

Hanwha QCells Solar Panels

Engineered in Germany these Black on Black modules offer best in class performance.

Mandalay is installing 295-380 watt modules based on the HERS rating of your home.





Q.ANTUM SOLAR MODULE

The new high-performance module Q.PEAK BLK-G4.1 is the ideal solution for residential buildings thanks to its innovative cell technology Q.ANTUM. The world-record cell design was developed to achieve the best performance under real conditions – even with low radiation intensity and on clear, hot summer days.



Q.ANTUM TECHNOLOGY: LOW LEVISED COST OF ELECTRICITY

Higher yield per surface area and lower BOS costs and higher power classes and an efficiency rate of up to 18.0%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

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



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 aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



MAXIMUM COST REDUCTIONS

Up to 10% lower logistics costs due to higher module capacity per box.



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty².

THE IDEAL SOLUTION FOR:



Engineered in Germany



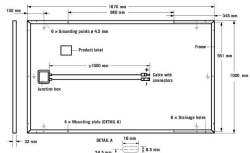
¹ APT test conditions: Cells at -1500V against grounded, with conductive metal foil covered module surface, 25°C, 168h

² See data sheet on rear for further information.



MECHANICAL SPECIFICATION

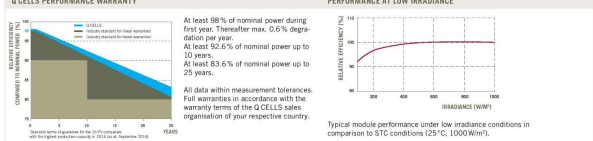
Format	1670mm × 1000mm × 32mm (including frame)
Weight	18.8kg
Front Cover	3.2mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 10 monocrystalline Q.ANTUM solar cells
Junction box	66.77 mm × 115.90 mm × 15.19 mm Protection class IP67, with bypass diodes
Cable	4mm² Solar cable, (4) 1000mm, (3) 1000mm
Connector	Multi-Contact, MC4, IP65 and IP68



ELECTRICAL CHARACTERISTICS

POWER CLASS	285	290	295
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5W / -0W)			
Power at MPP ²	P _{MPP} 285	290	295
Short Circuit Current ³	I _{sc} 9.56	9.63	9.70
Open Circuit Voltage ⁴	V _{oc} 38.91	39.19	39.48
Current at MPP ⁵	I _{MPP} 8.98	9.07	9.17
Voltage at MPP ⁶	V _{MPP} 31.73	31.96	32.19
Efficiency ⁷	η ≥17.1	≥17.4	≥17.7
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC⁸			
Power at MPP ²	P _{MPP} 210.9	214.6	218.3
Short Circuit Current ³	I _{sc} 7.71	7.77	7.82
Open Circuit Voltage ⁴	V _{oc} 36.38	36.65	36.92
Current at MPP ⁵	I _{MPP} 7.04	7.12	7.20
Voltage at MPP ⁶	V _{MPP} 29.95	30.14	30.33

¹ 1000W/m², 25°C, spectrum AM 1.5G ² Measurement tolerance STC ± 3%, NOC ± 5% ³ 800W/m², NOCT, spectrum AM 1.5G ⁴ Typical values, actual values may differ



TEMPERATURE COEFFICIENTS

Temperature coefficient of I _{sc}	α [%/K]	+0.04	Temperature coefficient of V _{oc}	β [%/K]	-0.28
Temperature coefficient of P _{MPP}	γ [%/K]	-0.39	Normal Operating Cell Temperature	NOCT [°C]	45

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V _{MPP} [V]	1000	Safety Class	II
Maximum Reverse Current	I _r [A]	20	Fire Rating	C
Wind/Snow Load (Test-load in accordance with IEC 61215)	[Pa]	4000/5400	Permitted Module Temperature On Continuous Duty	-40°C up to +85°C

QUALIFICATIONS AND CERTIFICATES PARTNER
VDE Quality Tested, IEC 61215 (Ed. 2), IEC 61730 (Ed. 1), Application class A
This data sheet complies with DIN EN 50380.



