

# SPT-LDK 230D+

## Monocrystalline Module

### WHY LDK SOLAR MODULES

- Industry leading module power output warranty
- International quality, safety and performance certifications
- Modules manufactured in ISO 9001 certified factories
- High-reliability with guaranteed 0/+5W peak power classification

### WARRANTIES

- 10 years for product defects in materials & workmanship
- 12 years for 90% of warranted minimum power
- 25 years for 80% of warranted minimum power

### CERTIFICATES

- IEC: IEC 61215, IEC 61730 (1&2), conformity to CE
- UL 1703 2002/03/15 Ed:3 Rev: 2004/06/30
- ULC/ORD-C1703-01 second edition 2001/01/01
- UL and Canadian standard for safety flat-plate
- ISO9001 :2008 Quality Management System
- CEC Listed: modules are eligible for california rebates
- PV Cycle: voluntary module take back and recycling program



# MONOCRYSTALLINE MODULE

## ELECTRICAL CHARACTERISTICS (STC\*)

TYPE	230D-20
Nominale Output (Pmax) [Wp]	230
Voltage at Pmax (Vmp) [V]	31.8
Current at Pmax (Imp) [A]	7.23
Open Circuit Voltage (Voc) [V]	37.2
Short Circuit Current (Isc) [A]	8.21
The power tolerance is +3% referred to the Nominale Output	
Maximum System Voltage	IEC: 1000 V / UL: 1000 V
Cell Efficiency [%]	16.56
Module Efficiency [%]	14.09

STC\* (Standard Test Conditions): Irradiance 1000 W/m<sup>2</sup>, Module Temperature 25 °C, Air Mass 1.5

## ELECTRICAL PERFORMANCE AT NOCT

TYPE	230D-20
Nominale Output (Pmax) [W]	167
Voltage at Pmax (Vmp) [V]	27.1
Current at Pmax Imp) [A]	6.16
Open Circuit Voltage (Voc) [V]	34.3
Short Circuit Current (Isc) [A]	6.65

NOCT: Irradiance 800 W/m<sup>2</sup>, Module Temperature 45 +/- 2 °C; wind speed 1m/s

## TEMPERATURE CHARACTERISTICS

TYPE	LDK-D-20 Series
NOCT**	45 +/- 2 °C
Temperature Coefficient of Pmax	-0.47 %/°C
Temperature Coefficient of Voc	-0.34 %/°C
Temperature Coefficient of Isc	0.06 %/°C
Maximum Series Fuse Rating	20
Operating Temperature	from -40 to +85 °C
Storage Temperature	from -40 to +60 °C

NOCT\*\*: Nominale Operation Cell Temperature Sun 800 W/m<sup>2</sup>; wind speed 1 m/s

# MONOCRYSTALLINE MODULE

## MECHANICAL CHARACTERISTICS

TYPE	LDK-D-20 Series
Solar Cells	60 (6x10) monocrystalline silicon solar cells 156x156 mm
Front Cover	3.2 mm thick, tempered glass / AR coating glass
Back Cover	TPT (Tedlar-PET-Tedlar) / BBF
Encapsulant	EVA (ethylene vinyl acetata)
Frame	Double-layer anodized aluminium alloy
Diodes	6 Bypass diodes serviceable
Junction Box	IP65 rated
Connectors	MC4 or compatible connectors
Cables	Lentgh: 1000 mm / Section: 4.0 mm <sup>2</sup>
Dimensions	1642 x 994 x 40 mm / 64.2 x 39.1 x 1.6 in
Weight	20 kg / 44.1 lbs
Max. Load	Wind Load: 2400 Pa / Snow Load: 5400 Pa

## PACKING CONFIGURATION

TYPE	LDK-D_20 Series
Packing configuration	25 pcs. / box
Quantity / Pallet	50 pcs. / pallet
Loading Capacity	700 pcs. / 40 ft (High Cube Container)