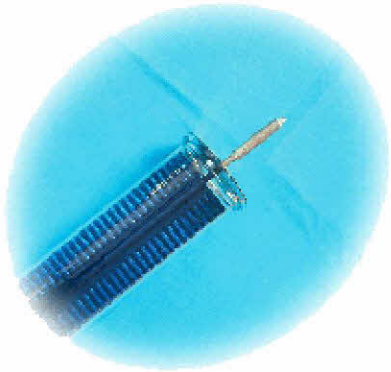
SEIDO1----Heat Pipe Solar Vacuum Tube

SEIDO1



Features

- **Flat plate absorber**
- **High efficiency under low ambient temperature due to ultra high vacuum**
- **Fast start-up due to small thermal capacity of working fluid**
- **Low heat losses due to thermal diode effect**
- **No corrosion or scaling problems due to patented thermo-compression sealing technology**
- **Easy installation and maintenance**
- **Antifreeze**
- **High system operation pressure resistance and thermal shock resistance**
- **Higher energy through heat transmission by working fluid compared to thermal conduction**
- **Reliable and durable**

Principle

SEIDO1 is a heat pipe vacuum tube with a flat absorber profile. **SEIDO1** tubes have large dimensions with an outer diameter of 100 mm and a length of 2000 mm. The heat transfer from the absorber to the heat circulation is performed by the heat pipe which is mounted in the absorber. This heat pipe had originally been developed for the thermal control in satellites. Inside the pipe, the heat is conducted with high efficiency to its upper end. From there it is released to the heat circulation. Although the heat transport medium of the heat pipe is water the heat pipe is a closed system. The pipe is charged with a small amount of water and carefully evacuated before sealing.
Since the heat transfer liquid of the heat circuit does not flow through the collector itself, installation is very simple and an exceptionally trouble-free operation is guaranteed. The operation of the system will not be interrupted even if one of the collector tubes should get damaged.

Technical data

Type	**SEIDO1**
Specification	Heat pipe vacuum tube with flat absorber

Configuration	
Absorber area	0.173 m²
Weight	4.6 kg
Installation tilt angel	15° ~ 90°
Dimension	Ø100mm x 2000mm
Heat pipe	Heat pipe copper Ø8 mm
Absorber material	Copper- Aluminium sunstrip, 0.47 mm thickness
Selective coating	Aluminum nitride Al-N-O selective coating; Absorptance: a > 0.94; Emittance: ε < 0.06
Glass tube material	Borosilicate glass Thickness: 2.8 mm Transmittance of glass: 91%
Vacuum	< 10-5 mbar
Min. ambient tem.	-45°C
Stagnation temp.	234.8°C
Resistance to hail	11J+-1J