

Technical Data Sheet



Air



Ground



Water



Brine



Cooling



PV-ready



Modulation

Brine/Water Heat Pumps 8 – 20 kW



Heliotherm Basic Comfort

A fully modulating Brine/Water heat pump with leading-edge modulation technology automatically adjusts to the single or multi-family home's heating requirements. Centralized to this Seasonal Performance accomplishment is the heat pump's intelligent control. The result is a high accent of indoor climate and maximum living comfort. In combination with a photovoltaic system, in connection to a wide range of buffer storage units and heat delivery systems and optional cooling virtually renders unlimited planning realisation for your heating system.

Basic Comfort Advantages

- Minimal operating costs resulting from a SCOP of up to 5.5 (climate zone „average“, temperature level of 35 °C)
- Quiet operation through acoustic decoupling and special insulation case design
- Ex-works integrated hydraulic block
- Safe and almost maintenance-free operation is obtained through the high quality construction and components
- Heliotherm's registered twin-x technology® and patented dsi-technology® for more efficiency from our environment's free energy



Technical Data

Type Basic Comfort Modulating		08S10W	12S16W	20S25W
Energy source (Primary cycle)				
Content	Liter	1,9	1,9	3
Volume flow (temperature difference 4 K)	m ³ /h	3,9	4,2	5,5
Pressure loss	mWs	2,6	2,8	3,9
Min. outlet temperature	°C	-4	-4	-4
Max. outlet temperature	°C	20	20	20
Heating water at 5 K temperature difference				
Content	Liter	2,5	2,5	3
Volume flow (temperature difference 5 K)	Liter/h	1,0 - 2,0	1,0 - 2,9	1,8 - 3,9
Pressure loss	mWs	1	1,6	2,1
Max. outlet temperature	°C	65	65	65
Hydraulic block		BC-HYD14	BC-HYD14	BC-HYD16
Residual head heating	mWs	5,2	2,7	4,1
Residual head energy source	mWs	3,6	3,1	0,8
Electric values				
Nominal voltage			3/N/PE 400 V/50 Hz	
Max. nominal voltage	A	13	15	21
Starting current	A	14	19	21
Fuse protection - slow	A	3 x 16	3 x 16	3 x 20
Nominal control circuit			1/N/PE 230 V/50 Hz	
Protection control circuit	A	13	13	13
Protection class		1	1	1
Refrigerant cycle				
Working fluid		R-410A	R-410A	R-410A
Fill amount	kg	4,3	4,8	5,0
Fill amount for reversible (optional)	kg	4,6	5,1	5,3
Compressor	Type	Scroll	Scroll	Scroll
Compressor speed	1/min	1200 - 5400	1200 - 5400	1200 - 5400
Oil amount	Liter	1,3	1,7	2,3
Dimensions				
Total length	mm	670	670	670
Total width	mm	600	600	600
Total height	mm	1.700	1.700	1.700
Total weight	kg	215	218	221
Permitted operating pressure	bar	10	10	10
Connections				
Heating water outlet and inlet	AG	5/4"	5/4"	5/4"
Brine outlet and inlet	AG	5/4"	5/4"	5/4"



Acoustic Technical Data acc. to EN 12102

Type Basic Comfort Modulating

**A-Assessed acoustic capacity - hum level
in heating mode at B0(±3 K)/W55 (±1 K)**

Nominal heat output

dB(A)

