

New H4300 model

New HEE control



The most **competitively priced**
technical solution for heating large spaces

Ensures buildings warm up ultra fast

Excellent diffusion via **patented**
JET+ double deflection technology

New High Energy Efficiency motor version



Heating



Cooling
and heating



ErP
READY



Use

In wall-mounted or ceiling-mounted versions, the HELIOTHERME is the simple, affordable heating/cooling solution for all your applications: for your premises in the service sector (sales outlets, halls, multi-purpose rooms etc.) or in industry (workshop, garage, storage unit, logistics platform, etc.).

The HELIOTHERME range meets APSAD and NFPA recommendations on air velocities along the edges of units.

All are less than 5 m/s at 0.5 m from the diffuser and thus do not interfere with sprinkler systems.

The air heater may be combined with destratifiers (TPL)

to promote mixing of the air within the building. (Anti-stratification solution)

HELIOTHERME ATEX version: voluntary type examination certificate LCIE 13 ATEX 1015 X gas and/or dust environment.

HELIOTHERME version 4631S: specially designed for "logistics platforms". Only available as hot water with 400 V/3 PH/50 Hz power supply.

CONTROL

A range of "Plug & Play" proportional air-source/water-source controllers with heat exchanger (or electric heater) are used to control the air flow of the fan motor assembly and the heating capacity required for the room, according to the occupancy periods (built-in timer).

LP water + 1-PH FMA application: 1-PH Eco+ BOX can control up to 3 x 1-PH H4000.

LP water + 3-PH FMA application: 3-PH Eco+ BOX can control up to 9 x 3-PH H4000.

Elec. + 3-PH FMA application: ELEC. Eco+ BOX can control up to 3 x ELEC. H4000.

LP water + 1-PH HEE FMA application: 1-PH HEE BOX can control 3 x 1-PH HEE H4000 + 3 x 1-PH HEE TPL or 6 x 1-PH HEE H4000 or 6 x 1-PH HEE TPL 4000.

OPTIONS AND ACCESSORIES

- Wall bracket, ceiling bracket, IPN additional kit
- Filter box
- 2-channel mixing box with built-in filter
- Specific diffuser (on door, high-level etc.)
- Antifreeze damper

- Room thermostat for THREE-PHASE or SINGLE-PHASE installation
- LS/HS switch for 3-PH fan motor assembly
- 5 speed autotransformer for Single-Phase AC FMAs
- Proximity switch, circuit breaker

HELIOTHERME 4000

TPL DETERMINATION AND SELECTION EXAMPLE

S = Supply (released at the top of the building)

TR = Temperature under roof

TW = Temperature setpoint in the work area

$$\text{Calculated flow rate for destratifiers} = \frac{S}{0.3 \times (TR - TW)}$$

Selection example:

Supply under building roof = S = 45,000 kcal (52,200 Watts)

Temperature under roof = TR = 30°C

Temperature setpoint in the work area = TW = 16°C

$$\text{Calculated flow rate for destratifiers} = \frac{45\,000}{0.3 \times (30-16)} = 10714 \text{ m}^3/\text{h}$$

So: 2 x TPL 4500 at HS or 1 x TPL 4630 at HS.

RANGE

Heating/cooling medium	LP water	HP superheated water - Oil	HP steam	Electrical
Standard drive	THREE-PHASE 2 speeds – SINGLE-PHASE 1 variable speed IP44/54 depending on the model			
Reinforced variant	CORROBLOC version – IP 55/65 – 700-hour salt spray test			
Coil (tubing/row)	Copper/Alu	Steel/Alu	Cupronickel/Alu	Stainless steel/Alu
Reinforced versions	316L stainless steel tubes/Heresite coating			
Casing	Precoated off-white (RAL 7035) galvanised steel Condensate pan + built-in nautical coupling for cooling			
Reinforced versions	304L Stainless steel/Double-sided coating			
ATEX versions	LCIE 13 ATEX 1015 X – Zone 1 or 2 – IIB or IIC – T4 or T6			



Standard/HEE



Reinforced version
(high resistance to corrosion)

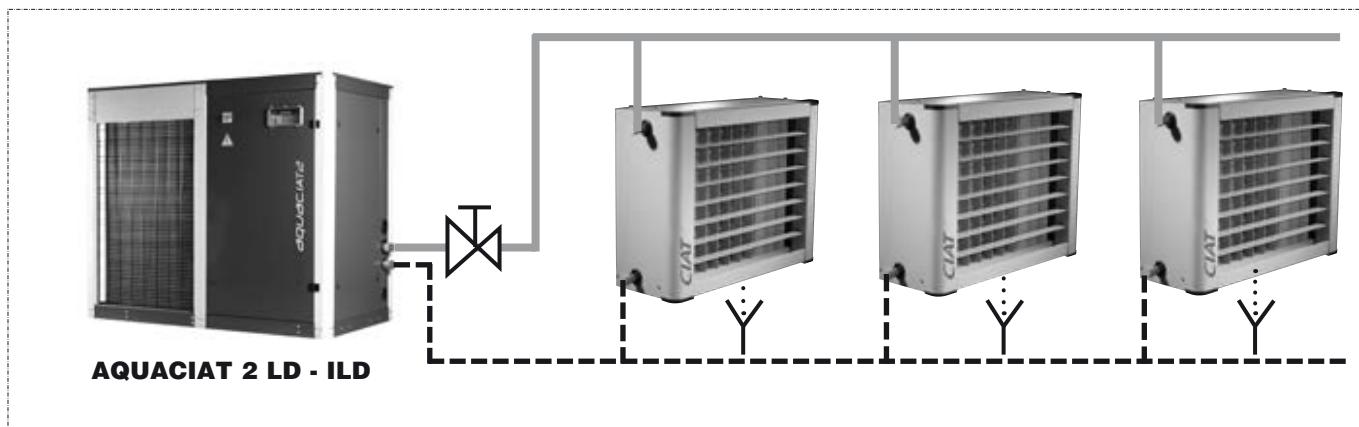


ATEX version

Heating/cooling medium	LP water with HEE FMA
HEE drive	1-phase variable speed with 0-10 V signal IP 54
Coil (tubing/row)	Copper/Alu
Casing	Precoated off-white (RAL 7035) galvanised steel Condensate pan + built-in nautical coupling for cooling
Reinforced versions	304L Stainless steel/Double-sided coating

OPERATING PRINCIPLE

HELIOTHERME units are installed at the end of a centralised heating or cooling system (boilers, air-source or water-source heat pump, reversible unit).



DESCRIPTION

High-efficiency fan motor assembly

Silent FMA featuring an aluminium epoxy polyester-coated airfoil propeller to ensure the best compromise between air flow efficiency and acoustic comfort.

The ROTOREX design (windings inserted in the fan hub) keeps the motor cool to ensure that it operates at optimum efficiency.



Three versions are available :

- **THREE-PHASE** 2 speed (230/400V - 3Ph - 50Hz) ([accessory LS/HS switch](#))
- **SINGLE PHASE** 1 variable speed (230V - 1Ph - 50Hz) ([accessory 5-speed autotransformer](#))
- **CORROBLOC** version guaranteed to withstand corrosive environments.



IP65/700-hour salt spray test



HEE FMA

Fan motor assembly equipped with a powerful HEE EC (electronically commutated) motor. These EC motors (single-phase 230V - 1Ph - 50/60V drive) will be progressively controlled by the 0-10 V signal, to ensure acoustic comfort and air flow efficiency and to optimise consumption of electricity. A shunt can be used to operate the air heater at maximum speed.

Casing

- Elegant galvanised steel casing, pre-coated with RAL 7035 (light grey) paint (stainless steel version available on request).
- Condensate drain pan built-in for cooling applications, featuring an antibacterial design (perforated bottom) and quick-release fitting (diameter 1'1/4).
- Intake section optimised for improved air flow performance and acoustic comfort level.
- Advantages:
 - Its classic design means that it can easily blend into the architecture of the installation site.
 - No need to add an unsightly condensate drain pan.
 - Condensate pipes quick and extremely simple to connect, without any need for a clamp, (1'1/4 diam. quick-release fitting).

Diffuser

Double deflection diffuser made from rigid aluminium sections, based on the BERNOULLI fluid flow principle and on NACA0012 airfoils, creating a high induction rate on the primary air, in order to increase the air throws, limit the stratification phenomenon and thereby reduce energy consumption.

