



SOLARHERO

heropv.com

# HERO®PV 590TBT-144



### Glass Coating

Double-layer anti-reflective film effectively improves light transmittance and provides a consistently black appearance.



### Better Low-Light Performance

High output even under diffuse light, such as on cloudy days.



### Double Electroluminescence (EL) Test

Each module is tested twice to ensure the highest possible quality.



### Stäubli MC4 Connector

Stäubli MC4 for secure plug connections from the original manufacturer.



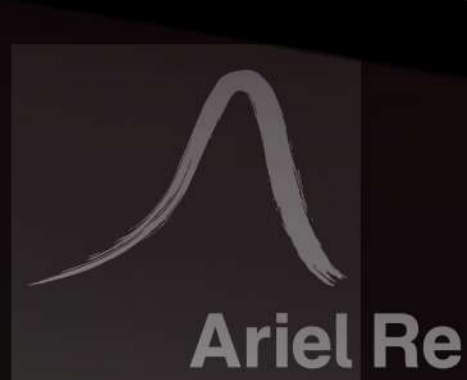
### N-Type TOPCon Cells

N-type solar cells offer a higher efficiency rate than P-type cells. This means more sunlight is converted into electrical energy.



### Laser Welding Technology

Unlike other modules, our diodes are laser welded. This ensures higher quality, safety, and reliability.

