



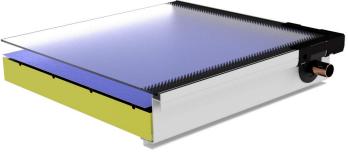
FK 8003 Series (7one) PRODUCT PRESENTATION

St.Veit/Glan, 10.01.2019



PRODUCT BENEFITS

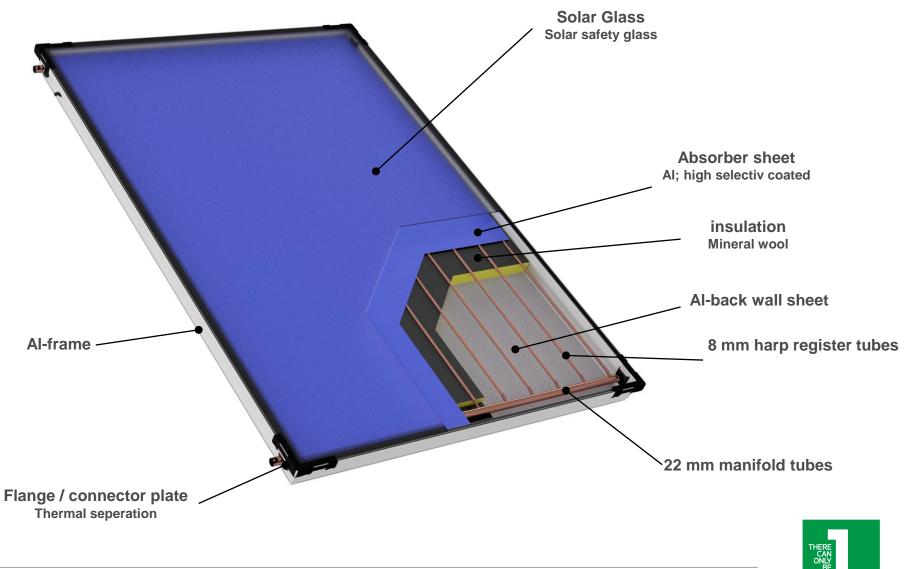
- The wave frame design combined with the black frame solar glass provides a unique look
- In-roof installation possible
- Suitable for universal use for all installation types; parallel roof, in-roof or flat roof
- The robot-controlled production line ensures the highest levels of precision during the production process
- Tempered solar safety glass
- Easy-to-install fastening system for all standard roof types
- The intelligent fastening concept with a groove/T-head bolt system ensures the shortest possible installation timeSolar







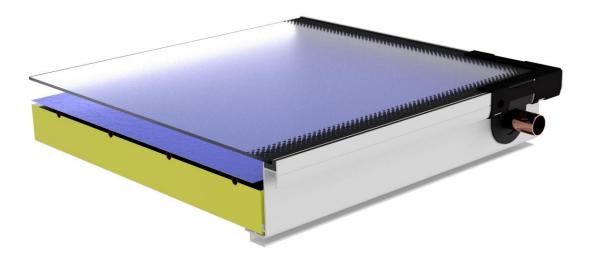
DESIGN DETAILS





AVAILABLE MODELS / OPTIONS

Available collector model size 2,0m² and 2,5m² (horizontal/vertical)







TECHNICAL DATA

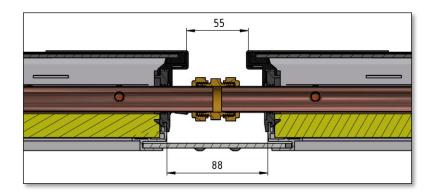
Technical data	FK 8203	FK 8253			
Туре	Frame collector				
Gross area [m²]	2,02	2,51			
Absorber area [m²]	1,84	2,31			
Aperture area [m ²]	1,84	2,31			
L x B X H [mm]	1730 x 1170 x 83	2150 x 1170 x 83			
Weight (emply) [kg]	31	38			
Absorber Capacity [I]	1,56	1,77			
Collector frame	Al-fram	IE			
Frame finish	Al, natur	ral			
Back plate	Al-shee	et			
Absorber type	AI, highly selectiv	vely coated			
Absorption [%]	95				
Emission [%]	5				
Ø Manifold tube [mm]	22				
Ø Riser tube [mm]	8				
Collector connections	blank copper ends (for use w	/ith compression joints)			
Glass sheet	3.2 mm tempered sol	lar safety glass			
Transmisson [%]	90				
Insulation	40 mm mineral v	wool plate			
Max. stagnation temperature	192°C under norm conditions				
Max. operation pressure	10 bar				
Permissibly heat transfere fluid	Polypropylene glycol / water mixture				
Permissibly installation angle	min. 15° - max. 75°				
Standard packaging	Single shrinked, 8 pcs. horizontal				

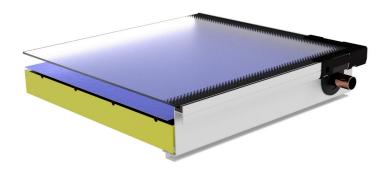
HYDRAULIC CONNECTION



Low cost connectors by using compression fitting coupling

- Isposability in all markets
- Easy handling
- Unmistakable mounting
- Easy & simple !!!

