



**karstsolar**

**380~410W**

**KSM-380-410/108-S3**

**Durability Against Extreme Environmental Conditions**

High salt mist and ammonia resistance certified by TUV NORD.



**PID Resistance**

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



**High Efficiency**

Higher module conversion efficiency(up to 21.00%) benefit from half cell structure(low resistance characteristic).



**Low-light Performance**

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



**Severe Weather Resilience**

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716, IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



KSM-380-410/108-S3

# 380-410W

Half-Cell High Efficiency PV Module

**Weight**

21.0kgs±3%

**Cells Type**

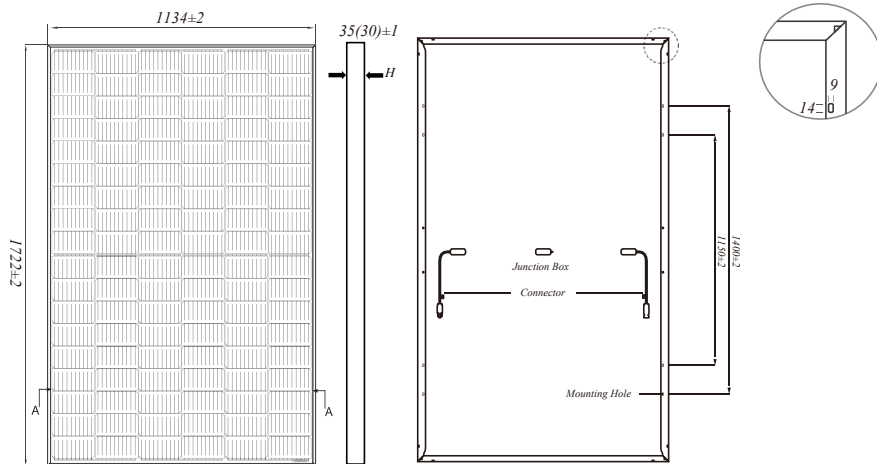
Mono 182-10BB

**Dimension(LxWxT)**

1722×1134×35(30)mm

**Packaging**

31/806pcs 37/962pcs



Front Side Back

Remark: customized frame color and cable length available upon request

**MECHANICAL SPECIFICATION**

Cell	Mono
No.of cells	108(6x18)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

**OPERATING PARAMETERS**

Maximum System Voltage	1500VDC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	ClassII

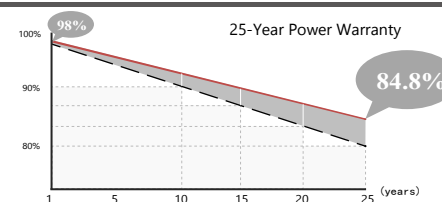
**ELECTRICAL CHARACTERISTICS** STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-380/108-S3		KSM-385/108-S3		KSM-390/108-S3		KSM-395/108-S3		KSM-400/108-S3		KSM-405/108-S3		KSM-410/108-S3	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	380	286.3	385	290.0	390	293.8	395	297.6	400	301.3	405	305.1	410	308.9
Open Circuit Voltage(Voc/V)	36.31	33.97	36.46	34.11	36.61	34.25	36.76	34.39	36.91	34.53	37.06	34.67	37.21	34.81
Short Circuit Current(Isc/A)	13.40	10.82	13.47	10.87	13.54	10.93	13.61	10.99	13.68	11.04	13.75	11.10	13.82	11.16
Voltage at Maximum Power(Vmp/V)	30.56	27.92	30.72	28.14	30.88	28.36	31.04	28.57	31.20	28.79	31.36	29.00	31.52	29.21
Current at Maximum Power(Imp/A)	12.43	10.25	12.53	10.31	12.63	10.36	12.73	10.41	12.82	10.47	12.91	10.52	13.01	10.57
Module Efficiency(%)	19.46%		19.72%		19.97%		20.23%		20.48%		20.74%		21.00%	

**TEMPERATURE RATINGS**

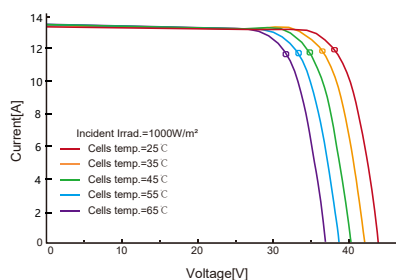
Norminal Operating Cell Temperature(NOCT)	45±2 C
Temperature Coefficient of Isc	+0.045%/C
Temperature Coefficient of Voc	-0.275%/C
Temperature Coefficient of Pmax	-0.350%/C

**ADDITIONAL VALUE**

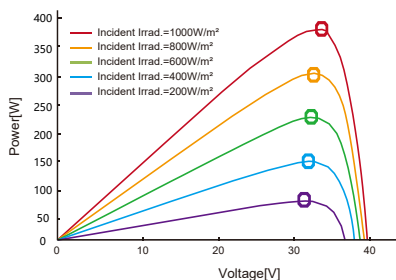


**I-V CURVE(KSM-380-410/108-S3)**

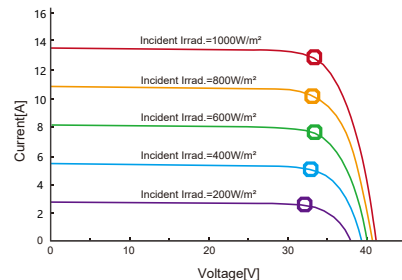
Current-Voltage Curve



Power-Voltage Curve



Current-Voltage Curve



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# 435~455W

## KSM-435-455/120-S3

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 21.02%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716, IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



KSM-435-455/120-S3

# 435-455W

Half-Cell High Efficiency PV Module

**Weight**

24.0kg±3%

**Cells Type**

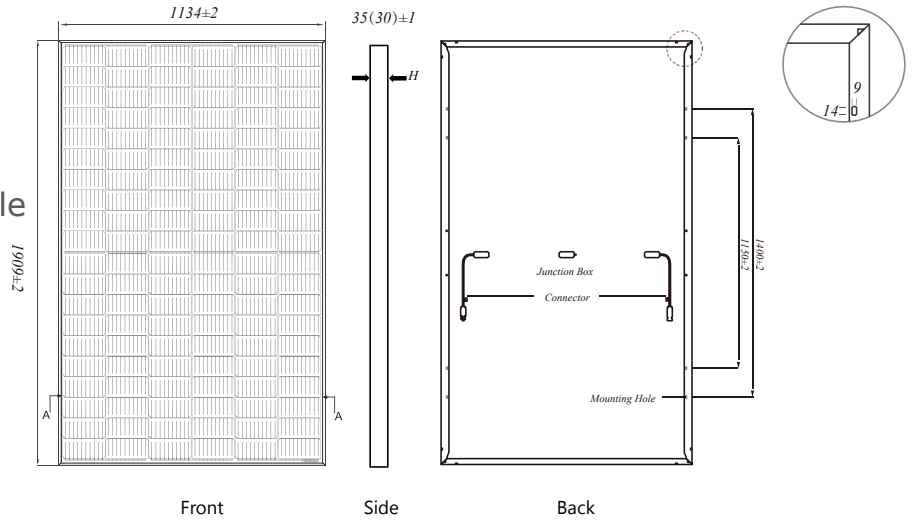
Mono 182-10BB

**Dimension(LxWxT)**

1909×1134×35(30)mm

**Packaging**

31/744pcs 37/888pcs



Remark: customized frame color and cable length available upon request

**MECHANICAL SPECIFICATION**

Cell	Mono
No.of cells	120(6x20)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

