



POWER MODULES ALPIN

# FOR HIGH SNOW LOADS

325 Wp Alpin black  
440 Wp HC Alpin black

## Highest load capacity

Suitable for areas with high snow loads,  
Can withstand loads of up to 8000 Pa depending on the  
installation situation.

## Stable frame concept

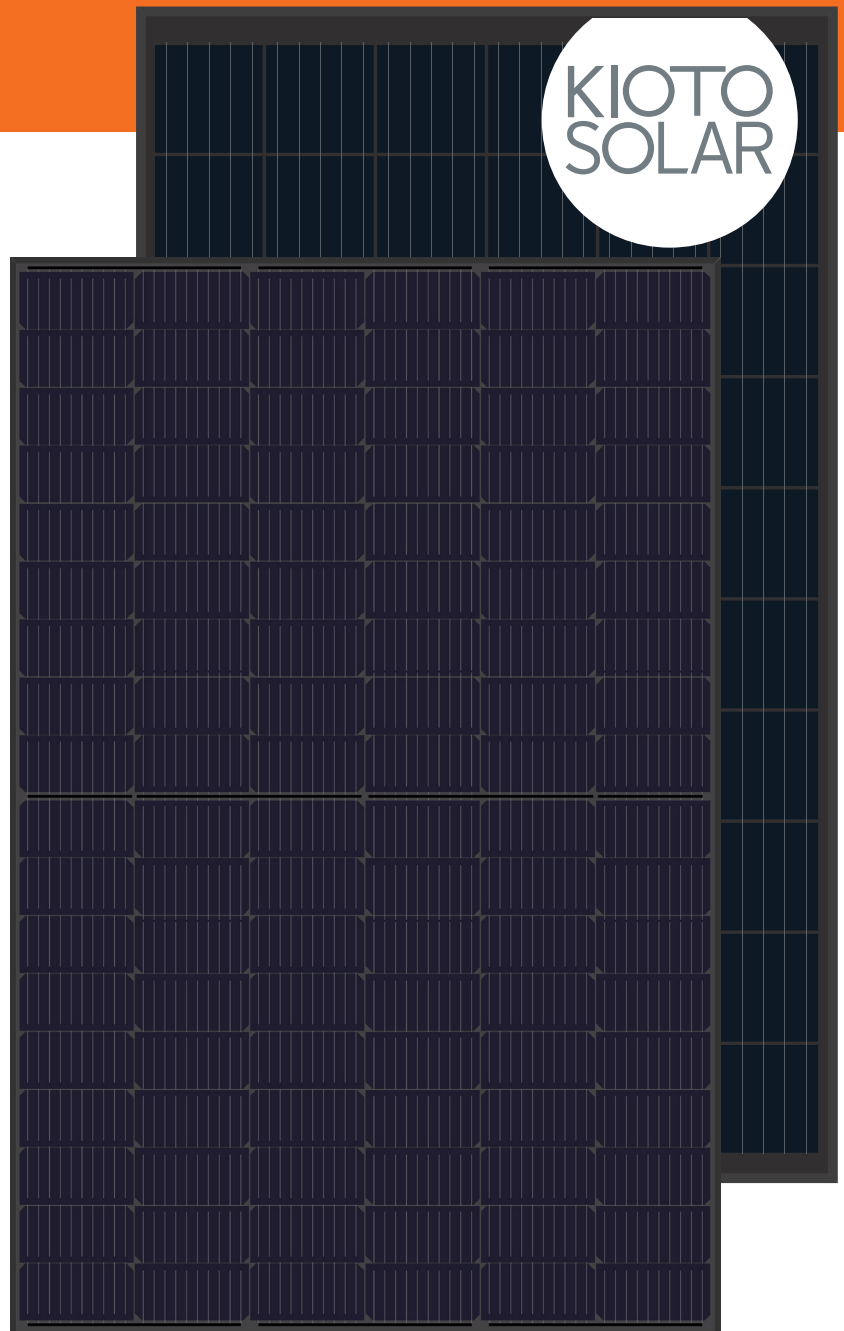
40 mm aluminum frame with miter cut  
for maximum technical safety (increased wall thickness)  
and flexibility (mounting holes).