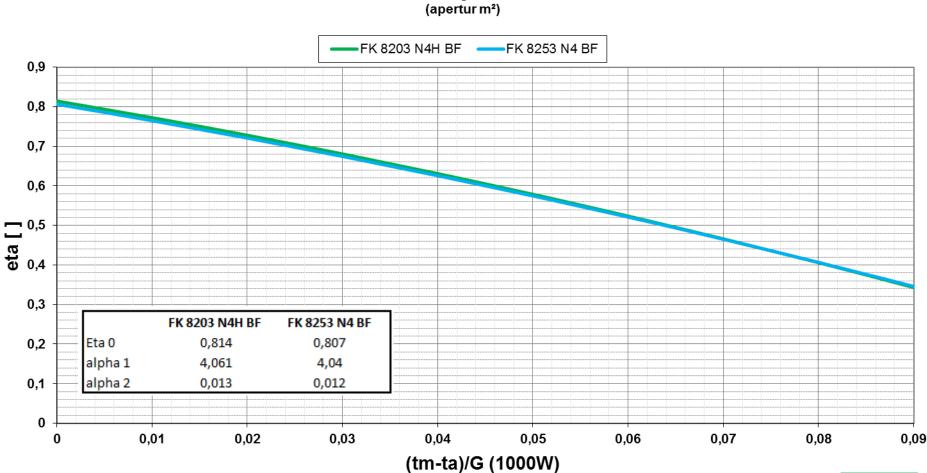








PERFORMANCE FIGURES



efficiency curves



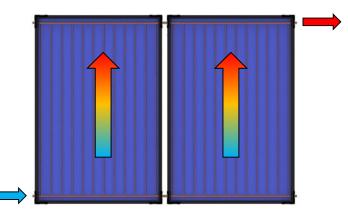
HYDRAULICS – USING HARP ABSORBER WITH 4X OUTLETS (CONNECTIONS)





BENEFITS

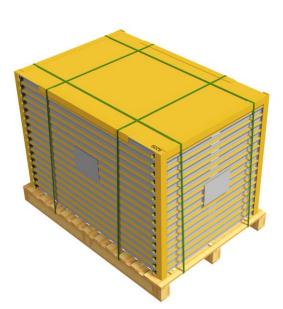
- 6 parallel connections single collectors possible
- Low pressure losses by compact solar fields
- Individual flow rate trough optimal block sealing washer





VERPACKUNGSVARIANTEN









flat stacked packaging 16 pcs. truck

upright packaging 8 pcs. on wooden pallet Single packaging for containers





- upright packaging: packaged individually (2.0/2.5 m²)
 - 8 pcs per Pallet
 - Capacity: 240 pcs / Truck
- Flat stacked packaging: Collector with cardboard protection on corners and between pannels
 - 16 pcs per Pallet
 - Capacity: 160 pcs / Truck
- Container loads for 2,5 m² Collector:
 - 20' Container: 105 STK
 - 40' Container: 220 STK
- Container loads for 2,0 m² Collector:
 - 20' Container: 125 STK
 - 40' Container: 260 STK











