

HRAP-108H 410-430M10

N-TOPCon Technology

22.02%

Maximum Module Efficiency

430W

Maximum Power Output

Power Shorting Tolerance:0~+3W

1722×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class C according to UL790

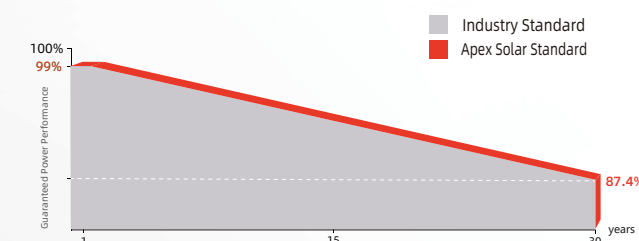
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty

HRAP-108H 410-430M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	410	415	420	425	430
Maximum Power Voltage(Vmp) [V]	31.13	31.32	31.51	31.70	31.88
Maximum Power Current(Imp) [A]	13.17	13.25	13.33	13.41	13.49
Open Circuit Voltage(Voc) [V]	37.73	37.92	38.11	38.30	38.49
Short Circuit Current(Isc) [A]	13.91	13.99	14.07	14.15	14.23
Module Efficiency [%]	21.00	21.25	21.51	21.76	22.02

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	308	312	316	320	323
Maximum Power Voltage(Vmp) [V]	29.06	29.21	29.34	29.50	29.63
Maximum Power Current(Imp) [A]	10.61	10.68	10.76	10.83	10.91
Open Circuit Voltage(Voc) [V]	35.84	36.02	36.20	36.38	36.56
Short Circuit Current(Isc) [A]	11.23	11.29	11.36	11.42	11.49

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(2×54)
Weight	22kg(±3%)
Module Dimensions	1722×1134×30mm
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 Photovoltaic Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

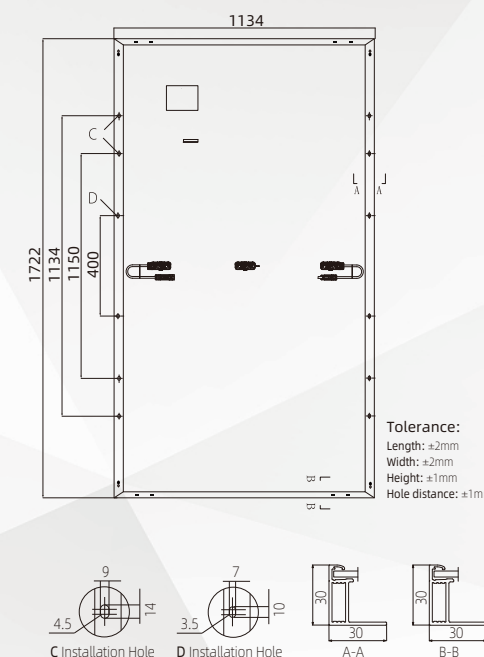
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

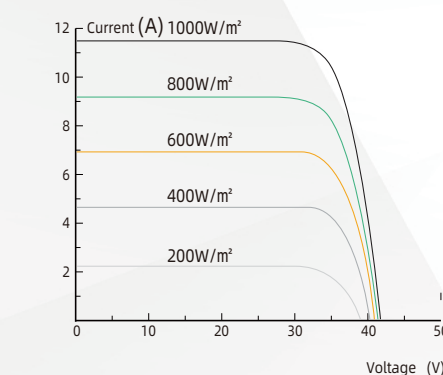
PPACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	936pcs/40HQ

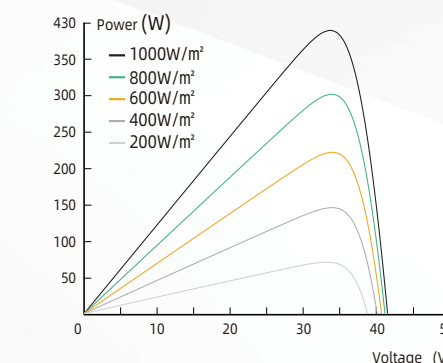
Module Dimension(mm)



Current-Voltage Curve 430W



Power-Voltage Curve (430W)



- 0~±3%**
Guaranteed 0~±3% 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 the 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]	460	465	470	475	480
Maximum Power Voltage(Vmp) [V]	34.72	34.89	35.05	35.21	35.38
Maximum Power Current(Imp) [A]	13.25	13.33	13.41	13.49	13.57
Open Circuit Voltage(Voc) [V]	42.05	42.22	42.38	42.54	42.71
Short Circuit Current(Isc) [A]	13.99	14.07	14.15	14.23	14.31
Module Efficiency [%]	21.32	21.55	21.78	22.01	22.24

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
Maximum Power Voltage(Vmp) [V]	32.60	32.77	32.94	33.10	33.27
Maximum Power Current(Imp) [A]	10.61	10.67	10.73	10.79	10.85
Open Circuit Voltage(Voc) [V]	39.94	40.10	40.25	40.41	40.57
Short Circuit Current(Isc) [A]	11.29	11.36	11.42	11.49	11.55

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(2×60)
Weight	24.2kg(±3%)
Module Dimensions	1903×1134×30mm
Cable	4.0 mm ² 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

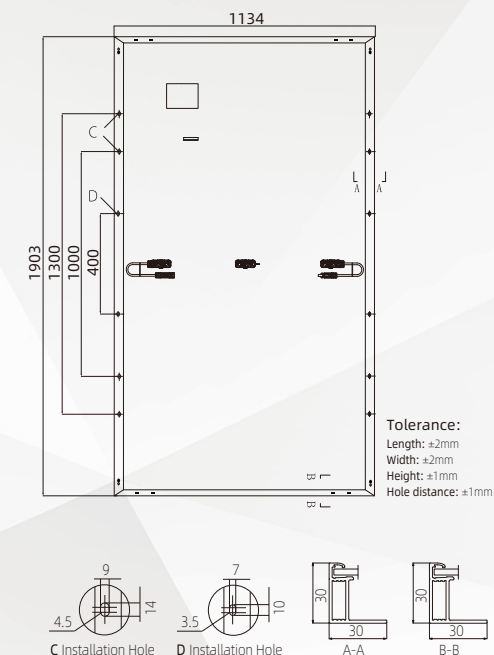
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

