

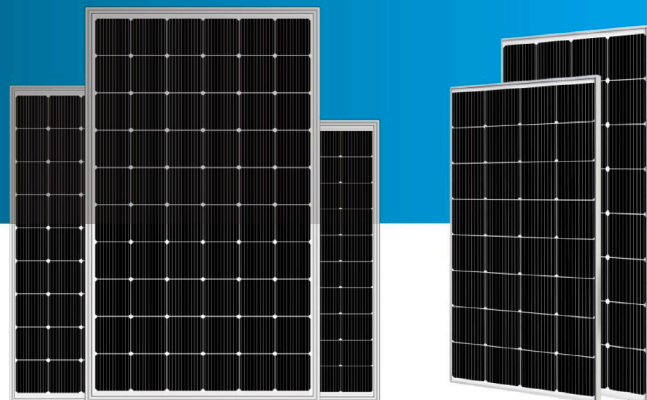
40-450 Watt

High efficiency monocrystalline
silicon solar modules

0~+3% tolerance

PERC

182 Cell 450W



Solar module features



PERC 182 cells

Better capability of current collection, larger area of power generation, nice appearance, more suitable for installation on the roof.



High output power

Using PERC battery structure technology (Low resistance characteristics), output power of 60pcs monocrystalline cells reaches Max 450W (Highest Conversion efficiency to 20.9%)



Low light performance

Using excellent glass and texture surface making of solar cell, outstanding performance can be obtained in low light condition.

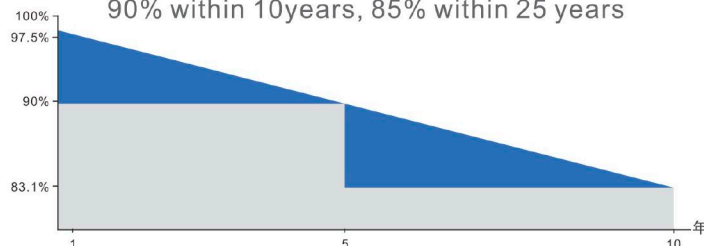


Adaptability of harsh environment

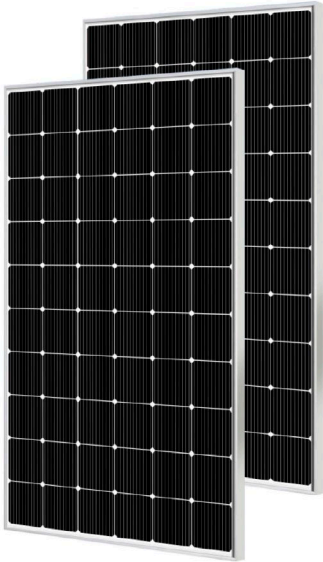
Corrosion tests have certified in high salt fog and high ammonia environment.

Guaranteed output power

90% within 10years, 85% within 25 years

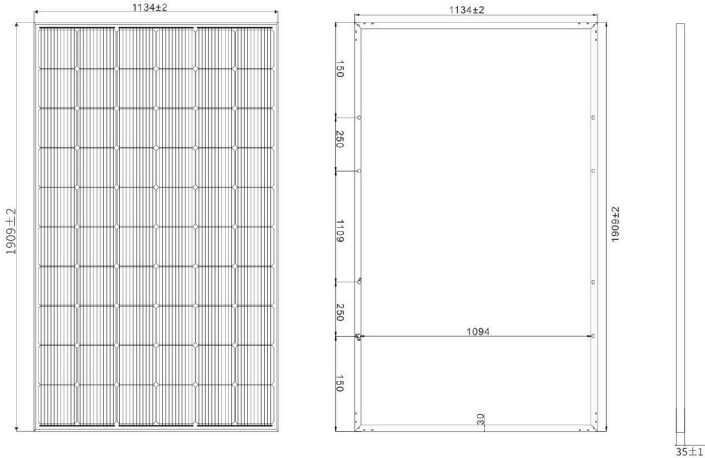


Module Picture



FL450M-60

Mechanical Diagrams



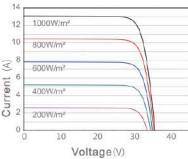
PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

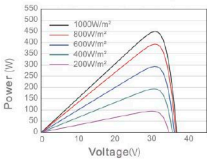
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Imp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL450M	450W	20.80%	34.20	13.16	41.04	13.95	±3%

