

26th June 2026
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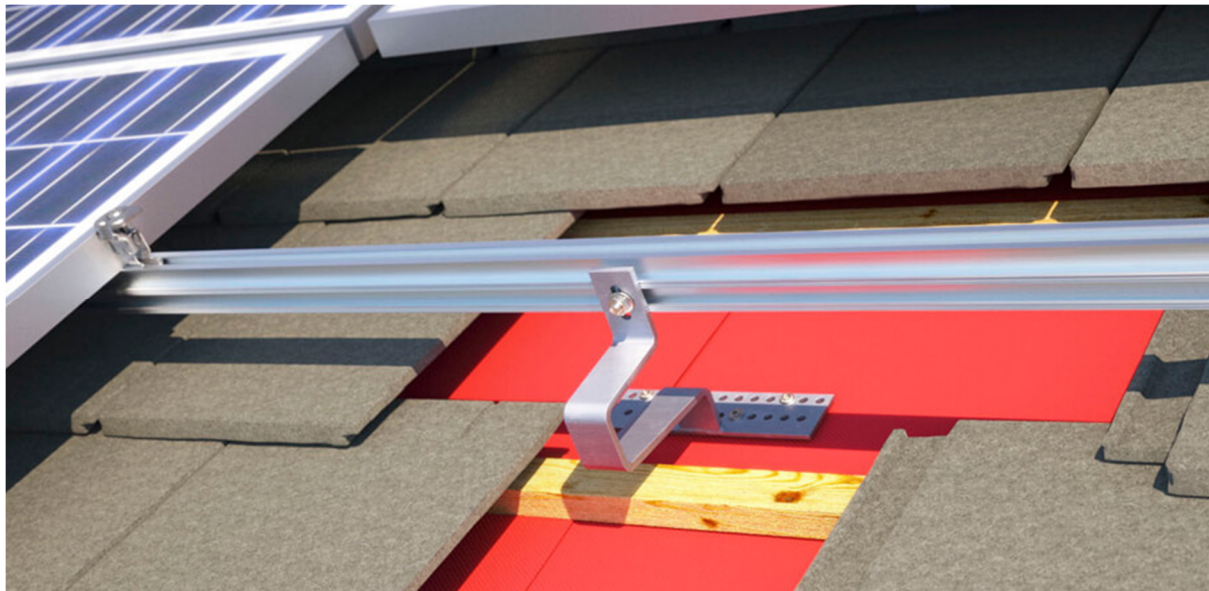
Redloft
Fifth Floor, Crystal Gate
28-30 Worship Street
London
EC2A 2AH

F.A.O: Ray Ford

Dear Ray

Solar Panel Fixing Details
Project: Colonnade House, Worthing: Capital Improvement Works

Further to recent correspondence from the Planning Authority, dated 15th June 2026, as requested by them, please find herein additional details of the solar panel array, and bracketry, proposed for installation at the above property.



Each Renusol-manufactured bracket (Model: Roof hook UK plain tiles/slates), is affixed at its base to the existing rafters, through the timber close boarding. The hooks crank around the base of the existing slates to support a longitudinal rail. The solar panels, manufactured by Trina Solar (Model: TSM-NEG9RC.27), fit directly to this rail. The general installation details are illustrated in the image above:

Baily Garner is a Limited
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Baily Garner is a trading name
of Baily Garner LLP

Registration No. OC305198

Registered office
146-148 Eltham Hill, London SE9 5DY

The project's Solar Engineer has advised that, depending on the thickness of the slates, which will mean adjusting the brackets to suit, the top face of the solar arrays will sit between 110mm and 130mm from the slate roof finish.

