

powered by

Q.ANTUM DUO Z

Q.PEAK DUO XL-G10.3 / BFG 460-470 W

BIFACIAL DOUBLE GLASS MODULE
WITH EXCELLENT RELIABILITY
AND ADDITIONAL YIELD



BIFACIAL ENERGY YIELD GAIN OF UP TO 20 %

Bifacial Q.ANTUM solar cells make efficient use of light shining on the module rear-side for radically improved LCOE.



LOW ELECTRICITY GENERATION COSTS

Q.ANTUM DUO Z combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology for higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.5%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID and Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



FRAME FOR VERSATILE MOUNTING OPTIONS

High-tech aluminum alloy frame protects from damage, enables use of a wide range of mounting structures and is certified regarding IEC for high snow (5400 Pa) and wind loads (2400 Pa).



A RELIABLE INVESTMENT

Double glass module design enables extended lifetime with 12-year product warranty and improved 30-year performance warranty².

¹ APT test conditions according to IEC / TS 62804-1:2015 method B (-1500V, 168h) including post treatment according to IEC 61215-1-1 Ed. 2.0 (CD)

² See data sheet on rear for further information

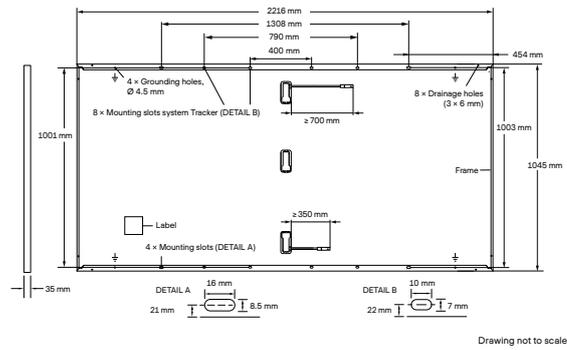
THE IDEAL SOLUTION FOR:



Ground-mounted
solar power plants

MECHANICAL SPECIFICATION

Format	2216 mm × 1045 mm × 35 mm (including frame)
Weight	29.1 kg
Front Cover	2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	2 mm semi-tempered glass
Frame	Anodised aluminium
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	53-101 mm × 32-60 mm × 15-18 mm Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 700 mm, (-) ≥ 350 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4; IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS			460	465	470	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ AND BSC ¹ (POWER TOLERANCE +5 W / -0 W)						
Minimum	Power at MPP ¹	P_{MPP} [W]	460	BSTC* ² 503.2	465	BSTC* ² 508.6
	Short Circuit Current ¹	I_{SC} [A]	10.95	11.99	11.00	12.03
	Open Circuit Voltage ¹	V_{OC} [V]	52.44	52.63	52.68	52.86
	Current at MPP	I_{MPP} [A]	10.43	11.41	10.47	11.45
	Voltage at MPP	V_{MPP} [V]	44.11	44.11	44.42	44.41
	Efficiency ¹	η [%]	≥ 19.9	≥ 21.7	≥ 20.1	≥ 22.0

Bifaciality of P_{MPP} and I_{SC} 70% ± 5% • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2

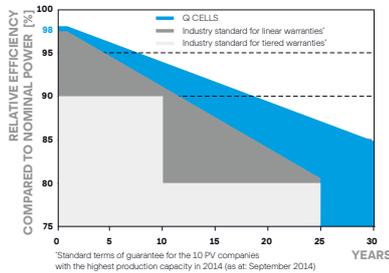
¹ Measurement tolerances P_{MPP} ± 3%; I_{SC} , V_{OC} ± 5% at STC: 1000 W/m²; *at BSC¹: 1000 W/m² + ϕ × 135 W/m², ϕ = 70% ± 5%, 25 ± 2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²

Minimum	Power at MPP	P_{MPP} [W]	346.3	350.1	353.8
	Short Circuit Current	I_{SC} [A]	8.82	8.86	8.89
	Open Circuit Voltage	V_{OC} [V]	49.59	49.81	50.04
	Current at MPP	I_{MPP} [A]	8.21	8.24	8.27
	Voltage at MPP	V_{MPP} [V]	42.19	42.48	42.77

² 800 W/m², NMOT, spectrum AM 1.5

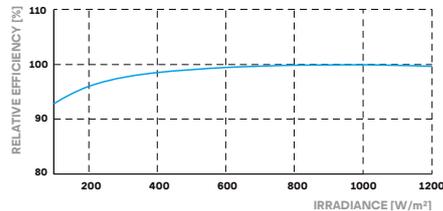
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.45% degradation per year. At least 93.95% of nominal power up to 10 years. At least 84.95% of nominal power up to 30 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]	-0.34	Nominal Module Operating Temperature	NMOT [°C]	42 ± 3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{SYS} [V]	1500	PV module classification	Class II
Maximum Reverse Current	I_R [A]	20	Fire Rating based on ANSI / UL 61730	C / TYPE 29 ³
Max. Design Load, Push / Pull	[Pa]	3600 / 1600	Permitted Module Temperature on Continuous Duty	-40 °C - +85 °C
Max. Test Load, Push / Pull	[Pa]	5400 / 2400	³ New Type is similar to Type 3 but with metallic frame	

QUALIFICATIONS AND CERTIFICATES

IEC 61215:2016, IEC 61730:2016.
This data sheet complies with
DIN EN 50380.

Certification in process.



PACKAGING INFORMATION

Horizontal packaging	2270 mm	1095 mm	1210 mm	896 kg	22 pallets	20 pallets	29 modules
Vertical packaging	2306 mm	1150 mm	1205 mm	913 kg	22 pallets	20 pallets	30 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.

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

Engineered in Germany