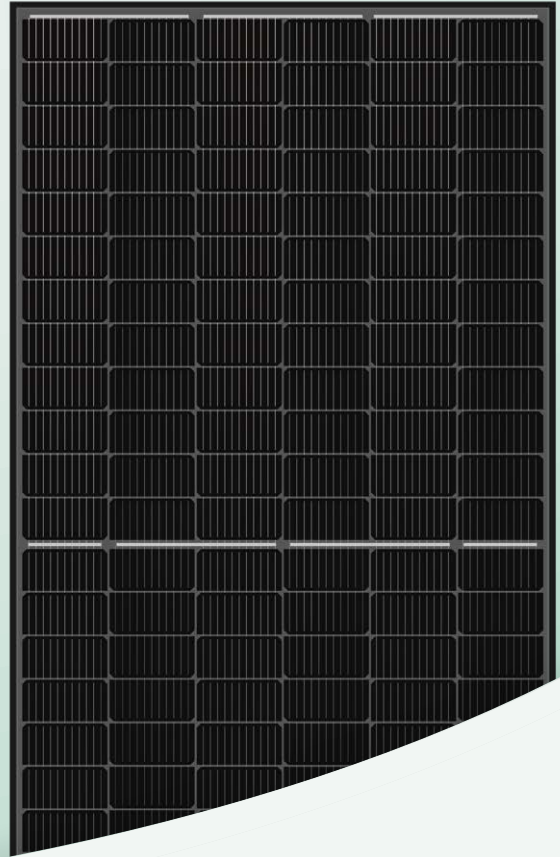


SP460M-72HB Black

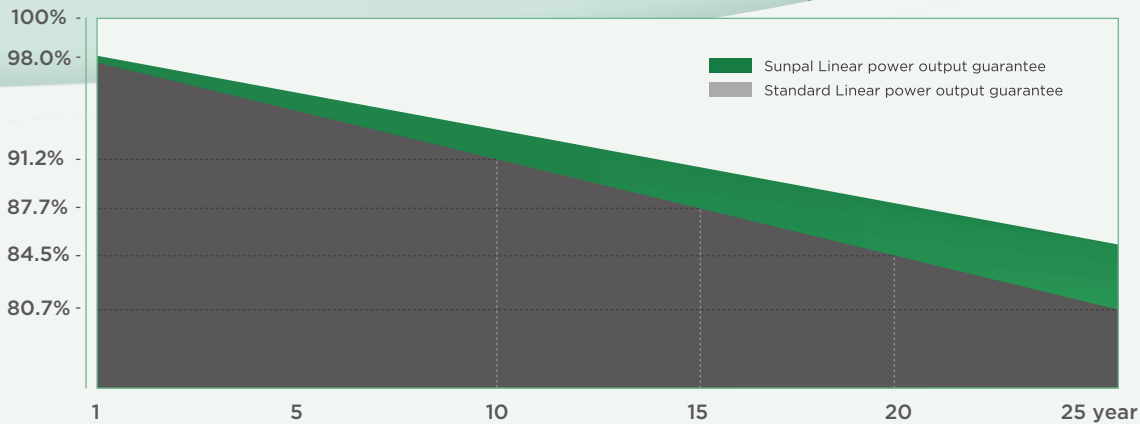
# 425~460W



**High Efficiency Low  
LID Mono PERC with  
MBB & Half-cut Technology**

**Quality Guarantee**

25years Warranty for Materials and Processing



**21.1%**  
Max Module Eff.

**0~+5W**  
Positive Tolerance

### Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730  
ISO 9001:2008: ISO Quality Management System  
ISO 14001:2004: ISO Environment Management System  
OHSAS 18001: 2007 Occupational Health and Safety



\* Specifications subject to technical changes and tests. Sunpal Solar reserves the right of interpretation.

**Positive power tolerance (0 +5W) guaranteed**

**High module conversion efficiency** (up to 21.1%)

**Slower power degradation** enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25

**Solid PID resistance** ensured by solar cell process optimization and careful module BOM selection

**Reduced resistive loss** with lower operating current

**Higher energy yield** with lower operating temperature

**Reduced hot spot risk** with optimized electrical design and lower operating current



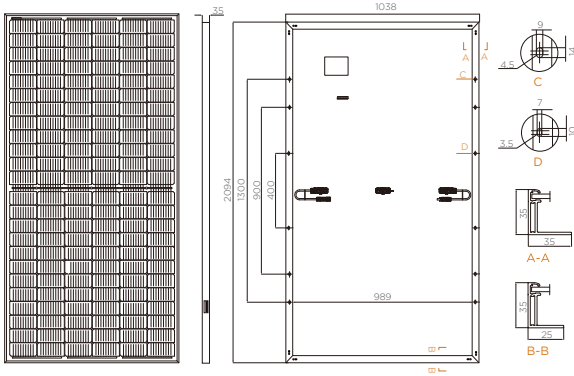
**Add:** West Changjiang Road, Shushan District, Hefei City, Anhui Province, China.  
**Email:** info@sunpalpower.com **Tel:** +86 551 6586 5992  
**WhatsApp:** +86 180 5513 2023 **Web:** www.sunpalsolar.com

