

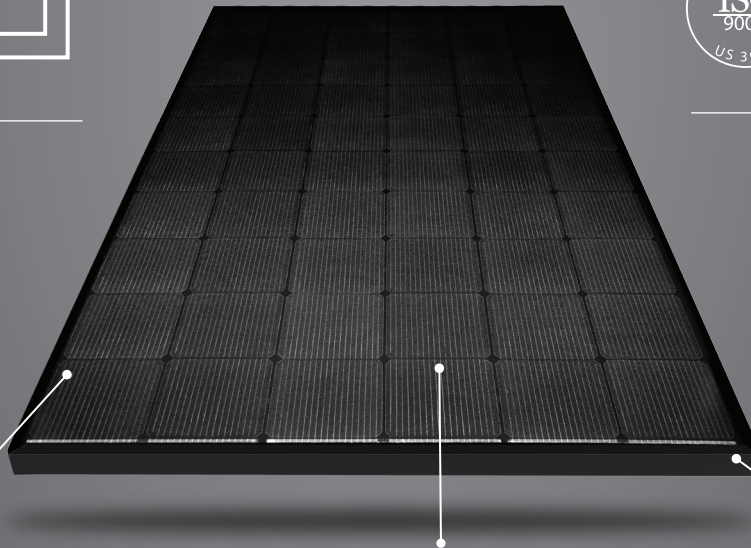
MONO-CRYSTALLINE  
PERC  
TECHNOLOGY

**Q UANTUM**  
**B LACK**

**300<sup>+</sup>**  
Watt



CERTIFICATIONS:  
IEC61215  
IEC61730  
UL1703  
Conformity to CE  
\*Certification Due Q4 2017



SmartWire Technology lessens the effects of micro-fractures and shading

Mono-crystalline PERC Busbar-less cells

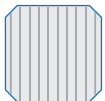
Anodized aluminum frame (Space Black)

## SMART FEATURES



### Superior Energy Production

Module efficiency up to **18.7%** achieved by utilizing the most advanced technology in the solar industry.



### SmartWire Technology (SWT)

The revolutionary process for connecting solar cells that outperforms busbars by spreading the electric current through 18 micro-wires.



### Advanced PERC Technology

A specialized mono-crystalline cell which improves energy production by adding a special layer to capture more sunlight.



### Exceptional at Low-Light Conditions

The round shape of SmartWire produces a light trapping effect and reduces shading on the cell by 25% compared to busbars.



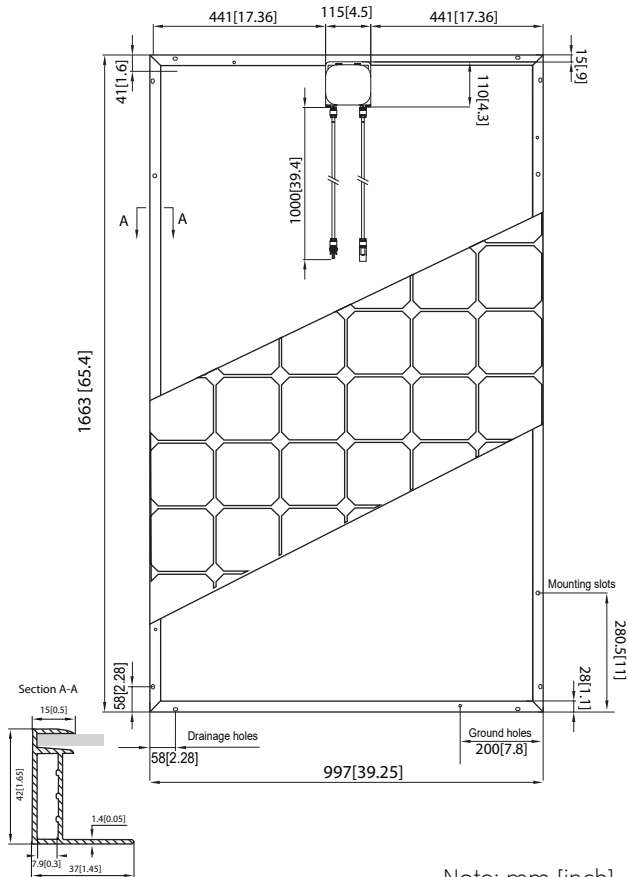
### Remarkable Connection Durability

SWT acts as a protective layer for the solar cells, ensuring reliable contact points for decades of consistent performance.



