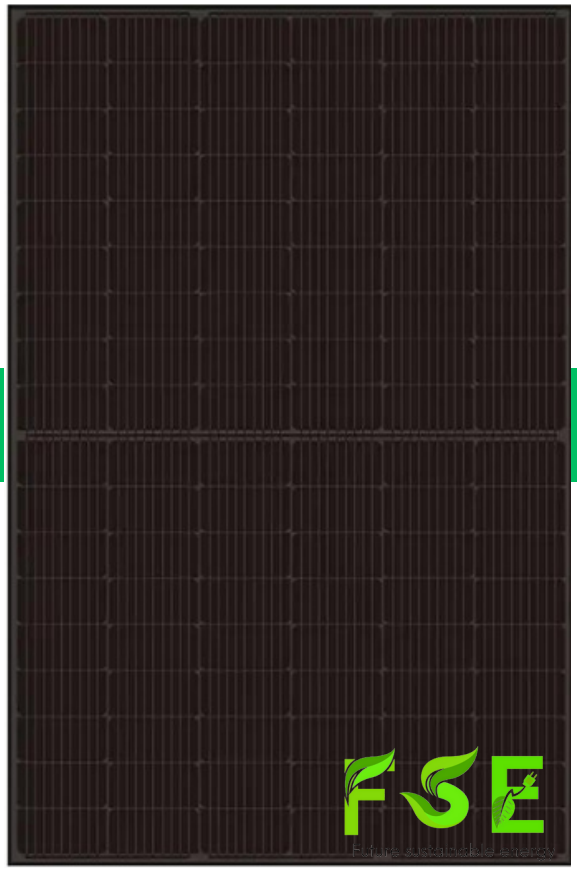
Future sustainable energy

GENERATION N-TYPE M10



FSE Oy

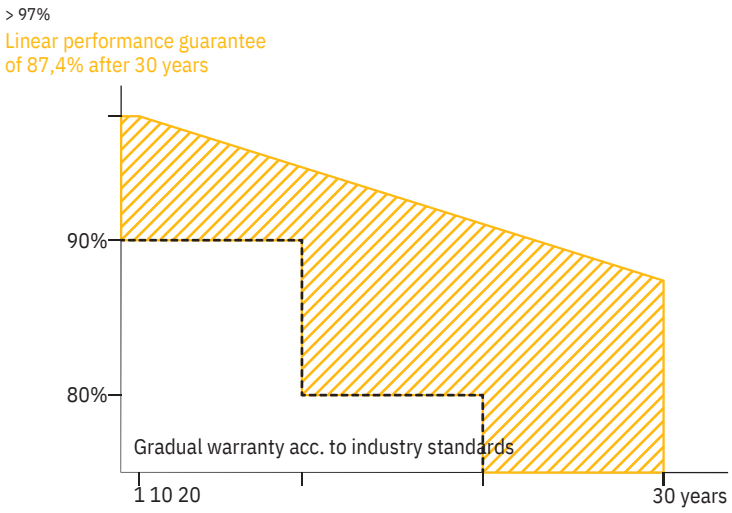
PREMIUM PROTECT

BS-108M10HBB-GG 420 - 430 W

BIFACIAL GLASS-GLASS HALF-CELL MODULE - TRANSPARENT

FSE guarantees a minimum performance value of 87,4% after 30 years for the **PREMIUM PROTECT** glass-glass solar modules.

A comparison of **FSE** glass-glass solar module's performance guarantee to conventional glass-foil modules according to industry standards:



FIRE CLASS A

Maximum fire protection through double glazing according to the highest security requirements

CERTIFICATION

Constant in-house quality controls - certified several times over by accredited inspection bodies

N-TYPE BIFACIAL HALF-CELLS

Up to 30% increase in yield through bifacial cells active on both sides and a transparent backside

GERMAN GUARANTOR

If necessary, it is guaranteed that a German company takes over any claim settlements

