iNFO GROUP GLOBAL

HT-SAAE

CREATING THE FUTURE BY HEART

2023

CATALOGUE

Silicon
Wafers
Solar Cells
PV Modules
PV Systems
ORISI Silicon Co.,Ltd
Shanghai Shenzhou New Energy Development Co., Ltd
Lianyungang Shenzhou New Energy Co., Ltd
Shanghai Solar Energy S&T Co., Ltd
HT Solar Energy Joint Stock Company

HT-SAAE

INFO GROUP GLOBAL

HT Solar Energy J.S.C was established in 2016, İstanbul, Turkey as subcompany of HT-SAAE which established in 1998 and listed on Shanghai Stock Exchange as state owned company. HT Solar operates **in area of 32.000 m² with approximately 400 employees with annual solar module production capacity of 1.2 GW İstanbul, Turkey Factory.**

HT Solar Energy supplies solar models to USA, Turkey, Europe, and the Middle East Markets as a member of PV Cycle and was included in ISO 500 and Fortune Turkey 500 lists for many years (Top 500 companies in Turkey).

HT-SAAE has been recognized for many years as a 'Tier 1' Module Manufacturer by Bloomberg New Energy Finance (BNEF). Also, the last published BNEF bankability report showed that HT-Solar increase its PV module bankability all around the world.

HT-SAAE has been chosen as a "Top Performer Manufacturer" by PV Evolution Labs (PVEL) in 2020 & 2021 & 2022 PV Module Reliability Scorecard as only solar module manufacturer from Turkey with its **solar panels produced in İstanbul/Turkey.**

Since its inception, HT Solar has supplied solar modules globally more than 6 GW. Having with strong financial status, high capacity and high quality production, HT Solar is continue to supply solar modules to United States and many projects in all over the world.

HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT60-166M

High Efficiency Low LID and PERC cell with Half-cut Technology Big Size: Cell 166mm×83mm Monocrystalline

370W / 375W
380W / 385W / 390W

- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- 9BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance white backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.4%
- No.of Cells
  120(6 × 20)
- Weight
  20.0kg
- Dimensions
  1755mm × 1038mm × 35mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT60-166M				
Maximum Power at STC (Pmax)	370W	375W	380W	385W	390W
Open - Circuit Voltage (Voc)	41.5V	41.6V	41.7V	41.8V	41.9V
Short - Circuit Current (Isc)	11.72A	11.85A	11.98A	12.12A	12.25A
Optimum Operating Voltage (Vmp)	34.1V	34.2V	34.6V	34.7V	34.8V
Optimum Operating Current (Imp)	10.86A	10.98A	10.99A	11.10A	11.21A
Module efficiency	20.3%	20.6%	20.9%	21.2%	21.4%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 C to +85 C				

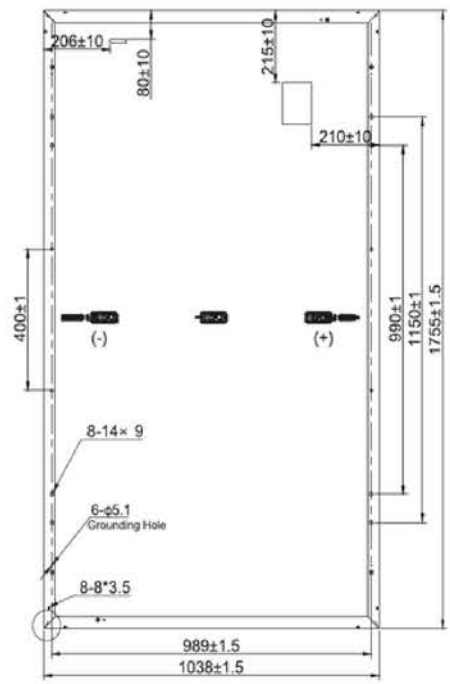
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT60-166M				
Maximum Power	274W	278W	281W	286W	290W
Open - Circuit Voltage (Voc)	39.2V	39.3V	39.4V	39.3V	39.5V
Short - Circuit Current (Isc)	9.46A	9.57A	9.67A	9.55A	9.62A
Maximum Power Voltage (Vmp)	32.2V	32.3V	32.4V	33.2V	33.4V
Maximum Circuit Current (Imp)	8.51A	8.61A	8.67A	8.61A	8.68A
NMOT	45±2 C				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



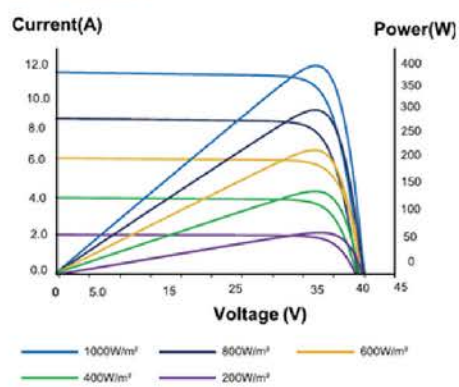
Mechanical Characteristics

Solar Cells	Monocrystalline 166 ×83mm
No.of Cells	120(6 × 20)
Dimensions	1755mm × 1038mm × 35mm
Weight	20.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 858pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

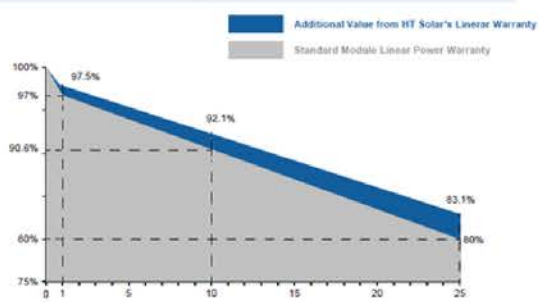


Warranty

12 - years
product warranty

25- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

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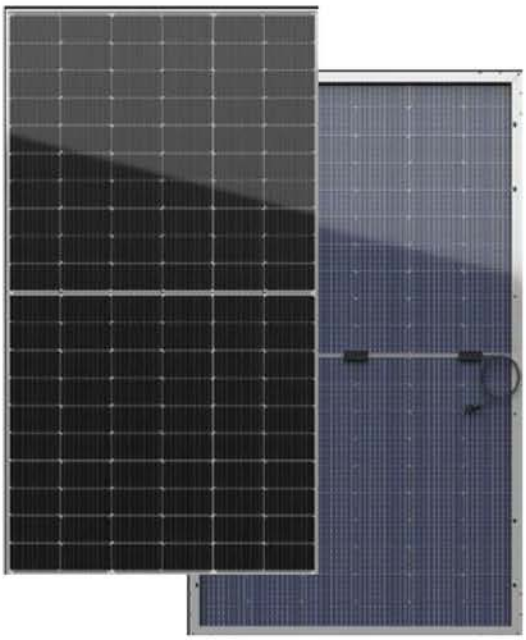
HT60-166M Transparent

High Efficiency Low LID and Bifacial cell with Half-cut Technology
Big Size: Cell 166mm×83mm Monocrystalline

370W / 375W
380W / 385W / 390W



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microcrack resistant high performance Transparent backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
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- No.of Cells
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- Weight
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- Dimensions
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Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 C to +85 C				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT60-166M(Bifaciality 70±5%)				
Maximum Power	274W	278W	281W	286W	290W
Open - Circuit Voltage (Voc)	39.2V	39.3V	39.4V	39.3V	39.5V
Short - Circuit Current (Isc)	9.46A	9.57A	9.67A	9.55A	9.62A
Maximum Power Voltage (Vmp)	32.2V	32.3V	32.4V	33.2V	33.4V
Maximum Circuit Current (Imp)	8.51A	8.61A	8.67A	8.61A	8.68A
NMOT	45±2 C				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Mechanical Characteristics

Solar Cells	Monocrystalline 166 ×83mm
No.of Cells	120(6 × 20)
Dimensions	1755mm × 1038mm × 35mm
Weight	20.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 858pcs / 40'HQ container

Temperature Characteristics

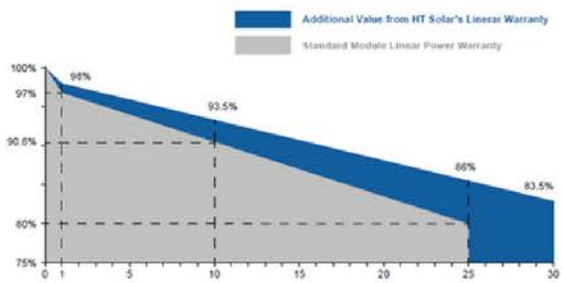
Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

Warranty

12 - years
product warranty

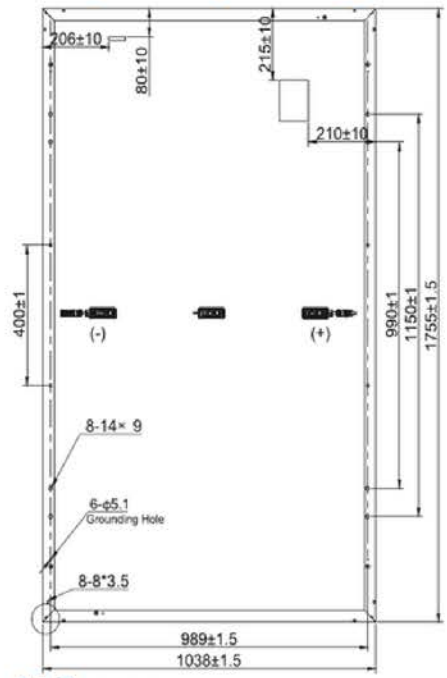
30- years
warranty on power output

Specific information is referred to the product quality guarantee

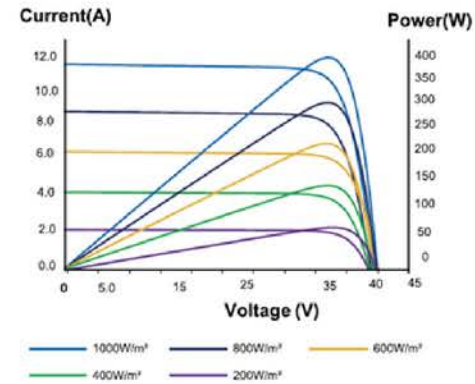


The module recycling should be carried out by the professional institutions at the end of module life cycle

Engineering Drawing



IV Curves



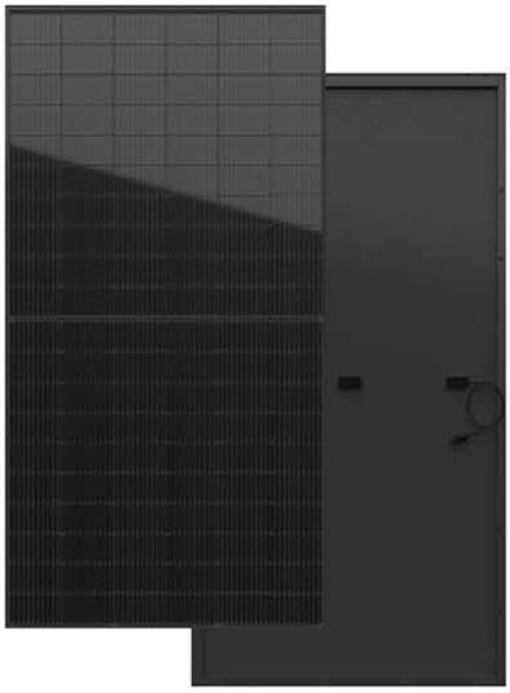
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT60-166M Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 166mm×83mm Monocrystalline

370W / 375W
380W / 385W / 390W



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12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Black backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.4%
- No.of Cells
  120(6 × 20)
- Weight
  20.0kg
- Dimensions
  1755mm × 1038mm × 35mm

Comprehensive and First-rate Certification System

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Electrical Characteristics

Module	HT60-166M				
Maximum Power at STC (Pmax)	370W	375W	380W	385W	390W
Open - Circuit Voltage (Voc)	41.5V	41.6V	41.7V	41.8V	41.9V
Short - Circuit Current (Isc)	11.72A	11.85A	11.98A	12.12A	12.25A
Optimum Operating Voltage (Vmp)	34.1V	34.2V	34.6V	34.7V	34.8V
Optimum Operating Current (Imp)	10.86A	10.98A	10.99A	11.10A	11.21A
Module efficiency	20.3%	20.6%	20.9%	21.2%	21.4%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃ to +85 ℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT60-166M				
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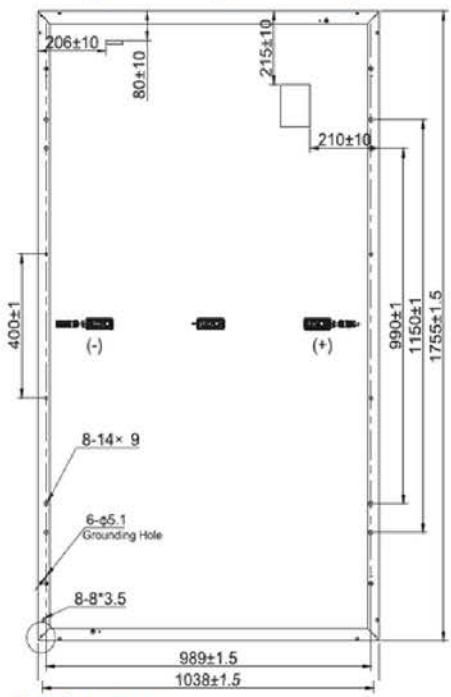
Maximum Power Voltage (Vmp)	32.2V	32.3V	32.4V	33.2V	33.4V
Maximum Circuit Current (Imp)	8.51A	8.61A	8.67A	8.61A	8.68A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



Mechanical Characteristics

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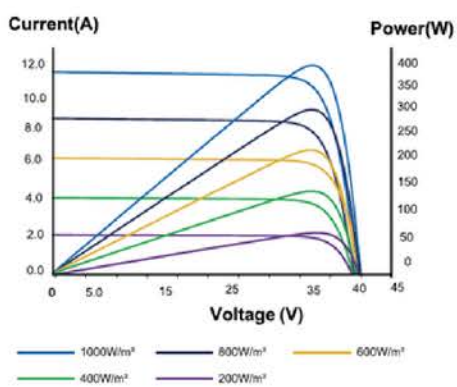
IV Curves



Warranty

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25- years
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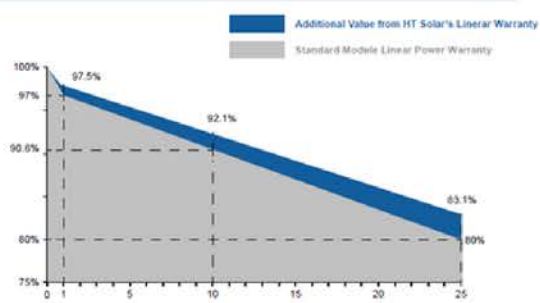

