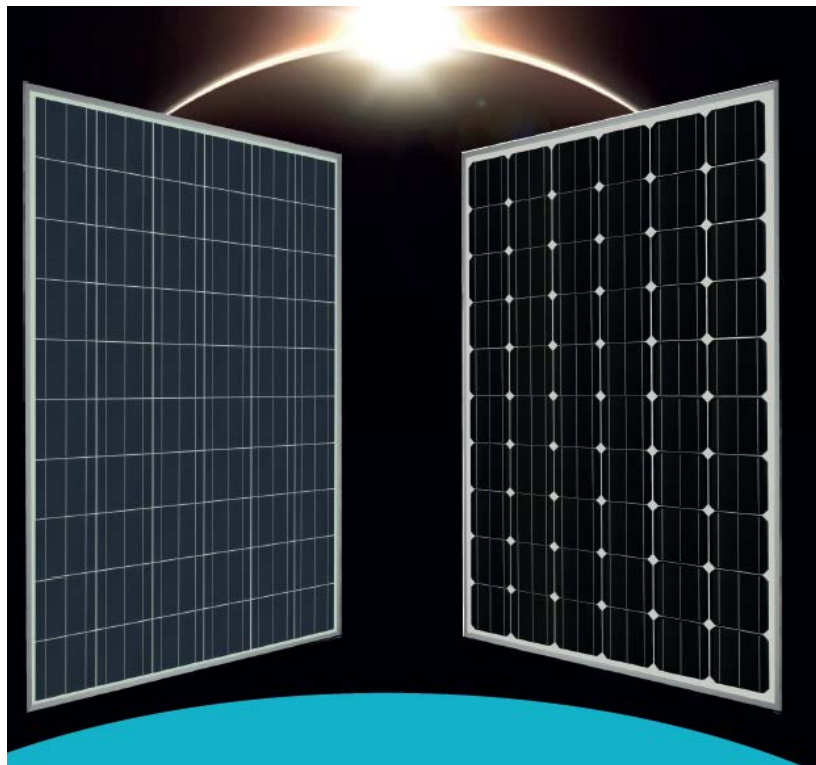




SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY

Polycrystalline (4BB) and Monocrystalline (5BB) Modules





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33140 YENISEHIR, MERSIN, TURKEY

Electrical Data

MODEL	ASE72P 320	ASE72P 325	ASE72P 330	ASE72P 335	ASE72P 340
P_{max} Maximum Power	320	325	330	335	340
% Module Efficiency	16,30	16,56	16,81	17,06	17,32
I_{mp} (A) Maximum Power Current	8,34	8,39	8,50	8,54	8,62
I_{sc} (A) Short Circuit Current	8,87	8,92	9,07	9,02	9,15
V_{mp} (V) Maximum Power Voltage	38,67	38,95	39,24	39,38	39,81
V_{oc} (V) Open Circuit Voltage	45,87	46,08	46,80	47,16	47,44

Mechanical Data

Subject	Specification
Dimensions	1969 ± 2 mm (L) x 997 ± 2 mm (W) x 42-35 0,5 mm (D)
Weight	24 Kg
Solar Cell	72 Polycrystalline Type 6" Silicon Cells (156.75 mm x 156.75 mm)
Front Glass	Tempered / Tempered ARC Glass
Encapsulant	Ethylene Vinyl Acetate (EVA)
Backsheet	Composite Film, Color White
Junction Box	With Multicontact / Tyco / Ekinler Certificate
Frame	Aluminium Frame (Eloxal Coating)

