

**BACK CONTACT MONO**  
**450 - 465 Watt**



**KEY FEATURES**

**HIGH EFFICIENCY**

- Increased solar light absorption area
- No front side busbars

**HIGH RELIABILITY**

- All Back Contact technology
- Lower micro-crack risk

**AESTHETIC DESIGN**

- Full black design with no visible front side contacts

**HIGH DURABILITY**

- Low degradation  $\leq 1\%$  in year 1 and  $\leq 0,4\%$  in years 2-30
- Low temperature coefficient of  $-0,29\%/^{\circ}\text{C}$  optimised
- Positive power tolerance of  $0\sim+3\%$

**OPTIMIZED BOS**

- Significant construction and installation cost savings



**QUALITY AND SAFETY**

- Industry leading power output warranty  
30 years linear power warranty 87,4%
- 30 years warranty on materials & workmanship
- Fire Rating: Class 1



**PREMIUM PERFORMANCE WARRANTY**

**30 years**

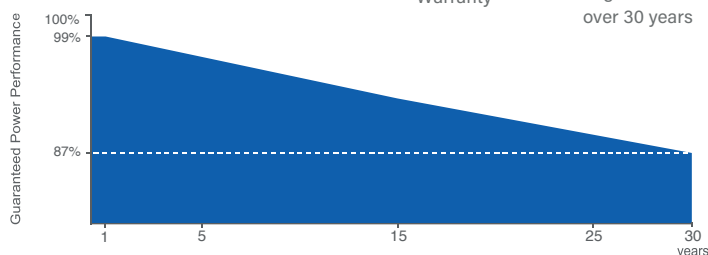
Product Warranty

**30 years**

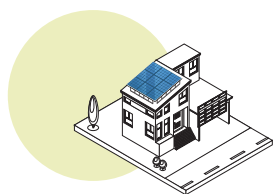
Linear Power  
Warranty

**0.40%**

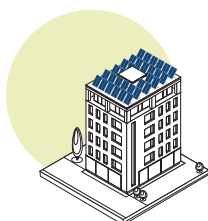
Annual  
degradation  
over 30 years



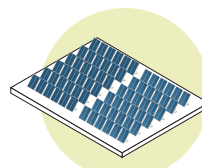
**APPLICATIONS**



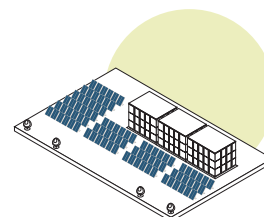
On-grid residential roof-tops



On-grid commercial - industrial roof-tops

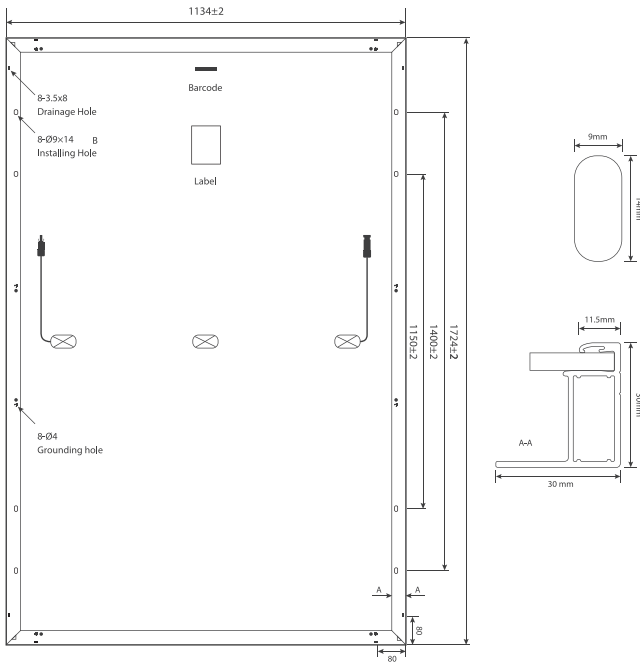


Solar power plants



Off-grid systems

## ENGINEERING DRAWINGS

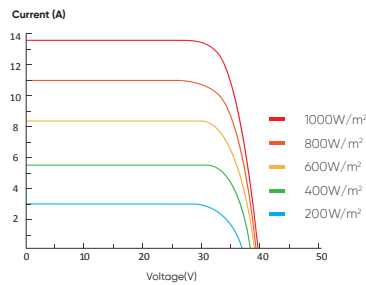


## PACKAGING CONFIGURATION

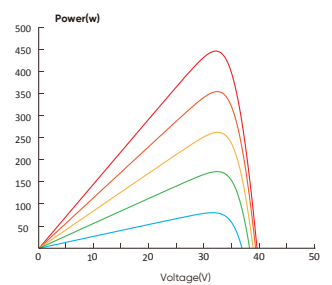
Standard packaging	72 pcs / pallet
Module quantity per 40' container	936pcs

## ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE

Current-Voltage Curve(450W)



Power-Voltage Curve(450W)



## MECHANICAL CHARACTERISTICS

Cell Type	Back Contact N-Type, mono-crystalline 182mm
No. of cells	108
Dimensions	1724 x 1134 x 30 mm (±2mm)
Weight	20.8kgs
Front Glass	3.2mm tempered, high transmission AR coating
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	TÜV 1x4.0mm² / UL 12AWG, Length:1100mm

## SPECIFICATIONS

STC



Irradiance 1000W/m²



Module Temperature 25°C



AM=1.5

Module Type <sup>(1)</sup>	TKA450M-BC-108		TKA455M-BC-108		TKA460M-BC-108		TKA465M-BC-108	
	STC <sup>(2)</sup>	NMOT <sup>(3)</sup>	STC <sup>(2)</sup>	NMOT <sup>(3)</sup>	STC <sup>(2)</sup>	NMOT <sup>(3)</sup>	STC <sup>(2)</sup>	NMOT <sup>(3)</sup>
Maximum Power (Pmax)	450Wp	339Wp	455Wp	343Wp	460Wp	347Wp	465Wp	351Wp
Maximum Power Voltage (Vmp)	33.81V	31.84V	33.91V	31.94V	34.01V	32.03V	34.11V	32.12V
Maximum Power Current (Imp)	13.32A	10.67A	13.42A	10.76A	13.53A	10.84A	13.64A	10.93A
Open-circuit Voltage (Voc)	39.99V	37.66V	40.09V	37.76V	40.19V	37.85V	40.29V	37.94V
Short-circuit Current (Isc)	13.96A	11.32A	14.02A	11.37A	14.08A	11.42A	14.14A	11.46A
Module Efficiency (%)	23.0%		23.3%		23.6%		23.8%	
Voc and isc tolerance	±3%							
Operating Temperature(°C)	-40°C~+85°C							
Maximum system voltage	1500V							
Maximum series fuse rating	25A							
Temperature coefficients of Pmax	-0.29%/°C							
Temperature coefficients of Voc	-0.25%/°C							
Temperature coefficients of Isc	0.045%/°C							
Nominal operating cell temperature (NOCT)	45±2 °C							