

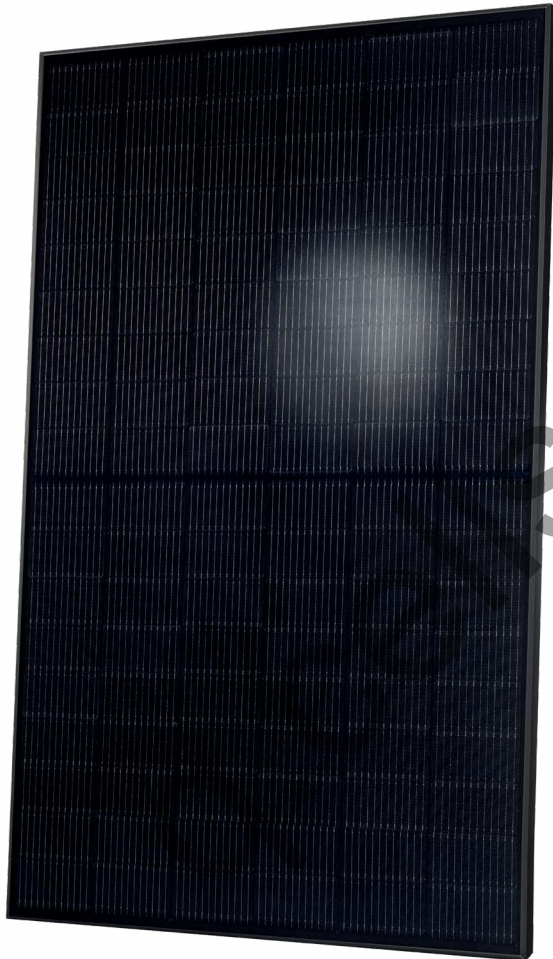
Q.TRON BLK SERIES



PRELIMINARY

405 - 425 Wp | 108 Cells
22.2 % Maximum Module Efficiency

MODEL Q.TRON BLK M-G2+



Q.ANTUM
NEO

High performance Qcells N-type solar cells

Q.ANTUM NEO solar cell technology with zero gap cell layout boosts module efficiency up to 22.2 %.



Warranty
Product & Performance

A reliable investment

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



Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology¹ and Hot-Spot Protect.



Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (3600 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.

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:



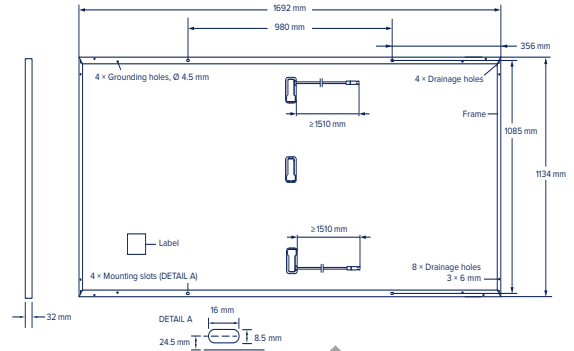
Rooftop arrays on
residential buildings



Q.TRON BLK SERIES

Mechanical Specification

Format	1692 mm × 1134 mm × 32 mm (including frame)
Weight	21.5 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 ² Solar cable; (+) ≥ 1510 mm, (-) ≥ 1510 mm
Connector	Stäubli MC4; IP68

