

# 01 Huawei 150KTL-MG0 Key Values

# PV Inverter – SUN2000-150K-MG0 & SUN5000-150K-MG0

## SUN2000 – without optimizer



SUN2000-150K-MG0

- **The largest 400V inverter in the world**
- Better applicable to large C&I scenarios (MW class).

## SUN5000 – Only with optimizer



SUN5000-150K-MG0  
MERC-1100/1300W-P

- **the only 100kW+ inverter with optimizer**
- More complex and nested roofs and/or for roofs with rapid shutdown requirements

# Specs of SUN2000/SUN5000-150K-MG0 Series



Rated output power: 150 kW

Maximum apparent power: 165 kVA

Maximum DC input voltage: 1100 V DC

Max. Current per MPPT/per String: 48A / 16A

Output voltage: 380/400/480 V AC

	Features	SUN2000-150K	SUN5000-150K
Efficiency	Max. efficiency	98.6% @400V, 98.8% @480V	98.6% @400V, 98.8% @480V
Input	Max. input number	21 (7*3)	12
	Max. Current per MPPT	48A	/
	Max. Short Circuit Current	66 A	66 A
	Operating Voltage Range	200 V ~ 1,000 V	200 V ~ 1,000 V
Output	Maximum apparent power	165 kVA	165 kVA
	Rated output power	150 kW	150 kW
	Nominal Output Voltage	380V/400V/480Vac	380V/400V/480Vac
General	Dimensions (W x H x D)	1,000 x 710 x 395 mm	1,000 x 710 x 395 mm
	Weight (with mounting plate)	98 kg	100 kg

# SUN2000-150KTL-MG0



## Active Safety

PV Ground-Fault Protection  
Smart Connector Temperature Detection  
AFCI upgrade

## Long-Term Reliability

Product availability:  
99.999%

## Optimal BOS

PV design tool  
Better BOS for 1MW PV plants



## More Energy

Maximum efficiency: 98.8%  
Built-in PID repair 3% higher yield

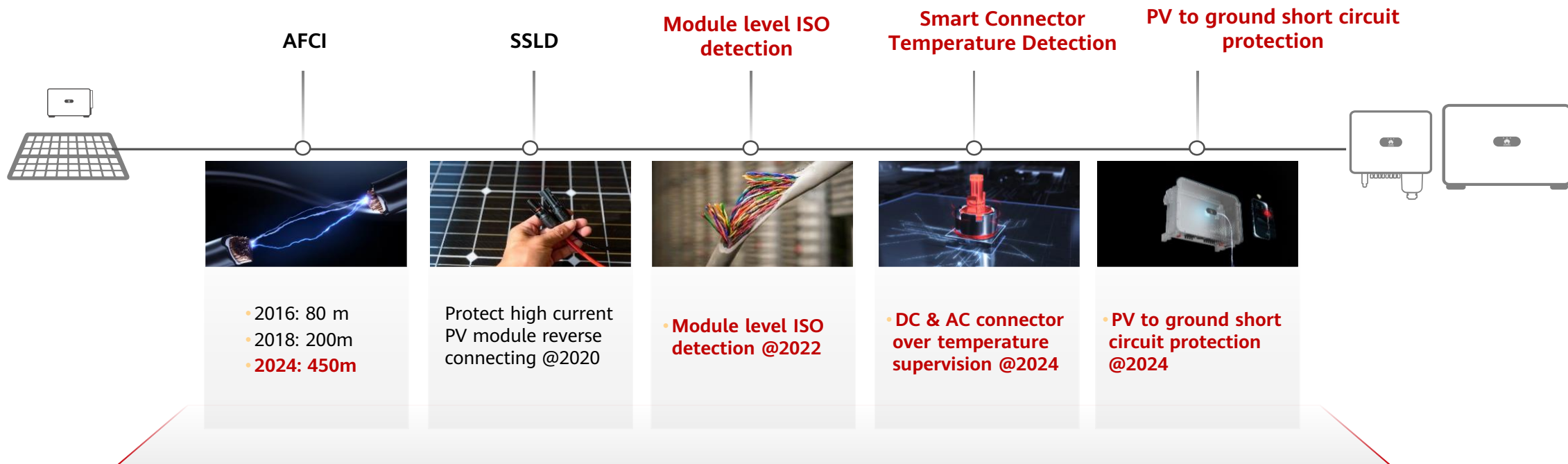
## Simplified O&M

Module-level insulation resistance detection

## Grid Friendly

Intelligent harmonic algorithm  
Intelligent reactive power compensation

## ➤ Advantage1, first C&I inverter with Module-level ISO Detection, SCTD & PV to Ground Protection



## ➤ Advantage2, More Energy: Increase energy yield and achieve optimal energy efficiency

### Built-in PID recovery



- **3%** higher system yield
- Support PV installation in extreme weather conditions

