



## TOPCon TECHNOLOGY



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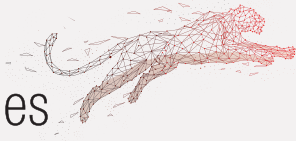
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## MONO CRYSTALLINE HALF-CUT MODULE

535 / 540 / 545 / 550 / 555 Watts

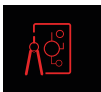
# Panther Series



### Overview

Ground breaking technology; higher power output, improved system performance - the ideal solution for end users who want a fast turnaround on their investments. A fully certified premium quality and high efficiency module made with A Grade materials.

### Key Benefits



Certified by Independent Engineering Bodies



Product Liability Insurance



Ultra High Power Output



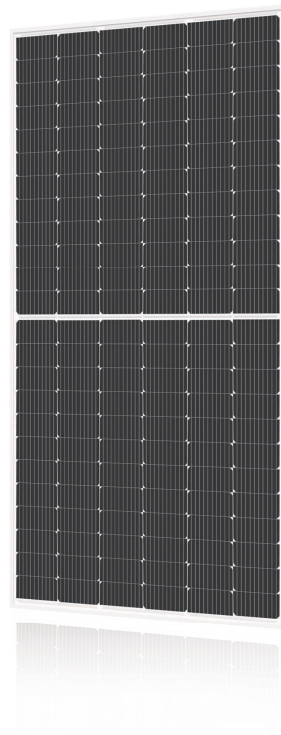
25 Years Limited Product Warranty



Low Resistive Losses



Low LCOE



Guaranteed mechanical resistance to severe weather conditions



Positive Tolerance

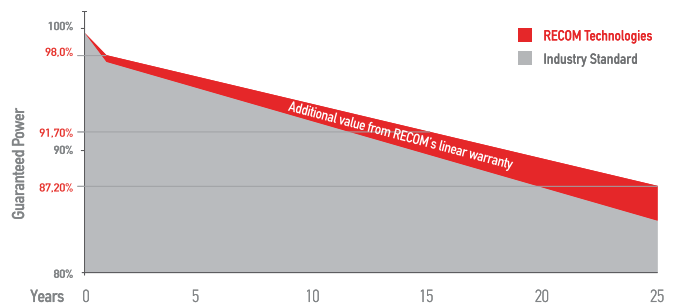


100 % electro-luminescence tested

### Tests, Certifications and Warranties

Standard Tests	IEC 61215, IEC 61730
Factory Quality Tests	ISO 9001: 2015, ISO 14001: 2015
Certifications	Conformity to CE, PV CYCLE Fire safety Class C according to UL790
Insurance	Third party liability insurance provided by Liberty Mutual
Wind and Snow Loads Testing	Module certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal)
Withstanding Hail	Maximum Diameter of 25 mm with impact speed of 23 m/s
Power Tolerance	Guaranteed +0/+5W (STC condition)
Warranties	<ul style="list-style-type: none"> <li>25-year limited product warranty</li> <li>15-year manufacturer warranty on 91.70% of the nominal performance</li> <li>25-year transferable linear power output warranty</li> </ul>

### Linear Performance Warranty



First Year Output  $\geq 98\%$       2-25 Year Decline  $\leq 0.45\%$       25 Year Output  $\geq 87.20\%$

# Panther

## MONO CRYSTALLINE HALF CUT MODULE

RCM-xxx-7MF(xxx=535-555)

### Electrical Characteristics

POWER CLASS <sup>(1)</sup>			535		540		545		550		555	
Testing Condition			STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power	P <sub>max</sub>	[Wp]	535	405	540	408	545	412	550	416	555	420
Maximum Power Voltage	V <sub>mp</sub>	[V]	41.47	38.78	41.64	38.99	41.8	39.2	41.96	39.43	42.11	39.64
Maximum Power Current	I <sub>mp</sub>	[A]	12.90	10.43	12.97	10.47	13.04	10.51	13.11	10.55	13.18	10.60
Open Circuit Voltage	V <sub>oc</sub>	[V]	49.45	46.31	49.60	46.43	49.75	46.55	49.90	46.68	50.02	46.81
Short Circuit Current	I <sub>sc</sub>	[A]	13.79	11.05	13.86	11.09	13.93	11.13	14.00	11.17	14.07	11.21
Module Efficiency	Eff	[%]	20,7		20,90		21,10		21,30		21,48	
Maximum Series Fuse	I <sub>R</sub>	[A]	25									
Maximum System Voltage	V <sub>sys</sub>	[V]	1500 V (IEC)									

