





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 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™.



EXTREME WEATHER RATING

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



A RELIABLE INVESTMENT

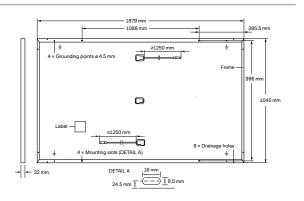
Inclusive 25-year product warranty and 25-year linear performance warranty¹.

THE IDEAL SOLUTION FOR:





¹ 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 (POWE	R TOLERANCE +5 W / -5 W)	
Minimum	Power at MPP¹	P _{MPP}	[W]	405	415
	Short Circuit Current ¹	I _{sc}	[A]	11.19	11.26
	Open Circuit Voltage ¹	V _{oc}	[V]	45.09	45.16
	Current at MPP	I _{MPP}	[A]	10.70	10.82
	Voltage at MPP	V_{MPP}	[V]	37.85	38.37
	Efficiency ¹	η	[%]	≥20.6	≥21.1
MIN	IMUM PERFORMANCE AT NORMA	L OPERATING COND	ITIONS, NMOT ²		
	Power at MPP	P _{MPP}	[W]	303.9	311.4
표	Short Circuit Current	I _{sc}	[A]	9.02	9.07
Minim	Open Circuit Voltage	V _{oc}	[V]	42.52	42.59
	Current at MPP	I _{MPP}	[A]	8.43	8.53
	Voltage at MPP	V _{MPP}	[V]	36.04	36.49

 1 Measurement tolerances P_{MPP} ±3 %; I_{SC} ; V_{OC} ±5% at STC: 1000 W/m 2 , 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 , NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 , NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 , NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 , NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 , NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 , NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 , NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, NMOT, spectrum AM 1.5 according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, according to IEC 60904-3 • 2 800 W/m 2 9, a

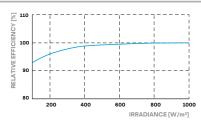
Q CELLS PERFORMANCE WARRANTY

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 _{SC}	α	[%/K]	+0.04	Temperature Coefficient of Voc	β	[%/K]	-0.27	
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.34	Nominal Module Operating Temperature	NMOT	[°C]	43±3	

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{SYS}	[V]	1000	PV module classification	Class II
Maximum Reverse Current	I _R	[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







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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