SOLATOM
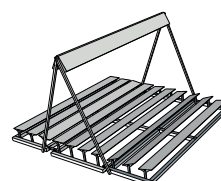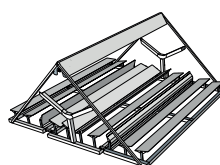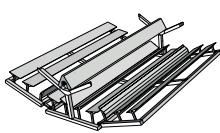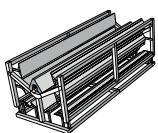
FLT 20
Linear Fresnel Solar Collector

The FLT20 is a concentrating solar collector designed to generate high temperature heat in SMEs industrial thermal processes. FLT20 is supplied in 6m modules (14.5kW) which are connected together to obtain the desire power output.
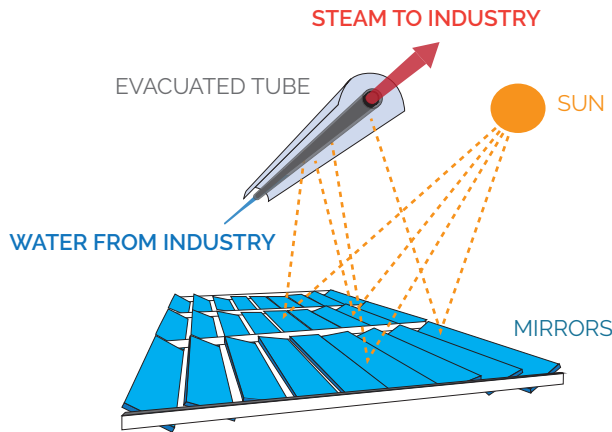

Pre-assembled solar solution for heat demand in SMEs
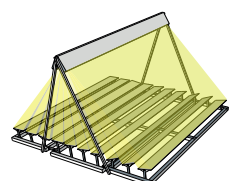
Applications in SMEs

The FLT20 collector uses mirrors which track the sun, and concentrate the sun rays on an evacuated tube, in which the thermal fluid circulates. Once the fluid reaches the design conditions (temperature and pressure), it is supplied into the industry's network.
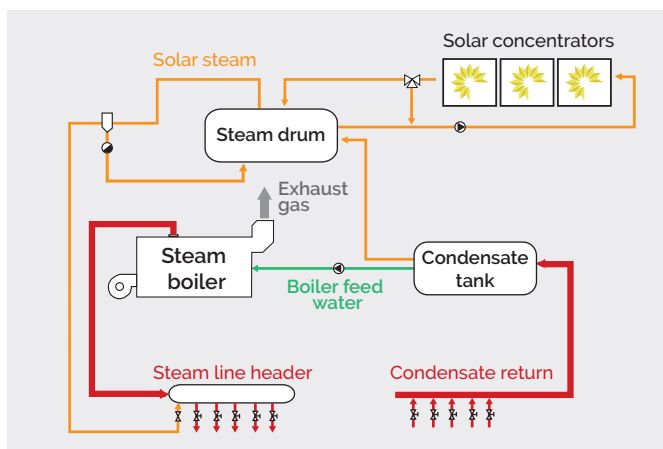
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Temperature: From: **80ºC**   To: **300ºC**
Pressure: Up to 30 bar
Fluid: Steam, water and thermal oil

STEAM TO INDUSTRY
EVACUATED TUBE
SUN
WATER FROM INDUSTRY
MIRRORS

Industry sector	Thermal process
Food & beverages	● Pasteurization ● Cooking ● Drying ● Cleaning ● Pealing ● Frying ● Boiling
Textile	● Dyeing ● Bleaching ● Washing
Chemical	● Heat treatment ● Sterilisation ● Distillation
Paper	● Bleaching
Water treatment	● Sluge Drying
Industrial laundries	● Calendar ironing ● Washing

Types of integration

Depending on the type of process, the FLT20 modules can be connected in parallel or in series with the conventional system already in place at the industry.
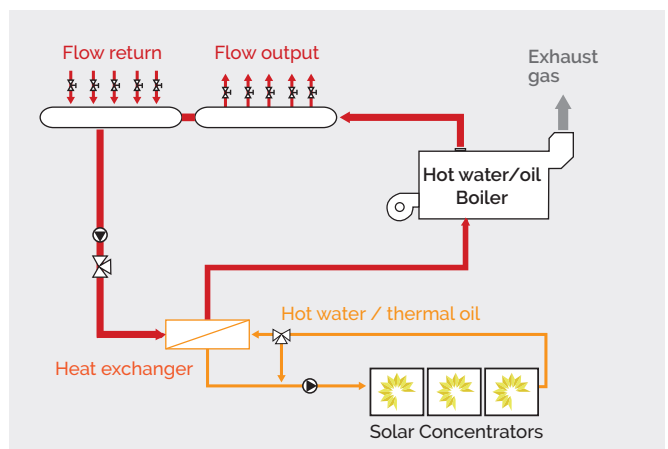
Solar steam generation (Parallel connection)

Solar steam
Solar concentrators
Steam drum
Exhaust gas
Steam boiler
Boiler feed water
Condensate tank
Steam line header
Condensate return

Example: Meat processing factory
The FLT20s are fed with the return of condensates, which generate saturated steam at the same pressure than the conventional boiler. The steam is directly integrated into the customer's network.

