



Apex Solar Energy Technology GmbH

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LET EVERYONE ENJOY
THE WEALTH OF SUNSHINE

PV ONE-STOP SOLUTION

Apex Solar Inc. operates with a 100% green production chain to help SMEs realize their carbon-reducing goals by providing:

Highest quality solar panels A full range of clean energy solutions Custom designs to meet your specific needs Excellent and responsive customer service.

We are committed to providing satisfied customers with the highest quality cutting-edge solar

Let us connect your solar plan to our 100% renewable supply chain and dedicated professional team so that we can work together to help you save on energy while protecting our natural environment.

N-TOPCon Technology

HOT SALE 425-640W

MONO HALF CELL SOLAR PANEL

Model TOPCon module has four advantages: high efficiency: 22.89%; high double-sided ratio: 85%; low attenuation: - 0.4%; low power temperature coefficient: - 0.3%/°C

The power generation capacity per watt of N-type TOPCon module will be higher than P 3.5 - 5% improvement on the dual sided components of the Model PERC

Higher return on investment and lower electricity cost

585W
Maximum Power

22.65%
Maximum Efficiency

25 Years
Process Warranty

30 Years
Power Wwarranty

≤1%
First Year Degradation

≤0.4%
Linear Degradation

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	430	435	440	445	450
Maximum Power Voltage(Vmp) [V]	32.38	32.59	32.81	33.02	33.21
Maximum Power Current(Imp) [A]	13.28	13.35	13.41	13.48	13.55
Open Circuit Voltage(Voc) [V]	38.95	39.16	39.38	39.59	39.78
Short Circuit Current(Isc) [A]	13.73	13.80	13.86	13.93	14.00
Module Efficiency [%]	21.99	22.25	22.50	22.76	23.00
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5					

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	323	327	331	335	338
Maximum Power Voltage(Vmp) [V]	30.10	30.33	30.56	30.76	30.90
Maximum Power Current(Imp) [A]	10.73	10.78	10.83	10.89	10.94
Open Circuit Voltage(Voc) [V]	37.00	37.20	37.41	37.61	37.79
Short Circuit Current(Isc) [A]	11.09	11.14	11.19	11.25	11.30
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s					

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	108(6×18)
Weight	21kg(±3%)
Module Dimensions	1724×1134×30mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

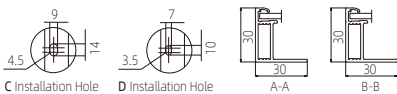
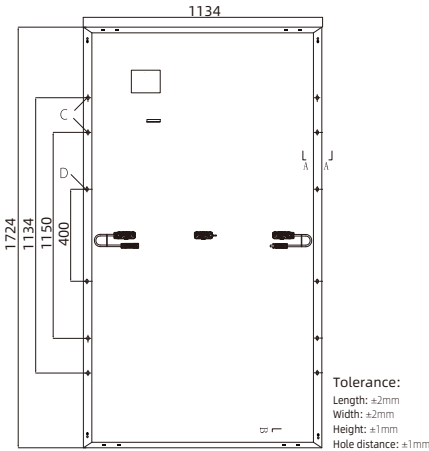
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

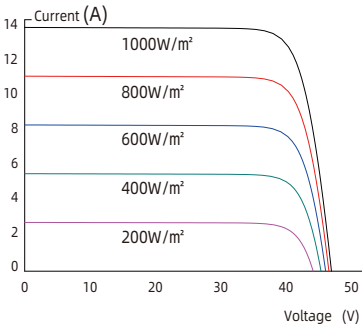
PACKING CONFIGURATION

Quantity/Pallet	37pcs/pallet
Quantity/Container	962pcs/40HQ

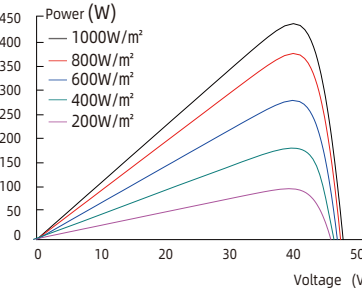
Module Dimension(mm)



Current-Voltage Curve (450W)



Power-Voltage Curve (450W)



APEX-108H-N430-N450M10

N-TOPCon Technology

23.00%

Maximum Module Efficiency

450W

Maximum Power Output

Power Tolerance:0-3W

1724×1134×30mm

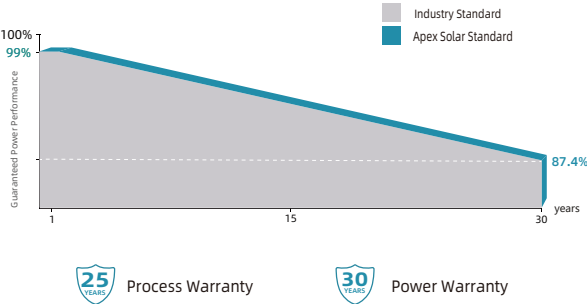
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



- 0-3W**
Guaranteed 0-3W positive tolerance ensures the power output reliability
- High customer value**
Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations
- Highly reliable due to stringent quality control**
Three times strict EL testing beyond certification requirements
- Fusion of MBB and half-cut cells technology**
The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability
- Excellent Anti-PID performance**
Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process
- Outstanding low light performance**
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment



APEX-108H-
N425-N445M10

N-TOPCon Technology

22.76%

Maximum Module Efficiency

445W

Maximum Power Output

Power Tolerance:0-3W

1724×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

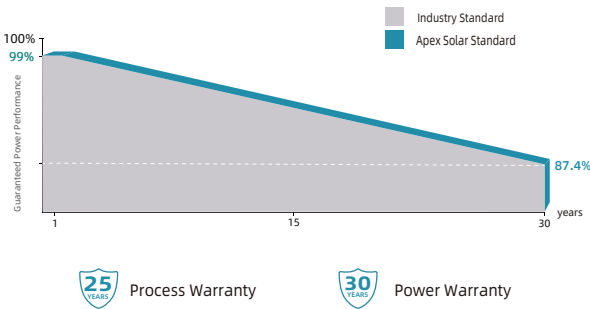
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



0-3W 0-3W
Guaranteed 0-3W positive tolerance ensures the power output reliability

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Fusion of MBB and half-cut cells technology
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Excellent Anti-PID performance
Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process

Outstanding low light performance
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

APEX-108H-N425-N445M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	425	430	435	440	445
Maximum Power Voltage(Vmp) [V]	32.37	32.58	32.78	32.99	33.19
Maximum Power Current(Imp) [A]	13.13	13.20	13.27	13.34	13.41
Open Circuit Voltage(Voc) [V]	38.95	39.16	39.36	39.57	39.77
Short Circuit Current(Isc) [A]	13.58	13.65	13.72	13.80	13.87
Module Efficiency [%]	21.30	21.50	21.80	22.00	22.76
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5					

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	320	323	327	331	335
Maximum Power Voltage(Vmp) [V]	30.19	30.30	30.50	30.73	30.93
Maximum Power Current(Imp) [A]	10.60	10.66	10.72	10.77	10.83
Open Circuit Voltage(Voc) [V]	37.00	37.20	37.39	37.59	37.78
Short Circuit Current(Isc) [A]	10.96	11.02	11.08	11.14	11.20
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s					

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	108(6×18)
Weight	22kg(±3%)
Module Dimensions	1724×1134×30mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

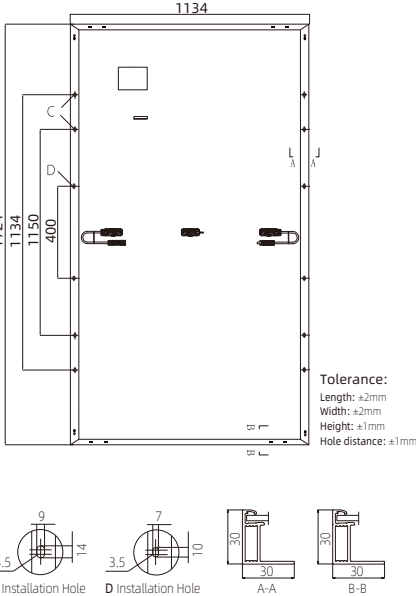
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

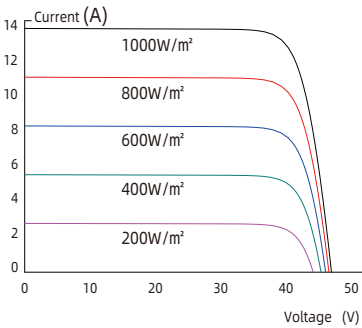
PACKING CONFIGURATION

Quantity/Pallet	37pcs/pallet
Quantity/Container	962pcs/40HQ

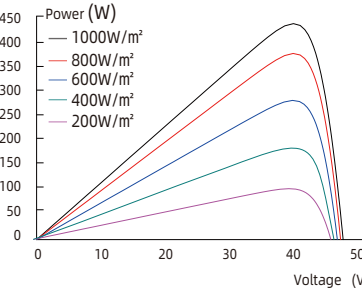
Module Dimension(mm)



Current-Voltage Curve (445W)



Power-Voltage Curve (445W)



ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	460	465	470	475	480	485	490
Maximum Power Voltage(Vmp) [V]	34.72	34.89	35.05	35.21	35.38	35.54	35.64
Maximum Power Current(Imp) [A]	13.25	13.33	13.41	13.49	13.57	13.65	13.75
Open Circuit Voltage(Voc) [V]	42.05	42.22	42.38	42.54	42.71	42.88	43.12
Short Circuit Current(Isc) [A]	13.99	14.07	14.15	14.23	14.31	14.39	14.51
Module Efficiency [%]	21.32	21.55	21.78	22.01	22.20	22.40	22.63
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5							

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	346	350	353	357	361	365	369
Maximum Power Voltage(Vmp) [V]	32.60	32.77	32.94	33.10	33.27	33.84	34.00
Maximum Power Current(Imp) [A]	10.61	10.67	10.73	10.79	10.85	10.80	10.86
Open Circuit Voltage(Voc) [V]	39.94	40.10	40.25	40.41	40.57	41.57	41.71
Short Circuit Current(Isc) [A]	11.29	11.36	11.42	11.49	11.55	11.24	11.31
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s							

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	120(6×20)
Weight	24.2kg(±3%)
Module Dimensions	1909×1134×30mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

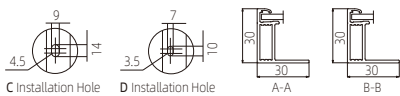
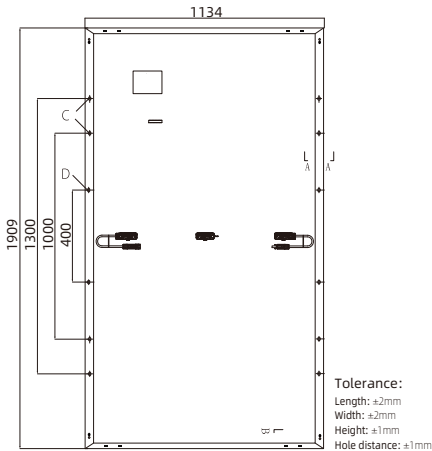
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

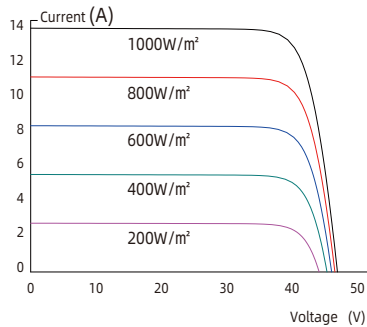
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	864pcs/40HQ

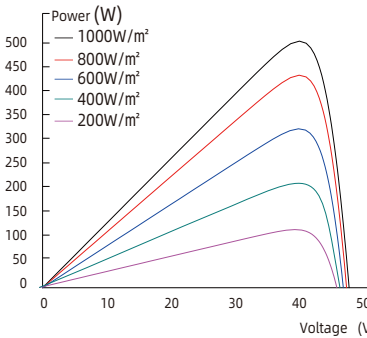
Module Dimension(mm)



Current-Voltage Curve (490W)



Power-Voltage Curve (490W)



APEX-120H-N460-N490M10

N-TOPCon Technology

22.63%

Maximum Module Efficiency

490W

Maximum Power Output

Power Tolerance:0-3W

1909×1134×30mm

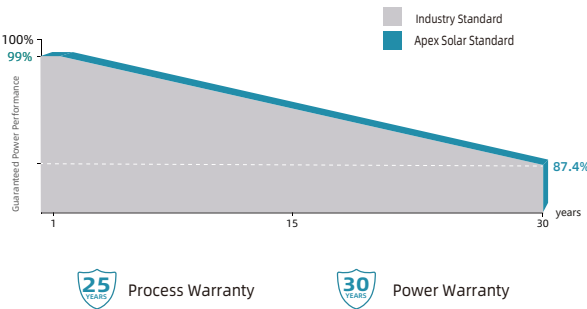
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing, 30-year Warranty for Extra Linear Power Output