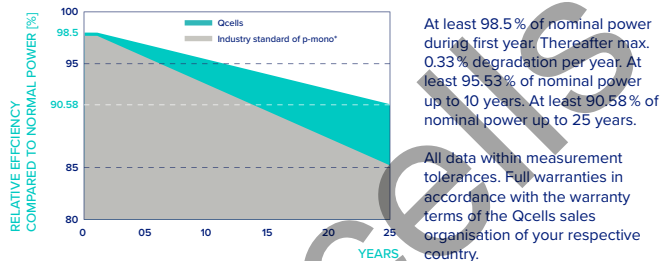


Electrical Characteristics

POWER CLASS			405	410	415	420	425
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/-0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	405	410	415	420	425
	Short Circuit Current ¹	I _{SC} [A]	13.35	13.39	13.42	13.46	13.49
	Open Circuit Voltage ¹	V _{OC} [V]	38.56	38.58	38.61	38.64	38.67
	Current at MPP	I _{MPP} [A]	12.62	12.68	12.75	12.82	12.88
	Voltage at MPP	V _{MPP} [V]	32.10	32.32	32.55	32.77	32.98
	Efficiency ¹	η [%]	≥ 21.1	≥ 21.4	≥ 21.6	≥ 21.9	≥ 22.2
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	306.3	310.0	313.8	317.6	321.4
	Short Circuit Current	I _{SC} [A]	10.76	10.79	10.82	10.84	10.87
	Open Circuit Voltage	V _{OC} [V]	36.58	36.61	36.63	36.66	36.69
	Current at MPP	I _{MPP} [A]	9.91	9.97	10.03	10.09	10.15
	Voltage at MPP	V _{MPP} [V]	30.90	31.09	31.29	31.48	31.66

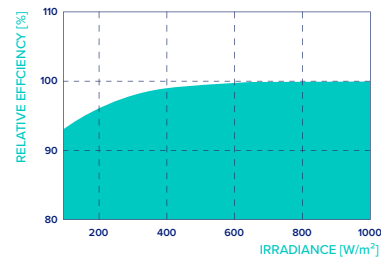
¹Measurement tolerances P_{MPP} ± 3%; I_{SC}, V_{OC} ± 5% at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY



*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/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α	[%/K]	+0.04	Temperature Coefficient of V _{OC}	β	[%/K]	-0.24
Temperature Coefficient of P _{MPP}	γ	[%/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]	20	Fire Rating based on ANSI/UL 61730	C/TYPE 2
Max. Design Load, Push/Pull	[Pa]	3600/2400		Permitted Module Temperature on Continuous Duty	-40 °C - +85 °C
Max. Test Load, Push/Pull	[Pa]	5400/3600			

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.

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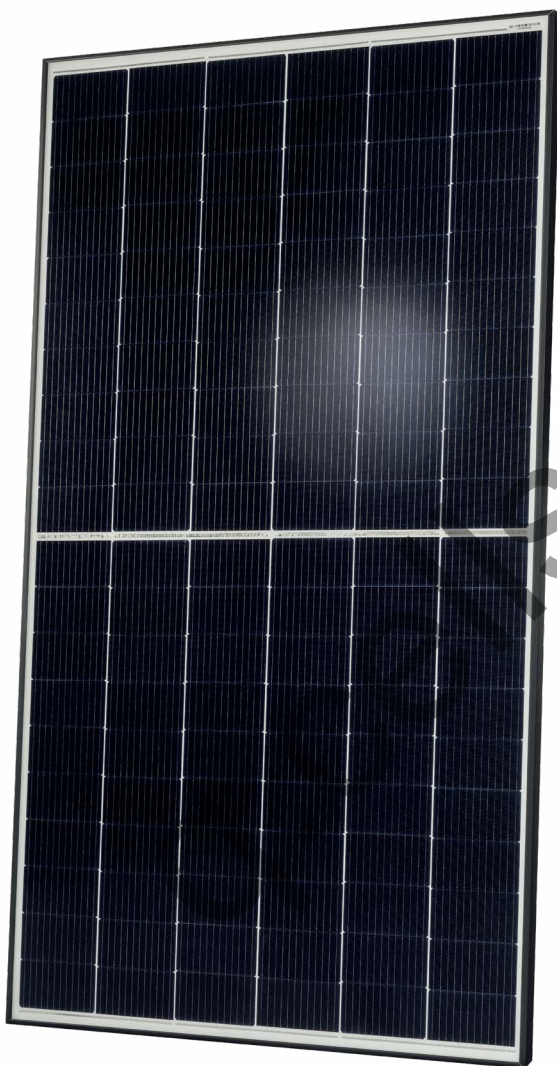
qcells

Q.TRON SERIES



380 - 400 Wp | 120 Cells
22.3% Maximum Module Efficiency

MODEL Q.TRON-G1+



Q.ANTUM
NEO

State of the art module design

Q.ANTUM NEO Technology with zero gap cell layout boosts module efficiency up to 22.3%.

25
YEARS

Warranty
Product & Performance

A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty¹.