PRODUCT CERTIFICATION





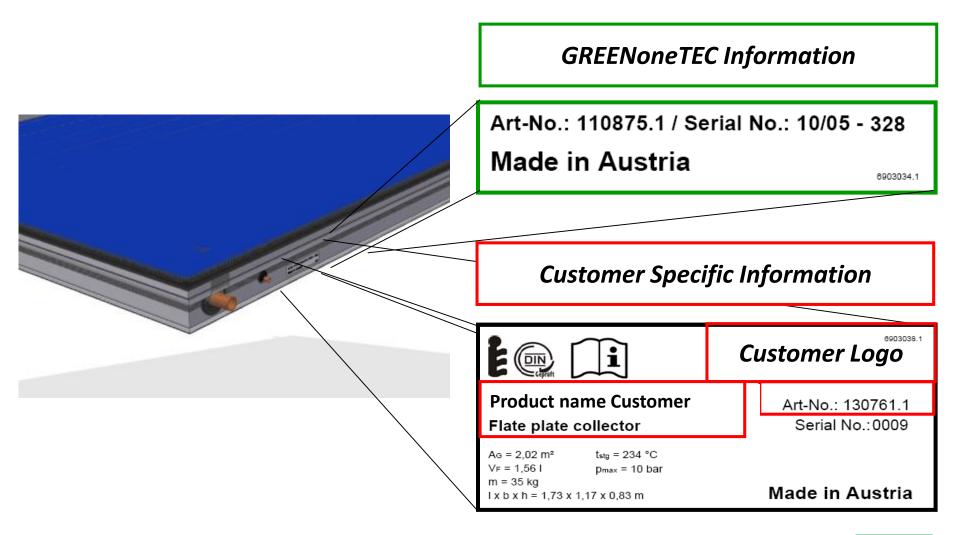


The Certification Mark for Onsite Sustainable Energy Technologies



CUSTOMER SPECIFIC LABELLING







MOUNTING OVERVIEW



Mounting	Flat Roof	On-Roof	In-Roof
Mounting Set	SS45	DB0 / SS0	Metal sheet flashing
Orientation	vertical / horizontal	vertical / horizontal	vertical single and parallel row
Roof tiles		 Clay roofing tile (DB) Crown tile (DB) Slate (SS) Wave cement asbestos (SS) Metal Sheet (SS) 	Clay roofing tile up to 50mm





INSTALLATION SETS MATRIX 2.0m² - FK8203

	2.0 m2	F	FK8203N 4H (2sqm) - vertical (portrait) mounting				
GoT Name	Detailed describtion	2x collector	3 collector	4 collector	5 collector	6 collector	
FK8203N 4H	Solar thermal collector	2	3	4	5	6	
	Required mounting levels for STANDARD Load (see installation manual)	3	4	5	6	7	
TRPN1	Support rail for 1 collector portrait		1		1		
TRPN2	Support rail for 2 collector portrait	1	1	2	2	3	
TRPL1	Support rail for 1 collector horizontal						
vs	Support rail connecting bracket set		1	1	2	2	
DB0N2	Roof bracket (hook) set for 2 panel installation	1	1	1	1	1	
DB0N1	Roof bracket (hook) extension set		1	2	3	4	
DB0L1	Roof bracket set for landscape mounting						
DB0L1 ES	Roof bracket extension set for landscape mounting						
SS0N2	Bold screw basic set	1	1	1	1	1	
SS0N1	Bold screw extension set		1	2	3	4	
SS0L1	Bold screw set for landscape mounting						
SSOL1 ES	Bold screw extension set for landscape mounting						
\$\$45N2	Bold screw A-frame 45 degree basic set	1	1	1	1	1	
SS45N1	Bold screw A-frame 45 degree extension set		1	2	3	4	
\$\$45L1	Bold screw A-frame 45 degree set for landscape mounting						
SS45L1 ES	Bold screw A-frame 45 degree extension set for landscape mounting						
	Fittings						
RE	Roof entering set (2x 700mm flexible pipes with insulation)	1	1	1	1	1	
GS	Compression basic set for 2 panels	1	1	1	1	1	
ES	Compression extension set		1	2	3	4	
GS landscape	Compression basic set for landscape mounting (1x Insulated corrugated tube; length 390 mm)						
ES landscape	Compression extension set for landscape mounting (1x Insulated corrugated tube; length 390 mm)						
	Flashing sets - for vertical (portrait mounting only)						
BS	Flashing basic set for 2 panels	1	1	1	1	1	
ES	Flashing extenshin set		1	2	3	4	

FK8203N 4H (2sqm) - horizontal (landscape) mounting						
1x collector	2x collector	3 collector	4 collector	5 collector	6 collector	
1	2	3	4	5	6	
2	3	4	7	8	10	
1	2	3	4	5	6	
	1	2	3	4	5	
		2	3	4	5	
1	1	1	1	1	1	
	1	2	3	4	5	
1	1	1	1	1	1	
	1	2	3	4	5	
1	1	1	1	1	1	
	1	2	3	4	5	
1	1	1	1	1	1	
	1	1	1	1	1	
1		1	2	3	4	