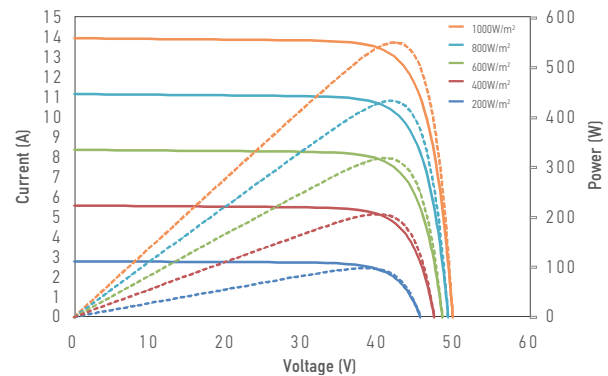
(1) Measurement Tolerances: P<sub>max</sub> (± 3%), I<sub>sc</sub> & V<sub>oc</sub> (± 3%) - Power Classification 0/+5W  
 (2) STC (Standard Testing Condition): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM 1.5  
 (3) NMOT (Nominal Operating Module Temperature): Irradiance 800W/m<sup>2</sup>, NMOT, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

### Mechanical Data

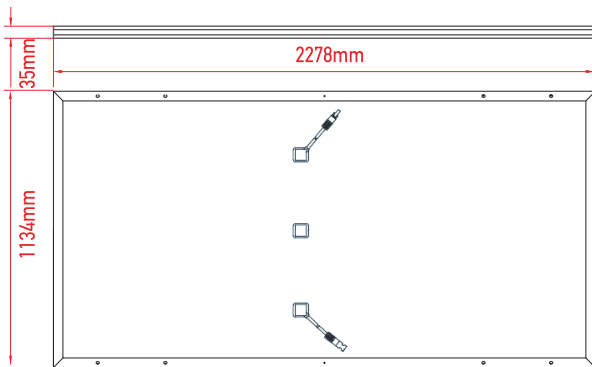
Dimensions	2278mm x 1134mm x 35mm
Weight	27,1 Kg
Cell Type	Mono Perc - 182mm x 91mm (2 x 72 Pcs) - M10
Front Glass	3.2mm Tempered and low iron glass + ARC
Rear Side	Anti-aging film
Frame	Anodized Aluminium Alloy
Junction Box	IP68 - 3 Bypass Diodes
Connector	MC4 compatible
Output cable	4mm <sup>2</sup> - Length:300mm or can be customized

### I-V Curve

The module relative power loss at low light irradiance of 200W/m<sup>2</sup> is less than 3%.



### Dimensions



RECOM assumes no liability or responsibility for any typographical error, layout error, misinformation, any other error, omission, contained herein.

### Temperature Characteristics

P <sub>max</sub> Temperature Coefficient	-0.35% / °C
V <sub>oc</sub> Temperature Coefficient	-0.275% / °C
I <sub>sc</sub> Temperature Coefficient	+0.045% / °C
Operating Temperature	-40~+85 °C
Nominal Operating Module Temperature (NMOT)	42 ± 2 °C