Characteristics

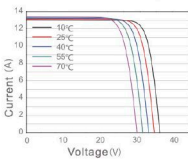
Current Voltage Curve SP450M/60



Power Voltage Curve SP450M/60



Current Voltage Curve SP450M/60



Mechanical Parameters	
Solar Cell(Type/Size)	MONO(182mm)
Solar Cells Number	60Pcs(6x10)
Dimension	1909x1134x35mm
Weight	22.9Kg/Pcs
Tempered Glass	3.2 mm High Permeability Coated
Frame	Anodized aluminum alloy
Junction Box	IP67,3*bypass diode
Cable	4.0mm², (+)1000mm/(-)1000mm
Connector	Original MC4/Compatible MC4
Mechanical Load	Front 5400Pa/back 2400Pa

Packing	
Module Type	FL450M-60
Carton Size	1930x1160x85mm
Number	2Pcs/Ctn
Weight	46Kg/Ctn
Volume	0.190Cbm/Ctn
20GP Container	316Pcs
40HQ Container	736Pcs

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

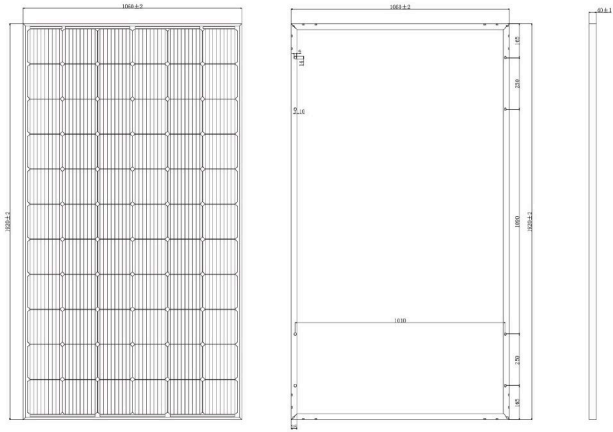
NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s

Module Picture



FL400M-66

Mechanical Diagrams

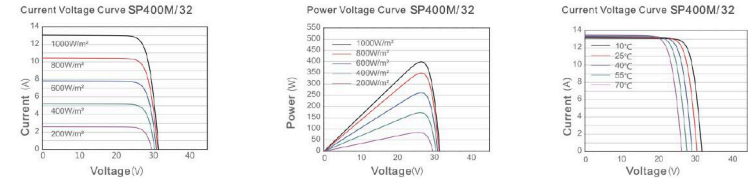


PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Impp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL400M	400W	20.70%	30.78	13.00	37.02	13.78	± 3%

Characteristics



Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(168mm)	Module Type	FL400M-66
Solar Cells Number	66Pcs(6x11)	Carton Size	1940x1085x95mm
Dimension	1920x1060x40mm	Number	2Pcs/Ctn
Weight	22.3Kg/Pcs	Weight	45Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.172Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	234Pcs
Junction Box	IP67-3* bypass diode	40HQ Container	600Pcs
Cable	4.0mm², (+)1000mm/(-)1000mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

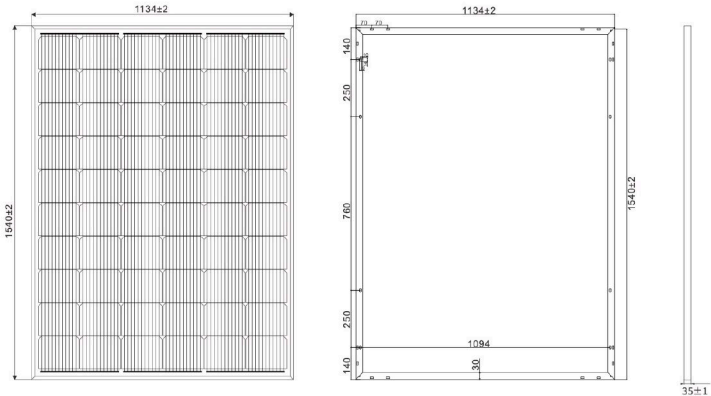
NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s

Module Picture



FL360M-60

Mechanical Diagrams



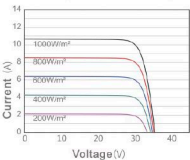
PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

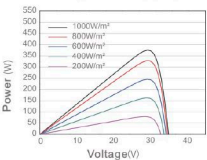
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Impp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL360M	360W	20.60%	34.20	10.53	41.04	11.16	±3%