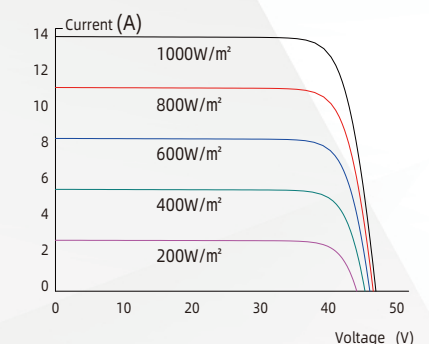
PPACKING CONFIGURATION

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

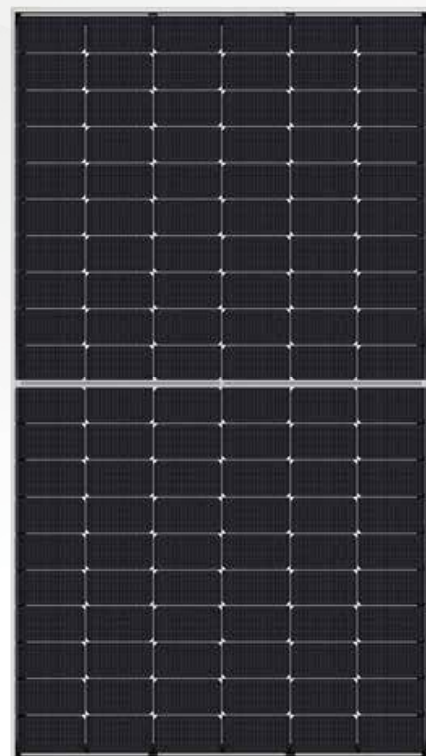
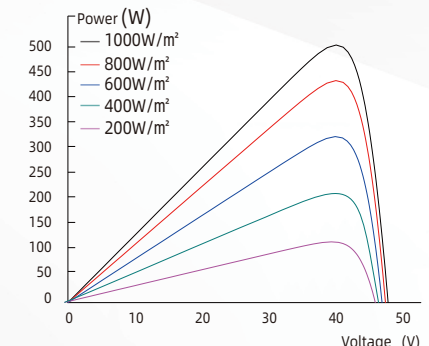
Module Dimension(mm)



Current-Voltage Curve (480W)



Power-Voltage Curve (480W)



HRAP-120H 460-480M10

N-TOPCon Technology

22.24%

Maximum Module Efficiency

480W

Maximum Power Output

Power Shorting Tolerance:0~+3W

1903×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class C according to UL790

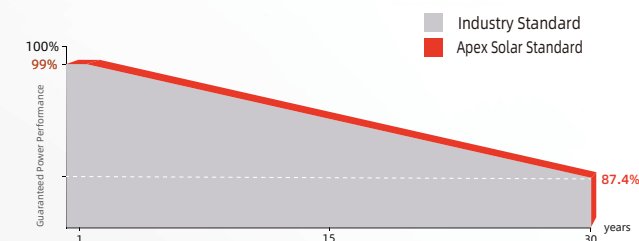
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty



0~±3%

Guaranteed 0~±3% 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 the 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





HRAP-144H 565-585M10

N-TOPCon Technology

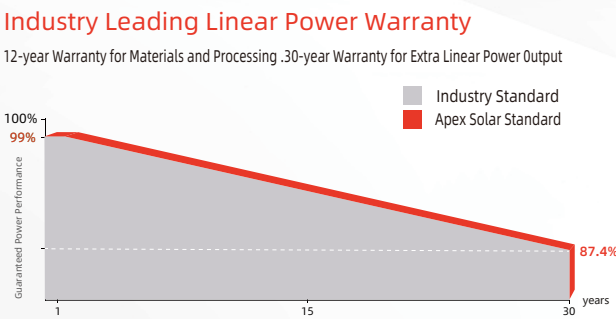
22.65%
Maximum Module Efficiency

585W
Maximum Power Output

Power Shorting Tolerance:0~+3W

2278×1134×35mm
Module Dimensions

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



 **12 YEARS** Process Warranty  **30 YEARS** Power Warranty

HRAP-144H 565-585M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	565	570	575	580	585
Maximum Power Voltage(Vmp) [V]	41.92	42.07	42.22	42.37	42.52
Maximum Power Current(Impp) [A]	13.48	13.55	13.62	13.69	13.76
Open Circuit Voltage(Voc) [V]	50.60	50.74	50.88	51.02	51.16
Short Circuit Current(Isc) [A]	14.23	14.31	14.39	14.47	14.55
Module Efficiency [%]	21.87	22.07	22.26	22.45	22.65

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	425	429	432	436	440
Maximum Power Voltage(Vmp) [V]	39.38	39.51	39.60	39.69	39.81
Maximum Power Current(Impp) [A]	10.79	10.85	10.92	10.99	11.05
Open Circuit Voltage(Voc) [V]	48.06	48.20	48.33	48.46	48.60
Short Circuit Current(Isc) [A]	11.49	11.55	11.62	11.68	11.75

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(2×72)
Weight	28kg(±3%)
Module Dimensions	2278×1134×35mm
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