■ Basic version (only for the H 4630 S):

- Single-deflection diffuser with directional louvre
- Light-grey galvanised steel louvre

■ JET+ version (fitted as standard):

- Double deflection diffuser
- JET+ aluminium louvre with NACA0012 airfoil design
- Each louvre can be adjusted independently
- Advantages:
 - Air flows adjustable in 4 directions for optimum coverage of the area to be handled, while limiting draughts.
 - Laminar air flow for better acoustic comfort (zero turbulence at the diffuser outlet).
 - Increased air speed, thanks to the resulting aerodynamics (depression along lower surface of blade) due to the curve of the airfoil, thereby increasing the air throws and the induction rate.
 - Limited stratification phenomenon.
 - Reduced building warm-up times:
 - Recorded energy savings of 15 to 20%.

Heat exchanger

HIGH EFFICIENCY heat exchanger coil with tapered intake baffles, to help pressurise the finned block, available in four versions:

- **LP hot or cold water version** – Available with 1, 2 or 3 rows:
 - Copper tube Ø 9.52 mm
 - Embossed aluminium fins – Thickness 10/100 mm
 - Fin spacing 2.1 mm
 - Advantage: Excellent thermal yield (dry transfer coefficient > 50 W/m².K)
- **HP superheated water - oil version** – Available with 1 row:
 - Heavy-gauge steel tubing (Ø 16 mm) (Stainless steel available on request)
 - Embossed aluminium fins – Thickness 28.5/100 mm
 - Fin spacing 2.5 mm
 - Compatible for use with thermal oils
 - Advantage: robust finned aluminium coil block suitable for use in industrial environments (dirty air) and may be cleaned using a high-pressure water jet.
- **HP steam version** – Available with 1 row:
 - Heavy-gauge cupronickel tubing (Ø 16 mm)
 - Embossed aluminium fins – Thickness 28.5/100 mm
 - Fin spacing 2.5 mm
 - Advantage: excellent corrosion resistance thanks to chemicals pumped through steam network piping.
- **Electrical version** – Four capacities available:
 - Stainless steel single-tube heating element
 - Embossed aluminium fins – Thickness 10/100 mm
 - Fin spacing 2.5 mm
 - Double overheating thermostat with automatic and manual reset for compliance with fire safety standards (CH37)
 - Advantage: Heating elements inserted directly into the finned block ensure excellent heat transfer.

HELIOTHERME 4000

COMPARATIVE STUDY OF AC AND HEE FMAs

Study comparing two air heaters in heating mode, (1) an Air heater fitted with an AC FMA (without JET+ diffuser) and (2) a HELIOTHERME fitted with an HEE FMA (with JET+ diffuser).

Space volume:	1240 m ² under 5 metres of ceiling, i.e. 6200 m³
Type of insulation:	light (such as in a workshop or small distribution centre)
Temperature to be maintained in occupied space:	17°C
Average outdoor temperature used:	5°C
Heating period:	November to March
Heating time range:	7.00 to 19.00
Necessary heating capacity:	80W/m² i.e. 99.2 kW (at 5 °C)

AIR HEATER WITH AC FMA	HELIOTHERME WITH HEE FMA
COST OF INSTALLATION	
Mixing rate: 6 (or 37,200 m ³ /h to be provided)	Mixing rate: 4 (or 24,800 m ³ /h to be provided) <i>(Lower rate achieved by adjusting the air flow via the 0-10 V signal of the FMA connected to the HEE BOX)</i>
Unit selected: - 6 x H4503 3-PH AC Total flow rate supplied = 37,200 m ³ /h Total heating capacity delivered = 194 kWh	Unit selected: - 6 x H4453 1-PH HEE Total flow rate supplied = 24,800 m ³ /h Total heating capacity delivered = 146 kWh
Total price of air heaters	Total price of air heaters
  €8 586	  €9 192
ECO+ 1-PH BOX control + installation costs	'Plug & Play' HEE BOX control
€2 781	€2 480
OPERATING COST	
Basis for analysis: Energy price assessed according to the Pegase database for energy statistics Total number of heating days = 100 (20 per month from November to March)	
Running time needed each day to maintain 17°C in the comfort zone 960 minutes a day ➡ or 1600 hours a year	Running time needed each day to maintain 17°C in the comfort zone 760 minutes a day ➡ or 1268 hours a year: 423 hours at maximum power and 845 hours at half 1/2 flow power (or a saving of 332 hours of operation)
	
158,720 kW of boiler power used	125,786 kW of boiler power used
€9 047	€7 170
Annual heating expenses	Annual heating expenses (savings of 25%)
Annual electricity expenses for AC FMA	Annual electricity expenses for HEE FMA
€605	€226
Total expenses	Total expenses (savings of 10%)
 €21,019	 €19,068



HELIOTHERME PERFORMANCE - 230V/1Ph/50Hz MOTOR - AC AND HEE

Model	No. rows	Air supply speed	Flow rate	Air speed	Range (metres)		Heating capacity (kW)		Sound pressure dB(A)
		SINGLE PHASE	m ³ /h	m/s	Wall-mounted	Suspended	accelerator pump	HPS	
H4300	2	Direct	1 420	3.16 m/s	15	3	35,87	40,57	45
		Direct	2 600	3.92 m/s	22	6	32,07	36,92	48
H4350	1	R3*	2 360	3.56 m/s	18	4			46
		Direct	2 400	3.62 m/s	20	5			49
H4400	2	R3*	2 030	3.06 m/s	15	2,5			47
		Direct	2 075	3.13 m/s	15	2,5			50
H4450	3	R3*	1 780	2.68 m/s	14	2			48
		Direct	4 200	4.57 m/s	26	8,5	48,85	56,71	54
H4500	1	R3*	3 914	4.26 m/s	24	7,5	44,55	52,75	52
		Direct	3 800	4.13 m/s	23	7			55
H4630	2	R3*	3 550	3.86 m/s	19	4,5			53
		Direct	3 450	3.75 m/s	23	7			56
H4630	3	R3*	3 220	3.50 m/s	20	5,5			54
		Direct	5 200	4.20 m/s	27	8,5			56
H4450	1	R3*	4 100	3.31 m/s	24	6			49
		Direct	4 700	3.80 m/s	21	4,5			58
H4500	2	R3*	3 700	2.99 m/s	18	4			51
		Direct	4 550	3.68 m/s	18	3,5			59
H4500	3	R3*	3 650	2.95 m/s	17	3			52
		Direct	7 100	4.22 m/s	28	9	100,55	100	56
H4630	1	R3*	5 700	3.39 m/s	26	7	83,79	86,82	50
		Direct	6 600	3.92 m/s	26	7			57
H4630	2	R3*	5 380	3.20 m/s	24	6			51
		Direct	6 200	3.69 m/s	24	6,5			58
H4630	3	R3*	5 055	3.01 m/s	23	5,5			52
		Direct	10 450	4.19 m/s	28	10,5	155,40	149,80	54
H4630	1	R3*	8 900	3.57 m/s	22	8	141	139	47
		Direct	9 610	3.86 m/s	24	8,5			55
H4630	2	R3*	7 630	3.06 m/s	20	6			46
		Direct	8 280	3.32 m/s	21	6,5			56
		R3*	6 270	2.52 m/s	19	5			44

HEATING - COOLING - 230V/1Ph/50Hz Motor - AC and HEE

Model	No. rows	Air supply speed	Air flow rate	Air speed	Range (metres)		Sound pressure	
			m ³ /h	m/s	Wall-mounted		dB(A)	
H4350 AC	3	Direct	1640	2.47 m/s		23		30
H4400 AC			2160	2.35 m/s		26		48
H4450 AC			3025	2.44 m/s		24		45
H4500 AC			4060	2.41 m/s		23		54
H4630 AC								
H4300 HEE	2	Direct	1200	2.67 m/s		12		43
H4350 HEE			1640	2.47 m/s		23		30
H4400 HEE	3	Direct	2160	2.35 m/s		26		48
H4450 HEE			3025	2.44 m/s		24		45
H4500 HEE			4060	2.41 m/s		23		54
H4630 HEE			5960	2.39 m/s		21		53

ELECTRIC HEATING - 230V/1Ph/50Hz Motor - AC only

Model	Air supply speed	Flow rate	Air speed	Range (metres)	Wall-mounted	Electrical power (kW)			Sound pressure dB(A)
		m ³ /h	m/s	Wall-mounted		Total	No. of stages	Power per stage	
4350	Direct	2600	3.92 m/s	22	9.6 kW	2		2.4 kW	48
	R3*	2360	3.56 m/s	18				7.2 kW	46
4400	Direct	4200	4.57 m/s	27	18.9 kW	2		5.4 kW	54
	R3*	3914	4.26 m/s	24				13.5 kW	52
4500	Direct	7100	4.22 m/s	28	28.8 kW	2		10.8 kW	56
	R3*	5700	3.39 m/s	26				18 kW	50
	Direct	7100	3.92 m/s	28	43.2 kW	3		14.4 kW x 3	56
	R3*	5700	3.20 m/s	26					50

Specifications determined using the following information:

- **Superheated water (HP SW):** Temperature 180 - 120°C/RT=15°C – RH 50%
- **Steam (HPS):** Temperature 175°C - 8 bar/RT=15°C – RH 50%
- **Air stream:**
 - * with JET+ diffuser for a residual speed of 0.1 m/s
 - * defined with Δt OT/RT of 15°C (heating) and 7°C (cooling)
 - * with LP water or electric heating
- **Air speed:** JET+ diffuser outlet
- **Sound pressure:** measured 5 metres from unit, directivity 2, attenuation of 22 dB
- ⇒ **Direct:** speed obtained when wired directly to single-phase motor.
- ⇒ **R3*** (version with AC motor): supply air speed obtained with autotransformer set to "3". Other operation points (5 in total) can be supplied on request by your agent using our technical selection software.



