

# Q.PRO BFR-G3 245-260

## 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<sup>1</sup>, 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-inter-mateable 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<sup>2</sup>.



### THE IDEAL SOLUTION FOR:



Rooftop arrays on commercial/industrial buildings



Ground-mounted solar power plants



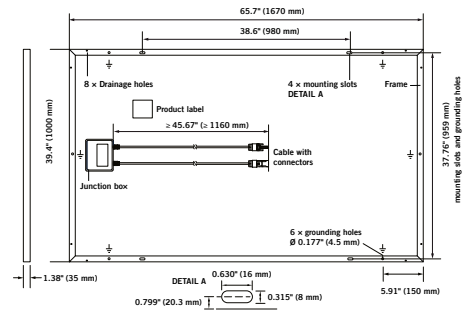
Rooftop arrays on residential buildings

<sup>1</sup> APT test conditions: Cells at -1000V against grounded, with conductive metal foil covered module surface, 25°C, 168h

<sup>2</sup> See data sheet on rear for further information.

## MECHANICAL SPECIFICATION

<b>Format</b>	65.7 in x 39.4 in x 1.38 in (including frame) (1670 mm x 1000 mm x 35 mm)
<b>Weight</b>	41.89 lb (19.0 kg)
<b>Front Cover</b>	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
<b>Back Cover</b>	Composite film
<b>Frame</b>	Black anodized aluminum
<b>Cell</b>	6 x 10 polycrystalline solar cells
<b>Junction box</b>	Protection class IP67, with bypass diodes
<b>Cable</b>	4 mm <sup>2</sup> Solar cable; (+) ≥ 45.67 in (1160 mm), (-) ≥ 45.67 in (1160 mm)
<b>Connector</b>	SOLARLOK PV4, IP68



## ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W/m<sup>2</sup>, 25 °C, AM 1.5 G SPECTRUM)<sup>1</sup>

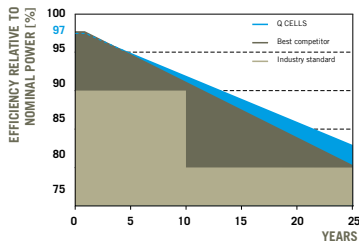
NOMINAL POWER (+5W/-0W)	[W]	245	250	255	260
<b>Average Power</b>	$P_{MPP}$ [W]	247.5	252.5	257.5	262.5
<b>Short Circuit Current</b>	$I_{SC}$ [A]	8.52	8.71	8.90	9.09
<b>Open Circuit Voltage</b>	$V_{OC}$ [V]	37.15	37.49	37.83	38.18
<b>Current at <math>P_{MPP}</math></b>	$I_{MPP}$ [A]	8.05	8.21	8.37	8.53
<b>Voltage at <math>P_{MPP}</math></b>	$V_{MPP}$ [V]	30.75	30.76	30.77	30.78
<b>Efficiency (Nominal Power)</b>	$\eta$ [%]	14.7	≥ 15.0	≥ 15.3	≥ 15.6

PERFORMANCE AT NORMAL OPERATING CELL TEMPERATURE (NOCT: 800 W/m<sup>2</sup>, 45 ± 3 °C, AM 1.5 G SPECTRUM)<sup>2</sup>

NOMINAL POWER (+5W/-0W)	[W]	245	250	255	260
<b>Average Power</b>	$P_{MPP}$ [W]	182.4	186.0	189.7	193.4
<b>Short Circuit Current</b>	$I_{SC}$ [A]	6.87	7.03	7.18	7.33
<b>Open Circuit Voltage</b>	$V_{OC}$ [V]	34.58	34.90	35.22	35.54
<b>Current at <math>P_{MPP}</math></b>	$I_{MPP}$ [A]	6.32	6.44	6.56	6.68
<b>Voltage at <math>P_{MPP}</math></b>	$V_{MPP}$ [V]	28.86	28.89	28.92	28.94

<sup>1</sup> Measurement tolerances STC: ± 3% ( $P_{MPP}$ ); ± 10% ( $I_{SC}$ ,  $V_{OC}$ ,  $I_{MPP}$ ,  $V_{MPP}$ )

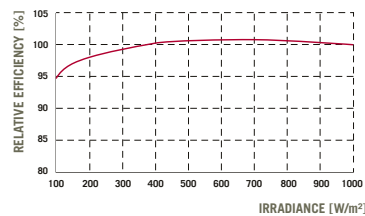
## Q CELLS PERFORMANCE WARRANTY



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/m<sup>2</sup> in relation to 1000 W/m<sup>2</sup> (both at 25 °C and AM 1.5 G spectrum) is -2% (relative).

TEMPERATURE COEFFICIENTS (AT 1000 W/M<sup>2</sup>, 25 °C, AM 1.5 G SPECTRUM)

<b>Temperature Coefficient of <math>I_{SC}</math></b>	$\alpha$	[%/K]	+0.04	<b>Temperature Coefficient of <math>V_{OC}</math></b>	$\beta$	[%/K]	-0.30
<b>Temperature Coefficient of <math>P_{MPP}</math></b>	$\gamma$	[%/K]	-0.42				

## PROPERTIES FOR SYSTEM DESIGN

<b>Maximum System Voltage <math>V_{SYS}</math></b>	[V]	1000	<b>Safety Class</b>	II
<b>Maximum Reverse Current <math>I_R</math></b>	[A]	20	<b>Fire Rating</b>	C
<b>Wind/Snow Load (in accordance with IEC 61215)</b>	[Pa]	5400	<b>Permitted module temperature on continuous duty</b>	-40 °F up to 185 °F (-40 °C up to 85 °C)

## QUALIFICATIONS AND CERTIFICATES

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



## PARTNER

**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 USA Corp.

8001 Irvine Center Drive, suite 1250, Irvine CA 92618, USA | TEL +1 848 748 59 96 | FAX +1 949 748 59 84 | EMAIL q-cells-usa@q-cells.com | WEB www.q-cells.us

Engineered in Germany

