



# COMUNE DI LECCE

PROVINCIA DI LECCE



REGIONE PUGLIA



## REALIZZAZIONE SU AREA INDUSTRIALE DI UN IMPIANTO SOLARE FOTOVOLTAICO CONNESSO ALLA RETE DI POTENZA DI PICCO PARI A 48.733,10 kW E POTENZA IN IMMISSIONE PARI A 38.000,00 kW

Denominazione Impianto:

**IMPIANTO LECCE 1**

Ubicazione:

Comune di Lecce (LE)  
Località Masseria Trapana

**ELABORATO  
2.7-IMP**

**COMPONENTI PRINCIPALI - DATA SHEET**

Cod. Doc.: 2.7-IMP



**Project - Commissioning – Consulting**  
Municipiul Bucuresti Sector 1  
Str. HRISOVULUI Nr. 2-4, Parter, Camera 1, Bl. 2, Ap. 88  
RO41889165

Scala: --

**PROGETTO**

Data:  
**15/12/2021**

PRELIMINARE



DEFINITIVO



AS BUILT



Richiedente:

**LECCE Srl**  
Piazza Walther Von Vogelweide, 8  
39100 Bolzano  
Provincia di Bolzano  
P.IVA 03016670212

Tecnici e Professionisti:

*Ing. Luca Ferracuti Pompa:*  
*Iscritto al n.A344 dell'Albo degli Ingegneri*  
*della Provincia di Fermo*

Revisione	Data	Descrizione	Redatto	Approvato	Autorizzato
01	01/09/2020	Progetto Definitivo	F.P.L.	F.P.L.	F.P.L.
02	15/12/2021	Revisione	F.P.L.	F.P.L.	F.P.L.
03					
04					

**Il Tecnico:**

Dott. Ing. Luca Ferracuti Pompa  
(Iscritto al n. A344, dell'Albo dell'Ordine degli Ingegneri della Provincia di Fermo)



**Il Richiedente:**

**LECCE S.r.l.**

Piazza Walther Von Vogelweide n.8 – 39100 Bolzano (BZ)  
P.Iva: 03016670212

ELABORATO 2.7-IMP	<b>COMUNE di LECCE</b> PROVINCIA di LECCE	Rev.: 02/21
<b>COMET ENERGY POWER</b>	<i>PROGETTO DEFINITIVO</i> <b>REALIZZAZIONE SU AREA INDUSTRIALE DI UN IMPIANTO SOLARE FOTOVOLTAICO CONNESSO ALLA RETE DI POTENZA DI PICCO PARI A 48.733,10 kW E POTENZA IN IMMISSIONE PARI A 38.000,00 kW</b>	Data: 15/12/21
	<b>COMPONENTI PRINCIPALI - DATA SHEET</b>	Pagina 2 di 2

## 1. OGGETTO

Il presente documento è redatto quale allegato alla documentazione relativa all'istanza per il procedimento di Valutazione di Impatto Ambientale ministeriale, ai sensi dell'Art. 23 del D. Lgs. 152/06, per la realizzazione in conformità alle vigenti disposizioni di legge di un impianto solare fotovoltaico per la produzione di energia elettrica, di potenza di picco pari a 48.733,10 kW e potenza massima in immissione pari a 38.000,00 kW, su area industriale sita nel Comune di Lecce (LE), in Località "Masseria Trapanà".

L'impianto sarà del tipo grid connected e l'energia elettrica prodotta sarà riversata completamente in rete, con allaccio in Alta Tensione alla Rete di Trasmissione Nazionale (RTN).

Il produttore e soggetto responsabile è la Società LECCE s.r.l., la quale dispone dell'autorizzazione all'utilizzo dell'area su cui sorgerà l'impianto in oggetto. La denominazione dell'opera è "Impianto fotovoltaico LECCE 1".

L'intervento prevede l'installazione di pannelli fotovoltaici (moduli) in silicio monocristallino della potenza unitaria di 475 Wp, su un terreno completamente pianeggiante ad una quota media di 37,5 m slm. avente destinazione d'uso Industriale. I moduli fotovoltaici saranno installati su strutture a inseguimento monoassiale (tracker) di tipo modulare, assemblabili per ospitare da 26 fino a 78 moduli. Il progetto prevede l'installazione di 1.453 tracker (ovvero 102.596 moduli fotovoltaici) per una potenza nominale complessiva installata di 48.733,10 kWp.

L'impianto sarà corredato da n. 11 Power Station, n.3 Cabine di Consegna e n. 1 Control Room.

Allegati:

- DATA SHEET MODULI FOTOVOLTAICI, INVERTER E TRACKER MONOASSIALI

Bolzano, li 15/12/2021

In Fede

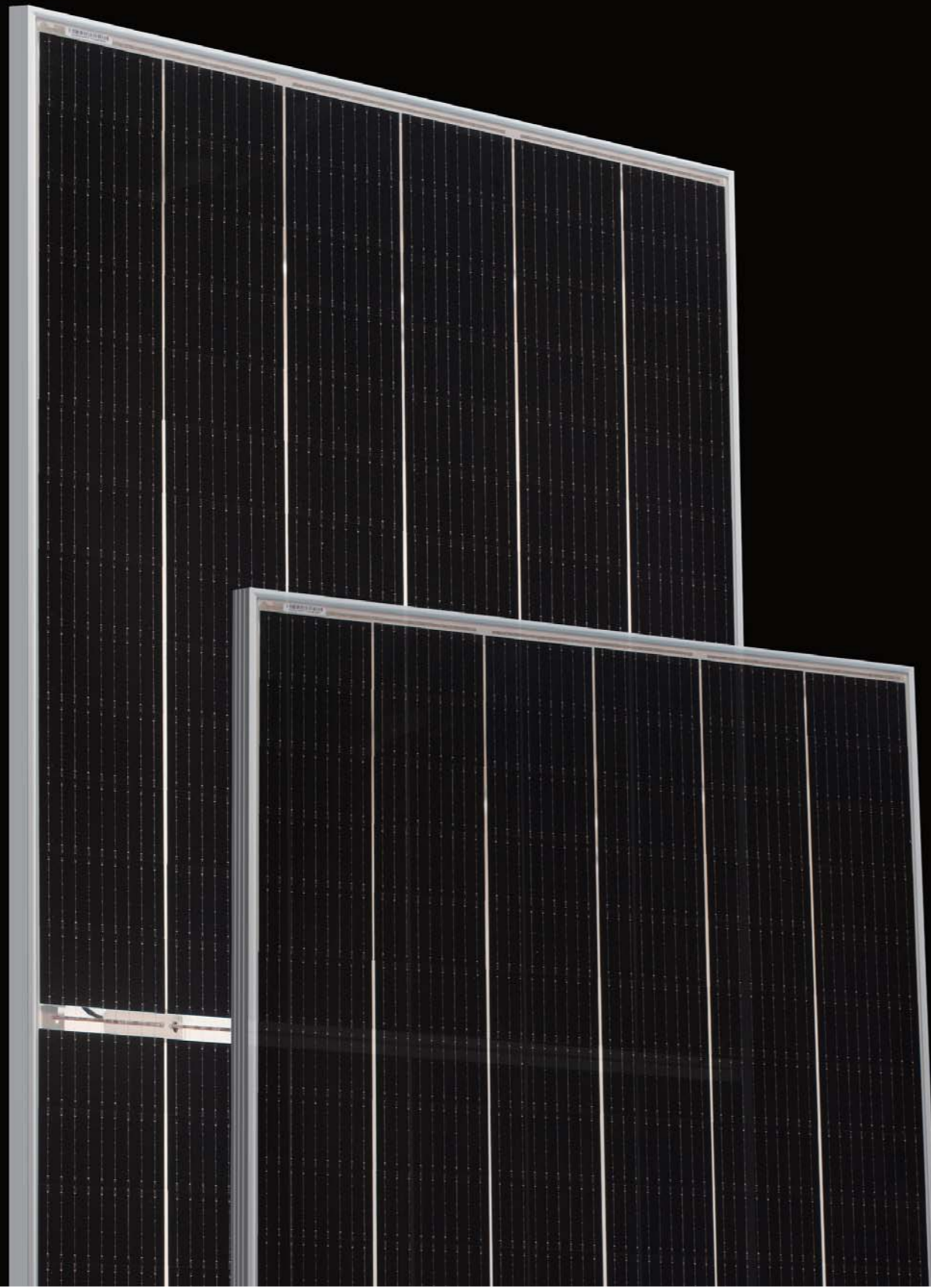
Il Tecnico

(Dott. Ing. Luca Ferracuti Pompa)