### Industry Leading Warranty

Accomplished with superior materials proven to perform better against potential induced degradation (PID).



Note: mm [inch]

### Electrical Characteristics STC

|                              | Quantum Black 295 PERC | Quantum Black 300 PERC | Quantum Black 305 PERC |
|------------------------------|------------------------|------------------------|------------------------|
| Average Power                | 295W                   | 300W                   | 305W                   |
| Max Module Efficiency (%)    | 18.1%                  | 18.4%                  | 18.7%                  |
| Voltage at Max power (Vmp)   | 32.3V                  | 32.9V                  | 33.5V                  |
| Current at Max power (Imp)   | 8.9A                   | 9.1A                   | 9.2A                   |
| Open Circuit Voltage (Voc)   | 39.0V                  | 39.6V                  | 40.3V                  |
| Short Circuit Current (Isc)  | 9.4A                   | 9.6A                   | 9.7A                   |
| Operating Module Temperature | -40°C → 85°C           |                        |                        |
| Maximum System Voltage       | 1000V DC ( IEC + UL )  |                        |                        |
| Maximum Series Fuse Rating   | 20A                    |                        |                        |
| Power Sorting                | -0/+5W                 |                        |                        |

STC: Irradiance 1000 W/m<sup>2</sup>, module temperature 25 °C, AM=1.5; Best in Class AAA solar simulator (IEC 60904-9) used, power measurement uncertainty is within +/- 3%

### Temperature Characteristics

|                                     |              |
|-------------------------------------|--------------|
| Nominal Operating Cell Temp. (NOCT) | 45.7°C       |
| Temperature Coefficient of Pmax     | -0.3594 %/°C |
| Temperature Coefficient of Voc      | -0.2769 %/°C |
| Temperature Coefficient of Isc      | +0.0461%/°C  |

NOCT: 800 W/m<sup>2</sup> Irradiance, 20 °C ambient temperature, AM=1.5, wind speed 1 m/s; NOCT values are based on TUV/PLC CEC certified results. Based pm a 290w module

### Mechanical Characteristics

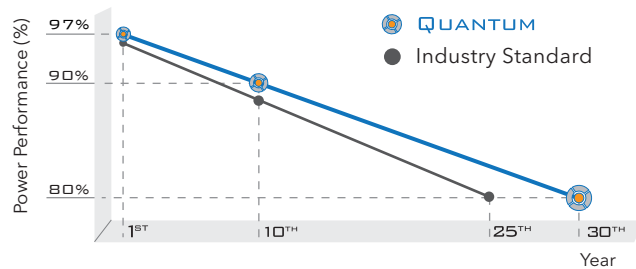
|                                |  |
|--------------------------------|--|
| Laminate Structure             | Glass / TPO / Cells / TPO / Backsheet                                |
| Weight                         | Approx. 18 kg [40lbs]  |
| Cell Type [156.75 x 156.75 mm] | Mono-crystalline PERC  |
| Cell connection                | 60 cells (serial)  |
| Junction Box (Electrical)      | 3 bypass (Tyco) IP65/IP67  |
| Connection Cable (Electrical)  | Tyco Solar 4mm <sup>2</sup> ( 1m length each )                       |
| Electrical Connectors          | Tyco PV4   |
| Dimensions                     | 997 x 1663 x 42mm [39.25 x 65.4 x 1.65]                              |
| Encapsulant                    | (TPO) Hydrophobic  |
| Front Load (Snow)              | 5400 Pa / 112.8 Psf  |
| Rear Load (Wind)               | 3800 Pa / 79.4 Psf   |
| Collection Pathways            | 18 Micro-wires   |
| Glass Thickness                | 3.2mm [125] Anti-reflective tempered solar glass (94% Transmittance) |

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### Warrantied Power Performance



### Packing Configuration

|                    |        |             |
|--------------------|--------|-------------|
| Equipment          | 20' GP | 53' Trailer |
| Modules per pallet | 20     | 23          |
| Pallets per unit   | 12     | 36          |
| Modules per unit   | 240    | 828         |

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