

## Technical Data Sheet



Air



Ground



Water



Brine



Cooling



PV-ready



Modulation

### Air / Water Heat Pump - Compact Design Modulating 8 – 18 kW - single phase P/230V



#### Heliotherm Sensor Comfort Compact

A modulating air / water heat pump in compact design for outdoor installation for generous sized single and multi-family homes, innovative modulation technology, pleasant room climate with active cooling, combination possibilities in use with photovoltaic systems as well as various buffer storage and heat delivery systems.

#### SCC Advantages:

- Low operating costs due to a COP of upto 4,3 (at A2/W35 bzw. > 5,1 at A7/W35°)
- Exceptionally silent in operation due to acoustic optimized custom case design
- The heat pump is easy to use and optimised via REMOTE CONTROL
- Energetic optimum heat pump operation in connection to a photovoltaic system
- Safe and virtually maintenance-free operation through the use of innovative scroll compressors





## Technical Data - single phase 230V

Type Sensor Comfort Compact		8 kW	12 kW	18 kW
<b>Energy source</b>				
Air volume	m <sup>3</sup> /h	1.000 - 4.000	2.000 - 6.000	2.000 - 8.000
Evaporator area	m <sup>2</sup>	60	80	100
Min. air inlet flow temperature	°C	-25	-25	-25
Max. air inlet flow temperature	°C	45	45	45
<b>Heating water at 5 K temperature difference</b>				
Content	Liter	2,5	2,8	3,1
Volume flow	m <sup>3</sup> /h	0,5 - 2,4	0,8 - 2,6	1 - 3,1
Pressure loss	mH <sub>2</sub> O	2	2,1	2,2
Max. outlet temperature at A0°C	°C	62	62	62
<b>Electric values</b>				
Nominal voltage		1/N/PE 230 V/50 Hz	1/N/PE 230 V/50 Hz	1/N/PE 230 V/50 Hz
Max. nominal current	A	21	25	31,5
Starting current	A	22	26	33
Fuse	A	25	32	40
Max. nominal current - fan	A	1,1	1,1	1,7
Fuse - fan	A	Thermal relay	Thermal relay	Thermal relay
Nominal voltage control cuircuit	V	1/N/PE 230 V/50 Hz	1/N/PE 230 V/50 Hz	1/N/PE 230 V/50 Hz
Fuse control cuircuit	A	13	13	13
<b>Power consumption</b>				
Fan	W	50 - 180	50 - 240	50 - 460
Max. power consumption-compressor	kW	6,0	7,0	9,5
<b>Refrigerant cycle</b>				
Working fluid		R-410A	R-410A	R-410A
fill amount	kg	4,9	6,6	8,0
fill amount reversible (optional)	kg	7,0	9,0	10,0
Compressor	Type	Scroll	Scroll	Scroll
Compressor speed	1/min	1.200 - 6.000	1.200 - 6.000	1.200 - 6.000
Oil amount	Liter	1,3	1,7	2,3
<b>Dimensions</b>				
Total length	mm	585	1.002	1.002
Total width	mm	896	935	935
Total height	mm	1.704	1.702	1.702
<b>Total weight</b>	kg	215	256	262
<b>Permitted operating pressure</b>	bar	10	10	10
<b>Connections</b>				
Heating water out- and inlet	Inch	5/4	5/4	5/4



## Acoustic Technical Data EN12102

### Type Sensor Comfort Compact 8 kW

<b>A-Assesed acoustic capacity &amp; level</b> in heating mode at A7 ( $\pm 3$ K)/W55 ( $\pm 1$ K)		Outdoor unit standing install.
Min. heat capacity	dB (A)	40
Nominal heating capacity	dB (A)	41
Max. heat capacity	dB (A)	48

### Type Sensor Comfort Compact 12 kW

<b>A-Assesed acoustic capacity &amp; level</b> in heating mode at A7 ( $\pm 3$ K)/W55 ( $\pm 1$ K)		Outdoor unit standing install.
Min. heat capacity	dB (A)	41
Nominal heating capacity	dB (A)	42
Max. heat capacity	dB (A)	50