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HT-SAAE INFO GROUP GLOBAL

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HT66-166M

High Efficiency Low LID and PERC cell with Half-cut Technology Big Size: Cell 166mm×83mm Monocrystalline

400W / 405W
410W / 415W / 420W

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warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.0%
- No.of Cells
  132(6 × 22)
- Weight
  21.5kg
- Dimensions
  1924mm × 1038mm × 35mm

Comprehensive and First-rate Certification System

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Electrical Characteristics

Module	HT66-166M				
Maximum Power at STC (Pmax)	400W	405W	410W	415W	420W
Open - Circuit Voltage (Voc)	45.5V	45.6V	45.7V	45.8V	45.5V
Short - Circuit Current (Isc)	11.54A	11.67A	11.80A	11.93A	11.77A
Optimum Operating Voltage (Vmp)	37.9V	38.0V	38.1V	38.2V	38.3V
Optimum Operating Current (Imp)	10.56A	10.66A	10.77A	10.88A	10.97A
Module efficiency	20.0%	20.3%	20.5%	20.8%	21.0%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃ to +85 ℃				

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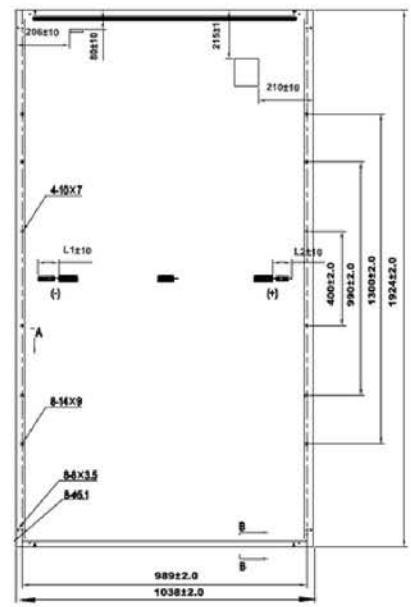
NMOT

Module	HT66-166M				
Maximum Power	298W	301W	305W	309W	314W
Open - Circuit Voltage (Voc)	42.94V	43.01V	43.06V	43.13V	43.20V
Short - Circuit Current (Isc)	9.39A	9.48A	9.58A	9.65A	9.72A
Maximum Power Voltage (Vmp)	35.10V	35.16V	35.26V	35.35V	35.44V
Maximum Circuit Current (Imp)	8.49A	8.56A	8.65A	8.74A	8.86A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



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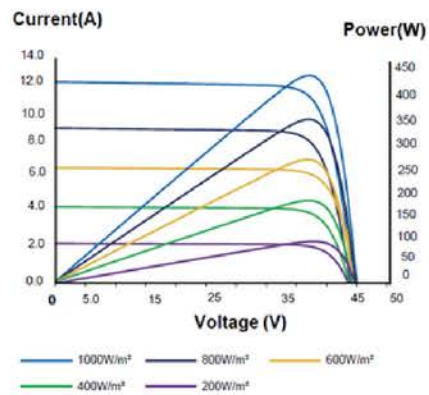

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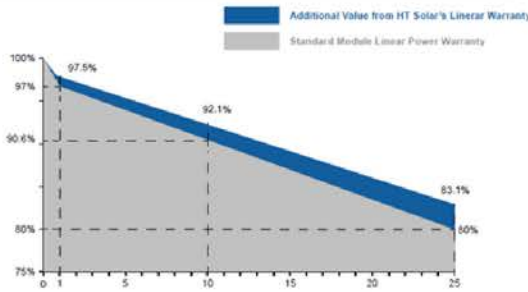

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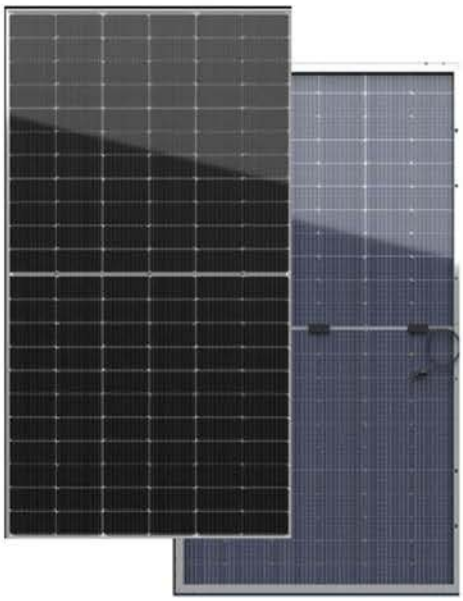

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Module efficiency	20.0%	20.3%	20.5%	20.8%	21.0%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃to +85 ℃				

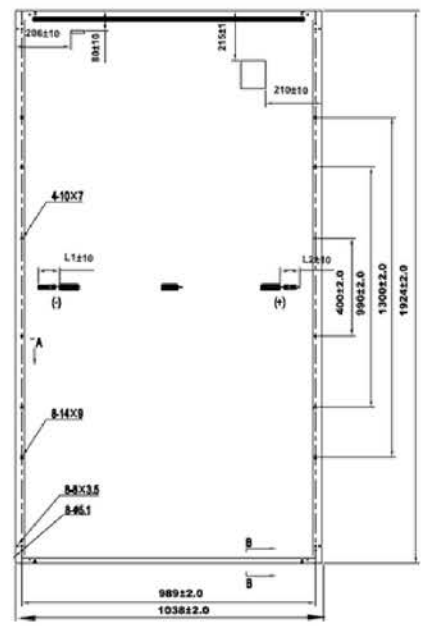
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT66-166M(Bifaciality 70±5%)				
Maximum Power	298W	301W	305W	309W	314W
Open - Circuit Voltage (Voc)	42.94V	43.01V	43.06V	43.13V	43.20V
Short - Circuit Current (Isc)	9.39A	9.48A	9.58A	9.65A	9.72A
Maximum Power Voltage (Vmp)	35.10V	35.16V	35.26V	35.35V	35.44V
Maximum Circuit Current (Imp)	8.49A	8.56A	8.65A	8.74A	8.86A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



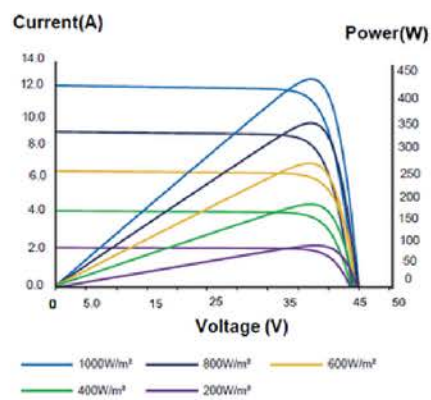
Mechanical Characteristics

Solar Cells	Monocrystalline 166 × 83mm
No.of Cells	132 (6 × 22)
Dimensions	1924mm × 1038mm × 35mm
Weight	21.5kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box,792pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

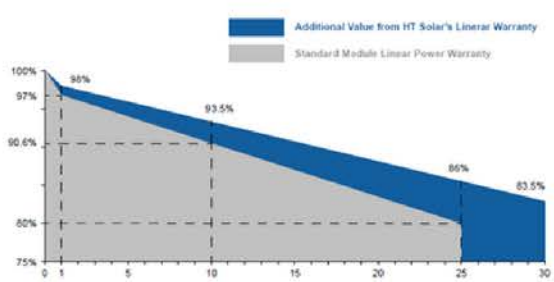


Warranty

12 - years
product warranty

30- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

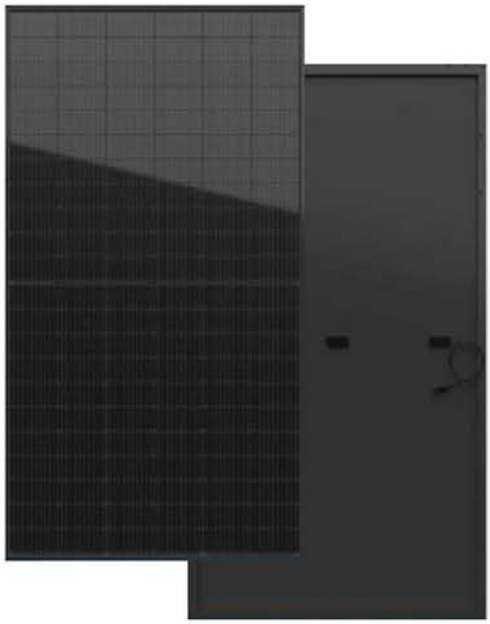
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT66-166M Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 166mm×83mm Monocrystalline

400W / 405W
410W / 415W / 420W



- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- 9BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Black backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.0%
- No.of Cells
  132(6 × 22)
- Weight
  21.5kg
- Dimensions
  1924mm × 1038mm × 35mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT66-166M				
Maximum Power at STC (Pmax)	400W	405W	410W	415W	420W
Open - Circuit Voltage (Voc)	45.5V	45.6V	45.7V	45.8V	45.5V
Short - Circuit Current (Isc)	11.54A	11.67A	11.80A	11.93A	11.77A
Optimum Operating Voltage (Vmp)	37.9V	38.0V	38.1V	38.2V	38.3V
Optimum Operating Current (Imp)	10.56A	10.66A	10.77A	10.88A	10.97A
Module efficiency	20.0%	20.3%	20.5%	20.8%	21.0%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃to +85 ℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT66-166M				
Maximum Power	298W	301W	305W	309W	314W
Open - Circuit Voltage (Voc)	42.94V	43.01V	43.06V	43.13V	43.20V
Short - Circuit Current (Isc)	9.39A	9.48A	9.58A	9.65A	9.72A
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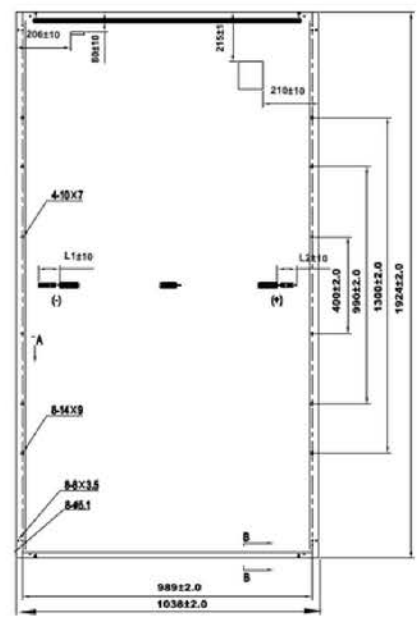
Maximum Circuit Current (Imp)	8.49A	8.56A	8.65A	8.74A	8.86A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



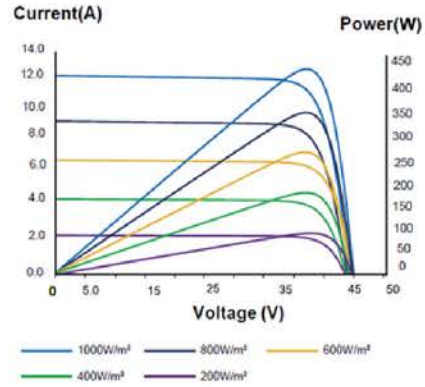
Mechanical Characteristics

Solar Cells	Monocrystalline 166 × 83mm
No.of Cells	132 (6 × 22)
Dimensions	1924mm × 1038mm × 35mm
Weight	21.5kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box,792pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

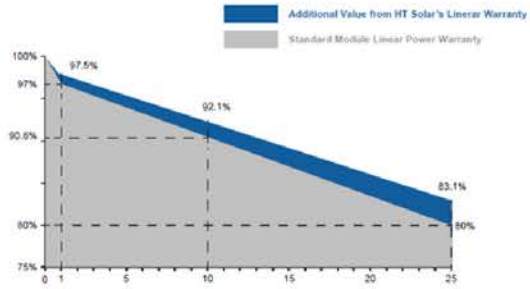


Warranty

12 - years
product warranty

25- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT72-166M

High Efficiency Low LID and PERC cell with Half-cut Technology

Big Size: Cell 166mm×83mm Monocrystalline

445W / 450W
455W / 460W / 465W

- Module Efficiency
  21.4%
- No.of Cells
  144 (6 × 24)
- Weight
  23.5kg
- Dimensions
  2094mm × 1038mm × 35mm

Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.

9BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption

Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs

Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)

All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+
Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT72-166M				
Maximum Power at STC (Pmax)	445W	450W	455W	460W	465W
Open - Circuit Voltage (Voc)	49.9V	50.0V	50.1V	50.2V	50.3V
Short - Circuit Current (Isc)	11.72A	11.83A	11.96A	12.06A	12.16A
Optimum Operating Voltage (Vmp)	41.00V	41.1V	41.4V	41.5V	41.60V
Optimum Operating Current (Imp)	10.86A	10.96A	10.99A	11.09A	11.18A
Module efficiency	20.5%	20.7%	20.9%	21.2%	21.4%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃ to +85 ℃				

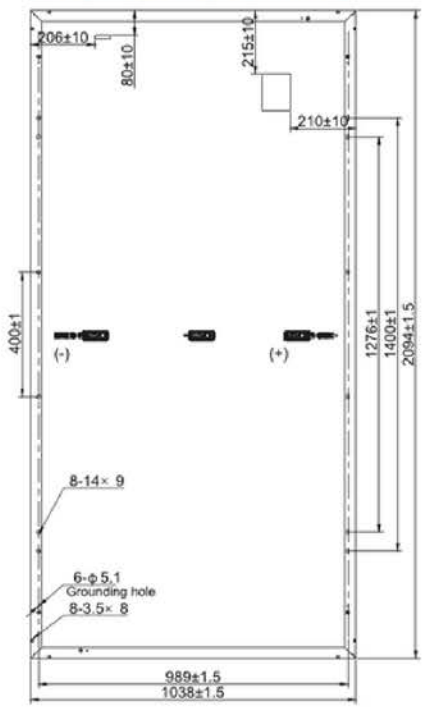
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT72-166M				
Maximum Power	329W	333W	337W	342W	346W
Open - Circuit Voltage (Voc)	47.1V	47.2V	47.3V	47.4V	47.5V
Short - Circuit Current (Isc)	9.44A	9.55A	9.66A	9.76A	9.87A
Maximum Power Voltage (Vmp)	38.7V	38.8V	38.9V	39.00V	39.1V
Maximum Circuit Current (Imp)	8.50A	8.58A	8.66A	8.74A	8.82A
NMOT	45±2 ℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



