

CONTENTS

Double Glass TOPCon 18X

FE54-18X(ND).....	01
FE60-18X(ND).....	03
FE66-18X(ND).....	05
FE72-18X(ND).....	07
FE78-18X(ND).....	09

Double Glass TOPCon 18X+

FE48-18X+(ND).....	11
FE54-18X+(ND).....	13
FE66-18X+(ND).....	15

Double Glass TOPCon 210

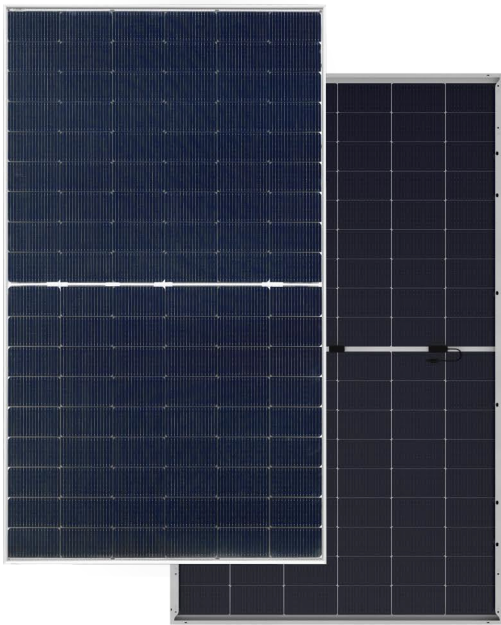
FE66-210(ND).....	17
-------------------	----

FE54-18X(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 91.875mm Monocrystalline

430W / 435W

440W / 445W / 450W



- Module Efficiency
23.0%
- No. of Cells
108 (6 × 18)
- Weight
24.0±0.5kg
- Dimensions
1722 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE54-18X(ND)				
Maximum Power at STC (Pmax)	430W	435W	440W	445W	450W
Open - Circuit Voltage (Voc)	38.30V	38.40V	38.60V	38.70V	38.90V
Short - Circuit Current (Isc)	14.23A	14.31A	14.39A	14.47A	14.55A
Optimum Operating Voltage (Vmp)	31.90V	32.00V	32.20V	32.30V	32.50V
Optimum Operating Current (Imp)	13.50A	13.60A	13.68A	13.78A	13.85A
Module efficiency	22.0%	22.3%	22.5%	22.8%	23.0%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 °C to +85 °C				

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

NMOT

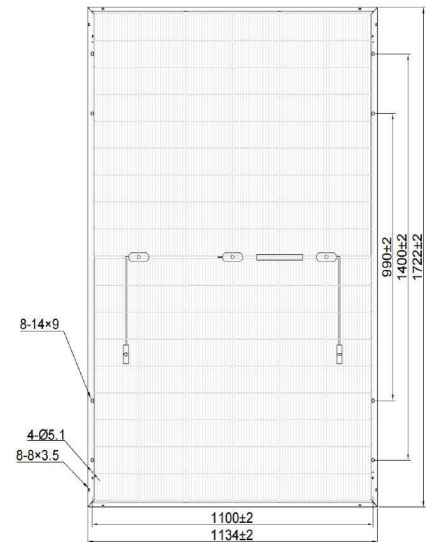
Module	FE54-18X(ND) (Bifaciality 80±10%)				
Maximum Power	327W	331W	335W	339W	343W
Open - Circuit Voltage (Voc)	36.80V	36.90V	37.10V	37.20V	37.40V
Short - Circuit Current (Isc)	11.47A	11.53A	11.59A	11.65A	11.71A
Optimum Operating Voltage (Vmp)	30.70V	30.90V	31.10V	31.30V	31.50V
Optimum Operating Current (Imp)	10.65A	10.71A	10.77A	10.83A	10.89A
NMOT	45±2°C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91.875mm
No. of Cells	108 (6 × 18)
Dimensions	1722 × 1134 × 30mm
Weight	24.0±0.5kg
Glass (Front/Back)	High transmission tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36pcs/box, 936pcs/40'HQ container

Engineering Drawing



Temperature Characteristics

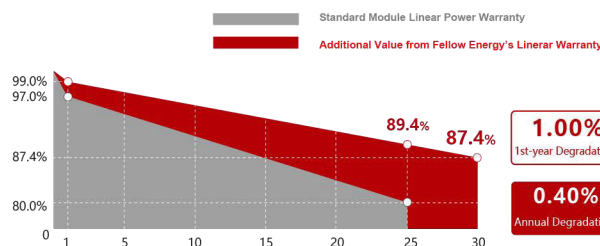
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.23%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

15 - years
product warranty

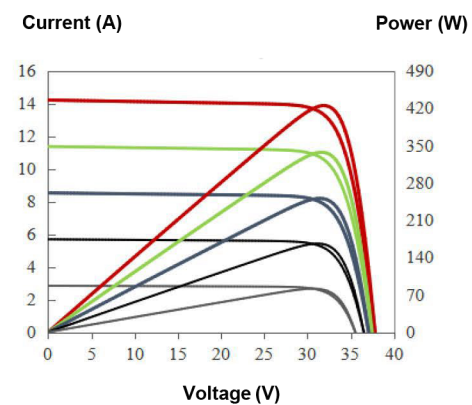
30 - years
warranty on power output

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

IV Curves

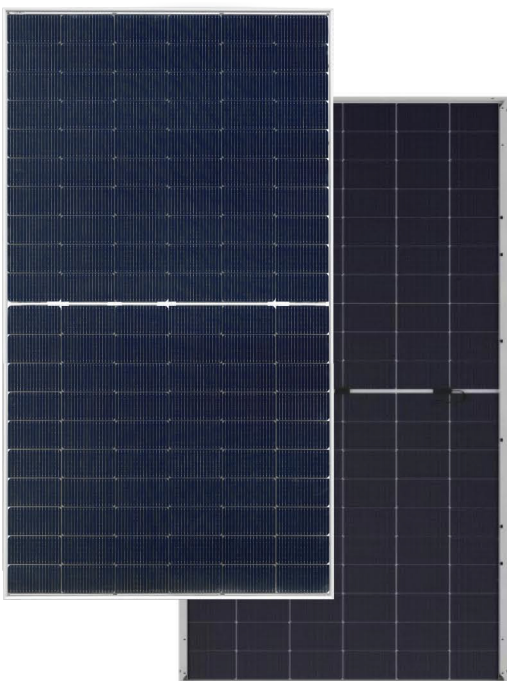


FE60-18X(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 91.875mm Monocrystalline

