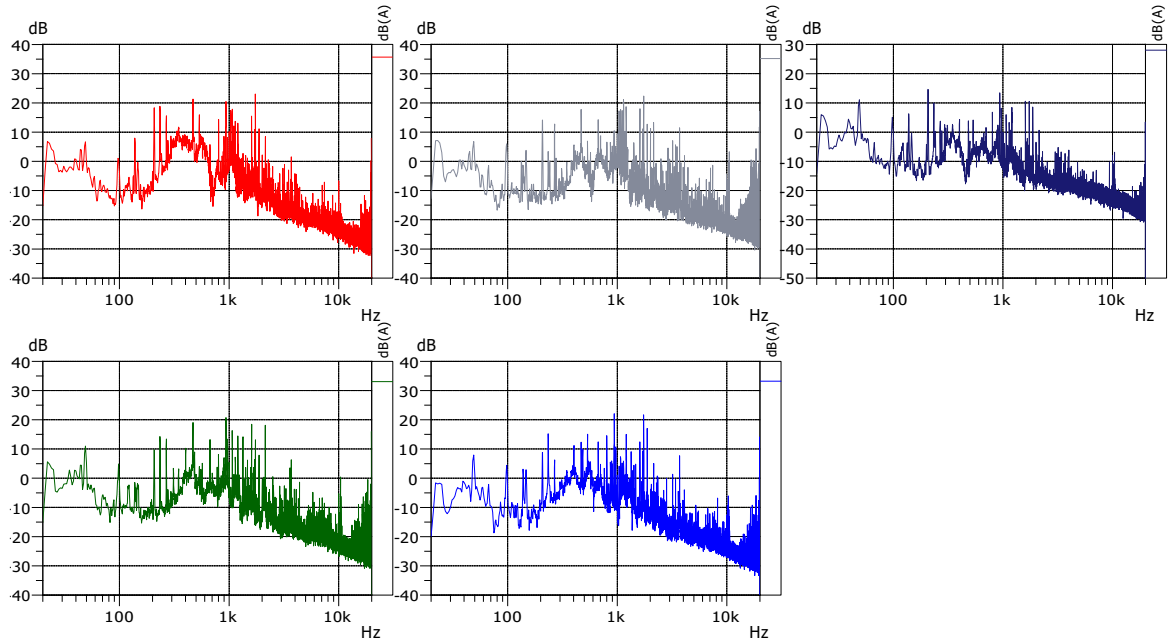


Figure 14. Acoustic spectra graph(18.7kw,440V)