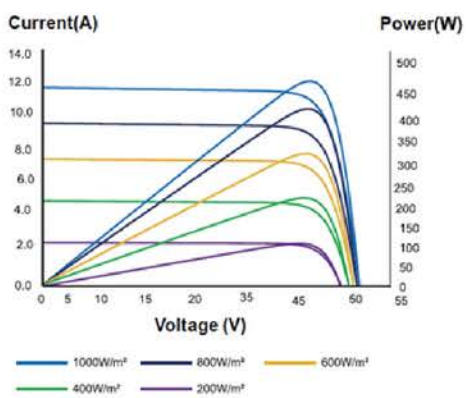
Mechanical Characteristics

Solar Cells	Monocrystalline 166 × 83mm
No.of Cells	144 (6 × 24)
Dimensions	2094mm × 1038mm × 35mm
Weight	23.5kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 726pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

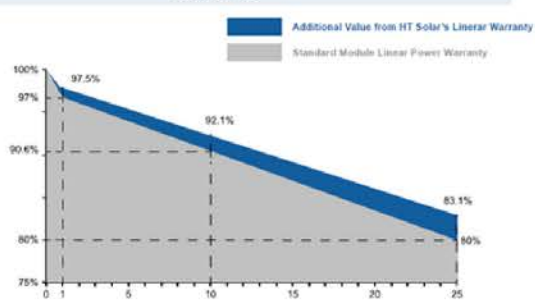


Warranty

12 - years
product warranty

25 - years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

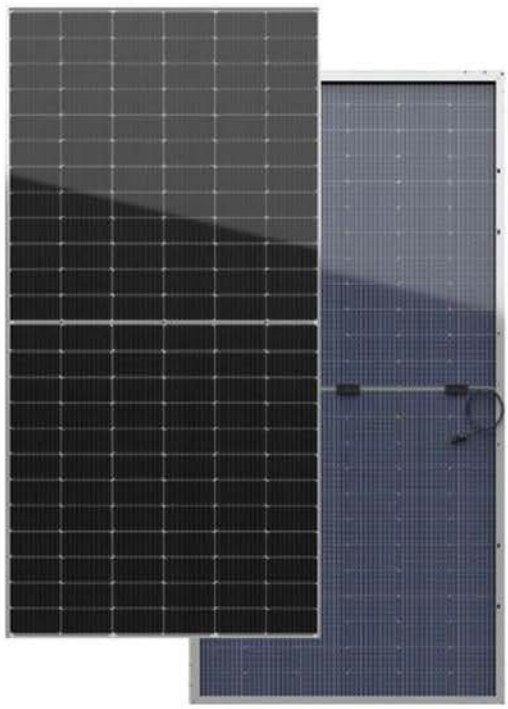
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT72-166M Transparent

High Efficiency Low LID and Bifacial cell with Half-cut Technology
Big Size: Cell 166mm×83mm Monocrystalline

445W / 450W
455W / 460W / 465W



- Module Efficiency
  21.4%
- No.of Cells
  144 (6 × 24)
- Weight
  23.5kg
- Dimensions
  2094mm × 1038mm × 35mm

Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.

9BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption

Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs

Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)

All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

30Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Transparent backsheet structure enhance reliability, triple EL tested of high quality control.

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

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Electrical Characteristics

Module	HT72-166M				
Maximum Power at STC (Pmax)	445W	450W	455W	460W	465W
Open - Circuit Voltage (Voc)	49.9V	50.0V	50.1V	50.2V	50.3V
Short - Circuit Current (Isc)	11.72A	11.83A	11.96A	12.06A	12.16A
Optimum Operating Voltage (Vmp)	41.00V	41.1V	41.4V	41.5V	41.60V
Optimum Operating Current (Imp)	10.86A	10.96A	10.99A	11.09A	11.18A
Module efficiency	20.5%	20.7%	20.9%	21.2%	21.4%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃to +85℃				

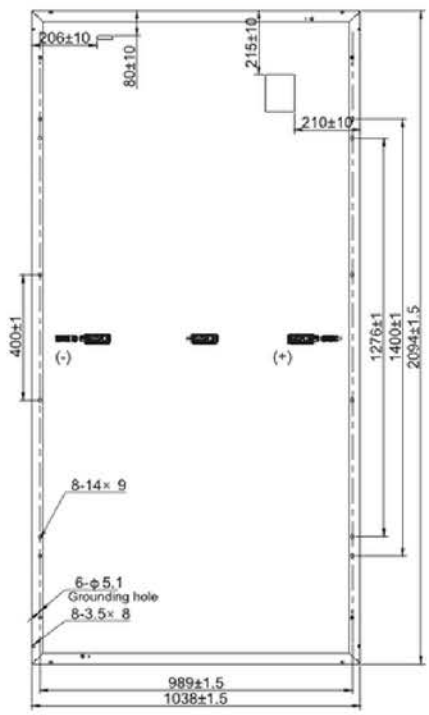
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT72-166M (Bifaciality 70±5%)				
Maximum Power	329W	333W	337W	342W	346W
Open - Circuit Voltage (Voc)	47.1V	47.2V	47.3V	47.4V	47.5V
Short - Circuit Current (Isc)	9.44A	9.55A	9.66A	9.76A	9.87A
Maximum Power Voltage (Vmp)	38.7V	38.8V	38.9V	39.00V	39.1V
Maximum Circuit Current (Imp)	8.50A	8.58A	8.66A	8.74A	8.82A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



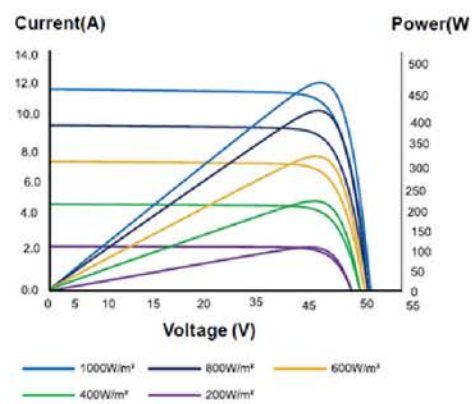
Mechanical Characteristics

Solar Cells	Monocrystalline 166 × 83mm
No.of Cells	144 (6 × 24)
Dimensions	2094mm × 1038mm × 35mm
Weight	23.5kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 726pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

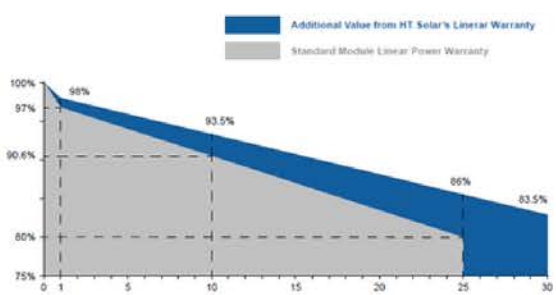


Warranty

12 - years
product warranty

30 - years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

HT-SAAE INFO GROUP GLOBAL

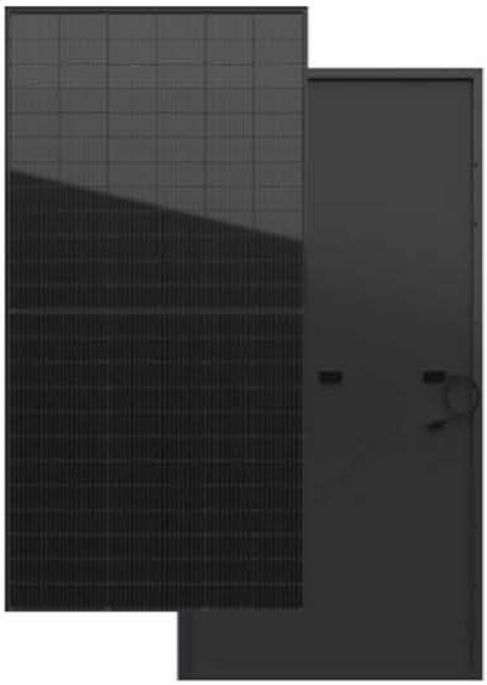
Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT72-166M Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology

Big Size: Cell 166mm× 83mm Monocrystalline

445W / 450W
455W / 460W / 465W



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12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Black backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.4%
- No.of Cells
  144 (6 × 24)
- Weight
  23.5kg
- Dimensions
  2094mm × 1038mm × 35mm

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IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT72-166M				
Maximum Power at STC (Pmax)	445W	450W	455W	460W	465W
Open - Circuit Voltage (Voc)	49.9V	50.0V	50.1V	50.2V	50.3V
Short - Circuit Current (Isc)	11.72A	11.83A	11.96A	12.06A	12.16A
Optimum Operating Voltage (Vmp)	41.00V	41.1V	41.4V	41.5V	41.60V
Optimum Operating Current (Imp)	10.86A	10.96A	10.99A	11.09A	11.18A
Module efficiency	20.5%	20.7%	20.9%	21.2%	21.4%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃ to +85℃				

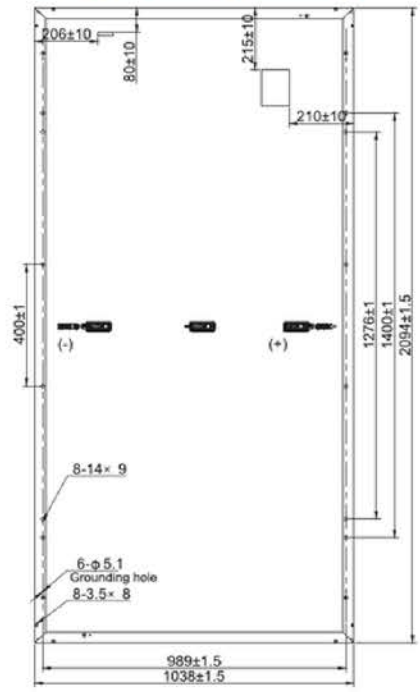
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT72-166M				
Maximum Power	329W	333W	337W	342W	346W
Open - Circuit Voltage (Voc)	47.1V	47.2V	47.3V	47.4V	47.5V
Short - Circuit Current (Isc)	9.44A	9.55A	9.66A	9.76A	9.87A
Maximum Power Voltage (Vmp)	38.7V	38.8V	38.9V	39.00V	39.1V
Maximum Circuit Current (Imp)	8.50A	8.58A	8.66A	8.74A	8.82A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



Mechanical Characteristics

Solar Cells	Monocrystalline 166 × 83mm
No.of Cells	144 (6 × 24)
Dimensions	2094mm × 1038mm × 35mm
Weight	23.5kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 726pcs / 40'HQ container

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Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
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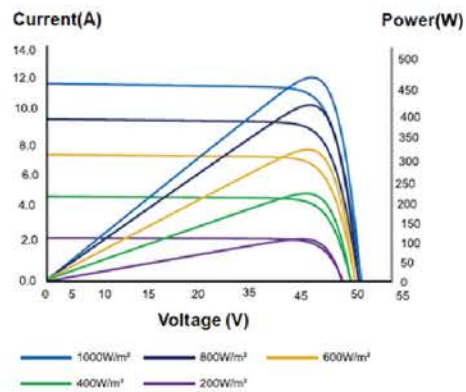
IV Curves

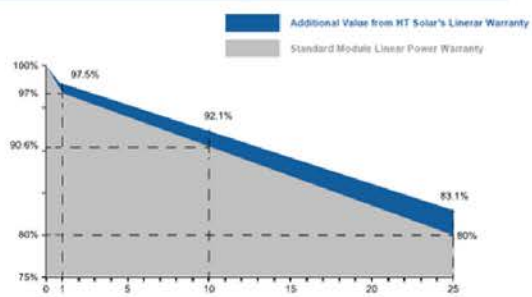


Warranty

12 - years
product warranty

25 - years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

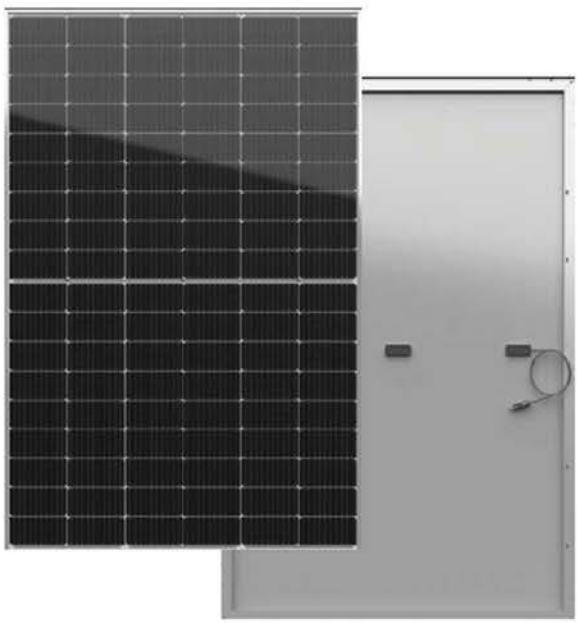
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT54-18X

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

400W / 405W
410W / 415W / 420W



- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- 10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.7%
- No.of Cells
  108(6 × 18)
- Weight
  21.0kg
- Dimensions
  1724mm × 1134mm × 30mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT54-18X				
Maximum Power at STC (Pmax)	400W	405W	410W	415W	420W
Open - Circuit Voltage (Voc)	37.05V	37.19V	37.33V	37.48V	37.63V
Short - Circuit Current (Isc)	13.83A	13.91A	13.98A	14.06A	14.14A
Optimum Operating Voltage (Vmp)	31.17V	31.31V	31.44V	31.60V	31.74V
Optimum Operating Current (Imp)	12.84A	12.95A	13.05A	13.14A	13.24A
Module efficiency	20.4%	20.7%	21.0%	21.2%	21.5%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 ℃to +85 ℃				

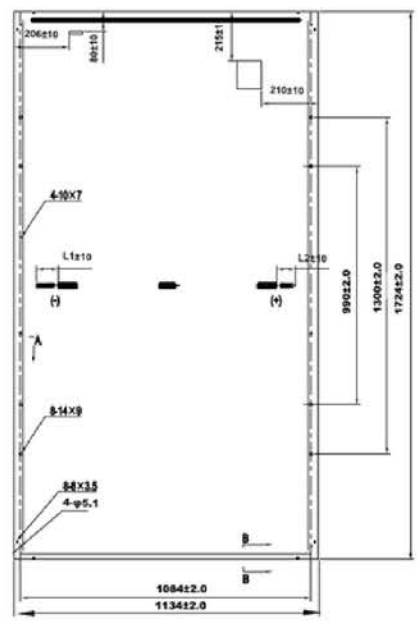
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT54-18X				
Maximum Power	297W	301W	305W	309W	312W
Open - Circuit Voltage (Voc)	35.12V	35.25V	35.38V	35.52V	35.67V
Short - Circuit Current (Isc)	11.17A	11.23A	11.28A	11.35A	11.41A
Maximum Power Voltage (Vmp)	29.55V	29.68V	29.80V	29.95V	30.08V
Maximum Circuit Current (Imp)	10.05A	10.14A	10.23A	10.32A	10.37A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



