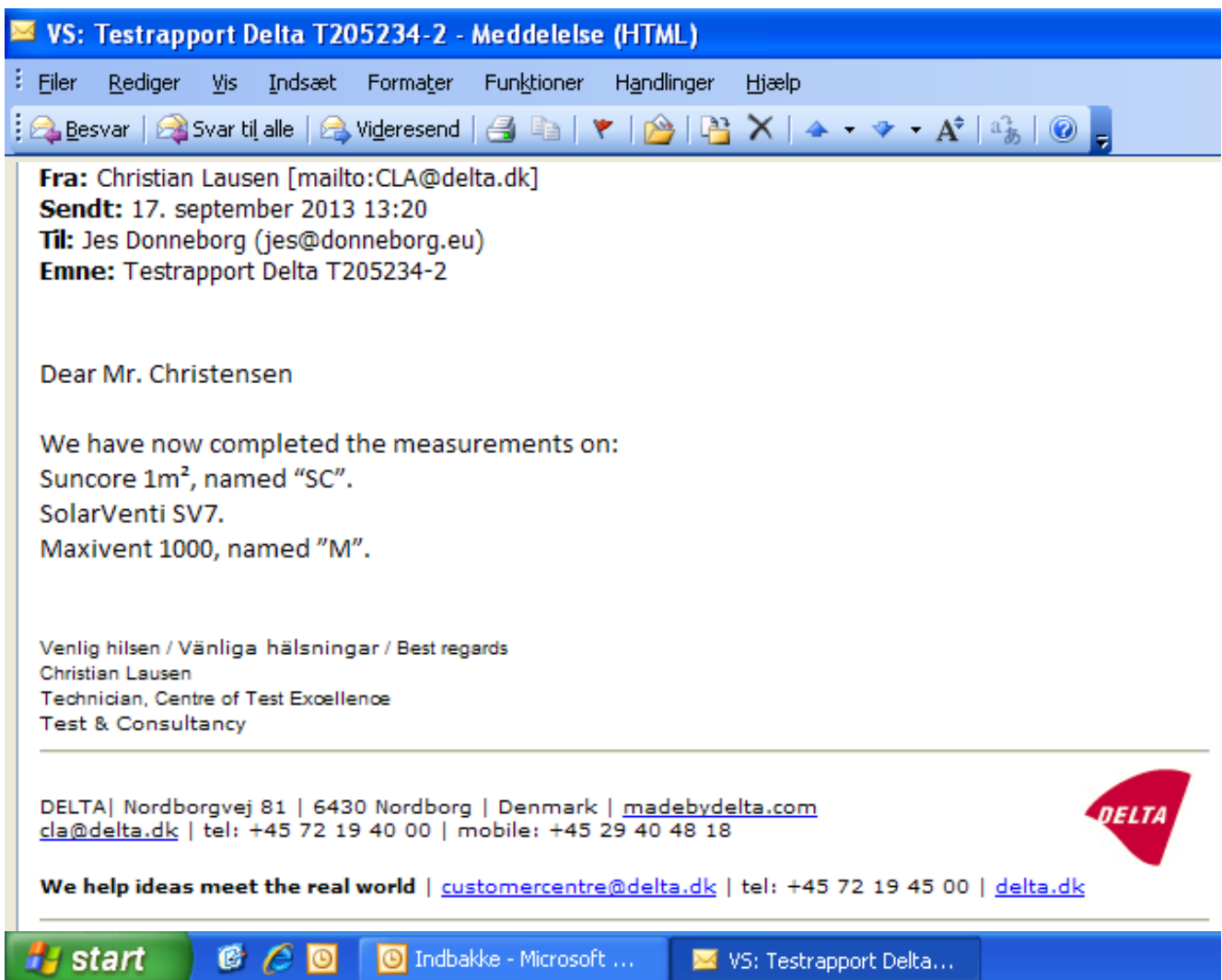


## About the Delta Test T205234-2

### Mail from Christian Lausen (Delta Test Laboratory)

A screenshot of an email client window. The title bar reads "VS: Testrapport Delta T205234-2 - Meddelelse (HTML)". The menu bar includes "Filer", "Rediger", "Vis", "Indsæt", "Formater", "Funktioner", "Handlinger", and "Hjælp". The toolbar contains icons for "Besvar", "Svar til alle", "Videresend", and other standard email actions. The main content area shows the email header and body text.

**Fra:** Christian Lausen [mailto:CLA@delta.dk]  
**Sendt:** 17. september 2013 13:20  
**Til:** Jes Donneborg (jes@donneborg.eu)  
**Emne:** Testrapport Delta T205234-2


Dear Mr. Christensen

We have now completed the measurements on:  
Suncore 1m<sup>2</sup>, named "SC".  
SolarVenti SV7.  
Maxivent 1000, named "M".

