





Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 21.4%.



THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY Q CELLS is the first solar module manufacturer to pass the most comprehen-

Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.



### 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  $Tra.Q^{TM}$ .



### **EXTREME WEATHER RATING**

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



# A RELIABLE INVESTMENT

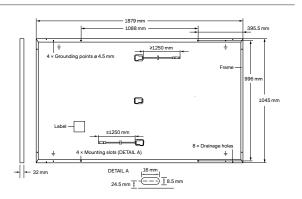
Inclusive 25-year product warranty and 25-year linear performance warranty<sup>1</sup>.

# THE IDEAL SOLUTION FOR:





<sup>&</sup>lt;sup>1</sup> See data sheet on rear for further information.



### **ELECTRICAL CHARACTERISTICS**

PO	VER CLASS		405	415			
MIN	IMUM PERFORMANCE AT STANDA	RD TEST CONDITIO	NS, STC1 (POWER	TOLERANCE+5W/-5W)			
	Power at MPP¹	P <sub>MPP</sub>	[W]	405	415		
Ε	Short Circuit Current <sup>1</sup>	I <sub>sc</sub>	[A]	11.19	11.26		
mun	Open Circuit Voltage <sup>1</sup>	V <sub>oc</sub>	[V]	45.09	45.16		
Mini	Current at MPP	I <sub>MPP</sub>	[A]	10.70	10.82		
_	Voltage at MPP	$V_{MPP}$	[V]	37.85	38.37		
	Efficiency <sup>1</sup>	η	[%]	≥20.6	≥21.1		
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT <sup>2</sup>							
	Power at MPP	P <sub>MPP</sub>	[W]	303.9	311.4		
En	Short Circuit Current	I <sub>sc</sub>	[A]	9.02	9.07		
nim	Open Circuit Voltage	V <sub>oc</sub>	[V]	42.52	42.59		
Ξ	Current at MPP	I <sub>MPP</sub>	[A]	8.43	8.53		
	Voltage at MPP	V <sub>MPP</sub>	[V]	36.04	36.49		

¹Measurement tolerances P<sub>MPP</sub> ±3%; I<sub>SC</sub>; V<sub>DC</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

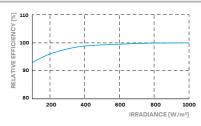
### Q CELLS PERFORMANCE WARRANTY

# RED TO

At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% 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]	-0.34	Nominal Module Operating Temperature	NMOT	[°C]	43±3

## PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	$V_{\text{SYS}}$	[V]	1000	PV module classification	Class II
Maximum Reverse Current	I <sub>R</sub>	[A]	20	Fire Rating based on ANSI/UL 61730	C/TYPE 2
Max. Design Load, Push / Pull		[Pa]	3600/2660	Permitted Module Temperature	-40°C - +85°C
Max. Test Load, Push / Pull		[Pa]	5400/4000	on Continuous Duty	

### **QUALIFICATIONS AND CERTIFICATES**

### PACKAGING INFORMATION

Quality Controlled PV - TÜV Rheinland IEC 61215:2016; IEC 61730:2016. This data sheet complies with DIN EN 50380. QCPV Certification ongoing Certification holder: Hanwha Q CELLS GmbH







packaging







751 kg



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.

### Made in Korea

### Hanwha Q CELLS Australia Pty Ltd

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