### Type Sensor Comfort Compact 18 kW

<b>A-Assesed acoustic capacity &amp; level</b> in heating mode at A7 ( $\pm 3$ K)/W55 ( $\pm 1$ K)		Outdoor unit standing install.
Min. heat capacity	dB (A)	43
Nominal heating capacity	dB (A)	44
Max. heat capacity	dB (A)	51



## Performance Data Sensor Comfort Compact 8

Acc. EN14511

Energy efficiency class	A+++		
Measuring point	A-7 / W 35	A2 / W 35	A7 / W 35
Heating output range in kW	2,4 - 10,3	3,1 - 11,1	4,8 - 11,8
Nominal heating capacity in kW	4,86	6,34	6,87
Electr. power input in kW	1,59	1,48	1,36
COP	3,05	4,27	5,05
Acoustic pressure level at 5m distance in dB(A)	29,4		

Acc. EN14825 (calculated values; errors reserved)  
Operating limit temperature TOL = -25 °C

Bivalent temperatures for climate zone "colder"

Outlet temperature level	T <sub>bivalent</sub> [°C]
lower (35 °C)	-18
average (45 °C)	-17
high (55 °C)	-14

Full load and Seasonal Performance Factor in heating mode

Climate zone	Outlet temperature level	P <sub>desinh</sub> [kW]	Q <sub>HE</sub> [kWh]	SCOP	η <sub>S</sub> [%]
average (Strasbourg)	low (35°C)	10,0	3118	4,49	177
	average (45°C)	10,0	3608	3,88	152
	high (55°C)	8,5	3684	3,23	126
warmer (Athens)	low (35°C)	10,0	2405	5,82	230
	average (45°C)	10,0	2756	5,08	200
	high (55°C)	10,0	3318	4,22	166
colder (Helsinki)	low (35°C)	10,0	5185	4,05	159
	average (45°C)	10,0	6140	3,42	134
	high (55°C)	10,0	7216	2,91	113

Full load in cooling mode for ceiling cooling applications  
Seasonal performance factor in cooling mode for ceiling cooling applications

P<sub>desinh</sub> = 8 kW  
SEER = 5,96

Full load in cooling mode for convector fans  
Seasonal performance factor in cooling mode for convector fans

P<sub>desinh</sub> = 8 kW  
SEER = 5,49



## Performance Data Sensor Comfort Compact 8 (continued)

Partial loads and COPs for the reference heating season, "average" (Strasbourg)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W24	15	6,71	7,03
	A7/W27	35	5,94	5,65
	A2/W30	54	5,47	4,55
	A-7/W34	88	8,80	2,70
	A-10/W35	100	10,15	2,20
average (45°C)	A12/W28	15	4,21	5,52
	A7/W33	35	3,40	4,52
	A2/W37	54	5,37	4,07
	A-7/W43	88	8,78	2,38
	A-10/W45	100	10,01	1,82
high (55°C)	A12/W30	15	4,22	5,29
	A7/W36	35	3,31	4,15
	A2/W42	54	4,69	3,42
	A-7/W52	88	7,51	1,65
	A-10/W55	100	8,51	1,23

Partial loads and COPs for the reference heating season, "warmer" (Athens)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W26	29	4,61	6,30
	A7/W31	64	6,42	5,68
	A2/W35	100	9,98	4,15
average (45°C)	A12/W31	29	4,45	6,06
	A7/W39	64	6,42	4,63
	A2/W45	100	10,07	2,86
high (55°C)	A12/W34	29	4,39	5,56
	A7/W46	64	6,48	3,63
	A2/W55	100	10,11	1,87



