

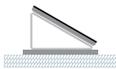


## GK3003 SERIES LARGE-SIZE COLLECTOR

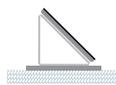
GREENoneTEC manufactures large-size collectors in the GK3003 series with a standard size of 8 and 13 m<sup>2</sup>, single & double glazed with anti-reflex coated glass. A special design of the absorber and the attractive performance data make these collectors ideal for large solar thermal systems working at higher temperature. The optimized mounting system, which permits time-saving installation by crane, and hydraulic connection considerably reduce the overall time and effort required to install the system.

### INSTALLATION OPTIONS

Mounting angle **30°**



Mounting angle **45°**



Mounting angle **60°**



Foundation possibility

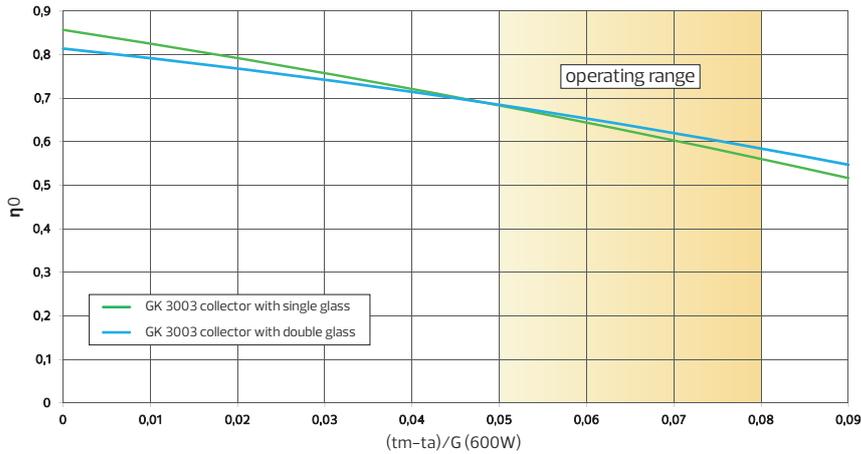
- rammed profiles
- concrete

### PRODUCT BENEFITS

- Up to 22 collectors can be connected in parallel / series with each other with minimum pressure loss (Low Flow / Tichelmann)
- Optimal stagnation and venting behaviour due to serpentine absorbers designed for large systems
- Aluminium frame collector with a high degree of long-term stability satisfies all static requirements as per EN 1991
- Time-saving collector installation due to optimized support rails as well as fast and easy collector connections
- Excellent value for money thanks to aluminium absorber with high selective coating as well as minimum crane use and installation time to set up the system
- Easy to service as covers and modules can be individually replaced

Technical data	GK3133 / GK3133-S	GK3803 / GK3803-S
Collector type	Large-size collector	
Overall area [m <sup>2</sup> ]	13.17	7.91
Absorber area [m <sup>2</sup> ]	12.37	7.42
Aperture area [m <sup>2</sup> ]	12.35	7.41
L x W x H [mm]	5.920 x 2.224 x 135	3.557 x 2.224 x 135
Weight [kg]	333	202
Weight [kg] - GK/S	232	141
Absorber capacity [l]	11.35	6.81
Housing	Al-frame	
Surface	Al-natural	
Back plate	Al-sheet	
Absorber	Al, high selective vacuum coating	
Absorption [%]	95	
Emission [%]	5	
Ø manifold [mm]	28	
Ø risers [mm]	8	
Connections	1¼" external thread	
Glass	3.2 mm tempered solar safety glass (double glazing)	
Transmittance of glass [%]	95 - AR glass	
Insulation	70 mm mineral wool plate	
Max. stagnation temperature	218 °C under norm conditions	
Max. operating pressure	10 bar	
Heat transfer medium	Polypropylene glycol / water mixture	
Packaging	for truck and container optimized	





**Efficiency factors measured on Solar Keymark conditions with solar irradiance 600 W/m<sup>2</sup> (based on aperture area).**

Model	GK3003 single glass	GK3003 double glass
$\eta_0$	0,857	0,814
$a_1$ [W/(m <sup>2</sup> K)]	3,083	2,102
$a_2$ [W/(m <sup>2</sup> K <sup>2</sup> )]	0,013	0,016