- 0-3W**
Guaranteed 0-3W positive tolerance ensures the power output reliability
- High customer value**
Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations
- Highly reliable due to stringent quality control**
Three times strict EL testing beyond certification requirements
- Fusion of MBB and half-cut cells technology**
The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability
- Excellent Anti-PID performance**
Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process
- Outstanding low light performance**
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	570	575	580	585	590
Maximum Power Voltage(Vmp) [V]	42.07	42.22	42.37	42.52	42.67
Maximum Power Current(Impp) [A]	13.55	13.62	13.69	13.76	13.83
Open Circuit Voltage(Voc) [V]	50.74	50.88	51.02	52.16	52.37
Short Circuit Current(Isc) [A]	14.31	14.39	14.47	14.89	14.94
Module Efficiency [%]	22.05	22.24	22.45	22.63	22.82
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5					

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	429	432	436	441	445
Maximum Power Voltage(Vmp) [V]	39.65	39.78	39.87	41.05	41.21
Maximum Power Current(Impp) [A]	10.81	10.87	10.94	10.74	10.79
Open Circuit Voltage(Voc) [V]	48.51	48.70	48.89	50.06	50.25
Short Circuit Current(Isc) [A]	11.50	11.55	11.60	11.30	11.36
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1 m/s					

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	144(6×24)
Weight	28kg(±3%)
Module Dimensions	2279×1134×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

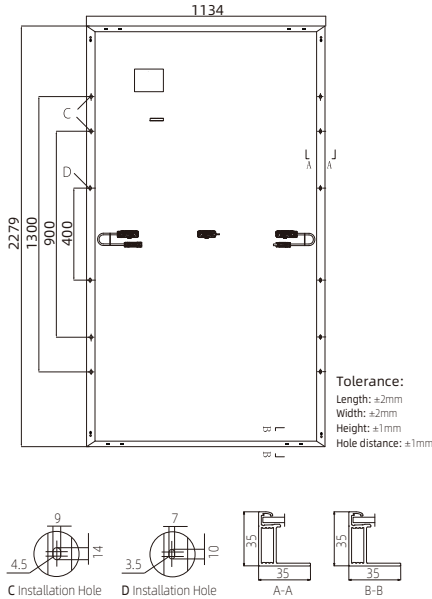
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

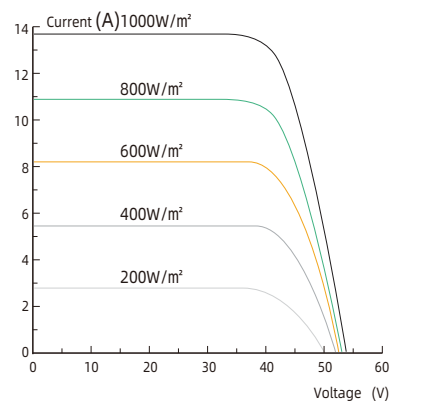
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	620pcs/40HQ

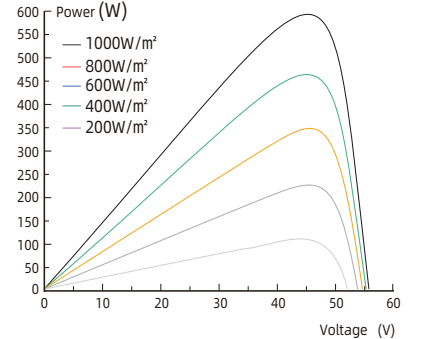
Module Dimension(mm)



Current-Voltage Curve (590W)



Power-Voltage Curve (590W)



APEX-144H-N570-N590M10

N-TOPCon Technology

22.82%

Maximum Module Efficiency

590W

Maximum Power Output

Power Tolerance:0-3W

2279×1134×35mm

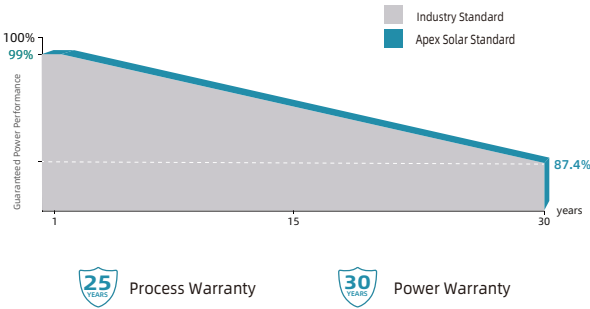
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



0-3W
Guaranteed 0-3W positive tolerance ensures the power output reliability

High customer value
Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations

Highly reliable due to stringent quality control
Three times strict EL testing beyond certification requirements

Fusion of MBB and half-cut cells technology
The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability

Excellent Anti-PID performance
Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process

Outstanding low light performance
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	570	575	580	585	590
Maximum Power Voltage(Vmp) [V]	42.07	42.22	42.37	42.52	42.67
Maximum Power Current(Imp) [A]	13.55	13.62	13.69	13.76	13.83
Open Circuit Voltage(Voc) [V]	50.74	50.88	51.02	52.16	52.37
Short Circuit Current(Isc) [A]	14.31	14.39	14.47	14.89	14.94
Module Efficiency [%]	22.05	22.24	22.45	22.63	22.82
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5					

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	429	432	436	441	445
Maximum Power Voltage(Vmp) [V]	39.65	39.78	39.87	41.05	41.21
Maximum Power Current(Imp) [A]	10.81	10.87	10.94	10.74	10.79
Open Circuit Voltage(Voc) [V]	48.51	48.70	48.89	50.06	50.25
Short Circuit Current(Isc) [A]	11.50	11.55	11.60	11.30	11.36
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s					

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	144(6×24)
Weight	28kg(±3%)
Module Dimensions	2279×1134×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

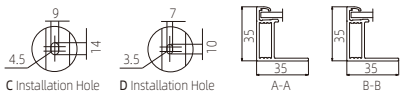
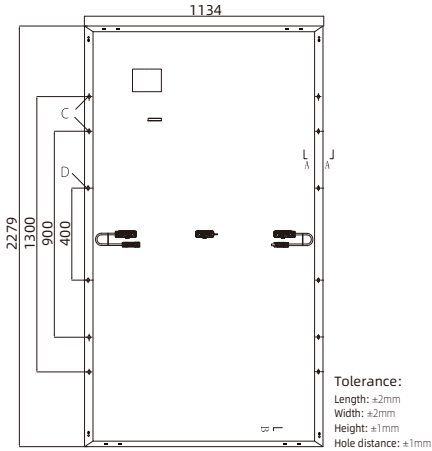
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

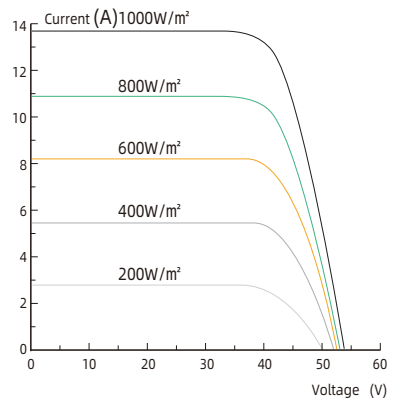
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	620pcs/40HQ

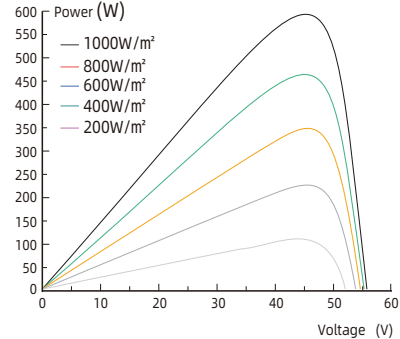
Module Dimension(mm)



Current-Voltage Curve (590W)



Power-Voltage Curve (590W)



APEX-144H-N570-N590M10

N-TOPCon Technology

22.82%

Maximum Module Efficiency

590W

Maximum Power Output

Power Tolerance:0-3W

2279×1134×35mm

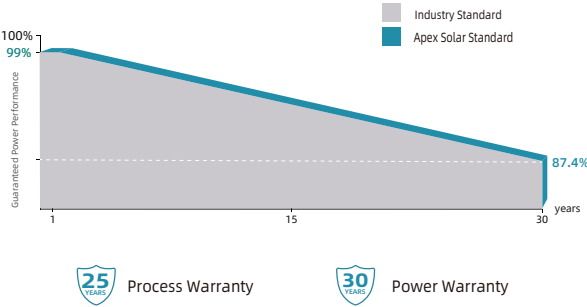
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



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Three times strict EL testing beyond certification requirements
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- Outstanding low light performance**
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	610	615	620	625	630	635	640
Maximum Power Voltage(Vmp) [V]	45.59	45.69	45.79	45.92	46.26	46.42	46.52
Maximum Power Current(Imp) [A]	13.38	13.46	13.54	13.61	13.62	13.68	13.76
Open Circuit Voltage(Voc) [V]	55.25	55.40	55.55	55.70	55.86	56.01	56.15
Short Circuit Current(Isc) [A]	14.11	14.18	14.25	14.32	14.35	14.48	14.54
Module Efficiency [%]	21.82	22.00	22.18	22.36	22.53	22.71	22.89
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5							

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	459	462	466	470	474	476	448
Maximum Power Voltage(Vmp) [V]	42.28	42.39	42.50	42.61	42.72	42.82	42.92
Maximum Power Current(Imp) [A]	10.85	10.91	10.97	11.03	11.09	11.11	11.18
Open Circuit Voltage(Voc) [V]	52.48	52.62	52.77	52.91	53.05	53.66	53.96
Short Circuit Current(Isc) [A]	11.39	11.45	11.50	11.56	11.62	11.68	11.72
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s							

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	156(2×78)
Weight	30.6kg(±3%)
Module Dimensions	2465×1134×35mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

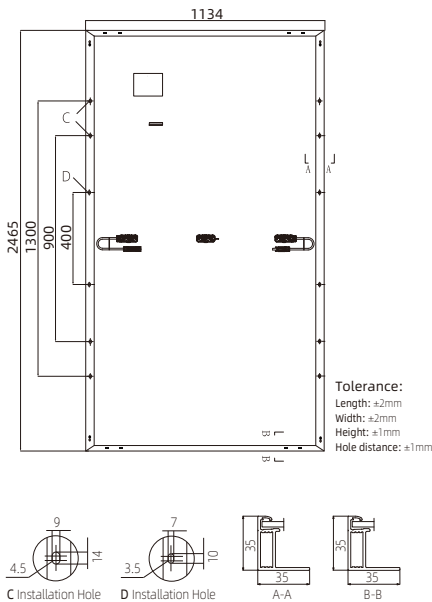
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

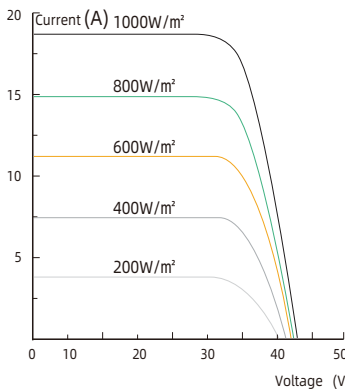
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	558pcs/40HQ

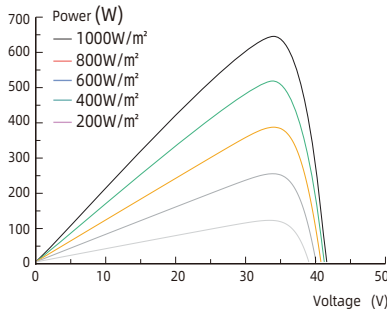
Module Dimension(mm)



Current-Voltage Curve (640W)



Power-Voltage Curve (640W)



APEX-156H-N610-N640M10

N-TOPCon Technology

22.89%

Maximum Module Efficiency

640W

Maximum Power Output

Power Tolerance:0-3W

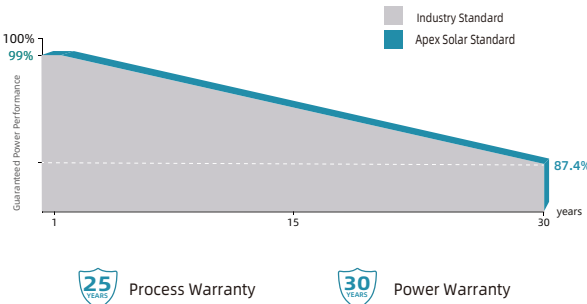
2465×1134×35mm

Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty
25-year Warranty for Materials and Processing .30-year Warranty for Extra Linear Power Output



- 0-3W**
Guaranteed 0-3W positive tolerance ensures the power output reliability
- High customer value**
Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations
- Highly reliable due to stringent quality control**
Three times strict EL testing beyond certification requirements
- Fusion of MBB and half-cut cells technology**
The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability
- Excellent Anti-PID performance**
Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process
- Outstanding low light performance**
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

APEX-108HBD
N425-N445M10

N-TOPCon Technology

22.76%

Maximum Module Efficiency

445W

Maximum Power Output

Power Tolerance:0-3W

1724×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

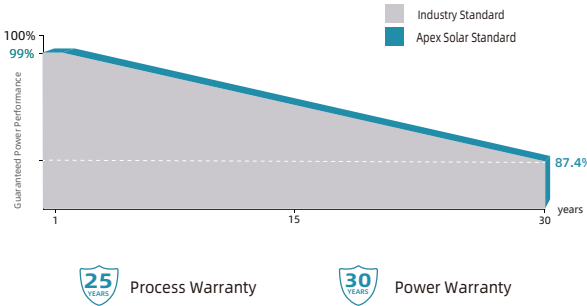
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



