

## MADE IN GERMANY

German engineering for consistently high energy yields.

PRELIMINARY DATA SHEET

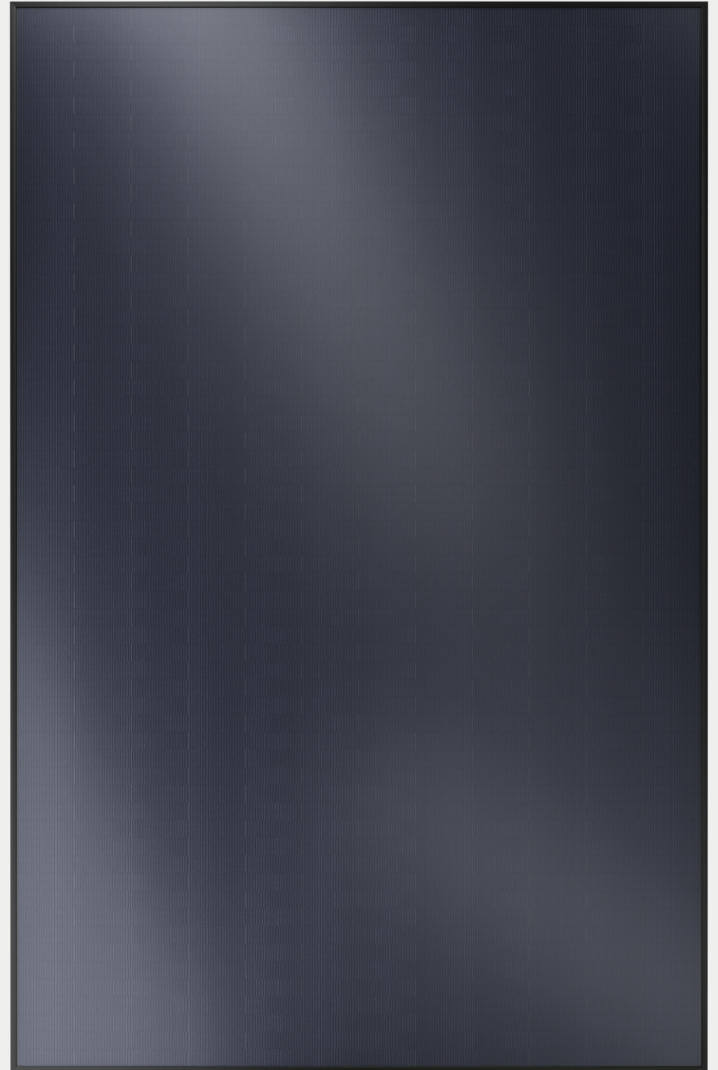

### APOLLON 2.0

**Bifacial shingle matrix module**  
**450–460 Wp**

- ✓ Designed by Fraunhofer ISE
- ✓ Optimal shading behaviour
- ✓ Robust modular architecture
- ✓ Bifacial glass-glass-module
- ✓ Sustainable materials
- ✓ Free from toxic lead and PFAS



Designed, manufactured  
and tested in Germany.



30  
Years product-  
warranty

30  
Years performance-  
warranty

25  
Years of Trust  
in quality



Heckert Solar  
Quality promise



Personal service directly  
from the manufacturer



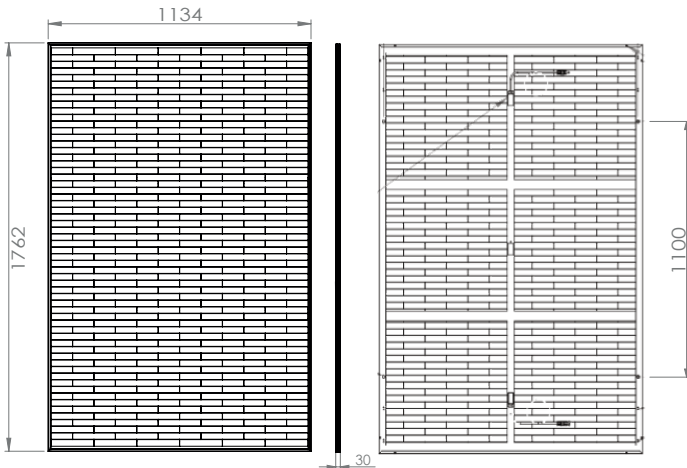
Sustainable out of  
responsibility

# APOLLON 2.0 450-460Wp

PRELIMINARY DATA SHEET



## DIMENSIONS IN : MM



## MODULE SPECIFICATIONS

Cell Technology	N-type TOPCon, bifacial
Cells	390 Shingle cells, matrix-technology
Dimensions	1762×1134×30 mm
Weight	23,5 kg
Front Glass	2mm semi-tempered AR-glass
Rear Glass	2mm semi-tempered glass
Frame	30mm black anodized aluminium frame
Junction Box	3 diodes, IP68, according to IEC 62790
Cable/ Connector	4mm <sup>2</sup> Stäubli MC4-EVO 2 connector
Cable Length	2 x 1200mm
Max. Test-Load, push/pull	+5400Pa / -2400Pa
Max. Design-Load, push/pull	+3600Pa / -1600Pa