Characteristics

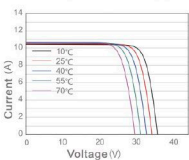
Current Voltage Curve SP360M/60



Power Voltage Curve SP360M/60



Current Voltage Curve SP360M/60



Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL360M-60
Solar Cells Number	60Pcs(6x10)	Carton Size	1560x1160x85mm
Dimension	1540x1134x35mm	Number	2Pcs/Ctn
Weight	18.8Kg/Pcs	Weight	38Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.153Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	386Pcs
Junction Box	IP67,3*bypass diode	40HQ Container	902Pcs
Cable	4.0mm², (+)1000mm/(-)1000mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s

Module Picture



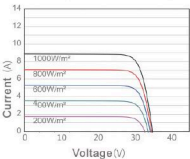
FL300M-60

Electrical Parameters at (STC)

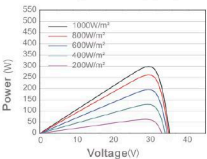
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Imp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL300M	300W	20.50%	34.20	8.77	41.04	9.30	±3%

Characteristics

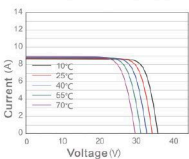
Current Voltage Curve SP300M/60



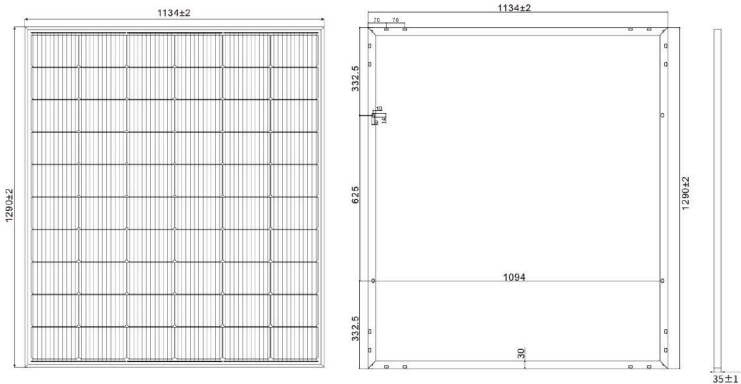
Power Voltage Curve SP300M/60



Current Voltage Curve SP300M/60



Mechanical Diagrams



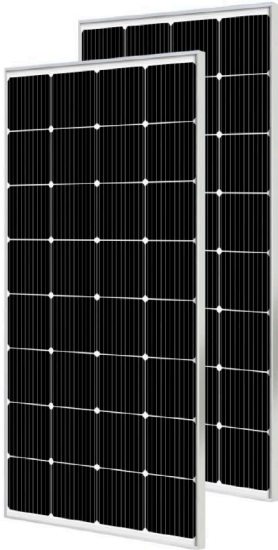
PS:Frame color and cable length can be customized

Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL300M-60
Solar Cells Number	60Pcs(6x10)	Carton Size	1310x1160x85mm
Dimension	1290x1134x35mm	Number	2Pcs/Ctn
Weight	14.3Kg/Pcs	Weight	29Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.129Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	444Pcs
Junction Box	IP67,3*bypass diode	40HQ Container	1088Pcs
Cable	4.0mm², (+)1000mm/(-)1000mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

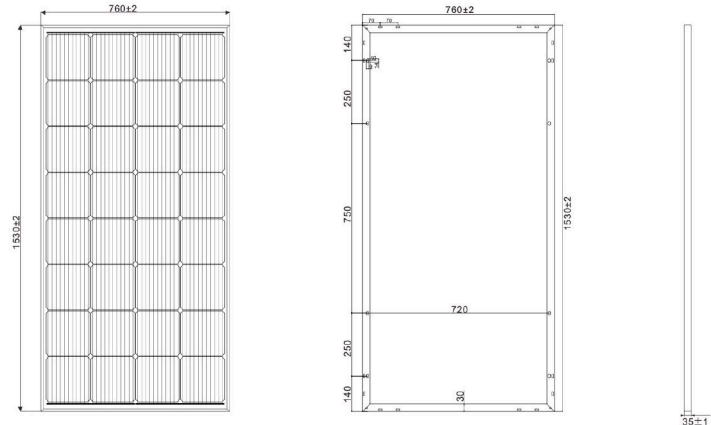
NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s

Module Picture



FL240M-32

Mechanical Diagrams



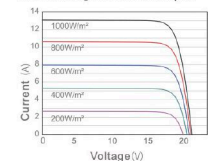
PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

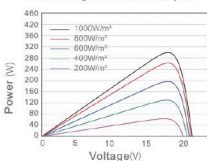
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Imp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL240M	240W	20.70%	18.24	13.16	21.80	13.95	±3%

