

V15 V20 V30 Roof Integrated Solar Heating Panels



- Clean, low-profile aesthetic
- Range of sizes can be joined or spaced apart on the roof
- Compatible with the widest range of roof coverings
- Fitted during the normal roofing programme, enabling clarity of responsibility and safe working practices
- Properly tested as a building material
- Combines seamlessly with Clearline PV solar panels

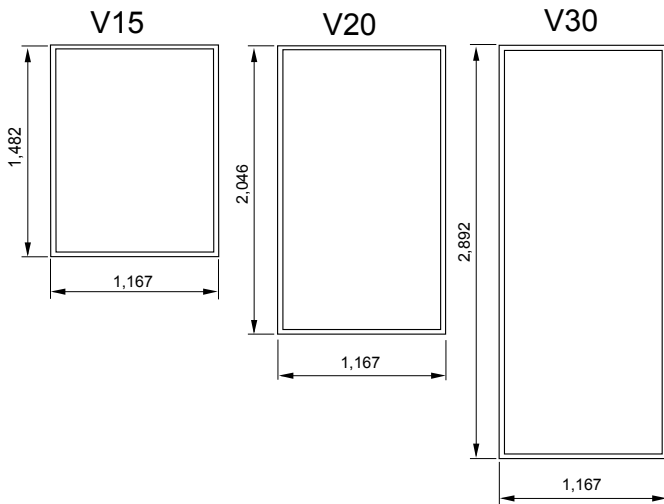
Mechanical Specification

Model		V15	V20	V30
Width (across roof)	mm	1,167	1,167	1,167
Height (up roof)	mm	1,482	2,046	2,892
Thickness	mm	82	82	82
Weight (empty)	kg	31.0	43.5	62.0
Static roof loading (distributed)	kg / m ²	17.9	18.2	18.4
Rated Flow	litres/hour	75	105	150
Pressure Drop at Rated Flow	kPa	7.0	12.1	34.2
Fluid Volume	litres	0.75	1.0	1.5
Max. Hydraulic Pressure	bar	10.0		
Characteristic Wind Resistance	kPa	3.4		
Ultimate Design Load ¹	kPa	2.4		
Fire Rating to BS 476-3		AA		
Warranty	years	10		
Standards		BBA, MCS, KEYMARK		

Clearline solar panels have been thoroughly tested, not only as energy generating equipment, but also as a building component and was the first solar panel to achieve a BBA certificate.

Performance Specification

Model		V15	V20	V30
Aperture Area	m ²	1.55	2.17	3.1
Zero Loss Efficiency	h_0	0.73	0.73	0.76
Heat Loss Coefficient	a_1	4.2	4.2	3.6
Second Order	a_2	0.0043	0.0043	0.0068
I.A.M. (50°)	k_θ	0.93		
Effective Heat Capacity	C_{eff}	5.3		



Also available



Clearline PV
Photovoltaic solar panels

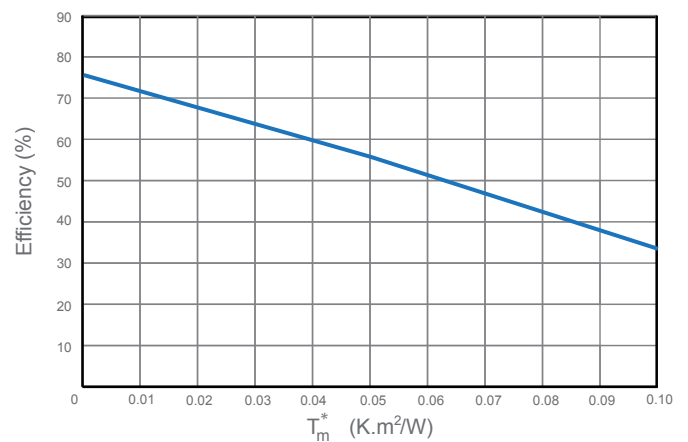


Symphony Cylinder
Optimised for solar energy



Clearline Aura
Wireless solar energy display

Efficiency Curve



¹ Design resistance to ultimate loads has been reduced by a partial material safety factor of 1.44

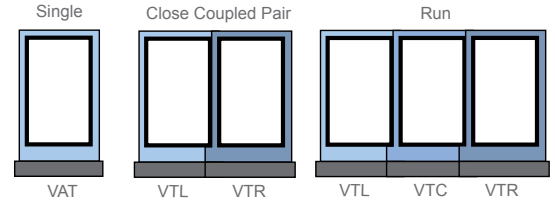
Pitched Roof Integration

Clearline solar panels are only 82mm thin and fit over tile battens with no modification to the roof structure. When integrated with rolling tiles, the panels finish flush with the tile surface. Connections are neatly tucked away behind and hidden from sight. The choice of three panel sizes, together with options to install either joined together or spaced apart on the roof, gives a wide range of options to integrate renewable energy and remain in harmony with the building design.



