

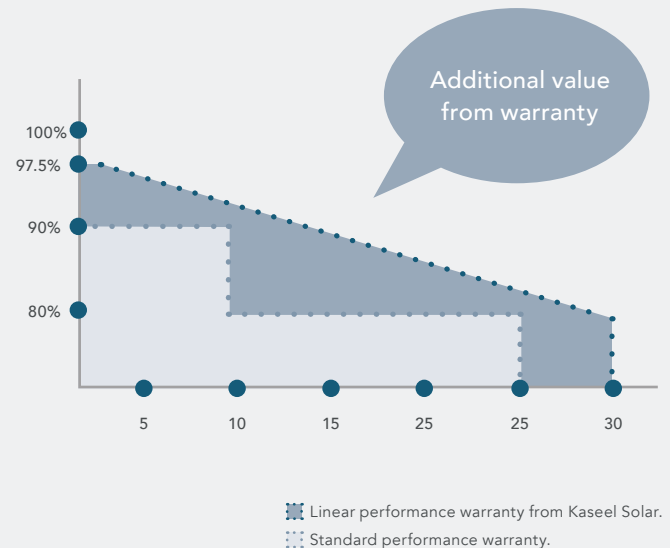


APOLO KSPM-60 F

60 cell monocrystalline
High performance solar module



SPECIAL WARRANTY



KEY FEATURES

- **HIGH PERFORMANCE LINEAR WARRANTY:**

12 years 91.2% of the nominal power output.
30 years 80.6% of the nominal power output.
20 years limited product warranty.

- **High module conversion efficiency up to 19.05%** by using Passivated Emitter Rear Contact (PERC) technology and advanced manufacturing technology.

- **Low-light Performance:** Advance glass and surface texturing allow for excellent performance in low-light environments.

- **5 Busbar Solar Cell:** 5 busbar solar cell adopts new technology to improve the efficiency of modules, offers a better aesthetic appearance, making it perfect for rooftop installation.

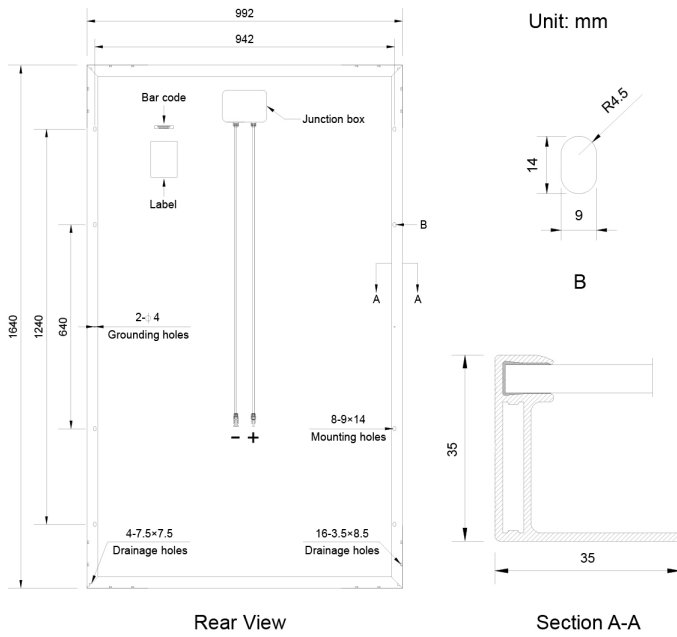
- **Temperature Coefficient:** excellent performance under high temperature.

- **Strong Mechanical load capacity:** Robust aluminum frame ensures the modules to withstand wind loads up to 2400Pa and snow loads up to 5400Pa.

- **Durability against extreme environmental conditions:** High reliability against extreme environmental conditions (passing salt mist, ammonia and hail tests).

- Potential induced degradation (PID)resistance.

- **Guaranteed positive power tolerance of 0~+3%** by individual measurement.



