

CERTIFICATE

Issued to:

Applicant:

Ningbo Shihe New Energy Technology Co., Ltd.
NO.528, Xinsheng RD., West Industrial Area, Xinqu
Town, Cixi City,
315322 Ningbo Zhejiang, China

Licensee:

Ningbo Shihe New Energy Technology Co., Ltd.
NO.528, Xinsheng RD., West Industrial Area, Xinqu
Town, Cixi City,
315322 Ningbo Zhejiang, China

Product : Junction boxes for photovoltaic modules
Trade name(s) : SHIHE TEC
Type(s)/model(s) : PV-F35

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:

- a type test according to the standard(s) IEC 62790:2020 and EN IEC 62790:2020
- an inspection of the factory location according to CENELEC Operational Document CIG 021
- a DEKRA certification agreement with the number 6062204

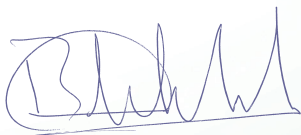
DEKRA hereby grants the right to use the DEKRA Seal certification mark.

The DEKRA Seal certification mark may be applied to the product as specified in this certificate for the duration and under the conditions of the DEKRA Seal certification agreement.

This certificate is issued on 28 October 2022 and expires at the latest on 25 October 2027.

Certificate number: 31-125925

DEKRA Certification B.V.



B.T.M. Holtus
Managing Director



H.R.M. Barends
Certification Manager

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SPECIFICATION OF THE CERTIFIED PRODUCT**Product data**

Product	: Junction boxes for photovoltaic modules
Trade name(s)	: SHIHE TEC
Type(s)/model(s)	: PV-F35
Rated Voltage	: 1500 Vdc
Rated Current	: 35 A
Reverse Current	: 41 A
Application Class	: Class A
Protection Class	: Class II
Protection Degree	: IP65/IP68(1 m, 1 h)
Ambient Temperature	: -40 °C to +85 °C

TESTS**Test requirements**

IEC 62790:2020
EN IEC 62790:2020

Test result

The test results are laid down in DEKRA test file 614401000.

Additional information

The list of components is laid down in test report 6144010.50.

Conclusion

The examination proved that all requirements were met.

Factory location

Ningbo Shihe New Energy Technology Co., Ltd.
NO.528, Xinsheng RD., West Industrial Area, Xinpu Town, Cixi City,
315322 Ningbo Zhejiang, China

Unique Identifier



Test specification: IEC 62790:2020; EN IEC 62790:2020

Our Reference 6144010.50

Appendix No. 1.0

License Holder	Ningbo Shihe New Energy Technology Co., Ltd.
(full address)	NO.528, Xincheng RD., West Industrial Area, Xinpu Town, Cixi City, 315322 Ningbo Zhejiang, China
Production Factory 1	Ningbo Shihe New Energy Technology Co., Ltd.
(full address)	NO.528, Xincheng RD., West Industrial Area, Xinpu Town, Cixi City, 315322 Ningbo Zhejiang, China
Type of Product	Junction box for photovoltaic modules
Trademark	SHIHE TEC
Type Name or Model No.....	PV-F35
Rated Voltage.....	1500 Vdc
Rated impulse voltage	16 kV
Max. working (module) Voltage	100 Vdc
Rated Current.....	35 A
Reverse Current.....	41 A
Standard	IEC 62790:2020; EN IEC 62790:2020
Application class.....	Class A
Pollution degree	1 (inside of the junction box's enclosure, after potting)
Over voltage category	I/II/III/IV
Lower ambient temperature	-40 °C
Upper ambient temperature.....	85 °C



Test specification: IEC 62790:2020; EN IEC 62790:2020

Our Reference 6144010.50

Appendix No. 1.0

RTI housing material	110 °C	
Flammability class	5VB	
Termination and connection	Crimped-type terminals for external flexible PV Cable; Soldered-type terminals for internal connection with bypass diode; Soldered-type terminals for internal connection with PV Ribbon.	
Cable diameter	5,8 mm - 6,0 mm	
Rated torque for cable gland	N/A	
Wire cross section area or cross section range	1 x 4,0 mm ²	
Degree of protection	IP65/IP68(1 m, 1 h)	
Rewire able	Yes/ No	
Adhesive and sealing compound of junction box/ Back sheet of PV-module	Type of adhesive and sealing compound	Type of Back sheet
	TS1527, manufactured by Beijing Tonsan New Materials and Technology Co., Ltd.	Fluorine resin (FFC-JW30(plus)), manufactured by Jollywood(Suzhou) Sunwatt Co.,Ltd.
	HT906Z, manufactured by Shanghai Huitian New Chemical Material Co., Ltd.	Fluorine resin (Cynagard 255), manufactured by Cybrid Technologies Inc.
		Fluorocarbon resin coating (PV308C), manufactured by Changzhou Huitian New Material Co., Ltd.
Fluorocarbon resin coating (PV308C-T), manufactured by Changzhou Huitian New Material Co., Ltd.		
Potting material	Type of potting material	Type of Junction Box
	5299W-S, manufactured by Shanghai Huitian New Chemical Material Co., Ltd.	PV-F35
Bypass-Diode	Type name	SH50M45
	Number	1 for each box, total 3 diodes
	Manufacturer	Ningbo Shihe New Energy Technology Co., Ltd. (OEM: NANTONG HORNBY ELECTRONIC CO.,LTD)
	Chip dimension/data	Side : 180 mil x 180 mil x 2 I _f = 50 A; V _{RRM} = 45 V; T _j = 200 °C
	Box type	PV-F35

Test specification: IEC 62790:2020; EN IEC 62790:2020

Our Reference 6144010.50

Appendix No. 1.0

	Rated current of Box	35 A
(Optional) Accessories	N/A	

List of Critical Components

Ref.	Object	Manufacturer / trademark	Type / model	Technical data / ratings	Certificates (if applicable)
1.0	Material of Box Body	SABIC JAPAN L L C	PPE+PS, PX9406P	UL94V-0, 5VA; RTI = 110 °C	UL E207780
2.0	Material of Box Lid	SABIC JAPAN L L C	PPE+PS, PX9406P	UL94V-0, 5VA; RTI = 110 °C	UL E207780
3.0	Material of Fixing Cable	SABIC JAPAN L L C	PPE+PS, PX9406P	14,5 mm x 14,8 mm; R 3,15 mm	UL E207780
4.0	Carry Current Part	Ningbo Jintian Copper Group Co., Ltd .	Copper, H62	Tin-plated	//
5.0	Soldering Material	ZHEJIANG QL GHOLDINGS Co.,LTD	Sn63/Pb37	Soldering temperature: 186 °C	//
6.0	PV Cable	Ningbo Shihe New Energy Technology Co., Ltd.	62930 IEC 131 1x4 mm ²	1 x 4,0 mm ²	TUV SUD: B 090781 0013 Rev. 00
7.0	Connector	BYD (Guangdong) Energy-saving Technology Co.,Ltd	BYD-L01	Rated voltage:1500 Vdc; Rated current: 30 A	TUV SUD: B 107024 0002 Rev. 00
		Ningbo Shihe New Energy Technology Co., Ltd.	DJ2011-4X	Rated voltage:1500 Vdc; Rated current: 45 A	TUV SUD: B 090781 0008 Rev. 01
		Ningbo Shihe New Energy Technology Co., Ltd.	DJ2011-4X	Rated voltage:1500 Vdc; Rated current: 41 A	DEKRA: 31-124156
Remark: N/A					