APEX-108HBD-N425-N445M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	425	430	435	440	445
Maximum Power Voltage(Vmp) [V]	32.37	32.58	32.78	32.99	33.19
Maximum Power Current(Imp) [A]	13.13	13.20	13.27	13.34	13.41
Open Circuit Voltage(Voc) [V]	38.95	39.16	39.36	39.57	39.77
Short Circuit Current(Isc) [A]	13.58	13.65	13.72	13.80	13.87
Module Efficiency [%]	21.30	21.50	21.80	22.00	22.76

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	320	323	327	331	335
Maximum Power Voltage(Vmp) [V]	30.19	30.30	30.50	30.73	30.93
Maximum Power Current(Imp) [A]	10.60	10.66	10.72	10.77	10.83
Open Circuit Voltage(Voc) [V]	37.00	37.20	37.39	37.59	37.78
Short Circuit Current(Isc) [A]	10.96	11.02	11.08	11.14	11.20

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	446	452	457	462	467
	Module Efficiency STC[%]	22.83	23.09	23.36	23.63	23.90
10%	Maximum Power (Pmax) [W]	468	473	479	484	490
	Module Efficiency STC[%]	23.91	24.19	24.48	24.76	25.04
20%	Maximum Power (Pmax) [W]	510	516	522	528	534
	Module Efficiency STC[%]	26.09	26.39	26.70	27.01	27.31

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	108(6×18)
Weight	24kg(±3%)
Module Dimensions	1724×1134×30mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

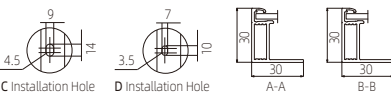
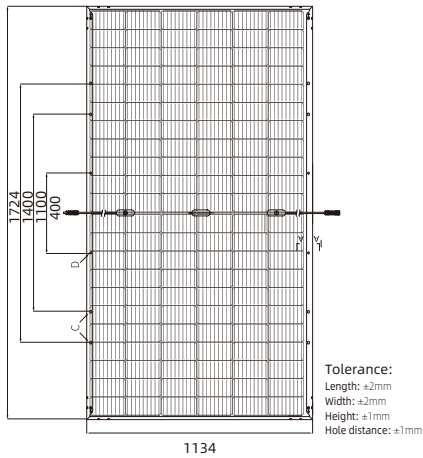
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C~+85°C
Maximum Series Fuse	25A

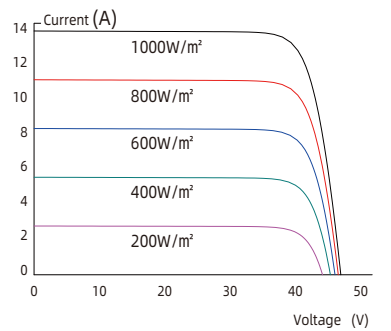
PACKING CONFIGURATION

Quantity/Pallet	37pcs/pallet
Quantity/Container	962pcs/40HQ

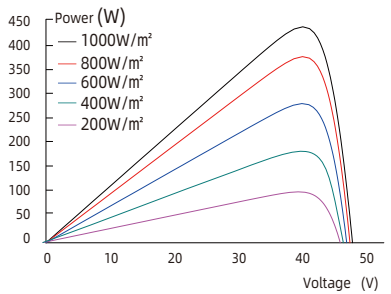
Module Dimension(mm)



Current-Voltage Curve (445W)



Power-Voltage Curve (445W)



108cells Monocrystalline Bifacial
Dual Glass Module

APEX-108HBD
N425-N445M10

N-TOPCon Technology

22.76%

Maximum Module Efficiency

445W

Maximum Power Output

Power Tolerance:0-3W

1724×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

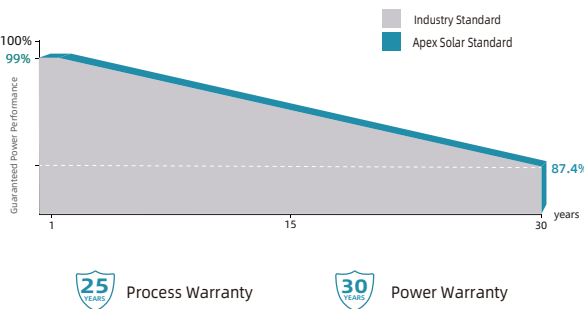
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ;30-year Warranty for Extra Linear Power Output



- 0-3W**
Guaranteed 0-3W positive tolerance ensures the power output reliability
- High customer value**
Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations
- Highly reliable due to stringent quality control**
Three times strict EL testing beyond certification requirements
- Fusion of MBB and half-cut cells technology**
The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability
- Excellent Anti-PID performance**
Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process
- Outstanding low light performance**
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

APEX-108HBD-N425-N445M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	425	430	435	440	445
Maximum Power Voltage(Vmp) [V]	32.37	32.58	32.78	32.99	33.19
Maximum Power Current(Imp) [A]	13.13	13.20	13.27	13.34	13.41
Open Circuit Voltage(Voc) [V]	38.95	39.16	39.36	39.57	39.77
Short Circuit Current(Isc) [A]	13.58	13.65	13.72	13.80	13.87
Module Efficiency [%]	21.30	21.50	21.80	22.00	22.76

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	320	323	327	331	335
Maximum Power Voltage(Vmp) [V]	30.19	30.30	30.50	30.73	30.93
Maximum Power Current(Imp) [A]	10.60	10.66	10.72	10.77	10.83
Open Circuit Voltage(Voc) [V]	37.00	37.20	37.39	37.59	37.78
Short Circuit Current(Isc) [A]	10.96	11.02	11.08	11.14	11.20

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	446	452	457	462	467
	Module Efficiency STC[%]	22.83	23.09	23.36	23.63	23.90
10%	Maximum Power (Pmax) [W]	468	473	479	484	490
	Module Efficiency STC[%]	23.91	24.19	24.48	24.76	25.04
20%	Maximum Power (Pmax) [W]	510	516	522	528	534
	Module Efficiency STC[%]	26.09	26.39	26.70	27.01	27.31

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	108(6×18)
Weight	24kg(±3%)
Module Dimensions	1724×1134×30mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

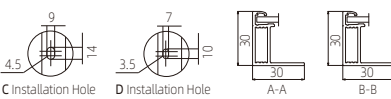
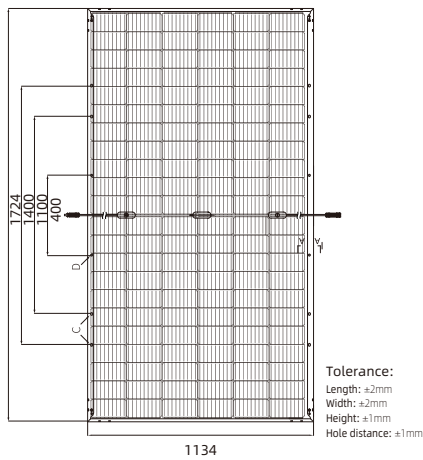
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C+85°C
Maximum Series Fuse	25A

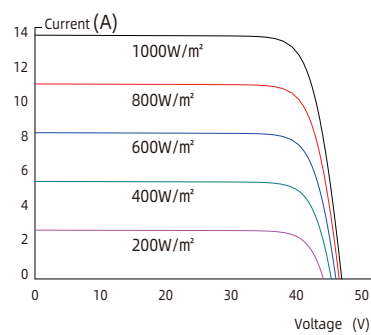
PACKING CONFIGURATION

Quantity/Pallet	37pcs/pallet
Quantity/Container	962pcs/40HQ

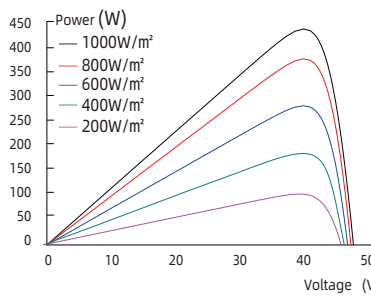
Module Dimension(mm)



Current-Voltage Curve (445W)



Power-Voltage Curve (445W)



APEX-120HBD
N460-N490M10

N-TOPCon Technology

22.63%

Maximum Module Efficiency

490W

Maximum Power Output

Power Tolerance:0-3W

1909×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

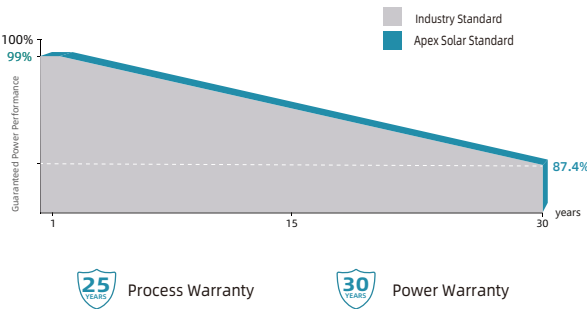
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



APEX-120HBD-N460-N490M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	460	465	470	475	480	485	490
Maximum Power Voltage(Vmp) [V]	34.72	34.89	35.05	35.21	35.38	35.54	35.64
Maximum Power Current(Imp) [A]	13.25	13.33	13.41	13.49	13.57	13.65	13.75
Open Circuit Voltage(Voc) [V]	42.05	42.22	42.38	42.54	42.71	42.88	43.12
Short Circuit Current(Isc) [A]	13.99	14.07	14.15	14.23	14.31	14.39	14.51
Module Efficiency [%]	21.32	21.55	21.78	22.01	22.20	22.40	22.63

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	346	350	353	357	361	365	369
Maximum Power Voltage(Vmp) [V]	32.60	32.77	32.94	33.10	33.27	33.84	34.00
Maximum Power Current(Imp) [A]	10.61	10.67	10.73	10.79	10.85	10.80	10.86
Open Circuit Voltage(Voc) [V]	39.94	40.10	40.25	40.41	40.57	41.57	41.71
Short Circuit Current(Isc) [A]	11.29	11.36	11.42	11.49	11.55	11.24	11.31

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	483	488	494	499	504	509	515
	Module Efficiency STC[%]	22.31	22.55	22.80	23.04	23.28	23.52	23.77
10%	Maximum Power (Pmax) [W]	506	512	517	523	528	534	539
	Module Efficiency STC[%]	23.37	23.63	23.88	24.14	24.39	24.64	24.89
20%	Maximum Power (Pmax) [W]	552	558	564	570	576	582	588
	Module Efficiency STC[%]	25.50	25.78	26.05	26.33	26.61	26.88	27.16

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	120(6×20)
Weight	26.2kg(±3%)
Module Dimensions	1909×1134×30mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

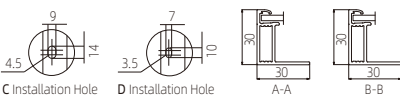
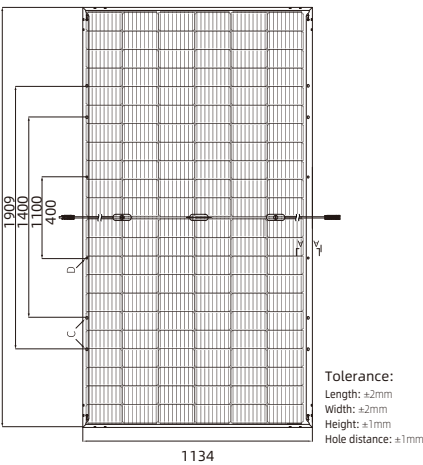
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C -+85°C
Maximum Series Fuse	25A

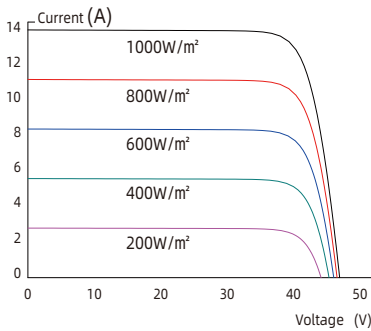
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	864pcs/40HQ

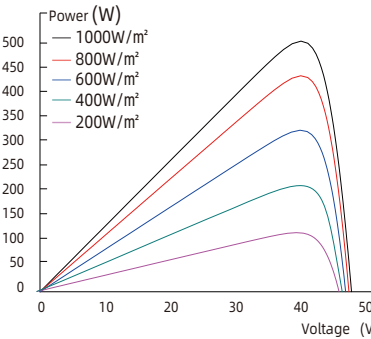
Module Dimension(mm)



Current-Voltage Curve (490W)



Power-Voltage Curve (490W)





APEX-144HBD
N570-N590M10

N-TOPCon Technology

22.82%

Maximum Module Efficiency

590W

Maximum Power Output

Power Tolerance:0-3W

2279×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

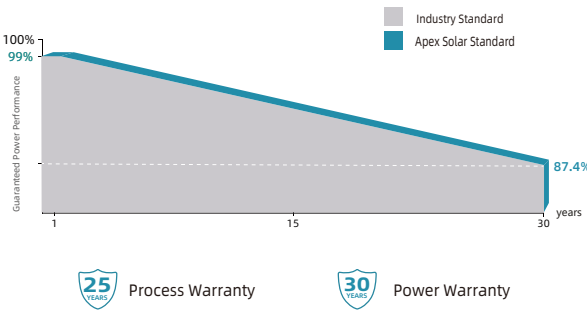
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