Characteristics

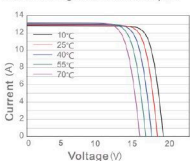
Current Voltage Curve SP240M/32



Power Voltage Curve SP240M/32



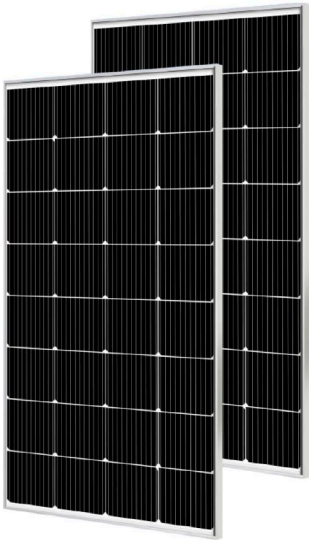
Current Voltage Curve SP240M/32



Mechanical Parameters		Packing	
Solar Cell (Type/Size)	MONO(182mm)	Module Type	FL240M-32
Solar Cells Number	32Pcs(4x8)	Carton Size	1550x780x85mm
Dimension	1530x760x35mm	Number	2Pcs/Ctn
Weight	14.3Kg/Pcs	Weight	24Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.100Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	532Pcs
Junction Box	IP67,3*bypass diode	40HQ Container	1356Pcs
Cable	4.0mm², (+)1000mm/(-)1000mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

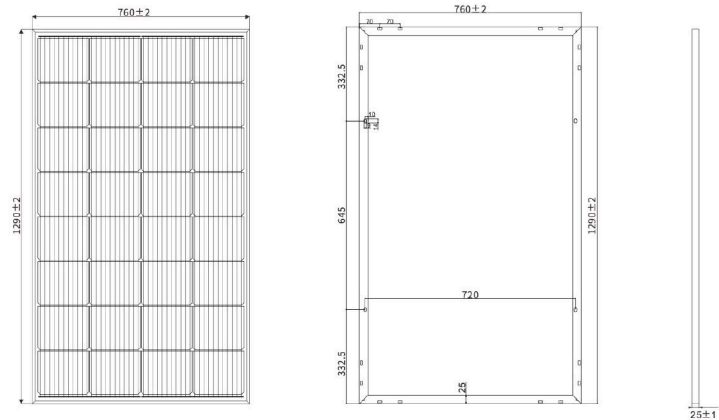
STC: ☀️ Light intensity 1000W/m² 🔋 Battery temperature:25°C ☁️ atmosphere quality=15
NOCT: ☀️ Light intensity 800W/m² 🔋 Battery temperature:20°C ☁️ atmosphere quality=15 🌬️ wind velocity 1m/s

Module Picture



FL200M-32

Mechanical Diagrams

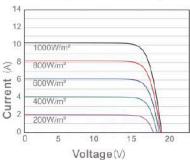


Electrical Parameters at (STC)

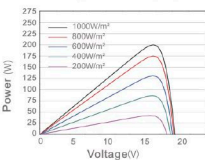
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Imp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL200M	200W	20.40%	18.24	10.96	21.80	11.62	±3%

Characteristics

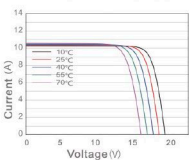
Current Voltage Curve SP200M/32



Power Voltage Curve SP200M/32



Current Voltage Curve SP200M/32



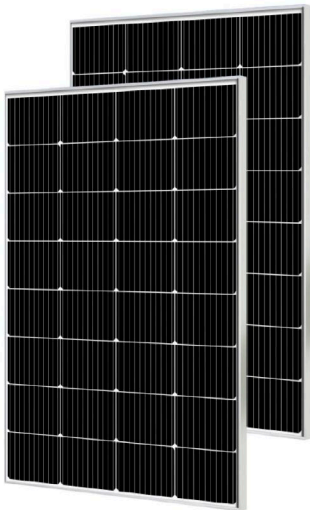
PS:Frame color and cable length can be customized

Mechanical Parameters	
Solar Cell(Type/Size)	MONO(182mm)
Solar Cells Number	32Pcs(4x8)
Dimension	1290x760x30mm
Weight	10.3Kg/Pcs
Tempered Glass	3.2 mm High Permeability Coated
Frame	Anodized aluminum alloy
Junction Box	IP67,2*bypass diode
Cable	2.5mm², (+)700mm/(-)700mm
Connector	Original MC4/Compatible MC4
Mechanical Load	Front 5400PA/back 2400PA

Packing	
Module Type	FL200M-32
Carton Size	1310x780x75mm
Number	2Pcs/Ctn
Weight	21Kg/Ctn
Volume	0.077Cbm/Ctn
20GP Container	784Pcs
40HQ Container	1836Pcs