→ Axial air heaters

HELIOTHERME 4000

HELIOTHERME PERFORMANCE SUPERHEATED WATER AND STEAM 400V/3Ph/50Hz MOTOR

HEATING - 400V/3Ph/50Hz motor										
Model	No. rows	Air supply speed		Flow rate	Air speed	Range (metres)		Heating capacity (kW)		Sound pressure dB(A)
		3-PH				m ³ /h	m/s	Wall-mounted	Suspended	
H4350	1	HS	△	2 600	3.92 m/s	22	6	35,87	40,57	48
		LS	*	2 210	3.33 m/s	17	3,5	32,07	36,92	44
	2	HS	△	2 480	3.74 m/s	20	5			49
		LS	*	2 040	3.07 m/s	15	2,5			45
	3	HS	△	2 165	3.26 m/s	18	4,5			50
		LS	*	1 775	2.67 m/s	14	2			46
H4400	1	HS	△	4 000	4.35 m/s	25	8	48,85	56,71	55
		LS	*	3 480	3.79 m/s	21	5	44,55	52,75	51
	2	HS	△	3 800	4.13 m/s	23	7			55
		LS	*	3 310	3.60 m/s	18	4			51
	3	HS	△	3 400	3.70 m/s	22	6,5			56
		LS	*	2 960	3.22 m/s	17	3,5			52
H4450	1	HS	△	5 400	4.36 m/s	28	9			56
		LS	*	3 910	3.16 m/s	23	5,5			49
	2	HS	△	5 300	4.28 m/s	25	8			57
		LS	*	4 140	3.34 m/s	21	4,5			50
	3	HS	△	5 000	4.04 m/s	24	7,5			59
		LS	*	3 910	3.16 m/s	20	4			52
H4500	1	HS	△	7 500	4.46 m/s	30	10	100,55	100	56
		LS	*	5 740	3.41 m/s	26	7	83,79	86,82	50
	2	HS	△	6 900	4.10 m/s	28	9			57
		LS	*	5 400	3.21 m/s	24	6			51
	3	HS	△	6 500	3.86 m/s	26	8,5			58
		LS	*	5 020	2.98 m/s	23	5,5			52
H4630	1	HS	△	11 140	4.47 m/s	29	11,5	155,40	149,80	55
		LS	*	9 635	3.87 m/s	24	8,5	141	139	48
	2	HS	△	10 510	4.22 m/s	26	10,5			56
		LS	*	8 820	3.54 m/s	22	7,5			49
	3	HS	△	9 175	3.68 m/s	25	10			57
		LS	*	7 545	3.03 m/s	21	7			49

ELECTRIC HEATING - 400V/3Ph/50Hz motor

Model	Air supply speed	Flow rate	Air speed	Range (metres)	Electrical power (kW)			Sound pressure dB(A)	
					m3/h	m/s	Wall-mounted		
H4350	HS	△	2600	3.92 m/s	22		9.6 kW	2.4 kW	48
	LS	*	2210	3.33 m/s	17			7.2 kW	44
H4400	HS	△	4000	4.35 m/s	25		18.9 kW	5.4 kW	55
	LS	*	3480	3.79 m/s	21			13.5 kW	51
H4500	HS	△	7500	4.46 m/s	30		28.8 kW	10.8 kW	56
	LS	*	5740	3.41 m/s	26			18 kW	50
	HS	△	7500	4.10 m/s	30		43.2 kW	14.4 kW x 3	56
	LS	*	5740	3.21 m/s	26			50	

Specifications determined using the following information:

- Superheated water (HP SW): Temperature 180 - 120°C/RT=15°C – RH 50%
- Steam (HPS): Temperature 175°C - 8 bar/RT=15°C – RH 50%
- Air stream:
 - * with JET+ diffuser for a residual speed of 0.1 m/s
 - * defined with Δt OT/RT of 15°C
 - * with LP water or electric heating
- Air speed: JET+ diffuser outlet
- Sound pressure: measured 5 metres from unit, directivity 2, attenuation of 22 dB

TPL AIR FLOW AND ACOUSTIC PERFORMANCE

TPL		4400		4450		4500		4630	
230/400V-3Ph-50Hz Motor (3-phase 400V coupling)		HS	LS	HS	LS	HS	LS	HS	LS
		△	*	△	*	△	*	△	*
230V-1Ph-50Hz Motor AC and HEE		Direct	-	Direct	-	Direct	-	Direct	-
Flow rate	m ³ /h	4400	3000	6000	4100	8000	5500	11500	8800
Air stream	m	15	8	14	9	16	10	19	14
Sound pressure	dB(A)	51	43	54	46	57	47	55	50

Specifications determined using the following information:

Air stream: * with JET+ diffuser for a residual speed of 0.1 m/s

Sound pressure: * measured 8 metres from unit, directivity 2, attenuation of 26 dB



→ Axial air heaters

HELIOTHERME 4000

HELIOTHERME PERFORMANCE - HOT WATER - 230V/1Ph/50Hz MOTOR - AC AND HEE

Inlet/Outlet water temperature, °C		H4302*				H4351				H4352				H4353			
		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)	
		Direct		Direct		R3*		Direct		R3*		Direct		R3*		Direct	
		1420		2600		2360		2400		2030		2075		1780			
80-60	Air inlet dry-bulb temperature (°C)	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18
	Hc	17,1	15,8	14,8	13,9	11,9	11	10,3	9,62	11,5	10,6	9,93	9,28	21,3	19,6	18,4	17,1
60-40	PD	42,7	36,8	32,7	28,9	7,91	6,95	6,11	5,4	7,41	6,42	5,73	5,07	7,94	6,82	6,04	5,31
	Hc	10,7	9,4	8,46	7,52	7,12	6,19	5,49	4,77	6,87	5,97	5,29	4,6	12,8	11,1	9,8	8,51
45-40	PD	18,4	14,6	12	9,65	3,37	2,63	2,12	1,65	3,17	2,46	1,99	1,55	3,24	2,48	2	1,54
	Hc					7,08	6,17	5,49	4,81	6,83	5,95	5,29	4,65	12,6	11	9,74	8,53
50-42	PD					40,4	31,7	25,7	20,3	37,9	29,5	24	19,1	41,4	31,9	25,6	20
	Hc					7,52	6,62	5,94	5,27	7,26	6,38	5,74	5,09	13,4	11,8	10,6	9,36
80-60	PD					19,3	15,3	12,6	10,1	18,1	14,4	11,9	9,52	19,3	15,2	12,4	9,87
						10,6	8,48	6,88	5,23	16,6	13	10,6	9,29	15,5	12,1	9,81	7,81

Inlet/Outlet water temperature, °C		H4401				H4402				H4403							
		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)					
		Direct		R3*		Direct		R3*		Direct		R3*					
		4200		3914		3800		3550		3450		3220					
80-60	Air inlet dry-bulb temperature (°C)	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18
	Hc	17,2	15,9	14,9	13,9	16,8	15,5	14,5	13,5	31,9	29,4	27,5	25,7	30,9	28,5	26,7	24,9
60-40	PD	7,24	6,25	5,55	4,9	6,91	5,96	5,3	4,68	13,9	11,9	10,5	9,24	13	11,2	9,9	8,7
	Hc	10,2	8,81	7,78	6,72	9,93	8,58	7,58	6,55	19,3	16,9	15	13,1	18,7	16,4	14,5	12,7
45-40	PD	2,99	2,3	1,85	1,42	2,86	2,2	1,76	1,36	5,66	4,4	3,53	2,76	5,33	4,15	3,32	2,6
	Hc	10,3	8,97	7,98	6,99	10	8,74	7,77	6,81	18,8	16,3	14,5	12,7	18,2	15,8	14,1	12,3
50-42	PD	38,1	29,5	23,8	18,7	36,3	28,1	22,6	17,9	72,4	55,6	44,6	34,8	68	52,3	42	32,8
	Hc	10,9	9,6	8,61	7,62	10,6	9,35	8,39	7,43	20	17,6	15,8	14	19,4	17,1	15,3	13,6
80-60	PD	17,9	14	11,5	9,22	17,1	13,4	11	8,79	33,7	26,4	21,6	17,2	31,7	24,8	20,3	16,2
						16,2	13,4	11,9	8,79	33,7	26,4	21,6	17,2	31,7	24,8	20,3	16,2