480W / 485W

490W / 495W / 500W



- Module Efficiency
23.1%
- No. of Cells
120 (6 × 20)
- Weight
26.0±0.5kg
- Dimensions
1909 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE60-18X(ND)				
Maximum Power at STC (Pmax)	480W	485W	490W	495W	500W
Open - Circuit Voltage (Voc)	42.60V	42.70V	42.90V	43.10V	43.30V
Short - Circuit Current (Isc)	14.31A	14.39A	14.47A	14.55A	14.63A
Optimum Operating Voltage (Vmp)	35.60V	35.80V	36.00V	36.20V	36.40V
Optimum Operating Current (Imp)	13.50A	13.56A	13.62A	13.68A	13.74A
Module efficiency	22.2%	22.4%	22.6%	22.9%	23.1%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 °C to +85 °C				

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

NMOT

Module	FE60-18X(ND) (Bifaciality 80±10%)				
Maximum Power	361W	365W	369W	372W	376W
Open - Circuit Voltage (Voc)	40.57V	40.73V	40.89V	41.05V	41.21V
Short - Circuit Current (Isc)	11.55A	11.61A	11.67A	11.73A	11.79A
Optimum Operating Voltage (Vmp)	33.27V	33.43V	33.51V	33.58V	33.67V
Optimum Operating Current (Imp)	10.85A	10.92A	11.01A	11.08A	11.16A
NMOT	45±2 °C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91.875mm
No. of Cells	120 (6 × 20)
Dimensions	1909 × 1134 × 30mm
Weight	26.0±0.5kg
Glass (Front/Back)	High transmission tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36pcs/box, 864pcs/40'HQ container

Temperature Characteristics

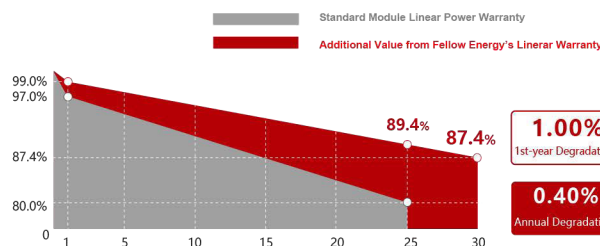
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.23%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

15 - years
product warranty

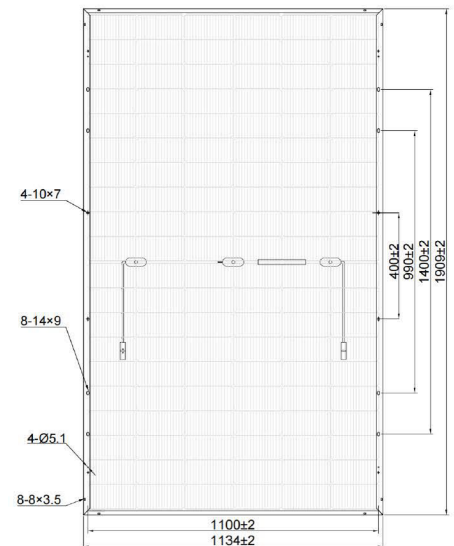
30 - years
warranty on power output

Specific information is referred to the product quality guarantee

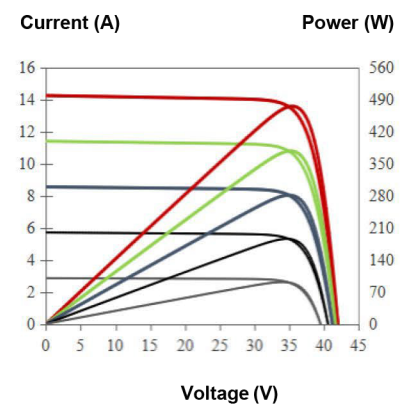


The module recycling should be carried out by the professional institutions at the end of module life cycle

Engineering Drawing



IV Curves

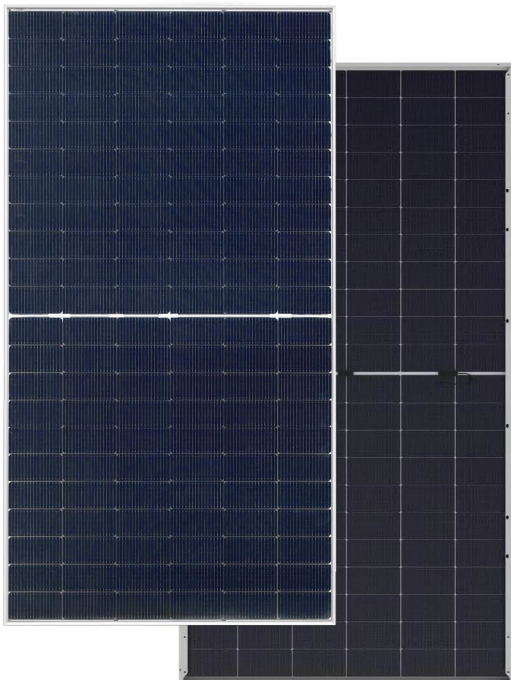


FE66-18X(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 91.875mm Monocrystalline

530W / 535W

540W / 545W / 550W



- Module Efficiency
23.2%
- No. of Cells
132 (6 × 22)
- Weight
28.0±0.5kg
- Dimensions
2094 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE66-18X(ND)				
Maximum Power at STC (Pmax)	530W	535W	540W	545W	550W
Open - Circuit Voltage (Voc)	47.00V	47.20V	47.40V	47.60V	47.80V
Short - Circuit Current (Isc)	14.35A	14.41A	14.47A	14.53A	14.60A
Optimum Operating Voltage (Vmp)	39.40V	39.60V	39.80V	40.00V	40.20V
Optimum Operating Current (Imp)	13.46A	13.52A	13.58A	13.64A	13.70A
Module efficiency	22.3%	22.5%	22.7%	23.0%	23.2%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 °C to +85 °C				

