

Installed Collector Power:	1,77 kW	
Installed Gross Solar Surface Area:	2,53 m ²	
Collector Surface Area Irradiation (Active Surface):	9.425,45 MJ	1.138,34 kWh/m ²
Energy Produced by Collectors:	4.029,57 MJ	486,66 kWh/m ²
Energy Produced by Collector Loop:	3.416,06 MJ	412,57 kWh/m ²
DHW Heating Energy Supply:	9134,34 MJ	
Solar Contribution to DHW:	3416,06 MJ	
Energy from Auxiliary Heating:	5873,21 MJ	
Natural Gas (H) Savings:		132,1 m³
CO2 Emissions Avoided:		279,29 kg
DHW Solar Fraction:		36,8 %
Fractional Energy Saving (EN 12976):		44,4 %
System Efficiency:		36,2 %

Basic Data

Climate File

Location:	Kaunas
Climate Data Record:	"Kaunas"
Total Annual Global Radiation:	3548,65 MJ
Latitude:	54,88 °
Longitude:	-23,88 °

Domestic Hot Water

Average Daily Consumption:	120 l
Desired Temperature:	60 °C
Load Profile:	Detached House (evening max)
Cold Water Temperature:	February:8 °C / August:12 °C
Circulation:	No

System Components

Collector Loop

Manufacturer:	ASTERSA aplicaciones solares s.a.
Type:	Colector plano TOP24
Number:	1,00
Total Gross Surface Area:	2,53 m ²
Total Active Solar Surface Area:	2,3 m ²
Tilt Angle:	40 °
Azimuth:	0 °




