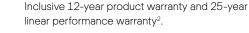




A RELIABLE INVESTMENT





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.

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

THE IDEAL SOLUTION FOR:



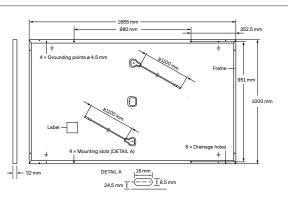
Rooftop arrays on residential buildings





Ground-mounted solar power plants





ELECTRICAL CHARACTERISTICS

PO	WER CLASS			315	320	325	330	335
MIN	IIMUM PERFORMANCE AT STANDAR	D TEST CONDITIO	NS, STC1 (PC	OWER TOLERANCE	+5W/-0W)			
Minimum	Power at MPP ¹	P _{MPP}	[W]	315	320	325	330	335
	Short Circuit Current ¹	I _{sc}	[A]	10.04	10.09	10.14	10.20	10.25
	Open Circuit Voltage ¹	V _{oc}	[V]	39.87	40.13	40.40	40.66	40.92
	Current at MPP	I _{MPP}	[A]	9.55	9.60	9.66	9.71	9.76
	Voltage at MPP	V_{MPP}	[V]	32.98	33.32	33.65	33.98	34.31
	Efficiency ¹	η	[%]	≥18.7	≥19.0	≥19.3	≥19.6	≥19.9
MIN	IIMUM PERFORMANCE AT NORMAL	OPERATING COND	DITIONS, NIV	IOT ²				
Minimum	Power at MPP	P _{MPP}	[W]	235.8	239.5	243.2	247.0	250.7
	Short Circuit Current	I _{sc}	[A]	8.09	8.13	8.17	8.22	8.26
	Open Circuit Voltage	V _{oc}	[V]	37.59	37.84	38.09	38.34	38.59
	Current at MPP	I _{MPP}	[A]	7.52	7.56	7.60	7.64	7.69
	Voltage at MPP	V _{MPP}	[V]	31.36	31.68	32.00	32.31	32.62

 $^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 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according to IEC } 60904-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according to IEC } 60904-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{NMOT}, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2, \text{spectrum AM 1.5 according } 60004-3 \cdot ^2800 \text{W/m}^2,$

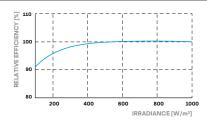
Q CELLS PERFORMANCE WARRANTY

DO TO THE WORLD THE TOTAL THE TOTAL

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 V _{oc}	β	[%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.36	Nominal Module Operating Temperature	NMOT	[°C]	43±3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	$V_{\scriptsize SYS}$	[V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Reverse Current	I _R	[A]	20	Fire Rating based on ANSI/UL 1703	C/TYPE 2
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; This data sheet complies with DIN EN 50380.







Number of Modules per Pallet	32
Number of Pallets per Trailer (24t)	30
Number of Pallets per 40' HC-Container (26t)	26
Pallet Dimensions (L × W × H)	1745 × 1130 × 1170 mm
Pallet Weight	639 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.

Hanwha Q CELLS GmbH

Sonnenallee~17-21,~06766~Bitterfeld-Wolfen,~Germany~|~TEL+49~(0)3494~66~99-23444~|~FAX+49~(0)3494~66~99-23000~|~EMAIL~sales@q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com~|~WEB~www.q-cells.com