INSTALLATION SETS MATRIX 2.5 m² FK8253

	2.5 m2		FK8253N 4H (2.5sqm) - vertical (portrait) mounting				
GoT Name	Detailed describtion	2x collector	3 collector	4 collector	5 collector	6 collector	
FK8253N 4H	Solar thermal collector	2	3	4	5	6	
	Required mounting levels for STANDARD Load (see installation manual)	3	4	5	6	7	
TRPN1	Support rail for 1 collector portrait		1		1		
TRPN2	Support rail for 2 collector portrait	1	1	2	2	3	
TRPL1	Support rail for 1 collector horizontal						
vs	Support rail connecting bracket set		1	1	2	2	
DB0N2	Roof bracket (hook) set for 2 panel installation	1	1	1	1	1	
DB0N1	Roof bracket (hook) extension set		1	2	3	4	
DB0L1	Roof bracket set for landscape mounting						
DB0L1 ES	Roof bracket extension set for landscape mounting						
SS0N2	Bold screw basic set	1	1	1	1	1	
SS0N1	Bold screw extension set		1	2	3	4	
SS0L1	Bold screw set for landscape mounting						
SSOL1 ES	Bold screw extension set for landscape mounting						
SS45N2	Bold screw A-frame 45 degree basic set	1	1	1	1	1	
\$\$45N1	Bold screw A-frame 45 degree extension set		1	2	3	4	
\$\$45L1	Bold screw A-frame 45 degree set for landscape mounting						
SS45L1 ES	Bold screw A-frame 45 degree extension set for landscape mounting						
	Fittings						
RE	Roof entering set (2x 700mm flexible pipes with insulation)	1	1	1	1	1	
GS	Compression basic set for 2 panels	1	1	1	1	1	
ES	Compression extension set		1	2	3	4	
GS landscape	Compression basic set for landscape mounting (1x Insulated corrugated tube; length 390 mm)						
ES landscape	Compression extension set for landscape mounting (1x Insulated corrugated tube; length 390 mm)						
	Flashing sets - for vertical (portrait mounting only)						
BS	Flashing basic set for 2 panels	1	1	1	1	1	
ES	Flashing extenshin set		1	2	3	4	

FK8253N 4H (2.5sqm) - horizontal (landscape) mounting						
1x collector	2x collector	3 collector	4 collector	5 collector	6 collector	
1	2	3	4	5	6	
2	3	4	7	8	10	
1	2	3	4	5	6	
	1	2	3	4	5	
1	1	1	1	1	1	
	1	2	3	4	5	
1	1	1	1	1	1	
		2	3	4	5	
1	1	1	1	1	1	
	1	2	3	4	5	
1	1	1	1	1	1	
	1	1	1	1	1	
1		1	2	3	4	



SUPPORT RAIL



TRPN1:

2 x support rail vertical collector length fits for one collector

TRPN2:

2 x support rail vertical collector length fits for two collectors

TRPL1:

2 x support rail horizontal collector length fits for one collector





ROOF BRACKET 0° DB0 VERTICAL

GREENoneTEC 1

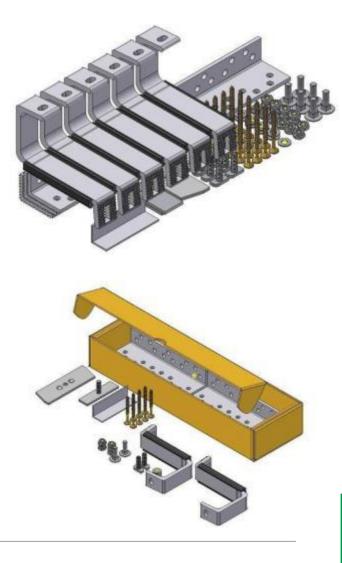
DB0N2 (Basic Set vertical mounting): 6 x roof bracket (incl. lay on rubber) 6 x roof bracket console 24 x Self-tapping screw 6x60 9 x Hammer head bolt M8x25 6 x Cup square bolt M8x25 9 x Washer M8 13 x Hex Nut M8 (thereof 4 x self-securing) 1 x Clamping Piece 2 x Mounting part, top 1 x Mounting jig

2 x Mounting instruction

DB0N1 (Extension Set vertical mounting): 2 x roof bracket (incl. lay on rubber) 2 x roof bracket console 8 x Self-tapping screw 6x60 2 x Hammer head bolt M8x25 2 x Cup square bolt M8x25 7 x Washer M8 9 x Hex Nut M8 (thereof 4 x self-securing) 1 x Clamping piece 1 x Mounting part, extension 1 x Mounting jig

Delivery in carton; small parts in PE-bag

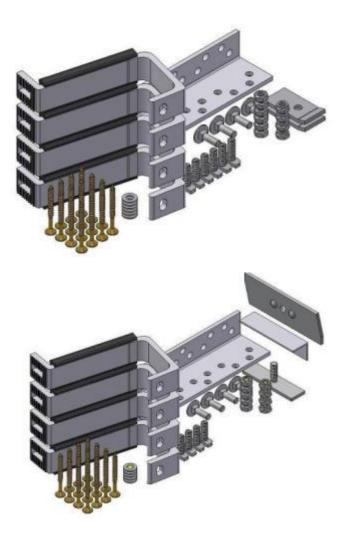
Delivery in carton; small parts in PE-bag



ROOF BRACKET 0° DB0 HORIZONTAL

DB0L1 (Basic Set horizontal mounting): 4 x roof bracket (incl. lay on rubber) 4 x roof bracket console 16 x Self-tapping screw 6x60 6 x Hammer head bolt M8x25 4 x Cup square bolt M8x25 6 x Washer M8 10 x Hex Nut M8 (thereof 4 x self-securing) 2 x Mounting part, top 2 x Mounting Instruction Delivery in carton; small parts in PE-bag