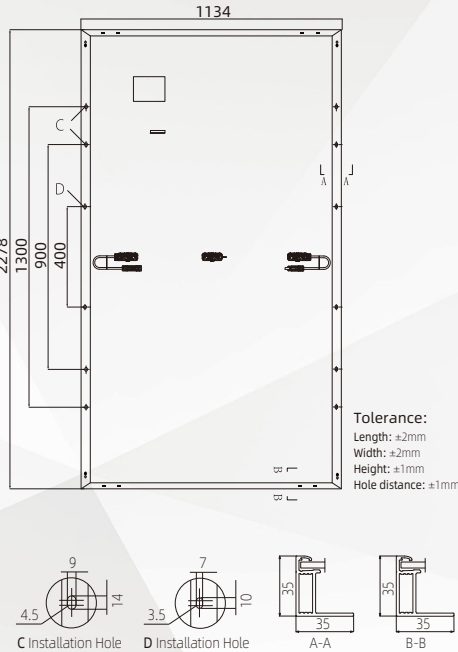
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

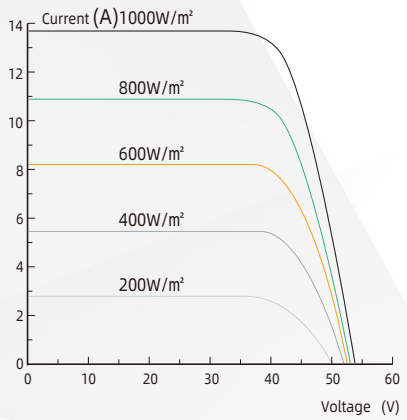
PPACKING CONFIGURATION

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

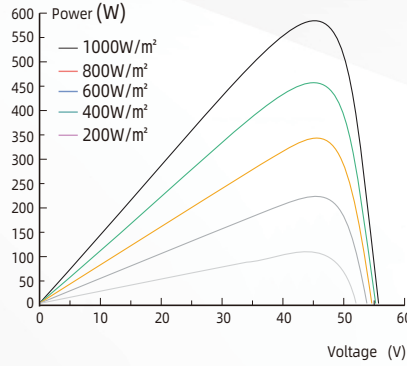
Module Dimension(mm)



Current-Voltage Curve (585W)



Power-Voltage Curve (585W)



-  **0~±3%**
Guaranteed 0~±3% 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 the 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



HRAP-156H 610-630M10

N-TOPCon Technology

22.54%

Maximum Module Efficiency

630W

Maximum Power Output

Power Shorting Tolerance:0~+3W

2465×1134×35mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class C according to UL790

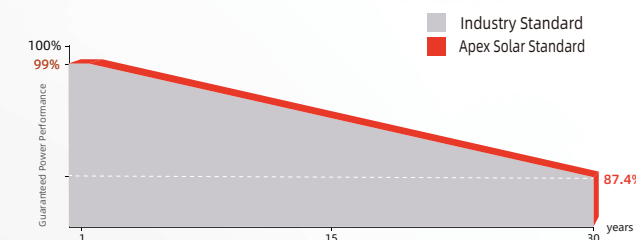
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty

HRAP-156H 610-630M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	610	615	620	625	630
Maximum Power Voltage(Vmp) [V]	45.59	45.69	45.79	45.92	46.02
Maximum Power Current(Imp) [A]	13.38	13.46	13.54	13.61	13.69
Open Circuit Voltage(Voc) [V]	55.25	55.40	55.55	55.70	55.85
Short Circuit Current(Isc) [A]	14.11	14.18	14.25	14.32	14.39
Module Efficiency [%]	21.82	22.00	22.18	22.36	22.54

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
Maximum Power Voltage(Vmp) [V]	42.28	42.39	42.50	42.61	42.72
Maximum Power Current(Imp) [A]	10.85	10.91	10.97	11.03	11.09
Open Circuit Voltage(Voc) [V]	52.48	52.62	52.77	52.91	53.05
Short Circuit Current(Isc) [A]	11.39	11.45	11.50	11.56	11.62

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

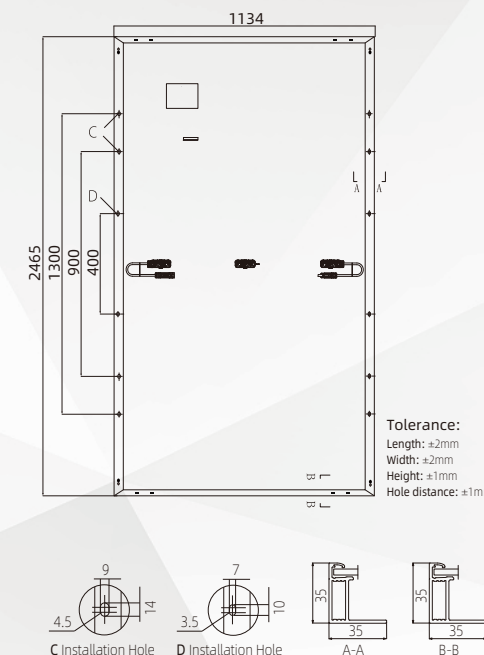
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

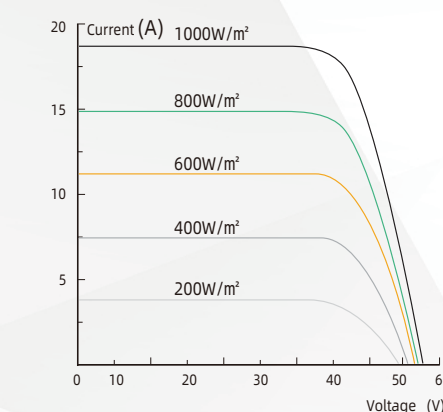
PPACKING CONFIGURATION

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

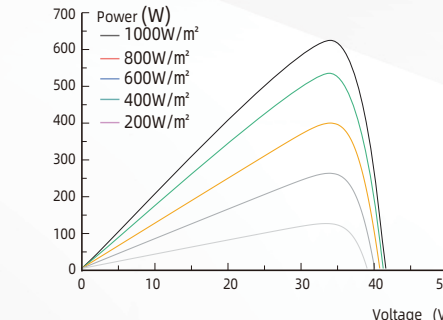
Module Dimension(mm)