## Glare-reduced glass

Strong 4 mm solar glass with reduced glare thanks to  
anti-reflective coating.

## Stronger module design

Better stiffening of the module thanks to optional backrails  
on the back of the module (for 325 Wp Alpin).



**EXTREME!**  
**The most stable modules**  
**for the toughest conditions.**

## POWER MODULWE ALPIN for high snow loads

| Module data          | 325 Wp                       | 440 Wp                    |
|----------------------|------------------------------|---------------------------|
| Module name          | Alpin black                  | HC Alpin black            |
| Module name          | KPV ME NEC 325Wp Alpin Black | KPV 4340Wp HC Alpin Black |
| Matchcode            | KPV325BA                     | KPV440HCBA                |
| P <sub>mp</sub>      | 325 Wp                       | 440 Wp                    |
| U <sub>mp</sub>      | 33,81 V                      | 34,06 V                   |
| I <sub>mp</sub>      | 9,65 A                       | 12,93 A                   |
| U <sub>oc</sub>      | 40,12 V                      | 39,78 V                   |
| I <sub>sc</sub>      | 10,09 A                      | 13,63 A                   |
| Efficiency           | 19,31 %                      | 22,02 %                   |
| Area requirement/kWp | 5,18 m <sup>2</sup>          | 4,54 m <sup>2</sup>       |

## Electrical data

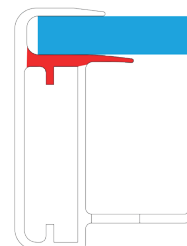
|                            |                                                                                       |                                                                                      |
|----------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Cells                      | 60 PERC full cells (6 x 10)<br>158,75 x 158,75 mm (5 busbar)                          | 108 TOPCON half cells (6 x 18)<br>182 x 91 mm (16 busbar)                            |
| Connection and plug system | central junction box<br>with original Stäubli MC4 connectors                          | central junction box<br>with original Stäubli MC4 connectors                         |
| Max. system voltage        | 1000 V DC                                                                             |                                                                                      |
| Power tolerance            | +5 W / -0 W (measurement under standard test conditions)                              |                                                                                      |
| Temperature coefficients   | P <sub>mp</sub> -0,37 %/K<br>U <sub>oc</sub> -90,7 mV/K<br>I <sub>sc</sub> +2,85 mA/K | P <sub>mp</sub> -0,32 %/K<br>U <sub>oc</sub> -0,25 %/K<br>I <sub>sc</sub> +0,045 %/K |
| Maximum reverse current    | 15 A                                                                                  | 20 A                                                                                 |
| Operating temperature      | +85 °C to -40 °C                                                                      |                                                                                      |
| Cable length               | 2 x 1000 mm                                                                           | 2 x 1150 mm                                                                          |
| Bypass diodes              | 3 pieces                                                                              |                                                                                      |
| Power guarantee            | min. 99% in the first year, then max. linear reduction of 0.4% p.a. up to 30 years    |                                                                                      |
| Product warranty           | 30 years                                                                              |                                                                                      |