DB0L1 ES (Extension Set horizontal mounting): 4 x roof bracket (incl. lay on rubber) 4 x roof bracket console 16 x Self-tapping screw 6x60 4 x Hammer head bolt M8x25 4 x Cup square bolt M8x25 5 x Washer M8 9 x Hex Nut M8 (thereof 4 x self-securing) 1 x Clamping piece 1 x Mounting part, extension 1 x Mounting jig Delivery in carton; small parts in PE-bag



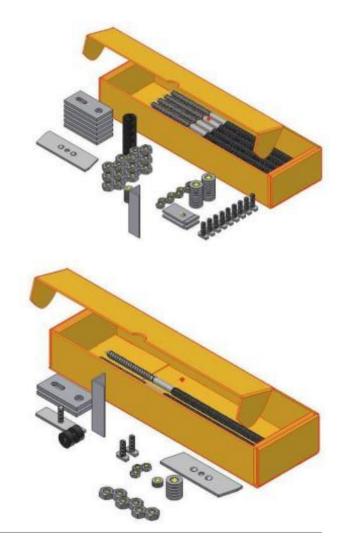


BENCH SCREW SET 0° (SS0) VERTICAL



SS0N2 (Basic Set vertical mounting): 6 x Bench screw M12 6 x Mounting part 6 x Rubber seal M12 18 x Washer M12 18 x Hex nut M12 9 x Hammer head bolt M8x25 9 x Washer M8 9 x Hex nut M8 1 x Clamping piece 2 x Mounting part, top 1 x Mounting jig 2 x Mounting instruction Delivery in carton; small parts in PE-bag

SSON1 (Extension Set vertical mounting):
2 x Bench screw M12
2 x Mounting part
2 x Rubber seal M12
6 x Washer M12
6 x Hex nut M12
2 x Hammer head bolt M8x25
3 x Washer M8
3 x Hex nut M8
1 x Clamping piece
1 x Mounting part, extension
1 x Mounting jig
Delivery in carton; small parts in PE-bag



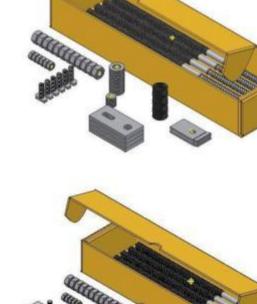


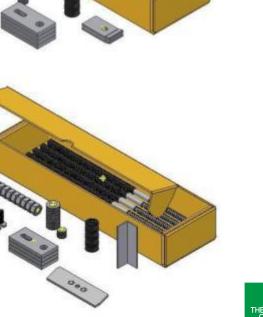
BENCH SCREW SET 0° (SS0) HORIZONTAL

SSOL1 (Basic Set horizontal mounting):
4 x Bench screw M12
4 x Mounting part
4 x Rubber seal M12
12 x Washer M12
12 x Hex nut M12
6 x Hammer head bolt M8x25
6 x Washer M8
6 x Hex nut M8
2 x Mounting part, top
1 x Mounting jig
2 x Mounting instruction
Delivery in carton; small parts in PE-bag

SS0L1 ES (Extension Set horizontal mounting): 4 x Bench screw

- 4 x Mounting part
- 4 x Rubber seal M12
- 12 x Washer M12
- 12 x Hex nut M12
- 4 x Hammer head bolt M8x25
- 5 x Washer M8
- 5 x Hex nut M8
- 1 x Clamping piece
- 1 x Mounting part, extension
- 1 x Mounting jig
- Delivery in carton; small parts in PE-bag





GREENoneTEC

SOLAR COLLECTORS





BENCH SCREW SET 45° (SS45) VERTICAL

SS45N2 (Basic Set vertical mounting):

- 3 x Base bracket 3 x Support bracket 6 x Attachment bracket 6 x Bench screw M12 6 x Rubber seal M12 18 x Washer M12 18 x Hex nut M12 9 x Hammer head bolt M8x25 9 x Hex bolt M8x25 18 x Washer M8 18 x Hex nut M8
- 2 x Mounting part, top
- 1 x Clamping piece
- 1 x Mounting jig
- 2 x Mounting instruction
- Delivery in carton; small parts in PE-bag



- 1 x Base bracket 1 x Support bracket 2 x Attachment bracket 2 x Bench screw M12 2 x Rubber seal M12 6 x Washer M12 6 x Hex nut M12 2 x Hammer head bolt M8x25 3 x Hex bolt M8x25 6 x Washer M8
- 6 x Hex Nut M8

- 1 x Clamping piece
- 1 x Mounting part, extension
- 1 x Mounting jig
- Delivery in carton; small parts in PE-bag





BENCH SCREW SET 45° (SS45) HORIZONTAL

SS45L1 (Basic Set horizontal mounting):