Operating Conditions

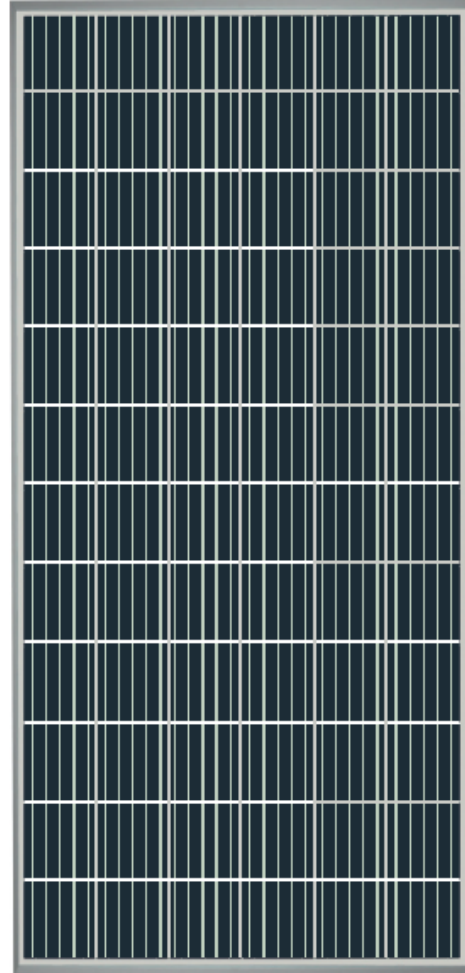
Subject	Specification
Mechanical Strength	5400 Pa (Certified By TUV Rheinland)
Maximum System Voltage	DC 1000 V
Series Fuse Rating	15 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

Subject	Specification
Nominal Operating Cell Temperature	45 °C ± 2 °C
Temperature Coefficient of α_{sc} (%/°C)	-0,04 % / °C
Temperature Coefficient of β_{Voc} (%/°C)	-0,33 % / °C
Temperature Coefficient of P_{max} Y (%/°C)	-0,45 % / °C
Temperature Coefficient of β_{Vmp} (%/°C)	-0,45 % / °C

Warranty

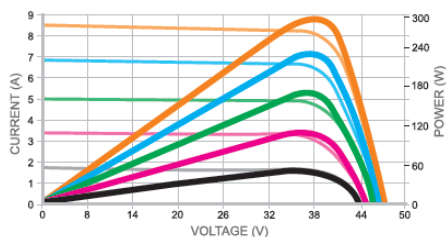
Subject	Specification
Product Warranty	10 Years
Linear Performance Warranty	10 Years, over %90 - 25 Years, over %80
JIT Product	Warranty of selling panels that are produced in last on year.
Power Tolerance	Positive (+) 5 Watt
Online Datasheet on the panel	QR Code System



- ISO 9001
- ISO 14001
- ISO 18001
- IEC 61215
- IEC 61730-1
- IEC 61730-2
- IEC 61701
- IEC 62716
- IEC 62804

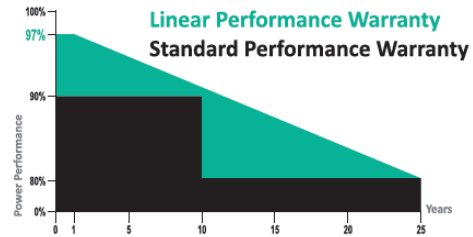
"LOCAL ITEM" MENTIONED
IN NUMBER 5346 YEK LAW

Turkey
Discover the potential



The typical relative change in module efficiency at irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 spectrum) is less than 3 %.

- 1000 W/m²
- 800 W/m²
- 600 W/m²
- 400 W/m²
- 200 W/m²





SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY

Electrical Data

MODEL	ASE60P 270	ASE60P 275	ASE60P 280	ASE60P 285
PMAX Maximum Power	270	275	280	285
% Module Efficiency	16,39	16,70	17,00	17,30
IMP (A) Maximum Power Current	8,34	8,50	8,54	8,62
ISC (A) Short Circuit Current	8,87	9,07	9,02	9,15
VMP (V) Maximum Power Voltage	32,23	32,70	32,82	33,18
VOC (V) Open Circuit Voltage	38,23	39,00	39,30	39,53