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





Q.PEAK DUO BLK-G5 300-320

Q. ANTUM SOLAR MODULE

The new Q.PEAK DUO BLK-G5 solar module from Q CELLS impresses with its outstanding visual appearance and particularly high performance on a small surface thanks to the innovative Q. ANTUM DUO Technology. Q. ANTUM's world-record-holding cell concept has now been combined with state-of-the-art circuitry half cells and a six-busbar design, thus achieving outstanding performance under real conditions — both with low-intensity solar radiation as well as on hot, clear summer days.



Q. ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.3%.



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 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 (4000 Pa) regarding IEC.



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance guarantee².



STATE OF THE ART MODULE TECHNOLOGY

Q. ANTUM DUO combines cutting edge cell separation and innovative wiring with Q. ANTUM Technology.



THE IDEAL SOLUTION FOR:

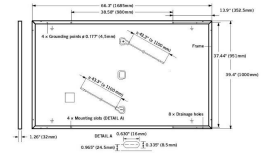


Engineered in Germany



MECHANICAL SPECIFICATION

Format	66.3 in × 39.4 in × 1.26 in (including frame) (1685 mm × 1000 mm × 32 mm)
Weight	41.2 lbs (18.7 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 20 monocrystalline Q. ANTUM solar half-cells
Junction box	2.76-3.35 in × 1.97-2.76 in × 0.51-0.83 in (70-85 mm × 50-70 mm × 13-21 mm), decentralized, IP67
Cable	4 mm ² Solar cable, (+) ≥ 43.3 in (1100 mm), (-) ≥ 43.3 in (1100 mm)
Connector	Multi-Contact MC4, IP68

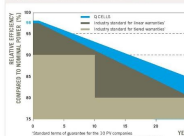


ELECTRICAL CHARACTERISTICS

POWER CLASS	300	305	310	315	320	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5 W / -0 W)						
Power at MPP¹	P_{MPP} [W]	300	305	310	315	320
Short Circuit Current¹	I_{SC} [A]	9.72	9.78	9.83	9.89	9.94
Open Circuit Voltage¹	V_{OC} [V]	39.48	39.75	40.02	40.29	40.56
Current at MPP	I_{MPP} [A]	9.25	9.31	9.36	9.41	9.47
Voltage at MPP	V_{MPP} [V]	32.43	32.78	33.12	33.46	33.80
Efficiency¹	η [%]	≥ 17.8	≥ 18.1	≥ 18.4	≥ 18.7	≥ 19.0
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOD²						
Power at MPP	P_{MPP} [W]	224.1	227.8	231.6	235.3	239.1
Short Circuit Current	I_{SC} [A]	7.83	7.88	7.92	7.97	8.01
Open Circuit Voltage	V_{OC} [V]	37.15	37.40	37.66	37.91	38.17
Current at MPP	I_{MPP} [A]	7.28	7.32	7.37	7.41	7.45
Voltage at MPP	V_{MPP} [V]	30.78	31.11	31.44	31.76	32.08

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

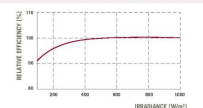
Q CELLS PERFORMANCE WARRANTY



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 organization 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]	-0.28
Temperature Coefficient of P_{MPP}	γ [%/K]	-0.37	Normal Operating Module Temperature	T_{MPP} [°F]	109 ± 5.4 (43 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{MPP}	[V]	1000 (IEC) / 1000 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Max. Design Load, Push / Pull (UL)³	[lbs/ft ²] / [55 (2667 Pa)]	75 (3600 Pa) / 55 (2667 Pa)	Permitted module temperature on continuous duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push / Pull (UL)³	[lbs/ft ²] / [84 (4000 Pa)]	113 (5400 Pa) / 84 (4000 Pa)	* See installation manual	

QUALIFICATIONS AND CERTIFICATES

UL 1703, VDE Quality Tested, CE-compliant, IEC 61215-2016, IEC 61730-2016, Application class A



PACKAGING INFORMATION

Number of Modules per Pallet	32
Number of Pallets per 53' Trailer	30
Number of Pallets per 40' High Cube Container	26
Pallet Dimensions (L x W x H)	69.3 in × 45.3 in × 46.9 in (1760 mm × 1150 mm × 1190 mm)
Pallet Weight	1415 lbs (642 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.

