

Q.CELLS
YIELD SECURITY

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



POLYCRYSTALLINE SOLAR CELL

Q6LPT3-G3

More power for modules

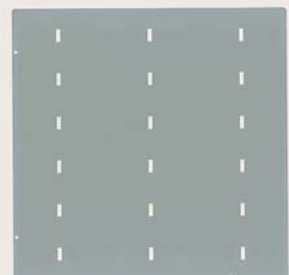
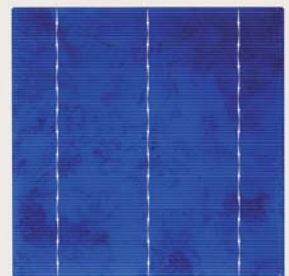
Q6LPT3-G3 is the consequent advancement of our polycrystalline solar cell generation and achieves efficiencies up to 18.0%. Apart from being the most powerful polycrystalline solar cell on the market, **Q6LPT3-G3** is also the safest and is PID-resistant¹ and Hot-Spot free. The new cell design allows for highest modul output making **Q6LPT3-G3** the most reliable choice for your modules.

YOUR EXCLUSIVE YIELD SECURITY

- Anti PID Technology (APT)¹: **Prevention of potential-induced degradation ensuring secure yields.**
- Hot-Spot Protect (HSP): **Performance safety and increased fire safety.**
- Traceable Quality (Tra.Q™): **First traceable and forgery proof solar cell on the market.**
- Positive sorting +0.2/-0%: **Extra output.**

ONE MORE ADVANTAGE FOR YOU

- **NEW!** Efficiencies up to 18.0%: **For the most powerful modules.**
- **NEW!** Optimized front surface layout for thinner solder wire: **Up to 0.8% more module power.**
- Comprehensive support for further processing and module certification: **Protection from the beginning.**



¹ APT test conditions: Cells at -1000 V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h (TÜV test conditions)

MECHANICAL SPECIFICATION		TECHNICAL DRAWING
Product	Polycrystalline solar cell	
Format	156 ^{+0.5} mm × 156 ^{+0.5} mm Diameter: 220 ^{+0.5} mm	
Average thickness (Si)	160 ⁺³⁰ μm / 180 ⁺³⁰ μm / 200 ⁺³⁰ μm	
Front contacts (-)	3 x 12 soldering pads (silver), 1.3 ^{+0.2} mm wide Acid textured surface, Blue anti-reflecting coating (silicon nitride)	
Back contacts (+)	3 x 6 soldering pads, 2.7 mm ^{+0.3} mm wide (silver), Aluminum backside metallization	

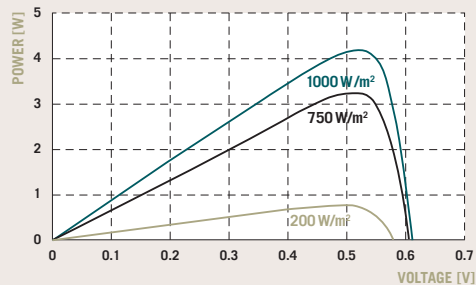
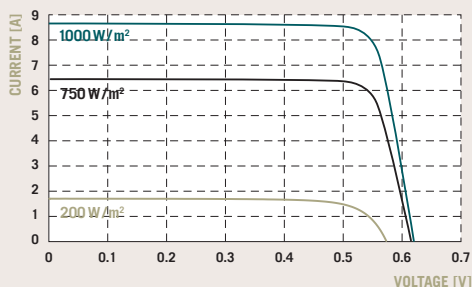
ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS, STC: 1000 W/m², 25 °C, AM 1.5 G (IEC 60904-3 ED.2)

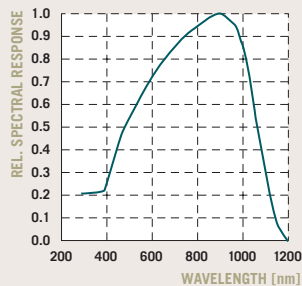
POWER CLASS			4.04	4.09	4.14	4.19	4.23	4.28	4.32	4.38
Ø Nominal Power*	P _{MPP}	[W]	≥ 4.04	≥ 4.09	≥ 4.14	≥ 4.19	≥ 4.23	≥ 4.28	≥ 4.32	≥ 4.38
Ø Short Circuit Current	I _{SC}	[A]	8.45	8.49	8.53	8.56	8.59	8.62	8.65	8.67
Ø Open Circuit Voltage	V _{OC}	[mV]	618	622	625	628	631	634	636	638
Ø Efficiency*	η	[%]	≥ 16.60	≥ 16.8	≥ 17.0	≥ 17.2	≥ 17.4	≥ 17.6	≥ 17.8	≥ 18.0

* Measurement tolerances: ± 1.5 % rel. (P_{MPP}); ± 0.2 % abs. (η); ± 5 % rel. (I_{SC}, V_{OC})

TYPICAL CURRENT-VOLTAGE AND POWER-VOLTAGE CURVES



SPECTRAL RESPONSE



INTENSITY DEPENDENCE

INTENSITY W/m ²	V _{MPP} *	I _{MPP} *
1000	1.000	1.00
800	0.995	0.80
500	0.979	0.50
400	0.971	0.40
300	0.957	0.30
200	0.936	0.20
100	0.893	0.10

* Ratio of V_{MPP} (I_{MPP}) at reduced intensity to V_{MPP} (I_{MPP}) at 1000 W/m²

TEMPERATURE COEFFICIENTS

Power	-0.42 %/K
Current	+0.05 %/K
Voltage	-0.33 %/K

PROCESSING RECOMMENDATION

Solder joint	Copper ribbons coated with 10 – 15 μm: 62 % Sn / 36 % Pb / 2 % Ag
Cells per bypass diode	Maximum 20 per bypass diode

STORAGE REMARK

- With the sealing foil around the cell boxes damaged, broken or opened, we recommend:
- to keep the cells at room temperature and in a dry and clean atmosphere.
 - to process the cells within 10 days after opening the seal.

QUALIFICATIONS AND CERTIFICATES



Hanwha Q.CELLS is certified according to:
ISO 9001:2008 (Quality Management)
Germany (VDE): 5008771/QM/UM/12.10
Malaysia (SIRIM): MY-AR 5278
ISO 14001:2009 (Environmental Management)
Germany (VDE): 5008771/QM/UM/12.10

PARTNER