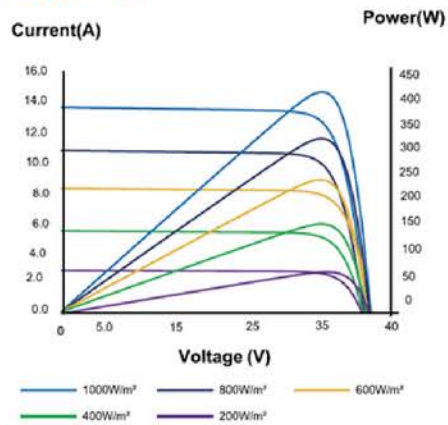
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	108(6 × 18)
Dimensions	1724mm × 1134mm × 30mm
Weight	21.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	36pcs / box, 936pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

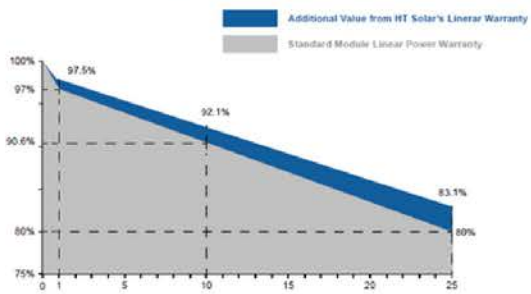


Warranty

12 - years
product warranty

25- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

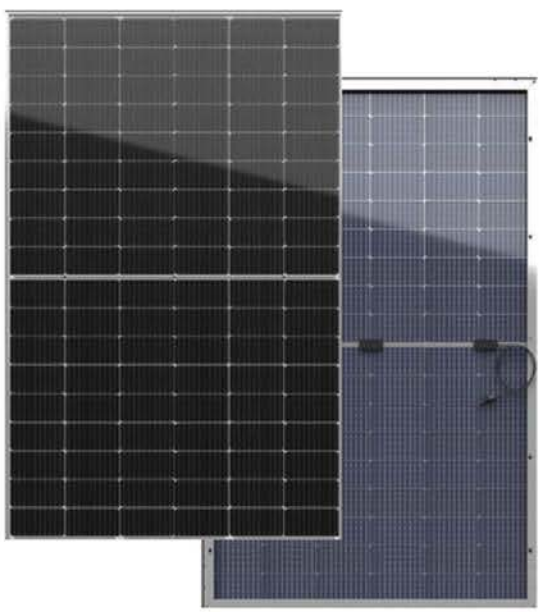
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT54-18X Transparent

High Efficiency Low LID and Bifacial cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

400W / 405W
410W / 415W / 420W



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12Ys
products

30Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Transparent backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.7%
- No.of Cells
  108(6 × 18)
- Weight
  21.0kg
- Dimensions
  1724mm × 1134mm × 30mm

Comprehensive and First-rate Certification System

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CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

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Electrical Characteristics

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Optimum Operating Current (Imp)	12.84A	12.95A	13.05A	13.14A	13.24A
Module efficiency	20.4%	20.7%	21.0%	21.2%	21.5%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 ℃ to +85 ℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT54-18X(Bifaciality 70±5%)				
Maximum Power	297W	301W	305W	309W	312W
Open - Circuit Voltage (Voc)	35.12V	35.25V	35.38V	35.52V	35.67V
Short - Circuit Current (Isc)	11.17A	11.23A	11.28A	11.35A	11.41A
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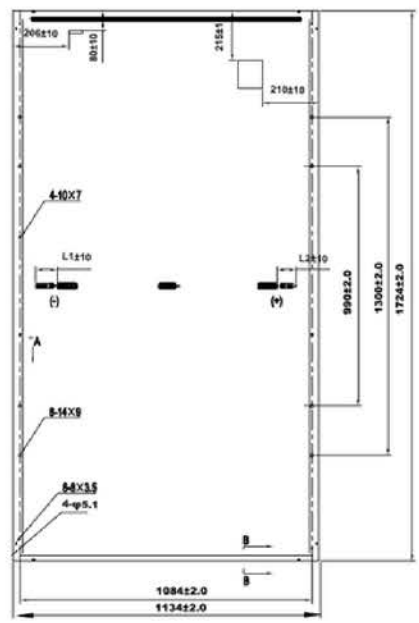
NMOT	45±2 ℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
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Weight	21.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
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Temperature Coefficient of Voc	-0.258%/℃
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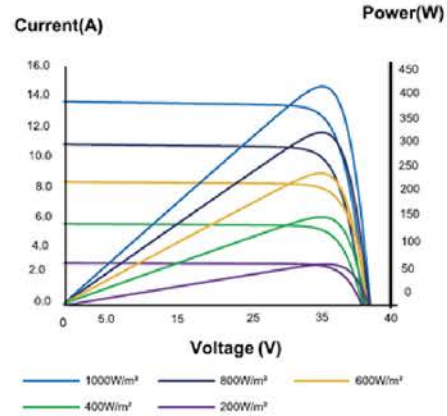
IV Curves

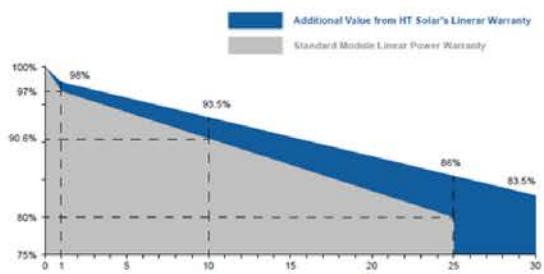


Warranty

12 - years
product warranty

30- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

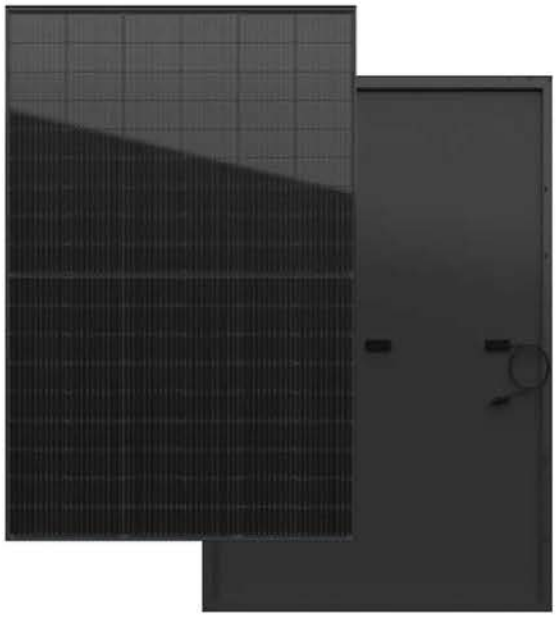
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT54-18X Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

400W / 405W
410W / 415W / 420W



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- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to withstand extreme wind (2400 Pa) and snow loads (5400 Pa)
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12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Black backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.7%
- No.of Cells
  108(6 × 18)
- Weight
  21.0kg
- Dimensions
  1724mm × 1134mm × 30mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT54-18X				
Maximum Power at STC (Pmax)	400W	405W	410W	415W	420W
Open - Circuit Voltage (Voc)	37.05V	37.19V	37.33V	37.48V	37.63V
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Optimum Operating Current (Imp)	12.84A	12.95A	13.05A	13.14A	13.24A
Module efficiency	20.4%	20.7%	21.0%	21.2%	21.5%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 ℃to +85 ℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT54-18X				
Maximum Power	297W	301W	305W	309W	312W
Open - Circuit Voltage (Voc)	35.12V	35.25V	35.38V	35.52V	35.67V
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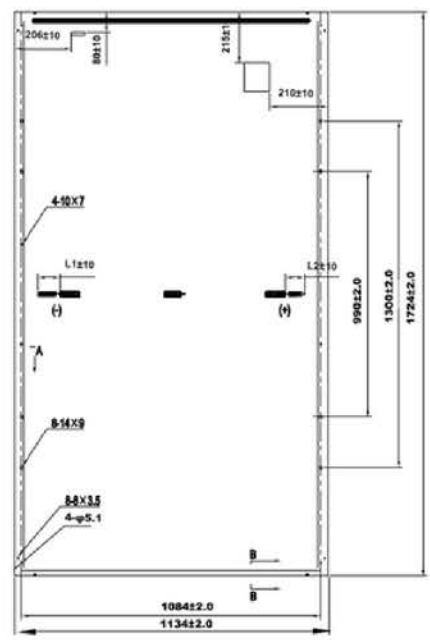
Maximum Circuit Current (Imp)	10.05A	10.14A	10.23A	10.32A	10.37A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
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Weight	21.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	36pcs / box, 936pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
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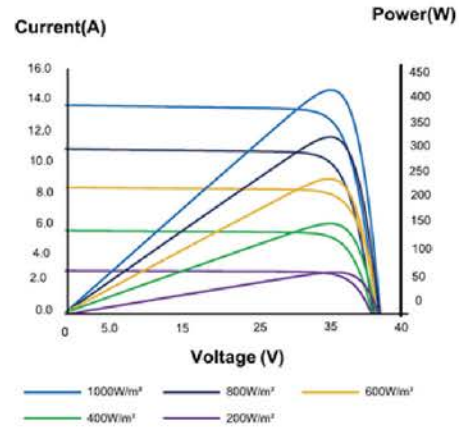
IV Curves

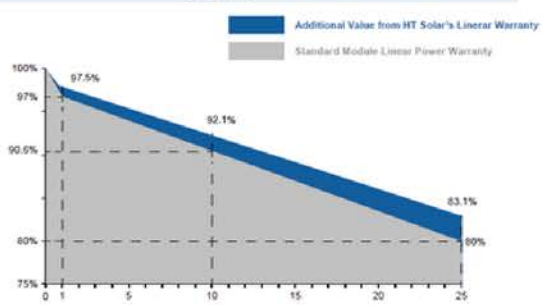


Warranty

12 - years
product warranty

25- years
warranty on power output

Specific information is referred to the product quality guarantee



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HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT60-18X

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

450W / 455W
460W / 465W / 470W

- Module Efficiency
  21.7%
- No.of Cells
  120(6 × 20)
- Weight
  23.0kg
- Dimensions
  1909mm × 1134mm × 30mm

Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.

10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption

Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs

Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)

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12Ys
products

25Ys
warranty on power output

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CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT60-18X				
Maximum Power at STC (Pmax)	450W	455W	460W	465W	470W
Open - Circuit Voltage (Voc)	41.33V	41.48V	41.63V	41.78V	41.93V
Short - Circuit Current (Isc)	13.90A	13.97A	14.04A	14.11A	14.18A
Optimum Operating Voltage (Vmp)	34.78V	34.93V	35.08V	35.23V	35.38V
Optimum Operating Current (Imp)	12.95A	13.04A	13.13A	13.22A	13.30A
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* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT60-18X				
Maximum Power	335W	338W	342W	346W	350W
Open - Circuit Voltage (Voc)	39.17V	39.31V	39.46V	39.60V	39.74V
Short - Circuit Current (Isc)	11.22A	11.27A	11.33A	11.39A	11.44A
Maximum Power Voltage (Vmp)	32.96V	33.11V	33.25V	33.39V	33.53V
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NMOT	45±2℃				

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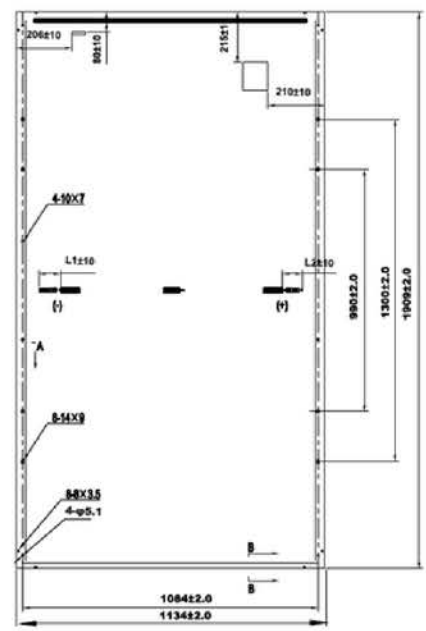
Engineering Drawing



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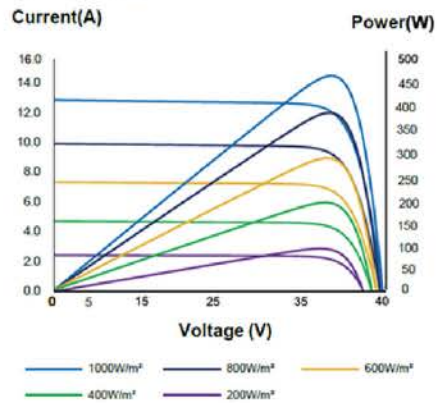

Warranty

12 - years
product warranty

25- years
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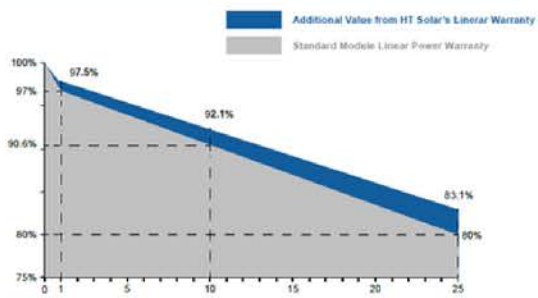

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450W / 455W
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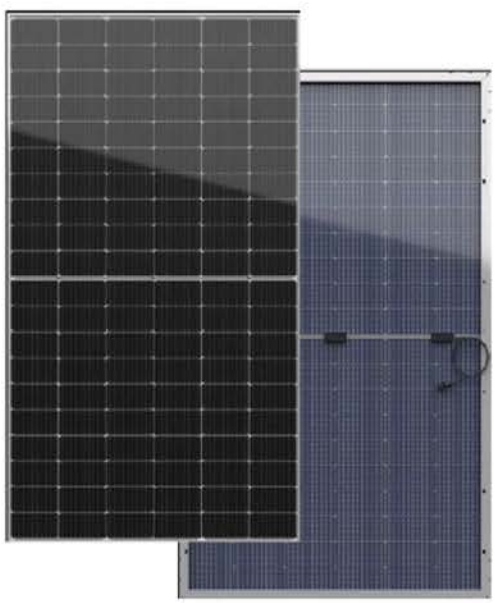

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Optional black frame or white frame module according to customer requirements