**TIGER · 475W**



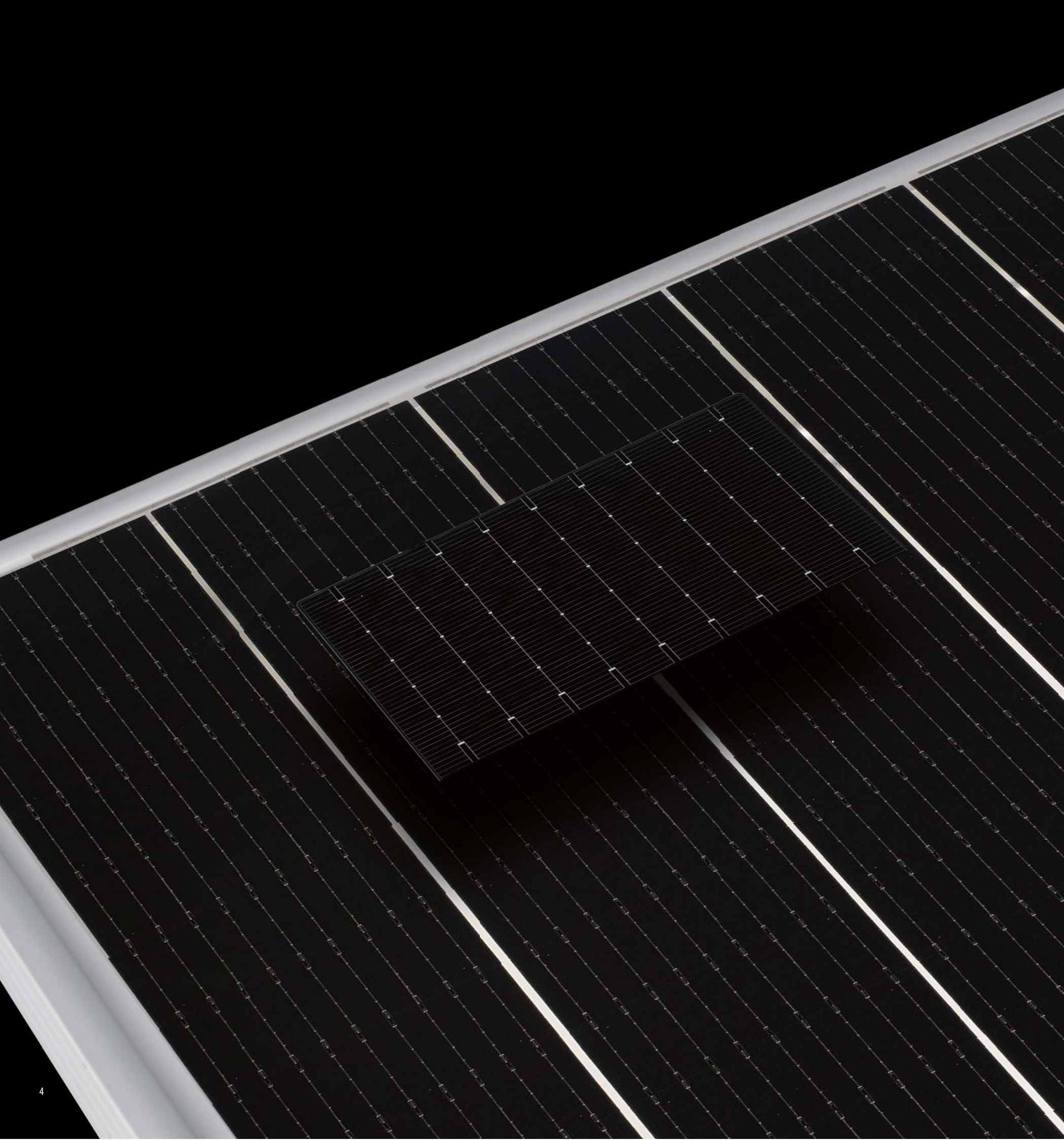


# 475W

## Breaking Power Records

The Ultra-high Efficiency  
of **21.16%**





# 9 Busbar Technology

Decreasing  
the Current Loss



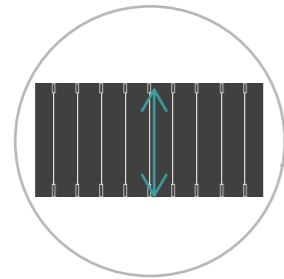
# Tiling Ribbon Technology

Eliminating the Inter-cell Gap

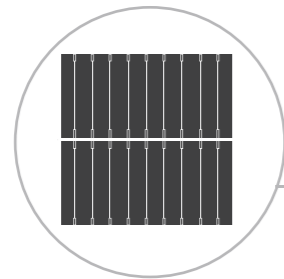


### Tiger Mono-facial

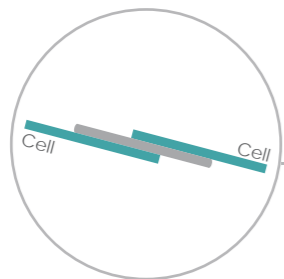
### Tiger Bifacial TB



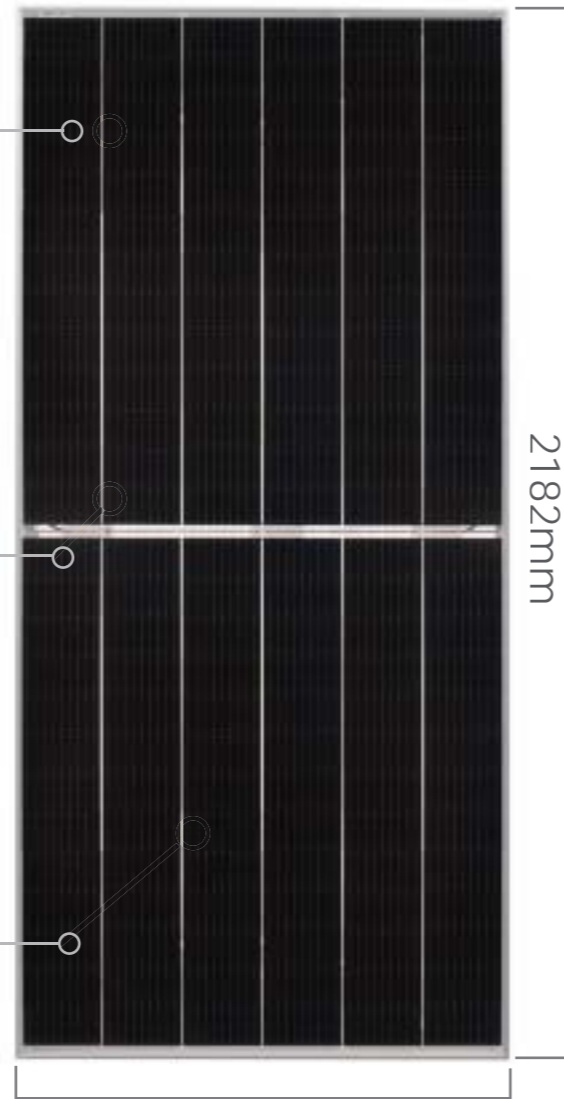
Half Cell Technology



9BB with circular ribbon

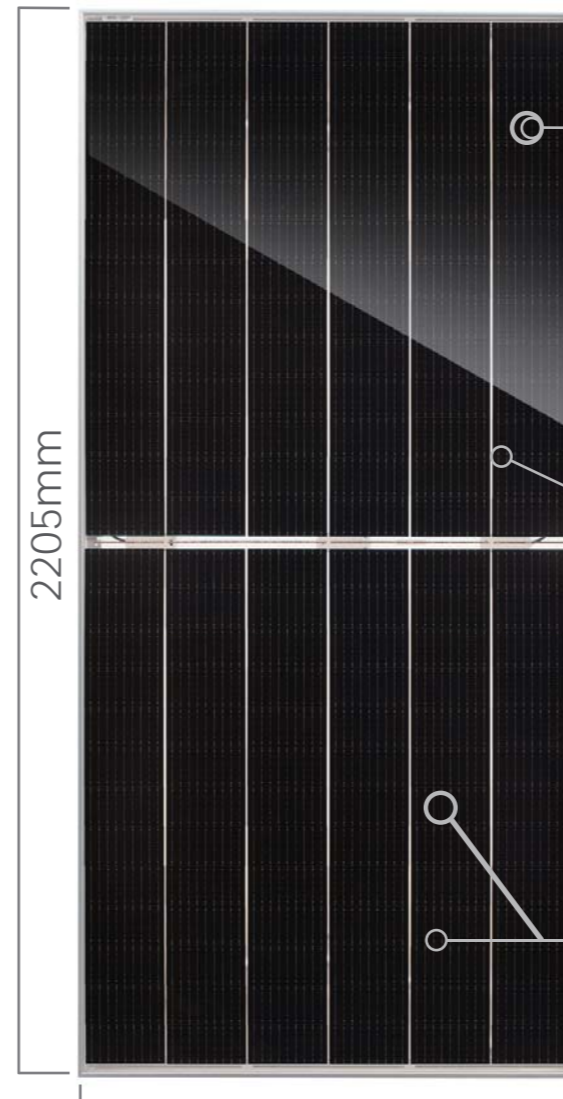


TR technology to eliminate the cell gap



1029mm

2182mm



1032mm

2205mm



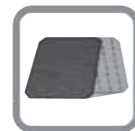
Rear side energy gain to increase IRR



Perfectly compatible with transparent backsheet, same weight with monofacial module



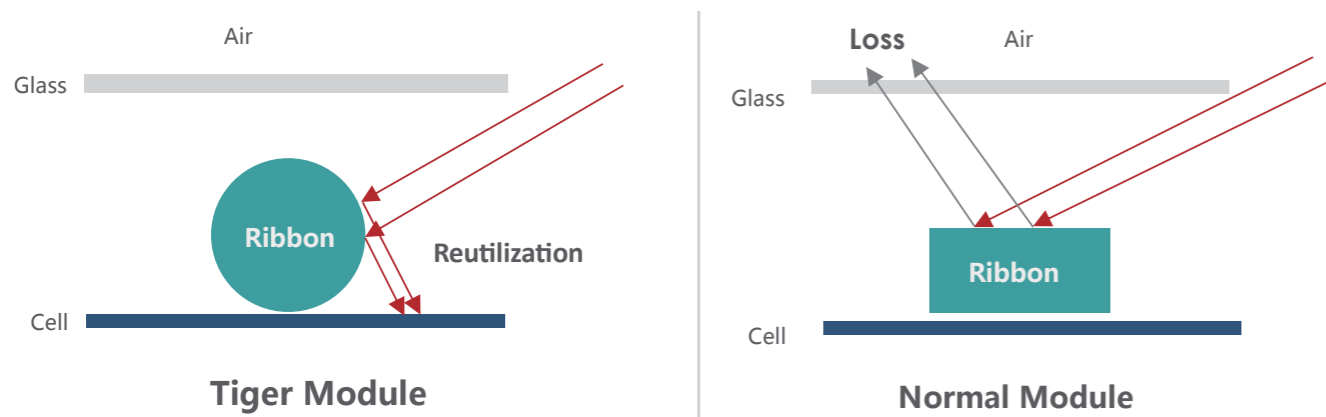
Use Dopot Tedlar film with high reliability and self-cleaning features



JinkoSolar is always focusing on creating value added for its customers. Tiger series, with the high energy density advantage and lower LCOE benefits, has been developed based on market's and customer's demands.

