

Dragonfly

A “Roof-Agnostic” Solution for C&I Solar

Dragonfly brings installation steps to the fab (“I2F”)

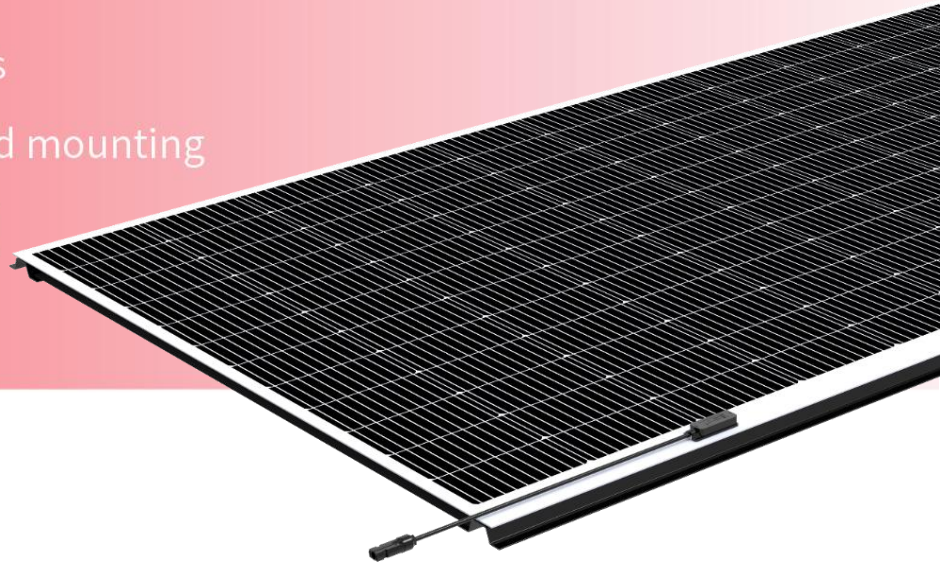
Introducing Dragonfly

A new innovation platform based on the SMF Series

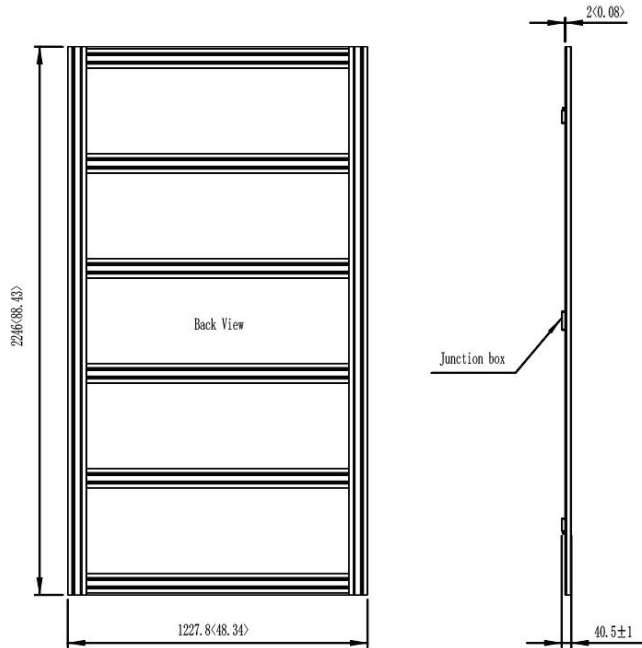
520W high-efficiency PV module with pre-integrated mounting

Bringing installation steps to the fab (“I2F”)

saving on-site time and costs.



Dimensions



Electrical Characteristics

STC	SMH520J-12X12UW
Maximum Power (P_{max})	520
Maximum Power Voltage (V_{mp})	42.3
Maximum Power Current (I_{mp})	12.31
Open-circuit Voltage (V_{oc})	49.5
Short-circuit Current (I_{sc})	13.56
Module Efficiency (%)	19.3
Operating Temperature	-40 °C to 85 °C
Maximum System Voltage	1500 V DC (IEC)
Maximum Series Fuse Rating	25 A
Application Class	Class A
Power Tolerance	0/+5 W
Product Dimensions	2246×1227.8×40.5 mm
Weight	4.1kg/m ²



Ultra-light

Weights 4.1kg/m².

60% lighter than equivalent conventional glass modules.