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

NMOT

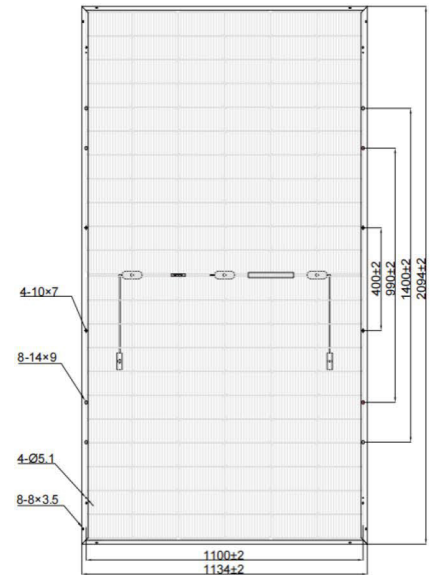
Module	FE66-18X(ND) (Bifaciality 80±10%)				
Maximum Power	412W	417W	420W	424W	428W
Open - Circuit Voltage (Voc)	46.20V	46.50V	46.60V	46.90V	47.10V
Short - Circuit Current (Isc)	11.31A	11.34A	11.41A	11.46A	11.51A
Optimum Operating Voltage (Vmp)	39.00V	39.30V	39.40V	39.60V	39.70V
Optimum Operating Current (Imp)	10.58A	10.62A	10.68A	10.73A	10.78A
NMOT	45±2 °C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91.875mm
No. of Cells	132 (6 × 22)
Dimensions	2094 × 1134 × 30mm
Weight	28.0±0.5kg
Glass (Front/Back)	High transmission tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36 pcs/box, 792 pcs/40'HQ container

Engineering Drawing



Temperature Characteristics

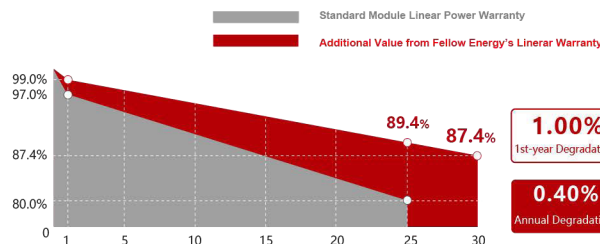
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.23%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

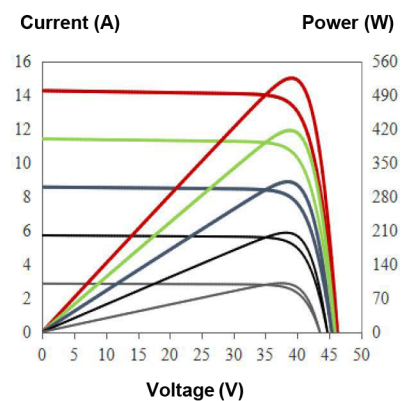
15 - years
product warranty

30 - years
warranty on power output

Specific information is referred to the product quality guarantee



IV Curves



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

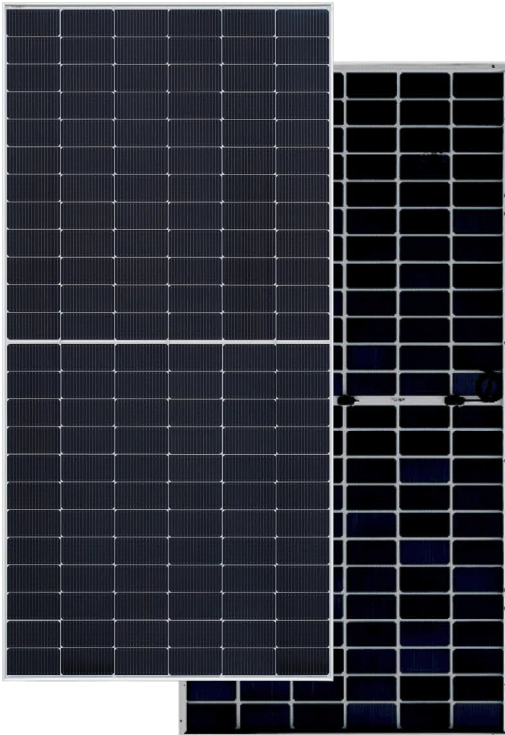
MARSTEPPOWER

FE72-18X(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 91.875mm Monocrystalline

580W / 585W

590W / 595W / 600W



- Module Efficiency
23.2%
- No. of Cells
144 (6 × 24)
- Weight
32.0±0.5kg
- Dimensions
2278 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE72-18X(ND)				
Maximum Power at STC (Pmax)	580W	585W	590W	595W	600W
Open - Circuit Voltage (Voc)	51.30V	51.50V	51.70V	51.85V	52.00V
Short - Circuit Current (Isc)	14.39A	14.47A	14.55A	14.62A	14.70A
Optimum Operating Voltage (Vmp)	43.10V	43.30V	43.50V	43.55V	43.70V
Optimum Operating Current (Imp)	13.47A	13.53A	13.59A	13.67A	13.73A
Module efficiency	22.5%	22.6%	22.8%	23.0%	23.2%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 C to +85 C				

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

NMOT

Module	FE72-18X(ND) (Bifaciality 80±10%)				
Maximum Power	441W	445W	449W	453W	457W
Open - Circuit Voltage (Voc)	49.20V	49.40V	49.60V	49.80V	50.00V
Short - Circuit Current (Isc)	11.60A	11.66A	11.73A	11.79A	11.86A
Optimum Operating Voltage (Vmp)	41.40V	41.60V	41.70V	41.90V	42.10V
Optimum Operating Current (Imp)	10.65A	10.70A	10.77A	10.82A	10.89A
NMOT	45±2°C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91.875mm
No. of Cells	144 (6 × 24)
Dimensions	2278 × 1134 × 30mm
Weight	32.0±0.5kg
Glass (Front/Back)	High transmission tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36 pcs/box, 720 pcs/40'HQ container

