

SOLAR MODULE SPECSHEET

Q.PEAK DUO BLK ML-G10+ SERIES

385-410 Wp | 132 Cells
20.9% Maximum Module Efficiency



MODEL Q.PEAK DUO BLK ML-G10+



Breaking the 20% efficiency barrier
Q. ANTUM DUO 2 Technology with zero gap cell layout boosts module efficiency up to 20.9%.



A reliable investment
Inclusive 25-year product warranty and 25-year linear performance warranty.



Enduring high performance
Long-term yield security with Anti LeTID Technology, Anti PID Technology² and Hot-Spot Protect.



Extreme weather rating
High-tech aluminium alloy frame, certified for high snow (5400 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 AFT test conditions according to IEC TS 62904-1:2015, method A1, E60V/50%.

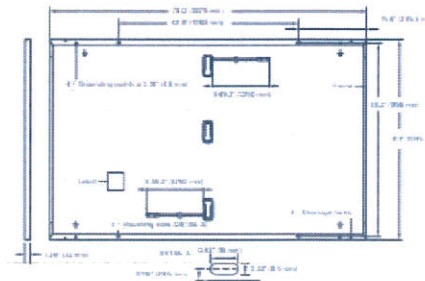
The ideal solution for:
Rooftop arrays on residential buildings



Q.PEAK DUO BLK ML-G10+ SERIES

Mechanical Specification

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 22 monocrystalline Q. ANTUM solar half cells
Junction box	2.09 in × 1.26 in × 0.59 in (53 mm × 32 mm × 15 mm) IP67 with bypass diodes
Cable	4 mm ² Solar cable, (+) ± 49.2 in (1250 mm), (-) ± 49.2 in (1250 mm)
Connector	Stäubli MC4, IP68



Electrical Characteristics

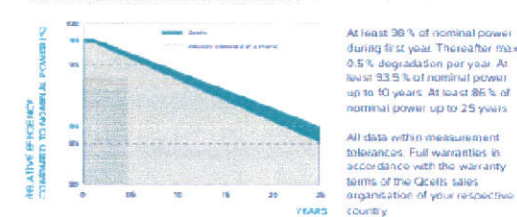
POWER CLASS			385	390	395	400	405	410
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE: +5W/-0W)								
Minimum	Power at MPP ¹	P _{max} [W]	385	390	395	400	405	410
	Short Circuit Current ¹	I _{sc} [A]	11.04	11.07	11.10	11.14	11.17	11.20
	Open Circuit Voltage ¹	V _{oc} [V]	45.19	45.23	45.27	45.30	45.34	45.37
	Current at MPP	I _{mp} [A]	10.59	10.65	10.71	10.77	10.83	10.89
	Voltage at MPP	V _{mp} [V]	36.36	36.62	36.88	37.13	37.39	37.64
	Efficiency ¹	η [%]	≥ 19.6	≥ 19.9	≥ 20.1	≥ 20.4	≥ 20.6	≥ 20.9

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²

Minimum	Power at MPP	P _{max} [W]	288.8	292.6	296.3	300.1	303.8	307.6
	Short Circuit Current	I _{sc} [A]	8.90	8.92	8.95	8.97	9.00	9.03
	Open Circuit Voltage	V _{oc} [V]	42.62	42.65	42.69	42.72	42.76	42.79
	Current at MPP	I _{mp} [A]	8.35	8.41	8.46	8.51	8.57	8.62
	Voltage at MPP	V _{mp} [V]	34.59	34.81	35.03	35.25	35.46	35.68

¹ Measurement tolerances: P_{max} ± 3%, I_{sc}, V_{oc} ± 5% at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3, 1000 W/m², NMOT: spectrum AM 1.5

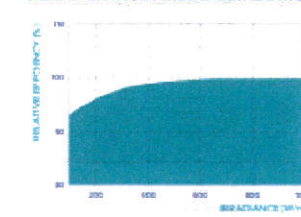
Qcells PERFORMANCE WARRANTY



At least 96% 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 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 _{mp}	γ [%/K]	-0.32	Nominal Module Operating Temperature	NMOT [°F]	109

Properties for System Design

Maximum System Voltage	V _{max} [V]	1000 (IEC) 1000 (UL)
Maximum Series Fuse Rating	[A DC]	20
Max. Design Load, Push/Pull ³	[lbs./ft ²]	75 (3500 Pa)/55 (2600 Pa)
Max. Test Load, Push/Pull ³	[lbs./ft ²]	113 (5400 Pa)/84 (4000 Pa)

