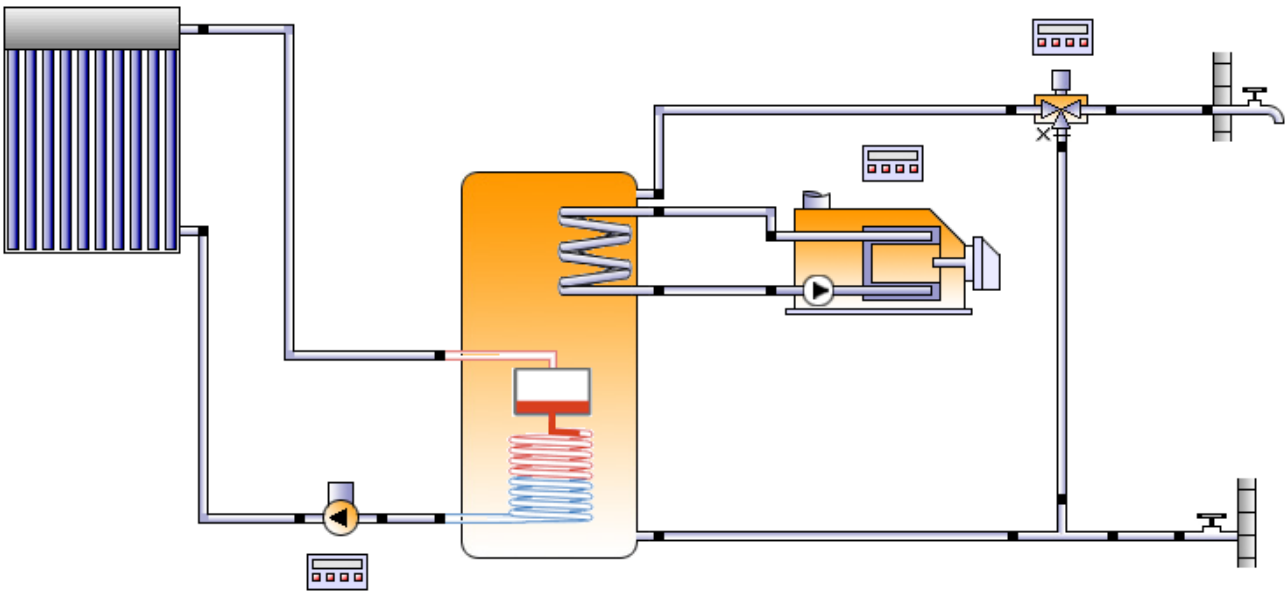


Professional Report

Project

Sunrise Eco



Location of the system

Rapperswil SG
Longitude: 8.82°
Latitude: 47.23°
Elevation: 417 m

Map section

"Current report item is not supported in this report format."

This report has been created by:

Vela Solaris AG

System overview (annual values)

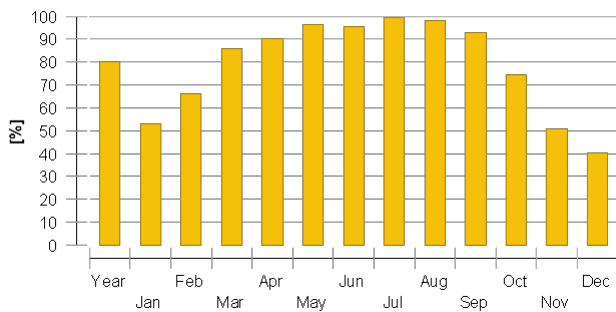
Total fuel and/or electrical energy consumption of the system [Etot]	1,009.5 kWh
Total energy consumption [Quse]	3,785.3 kWh
System performance (Quse / Etot)	3.75
Comfort demand	Energy demand covered

Professional Report

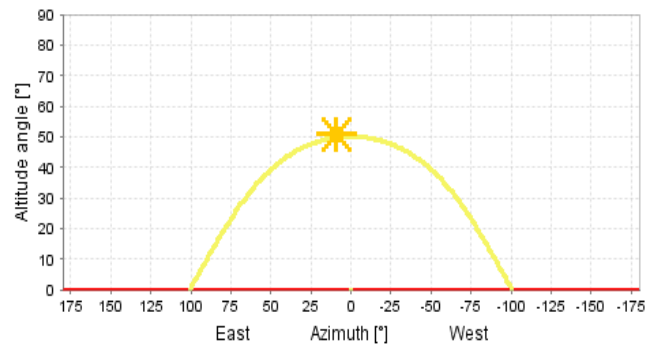
Overview solar thermal energy (annual values)