08S10W

12S16W

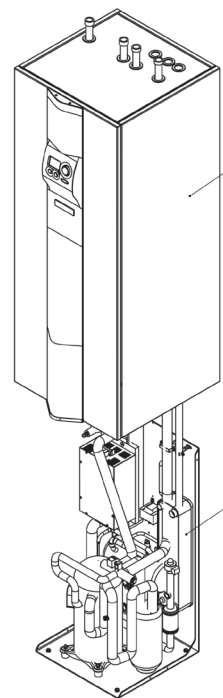
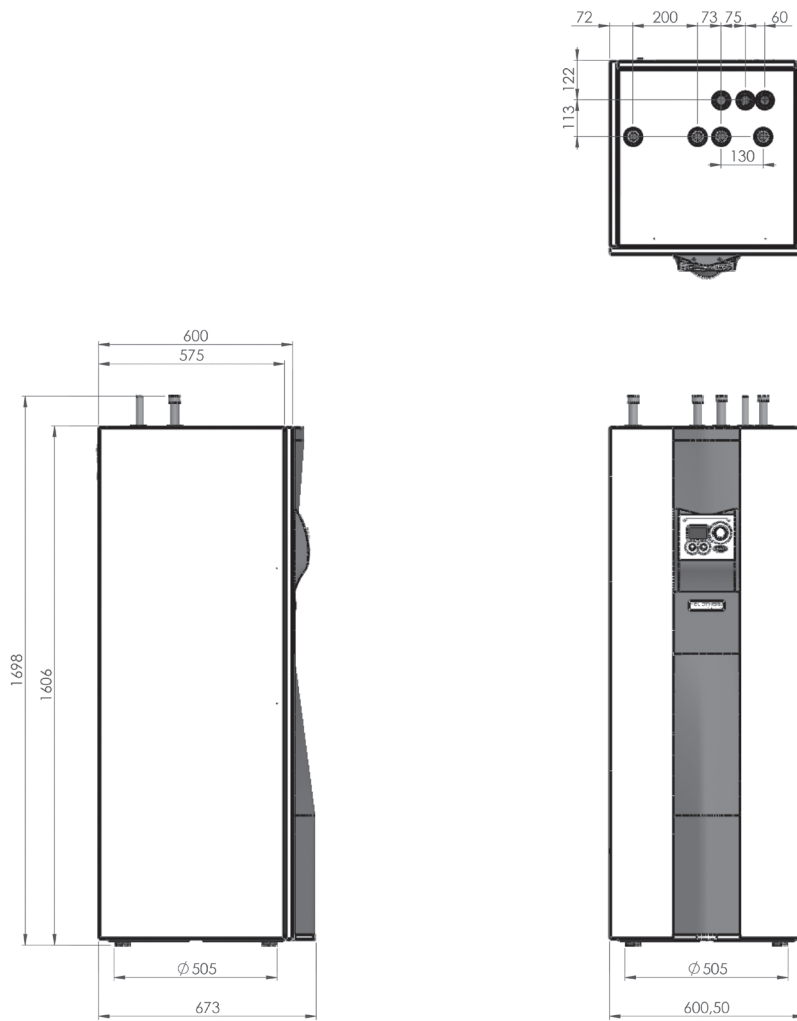
20S15W

42

45

47





Performance Data HP08S10W-M-BC

acc. to EN14825 (calculated values; errors reserved)

Seasonal room heating - Energy efficiency class A++

Full Load and Seasonal Performance Factor in heating mode

Climate zone	Outlet temperature level	P _{designh} [kW]	Q _{HE} [kWh]	SCOP	η _s [%]
average (Strasbourg)	low (35°C)	8	2146	5,22	206
	average (45°C)	8	2593	4,32	170
	high (55°C)	8	3088	3,63	142
warmer (Athens)	low (35°C)	8	2163	5,18	204
	average (45°C)	8	2426	4,62	182
	high (55°C)	8	2859	3,92	154
colder (Helsinki)	low (35°C)	8	3240	5,19	204
	average (45°C)	8	3861	4,35	171
	high (55°C)	8	4618	3,64	143

Full load in cooling mode for ceiling cooling applications
SPF in cooling mode for ceiling cooling applications

P_{designc} = 8 kW
SEER = 7,12

Full load in cooling mode for convector fans
SPF in cooling mode for convector fans

P_{designc} = 8 kW
SEER = 6,50



Performance Data HP08S10W-M-BC (Continued)