**OPERATING PARAMETERS**

Maximum System Voltage	1500VDC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	Class II

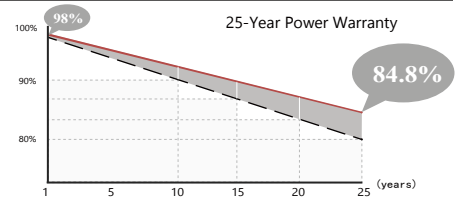
**ELECTRICAL CHARACTERISTICS** STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-435/120-S3		KSM-440/120-S3		KSM-445/120-S3		KSM-450/120-S3		KSM-455/120-S3	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	435	327.7	440	331.5	445	335.2	450	339	455	342.8
Open Circuit Voltage(Voc/V)	40.80	38.17	40.95	38.31	41.10	38.45	41.25	38.59	41.40	38.73
Short Circuit Current(Isc/A)	13.34	10.77	13.41	10.82	13.52	10.91	13.62	10.99	13.72	11.07
Voltage at Maximum Power(Vmp/V)	33.76	32.11	33.91	32.30	34.06	32.41	34.21	32.53	34.36	32.65
Current at Maximum Power(Imp/A)	12.89	10.21	12.98	10.26	13.07	10.34	13.16	10.42	13.25	10.50
Module Efficiency(%)	20.09		20.33		20.56		20.79		21.02	

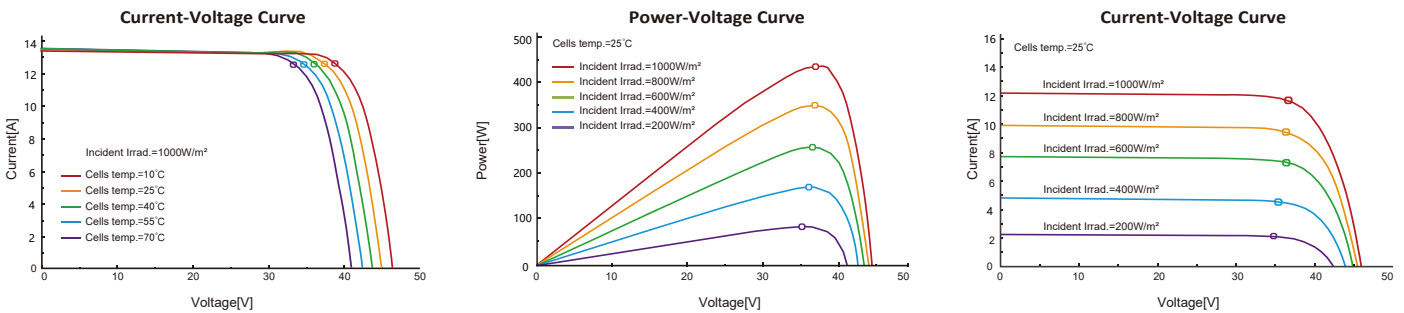
**TEMPERATURE RATINGS**

Norminal Operating Cell Temperature(NOCT)	45±2°C
Temperature Coefficient of Isc	+0.045%/°C
Temperature Coefficient of Voc	-0.275%/°C
Temperature Coefficient of Pmax	-0.350%/°C

**ADDITIONAL VALUE**



**I-V CURVE(KSM-435-455/120-S3)**



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# 480~505W

## KSM-480-505/132-S3

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 21.27%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716,IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



KSM-480-505/132-S3

# 480-505W

Half-Cell High Efficiency PV Module

**Weight**

26.0kg±3%

**Cells Type**

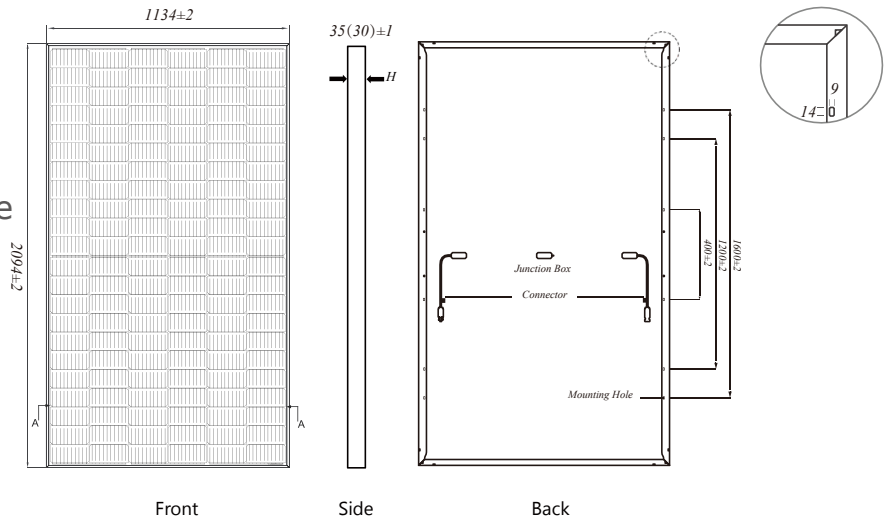
Mono 182-10BB

**Dimension(LxWxT)**

2094x1134x35(30)mm

**Packaging**

31/682pcs 37/814pcs



Remark: customized frame color and cable length available upon request

**MECHANICAL SPECIFICATION**

Cell	Mono
No.of cells	132(6x22)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

**OPERATING PARAMETERS**

Maximum System Voltage	1500VDC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	ClassII