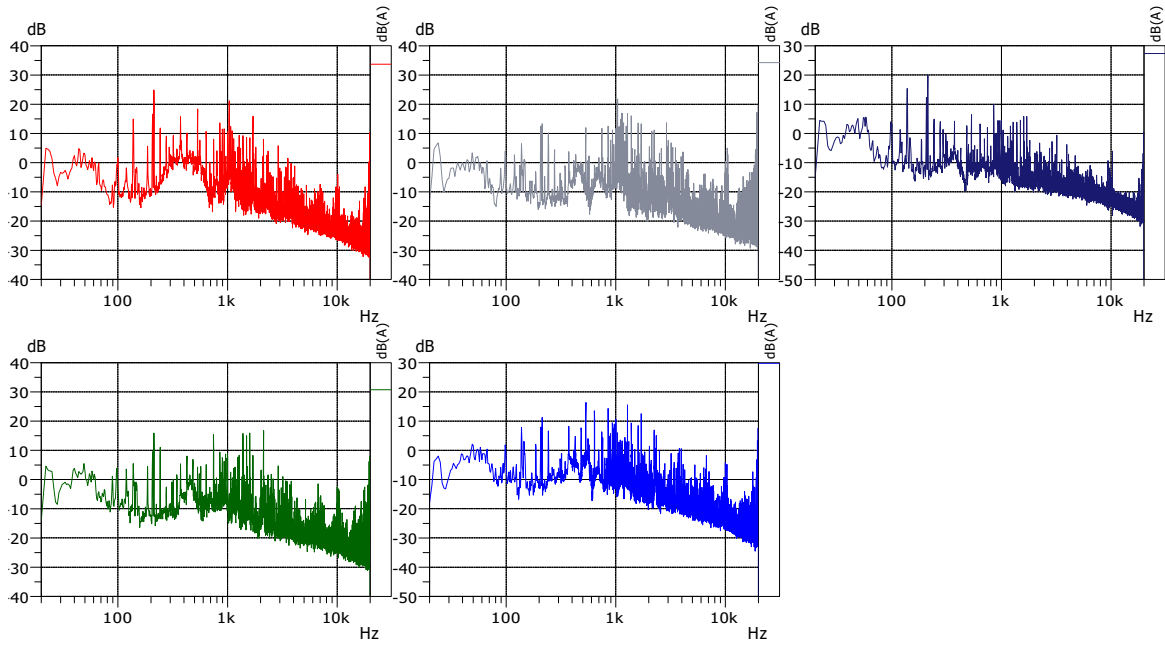


Figure 15. Acoustic spectra graph(18.7kw,600V)

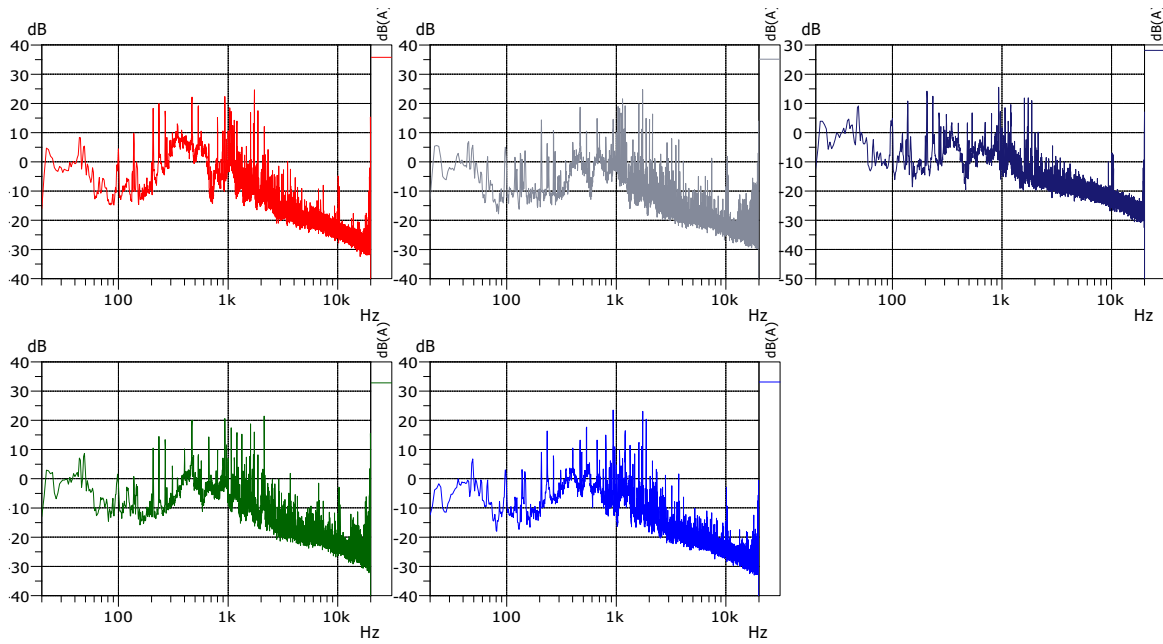


Figure 16. Acoustic spectra graph(18.7kw,800V)

Appendix Abbreviations

Abbreviation	Full Name
EUT	equipment under test

Measurement results note:

Related Expanded Uncertainty of Acoustic :U=1.0 dB, k =2.

Acoustic test decision rule: The measured value plus 1dB does not exceed the limit specified by the standard or fall within the limit specified by the standard is judged as conforming.

END