2 x Base bracket
2 x Support bracket
4 x Attachment bracket
4 x Attachment bracket
4 x Bench Screw M12
4 x Rubber Seal M12
12 x Washer M12
12 x Hex nut M12
6 x Hammer head bolt M8x25
6 x Hex bolt M8x25
12 x Washer M8
12 x Hex nut M8

SS45L1 ES (Extension Set horizontal mounting):

2 x Base bracket 1 x Clamping piece 2 x Support bracket 1 x Mounting part, extension 4 x Attachment bracket 1 x Mounting jig 4 x Bench bcrew M12 Delivery in carton; small parts in PE-bag 4 x Rubber beal M12 12 x Washer M12 12 x Hex nut M12 4 x Hammer head bolt M8x25 ----6 x Hex bolt M8x25 11 x Washer M8 11 x Hex nut M8

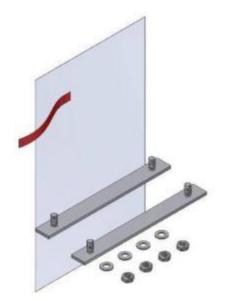
THERE CAN ONLY BE

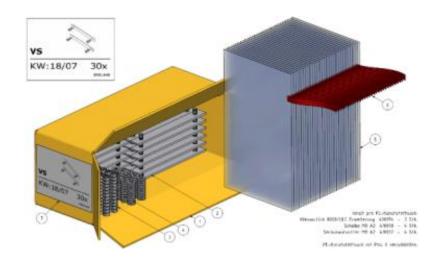
CONNECTING SET



 Connecting Set (necessary to combine the support rail): 2 x Clamping piece extension 4 x Washer M8 4 x Hex nut M8 all parts in PE-bag

Delivery: 30 pcs. connecting sets in carton

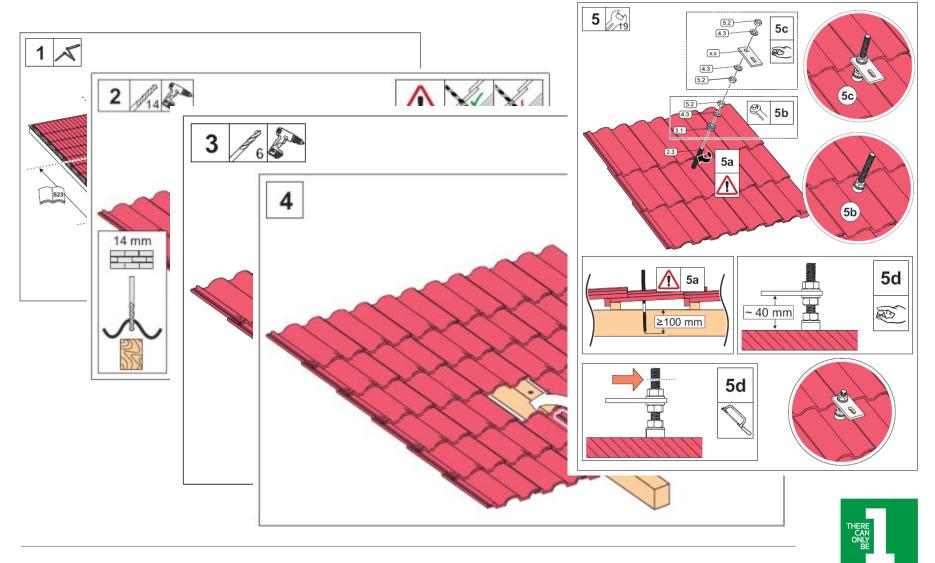








EXAMPLE FOR MOUNTING INSTRUCTION



CONNECTION-SETS VERTICAL

GREENONETEC 1

Connection (compression) basic set vertical:

- 4 x Straight compression coupling
- 1 x Blanking coupling
- 2 x Stop end piece
- 1 x Air vent connector
- 1 x Air vent piece
- 1 x Air vent Key



Connection (compression) extension set vertical:

2 x Straight compression couplings

1 x Blanking coupling





CONNECTION-SETS HORIZONTAL



Connection Basic Set horizontal:

- 1 x Insulated corrugated tube; length 390 mm
- 2 x Stop end piece
- 2 x Air vent connector
- 2 x Air vent piece
- 2 x Adapter piece 22/ 1" flat seal
- 2 x Flat seals
- 1 x Air vent Key



Connection Extension Set horizontal :

- 1 x Insulated corrugated tube; length 390 mm
- 1 x Stop end piece
- 1 x Air vent conector
- 1 x Air vent piece
- 2 x Adapter piece 22/ 1" flat seal
- 2 x Flat seals
- 1 x Air Vent Key



