

# Performance and Technical Data

## Trigon Solar Collectors

		Units	Collector Model	
			Trigon 2.3V	Trigon 2.3H
Energy	Collector output @ irradiance 1000W/m <sup>2</sup> and 20l/hr/m <sup>2</sup> solar fluid flow rate	kW	1.57	
	Collector yield per annum per m <sup>2</sup> absorber area @ irradiance 1000W/m <sup>2</sup> and 20l/hr/m <sup>2</sup> collector flow	kWh/m <sup>2</sup>	785	
	Optical Efficiency*	%	80.4	79.4
	Heat loss coefficient a <sub>1</sub> * (Thermal Transmittance, linear K <sub>1</sub> )	W/(m <sup>2</sup> K)	3.235	3.494
	Heat loss coefficient a <sub>2</sub> *(Thermal Transmittance, quadratic (K <sub>2</sub> ) W/m <sup>2</sup> °C)	W/(m <sup>2</sup> K)	0.0117	0.015
	Maximum idle temperature	°C	194	198
	Irradiation angle correction factor IAM-50	%	94.0	95.4
	Specific thermal capacity C*	kJ/(m <sup>2</sup> K)	5.85	6.3 (8.073)
	Effective thermal capacity	kJ/K	11.75	12.6
	Maximum operating pressure	bar	10	
Solar Fluid	Recommended Max flow rate per collector	litres/hr.	20	
	Recommended solar fluid	-	Propylene glycol e.g. Tyfocor L (diluted 40% Tyfocor /60% water)	
	Maximum solar fluid pressure	bar	10	
	Maximum stagnation temperature at 1000W/m <sup>2</sup> and 30°C	°C	194	198
	Solar fluid content	litres	1.7	1.9
Collector	Surface area of collector, gross	m <sup>2</sup>	2.3	
	Aperture surface area	m <sup>2</sup>	2.0	
	Effective absorber surface area	m <sup>2</sup>	2.0	
	Tempered solar safety glass, resistant to hail (EN12150, EN12975) thickness	mm	3.2	
	Mechanical strength of the glass cover to climatic loads (wind lift and snow loading)	Pa	3200	
	Depth of Rockwool Insulation in base of housing	mm	55	60
	Angle of installation	degrees	From 15° to 90° depending on fixings	

\*Values to EN 12975

### Pressure Loss across Collector Arrays @20l/h/m<sup>2</sup> Collector Absorber Area

Pressure Loss/mbar, with Flow & Return Connection at:	Number of Collectors									
	1	2	3	4	5	6	7	8	9	10
Opposite Ends/2.3 V	31.93	32.23	32.99	34.02	35.73	38.04	41.04	45.09	49.72	55.98
Same Ends/2.3 V	32.07	32.56	33.55	34.88	36.89	N/A	N/A	N/A	N/A	N/A
Opposite Ends/2.3 H	32.36	34.03	36.75	40.42	45.85	53.19	62.28	74.57	87.86	105.85
Same Ends/2.3 H	31.99	33.15	35.30	38.22	42.49	N/A	N/A	N/A	N/A	N/A