Collector area	8.5 m ²
Solar fraction total	80.2%
Total annual field yield	4,051.1 kWh
Collector field yield relating to gross area	475.5 kWh/m ² /Year
Collector field yield relating to aperture area	629.1 kWh/m ² /Year
Max. fuel savings	405.1 l: [Heating oil]
Max. energy savings	4,051.1 kWh
Max. reduction in CO2 emissions	1,218.1 kg

Solar fraction: fraction of solar energy to system [SFn]



Horizon line



Meteorological data-Overview

Average outdoor temperature	10.1 °C
Global irradiation, annual sum	1,103.5 kWh/m ²
Diffuse irradiation, annual sum	578 kWh/m ²

Component overview (annual values)

Boiler 1	ecoTEC exclusiv VC 146	
Power	kW	14
Total efficiency	%	100.3
Energy from/to the system [Qaux]	kWh	1,001.7
Fuel and electrical energy consumption [Eaux]	kWh	998.2
Energy savings solar thermal	kWh	4,051.1
CO2 savings solar thermal	kg	1,218.1
Fuel savings solar thermal	l	405.1

Professional Report

Collector Collector field		Solar Plus HP 30
Data Source		TÜV
Number of collectors		2
Number of arrays		1
Total gross area	m ²	8.52
Total aperture area	m ²	6.44
Total absorber area	m ²	6.44
Tilt angle (hor.=0°, vert.=90°)	°	45
Orientation (E=+90°, S=0°, W=-90°)	°	0
Collector field yield [Qsol]	kWh	4,051.1
Irradiation onto collector area [Esol]	kWh	7,960.9
Collector efficiency [Qsol / Esol]	%	50.9
Direct irradiation after IAM	kWh	4,081.5
Hot water demand		Constant
Volume withdrawal/daily consumption	l/d	202.1
Temperature setting	°C	55
Energy demand [Qdem]	kWh	3,846.9
Pump Solar pump		Eco, small
Circuit pressure drop	bar	1.417
Flow rate	l/h	257.6
Fuel and electrical energy consumption [Epar]	kWh	11.2
Storage tank Domestic hot water tank		Sunrise 400
Volume	l	400
Height	m	1.7
Material		Stainless steel
Insulation		Rigid PU foam
Thickness of insulation	mm	80
Heat loss	kWh	404.7
Connection losses	kWh	402.5

Loop

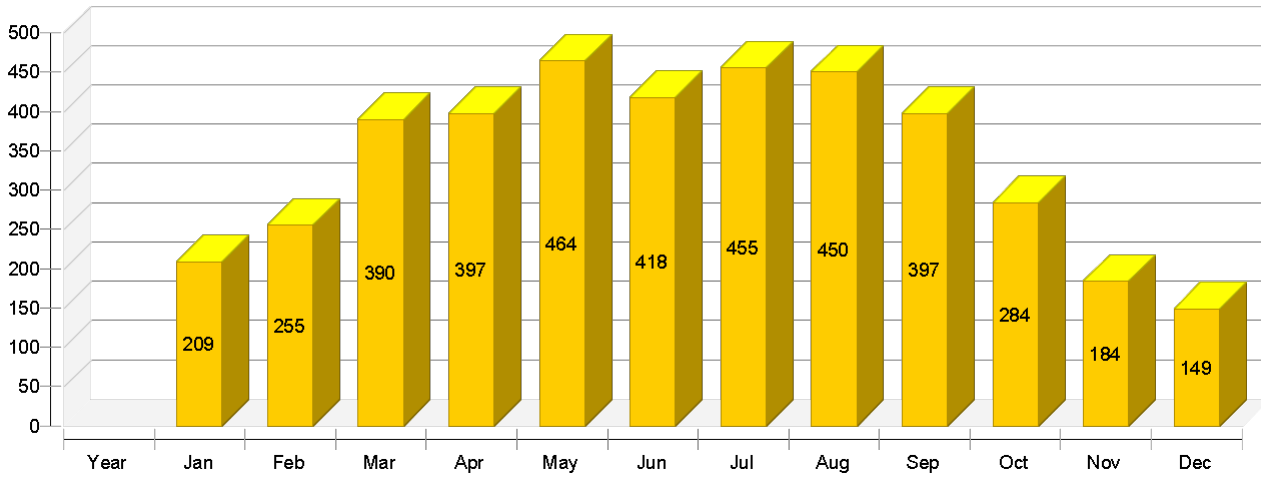
Solar loop		
Fluid mixture		Propylene mixture
Fluid concentration	%	40
Fluid domains volume	l	28.9
Pressure on top of the circuit	bar	1