Partial loads and COPs for the reference heating period, „average“ (Strasbourg)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P_{dh} [kW]	COP _d
low (35°C)	B0/W24	15	1,24	5,49
	B0/W27	35	2,81	5,47
	B0/W30	54	4,35	5,14
	B0/W34	88	7,08	4,96
	B0/W35	100	8,48	4,93
average (45°C)	B0/W28	15	1,18	5,01
	B0/W33	35	2,79	4,43
	B0/W37	54	4,40	4,30
	B0/W43	88	7,15	3,99
	B0/W45	100	8,33	3,85
high (55°C)	B0/W30	15	1,24	4,37
	B0/W36	35	2,84	3,84
	B0/W42	54	4,39	3,67
	B0/W52	88	7,17	2,98
	B0/W55	100	8,34	2,86

Partial loads and COPs for the reference heating period, „warmer“ (Athens)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P_{dh} [kW]	COP _d
low (35°C)	B0/W26	29	2,30	5,33
	B0/W31	64	5,34	5,10
	B0/W35	100	8,48	4,96
average (45°C)	B0/W31	29	2,42	4,95
	B0/W39	64	5,34	4,41
	B0/W45	100	8,33	3,88
high (55°C)	B0/W34	29	2,32	4,45
	B0/W46	64	5,27	3,57
	B0/W55	100	8,34	2,86



Performance Data HP08S10W-M-BC (Continued)

Partial loads and COPs for the reference heating period, „colder“ (Helsinki)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P_{dh} [kW]	COP _d
low (35°C)	B0/W24	11	1,09	4,99
	B0/W25	24	1,94	5,48
	B0/W27	37	2,98	5,29
	B0/W30	61	5,33	5,09
	B0/W35	100	8,48	4,96
average (45°C)	B0/W26	11	1,13	4,84
	B0/W30	24	1,90	4,78
	B0/W33	37	2,95	4,37
	B0/W38	61	5,34	4,25
	B0/W45	100	8,33	3,85
high (55°C)	B0/W28	11	1,18	4,59
	B0/W32	24	1,95	4,23
	B0/W37	37	2,99	3,80
	B0/W44	61	5,29	3,38
	B0/W55	100	8,34	2,86

Partial loads and COPs in cooling mode for ceiling cooling applications ^(a)

Operating point	Partial load ratio [%]	Cooling capacity P_{dc} [kW]	EER _d
B10/W18	21	5,30	7,12
B10/W18	47	5,51	7,39
B10/W18	74	6,10	7,78
B10/W18	100	8,09	7,87

Partial loads and COPs in cooling mode for cooling mode for convector fans ^{(a)(b)}

Operating point	Partial load ratio [%]	Cooling capacity P_{dc} [kW]	EER _d
B10/W11,5	21	5,11	6,64
B10/W10	47	5,29	6,93
B10/W8,5	74	6,23	6,79
B10/W7	100	8,09	6,37

^(a) Operational use only with a hydraulic accumulation at a condensing temperature of 20 (B10/W7) to 30 °C (B10/W18)!

^(b) Cooling Temperatures below 15 °C only after consultation with Heliotherm.



Performance Data HP12S16W-M-BC

acc. to EN14825 (calculated values; errors reserved)

Seasonal room heating - Energy efficiency class A++

Full Load and Seasonal Performance Factor in heating mode

Climate zone	Outlet temperature level	P_{designh} [kW]	Q_{HE} [kWh]	SCOP	η_s [%]
average (Strasbourg)	low (35°C)	12	3159	5,32	210
	average (45°C)	12	3822	4,40	173
	high (55°C)	12	4499	3,73	146
warmer (Athens)	low (35°C)	12	3192	5,26	208
	average (45°C)	12	3696	4,55	179
	high (55°C)	12	4536	3,70	145
colder (Helsinki)	low (35°C)	12	4670	5,40	213
	average (45°C)	12	5940	4,24	167
	high (55°C)	12	6540	3,85	151