### Packing Configuration

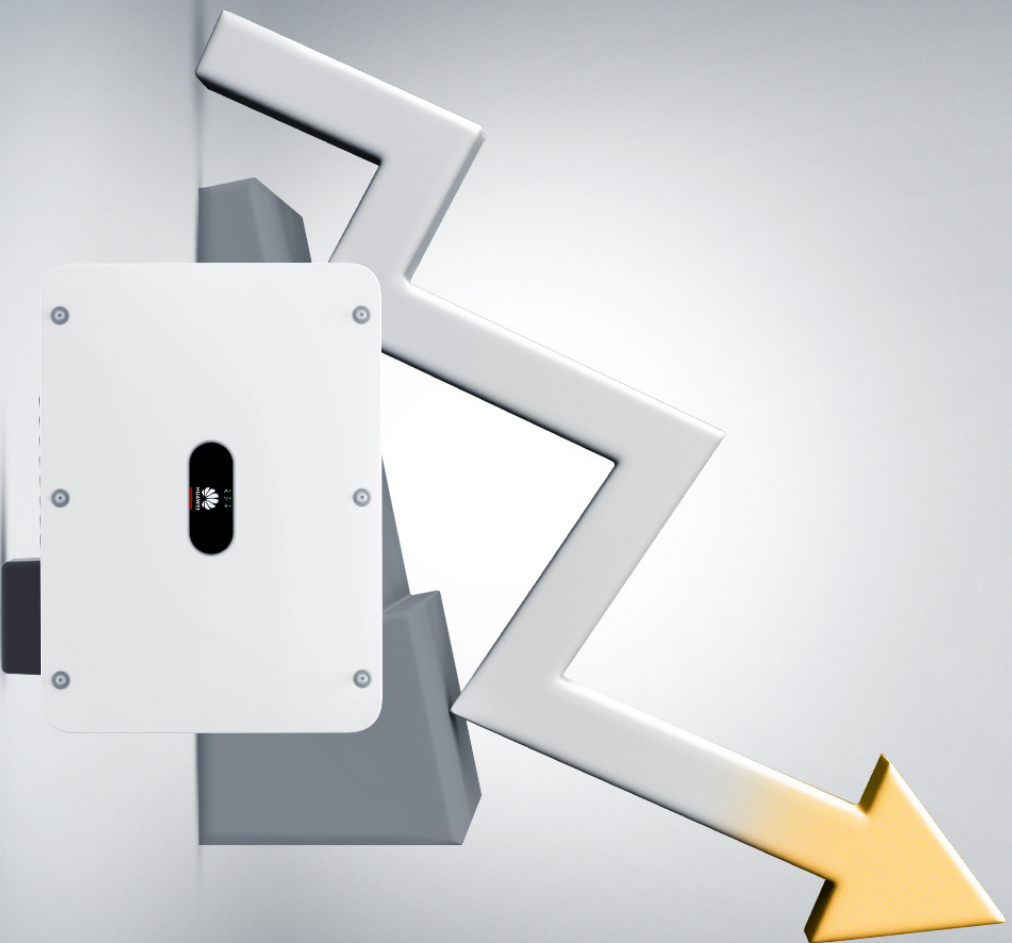
Container	40' (HC)
Pieces per Pallet	31
Pallets per Container	20
Pieces per Container	(31 + 31) x 10 = 620 pcs

**Fusión**solar

**PRODUCTIVE.**

## Embrace Energy Boost

- PID recovery ensures PV module performance
- Intelligent MPPT algorithm optimizes power generation
- Module-level optimization minimizes the impact of mismatch