Professional Report

Demo Version

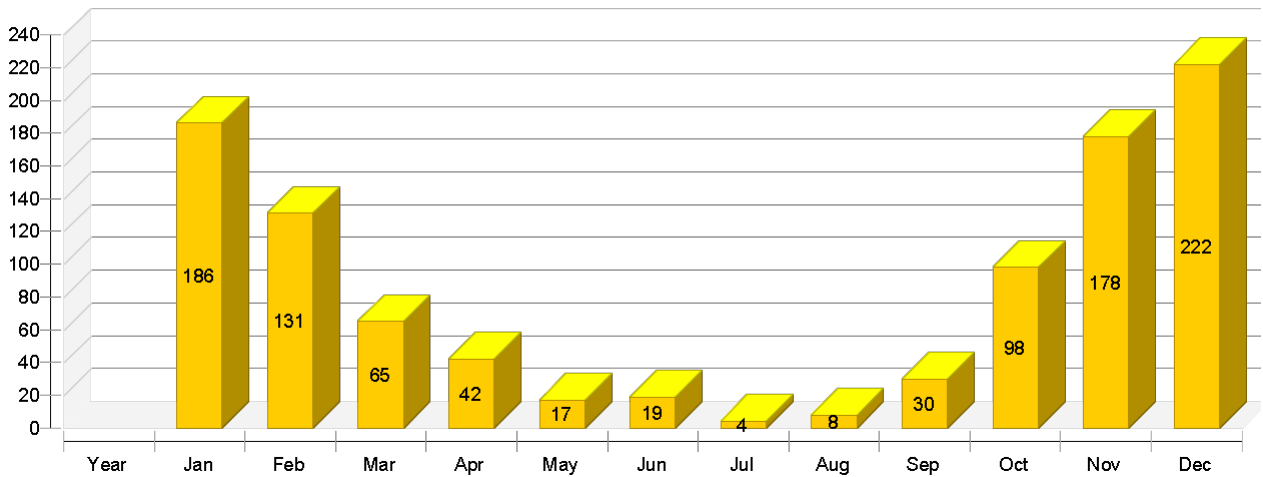
Solar thermal energy to the system [Qsol]

kWh



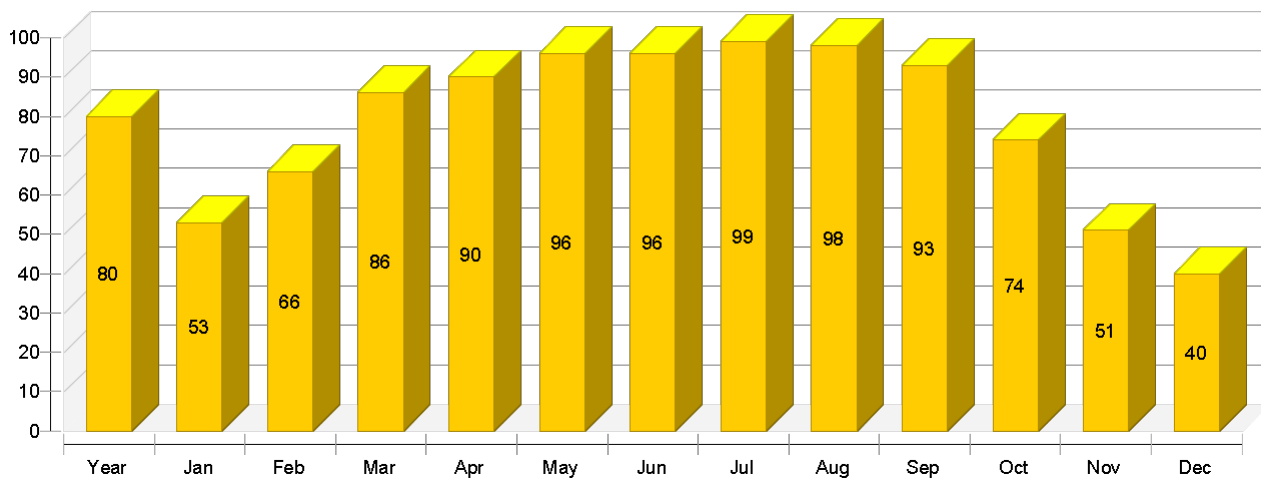
Heat generator energy to the system (solar thermal energy not included) [Qaux]

kWh



Solar fraction: fraction of solar energy to system [SF_n]