NMOT

Module	HT60-18X (Bifaciality 70±5%)				
Maximum Power	335W	338W	342W	346W	350W
Open - Circuit Voltage (Voc)	39.17V	39.31V	39.46V	39.60V	39.74V
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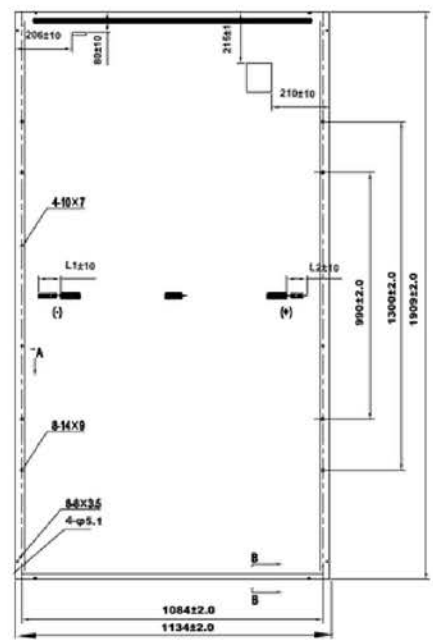
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



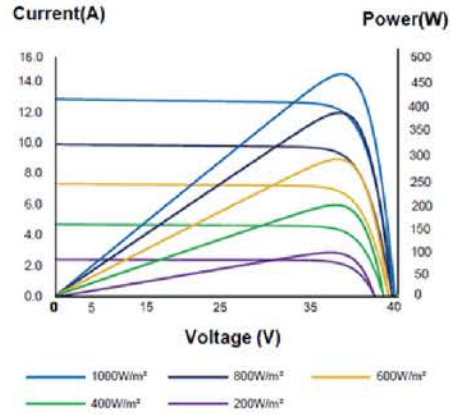
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	120(6 × 20)
Dimensions	1909mm × 1134mm × 30mm
Weight	23.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	36pcs / box,864pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

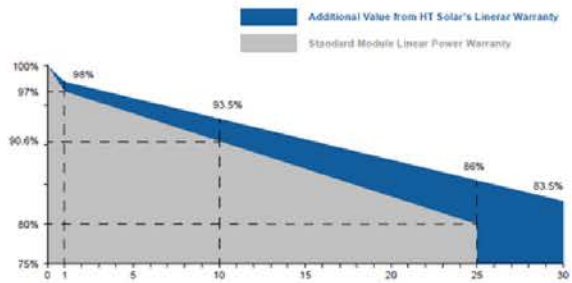


Warranty

12 - years
product warranty

30- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

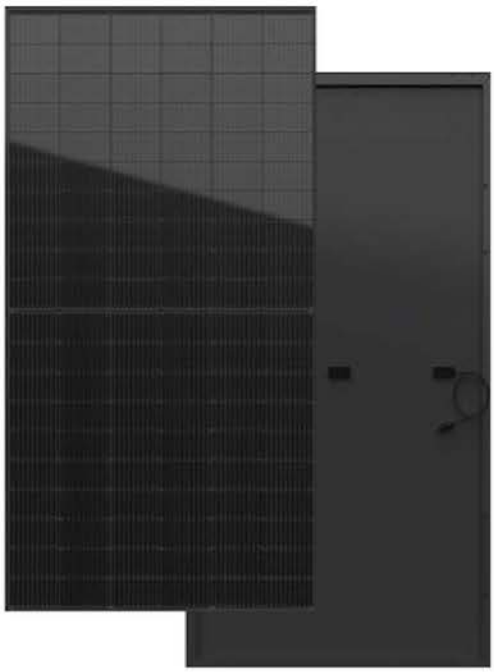
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT60-18X Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182 mm× 91mm Monocrystalline

450W / 455W
460W / 465W / 470W



- Module Efficiency
  21.7%
- No.of Cells
  120(6 × 20)
- Weight
  23.0kg
- Dimensions
  1909mm × 1134mm × 30mm

Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.

10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption

Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs

Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)

All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance **Black** backsheet structure enhance reliability, triple EL tested of high quality control.

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT60-18X				
Maximum Power at STC (Pmax)	450W	455W	460W	465W	470W
Open - Circuit Voltage (Voc)	41.33V	41.48V	41.63V	41.78V	41.93V
Short - Circuit Current (Isc)	13.90A	13.97A	14.04A	14.11A	14.18A
Optimum Operating Voltage (Vmp)	34.78V	34.93V	35.08V	35.23V	35.38V
Optimum Operating Current (Imp)	12.95A	13.04A	13.13A	13.22A	13.30A
Module efficiency	20.8%	21.1%	21.3%	21.5%	21.7%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 ℃to +85 ℃				

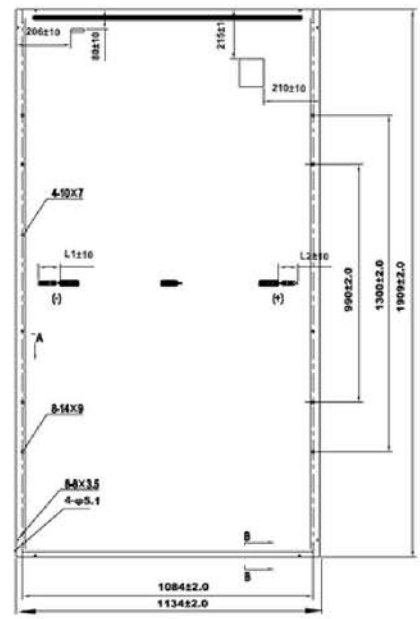
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT60-18X				
Maximum Power	335W	338W	342W	346W	350W
Open - Circuit Voltage (Voc)	39.17V	39.31V	39.46V	39.60V	39.74V
Short - Circuit Current (Isc)	11.22A	11.27A	11.33A	11.39A	11.44A
Maximum Power Voltage (Vmp)	32.96V	33.11V	33.25V	33.39V	33.53V
Maximum Circuit Current (Imp)	10.16A	10.21A	10.29A	10.36A	10.44A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



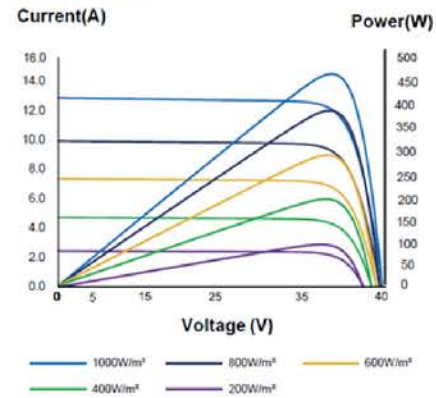
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	120(6 × 20)
Dimensions	1909mm × 1134mm × 30mm
Weight	23.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	36pcs / box, 864pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

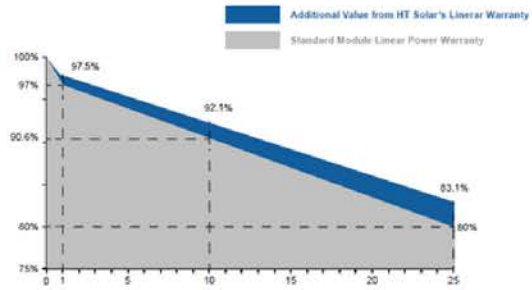


Warranty

12 - years
product warranty

25- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT66-18X

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

490W / 495W
500W / 505W / 510W

- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- 10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.5%
- No.of Cells
  132(6 × 22)
- Weight
  25.0kg
- Dimensions
  2094mm × 1134mm × 30mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT66-18X				
Maximum Power at STC (Pmax)	490W	495W	500W	505W	510W
Open - Circuit Voltage (Voc)	45.25V	45.40V	45.55V	45.70V	45.85V
Short - Circuit Current (Isc)	13.79A	13.86A	13.93A	13.99A	14.06A
Optimum Operating Voltage (Vmp)	38.07V	38.22V	38.37V	38.52V	38.67V
Optimum Operating Current (Imp)	12.88A	12.96A	13.04A	13.12A	13.20A
Module efficiency	20.7%	20.9%	21.1%	21.3%	21.5%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 ℃to +85 ℃				

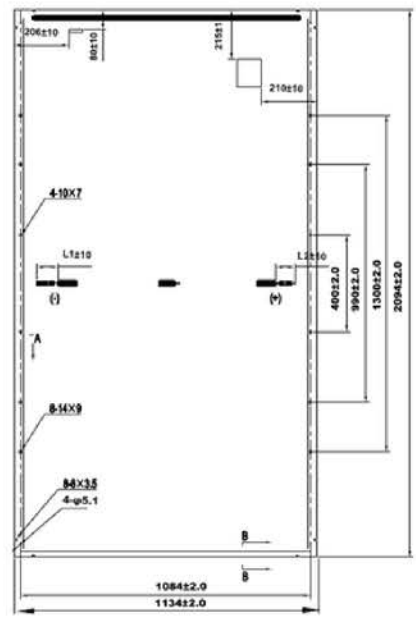
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT66-18X				
Maximum Power	364W	368W	372W	376W	379W
Open - Circuit Voltage (Voc)	42.85V	43.00V	43.20V	43.30V	43.46V
Short - Circuit Current (Isc)	11.13A	11.19A	11.24A	11.29A	11.35A
Maximum Power Voltage (Vmp)	36.05V	36.20V	34.40V	34.50V	34.65V
Maximum Circuit Current (Imp)	10.09A	10.17A	10.22A	10.30A	10.34A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	132 (6 × 22)
Dimensions	2094mm × 1134mm × 30mm
Weight	25.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	36pcs / box, 792pcs / 40'HQ container

Temperature Characteristics

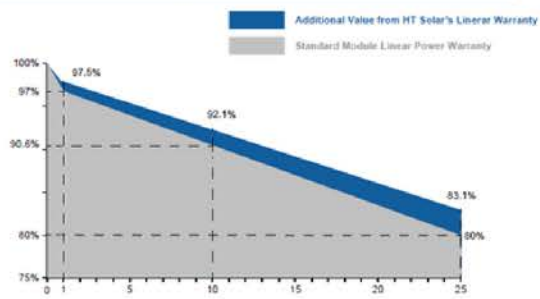
Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

Warranty

12 - years
product warranty

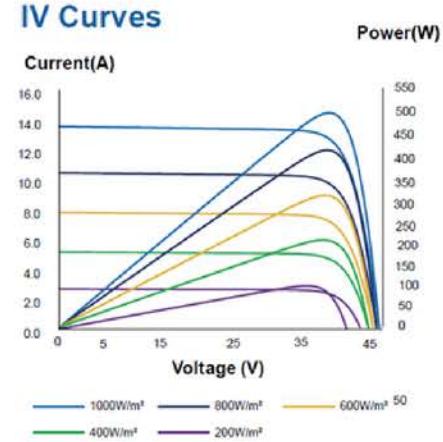
25- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

IV Curves



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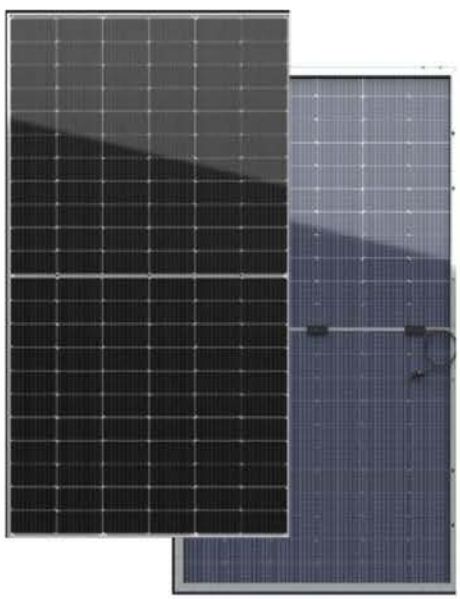
HT66-18X Transparent

High Efficiency Low LID and Bifacial cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

490W / 495W
500W / 505W / 510W



- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- 10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

30Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance transparent backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.5%
- No.of Cells
  132(6 × 22)
- Weight
  25.0kg
- Dimensions
  2094mm × 1134mm × 30mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest internationalstandards Strict quality control

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Electrical Characteristics

Module	HT66-18X				
Maximum Power at STC (Pmax)	490W	495W	500W	505W	510W
Open - Circuit Voltage (Voc)	45.25V	45.40V	45.55V	45.70V	45.85V
Short - Circuit Current (Isc)	13.79A	13.86A	13.93A	13.99A	14.06A
Optimum Operating Voltage (Vmp)	38.07V	38.22V	38.37V	38.52V	38.67V
Optimum Operating Current (Imp)	12.88A	12.96A	13.04A	13.12A	13.20A
Module efficiency	20.7%	20.9%	21.1%	21.3%	21.5%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 to +85				

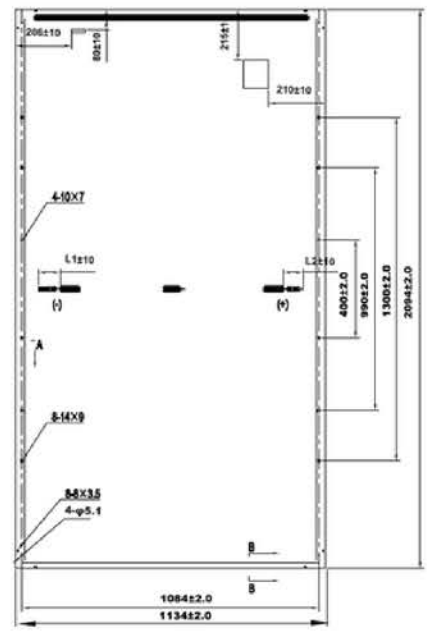
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT66-18X (Bifaciality 70±5%)				
Maximum Power	364W	368W	372W	376W	379W
Open - Circuit Voltage (Voc)	42.85V	43.00V	43.20V	43.30V	43.46V
Short - Circuit Current (Isc)	11.13A	11.19A	11.24A	11.29A	11.35A
Maximum Power Voltage (Vmp)	36.05V	36.20V	34.40V	34.50V	34.65V
Maximum Circuit Current (Imp)	10.09A	10.17A	10.22A	10.30A	10.34A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



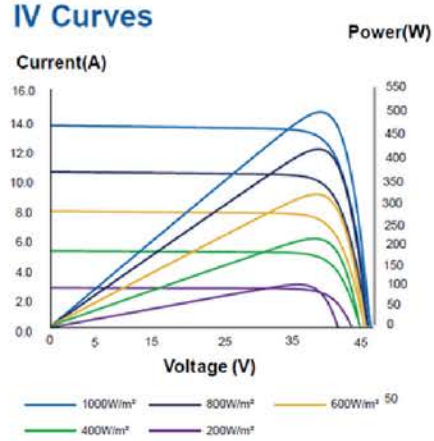
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	132 (6 × 22)
Dimensions	2094mm × 1134mm × 30mm
Weight	25.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	36pcs / box, 792pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

