

powered by

Q.ANTUM DUO Z

Q.PEAK DUO XL-G9.3 440-460

ENDURING HIGH
PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area, lower BOS costs and up to 30 watts more power per module.



ENDURING HIGH PERFORMANCE

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



EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (2400 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 12-busbar design 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:



Rooftop arrays on commercial/industrial buildings



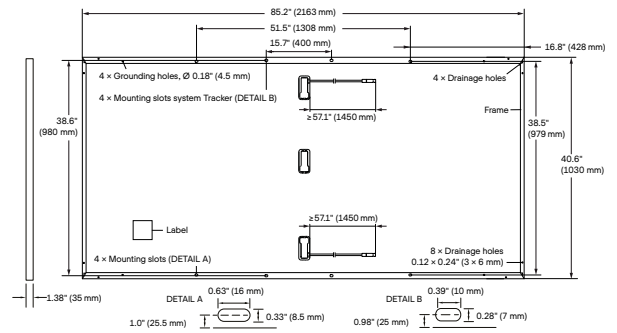
Ground-mounted solar power plants

Engineered in Germany

Q CELLS

MECHANICAL SPECIFICATION

Format	85.2 in × 40.6 in × 1.38 in (including frame) (2163 mm × 1030 mm × 35 mm)
Weight	56.2 lbs (25.5 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodized aluminum
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥57.1 in (1450 mm), (-) ≥57.1 in (1450 mm)
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4, IP68

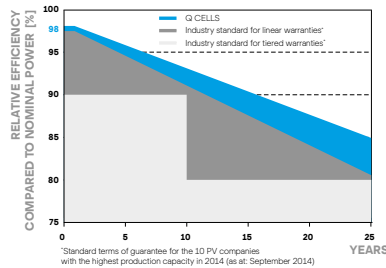


ELECTRICAL CHARACTERISTICS

POWER CLASS		440	445	450	455	460	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	440	445	450	455	460
	Short Circuit Current ¹	I _{SC} [A]	10.59	10.62	10.65	10.67	10.70
	Open Circuit Voltage ¹	V _{OC} [V]	53.11	53.15	53.18	53.22	53.25
	Current at MPP	I _{MPP} [A]	10.05	10.10	10.15	10.20	10.25
	Voltage at MPP	V _{MPP} [V]	43.77	44.06	44.34	44.61	44.89
	Efficiency ¹	η [%]	≥19.7	≥20.0	≥20.2	≥20.4	≥20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	329.5	333.2	337.0	340.7	344.5
	Short Circuit Current	I _{SC} [A]	8.54	8.56	8.58	8.60	8.62
	Open Circuit Voltage	V _{OC} [V]	50.08	50.12	50.15	50.18	50.22
	Current at MPP	I _{MPP} [A]	7.90	7.95	7.99	8.03	8.08
	Voltage at MPP	V _{MPP} [V]	41.69	41.93	42.17	42.41	42.64

¹Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25 ±2 °C, AM 1.5 according to IEC 60904-3 • *800 W/m², NMOT, spectrum AM 1.5

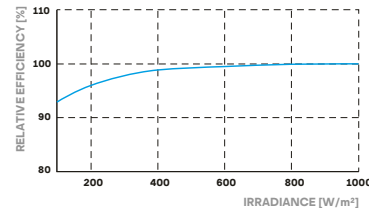
Q CELLS PERFORMANCE WARRANTY



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]	-0.35	Nominal Module Operating Temperature	NMOT [°F]	109 ± 5.4 (43 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{sys} [V]	1500 (IEC)/1500 (UL)	PV module classification	Class II
Maximum Series Fuse Rating [A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 1
Max. Design Load, Push / Pull ³ [lbs / ft ²]	75 (3600 Pa) / 33 (1600 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push / Pull ³ [lbs / ft ²]	113 (5400 Pa) / 50 (2400 Pa)		

³ See Installation Manual

QUALIFICATIONS AND CERTIFICATES

UL 61730, CE-compliant,
IEC 61215:2016,
IEC 61730:2016,
U.S. Patent No. 9,893,215
(solar cells)



PACKAGING AND TRANSPORT INFORMATION

Horizontal packaging	87.8 in 2230 mm	42.5 in 1080 mm	47.1 in 1196 mm	1723 lbs 781 kg	24 pallets	22 pallets	29 modules
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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 America Inc.

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