Venlig hilsen / Vänliga hälsningar / Best regards  
Christian Lausen  
Technician, Centre of Test Excellence  
Test & Consultancy

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The Delta logo, a red triangle with the word "DELTA" in white capital letters inside it.

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The screenshot also shows the Windows taskbar at the bottom with the "start" button and several open applications, including "Indbakke - Microsoft ..." and "VS: Testrapport Delta..."



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## Test of air heating solar panels.

Task reference: T205234-2

Solarventi A/S

**Hans Jørgen Christensen**

Fabriksvej 8

8881 Thorsø



Comp "SC"

SolarVenti SV7

Comp "M"

**Report by:** Christian Lausen, Tel.: +45 2940 4818  
Test engineer, Centre of Test Excellence

**Report date:** 2013-09-02

**Number of pages:** 5

**Report no.:** 205234-2

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T205234-2

## About Delta

DELTA is an independent technology company based in Denmark

We pride ourselves of being at the forefront of innovation of advanced technologies. And we serve as a strategic partner to our clients and society.

We are the technology pathfinder within our cores technology domains and specialise in

- electronics
- information technology
- micro and nano technology
- sensor systems
- acoustic and vibration technology
- light technology and optics

The company was established in 1941 and employs 270 highly skilled people located in Denmark, Sweden, and England. Our annual turnover in 2011 was DKK 327 million.

With more than 70 years of experience we have extensive expertise in development of technology driven products within sectors such as health and welfare technology, climate, energy and the environment. Every year we help more than 2,000 customers worldwide with their product development process from product idea, product extreme testing to product launch.

DELTA is a highly reputable international company and part of GTS – Advanced Technology Group approved by the Danish Ministry of Science, Innovation and Higher Education.

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## Panels Tested

Panel	Width	Height	Thick	Area	Weight	Fan	Solar cell / area
	cm	cm	cm	m <sup>2</sup>	Kg		Wp / m <sup>2</sup>
"SC"	58	170	4,5	0,99	9	Noctua 1,4 Watt	4 / 0,10
Solarventi SV7	70	100	5,5	0,70	7	Sunon 3,4 Watt	12
"M"	70	100	15,5	0,70	20	Sunon 2,0 Watt	8 / 0,15

## Test set up

The solar panels are mounted according to manufacturer specifications and set 90° upright, facing south.

The panels are set to produce the highest possible ventilation from fresh air.

The measurements were performed Wednesday 14 of august, in a very changing weather with clouds and open sky.

## Measuring

The measurements are simple relative measurements that only speak of how the panels perform relative to each other, under the specific conditions of the day.

The strength of the solar radiation, sun azimuth and height, amount of clouds and air temperature makes it impossible to make absolute measurements with the real sun.

On the other hand absolute measurements, made in a weathering chamber, would lack the changing reality of nature.

The temperature difference produced by the solar panel, and the airflow produced by the fan, is measured by an anemometer tube equipped with a temperature gauge.

The three sets of anemometer tubes (one for each solar panel) have been internally calibrated. As well have the temperature gauges.

The uncertainty of the measurements are as follows.

Temperature  $\pm 0,1^{\circ}\text{C}$

Air flow  $\pm 2\text{m}^3/\text{h}$

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Power  $\pm 20W$

Air density 0,00129 Kg/L  
Specific heat of air 1005 J/ (kg \* Kelvin )

	Temp.			Relative Efficiency	Power (1m <sup>2</sup> ) w/m <sup>2</sup>	Power (unit) w/unit	Air flow /Unit m <sup>3</sup> /h
	Out °C	In °C	Difference °C				
Measurement 1. 08.45							
Comp "SC"	19,9	17,6	2,3	49	8	8	10,2
Solarventi	19,2	17,6	1,6	100	16	11	19,1
Comp "M"	21,7	17,6	4,1	54	9	7	4,9

Measurement 2. 09.15

Comp "SC"	22,8	18	4,8	55	27	30	17,3
Solarventi	20,8	18	2,8	100	50	35	34,5
Comp "M"	23,8	18	5,8	77	38	33	15,6

Measurement 3. 10.00

Comp "SC"	28,5	19,8	8,7	70	64	70	22,4
Solarventi	23,9	19,8	4,1	100	92	65	43,8
Comp "M"	25,4	19,8	5,6	112	103	88	43,6

Measurement 4. 10.50

Comp "SC"	30,8	20,4	10,4	53	99	107	28,7
Solarventi	25,7	20,4	5,3	100	186	130	68,2
Comp "M"	27,8	20,4	7,4	78	145	123	46,2