Qcells
Advanced Yield Security

Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology², 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.

¹ See data sheet on rear for further information.

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

The ideal solution for:



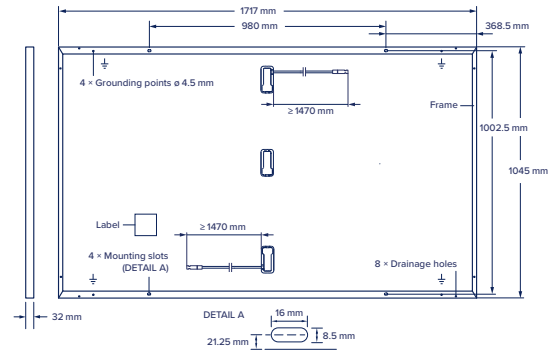
Rooftop arrays on
residential buildings



Q.TRON SERIES

Mechanical Specification

Format	1717 mm × 1045 mm × 32 mm (including frame)
Weight	19.9 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 20 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 ² Solar cable; (+) ≥1470 mm, (-) ≥1470 mm
Connector	Stäubli MC4; IP68

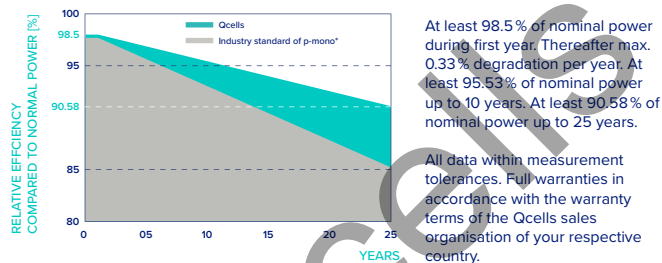


Electrical Characteristics

POWER CLASS			380	385	390	395	400
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/-0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	380	385	390	395	400
	Short Circuit Current ¹	I _{SC} [A]	11.22	11.25	11.28	11.32	11.35
	Open Circuit Voltage ¹	V _{OC} [V]	42.58	42.61	42.65	42.68	42.71
	Current at MPP	I _{MPP} [A]	10.65	10.71	10.77	10.83	10.89
	Voltage at MPP	V _{MPP} [V]	35.69	35.96	36.22	36.48	36.73
	Efficiency ¹	η [%]	21.2	21.5	21.7	22.0	22.3
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	287.4	291.1	294.9	298.7	302.5
	Short Circuit Current	I _{SC} [A]	9.04	9.07	9.09	9.12	9.14
	Open Circuit Voltage	V _{OC} [V]	40.40	40.43	40.46	40.49	40.53
	Current at MPP	I _{MPP} [A]	8.37	8.43	8.48	8.53	8.59
	Voltage at MPP	V _{MPP} [V]	34.32	34.55	34.78	35.00	35.22

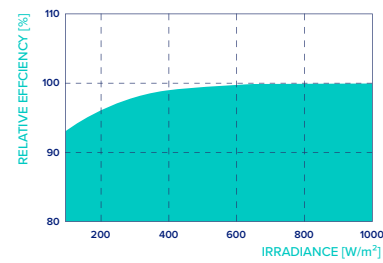
¹Measurement tolerances P_{MPP} ±3%; I_{SC}, V_{OC} ±5% at STC: 1000 W/m², 25 ±2 °C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY



*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/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α	[%/K]	+0.04	Temperature Coefficient of V _{OC}	β	[%/K]	-0.24
Temperature Coefficient of P _{MPP}	γ	[%/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]	20	Fire Rating based on ANSI/UL 61730	C/TYP 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.



