









# Q.ANTUM TECHNOLOGY: LOW LEVELISED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.8%.



#### INNOVATIVE ALL-WEATHER TECHNOLOGY

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



# **ENDURING HIGH PERFORMANCE**

Long-term yield security with Anti LID Technology, Anti PID Technology<sup>1</sup>, Hot-Spot Protect and Traceable Quality Tra.Q<sup>TM</sup>.



# **EXTREME WEATHER RATING**

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



# A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty $^2$ .



## STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

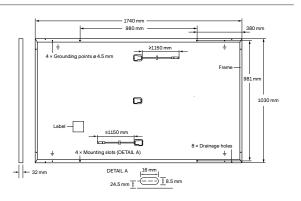
# THE IDEAL SOLUTION FOR:





 $<sup>^{\</sup>rm 1}$  APT test conditions according to IEC/TS 62804-1:2015, method B (–1500 V, 168 h)

 $<sup>^{\</sup>rm 2}$  See data sheet on rear for further information.



#### **ELECTRICAL CHARACTERISTICS**

| PO      | VER CLASS                          |                  |            | 335                  | 340   | 345   | 350   |
|---------|------------------------------------|------------------|------------|----------------------|-------|-------|-------|
| MIN     | IMUM PERFORMANCE AT STANDAR        | D TEST CONDITIO  | NS, STC¹ ( | POWER TOLERANCE +5W/ | -0W)  |       |       |
| Minimum | Power at MPP¹                      | P <sub>MPP</sub> | [W]        | 335                  | 340   | 345   | 350   |
|         | Short Circuit Current <sup>1</sup> | I <sub>sc</sub>  | [A]        | 10.34                | 10.40 | 10.45 | 10.51 |
|         | Open Circuit Voltage <sup>1</sup>  | V <sub>oc</sub>  | [V]        | 40.44                | 40.70 | 40.95 | 41.21 |
|         | Current at MPP                     | I <sub>MPP</sub> | [A]        | 9.85                 | 9.90  | 9.96  | 10.01 |
|         | Voltage at MPP                     | $V_{MPP}$        | [V]        | 34.01                | 34.34 | 34.65 | 34.97 |
|         | Efficiency <sup>1</sup>            | η                | [%]        | ≥18.7                | ≥19.0 | ≥19.3 | ≥19.5 |
| MIN     | IMUM PERFORMANCE AT NORMAL         | OPERATING COND   | ITIONS, N  | IMOT <sup>2</sup>    |       |       |       |
| Minimum | Power at MPP                       | P <sub>MPP</sub> | [W]        | 250.9                | 254.6 | 258.4 | 262.1 |
|         | Short Circuit Current              | I <sub>sc</sub>  | [A]        | 8.33                 | 8.38  | 8.42  | 8.47  |
|         | Open Circuit Voltage               | V <sub>oc</sub>  | [V]        | 38.13                | 38.38 | 38.62 | 38.86 |
|         | Current at MPP                     | I <sub>MPP</sub> | [A]        | 7.75                 | 7.79  | 7.84  | 7.88  |
|         | Voltage at MPP                     | V <sub>MPP</sub> | [V]        | 32.36                | 32.67 | 32.97 | 33.27 |

 $^1\text{Measurement tolerances P}_{\text{MPP}}\pm3\%; I_{\text{SC}}; V_{\text{OC}}\pm5\% \text{ at STC}; \overline{1000\text{W/m}^2, 25\pm2\text{°C}, \text{AM 1.5 according to IEC 60904-3}} + 2800\text{W/m}^2, \text{NMOT, spectrum AM 1.5}$ 

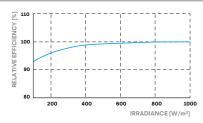
#### Q CELLS PERFORMANCE WARRANTY

# Q CELLS 98 96 Includy standard for finear warrardies\* Includy standard for finear warrardies\* Includy standard for finear warrardies\* Includy standard for feed warrardies\* Includy s

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.

## PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25  $^{\circ}$ C, 1000 W/m²).

| TEMPERATURE COEFFICIENTS                    |   |       |       |                                     |      |       |       |
|---|---|-------|-------|-------------------------------------|------|-------|-------|
| Temperature Coefficient of I <sub>SC</sub>  | α | [%/K] | +0.04 | Temperature Coefficient of Voc      | β    | [%/K] | -0.27 |
| Temperature Coefficient of P <sub>MPP</sub> | γ | [%/K] | -0.35 | Normal Module Operating Temperature | NMOT | [°C]  | 43±3  |

# PROPERTIES FOR SYSTEM DESIGN

| Maximum System Voltage        | $V_{\rm SYS}$  | [V]  | 1000      | Protection Class                  | II            |
|-------------------------------|----------------|------|-----------|-----------------------------------|---------------|
| Maximum Reverse Current       | I <sub>R</sub> | [A]  | 20        | Fire Rating based on ANSI/UL 1703 | C/TYPE 2      |
| Max. Design Load, Push / Pull |                | [Pa] | 3600/2667 | Permitted Module Temperature      | -40°C - +85°C |
| Max. Test Load, Push / Pull   |                | [Pa] | 5400/4000 | on Continuous Duty                |               |

# **QUALIFICATIONS AND CERTIFICATES**

# PACKAGING INFORMATION

VDE Quality Tested, IEC 61215:2016; IEC 61730:2016, Application Class II; This data sheet complies with DIN EN 50380.





| Number of Modules per Pallet                 | 32                    |
|--|-----------------------|
| Number of Pallets per Trailer (24t)          | 28                    |
| Number of Pallets per 40' HC-Container (26t) | 24                    |
| Pallet Dimensions (L × W × H)                | 1815 × 1150 × 1220 mm |
| Pallet Weight                                | 683kg                 |

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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