



SOLAR COOLING

Pleion Group

PRODUCT RANGE

PLEION
SMART SOLAR SYSTEMS



SOLAR SYSTEMS

Distribution and marketing of solar systems in Italy and Europe



COLLECTORS

Production of VACUUM TUBE COLLECTORS



TANKS

Production of BUFFER TANKS and FRESH WATER TANKS



110 Employees



500 sqm of offices and show room



17.500 sqm of production and warehouse



21,5 Mln Euro Turnover

PLEION COMPANY

Visit www.pleion-group.com

INNOVATIVE PRODUCTS

PLEION GROUP

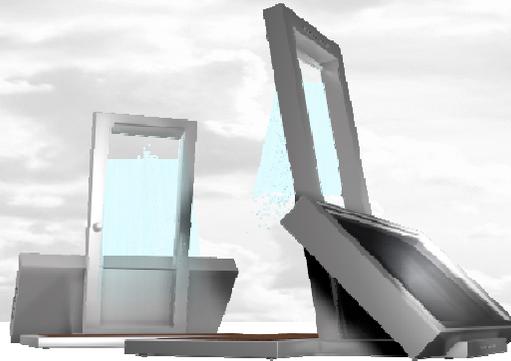
PLEION
SMART SOLAR SYSTEMS



ECLIPSE

**The First Smart Solar Collector
in the world**

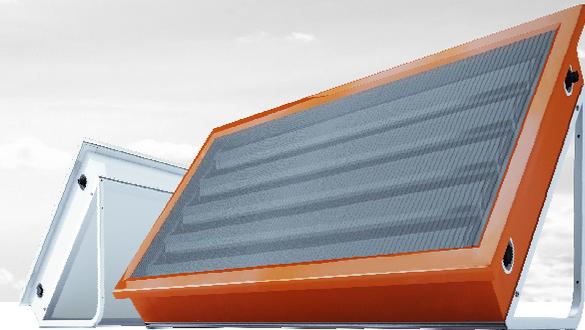
Overheating and stagnation have been always the most important issues for solar collectors. PLEION has developed the first smart cover system for vacuum tube collectors that can control the solar power based on the temperature inside the cylinder