Current-Voltage Curve (630W)

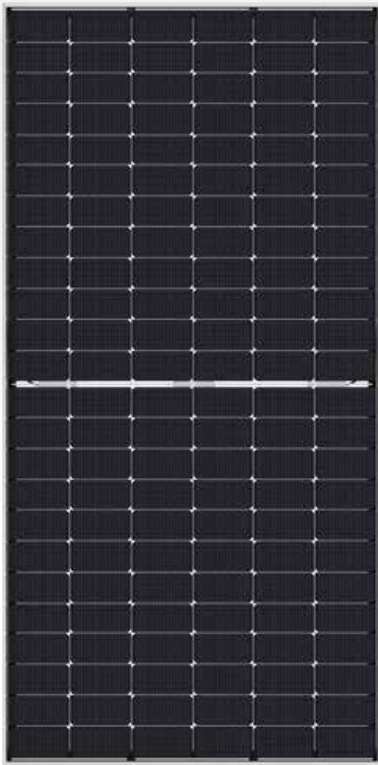


Power-Voltage Curve (630W)



- 0~±3%**
Guaranteed 0~±3% 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 the 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





HRAP-144HBD 560-580M10

N-TOPCon Technology

22.45%

Maximum Module Efficiency

580W

Maximum Power Output

Power Shorting Tolerance:0~+3W

2278×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class C according to UL790

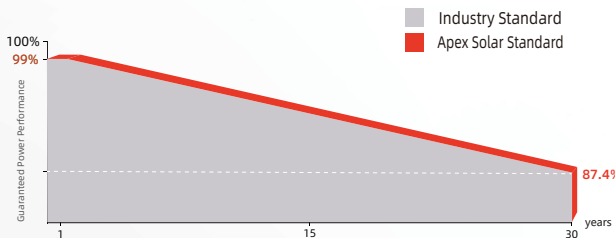
ISO 9001 :Quality Management System

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Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty



0~±3%

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High customer value

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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 the 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

HRAP-144HBD 560-580M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	560	565	570	575	580
Maximum Power Voltage(Vmp) [V]	41.95	42.14	42.29	42.44	42.59
Maximum Power Current(Imp) [A]	13.35	13.41	13.48	13.55	13.62
Open Circuit Voltage(Voc) [V]	50.67	50.87	51.07	51.27	51.47
Short Circuit Current(Isc) [A]	14.13	14.19	14.25	14.31	14.37
Module Efficiency [%]	21.68	21.87	22.07	22.26	22.45

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	421	425	429	432	436
Maximum Power Voltage(Vmp) [V]	39.39	39.52	39.65	39.78	39.87
Maximum Power Current(Imp) [A]	10.69	10.75	10.81	10.87	10.94
Open Circuit Voltage(Voc) [V]	48.13	48.32	48.51	48.70	48.89
Short Circuit Current(Isc) [A]	11.41	11.46	11.50	11.55	11.60

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

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	144(2×72)
Weight	32kg(±3%)
Module Dimensions	2278×1134×30mm
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

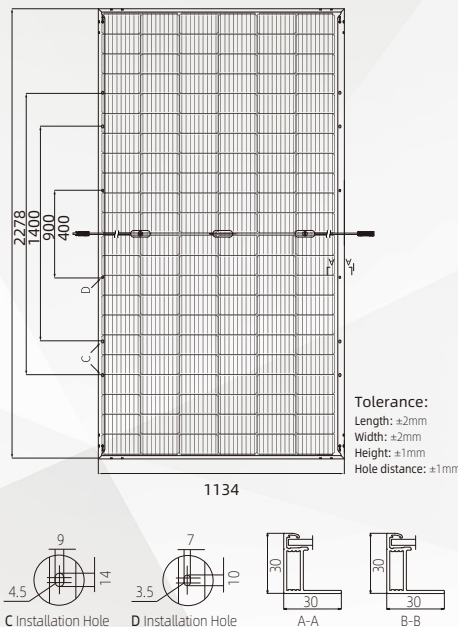
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	30A

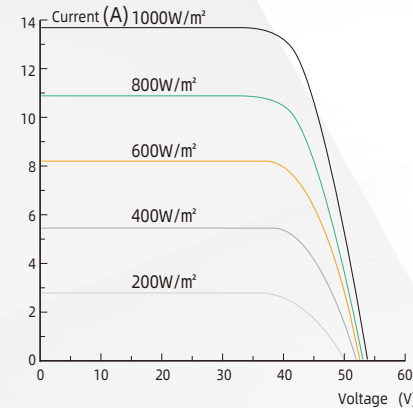
PPACKING CONFIGURATION

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

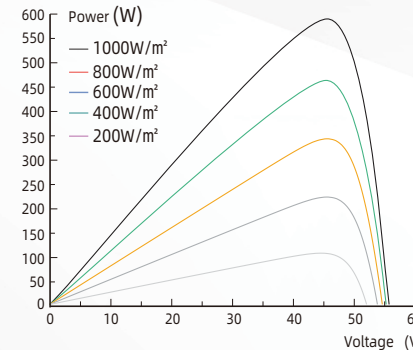
Module Dimension(mm)



Current-Voltage Curve (580W)



Power-Voltage Curve (580W)





HRAP-156HBD 605-625M10

N-TOPCon Technology

22.36%

Maximum Module Efficiency

625W

Maximum Power Output

Power Shorting Tolerance:0~+3W

2465×1134×30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class C according to UL790

