

# Q.TRON M-G2+ SERIES



**425-450 Wp | 108 Cells**  
**23.0% Maximum Module Efficiency**

**MODEL** Q.TRON M-G2+  
Q.TRON M-G2.4+



## High performance Qcells N-type solar cells

Q.ANTUM NEO solar cell technology with optimized module layout boosts module efficiency up to 23.0%.



## A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty<sup>1</sup>.



## Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology<sup>2</sup>, Hot-Spot Protect.



## Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (8100 Pa) and wind loads (4000 Pa).



## Innovative all-weather technology

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



## The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

<sup>1</sup> See data sheet on rear for further information.

<sup>2</sup> APT test conditions according to IEC/TS 62804-1:2015, method A (-1500V, 96h)

### The ideal solution for:



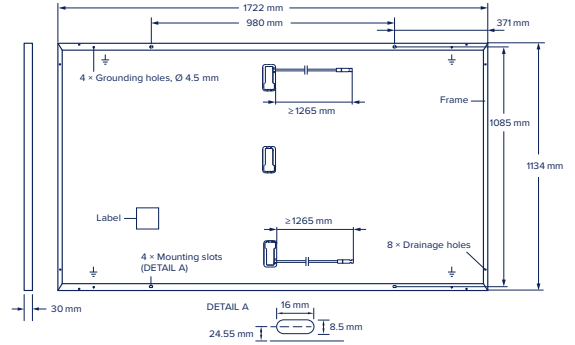
Rooftop arrays on  
residential buildings



# Q.TRON M-G2+ SERIES

## Mechanical Specification

Format	1722 mm × 1134 mm × 30 mm (including frame)
Weight	21.2 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 18 monocrystalline Q.ANTUM NEO solar half cells
Junction box	53-101 mm × 32-60 mm × 15-18 mm Protection class IP67, with bypass diodes
Cable	4 mm <sup>2</sup> Solar cable; (+) ≥1265 mm, (-) ≥1265 mm
Connector	Stäubli MC4, Hanwha Q CELLS HQC4; IP68

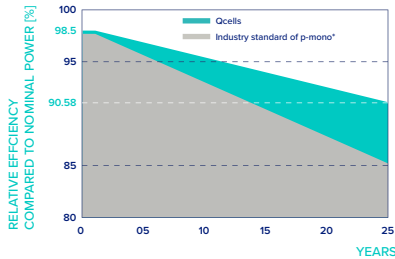


## Electrical Characteristics

POWER CLASS			425	430	435	440	445	450
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC <sup>1</sup> (POWER TOLERANCE +5 W/-0 W)								
Minimum	Power at MPP <sup>1</sup>	$P_{MPP}$ [W]	425	430	435	440	445	450
	Short Circuit Current <sup>1</sup>	$I_{SC}$ [A]	13.81	13.89	13.97	14.06	14.14	14.22
	Open Circuit Voltage <sup>1</sup>	$V_{OC}$ [V]	38.76	39.04	39.32	39.60	39.87	40.15
	Current at MPP	$I_{MPP}$ [A]	13.11	13.18	13.26	13.33	13.40	13.48
	Voltage at MPP	$V_{MPP}$ [V]	32.42	32.62	32.82	33.01	33.20	33.39
	Efficiency <sup>1</sup>	$\eta$ [%]	≥21.8	≥22.0	≥22.3	≥22.5	≥22.8	≥23.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT <sup>2</sup>								
Minimum	Power at MPP	$P_{MPP}$ [W]	321.2	325.0	328.8	332.6	336.4	340.1
	Short Circuit Current	$I_{SC}$ [A]	11.13	11.19	11.26	11.33	11.39	11.46
	Open Circuit Voltage	$V_{OC}$ [V]	36.78	37.04	37.31	37.58	37.84	38.11
	Current at MPP	$I_{MPP}$ [A]	10.31	10.37	10.42	10.48	10.54	10.60
	Voltage at MPP	$V_{MPP}$ [V]	31.16	31.35	31.54	31.73	31.92	32.10

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

## Qcells PERFORMANCE WARRANTY

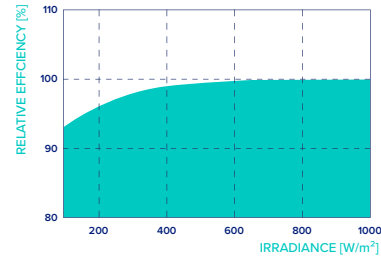


At least 98.5% of nominal power during first year. Thereafter max. 0.33% degradation per year. At least 95.53% of nominal power up to 10 years. At least 90.58% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

<sup>\*</sup>Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

## PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m<sup>2</sup>).

## TEMPERATURE COEFFICIENTS

Temperature Coefficient of $I_{SC}$	$\alpha$ [%/K]	+0.04	Temperature Coefficient of $V_{OC}$	$\beta$ [%/K]	-0.24
Temperature Coefficient of $P_{MPP}$	$\gamma$ [%/K]	-0.30	Nominal Module Operating Temperature	NMOT [°C]	43 ± 3

## Properties for System Design

Maximum System Voltage	$V_{SYS}$ [V]	1000	PV module classification	Class II
Maximum Reverse Current	$I_R$ [A]	25	Fire Rating based on ANSI/UL 61730	C / TYPE 2
Max. Design Load, Push/Pull	[Pa]	5400/2660	Permitted Module Temperature on Continuous Duty	-40 °C - +85 °C
Max. Test Load, Push/Pull	[Pa]	8100/4000		

## Qualifications and Certificates

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



Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation 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.qcells.com

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