CORNICHE

The Solar Shower

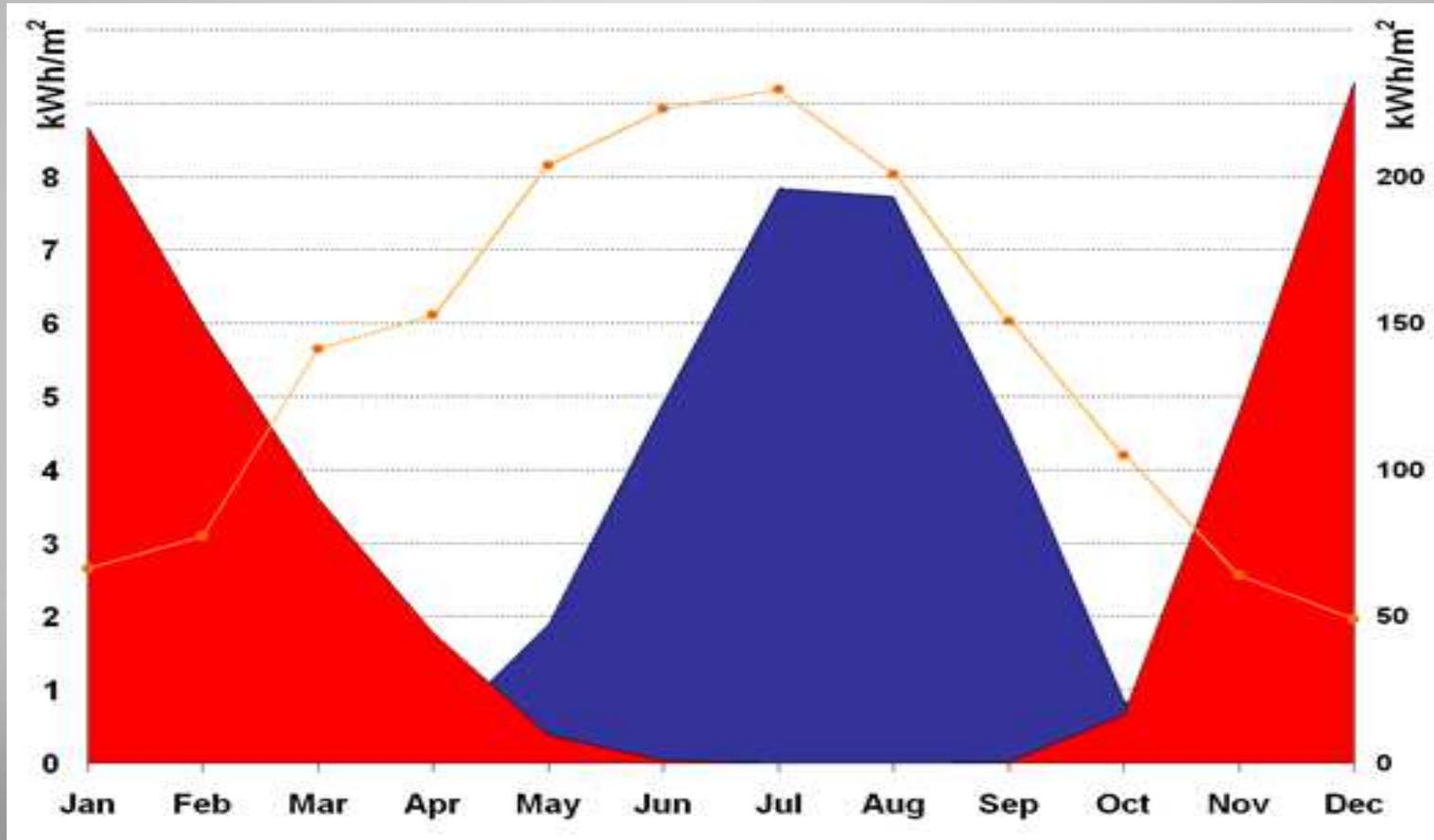
PLEION developed CORNICHE, the first design oriented SOLAR BEACH SHOWER which works without electricity and its the perfect solution for beach's, marina's and hotel's applications.



EGO
Smart.Solar.Box

SOLAR ENERGY AND SOLAR COOLING DEMAND

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SOLAR COOLING SYSTEM MAIN COMPONENTS



