



SOLAR MODULES

FOR STANDARD APPLICATIONS

380 Wp HC | 410 Wp HC silver | 410 Wp HC black 470
Wp HC black | 335 Wp
400 Wp HC bifacial

Top price-performance ratio

Suitable for the most diverse of standard applications and large plants

Innovative half-cell technology

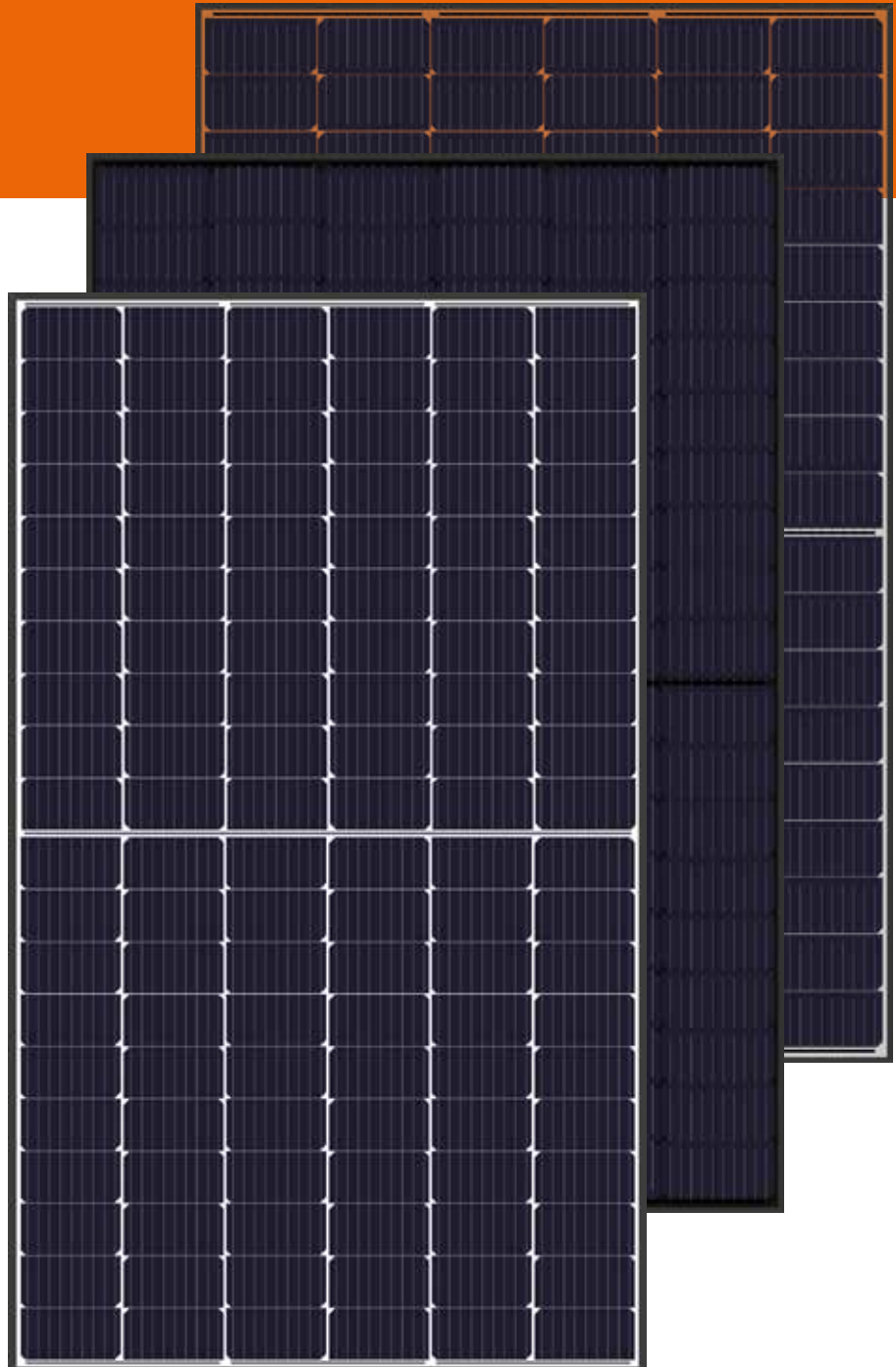
Half-cell technology with optimised module interconnection with regard to shading

Decentralised junction boxes for half-cell modules

Original Stäubli MC4 EVO2 connectors with 2 x 1150 mm cable and max. system voltage of 1500 V

Homogeneous design

Anodised aluminium frame with mitre cut, solar glass panel with ideal low-light performance and reduced glare due to anti-reflective coating



EFFICIENT!