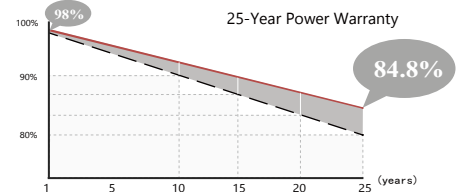
**ELECTRICAL CHARACTERISTICS** STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-480/132-S3		KSM-485/132-S3		KSM-490/132-S3		KSM-495/132-S3		KSM-500/132-S3		KSM-505/132-S3	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	480	361.6	485	365.4	490	369.1	495	372.9	500	376.7	505	380.4
Open Circuit Voltage(Voc/V)	45.07	42.17	45.22	42.31	45.37	42.45	45.52	42.56	45.67	42.73	45.82	42.87
Short Circuit Current(Isc/A)	13.65	11.02	13.72	11.07	13.79	11.13	13.86	11.19	13.93	11.24	14.00	11.30
Voltage at Maximum Power(Vmp/V)	37.65	34.62	37.81	34.80	37.97	34.98	38.13	35.16	38.29	35.34	38.45	35.51
Current at Maximum Power(Impp/A)	12.75	10.44	12.83	10.50	12.90	10.55	12.98	10.60	13.06	10.66	13.13	10.71
Module Efficiency(%)	20.21		20.42		20.64		20.85		21.06		21.27	

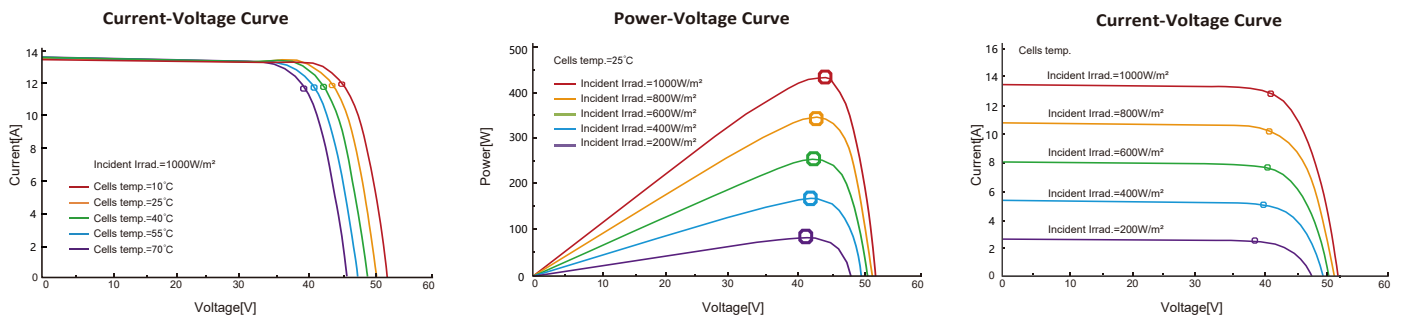
**TEMPERATURE RATINGS**

Normal Operating Cell Temperature(NOCT)	45±2°C
Temperature Coefficient of Isc	+0.045%/°C
Temperature Coefficient of Voc	-0.275%/°C
Temperature Coefficient of Pmax	-0.350%/°C

**ADDITIONAL VALUE**



**I-V CURVE (KSM-480-505/132-S3)**



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# 525~550W

## KSM-525-550/144-S3

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 21.28%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716,IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

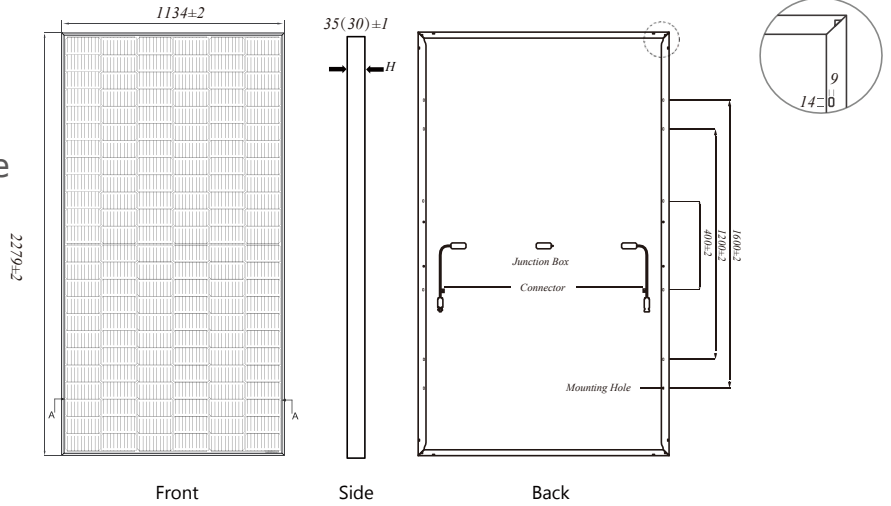
ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



# KSM-525-550/144-S3

# 525-550W

Half-Cell High Efficiency PV Module



Remark: customized frame color and cable length available upon request

### Weight

28.6kg±3%

### Cells Type

Mono 182-10BB

### Dimension(LxWxT)

2279×1134×35(30)mm

### Packaging

31/620pcs 37/740pcs

## MECHANICAL SPECIFICATION

Cell	Mono
No.of cells	144(6x24)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

## OPERATING PARAMETERS

Maximum System Voltage	1500VDC
Operating Temperature	-40°C ~ +85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	Class II

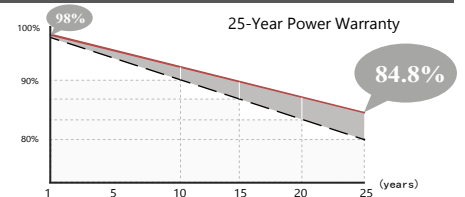
## ELECTRICAL CHARACTERISTICS STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-525/144-S3		KSM530/144-S3		KSM-535/144-S3		KSM-540/144-S3		KSM-545/144-S3		KSM-550/144-S3	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	525	395.5	530	399.2	535	403.0	540	406.8	545	410.5	550	414.3
Open Circuit Voltage(Voc/V)	49.15	45.98	49.30	46.12	49.45	46.26	49.60	46.40	49.75	46.54	49.90	46.68
Short Circuit Current(Isc/A)	13.65	11.02	13.72	11.07	13.79	11.13	13.86	11.19	13.93	11.24	14.00	11.30
Voltage at Maximum Power(Vmp/V)	41.15	37.87	41.31	38.03	41.47	38.20	41.64	38.36	41.80	38.52	41.96	38.68
Current at Maximum Power(Imp/A)	12.76	10.44	12.83	10.50	12.90	10.55	12.97	10.60	13.04	10.66	13.11	10.71
Module Efficiency(%)	20.31		20.51		20.70		20.89		21.09		21.28	

