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Test of solar panels.

Task reference: T201294

Solarventi
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8881 Thorsø

Subject

Following samples have been subjected to testing to find differences of efficiency of the solar collectors.

Samples

Solar collector 1 Solarventi
Solar collector 2 Dansolar
Solar collector 3 Scanheat



Applied method

Each solar collector was exposed to sunlight with a intensity of 550 W/m^2 .
The test time (5 min.) started when the air temperature at the air outtake was constant.
Following parameters were measured:
Air outtake volume.
Temperature at the ventilator.
Temperature behind the solar collector.
Noise level 10cm above air outtake .

Results

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Vendor	Air flow	Temperature raise	Power	Power	Efficiency	Noise from air flow
	m ³ /h	°C	W	W/m ²	%	dBA
Solarventi	60,1	11	237	340	62	66
Dansolar	33	12,1	144	274	50	72
Scanheat	25,5	17,3	159	243	44	63

The measurements were performed at Saturday the 12/11 - 2011 between noon and 13.00

The panels are exposed to the sun.

Angel to the horizon 60°. Facing south.

Air density 0,00129 Kg/L

Specific heat of air 1005 J/ (kg * Kelvin)

Total panel surface. Solarventi 0,7m²
 Dansolar 0,525m²
 Scanheat 0,653m²

Measurement 4	Temp.			Efficiency	Power (1m ²)	Sun intensity	Air flow /Unit
	Out °C	In °C	Difference °C				
Solarventi	17,2	6,2	11	62	340	550	60,1
Dansolar	18,3	6,2	12,1	50	274	550	33,0
Scanheat	23,5	6,2	17,3	44	243	550	25,5

Measurement No	Air flow			Sun intensity w/m ²
	m ³ /h	m ³ /h	m ³ /h	
	Solarventi	Dansolar	Scanheat	
4	60,1	33	25,5	550
5	59,8	33,7	25,2	550
6	57,3	28,6	24,7	
7	58,3	30,6	24,9	

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Målingerne er udført lørdag d. 12/11 - 2011 mellem kl.12 og 13.

Panelerne er i solen (550W/m²)

Hældning 60° Pegende stik syd.

Luft vægtylde 0,00129 Kg/L

Luft varmfylde 1005 J/ (kg * Kelvin)

Bruttoflade af solfanger Solarven 0,7m²

 Dansolar 0,525m²

 Scanheat 0,653m²

Temperaturføler sat i rør 5 cm efter blæser .

Measurement 4	Temp.			Virkningsgrad	Effekt (1m ²)	Sol	Luft flow
	Ud	d	Forskel			intensitet	
	°C	°C	°C	%	w/m ²	w/m ²	m ³ /h
Solarventi	17,2	6,2	11	62	340	550	60,1
Dansolar	18,3	6,2	12,1	50	274	550	33,0
Scanheat	23,5	6,2	17,3	44	243	550	25,5

Temperature sensor 1 is Solarventi.

Temperature sensor 2 is Dansolar.

Temperature sensor 3 is Scanheat.

Temperature sensor 4 is the ambient air.

Measurement 4

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12:29:31	17,3	18,3	23,5	6,1		
12:29:33	17,3	18,3	23,5	6,1		
12:29:35	17,3	18,3	23,6	6,4		
12:29:37	17,3	18,3	23,6	6,4		
12:29:39	17,3	18,3	23,6	6,1		
	1774,5	1879,9	2419,3	640,4		
	17,22816	18,25146	23,48835	6,217476		
	11,01068	12,03398	17,27087	0		

Measurement 5

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14-11-2011	12:31:49	16,8	18,1	23,4	5,7
14-11-2011	12:31:51	16,8	18,1	23,4	5,8
14-11-2011	12:31:53	16,8	18,1	23,4	5,8
14-11-2011	12:31:55	16,8	18,1	23,3	5,8
14-11-2011	12:31:57	16,8	18,1	23,3	5,8
14-11-2011	12:31:59	16,8	18,1	23,3	5,8
14-11-2011	12:32:01	16,8	18,1	23,3	6
14-11-2011	12:32:03	16,8	18,1	23,3	6
14-11-2011	12:32:05	16,8	18,1	23,3	6,1
		17,01364	18,16761	23,33864	5,834659