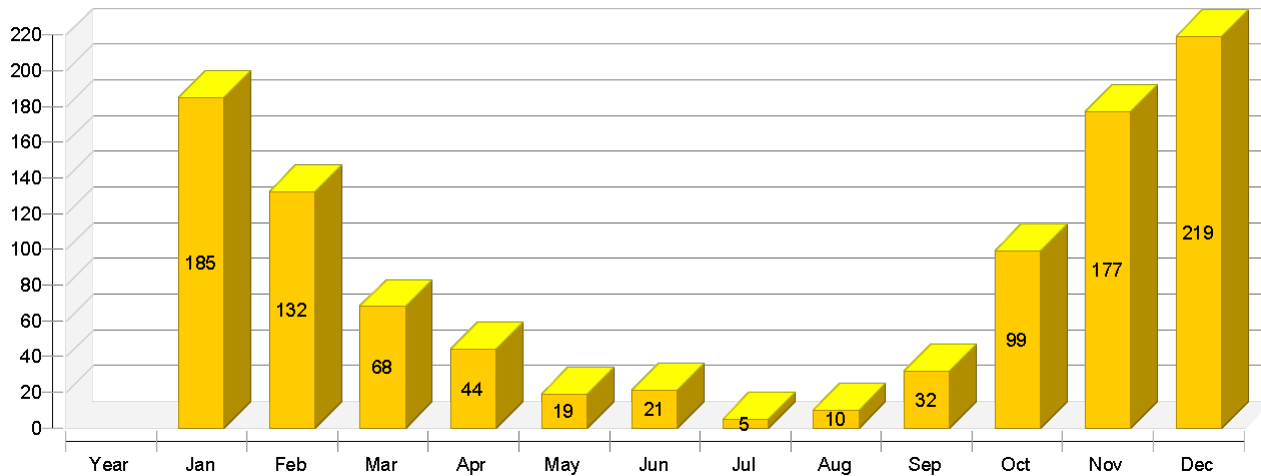
%



Professional Report

Total fuel and/or electrical energy consumption of the system [Etot]

kWh



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Solar thermal energy to the system [Qsol]

kWh	4051	209	255	390	397	464	418	455	450	397	284	184	149
-----	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Heat generator energy to the system (solar thermal energy not included) [Qaux]

kWh	1002	186	131	65	42	17	19	4	8	30	98	178	222
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Heat generator fuel and electrical energy consumption [Eaux]

kWh	998	184	131	67	43	17	20	4	9	31	98	176	219
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Solar fraction: fraction of solar energy to system [SFn]

%	80.2	52.8	66.1	85.6	90.3	96.4	95.6	99.1	98.2	93	74.4	50.9	40.2
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Total fuel and/or electrical energy consumption of the system [Etot]

kWh	1009	185	132	68	44	19	21	5	10	32	99	177	219
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Irradiation onto collector area [Esol]

kWh	7961	367	464	715	814	902	879	965	940	767	549	331	267
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Electrical energy consumption of pumps [Epar]

kWh	11	1	1	1	1	1	1	1	1	1	1	1	1
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Total energy consumption [Quse]