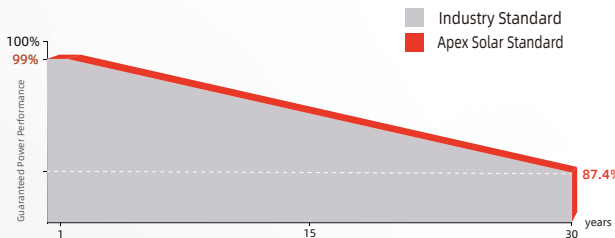
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty



0~±3%

Guaranteed 0~±3% 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 the 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

HRAP-156HBD 605-625M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	605	610	615	620	625
Maximum Power Voltage(Vmp) [V]	45.42	45.60	45.77	45.93	46.10
Maximum Power Current(Imp) [A]	13.32	13.38	13.44	13.50	13.56
Open Circuit Voltage(Voc) [V]	55.17	55.31	55.44	55.58	55.72
Short Circuit Current(Isc) [A]	13.95	14.03	14.11	14.19	14.27
Module Efficiency [%]	21.64	21.82	22.00	22.18	22.36

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	455	459	462	466	470
Maximum Power Voltage(Vmp) [V]	42.23	42.35	42.46	42.57	42.68
Maximum Power Current(Imp) [A]	10.77	10.83	10.89	10.95	11.01
Open Circuit Voltage(Voc) [V]	52.41	52.54	52.66	52.79	52.93
Short Circuit Current(Isc) [A]	11.26	11.33	11.39	11.46	11.52

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

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
C ell Dimensions	182×182mm
Cell Arrangement	156(2×78)
Weight	34.6kg(±3%)
Module Dimensions	2465×1134×30mm
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

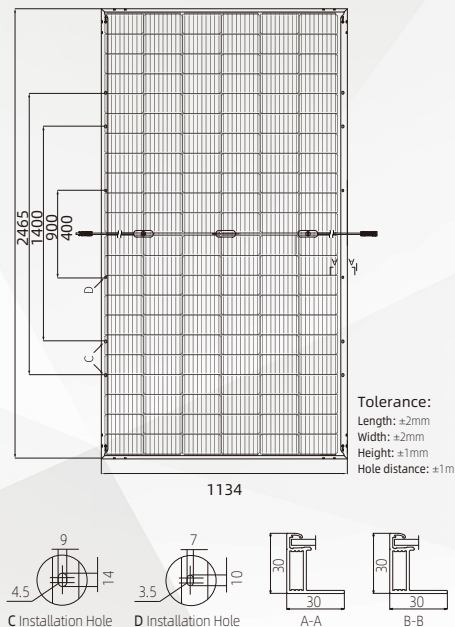
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	30A

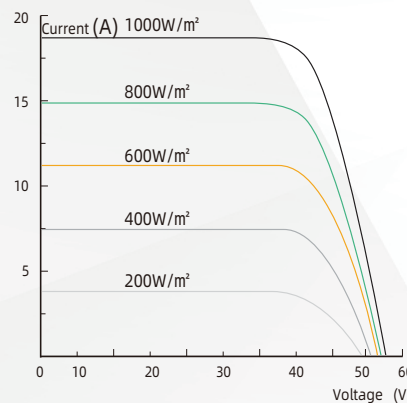
PPACKING CONFIGURATION

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

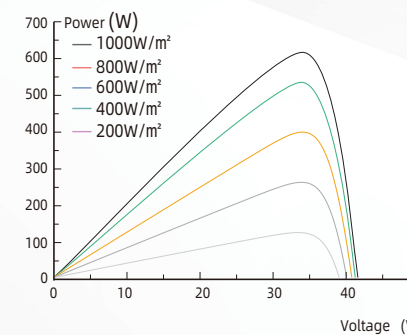
Module Dimension(mm)

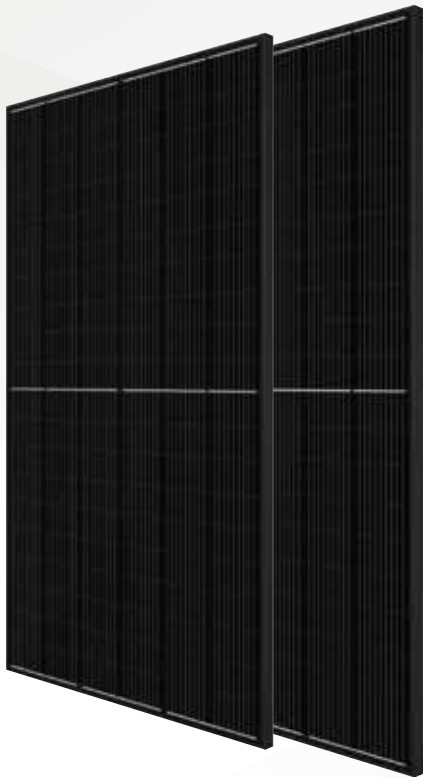


Current-Voltage Curve (625W)



Power-Voltage Curve (625W)





HRAP-108H 410-425M10

N-TOPCon Technology

21.76%
Maximum Module Efficiency

425W
Maximum Power Output

Power Shorting Tolerance:0~+3W

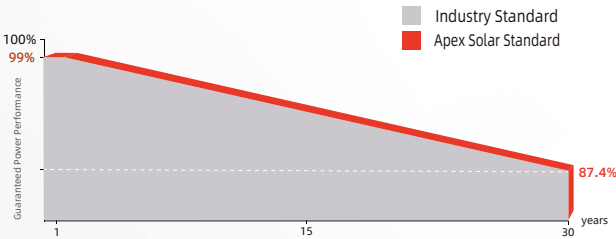
1722×1134×30mm
Module Dimensions

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



Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty

HRAP-108H 410-425M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	410	415	420	425
Maximum Power Voltage(Vmp) [V]	31.13	31.32	31.51	31.70
Maximum Power Current(Impp) [A]	13.17	13.25	13.33	13.41
Open Circuit Voltage(Voc) [V]	37.73	37.92	38.11	38.30
Short Circuit Current(Isc) [A]	13.91	13.99	14.07	14.15
Module Efficiency [%]	21.00	21.25	21.51	21.76

