





# 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 20.4%.



## **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, 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 25-year product warranty and 25-year linear performance warranty<sup>1</sup>.



## STATE OF THE ART MODULE TECHNOLOGY

 $\ensuremath{\mathsf{Q.ANTUM}}$  DUO combines cutting edge cell separation and innovative wiring with  $\ensuremath{\mathsf{Q.ANTUM}}$  Technology.

# THE IDEAL SOLUTION FOR:



Rooftop arrays on residential buildings

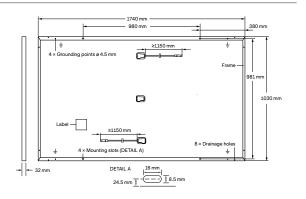




Ground-mounted solar power plants



 $<sup>^{\</sup>mbox{\tiny 1}}$  See data sheet on rear for further information.



#### **ELECTRICAL CHARACTERISTICS**

WER CLASS			340	345	350	355	360
IIMUM PERFORMANCE AT STANDAF	RD TEST CONDITIO	NS, STC1 (PC	OWER TOLERANCE	+5W/-0W)			
Power at MPP¹	P <sub>MPP</sub>	[W]	340	345	350	355	360
Short Circuit Current <sup>1</sup>	I <sub>sc</sub>	[A]	10.68	10.73	10.79	10.84	10.90
Open Circuit Voltage <sup>1</sup>	V <sub>oc</sub>	[V]	40.24	40.49	40.73	40.98	41.23
Current at MPP	I <sub>MPP</sub>	[A]	10.16	10.22	10.27	10.33	10.38
Voltage at MPP	V <sub>MPP</sub>	[V]	33.45	33.76	34.07	34.38	34.69
Efficiency <sup>1</sup>	η	[%]	≥19.0	≥19.3	≥19.5	≥19.8	≥20.1
IIMUM PERFORMANCE AT NORMAL	OPERATING CONE	DITIONS, NIV	IOT <sup>2</sup>				
Power at MPP	P <sub>MPP</sub>	[W]	254.5	258.2	261.9	265.7	269.4
Short Circuit Current	I <sub>sc</sub>	[A]	8.60	8.65	8.69	8.74	8.78
Open Circuit Voltage	V <sub>oc</sub>	[V]	37.94	38.17	38.41	38.65	38.88
Current at MPP	I <sub>MPP</sub>	[A]	8.00	8.04	8.09	8.13	8.17
Voltage at MPP	V <sub>MPP</sub>	[V]	31.81	32.10	32.40	32.69	32.98
	Power at MPP¹ Short Circuit Current¹ Open Circuit Voltage¹ Current at MPP Voltage at MPP Efficiency¹ SIMUM PERFORMANCE AT NORMAL Power at MPP Short Circuit Current Open Circuit Voltage Current at MPP	NIMUM PERFORMANCE AT STANDARD TEST CONDITIO  Power at MPP¹ P <sub>MPP</sub> Short Circuit Current¹ I <sub>SC</sub> Open Circuit Voltage¹ V <sub>OC</sub> Current at MPP I <sub>MPP</sub> Voltage at MPP V <sub>MPP</sub> Efficiency¹   NIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS  Power at MPP P <sub>MPP</sub> Short Circuit Current I <sub>SC</sub> Open Circuit Voltage V <sub>OC</sub> Current at MPP I <sub>MPP</sub>	NIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC1 (POPOWER at MPP1 Power at MPP2 Power at MPP2 Power at MPP2 Power at MPP2 Power at MPP3 Power at MPP4 Power at MPP4 Power at MPP4 Power at MPP5 Power at MPP5 Power at MPP6 Power at MPP6 Power at MPP6 Power	MIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE Power at MPP¹ $P_{MPP}$ [W] 340   Short Circuit Current¹ $P_{MPP}$ [W] 340   Short Circuit Voltage¹ $P_{MPP}$ [W] 40.24   Current at MPP $P_{MPP}$ [V] 40.24   Current at MPP $P_{MPP}$ [V] 33.45   Efficiency¹ $P_{MPP}$ [V] 33.45   Efficiency¹ $P_{MPP}$ [V] 33.45   Short Circuit Current $P_{MPP}$ [W] 254.5   Short Circuit Current $P_{MPP}$ [W] 254.5   Short Circuit Voltage $P_{MPP}$ [W] 37.94   Current at MPP $P_{MPP}$ [A] 8.00	NIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5W/-0W)   Power at MPP¹   P <sub>MPP</sub> [W] 340 345   Short Circuit Current¹   I <sub>SC</sub> [A] 10.68 10.73   Open Circuit Voltage¹   V <sub>OC</sub> [V] 40.24 40.49   Current at MPP   I <sub>MPP</sub> [A] 10.16 10.22   Voltage at MPP   V <sub>MPP</sub> [V] 33.45 33.76   Efficiency¹   $\eta$ [%] ≥19.0 ≥19.3   NIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²   Power at MPP   P <sub>MPP</sub> [W] 254.5 258.2   Short Circuit Current   I <sub>SC</sub> [A] 8.60 8.65   Open Circuit Voltage   V <sub>OC</sub> [V] 37.94 38.17   Current at MPP   I <sub>MPP</sub> [A] 8.00 8.04	NIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5 W / -0 W)   Power at MPP¹   P <sub>MPP</sub> [W] 340 345 350   Short Circuit Current¹   I <sub>SC</sub> [A] 10.68 10.73 10.79   Open Circuit Voltage¹   V <sub>OC</sub> [V] 40.24 40.49 40.73   Current at MPP   I <sub>MPP</sub> [A] 10.16 10.22 10.27   Voltage at MPP   V <sub>MPP</sub> [V] 33.45 33.76 34.07   Efficiency¹   $\eta$ [%] ≥19.0 ≥19.3 ≥19.5   SIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²   Power at MPP   P <sub>MPP</sub> [W] 254.5 258.2 261.9   Short Circuit Current   I <sub>SC</sub> [A] 8.60 8.65 8.69   Open Circuit Voltage   V <sub>OC</sub> [V] 37.94 38.17 38.41   Current at MPP   I <sub>MPP</sub> [A] 8.00 8.04 8.09	NIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE $+5 \text{W}/-0 \text{W}$ )   Power at MPP¹   P <sub>MPP</sub> [W] 340 345 350 355     Short Circuit Current¹   I <sub>SC</sub> [A] 10.68 10.73 10.79 10.84     Open Circuit Voltage¹   V <sub>OC</sub> [V] 40.24 40.49 40.73 40.98     Current at MPP   I <sub>MPP</sub> [A] 10.16 10.22 10.27 10.33     Voltage at MPP   V <sub>MPP</sub> [V] 33.45 33.76 34.07 34.38     Efficiency¹   $\eta$ [%] $\geq 19.0$ $\geq 19.3$ $\geq 19.5$ $\geq 19.8$     IIIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²     Power at MPP   P <sub>MPP</sub> [W] 254.5 258.2 261.9 265.7     Short Circuit Current   I <sub>SC</sub> [A] 8.60 8.65 8.69 8.74     Open Circuit Voltage   V <sub>OC</sub> [V] 37.94 38.17 38.41 38.65     Current at MPP   I <sub>MPP</sub> [A] 8.00 8.04 8.09 8.13

