powered by Q.ANTUM DUO Z

Q.PEAK DUO ML-G11.2
480-500

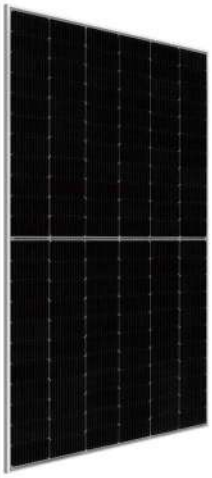
ENDURING HIGH PERFORMANCE

Quality Controlled PV
TÜVRheinland CERTIFIED
www.tuv.com ID 1111232615

ntv GERMANY'S MOST POPULAR PROVIDER Life & Living Award 2021 1st Place Solar Technology Customer rating from 11 brands www.disq.de DEUTSCHES INSTITUT FÜR SERVICE-QUALITÄT GmbH & Co. KG

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2021

Q CELLS Yield Security



BREAKING THE 21% EFFICIENCY BARRIER
Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 21.7%.

LOW ELECTRICITY GENERATION COSTS
Higher yield per surface area, lower BOS costs and up to 85 watts more module power than standard 144 half-cell modules.

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID Technology, Anti PID Technology[1] and Hot-Spot Protect.

EXTREME WEATHER RATING
High-tech aluminium 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 warranty[2].

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 A (–1500 V, 96 h)
[2] See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

Rooftop arrays on commercial / industrial buildings

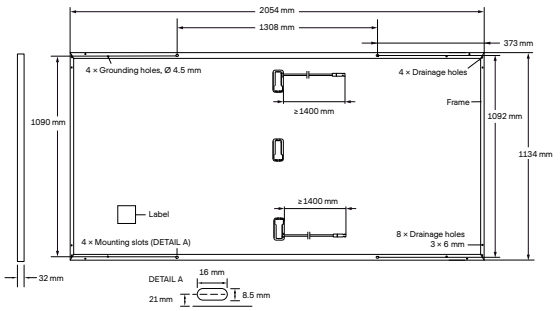
Ground-mounted solar power plants

Engineered in Germany

Q CELLS

MECHANICAL SPECIFICATION

Format	2054 mm × 1134 mm × 32 mm (including frame)
Weight	26.0 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodised aluminium
Cell	6 × 22 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 mm² Solar cable; (+) ≥1400 mm, (–) ≥1400 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4; IP68



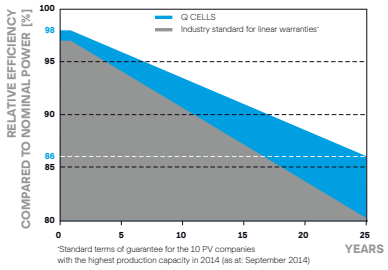
Drawing not to scale

ELECTRICAL CHARACTERISTICS

POWER CLASS				480	485	490	495	500
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / –0 W)								
Minimum	Power at MPP[1]	P_{MPP}	[W]	480	485	490	495	500
	Short Circuit Current[1]	I_{SC}	[A]	13.51	13.54	13.57	13.60	13.63
	Open Circuit Voltage[1]	V_{OC}	[V]	45.59	45.62	45.65	45.67	45.70
	Current at MPP	I_{MPP}	[A]	12.78	12.83	12.89	12.95	13.00
	Voltage at MPP	V_{MPP}	[V]	37.57	37.79	38.02	38.24	38.45
	Efficiency[1]	η	[%]	20.6	20.8	21.0	21.3	21.5
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]								
Minimum	Power at MPP	P_{MPP}	[W]	360.1	363.8	367.6	371.3	375.1
	Short Circuit Current	I_{SC}	[A]	10.89	10.91	10.94	10.96	10.98
	Open Circuit Voltage	V_{OC}	[V]	43.00	43.02	43.05	43.08	43.10
	Current at MPP	I_{MPP}	[A]	10.04	10.09	10.14	10.19	10.24
	Voltage at MPP	V_{MPP}	[V]	35.87	36.07	36.26	36.45	36.63

[1]Measurement 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 • [2]800 W/m², NMOT, spectrum AM 1.5

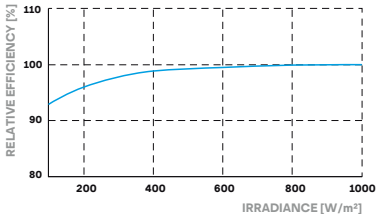
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.5% 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 V_{OC}	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]	1500	PV module classification	Class II
Maximum Reverse Current	I_R	[A]	25	Fire Rating	C
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		

QUALIFICATIONS AND CERTIFICATES

Quality Controlled PV - TÜV Rheinland;
IEC 61215:2016;
IEC 61730:2016.
This data sheet complies with DIN EN 50380.

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ID 1111220277

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.

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Engineered in Germany