APEX-144HBD-N570-N590M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	570	575	580	585	590
Maximum Power Voltage(Vmp) [V]	42.07	42.22	42.37	42.52	42.67
Maximum Power Current(Imp) [A]	13.55	13.62	13.69	13.76	13.83
Open Circuit Voltage(Voc) [V]	50.74	50.88	51.02	52.16	52.37
Short Circuit Current(Isc) [A]	14.31	14.39	14.47	14.89	14.94
Module Efficiency [%]	22.05	22.24	22.45	22.63	22.82

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	429	432	436	441	445
Maximum Power Voltage(Vmp) [V]	39.65	39.78	39.87	41.05	41.21
Maximum Power Current(Imp) [A]	10.81	10.87	10.94	10.74	10.79
Open Circuit Voltage(Voc) [V]	48.51	48.70	48.89	50.06	50.25
Short Circuit Current(Isc) [A]	11.50	11.55	11.60	11.30	11.36

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	599	604	609	614	620
	Module Efficiency STC[%]	23.16	23.36	23.56	23.77	23.97
10%	Maximum Power (Pmax) [W]	627	633	638	644	649
	Module Efficiency STC[%]	24.26	24.47	24.69	24.90	25.11
20%	Maximum Power (Pmax) [W]	684	690	696	702	708
	Module Efficiency STC[%]	26.47	26.70	26.93	27.16	27.40

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	144(6×24)
Weight	32kg(±3%)
Module Dimensions	2279×1134×30mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

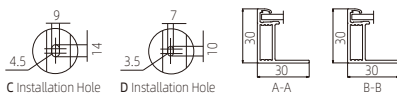
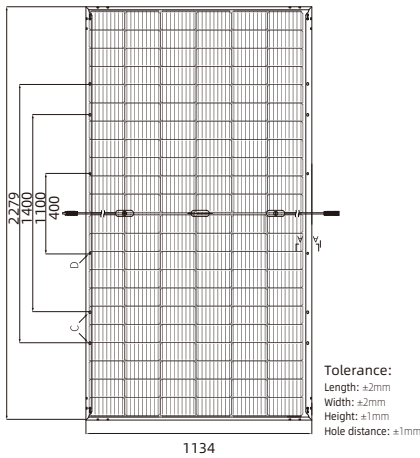
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C~+85°C
Maximum Series Fuse	25A

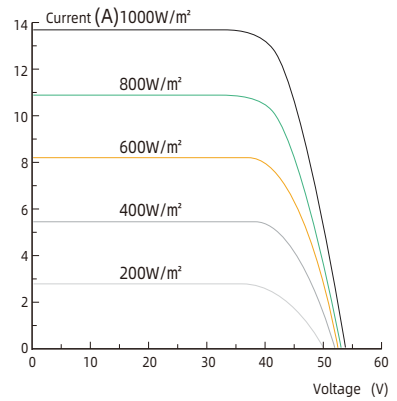
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	720pcs/40HQ

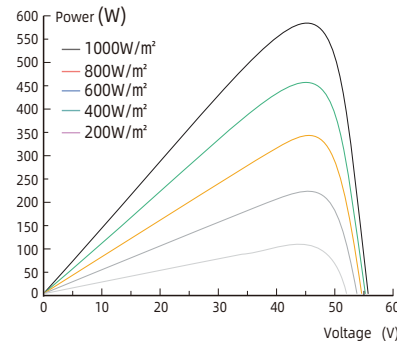
Module Dimension(mm)



Current-Voltage Curve (590W)



Power-Voltage Curve (590W)



APEX-156HBD-
N610-N640M10

N-TOPCon Technology

22.89%

Maximum Module Efficiency

640W

Maximum Power Output

Power Tolerance:0-3W

2465×1134×35mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

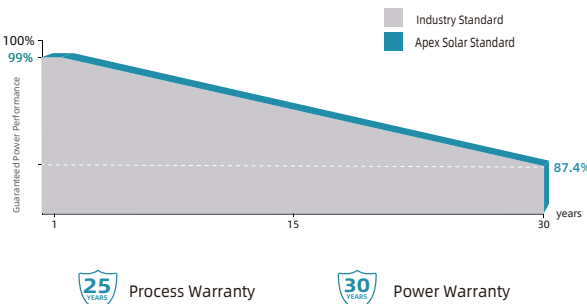
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



High Efficiency Half-cells Solar Panel APEX-156HBD-N610-N640M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	610	615	620	625	630	635	640
Maximum Power Voltage(Vmp) [V]	45.59	45.69	45.79	45.92	46.26	46.42	46.52
Maximum Power Current(Imp) [A]	13.38	13.46	13.54	13.61	13.62	13.68	13.76
Open Circuit Voltage(Voc) [V]	55.25	55.40	55.55	55.70	55.86	56.01	56.15
Short Circuit Current(Isc) [A]	14.11	14.18	14.25	14.32	14.35	14.48	14.54
Module Efficiency [%]	21.82	22.00	22.18	22.36	22.53	22.71	22.89

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	459	462	466	470	472	476	480
Maximum Power Voltage(Vmp) [V]	42.28	42.39	42.50	42.61	42.72	42.82	42.92
Maximum Power Current(Imp) [A]	10.85	10.91	10.97	11.03	11.09	11.11	11.18
Open Circuit Voltage(Voc) [V]	52.48	52.62	52.77	52.91	53.05	53.66	53.96
Short Circuit Current(Isc) [A]	11.39	11.45	11.50	11.56	11.62	11.68	11.72

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REAR SIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	641	646	651	656	662	667	672
	Module Efficiency STC[%]	22.91	23.10	23.29	23.48	23.66	23.86	24.04
10%	Maximum Power (Pmax) [W]	671	677	682	688	693	698	704
	Module Efficiency STC[%]	24.00	24.20	24.40	24.59	24.79	24.97	25.18
20%	Maximum Power (Pmax) [W]	732	738	744	750	756	762	768
	Module Efficiency STC[%]	26.19	26.40	26.62	26.83	27.05	27.26	27.47

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	156(2×78)
Weight	34.6kg(±3%)
Module Dimensions	2465×1134×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

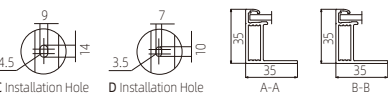
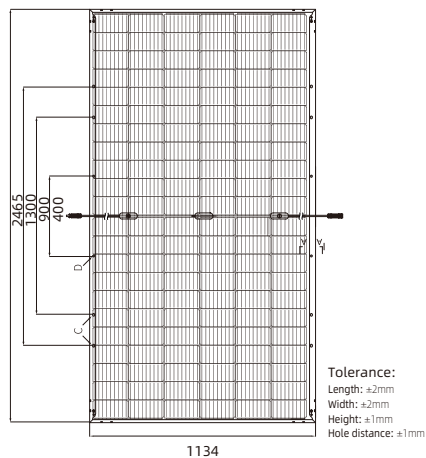
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C~+85°C
Maximum Series Fuse	30A

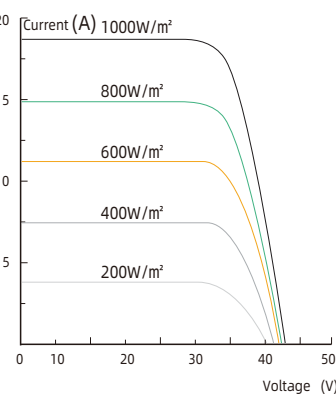
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	720pcs/40HQ

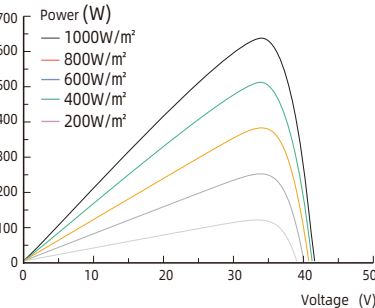
Module Dimension(mm)



Current-Voltage Curve (640W)



Power-Voltage Curve (640W)



132cells Monocrystalline Bifacial
Dual Glass Module

APEX-132HBD-
N695-N720M12

N-TOPCon Technology

23.20%

Maximum Module Efficiency

720W

Maximum Power Output

Power Tolerance:0-3W

2384×1303×35mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

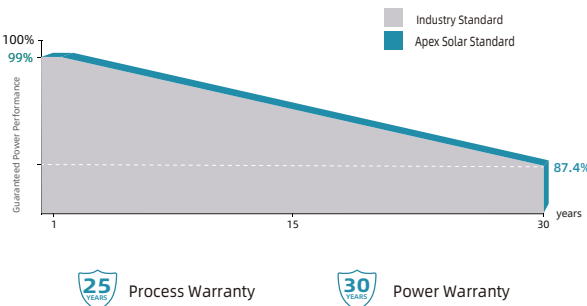
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



High Efficiency Half-cells Solar Panel APEX-132HBD-N695-N720M12

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	695	700	705	710	715	720
Maximum Power Voltage(Vmp) [V]	40.30	40.50	40.70	40.90	41.10	41.30
Maximum Power Current(Imp) [A]	17.25	17.29	17.33	17.36	17.40	17.44
Open Circuit Voltage(Voc) [V]	48.30	48.60	48.80	49.00	49.20	49.40
Short Circuit Current(Isc) [A]	18.28	18.32	18.36	18.40	18.44	18.49
Module Efficiency [%]	22.40	22.50	22.70	22.90	23.00	23.20

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	531	534	540	543	547	551
Maximum Power Voltage(Vmp) [V]	37.90	38.00	38.30	38.50	38.70	38.80
Maximum Power Current(Imp) [A]	14.00	14.04	14.08	14.12	14.14	14.19
Open Circuit Voltage(Voc) [V]	45.90	46.10	46.30	46.50	46.70	46.90
Short Circuit Current(Isc) [A]	14.72	14.76	14.80	14.83	14.86	14.90

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	730	735	740	746	751	756
	Module Efficiency STC[%]	23.49	23.66	23.83	24.00	24.17	24.34
10%	Maximum Power (Pmax) [W]	765	770	776	781	787	792
	Module Efficiency STC[%]	24.61	24.79	24.96	25.14	25.32	25.50
20%	Maximum Power (Pmax) [W]	834	840	846	852	858	864
	Module Efficiency STC[%]	26.85	27.04	27.23	27.43	27.62	27.81

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	210×210mm
Cell Arrangement	132(6×22)
Weight	38.3kg(±3%)
Module Dimensions	2384×1303×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

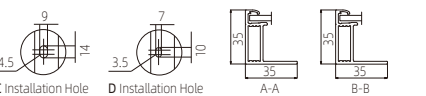
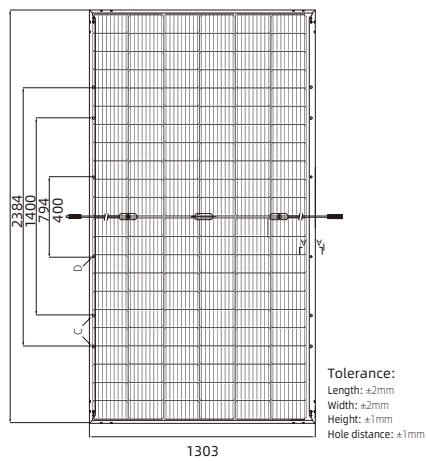
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C -+85°C
Maximum Series Fuse	35A

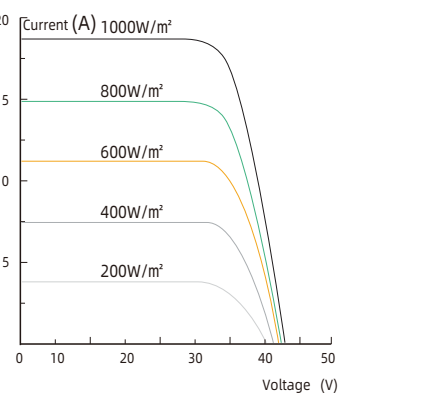
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	558pcs/40HQ

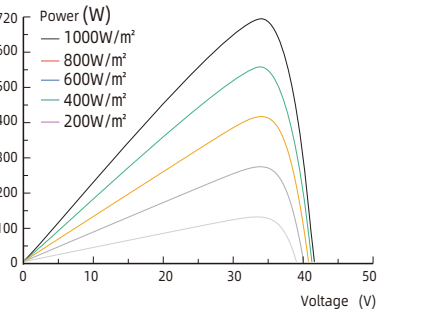
Module Dimension(mm)



Current-Voltage Curve (720W)



Power-Voltage Curve (720W)



P-TYPE Technology

HOT SALE 365-675W
MONO HALF CELL SOLAR PANEL

675W
Maximum Power

21.73%
Maximum Efficiency

25 Years
Process Warranty

25 Years
Power Wwarranty

≤2%
First Year Degradation

≤0.55%
Linear Degradation



APEX-120H
365-380M6

20.86%

Maximum Module Efficiency

380W

Maximum Power Output

Power Tolerance:0-3W

1755×1038×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

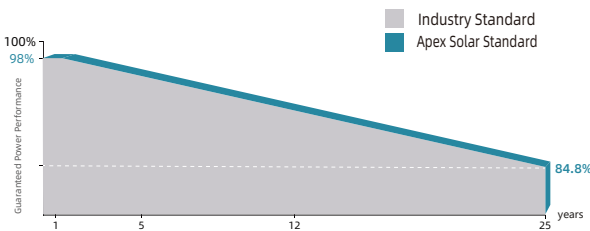
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing . 25-year Warranty for Extra Linear Power Output