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	308	312	316	320
Maximum Power Voltage(Vmp) [V]	29.06	29.21	29.34	29.50
Maximum Power Current(Impp) [A]	10.61	10.68	10.76	10.83
Open Circuit Voltage(Voc) [V]	35.84	36.02	36.20	36.38
Short Circuit Current(Isc) [A]	11.23	11.29	11.36	11.42

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(2×54)
Weight	22kg(±3%)
Module Dimensions	1722×1134×30mm
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 Photovoltaic Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

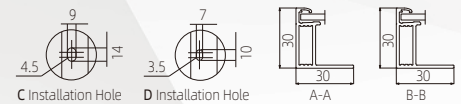
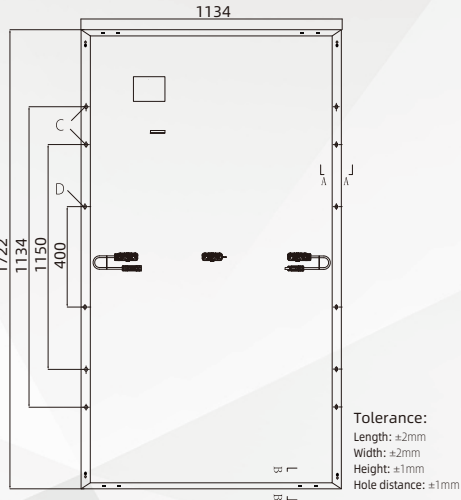
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

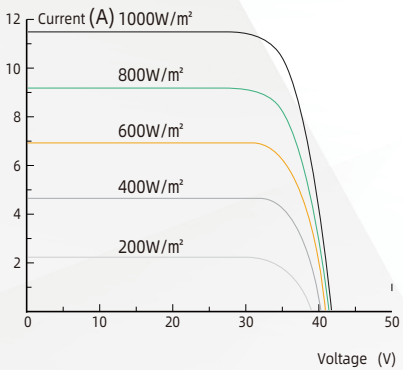
PPACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	936pcs/40HQ

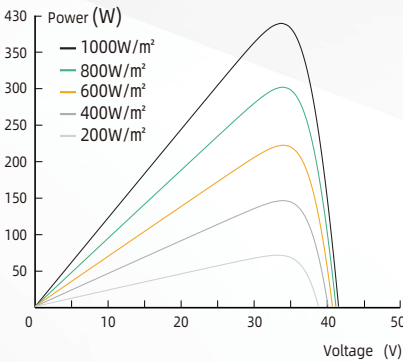
Module Dimension(mm)

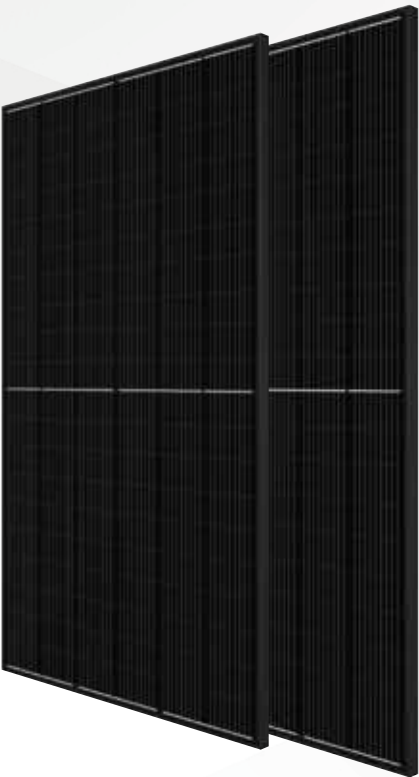


Current-Voltage Curve 425W)



Power-Voltage Curve (425W)





HRAP-120H 460-475M10

N-TOPCon Technology

22.01%
Maximum Module Efficiency

475W
Maximum Power Output

Power Shorting Tolerance:0~+3W

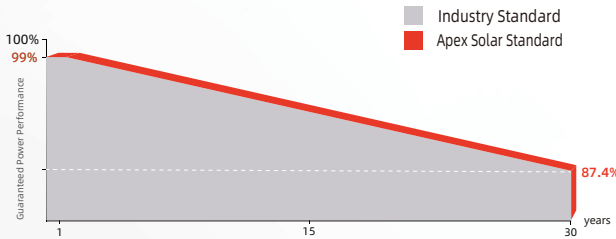
1903×1134×30mm
Module Dimensions

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



Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty

HRAP-120H 460-475M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	460	465	470	475
Maximum Power Voltage(Vmp) [V]	34.72	34.89	35.05	35.21
Maximum Power Current(Imp) [A]	13.25	13.33	13.41	13.49
Open Circuit Voltage(Voc) [V]	42.05	42.22	42.38	42.54
Short Circuit Current(Isc) [A]	13.99	14.07	14.15	14.23
Module Efficiency [%]	21.32	21.55	21.78	22.01

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
Maximum Power Voltage(Vmp) [V]	32.60	32.77	32.94	33.10
Maximum Power Current(Imp) [A]	10.61	10.67	10.73	10.79
Open Circuit Voltage(Voc) [V]	39.94	40.10	40.25	40.41
Short Circuit Current(Isc) [A]	11.29	11.36	11.42	11.49

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(2×60)
Weight	24.2kg(±3%)
Module Dimensions	1903×1134×30mm
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

