



SOLAR INNOVATION POWERING A SUSTAINABLE WORLD

AESTHETICS & DESIGN

Superior performance delivered in an all black, frameless presentation. Our frameless modules integrate seamlessly to urban-distributed solar systems.

HIGH PERFORMANCE

- 10 to 20% higher energy yield versus nameplate c-Si PV technologies*
- Superior performance in diffused light
- Versatile product platform that excels at any installation angle

*Performance comparison based on HelioVolt test arrays.

www.heliovolta.com

HelioVolt HVC-170X / 190X

High Performance Thin Film CIGS Solar Modules

HelioVolt modules provide high performance and lasting reliability for scalable, low cost distributed solar power. Developed and manufactured in Austin, Texas, HelioVolt's monolithically integrated modules demonstrate unprecedented environmental performance and customer value.

Applications

HelioVolt modules excel at the full range of solar array deployments:

- **Commercial rooftops:** HelioVolt modules deliver outstanding energy production even in sub-optimal orientation and in the most complex rooftop installations
- **Car ports and BIPV:** HelioVolt modules exhibit superior performance and welcome aesthetic design in urban solar environments.
- **Ground mounts:** Our products are designed to yield the highest energy harvest versus peak power rating.

Enduring Reliability

HelioVolt glass-glass laminates are distinguished by superb weathering characteristics, durability and our aesthetic design. Rigorous tests confirm HelioVolt modules exhibit degradation rates one to two orders of magnitude lower than typical module performance.



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PRODUCT WARRANTY

Material and workmanship replacement warranty for 5 years from proof of purchase.

Power output warranty of 90% nominal power (+/-5%) for the first 10 years and 80% for 25 years.

ENVIRONMENTALLY SAFE

HelioVolt modules do not contain any hazardous levels of toxic chemicals or metals and do not require expensive end-of-life recycling provisions.

PRODUCT COMPLIANCE

The HVC-170X solar modules conform to the following standards, as tested by Intertek:

ANSI/UL-1703

IEC-61646 Ed 2.0

IEC-61730

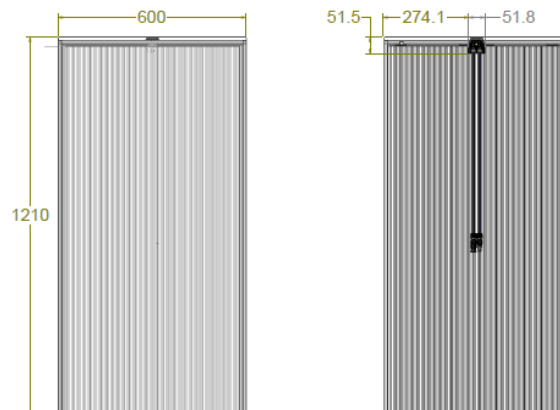
Electrical Performance*

		170X	190X
Maximum Power-Pmax	W	68.0	82.0
Open Circuit Voltage-Voc	V	74.5	77.0
Short Circuit Current-Isc	A	1.5	1.6
Operating Voltage-Vmp	V	55.0	58.6
Current at Operating Voltage-Imp	A	1.25	1.4
Maximum System Voltage-UL	V	600	600
Maximum System Voltage-IEC	V	1000	1000

Mechanical Characteristics

170X/190X				
Length	mm	1210	Connectors	MC-4
Width	mm	600	Bypass Diode	Yes
Thickness	mm	6.7	Cell Type	CIGS
Area	m ²	0.73	Frame	None
Weight	kg	12.3	Cover Type	Tempered Glass
Leadwire Lengths	mm	660	Encapsulation	Edge Seal/Thermoplastic

Mechanical Drawing



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**PROUDLY
MADE IN TEXAS**

*Ratings +/- 10% at Standard Test Conditions: 1000W/m², 25° C, AM 1.5G.

Compliance Notes: HVC-190X product has not been certified at this time.

Preliminary datasheet. Specifications are subject to change. Please see www.heliovolt.com for latest product information.