Inlet/Outlet water temperature, °C		H4451				H4452				H4453							
		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)					
		Direct		R3*		Direct		R3*		Direct		R3*					
		5200		4100		4700		3700		4550		3650					
80-60	Air inlet dry-bulb temperature (°C)	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18
	Hc	23,4	21,6	20,3	19	21,3	19,7	18,5	17,3	41,7	38,5	36,1	33,7	37	34,1	32	29,9
60-40	PD	14,6	12,7	11,3	10	12,4	10,7	9,55	8,46	13,3	11,5	10,2	8,96	10,7	9,16	8,14	7,18
	Hc	14,3	12,5	11,2	9,92	13,1	11,5	10,2	9,01	25,6	22,4	20	17,6	22,77	19,9	17,7	15,5
45-40	PD	6,43	5,12	4,2	3,37	5,5	4,34	3,57	2,83	5,73	4,47	3,69	2,92	4,61	3,64	2,95	2,34
	Hc	13,7	12	10,7	9,38	12,5	10,9	9,71	8,53	24,4	21,2	18,9	16,6	21,5	18,7	16,7	14,6
50-42	PD	72,4	56,8	45,9	36,5	61,3	48	38,9	30,8	67,1	51,7	41,9	33	53,5	41,3	33,2	26,2
	Hc	14,7	12,9	11,6	10,3	13,4	11,8	10,6	9,42	26,1	23	20,6	18,3	23,1	20,3	18,2	16,2
80-60	PD	34,9	27,8	23	18,6	29,5	23,6	19,5	15,8	31,9	25,2	20,6	16,6	25,5	20,1	16,5	13,2
						16,6	13,4	11,9	8,79	33,9	25,2	20,6	16,6	25,5	20,1	16,5	13,2



→ Axial air heaters

HELIOTHERME 4000

Inlet/Outlet water temperature, °C		H4501							H4502							H4503									
		Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)						
		Direct		R3*		Direct		R3*		Direct		R3*		Direct		R3*		Direct		R3*					
		7100		5700		6600		5380		6200		5055													
80-60	Hc	31	28,6	26,9	25,1	28,5	26,3	24,7	23,1	56,2	51,8	48,5	45,2	50,9	46,9	43,9	41	74,3	68,4	64,1	59,8	65,9	60,8	56,9	53,1
	PD	7,9	6,84	6,1	5,4	6,8	5,89	5,25	4,65	8,27	7,1	6,28	5,52	6,87	5,9	5,22	4,62	12,8	11	9,74	8,56	10,3	8,81	7,8	6,87
60-40	Hc	18,6	16,2	14,3	12,5	17,1	14,8	13,1	11,4	33,7	29,2	25,8	22,4	30,5	26,4	23,3	20,3	45,8	40,1	35,7	31,3	40,7	35,5	31,7	27,8
	PD	3,39	2,65	2,13	1,66	2,92	2,27	1,83	1,42	3,37	2,59	2,07	1,59	2,79	2,14	1,7	1,34	5,46	4,27	3,44	2,71	4,39	3,42	2,77	2,17
45-40	Hc	18,4	16,1	14,3	12,5	16,9	14,7	13,1	11,5	33,2	28,9	25,7	22,5	30	26,1	23,2	20,3	43,1	37,5	33,3	29,2	38,2	33,2	29,5	25,9
	PD	40,3	31,4	25,5	20,2	34,5	26,9	21,8	17,3	43	33,1	26,6	20,9	35,6	27,3	22,1	17,2	64,8	49,9	39,9	31,4	51,6	39,9	32	25
50-42	Hc	19,6	17,2	15,5	13,7	18	15,8	14,2	12,6	35,4	31,1	27,9	24,7	32	28,1	25,2	22,3	46,3	40,7	36,5	32,4	41,1	36,1	32,4	28,8
	PD	19,2	15,2	12,6	10,1	16,6	13,1	10,9	8,69	20,1	15,8	12,9	10,3	16,7	13,1	10,7	8,5	30,7	24,1	19,7	15,7	24,5	19,3	15,7	12,6

Inlet/Outlet water temperature, °C		H4631							H4632							H4633									
		Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)						
		Direct		R3*		Direct		R3*		Direct		R3*		Direct		R3*		Direct		R3*					
		10450		8900		9610		7630		8280		6270													
80-60	Hc	45,4	41,9	39,3	36,7	42,7	39,4	37	34,5	84,2	77,7	72,8	68	75,1	69,2	64,9	60,6	106	97,5	91,4	85,4	89,1	82,2	77	72
	PD	6,89	5,94	5,28	4,65	6,16	5,32	4,72	4,16	14,1	12,1	10,7	9,41	11,3	9,74	8,63	7,59	21,5	18,3	16,2	14,3	15,5	13,3	11,8	10,4
60-40	Hc	26,9	23,3	20,6	17,8	25,3	21,9	19,3	16,7	51,4	44,9	40,1	35	45,8	40,1	35,5	31,1	66,1	58,2	52,3	46,3	56	49,2	44	38,9
	PD	2,79	2,14	1,71	1,32	2,5	1,91	1,53	1,19	5,8	4,52	3,67	2,84	4,69	3,66	2,92	2,29	9,2	7,26	5,94	4,76	6,74	5,31	4,31	3,43
45-40	Hc	27,2	23,7	21	18,5	25,5	22,2	19,8	17,3	49,5	43,1	38,3	33,6	44	38,3	34,1	29,9	/	53,1	47,3	41,5	51,1	44,5	39,7	34,9
	PD	36,3	28,1	22,7	17,9	32,4	25,1	20,3	15,9	73,6	56,5	45,3	35,3	58,8	45,2	36,3	28,5	/	82,5	66,5	52,2	76,9	59,2	47,7	37,6
50-42	Hc	28,8	25,3	22,7	20,1	27,1	23,8	21,4	18,9	52,9	46,6	41,8	37,1	47,1	41,4	37,2	33	65,8	57,9	52,1	46,3	55,3	48,7	43,8	38,9
	PD	17	13,4	11	8,75	15,1	12	9,77	7,81	34,2	27	22	17,6	27,6	21,6	17,7	14,1	50,9	40,1	32,8	26,3	36,8	28,9	23,8	19

Hc: heating capacity (kW)

PD: Water pressure drop (kPa)

* Only available in HEE version


**HELIOTHERME PERFORMANCE - CHILLED WATER AND REVERSIBLE -
230V/1Ph/50Hz MOTOR - AC AND HE**

Inlet/Outlet water temperature, °C		H4302*				H4353				H4403				H4453				H4503				H4633*			
		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)			
		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct			
		1200		1640		2160		3025		4060		5960													
		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)					
		8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18
80-60	Hc	17,1	15,8	14,8	13,9	21,4	19,7	18,5	17,2	28,9	26,6	24,9	23,2	40,6	37,4	35,1	32,8	54,9	50,6	47,4	44,3	82	75,7	71	66,4
	PD	42,7	36,8	32,7	28,9	5,32	4,5	4	3,5	7,2	6,2	5,5	4,8	7,8	6,7	6	5,2	7,3	6,3	5,6	4,9	13,2	11,4	10,1	8,9
60-40	Hc	10,7	9,4	8,46	7,52	12,8	11,1	9,8	8,6	17,3	15	13,3	11,7	25	21,9	19,5	17,1	33,9	29,6	26,4	23,2	51,6	45,4	40,6	35,9
	PD	18,4	14,6	12	9,65	2,1	1,6	1,3	1	3	2,3	1,9	1,5	3,3	2,6	2,1	1,7	3,1	2,4	2	1,6	5,8	4,6	3,7	3
45-40	Hc					12,5	10,9	9,7	8,5	16,8	14,6	13	11,4	23,5	20,5	18,2	16	31,7	27,6	24,6	21,6	46	41,1	36,6	32,2
	PD					27,6	21,3	16,9	13,1	36,6	28,4	22,7	17,8	39,4	30,6	24,5	19,2	36,5	28,3	22,8	17,9	44,9	51,1	41,2	32,4