### 98.8% Max. efficiency



- Circuit design
- Cooling design
- Software algorithm
- **3 steps:** Simulation in the early stage, test and verification, and long-term optimization
- **0.2% higher** efficiency than industry

## ➤ Advantage 3, Long-term Reliability Assurance, with 99.999% Product Availability

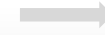
Reliability design



High-standard components



Rigorous tests



Meticulous inspection



- Simulation design for **high-power** inverters



- Components are carefully selected and have been proven in large shipments.



- **Vigorous tests** on high-power inverters

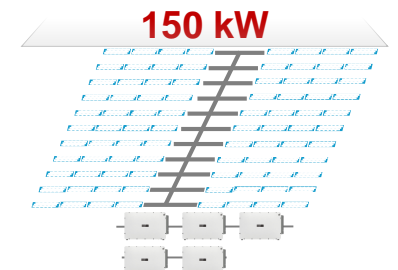
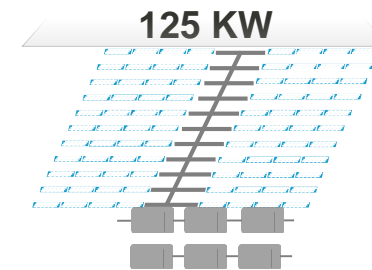


- **100% aging test** before delivery
- Huawei-unique **ongoing reliability testing (ORT)**

## ➤ Advantage 4, Optimal BOS, SmartDesign Brings Simplified Design Experience

For a 1 MW typical PV plant,

**BOS saves € 0.03 cent/W than conventional solution**



Total number of inverters

**6pcs**

VS

**5pcs** ↓

Total length of AC power cables

**393m**

**333m** ↓

Total length of DC power cables

**47454m**

**47286m** ↓

Installation costs

**340\$\*6**

**HUAWEI**  
270\$\*5 ↓

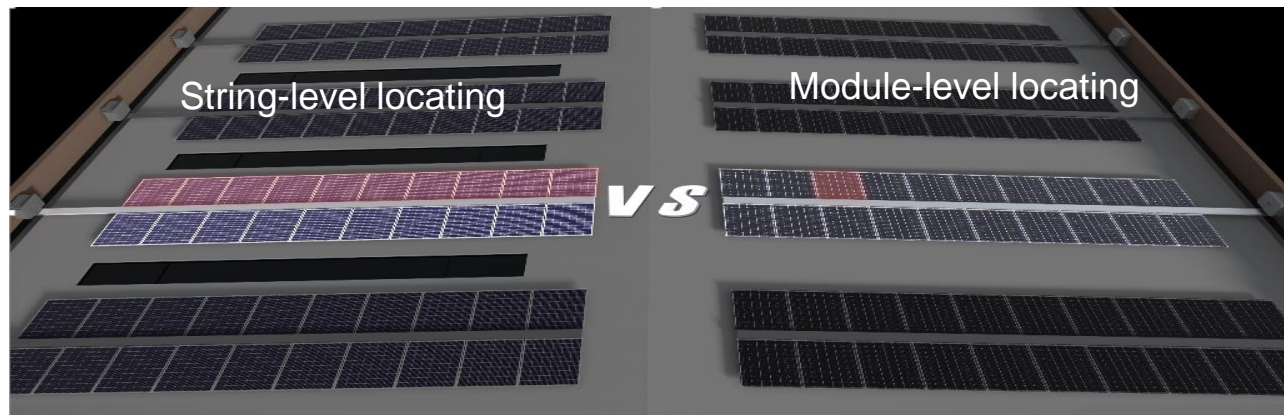


## ➤ Advantage 5, Simplified O&M: Fast Fault Locating Reduces O&M Costs

### Module-level Isolation Fault Detection

Isolation Fault is a Very Common Problem and Hard To Locate

- More MPPTs and longer cables
- Small or tiny fault points
- More false alarm in rainy seasons