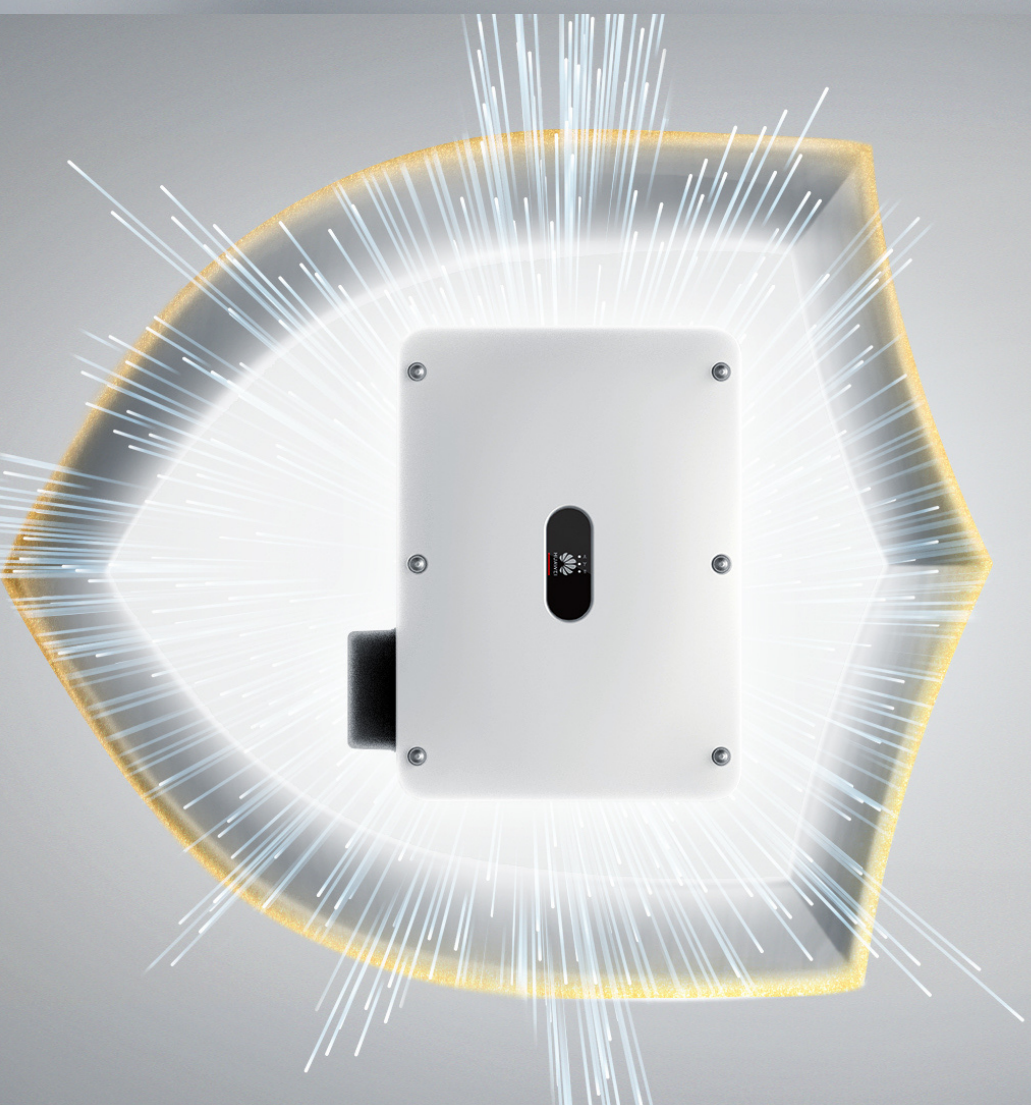


**Fusión**solar

**SAFE.**

## No Stress, No Mess, Worry Free

- World's highest Level 4 Arc-Fault Protection
- Rapid shutdown to safe voltage in 20s