## Technical data

|                            |                                                                                                                                                                   |                                                                      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Weight                     | frame: 21.50 kg                                                                                                                                                   | 24 kg                                                                |
| Dimensions (HxWxD)         | 1680 x 1002 x 40 mm (± 3 mm)                                                                                                                                      | 1748 x 1143 x 40 mm (± 3 mm)                                         |
| Optical design             | Black anodized frame<br>Backsheet: front black, back white                                                                                                        | Black anodized ALPIN frame<br>Backsheet: front black, back white     |
| Glass specifications       | Solar glass ESG 4.0 mm DEFLECT<br>with high-strength anti-reflective coating                                                                                      | Solar glass ESG 4.0 mm<br>with high-strength anti-reflective coating |
| Applicable standards       | IEC 61215, Ed. 2 incl. extended, inhomogeneous<br>load test according to SPF test basis up to<br>8000 Pa depending on installation situation,<br>IEC 61730; IP 65 | IEC1215<br>IEC61730<br>IP65                                          |
| Extended hail test         | Qualification for HW4                                                                                                                                             |                                                                      |
| Extended snow load release | up to 8000Pa depending on the installation<br>situation                                                                                                           | up to 6800Pa depending on the installation<br>situation              |
| Salt mist test             | Min. 96 hours in a highly concentrated salt mist                                                                                                                  |                                                                      |
| Ammonia resistance         | 1500 h at 750 ppm ammonia concentration                                                                                                                           |                                                                      |
| Packaging configuration    | 24 modules/pallet, 720 modules/truck                                                                                                                              | 26 modules/pallet, 728 modules/truck                                 |

## Alpine frame

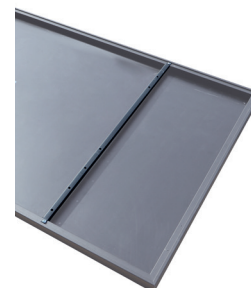
- Particularly robust frame
- For use with increased snow loads
- Extended contact surface of the laminate, reinforced frame, improved constructive geometry



## Optionally available: Backrails

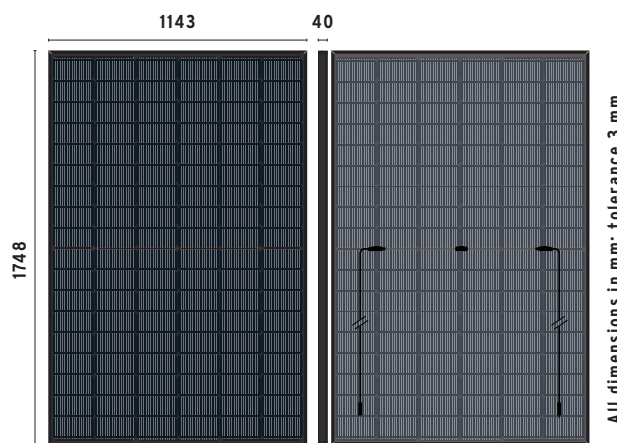
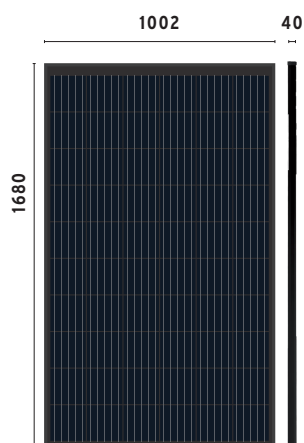
(for 325 Wp Alpin)

- Stiffening of the frame for transverse mounting
- Highest load capacity, with backrails up to 8000 Pa according to SPF test specification with inhomogeneous snow load tested



## 325 Wp

## 440 Wp



All dimensions in mm; tolerance 3 mm



Additional installation  
instructions to achieve  
8000 Pa Snow load  
(on-roof - 325 Wp)

The customer shall be solely responsible for ensuring that the goods ordered and delivered are suitable for the customer's purposes. Any technical advice given by SONNENKRAFT ENERGY GmbH, whether verbal, in writing, by way of tests or in any other way, shall be given to the best of its knowledge, but without any warranty or liability, and special technical designs or special constructions may be subject to official approval. Obtaining such approval is the responsibility of the client or building owner. Any resulting changes to the design or additional services, in particular tests and proof of calculations, shall be borne by the client; we have not carried out or checked any project-related, static pre-dimensioning or the correct use of the glass in terms of glass technology. Measuring tolerance 3 %