MECHANICAL CHARACTERISTICS

Cell type	Monocrystalline PERC 5BB 156.75x156.75mm
Number of cells	60 (6x10)
Module dimensions	1640x992x35mm
Weight	18,0kg
Front cover	3.2mm tempered glass with AR coating. Low Iron Glass
Frame	Clear anodized aluminum alloy
Junction box	IP68, 3 diodes
Cable	4mm ² , 1200mm
Connector	MC4 or MC4 compatible

TEMP. CHARACTERISTICS

Nominal Operating Cell Temperature (NOCT)	45° C±2°C
Temperature Coefficients of Pmax	-0.39%/°C
Temperature Coefficients of VOC	-0.29%/°C
Temperature Coefficients of ISC	0.052%/°C

Specifications in this datasheet are subject to change without prior notice.

ELECTRICAL CHARACTERISTICS AT STC

STC: Irradiance 1000W/m², Cell temperatura 25°C, A/11.5

Nominal Power (Pmax)	285W	290W	295W	300W	305W	310W
Open Circuit Voltage (VOC)	39.0V	39.2V	39.4V	39.6V	39.8V	40.0V
Short Circuit Current (ISC)	9.45A	9.53A	9.62A	9.70A	9.79A	9.88A
Voltage at Nominal Power (Vmp)	31.8V	32.0V	32.2V	32.4V	32.6V	32.8V
Current at Nominal Power (Imp)	8.97V	9.07A	9.17A	9.26A	9.36A	9.46A
Module Efficiency (%)	17.52	17.83	18.13	18.44	18.75	19.05
Operating Temperature	-40 C to +85 C					
Maximum System Voltage	1000V DC					
Fire Resistance Rating	Type I (in accordance with UL 1703)/Class C (IEC61730)					
Maximum Series Fuse Rating	15A					

ELECTRICAL CHARACTERISTICS AT NOCT

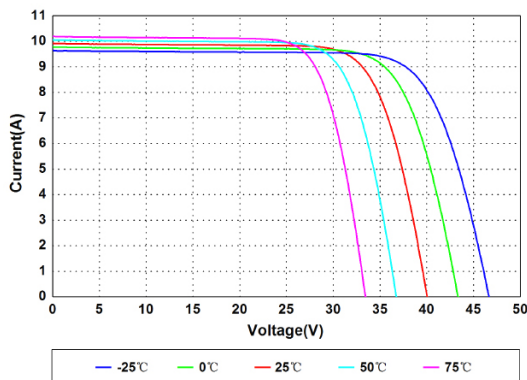
NOCT: Irradiance 800W/m², Ambient temperatura 20°C, Wind Speed 1 mis

Nominal Power (Pmax)	211W	215W	218W	222W	226W	230W
Open Circuit Voltage (VOC)	35.9V	36.1V	36.3V	36.5V	36.7V	36.9V
Short Circuit Current (ISC)	7.65A	7.72A	7.79A	7.86A	7.93A	8.00A
Voltage at Nominal Power (Vmp)	29.0V	29.2V	29.4V	29.6V	29.8V	30.0V
Current at Nominal Power (Imp)	7.28A	7.37A	7.42A	7.50A	7.59A	7.67A

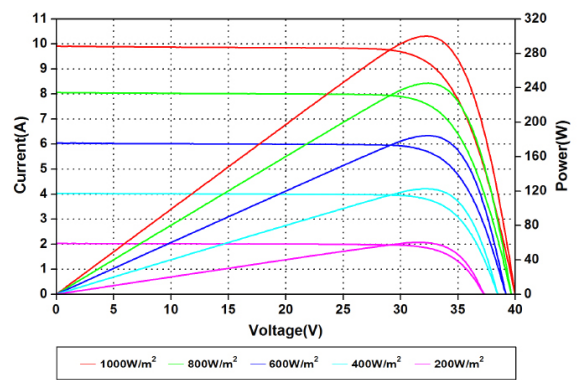
PACKAGING

Standard packaging	30pcs pallet
Module quantity per 40' container	924pcs

IV CURVES



Current-Voltage Curves at Different Temperatures



Current-Voltage and Power-Voltage Curves at Different Irradiances