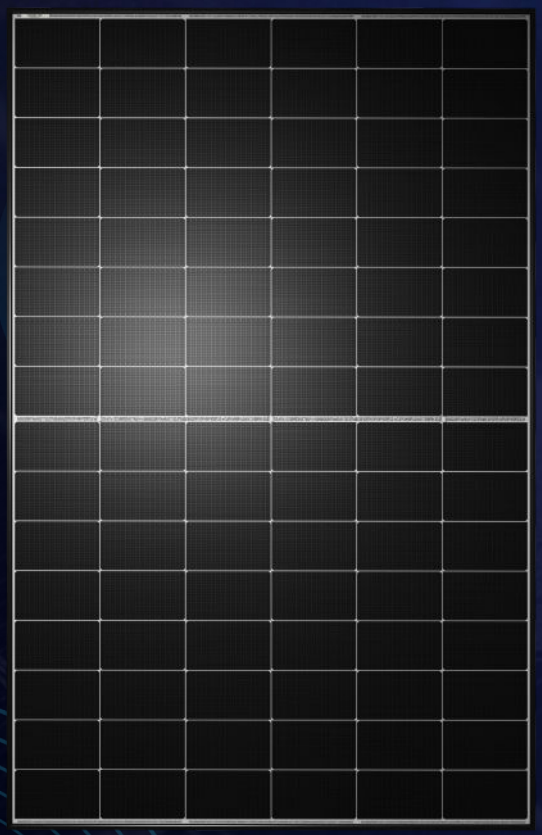
Heckert Solar

FUTURE STARTS IN GERMANY

ZEUS 1.1 white

N-Type glass-glass-module

450-460WP

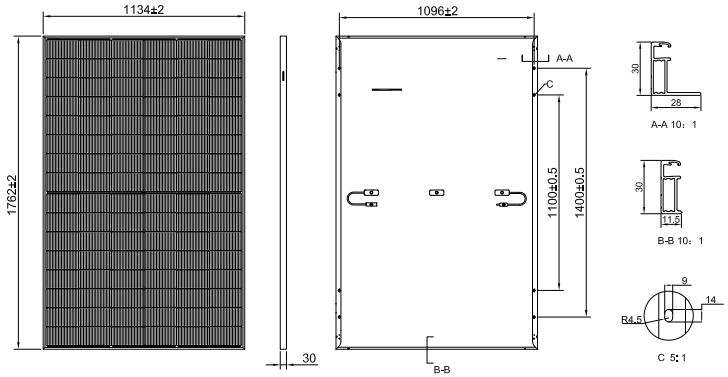


- LATEST TECHNOLOGY
- ELEGANT DESIGN
- MODULE POWER UP TO 460WP
- MODULE EFFICIENCY UP TO 23%

DE		30 YEARS	30 YEARS
GERMAN WARRANTOR	DIRECT SERVICE	PRODUCT WARRANTY	PERFORMANCE WARRANTY

ZEUS 1.1 450-460WP WHITE

DIMENSIONS IN MM



MODULE SPECIFICATIONS

Cell Technology	G12R n-type monocrystalline, TOPCon
Cells	96 half cut cells
Dimensions	1762±2 x 1134±2 x 30mm
Weight	23,7kg
Front Glass	2mm partially heat strengthened AR-glass
Rear Glass	2mm partially heat strengthened glass
Frame	30mm black anodized aluminium frame
Junction Box	3 diodes, IP68, according to IEC 62790
Connecting Cable	4mm²/Stäubli MC4-EVO 2A (1500V)
Cable Length	2 x 1200mm
Max. Test-Load, push/pull	8100Pa / 2400Pa
Max. Design-Load, push/pull	5400Pa / 1600Pa

ELECTRICAL SPECIFICATIONS[1] (STC[2])

Rated Power P_{MPP} (Wp)	450	455	460
Max. Power Current I_{MPP} (A)	14,93	14,95	14,97
Max. Power Voltage V_{MPP} (V)	30,15	30,44	30,73
Short-circuit Current I_{SC} (A)	15,84	15,89	15,94
Open-circiut Voltage V_{OC} (V)	35,95	36,10	36,25
Module Efficiency (%)	22,5	22,8	23,0

ELECTRICAL SPECIFICATIONS[1] (NMOT[3])

Rated Power P_{MPP} (Wp)	340	344	347
Max. Power Current I_{MPP} (A)	12,05	12,07	12,09
Max. Power Voltage V_{MPP} (V)]	28,22	28,51	28,71
Short-circuit Current I_{SC} (A)	12,79	12,83	12,87
Open-circiut Voltage V_{OC} (V)	34,22	34,37	34,51

TEMPERATURE CHARACTERISTICS

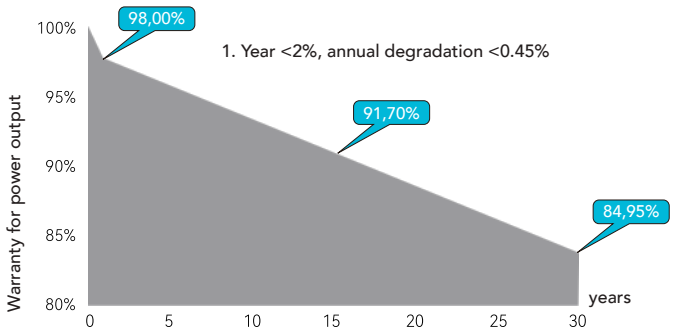
Nominal Module Operating Temperature[3]	45 ± 2°C
Temperature Coefficient P_{MAX} (%/°C)	- 0,28
Temperature Coefficient V_{OC} (%/°C)	- 0,24
Temperature Coefficient I_{SC} (%/°C)	+ 0,046

OPERATING CONDITIONS

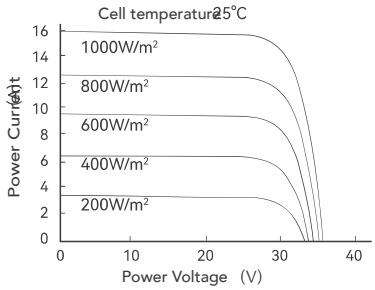
Operation Temperature Range	-40 ~ +85°C
Max. System Voltage (VDC)	1500
Reverse Current Feed I_R (A)	30
Power Performance Tolerance (Wp)	0 / +4,99

Measurements according to IEC 60904-3, measurements tolerance: ISC ±5%, VOC ±5%, PMPP +/-4%, bifaciality: 80% ± 5%, [2]Standard Test Conditions STC: irradiation 1.000 W/m² with a spectrum of AM 1,5 at a cell temperature of 25°C. Maximum reduction in efficiency at 200W/m²: 2%. [3]NMOT-Data: Nominal Module Operating Temperature at irradiation of 800W/m² and an ambient temperature of 20 °C. Operation temperature range between -40°C and +85°C. All dimensions +/-3mm. Technical specifications subject to changes. No liability is assumed for particulars. Please follow our installations instrucions.

LINEAR POWER OUTPUT WARRANTY



I-V CURVE



CERTIFICATES & WARRANTIES

IEC 61215, IEC 61730
IEC 62716: Ammonia Corrosion
IEC 61701: Salt Mist Corrosion
IEC 62804: PID
IEC 60068-2-68: Dust & Sand
Fire Protection Class: A (according to UL 790)
Hail Resistance Class: HW4
Product Warranty: 30 years
Performance Warranty: 30 years
WEEE-Reg.-No.: DE 42676826
36 Modules/Palettes, 936 Modules/40'HC

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Status: 04/2025| Illustrations similar. Heckert Solar GmbH reserves the right to make changes to the specification.