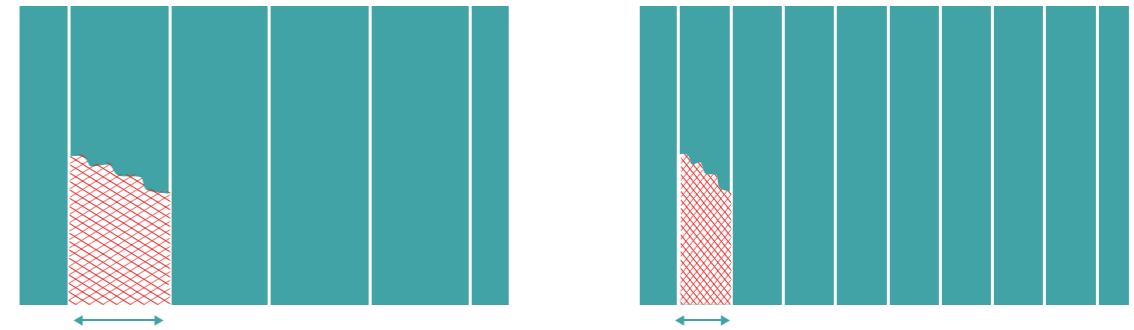
### Circular Ribbon Brings More Energy

Comparing with 5BB, Tiger series module uses circular ribbon which is developed by Jinko R&D independently to achieve the reutilization of light absorption and increase energy generation.



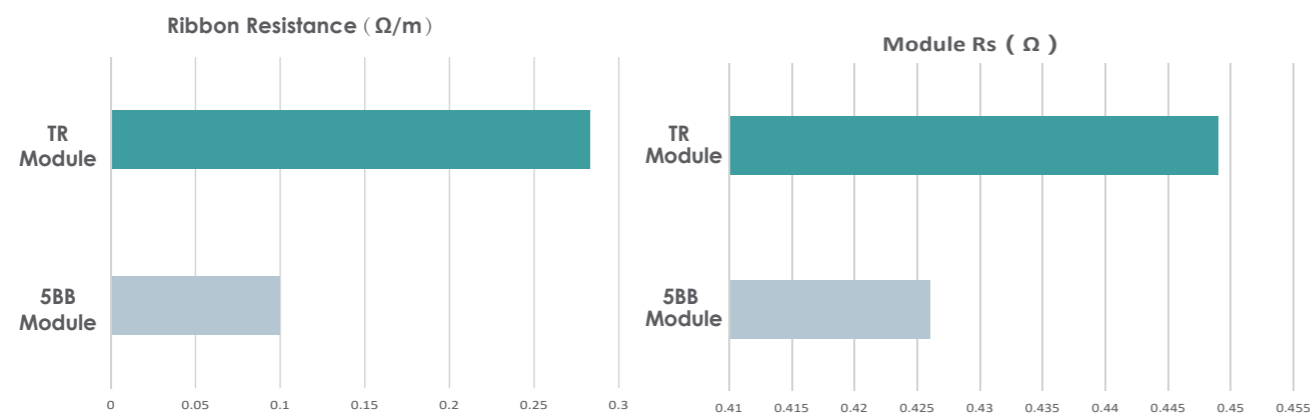
### Lower Microcrack Loss

Comparing with 5BB, current transmission distance is 50% lower which decreases the power loss by micro crack.



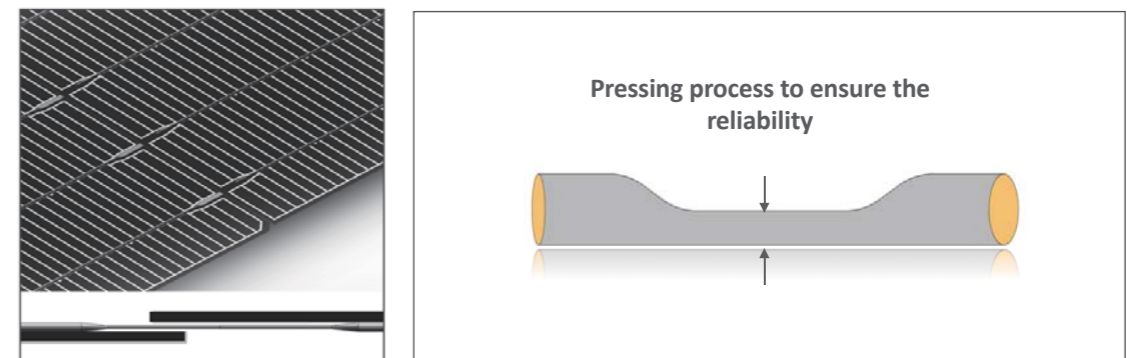
### Better Performance in Low Irradiance Environment

Comparing with normal 5BB module, Rs of Tiger module will increase about 5.4% and shows better performance in low irradiance environment.

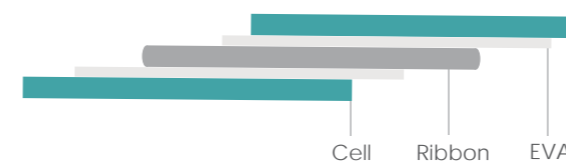


### Tiling Ribbon (TR) Technology

Comparing with 5BB normal ribbon, Jinko circular ribbon has better suppleness, after the pressing process, it performs excellent reliability.



### Structure diagram of overlapping area

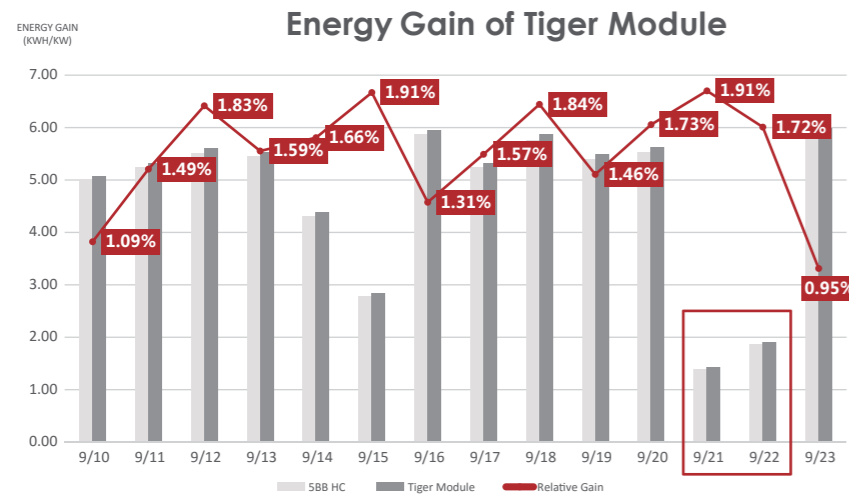


According to the experiment, specially made EVA will fill the overlapping region that gives excellent buffering effect to ensure the reliability.



### More Energy Generation

Comparing with traditional 5BB HC module, due to the secondary reflection of circular ribbon, energy generation will increase about 1.57%.

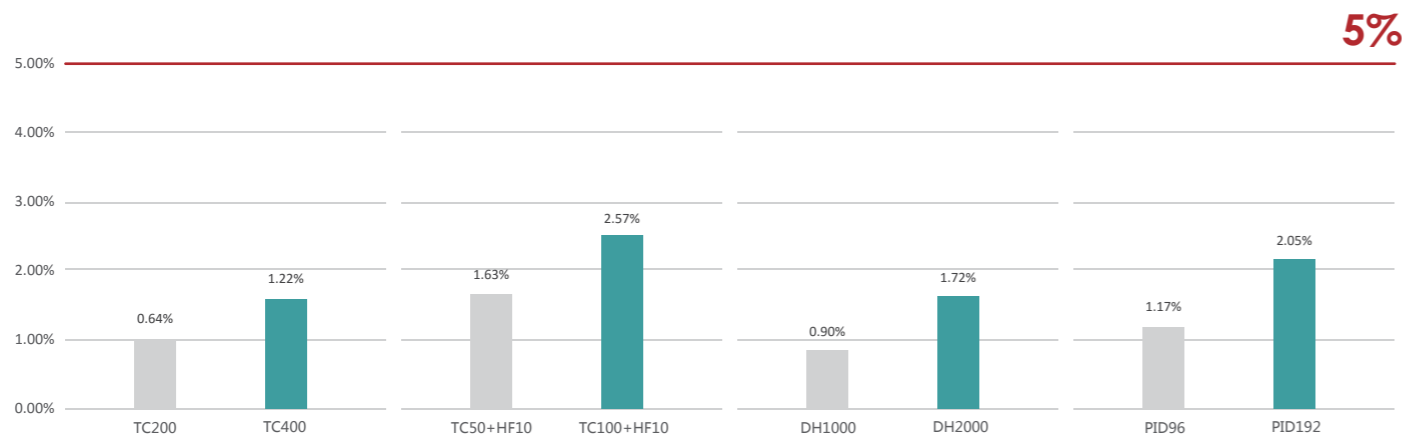


**Location:** Jinko factory, Haining, 30.3° N / 120.4° E  
**Fixed Tilt angle:** 30 degree, close to the latitude  
**Mounting Height:** distance from lower edge to ground is 1.2m  
**Capacity:** 1.5kW/array  
**Energy Gain:** Comparing with SBB HC module in same condition

9BB shows excellent energy generation performance especially in low irradiance environment.

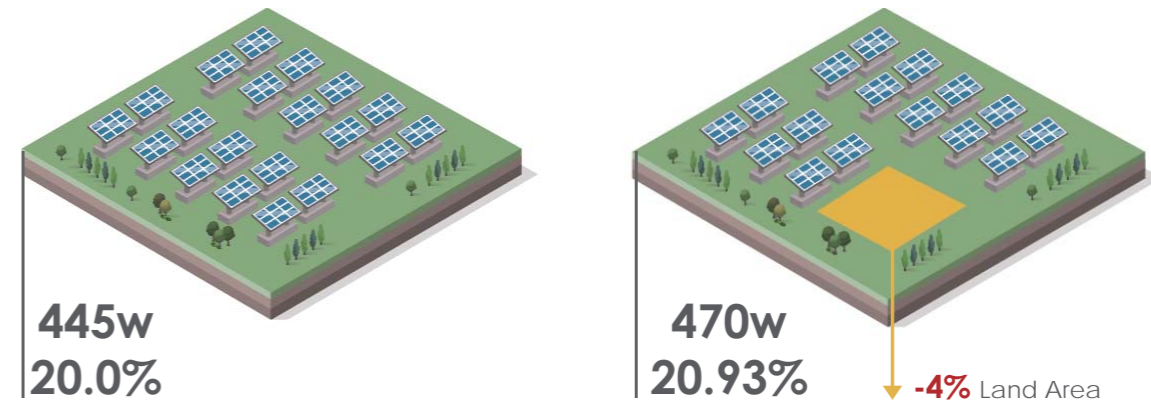
### More Reliability—IEC Test

With strict reliability test in IEC61215, such as PID, Thermal cycling and Damp Heat double standard test, TR module has advantages in reliability performance.