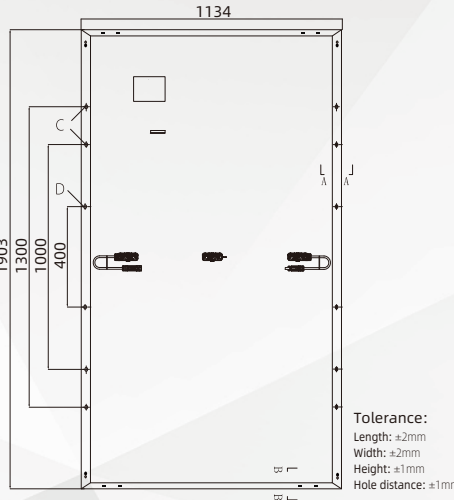
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

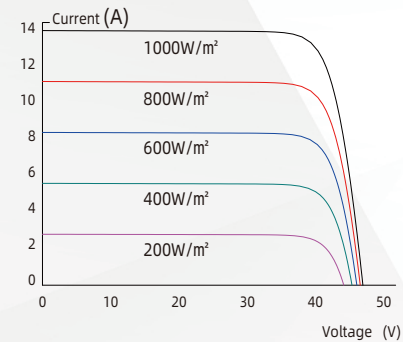
PPACKING CONFIGURATION

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

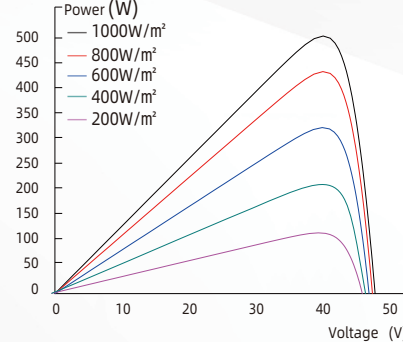
Module Dimension(mm)

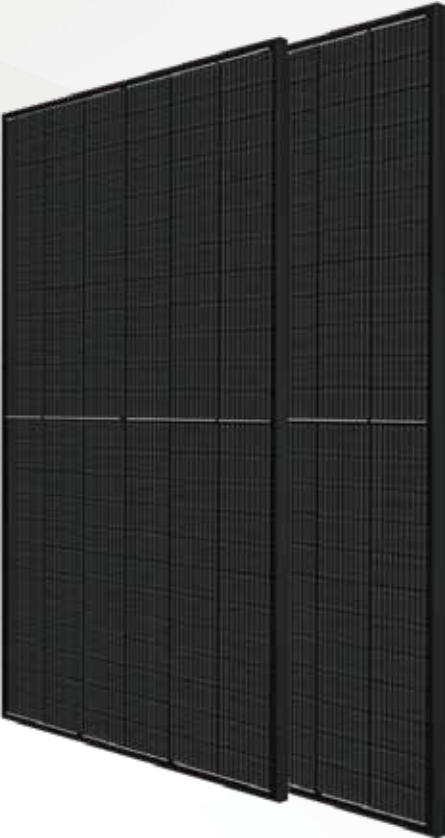


Current-Voltage Curve (475W)



Power-Voltage Curve (475W)





HRAP-144H 565-580M10

N-TOPCon Technology

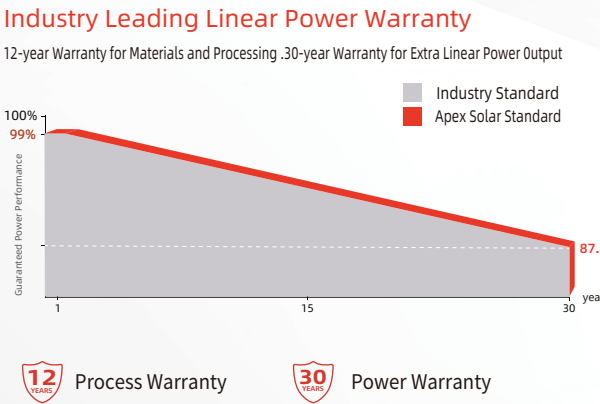
22.45%
Maximum Module Efficiency

580W
Maximum Power Output

Power Shorting Tolerance:0~+3W

2278×1134×35mm
Module Dimensions

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



- 0~±3%**
Guaranteed 0~±3% 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 the 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

HRAP-144H 565-580M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	565	570	575	580
Maximum Power Voltage(Vmp) [V]	41.92	42.07	42.22	42.37
Maximum Power Current(Imp) [A]	13.48	13.55	13.62	13.69
Open Circuit Voltage(Voc) [V]	50.60	50.74	50.88	51.02
Short Circuit Current(Isc) [A]	14.23	14.31	14.39	14.47
Module Efficiency [%]	21.87	22.07	22.26	22.45

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	425	429	432	436
Maximum Power Voltage(Vmp) [V]	39.38	39.51	39.60	39.69
Maximum Power Current(Imp) [A]	10.79	10.85	10.92	10.99
Open Circuit Voltage(Voc) [V]	48.06	48.20	48.33	48.46
Short Circuit Current(Isc) [A]	11.49	11.55	11.62	11.68

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(2×72)
Weight	28kg(±3%)
Module Dimensions	2278×1134×35mm
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

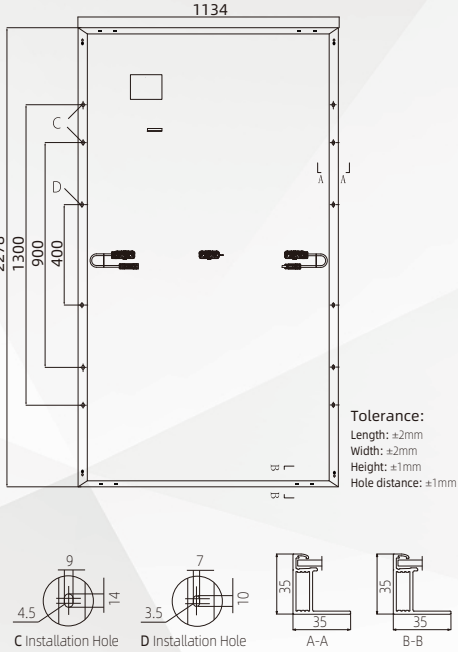
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

