











# Q.ANTUM TECHNOLOGY: LOW LEVELISED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.6%.



## **INNOVATIVE ALL-WEATHER TECHNOLOGY**

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.



## **ENDURING HIGH PERFORMANCE**

Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



## **EXTREME WEATHER RATING**

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



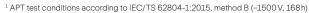
## A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty<sup>2</sup>.



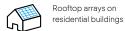
## STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.



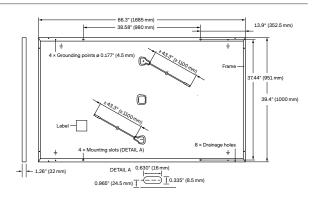
 $<sup>^{\</sup>rm 2}$  See data sheet on rear for further information.

# THE IDEAL SOLUTION FOR:





**PERFORMANCE** 

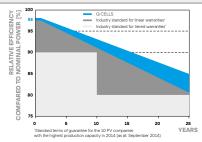


## **ELECTRICAL CHARACTERISTICS**

PO	WER CLASS			310	315	320	325
MIN	IIMUM PERFORMANCE AT STANDARD	TEST CONDITIO	NS, STC1 (POW	ER TOLERANCE +5W/-0	OW)		
	Power at MPP¹	P <sub>MPP</sub>	[W]	310	315	320	325
_	Short Circuit Current <sup>1</sup>	I <sub>SC</sub>	[A]	9.83	9.89	9.94	10.00
nun	Open Circuit Voltage <sup>1</sup>	V <sub>oc</sub>	[V]	40.02	40.29	40.56	40.83
Minir	Current at MPP	I <sub>MPP</sub>	[A]	9.36	9.41	9.47	9.52
2	Voltage at MPP	$V_{MPP}$	[V]	33.12	33.46	33.80	34.14
	Efficiency <sup>1</sup>	η	[%]	≥18.4	≥18.7	≥19.0	≥19.3
MIN	IIMUM PERFORMANCE AT NORMAL O	PERATING CONI	DITIONS, NMOT	2			
	Power at MPP	P <sub>MPP</sub>	[W]	232.0	235.8	239.5	243.3
Ę	Short Circuit Current	I <sub>sc</sub>	[A]	7.92	7.97	8.01	8.05
ij	Open Circuit Voltage	V <sub>oc</sub>	[V]	37.73	37.99	38.24	38.50
Ξ	Current at MPP	I <sub>MPP</sub>	[A]	7.37	7.41	7.45	7.49
	Voltage at MPP	V <sub>MPP</sub>	[V]	31.50	31.82	32.14	32.46

¹Measurement tolerances P<sub>MPP</sub> ±3%; I<sub>SC</sub>; V<sub>OC</sub> ±5% at STC: 1000 W/m², 25±2°C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

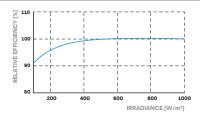
#### Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 93.1% of nominal power up to 10 years. At least 85% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

### PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²)

TEMPERATURE COEFFICIENTS							
Temperature Coefficient of I <sub>SC</sub>	α	[%/K]	+0.04	Temperature Coefficient of Voc	β	[%/K]	-0.27
Temperature Coefficient of P <sub>MPP</sub>	γ	[%/K]	-0.36	Nominal Module Operating Temperature	NMOT	[°F]	109±5.4 (43±3°C)

# PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V <sub>SYS</sub>	[V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI/UL 61730	C (IEC)/TYPE 2 (UL)
Max. Design Load, Push / Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ]	75 (3600 Pa) / 55 (2667 Pa)	Permitted Module Temperature	-40°F up to +185°F
Max. Test Load, Push / Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ]	113 (5400 Pa) / 84 (4000 Pa)	on Continuous Duty	(-40°C up to +85°C)

## **QUALIFICATIONS AND CERTIFICATES**

Horizontal

packaging

packaging

Vertical

UL 61730, CE-compliant IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells)

3 See Installation Manual











1040 mm

1150 mm

45.3 in

1730 mm

1760 mm

69.3in



PACKAGING INFORMATION

47.6 in

46.1 in

1208 mm

1170 mm



1399 lbs

634kg

1429 lbs

648 kg



28

30

pallets

pallets



pallets

pallets

26



modules

modules

32

32

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product. Q CELLS supplies solar modules in two different stacking methods, depending on the location of manufacture (modules are packed horizontally or vertically). You can find more detailed information in the document "Packaging and Transport Information", available from Q CELLS.

### Hanwha Q CELLS America Inc.