## Performance Data Sensor Comfort Compact 8 (continued)

Partial loads and COPs for the reference heating season, "colder" (Helsinki)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W24	11	4,67	6,36
	A7/W25	24	3,88	5,32
	A2/W27	37	3,75	4,81
	A-7/W30	61	6,17	3,65
	A-15/W32	82	8,18	2,37
	A-16/W32	84	8,87	2,12
	A-22/W35	100	7,80	1,31
average (45°C)	A12/W26	11	4,38	5,85
	A7/W30	24	3,53	4,71
	A2/W33	37	3,72	4,34
	A-7/W38	61	6,07	2,93
	A-14/W40	79	8,14	1,82
	A-15/W41	82	8,59	1,65
	A-22/W45	100	7,50	1,12
high (55°C)	A12/W28	11	4,28	5,52
	A7/W32	24	3,49	4,49
	A2/W37	37	3,68	3,94
	A-7/W44	61	6,11	2,33
	A-10/W46	68	7,81	1,81
	A-15/W49	82	7,50	1,22
	A-22/W55	100	7,19	1,03

### Option „R“ reversible

Partial loads and COPs in cooling mode for ceiling cooling applications

Operating point	Partial load ratio [%]	Cooling capacity $P_{dh}$ [kW]	EER <sub>d</sub>
A20/W18	21	7,33	7,65
A25/W18	47	7,16	6,64
A30/W18	74	7,87	5,42
A35/W18	100	8,18	4,01

Partial loads and COPs in cooling mode for cooling mode convector fans\*


Operating point	Partial load ratio [%]	Cooling capacity $P_{dh}$ [kW]	EER <sub>d</sub>
A20/W11,5	21	3,93	7,42
A25/W10	47	4,77	6,12
A30/W8,5	74	6,76	4,93
A35/W7	100	7,14	3,58

\* Setting cooling temperatures to below 15°C are to be first consulted with a Heliotherm technician.



## Performance Data Sensor Comfort Compact 12

Acc. EN14511

Energy efficiency class			
Measuring point	A-7 / W 35	A2 / W 35	A7 / W 35
Heating output range in kW	4,1 - 12,2	4,9 - 15,8	6,8 - 16,5
Nominal heating capacity in kW	5,04	6,84	7,99
Electr. power input in kW	1,68	1,70	1,70
COP	3,00	4,02	4,71
Acoustic pressure level at 5m distance in dB(A)	31,2		

Acc. EN14825 (calculated values; errors reserved)  
Operating limit temperature TOL = -25 °C

Bivalent temperatures for climate zone "colder"

Outlet temperature level	T <sub>bivalent</sub> [°C]
low (35 °C)	-19
average (45 °C)	-17
high (55 °C)	-15

Full load and Seasonal Performance Factor in heating mode

Climate zone	Outlet temperature level	P <sub>desinh</sub> [kW]	Q <sub>HE</sub> [kWh]	SCOP	η <sub>S</sub> [%]
average (Strasbourg)	low (35°C)	12,0	3676	4,57	180
	average (45°C)	12,0	4297	3,75	151
	high (55°C)	10,0	5490	3,06	119
warmer (Athens)	low (35°C)	12,0	3083	5,45	215
	average (45°C)	12,0	3537	4,56	185
	high (55°C)	12,0	4264	3,94	155
colder (Helsinki)	low (35°C)	12,0	6087	4,14	163
	average (45°C)	12,0	7545	3,59	143
	high (55°C)	12,0	8025	3,14	123

Full load in cooling mode for ceiling cooling applications  
Seasonal performance factor in cooling mode for ceiling cooling applications

P<sub>desinh</sub> = 12 kW  
SEER = 5,71

Full load in cooling mode for convector fans  
Seasonal performance factor in cooling mode for convector fans

P<sub>desinh</sub> = 12 kW  
SEER = 4,54





## Performance Data Sensor Comfort Compact 12 (continued)

Partial loads and COPs for the reference heating season, "average" (Strasbourg)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W24	15	8,35	6,91
	A7/W27	35	7,48	5,64
	A2/W30	54	6,57	4,69
	A-7/W34	88	10,62	2,72
	A-10/W35	100	11,99	2,20
average (45°C)	A12/W28	15	5,23	5,20
	A7/W33	35	4,48	4,54
	A2/W37	54	6,38	3,96
	A-7/W43	88	10,53	2,21
	A-10/W45	100	11,86	1,67
high (55°C)	A12/W30	15	5,03	5,00
	A7/W36	35	4,05	3,81
	A2/W42	54	5,36	3,30
	A-7/W52	88	8,79	1,55
	A-10/W55	100	9,84	1,09