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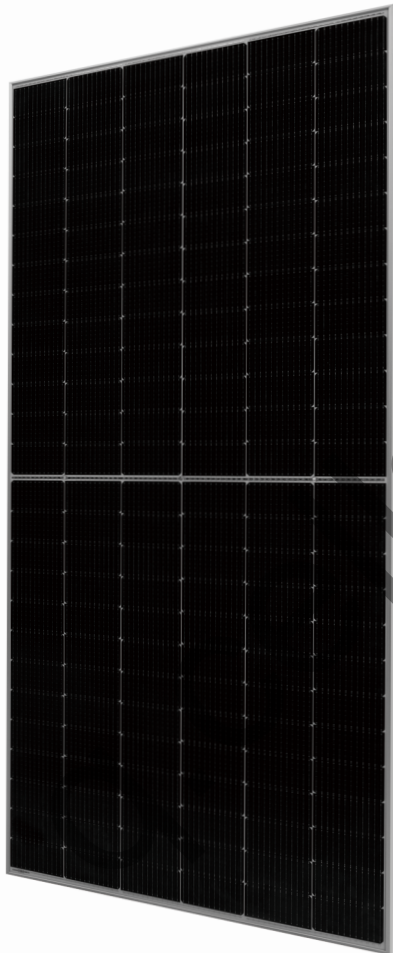
qcells

Q.PEAK DUO SERIES



570 - 590 Wp | 156 Cells
21.5 % Maximum Module Efficiency

MODEL Q.PEAK DUO XL-G11.3
Q.PEAK DUO XL-G11.7



Breaking the 21% efficiency barrier

Q.ANTUM DUO Z technology with zero gap cell layout boosts module efficiency up to 21.5 %.



Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology¹ and Hot-Spot Protect



Low electricity generation costs

Higher yield per surface area, lower BOS costs and more module power than standard 144 half-cell modules.



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

The ideal solution for:



Ground mounted solar panels

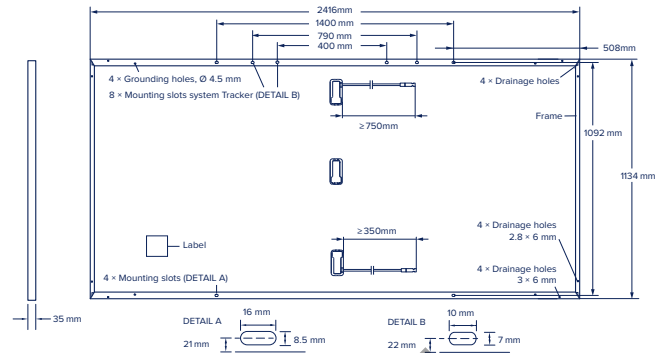


Q.PEAK DUO SERIES

Mechanical Specification

Format	2416 mm × 1134 mm × 35 mm (including frame)
Weight	30.7 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
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; (+) ≥ 750 mm, (-) ≥ 350 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4; IP68

*Long cables (+) ≥ 1650 mm, (-) ≥ 1650 mm are available upon request.

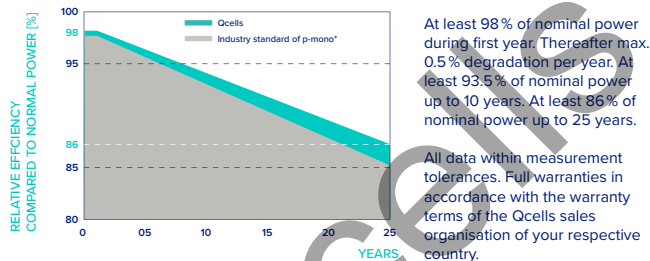


Electrical Characteristics

POWER CLASS				570	575	580	585	590
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/-0 W)								
Minimum	Power at MPP ¹	P _{MPP}	[W]	570	575	580	585	590
	Short Circuit Current ¹	I _{SC}	[A]	13.49	13.51	13.54	13.57	13.59
	Open Circuit Voltage ¹	V _{OC}	[V]	53.59	53.62	53.64	53.67	53.70
	Current at MPP	I _{MPP}	[A]	12.82	12.87	12.92	12.97	13.01
	Voltage at MPP	V _{MPP}	[V]	44.46	44.68	44.9	45.12	45.33
	Efficiency ¹	η	[%]	≥20.8	≥21.0	≥21.2	≥21.4	≥21.5
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²								
Minimum	Power at MPP	P _{MPP}	[W]	427.6	431.4	435.1	438.9	442.6
	Short Circuit Current	I _{SC}	[A]	10.87	10.89	10.91	10.93	10.95
	Open Circuit Voltage	V _{OC}	[V]	50.54	50.56	50.59	50.62	50.64
	Current at MPP	I _{MPP}	[A]	10.09	10.13	10.17	10.22	10.26
	Voltage at MPP	V _{MPP}	[V]	42.39	42.58	42.77	42.96	43.14
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 • ²800 W/m², NMOT, spectrum AM 1.5								