Inlet/Outlet water temperature, °C		H4302*				H4353				H4403				H4453				H4503				H4633*			
		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%		Relative humidity 50%			
		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)		Air flow rate (m³/h)			
		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct		Direct			
		1200		1640		2160		3025		4060		5960													
		23	25	27	23	25	27	23	25	27	23	25	27	23	25	27	23	25	27	23	25	27	23	25	27
7-12	Tcc	2,95	3,65	4,59	3,38	4,28	5,6	4,6	5,91	7,64	7,13	8,87	11,6	9,66	12,1	15,7	15,2	19,3	24,4						
	Scc	2,95	3,5	3,99	3,38	4,28	5,17	4,6	5,85	6,98	7,13	8,67	10,2	9,66	11,8	13,7	15,2	18,2	20,8						
8-13	PD	24,4	36,1	55	2,34	3,69	6,22	3,46	5,55	9,08	4,44	6,75	11,3	4,22	6,55	10,7	8,46	13,3	20,6						
	8-13	2,69	3,28	4,06	2,96	3,9	4,93	4,04	5,3	6,71	6,39	8,08	10,2	8,66	10,9	13,9	13,8	17,1	21,7						
	Scc	2,69	3,24	3,75	2,96	3,9	4,78	4,04	5,3	6,46	6,39	8,02	9,47	8,66	10,9	12,9	13,8	16,8	19,6						
10-15	PD	20,4	29,5	43,8	1,82	3,1	4,86	2,68	4,53	7,06	3,6	5,65	8,76	3,43	5,37	8,52	6,98	10,6	16,5						
	Tcc	2,15	2,71	3,31	2,16	3,1	3,99	2,92	4,22	5,43	4,84	6,54	8,19	6,55	8,86	11,1	10,8	14	17,3						
	Scc	2,15	2,71	3,26	2,16	3,1	3,99	2,92	4,22	5,43	4,84	6,54	8,12	6,55	8,86	11	10,8	14	16,9						
		13,4	20,6	29,7	0,993	1,98	3,22	1,43	2,92	4,74	2,11	3,75	5,79	2,01	3,57	5,5	4,38	7,11	10,7						

Hc: Heating capacity (kW)

TCC: total cooling capacity (kW)

SCC: sensible cooling capacity (kW)

PD: Water pressure drop (kPa)

*: Only available in HEE version



HELIOTHERME 4000

HELIOTHERME PERFORMANCE - HOT WATER - 400V/3Ph/50Hz MOTOR

Inlet/Outlet water temperature, °C		H4351							H4352							H4353									
		Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)						
		HS		LS		HS		LS		HS		LS		HS		LS		HS		LS					
		2600		2210		2480		2040		2165		1775		2600		2040		1775		2165		1775			
80-60	Hc	11,9	11	10,3	9,62	11,2	10,3	9,69	9,05	21,7	20	18,7	17,4	19,7	18,1	17	15,9	26,6	24,5	22,9	21,4	23,7	21,8	20,4	19
	PD	7,92	6,86	6,12	5,41	7,09	6,14	5,48	4,84	8,19	7,04	6,23	5,48	6,86	5,89	5,22	4,61	8,04	6,86	6,07	5,3	6,42	5,49	4,86	4,24
60-40	Hc	7,13	6,2	5,5	4,78	6,71	5,83	5,17	4,49	13	11,3	9,98	8,67	11,8	10,2	9,04	7,87	15,9	13,8	12,2	10,7	14,1	12,3	10,8	9,47
	PD	3,38	2,63	2,13	1,66	3,03	2,36	1,9	1,48	3,35	2,57	2,06	1,59	2,79	2,15	1,71	1,34	3,15	2,4	1,91	1,5	2,51	1,93	1,55	1,21
45-40	Hc	7,08	6,18	5,5	4,82	6,66	5,8	5,16	4,53	12,8	11,2	9,92	8,69	11,6	10,1	9	7,88	15,6	13,6	12,1	10,6	13,8	12	10,7	9,36
	PD	40,5	31,7	25,7	20,3	36,3	28,3	22,9	18,3	42,8	33	26,8	20,7	35,6	27,5	22,2	17,3	42	32,4	25,7	20	33,5	25,6	20,4	15,8
50-42	Hc	7,53	6,63	5,95	5,28	7,08	6,23	5,59	4,96	13,7	12	10,8	9,53	12,4	10,9	9,77	8,66	16,7	14,7	13,1	11,6	14,8	13	11,7	10,3
	PD	19,3	15,3	12,7	10,2	17,3	13,7	11,3	9,11	20	15,7	12,8	10,2	16,7	13,1	10,7	8,55	19,5	15,2	12,3	9,79	15,5	12,1	9,82	7,82

Inlet/Outlet water temperature, °C		H4401							H4402							H4403									
		Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)						
		HS		LS		HS		LS		HS		LS		HS		LS		HS		LS					
		4000		3480				3800		3310		3400		2960		3400		2960		3400					
80-60	Hc	16,9	15,6	14,6	13,6	16,1	14,8	13,9	13	31,9	29,4	27,5	25,7	29,9	27,5	25,8	24,1	39,8	36,6	34,3	32	36,8	33,8	31,7	29,5
	PD	7,01	6,04	5,37	4,74	6,38	5,51	4,9	4,33	13,9	11,9	10,5	9,24	12,2	10,5	9,31	8,18	13,1	11,2	9,92	8,76	11,3	9,69	8,63	7,55
60-40	Hc	10	8,65	7,64	6,6	9,51	8,21	7,26	6,29	19,3	16,9	15	13,1	18,1	15,8	14,1	12,3	24	20,8	18,4	16	22,1	19,2	17	14,8
	PD	2,9	2,23	1,79	1,37	2,65	2,03	1,63	1,27	5,66	4,4	3,53	2,76	4,99	3,92	3,13	2,45	5,39	4,16	3,31	2,59	4,66	3,58	2,88	2,26
45-40	Hc	10,1	8,81	7,83	6,86	9,61	8,37	7,44	6,52	18,8	16,3	14,5	12,7	17,6	15,3	13,6	11,9	23,3	20,3	18	15,8	21,5	18,7	16,6	14,6
	PD	36,8	28,5	23	18,1	33,5	26	21	16,4	72,4	55,6	44,6	34,8	63,6	49,2	39,4	30,8	66,9	51,6	41,6	32,4	57,6	44,5	35,7	28
50-42	Hc	10,7	9,42	8,45	7,48	10,2	8,96	8,03	7,11	20	17,6	15,8	14	18,8	16,5	14,8	13,1	25	21,9	19,6	17,4	23,1	20,2	18,1	16,1
	PD	17,3	13,6	11,1	8,91	15,7	12,4	10,1	8,13	33,7	26,4	21,6	17,2	29,8	23,3	19,1	15,2	31,6	24,7	20,2	16,1	27,4	21,3	7,4	13,9

Inlet/Outlet water temperature, °C		H4451							H4452							H4453									
		Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)				Air flow rate (m³/h)			Air flow rate (m³/h)						
		HS		LS		HS		LS		HS		LS		HS		LS		HS		LS					
		5400		3910				5300		4140		5000		3910		3910		3910		3910					
80-60	Hc	23,7	21,9	20,6	19,2	21	19,4	18,2	17	44,2	40,8	38,2	35,7	39,2	36,2	33,9	31,7	57,4	52,9	49,6	46,2	49,8	45,9	43	40,1
	PD	14,9	13	11,6	10,2	12	10,4	9,24	8,19	14,8	12,7	11,3	9,96	11,9	10,2	9,08	8,01	15	12,8	11,3	9,97	11,5	9,84	8,71	7,65
60-40	Hc	14,5	12,7	11,4	10,1	12,8	11,3	10,1	8,84	27	23,7	21,2	18,7	24,1	21,1	18,8	16,5	35,3	30,9	27,5	24,1	30,7	26,8	23,9	20,9
	PD	6,58	5,24	4,31	3,45	5,32	4,23	3,46	2,74	6,31	4,99	4,08	3,27	5,13	4,04	3,31	2,61	6,27	4,89	3,95	3,1	4,84	3,76	3,03	2,37
45-40	Hc	13,9	12,1	10,8	9,5	12,3	10,7	9,54	8,38	25,8	22,5	20	17,5	22,9	19,9	17,7	15,5	33,4	29	25,8	22,6	28,9	25,1	22,3	19,6
	PD	74,2	58,2	47,3	37,4	59,3	46,4	37,7	29,9	74,7	57,9	46,6	36,6	59,8	46,2	37,2	29,2	76,5	58,7	47	36,7	58,1	44,7	35,9	28
50-42	Hc	14,9	13,1	11,8	10,5	13,1	11,6	10,4	9,25	27,7	24,3	21,9	19,4	24,5	21,6	19,4	17,2	35,8	31,5	28,3	25,1	31,1	27,3	24,5	21,7
	PD	35,7	28,5	23,6	19,1	28,6	22,8	18,8	15,3	35,4	28	23,1	18,5	28,4	22,5	18,4	14,9	35,9	28,1	23	18,3	27,4	21,6	17,6	14