Wide range of applications

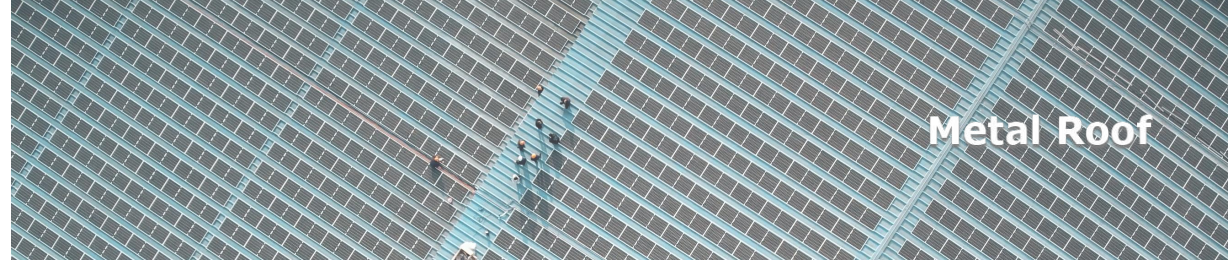
Supports **all types** of installation methods including Quick-bonding and removable mechanical mounting.



Effortless installation

Module comes pre-integrated with mounting hardware and bracket. **Saving 40%** of installation time.

“Roof” Agnostic
C&I PV solution



Mechanical Installation For Metal and Flat Roof Applications



① Mark the Roof



② Apply glue to the base



③ Glue the base to the roof



④ Slide the mounts into the brackets and screw the mount onto the base.



⑤ Complete the installation

Quick-bonding Installation For Flat Roof Applications



① Mark the Roof



② Apply glue to the short side of the mounting structure

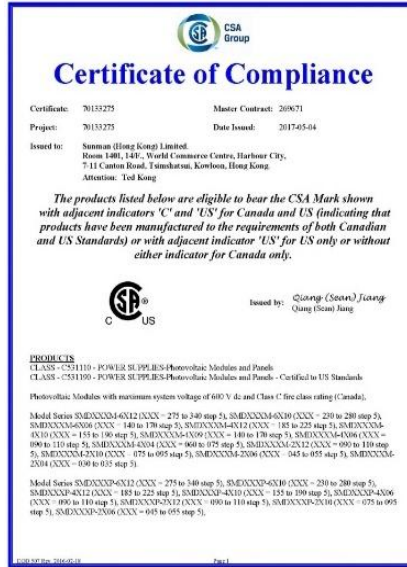


③ Lay the module flat



④ Complete the installation

Full Set of Certification



Dragonfly has obtained the latest IEC 61215 and 61730, UL61730 and CGC certification.

Additional Reliability Testing

VDE RENEWABLES

Test Report

Client (客户): Sunwin (Zhenjiang) Co., Ltd.
 上海(镇江)新能源科技有限公司

Trade Mark: **SUNMAN**

Address (地址): No. 1, Hengjiang Road, Hengjiang Town, Yangzhong City 212218 Zhenjiang Jiangsu China.
 中国江苏省扬州市江都区恒兴镇恒江路1号

General Description (描述概述):

1. The Lab Test Report includes the following parts (除报告包含以下内容外):
 Part A: General Information. Part B: Lab Test and Appendix(A)的副本和图。 部分B.实验室测试和附录(A)。
2. Part A: General information includes the testing location, information of manufacturer and sample.
 (除基本信息外还包括: 测试地点, 制造商样品信息)
3. Part B: Lab test includes following test part (实验室测试包含以下测试):
 - Visual inspection (目视检查)
 - Maximum Power determination under STC (STC条件下最大功率测试)
 - Electromechanical test at the field test (现场电磁测试)
 - Static mechanical test (静态力学测试)
 - Wet leakage current test (湿态漏电测试)
 - Insulation test (绝缘测试)
4. Appendix includes the photographs of samples and list of test equipment. (附录包括样品照片及测试设备清单)
5. The terms of Lab test as per client's internal standard are followed for lab test. (按照客户内部标准进行实验室测试)

Result of lab test (测试结果):

All: Passed criteria
 AS: Passed criteria
 Lab test: Passed criteria
 Power degradation less than 5% (功率衰减小于5%)

Supplementary information (附加信息):

