

# MODUL CPM220P-B-60



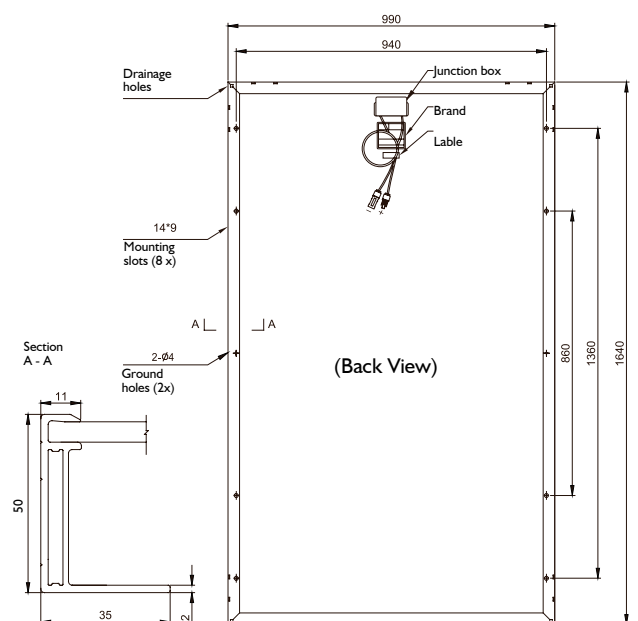
## 60 pcs 156 x 156 mm polycrystalline silicon cell

The CPM220P series modules consists of 60 pcs 156×156 mm polycrystalline silicon solar cells which are in high efficiency, individually characterized and electronically matched before interconnection. Laminated with high quality toughened glass, EVA and TPT, the operating characteristics of solar cells can be ensured under any climatic conditions.

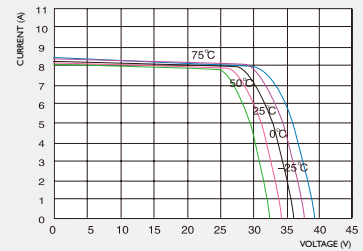
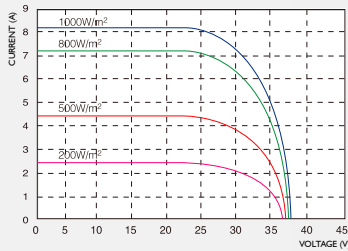
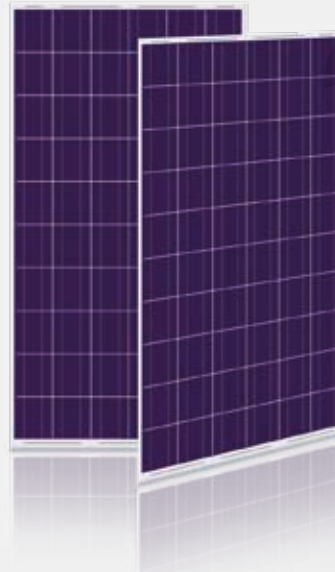
After assembled by anodized aluminum alloy frame and MC type junction box, cable with connector, the CALRAYS solar modules are designed for long service life, easy to install, withstand the storm, high wind and hail impact etc..

**The Junction box is available in black or silver.**

Module Diagram (measures: mm)



# MODUL CPM220P-B-60



SPECIFICATIONS	
Cell	Polycrystalline silicon solar cells 156 mm × 156 mm
No. of cells and connections	60 (6 × 10)
Dimension of module	1640 mm × 990 mm × 50 mm

OUTPUT	
Cable	4.0 mm <sup>2</sup> (TÜV)
Lengths	1100 mm
Connector	MC Type

TEMPERATURE COEFFICIENTS		
NOCT		46°C ± 2°C
Short-circuit current temperature coefficient	$\alpha(I_{sc})$	0.08%/°C
Open-circuit voltage temperature coefficient	$\beta(V_{oc})$	-0.32%/°C
Peak power temperature coefficient	$\gamma(P_{max})$	-0.38%/°C

NOCT: Nominal Operating Cell Temperature above data is only for reference

MODUL CPM220P-B-60		
	230 W	240 W
Maximum Power (Pmax)	230 W	240 W
Encapsulation	Glass/EVA/Cells/EVA/TPT	
Size and Number of cells	156 mm × 156 mm 60/6 × 10 Stk.	
Power Tolerance	± 3%	
Cell Efficiency	16,2	17
Open Circuit Voltage (Voc)	37.0 V	37.2 V
Short Circuit Current (Isc)	8.22 A	8.33 A
Maximum Power Voltage (Vmp)	29.8 V	30.2 V
Maximum Power Current (Imp)	7.73 A	7.95 A
Max.syst. Oper. Voltage	1000 V	
Diodes	6 by-pass	
Dimension	1640 × 990 × 50 mm	
Weight	21 kg	
Operate Temp. scope	-40   +85 °C	
Relative humidity	0 to 100%	
Resistances	227g steel ball fall down from 1m height and 60m/s wind	
Warranty	Pm is not less than 90% in 10 years and 80% in 25 years	

Test condition: @STC 1000W/m<sup>2</sup> · AM1.5 · 25°C