Mechanical Data

Subject	Specification
Dimensions	1652 ± 2 mm (L) x 997 ± 2 mm (W) x 42-35 0,5 mm (D)
Weight	20 Kg
Solar Cell	60 Polycrystalline Type 6" Silicon Cells (156,75 mm x 156,75 mm)
Front Glass	Tempered / Tempered ARC Glass
Encapsulant	Ethylene Vinyl Acetate (EVA)
Backsheet	Composite Film, Color White
Junction Box	With Multicontact / Tyco / Ekinler Certificate
Frame	Aluminium Frame (Eloxal Coating)

Operating Conditions

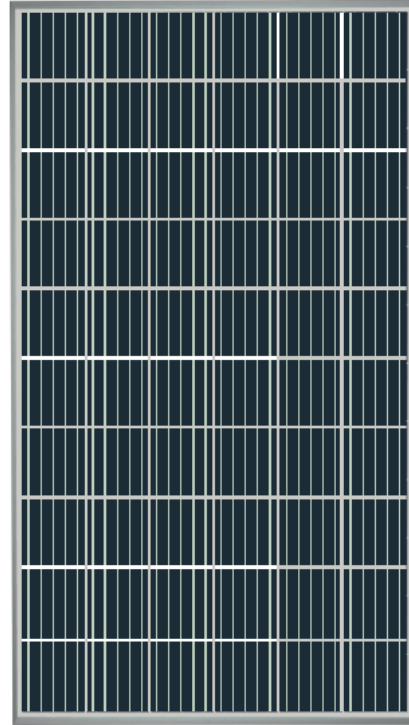
Subject	Specification
Mechanical Strength	5400 Pa (Certified By TUV Rheinland)
Maximum System Voltage	DC 1000 V
Series Fuse Rating	15 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

Subject	Specification
Nominal Operating Cell Temperature	45 °C ± 2 °C
Temperature Coefficient of α_{sc} (%/°C)	-0,04 % / °C
Temperature Coefficient of β_{Voc} (%/°C)	-0,33 % / °C
Temperature Coefficient of β_{Pmax} (%/°C)	-0,45 % / °C
Temperature Coefficient of β_{Vmp} (%/°C)	-0,45 % / °C

Warranty

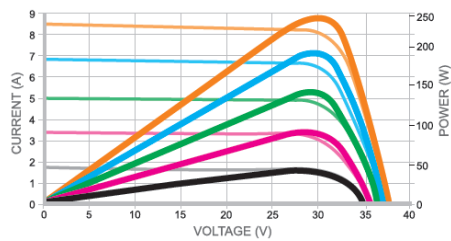
Subject	Specification
Product Warranty	10 Years
Linear Performance Warranty	10 Years, over %90 - 25 Years, over %80
JIT Product	Warranty of selling panels that are produced in last on year.
Power Tolerance	Positive (+) 5 Watt
Online Datasheet on the panel	QR Code System



- ISO 9001
- ISO 14001
- ISO 18001
- IEC 61215
- IEC 61730-1
- IEC 61730-2
- IEC 61701
- IEC 62716
- IEC 62804

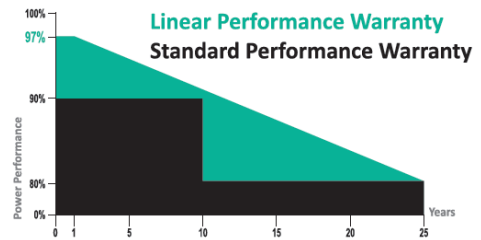
"LOCAL ITEM" MENTIONED
IN NUMBER 5346 YEK LAW

Turkey
Discover the potential



The typical relative change in module efficiency at irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 spectrum) is less than 3 %.