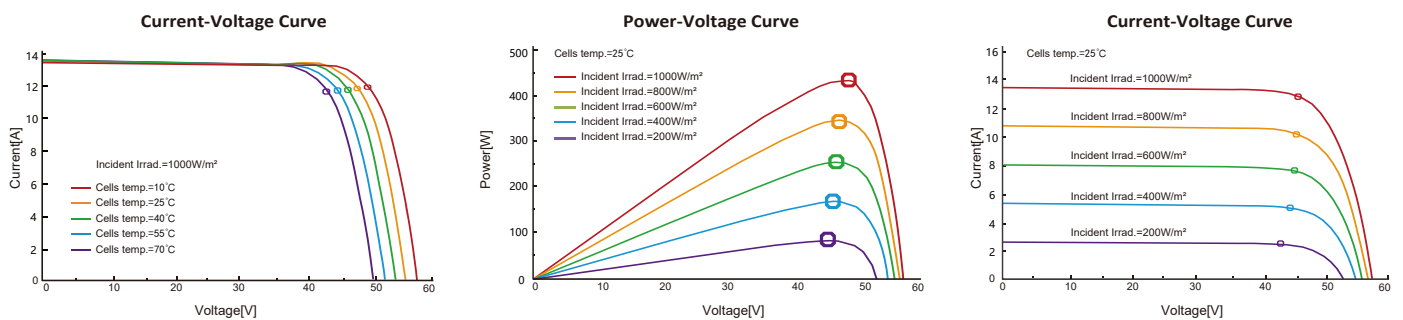
## TEMPERATURE RATINGS

Normal Operating Cell Temperature(NOCT)	45±2 C
Temperature Coefficient of Isc	+0.045%/C
Temperature Coefficient of Voc	-0.275%/C
Temperature Coefficient of Pmax	-0.350%/C

## ADDITIONAL VALUE



## I-V CURVE(KSM-525-550/144-S3)



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# 380~410W

## KSM-380-410/108-S3B FULL BLACK

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 21.00%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716,IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



KSM-380-410/108-S3B

# 380-410W

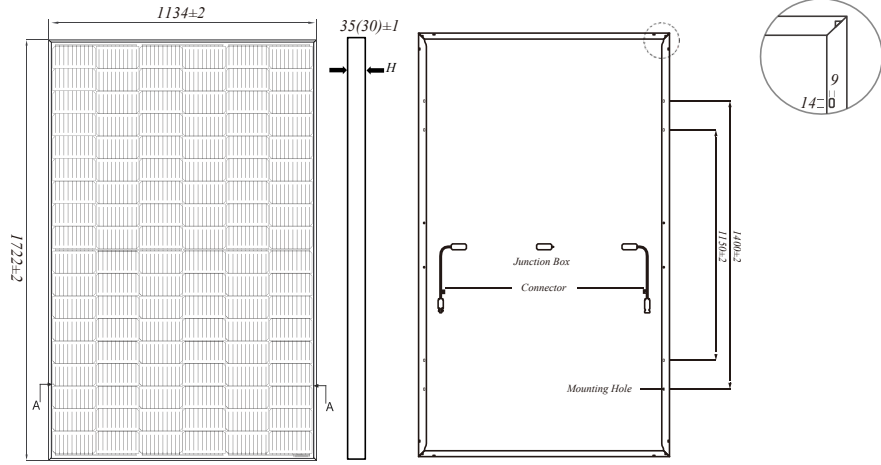
Full Black Half-Cell High Efficiency PV Module

**Weight**  
21.0kgs±3%

**Cells Type**  
Mono 182-10BB

**Dimension(LxWxT)**  
1722×1134×35(30)mm

**Packaging**  
31/806pcs 37/962pcs



Front Side Back

Remark: customized frame color and cable length available upon request

## MECHANICAL SPECIFICATION

Cell	Mono
No.of cells	108(6x18)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

## OPERATING PARAMETERS

Maximum System Voltage	1500VDC
Operating Temperature	-40°C ~ +85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	ClassII

## ELECTRICAL CHARACTERISTICS

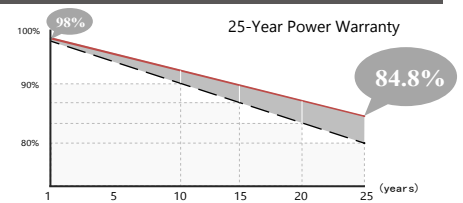
STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-380/108-S3B		KSM-385/108-S3B		KSM-390/108-S3B		KSM-395/108-S3B		KSM-400/108-S3B		KSM-405/108-S3B		KSM-410/108-S3B	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	380	286.3	385	290.0	390	293.8	395	297.6	400	301.3	405	305.1	410	308.9
Open Circuit Voltage(Voc/V)	36.31	33.97	36.46	34.11	36.61	34.25	36.76	34.39	36.91	34.53	37.06	34.67	37.21	34.81
Short Circuit Current(Isc/A)	13.40	10.82	13.47	10.87	13.54	10.93	13.61	10.99	13.68	11.04	13.75	11.10	13.82	11.16
Voltage at Maximum Power(Vmp/V)	30.56	27.92	30.72	28.14	30.88	28.36	31.04	28.57	31.20	28.79	31.36	29.00	31.52	29.21
Current at Maximum Power(Imp/A)	12.43	10.25	12.53	10.31	12.63	10.36	12.73	10.41	12.82	10.47	12.91	10.52	13.01	10.57
Module Efficiency(%)	19.46%		19.72%		19.97%		20.23%		20.48%		20.74%		21.00%	

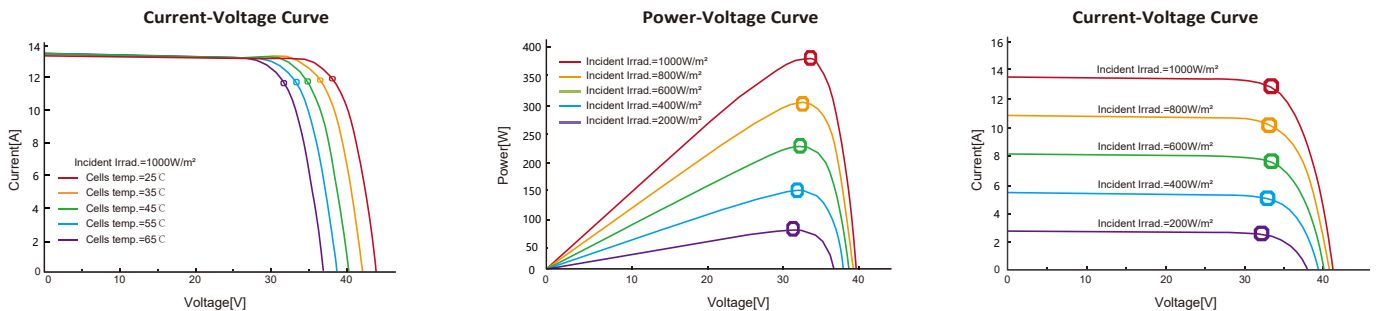
## TEMPERATURE RATINGS

Normal Operating Cell Temperature(NOCT)	45±2°C
Temperature Coefficient of Isc	+0.045%/°C
Temperature Coefficient of Voc	-0.275%/°C
Temperature Coefficient of Pmax	-0.350%/°C