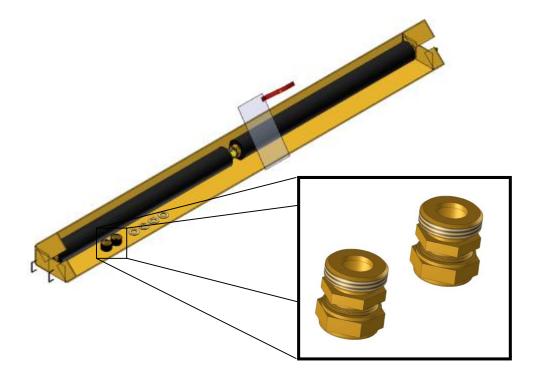


ROOF ENTERING SET



Adapter piece for flat sealing and compression parts

- 2 x Insulated corrugated tube with 1" coupling nut on both sides 700mm
- 4 x flat seals
- 2 x compression adapter piece 22/ 1" flat seal







IN – ROOF SET

- Metal Sheet cladding (colour RAL 7016):
 - Basic Set for 2 collectors (vertical)
 - Extension Set for 1 collector (vertical)
 - Basic Set for 2 collectors in 2nd row (vertical)
 - Extension Set for 1 collector in 2nd row (vertica
- Following parts are included in the Metal Sheet cladding basic set 2 for collectors:
 - 2 x 90 (elbow) compression parts
 - All collector roof mounting parts (e.g. rail)
 - Mounting instruction (installation manual)





- Connection Set have to be ordered according number of collectors:
 - 1 x Basic Set vertical for 2 collectors
 - Number of extension sets vertical = number of additional collectors



OVERVIEW MOUNTING SETS



Mounting Set	Packaging Unit (PU)	Packaging Dimension (L/W/H) in mm	Weight per PU in kg	Minimum Order Quantity
DB0N1	1	422 x 134 68	1,55	10
DB0N2	1	422 x 134 x 68	4,06	10
DB0L1	1	412 x 162 x 162	2,72	10
DB0L1 ES	1	412 x 162 x 162	2,81	10
SS0N1	1	422 x 134 x 68	1,32	10
SS0N2	1	422 x 134 x 68	3,26	10
SS0L1	1	422 x 134 x 68	2,14	10
SS0L1 ES	1	422 x 134 x 68	2,31	10
SS45N1	1	1674 x 144 x 90	3,90	10
SS45N2	1	1674 x 144 x 90	10,27	10
SS45L1	1	1512 x 132 x 70	4,93	10
SS45L1 ES	1	1512 x 132 x 70	5,32	10
VS	30	400 x 150 x 150	10,22	1
TRP N 1	1	1225 x 80 x 40	2,91	18
TRP N 2	1	2453 x 80 x 40	5,84	18
TRP L1	1	2205 x 80 x 40	5,25	18
Metal Sheet Flashing BS single row	1	2200 x 880 x 150	34,5	1
Metal Sheet Flashing ES single row	1	2200 x 880 x 150	17,5	1
Metal Sheet Flashing BS double row	1	2200 x 270 x 150	25,0	1
Metal Sheet Flashing ES double row	1	2200 x 270 x 150	14,0	1

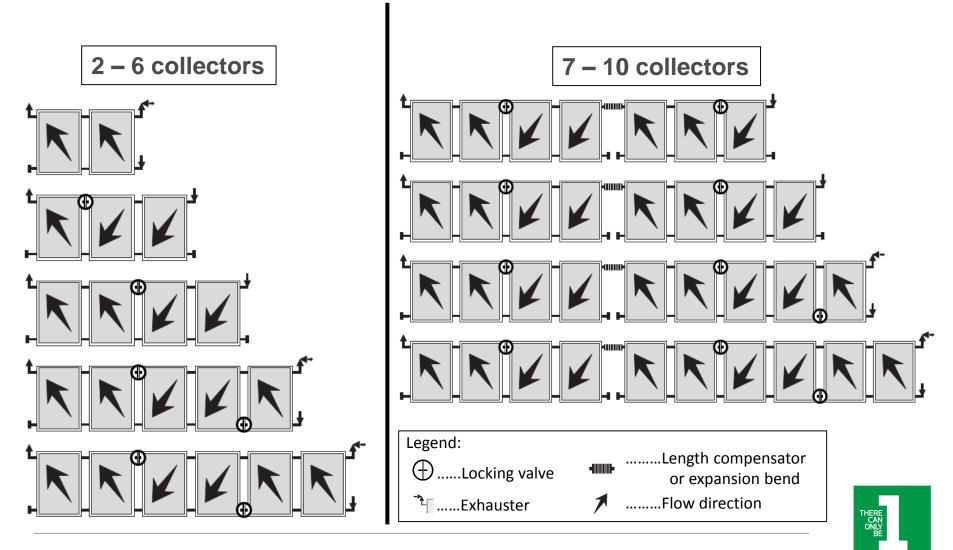
OVERVIEW Connection Sets



Connection Set	Packaging Unit (PU)	Packaging Dimension (L/W/H) in mm	Weight per PU in kg	Minimum Order Quantity
Basic Set vertical	1	250 x 130 x 60	1,02	10
Extension Set vertical	1	250 x 130 x 60	0,5	10
Basic Set horizontal	1	250 x 130 x 60	1,3	10
Extension Set horizontal	1	250 x 130 x 60	0,8	10
Roof Entering Set	1	1500 x 120 x 60	1,61	10