Temperature Characteristics

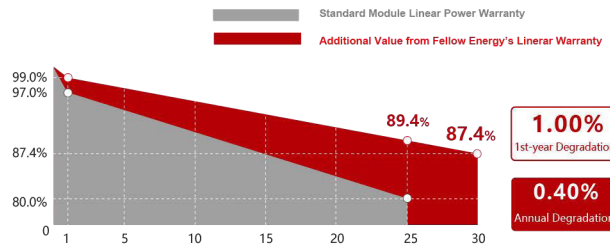
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.23%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

15 - years
product warranty

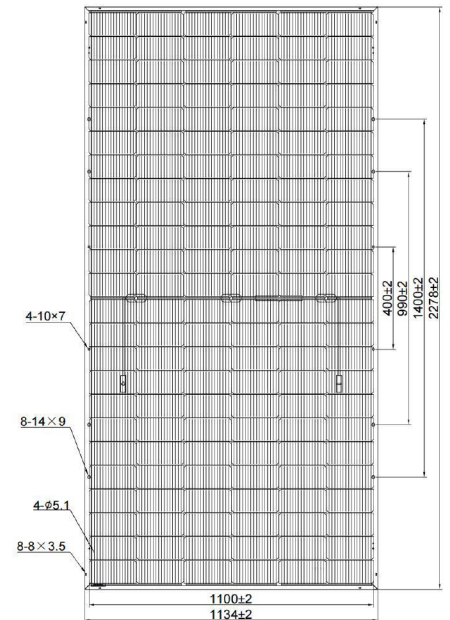
30 - years
warranty on power output

Specific information is referred to the product quality guarantee

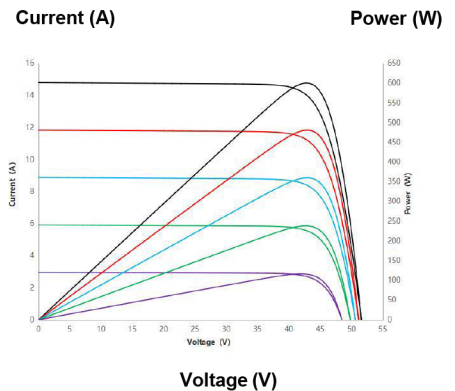


The module recycling should be carried out by the professional institutions at the end of module life cycle

Engineering Drawing



IV Curves

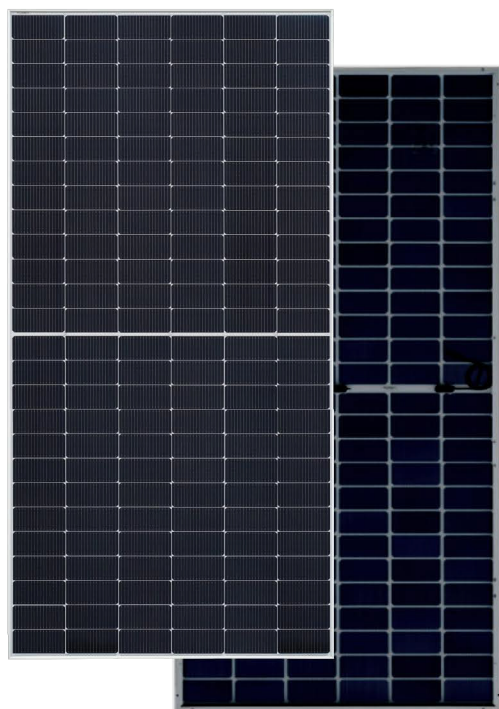


FE78-18X(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 91.875mm Monocrystalline

625W / 630W

635W / 640W / 645W



- Module Efficiency
23.1%
- No. of Cells
156 (6 × 26)
- Weight
34.1±0.5kg
- Dimensions
2465 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE78-18X(ND)				
Maximum Power at STC (Pmax)	625W	630W	635W	640W	645W
Open - Circuit Voltage (Voc)	55.72V	55.86V	55.98V	56.12V	56.26V
Short - Circuit Current (Isc)	14.27A	14.35A	14.43A	14.51A	14.59A
Optimum Operating Voltage (Vmp)	46.10V	46.27V	46.41V	46.57V	46.71V
Optimum Operating Current (Imp)	13.56A	13.62A	13.68A	13.75A	13.82A
Module efficiency	22.3%	22.5%	22.7%	22.9%	23.1%
Power Tolerance	0 ~ + 3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 °C to +85 °C				

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

NMOT

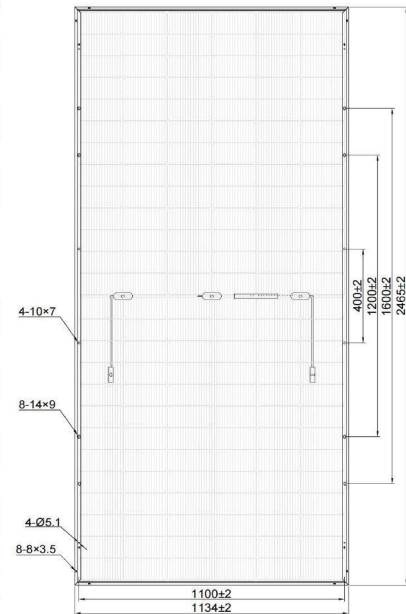
Module	FE78-18X(ND) (Bifaciality 80±10%)				
Maximum Power	475W	479W	483W	488W	492W
Open - Circuit Voltage (Voc)	53.31V	53.34V	53.37V	53.40V	53.43V
Short - Circuit Current (Isc)	11.46A	11.52A	11.58A	11.64A	11.70A
Optimum Operating Voltage (Vmp)	43.88V	43.99V	44.10V	44.21V	44.32V
Optimum Operating Current (Imp)	10.81A	10.87A	10.95A	11.01A	11.07A
NMOT	45±2°C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91.875mm
No. of Cells	156 (6 × 26)
Dimensions	2465 × 1134 × 30mm
Weight	34.1±0.5kg
Glass (Front/Back)	High transmission tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36 pcs/box, 576 pcs/40'HQ container