Full load in cooling mode for ceiling cooling applications
SPF in cooling mode for ceiling cooling applications

$P_{\text{designc}} = 12 \text{ kW}$
SEER = 6,75

Full load in cooling mode for convector fans
SPF in cooling mode for convector fans

$P_{\text{designc}} = 12 \text{ kW}$
SEER = 6,15



Performance Data HP12S16W-M-BC (Continued)

Partial loads and COPs for the reference heating period, „average“ (Strasbourg)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P _{dh} [kW]	COP _d
low (35°C)	B0/W24	15	6,96	5,66
	B0/W27	35	7,20	5,64
	B0/W30	54	6,56	5,21
	B0/W34	88	10,66	5,04
	B0/W35	100	12,07	5,14
average (45°C)	B0/W28	15	7,05	4,89
	B0/W33	35	4,28	4,55
	B0/W37	54	6,53	4,41
	B0/W43	88	10,70	3,98
	B0/W45	100	12,05	3,82
high (55°C)	B0/W30	15	7,08	4,12
	B0/W36	35	4,24	4,09
	B0/W42	54	6,58	3,73
	B0/W52	88	10,61	3,12
	B0/W55	100	12,05	2,91

Partial loads and COPs for the reference heating period, „warmer“ (Athens)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P _{dh} [kW]	COP _d
low (35°C)	B0/W26	29	6,98	5,36
	B0/W31	64	7,71	5,21
	B0/W35	100	12,07	5,14
average (45°C)	B0/W31	29	7,07	4,74
	B0/W39	64	7,75	4,51
	B0/W45	100	12,05	3,82
high (55°C)	B0/W34	29	3,49	4,16
	B0/W46	64	7,73	3,36
	B0/W55	100	12,05	2,91



Performance Data HP12S16W-M-BC (Continued)

Partial loads and COPs for the reference heating period, „colder“ (Helsinki)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P _{dh} [kW]	COP _d
low (35°C)	B0/W24	11	6,98	5,20
	B0/W25	24	6,97	5,71
	B0/W27	37	4,58	5,51
	B0/W30	61	7,25	5,29
	B0/W35	100	12,07	5,14
average (45°C)	B0/W26	11	7,04	4,46
	B0/W30	24	7,07	4,54
	B0/W33	37	4,49	4,29
	B0/W38	61	7,34	4,16
	B0/W45	100	12,05	3,82
high (55°C)	B0/W28	11	7,06	4,69
	B0/W32	24	2,90	4,23
	B0/W37	37	4,49	4,07
	B0/W44	61	7,36	3,61
	B0/W55	100	12,05	2,91

Partial loads and COPs in cooling mode for ceiling cooling applications ^(a)

Operating point	Partial load ratio [%]	Cooling capacity P _{dc} [kW]	EER _d
B10/W18	21	2,73	6,37
B10/W18	47	5,69	6,93
B10/W18	74	9,08	7,46
B10/W18	100	12,20	7,45

Partial loads and COPs in cooling mode for cooling mode for convector fans ^{(a)(b)}

Operating point	Partial load ratio [%]	Cooling capacity P _{dc} [kW]	EER _d
B10/W11,5	21	2,68	5,82
B10/W10	47	5,72	6,29
B10/W8,5	74	8,94	6,77
B10/W7	100	11,98	6,78

^(a) Operational use only with a hydraulic accumulation at a condensing temperature of 20 (B10/W7) to 30 °C (B10/W18)!

^(b) Cooling Temperatures below 15 °C only after consultation with Heliotherm.