Vacuum Solar collectors



Plate heat exchanger



Cooling tower



Backup chiller



Backup Boiler



Solar storage tank



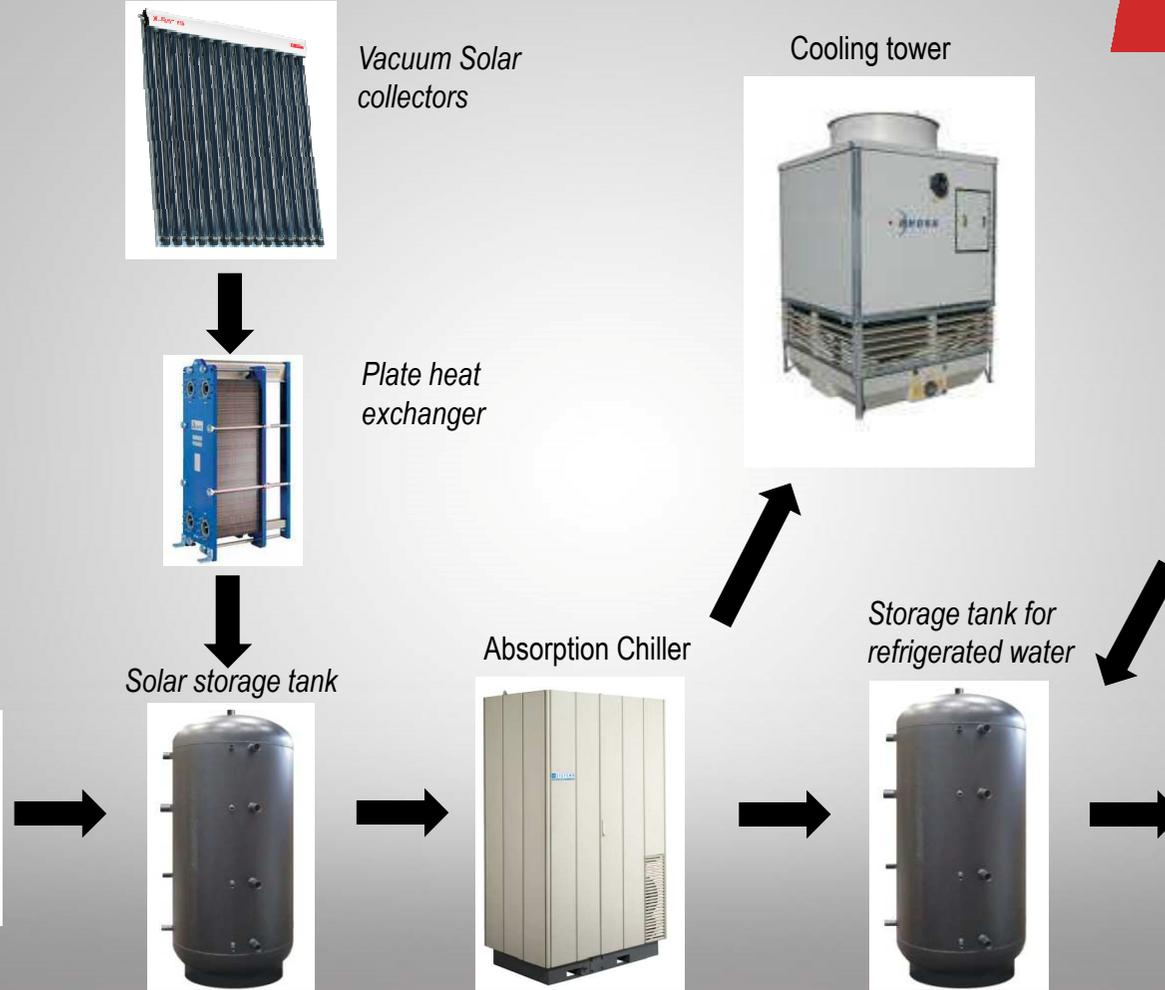
Absorption Chiller



Storage tank for refrigerated water



Environments



PLEION SOLAR VACUUM COLLECTORS

PLEION
SMART SOLAR SYSTEMS



X-RAY 15

15 vacuum pipes double-walled with REFLECTOR CPC

Height 200 cm

Width 171 cm

Empty weight 78 kg

Gross area 3,43 m²

Aperture area 2,87 m²

Absorption area 360° 3,86 m²

Flow 2,25 l/min coll

Connectable in a row up to 6



X-RAY 10

10 vacuum pipes double-walled with REFLECTOR CPC

Height 197 cm