- **Advantage 1: SafeLink: Covers the Breakpoint of PV Safety**



#### AFCI + RSD

A wider detection range of **450m** and quick DC arc shutdown within 0.5s, ensuring asset safety. The system **works with the optimizer** to quickly reduce the roof voltage to less than 1100 V within 30 seconds, ensuring the safety of fire fighting and O&M personnel. **(RSD triggered by AFCI automatically in the 5th times)**

#### SSLD + RSD

**Unique**

When positive and negative poles are reversely connected, current backfeed, or DC short circuit, the first intelligent and quick disconnection of DC-side faults within 15 ms ensures the safety of inverters. **The system works with the optimizer** to quickly reduce the roof voltage from 1100 V to less than 30 V within 30 seconds, ensuring the safety of fire fighting and O&M personnel.

*For other safety features, please check the SUN2000.*



• **Advantage 2: ProfiLink: Ensures Lifecycle Revenue of Various Kinds of Application**

**Construction:**  
Release the potential of rooftop



**Module-level optimization:**

When installed, face complex multi-blocking roof, the roof is equipped with 10 - 50% more modules.

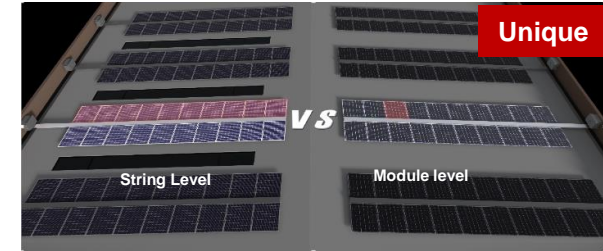
**Operation:**  
No fear of module mismatch



**Module-level optimization:**

Long-term use reduces the impact of PV module mismatch and increases the energy yield by 5% to 30%.

**Maintenance:**  
Module-level fault locating



**Module-level insulation impedance fault location:**

Module-level insulation resistance fault locating, reducing O&M time and costs

• **Advantage 3: SmartLink: Enables One System to Provide Lifecycle Intelligent Experience**

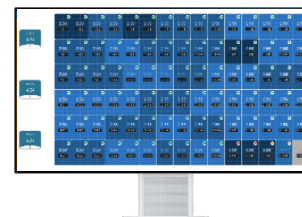
**Smartdesign –**  
Your digital expert assistant



**SmartDesign 2.0:**

- Free of site survey
- Multi-solution comparison to achieve optimal design

**Module-level management – minimal long-term O&M cost**



**Module-level management:**

- Health status and energy yield real time
- Faults be accurately located without manual inspection

**30% Less Component for Utmost Reliability**



**Reliable optimizer:**

- Unique architecture with 30% Less components
- Utmost performance with rigorous testing under extreme weather conditions

# Comparison of MG0 with M2 and M3 inverters

	Name of the function	SUN2000-50K-M3	SUN2000-100K-M2	SUN2000-115K-M2	SUN2000-150K-MG0	SUN5000-150K-MG0
1	Output Power	50K	100K	115K	150K	150K
2	Module-level optimization (optimizer)	X				<b>X (mandatory)</b>
3	Module-level shutdown (optimizer)	X				<b>X (mandatory)</b>
4	Anti-PID function	X			X	X
5	Intelligent Arc Protection (AFCI)	X	X		X	X
6	DC-to-Earth Protection				X	X
7	Temperature monitoring of the intelligent AC and DC terminals				X	X
8	SSLD smart string level disconnection		X	X	X	X
9	Position of the insulation impedance at the module level	X	X (from Q4/2024)	X (from Q4/2024)	X	X
10	Smart Fan Dust Removal				X	X
11	IV Scanning	X	X	X	X	
12	AC MBUS Communication	X	X	X	X	X
13	Intelligent harmonic algorithm that supports THDi < 1%	3%	3%	3%	X	X
20	Surge protection DC Type I+II	X	X	X	X	X