- 1000 W/m²
- 800 W/m²
- 600 W/m²
- 400 W/m²
- 200 W/m²





SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY

Electrical Data

MODEL	ASE48P 215	ASE60P 220	ASE48P 225	ASE48P 230
P_{MAX} Maximum Power	215	220	225	230
% Module Efficiency	16,15	16,53	16,90	17,28
I_{MP} (A) Maximum Power Current	8,34	8,50	8,54	8,62
I_{SC} (A) Short Circuit Current	8,87	9,07	9,02	9,15
V_{MP} (V) Maximum Power Voltage	25,78	26,16	26,25	26,54
V_{OC} (V) Open Circuit Voltage	30,58	31,20	31,44	31,63

Mechanical Data

Subject	Specification
Dimensions	1335 ± 2 mm (L) x 997 ± 2 mm (W) x 42-35 0,5 mm (D)
Weight	17 Kg
Solar Cell	48 Polycrystalline Tip 6" Silicon Cells (156,75 mm x 156,75 mm)
Front Glass	Tempered / Tempered ARC Glass
Encapsulant	Ethylene Vinyl Acetate (EVA)
Backsheet	Composite Film, Color White
Junction Box	With Multicontact / Tyco / Ekinler Certificate
Frame	Aluminium Frame (Eloxal Coating)

Operating Conditions

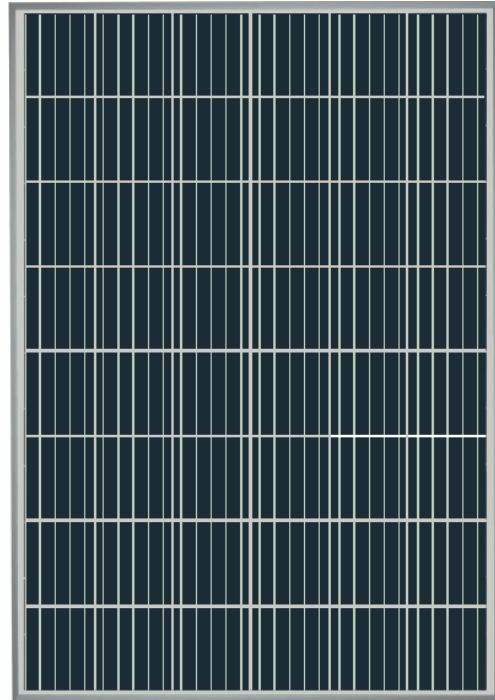
Subject	Specification
Mechanical Strength	5400 Pa (Certified By TUV Rheinland)
Maximum System Voltage	DC 1000 V
Series Fuse Rating	15 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

Subject	Specification
Nominal Operating Cell Temperature	45 °C ± 2 °C
Temperature Coefficient of η_{sc} (%/°C)	-0,04 % / °C
Temperature Coefficient of β_{Voc} (%/°C)	-0,33 % / °C
Temperature Coefficient of P_{max} Y (%/°C)	-0,45 % / °C
Temperature Coefficient of β_{Vmp} (%/°C)	-0,45 % / °C

Warranty

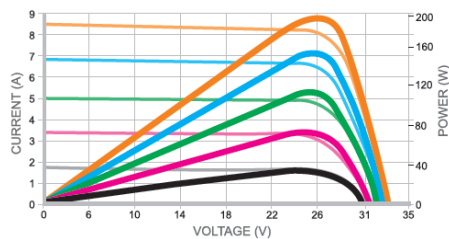
Subject	Specification
Product Warranty	10 Years
Linear Performance Warranty	10 Years, over %90 - 25 Years, over %80
JIT Product	Warranty of selling panels that are produced in last on year.
Power Tolerance	Positive (+) 5 Watt
Online Datasheet on the panel	QR Code System



- ISO 9001
- ISO 14001
- ISO 18001
- IEC 61215
- IEC 61730-1
- IEC 61730-2
- IEC 61701
- IEC 62716
- IEC 62804

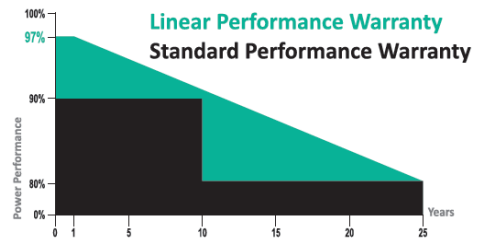
"LOCAL ITEM" MENTIONED
IN NUMBER 5346 YEK LAW

Turkey
Discover the potential



The typical relative change in module efficiency at irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 spectrum) is less than 3 %.