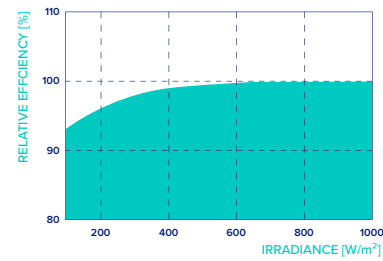
¹Measurement tolerances P_{MPP} ± 3%; I_{SC}, V_{OC} ± 5% at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY



*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



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 based on ANSI/UL 61730	C / TYPE 1
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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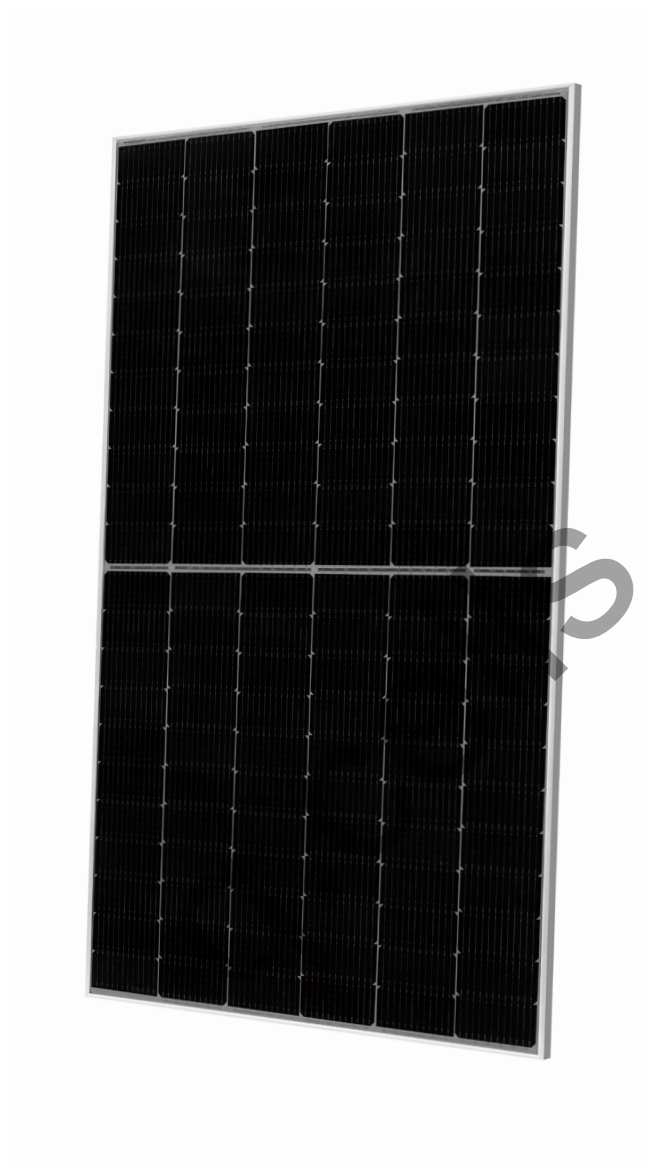
qcells

Q.PEAK DUO ML-G11 SERIES



480 - 500 Wp | 132 Cells
21.5 % Maximum Module Efficiency

MODEL Q.PEAK DUO ML-G11.2



Breaking the 21% efficiency barrier

Q.ANTUM DUO Z technology with zero gap cell layout boosts module efficiency up to 21.5 %.



Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology¹ and Hot-Spot Protect.



Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).



Innovative all-weather technology

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



A reliable investment

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



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.