## ADDITIONAL VALUE



## I-V CURVE(KSM-380-410/108-S3B)



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# 435~455W

## KSM-435-455/120-S3B FULL BLACK

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 21.02%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716, IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



KSM-435-455/120-S3B

# 435-455W

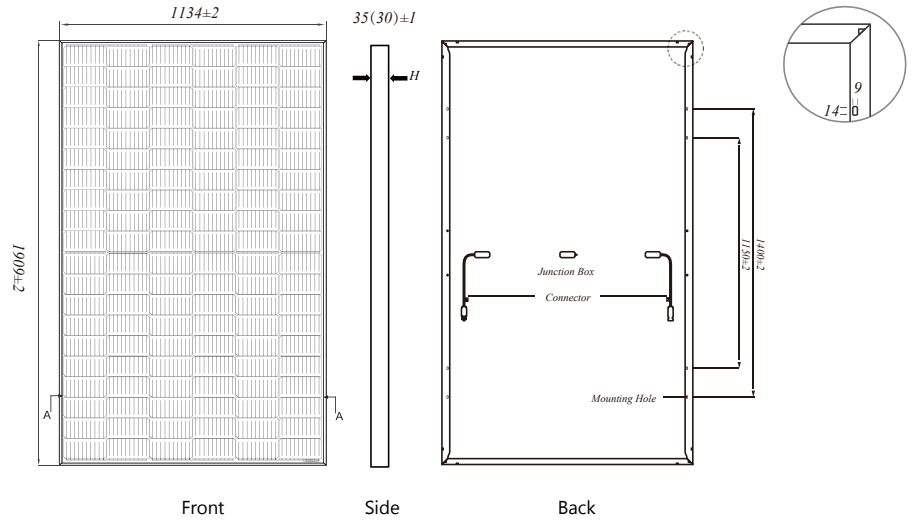
Full Black Half-Cell High Efficiency PV Module

**Weight**  
24.0kg±3%

**Cells Type**  
Mono 182-10BB

**Dimension(LxWxT)**  
1909×1134×35(30)mm

**Packaging**  
31/744pcs 37/888pcs



Remark: customized frame color and cable length available upon request

## MECHANICAL SPECIFICATION

Cell	Mono
No.of cells	120(6x20)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm²(IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

## OPERATING PARAMETERS

Maximum System Voltage	1500VDC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft²)
Maximum StaticLoad,Back	2400Pa(50lb/ft²)
Safety Class	Class II

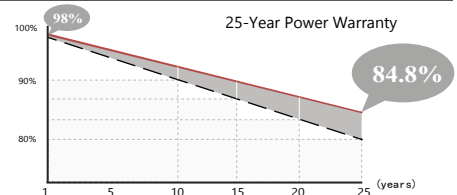
**ELECTRICAL CHARACTERISTICS** STC:AM1.5 1000W/m² 25°C NOCT:AM1.5 800W/m² 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-435/120-S3B		KSM-440/120-S3B		KSM-445/120-S3B		KSM-450/120-S3B		KSM-455/120-S3B	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	435	327.7	440	331.5	445	335.2	450	339	455	342.8
Open Circuit Voltage(Voc/V)	40.80	38.17	40.95	38.31	41.10	38.45	41.25	38.59	41.40	38.73
Short Circuit Current(Isc/A)	13.34	10.77	13.41	10.82	13.52	10.91	13.62	10.99	13.72	11.07
Voltage at Maximum Power(Vmp/V)	33.76	32.11	33.91	32.30	34.06	32.41	34.21	32.53	34.36	32.65
Current at Maximum Power(Imp/A)	12.89	10.21	12.98	10.26	13.07	10.34	13.16	10.42	13.25	10.50
Module Efficiency(%)	20.09		20.33		20.56		20.79		21.02	

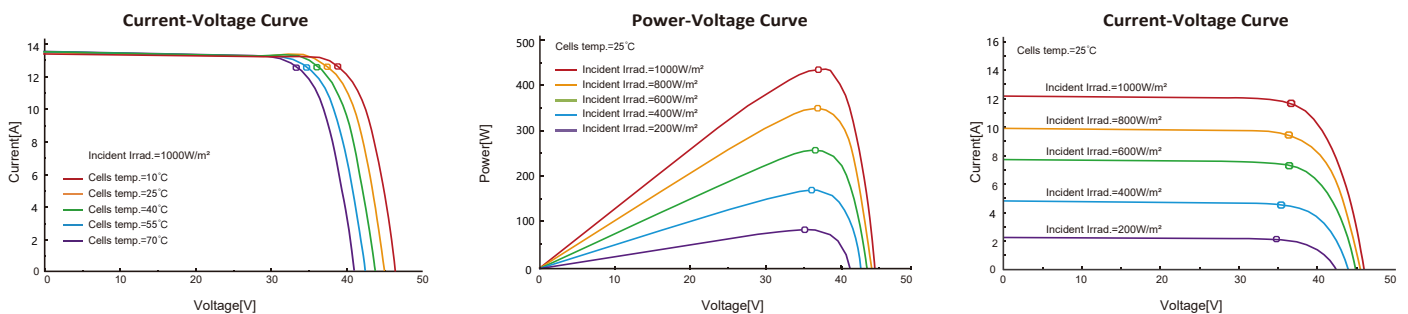
## TEMPERATURE RATINGS

Normal Operating Cell Temperature(NOCT)	45±2°C
Temperature Coefficient of Isc	+0.045%/°C
Temperature Coefficient of Voc	-0.275%/°C
Temperature Coefficient of Pmax	-0.350%/°C

## ADDITIONAL VALUE



## I-V CURVE(KSM-435-455/120-S3B)



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# 480~505W

## KSM-480-505/132-S3B FULL BLACK

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 21.27%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716, IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