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Specifications subject to technical changes © Hanwa & CELLS America Inc. 300-320-0208-02_Peak2-NA



Q.PEAK DUO BLK-G6+ / AC 340

Q. ANTUM DUO SOLAR MODULE WITH INTEGRATED MICROINVERTER



Q. ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.5%.



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 Technology, Anti PID Technology¹, Hot-Spot Protect, Traceable Quality Tra.Q™.



EXTREME WEATHER RATING
High-tech aluminum alloy frame, certified for high snow (5400Pa) and wind loads (4000Pa).



A RELIABLE INVESTMENT
Inclusive 25-year product warranty and 25-year linear performance warranty².



STATE OF THE ART MODULE TECHNOLOGY
Q. ANTUM DUO Technology and the integrated high-powered Enphase IQ 7+ Microinverter achieving maximum system efficiency.



RELIABLE ENERGY MONITORING
Seamless management with the intelligent Enphase Enlighten™ monitoring system.



RAPID SHUTDOWN COMPLIANT
Built-in rapid shutdown with no additional components required.



THE IDEAL SOLUTION FOR:



Rooftop arrays on residential buildings

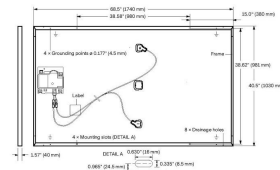
¹ IFT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 168h)
² See data sheet on rear for further information

Engineered in Germany



MECHANICAL SPECIFICATIONS

Format	68.5 × 40.6 × 1.57 in (including frame) (1740 × 1030 × 40 mm)
Weight	47.2 lb (21.4 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 20 monocrystalline Q. ANTUM solar half cells
Junction Box	2.09 × 3.86 × 1.26 × 2.36 × 0.59 × 0.71 in (53-103 × 32-60 × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 45.3 in (1150 mm), (-) ≥ 33.5 in (850 mm)
Connector	Stäubli MC4, IP68



AC OUTPUT ELECTRICAL CHARACTERISTICS

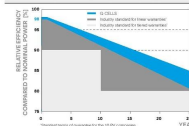
IQ7PLUS-72-ACM-US OR IQ7PLUS-72-E-ACM-US				
Peak Output Power	[VA]	295	AC Short Circuit Fault Current over 3 Cycles	5.8 Arms
Max. Continuous Output Power	[VA]	290	Max. Units per 20 A (L-L) Branch Circuit	13
Nominal (L-L) Voltage / Range	[V]	240/211-264	Overvoltage Class AC Port	III
Max. Continuous Output Current	[A]	1.21	AC Port Backfeed Current	18 mA
Nominal Frequency	[Hz]	60	Power Factor (Setting)	1
Extended Frequency Range	[Hz]	47-68	Power Factor (adjustable)	0.85 leading ... 0.85 lagging

DC ELECTRICAL CHARACTERISTICS

POWER CLASS 340					
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE ±5W / -0W)					
Min. Power at MPP ²	P_{MPP} [W]	340	Min. Current at MPP	I_{MPP} [A]	10.02
Min. Short Circuit Current ³	I_{SC} [A]	10.52	Min. Voltage at MPP	V_{MPP} [V]	33.94
Min. Open Circuit Voltage ³	V_{OC} [V]	40.66	Min. Efficiency ⁴	η [%]	≥19.0

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

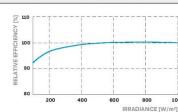
Q CELLS PERFORMANCE WARRANTY



At least 95% 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 tolerance. Full warranties in accordance with the warranty terms of the Q CELLS sales organization 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 [°F]	109 ± 5.4 (43.3°C)

PROPERTIES FOR DC SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1000	PV Module Classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 1703	TYPE 2
Max. Design Load, Push / Pull ³	[lbs / ft]	75 (3600 Pa) / 55 (2667 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]	113 (5400 Pa) / 84 (4000 Pa)		