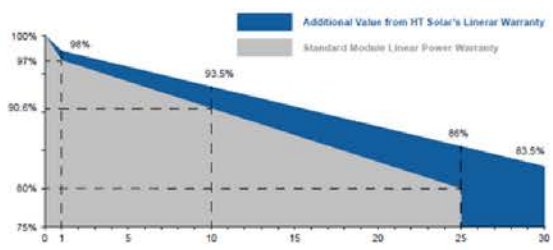


Warranty

12 - years
product warranty

30 - years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

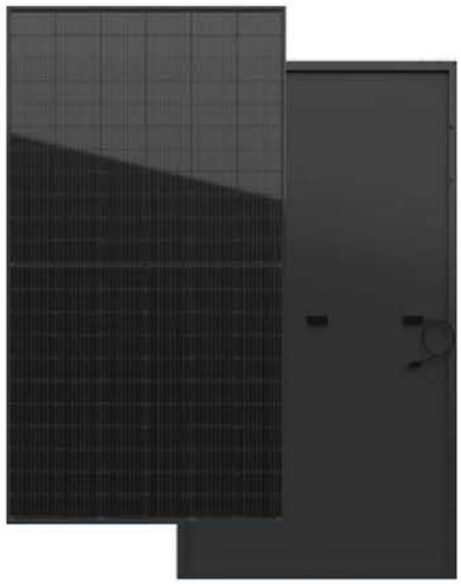
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT66-18X Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182mm× 91mm Monocrystalline

490W / 495W
500W / 505W / 510W



- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
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12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Black backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.5%
- No.of Cells
  132(6 × 22)
- Weight
  25.0kg
- Dimensions
  2094mm × 1134mm × 30mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT66-18X				
Maximum Power at STC (Pmax)	490W	495W	500W	505W	510W
Open - Circuit Voltage (Voc)	45.25V	45.40V	45.55V	45.70V	45.85V
Short - Circuit Current (Isc)	13.79A	13.86A	13.93A	13.99A	14.06A
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Module efficiency	20.7%	20.9%	21.1%	21.3%	21.5%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 ℃to +85 ℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT66-18X				
Maximum Power	364W	368W	372W	376W	379W
Open - Circuit Voltage (Voc)	42.85V	43.00V	43.20V	43.30V	43.46V
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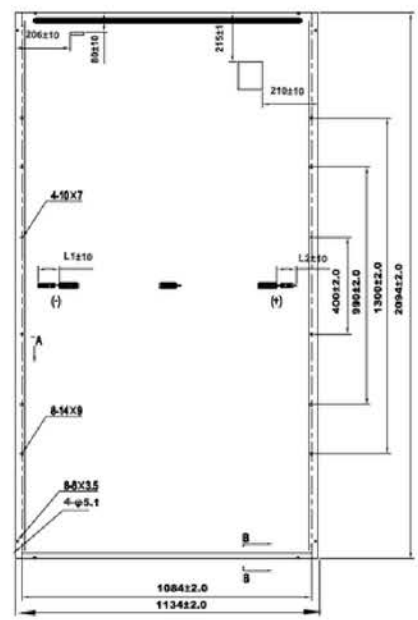
Maximum Power Voltage (Vmp)	36.05V	36.20V	34.40V	34.50V	34.65V
Maximum Circuit Current (Imp)	10.09A	10.17A	10.22A	10.30A	10.34A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



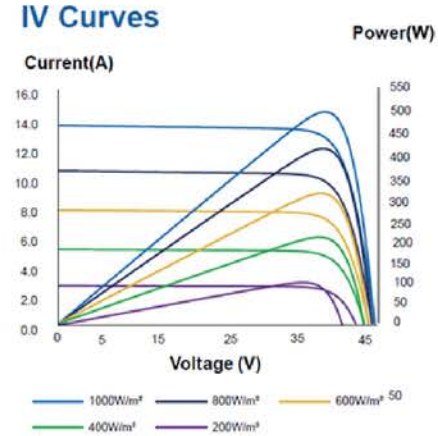
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	132 (6 × 22)
Dimensions	2094mm × 1134mm × 30mm
Weight	25.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	36pcs / box, 792pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

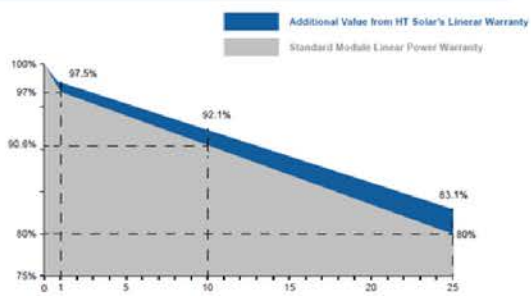


Warranty

12 - years
product warranty

25- years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT72-18X

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

540W / 545W
550W / 555W / 560W

- Module Efficiency
  21.7%
- No.of Cells
  144 (6 × 24)
- Weight
  27.4kg
- Dimensions
  2279mm × 1134mm × 35mm

Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.

10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption

Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs

Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)

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12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+
Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT72-18X				
Maximum Power at STC (Pmax)	540W	545W	550W	555W	560W
Open - Circuit Voltage (Voc)	49.50V	49.65V	49.80V	49.95V	50.10V
Short - Circuit Current (Isc)	13.90A	13.95A	14.00A	14.07A	14.14A
Optimum Operating Voltage (Vmp)	41.65V	41.80V	41.95V	42.10V	45.25V
Optimum Operating Current (Imp)	12.97A	13.05A	13.12A	13.20A	13.27A
Module efficiency	20.9%	21.1%	21.3%	21.5%	21.7%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 ℃ to +85 ℃				

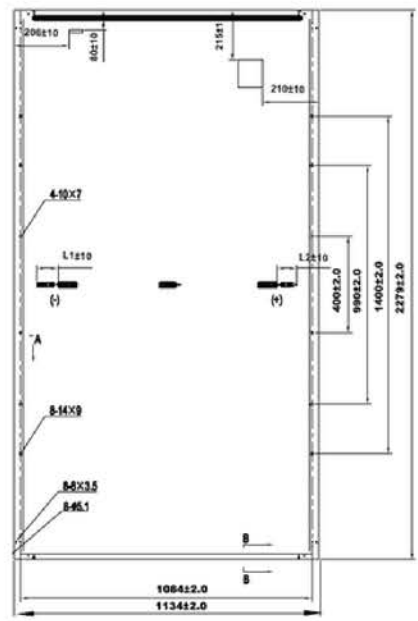
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT72-18X				
Maximum Power	402W	405W	409W	413W	417W
Open - Circuit Voltage (Voc)	46.92V	47.06V	47.20V	47.34V	47.48V
Short - Circuit Current (Isc)	11.22A	11.26A	11.30A	11.36A	11.41A
Maximum Power Voltage (Vmp)	39.48V	39.62V	39.76V	39.90V	40.04V
Maximum Circuit Current (Imp)	10.18A	10.22A	10.29A	10.35A	10.41A
NMOT	45±2 ℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



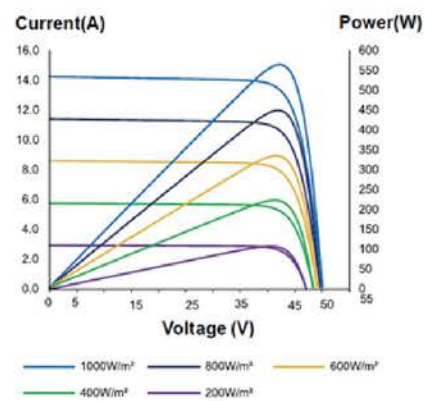
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	144 (6 × 24)
Dimensions	2279mm × 1134mm × 35mm
Weight	27.4kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 620pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

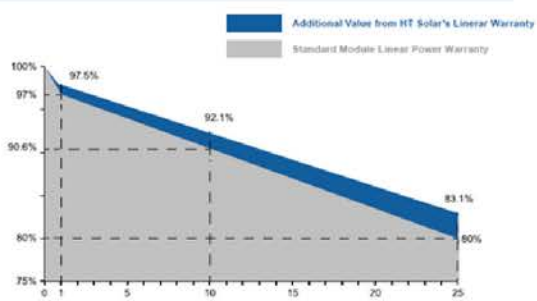


Warranty

12 - years
product warranty

25 - years
warranty on power output

Specific information is referred to
the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

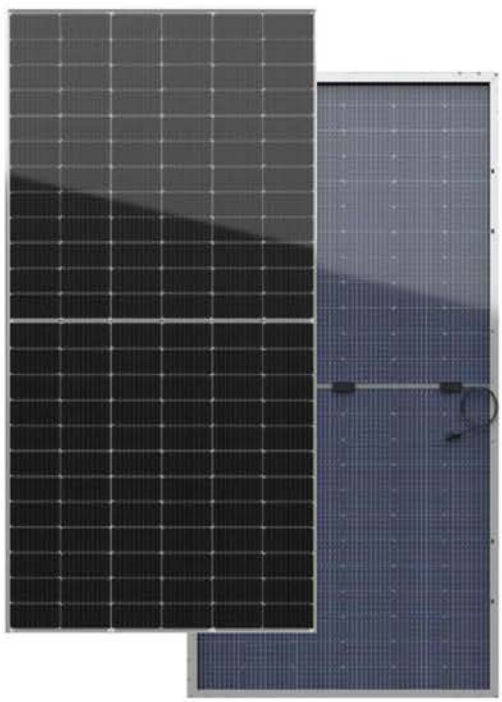
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT72-18X Transparent

High Efficiency Low LID and Bifacial cell with Half-cut Technology
Big Size: Cell 182mm × 91mm Monocrystalline

540W / 545W
550W / 555W / 560W



- Module Efficiency
  21.7%
- No.of Cells
  144 (6 × 24)
- Weight
  27.4kg
- Dimensions
  2279mm × 1134mm × 35mm

Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.

10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption

Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs

Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)

All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

30Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance transparent backsheet structure enhance reliability, triple EL tested of high quality control.

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Operating Temperature	-40℃to +85℃				

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Optional black frame or white frame module according to customer requirements

NMOT

Module	HT72-18X (Bifaciality 70±5%)				
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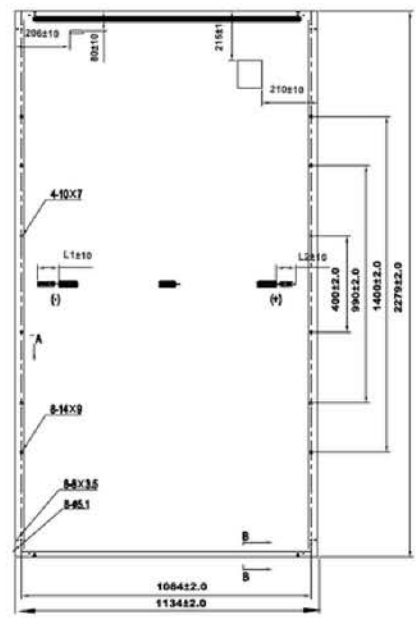

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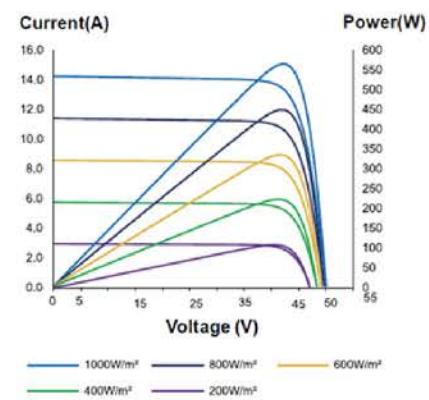

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12 - years
product warranty

30 - years
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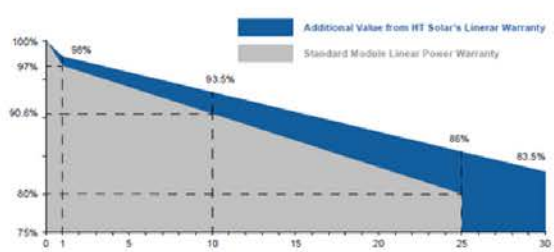

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HT-SAAE INFO GROUP GLOBAL

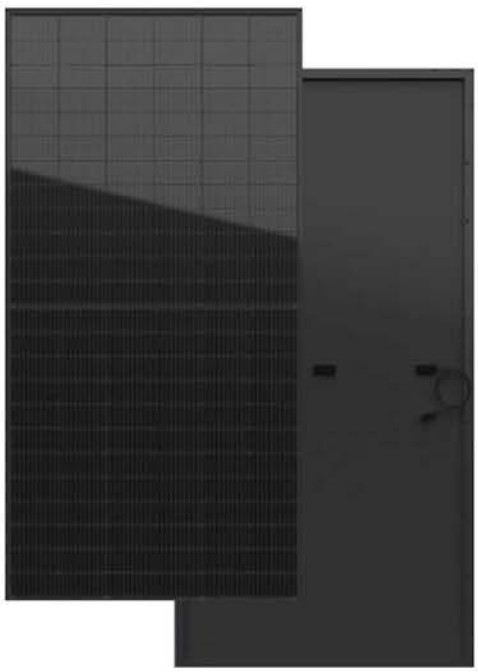
Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT72-18X Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology

Big Size: Cell 182mm×91mm Monocrystalline

540W / 545W
550W / 555W / 560W



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12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Black backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.7%
- No.of Cells
  144 (6 × 24)
- Weight
  27.4kg
- Dimensions
  2279mm × 1134mm × 35mm

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* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
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NMOT

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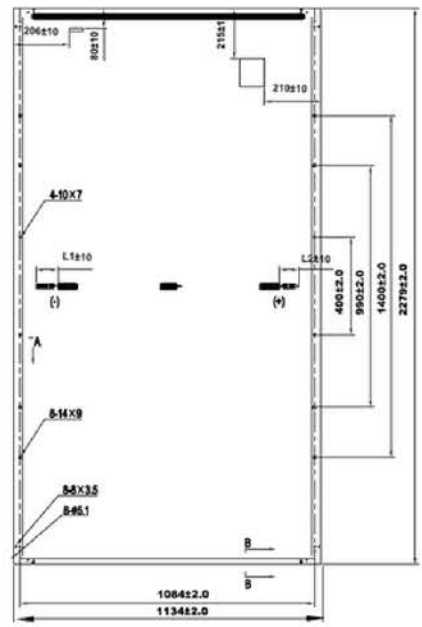
Engineering Drawing



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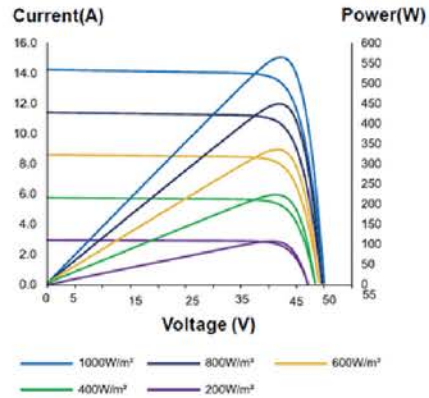