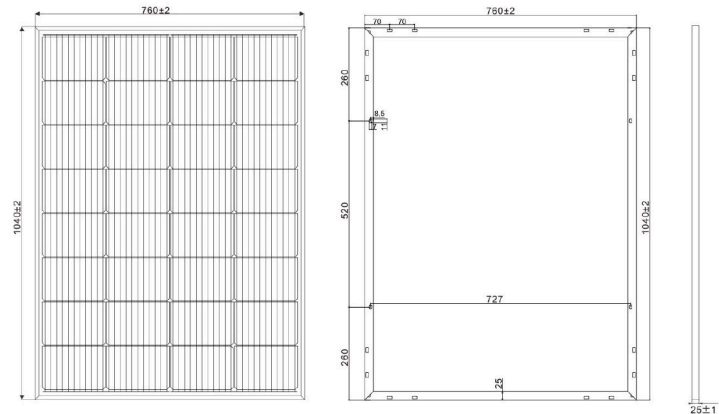
STC: ☀️ Light intensity 1000W/m² 🔋 Battery temperature:25°C ☁️ atmosphere quality=15
NOCT: ☀️ Light intensity 800W/m² 🔋 Battery temperature:20°C ☁️ atmosphere quality=15 🌬️ wind velocity 1m/s

Module Picture



FL160M-32

Mechanical Diagrams



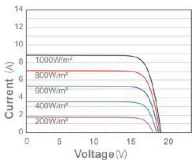
PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

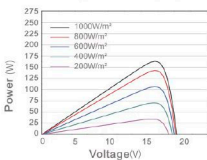
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Impp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL160M	160W	20.20%	18.24	8.77	21.80	9.30	±3%

Characteristics

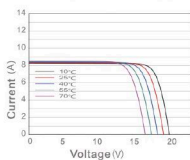
Current Voltage Curve SP160M/32



Power Voltage Curve SP160M/32



Current Voltage Curve SP160M/32



Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL160M-32
Solar Cells Number	32Pcs(4x8)	Carton Size	1060x780x75mm
Dimension	1040x760x30mm	Number	2Pcs/Ctn
Weight	8.30Kg/Pcs	Weight	17Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.062Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	984Pcs
Junction Box	IP67,2*bypass diode	40HQ Container	2280Pcs
Cable	2.5mm², (+)700mm/(-)700mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

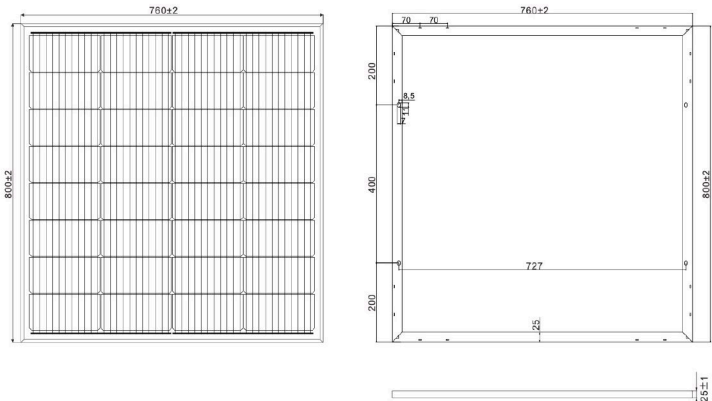
NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s

Module Picture



FL120M-32

Mechanical Diagrams



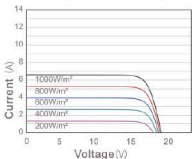
PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

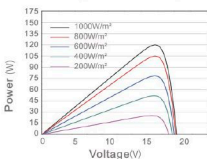
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Impp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL120M	120W	19.70%	18.24	6.58	21.80	6.97	±3%

