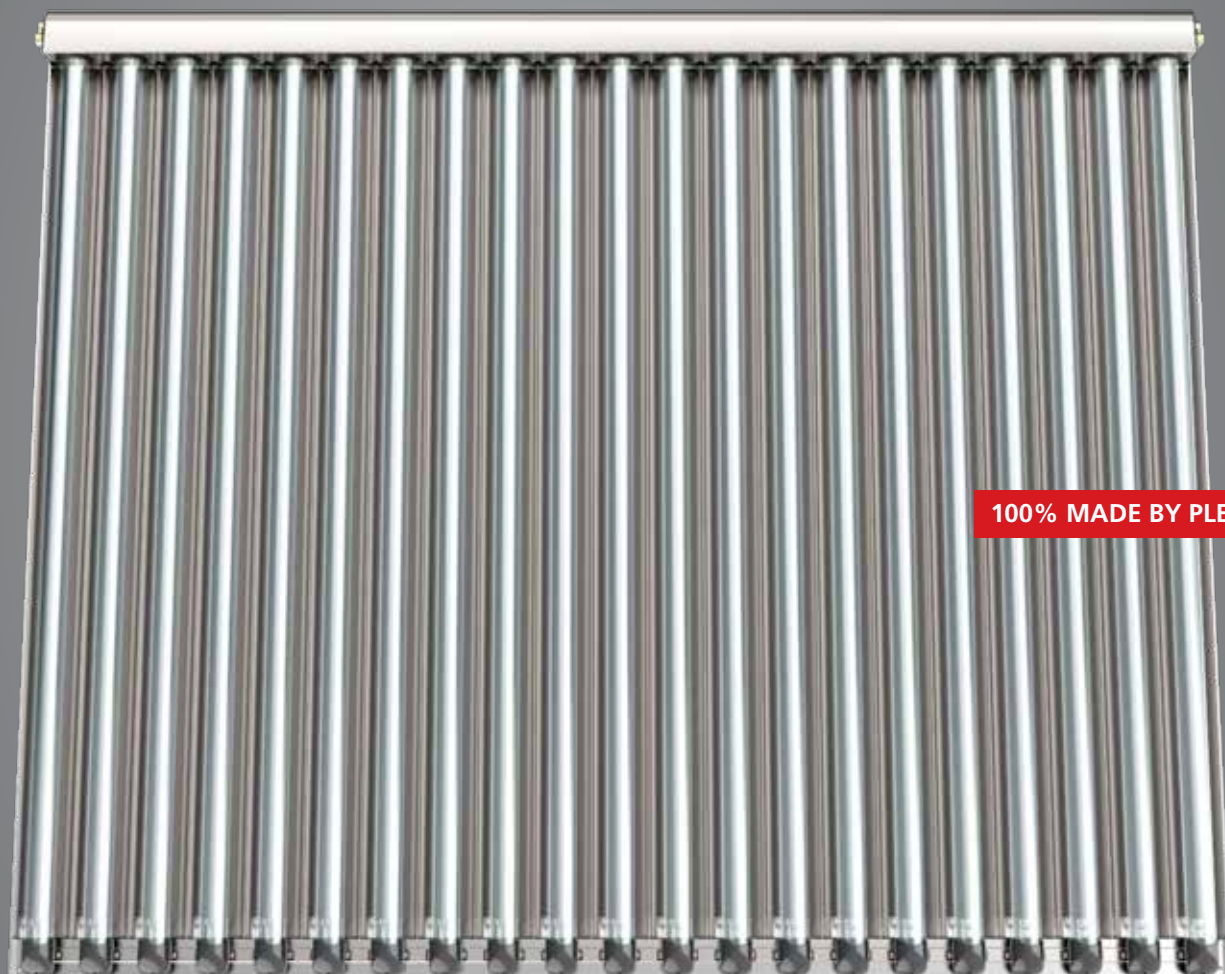


X-RAY 21R

VACUUM SOLAR COLLECTORS X-RAY 21R



3RD TUBE



100% MADE BY PLEION



X-RAY 21R

VACUUM SOLAR COLLECTORS X-RAY 21R

MODERN DESIGN AND ABSOLUTELY EASY INSTALLATION

Assembly time reduced to the minimum.

