Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 08/03/15

Q.PRO BFR-G3 255-265

POLYCRYSTALLINE SOLAR MODULE

The new Q.PRO BFR-G3 is the reliable evergreen for all applications, with a black frame design for improved aesthetics. The third module generation from Q CELLS has been optimised across the board: improved output yield, higher operating reliability and durability, quicker installation and more intelligent design.

INNOVATIVE ALL-WEATHER TECHNOLOGY

- Maximum yields with excellent low-light and temperature behaviour.
- Certified fully resistant to level 5 salt fog

ENDURING HIGH PERFORMANCE

- Long-term Yield Security due to Anti PID Technology[1], Hot-Spot Protect, and Traceable Quality Tra.Q™.
- Long-term stability due to VDE Quality Tested – the strictest test program.

SAFE ELECTRONICS

- Protection against short circuits and thermally induced power losses due to breathable junction box and welded cables.
- Increased flexibility due to MC4-intermateable connectors.

PROFIT-INCREASING GLASS TECHNOLOGY

- Reduction of light reflection by 50 %, plus long-term corrosion resistance due to high-quality
- Sol-Gel roller coating processing.

LIGHTWEIGHT QUALITY FRAME

- Stability at wind loads of up to 5400 Pa with a module weight of just 19 kg due to slim frame design with high-tech alloy.

MAXIMUM COST REDUCTIONS

- Up to 31 % lower logistics costs due to higher module capacity per box.

EXTENDED WARRANTIES

- Investment security due to 12-year product warranty and 25-year linear performance warranty[2].

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2014

Q CELLS YIELD SECURITY
ANTI PID TECHNOLOGY (APT)
HOT-SPOT PROTECT (HSP)
TRACEABLE QUALITY (TRA.Q™)

VDE Quality Tested
✓ high reliability
✓ low degradation
✓ frequent product surveillance
ID. 40032587

Photon
Q CELLS
Best polycrystalline solar module 2013
Q.PRO-G2 235
151 modules tested

THE IDEAL SOLUTION FOR:

- Rooftop arrays on commercial / industrial buildings
- Ground-mounted solar power plants
- Rooftop arrays on residential buildings

[1] APT test conditions: Cells at -1000 V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h
[2] See data sheet on rear for further information.

Engineered in **Germany**

Q CELLS

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MECHANICAL SPECIFICATION

Format	65.7 in × 39.4 in x 1.38 in (including frame) (1670 mm × 1000 mm × 35 mm)
Weight	41.89 lb (19.0 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 × 10 polycrystalline solar cells
Junction box	Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥45.67 in (1160 mm), (-) ≥45.67 in (1160 mm)
Connector	SOLARLOK PV4, IP68

ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W/m², 25 °C, AM 1.5 G SPECTRUM)[1]					
NOMINAL POWER (+5 W/-0 W)		[W]	255	260	265
Average Power	P_{MPP}	[W]	257.5	262.5	267.5
Short Circuit Current	I_{SC}	[A]	8.90	9.09	9.28
Open Circuit Voltage	V_{OC}	[V]	37.83	38.18	38.52
Current at P_{MPP}	I_{MPP}	[A]	8.37	8.53	8.69
Voltage at P_{MPP}	V_{MPP}	[V]	30.77	30.78	30.79
Efficiency (Nominal Power)	η	[%]	≥15.3	≥15.6	≥15.9
PERFORMANCE AT NORMAL OPERATING CELL TEMPERATURE (NOCT: 800 W/m², 45 ± 3 °C. AM 1.5 G SPECTRUM)[2]					
NOMINAL POWER (+5 W/-0 W)		[W]	255	260	265
Average Power	P_{MPP}	[W]	189.7	193.4	197.1
Short Circuit Current	I_{SC}	[A]	7.18	7.33	7.48
Open Circuit Voltage	V_{OC}	[V]	35.22	35.54	35.86
Current at P_{MPP}	I_{MPP}	[A]	6.56	6.68	6.80
Voltage at P_{MPP}	V_{MPP}	[V]	28.92	28.94	28.97

[1] Measurement tolerances STC: ±3 % (P_{mpp}); ±10 % (I_{sc}, V_{oc}, I_{mpp}, V_{mpp}) [2] Measurement tolerances NOCT: ±5 % (P_{mpp}); ±10 % (I_{sc}, V_{oc}, I_{mpp}, V_{mpp})

Q CELLS PERFORMANCE WARRANTY

At least 97 % of nominal power during first year. Thereafter max. 0.6 % degradation per year.
At least 92 % of nominal power after 10 years.
At least 83 % of nominal power after 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

The typical change in module efficiency at an irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 G spectrum) is -2 % (relative).

TEMPERATURE COEFFICIENTS (AT 1000 W/M², 25 °C, AM 1.5 G SPECTRUM)

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.30
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.42	NOCT		[°F]	113 ± 5.4 (45 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1000 (IEC) / 600 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C
Max Load (UL)[2]	[lbs/ft²]	75 (3600 Pa)	Permitted module temperature on continuous duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Load Rating (UL)[2]	[lbs/ft²]	75 (3600 Pa)	[2] see installation manual	

QUALIFICATIONS AND CERTIFICATES

UL 1703; VDE Quality Tested; CE-compliant;
IEC 61215 (Ed.2); IEC 61730 (Ed.1) application class A

C Certified US
UL 1703
(254141)

PACKAGING INFORMATION

Number of Modules per Pallet	29
Number of Pallets per 53' Container	32
Number of Pallets per 40' Container	26
Pallet Dimensions (L × W × H)	68.5 in × 44.5 in × 46.0 in (1740 × 1130 × 1170 mm)
Pallet Weight	1323 lb (600 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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Engineered in **Germany**

Specifications subject to technical changes © Hanwha Q CELLS GmbH Q.PRO BFR-G3_2014-10_Rev05_NA