Naps Saana 240-245 P3 PBW

Glass type: PRISM (P) | Frame colour: BLACK (B) | Backsheet colour: WHITE (W)

Naps Systems' 30 years of solar power experience in all continents and conditions provide the highest level of quality and power in an attractive and dependable package.

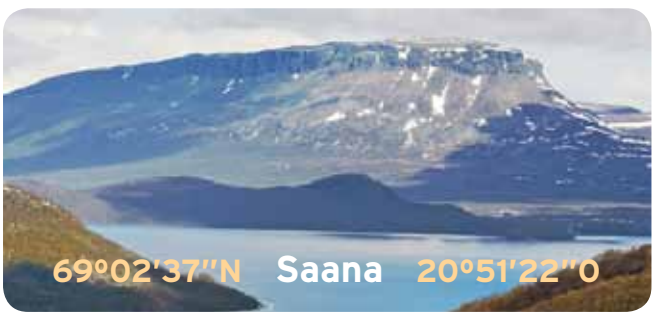
High power and efficiency

Naps Saana series of solar modules contain 60 high efficiency dark blue polycrystalline solar cells. The cells are carefully selected to assure a narrow and positive power range, thus minimising mismatch losses in the system.

The deeply textured surface of the prism glass improves light transmission to the solar cells. An increase of up to 3% is attained in the rated maximum power under Standard Test Conditions. At low sun elevation, the transmitted light is increased by up to 20%. In a typical grid-connected system in Germany and similar locations, the annual energy production is increased by approximately 5% compared to smooth glass modules of the same power rating.

Dependable construction and long life

Featuring the highest standards of construction and materials, Naps Saana solar modules are able to withstand the harshest environments and continue to perform efficiently. Properly installed, these modules have a design life well beyond the power warranty. Limited power warranties are given for both 10 and 25 years. The modules are tested to meet or exceed all relevant international standards and the highest requirements for quality and performance.



- Carefully selected polycrystalline silicon solar cells for close tolerance
- Solar cells treated for reduced reflection and for efficient conversion of both direct and diffuse light
- Electrical circuit laminated between layers of ethylene vinyl acetate (EVA) for electrical isolation, moisture resistance and UV stability
- Low iron content, tempered glass for mechanical protection and high light transmission
- The textured surface of the prism glass improves standard rated power by up to 3% and increases the current by up to 20% at low sun elevation
- Multi-layered polymer backsheet for resistance to abrasion, tears and punctures and dependable electrical insulation
- Rugged and lightweight anodised aluminium frame with mounting, grounding and drainage holes
- Junction box with pre-fitted cables and quick connectors designed for ease and safety
- Wired-in bypass diodes to reduce potential loss of power and damage from partial array shading
- Tested for a wide range of operating conditions (-40°C to +85°C)
- Tested to withstand the highest wind, hail storm and snow load requirements (5400 N/m^2)
- Designed to meet or exceed the environmental requirements of IEC61215
- Designed to meet the requirements of IEC61730, including Safety Class II to IEC61140

NAPS
Power of Light

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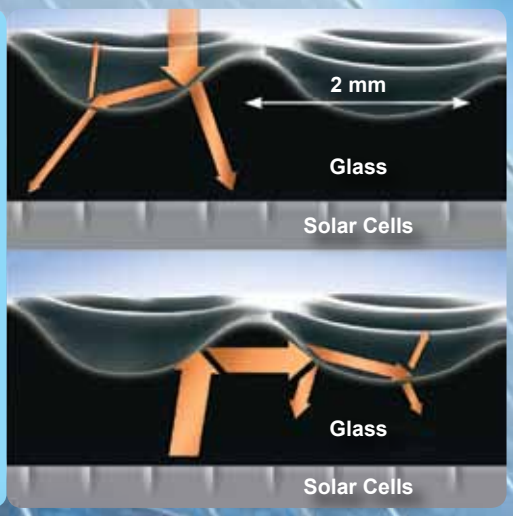
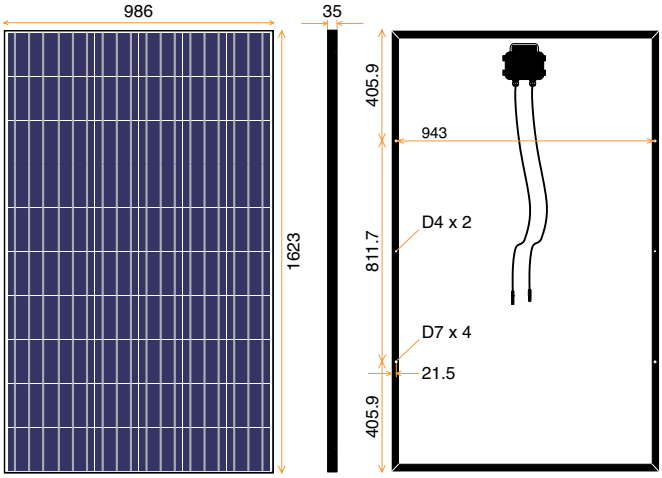
Saana 240-245 P3 PBW