Pre-programming test Ref No.: 017000000114

Load Testing

SUNMAN
 新能源科技有限公司

报告编号 Report No.: 202309011

检测报告
 TEST REPORT

检测项目: 光伏组件虚焊

样品名称: DF 组件可拆卸方案底座

检测时间: 2023.09.22-2023.09.01

检测类别: 委托测试

编制: 丁晓
 审核: 张浩宇
 批准: 葛科

2023年09月01日

上海(镇江)新能源科技有限公司测试中心
 TESTING CENTER OF SUNMAN (ZHENJIANG) CO., LTD

地址: 中国江苏省扬州市江都区恒兴镇恒江路1号
 邮编: 212218
 电话: 0514-88513940

Roof adhesion Testing

SGS

检测报告
 (RoHS)
 客户名称: 上海(镇江)新能源科技有限公司
 客户地址: 中国江苏省扬州市江都区恒兴镇恒江路1号

样品名称: 光伏逆变器材料支撑件 M20
 制造商: 江苏德聚复合材料科技有限公司
 产地名称: 以上所述制造商的自有工厂。

9001 工厂编号: SHINC3300101P1L02
 检测日期: 2023年08月14日
 检测周期: 2023年08月14日 - 2023年08月21日
 检测要求: 依据客户要求

检测范围: 依据客户要求
 检测标准: 依据客户要求

检测项目: 依据客户要求
 检测方法: 依据客户要求

检测结果: 依据客户要求

结论: 依据具体的检测项目和检测, 再提交符合 SVHC 检测标准 < 0.1% (w/w), 通过

委托检测技术部(主检): 葛科
 检测员: 魏小凡
 Lab PMA 负责人: 魏小凡
 检测负责人: 魏小凡

上海(镇江)新能源科技有限公司
 TESTING CENTER OF SUNMAN (ZHENJIANG) CO., LTD

地址: 中国江苏省扬州市江都区恒兴镇恒江路1号
 邮编: 212218
 电话: 0514-88513940

RoHS & REACH Testing

VDE RENEWABLES

Test Report

Client (客户): Sunwin (Zhenjiang) Co., Ltd.
 上海(镇江)新能源科技有限公司

Trade Mark: **SUNMAN**

Address (地址): No. 1, Hengjiang Road, Hengjiang Town, Yangzhong City 212218 Zhenjiang Jiangsu China.
 中国江苏省扬州市江都区恒兴镇恒江路1号

General Description (描述概述):

1. The Lab Test Report includes the following parts (除报告包含以下内容外):
 Part A: General Information. Part B: Lab Test and Appendix(A)的副本和图。 部分B.实验室测试和附录(A)。
2. Part A: General information includes the testing location, information of manufacturer and sample.
 (除基本信息外还包括: 测试地点, 制造商样品信息)
3. Part B: Lab test includes following test part (实验室测试包含以下测试):
 - Pull Strength test (拉力测试)
4. Appendix includes the photographs of samples and list of test equipment. (附录包括样品照片及测试设备清单)
5. The terms of Lab test as per client's internal standard are followed for lab test. (按照客户内部标准进行实验室测试)

Result of lab test (测试结果):

Customized tests: Pull strength test according to customer's requirement
 The specified criteria for above test has not been defined by any current national/international standards, partial criteria has been set to min. 5.25 kN pull strength for the customized test sequence.
 (定制测试: 根据客户要求进行的拉力测试。 测试标准没有定义任何国家/国际标准, 定制测试序列中的部分标准设置为至少 5.25 kN 拉力强度)

Lab test AS/A: (实验室测试按照客户要求按照客户要求)
 (除客户内部标准外还包括以下标准: 符合 AS, A2
 - Sample A: 符合 AS 和 A2 (符合 AS, A2 和 A2))

Supplementary information (附加信息):

Pre-programming test Ref No.: 017000000114

Module pulling force Testing

SUNMAN
 新能源科技有限公司

报告编号 Report No.: 20230903030

检测报告
 TEST REPORT

检测项目: 排水测试

样品名称: DM220*12*120W 组件

检测时间: 2023.09.21-2023.10.08

检测类别: 委托测试

编制: 张浩宇
 审核: 张浩宇
 批准: 何叶叶

2023年09月21日

上海(镇江)新能源科技有限公司测试中心
 TESTING CENTER OF SUNMAN (ZHENJIANG) CO., LTD

地址: 中国江苏省扬州市江都区恒兴镇恒江路1号
 邮编: 212218
 电话: 0514-88513940

Drainage Testing



Additional Reliability Testing

IEC 61701:2020
Salt mist corrosion testing of photovoltaic (PV) modules
Confirmation of test results