³ See Installation Manual

Qualifications and Certificates

UL 5050 CE compliant
Quality Controlled PV - TÜV Rheinland
IEC 61215:2016 IEC 61730:2016
U.S. Patent No. 9,933,215 (solar cells)



qcells

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.
Hermann G. (781) 546-0000 ext. 400 | Spectrum Tower Drive, Suite 400, Boston, MA 02459 | USA | TEL: (1549) 743 19 30 | E-MAIL: technical@qcells.com | www.qcells.com



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SITE INFORMATION:
Campili, Darren & Carol
911 Fairway Lane
Mamaroneck, NY 10543
DC SYSTEM SIZE:
9.2 kW

DBM DESIGN
DBM SOLAR DESIGN AND CONSULTING COMPANY, LLC
P: (801) 690-4873
E: SUPPORT@DBMSOLAR.COM
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DESIGNED BY: K. Vang
DATE: 4/17/2023
PROJECT #: 2021-SUN BLUE
SHEET NAME: SPEC SHEETS
PAGE #: SPECS
REVISION: 0

INVERTER SPECSHEET



DATA SHEET



IQ8 Series Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.

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IQ8SE-DS-0001-01-EN-US-2021-10-19



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

IQ8 Series Microinverters

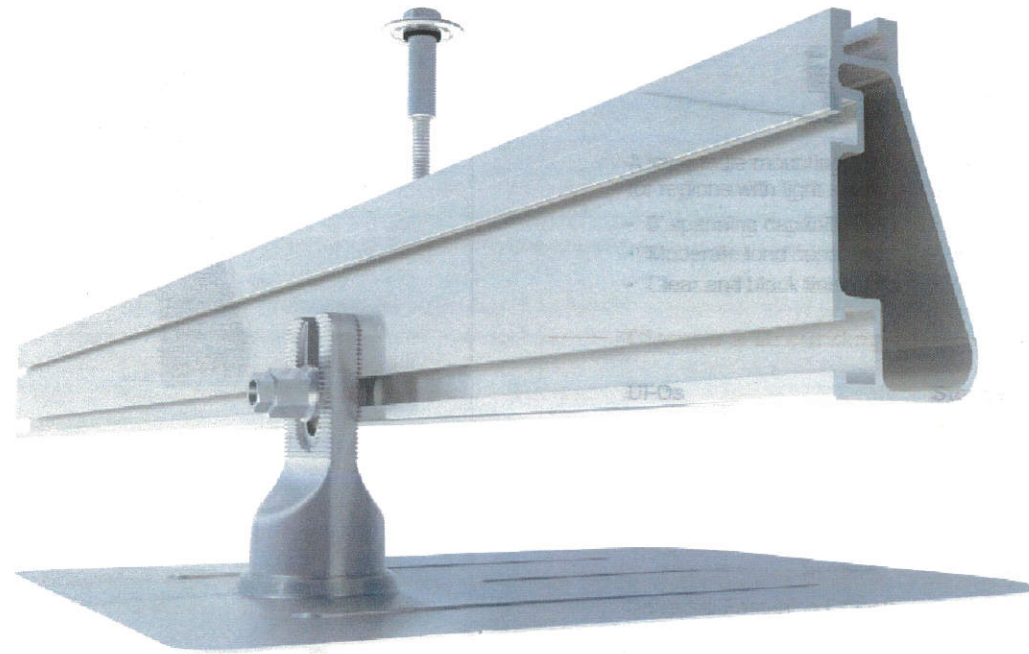
INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US ¹
Commonly used module pairings ²	W	235 - 350	235 - 440	260 - 460	295 - 500	320 - 540+	295 - 500+
Module compatibility		60-cell/120 half-cell		60-cell/120 half-cell and 72-cell/144 half-cell			
MPPT voltage range	V	27 - 37	29 - 45	33 - 45	36 - 45	38 - 45	38 - 45
Operating range	V	25 - 48			25 - 58		
Min/max start voltage	V	30 / 48			30 / 58		
Max input DC voltage	V	50			60		
Max DC current ³ (module Isc)	A			15			
Overvoltage class DC port				II			
DC port backfeed current	mA			0			
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit					
OUTPUT DATA (AC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US
Peak output power	VA	245	300	330	366	384	366
Max continuous output power	VA	240	290	325	349	380	360
Nominal (L-L) voltage/range ⁴	V			240 / 211 - 264			208 / 183 - 250
Max continuous output current	A	1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz			60			
Extended frequency range	Hz			50 - 68			
Max units per 20 A (L-L) branch circuit ⁵		16	13	11	11	10	9
Total harmonic distortion				<5%			
Overvoltage class AC port				III			
AC port backfeed current	mA			30			
Power factor setting				1.0			
Grid-tied power factor (adjustable)				0.85 leading - 0.85 lagging			
Peak efficiency	%	97.5	97.6	97.6	97.6	97.6	97.4
CEC weighted efficiency	%	97	97	97	97.5	97	97
Night-time power consumption	mW			60			
MECHANICAL DATA							
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)					
Relative humidity range		4% to 100% (condensing)					
DC Connector type		MC4					
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")					
Weight		1.08 kg (2.38 lbs)					
Cooling		Natural convection - no fans					
Approved for wet locations		Yes					
Acoustic noise at 1 m		<60 dBA					
Pollution degree		PD3					
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure					
Environ. category / UV exposure rating		NEMA Type 6 / outdoor					
COMPLIANCE							