Specifications

Performance at STC	240 P3 PBW	245 P3 PBW
Maximum power (W/Pmax)	240	245
Maximum power tolerance (W)	+5/-0	+5/-0
Current (typical at max power) (A/Ip)	8.29	8.41
Voltage (typical at max power) (V/Vp)	28.9	29.1
Short circuit current (typical) (A/Isc)	8.91	9.01
Open circuit voltage (typical) (V/Voc)	37.2	37.4
Module efficiency (minimum) (%)	15.0	15.3
Module efficiency (maximum) (%)	15.3	15.6
Performance at NOCT and 800 W/m²	**240 P3 PBW**	**245 P3 PBW**
Maximum power (W/Pmax)	173.2	177.0
Current (typical at max power) (A/Ip)	6.59	6.69
Voltage (typical at max power) (V/Vp)	26.3	26.5
Short circuit current (typical) (A/Isc)	7.20	7.29
Open circuit voltage (typical) (V/Voc)	34.2	34.4

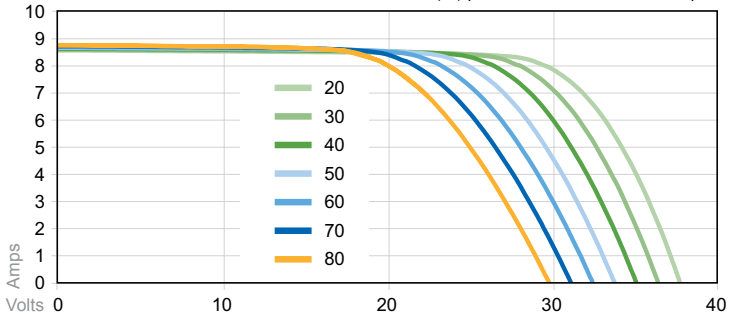


Module Dimensions



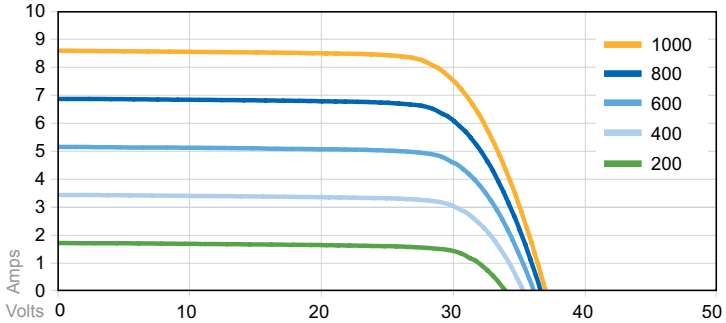
Voltage / Current Dependence on Temperature

1 kW/m² IRRADIANCE, VARYING CELL TEMPERATURE (°C) **(TYPICAL FOR SAANA 230 PBW)**



Voltage / Current Dependence on Irradiance

5°C CELL TEMPERATURE, VARYING IRRADIANCE (W/m²) **(TYPICAL FOR SAANA 230 PBW)**



Made in EU

Mechanical Details

Overall length (mm)	1623
Overall width (mm)	986
Area (m²)	1.601
Thickness at edge (mm)	35
Weight (kg)	21.1

Construction

Cell type	polycrystalline
Cells	60
Cell dimensions (mm)	156 x 156
Cell electrical circuit (series x parallel)	60 x 1
Cell layout (horizontal x vertical)	6 x 10
Glass thickness (mm)	4.0
Junction box type	S PV1410-2
Bypass diodes factory fitted	3
Cables (4.0 mm²)	2 x 1 m
Connector type	H+S Radox push-pull 4mm

Other connector options available to special order

Protection Class

IEC61730 Application Class A, equivalent to Safety Class II

Maximum System Voltage

Voltage (V)	1000

Overcurrent Protection

Series fuse protection rating (A)	15
Reverse current maximum (A)	15

Mechanical Load

Tested to (N/m² = Pa)	5400

According to IEC 61215-2 extended test for heavy snow load

Temperature Coefficients at STC type

Open circuit voltage (V/K)	-0.130
Short circuit current (A/K)	0.0040
Maximum power (%/K)	-0.54

Efficiency Reduction from STC

Reduction (approximately) (%)	5
Cell temperature (°C)	25
Irradiance change (W/m²)	from 1000 to 200
Air Mass	1.5

STC = Standard Test Conditions

Cell temperature (°C)	25
Irradiation (W/m²)	1000
Air Mass	1.5

NOCT = Normal Operating Cell Temperature

Cell temperature (°C)	46
Irradiation (W/m²)	800
Ambient temperature (°C)	20
Wind speed (m/s)	≤1

Free air access to module rear

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