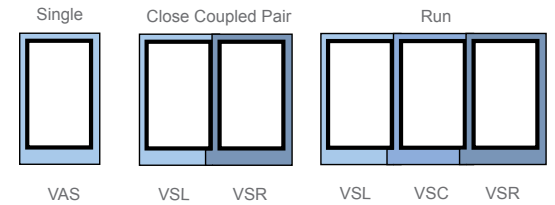
T Series Tiled Roof

Interlocking and plain tiles
thickness > 19mm
Pitch 20-60°

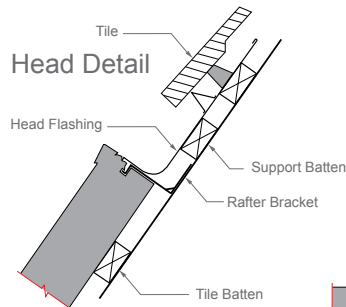
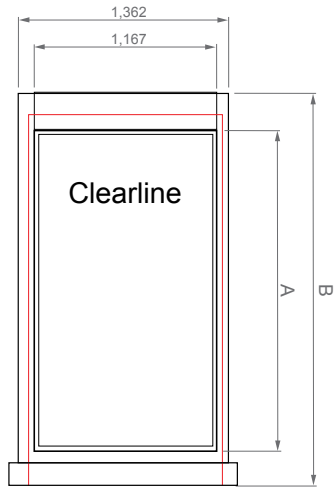


S Series Slate Roof

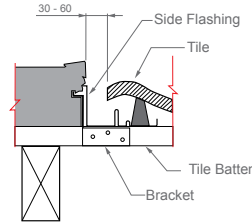
Natural and artificial slates
thickness < 10mm
Pitch 20-60°



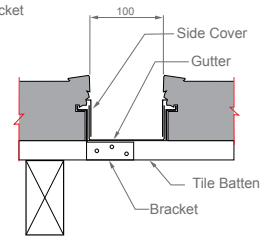
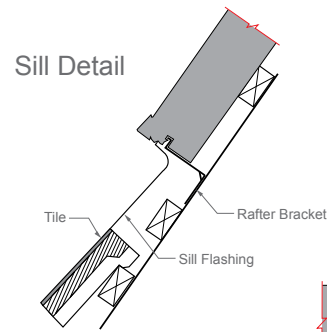
T Series Flashings



	V15	V20	V30
A	mm 1,482	2,046	2,892
B	mm 1,980	2,543	3,389

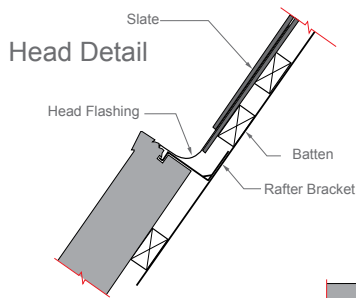
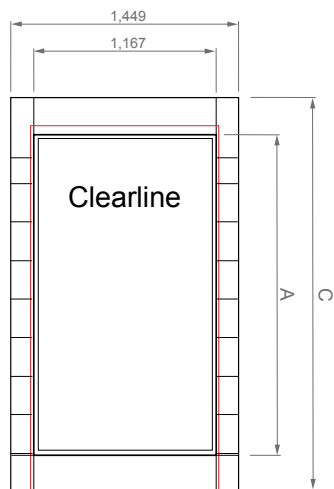


Side Detail

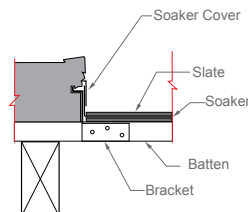


Gutter Detail
(joined flashings)

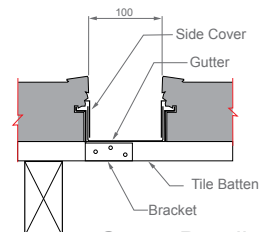
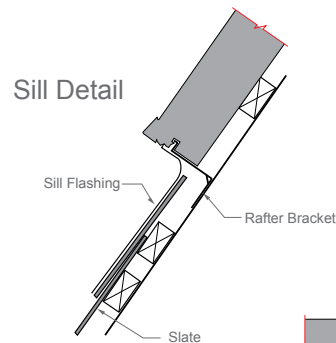
S Series Flashings



	V15	V20	V30
A	mm 1,482	2,046	2,892
C	mm 1,946	2,509	3,355



Side Detail



Gutter Detail
(joined flashings)