Measurement 5. 11.45

Comp "SC"	33,7	20,5	13,2	55	181	197	41,4
Solarventi	28,3	20,5	7,8	100	329	230	81,9
Comp "M"	31,5	20,5	11	97	317	270	68,1

Measurement 6. 12.50

Comp "SC"	39,5	21,6	17,9	79	307	335	51,9
Solarventi	30,2	21,6	8,6	100	386	270	87,3
Comp "M"	33,9	21,6	12,3	99	381	324	73,1

Measurement 7. 13.30

Comp "SC"	36,9	22,4	14,5	74	191	208	39,8
Solarventi	29,2	22,4	6,8	100	258	181	73,8
Comp "M"	31,4	22,4	9	88	227	193	59,6

Measurement 8. 15.00

Comp "SC"	38,2	23	15,2	76	224	245	44,7
Solarventi	29,7	23	6,7	100	296	207	85,8
Comp "M"	32,4	23	9,4	66	195	166	48,9

Measurement 9. 16.00

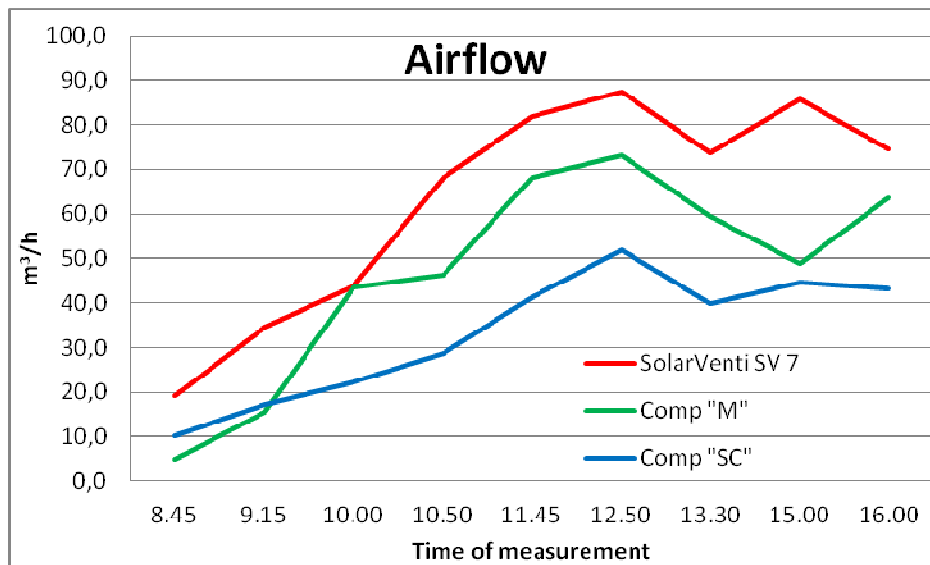
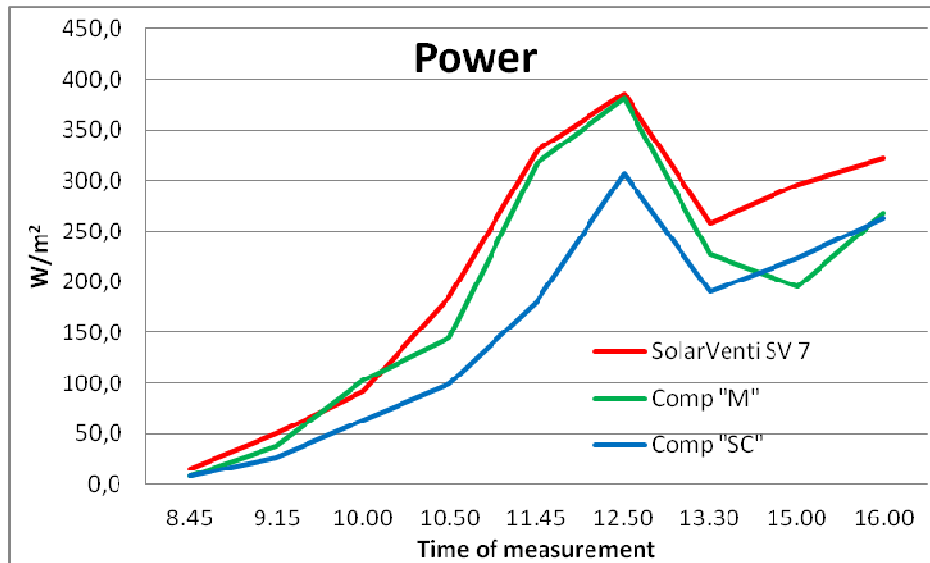
Comp "SC"	40	21,6	18,4	82	263	286	43,2
Solarventi	29,9	21,6	8,3	100	322	225	75,4
Comp "M"	31,6	21,6	10	83	268	228	63,3

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