

Pressure drop per module	<5mbar(80L/h)		<12mbar(150L/h)	
Fluid content per module	0.5L		0.9L	
Header box material	Aluminium	Aluminium alloy	Aluminium	Aluminium alloy
Header box color	Brown	Silver	Brown	Silver
Header box diameter	130mm			
Insulation	Polyurethane foam			
Max. Operating pressure	6bar			
Stagnation temperature, module	190°C			
Connection	Compression fitting			

### 5.5.1 Module Efficiency Curve

For SEIDO10 such parameters will be calculated based on the aperture area of the collector:  
 $\eta=0.659-1.800*(T_{in}-T_a)/G+0.0068*(T_{in}-T_a)^2/G$  (Test Report No.2006-26-EN)

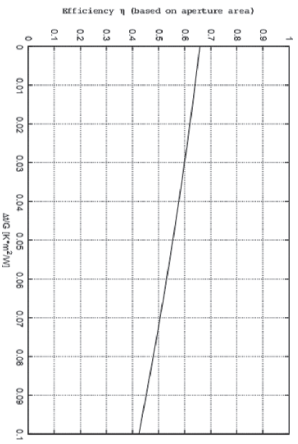


Figure 5.5.1 Efficiency curve with measurement points based on aperture area 2.222m<sup>2</sup>

### 5.5.2 Module pressure drop curve

The measurement of the pressure drop  $\Delta P$  was carried out with water as fluid up to flow rate of 745Kg/h, the inlet temperature of the water was 20°C. The reason for the high number of measurement points at a low flow rate is given by EN 12975-2:2006. Five measurements of different flow rates in the range of 18kg/h·m<sup>2</sup> to 108kg/h·m<sup>2</sup> are necessary. The measurements were performed up to a much higher value to increase the accuracy of the parameters. Also, these flow rates are closer to flow rates occurring in collector fields.

For SEIDO10 the pressure drop in mbar can be described by the following function of the mass flow X in Kg/h:  
 $\Delta P=0.011*X+9.89*10^{-5}*X^2$

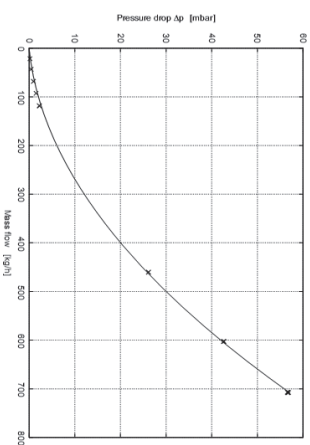


Figure 5.5.2 Measured pressure drop of the collector SEIDO10-20

### 5.5.3 Application SEIDO10

SEIDO10 solar collectors are very similar to SEIDO1 collectors. They also have heat pipe evacuated tubes with flat absorber plate and employ a plug-in structure for manual adjustment, easy installation and maintenance. While sharing the same configuration as SEIDO1 tubes, their absorber area and tube dimensions are smaller creating even more versatility.

The main component of the solar collector is the straight absorber, which converts the sunlight into heat.

In case of roof deviation from south, the absorber surface of each tube can be directed to south to obtain nearly optimal insolation onto the collector area. This is carried out by turning each tube and adjusting it to the sun at noon time.

#### Adjustment of Absorber Surfaces

In case the roof is not inclined correctly to south, but deviates by an angle  $\alpha$ , the collector tubes have to be turned by an angle  $\delta$  to south direction.

#### Roof Tilt 45°:

- $\alpha$  10° 20° 45°
- $\delta$  7° 14° 30°

#### Roof Tilt 30°:

- $\alpha$  10° 20° 45°
- $\delta$  5° 10° 26°

#### Mounting Location