Engineering Drawing



Temperature Characteristics

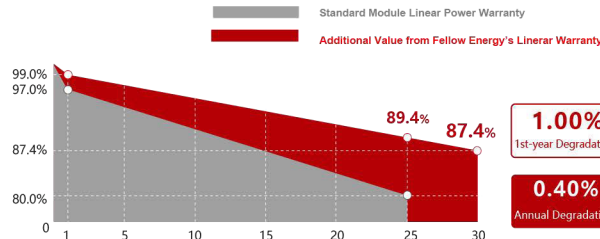
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.23%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

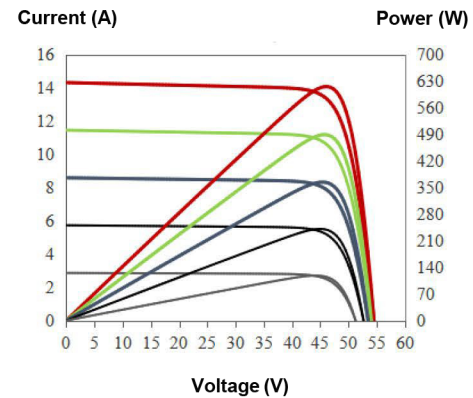
15 - years
product warranty

30 - years
warranty on power output

Specific information is referred to the product quality guarantee



IV Curves



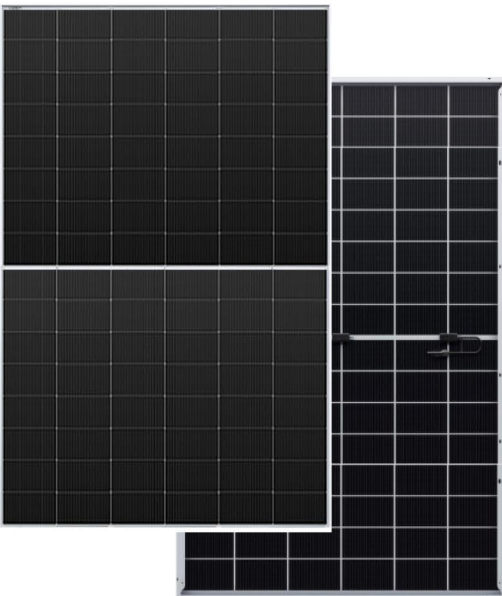
The module recycling should be carried out by the professional institutions at the end of module life cycle

FE48-18X+(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 105mm Monocrystalline

440W / 445W

450W / 455W / 460W



- Module Efficiency
23.0%
- No. of Cells
96 (6 × 16)
- Weight
23.0±0.5kg
- Dimensions
1762 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE48-18X+(ND)				
Maximum Power at STC (Pmax)	440W	445W	450W	455W	460W
Open - Circuit Voltage (Voc)	35.30V	35.50V	35.70V	35.90V	36.10V
Short - Circuit Current (Isc)	15.89A	15.97A	16.05A	16.13A	16.20A
Optimum Operating Voltage (Vmp)	29.45V	29.60V	29.75V	29.90V	30.05V
Optimum Operating Current (Imp)	14.95A	15.04A	15.13A	15.22A	15.31A
Module efficiency	22.0%	22.3%	22.5%	22.8%	23.0%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	35A				
Operating Temperature	-40 C to +85 C				

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

NMOT

Module	FE48-18X+(ND) (Bifaciality 80±10%)				
Maximum Power	332W	336W	340W	344W	347W
Open - Circuit Voltage (Voc)	33.30V	33.50V	33.60V	33.80V	34.00V
Short - Circuit Current (Isc)	12.83A	12.89A	12.96A	13.02A	13.08A
Optimum Operating Voltage (Vmp)	27.50V	27.60V	27.80V	28.00V	28.10V
Optimum Operating Current (Imp)	12.07A	12.16A	12.22A	12.28A	12.34A
NMOT	45±2 C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 105mm
No. of Cells	96 (6 × 16)
Dimensions	1762 × 1134 × 30mm
Weight	23.0±0.5kg
Glass (Front/Back)	High transmission coated tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36 pcs/box, 936 pcs/40'HQ container

Temperature Characteristics

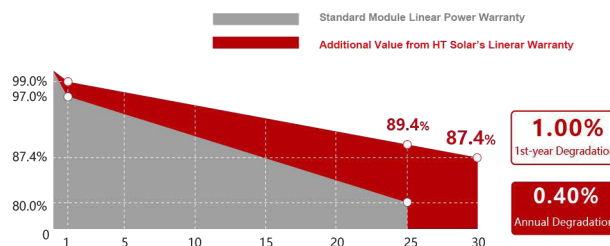
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

15 - years
product warranty

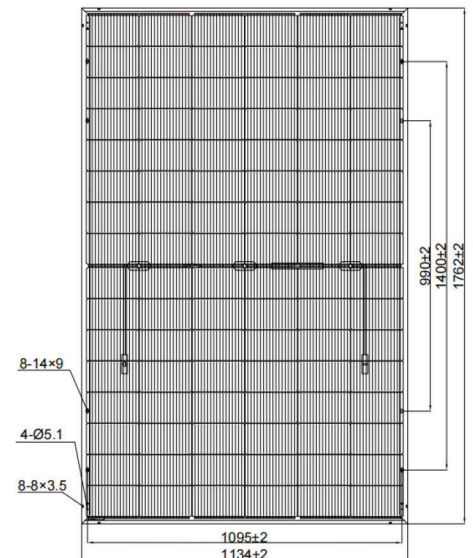
30 - years
warranty on power output

Specific information is referred to the product quality guarantee

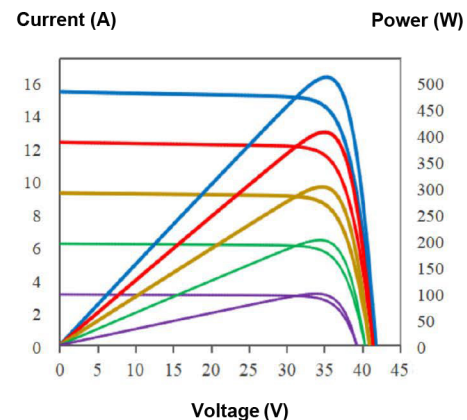


The module recycling should be carried out by the professional institutions at the end of module life cycle