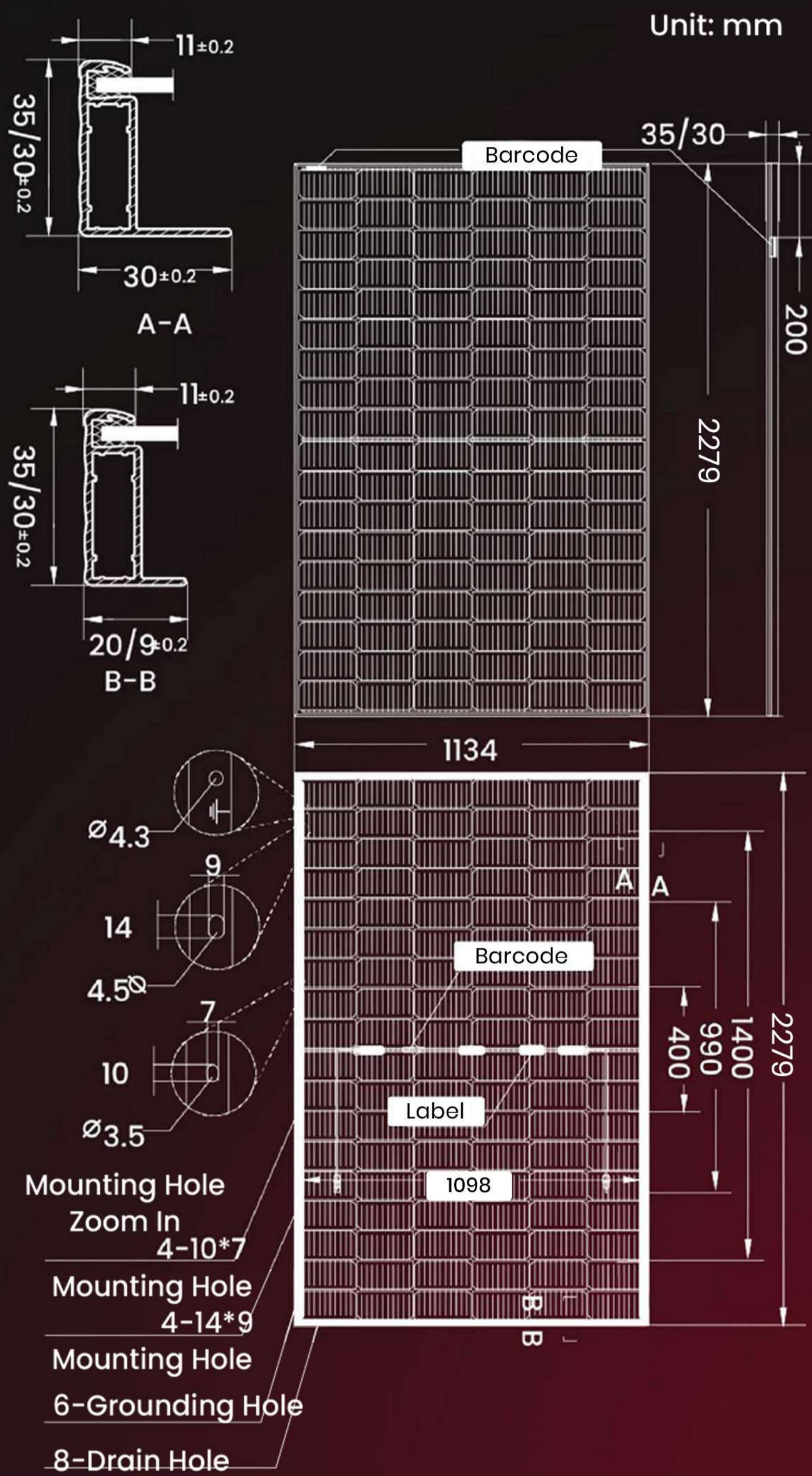


Materials and workmanship warranty



Linear power warranty




**ELECTRICAL CHARACTERISTICS (STC\*)**

Model Number	590TBT-144
Rated Power in Watts-Pmax(Wp)	590
Open Circuit Voltage-Voc(V)	53.41
Short Circuit Current-Isc(A)	13.89
Max. Power Voltage-Vmpp(V)	45.28
Max. Power Current-Impp(A)	13.06
Module Efficiency(%)	22.8
Maximum system voltage	1500V DC
Fuse Rating(A)	30
Temperature coefficient Pmax	-0.29%/°C
Temperature coefficient Isc	0.045%/°C
Temperature coefficient Voc	-0.25%/°C
Refer. Bifacial Factor	80±5%

**WORKING CHARACTERISTICS (NOCT\*)**

Model Number	590TBT-144
Rated Power in Watts-Pmax(Wp)	448
Open Circuit Voltage-Voc(V)	48.94
Short Circuit Current-Isc(A)	11.62
Max. Power Voltage-Vmpp(V)	40.72
Max. Power Current-Impp(A)	11.01
Power tolerance	0~+3%
NOCT	45°C±2°C
Operating Temperature	-40°C~85°C

\*STC: Irradiance 1000W/m², module temperature 25°C, AM=1.5

\*NOCT: Irradiance 800W/m², ambient temperature 20°C, wind speed 1m/s Electrical characteristics with different rear side power gain