Measurement 6

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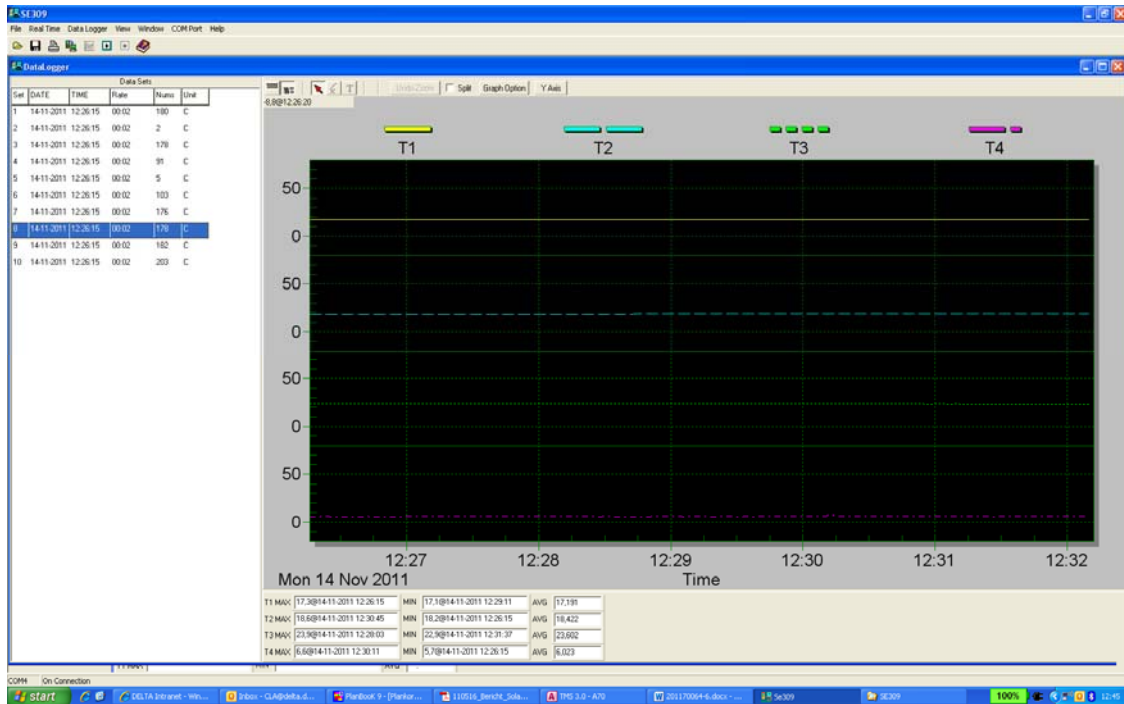
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14-11-2011	12:31:55	17,1	18,5	23,1	6,2
14-11-2011	12:31:57	17,1	18,5	23,1	6,1
14-11-2011	12:31:59	17,1	18,5	23,1	6,1
14-11-2011	12:32:01	17,2	18,5	23,1	5,9
14-11-2011	12:32:03	17,2	18,5	23,2	5,9
14-11-2011	12:32:05	17,2	18,5	23,2	5,9
14-11-2011	12:32:07	17,2	18,5	23,2	5,9
14-11-2011	12:32:09	17,2	18,5	23,2	5,9
		17,18977	18,425	23,60341	6,026136