RACKING SPECSHEET



Datasheet

Flush Mount System



Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Every component has been tested to the limit and proven in extreme environments.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 20-year warranty.



Strength Tested

All components evaluated for superior structural performance.



Class A Fire Rating

Certified to maintain the fire resistance rating of the existing roof.



UL 2703 Listed System

Entire system and components meet newest effective UL 2703 standard.



PE Certified

Pre-stamped engineering letters available in most states.



Design Assistant

Online software makes it simple to create, share, and price projects.

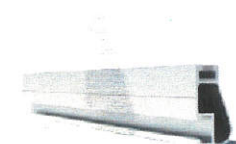


20-Year Warranty

Twice the protection offered by competitors.

XR Rails ☺

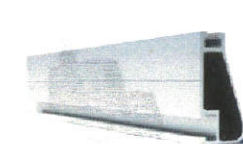
XR10 Rail



A low-profile mounting rail for regions with light snow.

- 6' spanning capability
- Moderate load capability
- Clear and black finish

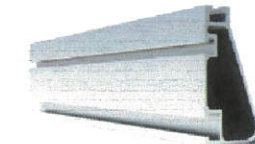
XR100 Rail



The ultimate residential solar mounting rail.

- 8' spanning capability
- Heavy load capability
- Clear and black finish

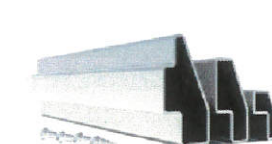
XR1000 Rail



A heavyweight mounting rail for commercial projects.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish

Bonded Splices



All rails use internal splices for seamless connections.

- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

Clamps & Grounding ☺

UFOs



Universal Fastening Objects bond modules to rails.

- Fully assembled & lubed
- Single, universal size
- Clear and black finish

Stopper Sleeves



Snap onto the UFO to turn into a bonded end clamp.

- Bonds modules to rails
- Sized to match modules
- Clear and black finish

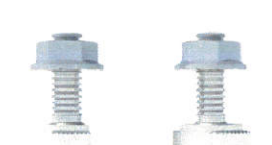
Grounding Lugs



Connect arrays to equipment ground.

- Low profile
- Single tool installation
- Mounts in any direction

Microinverter Kits



Mount MIs or POs to XR Rails.

- Bonds devices to rails
- Kit comes assembled
- Listed to UL 2703

Attachments ☺

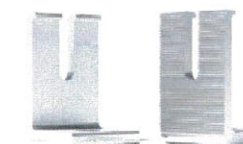
FlashFoot2



Flash and mount XR Rails with superior waterproofing.

- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

Slotted L-Feet



Drop-in design for rapid rail attachment.

- Secure rail connections
- Slot for vertical adjusting
- Clear and black finish

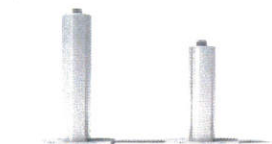
Bonding Hardware



Bond and attach XR Rails to roof attachments.

- T & Square Bolt options
- Nut uses 7/16" socket
- Assembled and lubricated

Flush Standoffs



Raise Flush Mount System to various heights.

- Works with vertical flashing
- 4" and 6" lengths
- Ships assembled

Resources



Design Assistant

Go from rough layout to fully engineered system. For free.

Go to IronRidge.com/design



NABCEP Certified Training

Earn free continuing education credits while learning more about solar.

Go to IronRidge.com/train



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SITE INFORMATION:
Campili, Darren & Carol
911 Fairway Lane
Mamaroneck, NY 10543
DC SYSTEM SIZE:
9.2 kW



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DESIGNED BY: K. Vang

DATE: 4/17/2023

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SHEET NAME: SPEC SHEETS

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SPEC

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