Sunpal Power

Black

# SP460M-72HB 425~460W

## Design (mm)



<b>Cell Orientation</b>	144 (6x24)
<b>Junction Box</b>	IP68, three diodes
<b>Output Cable</b>	4mm <sup>2</sup> , 1.2 meter in length, length can be customized
<b>Glass</b>	Single glass 3.2mm coated tempered glass
<b>Frame</b>	Anodized aluminum alloy frame
<b>Weight:</b>	23.5kg
<b>Dimension</b>	2094x1038x35mm
<b>Packaging</b>	30pcs per pallet 150pcs per 20'GP 660pcs per 40'HC

<b>Operational Temperature</b>	-40°C~+85°C
<b>Power Output Tolerance</b>	0~+5W
<b>Voc &amp; Isc Tolerance</b>	±3%
<b>Max. System Voltage</b>	DC1500V(IEC/UL)
<b>Max. Series Fuse Rating</b>	20A
<b>NOCT</b>	45±2°C
<b>Safety Class</b>	II
<b>Fire Rating</b>	UL type 1 or 2
<b>Max. Static Load(Front)</b>	5400Pa
<b>Max. Static Load(Back)</b>	2400Pa

\*Units: mm \*Tolerance: ±2mm

## Electrical Characteristics

Model Number	SP425M-72HB		SP430M-72HB		SP435M-72HB		SP440M-72HB		SP445M-72HB		SP450M-72HB		SP455M-72HB		SP460M-72HB	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
<b>Maximum Power (Pmax/W)</b>	425	317.4	430	321.1	435	324.9	440	328.6	445	332.3	450	336.1	455	339.8	460	343.8
<b>Open Circuit Voltage (Voc/V)</b>	48.3	45.3	48.5	45.5	48.7	45.7	48.9	45.8	49.1	46.0	49.3	46.2	49.5	46.4	49.7	46.6
<b>Short Circuit Current (Isc/A)</b>	11.23	9.08	11.31	9.15	11.39	9.21	11.46	9.27	11.53	9.33	11.60	9.38	11.66	9.43	11.73	9.48
<b>Voltage at Maximum Power (Vmp/V)</b>	40.5	37.7	40.7	37.9	40.9	38.1	41.1	38.3	41.3	38.5	41.5	38.6	41.7	38.8	41.9	38.8
<b>Current at Maximum Power (Imp/A)</b>	10.50	8.42	10.57	8.47	10.64	8.53	10.71	8.59	10.78	8.64	10.85	8.70	10.92	8.75	10.98	8.81
<b>Module Efficiency(%)</b>	19.6		19.8		20.0		20.2		20.5		20.7		20.9		21.1	
<b>Temperature Coefficient of Isc</b>																+0.048%/°C
<b>Temperature Coefficient of Voc</b>																-0.270%/°C
<b>Temperature Coefficient of Pmax</b>																-0.350%/°C

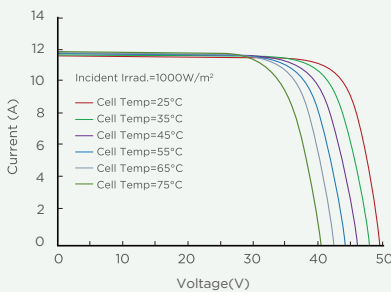
\* STC (Standard Testing Conditions): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Spectra at AM1.5

\* NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/S

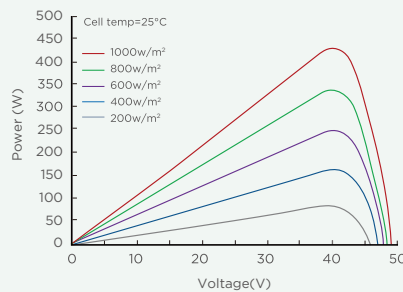
\*Test uncertainty for Pmax: ±3%

## I-V Curve

Current-Voltage Curve(SP440M-72HB)



Current-Voltage Curve(SP440M-72HB)



Current-Voltage Curve(SP440M-72HB)