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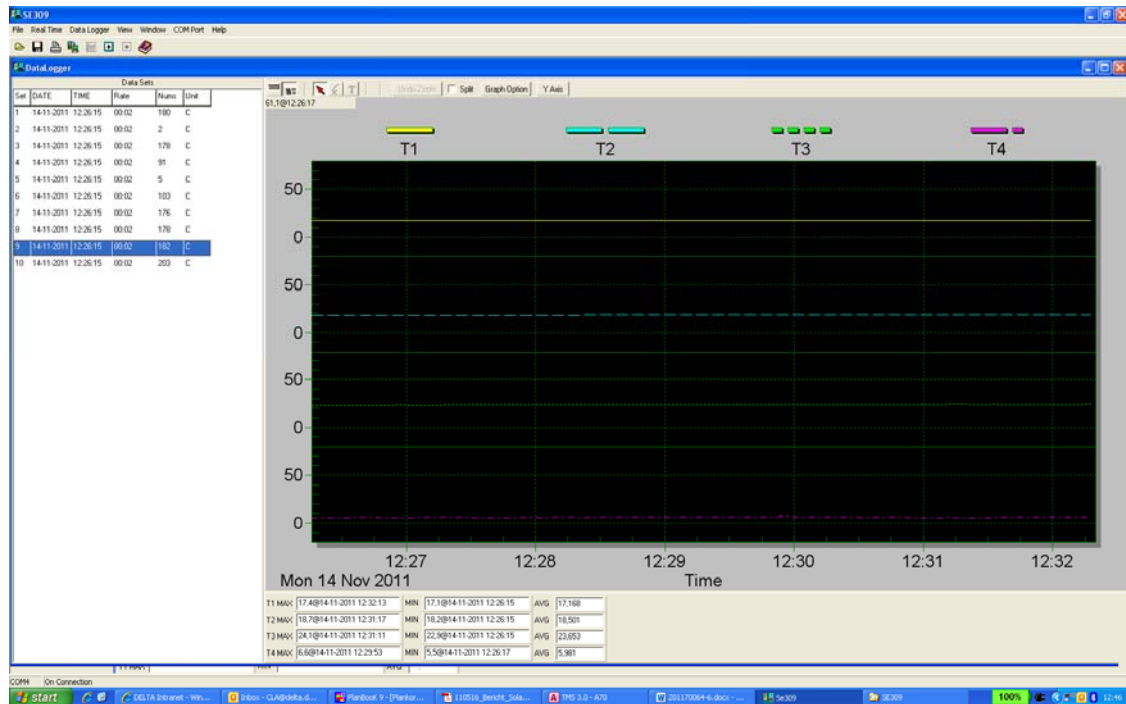
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Measurement 7



14-11-2011	12:32:03	17,3	18,7	24	6,4
14-11-2011	12:32:05	17,3	18,7	24	6,4
14-11-2011	12:32:07	17,3	18,7	24	6,4
14-11-2011	12:32:09	17,3	18,7	24	6,5
14-11-2011	12:32:11	17,3	18,7	24	6,5
14-11-2011	12:32:13	17,4	18,7	24	6,2
14-11-2011	12:32:15	17,4	18,7	24,1	6,2
14-11-2011	12:32:17	17,3	18,7	24,1	6
		17,16989	18,5108	23,67727	5,992614