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



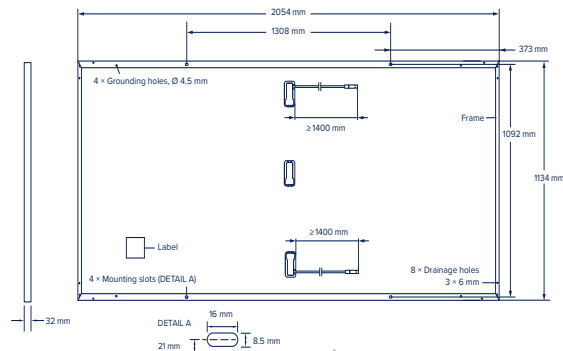
Ground mounted solar panels



Q.PEAK DUO ML-G11 SERIES

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	Silver 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 mm ² Solar cable; (+) ≥1400 mm, (-) ≥1400 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4; IP68

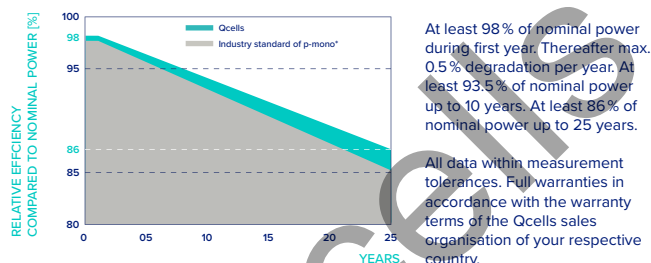


Electrical Characteristics

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

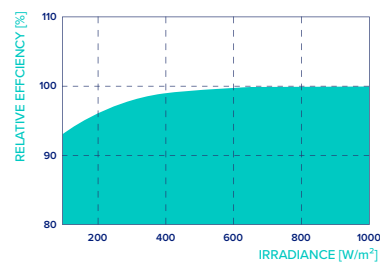
¹Measurement tolerances P_{MPP} ±3%; I_{SC}, V_{OC} ±5% at STC: 1000 W/m², 25 ±2 °C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY



*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/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 based on ANSI/UL 61730	C / TYPE 1
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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qcells

Q.PEAK DUO SERIES



350 - 370 Wp | 120 Cells
20.6 % Maximum Module Efficiency

MODEL Q.PEAK DUO BLK-G10
Q.PEAK DUO BLK-G10.4



Breaking the 20% efficiency barrier

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



Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology¹ and 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.



A reliable investment

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



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.

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:



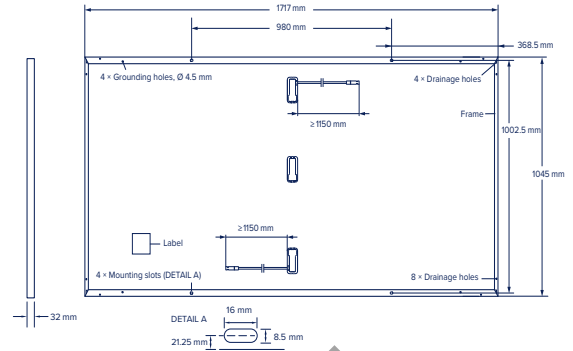
Rooftop arrays on residential buildings



Q.PEAK DUO SERIES

Mechanical Specification

Format	1717 mm × 1045 mm × 32 mm (including frame)
Weight	19.9 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 20 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; (+) ≥ 1150 mm, (-) ≥ 1150 mm
Connector	Stäubli MC4, Hanwha Q CELLS HQC4; IP68

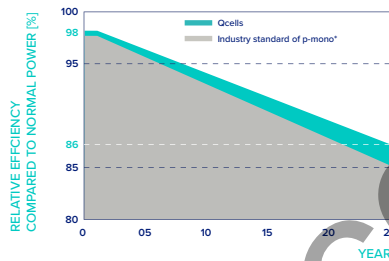


Electrical Characteristics

POWER CLASS			350	355	360	365	370
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/-0 W)							
Minimum	Power at MPP ¹	P _{MPP} [W]	350	355	360	365	370
	Short Circuit Current ¹	I _{SC} [A]	10.97	11.00	11.04	11.07	11.10
	Open Circuit Voltage ¹	V _{OC} [V]	41.11	41.14	41.18	41.21	41.24
	Current at MPP	I _{MPP} [A]	10.37	10.43	10.49	10.56	10.62
	Voltage at MPP	V _{MPP} [V]	33.76	34.03	34.31	34.58	34.84
	Efficiency ¹	η [%]	≥ 19.5	≥ 19.8	≥ 20.1	≥ 20.3	≥ 20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²							
Minimum	Power at MPP	P _{MPP} [W]	262.6	266.3	270.1	273.8	277.6
	Short Circuit Current	I _{SC} [A]	8.84	8.87	8.89	8.92	8.95
	Open Circuit Voltage	V _{OC} [V]	38.77	38.80	38.83	38.86	38.90
	Current at MPP	I _{MPP} [A]	8.14	8.20	8.26	8.31	8.37
	Voltage at MPP	V _{MPP} [V]	32.24	32.48	32.71	32.94	33.17