Partial loads and COPs for the reference heating season, "warmer" (Athens)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W26	29	5,42	5,73
	A7/W31	64	7,65	5,40
	A2/W35	100	11,91	4,30
average (45°C)	A12/W31	29	5,09	5,14
	A7/W39	64	7,64	4,28
	A2/W45	100	11,97	3,05
high (55°C)	A12/W34	29	4,96	4,88
	A7/W46	64	7,60	3,50
	A2/W55	100	11,92	2,01



## Performance Data Sensor Comfort Compact 12 (continued)

Partial loads and COPs for the reference heating season, "colder" (Helsinki)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W24	11	5,43	5,69
	A7/W25	24	4,61	4,85
	A2/W27	37	4,59	4,48
	A-7/W30	61	7,17	3,45
	A-15/W32	82	9,47	2,40
	A-19/W34	92	11,22	1,89
	A-22/W35	100	9,40	1,61
average (45°C)	A12/W26	11	5,22	5,39
	A7/W30	24	4,38	4,42
	A2/W33	37	4,46	4,03
	A-7/W38	61	7,07	2,79
	A-15/W41	79	9,67	1,79
	A-17/W42	82	10,12	1,43
	A-22/W45	100	7,28	1,16
high (55°C)	A12/W28	11	5,16	5,20
	A7/W32	24	4,27	4,20
	A2/W37	37	4,45	3,67
	A-7/W44	61	7,16	2,24
	A-15/W49	82	9,58	1,23
	A-22/W55	100	5,70	1,08

### Option „R“ reversible

Partial loads and COPs in cooling mode for ceiling cooling applications

Operating point	Partial load ratio [%]	Cooling capacity $P_{dh}$ [kW]	EER <sub>d</sub>
A20/W18	21	5,38	5,96
A25/W18	47	5,83	6,12
A30/W18	74	8,85	6,01
A35/W18	100	10,98	4,17

Partial loads and COPs in cooling mode for convector fans\*


Operating point	Partial load ratio [%]	Cooling capacity $P_{dh}$ [kW]	EER <sub>d</sub>
A20/W11,5	21	4,52	4,85
A25/W10	47	5,65	4,99
A30/W8,5	74	7,82	4,55
A35/W7	100	9,03	3,57

\* Setting cooling temperatures to below 15°C are to be first consulted with a Heliotherm technician.



## Performance Data Sensor Comfort Compact 18

Acc. EN14511

Energy efficiency class			
Measuring point	A-7 / W 35	A2 / W 35	A7 / W 35
Heating output range in kW	5,1 - 13,7	6,6 - 18,9	8,6 - 21,4
Nominal heating capacity in kW	13,57	15,42	17,55
Electr. power input in kW	4,51	3,63	3,50
COP	3,01	4,25	5,01
Acoustic pressure level at 5m distance in dB(A)	32,1		

Acc. EN14825 (calculated values; errors reserved)  
Operating limit temperature TOL = -25 °C

Bivalent temperature for climate zone "average"

Outlet temperature level	T <sub>bivalent</sub> [°C]
high (55 °C)	-7

Bivalent temperature for climate zone "colder"

Outlet temperature level	T <sub>bivalent</sub> [°C]
low (35 °C)	-18
average (45 °C)	-16
high (55 °C)	-14

Full Load and Seasonal Performance Factor in heating mode

Climate zone	Outlet temperature level	P <sub>desinh</sub> [kW]	Q <sub>HE</sub> [kWh]	SCOP	η <sub>S</sub> [%]
average (Strasbourg)	low (35°C)	18,0	5081	4,96	195
	average (45°C)	16,0	5957	4,03	164
	high (55°C)	16,0	7412	3,40	133
warmer (Athens)	low (35°C)	18,0	4032	6,25	247
	average (45°C)	18,0	4549	5,28	210
	high (55°C)	18,0	5714	4,41	173
colder (Helsinki)	low (35°C)	18,0	8147	4,64	183
	average (45°C)	18,0	10244	4,00	160
	high (55°C)	18,0	10831	3,49	137