³ See Installation Manual

QUALIFICATIONS AND CERTIFICATES



Solar module: UL 1703, CE-compliant.
U.S. Patent No. 8,893,233 solar cells.
Enphase micro inverter: UL 1741 SA, UL 62109-1, UL 1741 RFI, IEC FCC Part 15 Class B.
IEC 60903 Class B, CAN/CSA-C22.2 NO. 107.1-01, Rapid Shutdown Compliant per NEC-2014 & 2017 & C22.1-2015

PACKAGING INFORMATION

Number of Modules per Pallet	26
Number of Pallets per Trailer (24 ft)	28
Number of Pallets per 40' HC-Container (26 ft)	26
Pallet Dimensions (L × W × H)	70.1 × 42.5 × 47.6 in (1780 × 1080 × 1208 mm)
Pallet Weight	1345 lbs (610 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.

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powered by
Q.ANTUM DUO Z

Q. PEAK DUO BLK ML-G9

365-385

ENDURING HIGH PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.6%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

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



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 (6000 Pa) and wind loads (4000 Pa).



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty².



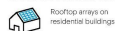
STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

¹ APT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 16h)
² See data sheet on rear for further information.



THE IDEAL SOLUTION FOR:



Engineered in Germany

Q CELLS

MECHANICAL SPECIFICATION

Format	1840mm x 1030mm x 32mm (including frame)
Weight	19.5kg
Front Cover	2.8mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminum
Cell	6 x 22 monocrystalline Q.ANTUM solar half cells
Junction box	55 (21mm x 32.60mm x 15-19mm) Protection class IP67, with bypass diodes
Cable	4mm ² Solar cable, (+) x1200mm, (-) x1200mm
Connector	Stäubli MC4, Hanwha Q CELLS HQC4, IP68

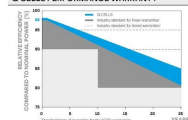


ELECTRICAL CHARACTERISTICS

POWER CLASS	365	370	375	380	385	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE +5W / -0W)						
Power at MPP	P_{MPP} [W]	365	370	375	380	385
Short Circuit Current ¹	I_{SC} [A]	10.40	10.44	10.47	10.50	10.53
Open Circuit Voltage ¹	V_{OC} [V]	44.93	44.97	45.01	45.04	45.08
Current at MPP	I_{MPP} [A]	9.87	9.92	9.98	10.04	10.10
Voltage at MPP	V_{MPP} [V]	36.99	37.28	37.57	37.85	38.13
Efficiency ¹	η [%]	≥19.3	≥19.5	≥19.8	≥20.1	≥20.3
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT¹						
Power at MPP	P_{MPP} [W]	273.3	277.1	280.8	284.6	288.3
Short Circuit Current	I_{SC} [A]	8.38	8.41	8.43	8.46	8.48
Open Circuit Voltage	V_{OC} [V]	42.37	42.41	42.44	42.48	42.51
Current at MPP	I_{MPP} [A]	7.76	7.81	7.86	7.91	7.96
Voltage at MPP	V_{MPP} [V]	35.23	35.48	35.72	35.96	36.20

¹ Measurement tolerances P_{MPP} ±3%; I_{SC} , V_{OC} ±5% at STC; 1000W/m², 25±2°C, AM 1.5 according to IEC 60904-3 • 1800W/m², NMOT, spectrum AM 1.5

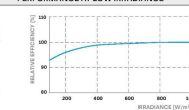
Q CELLS PERFORMANCE WARRANTY



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 with 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, 1000W/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 [°C]	43±3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{MYS} [V]	1000	PV module classification	Class II
Maximum Reverse Current	I_{R} [A]	20	Fire Rating based on ANSI / UL 61730	C) TYPE 2
Max. Design Load, Push/Pull	[Pa]	4000/2660	Permitted Module Temperature on Continuous Duty	-40°C - +85°C
Max. Test Load, Push/Pull	[Pa]	6000/4000		

QUALIFICATIONS AND CERTIFICATES

IEC 61215:2016
IEC 61730:2016
This data sheet complies with DIN EN 50338



Horizontal packaging



PACKAGING INFORMATION

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

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Q CELLS

Engineered in Germany