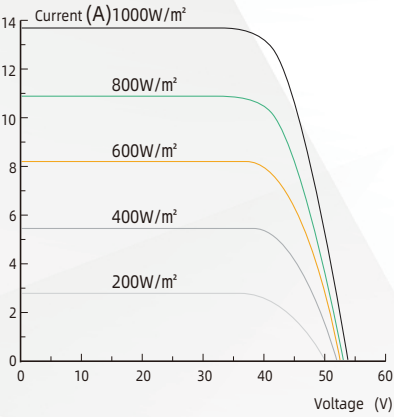
PPACKING CONFIGURATION

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

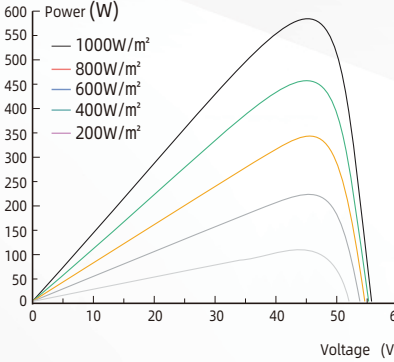
Module Dimension(mm)

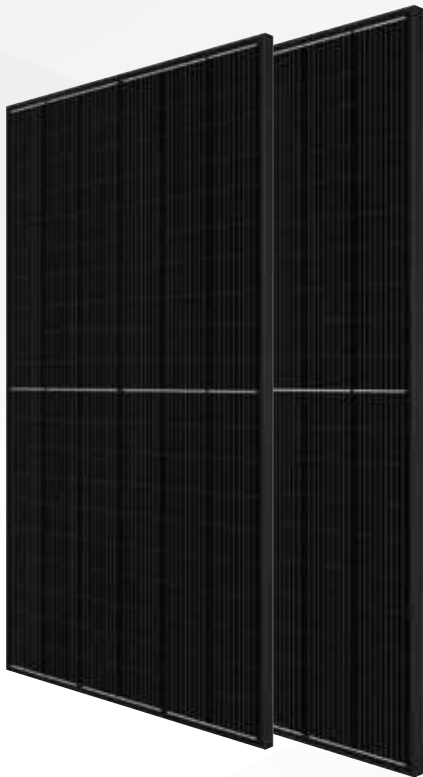


Current-Voltage Curve (580W)



Power-Voltage Curve (580W)





HRAP-156H 610-625M10

N-TOPCon Technology

22.36%
Maximum Module Efficiency

625W
Maximum Power Output

Power Shorting Tolerance:0~+3W

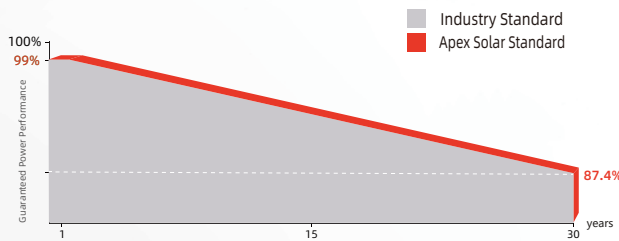
2465×1134×35mm
Module Dimensions

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



Industry Leading Linear Power Warranty

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



12 YEARS Process Warranty

30 YEARS Power Warranty

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	610	615	620	625
Maximum Power Voltage(Vmp) [V]	45.59	45.69	45.79	45.92
Maximum Power Current(Imp) [A]	13.38	13.46	13.54	13.61
Open Circuit Voltage(Voc) [V]	55.25	55.40	55.55	55.70
Short Circuit Current(Isc) [A]	14.11	14.18	14.25	14.32
Module Efficiency [%]	21.82	22.00	22.18	22.36
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
Maximum Power Voltage(Vmp) [V]	42.28	42.39	42.50	42.61
Maximum Power Current(Imp) [A]	10.85	10.91	10.97	11.03
Open Circuit Voltage(Voc) [V]	52.48	52.62	52.77	52.91
Short Circuit Current(Isc) [A]	11.39	11.45	11.50	11.56
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

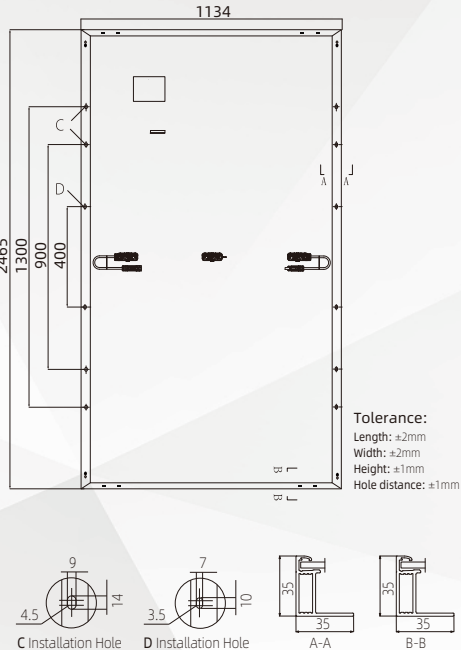
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

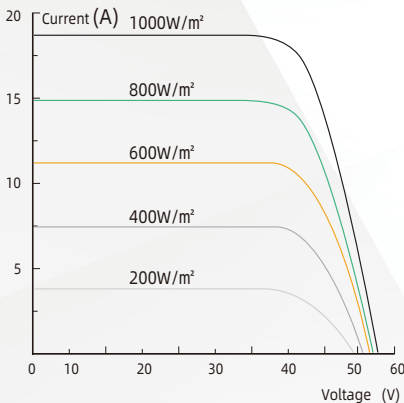
PPACKING CONFIGURATION

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

Module Dimension(mm)



Current-Voltage Curve (625W)



Power-Voltage Curve (625W)