Warranty

12 - years
product warranty

25 - years
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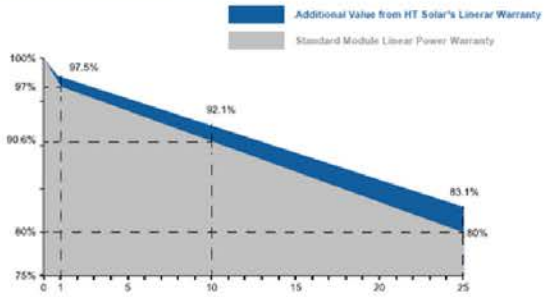

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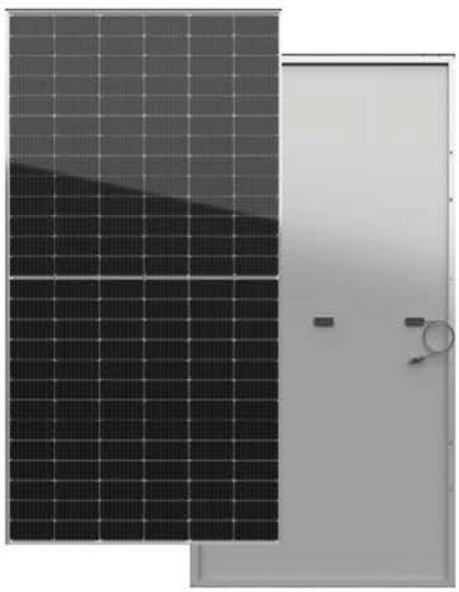
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT78-18X

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 182 mm× 91mm Monocrystalline

585W / 590W
595W / 600W / 605W



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12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.6%
- No.of Cells
  156 (6 × 26)
- Weight
  29.0kg
- Dimensions
  2464mm × 1134mm × 35mm

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Electrical Characteristics

Module	HT78-18X				
Maximum Power at STC (Pmax)	585W	590W	595W	600W	605W
Open - Circuit Voltage (Voc)	53.77V	53.92V	53.94V	54.09V	54.24V
Short - Circuit Current (Isc)	13.89A	13.96A	14.03A	14.10A	14.17A
Optimum Operating Voltage (Vmp)	45.13V	45.28V	45.43V	45.58V	45.73V
Optimum Operating Current (Imp)	12.97A	13.04A	13.11A	13.17A	13.24A
Module efficiency	20.9%	21.1%	21.3%	21.4%	21.6%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
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Operating Temperature	-40℃ to +85℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT78-18X				
Maximum Power	435W	439W	443W	446W	450W
Open - Circuit Voltage (Voc)	50.84V	50.98V	51.12V	51.27V	51.41V
Short - Circuit Current (Isc)	11.21A	11.27A	11.32A	11.38A	11.44A
Maximum Power Voltage (Vmp)	42.77V	42.92V	43.06V	43.20V	43.34V
Maximum Circuit Current (Imp)	10.17A	10.23A	10.29A	10.32A	10.38A
NMOT	45±2℃				

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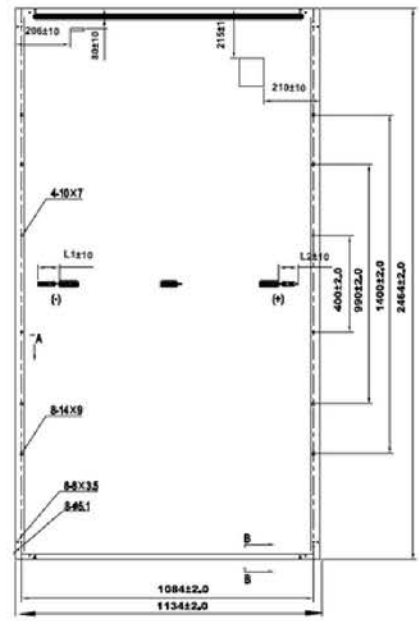
Engineering Drawing



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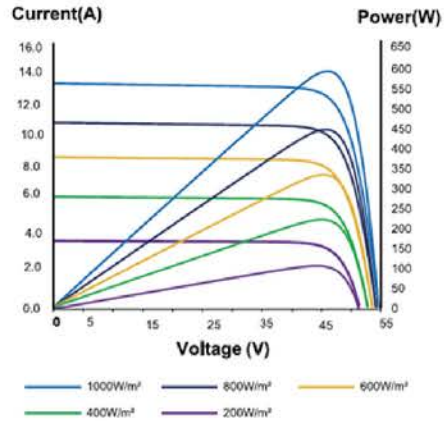

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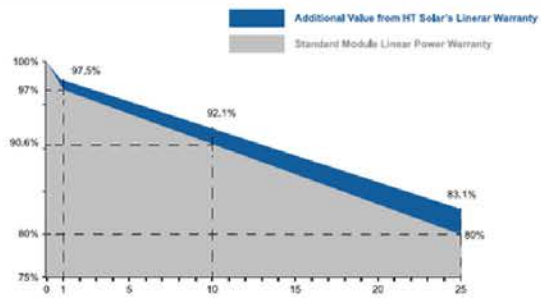

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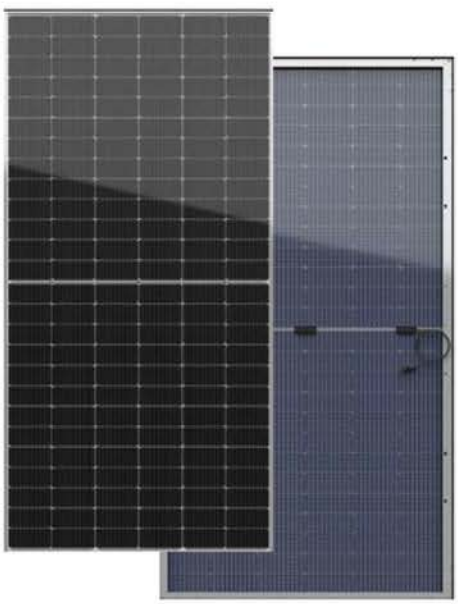

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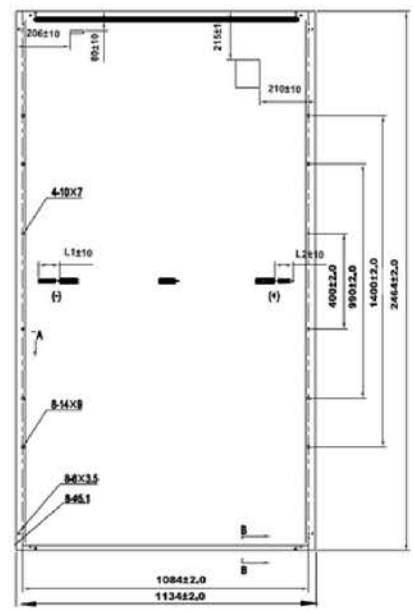

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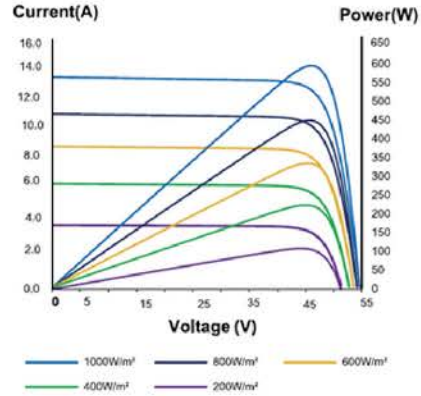
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

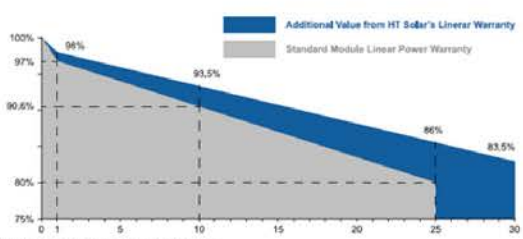


Warranty

12 - years
product warranty

30 - years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

HT-SAAE INFO GROUP GLOBAL

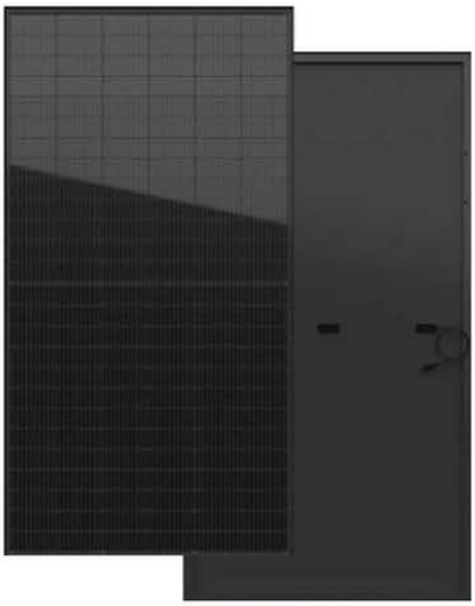
Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT78-18X Full Black

High Efficiency Low LID and PERC cell with Half-cut Technology

Big Size: Cell 182mm× 91mm Monocrystalline

585W / 590W
595W / 600W / 605W



- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- 10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance Black backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.6%
- No.of Cells
  156 (6 × 26)
- Weight
  29.0kg
- Dimensions
  2464mm × 1134mm × 35mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

CE TÜVRheinland C US TOP PERFORMER PVEL DNV·GL PV MODULE RELIABILITY SCORECARD

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT78-18X				
Maximum Power at STC (Pmax)	585W	590W	595W	600W	605W
Open - Circuit Voltage (Voc)	53.77V	53.92V	53.94V	54.09V	54.24V
Short - Circuit Current (Isc)	13.89A	13.96A	14.03A	14.10A	14.17A
Optimum Operating Voltage (Vmp)	45.13V	45.28V	45.43V	45.58V	45.73V
Optimum Operating Current (Imp)	12.97A	13.04A	13.11A	13.17A	13.24A
Module efficiency	20.9%	21.1%	21.3%	21.4%	21.6%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40℃ to +85℃				

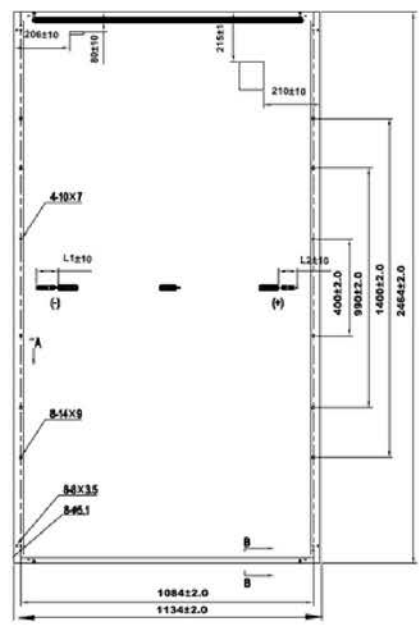
* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

Module	HT78-18X				
Maximum Power	435W	439W	443W	446W	450W
Open - Circuit Voltage (Voc)	50.84V	50.98V	51.12V	51.27V	51.41V
Short - Circuit Current (Isc)	11.21A	11.27A	11.32A	11.38A	11.44A
Maximum Power Voltage (Vmp)	42.77V	42.92V	43.06V	43.20V	43.34V
Maximum Circuit Current (Imp)	10.17A	10.23A	10.29A	10.32A	10.38A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Engineering Drawing



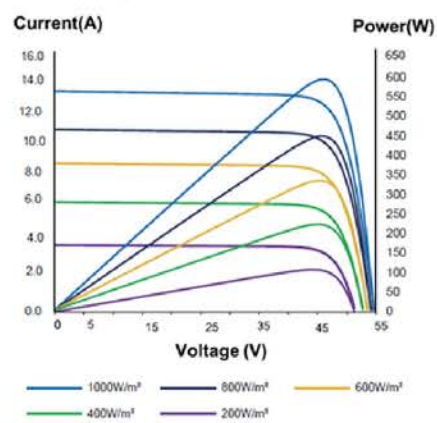
Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91mm
No.of Cells	156(6 × 26)
Dimensions	2464mm × 1134mm × 35mm
Weight	29.0kg
Front Glass	High transmission tempered glass; thickness; 3.2mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 200mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 496pcs / 40'HQ container

Temperature Characteristics

Temperature Coefficient of Pmax	-0.326%/℃
Temperature Coefficient of Voc	-0.258%/℃
Temperature Coefficient of Isc	+0.051%/℃

IV Curves

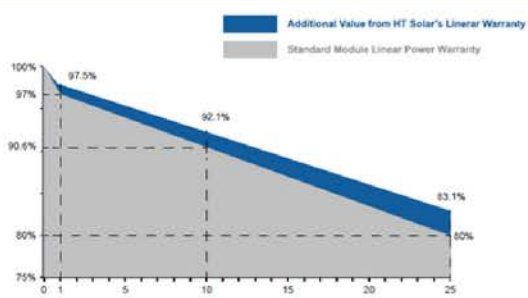


Warranty

12 - years
product warranty

25 - years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

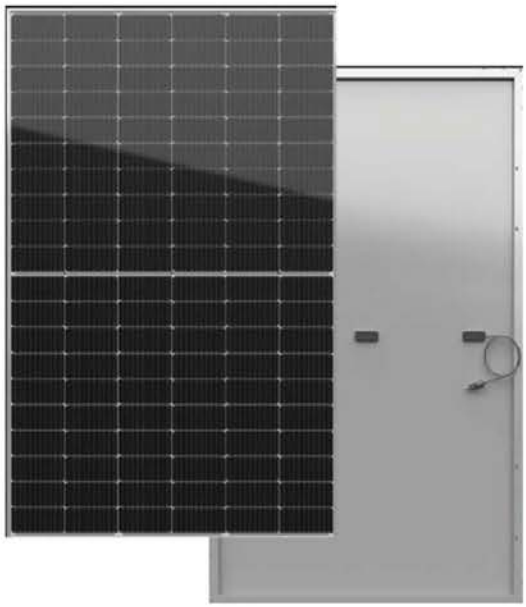
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT60-210

High Efficiency Low LID and PERC cell with Half-cut Technology
Big Size: Cell 210mm × 105mm Monocrystalline