Width 111 cm

Empty weight 41 kg

Gross surface area 2,20 m²

Aperture area 1,91 m²

Absorption area 360° 2,57 m²

Flow 1,50 l/min coll

Connectable in a row up to 12



X-AIR14 + ECLIPSE COVER

14 vacuum pipes double-walled with ECLIPSE SYSTEM

Height 200 cm

Width 131 cm

Empty weight 72 kg

Gross area 2,63 m²

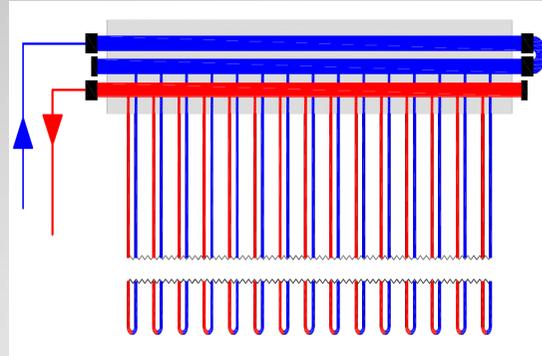
Aperture area 1,33 m²

Absorption area 360° 1,145 m²

Flow 1,00 l/min coll

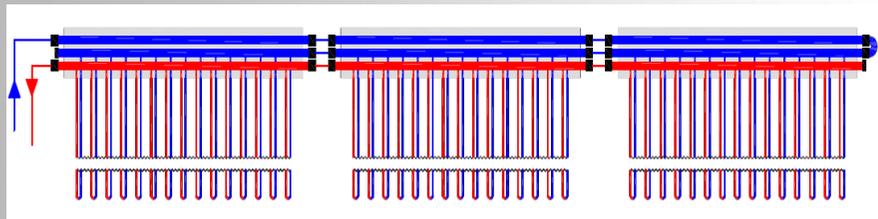
Connectable in a row up to 8

PLEION SOLAR VACUUM COLLECTORS

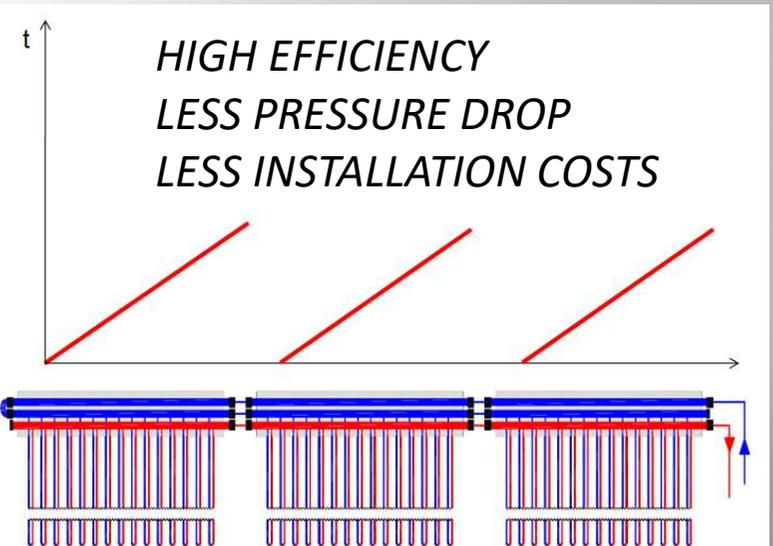
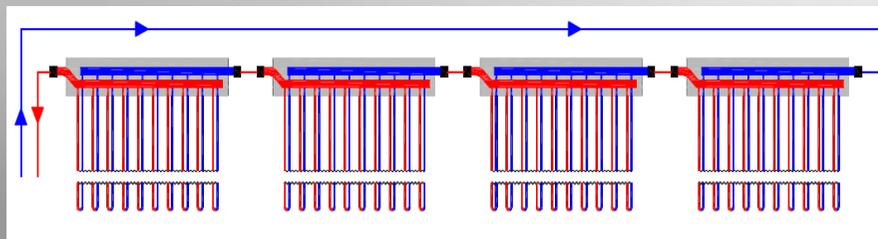