Characteristics

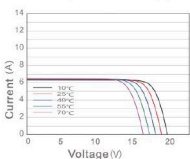
Current Voltage Curve SP120M/32



Power Voltage Curve SP120M/32



Current Voltage Curve SP120M/32

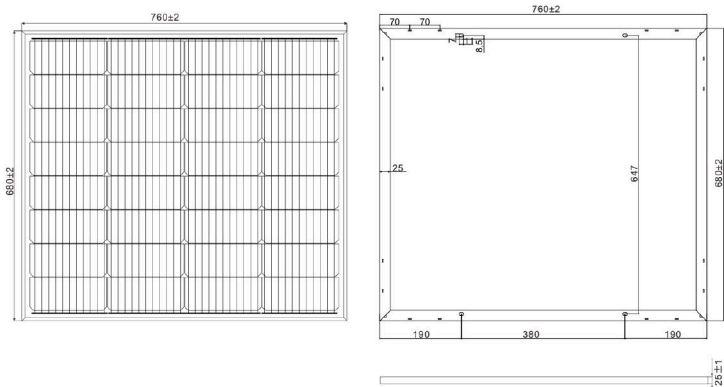


Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL120M-32
Solar Cells Number	32Pcs(4x8)	Carton Size	820x780x75mm
Dimension	800x760x30mm	Number	2Pcs/Ctn
Weight	7.30Kg/Pcs	Weight	15Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.048Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	1284Pcs
Junction Box	IP67,1*bypass diode	40HQ Container	2880Pcs
Cable	2.0mm², (+)500mm/(-)500mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: ☀️ Light intensity 1000W/m² 🔋 Battery temperature:25°C ☁️ atmosphere quality=15
NOCT: ☀️ Light intensity 800W/m² 🔋 Battery temperature:20°C ☁️ atmosphere quality=15 🌬️ wind velocity 1m/s



FL100M-32



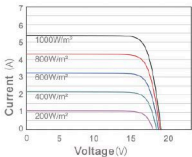
PS: Frame color and cable length can be customized

Electrical Parameters at (STC)

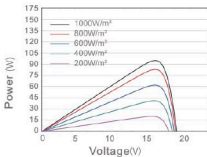
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Impp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL100M	100W	19.30%	18.24	5.48	21.80	5.81	±3%

Characteristics

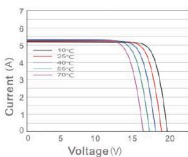
Current Voltage Curve SP100M/32



Power Voltage Curve SP100M/32



Current Voltage Curve SP100M/32

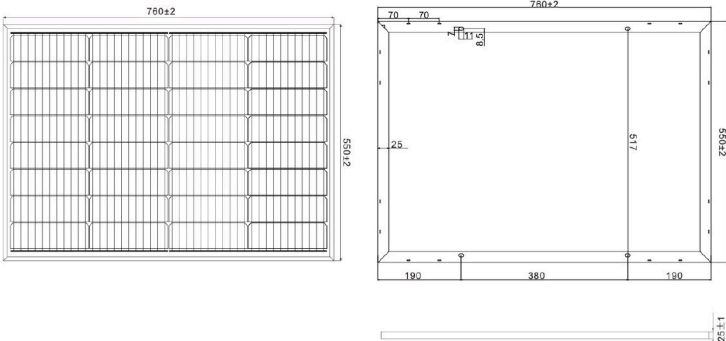


Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL100M-32
Solar Cells Number	32Pcs(4x8)	Carton Size	700x780x75mm
Dimension	680x760x30mm	Number	2Pcs/Ctn
Weight	6.30Kg/Pcs	Weight	13Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.040Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	1494Pcs
Junction Box	IP67, 1*bypass diode	40HQ Container	3366Pcs
Cable	2.0mm², (+)500mm/(-)500mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: ☀️ Light intensity 1000W/m² 🔋 Battery temperature:25°C ☁️ atmosphere quality=15
NOCT: ☀️ Light intensity 800W/m² 🔋 Battery temperature:20°C ☁️ atmosphere quality=15 🌬️ wind velocity 1m/s



FL080M-32

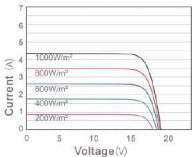


Electrical Parameters at (STC)

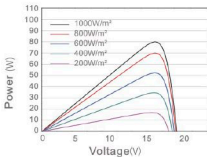
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Imp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL080M	80W	19.10%	18.24	4.39	21.80	4.65	±3%

Characteristics

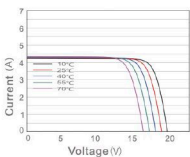
Current Voltage Curve SP080M/32



Power Voltage Curve SP080M/32



Current Voltage Curve SP080M/32



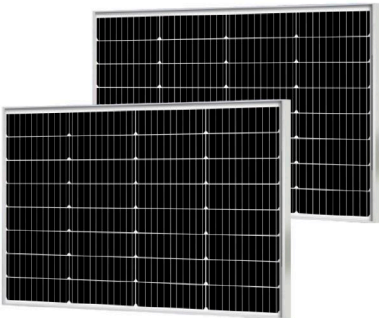
PS:Frame color and cable length can be customized

Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL080M-32
Solar Cells Number	32Pcs(4x8)	Carton Size	570x780x75mm
Dimension	550x760x30mm	Number	2Pcs/Ctn
Weight	5.30Kg/Pcs	Weight	11Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.030Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	1776Pcs
Junction Box	IP67, 1*bypass diode	40HQ Container	4032Pcs
Cable	2.0mm², (+)500mm/(-)500mm		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

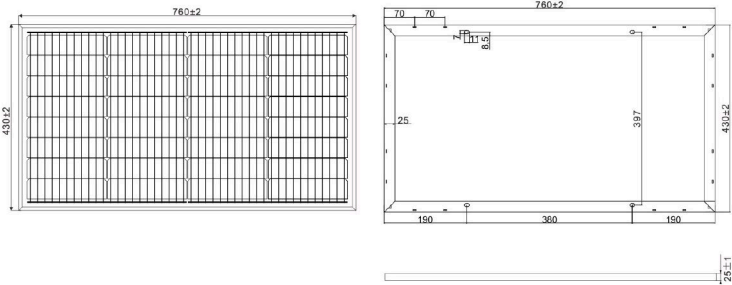
NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s

Module Picture



FL060M-32

Mechanical Diagrams

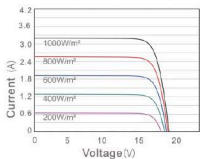


Electrical Parameters at (STC)

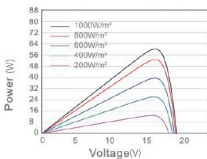
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Impp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL060M	60W	18.30%	18.24	3.29	21.80	3.49	±3%

Characteristics

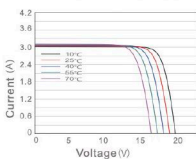
Current Voltage Curve SP060M/32



Power Voltage Curve SP060M/32



Current Voltage Curve SP060M/32



PS:Frame color and cable length can be customized

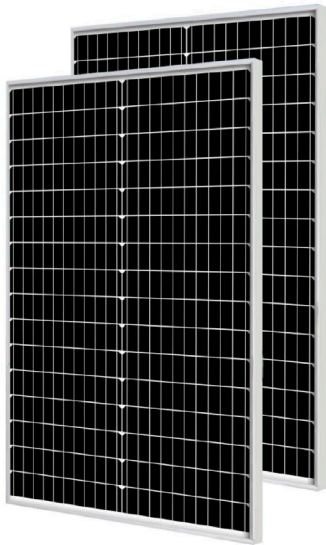
Mechanical Parameters	
Solar Cell(Type/Size)	MONO(182mm)
Solar Cells Number	32Pcs(4x8)
Dimension	430x760x30mm
Weight	4.30Kg/Pcs
Tempered Glass	3.2 mm High Permeability Coated
Frame	Anodized aluminum alloy
Junction Box	IP67, 1*bypass diode
Cable	2.0mm², (+)500mm/(-)500mm
Connector	Original MC4/Compatible MC4
Mechanical Load	Front 5400PA/back 2400PA

Packing	
Module Type	FL060M-32
Carton Size	450x780x75mm
Number	2Pcs
Weight	9Kg/Ctn
Volume	0.026Cbm/Ctn
20GP Container	2600Pcs
40HQ Container	5340Pcs

STC: ☀️ Light intensity 1000W/m² 🔋 Battery temperature:25°C ☁️ atmosphere quality=15

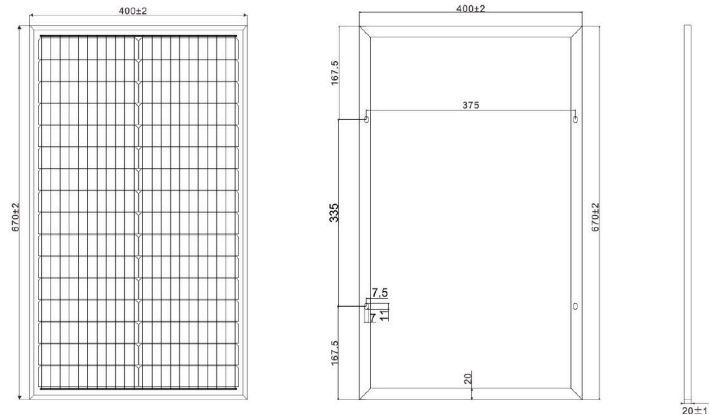
NOCT: ☀️ Light intensity 800W/m² 🔋 Battery temperature:20°C ☁️ atmosphere quality=15 🌬️ wind velocity 1m/s