- 1000 W/m²
- 800 W/m²
- 600 W/m²
- 400 W/m²
- 200 W/m²





SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY

Electrical Data

MODEL	ASE36P 165	ASE36P 170	ASE36P 175	
Pmax	Maximum Power	165	170	175
%	Module Efficiency	16,27	16,76	17,25
Imp (A)	Maximum Power Current	8,34	8,54	8,62
Isc (A)	Short Circuit Current	8,87	9,02	9,15
Vmp (V)	Maximum Power Voltage	19,34	19,69	19,91
Voc (V)	Open Circuit Voltage	22,94	23,58	23,72

Mechanical Data

Subject	Specification
Dimensions	1494 ± 2 mm (L) x 679 ± 2 mm (W) x 42-35 0,5 mm (D)
Weight	12 Kg
Solar Cell	36 Polycrystalline Type 6" Silicon Cells (156.75 mm x 156.75 mm)
Front Glass	Tempered / Tempered ARC Glass
Encapsulant	Ethylene Vinyl Acetate (EVA)
Backsheet	Composite Film, Color White
Junction Box	With Multicontact / Tyco / Ekinler Certificate
Frame	Aluminium Frame (Eloxal Coating)

Operating Conditions

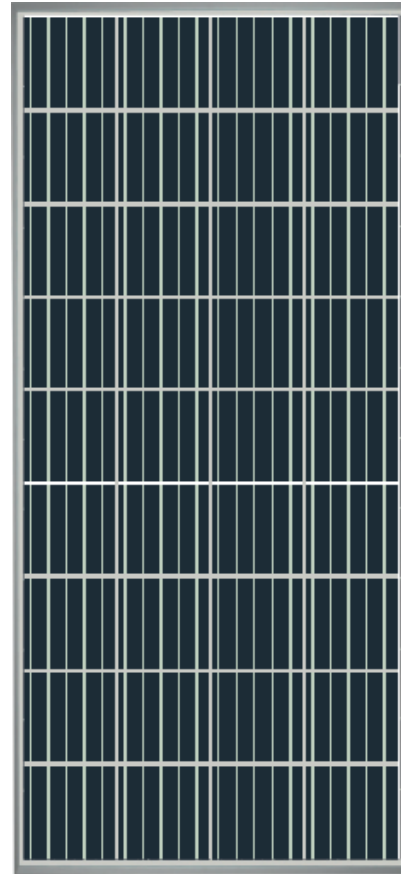
Subject	Specification
Mechanical Strength	5400 Pa (Certified By TUV Rheinland)
Maximum System Voltage	DC 1000 V
Series Fuse Rating	15 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

Subject	Specification
Nominal Operating Cell Temperature	45 °C ± 2 °C
Temperature Coefficient of Isc (%/°C)	-0,04 % / °C
Temperature Coefficient of Voc (%/°C)	-0,33 % / °C
Temperature Coefficient of Pmax Y (%/°C)	-0,45 % / °C
Temperature Coefficient of Vmp (%/°C)	-0,45 % / °C

Warranty

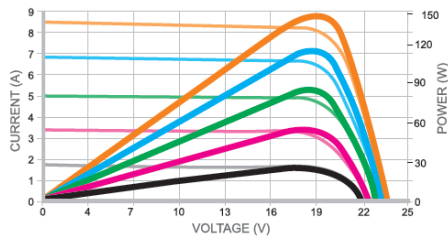
Subject	Specification
Product Warranty	10 Years
Linear Performance Warranty	10 Years, over %90 - 25 Years, over %80
JIT Product	Warranty of selling panels that are produced in last on year.
Power Tolerance	Positive (+) 5 Watt
Online Datasheet on the panel	QR Code System