CPC TECHNOLOGY

PIPES	21
Base [mm]	2316
Height (direction of the pipes) [mm]	1921
Thickness [mm]	114
Gross Area [m²]	4,45
Aperture Area [m²]	4,02
360 ° absorption area	5,39
Liquid content	3,75

PARALLEL CONNECTIONS
UP TO 15% GREATER
ENERGY OUTPUT

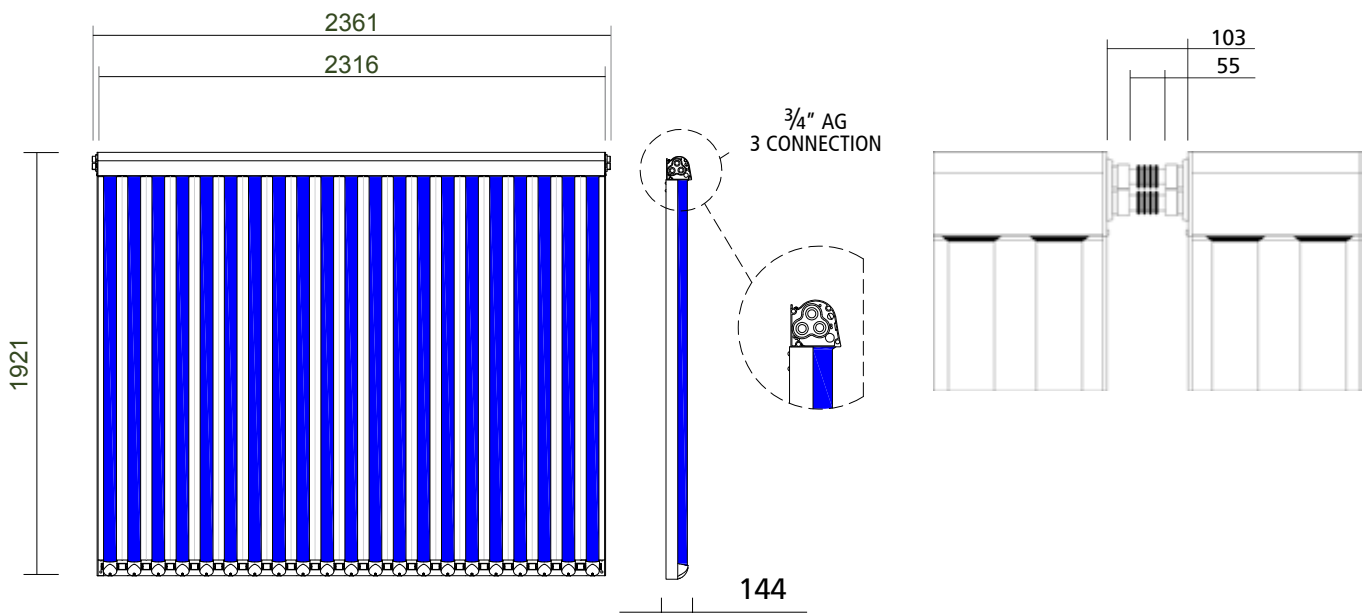
TOP PERFORMANCES IN WINTER TIME

Perfectly functioning even when
the temperature drops drastically

3RD INTEGRATED TUBE

INTEGRATED PLUMBING CONNECTIONS:
THE TUBE VANISHES, AND PROGRESS TAKES OVER.

No tubes are displayed on the roof: an integrated return
line is installed in the collector-header.