kWh	3785	331	310	349	332	334	310	309	302	293	304	297	315
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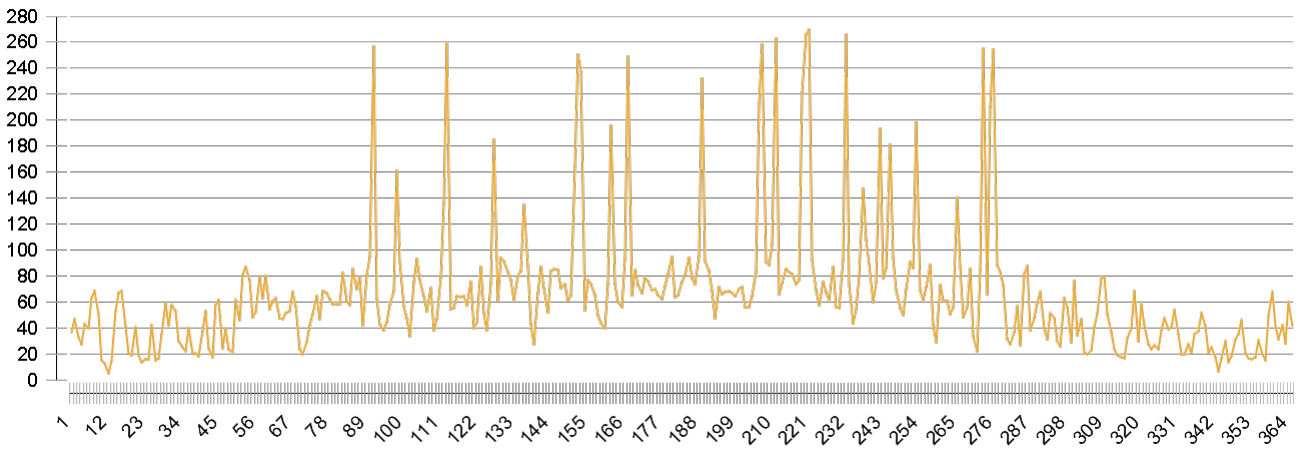
Heat loss to indoor room (including heat generator losses) [Qint]

kWh	1275	59	71	101	118	140	137	152	154	132	99	62	50
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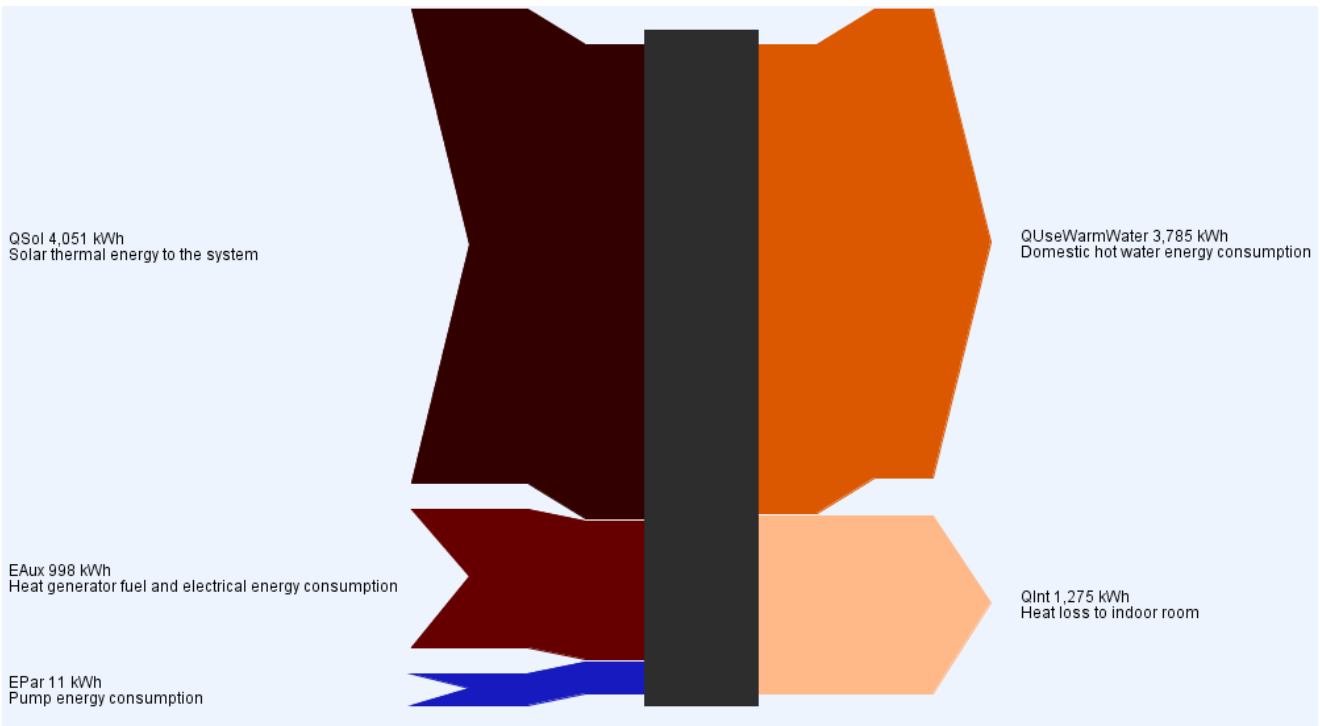
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Professional Report

Collector Collector field Daily maximum temperature [°C]



Energy flow diagram (annual balance)



Demo Version