- ISO 9001
- ISO 14001
- ISO 18001
- IEC 61215
- IEC 61730-1
- IEC 61730-2
- IEC 61701
- IEC 62716
- IEC 62804

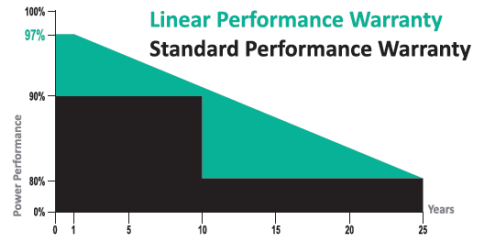
"LOCAL ITEM" MENTIONED
IN NUMBER 5346 YEK LAW

Turkey
Discover the potential



The typical relative change in module efficiency at irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 spectrum) is less than 3 %.

- 1000 W/m²
- 800 W/m²
- 600 W/m²
- 400 W/m²
- 200 W/m²





SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY



5400Pa

Snow Load Test: Under 5400 Pa snow load resistance according to IEC 61215



Ammonia Corrosion Test: Corrosion resistance according to IEC 62716



PID

Potential Induced Degradation: PID Resistance according to IEC 62804



5400Pa

Wind Load Test: Under 5400 Pa wind load resistance according to IEC 61215



Electroluminescence: Quality control for small microcracks with infrared radiation.



+5

Sun Simulator: 1000 W/m² radiation, 25°C temperature, +5 positive power tolerance and classification according to power tolerance.



Salt Mist Test: According to IEC 61701 ed.2 Salt Resistance



SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY

JIT

Just in Time Production: Production date is in panels glass, unchangeable and warranty of selling production in that are produced in last one year.



Thermal Cycles Damp Heat Test: 1000 hours damp heat and 200 thermal cycles according to IEC 61215



High Performance in Low Radiation :
On cloudy days, morning and evening over %3 performance (200 w/m²)



Fill Factor: High Fill Factor value, increased power.
Cell Power: Five bus bar, with high power.

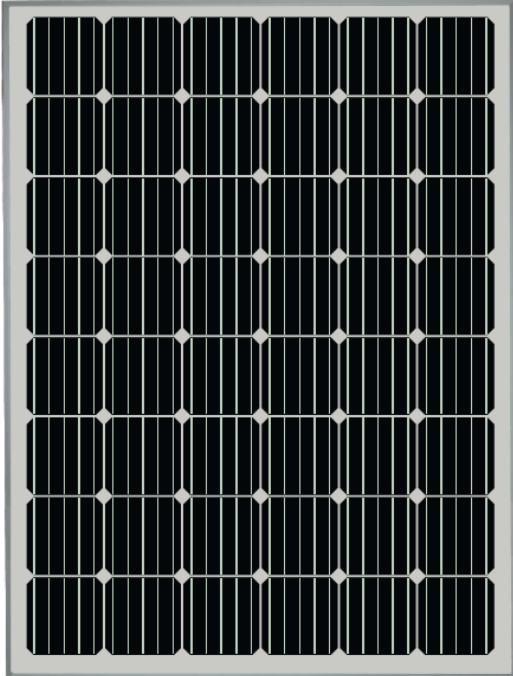
QR
KAREKOD

QR Code System: Real power measurements of modules which have +5 power tolerance ease of viewing with QR Code.



SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY



Electrical Data

MODEL	ASE48M 235	ASE48M 240	ASE48M 245
P_{max}	235	240	245
%	17,66	18,03	18,41
I_{mp} (A)	9,19	9,24	9,30
I_{sc} (A)	9,78	9,81	9,85
V_{mp} (V)	25,78	26,16	26,54
V_{oc} (V)	30,58	31,20	31,63

Mekanik Verileri

Subject	Specification
Dimensions	1335 ± 2 mm (L) x 997 ± 2 mm (W) x 42-35 0,5 mm (D)
Weight	17 Kg
Solar Cell	48 Monocrystalline Type 6" Silicon Cells (156.75 mm x 156.75 mm)
Front Glass	Tempered / Tempered ARC Glass
Encapsulant	Ethylene Vinyl Acetate (EVA)
Backsheet	Composite Film, Color White
Junction Box	With Multicontact / Tyco / Ekinler Certificate
Frame	Aluminium Frame (Eloxal Coating)