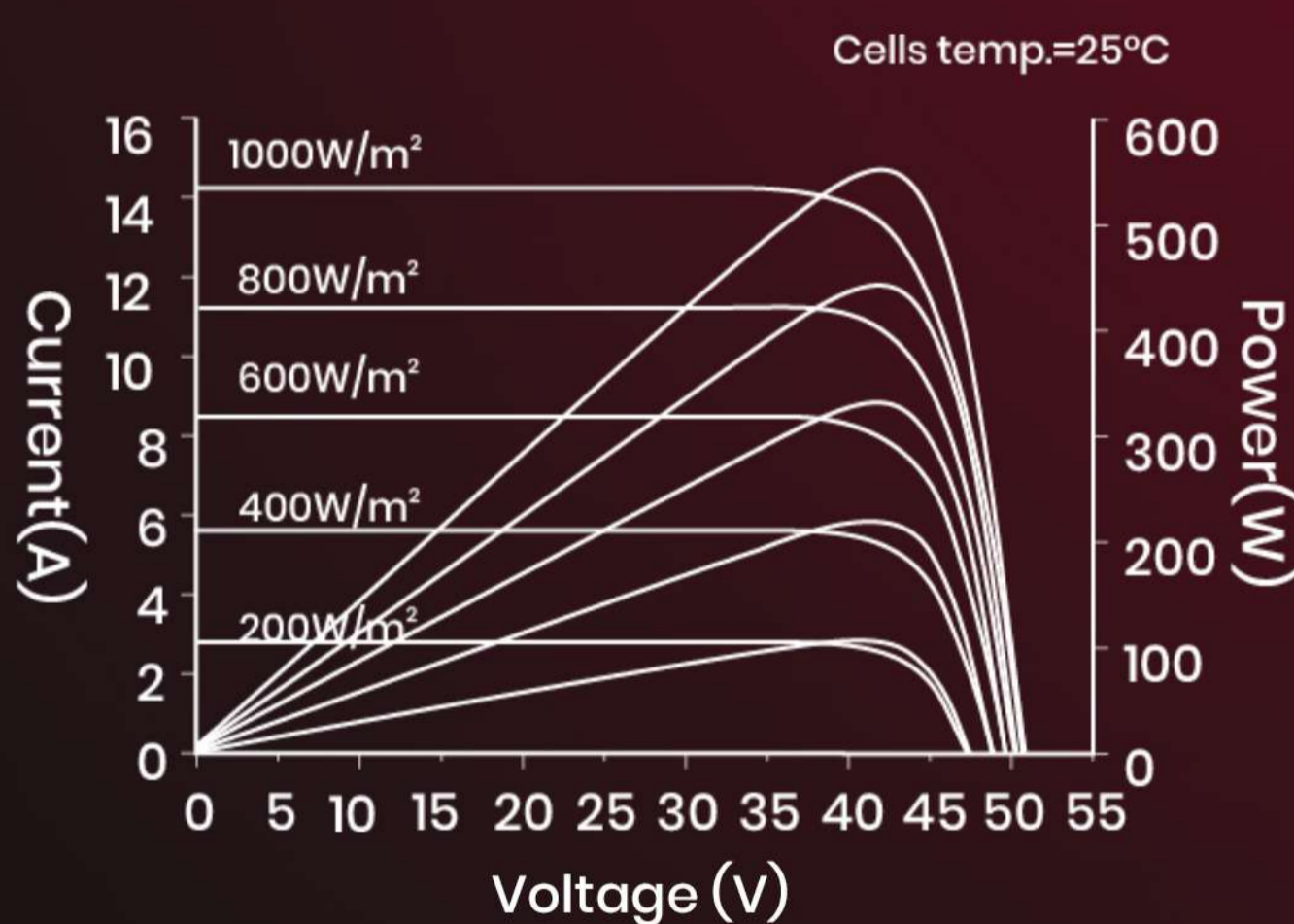
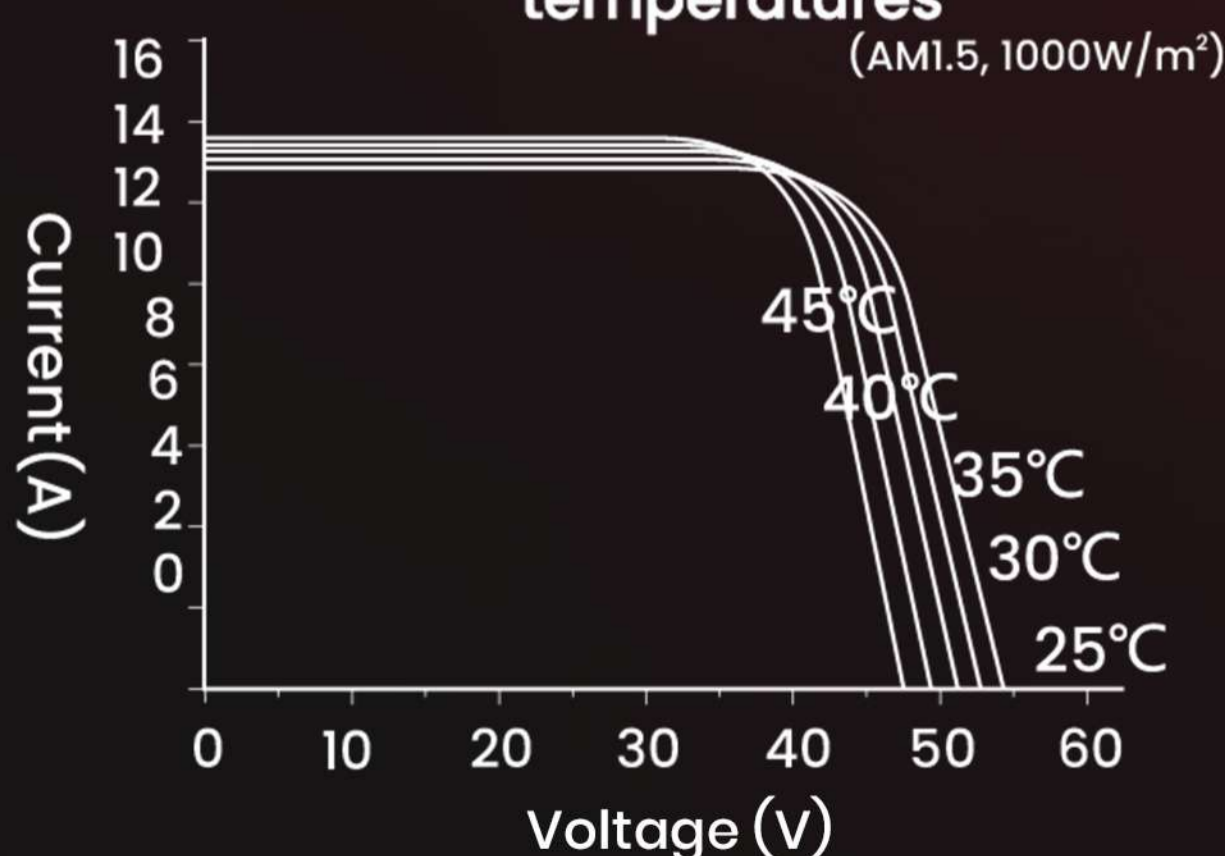
**ELECTRICAL CHARACTERISTICS with varying rear-side power gain**

	Pmax/W	Voc/V	Isc/A	Vmpp/V	Impp/A
5%	630	53.73	14.71	45.72	13.84
10%	660	53.73	15.41	45.72	14.50