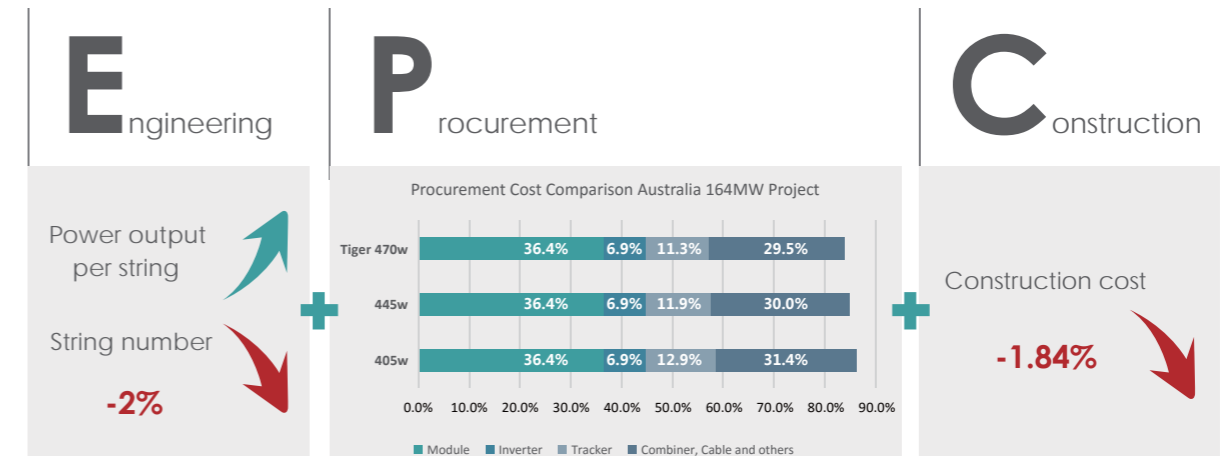
### Lower Land Cost

\*Example: Australia - 164MW Project



Using tiger module can save 4% land area comparing with 445w module.

### Lower EPC Cost

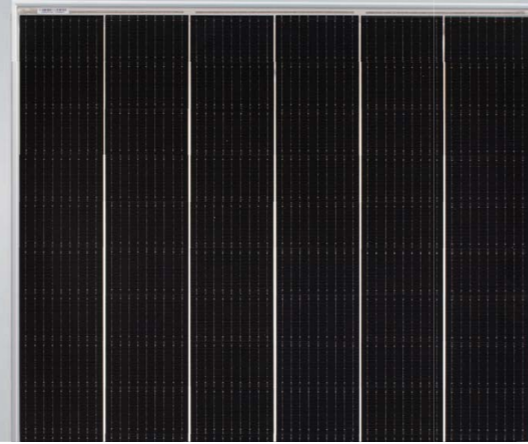


Comparing with 445w, using tiger module can save > 1.2% EPC cost.

# Tiger Mono-facial 455-475 Watt

Tiling Ribbon (TR) Technology

Positive power tolerance of 0~+3%



## KEY FEATURES



### TR technology + Half Cell

TR technology with Half cell aims to eliminate the cell gap to increase module efficiency (mono-facial up to 21.16%)



### 9BB instead of 5BB

9BB technology decreases the distance between bus bars and finger grid line which is benefit to power increase.



### Higher lifetime Power Yield

2.5% first year degradation,  
0.6% linear degradation



### Best Warranty

12 year product warranty,  
25 year linear power warranty



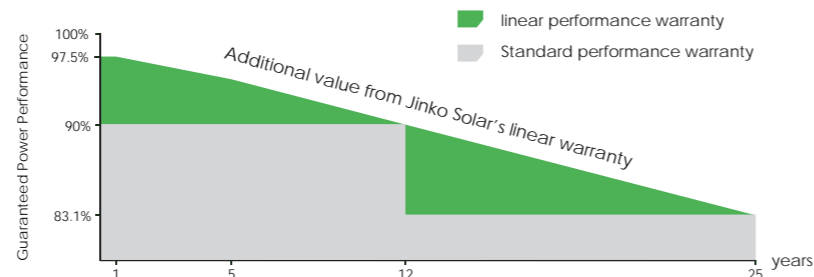
### Avoid debris, cracks and broken gate risk effectively

9BB technology using circular ribbon that could avoid debris, cracks and broken gate risk effectively

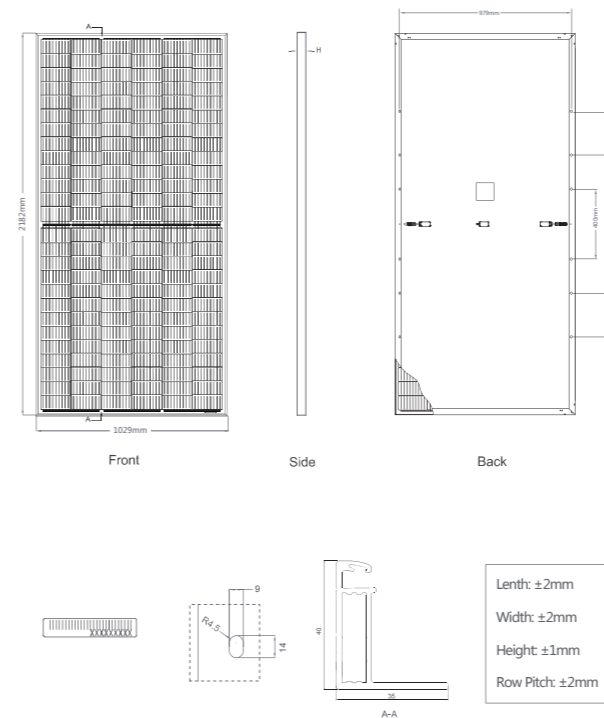


## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty • 25 Year Linear Power Warranty  
0.6% Annual Degradation Over 25 years



## Engineering Drawings

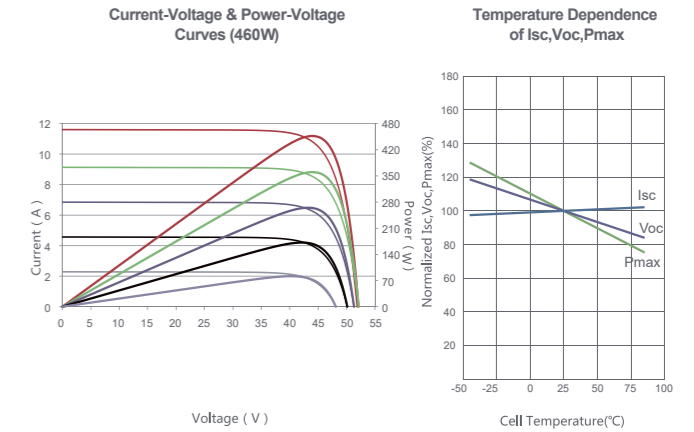


## Packaging Configuration

(Two pallets = One stack)

27pcs/pallets, 54pcs/stack, 540pcs/ 40'HQ Container

## Electrical Performance & Temperature Dependence



## Mechanical Characteristics

Cell Type	P type Mono-crystalline
No. of cells	156 (2×78)
Dimensions	2182×1029×40mm (85.91×40.51×1.57 inch)
Weight	26.1 kg (57.54 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	TUV 1×4.0mm <sup>2</sup> (+): 290mm, (-): 145 mm or Customized Length

## SPECIFICATIONS

Module Type	JKM455M-7RL3		JKM460M-7RL3		JKM465M-7RL3		JKM470M-7RL3		JKM475M-7RL3	
	JKM455M-7RL3-V	JKM460M-7RL3-V	JKM465M-7RL3-V	JKM470M-7RL3-V	JKM475M-7RL3-V					
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	455Wp	339Wp	460Wp	342Wp	465Wp	346Wp	470Wp	350Wp	475Wp	353Wp
Maximum Power Voltage (Vmp)	42.97V	39.32V	43.08V	39.43V	43.18V	39.58V	43.28V	39.69V	43.38V	39.80V
Maximum Power Current (Imp)	10.59A	8.61A	10.68A	8.68A	10.77A	8.74A	10.86A	8.81A	10.95A	8.88A
Open-circuit Voltage (Voc)	51.60V	48.70V	51.70V	48.80V	51.92V	49.01V	52.14V	49.21V	52.26V	49.33V
Short-circuit Current (Isc)	11.41A	9.22A	11.50A	9.29A	11.59A	9.36A	11.68A	9.43A	11.77A	9.51A
Module Efficiency STC (%)	20.26%		20.49%		20.71%		20.93%		21.16%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1000/1500VDC (IEC)									
Maximum series fuse rating	20A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.35%/°C									
Temperature coefficients of Voc	-0.28%/°C									
Temperature coefficients of Isc	0.048%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									

\* STC: ☀ Irradiance 1000W/m<sup>2</sup> 🌡 Cell Temperature 25°C ☁ AM=1.5  
 NOCT: ☀ Irradiance 800W/m<sup>2</sup> 🌡 Ambient Temperature 20°C ☁ AM=1.5 🌀 Wind Speed 1m/s  
 \* Power measurement tolerance: ± 3%

The company reserves the final right for explanation on any of the information presented hereby. TR JKM455-475M-7RL3-(V)-C1-EN



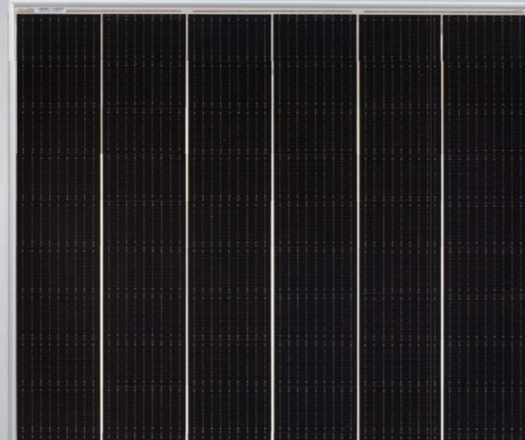
• ISO9001:2015, ISO14001:2015, OHSAS18001 certified factory

• IEC61215, IEC61730 certified product

# Tiger Bifacial 450-470 Watt

Tiling Ribbon (TR) Technology

Positive power tolerance of 0~+3%



## KEY FEATURES



### TR technology + Half Cell

TR technology with Half cell aims to eliminate the cell gap to increase module efficiency (bi-facial up to 20.65%)



### 9BB instead of 5BB

9BB technology decreases the distance between bus bars and finger grid line which is benefit to power increase.