The module series with top price-performance ratio

SOLAR MODULE for standard applications 35 mm

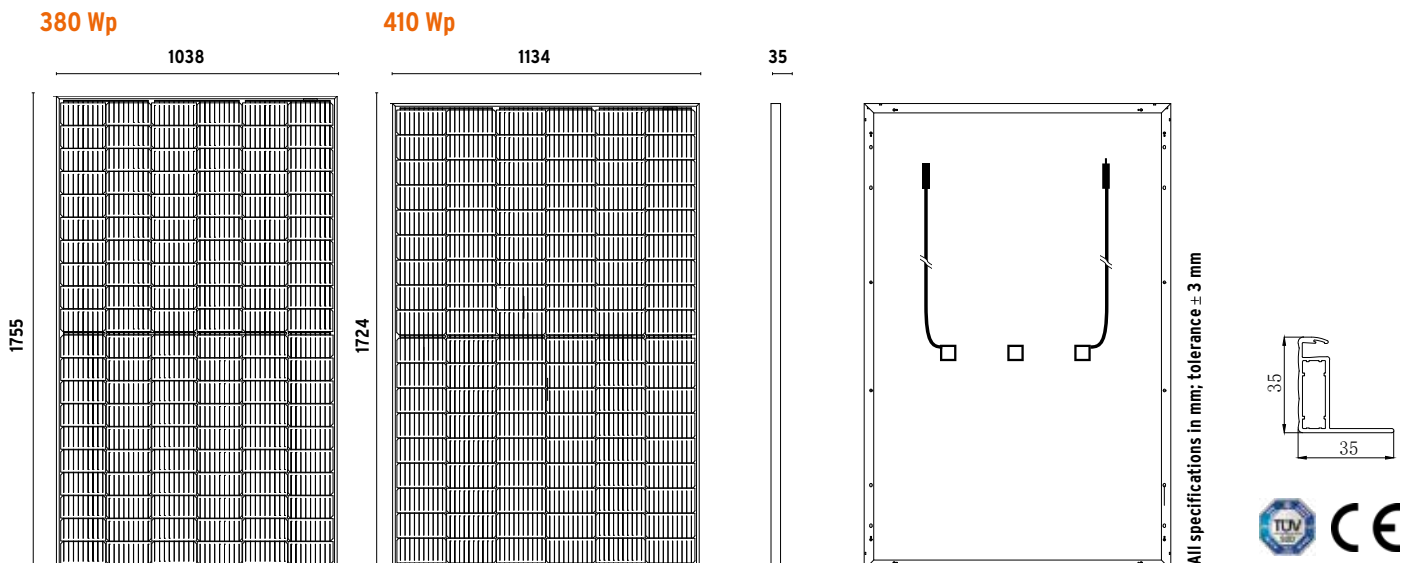
Module data	380 Wp	410 Wp	410 Wp
HC	HC	HC silver	HC black
P _{mp}	380 Wp	410 Wp	410 Wp
U _{mp}	34.32 V	31.30 V	31.30 V
I _{mp}	11.08 A	13.10 A	13.10 A
U _{oc}	41.40 V	37.26 V	37.26 V
I _{sc}	11.60 A	13.79 A	13.79 A
Efficiency	20.86%	20.97%	20.97%
Space requirement/kWp	4.79 m ²	4.77 m ²	4.77 m ²

Electrical data

Cells	120 half-cells (6 x 20) 166 x 83 mm half-cut (9 busbar)	108 half-cells (6 x 18) 182 x 91 mm half-cut (10 busbar)	108 half-cells (6 x 18) 182 x 91 mm half-cut (10 busbar)
Connection and plug system	decentralised junction box with original Stäubli MC4 EVO2 connectors		
Max. system voltage	1500 V DC		
Power tolerance	+5 W / -0 W (measurement under standard test conditions)		
Temperature coefficients	P _{mp} -0.350 %/K U _{oc} -0.270 %/K I _{sc} +0.048 %/K		
Maximum return current	20 A		
Operating temperature	+85 °C to -40 °C		
Cable length	2 x 1150 mm		
Bypass diodes	3 piece		
Performance guarantee	min. 97% in the first year, thereafter max. reduction by 0.7% p.a. up to 25 years		
Product guarantee	12 years		