Module Picture



FL050M-32

Mechanical Diagrams



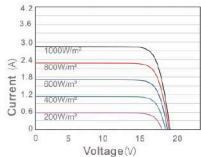
PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

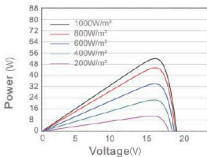
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Imp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL050M	50W	18.60%	18.24	2.74	21.80	2.97	±3%

Characteristics

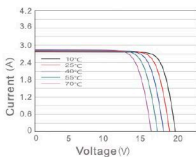
Current Voltage Curve SP050M/32



Power Voltage Curve SP050M/32



Current Voltage Curve SP050M/32

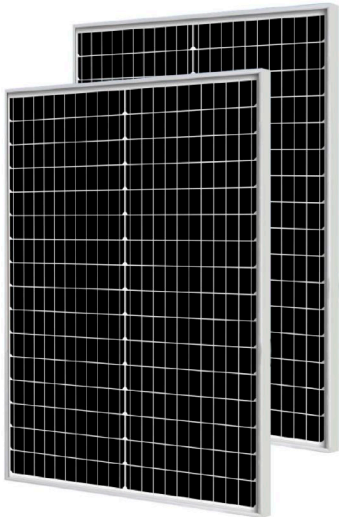


Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL050M-32
Solar Cells Number	32Pcs(2x16)	Carton Size	700x430x170mm
Dimension	670x400x25mm	Number	5Pcs/Ctn
Weight	3.80Kg/Pcs	Weight	20Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.052Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	2690Pcs
Junction Box	IP67,0"bypass diode	40HQ Container	6540Pcs
Cable	//		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400PA/back 2400PA		

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

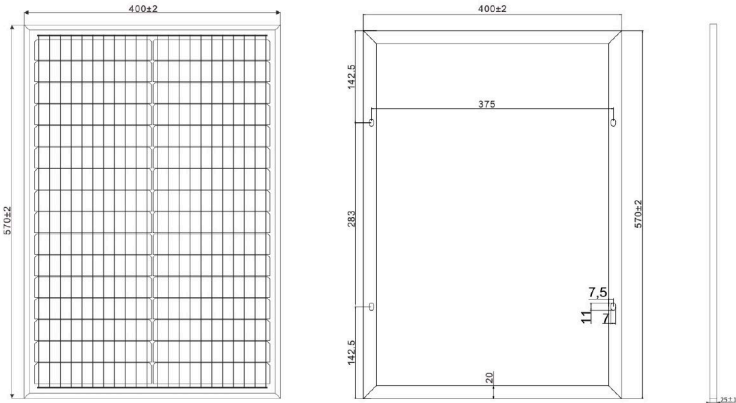
NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s

Module Picture



FL040M-32

Mechanical Diagrams



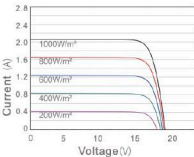
PS:Frame color and cable length can be customized

Electrical Parameters at (STC)

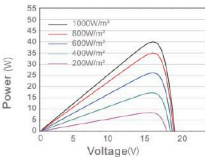
Module	Power (W)	Module Efficiency(%)	Voltage at Pmax(Vmp)	Current at Pmax(Impp)	Open Circuit Voltage(Voc)	Short Circuit Current(Isc)	Power Tolerance(w)
FL040M	40W	17.50%	18.24	2.19	21.80	2.39	±3%

Characteristics

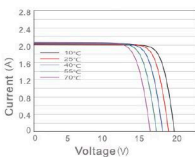
Current Voltage Curve SP040M/32



Power Voltage Curve SP040M/32



Current Voltage Curve SP040M/32



Mechanical Parameters		Packing	
Solar Cell(Type/Size)	MONO(182mm)	Module Type	FL040M-32
Solar Cells Number	32Pcs(2x16)	Carton Size	600x430x170mm
Dimension	570x400x25mm	Number	5Pcs/Ctn
Weight	2.80Kg/Pcs	Weight	15Kg/Ctn
Tempered Glass	3.2 mm High Permeability Coated	Volume	0.044Cbm/Ctn
Frame	Anodized aluminum alloy	20GP Container	3180Pcs
Junction Box	IP67,0"bypass diode	40HQ Container	7730Pcs
Cable	//		
Connector	Original MC4/Compatible MC4		
Mechanical Load	Front 5400Pa/back 2400Pa		

STC: Light intensity 1000W/m² Battery temperature:25°C atmosphere quality=15

NOCT: Light intensity 800W/m² Battery temperature:20°C atmosphere quality=15 wind velocity 1m/s