25 years Process Warranty

25 years Power Warranty



0-3W

Guaranteed 0-3W positive tolerance ensures the power output reliability



High customer value

Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations



Highly reliable due to stringent quality control

Three times strict EL testing beyond certification requirements



Fusion of MBB and half-cut cells technology

The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability



Excellent Anti-PID performance

Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process



Outstanding low light performance

The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

High Efficiency Half-cells Solar Panel APEX-120H 365-380M6

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	365	370	375	380
Maximum Power Voltage(Vmp) [V]	33.85	34.05	34.25	34.40
Maximum Power Current(Impp) [A]	10.79	10.87	10.95	11.04
Open Circuit Voltage(Voc) [V]	41.05	41.25	41.45	41.65
Short Circuit Current(Isc) [A]	11.27	11.35	11.43	11.51
Module Efficiency [%]	20.00	20.30	20.60	20.86
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5				

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	266.7	270.4	274.1	277.8
Maximum Power Voltage(Vmp) [V]	31.2	31.3	31.5	31.7
Maximum Power Current(Impp) [A]	8.56	8.63	8.7	8.76
Open Circuit Voltage(Voc) [V]	38.1	38.3	38.5	38.7
Short Circuit Current(Isc) [A]	9.06	9.12	9.19	9.25
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s				

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	166×166mm
Cell Arrangement	120(6×20)
Weight	19.5kg(±3%)
Module Dimensions	1755×1038×30mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

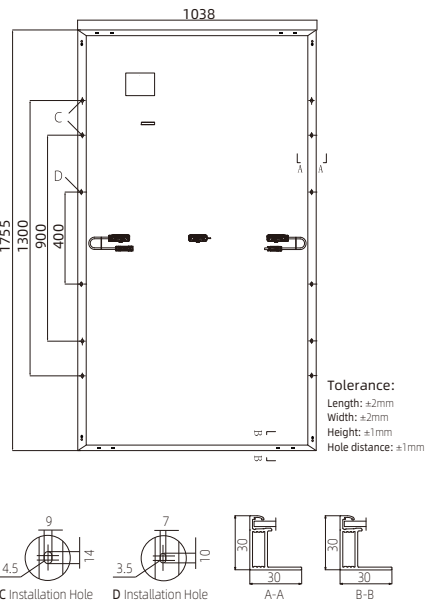
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	20A

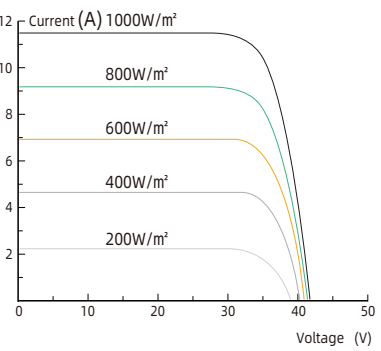
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	975pcs/40HQ

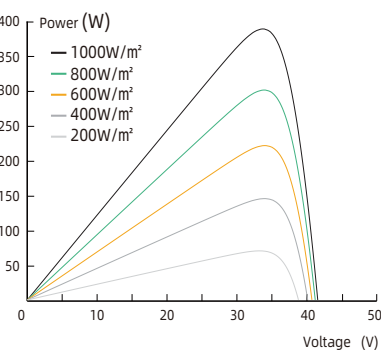
Module Dimension(mm)

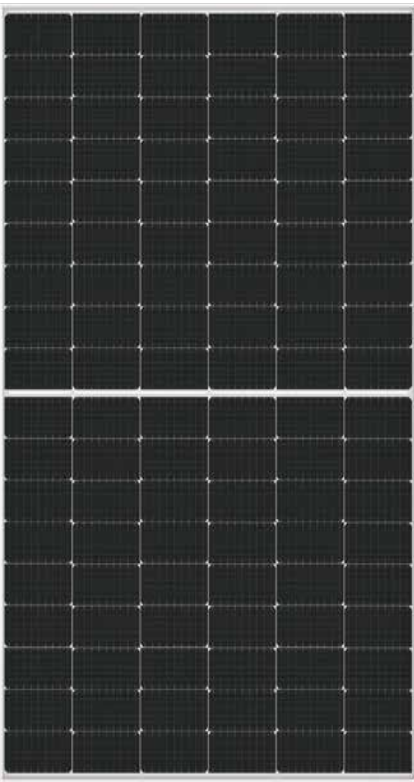


Current-Voltage Curve (380W)



Power-Voltage Curve (380W)





APEX-108H
400-420M10

21.48%

Maximum Module Efficiency

420W

Maximum Power Output

Power Tolerance:0-3W

1724×1134×30mm

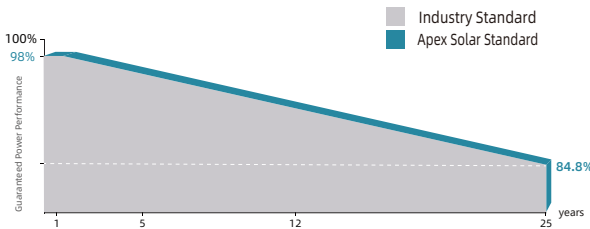
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing , 25-year Warranty for Extra Linear Power Output



25 Process Warranty 25 Power Warranty

High Efficiency Half-cells Solar Panel APEX-108H 400-420M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	400	405	410	415	420
Maximum Power Voltage(Vmp) [V]	30.75	31.00	31.25	31.49	31.73
Maximum Power Current(Imp) [A]	13.01	13.07	13.12	13.18	13.24
Open Circuit Voltage(Voc) [V]	36.75	37.00	37.25	37.50	37.75
Short Circuit Current(Isc) [A]	13.76	13.83	13.88	13.94	14.01
Module Efficiency [%]	20.46	20.72	20.97	21.23	21.48
STC: Irrradiance 1000 W/m2 module temperature 25°C AM=1.5					

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	299	302.7	306.5	310.2	313.9
Maximum Power Voltage(Vmp) [V]	28.56	28.80	29.03	29.25	29.47
Maximum Power Current(Imp) [A]	10.47	10.52	10.56	10.60	10.65
Open Circuit Voltage(Voc) [V]	34.55	34.79	35.08	35.26	35.49
Short Circuit Current(Isc) [A]	11.13	11.18	11.22	11.27	11.32
NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s					

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	108(6×18)
Weight	21.5kg(±3%)
Module Dimensions	1724×1134×30mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

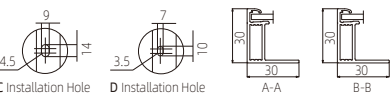
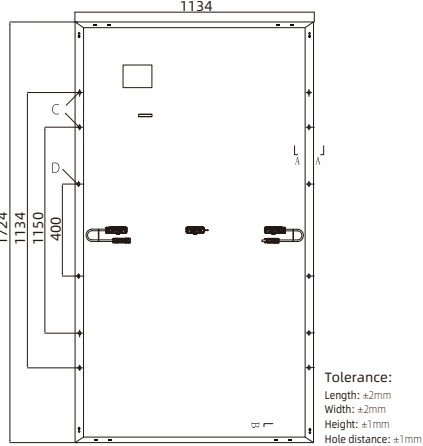
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

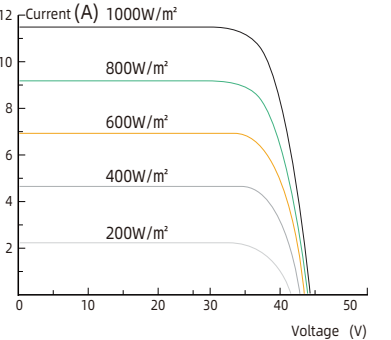
PACKING CONFIGURATION

Quantity/Pallet	37pcs/pallet
Quantity/Container	962pcs/40HQ

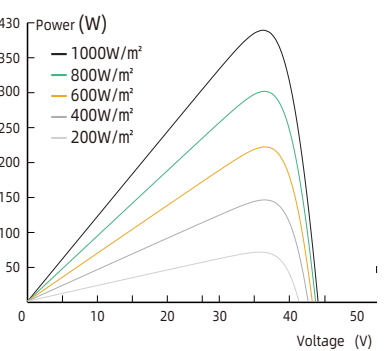
Module Dimension(mm)

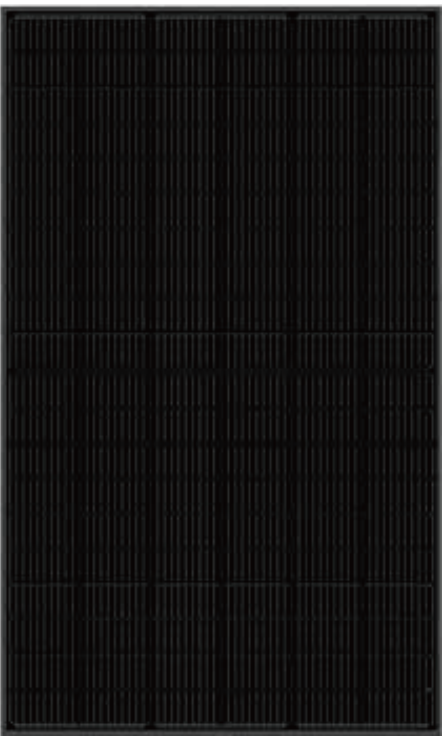


Current-Voltage Curve (420W)



Power-Voltage Curve (420W)





APEX-108H
400-420M10

21.48%

Maximum Module Efficiency

420W

Maximum Power Output

Power Tolerance:0-3W

1724×1134×30mm

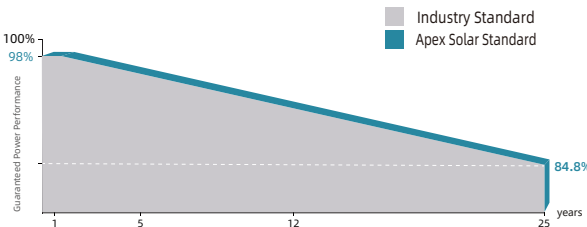
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing . 25-year Warranty for Extra Linear Power Output



25 Process Warranty

25 Power Warranty

0-3W

Guaranteed 0-3W positive tolerance ensures the power output reliability

High customer value

Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations

Highly reliable due to stringent quality control

Three times strict EL testing beyond certification requirements

Fusion of MBB and half-cut cells technology

The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability

Excellent Anti-PID performance

Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process

Outstanding low light performance

The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

High Efficiency Half-cells Solar Panel APEX-108H 400-420M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	400	405	410	415	420
Maximum Power Voltage(Vmp) [V]	30.75	31.00	31.25	31.49	31.73
Maximum Power Current(Imp) [A]	13.01	13.07	13.12	13.18	13.24
Open Circuit Voltage(Voc) [V]	36.75	37.00	37.25	37.50	37.75
Short Circuit Current(Isc) [A]	13.76	13.83	13.88	13.94	14.01
Module Efficiency [%]	20.46	20.72	20.97	21.23	21.48

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	299	302.7	306.5	310.2	313.9
Maximum Power Voltage(Vmp) [V]	28.56	28.80	29.03	29.25	29.47
Maximum Power Current(Imp) [A]	10.47	10.52	10.56	10.60	10.65
Open Circuit Voltage(Voc) [V]	34.55	34.79	35.08	35.26	35.49
Short Circuit Current(Isc) [A]	11.13	11.18	11.22	11.27	11.32

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	108(6×18)
Weight	21.5kg(±3%)
Module Dimensions	1724×1134×30mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

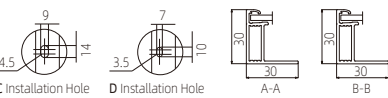
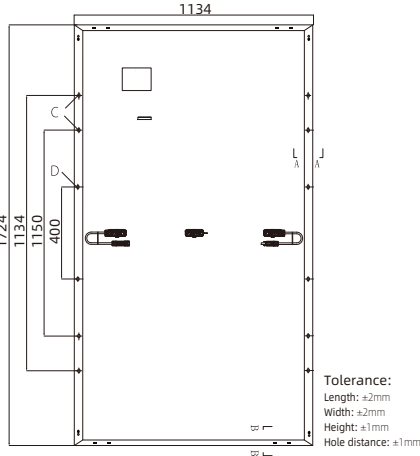
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

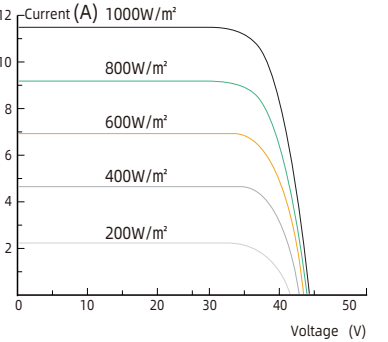
PACKING CONFIGURATION

Quantity/Pallet	37pcs/pallet
Quantity/Container	962pcs/40HQ

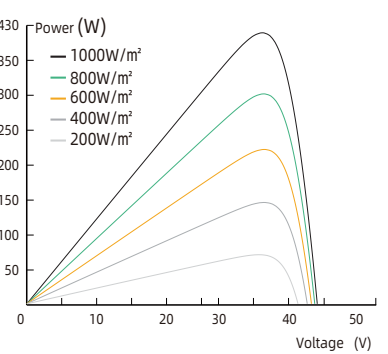
Module Dimension(mm)