→ Axial air heaters

HELIOTHERME 4000

Inlet/Outlet water temperature, °C		H4501								H4502								H4503											
		Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)							
		HS		LS		HS		LS		HS		LS		HS		LS		HS		LS		HS		LS					
		7500		5740		6900		5400		6500		5202		8		12		15		18		8		12		15		18	
		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)					
		8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18
80-60	Hc	31,7	29,2	27,4	25,6	28,6	26,4	24,8	23,2	57,4	52,9	49,5	46,2	51	47	44	41,1	76,4	70,4	65,9	61,6	65,7	60,6	56,7	53				
	PD	8,2	7,1	6,33	5,6	6,84	5,93	5,29	4,68	8,6	7,38	6,54	5,74	6,9	5,93	5,25	4,65	13,5	11,6	10,3	9,03	10,2	8,76	7,16	6,83				
60-40	Hc	19	16,5	14,6	12,7	17,2	14,9	13,2	11,5	34,4	29,8	26,4	22,9	30,6	26,5	23,4	20,3	47,1	41,2	36,8	32,3	40,6	35,5	31,6	27,7				
	PD	3,51	2,75	2,21	1,73	2,94	2,28	1,84	1,43	3,5	2,69	2,15	1,65	2,83	2,16	1,72	1,33	5,75	4,49	3,67	2,86	4,37	3,4	2,76	2,16				
45-40	Hc	18,8	16,4	14,6	12,8	17	14,8	13,2	11,6	33,9	29,5	26,2	23	30,1	26,2	23,3	20,4	44,4	38,6	34,3	30,1	38,1	33,1	29,5	25,8				
	PD	41,9	32,6	26,4	20,9	34,8	27,1	22	17,5	44,8	34,5	27,7	21,7	35,8	27,5	22,2	17,3	68,5	52,7	42,3	33,1	51,3	39,7	31,8	24,9				
50-42	Hc	20	17,6	15,8	14	18,1	15,9	14,3	12,7	36,2	31,7	28,5	25,2	32,1	28,2	25,3	22,4	47,7	41,9	37,6	33,4	41	36	32,3	28,7				
	PD	19,9	15,8	13	10,5	16,7	13,2	10,9	8,77	21	16,4	13,5	10,7	16,8	13,1	10,7	8,57	32,4	25,4	20,8	16,6	24,4	19,2	15,7	12,5				

Inlet/Outlet water temperature, °C		H4631 or 4631S								H4632								H4633											
		Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)				Air flow rate (m³/h)							
		HS		LS		HS		LS		HS		LS		HS		LS		HS		LS		HS		LS					
		11140		9635		10510		8820		9175		7545		8		12		15		18		8		12		15		18	
		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)		Air inlet dry-bulb temperature (°C)					
		8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18	8	12	15	18
80-60	Hc	46,5	42,9	40,2	37,5	44,1	40,7	38,1	35,6	87,9	81	75,9	70,9	80,8	74,5	69,8	65,2	112	103	97	90,6	100	92,2	86,5	80,8				
	PD	7,19	6,2	5,5	4,85	6,51	5,62	4,99	4,4	15,3	13,1	11,6	10,2	13	11,2	9,9	8,7	24	20,5	18,2	16	19,2	16,5	14,6	12,9				
60-40	Hc	27,6	23,9	21	18,2	26,1	22,6	19,9	17,2	53,5	46,8	41,8	36,5	49,3	43,1	38,3	33,5	70	61,7	55,4	49,1	62,7	55,1	49,5	43,7				
	PD	2,91	2,24	1,78	1,38	2,64	2,02	1,61	1,25	6,27	4,88	3,96	3,07	5,37	4,19	3,36	2,63	10,2	8,1	6,6	5,3	8,36	6,56	2,17	4,26				
45-40	Hc	27,8	24,2	21,5	18,9	26,3	22,9	20,4	17,9	51,7	45	40	35,1	47,4	41,3	36,8	32,2	/	56,4	50,2	44,1	57,6	50,1	44,6	39,2				
	PD	37,9	29,4	23,7	18,6	34,3	26,6	21,5	16,9	79,8	61,2	49,2	38,4	67,9	52,2	41,9	32,8	/	92,9	74,5	58,3	96,6	74,2	59,5	46,7				
50-42	Hc	15,7	25,9	23,3	20,6	16,4	24,6	22	19,5	23,1	48,6	43,6	38,7	24,5	44,6	40,1	35,6	29,9	61,5	55,3	49,1	31,6	54,7	49,2	43,8				
	PD	17,7	13,9	11,5	9,12	16	12,6	10,3	8,26	37	29,1	23,8	19	31,6	24,8	20,3	16,2	56,9	44,8	36,8	29,4	45,6	36,1	29,5	23,8				

Hc: Heating capacity (kW)

PD: Water pressure drop (kPa)



HELIOTHERME 4000

ELECTRIC MOTOR SPECIFICATIONS

Use	Model	Motor	Rotation speed Rpm	Nom. current A	Max power input (W)	IP	Thermal cut-out	Class	Operating temp			
HEATING	H4350	THREE-PHASE 230/400V - 3Ph - 50Hz	HS - △ 1385	0,35	110	44	YES 6.3 A - 165 °C	F	-40°C / +60°C			
	LS - ★ 1175		0,15	70								
	HS - △ 1404		0,5	260								
	LS - ★ 1176		0,3	170		54						
	HS - △ 1385		1,13	550								
	LS - ★ 1040		0,64	380								
	HS - △ 1391		1,51	770								
	LS - ★ 1176		0,9	520								
	HS - △ 870		1,3	590								
HEATING	H4630		LS - ★ 750	0,63	250							
	H4350	1-PH 230V - 1Ph - 50Hz - AC	Direct 1330	0,7	150	44	YES 6.3 A - 165 °C	F	-40°C / +60°C			
	H/TPL4400		Direct 1400	1,3	300	54						
	H/TPL4450		Direct 1380	2,01	480							
	H/TPL4500		Direct 1403	2,78	630							
COOL- ING	H/TPL4630		Direct 913	2,6	580							
	H4350	1-PH 230V - 1Ph - 50Hz - AC	Direct 880	0,3	70	44	YES 6.3 A - 165 °C	F	40 °C/+60 °C			
	H4400		Direct 890	0,5	110	54						
	H4450		Direct 933	0,6	140							
	H4500		Direct 890	1	230							
	H4630											

HEE FMA

HEATING	H4300	1-PH 230V - 1Ph - 50/60Hz - HEE	1530	0,65	72	54	PTC	B	-25°C/+60°C
	H4350		1480	1,35	165	54	PTC	B	-25°C/+60°C
	H/TPL4400		1760	2,2	500	54	Thermal cut-out	B	-25°C/+60°C
	H/TPL4450		1500	2,2	500	54	Thermal cut-out	B	-25°C/+60°C
	H/TPL4500		1440	3,25	740	54	Thermal cut-out	B	-40°C/+60°C
	H/TPL4630		1020	3,2	730	54	Thermal cut-out	B	-40°C/+60°C
COOL- ING	H4300		1530	0,65	72	54	PTC	B	-25°C/+60°C
	H4350		1040	0,65	73	54	PTC	B	-25°C/+60°C
	H4400		1760	2,2	500	54	Thermal cut-out	B	-25°C/+60°C
	H4450		1500	2,2	500	54	Thermal cut-out	B	-25°C/+60°C
	H4500		970	1,1	250	54	Thermal cut-out	B	-25°C/+60°C
	H4630		770	1,1	250	54	Thermal cut-out	B	-25°C/+60°C

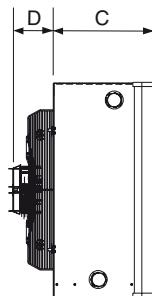
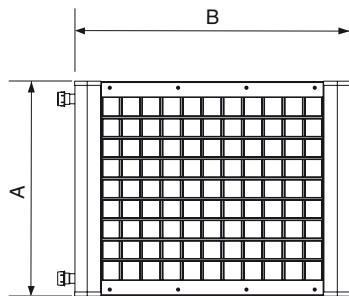
COIL SPECIFICATIONS

	4300	4350	4400	4450	4500	4630
LOW PRESSURE WATER COIL	Number of heating rows	2	1	2	3	1
	Number of cooling rows	2		3		
	Coil capacity (L)	0,8	0,68	1,18	1,66	0,96
	Connection diameter	1/2"		3/4"		1"
	Connection type				Threaded unions 243 GCU F/M	
	Maximum operating pressure				8 bar	
	Test pressure				24 bar	
	Max T°				110°C	
HP OIL/WATER COIL	Number of heating rows				1	
	Coil capacity (L)		1,19		1,69	-
	Connection diameter		33.7 mm		42.4 mm	-
	Connection type				Smooth steel tube for welding	
	Maximum operating pressure				16 bar	
	Test pressure				24 bar	
	Max T°				200°C	
HP STEAM COIL	Number of heating rows				1	
	Coil capacity (L)		0,97		1,22	-
	Connection diameter		26.9 mm		33.7 mm	-
	Connection type				Smooth steel tube or stainless steel tube for welding	
	Maximum operating pressure				8 or 16 bar	
	Test pressure				24 bar	
	Max T°				170°C/200°C	

Version in stainless steel or with Heresite coating available upon request. Contact our sales network.