585W / 590W
595W / 600W / 605W



- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- MBB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.4%
- No.of Cells
  120 (6 × 20)
- Weight
  30.5kg
- Dimensions
  2172mm × 1303mm × 35mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT60-210				
Maximum Power at STC (Pmax)	585W	590W	595W	600W	605W
Open - Circuit Voltage (Voc)	40.7V	40.9V	41.1V	41.3V	41.5V
Short - Circuit Current (Isc)	18.32A	18.37A	18.42A	18.47A	18.52A
Optimum Operating Voltage (Vmp)	34.3V	34.5V	34.7V	34.9V	35.1V
Optimum Operating Current (Imp)	17.06A	17.11A	17.15A	17.20A	17.25A
Module efficiency	20.7%	20.9%	21.1%	21.2%	21.4%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	30A				
Operating Temperature	-40℃ to +85℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

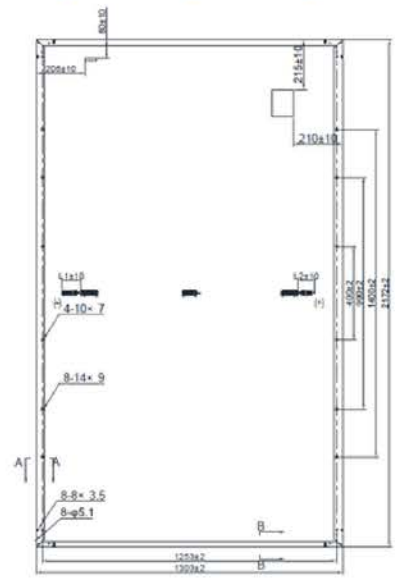
Module	HT60-210				
Maximum Power	443W	447W	451W	455W	458W
Open - Circuit Voltage (Voc)	39.0V	39.2V	39.4V	39.6V	39.8V
Short - Circuit Current (Isc)	14.75A	14.79A	14.84A	14.88A	14.92A
Maximum Power Voltage (Vmp)	32.9V	33.1V	33.3V	33.4V	33.6V
Maximum Circuit Current (Imp)	13.47A	13.50A	13.54A	13.62A	13.63A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

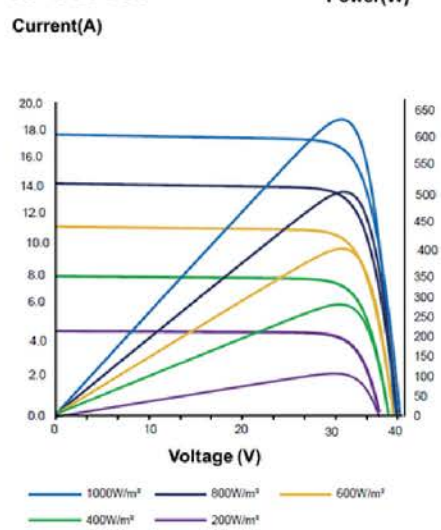
Mechanical Characteristics

Solar Cells	Monocrystalline 210× 105mm
No.of Cells	120(6 × 20)
Dimensions	2172mm × 1303mm × 35mm
Weight	30.5kg
Front Glass	High transmission tempered glass;
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 300mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 558pcs / 40'HQ container

Engineering Drawing



IV Curves



Temperature Characteristics

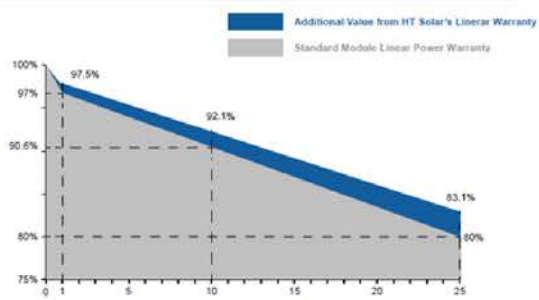
Temperature Coefficient of Pmax	-0.33%/℃
Temperature Coefficient of Voc	-0.26%/℃
Temperature Coefficient of Isc	0.042%/℃

Warranty

12 - years
product warranty

25 - years
warranty on power output

Specific information is referred to the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

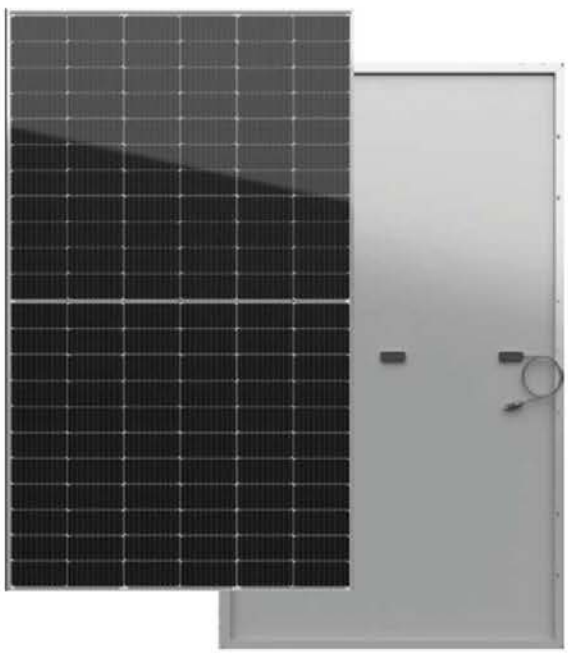
HT-SAAE INFO GROUP GLOBAL

Reliable State - owned Enterprise Deliver Solar Power Since 1960s

HT66-210

High Efficiency Low LID and PERC cell with Half-cut Technology Big Size: Cell 210mm × 105mm Monocrystalline

645W / 650W
655W / 660W / 665W



- Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.
- MBB The optimized number and width of main gate lines, Maximize the light receiving area of components and reduce component power consumption
- Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs
- Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)
- All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

12Ys
products

25Ys
warranty on power output

PID
PID resistant

5W
positive tolerance 0/+5W guaranteed

EL
microcrack resistant high performance White backsheet structure enhance reliability, triple EL tested of high quality control.

- Module Efficiency
  21.4%
- No.of Cells
  132 (6 × 22)
- Weight
  33.5kg
- Dimensions
  2384mm × 1303mm × 35mm

Comprehensive and First-rate Certification System

IEC61215: 2016.IEC61730: 2016 Latest Standard IS014001 and ISO45001, meeting the highest international standards Strict quality control

MULTIWAY+

Better Choice For Higher Efficiency!

Electrical Characteristics

Module	HT66-210				
Maximum Power at STC (Pmax)	645W	650W	655W	660W	665W
Open - Circuit Voltage (Voc)	44.8V	45.0V	45.2V	45.4V	45.6V
Short - Circuit Current (Isc)	18.35A	18.39A	18.43A	18.47A	18.51A
Optimum Operating Voltage (Vmp)	37.7V	37.9V	38.1V	38.3V	38.5V
Optimum Operating Current (Imp)	17.11A	17.16A	17.20A	17.24A	17.28A
Module efficiency	20.8%	20.9%	21.1%	21.2%	21.4%
Power Tolerance	0 ~ + 5W				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	30A				
Operating Temperature	-40℃ to +85℃				

* STC: Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NMOT

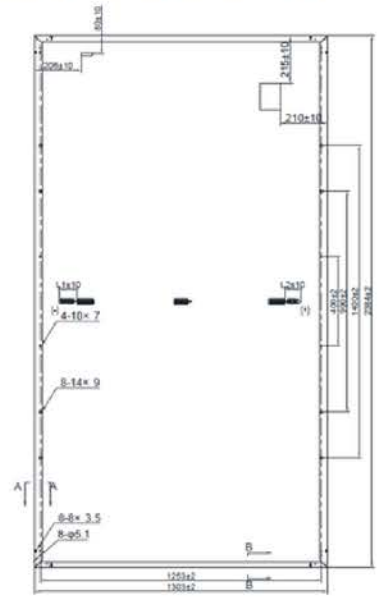
Module	HT66-210				
Maximum Power	489W	493W	496W	500W	504W
Open - Circuit Voltage (Voc)	42.9V	43.1V	43.3V	43.5V	43.7V
Short - Circuit Current (Isc)	14.78A	14.81A	14.84A	14.88A	14.91A
Maximum Power Voltage (Vmp)	36.1V	36.3V	36.5V	36.7V	36.9V
Maximum Circuit Current (Imp)	13.55A	13.58A	13.59A	13.62A	13.66A
NMOT	45±2℃				

* NMOT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1m/s

Mechanical Characteristics

Solar Cells	Monocrystalline 210× 105mm
No.of Cells	132(6 × 22)
Dimensions	2384mm × 1303mm × 35mm
Weight	33.5kg
Front Glass	High transmission tempered glass;
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL / IEC) length; (+) 400mm (-) 300mm / length can be customized
Connectors	MC_4 / MC_4 compatible
Packaging Configuration	31pcs / box, 558pcs / 40'HQ container

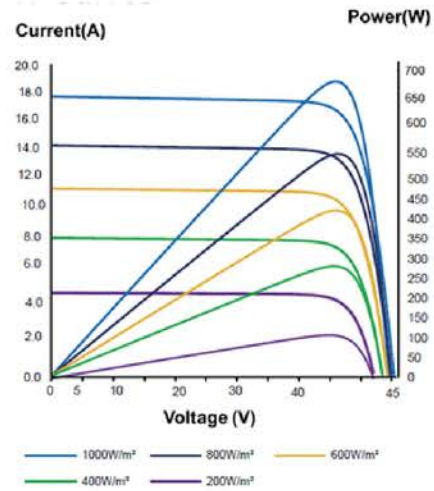
Engineering Drawing



Temperature Characteristics

Temperature Coefficient of Pmax	-0.33%/℃
Temperature Coefficient of Voc	-0.26%/℃
Temperature Coefficient of Isc	0.042%/℃

IV Curves

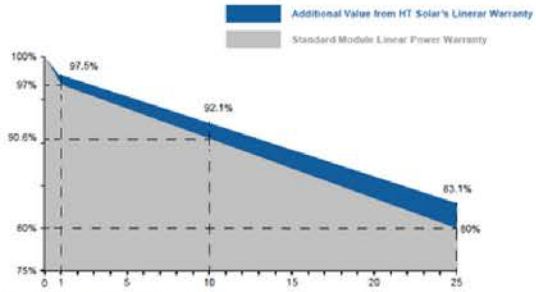


Warranty

12 - years
product warranty

25 - years
warranty on power output

Specific information is referred to
the product quality guarantee



The module recycling should be carried out by the professional institutions at the end of module life cycle

GLOBAL REFERENCE PROJECTS

Poland
49 MWp
Module: HT72-156M-400W
Completion Date: May 2020

Arkansas (USA)
10 MWp
Module: HT72-156M(V)-365W
Completion Date: August 2019

New Jersey (USA)
4,4 MWp
Module: HT72-156M-345W
Completion Date: August 2019

Pennslyvania (USA)
4,0 MWp
Module: HT72-156P-350W
Completion Date: July 2019

USA
7,0 MWp
Module: HT60-156M-300W
Completion Date: June 2018

Manhattan (USA)
161 kWp
Module: HT60-156M-320W
Completion Date: August 2020

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REFERENCE PROJECTS

California (USA)
100 kWp
Module: HT72-156M-365W
Completion Date: July 2020

Harvard (USA)
1,7 MWp
Module: HT72-156M-385W
Completion Date: August 2020

Dnipro (Ukraine)
5,1 MWp
Module: HT72-156P-330W
Completion Date: May 2018

Hatay (Turkey)
11,0 MWp
Module: HT60-156P-265W
Completion Date: July 2018

Aydın(Turkey)
11,0 MWp
Module: HT60-156M-300W
Completion Date: June 2018

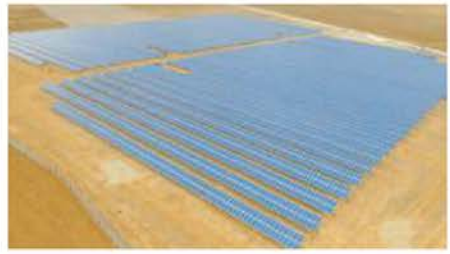
Maine (USA)
9,1 MWp
Module: HT78-18X-570-575W Bifacial
Completion date: 2021

GLOBAL REFERENCE PROJECTS

Virginia (USA)
80,0 MWp
Module: HT72-156M-390W
Completion date: June 2021

Oregon (USA)
15,33 MWp
Module: HT72-156M-375W
Completion date: October 2020

Maryland (USA)
26,78 MWp
Module: HT72-156M-380W
Completion date: January 2020



Uzhgrod (Ukraine)
6,9 MWp
Module: HT60-156P 275W
Completion date: November 2019

Kırsehir (Turkey)
6,0 MWp
Module: HT72-156M-PDV 400W
Completion date: June 2020

Berdyansk (Ukraine)
19,65 MWp
Module: HT72-156M-PDV-400W
Completion date: March 2021

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REFERENCE PROJECTS

Adana (Turkey)
1,74 MWp
Module: HT72-156M-385W
Completion Date: June 2020

Osmaniye (Turkey)
5,7 MWp
Module: HT72-156M-375W
Completion Date: December 2019

Afyon (Turkey)
12,7 MWp
Module: HT60-156P-275W
Completion Date: September 2019

Van (Turkey)
13,7 MWp
Module: HT72-156P-325W
Completion Date: January 2020

Ağrı (Turkey)
7,0 MWp
Module: HT72-156P-325W
Completion Date: January 2020

Adıyaman (Turkey)
10,0 MWp
Module: HT72-156M-295W
Completion Date: September 2017

GLOBAL REFERENCE PROJECTS

Bartın (Turkey)
5,8 MWp
Module: HT72-156M-400W
Completion date: April 2021

Adana (Turkey)
6,2 MWp
Module: HT72-156M-385W
Completion date: August 2020

Adana (Turkey)
11 MWp
Module: HT72-156M-385W
Completion date: November 2020

Bingöl (Turkey)
37 MWp
Module: HT72-156M-405W
Completion date: January 2021

Muğla (Turkey)
20,17 MWp
Module: HT72-156M-385W
Completion date: February 2020

Maine (USA)
10,2 MWp
Module: HT78-18X-570-575W Bifacial
Completion date: 2021-2022

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REFERENCE PROJECTS

İstanbul (Turkey)
2,3 MWp
Module: HT72-166M-455W
Completion date: September 2022

Rhode Island (USA)
17 MWp
Module: HT72-156M-375W
Completion date: 2021

Washington (USA)
6,7 MWp
Module: HT72-18X-545W Bifacial
Completion date: 2021-2022

Konya (Turkey)
450 KWp
Module: HT72-166M-455W
Completion date: June 2022

Maine (USA)
20,3 MWp
Module: HT78-18X-570-575W Bifacial
Completion date: 2021

İstanbul (Turkey)
163,8 KWp
Module: HT72-166M-455W
Completion date: June 2022

The module recyling should be carried out by the professional institutions at the end of module life cycle

HIGHWAY+

NOTES

NOTES

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