



SAVOSOLAR



Solar thermal technology taken to the next level

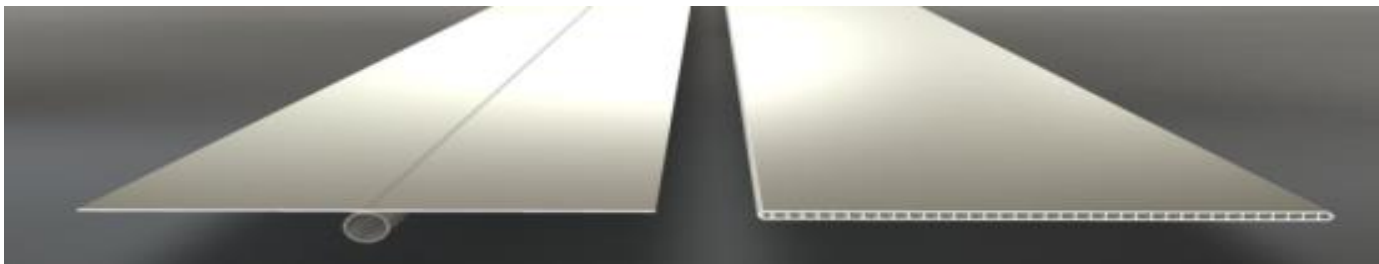
Performance of solar thermal collectors with direct-flow absorbers

Maxime Viot

Gleisdorf Solar 9.6.2016

The direct-flow technology

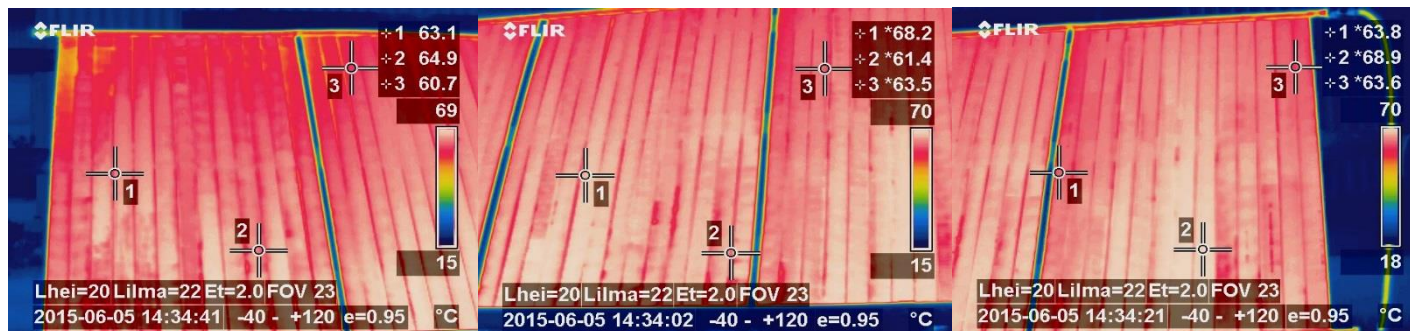
- The plate and the tubes are integrated into one single aluminium part, the MPE profile
- Increased amount of riser tubes uniformly distributed under the absorbing surface
- Maximized heat transfer between the plate and the fluid
- Optimal heat conversion factor $F' = 0.99$



Comparison between the traditional tube/plate design (left) and the direct-flow design (right).

Temperature and flow distribution

- Experimental test of the absorber with a force water flow
- Monitoring of the absorber surface with temperature sensors and thermal camera
- Near uniform temperature on the absorber surface
- Good flow distribution inside all the absorber channels



Performance of the collectors

- Collectors efficiency measured by two institutes (indoor and outdoor)
- Measured optical efficiencies
 - Single glass 0.87 - 0.9
 - Double glass 0.83 - 0.86
- The collector box ensures high insulation and performance also at high operation temperatures

Last news from the Savosolar field in Jelling:
collector production 5 kWh/m²/day last weekend
→ Highest recorded value in Denmark!

Thank you!