Return temperature increase (Series connection)

Flow return
Flow output
Exhaust gas
Hot water/oil Boiler
Hot water / thermal oil
Heat exchanger
Solar Concentrators

Example: Industrial laundry
The FLT20s are used to increase the temperature of the fluid returning from the process, before it goes back into the boiler.
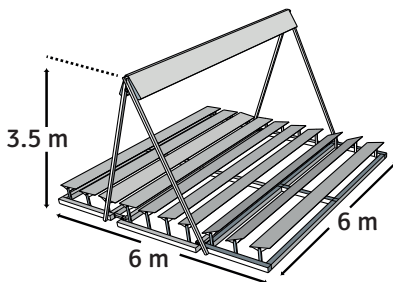
The solar collector

FLT20 modules are fully pre-assembled in factory, and then transported ready to be used. They are easily deployed and can be easily re-deployed if necessary.

Once in position, the modules are connected together using plug-&-play connections.
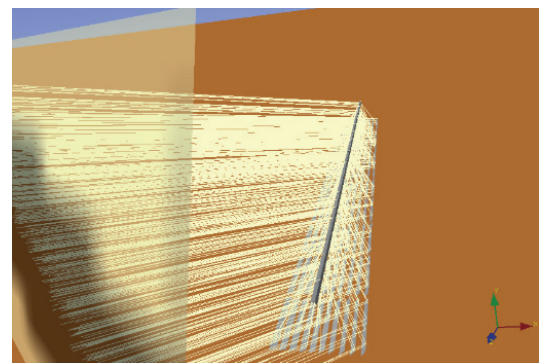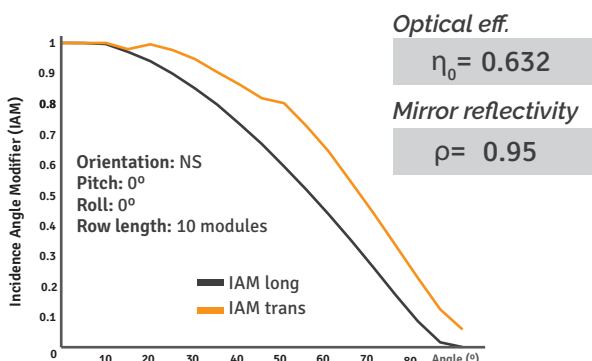

Technical data

3.5 m

6 m

6 m

- **High reflectivity tempered glass mirrors with individual tracking control**
- **Secundary reflector**
- **Vacuum absorber with selective coating**
- **Remote monitoring**

Data for 1 module

Thermal ouput*	14.5 kWt
Net aperture area	26.4 m^2
Land use	36 m^2
Specific weight (over the collector area)	26 kg/m^2
Max. operational wind speed	70 km/h
Max. wind speed (stowed)	150 km/h
Life expectancy	20 years

*Reference conditions: DNI=900 W/m^2, T_{inlet}=150ºC, T_{outlet}=180ºC, T_{amb}=30ºC, θ_{trans}=0º, θ_{long}=0º

Optical performance

Optical eff.
η_0= 0.632

Mirror reflectivity
ρ= 0.95

Incidence Angle Modifier (IAM)

Orientation: NS
Pitch: 0º
Roll: 0º
Row length: 10 modules

— IAM long
— IAM trans

Angle (º)

More details regarding the optical performance can be sent upon request at info@solatom.com

Getting started !

Solatom will take care of the overall solar project lifecycle. Initial assessment, project development, transport & integration with the industry, and O&M

| Initial assessment with **ReSSSPI** (Free and on-line) | Project Development | Transport & Integration | Operation & Maintenance |

Ressspi allows users without previous solar experience to perform detailed simulations of solar thermal projects.

1) Go to **www.ressspi.com** and log in
2) Create a new simulation
3) Introduce the **data** from the industry

Location of the project	Temperature inlet & outlet boiler
Annual demand of thermal energy	Outlet pressure of the boiler
Working hours during typical day	Working days during the week
Heat transfer fluid used (steam/water/oil)	Current price of fossil fuel

4) Use **automatic** or manual simulation (only experts)
5) Get energy performance and economic detailed results

ReSSPI
The Solar Simulator for Industrial Processes
www.ressspi.com

References
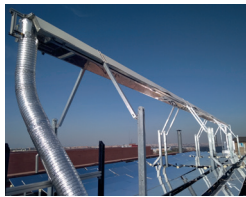
UCIII, Madrid (Spain)

MARGALIDA, Girona (Spain)

SOLPINTER, Almería (Spain)

DADELOS, Valencia (Spain)

NATURAL CORK, Badajoz (Spain)

MAGTEL, Sevilla (Spain)

In operation
In construction
In development

Thermal oil
Pressurized water
Hot air
Steam

ITC, Canarias (Spain)

HERMA, Caceres (Spain)

SOLPINVAP, Castellón (Spain)

SOLATOM

C/ Pedro Duque, 7, 46022 Valencia, Spain

Tel: (+34) 691 902 188
info@solatom.com - www.solatom.com