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 • ²800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

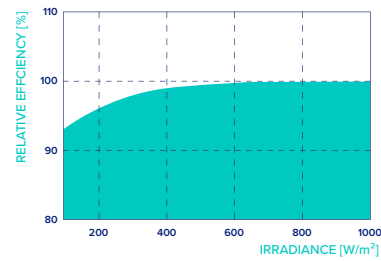


At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

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

*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/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]	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]	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.

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qcells

powered by

Q.ANTUM DUO

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

ENDURING HIGH
PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM Technology combined with zero gap cell layout boosts module efficiency up to 20.8% absolute.



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 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 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 (-1500V, 168h)

² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:



Rooftop arrays on
commercial / industrial
buildings



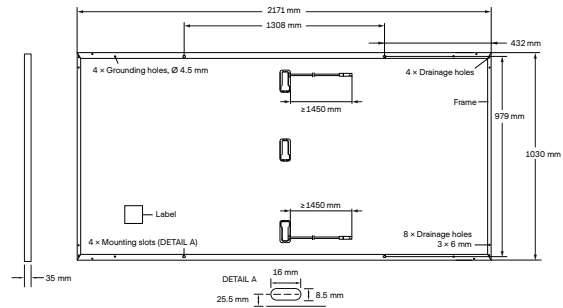
Ground-mounted
solar power plants

Engineered in Germany

Q CELLS

MECHANICAL SPECIFICATION

Format	2171 mm × 1030 mm × 35 mm (including frame)
Weight	25.5 kg
Front Cover	2.8 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
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; (+) ≥ 1450 mm, (-) ≥ 1450 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4, Amphenol UTX, Renhe 05-8, JMTHY JM601A, Tongling Cable01S-F; IP68 or Friends PV2e; IP67

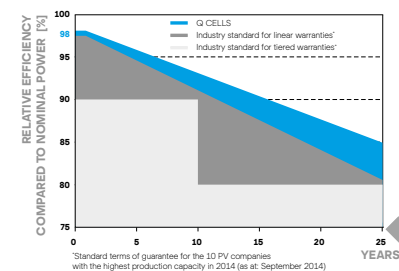


ELECTRICAL CHARACTERISTICS

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	≥19.9	≥20.1	≥20.3	≥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 • 2800 W/m², NMOT, spectrum AM 1.5

Q CELLS PERFORMANCE WARRANTY

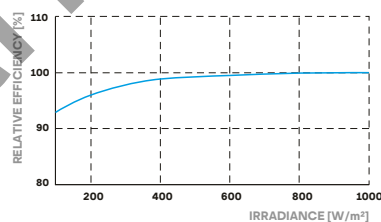


At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 93.1% of nominal power up to 10 years. At least 85% of nominal power up to 25 years.

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

¹Standard terms of guarantee for the 10 PV companies with the highest production capacity in 2014 (as at September 2014)

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 [°C]	43 ± 3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V _{sys} [V]	1500 (IEC) / 1500 (UL)	PV module classification	Class II
Maximum Reverse Current	I _R [A]	20	Fire Rating based on ANSI / UL 1703	C / TYPE 1
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

IEC 61215:2016; IEC 61730:2016;

This data sheet complies with DIN EN 50380.



PACKAGING INFORMATION

Number of Modules per Pallet	29
Number of Pallets per Trailer (24t)	24
Number of Pallets per 40' HC-Container (26t)	20
Pallet Dimensions (L × W × H)	2241 × 1150 × 1220 mm
Pallet Weight	814 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.

Hanwha Q CELLS GmbH

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Engineered in Germany