Operating Conditions

Subject	Specification
Mechanical Strength	5400 Pa (Certified By TUV Rheinland)
Maximum System Voltage	DC 1000 V
Series Fuse Rating	15 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

Subject	Specification
Nominal Operating Cell Temperature	44 °C ± 2 °C
Temperature Coefficient of α_{isc} (%/°C)	-0,04 % / °C
Temperature Coefficient of β_{voc} (%/°C)	-0,31 % / °C
Temperature Coefficient of P_{max} (%/°C)	-0,42 % / °C
Temperature Coefficient of β_{mpp} (%/°C)	-0,42 % / °C

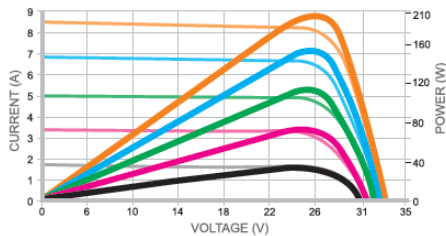
Warranty

Subject	Specification
Product Warranty	10 Years
Linear Performance Warranty	10 Years, over %90 - 25 Years, over %80
JIT Product	Warranty of selling panels that are produced in last on year.
Power Tolerance	Positive (+) 5 Watt
Online Datasheet on the panel	QR Code System

ISO 9001	ISO 14001	ISO 18001
IEC 61215	IEC 61730-1	IEC 61730-2
IEC 61701	IEC 62716	IEC 62804

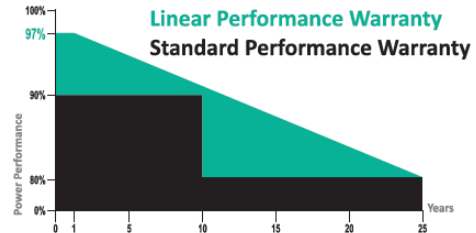
"LOCAL ITEM" MENTIONED
IN NUMBER 5346 YEK LAW

Turkey
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The typical relative change in module efficiency at irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 spectrum) is less than 3 %.

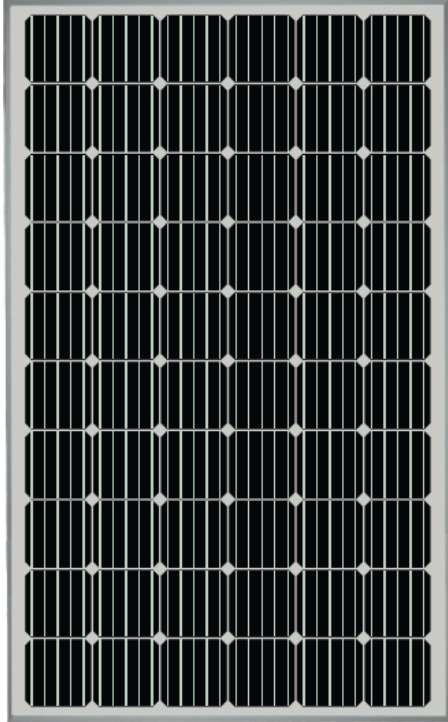
1000 W/m ²
800 W/m ²
600 W/m ²
400 W/m ²
200 W/m ²





SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY



Electrical Data

MODEL	ASE60M 300	ASE60M 305	ASE72M 310	ASE72M 315	ASE72M 320	
P_{max}	Maximum Power	300	305	310	315	320
%	Module Efficiency	18,21	18,52	19,07	19,38	19,69
I_{mp} (A)	Maximum Power Current	9,24	9,30	9,29	9,35	9,39
I_{sc} (A)	Short Circuit Current	9,81	9,85	9,79	9,84	9,86
V_{mpp} (V)	Maximum Power Voltage	32,70	33,18	33,60	34,10	34,38
V_{oc} (V)	Open Circuit Voltage	39,00	39,53	39,80	39,90	40,02

