



LDK-225P-20, LDK-230P-20, LDK-235P-20, LDK-240P-20



### 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/+5 W positive power tolerance

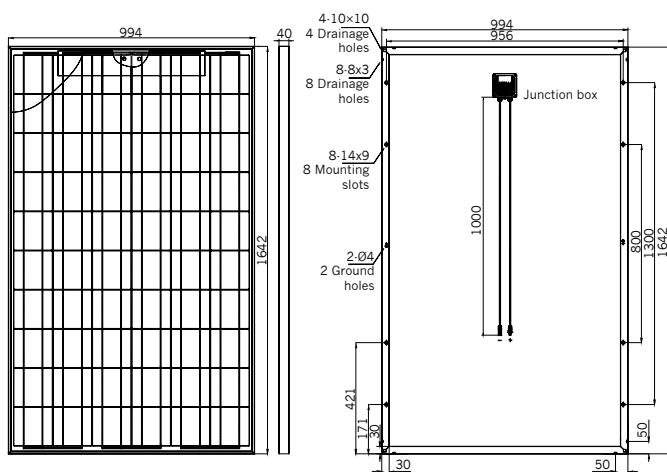
### WARRANTIES

- 10 years for product defects in materials & workmanship
- 4-Step Power Warranty**
- Up to 5 years a minimum of 94% Nominal Output
- Up to 11 years a minimum of 90% Nominal Output
- Up to 18 years a minimum of 85% Nominal Output
- Up to 25 years a minimum of 80% Nominal Output

### CERTIFICATES

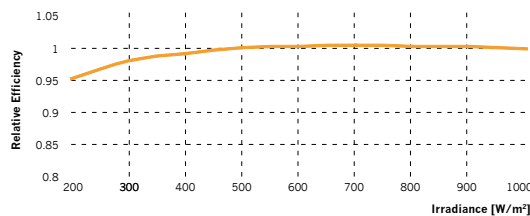
- IEC EN 61215, IEC EN 61730-1-2, CE Conformity
- UL 1703 2002/03/15 Ed:3 Rev:2008/04/08
- ULC/ORD-C1703-01 second edition 2001/01/01
- UL and Canadian standard for safety flat-plate
- CEC Listed: modules are eligible for California rebates
- MCS The Microgeneration Certification Scheme UK
- ISO 9001:2008 Quality Management System
- PV CYCLE: voluntary module take back and recycling program

### DIMENSIONS



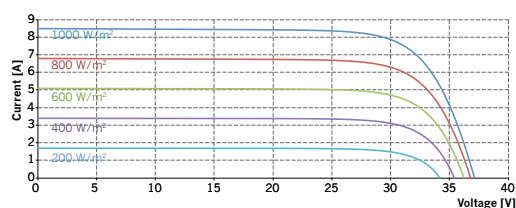
Tolerance of length and width dimensions is  $\pm 2$  mm

### PERFORMANCE AT LOW IRRADIANCE



The typical relative change in module efficiency at an irradiance of 200W/m<sup>2</sup> in relation to 1000 W/m<sup>2</sup> (both at 25°C and AM 1.5 spectrum) is less than 5%

### I-V CURVE AT DIFFERENT IRRADIANCE LEVELS



Above graphics according to LDK-235P-20

# MULTICRYSTALLINE MODULES

## LDK-235P-20 Value Series



### ELECTRIC CHARACTERISTICS (STC\*)

| TYPE                            | 225P-20                    | 230P-20 | 235P-20 | 240P-20 |
|---------------------------------|----------------------------|---------|---------|---------|
| Nominal Power (Pmax) [W]        | 225                        | 230     | 235     | 240     |
| Voltage at Pmax (Vmp) [V]       | 29.0                       | 29.3    | 29.5    | 29.8    |
| Current at Pmax (Imp) [A]       | 7.78                       | 7.88    | 7.98    | 8.08    |
| Open Circuit Voltage (Voc) [V]  | 36.6                       | 36.9    | 37.1    | 37.3    |
| Short Circuit Current (Isc) [A] | 8.36                       | 8.43    | 8.50    | 8.56    |
| Tolerance on Nominal Power [W]  | -0/+5                      | -0/+5   | -0/+5   | -0/+5   |
| Maximum System Voltage          | IEC EN: 1000 V / UL: 600 V |         |         |         |
| Cell Efficiency [%]             | 15.41                      | 15.75   | 16.09   | 16.44   |
| Module Efficiency [%]           | 13.79                      | 14.09   | 14.40   | 14.70   |

