



General Characteristics

Shingle Dimensions	34 1/4" x 34 1/4", 870 x 870 mm
Construction	Glass EVA Cells EVA Glass
Solar Cell Type	PERC Monocrystalline
Glass Thickness	3.2 mm (front) + 3.2 mm (back)
Glass Properties	Tempered Solar Glass
Weight	4.4 lbs/ft ² , 21.5 kg/m ²
Temperature Range	-40° F to +185°F
Junction Box	TE Connectivity or equivalent
Bypass Diode	One Diode per shingle
Connection Cable	Solar Cable 4mm ²
Connection Cable Length	800mm
Connector	TE Connectivity (PV4) or equivalent
Roof Pitch	2:12 or greater

Certifications

Photovoltaic Module Safety	UL/IEC 61730-1, 61730-2
PV Module Performance	UL/IEC 61215
Fire	UL 790 Class A*
Impact	FM4437 Class 4*
Wind Resistance	ASTM D3161 Class F*
Wind-Driven Rain	TAS 100 (A)*
Mechanical Loading	UL7103 Section 31*
Grounding	Pending UL 2703 Evaluation

Electrical Properties at STC (1000 W/m², 25°C And Am 1.5)

Type of shingle	Black basic shingle
Nominal output	110 Wp per shingle
Efficiency	17%
Voltage at Mpp Vmpp	13.1 V
Current at Mpp Impp	8.4 A
Open circuit voltage Voc	16.1 V
Short circuit current Isc	9.2 A
Maximum system voltage	1000 V DC
Reverse current overload	18 A
Tolerance nominal output	±3%

Temperature Coefficients

Temperature coefficient voltage (VOC)	-0.33%/K
Temperature coefficient nominal output (PMPP)	-0.44%/K
Temperature coefficient short circuit current (ISC)	+0.0003%/K

Quality and Warranty

Product guarantee	30 years
Performance guarantee	10 years at 90% nominal output 25 years at 80% nominal output

*Tests have passed and preliminary reports are available, however listing is pending final UL 7103 listing completion expected in February 2022.