# SUN2000-50KTL-M3 Smart PV Controller



## Higher Yields

Up to 30% More Energy  
with Optimizer



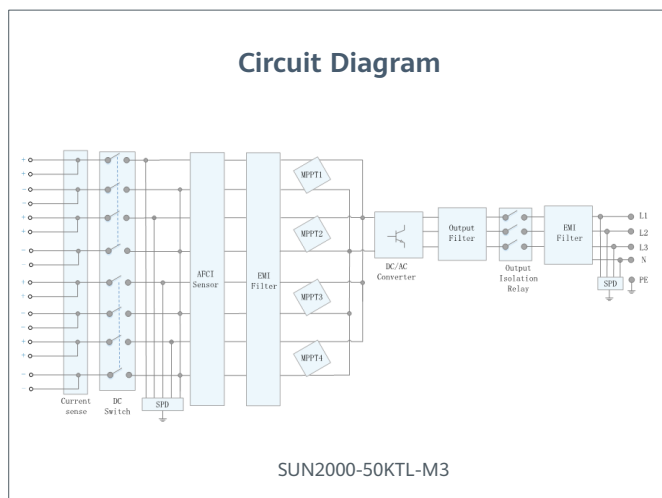
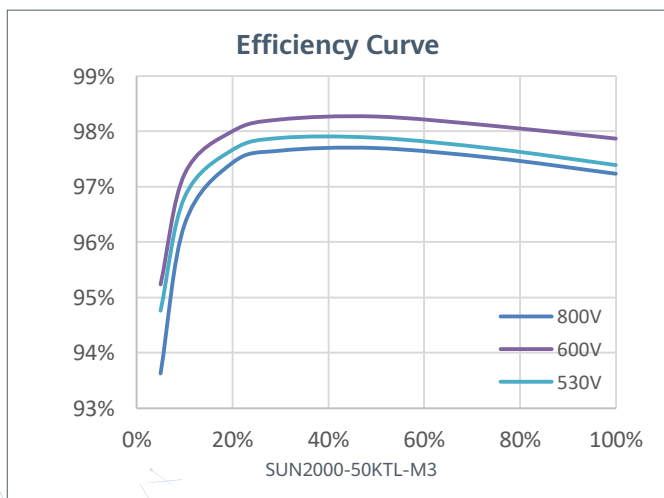
## Active Safety

AI Powered  
Active Arcing Protection



## Flexible Communication

WLAN, Fast Ethernet, 4G  
Communication Supported



**Technical Specification** **SUN2000-50KTL-M3**

Efficiency	
Max. Efficiency	98.5%
European Efficiency	98.0%

Input	
Max. Input Voltage <sup>1</sup>	1,100 V
Max. Current per MPPT	30 A
Max. Current per Input	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range <sup>2</sup>	200 V ~ 1,000 V
Rated Input Voltage	600 V
Number of Inputs	8
Number of MPP Trackers	4

Output	
Rated AC Active Power	50,000 W
Max. AC Apparent Power	55,000 VA
Max. AC Active Power (cosφ=1)	55,000 W
Rated Output Voltage	400 Vac / 480 Vac, 3W+(N) + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	72.2 A @ 400Vac, 60.1 A @ 480Vac
Max. Output Current	79.8 A @ 400Vac, 66.5 A @ 480Vac
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
Arc Fault Protection	Yes
Ripple Receiver Control	Yes
Integrated PID Recovery <sup>3</sup>	Yes

Communication	
Display	LED Indicators, Bluetooth + APP
RS485	Yes
Smart Dongle	WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)
Monitoring BUS (MBUS)	Yes (Isolation Transformer required)

Optimizer Compatibility	
DC MBUS Compatible Optimizer	MERC-1100/1300W-P

General Data	
Dimensions (W x H x D)	640 x 530 x 270 mm (25.2 x 20.9 x 10.6 inch)
Weight (with mounting plate)	49 kg (108.1 lb)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0% RH ~ 100% RH
DC Connector	Amphenol HH4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP 66
Topology	Transformerless
Nighttime Power Consumption	≤ 5.5W

Standard Compliance (more available upon request)	
Safety	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Connection Standards	IEC 61727, VDE-AR-N4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, P.O. 12.3, RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, MEA, Resolution No.7, NRS 097-2-1, DEWA

1. The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.  
2. Any DC input voltage beyond the operating voltage range may result in inverter improper operating.  
3. SUN2000-30-50KTL-M3 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly), N-type (nPERT, HIT)  
4. 50KTL Platform only supports C&I Optimizer(MERC-1100/1300W-P). The current version does not support this function and it can be upgraded to optimizer version via new inverter software version(Dec 30<sup>th</sup>, 2022)  
Refer to [HTTP://solar.huawei.com/](http://solar.huawei.com/)