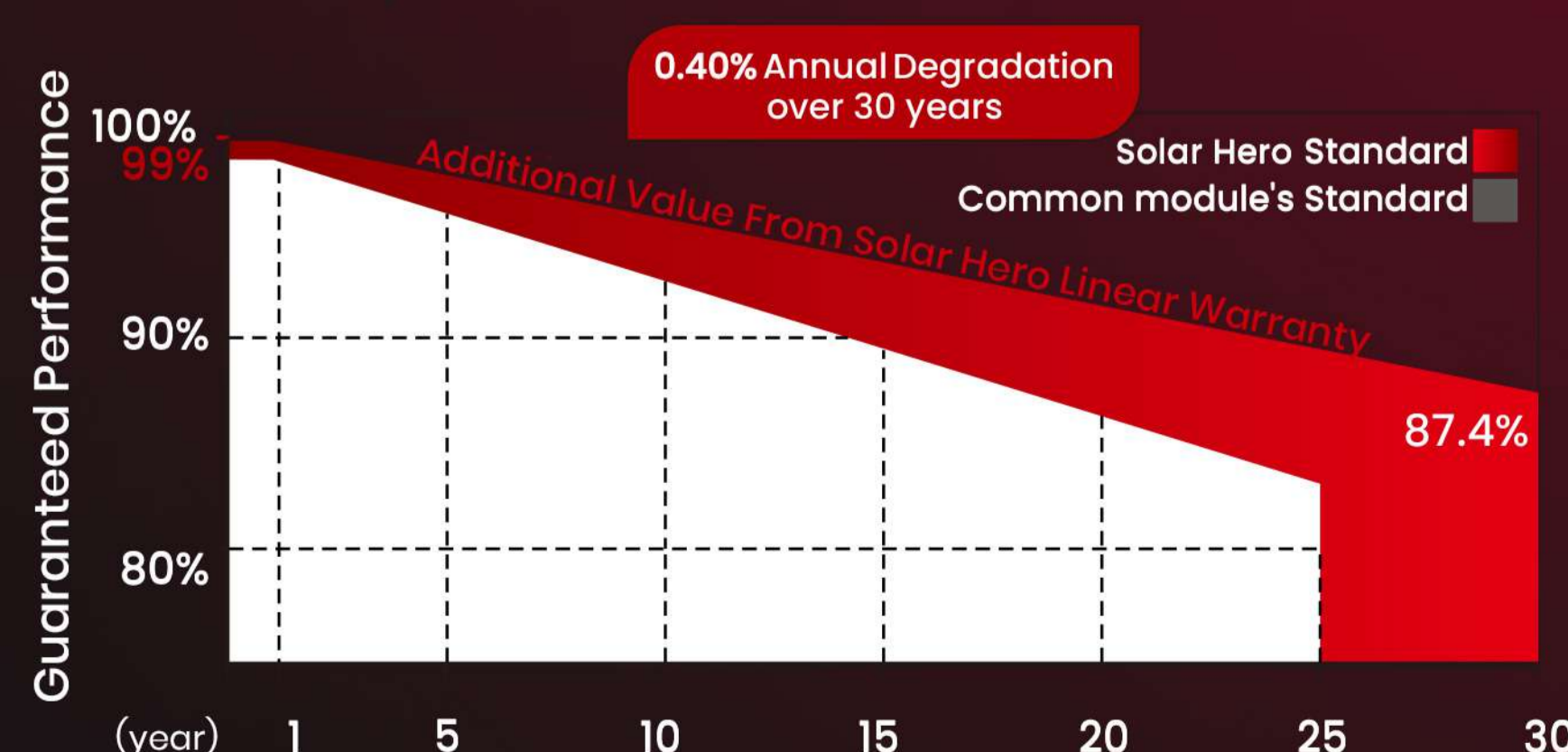
The additional gain from the rear side compared to the front-side output under standard test conditions depends on the mounting (structure, height, tilt angle, etc.) and the albedo of the ground.

**MECHANICAL CHARACTERISTICS**

Number of cells	144pcs	Type of frame	Anodized Aluminum Alloy
Size of cell(mm)	182x91	Size of module(mm)	2279x1134x35
Type of cell	N-TOPCon Mono	Weight(kg)	32
Thickness of glass(mm)	2.0	Cables/connectors	4.0mm², Stäubli MC4-EVO2
Junction box	IP68	Length of Cabel	1200mm (can be customized)

**590TBT-144**
**I-V characteristics at different irradiances**

**I-V characteristics at different temperatures**

**PACKAGING CONFIGURATION**

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	2300x1120x1260	2300x1120x1260
Box Gross Weight (kg)	1020	1180
Number of Modules Per 40ft (HQ) Container	620	720
Number of Pallets Per 40ft (HQ) Container	20	20

**ANNUAL DEGRADATION**

**LINEAR PERFORMANCE WARRANTY**

20-year product warranty / 30-year linear power warranty

Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716