VDE Renewables File Ref.: 10398/ ET-20220711-121

Applicant: Sunman (Zhenjiang) Company Limited
No. 1 Mingzhu South Road, Youfang Town, Yangzhou City, 212218
Zhenjiang, Jiangsu, China

Product: Crystalline silicon Photovoltaic (PV) Modules

Type:

BE) SMPK00L-12X110W	BE) SMPK00L-12X100W	BF) SMPK00L-1200W
BG) SMPK00L-12X110W	BH) SMPK00L-1200W	BI) SMPK00L-1000W
BJ) SMPK00L-12X110W	BL) SMPK00L-1200W	BM) SMPK00L-1200W
BN) SMPK00L-12X110W	BO) SMPK00L-1200W	BP) SMPK00L-1000W
BQ) SMPK00L-12X110W	BR) SMPK00L-1000W	BS) SMPK00L-1200W
BT) SMPK00L-12X110W	BU) SMPK00L-1000W	BV) SMPK00L-1200W
BW) SMPK00L-12X110W	BX) SMPK00L-1000W	BY) SMPK00L-1200W
BZ) SMPK00L-12X110W	CA) SMPK00L-1200W	CB) SMPK00L-1000W
CC) SMPK00L-12X110W	CD) SMPK00L-1000W	CE) SMPK00L-1200W
CF) SMPK00L-12X110W	CG) SMPK00L-1000W	CH) SMPK00L-1200W
CI) SMPK00L-12X110W	CJ) SMPK00L-1000W	CK) SMPK00L-1200W
CL) SMPK00L-12X110W	CM) SMPK00L-1000W	CN) SMPK00L-1200W
CO) SMPK00L-12X110W	CP) SMPK00L-1000W	CQ) SMPK00L-1200W
CR) SMPK00L-12X110W	CS) SMPK00L-1000W	CT) SMPK00L-1200W
CU) SMPK00L-12X110W	CV) SMPK00L-1000W	CW) SMPK00L-1200W

XXX in the type replaces the power in watt, and can be any number between:
 600 – 655 for BE), BF) 645 – 645 for BE), BN) 490 – 638 for BF), BO) 380 – 545 for BE), BP) 485 – 445 for BE), BQ) 380 – 545 for BE), BR), BT), BU) 435 – 435 for BL), BS) 380 – 415 for BL), BV) 315 – 345 for BV) 200 – 275 for BN) 380 – 445 for BN) 500 – 545 for BY), CB), CD), CO), CR) 485 – 495 for BE), CE) 415 – 450 for CA), CB), CF), CG), CH), CI), CL) 330 – 360 for CO), CM) 315 – 340 for CL) 485 – 500 for CA) 145 – 185 for CL) 490 – 535 for BF) 165 – 165 for CV) 415 – 440 for CO), CV) 165 – 165 for CO), CV)

Manufacturer: Sunman (Zhenjiang) Company Limited

Standards: IEC 61701:2020, Salt mist corrosion test

Test conditions

Test method:	8
Testing time:	1440 hrs
Relative temperature:	35°C
Chamber Humidity:	95% R.H.
Mist pH level:	3.5

VDE RENEWABLES GmbH
 Am Altensteintor 20
 48756 Aachen, Germany
 info@renewables-vde.com
 www.vde.com/renewables

Location Address:
 52825 Crefeld, Germany
 Registration No. 1498 13000
 Tax Number: 25414/00120

Bank Information:
 Deutsche Bank AG
 IBAN: 2512 0510 0010 0265 0006 01
 BIC: 251205330000

Salt Mist Corrosion Testing

Test Report issued under the responsibility of **VDE**

TEST REPORT
IEC 61215-edition 2016
Terrestrial photovoltaic (PV) modules – Design qualification and type approval

Report Number: 1917N-2022-02135-1
Date of issue: 2023-09-06
Total number of pages: 178

Name of Testing Laboratory
 Issuing the Report: China Telecommunication Technology Lab

Applicant's name: Sunman (Zhenjiang) Company Limited
Address: No. 1 Mingzhu South Road, Youfang Town, Yangzhou City, 212200 Zhenjiang, Jiangsu, China

Test specification:

Standard:

<input type="checkbox"/> IEC 61915-1-3016	<input checked="" type="checkbox"/> IEC 61215-2:2016
<input type="checkbox"/> IEC 61215-1-1:2016	<input type="checkbox"/> IEC 61915-1-3:2016
<input type="checkbox"/> IEC 61915-1-3:2016	<input type="checkbox"/> IEC 61215-1-3:2016
<input type="checkbox"/> IEC 61215-1-4:2016	