*+15% PARALLEL DISTRIBUTION
TESTED BY SAPIENZA*

PLEION

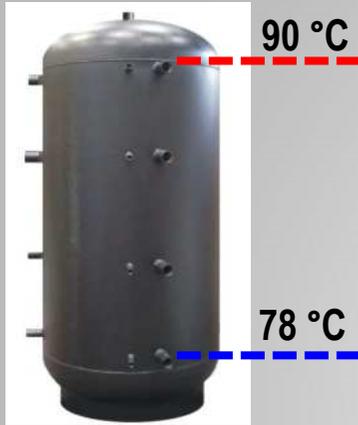


COMPETITOR

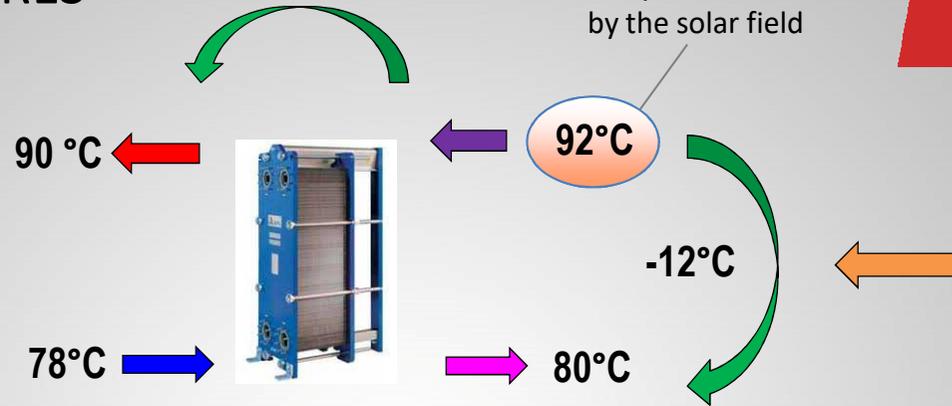


*HIGH EFFICIENCY
LESS PRESSURE DROP
LESS INSTALLATION COSTS*

WORKING TEMPERATURES



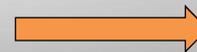
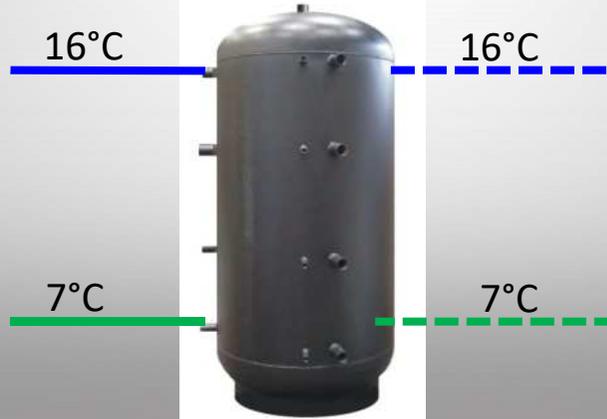
Solar storage tank



Absorption machine



Storage tank for refrigerated water



- radiant system
- fan coil system
- etc

SOLAR COOLING SYSTEM MADE BY PLEION

PLEION
SMART SOLAR SYSTEMS



Solar Cooling System
at the service of
Air Force Base

Location: SIRACUSA



AIR CONDITIONING REQUEST

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- Dormitory (30 rooms)
30 fan coil
2,5 kW eachone



- Canteen Area
75 W/m²
300 m²



- Hall 200 sqm
75 W/m²
200 m²



Total cooling request: $75 + 22 + 15 = 112$ kW

HOW CAN WE ACHIEVE IT?