Full load in cooling mode for ceiling cooling applications  
Seasonal performance factor in cooling mode for ceiling cooling applications

P<sub>desinh</sub> = 14 kW  
SEER = 6,09

Full load in cooling mode for convector fans  
Seasonal performance factor in cooling mode for convector fans

P<sub>desinh</sub> = 13 kW  
SEER = 5,44



## Performance Data Sensor Comfort Compact 18 (continued)

Partial loads and COPs for the reference heating season, "average" (Strasbourg)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W24	15	7,97	7,28
	A7/W27	35	6,80	6,32
	A2/W30	54	9,02	4,97
	A-7/W34	88	15,86	3,04
	A-10/W35	100	18,11	2,54
average (45°C)	A12/W28	15	7,17	6,56
	A7/W33	35	5,68	4,83
	A2/W37	54	8,74	4,18
	A-7/W43	88	14,5	2,34
	A-10/W45	100	16,01	1,86
high (55°C)	A12/W30	15	6,98	6,21
	A7/W36	35	6,30	5,10
	A2/W42	54	9,63	3,53
	A-7/W52	88	15,92	1,57
	A-10/W55	100	13,88	1,23

Partial loads and COPs for the reference heating season, "warmer" (Athens)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W26	29	7,33	7,03
	A7/W31	64	11,30	5,87
	A2/W35	100	18,04	4,18
average (45°C)	A12/W31	29	6,86	6,35
	A7/W39	64	11,74	4,72
	A2/W45	100	18,14	3,04
high (55°C)	A12/W34	29	6,60	5,85
	A7/W46	64	11,03	3,70
	A2/W55	100	18,02	2,08



## Performance Data Sensor Comfort Compact 18 (continued)

Partial loads and COPs for the reference heating season, "colder" (Helsinki)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity $P_{dh}$ [kW]	COP <sub>d</sub>
low (35°C)	A12/W24	11	7,52	7,26
	A7/W25	24	6,26	5,84
	A2/W27	37	6,83	5,25
	A-7/W30	61	10,98	3,52
	A-15/W32	82	14,48	2,42
	A-18/W33	89	16,52	2,16
	A-22/W35	100	13,77	1,81
average (45°C)	A12/W26	11	7,37	6,82
	A7/W30	24	6,09	5,41
	A2/W33	37	6,81	4,63
	A-7/W38	61	10,90	2,86
	A-15/W41	82	14,73	1,84
	A-16/W42	84	14,29	1,67
	A-22/W45	100	11,10	1,27
high (55°C)	A12/W28	11	7,17	6,48
	A7/W32	24	5,92	5,11
	A2/W37	37	6,69	4,13
	A-7/W44	61	10,80	2,36
	A-14/W48	79	14,07	1,48
	A-15/W49	82	13,13	1,34
	A-22/W55	100	8,65	1,12

### Option „R“ reversible

Partial loads and COPs in cooling mode for ceiling cooling applications

Operating point	Partial load ratio [%]	Cooling capacity $P_{dh}$ [kW]	EER <sub>d</sub>
A20/W18	21	7,32	7,56
A25/W18	47	8,40	6,59
A30/W18	74	11,23	5,19
A35/W18	100	13,84	3,99

Partial loads and COPs in cooling mode for convector fans\*

Operating point	Partial load ratio [%]	Cooling capacity $P_{dh}$ [kW]	EER <sub>d</sub>
A20/W11,5	21	6,84	6,36
A25/W10	47	8,53	5,92
A30/W8,5	74	10,17	4,78
A35/W7	100	11,93	3,69

\* Setting cooling temperatures to below 15°C are to be first consulted with a Heliotherm technician.