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Scanheat

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Dansolar

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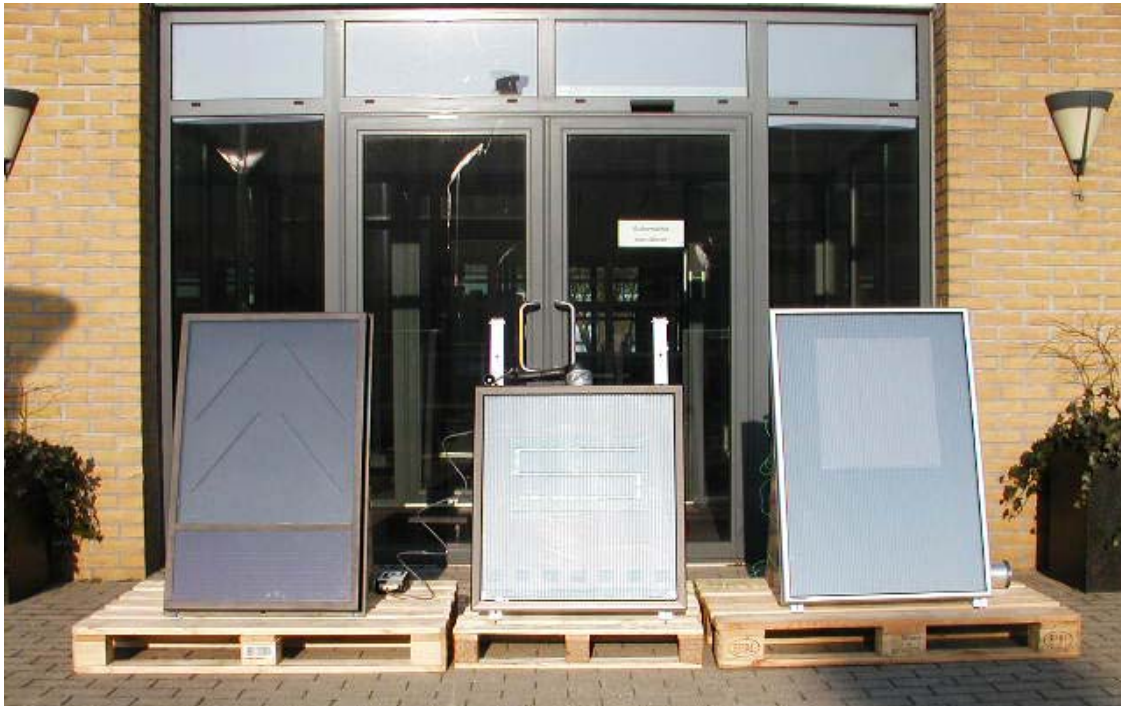
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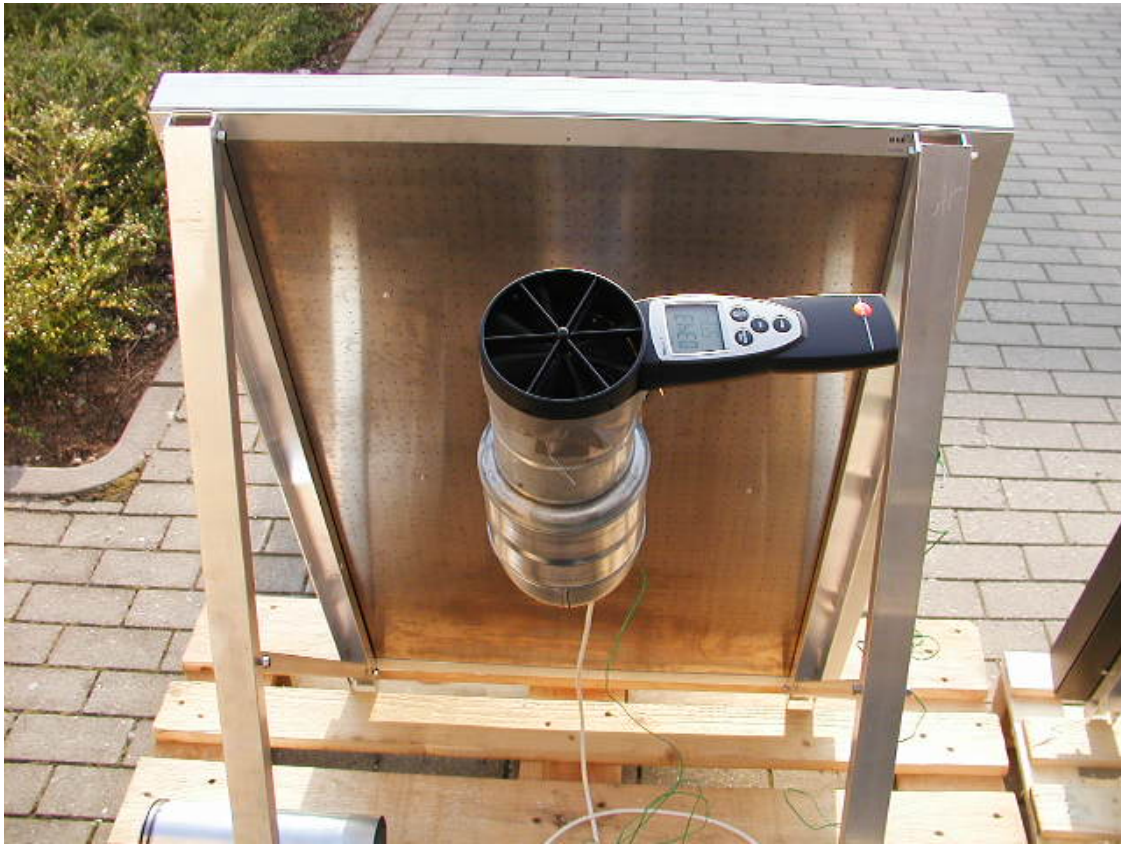
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