Technical data

Weight	20.00 kg	22.00 kg	22.00 kg
Dimensions (HxWxD)	1755 x 1038 x 35 mm (± 3 mm)	1724 x 1134 x 35 mm (± 3 mm)	1724 x 1134 x 35 mm (± 3 mm)
optical design	black anodised frame, backsheet: Front and rear side white	silver anodised frame, backsheet: Front and rear side white	black anodised frame, backsheet: front and rear side black
Glass specifications	3.2 mm ESG solar glass panel with anti-reflective coating (solar transmission AM 1.5 min. 94 %)		
Test certificate	IEC 61215, ed. 2, incl. extended mechanical load test up to 5400 Pa, IEC 61730 by TÜV Süd		
Extended tests	Salt mist & ammonium test, certified by TÜV Nord		
Packaging configuration	896 modules/lorry 31 + 33 modules per storage position	868 modules/lorry 31 + 31 modules per storage position	868 modules/lorry 31 + 31 modules per storage position



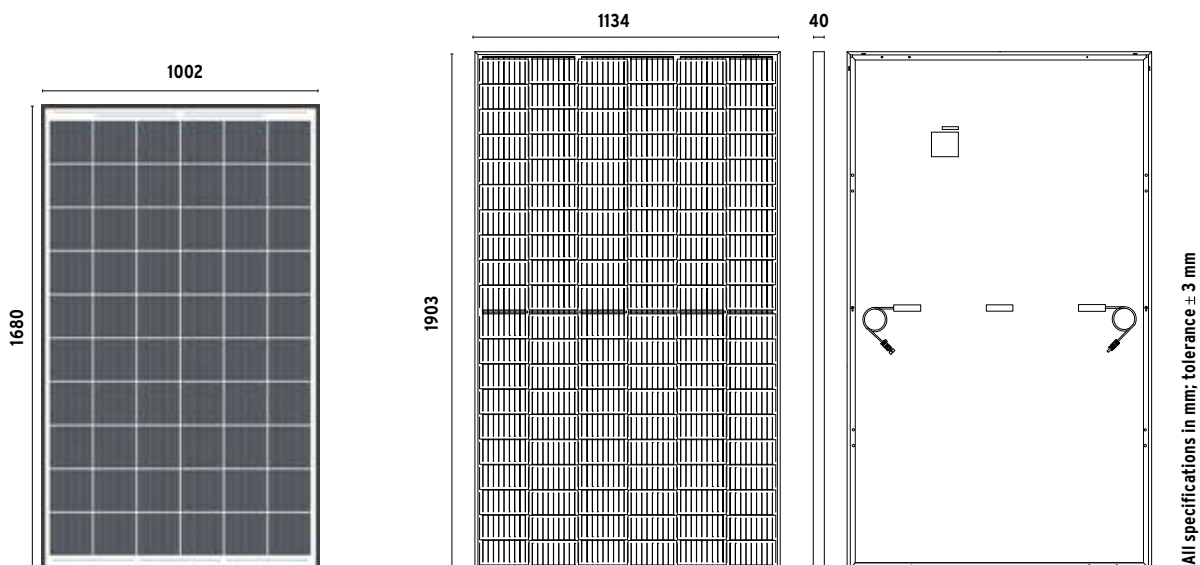
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SOLAR MODULE for standard applications 40 mm

	470 Wp	335 Wp
Module data	HC black	
P _{mp}	470 Wp	335 Wp
U _{mp}	35.24 V	34.09 V
I _{mp}	13.34 A	9.85 A
U _{oc}	41.69 V	40.79 V
I _{sc}	14.22 A	10.23 A
Efficiency	21.78%	19.90%
Space requirement/kWp	4.59 m ²	5.02 m ²
Electrical data		
Cells	120 half-cells (6 x 20) 182 x 91 mm half-cut (10 busbar)	60 full cells (6 x 10) 158.75 x 158.75 mm (5 busbar)
Connection and plug system	decentralised junction box with original Stäubli MC4 EVO2 connectors	centralised junction box with original Stäubli MC4 connectors
Max. system voltage	1500 V DC	1000 V DC
Power tolerance	+5 W / -0 W (measurement under standard test conditions)	+5 W / -0 W (measurement under standard test conditions)
Temperature coefficients	P _{mp} -0.350 %/K U _{oc} -0.270 %/K I _{sc} +0.048 %/K	P _{mp} -0.37 %/K U _{oc} -0.7 %/K I _{sc} +2.85 mA/K
Maximum return current	20 A	15 A
Operating temperature	+85 °C to -40 °C	
Cable length	2 x 1150 mm	2 x 1000 mm
Bypass diodes	3 piece	
Performance guarantee	min. 97% in the first year, thereafter max. reduction by 0.7% p.a. up to 25 years	
Product guarantee	12 years	
Technical data		
Weight	25.00 kg	19.50 kg
Dimensions (HxWxD)	1903 x 1134 x 40 mm (± 3 mm)	1680 x 1002 x 40 mm (± 3 mm)
optical design	black anodised frame, backsheet: front and rear side black	black anodised frame, backsheet: front and rear side white
Glass specifications	3.2 mm ESG solar glass panel with anti-reflective coating (solar transmission AM 1.5 min. 94 %)	Solar glass Interfloat Deflect 3.2 mm
Test certificate	Conformity in accordance with IEC 61215, ed. 2, incl. extended mechanical load test up to 5400 Pa, IEC 61730 by TÜV Süd	IEC 61215, ed. 2, incl. extended mechanical load test (test load: 8100 Pa; design load: 5400 Pa) up to 5400 Pa, IEC 61730; IP 65
Packaging configuration	676 modules/lorry 26 + 26 modules per storage position	720 modules/lorry 24 modules/pallet

