

MADE IN GERMANY

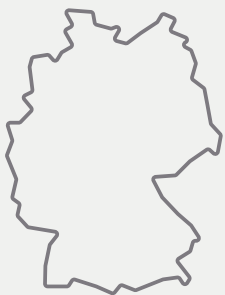
German engineering for consistently high energy yields.

PRELIMINARY DATA SHEET

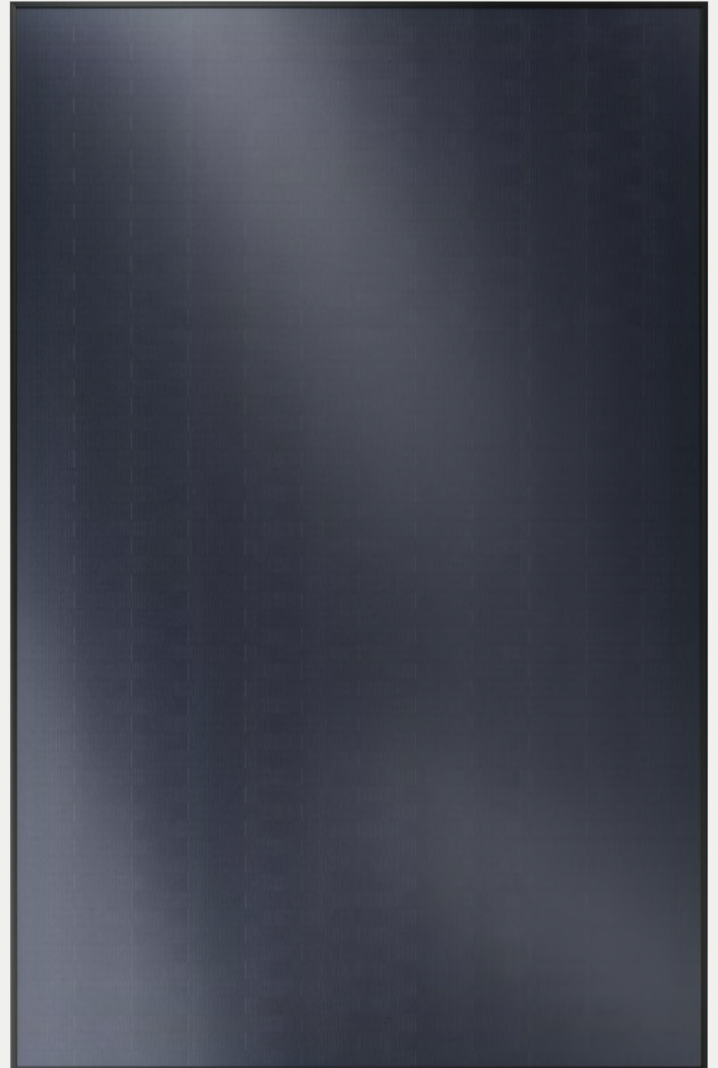
APOLLON 2.0

Bifacial shingle matrix module
445–460 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



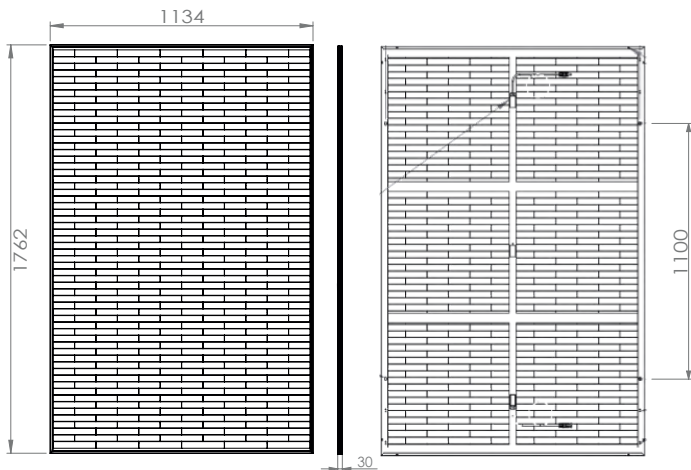
Sustainable out of
responsibility

APOLLON 2.0 445-460Wp

PRELIMINARY DATA SHEET



DIMENSIONS IN : MM



ELECTRICAL SPECIFICATIONS¹ (STC²)