### Higher lifetime Power Yield

2.5% first year degradation,  
0.55% linear degradation



### Best Warranty

12 year product warranty,  
30 year linear power warranty

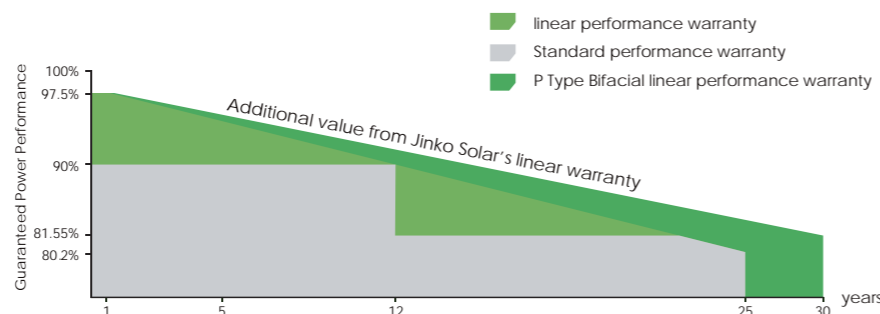


### Avoid debris, cracks and broken gate risk effectively

9BB technology using circular ribbon that could avoid debris, cracks and broken gate risk effectively

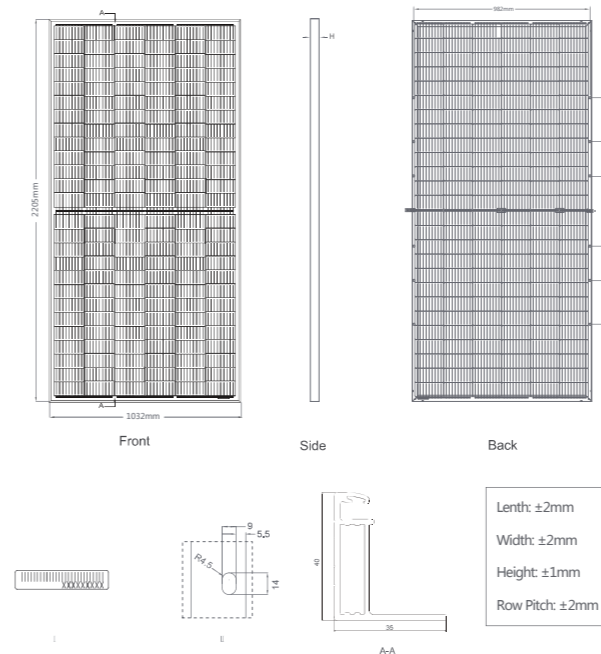
## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty • 30 Year Linear Power Warranty  
0.55% Annual Degradation Over 30 years



- ISO9001:2015, ISO14001:2015, OHSAS18001 certified factory
- IEC61215, IEC61730 certified product

## Engineering Drawings

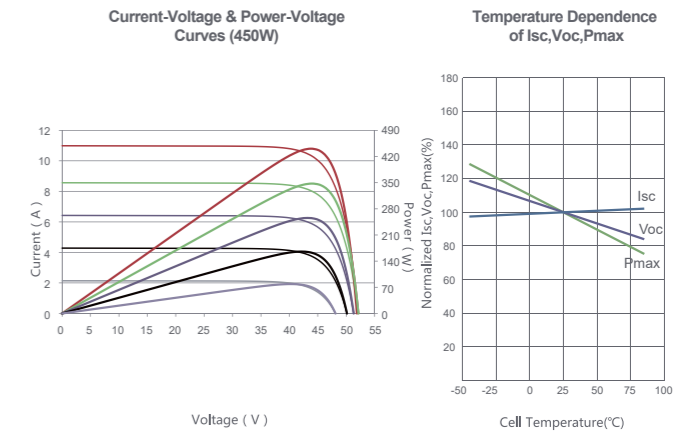


## Packaging Configuration

( Two pallets = One stack )

27pcs/pallets, 54pcs/stack, 540pcs/ 40'HQ Container

## Electrical Performance & Temperature Dependence



## Mechanical Characteristics

Cell Type	P type Mono-crystalline
No. of cells	156 (2×78)
Dimensions	2205×1032×40mm (86.81×40.63×1.57 inch)
Weight	26.5 kg (58.42 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	TUV 1×4.0mm <sup>2</sup> (+): 250mm, (-): 150 mm or Customized Length

## SPECIFICATIONS

Module Type	JKM450M-7RL3-TV		JKM455M-7RL3-TV		JKM460M-7RL3-TV		JKM465M-7RL3-TV		JKM470M-7RL3-TV	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	450Wp	335Wp	455Wp	339Wp	460Wp	342Wp	465Wp	346Wp	470Wp	350Wp
Maximum Power Voltage (Vmp)	43.19V	39.62V	43.25V	39.73V	43.32V	39.84V	43.38V	39.95V	43.44V	40.05V
Maximum Power Current (Imp)	10.42A	8.45A	10.52A	8.52A	10.62V	8.59A	10.72A	8.66A	10.82A	8.73A
Open-circuit Voltage (Voc)	51.70V	48.80V	51.80V	48.89V	51.90V	48.99V	52.00V	49.08V	52.10V	49.13V
Short-circuit Current (Isc)	11.17A	9.02A	11.26A	9.09A	11.35A	9.17A	11.44A	9.24A	11.53A	9.31A
Module Efficiency STC (%)	19.78%		20.00%		20.21%		20.43%		20.65%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1500VDC (IEC)									
Maximum series fuse rating	20A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.35%/°C									
Temperature coefficients of Voc	-0.28%/°C									
Temperature coefficients of Isc	0.048%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									
Refer. Bifacial Factor	70±5%									

## BIFACIAL OUTPUT-REAR SIDE POWER GAIN

		473Wp	478Wp	483Wp	488Wp	494Wp
5%	Maximum Power (Pmax)	473Wp	478Wp	483Wp	488Wp	494Wp
	Module Efficiency STC (%)	20.76%	20.99%	21.23%	21.46%	21.69%
15%	Maximum Power (Pmax)	518Wp	523Wp	529Wp	535Wp	541Wp
	Module Efficiency STC (%)	22.74%	22.99%	23.25%	23.50%	23.75%
25%	Maximum Power (Pmax)	563Wp	569Wp	575Wp	581Wp	588Wp
	Module Efficiency STC (%)	24.72%	24.99%	25.27%	25.54%	25.82%

\* STC: ☀ Irradiance 1000W/m<sup>2</sup> 🔥 Cell Temperature 25°C ☁ AM=1.5  
 NOCT: ☀ Irradiance 800W/m<sup>2</sup> 🔥 Ambient Temperature 20°C ☁ AM=1.5 🌀 Wind Speed 1m/s  
 \* Power measurement tolerance: ± 3%

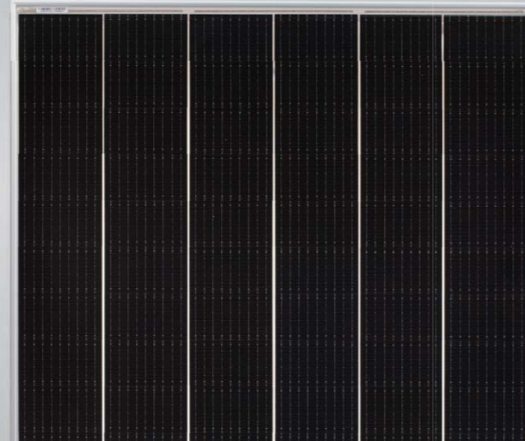
The company reserves the final right for explanation on any of the information presented hereby. TR JKM450-470M-7RL3-TV-C1-EN



# Tiger Mono-facial 375-395 Watt

Tiling Ribbon (TR) Technology

Positive power tolerance of 0~+3%

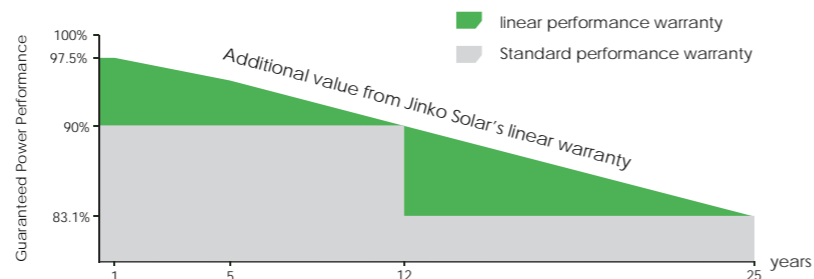


## KEY FEATURES

- TR technology + Half Cell**  
TR technology with Half cell aims to eliminate the cell gap to increase module efficiency (mono-facial up to 20.69%)
- 9BB instead of 5BB**  
9BB technology decreases the distance between bus bars and finger grid line which is benefit to power increase.
- Higher lifetime Power Yield**  
2.5% first year degradation, 0.6% linear degradation
- Best Warranty**  
12 year product warranty, 25 year linear power warranty
- Avoid debris, cracks and broken gate risk effectively**  
9BB technology using circular ribbon that could avoid debris, cracks and broken gate risk effectively