Mechanical Data

Subject	Specification
Dimensions	1652 ± 2 mm (L) x 997 ± 2 mm (W) x 42-35 0,5 mm (D)
Weight	20 Kg
Solar Cell	60 Monocrystalline Type 6" Silicon Cells (156.75 mm x 156.75 mm)
Front Glass	Tempered / Tempered ARC Glass
Encapsuland	Ethylene Vinyl Acetate (EVA)
Backsheet	Composite Film, Color White
Junction Box	With Multicontact / Tyco / Ekinler Certificate
Frame	Aluminium Frame (Eloxal Coating)

Operating Conditions

Subject	Specification
Mechanical Strenght	5400 Pa (Certified By TUV Rheinland)
Maximum System Voltage	DC 1000 V
Series Fuse Rating	15 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

Subject	Specification
Nominal Operating Cell Temperature	44 °C ± 2 °C
Temperature Coefficient of α _{isc} (%/°C)	-0,04 % / °C
Temperature Coefficient of β _{Voc} (%/°C)	-0,31 % / °C
Temperature Coefficient of P _{max} V (%/°C)	-0,42 % / °C
Temperature Coefficient of β _{Vmpp} (%/°C)	-0,42 % / °C

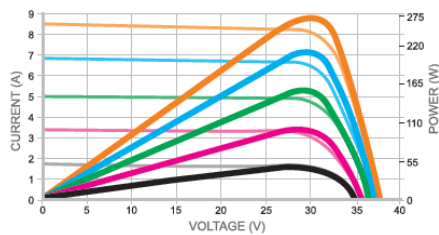
Warranty

Subject	Specification
Product Warranty	10 Years
Linear Performance Warranty	10 Years, over %90 - 25 Years, over %80
JIT Product	Warranty of selling panels that are produced in last on year.
Power Tolerance	Positive (+) 5 Watt
Online Datasheet on the panel	QR Code System

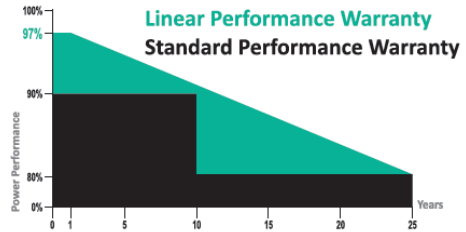
- ISO 9001
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- ISO 18001
- IEC 61215
- IEC 61730-1
- IEC 61730-2
- IEC 61701
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- IEC 62804

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SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY



Electroluminescence: Quality control for small microcracks with infrared radiation.



Sun Simulator: 1000 W/m² radiation, 25°C temperature, +5 positive power tolerance and classification according to power tolerance.



Salt Mist Test: According to IEC 61701 ed.2 Salt Resistance



Snow Load Test: Under 5400 Pa snow load resistance according to IEC 61215



Ammonia Corrosion Test: Corrosion resistance according to IEC 62716



Potential Induced Degradation: PID Resistance according to IEC 62804



Wind Load Test: Under 5400 Pa wind load resistance according to IEC 61215



Thermal Cycles Damp Heat Test: 1000 hours damp heat and 200 thermal cycles according to IEC 61215

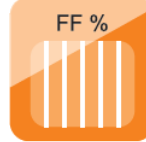


High Performance in Low Radiation : On cloudy days, morning and evening over %3 performance (200 w/m²)



SOLAR ENERGY SYSTEMS COMPANY

33140 YENISEHIR, MERSIN, TURKEY



Fill Factor: High Fill Factor value, increased power.
Cell Power: Five bus bar, with high power.



QR Code System: Real power measurements of modules which have +5 power tolerance ease of viewing with QR Code.



Just in Time Production: Production date is in panels glass, unchangeable and warranty of selling production in that are produced in last one year.

Solar Energy Systems Company

Cumhuriyet Mah , sk 2030 , 33140 Yenisehir

Mersin , Turkey

Marketing department