Rated Power P_{MPP} (Wp)	445	450	455	460
Max. Power Current I_{MPP} (A)	12,03	12,15	12,27	12,39
Max. Power Voltage V_{MPP} (V)	37,00	37,04	37,08	37,12
Short-circuit Current I_{SC} (A)	12,83	12,87	12,91	12,94
Open-circuit Voltage V_{OC} (V)	44,11	44,13	44,15	44,17
Module Efficiency (%)	22,2	22,5	22,8	23,0

TEMPERATURE CHARACTERISTICS

Nominal Module Operating Temperature ³	$42 \pm 2^\circ\text{C}$
Temperature Coefficient P_{MAX} (%/ $^\circ\text{C}$)	- 0,29
Temperature Coefficient V_{OC} (%/ $^\circ\text{C}$)	- 0,23
Temperature Coefficient I_{SC} (%/ $^\circ\text{C}$)	+ 0,031

OPERATING CONDITIONS

Operating Temperature Range	$-40 \sim +85^\circ\text{C}$
Max. System Voltage (VDC)	1500
Reverse Current Feed I_R (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

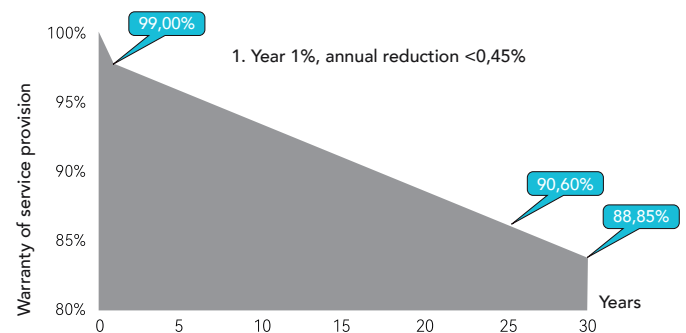
*under certification

¹Measurements according to IEC 60904-3, measurements tolerance: $I_{SC} \pm 5\%$, $V_{OC} \pm 5\%$, $P_{MPP} \pm 4\%$, ²Standard Test Conditions STC: irradiation 1.000 W/m^2 with a spectrum of AM 1,5 at a cell temperature of 25°C . ³NMOT-Data: Nominal Module Operating Temperature= Nominal Module Operating Temperature at irradiation of 800 W/m^2 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.

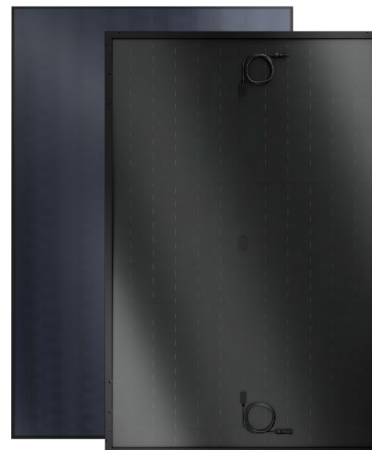
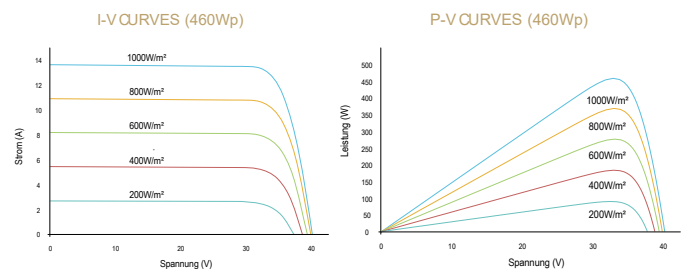
MODULE SPECIFICATIONS

Cell Technology	N-type TOPCon, bifacial
Cells	390 Shingle cells, matrix-technology
Dimensions	$1762 \times 1134 \times 30 \text{ mm}$
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 ² Stäubli MC4-EVO 2 connector
Cable Length	2 x 1200mm
Max. Test-Load, push/pull	+5400Pa / -2400Pa
Max. Design-Load, push/pull	+3600Pa / -1600Pa

LINEAR PERFORMANCE WARRANTY



CURRENTY-VOLTAGE-CHARACTERISTICS



TÜVRheinland®
Genau. Richtig.