Engineering Drawing



IV Curves

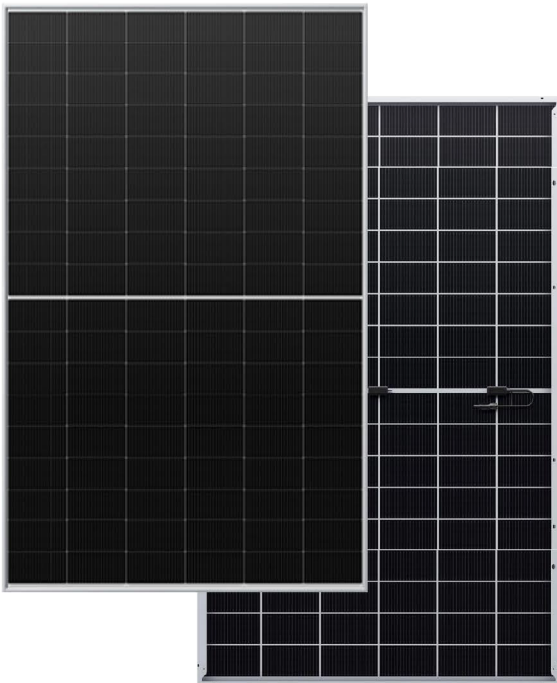


FE54-18X+(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 105mm Monocrystalline

495W / 500W

505W / 510W / 515W



- Module Efficiency
23.2%
- No. of Cells
108 (6 × 18)
- Weight
27.6±0.5kg
- Dimensions
1960 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE54-18X+(ND)				
Maximum Power at STC (Pmax)	495W	500W	505W	510W	515W
Open - Circuit Voltage (Voc)	39.63V	39.83V	40.03V	40.23V	40.43V
Short - Circuit Current (Isc)	15.92A	16.00A	16.07A	16.15A	16.23A
Optimum Operating Voltage (Vmp)	33.04V	33.19V	33.34V	33.49V	33.64V
Optimum Operating Current (Imp)	14.99A	15.07A	15.15A	15.23A	15.31A
Module efficiency	22.3%	22.5%	22.7%	22.9%	23.2%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	35A				
Operating Temperature	-40 C to +85 C				

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

NMOT

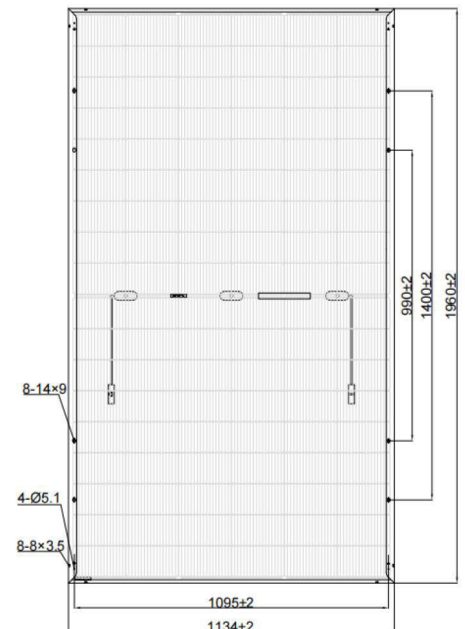
Module	FE54-18X+(ND) (Bifaciality 80±10%)				
Maximum Power	374W	378W	381W	385W	389W
Open - Circuit Voltage (Voc)	37.30V	37.50V	37.80V	38.00V	38.10V
Short - Circuit Current (Isc)	12.88A	12.92A	12.96A	13.02A	13.09A
Optimum Operating Voltage (Vmp)	30.85V	31.00V	31.20V	31.40V	31.50V
Optimum Operating Current (Imp)	12.13A	12.17A	12.22A	12.28A	12.33A
NMOT	45±2 C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 105mm
No. of Cells	108 (6 × 18)
Dimensions	1960 × 1134 × 30mm
Weight	27.6±0.5kg
Glass (Front/Back)	High transmission coated tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36 pcs/box, 864 pcs/40'HQ container

Engineering Drawing



Temperature Characteristics

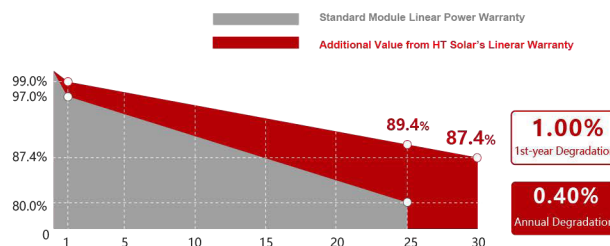
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