Current-Voltage Curve (420W)



Power-Voltage Curve (420W)





APEX-120H
440-460M10

21.32%

Maximum Module Efficiency

460W

Maximum Power Output

Power Tolerance:0-3W

1909×1134×35mm

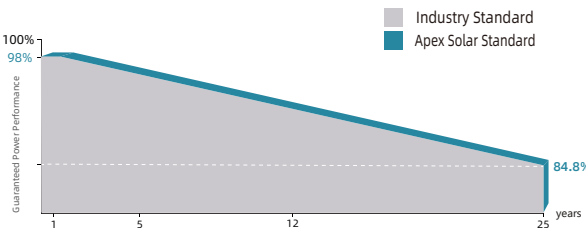
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing . 25-year Warranty for Extra Linear Power Output



25 YEARS Process Warranty 25 YEARS Power Warranty

High Efficiency Half-cells Solar Panel APEX-120H 440-460M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	440	445	450	455	460
Maximum Power Voltage(Vmp) [V]	33.91	34.06	34.21	34.36	34.90
Maximum Power Current(Imp) [A]	12.98	13.07	13.16	13.25	13.19
Open Circuit Voltage(Voc) [V]	40.95	41.1	41.25	41.4	41.80
Short Circuit Current(Isc) [A]	13.41	13.52	13.62	13.72	13.92
Module Efficiency [%]	20.33	20.56	20.79	21.02	21.32
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5					

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	330	334	338	342	343.80
Maximum Power Voltage(Vmp) [V]	31.34	31.49	31.64	31.79	32.50
Maximum Power Current(Imp) [A]	10.54	10.62	10.69	10.77	10.59
Open Circuit Voltage(Voc) [V]	37.76	37.91	38.06	38.21	39.00
Short Circuit Current(Isc) [A]	11.19	11.28	11.36	11.45	11.24
NMOT: Irradiance 800 W/m2 ambient temperature 20°C win d speed: 1m/s					

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	120(6×20)
Weight	23.5kg(±3%)
Module Dimensions	1909×1134×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

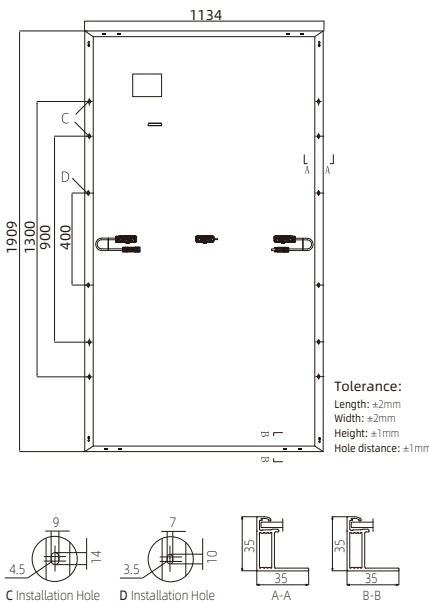
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	20A

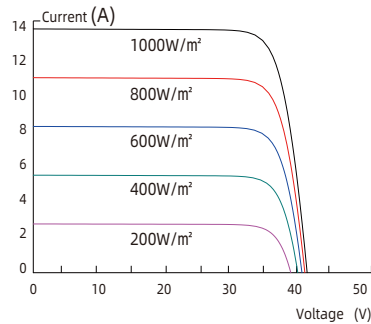
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	744pcs/40HQ

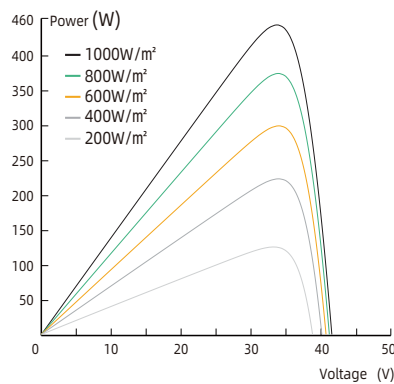
Module Dimension(mm)



Current-Voltage Curve (460W)



Power-Voltage Curve (460W)





APEX-144H 440-460M6

21.16%

Maximum Module Efficiency

460W

Maximum Power Output

Power Tolerance:0-3W

2094×1038×35mm

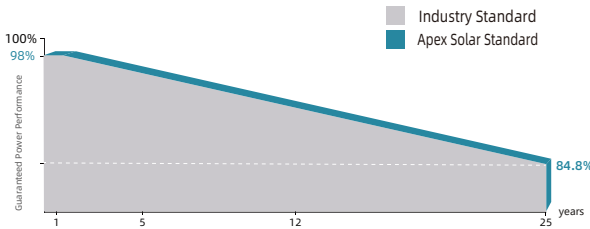
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing . 25-year Warranty for Extra Linear Power Output



25 YEARS Process Warranty

25 YEARS Power Warranty

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	440	445	450	455	460
Maximum Power Voltage(Vmp) [V]	41.2	41.44	41.67	41.9	42.13
Maximum Power Current(Imp) [A]	10.68	10.74	10.8	10.86	10.92
Open Circuit Voltage(Voc) [V]	49.3	49.55	49.8	50.05	50.3
Short Circuit Current(Isc) [A]	11.3	11.36	11.42	11.48	11.54
Module Efficiency [%]	20.24	20.47	20.7	20.93	21.16

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	334.76	338.61	342.39	346.19	349.57
Maximum Power Voltage(Vmp) [V]	39.29	39.52	39.74	39.96	40.18
Maximum Power Current(Imp) [A]	8.52	8.57	8.62	8.66	8.7
Open Circuit Voltage(Voc) [V]	46.76	46.99	47.23	47.47	47.71
Short Circuit Current(Isc) [A]	9.09	9.14	9.19	9.24	9.29

NMOT: Irradiance 800 W/m2 ambient temperature 20°C win d speed: 1m/s

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	166×166mm
Cell Arrangement	144(6×24)
Weight	23kg(±3%)
Module Dimensions	2094×1038×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

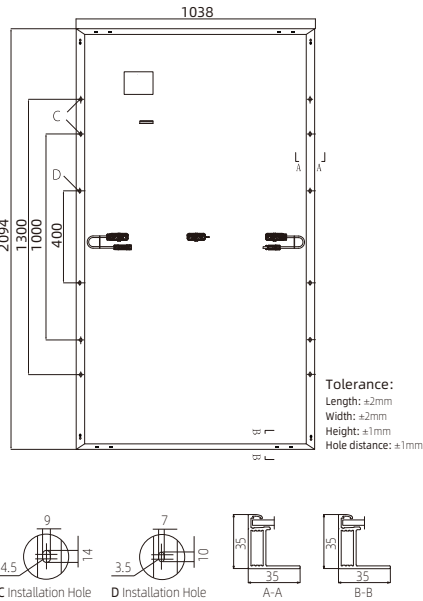
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	20A

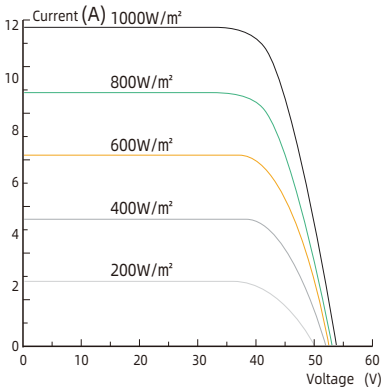
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	715pcs/40HQ

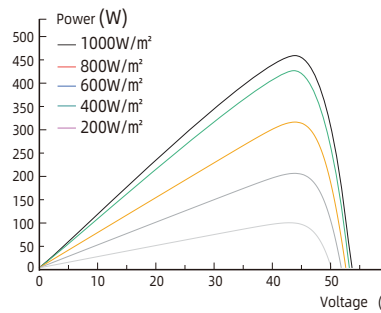
Module Dimension(mm)



Current-Voltage Curve (460W)



Power-Voltage Curve (460W)





APEX-144H
525-550M10

21.3%

Maximum Module Efficiency

550W

Maximum Power Output

Power Tolerance:0-3W

2279×1134×35mm

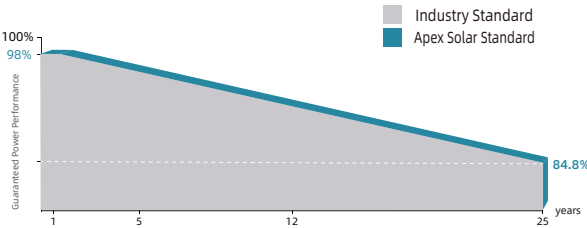
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing , 25-year Warranty for Extra Linear Power Output



25 Process Warranty

25 Power Warranty

High Efficiency Half-cells Solar Panel APEX-144H 525-550M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	525	530	535	540	545	550
Maximum Power Voltage(Vmp) [V]	41.15	41.31	41.47	41.64	41.80	41.96
Maximum Power Current(Imp) [A]	12.76	12.83	12.90	12.97	13.04	13.11
Open Circuit Voltage(Voc) [V]	49.15	49.30	49.45	49.60	49.75	49.90
Short Circuit Current(Isc) [A]	13.65	13.72	13.79	13.86	13.93	14.00
Module Efficiency [%]	20.3	20.5	20.7	20.9	21.1	21.3
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5						

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	397	401	405	408	412	416
Maximum Power Voltage(Vmp) [V]	38.36	38.57	38.78	38.99	39.20	39.43
Maximum Power Current(Imp) [A]	10.35	10.39	10.43	10.47	10.51	10.55
Open Circuit Voltage(Voc) [V]	46.05	46.18	46.31	46.43	46.55	46.68
Short Circuit Current(Isc) [A]	10.97	11.01	11.05	11.09	11.13	11.17
NMOT: Irradiance 800 W/m2 ambient temperature 20°C win d speed: 1m/s						

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	144(6×24)
Weight	29.0kg(±3%)
Module Dimensions	2279×1134×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

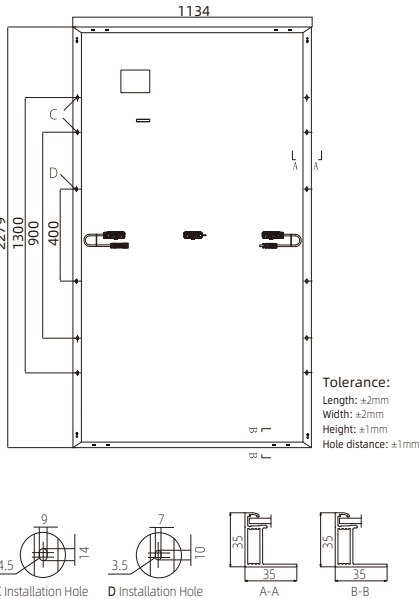
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	20A

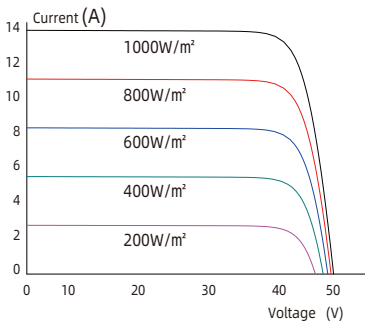
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	620pcs/40HQ

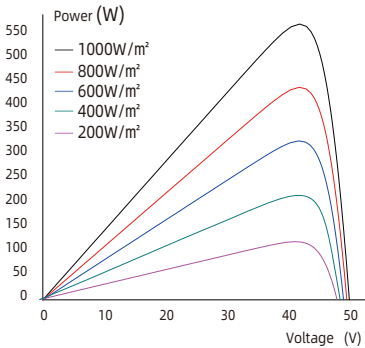
Module Dimension(mm)

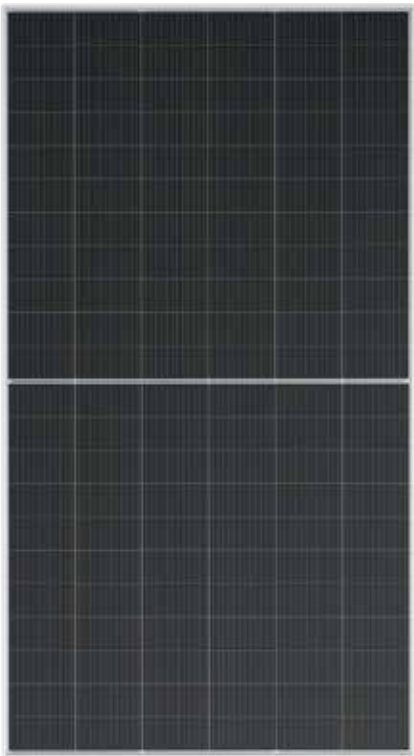


Current-Voltage Curve (550W)



Power-Voltage Curve (550W)





APEX-132H
655-675M12

23.20%

Maximum Module Efficiency

720W

Maximum Power Output

Power Tolerance:0-3W

2384×1303×35mm

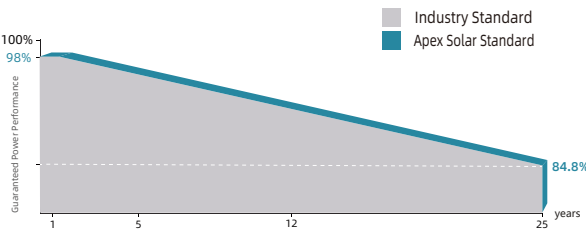
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing . 25-year Warranty for Extra Linear Power Output