STC\* (Standard Test Conditions): Irradiance 1000 W/m<sup>2</sup>, Module Temperature 25 °C, Air Mass 1.5  
 Best in Class AAA solar simulator (IEC 60904-9) used, power measurement uncertainty is within +/-3%

### ELECTRICAL PERFORMANCE AT NOCT

| TYPE                            | 225P-20 | 230P-20 | 235P-20 | 240P-20 |
|---------------------------------|---------|---------|---------|---------|
| Power Output (Pmax) [W]         | 164     | 167     | 171     | 175     |
| Voltage at Pmax (Vmp) [V]       | 26.4    | 26.5    | 26.8    | 27.1    |
| Current at Pmax (Imp) [A]       | 6.22    | 6.30    | 6.38    | 6.46    |
| Open Circuit Voltage (Voc) [V]  | 33.9    | 34.2    | 34.4    | 34.5    |
| Short Circuit Current (Isc) [A] | 6.77    | 6.82    | 6.88    | 6.93    |

NOCT: Irradiance 800 W/m<sup>2</sup>, Module Temperature 45±2°C, Wind Speed 1 m/s  
 Best in Class AAA solar simulator (IEC 60904-9) used, power measurement uncertainty is within +/-3%

### TEMPERATURE CHARACTERISTICS

| TYPE                            | LDK-P-20 Series    |
|---------------------------------|--------------------|
| NOCT**                          | 45±2°C             |
| Temperature Coefficient of Pmax | -0.45% / °C        |
| Temperature Coefficient of Voc  | -0.33% / °C        |
| Temperature Coefficient of Isc  | 0.06% / °C         |
| Maximum Series Fuse Rating      | 20 A               |
| Operating Temperature           | from -40 to +85 °C |
| Storage Temperature             | from -40 to +60 °C |

NOCT\*\* (Nominal Operating Cell Temperature): Irradiance 800 W/m<sup>2</sup>, Air 20 °C, Wind Speed 1 m/s

### PACKING CONFIGURATION

| TYPE                  | LDK-P-20 Series                           |
|-----------------------|---|
| Packing Configuration | 25 pcs. / box                             |
| Quantity / Pallet     | 50 pcs. / pallet                          |
| Loading Capacity      | 700 pcs. / 40 ft<br>(High Cube Container) |

### MECHANICAL CHARACTERISTICS

| TYPE         | LDK-P-20 Series  |
|--------------|--|
| Solar Cells  | 60 (6x10) multicrystalline silicon solar cells<br>156 x 156 mm |
| Front Glass  | 3.2 mm thick, tempered glass / AR coating glass                |
| Backsheet    | TPT (Tedlar-PET-Tedlar) / BBF                                  |
| Encapsulant  | EVA (ethylene vinyl acetate)                                   |
| Frame        | Double-layer anodized aluminium alloy                          |
| Diodes       | 6 (3 x 2 in parallel) serviceable Bypass Diodes                |
| Junction Box | IP65 rated   |
| Connectors   | MC4 or compatible connectors                                   |
| Cables       | Length: 1000 mm / Section: 4.0 mm <sup>2</sup>                 |
| Dimensions   | 1642 x 994 x 40 mm / 64.64 x 39.13 x 1.57 in                   |
| Weight       | 19 kg / 41.9 lbs   |
| Max. Load    | Wind Load: 2400 Pa / Snow Load: 5400 Pa                        |

LDK Solar reserves the right to make specifications changes without any prior notice.