Performance Data HP20S25W-M-BC

acc. to EN14825 (calculated values; errors reserved)

Seasonal room heating - Energy efficiency class A++

Full Load and Seasonal Performance Factor in heating mode

Climate zone	Outlet temperature level	P _{designh} [kW]	Q _{HE} [kWh]	SCOP	η _s [%]
average (Strasbourg)	low (35°C)	20	5053	5,56	219
	average (45°C)	20	6055	4,62	182
	high (55°C)	20	7069	3,96	155
warmer (Athens)	low (35°C)	20	5108	5,48	216
	average (45°C)	20	5894	4,75	187
	high (55°C)	20	6888	4,07	160
colder (Helsinki)	low (35°C)	20	7475	5,62	222
	average (45°C)	20	8913	4,71	185
	high (55°C)	20	10322	4,07	160

Full load in cooling mode for ceiling cooling applications
SPF in cooling mode for ceiling cooling applications

P_{designc} = 20 kW
SEER = 6,81

Full load in cooling mode for convector fans
SPF in cooling mode for convector fans

P_{designc} = 20 kW
SEER = 6,22



Performance Data HP20S25W-M-BC (Continued)

Partial loads and COPs for the reference heating period, „average“ (Strasbourg)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P_{dh} [kW]	COP _d
low (35°C)	B0/W24	15	5,59	5,91
	B0/W27	35	7,56	5,77
	B0/W30	54	11,43	5,46
	B0/W34	88	17,74	5,22
	B0/W35	100	20,11	4,94
average (45°C)	B0/W28	15	5,44	5,25
	B0/W33	35	7,43	4,74
	B0/W37	54	11,30	4,59
	B0/W43	88	17,82	4,24
	B0/W45	100	20,19	4,06
high (55°C)	B0/W30	15	5,34	4,54
	B0/W36	35	7,41	4,29
	B0/W42	54	11,37	4,00
	B0/W52	88	17,60	3,19
	B0/W55	100	20,17	3,06

Partial loads and COPs for the reference heating period, „warmer“ (Athens)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P_{dh} [kW]	COP _d
low (35°C)	B0/W26	29	5,52	5,54
	B0/W31	64	13,20	5,46
	B0/W35	100	20,11	4,94
average (45°C)	B0/W31	29	5,31	5,00
	B0/W39	64	13,25	4,59
	B0/W45	100	20,19	4,06
high (55°C)	B0/W34	29	5,39	4,59
	B0/W46	64	13,29	3,72
	B0/W55	100	20,17	3,06



Performance Data HP20S25W-M-BC (Continued)

Partial loads and COPs for the reference heating period, „colder“ (Helsinki)

Temperature level	Operating point	Partial load ratio [%]	Heating capacity P _{dh} [kW]	COP _d
low (35°C)	B0/W24	11	5,57	5,39
	B0/W25	24	5,55	5,94
	B0/W27	37	7,57	5,73
	B0/W30	61	12,97	5,51
	B0/W35	100	20,11	5,26
average (45°C)	B0/W26	11	5,50	5,10
	B0/W30	24	5,31	5,13
	B0/W33	37	7,54	4,77
	B0/W38	61	12,87	4,61
	B0/W45	100	20,19	4,06
high (55°C)	B0/W28	11	5,44	5,03
	B0/W32	24	5,26	4,59
	B0/W37	37	7,43	4,31
	B0/W44	61	12,68	3,79
	B0/W55	100	20,17	3,06

Partial loads and COPs in cooling mode for ceiling cooling applications ^(a)

Operating point	Partial load ratio [%]	Cooling capacity P _{dc} [kW]	EER _d
B10/W18	21	16,21	6,62
B10/W18	47	17,35	7,06
B10/W18	74	17,91	7,26
B10/W18	100	20,35	7,50

Partial loads and COPs in cooling mode for cooling mode for convector fans ^{(a)(b)}

Operating point	Partial load ratio [%]	Cooling capacity P _{dc} [kW]	EER _d
B10/W11,5	21	15,65	6,17
B10/W10	47	16,66	6,62
B10/W8,5	74	18,31	6,34
B10/W7	100	20,35	6,07

^(a) Operational use only with a hydraulic accumulation at a condensing temperature of 20 (B10/W7) to 30 °C (B10/W18)!

^(b) Cooling Temperatures below 15 °C only after consultation with Heliotherm.

