

FULL-SQUARE MONOCRYSTALLINE SOLAR CELL

Q6LMX3 Quality at the core of every module

With efficiencies of up to 17.4 %, the **Q6LMX3** is one of the most powerful monocrystalline solar cells on the market. The **Q6LMX3** enables the production of modules with a homogeneous black appearance. Therefore, it is ideally suited for applications where aesthetics are especially important.

HIGHLY RELIABLE ENERGY OUTPUT ON MODULE LEVEL

- 3 % performance increase because of fullsquare format*
- Maximum yield and longevity due to 100 % hotspot prevention
- Excellent performance due to outstanding low-light behavior
- Prevention of power loss on module level through precise cell efficiency sorting (±0.2 % absolute)
- Excellent electrical long-term stability through use of best raw materials and strict quality inspection procedures
- Breakage decrease and performance increase on module level with 3-busbar layout

ATTRACTIVE AND SOPHISTICATED VISUAL APPEARANCE

Homogeneous, true black surface for highly aesthetical modules

PROFICIENT AND APPLICATION-ORIENTED SERVICE

- Application-oriented advice regarding further processing
- Professional on-site service
- Comprehensive support for module certifications





* COMPARED TO A STANDARD MONOCRYSTALLINE SOLAR CELL WITH A 195 MM DIAGONAL AT THE SAME LEVEL OF EFFICIENCY

MECHANICAL SPECIFICATION

TECHNICAL DRAWING

Product	Monocrystalline solar cell			
Format	156 mm \times 156 mm \pm 0.5 mm Diameter: 220 \pm 0.5 mm			
Average thickness (Si)	$200\mu m \pm 30\mu m$			
Front contacts (–)	Three 1.5 mm wide bus bars (silver) Alkaline texturized surface Dark blue anti-reflecting coating (silicon nitride)			
Back contacts (+)	Three 3 mm wide bus bars (silver/aluminum) Aluminum backside metallization			



ELECTRICAL CHARACTERISTICS										
PERFORMANCE AT STANDARD TEST CONDITIONS, STC: 1000 W/m ² , 25 °C, AM 1.5 G (IEC 60904-3 ED.1), P _{MPP} ± 1.5 % Rel., EFFICIENCY: ±0.2 % ABS.										
POWER CLASS			3.89	3.94	3.99	4.04	4.09	4.14	4.19	4.23
Ø Efficiency	η	[%]	16.0	16.2	16.4	16.6	16.8	17.0	17.2	17.4
Ø Nominal Power	P _{MAX}	[W]	3.89	3.94	3.99	4.04	4.09	4.14	4.19	4.23
Ø Short Circuit Current	I _{sc}	[A]	8.51	8.52	8.54	8.57	8.60	8.63	8.66	8.69
Ø Open Circuit Voltage	U _{oc}	[mV]	599	601	603	605	608	610	612	614
Current at 0.5 V	I.	[A]	≥ 7.90	≥ 8.02	≥ 8.12	≥ 8.21	≥ 8.29	≥ 8.37	≥ 8.47	≥ 8.57

TYPICAL CURRENT-VOLTAGE AND POWER-VOLTAGE CURVES





SPECTRAL RESPONSE



INTENSITY DEPENDANCE **INTENSITY W/m²** $\mathbf{U}_{\text{MMP}}^{*}$ $I_{\rm MMP}^{*}$ 1000 1.000 1.0 800 0.999 0.8 500 0.5 0.994 400 0.986 0.4 300 0.970 0.3 200 0.936 0.2 100 0.1 0.862 * Ratio of $U_{_{MPP}}\,(I_{_{MPP}})$ at reduced intensity to $U_{_{MPP}}\,(I_{_{MPP}})$ at 1000 W/m²

	TEMPERATURE COEFFICIENTS					
	Power	-0.47 %/K				
	Current	+0.05 %/K				
	Voltage	-0.37 %/K				
	PROCESSING RECOMMENDATION					
	Solder joint	Copper ribbons coated with 10 – 15 µm: 62 % Sn / 36 % Pb / 2 % Ag				
	Cells per bypass diode	Maximum 24* per bypass diode				
	Light induced degradation**	2.5 % (rel. P _{MAX}) considered in the electrical classification				
	* An electro luminescence based outgoing inspection as well as a visual inspection of the cell distances after					

 An electro luminescence based outgoing inspection as well as a visual inspection of the cell distances a module assembly is recommended
one -time power reduction after 24 hours sunlight exposure

QUALIFICATIONS AND CERTIFICATES



The Q-Cells SE quality and environmental management system is certified according to: DIN EN ISO 9001:2008 DIN EN ISO 14001:2004 Certificate: 01 150 055125 Specifications subject to technical changes © Q-Cells SE Q6LMX3_English_09/2010_02

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PARTNER