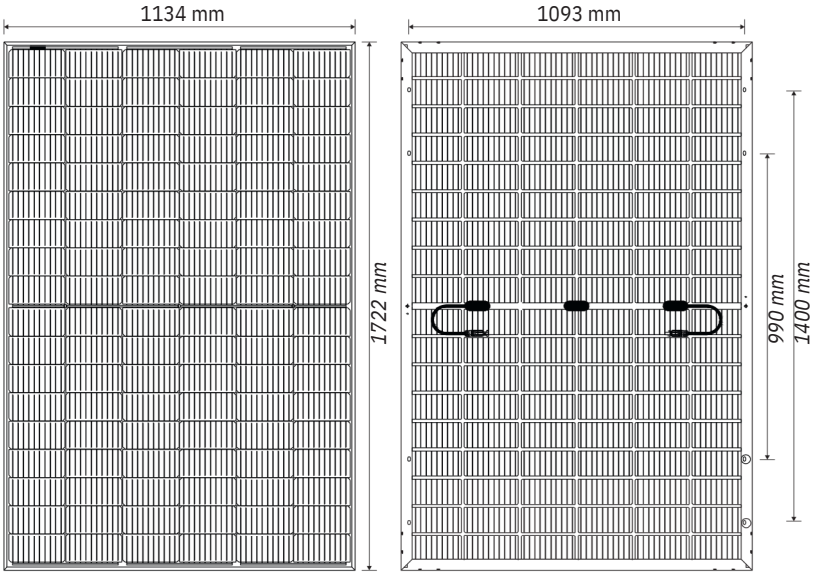
PERFORMANCE GUARANTEE

30 year product warranty and a linear performance guarantee over a period of 30 years

REINSURANCE COVERAGE

FSE is reinsured for 30 years of the product‘s perfomance guarantee

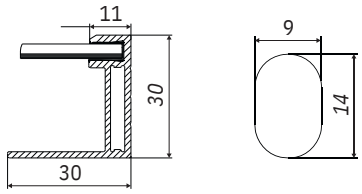
Future sustainable energy



FSE Oy

PREMIUM PROTECT

BS-108M10HBB-GG 420 - 430 W



WARRANTIES[1]

30 years product warranty
30 years performance guarantee

PHYSICAL SPECIFICATIONS

Module dimensions 1722 x 1134 x 30 mm
Weight24,7 kg
FrameAnodized aluminium alloy (black)
Frontside Premium Protect anti-reflection glass, 2 mm Embedding material EVA
Backside Premium Protect anti-reflection glass, 2 mm Solar cells
108 monocrystalline N-type bifacial half-cells Bifaciality 80 % ± 5 %
Junction box(es) IP68, 3 bypass diodes
Cable & connector 1x4 mm², 1200 mm, MC4 compatible

OPERATING CONDITIONS

Operating temperature -40 to 85°C
Static load 5400 Pa (snow/wind) HailØ25 mm at 23 m/s

CERTIFICATION

IEC 61215, IEC 61730, fire class A acc. IEC 61730-2

PACKAGING

Modules per pallet	35
Pallets/modules per truck	26/910

ELECTRICAL CHARACTERISTICS[2]

		BS-420-108M10HBB-GG	BS-425-108M10HBB-GG	BS-430-108M10HBB-GG
Maximum power	Pmax (W)	420	425	430
Power output tolerance	Pmax (%)	0 ~ +3	0 ~ +3	0 ~ +3
Open circuit voltage	Voc (V)	38,11	38,40	38,50
Short circuit current	Isc (A)	14,07	14,16	14,23
Voltage at maximum power	Vmpp (V)	31,52	31,72	31,89
Current at maximum power	Impp (A)	13,32	13,40	13,50
Module efficiency	ηm (%)	21,51	21,76	22,02
Bifaciality performance increase*	10 % Pmpp (W)	462 (+40)	467,5 (+42,5)	473 (+43)
	20 % Pmpp (W)	504 (+84)	510 (+85)	516 (+86)
	30 % Pmpp (W)	546 (+126)	552,5 (+127,5)	559 (+129)
Nominal opterating cell temperature	NOCT (°C)	45 +/- 2		
Temperature coefficient of Voc	Tk (Voc)	-0,26 %/°C		
Temperature coefficient of Isc	Tk (Isc)	+0,046 %/°C		
Temperature coefficient of Pmpp	Tk (Pmpp)	-0,30 %/°C		
Maximum system voltage DC (TÜV)	(V)	1500		
Maximum series fuse rating	(A)	30		

*depending on Albedo and irradiation conditions at installation site