





power classes, and an efficiency rate of up to 19.5%.



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 Technology 1 , Hot-Spot Protect and Traceable Quality Tra.Q $^{\text{TM}}$.



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 warranty².



STATE OF THE ART MODULE TECHNOLOGY

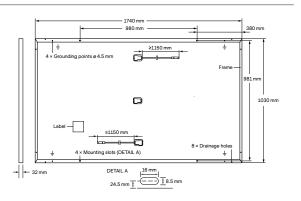
Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

- ¹ APT test conditions according to IEC/TS 62804-1:2015, method B (-1500 V, 168h)
- ² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:







ELECTRICAL CHARACTERISTICS

VER CLASS			330	335	340	345
IIMUM PERFORMANCE AT STANDA	RD TEST CONDITIO	NS, STC¹ (PC	OWER TOLERANCE +5 W /	-0W)		
Power at MPP¹	P _{MPP}	[W]	330	335	340	345
Short Circuit Current ¹	I _{sc}	[A]	10.41	10.47	10.52	10.58
Open Circuit Voltage ¹	V _{oc}	[V]	40.15	40.41	40.66	40.92
Current at MPP	I _{MPP}	[A]	9.91	9.97	10.02	10.07
Voltage at MPP	V_{MPP}	[V]	33.29	33.62	33.94	34.25
Efficiency ¹	η	[%]	≥18.4	≥18.7	≥19.0	≥19.3
IIMUM PERFORMANCE AT NORMAL	OPERATING CONE	DITIONS, NM	OT ²			
Power at MPP	P _{MPP}	[W]	247.0	250.7	254.5	258.2
Short Circuit Current	I _{sc}	[A]	8.39	8.43	8.48	8.52
Open Circuit Voltage	V _{oc}	[V]	37.86	38.10	38.34	38.59
Current at MPP	I _{MPP}	[A]	7.80	7.84	7.89	7.93
Voltage at MPP	V _{MPP}	[V]	31.66	31.97	32.27	32.57
	Power at MPP¹ Short Circuit Current¹ Open Circuit Voltage¹ Current at MPP Voltage at MPP Efficiency¹ IMMUM PERFORMANCE AT NORMAL Power at MPP Short Circuit Current Open Circuit Voltage Current at MPP	IMUM PERFORMANCE AT STANDARD TEST CONDITIO Power at MPP¹	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	IMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5 W / Power at MPP¹	Note of the property of the	Power at MPP¹

 $^4\text{Measurement tolerances P}_{\text{MPP}} \pm 3\%; I_{\text{SC}}; V_{\text{OC}} \pm 5\% \text{ at STC} : 1000 \text{W/m}^2, 25 \pm 2^{\circ}\text{C}, \text{AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/m}^2, \text{NMOT, spectrum AM 1.5G according to IEC 60904-3} \bullet ^{7}\overline{2}800 \text{W/$

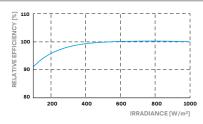
Q CELLS PERFORMANCE WARRANTY

DO SEARS with the highest production specify is 2014 (sea t September 2014)

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 _{SC}	α	[%/K]	+0.04	Temperature Coefficient of Voc	β	[%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.36	Normal Module Operating Temperature	NMOT	[°C]	43±3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{SYS}	[V]	1000	Safety Class	II
Maximum Reverse Current	I_R	[A]	20	Fire Rating	С
Max. Design Load, Push / Pull		[Pa]	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

VDE Quality Tested, IEC 61215:2016; IEC 61730:2016, Application Class II; This data sheet complies with DIN EN 50380.





Number of Modules per Pallet	32
Number of Pallets per Trailer (24t)	28
Number of Pallets per 40' HC-Container (26t)	24
Pallet Dimensions (L × W × H)	1815 × 1150 × 1190 mm
Pallet Weight	683kg

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.

Hanwha Q CELLS GmbH

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