# KSM-480-505/132-S3B

# 480-505W

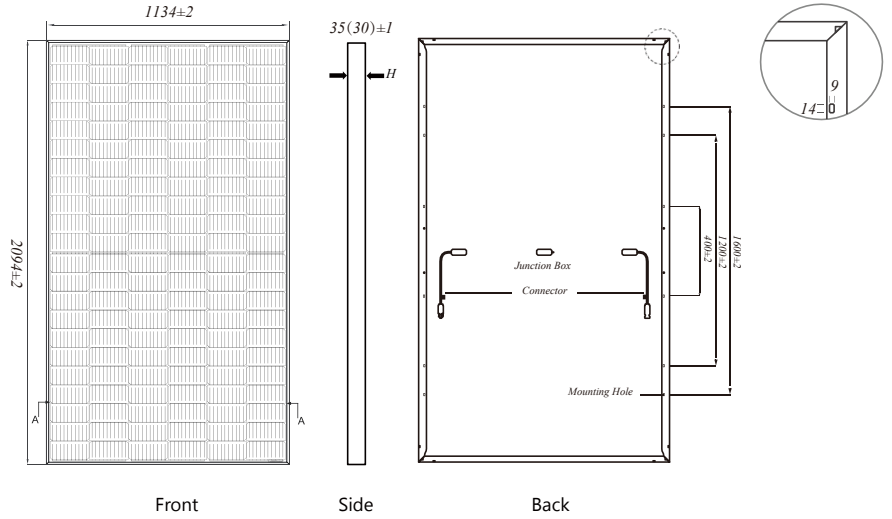
Full Black Half-Cell High Efficiency PV Module

**Weight**  
26.0kg±3%

**Cells Type**  
Mono 182-10BB

**Dimension(LxWxT)**  
2094x1134x35(30)mm

**Packaging**  
31/682pcs 37/814pcs



Remark: customized frame color and cable length available upon request

## MECHANICAL SPECIFICATION

Cell	Mono
No.of cells	132(6x22)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

## OPERATING PARAMETERS

Maximum System Voltage	1500VDC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	Class II

## ELECTRICAL CHARACTERISTICS

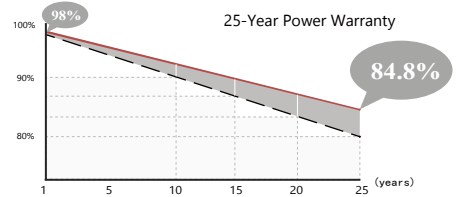
STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-480/132-S3B		KSM-485/132-S3B		KSM-490/132-S3B		KSM-495/132-S3B		KSM-500/132-S3B		KSM-505/132-S3B	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	480	361.6	485	365.4	490	369.1	495	372.9	500	376.7	505	380.4
Open Circuit Voltage(Voc/V)	45.07	42.17	45.22	42.31	45.37	42.45	45.52	42.56	45.67	42.73	45.82	42.87
Short Circuit Current(Isc/A)	13.65	11.02	13.72	11.07	13.79	11.13	13.86	11.19	13.93	11.24	14.00	11.30
Voltage at Maximum Power(Vmp/V)	37.65	34.62	37.81	34.80	37.97	34.98	38.13	35.16	38.29	35.34	38.45	35.51
Current at Maximum Power(Imp/A)	12.75	10.44	12.83	10.50	12.90	10.55	12.98	10.60	13.06	10.66	13.13	10.71
Module Efficiency(%)	20.21		20.42		20.64		20.85		21.06		21.27	

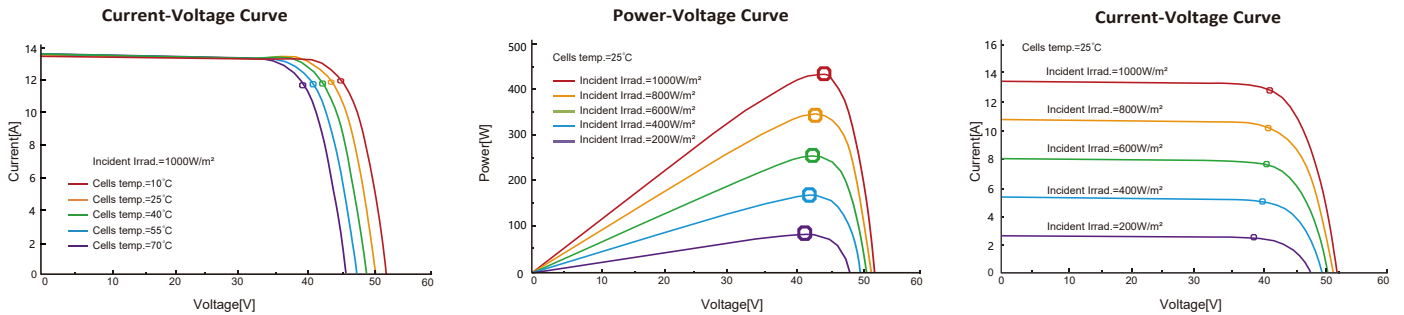
## TEMPERATURE RATINGS

Norminal Operating Cell Temperature(NOCT)	45±2 C
Temperature Coefficient of Isc	+0.045%/C
Temperature Coefficient of Voc	-0.275%/C
Temperature Coefficient of Pmax	-0.350%/C

## ADDITIONAL VALUE



## I-V CURVE (KSM-480-505/132-S3B)



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# 525 ~ 540W

## KSM-525-540/144-S3B FULL BLACK

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 20.89%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal) and snow load(5400 pascal).



12-year Warranty for Materials and Processing



25-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716, IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



# KSM-525-540/144-S3B

# 525-540W

Full Black Half-Cell High Efficiency PV Module

### Weight

28.6kgs±3%

### Cells Type

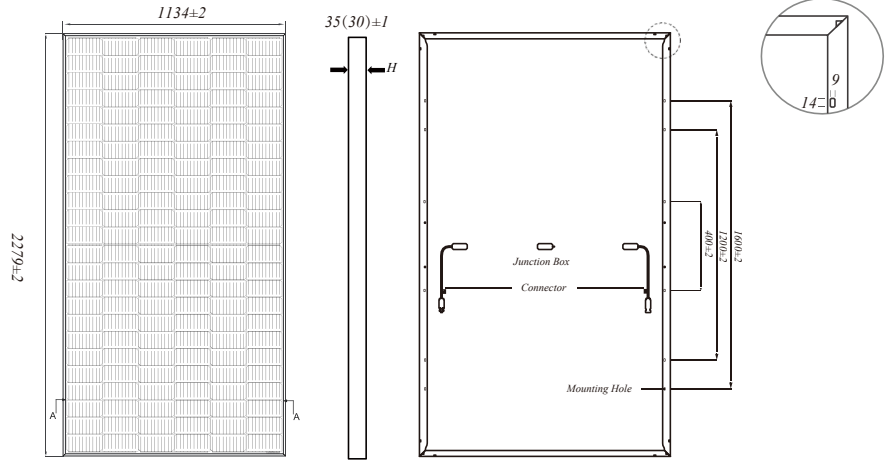
Mono 182-10BB

### Dimension(LxWxT)

2279×1134×35(30)mm

### Packaging

31/620pcs 37/740pcs



Remark: customized frame color and cable length available upon request

### MECHANICAL SPECIFICATION

Cell	Mono
No.of cells	144(6x24)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