 $^{1}\text{Measurement tolerances P}_{\text{MPP}}\pm3\%; I_{\text{SC}}; V_{\text{OC}}\pm5\% \text{ at STC}: 1000 \text{ W/m}^{2}, 25\pm2\text{°C}, \text{AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet ^{2}800 \text{ W/m}^{2}, \text{NMOT, spectrum AM 1.5 according to IEC 60904-3} \bullet$ 

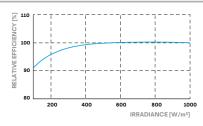
## Q CELLS PERFORMANCE WARRANTY

# RELATIVE EFFICIENCY NOMINAL POWER [%] ARED 20

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	[°C]	43±3

# PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	Im Reverse Current I <sub>R</sub> [A] 20		1000	PV module classification	Class II
Maximum Reverse Current			Fire Rating based on ANSI/UL 61730	C/TYPE 2	
Max. Design Load, Push / Pull			3600/2667	Permitted Module Temperature	-40°C - +85°C
Max. Test Load, Push / Pull		[Pa]	5400/4000	on Continuous Duty	

## **QUALIFICATIONS AND CERTIFICATES**

## PACKAGING INFORMATION

IEC 61215:2016; IEC 61730:2016. This data sheet complies with DIN EN 50380. Certification holder Hanwha Q CELLS GmbH





				KG	[O-O]	40'HC	
Horizontal packaging	1780 mm	1080 mm	1208mm	673.8 kg	28 pallets	26 pallets	32 modules
Vertical packaging	1815mm	1150 mm	1220mm	683kg	28 pallets	24 pallets	32 modules

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

#### Made in Korea

#### Hanwha Q CELLS Australia Pty Ltd

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