Test procedure: VDE-9-2-2-2-1
Non-standard test method(s): Nil

TRF template used: IEC-61215-2:2016, IEC-61215-1-3:2016
Test Report Form No.: IEC-01/2016_05E
Test Report Form(s) Originator: TÜV SÜD Product Service GmbH

Master TRF: 937/ 66-03

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General disclaimer:
 The test results presented in this report relate only to the device tested. This report does not constitute, nor does it imply, any warranty or endorsement of the product or the manufacturer. The responsibility of this Test Report and its contents can be verified by contacting the IECZ responsible for the Test Report.

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Hail Testing

北京鉴衡认证
 中国合格评定国家认可委员会
 TESTING
 CNAS 13687

Report Number 报告编号: CGCZ-PVT-2023-420

光伏组件检测报告
TEST REPORT

客户名称
 Customer 上海（镇江）新能源科技有限公司

客户地址
 Customer's Address 镇江市扬中市中油镇镇珠海路 1 号 附近

样品名称
 Name of Sample 太阳能组件

样品批号
 Sample批号 PVT2301418

编辑/日期
 Edited by/Date 刘永强 2023-09-19

审核/日期
 Reviewed by/Date 杨月 2023-09-19

批准/日期
 Approved by/Date 2023-09-19

北京鉴衡认证中心有限公司浙江分公司
 Beijing CGC Certification Center Co., Ltd. Zhejiang Branch

地址: 浙江省舟山市普陀区沈家门街道和泰路 1288 号阳光科技园 6 号楼 1 层 2 层
 Address: 1/F-2/F, west of Building 6, Jiang photovoltaic science and technology park, No.1288, Kanglehe Road, Gaoqiao Street, Zhushou District, Jiangsu City, Zhejiang Province, China

邮编/ Post Code: 311600 电话/电话: /Tel:0571-92798982
 网址/ Website: www.sgc.org.cn 电子邮箱/ Email: wahl@sgc.org.cn

DH Testing

SMART Smart Products Service Co., Ltd.
 1622 Deyang Mansion, No. 118 Middle Jiangdong Road
 Nanjing, Jiangsu Province, China
 ☎ +86-25-86583475
 📧 info@fire-test.com

FIRE TEST
 消防测试
 www.fire-test.com

Applicant: SUNMAN (ZHENJIANG) CO., LTD.
Address: No. 1, Mingzhu South Road, Youfang Town, Yangzhou City, Zhenjiang, Jiangsu, China

Sample: PVC cross shaped support, Material: PVC, Color: White, Type: TEPV100, Thickness: 3mm

Standard: DIN 4102-1:1998 B1 Fire behavior of building materials and elements

Testing Lab: SGS (the lab is recognized by CNAS with number 14743)

Date of issue: 2023-09-22

Test Items	Certificate ID code	Test result	Requirement of DIN 4102-1 B1
Ignitibility test DIN 4102-1 Clause 6.2.5		Fac150mm within 20s	Fast150mm within 20s
"Branchcheck" test DIN 4102-1.5 A.16	AJFS230700689RS (Customer ID code: 3516)	The minimum remaining length of burning: 210 mm The average remaining length of burning: 233mm The maximum average flame gas temperature peak: 153.4 °C	The minimum remaining length of burning: >90mm The average remaining length of burning ≤150mm The maximum average flame gas temperature peak ≤ 200°C

Conclusion: the above test results indicate to meet with the requirements of DIN 4102-1:1998 B1.

Certificate search:
 1. Click www.fire-test.com (English)
 2. Select "Search for Certification"
 a. Fill the Certificate ID Code (AJFS230700689RS) and Customer ID Code (3518)
 b. Fill the Certificate ID Code (AJFS230700689RS) and applicant name (SUNMAN (ZHENJIANG) CO., LTD.)
 3. Submit with confirmation, you may get the search information.

Smart Products Service Co., Ltd. www.fire-test.com Tel: +86-25-86583475

Fire Testing



In-field application:



Metal Roof | 6.7MW

In-field application:



Metal Roof | 1.6MW

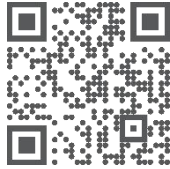
Thank You



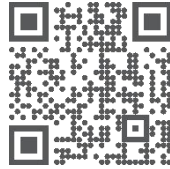
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Website



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