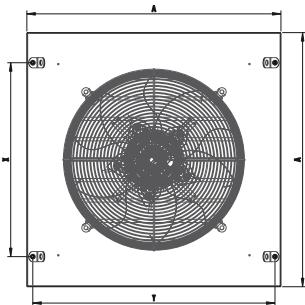
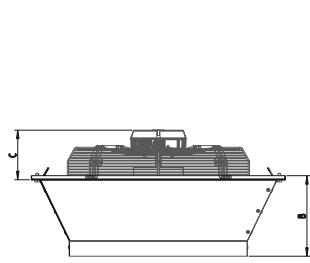
DIMENSIONS

HELIOTHERME



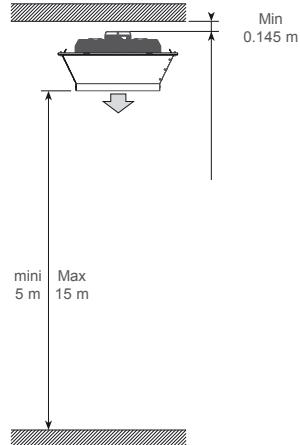
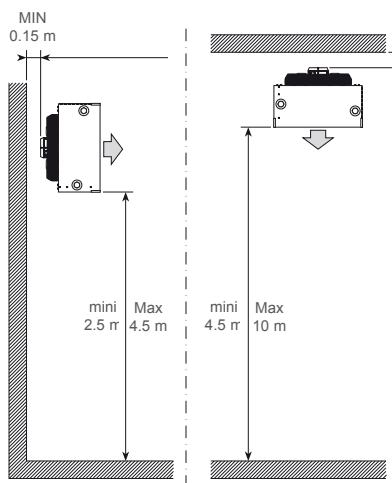
Size	A	B	C	D		Weight (kg)		
				STD	HEE	1 row	2 rows	3 rows
	mm							
H4300	395	600	286	-	115	-	18	-
H4350	460	646	286	101	126	21	24	26
H4400	557	700	286	142	143	30	32	34
H4450	620	813	286	142	143	40	42	44
H4500	716	918	336	142	188	50	53	56
H4630	876	1050	336	142	200	62	67	72
H4630S	872	1050	295	126	-	60	-	-

TPL DESTRATIFIER



TPL	A	B	C		X	Y	Weight (kg)
			STD	HEE			
TPL4400	586	183	143	143	370	552	17
TPL4450	666	212	143	143	470	632	22
TPL4500	747	225	143	188	570	712	25
TPL4630	907	273	143	200	705	872	33

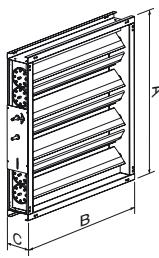
INSTALLATION



HELIOTHERME 4000

ASSEMBLY ACCESSORIES

A different assembly for each use.

RETURN AIR MODULE					
	Size	A	B	C	Codes
	4300	395			7417083
	4350	440			7185105
	4400	520			7185106
	4450	600			7185107
	4500	680			7185108
	4630	840			7185110
	Size	A	B	C	Codes
	4300	521	402	736	7415648
	4350	585	455	788	7185127
	4400	665	535	868	7185128
	4450	745	615	949	7185129
	4500	825	695	1029	7185131
	4630*	985	855	1189	7185132
DIFFUSION MODULE					
	Size	A	B	C	Codes
	4300	750	655	300	7417084
	4350	750	700	300	7185133
	4400	850	750	325	7185134
	4450	970	850	350	7185135
	4500	1100	970	375	7185136
	Size	A	B	C	Codes
	4300	—	—	—	—
	4350	—	—	—	—
	4400	178	555	522	7185138
	4450	136	637	618	7185139
	4500	132	740	714	7185140
	4630	282	872	814	7185141
ASSEMBLY SUPPORT ACCESSORIES					
	Size			Codes	Wall bracket
	All			7181226	
	300 to 450			7181228	
	500 to 630			7181230	
	Size			Codes	Suspension support for ceiling mounting
	All			7282116	
DUCT ACCESSORIES					
	Size	A	B	C	Codes
	4300	393			7417127
	4350	443			7043051
	4400	523			7043052
	4450	603			7043053
	4500	683			7043054
	4630	843			7043055

ELECTRICAL ACCESSORIES

ELECTRICAL & USER SAFETY

	Codes		Padlockable proximity switch Available in a 1 or 2-speed version, this accessory must be placed at least 2 metres from any rotating part, to comply with French standard IT 246, Art. 4-7-3, and EC requirements.			
	0596142					
	0596147					
	Use	Circuit breaker unit - FMA 1-PH heating	Circuit breaker unit - HEE FMA 1-PH heating	Circuit breaker unit - FMA 1-PH cooling	Circuit breaker unit - HEE FMA 1-PH cooling	Circuit breaker unit - 3-PH
	H4300		7252526		7252526	
	H4350	7252526	7252527	7252523	7252526	7252523
	H4400	7252527	7252528	7252525	7252528	7252525
	H4450	7252528	7252528	7252526	7252528	7252527
	H4500	7252529	7252529	7252526	7252527	72525227
	H4630	7252529	7252529		7252527	7252527
	TPL4400	7252527	7252528			7252525
	TPL4450	7252528	7252528			7252527
	TPL4500	7252529	7252529			7252527
	TPL4630	7252529	7252529			7252527

THERMOSTATS

	Codes		Manual/auto room thermostat – SINGLE-PHASE installation
	7486653		7486653: 3-speed HEE thermostat kit (for HEE SINGLE-PHASE FMA) - Heating and cooling with manual toggle switch - Inductive breaking capacity 3.53A
	7486654		7486654: 1-speed AC thermostat kit (for AC SINGLE-PHASE FMA) Heating and cooling with manual toggle switch - Inductive breaking capacity 3.53A
	Codes		IP54 industrial environment thermostat – THREE-PHASE installation
	7113335		7113335: 1 stage
	7113336		7113336: 2 stages

SUPPLY AIR SPEED SELECTION

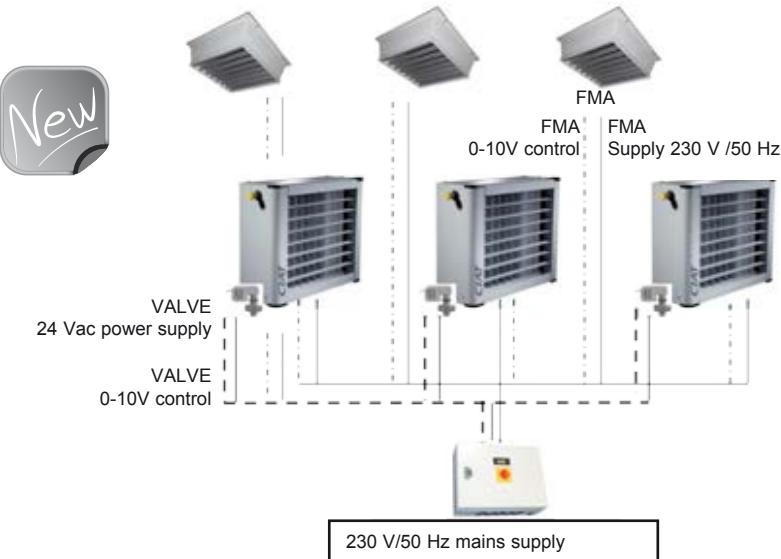
	Codes		LS/HS switch
	7169961		For 3-phase motor, selects two motor rotation speeds and stop.
	Codes		Autotransformer with selector switch (3.5 A)
	7166982		Adjusts the voltage on single-phase motors with one variable speed to achieve up to five supply air speeds.