Regards



Jeremy Vinson BSc (Hons), Pg Dip., MRICS

For and on behalf of Baily Garner LLP

Tel: 0208 294 1000

Jeremy.Vinson@bailygarner.co.uk

Enc: Renusol Roof hook bracket datasheet.
Trina Solar panel TSM-NEG9RC.27 datasheet

Roof hook UK Plain tiles/slates (without wood screw)

Item No.	R420181
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Product properties

Dimensions	235x35x164
Dimensions base plate	35 x 55 mm
Perforations in base plate	2 x 6,5 mm
Material thickness	6,0 mm
Weight	0,730 kg
Colour	Grey mat

Application properties

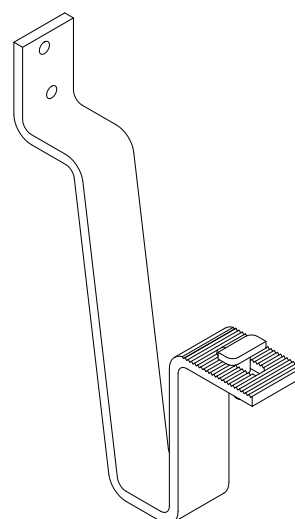
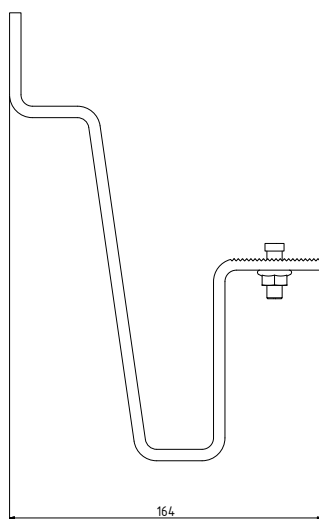
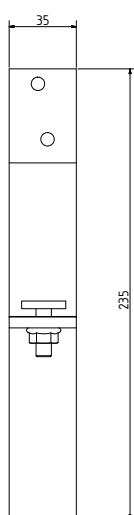
Compatible with tiles	Flat tiles UK; Slate tiles UK
Applicable to substructure material	Wood
Space for horizontal adjustment	0,0 mm
Space for vertical adjustment	21,00 mm
Article is pre-assembled	Yes
Rail orientation on roof hook	Horizontal
Compatible with product group	VarioSole SE; VS+
Additional article in set	R900001; R900007

Material

Material	Steel
Surface coating	Zinc according to ISO 1461; Category C3

Statics

Compression force limit	0,80 kN
Tension force limit	0,73 kN
Shearing force limit	0,85 kN