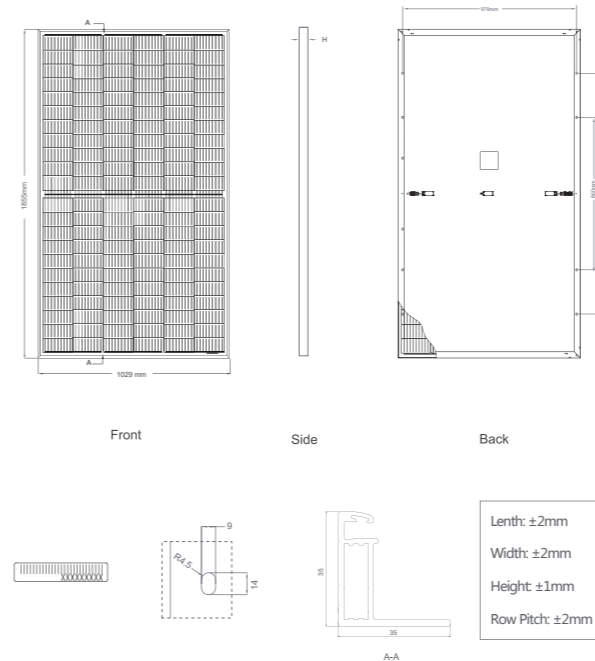
## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty 25 Year Linear Power Warranty  
0.6% Annual Degradation Over 25 years



- ISO9001:2015, ISO14001:2015, OHSAS18001 certified factory
- IEC61215, IEC61730 certified product

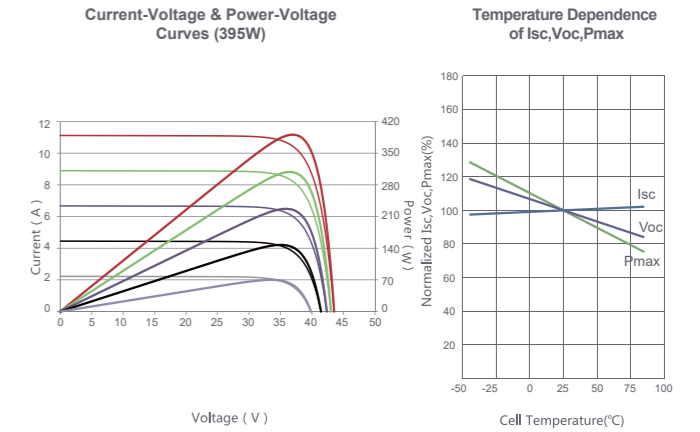
## Engineering Drawings



## Packaging Configuration

(Two pallets = One stack)  
31pcs/pallets, 62pcs/stack, 744pcs/ 40'HQ Container

## Electrical Performance & Temperature Dependence



## Mechanical Characteristics

Cell Type	P type Mono-crystalline
No. of cells	132 (2×66)
Dimensions	1855×1029×35mm (73.03×40.51×1.37 inch)
Weight	22.1 kg (48.72 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	TUV 1×4.0mm <sup>2</sup> (+): 290mm, (-): 145 mm or Customized Length

## SPECIFICATIONS

Module Type	JKM375M-6RL3		JKM380M-6RL3		JKM385M-6RL3		JKM390M-6RL3		JKM395M-6RL3	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	375Wp	279Wp	380Wp	283Wp	385Wp	286Wp	390Wp	290Wp	395Wp	294Wp
Maximum Power Voltage (Vmp)	36.20V	33.21V	36.30V	33.34V	36.39V	33.50V	36.49V	33.66V	36.58V	33.82V
Maximum Power Current (Imp)	10.36A	8.40A	10.47A	8.48A	10.58A	8.55A	10.69A	8.62A	10.80A	8.69A
Open-circuit Voltage (Voc)	43.49V	41.05V	43.58V	41.13V	43.66V	41.21V	43.75V	41.29V	43.93V	41.47V
Short-circuit Current (Isc)	11.12A	8.98A	11.21A	9.05A	11.30A	9.13A	11.39A	9.20A	11.48A	9.27A
Module Efficiency STC (%)	19.65%		19.91%		20.17%		20.43%		20.69%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1000/1500VDC (IEC)									
Maximum series fuse rating	20A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.35%/°C									
Temperature coefficients of Voc	-0.28%/°C									
Temperature coefficients of Isc	0.048%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									

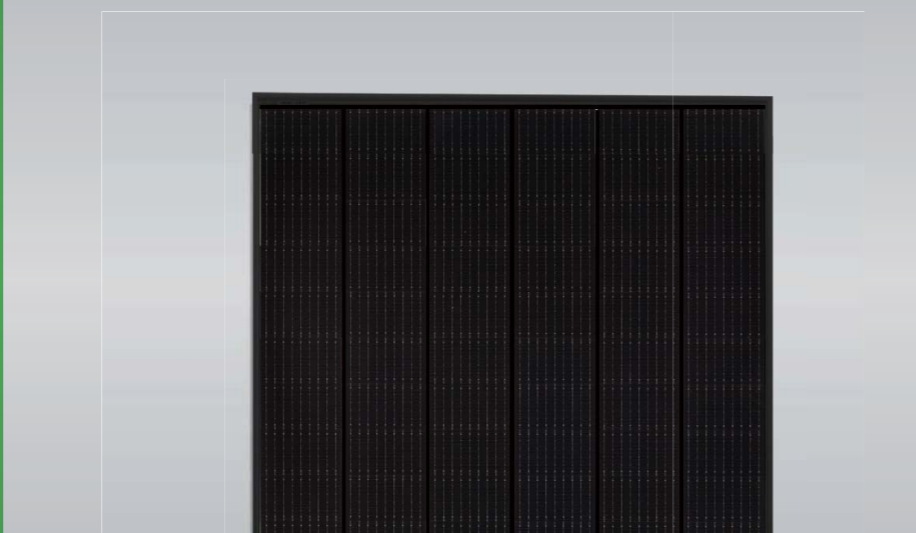
\* STC: ☀ Irradiance 1000W/m<sup>2</sup> 🌡 Cell Temperature 25°C ☁ AM=1.5  
 NOCT: ☀ Irradiance 800W/m<sup>2</sup> 🌡 Ambient Temperature 20°C ☁ AM=1.5 🌀 Wind Speed 1m/s  
 \* Power measurement tolerance: ± 3%

The company reserves the final right for explanation on any of the information presented hereby. TR JKM375-395M-6RL3-(V)-C1-EN

# Tiger Mono-facial All Black 365-385 Watt

Tiling Ribbon (TR) Technology

Positive power tolerance of 0~+3%



## KEY FEATURES



### TR technology + Half Cell

TR technology with Half cell aims to eliminate the cell gap to increase module efficiency (mono-facial up to 20.17%)



### 9BB instead of 5BB

9BB technology decreases the distance between bus bars and finger grid line which is benefit to power increase.



### Higher lifetime Power Yield

2.5% first year degradation, 0.6% linear degradation



### Best Warranty

12 year product warranty, 25 year linear power warranty

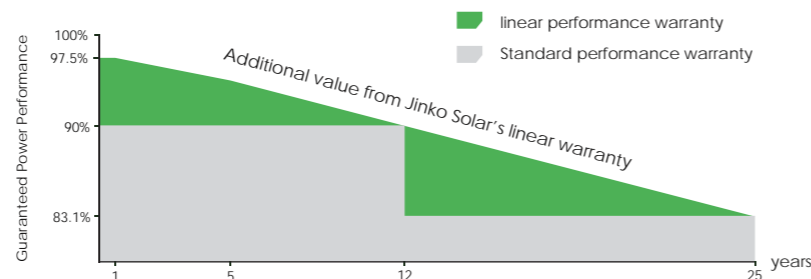


### Avoid debris, cracks and broken gate risk effectively

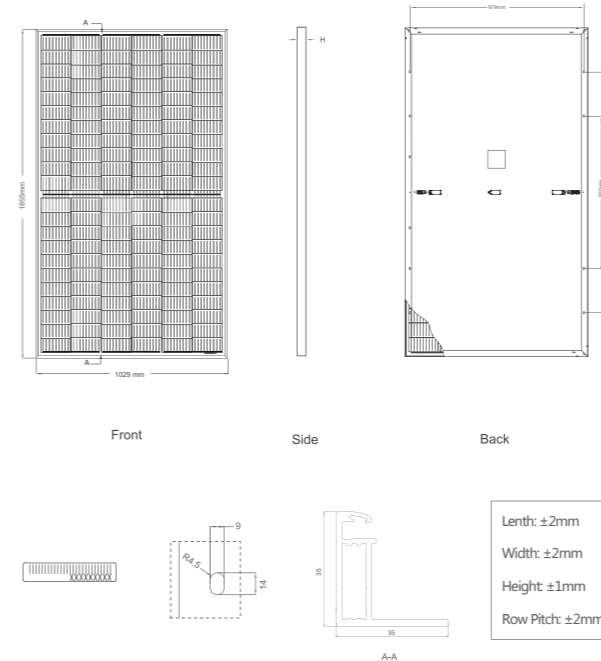
9BB technology using circular ribbon that could avoid debris, cracks and broken gate risk effectively

## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty 25 Year Linear Power Warranty  
0.6% Annual Degradation Over 25 years



## Engineering Drawings

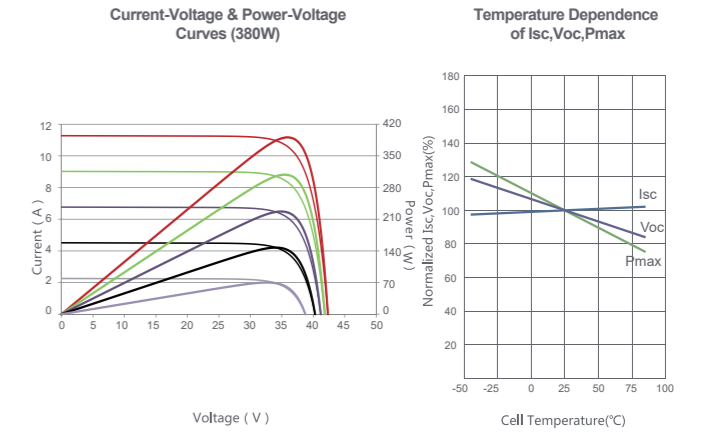


## Packaging Configuration

(Two pallets = One stack)