25 Process Warranty 25 Power Warranty

High Efficiency Half-cells Solar Panel APEX-132H 655-675M12

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	655	660	665	670	675
Maximum Power Voltage(Vmp) [V]	37.59	37.79	37.99	38.19	38.39
Maximum Power Current(Imp) [A]	17.43	17.47	17.51	17.55	17.59
Open Circuit Voltage(Voc) [V]	45.49	45.69	45.89	46.09	46.29
Short Circuit Current(Isc) [A]	18.49	18.52	18.55	18.61	18.64
Module Efficiency [%]	21.09	21.25	21.41	21.57	21.73
STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5					

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	496	500	504	508	512
Maximum Power Voltage(Vmp) [V]	35.09	35.29	35.49	35.69	35.89
Maximum Power Current(Imp) [A]	14.14	14.17	14.20	14.23	14.26
Open Circuit Voltage(Voc) [V]	42.79	42.99	43.19	43.39	43.59
Short Circuit Current(Isc) [A]	14.88	14.93	14.98	15.03	15.08
NMOT: Irradiance 800 W/m2 ambient temperature 20°C win d speed: 1m/s					

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	210×210mm
Cell Arrangement	132(6×22)
Weight	34.0kg(±3%)
Module Dimensions	2384×1303×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

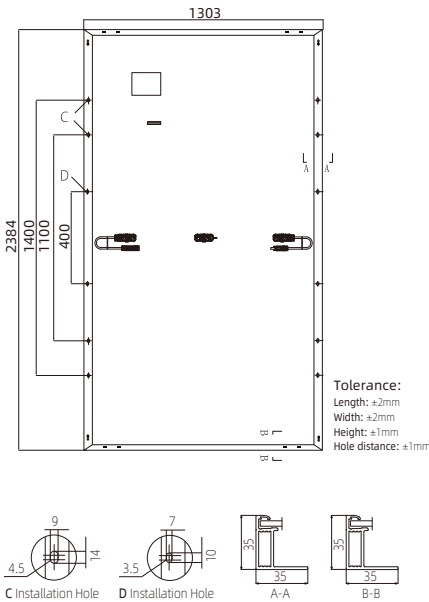
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	30A

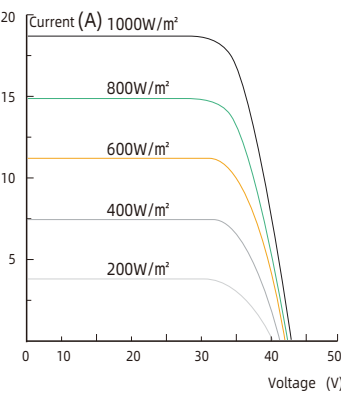
PACKING CONFIGURATION

Quantity/Pallet	31pcs/pallet
Quantity/Container	558pcs/40HQ

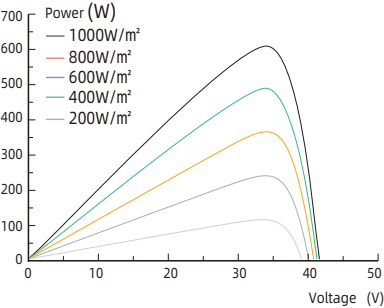
Module Dimension(mm)



Current-Voltage Curve (675W)



Power-Voltage Curve (675W)





APEX-108HBD
395-420M10

21.51%

Maximum Module Efficiency

420W

Maximum Power Output

Power Tolerance:0-3W

1724×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class A according to UL790

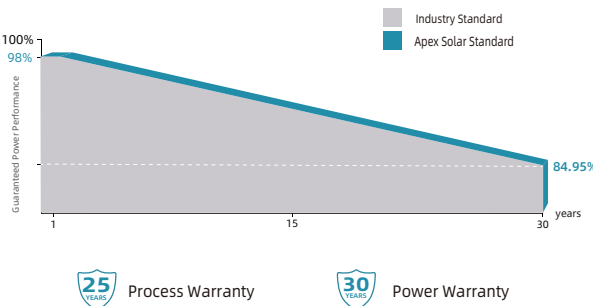
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing .30-year Warranty for Extra Linear Power Output



0-3W

Guaranteed 0-3W positive tolerance ensures the power output reliability



High customer value

Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations



Highly reliable due to stringent quality control

Three times strict EL testing beyond certification requirements



Fusion of MBB and half-cut cells technology

The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability



Excellent Anti-PID performance

Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process



Outstanding low light performance

The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

High Efficiency Half-cells Solar Panel APEX-108HBD 395-420M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	395	400	405	410	415	420
Maximum Power Voltage(Vmp) [V]	30.84	31.02	31.23	31.45	31.64	31.82
Maximum Power Current(Imp) [A]	12.81	12.90	12.97	13.04	13.12	13.20
Open Circuit Voltage(Voc) [V]	36.98	37.07	37.19	37.32	37.45	37.58
Short Circuit Current(Isc) [A]	13.70	13.79	13.87	13.95	14.02	14.10
Module Efficiency [%]	20.23	20.48	20.74	21.00	21.25	21.51

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	298	302	306	310	314	318
Maximum Power Voltage(Vmp) [V]	34.75	34.88	35.12	35.23	35.37	35.50
Maximum Power Current(Imp) [A]	29.08	29.26	29.47	29.72	29.89	30.09
Open Circuit Voltage(Voc) [V]	10.96	11.03	11.10	11.16	11.22	11.29
Short Circuit Current(Isc) [A]	10.25	10.32	10.38	10.43	10.50	10.57

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REAR SIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	415	420	425	431	436	441
	Module Efficiency STC[%]	21.24	21.51	21.78	22.05	22.31	22.58
10%	Maximum Power (Pmax) [W]	435	440	446	451	457	462
	Module Efficiency STC[%]	22.25	22.53	22.81	23.10	23.38	23.66
20%	Maximum Power (Pmax) [W]	474	480	486	492	498	504
	Module Efficiency STC[%]	24.27	24.58	24.89	25.20	25.50	25.81

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	108(6×18)
Weight	21.5kg(±3%)
Module Dimensions	1724×1134×30mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

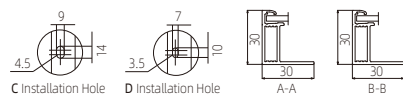
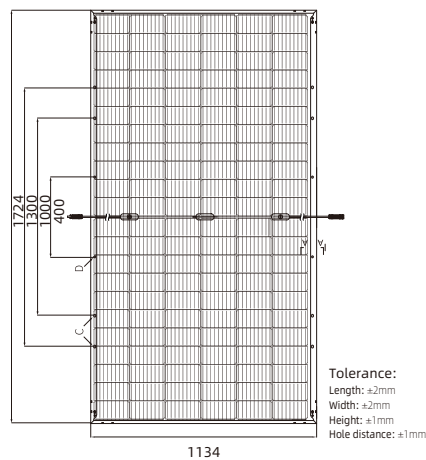
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C-+85°C
Maximum Series Fuse	25A

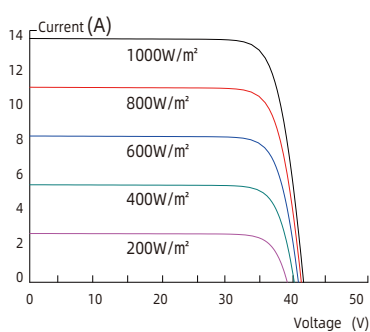
PACKING CONFIGURATION

Quantity/Pallet	37pcs/pallet
Quantity/Container	962pcs/40HQ

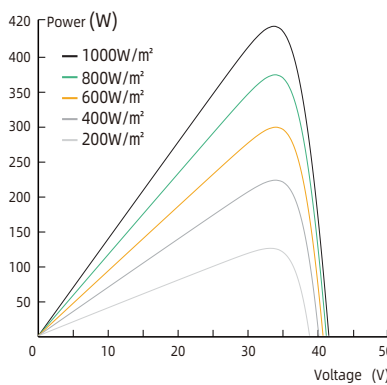
Module Dimension(mm)



Current-Voltage Curve (420W)



Power-Voltage Curve (420W)



**120cells Monocrystalline Bifacial
Dual Glass Module**



**APEX-120HBD
440-455M10**

21.08%

Maximum Module Efficiency

455W

Maximum Power Output

Power Tolerance:0-3W

1909×1134×30mm

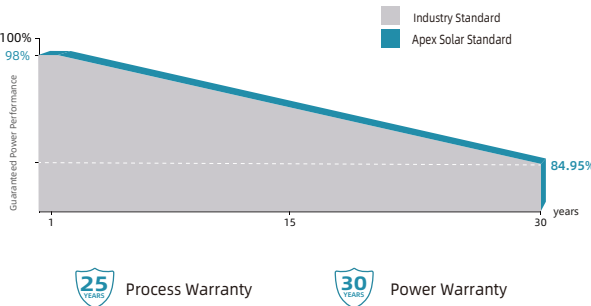
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ;30-year Warranty for Extra Linear Power Output



- 0-3W**
Guaranteed 0-3W positive tolerance ensures the power output reliability
- High customer value**
Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations
- Highly reliable due to stringent quality control**
Three times strict EL testing beyond certification requirements
- Fusion of MBB and half-cut cells technology**
The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability
- Excellent Anti-PID performance**
Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process
- Outstanding low light performance**
The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

High Efficiency Half-cells Solar Panel APEX-120HBD 440-455M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	440	445	450	455
Maximum Power Voltage(Vmp) [V]	34.10	34.30	34.50	34.70
Maximum Power Current(Imp) [A]	12.91	12.98	13.05	13.12
Open Circuit Voltage(Voc) [V]	41.00	41.20	41.40	41.60
Short Circuit Current(Isc) [A]	13.64	13.71	13.78	13.85
Module Efficiency [%]	20.39	20.62	20.85	21.08

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	328.90	332.60	336.40	340.10
Maximum Power Voltage(Vmp) [V]	31.70	31.90	32.10	32.30
Maximum Power Current(Imp) [A]	10.37	10.43	10.48	10.54
Open Circuit Voltage(Voc) [V]	38.30	38.50	38.70	38.90
Short Circuit Current(Isc) [A]	11.02	11.07	11.13	11.18

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REAR SIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	426	467	473	478
	Module Efficiency STC[%]	21.34	21.58	21.83	22.07
10%	Maximum Power (Pmax) [W]	484	490	495	501
	Module Efficiency STC[%]	22.36	22.61	22.87	23.12
20%	Maximum Power (Pmax) [W]	528	534	540	546
	Module Efficiency STC[%]	24.39	24.67	24.94	25.22

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	120(6×20)
Weight	26kg(±3%)
Module Dimensions	1909×1134×30mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

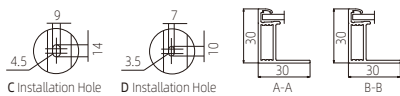
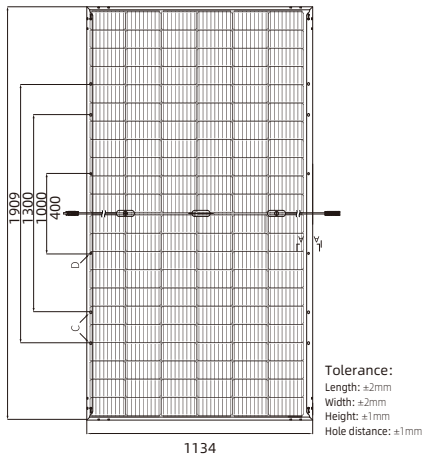
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C~+85°C
Maximum Series Fuse	25A

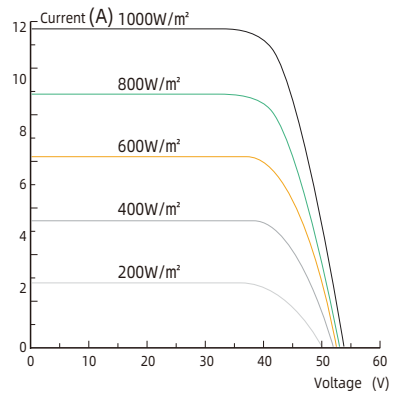
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	864pcs/40HQ

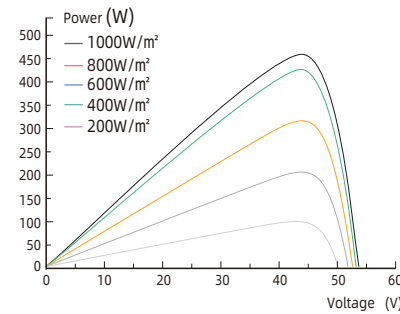
Module Dimension(mm)



Current-Voltage Curve (455W)



Power-Voltage Curve (455W)





APEX-144HBD
530-550M10

21.3%

Maximum Module Efficiency

550W

Maximum Power Output

Power Tolerance:0-3W

2279×1134×30mm

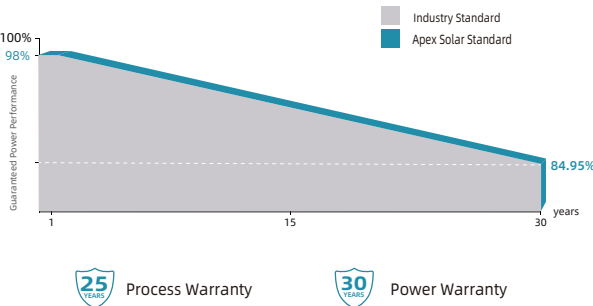
Module Dimensions

IEC 61215 / IEC 61730
 Fire safty class:Class A according to UL790
 ISO 9001 :Quality Management System
 ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing, 30-year Warranty for Extra Linear Power Output