15 - years
product warranty

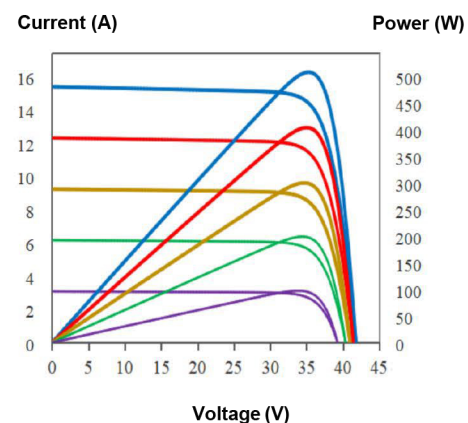
30 - years
warranty on power output

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

IV Curves

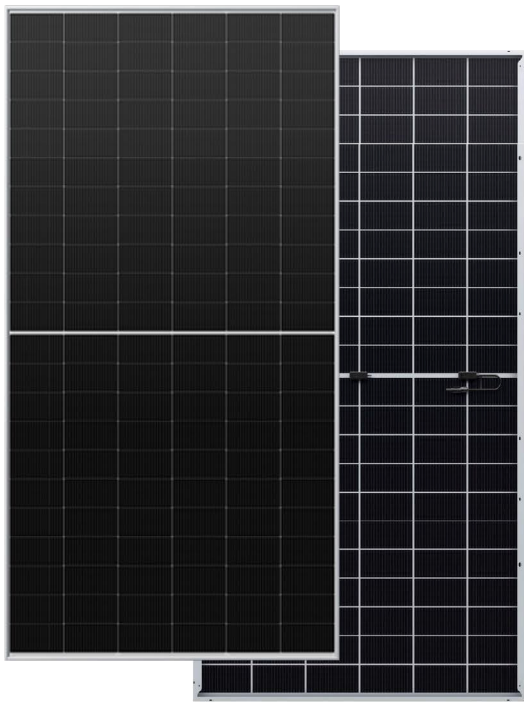


FE66-18X+(ND) Double Glass

High Efficiency Lower LID and TOPCon cell with Half-cut Technology
Big Size : Cell 182 × 105mm Monocrystalline

610W / 615W

620W / 625W / 630W



- Module Efficiency
23.3%
- No. of Cells
132 (6 × 22)
- Weight
33.7±0.5kg
- Dimensions
2382 × 1134 × 30mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)

Comprehensive and First-rate Certification System

IEC61215: 2021. IEC61730: 2023. UL61730: 2017. IEC62804: 2015
ISO9001 ISO14001 and ISO45001



Electrical Characteristics

Module	FE66-18X+(ND)				
Maximum Power at STC (Pmax)	610W	615W	620W	625W	630W
Open - Circuit Voltage (Voc)	48.70V	48.90V	49.10V	49.30V	49.50V
Short - Circuit Current (Isc)	15.95A	16.02A	16.08A	16.14A	16.21A
Optimum Operating Voltage (Vmp)	40.60V	40.75V	40.90V	41.05V	41.20V
Optimum Operating Current (Imp)	15.03A	15.10A	15.16A	15.23A	15.30A
Module efficiency	22.6%	22.8%	23.0%	23.1%	23.3%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	35A				
Operating Temperature	-40 °C to +85 °C				

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

NMOT

Module	FE66-18X+(ND) (Bifaciality 80±10%)				
Maximum Power	460W	464W	468W	472W	476W
Open - Circuit Voltage (Voc)	45.90V	46.43V	46.62V	46.82V	47.02V
Short - Circuit Current (Isc)	12.88A	12.93A	12.98A	13.03A	13.08A
Optimum Operating Voltage (Vmp)	37.90V	38.10V	38.25V	38.45V	38.62V
Optimum Operating Current (Imp)	12.14A	12.19A	12.24A	12.29A	12.34A
NMOT	45±2 °C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 105mm
No. of Cells	132 (6 × 22)
Dimensions	2382 × 1134 × 30mm
Weight	33.7±0.5kg
Glass (Front/Back)	High transmission coated tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	36 pcs/box, 720 pcs/40'HQ container

Temperature Characteristics

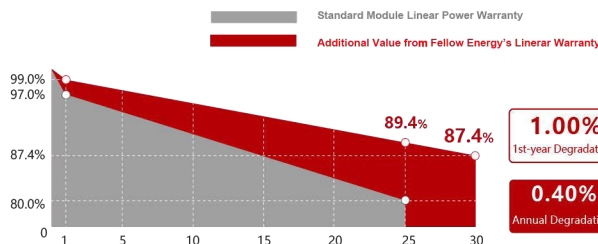
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

15 - years product warranty

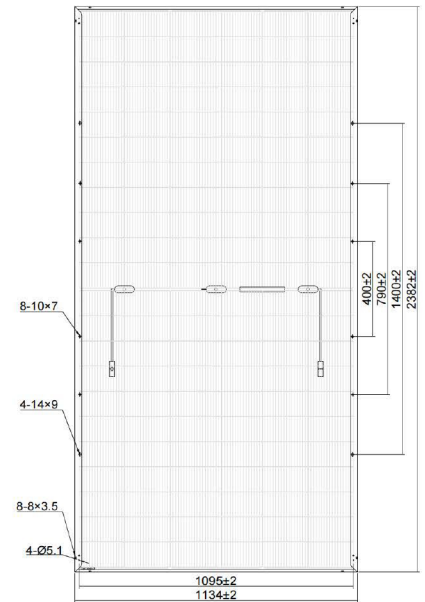
30 - years warranty on power output

Specific information is referred to the product quality guarantee

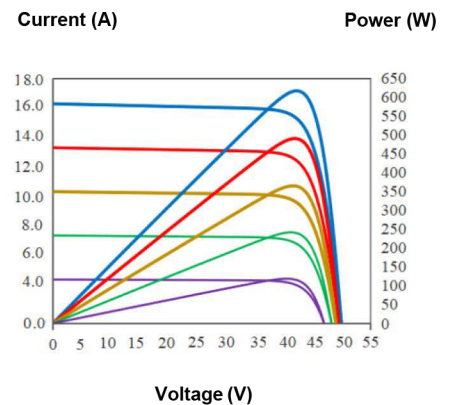


The module recycling should be carried out by the professional institutions at the end of module life cycle