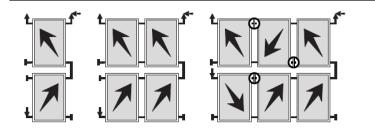
CONNECTION SCHEME SINGLE ROW SOLAR COLLECTORS (VERTICAL) EXAMPLE

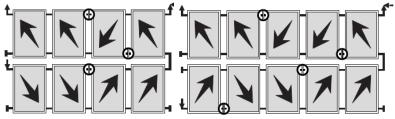


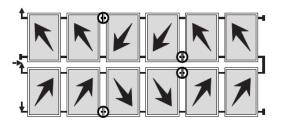
CONNECTION SCHEME DOUBLE-/TRIPLE ROW (VERTICAL) EXAMPLE



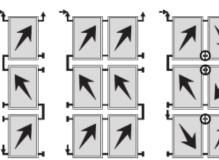
Two rows on top of each other

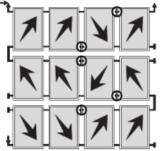


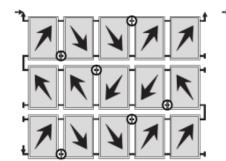


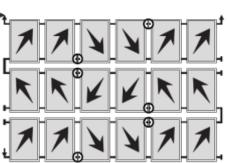


Three rows on top of each other





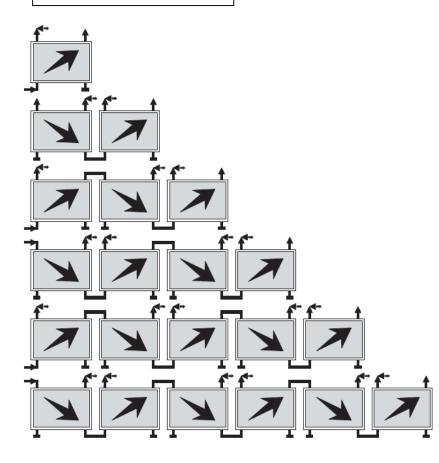


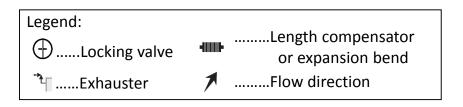




CONNECTION SCHEME SINGLE ROW SOLAR COLLECTORS (HORIZONTAL) EXAMPLE

2 – 6 collectors



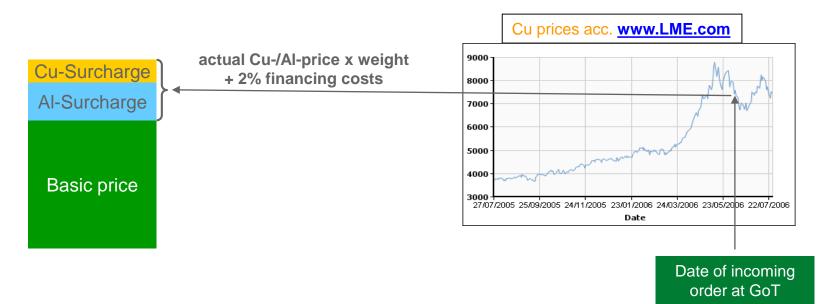




PRODUCT PRICES



Product price = basic price + actual Al-/Cu- Surcharge

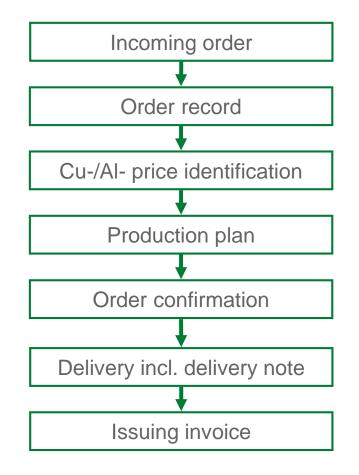


- Fair and transparent price
- Opportunity of fixed prices based on frame orders
- Customer knows exact price with order confirmation





ORDER PROCESS AT GREENONETEC





GREENoneTEC Solarindustrie GmbH



DANKE FÜR IHRE AUFMERKSAMKEIT

THANK YOU FOR YOUR ATTENTION



GREENoneTEC Solarindustrie GmbH

Industriepark St. Veit, Energieplatz 1 9300 St. Veit/Glan info@greenonetec.com www.greenonetec.com