### OPERATING PARAMETERS

Maximum System Voltage	1500VDC
Operating Temperature	-40°C ~ +85°C
Maximum Series Fuse	25A
Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	Class II

### ELECTRICAL CHARACTERISTICS

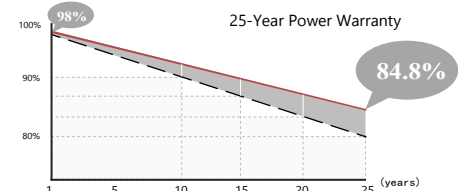
STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-525/144-S3B		KSM-530/144-S3B		KSM-535/144-S3B		KSM-540/144-S3B	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	525	395.5	530	399.2	535	403.0	540	406.8
Open Circuit Voltage(Voc/V)	49.15	45.98	49.30	46.12	49.45	46.26	49.60	46.40
Short Circuit Current(Isc/A)	13.65	11.02	13.72	11.07	13.79	11.13	13.86	11.19
Voltage at Maximum Power(Vmp/V)	41.15	37.87	41.31	38.03	41.47	38.20	41.64	38.36
Current at Maximum Power(Impp/A)	12.76	10.44	12.83	10.50	12.90	10.55	12.97	10.60
Module Efficiency(%)	20.31		20.51		20.70		20.89	

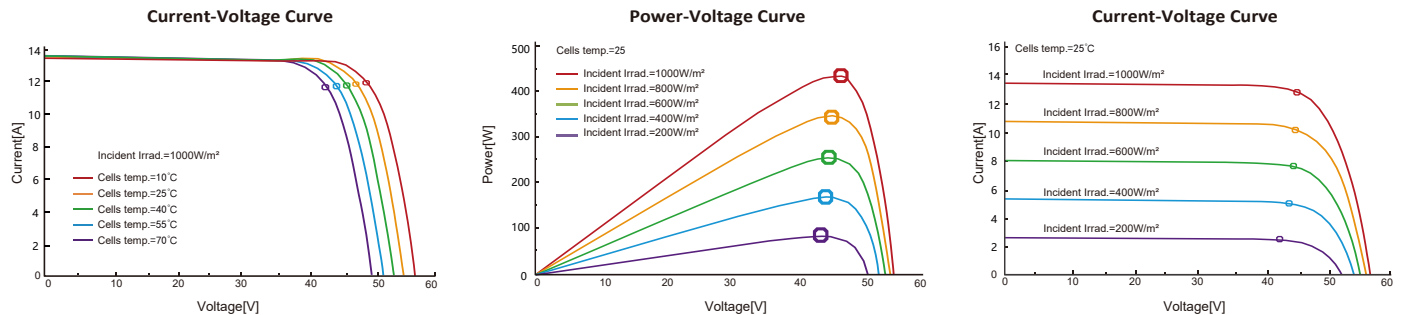
### TEMPERATURE RATINGS

Norminal Operating Cell Temperature(NOCT)	45±2 C
Temperature Coefficient of Isc	+0.045%/C
Temperature Coefficient of Voc	-0.275%/C
Temperature Coefficient of Pmax	-0.350%/C

### ADDITIONAL VALUE

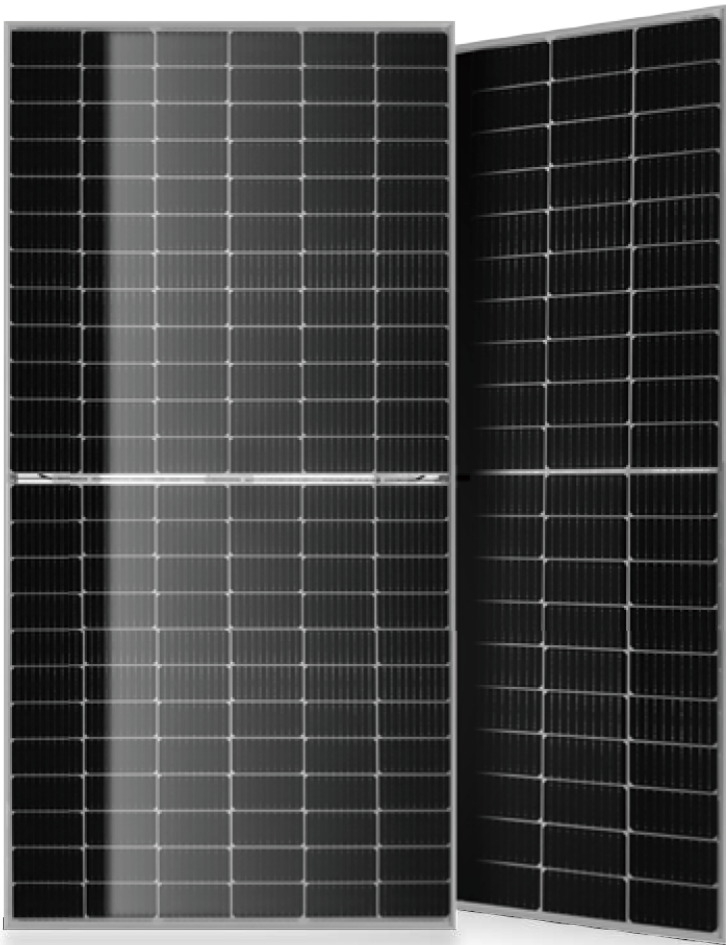


### I-V CURVE(KSM-525-540/144-S3B )



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# 525 ~ 545W

## KSM-525-545/144-S3S

### BIFACIAL MONO PERC

#### High Efficiency

Higher module conversion efficiency (up to 21.03%) benefit from half cell structure (low resistance characteristic).



#### Multi busbar technology

Better light utilization and current collection capabilities, effectively improving product power output and reliability.



#### Longer service life

Excellent double-sided warranty promises a 30-year power warranty of 0.45% linear power attenuation.



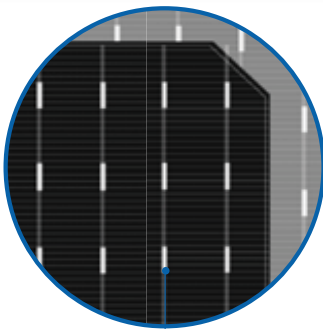
#### Severe Weather Resilience

Certified to withstand: Wind load (2400 pascal) and snow load (5400 pascal).