335 Wp

470 Wp



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Double glass module with frame for standard applications 35 mm

400 Wp HC bifacial 2 x 2 mm

Module data	transparent
Pmpp	400 Wp
Ump	31.00 V
Impp	12.91 A
Uoc	36.96 V
Isc	13.60 A
Efficiency	20.46%
Space requirement/kWp	4.89 m ²

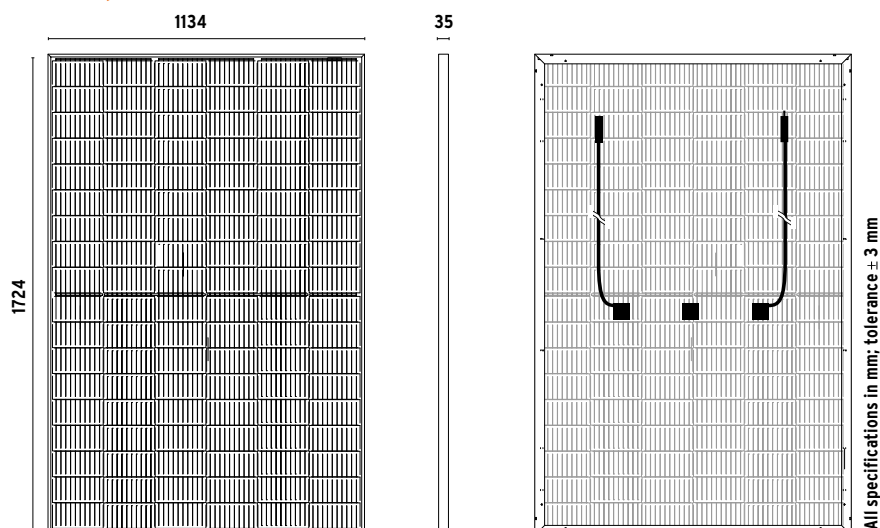
Electrical data

Cells	108 cells (6 x 18) 182 x 91 mm half-cut (10 busbar)
Connection and plug system	decentralised junction box with original Stäubli MC4 EVO2 connectors
Max. system voltage	1500 V DC
Power tolerance	+5 W / -0 W (measurement under standard test conditions)
Temperature coefficients	Pmpp -0.350 %/K Uoc -0.270 %/K Isc +0.048 %/K
Maximum return current	20 A
Operating temperature	+85 °C to -40 °C
Cable length	2 x 1150 mm
Bypass diodes	3 piece
Performance guarantee	min. 97% in the first year, thereafter max. reduction by 0.7% p.a. up to 25 years
Product guarantee	12 years

Technical data

Weight	25.00 kg
Dimensions (HxWxD)	1724 x 1134 x 35 mm (± 3 mm)
optical design	black anodised frame and transparent encapsulation film
Glass specifications	Front: 2 mm / rear: 2 mm solar glass with anti-reflective coating
Test certificate	IEC 61215, ed. 2, incl. extended mechanical load test up to 5400 Pa, IEC 61730 by TÜV Süd
Extended tests	Salt mist & ammonium test, certified by TÜV Nord
Packaging configuration	868 modules/lorry 31 + 31 modules per storage position

400 Wp



Bifacial cell technology

With bifacial cell technology, the light is absorbed on both the front and the back of the module. The increased luminous efficacy increases the efficiency of the module. The active rear side of the module can thus achieve an additional yield of up to 30% (depending on the substrate).