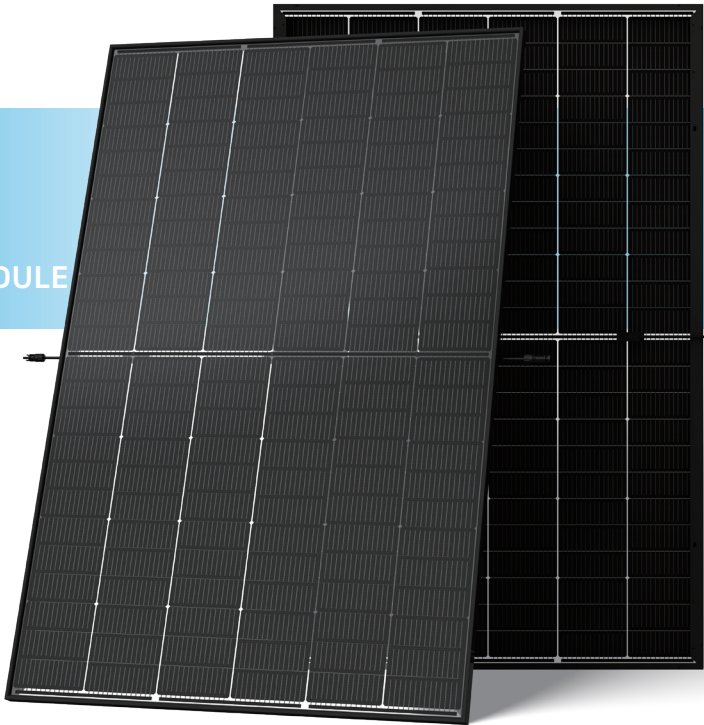
N-type i-TOPCon

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

TSM-NEG9RC.27 425-450W

450_W / MAXIMUM POWER OUTPUT

22.5% / MAXIMUM EFFICIENCY



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High Customer Value

- Clear black, designed with aesthetics in mind, suitable for residential and C&I rooftop
- Perfect size and low weight for handling and installation
- Compatible with mainstream inverters and diverse mounting systems
- Mechanical test loads up to 5400 Pa front side and 4000 Pa back side
- Certified lifetime carbon footprint assessment



High reliability with light double glass

- Less prone to micro-cracks and scratches on the back side
- Excellent fire rating, weather resistance, Sustainable in harsh environments and extreme weather conditions
- Certified resistance against salt spray, sand dust, ammonia, PID
- Up to 25 years product warranty and 30 years power warranty



High power up to 450W

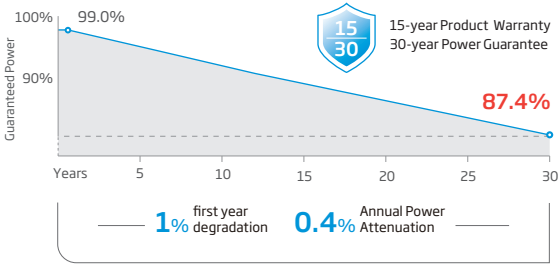
- Up to 22.5% module efficiency, on 210 innovative platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment



High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature efficient (-0.29%/°C) and lower working temperature
- Higher bifaciality, with up to 10%~20% additional power gain from back side depending on albedo

Performance Warranty



* Please refer to product warranty for details

Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716/UL61730
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupational Health and Safety Management System
ISO14067: Product Carbon Footprint Limited Assurance
ISO14025: Environmental Product Declaration



ELECTRICAL DATA (STC & NOCT & BNPI)

Testing Condition	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI
Peak Power Watts- $P_{MAX}(W_p)^*$	425	325	471	430	329	476	435	333	482	440	337	488	445	341	493	450	344	499
Power Selection (W)**	0 ~ +5																	
Maximum Power Voltage- V_{MPP} (V)	42.9	40.4	42.9	43.2	40.7	43.2	43.6	41.0	43.6	44.0	41.4	44.0	44.3	41.7	44.3	44.6	42.0	44.6
Maximum Power Current- I_{MPP} (A)	9.92	8.06	10.98	9.96	8.08	11.03	9.99	8.12	11.05	10.01	8.14	11.08	10.05	8.17	11.13	10.09	8.19	11.18
Open Circuit Voltage- V_{oc} (V)	50.9	48.3	50.9	51.4	48.7	51.4	51.8	49.1	51.8	52.2	49.5	52.2	52.6	49.9	52.6	52.9	50.2	52.9
Short Circuit Current- I_{sc} (A)	10.56	8.51	11.70	10.59	8.54	11.73	10.64	8.58	11.79	10.67	8.60	11.82	10.71	8.63	11.87	10.74	8.66	11.90
Module Efficiency η_m (%)	21.3			21.5			21.8			22.0			22.3			22.5		

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. BNPI: Irradiance: front 1000W/m², rear 135W/m², Temperature 25°C, Air Mass AM1.5
*Measuring tolerance: ±3%. **Power selection up to: +3%.

Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Peak Power Watts- $P_{MAX}(W_p)$	446	468	452	473	457	479	462	484	467	490	473	495
Maximum Power Voltage- V_{MPP} (V)	42.9	42.9	43.2	43.2	43.6	43.6	44.0	44.0	44.3	44.3	44.6	44.6
Maximum Power Current- I_{MPP} (A)	10.42	10.91	10.46	10.96	10.49	10.99	10.51	11.01	10.55	11.06	10.59	11.10
Open Circuit Voltage- V_{oc} (V)	50.9	50.9	51.4	51.4	51.8	51.8	52.2	52.2	52.6	52.6	52.9	52.9
Short Circuit Current- I_{sc} (A)	11.09	11.62	11.12	11.65	11.17	11.70	11.20	11.74	11.25	11.78	11.28	11.81

Power Bifaciality: 80±5%.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature) 43°C (±2°C)

Temperature Coefficient of P_{MAX} -0.29% /°C

Temperature Coefficient of V_{oc} -0.24% /°C

Temperature Coefficient of I_{sc} 0.04% /°C

Due to different testing methods, the actual performances might differ from the declared specifications.

MAXIMUM RATINGS

Operational Temperature -40~+85°C

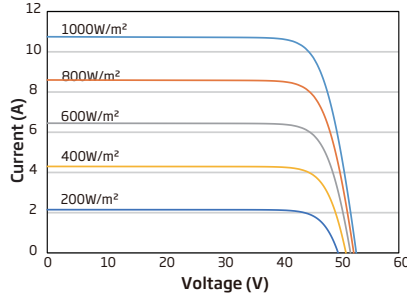
Maximum System Voltage 1500V DC (IEC)

Max Series Fuse Rating 25A

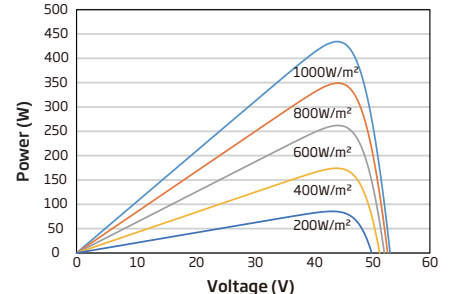
CURVES OF PV MODULE

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I-V CURVES OF PV MODULE (440W)



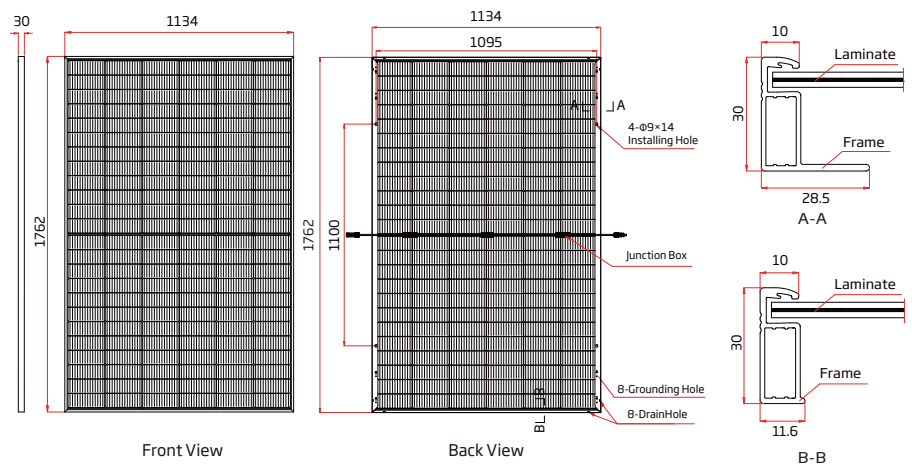
P-V CURVES OF PV MODULE (440W)



MECHANICAL DATA

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	144 cells
Module Dimensions	1762×1134×30 mm (69.37×44.65×1.18 inches)
Weight	21.0kg (72.8 lb)
Front Glass	1.6 mm (0.06 inches) AR Coating Heat Strengthened Glass
Back Glass	1.6 mm (0.06 inches), Heat Strengthened Glass
Frame	30mm (1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²) Portrait: 350/280 mm (13.78/11.02 inches) Length can be customized
Connector	MC4 EV02 / TS4 Plus / TS4*
Packaging	Modules per box: 36 pieces Modules per 40' container: 936 pieces

*Please refer to regional datasheet for specified connector.



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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.
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