

Country/language

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**SOLARGE**Enlarging Solar Thermal Systems in Multi-Family-Houses,
Hotels, Public and Social Buildings in Europe

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Hotel Alicante



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Alicante, Spain

Hotel | 96 sqm installation
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Project Summary

Description

The installation is formed by 48 SOLAHART collectors, mod. L, situated in a suitable area. The 48 collectors are divided into 8 batteries of 6 collectors. The system uses a variable temperature control which operates the primary and secondary circuits.

The collector heat is transferred to the storage tank by an external heat exchanger. The variable temperature setting to start/stop the circulation pumps is 6 °C.

System use: ACS with a solar fraction of 80 %.

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Building

Type of building	Hotel
Number of users / dwellings, floors	60 users 100 rooms
Year of construction	2004
Total effective area (heated)	not available
Hot tap water consumption (measured/estimated)	not available
Whole energy consumption for heating purpose after CSTS implementation	30,871 kWh/a

System engineering

Year of construction of CSTS	2004
Type of collectors	Flat plate collectors
Thermal power	62.5 kW _{therm.}
Aperture area of collectors ^{*)}	89.28 m ²

Buffer storage	5 m ³
Hot tap water storage	not available
Total capacity of boilers with energy source	75 + x kW,
Type of hot tap water heating	Centralised
Type of heating system	Centralised

Costs

Total cost solar system	56,155 Euro
Cost of the CSTS / gross area of collectors	585 Euro/m ²
Subsidies	30 %

Output

Output of solar heat ^{**)}	50,424 kWh/a
Reduction of final energy ^{***)}	72,034 kWh/a
CO ₂ emissions avoided	16.5 CO ₂ /a

Solar performance guarantee

*) Aperture area = light transmitting area of the front glass

**) measured, between storage and piping to taps (solar system output)

***) related to the measured output mentioned before

Operator (ESCO)

Instalaciones Gallego Blaya S.L.
I. Albeniz, 3
03580 Alfaz Pi
Alicante, Spain
Phone: 966865164

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Technical description

Description of the CSTS

Year of construction of CSTS	2004
Thermal power	62 kW _{therm.}
Gross area of collectors	96 m ²
Aperture area of collectors	89.28 m ²
Type of collectors	Flat plate collectors
Type of assembly	On flat roof
Orientation of collectors	South (0°)
Inclination angle to horizon	45°
Freezing protection	Glycol
Overheating protection	Expansion vessel
Operation mode	Low flow
Use of CSTS for	Hot tap water heating
Buffer storage	5 m ³ (1 × 5 m ³)
Hot tap water storage	not available
Control of backup-system / CSTS	Separated control

Hot tap water system

Type of hot water heating	Centralised
Recirculation system	Yes

Summary

The installation is formed by 48 SOLAHART collectors, mod. L, situated in a suitable area. The 48 collectors are divided into 8 batteries of 6 collectors. The system uses a variable temperature control which operates the primary and secondary circuits.

The collector heat is transferred to the storage tank by an external heat exchanger. The variable temperature setting to start/stop the circulation pumps is 6 °C.

System use: ACS with a solar fraction of 80%.

For decentralised systems:	./.
The installation on the consumer site	
Size of storage for hot tap water	not available
Specification (if necessary)	Separated back-up heater/boiler for hot water heating only: standard, natural gas, 2003, capacity not available

Space heating system

Type of heating system	Centralised
Number of boilers	1
Total capacity (power output) of boilers	75 kW
Capacity of each boiler (year of construction)	No. 1: kW (2003)
Energy source	Natural gas
Type of boiler system	Standard

Type of operation

Operator of the CSTS system	ESCo
CSTS monitoring	Yes: output of solar heat
Data accessible via internet	No
Scientific monitoring / follow up	Yes
Maintenance contract	Yes: one to three times a year
Visualisation of the solar heat output	Yes

Yield of CSTS plant

Output of solar heat	50,424 kWh/a
Origin of data	Design (calculated)
Measuring point	Between collector and storage
Reduction of final energy	72,034 kWh/a
Origin of data	Designed data
Solar performance guarantee	Yes

Collectors' provider

SACLIMA S.L.
Elena Salazar Mir
Pol. Ind. "Els Mollons
C/Torners, 21
46970 Alaquas (Valencia),
Spain
Phone: +34 96 151 61 62
Fax: +34 96 151 22 88
info@saclima.com
www.saclima.es

Heat consumption

Whole energy consumption for heating purposes <u>after</u> CSTS implementation	30,871 kWh/a
Origin of data	Estimated
Energy used for	Hot tap water heating
Whole energy consumption for heating purposes <u>before</u> CSTS implementation	102,906 kWh/a
Total tap water consumption	2,190 m ³ /a
Hot tap water consumption	not available
Hot tap water temperature	45 °C
Cold water temperature	12.3 °C

Collectors' manufacturer

Solarhart industries
Rob meesters
Vlamoven weg 12
5708JV Helmond,
Netherlands
Phone: +31 492579696
Fax: +31 492579694
r.meesters@solahart-europe.com
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Financing and investment

Financing of the CSTS

Form of financing	Purchase
Distribution in percentage	20 % loans 30 % subsidies (granted by the Valencia Energy Agency)

Costs of solar materials

Total cost of solar system	56,155 Euro
Detailed costs for	
Collectors	22,000 Euro
Elevation / mounting structure	3,128 Euro
Storage / heat exchanger	6,500 Euro
Backup heater	./.
Control	540 Euro
Installation	21,752 Euro
Planning / Engineering	./.
Others (system of pumping)	2,235 Euro

Operation costs of heating system

Increase of the operation cost after CSTS implementation	not available
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Development & experiences

Experiences management

Experienced problems or failures?	No
Found solutions to these problems or failures?	./.

Financial effects / project performance

Project economically efficient?	Yes: The investment will generate considerable savings in a medium term to the hotel owner.
Fiscal or other financial effects?	No
Effects on rental fees?	No

Experiences technical staff

Experienced problems or failures?	No
Found solutions to these problems or failures?	./.

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