APPLICATION



USES



Fraunhofer



FLAT ROOF 45°



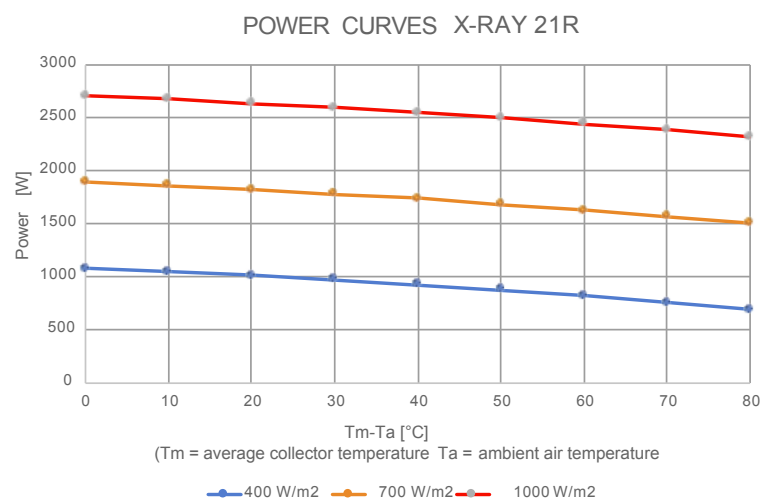
SLOPING ROOF

X-RAY 21 R

TECH SPECS

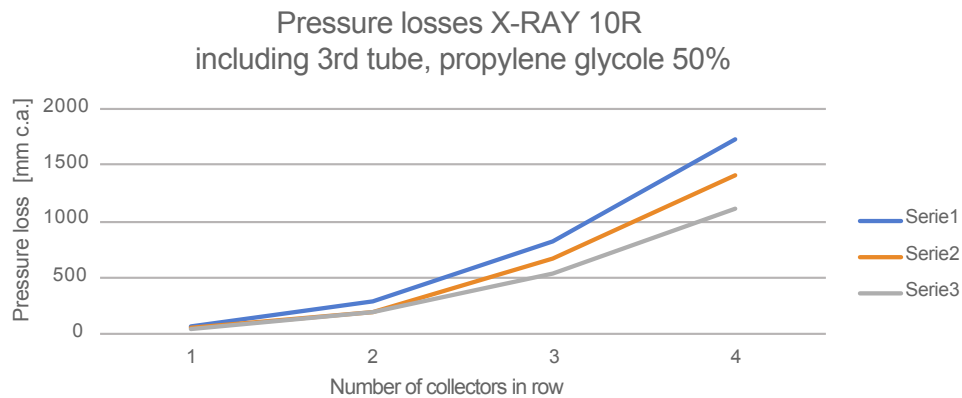
TECH SPECS		
Vacuum tubes	[N]	21
Maximum number of collectors in battery	[N]	6
Anchorage devices	[N]	4 o 6
Dimensions of anchorage devices	[Ø]	3/4 " M
Aperture area	[m²]	4,45
Absorption area	[m²]	5,39
Gross area	[m²]	4,02
Dimensions (LxHxD)	[mm]	2316 x 1921 x 114
Thickness of tested insulation, curved insulation in aluminised fibre glass.	[mm]	30
Inner/outer diameter-length of vacuum tubes	[mm]	58/47 - 1800
Recommended inclination	[°]	15 - 75
Weight	[kg]	80
Content fluid	[lt]	3,75
PERFORMANCES		
η_b (Ref. gross area)	[%]	0,609
k1 transmission coefficient (ref. gross area)	[W/m²K]	0,690
k2 transmission coefficient (ref. gross area)	[W/m²K²]	0,005
Nominal power	[W]	2710
IAM - Incidence Angle Modifier	[K50°]	1,14T/0,91L
Thermal capacity (ref. light absorption surface)	[kWh]	2884
Energy produced annually – Würzburg – Temperature 50°C	[kWh]	2499
Test Report	-	Kiwa
Recommended Flowrate per collector	[l/h]	3,00
Stagnation temperature	[°C]	176
Maximum pressure	[bar]	10

POWER CURVES of X-RAY 21R collector according to change in irradiation 400-700-1000 W/m² and temperature difference.

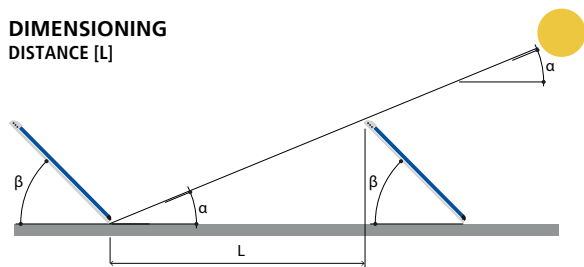


POWER [W]	SOLAR IRRADIATION [W/m²]		
Tm-Ta [°C]	400	700	1000
0	1084	1897	2710
10	1051	1864	2677
20	1014	1827	2640
30	972	1785	2598
40	926	1739	2552
50	875	1688	2501
60	820	1633	2446
70	760	1573	2386
80	696	1509	2322

PRESSURE LOSSES X-RAY 21R INCLUDING 3RD TUBE, PROPYLENE GLYCOLE 50% [mm C.A.]				
N. collettori	Gross area [m2]	ΔP [mm.c.a.] con 45 l/h/m2	ΔP [mm.c.a.] con 40 l/h/m2	ΔP [mm.c.a.] con 35 l/h/m2
1	4,45	65	53	42
2	8,90	293	189	189
3	13,35	820	665	528
4	17,80	1730	1410	1113



DIMENSIONING DISTANCE [L]



Inclination of sun's rays α [°]	Inclination of solar collector β [°]		
	35°	45°	50°
15	4,1	5,1	5,5
25	2,3	2,8	3,0
35	1,5	2,0	2,2

SOLAR CIRCLE PIPES APPROXIMATE DIMENSIONS

Number of collectors	Recommended capacity [l/h]	Pipes Cu $\varnothing_e/\varnothing_i$ [mm]
1	180	18/16
2	360	22/20
3	540	22/20
4	720	28/25

DIMENSIONS AND MAX AREA REQUIRED

Number of collectors	Width [mm]
1	2400
2	4790
3	7190
4	9585