## ELECTRICAL SPECIFICATIONS<sup>1</sup> (STC<sup>2</sup>)

Rated Power P <sub>MPP</sub> (Wp)	450	455	460
Max. Power Current I <sub>MPP</sub> (A)	13,12	13,17	13,23
Max. Power Voltage V <sub>MPP</sub> (V)	33,41	34,54	34,77
Short-circuit Current I <sub>SC</sub> (A)	13,64	13,69	13,74
Open-circuit Voltage V <sub>OC</sub> (V)	40,61	40,89	41,18
Module Efficiency (%)	22,5	22,8	23,0

## TEMPERATURE CHARACTERISTICS

Nominal Module Operating Temperature <sup>3</sup>	42 ± 2°C
Temperature Coefficient P <sub>MAX</sub> (%/°C)	- 0,29
Temperature Coefficient V <sub>OC</sub> (%/°C)	- 0,23
Temperature Coefficient I <sub>SC</sub> (%/°C)	+ 0,031

## OPERATING CONDITIONS

Operating Temperature Range	-40 ~ +85°C
Max. System Voltage (VDC)	1500
Reverse Current Feed I <sub>R</sub> (A)	25
Power Performance Tolerance (Wp)	0 / +4,99

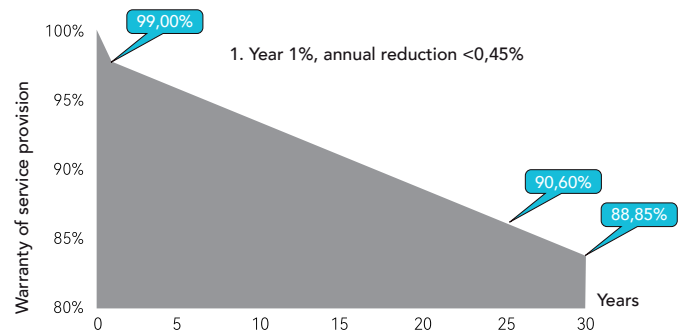
## CERTIFICATES & WARRANTIES

IEC 61215, IEC 61730  
 IEC 62716: Ammonia Corrosion\*  
 IEC 61701: Salt Mist Corrosion\*  
 Fire Protection Class: IEC Class A  
 Product warranty: 30 Years  
 Performance warranty: 30 Years  
 WEEE-Reg.-No.: DE 42676826  
 30 Modules/Palettes

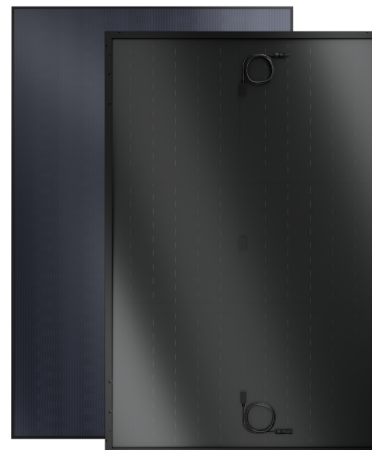
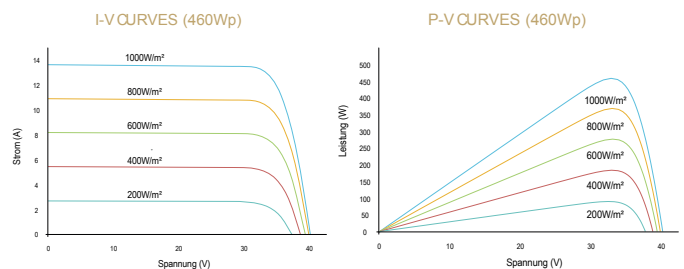
\*under certification

<sup>1</sup>Measurements according to IEC 60904-3, measurements tolerance: ISC ±5%, VOC ±5%, PMPP +/-4%, <sup>2</sup>Standard Test Conditions STC: irradiation 1.000 W/m<sup>2</sup> with a spectrum of AM 1,5 at a cell temperature of 25°C. <sup>3</sup>NMOT-Data: Nominal Module Operating Temperature= Nominal Module Operating Temperature at irradiation of 800W/m<sup>2</sup> and an ambient temperature of 20 °C. Technical specifications subject to change. All information is provided without guarantee. Design load = rated load, test load = test load. Please refer to our installation instructions.

## LINEAR PERFORMANCE WARRANTY



## CURRENTY-VOLTAGE-CHARACTERISTICS



**TÜVRheinland®**  
Genau. Richtig.