31pcs/pallets, 62pcs/stack, 744pcs/ 40'HQ Container

## Electrical Performance & Temperature Dependence



## Mechanical Characteristics

Cell Type	P type Mono-crystalline
No. of cells	132 (2×66)
Dimensions	1855×1029×35mm (73.03×40.51×1.37 inch)
Weight	22.1kg (48.72 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	TUV 1×4.0mm <sup>2</sup> (+): 290mm, (-): 145 mm or Customized Length

## SPECIFICATIONS

Module Type	JKM365M-6RL3-B		JKM370M-6RL3-B		JKM375M-6RL3-B		JKM380M-6RL3-B		JKM385M-6RL3-B	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	365Wp	272Wp	370Wp	275Wp	375Wp	279Wp	380Wp	283Wp	385Wp	286Wp
Maximum Power Voltage (Vmp)	36.00V	32.92V	36.10V	33.05V	36.20V	33.21V	36.30V	33.34V	36.39V	33.50V
Maximum Power Current (Imp)	10.14A	8.25A	10.25A	8.33A	10.36A	8.40A	10.47A	8.48A	10.58A	8.55A
Open-circuit Voltage (Voc)	43.32V	40.89V	43.41V	40.97V	43.49V	41.05V	43.58V	41.13V	43.66V	41.21V
Short-circuit Current (Isc)	10.94A	8.84A	11.03A	8.91A	11.12A	8.98A	11.21A	9.05A	11.30A	9.13A
Module Efficiency STC (%)	19.12%		19.38%		19.65%		19.91%		20.17%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1000VDC (IEC)									
Maximum series fuse rating	20A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.35%/°C									
Temperature coefficients of Voc	-0.28%/°C									
Temperature coefficients of Isc	0.048%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									

\* STC: ☀ Irradiance 1000W/m<sup>2</sup> 🚧 Cell Temperature 25°C ☁ AM=1.5  
NOCT: ☀ Irradiance 800W/m<sup>2</sup> 🚧 Ambient Temperature 20°C ☁ AM=1.5 🌀 Wind Speed 1m/s  
\* Power measurement tolerance: ± 3%

The company reserves the final right for explanation on any of the information presented hereby. TR JKM365-385M-6RL3-B-C1-EN

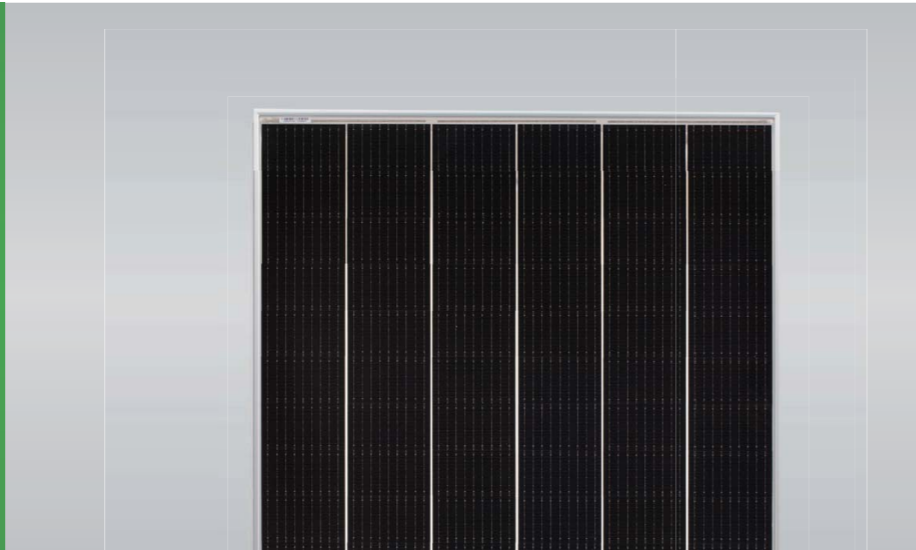


- ISO9001:2015, ISO14001:2015, OHSAS18001 certified factory
- IEC61215, IEC61730 certified product

# Tiger Bifacial DG 450-470 Watt

Tiling Ribbon (TR) Technology

Positive power tolerance of 0~+3%



## KEY FEATURES

**TR technology + Half Cell**  
TR technology with Half cell aims to eliminate the cell gap to increase module efficiency (bi-facial up to 20.65%)

**9BB instead of 5BB**  
9BB technology decreases the distance between bus bars and finger grid line which is benefit to power increase.

**Higher lifetime Power Yield**  
2.5% first year degradation,  
0.5% linear degradation

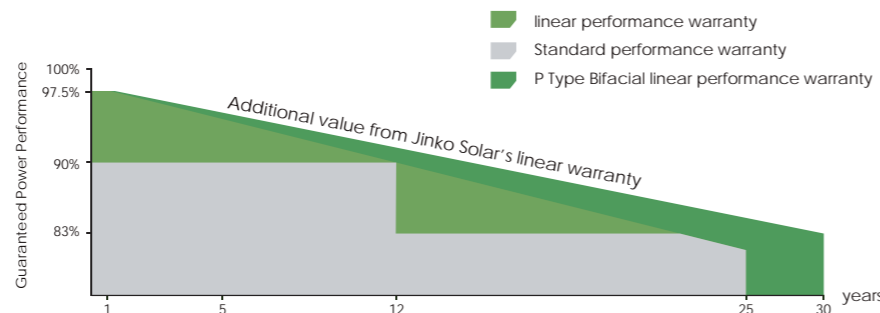
**Saving BOS Cost**  
Designed for high voltage systems of up to 1500 VDC, saving BOS cost

**Avoid debris, cracks and broken gate risk effectively**  
9BB technology using circular ribbon that could avoid debris, cracks and broken gate risk effectively

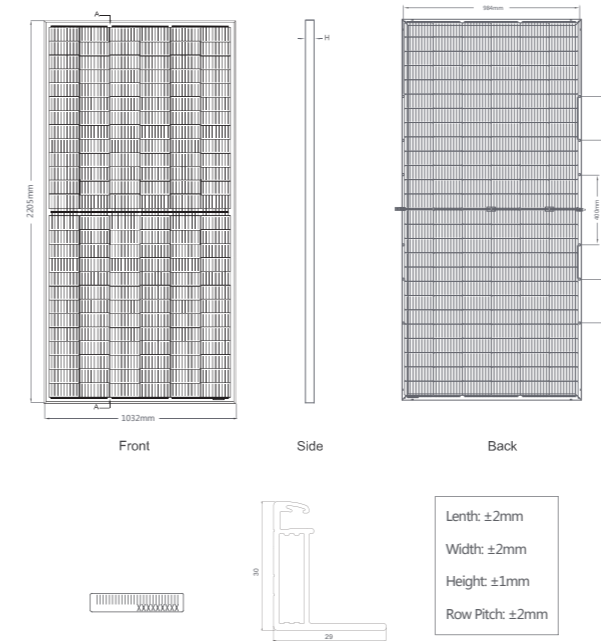


## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty • 30 Year Linear Power Warranty  
0.5% Annual Degradation Over 30 years



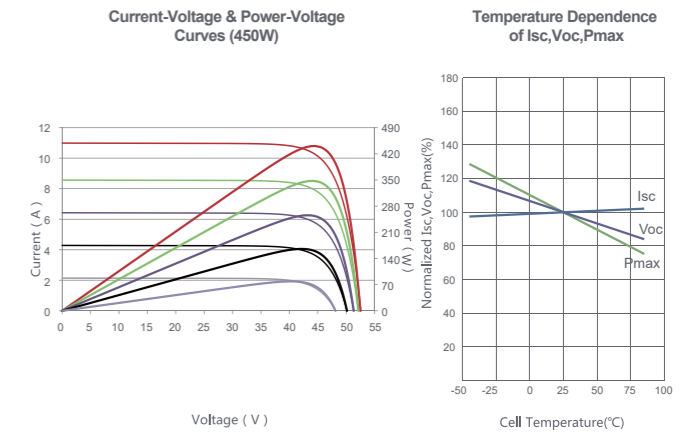
## Engineering Drawings



## Packaging Configuration

( Two pallets = One stack )  
36pcs/pallets, 72pcs/stack, 720pcs/ 40'HQ Container

## Electrical Performance & Temperature Dependence



## Mechanical Characteristics

Cell Type	P type Mono-crystalline
No. of cells	156 (2×78)
Dimensions	2205×1032×30mm (86.81×40.63×0.98 inch)
Weight	30.0 kg ( 66.04 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	TUV 1×4.0mm <sup>2</sup> (+): 250mm, (-): 150 mm or Customized Length

## SPECIFICATIONS

Module Type	JKM450M-7RL3-BDVP		JKM455M-7RL3-BDVP		JKM460M-7RL3-BDVP		JKM465M-7RL3-BDVP		JKM470M-7RL3-BDVP	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	450Wp	335Wp	455Wp	339Wp	460Wp	342Wp	465Wp	346Wp	470Wp	350Wp
Maximum Power Voltage (Vmp)	43.19V	39.62V	43.25V	39.73V	43.32V	39.84V	43.38V	39.95V	43.44V	40.05V
Maximum Power Current (Imp)	10.42A	8.45A	10.52A	8.52A	10.62V	8.59A	10.72A	8.66A	10.82A	8.73A
Open-circuit Voltage (Voc)	51.70V	48.80V	51.80V	48.89V	51.90V	48.99V	52.00V	49.08V	52.10V	49.13V
Short-circuit Current (Isc)	11.17A	9.02A	11.26A	9.09A	11.35A	9.17A	11.44A	9.24A	11.53A	9.31A
Module Efficiency STC (%)	19.78%		20.00%		20.21%		20.43%		20.65%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1500VDC (IEC)									
Maximum series fuse rating	20A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.35%/°C									
Temperature coefficients of Voc	-0.28%/°C									
Temperature coefficients of Isc	0.048%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									
Refer. Bifacial Factor	70±5%									

## BIFACIAL OUTPUT-REAR SIDE POWER GAIN

		473Wp	478Wp	483Wp	488Wp	494Wp
5%	Maximum Power (Pmax)	473Wp	478Wp	483Wp	488Wp	494Wp
	Module Efficiency STC (%)	20.76%	20.99%	21.23%	21.46%	21.69%
15%	Maximum Power (Pmax)	518Wp	523Wp	529Wp	535Wp	541Wp
	Module Efficiency STC (%)	22.74%	22.99%	23.25%	23.50%	23.75%
25%	Maximum Power (Pmax)	563Wp	569Wp	575Wp	581Wp	588Wp
	Module Efficiency STC (%)	24.72%	24.99%	25.27%	25.54%	25.82%

