

Engel Solar

Address: Ostersbaum 27, D-42107 Wuppertal

Tel: +49 (0) 3939 14 44

Fax: +49 (0) 3939 14 45

info@engel-solar.com



ESS230P-60

Crystalline silicon modules represent one of the best products in the PV industry. These products made of environmentally sustained material are light easy to install.



Anodized frame



*Mechanical load
at 5400 Pa*



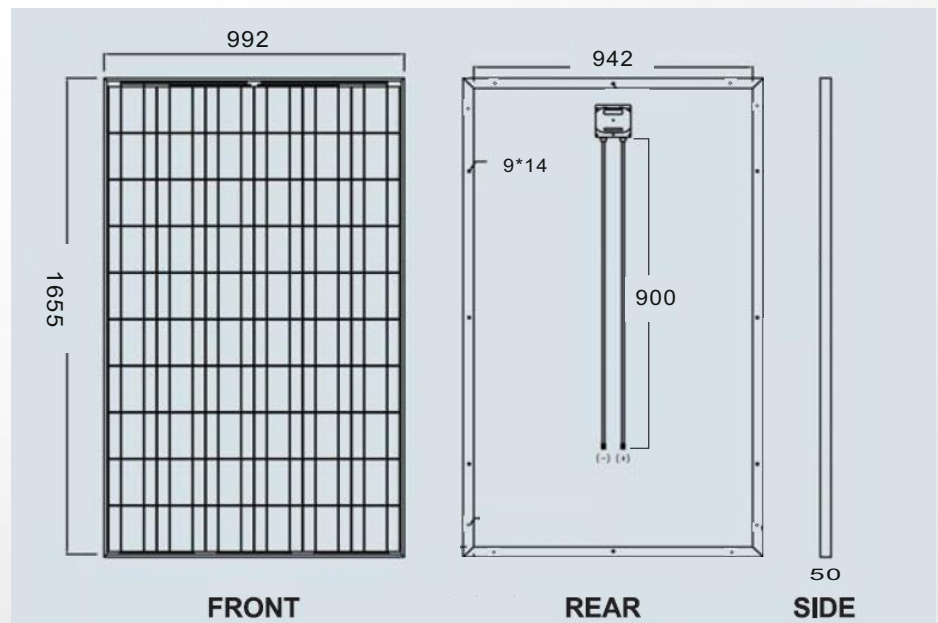
*90% out put 10 years
80% out put 25 years*



Quality



*Motech Cell
FPE Aluminium Box
Krempel Backsheet*



Characteristics

Electrical Characteristics

All specified parameters are at STC 25°C ambient, 1000W/ m² irradiance and AM 1.5

POWER OUTPUT P(MAX)	220W	225W	230W	235W	240W
MAX POWER TOLERANCE	0-5W	0-5W	0-5W	0-5W	0-5W
ELECTRICAL PARAMETERS AT STC(1000W/M²) 25°C AM 1.5					
MODULE EFFICIENCY (%)	13.4	13.7	14	14.3	14.6
VOLTAGE MPP Vmpp (V)	30	30.1	30.2	30.3	29.7
CURRENT MPP Impp (A)	7.34	7.48	7.62	7.76	8.09
VOLTAGE OPEN CIRCUIT Voc (V)	36.6	36.8	36.9	37.4	37.1
SHORT CIRCUIT CURRENT Isc (A)	8.1	8.2	8.31	8.42	8.68
MAX SYSTEM VOLTAGE (VDC)	1000V (IEC)/600V(UL)				
SERIES FUSE RATING	15A				
NOCT (°C)	45±2				
ELECTRICAL PARAMETERS AT 800W/M²					
POWER OUTPUT (W)	173.9	177.8	181.8	185.7	189.7
VOLTAGE MPP Vmpp (V)	29.6	29.7	29.8	29.9	29.3
CURRENT MPP Impp (A)	5.87	5.98	6.09	6.2	6.47
VOLTAGE OPEN CIRCUIT Voc (V)	36.2	36.4	36.5	37	36.7
SHORT CIRCUIT CURRENT Isc (A)	6.48	6.56	6.65	6.74	6.94
TEMPERATURE COEFFICIENTS					
Isc (%/°C)	0.0877				
Voc (%/°C)	-0.3522				
Pmpp (%/°C)	-0.4418				
MECHANICAL DATA					
DIMENSIONS OF MODULE	1655*992*50mm				
WEIGHT (Kg)	20				
CABLE	4mm ² 900mm				
GLASS	Low iron tempered glass (High transmittance) 4.00mm				
JUNCTION BOX	FPE Aluminum BOX				
TYPE OF CONNECTOR	Compatible MC 4				

Packaging Configuration

Packing Configuration	20pcs/box
Quantity/Pallet	40pcs/pallet
Loading Capacity	520pcs/40ft(H)

Absolute Ratings

Dielectric Insulation Voltage	3000V
Operating Temperature (°C)	-40~+85
Storage Temperature (°C)	-40~+85
Mechanical Load	5400Pa

I-V CURVES