n. 64
X-RAY 15



Solar storage
3x2000 liters



SYSTEMA
SYDHL115



Cold storage
2000 liters



Technical
Room

SOLAR FIELD COLLECTORS

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Solar field 1
n.24 X-Ray15

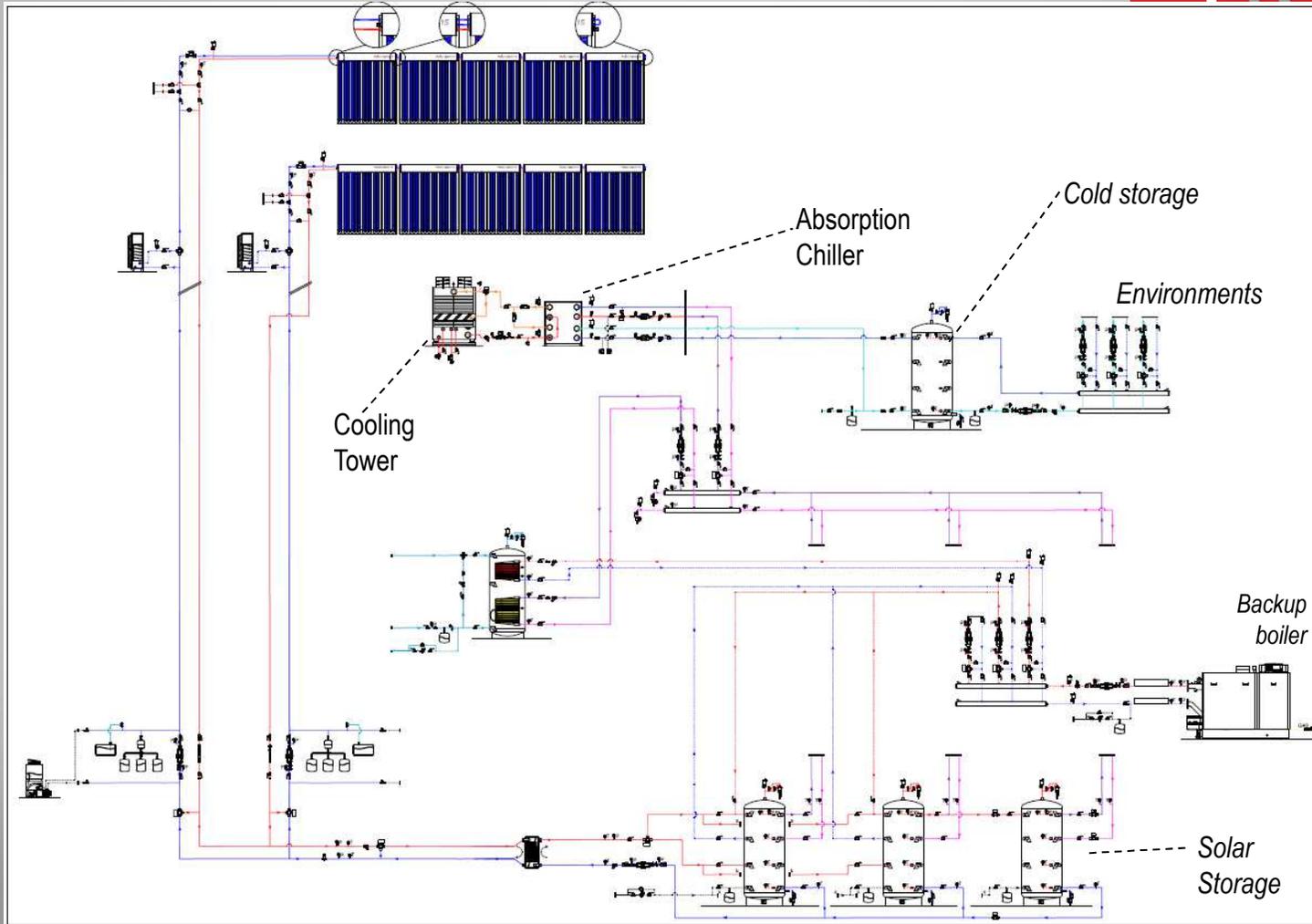


Solar field 2
n.40 X-Ray15



TOTAL SOLAR POWER **110 kW**
(operating condition)

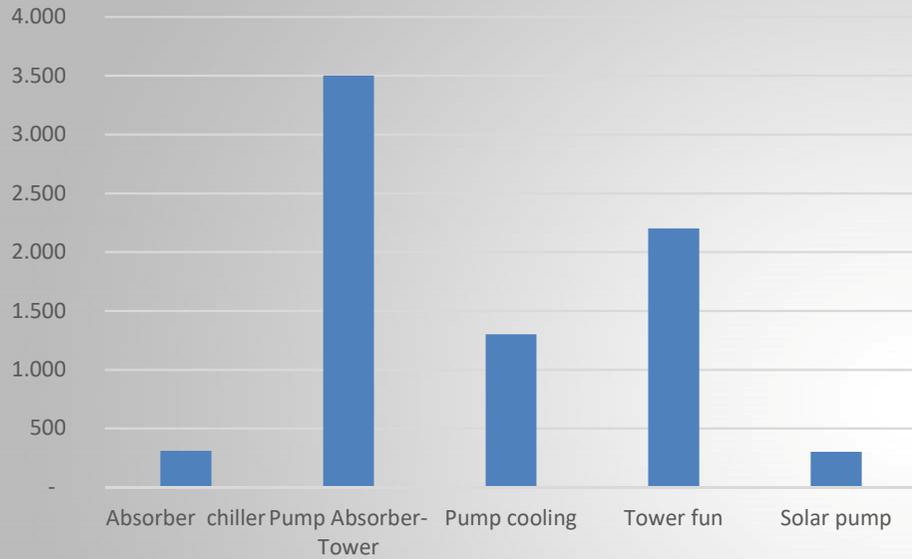
THERMAL PLANT SCHEME



ENERGY EFFICIENCY RATIO



Electric power



TOTAL ELETTRICAL POWER: 7,6 kW

COOLING POWER: 105 kW

$$EER_{\text{rated}} = 105 / 7,6 = 13,8$$

Absorber chiller	310	W
Pump Absorber-Tower	3.500	W
Pump cooling	1.300	W
Tower fun	2.200	W
Solar pump	300	W
	7.610	