**Efficiency:**

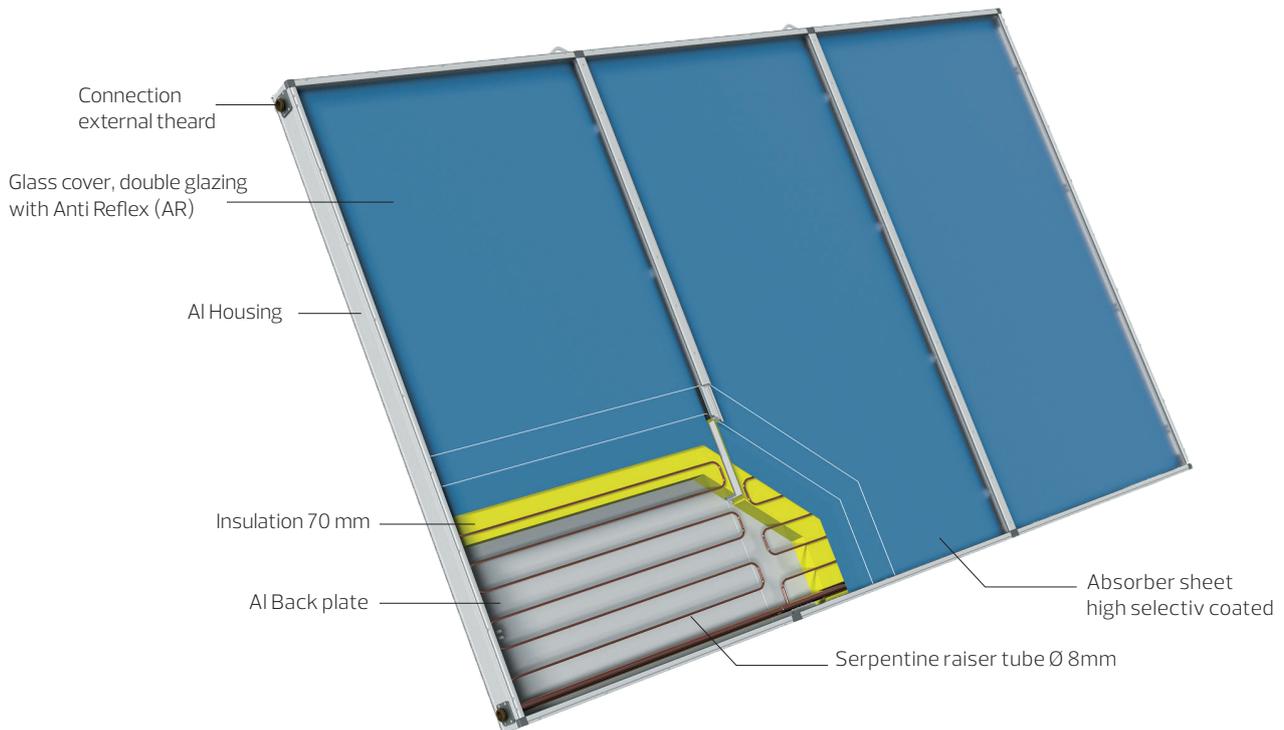
$$\eta = \eta_0 - \frac{a_1 (T_m - T_a)}{G} - \frac{a_2 (T_m - T_a)^2}{G}$$

$T_a$  = Ambient temperature [°C]

$T_m$  = Mean fluid temperature [°C]

$G$  = Irradiance [W/m<sup>2</sup>]

Angle [°]	0	20	30	40	50	60	70	80	90
$K_{\theta_b}()$ [ ] double glazed	1.00	0.99	0.98	0.96	0.91	0.82	0.53	0.27	0
$K_{\theta_b}()$ [ ] single glazed	1.00	0.99	0.97	0.95	0.91	0.83	0.68	0.21	0



### EXTERNAL PIPING

Large collector fields can be realized with minimal external piping (reduction of installation costs, heat loss and pressure loss).

### OPERATION & MAINTENANCE

Serpentine absorbers guarantee easy bottom-up flushing, filling and venting of the collector field.

### STAGNATION

In case of an emergency shutdown of the solar system the serpentine absorbers guarantee an excellent stagnation behaviour. In such case the liquid is quickly pressed out of the collectors from top to bottom at the beginning of the stagnation phase.