Solar Preheating Tank

Manufacturer:	T*SOL Database
Type:	DHW Tank - 200
Volume:	200 l

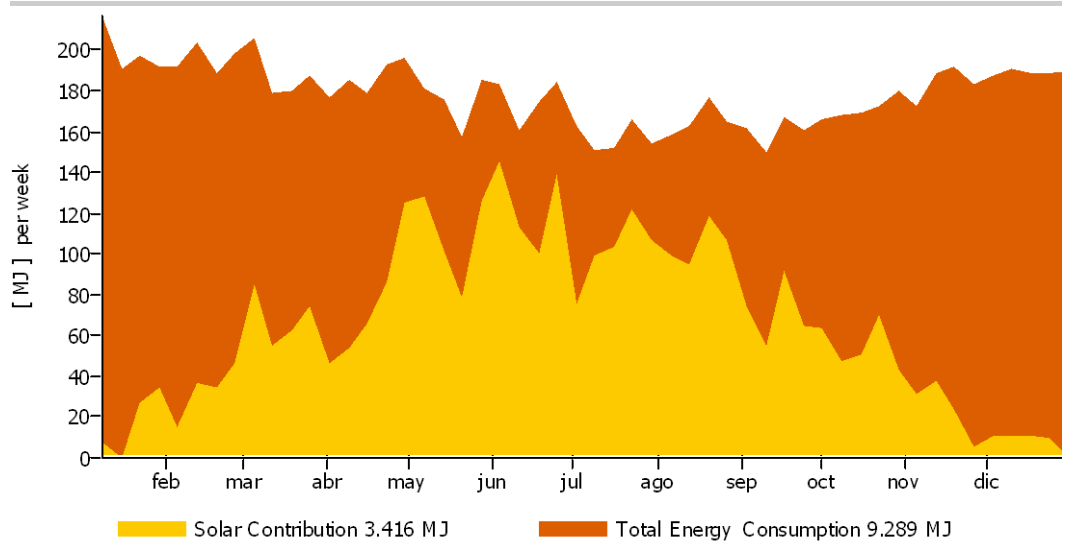
Auxiliary Heating

Manufacturer:	T*SOL Database
Type:	 Gas Boiler - 9
Nominal Output:	9 kW

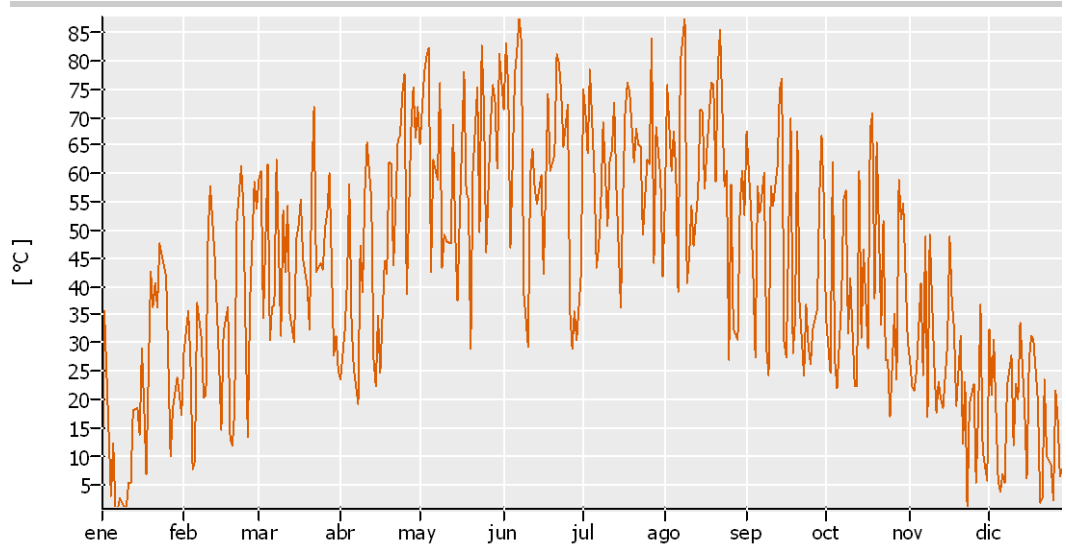
Legend

 Original T*SOL Database
 With Test Report
 Solar Keymark

Solar Energy Consumption as Percentage of Total Consumption

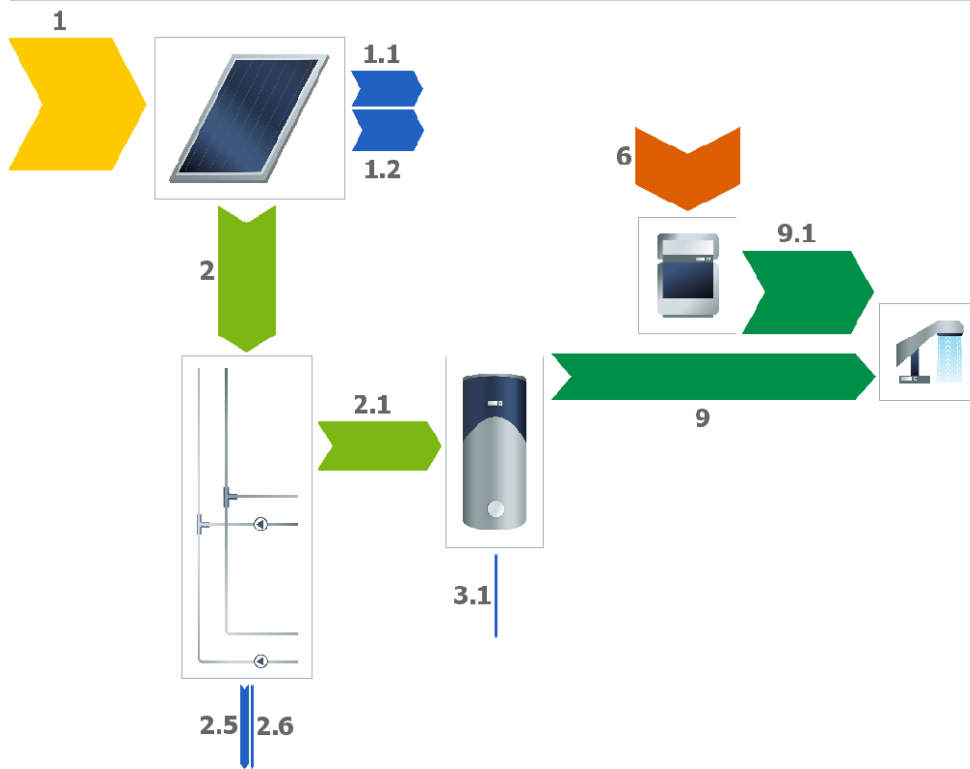


Daily Maximum Collector Temperature



These calculations were carried out by T*SOL Pro 4.5 - the Simulation Programme for Solar Thermal Heating Systems. The results are determined by a mathematical model calculation with variable time steps of up to 6 minutes. Actual yields can deviate from these values due to fluctuations in climate, consumption and other factors. The system schematic diagram above does not represent and cannot replace a full technical drawing of the solar system.

Energy Balance Schematic



Legend

1	Collector Surface Area Irradiation (Active Surface)	2,618 kWh
1.1	Optical Collector Losses	694 kWh
1.2	Thermal Collector Losses	805 kWh
2	Energy from Collector Array	1,119 kWh
2.1	Solar Energy to Storage Tank	949 kWh
2.5	Internal Piping Losses	138 kWh
2.6	External Piping Losses	32 kWh
3.1	Tank Losses	44 kWh
6	Final Energy	2,071 kWh
9	DHW Energy from Tank	906 kWh
9.1	DHW Energy via Continuous-Flow Water Heater	1,631 kWh

Glossary

- 1 Collector Surface Area Irradiation (Active Surface)**
Energy Irradiated onto Tilted Collector Area (Active Solar Surface)
- 1.1 Optical Collector Losses**
Reflection and Other Losses
- 1.2 Thermal Collector Losses**
Heat Conduction and Other Losses
- 2 Energy from Collector Array**
Energy Output at Collector Array Outlet (i.e. Before the Piping)
- 2.1 Solar Energy to Storage Tank**
Energy from Collector Loop to Storage Tank (Minus Piping Losses)
- 2.5 Internal Piping Losses**
Internal Piping Losses
- 2.6 External Piping Losses**
External Piping Losses
- 3.1 Tank Losses**
Heat Losses via Surface Area
- 6 Final Energy**
Final Energy Current into System. This can flow in as natural gas, oil or electricity (not including solar energy) taking efficiency levels into account
- 9 DHW Energy from Tank**
Heat for DHW Appliances from Tank (Excluding Circulation)
- 9.1 DHW Energy via Continuous-Flow Water Heater**
Heat from DHW Appliances via Continuous-Flow Water Heater (Excluding Solar Energy)