

- ◆ Outstanding performance under low light and high temperature conditions, and at low angles of installation
- ◆ High efficiency tandem junction converts a broader spectrum of solar radiation, improving return on investment
- ◆ Significant savings on BOS and installation costs, due to large module size and range of mounting options
- ◆ Excellent aesthetic appearance of modules makes them ideal for BIPV and BAPV applications



Module	Unit	EST-540	EST-520	EST-500	EST-480	EST-460	EST-440
Electrical Data							
Performance at Standard Test Conditions (STC) : 1000W/m ² , 25°C, AM 1.5 spectrum							
Nominal Power (Pmax)	Wp	540	520	500	480	460	440
Open Current Voltage (Voc)	V	292	288	286	284	282	280
Short Circuit (Isc)	A	2.92	2.88	2.86	2.84	2.82	2.80
Max. Power Voltage (Vmpp)	V	226	222	216	210	206	200
Max. Power Current (Impp)	A	2.39	2.36	2.32	2.28	2.24	2.20
Performance at Normal Operating Cell Temperature (NOCT): 800W/m ² , 40°C, AM 1.5 spectrum							
Nominal Power (Pmax)	Wp	424	408	392	376	360	344
Open Current Voltage (Voc)	V	272	268	266	264	262	260
Short Circuit (Isc)	A	2.38	2.36	2.34	2.32	2.30	2.28
Max. Power Voltage (Vmpp)	V	218	214	208	202	198	192
Max. Power Current (Impp)	A	1.96	1.92	1.89	1.86	1.83	1.80

ENN Solar Energy's EST series of PV modules experiences an increase of 1% in efficiency at 200W/m², when compared with 1000W/m²

Mechanical Data		
Length	mm	2600 (8.5')
Width	mm	2200 (7.2')
Thickness (excl. J-box & rail)	mm	7.5 (.295")
Thickness (incl. J-box & rail)	mm	45 (1.77")
Weight	kg	117
Front Glass	mm	3.2 (low-iron float glass)
Back Glass	mm	3.2 (normal float glass)
PVB	mm	1.14
Junction Box	Protection class IP 67, with by-pass diode	
Connector	MC-4	

Temperature Coefficient (STC)		
Temperature Coefficient of Voc	%/°C	-0.35
Temperature Coefficient of Isc	%/°C	+0.1
Temperature Coefficient of Pmax	%/°C	-0.28

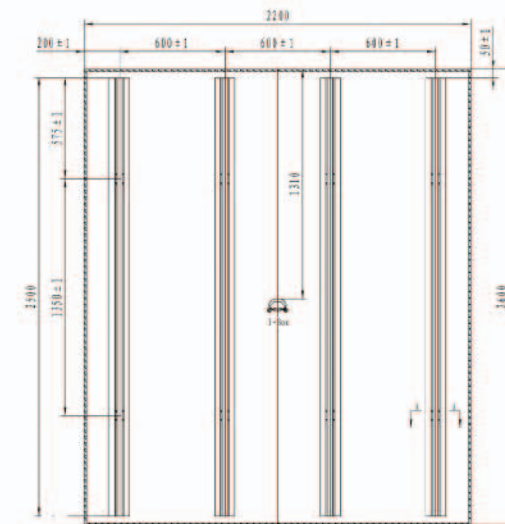
Limits		
Max. System Voltage	V	IEC1000, UL600
Max. Operating Temperature	°C	-40 to +85

Packaging Data		
Quantity/Case	pcs	20
Quantity/40' HQ	pcs	160

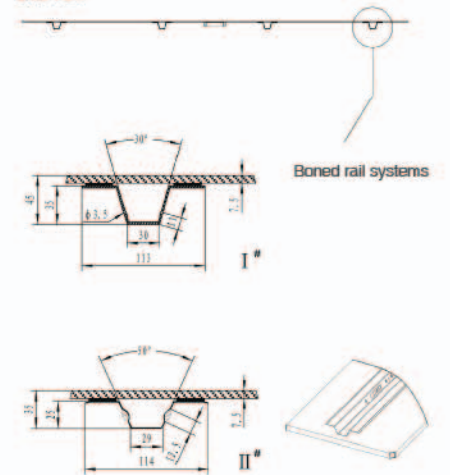
Warranty	
Output Warranty	≥ 90% of rated power at 10 years, and ≥ 80% at 25 years

*All ratings +/-5%, unless specified otherwise.

Back View[#]



Side view



Edge Deletion
12mm

Shadowed areas are schematic drawing of bonded rail system.
ENN Solar Energy provides various bonded rail systems, according to the customer's specific requirements.





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Module	Unit	EST-135	EST-130	EST-125	EST-120	EST-115	EST-110
Electrical Data							
Performance at Standard Test Conditions (STC): 1000W/m ² , 25°C, AM 1.5 spectrum							
Nominal Power (P _{max})	Wp	135	130	125	120	115	110
Open Current Voltage (V _{oc})	V	146	143	142	141	140	139
Short Circuit (I _{sc})	A	1.46	1.44	1.43	1.42	1.41	1.40
Max. Power Voltage (V _{mpp})	V	113	111	108	105	103	100
Max. Power Current (I _{mpp})	A	1.20	1.18	1.16	1.14	1.12	1.10
Performance at Normal Operating Cell Temperature (NOCT): 800W/m ² , 40°C, AM 1.5 spectrum							
Nominal Power (P _{max})	Wp	106	102	98	94	90	86
Open Current Voltage (V _{oc})	V	136	134	133	132	131	130
Short Circuit (I _{sc})	A	1.19	1.18	1.17	1.16	1.15	1.14
Max. Power Voltage (V _{mpp})	V	109	107	104	101	99	96
Max. Power Current (I _{mpp})	A	0.98	0.96	0.945	0.93	0.915	0.9

ENN Solar Energy's EST series of PV modules experiences an increase of 1% in efficiency at 200W/m², when compared with 1000W/m²

Mechanical Data			
Length	mm	1300 (4.26')	
Width	mm	1100 (3.6')	
Thickness (excl. J-box & rail)	mm	7.5 (.295")	
Thickness (incl. J-box & rail)	mm	35 (1.38")	
Weight	kg	29.5	
Front Glass	mm	3.2 (low-iron float glass)	
Back Glass	mm	3.2 (normal float glass)	
PVB	mm	1.14	
Junction Box		Protection class IP 67, with by-pass diode	
Connector		MC-4	

Temperature Coefficient (STC)		
Temperature Coefficient of V _{oc}	%/°C	-0.35
Temperature Coefficient of I _{sc}	%/°C	+0.1
Temperature Coefficient of P _{max}	%/°C	-0.28

Limits		
Max. System Voltage	V	IEC1000, UL600
Max. Operating Temperature	°C	-40 to +85

Packaging Data		
Quantity/Case	pcs	25
Quantity/40' HQ	pcs	800

Warranty	
Output Warranty	≥90% of rated power at 10 years, and ≥80% at 25 years

*All ratings +/±5%, unless specified otherwise.