#### Double-sided power generation

The double-sided power generation gain increases with the light received on the back side, up to 25%, which significantly reduces the LCOE.

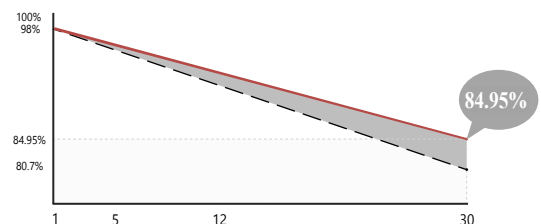


• Double-sided cell technology

12-year Warranty for Materials and Processing



30-year Warranty for Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716, IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



# KSM-525-545/144-S3S

# 525-545W

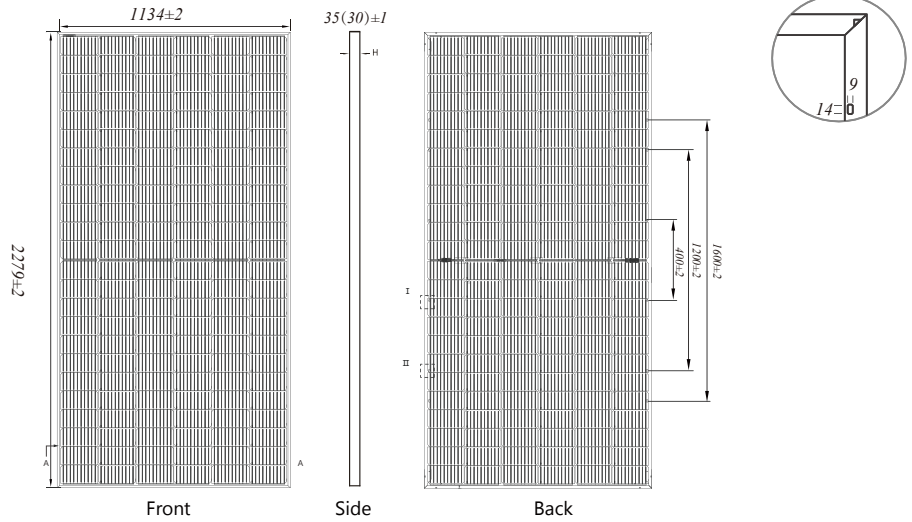
Half-Cell High Efficiency  
PV Module

**Weight**  
34.6kg±3%

**Cells Type**  
Mono 182-10BB

**Dimension(LxWxT)**  
2279×1134×35(30)mm

**Packaging**  
31/620pcs 37/740pcs



Remark: customized frame color and cable length available upon request

## MECHANICAL SPECIFICATION

Cell	Mono
No. of cells	144(6x24)
Cable Length	300mm(+)/300mm(-)
Cable Cross Section Size	4mm <sup>2</sup> (IEC)
Junction Box	IP68,3 diodes
Connector	MC4 Compatible

## OPERATING PARAMETERS

Maximum System Voltage	1500VDC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	30A
Maximum Static Load, Front	5400Pa(112lb/ft <sup>2</sup> )
Maximum Static Load, Back	2400Pa(50lb/ft <sup>2</sup> )
Safety Class	Class II

**ELECTRICAL CHARACTERISTICS** STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

Module Type	KSM-525/144-S3S		KSM-530/144-S3S		KSM-535/144-S3S		KSM-540/144-S3S		KSM-545/144-S3S	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	525	390.6	530	394.3	535	398.0	540	401.8	545	405.5
Open Circuit Voltage(Voc/V)	49.27	46.51	49.35	46.59	49.42	46.65	49.49	46.72	49.65	46.87
Short Circuit Current(Isc/A)	13.64	11.02	13.71	11.07	13.79	11.14	13.87	11.20	13.94	11.26
Voltage at Maximum Power(Vmp/V)	40.61	37.58	40.71	37.75	40.81	37.88	40.91	38.02	41.07	38.17
Current at Maximum Power(Impp/A)	12.93	10.39	13.02	10.45	13.11	10.51	13.20	10.57	13.27	10.62
Module Efficiency(%)	20.26		20.45		20.65		20.84		21.03	

## ELECTRICAL CHARACTERISTICS WITH DIFFERENT REAR SIDE POWER GAINS

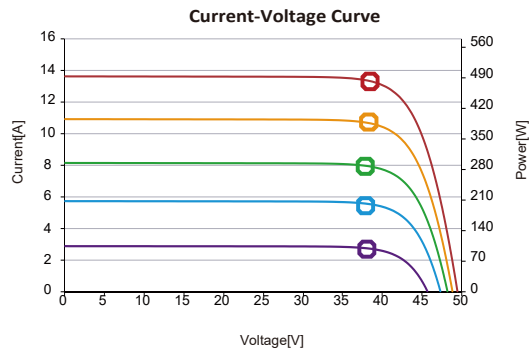
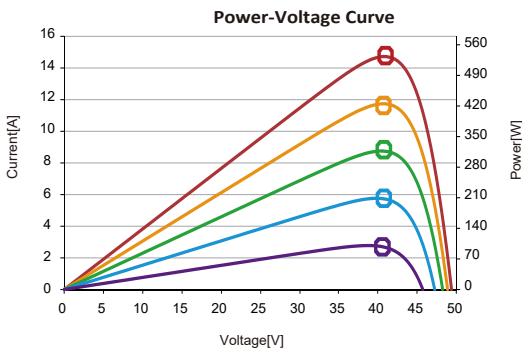
(REFERENCED SPECIFICALLY TO 540WP FRONT)

Maximum Power(Pmax/W)	5%	10%	15%	20%	25%
Maximum Power(Pmax/W)	572	600	627	654	681
Pmax Gain(%)	22.07%	23.16%	24.20%	25.24%	25.28%

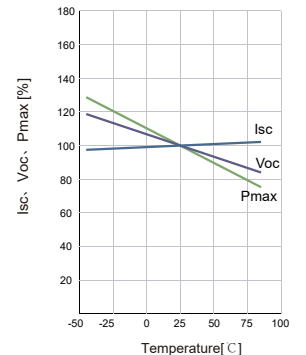
## TEMPERATURE RATINGS

Normal Operating Cell Temperature(NOCT)	45±2°C
Temperature Coefficiency of Isc	+0.048%/°C
Temperature Coefficiency of Voc	-0.280%/°C
Temperature Coefficiency of Pmax	-0.350%/°C

## I-V CURVE (KSM-525-545/144-S3S)



## Isc, Voc, Pmax-Temperature Curve



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