Engineering Drawing



IV Curves

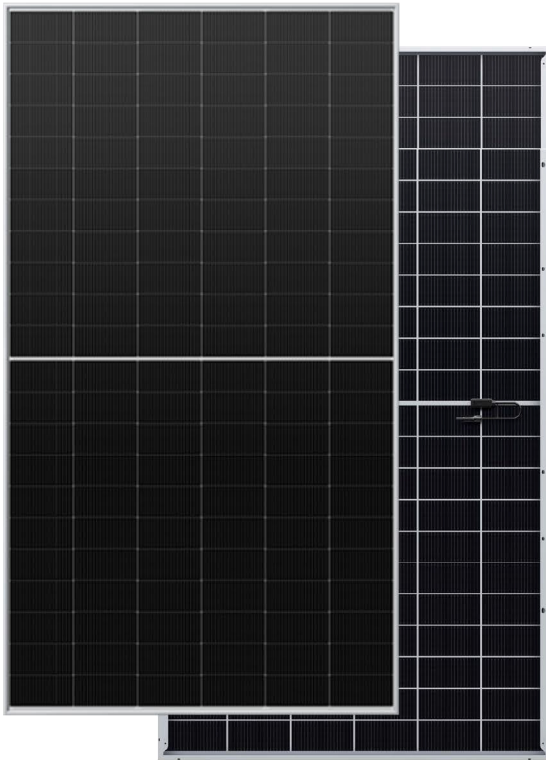


FE66-210(ND) Double Glass

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

700W / 705W

710W / 715W / 720W



- Module Efficiency
23.2%
- No. of Cells
132 (6 × 22)
- Weight
38.3±0.5kg
- Dimensions
2384 × 1303 × 33mm



10-30% Additional Power Generation

10-30% additional power generation comparing with conventional P-type module



Lower LID (Light Induced Degradation)

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance



Lower LCOE

Higher power output and lower BOS cost



Better Weak Illumination Response

Higher power output even under low-light environment



Better Temperature Coefficient

Higher power generation under normal working conditions



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).

Comprehensive and First-rate Certification System

IEC61215: 2021 . IEC61730: 2023 . UL61730: 2017 . IEC62804: 2015
ISO9001 . ISO14001 . and . ISO45001



Electrical Characteristics

Module	FE66-210(ND)				
Maximum Power at STC (Pmax)	700W	705W	710W	715W	720W
Open - Circuit Voltage (Voc)	48.20V	48.40V	48.60V	48.80V	49.00V
Short - Circuit Current (Isc)	18.38A	18.43A	18.48A	18.53A	18.57A
Optimum Operating Voltage (Vmp)	40.40V	40.60V	40.80V	41.00V	41.20V
Optimum Operating Current (Imp)	17.33A	17.37A	17.41A	17.45A	17.48A
Module efficiency	22.5%	22.7%	22.9%	23.0%	23.2%
Power Tolerance	0 ~ +3%				
Maximum System Voltage	1500V DC (UL / IEC)				
Maximum Series Fuse Rating	35A				
Operating Temperature	-40 C to +85 C				

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

NMOT

Module	FE66-210(ND) (Bifaciality 80±10%)				
Maximum Power	534W	538W	542W	546W	550W
Open - Circuit Voltage (Voc)	46.00A	46.20A	46.40V	46.60V	46.80V
Short - Circuit Current (Isc)	14.76A	14.80A	14.83A	14.87A	14.91A
Optimum Operating Voltage (Vmp)	38.00V	38.20V	38.40V	38.60V	38.80V
Optimum Operating Current (Imp)	14.05A	14.08A	14.11A	14.14A	14.17A
NMOT	45±2 C				

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

Mechanical Characteristics

Solar Cells	Monocrystalline 210 × 105mm
No. of Cells	132 (6 × 22)
Dimensions	2384 × 1303 × 33mm
Weight	38.3±0.5kg
Glass (Front/Back)	High transmission tempered glass; thickness: 2.0mm
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm ² (UL / IEC); length: (+)400mm, (-)200mm / customized length
Connectors	MC4-EVO2/MC4 Compatible
Packaging Configuration	33 pcs/box, 594 pcs/40'HQ container

Temperature Characteristics

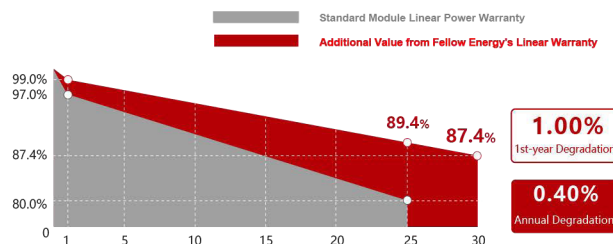
Temperature Coefficient of Pmax	-0.30%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	+0.046%/°C

Warranty

15 - years
product warranty

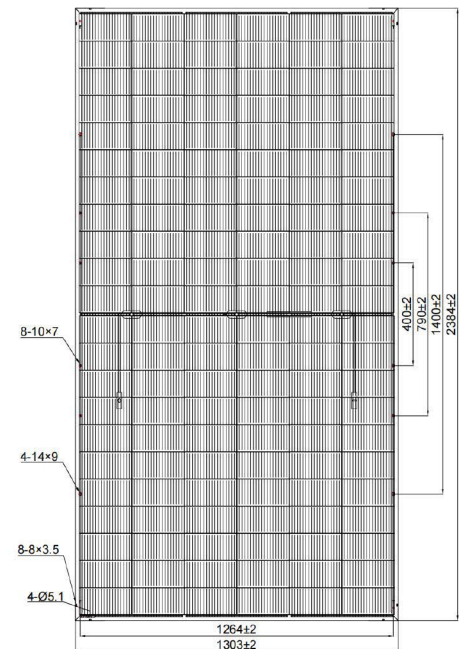
30 - years
warranty on power output

Specific information is referred to the product quality guarantee

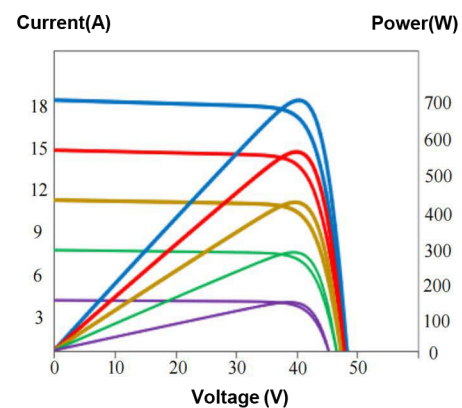


The module recycling should be carried out by the professional institutions at the end of module life cycle

Engineering Drawing



IV Curves





MARSTEPPOWER