\* STC: ☀ Irradiance 1000W/m<sup>2</sup> 🔥 Cell Temperature 25°C ☁ AM=1.5  
NOCT: ☀ Irradiance 800W/m<sup>2</sup> 🔥 Ambient Temperature 20°C ☁ AM=1.5 🌀 Wind Speed 1m/s

\* Power measurement tolerance: ± 3%

The company reserves the final right for explanation on any of the information presented hereby. TR JKM450-470M-7RL3-BDVP-C1-EN



- ISO9001:2015, ISO14001:2015, OHSAS18001 certified factory
- IEC61215, IEC61730, UL1703 certified product



# SUN2000-185KTL-H1 Smart String Inverter



9  
MPP Trackers



Max. Efficiency  
>99.0%



String-level  
Management



Smart I-V Curve  
Diagnosis Supported



MBUS  
Supported



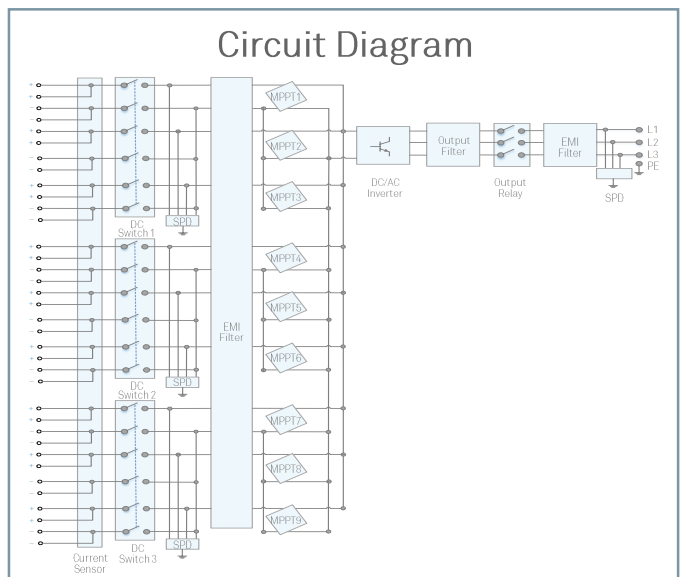
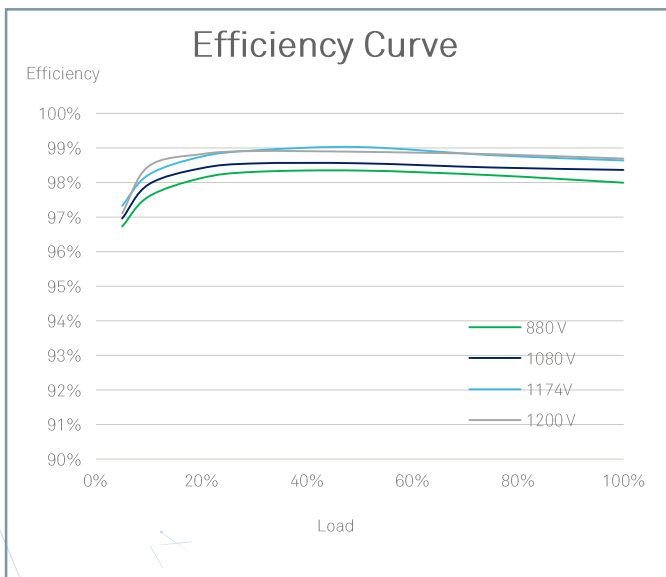
Fuse Free  
Design



Surge Arresters for  
DC & AC

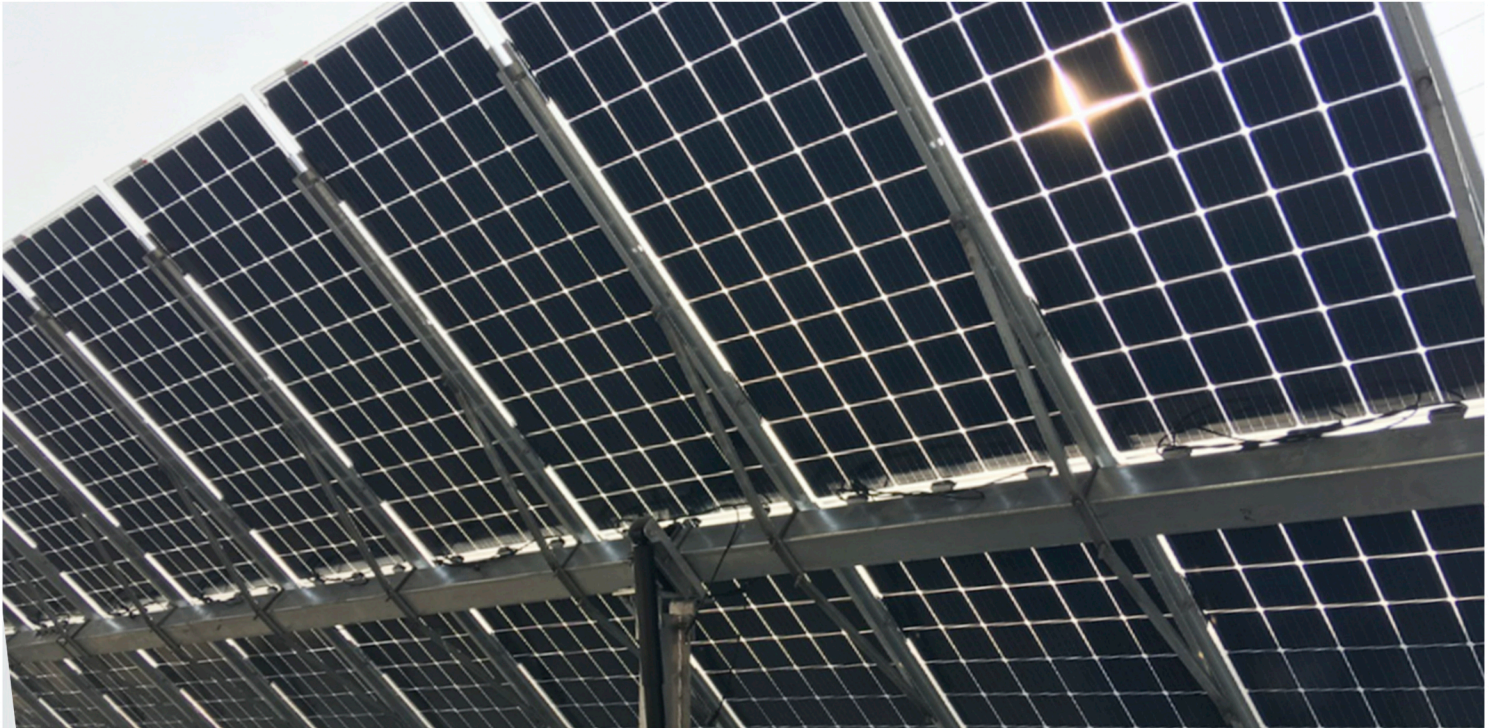


IP66  
Protection



# Technical Specifications

Efficiency	
Max. Efficiency	99.03%
European Efficiency	98.69%
Input	
Max. Input Voltage	1,500 V
Max. Current per MPPT	26 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	550 V
MPPT Operating Voltage Range	500 V ~ 1,500 V
Nominal Input Voltage	1,080 V
Number of Inputs	18
Number of MPP Trackers	9
Output	
Nominal AC Active Power	175,000 W @40°C, 168,000 W @45°C, 150,000 W @50°C
Max. AC Apparent Power	185,000 VA
Max. AC Active Power (cosφ=1)	185,000 W
Nominal Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	126.3 A @40°C, 121.3 A @45°C, 108.3 A @50°C
Max. Output Current	134.9 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Communication	
Display	LED Indicators, Bluetooth/WLAN + APP
USB	Yes
MBUS	Yes
RS485	Yes
General	
Dimensions (W x H x D)	1,035 x 700 x 365 mm (40.7 x 27.6 x 14.4 inch)
Weight (with mounting plate)	84 kg (185.2lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Staubli MC4 EVO2
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code	IEC 61727, P.O. 12.3, RD 1699, RD 661, RD 413, RD 1565, RD 1663, UNE 206007-1, UNE 206006



# SkySmart

Single Row Double Performance

## SkySmart Product Features

1

The industrial  
N-S slope  
record **20%**



2

Only **200**  
foundations/MW



3

Apply to  
✓ bifacial module  
✓ regular module



4

Self-powered system  
with Li-ion battery  
as a backup



5

1st tracker supplier  
to apply LoRa-wireless  
communication  
technology



6

Double pitch risk-free  
drive-through  
module cleaning





## SKYSMART TRACKER SPECIFICATIONS

Tracking Type	Independent Horizontal Single Axis Tracker
Tracking Range	Up to 120°(±60°)
Driving System	One Slewing Gear, 24VDC Motor
Modules per Tracker	Up to 90 modules per tracker
System Voltage	1,000 Volt or 1,500 Volt
Ground Coverage Ratio	Fully configurable by customer, typical range 33%-55%
Foundation Options	Ramming/Pre-drilling/Concrete Piles/Screw Pile
Terrain Adaption	Up to 20% N-S Slope
Structure Material	Hot Dipped Galvanized/Pre-Galvanized Steel
Power Supply	Self-powered PV series
Daily Energy Consumption	Typical 0.08kWh
Standard Wind Design	105mph(47m/s) per ASCE7-10, higher wind load available
Wind Protection	Stow when wind speed > 18m/s
Module Supported	Most commercially available
Operation Temperature	-30°C to 60°C

## ELECTRONIC CONTROLLER SPECIFICATIONS

Control System	1 Controller per 3 Trackers
Control Algorithm	Astronomical Algorithms + Tilt Sensor Close Loop
Tracking Accuracy	$\leq \pm 2^\circ$
Backtracking	Yes
Communication	RS 485 cable/ LoRa wireless
Night Position	Yes