- 0-3W**
 Guaranteed 0-3W positive tolerance ensures the power output reliability
- High customer value**
 Lower cost per kilowatt hour.High quality silicon wafer guarantee,high power module output, excellent cost performance advantage,is an ideal choice for solar power stations
- Highly reliable due to stringent quality control**
 Three times strict EL testing beyond certification requirements
- Fusion of MBB and half-cut cells technology**
 The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability
- Excellent Anti-PID performance**
 Ensure that the scale production passes the PID test, and greatly reduce he attenuation caused by PID by optimizing the wafer process
- Outstanding low light performance**
 The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment

High Efficiency Half-cells Solar Panel APEX-144HBD 530-550M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	530	535	540	545	550
Maximum Power Voltage(Vmp) [V]	41.31	41.47	41.64	41.80	41.96
Maximum Power Current(Imp) [A]	12.83	12.90	12.97	13.04	13.11
Open Circuit Voltage(Voc) [V]	49.30	49.45	49.60	49.75	49.90
Short Circuit Current(Isc) [A]	13.72	13.79	13.86	13.93	14.00
Module Efficiency [%]	20.5	20.7	20.9	21.1	21.3

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	401	405	408	412	416
Maximum Power Voltage(Vmp) [V]	38.57	38.78	38.99	39.20	39.43
Maximum Power Current(Imp) [A]	10.39	10.43	10.47	10.51	10.55
Open Circuit Voltage(Voc) [V]	46.18	46.31	46.43	46.55	46.68
Short Circuit Current(Isc) [A]	11.01	11.05	11.09	11.13	11.17

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	557	562	567	572	578
	Module Efficiency STC[%]	21.53	21.74	21.94	22.14	22.35
10%	Maximum Power (Pmax) [W]	583	589	594	600	605
	Module Efficiency STC[%]	22.56	22.77	22.98	23.20	23.41
20%	Maximum Power (Pmax) [W]	636	642	648	654	660
	Module Efficiency STC[%]	24.61	24.84	25.07	25.31	25.54

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	144(6×24)
Weight	32.3kg(±3%)
Module Dimensions	2279×1134×30mm
Cable	4.0 mm² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

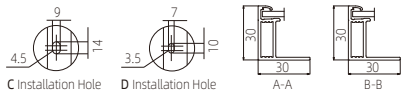
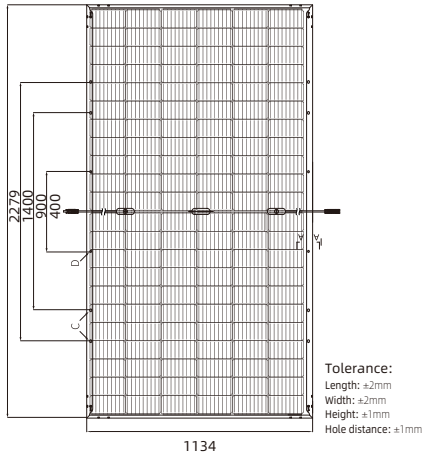
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C-+85°C
Maximum Series Fuse	20A

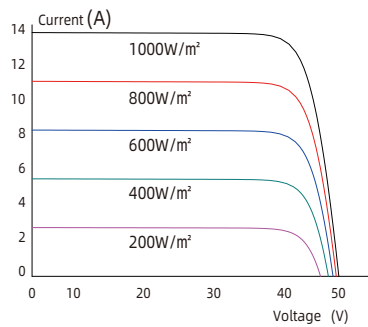
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	720pcs/40HQ

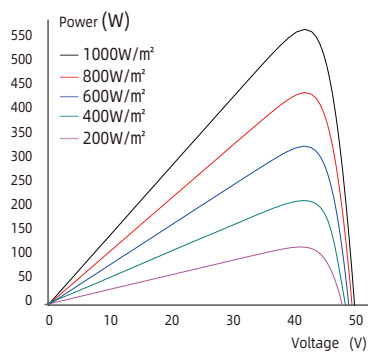
Module Dimension(mm)



Current-Voltage Curve (550W)



Power-Voltage Curve (550W)



120cells Monocrystalline Bifacial
Dual Glass Module



APEX-120HBD
590-605M12

21.4%

Maximum Module Efficiency

605W

Maximum Power Output

Power Tolerance:0-3W

2172×1303×35mm

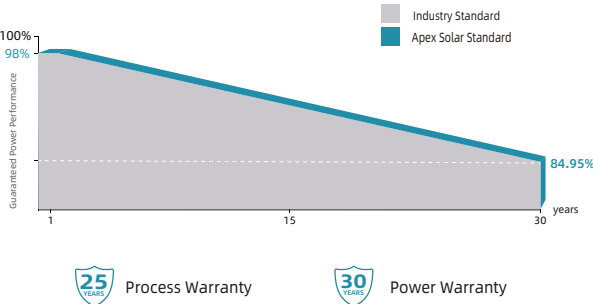
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing, 30-year Warranty for Extra Linear Power Output



High Efficiency Half-cells Solar Panel APEX-120HBD 590-605M12

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	590	595	600	605
Maximum Power Voltage(Vmp) [V]	34	34.2	34.4	34.6
Maximum Power Current(Imp) [A]	17.35	17.4	17.44	17.49
Open Circuit Voltage(Voc) [V]	41.1	41.3	41.5	41.7
Short Circuit Current(Isc) [A]	18.42	18.47	18.52	18.57
Module Efficiency [%]	20.8	21	21.2	21.4

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	447	451	454	458
Maximum Power Voltage(Vmp) [V]	31.7	31.9	32	32.2
Maximum Power Current(Imp) [A]	14.09	14.13	14.18	14.22
Open Circuit Voltage(Voc) [V]	38.7	38.9	39.1	39.3
Short Circuit Current(Isc) [A]	14.85	14.88	14.92	14.96

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	620	625	630	635
	Module Efficiency STC[%]	21.89	22.08	22.26	22.45
10%	Maximum Power (Pmax) [W]	649	655	660	666
	Module Efficiency STC[%]	22.93	23.13	23.32	23.51
20%	Maximum Power (Pmax) [W]	708	714	720	726
	Module Efficiency STC[%]	25.02	25.23	25.44	25.65

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
C ell Dimensions	210×210mm
Cell Arrangement	120(6×20)
Weight	30.9kg(±3%)
Module Dimensions	2172×1303×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

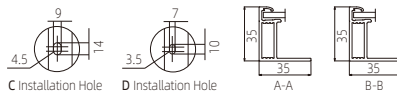
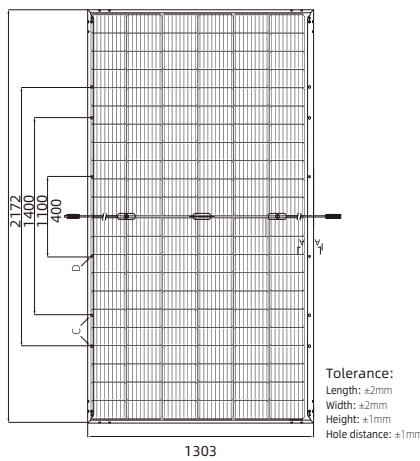
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C-+85°C
Maximum Series Fuse	30A

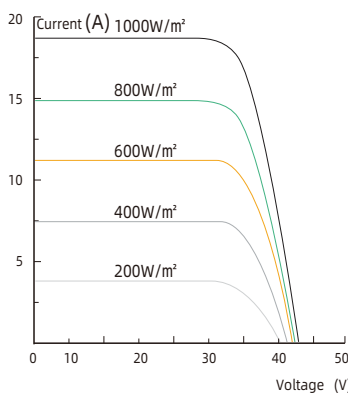
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	648pcs/40HQ

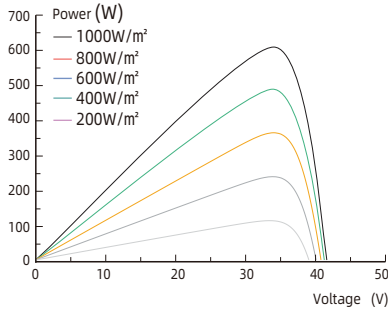
Module Dimension(mm)



Current-Voltage Curve (605W)



Power-Voltage Curve (605W)





APEX-132HBD
655-670M12

21.57%

Maximum Module Efficiency

670W

Maximum Power Output

Power Tolerance:0-3W

2384×1303×35mm

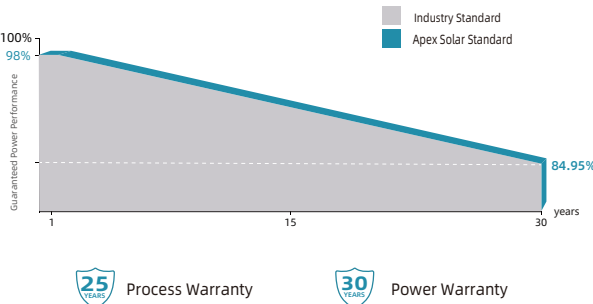
Module Dimensions

IEC 61215 / IEC 61730
Fire safty class:Class A according to UL790
ISO 9001 :Quality Management System
ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

25-year Warranty for Materials and Processing ,30-year Warranty for Extra Linear Power Output



ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	655	660	665	670
Maximum Power Voltage(Vmp) [V]	37.59	37.79	37.99	38.19
Maximum Power Current(Imp) [A]	17.43	17.47	17.51	17.55
Open Circuit Voltage(Voc) [V]	45.49	45.69	45.89	46.09
Short Circuit Current(Isc) [A]	18.49	18.52	18.55	18.61
Module Efficiency [%]	21.09	21.25	21.41	21.57

STC: Irradiance 1000 W/m2 module temperature 25°C AM=1.5

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	496	500	504	508
Maximum Power Voltage(Vmp) [V]	35.09	35.29	35.49	35.69
Maximum Power Current(Imp) [A]	14.14	14.17	14.20	14.23
Open Circuit Voltage(Voc) [V]	42.79	42.99	43.19	43.39
Short Circuit Current(Isc) [A]	14.88	14.93	14.98	15.03

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	688	693	698	704
	Module Efficiency STC[%]	22.14	22.31	22.48	22.65
10%	Maximum Power (Pmax) [W]	721	726	732	737
	Module Efficiency STC[%]	23.19	23.37	23.55	23.73
20%	Maximum Power (Pmax) [W]	786	792	798	804
	Module Efficiency STC[%]	25.30	25.50	25.69	25.88

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
C ell Dimensions	210×210mm
Cell Arrangement	132(6×22)
Weight	38.1kg(±3%)
Module Dimensions	2384×1303×35mm
Cable	4.0 mm²positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

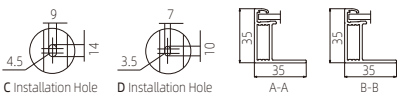
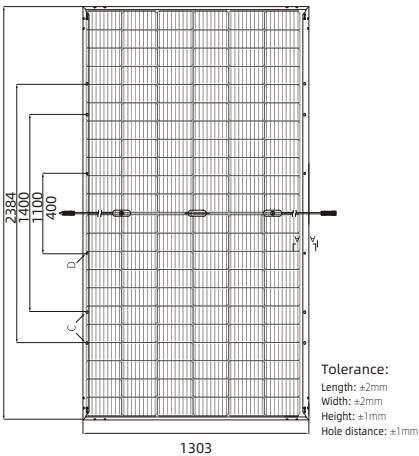
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	- 40°C-+85°C
Maximum Series Fuse	35A

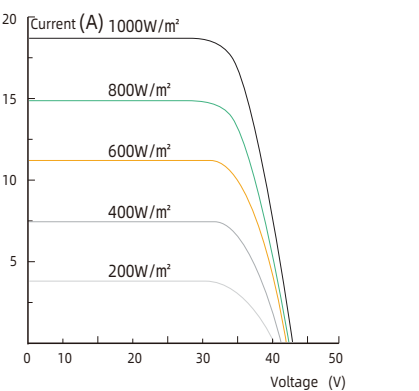
PACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	648pcs/40HQ

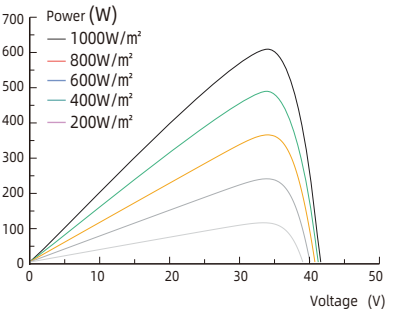
Module Dimension(mm)



Current-Voltage Curve (670W)



Power-Voltage Curve (670W)





residential house roof — town



residential house roof — countryside



residential house roof — Warehouse



Industrial and commercial distribution — workshop



Industrial and commercial distribution — workshop



Industrial and commercial distribution — workshop



Ground power station — wasteland



Ground power station — desert



Ground power station — mountain