HELIOTHERME 4000

HEE SINGLE-PHASE HELIOTHERME CONTROL

HEE 1-PH BOX range, controls 6 Heliotherme units or 6 TPL or 3 Heliotherme units + 3 TPL

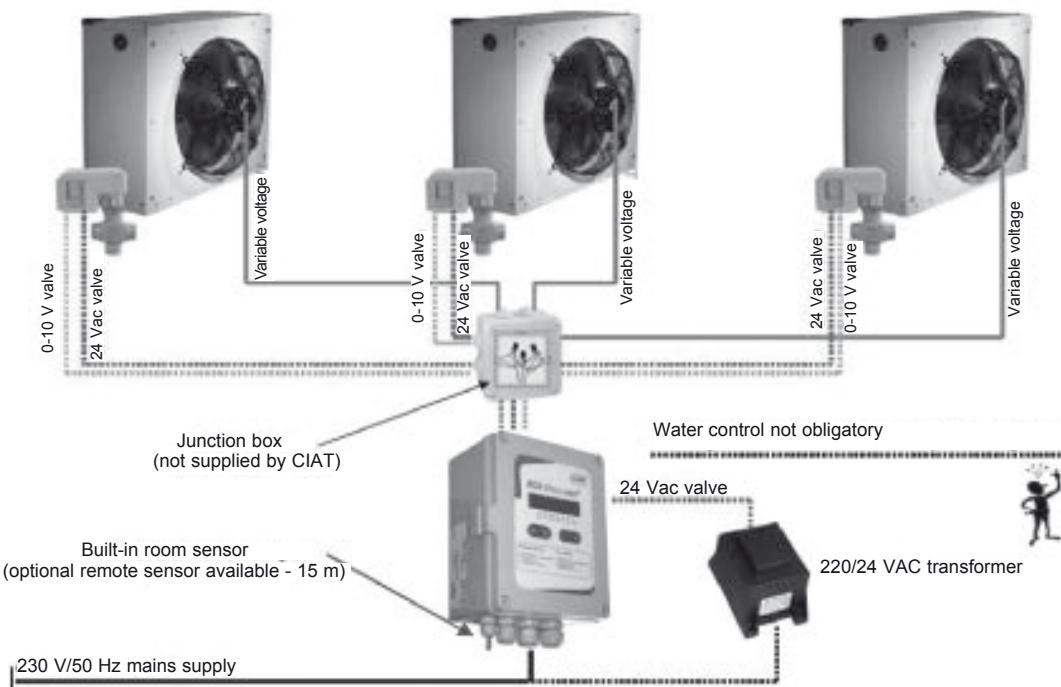
Figure A



SINGLE-PHASE HELIOTHERME CONTROL

Eco+ 1-PH BOX range

Figure B



HELIOTHERME 3-PH CONTROL (diagram in Eco+ 3-PH BOX user manual)

3-PH Eco+ BOX range

Figure C

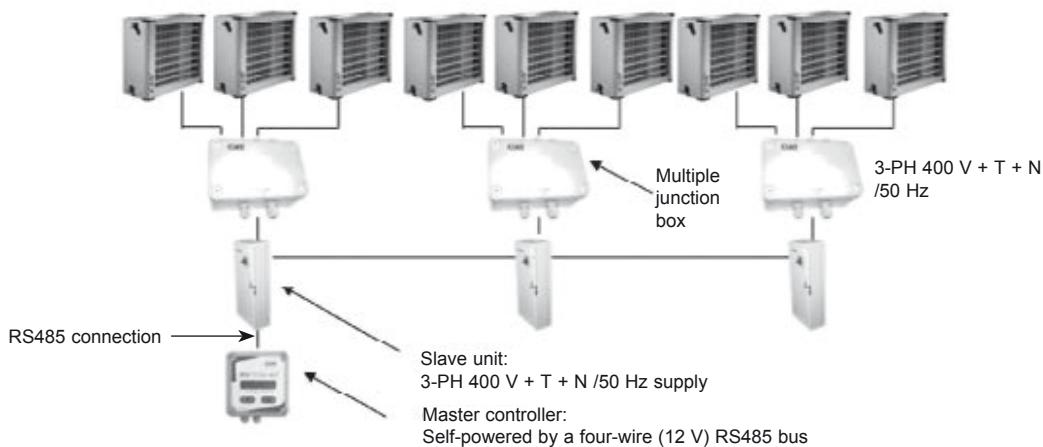


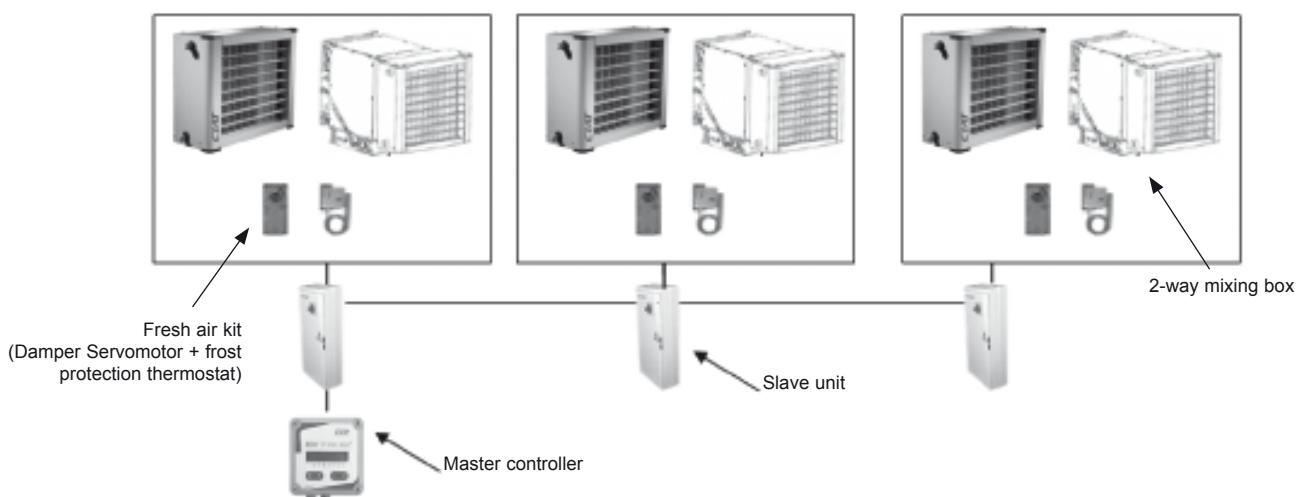
Figure D



HELIOTHERME 3-PH CONTROL (diagram in Eco+ 3-PH BOX user manual)

3-PH Eco+ BOX range with fresh air control

Figure E

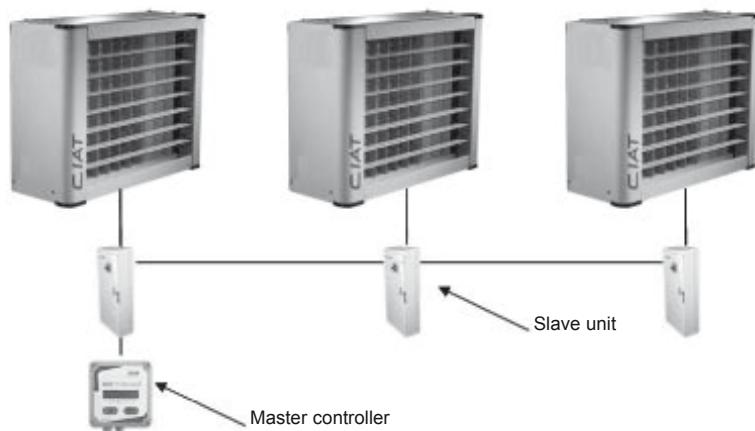


HELIOTHERME 4000

ALL-ELECTRIC HELIOTHERME CONTROL (diagram in Eco+ ELEC BOX user manual)

Eco+ ELEC BOX range

Figure F



TECHNICAL SPECIFICATIONS OF THE DIFFERENT CONTROLLERS

HELIOTHERME or TPL CONTROL AND ACCESSORIES					
CONTROL	HEE Mono Box	1-Ph ECO+ BOX unit	3-PH ECO + BOX with BMR	3-PH ECO + BOX with fresh air control	ECO + ELEC BOX
Figure	A	B	C and D	E	F
Function					
Number of heliotherms or TPL that can be controlled	1 to 6	1 to 3	1 to 9	1 to 3	1 to 3
Protection rating	54	55	55	55	55
Weekly timer (Comfort/ECO/frost protection)	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Supply Voltage/Phase/Frequency	230 V/1/50Hz	230 V/1/50Hz	400 V/3/50Hz+N	400 V/3/50Hz+N	400 V/3/50Hz+N
Electrical protection (circuit breakers, connectors, disconnectors)	INCLUDED	TO BE FITTED	INCLUDED	INCLUDED	INCLUDED
Air control	Proportional 0 - 10V	Proportional 110 - 230V	2-speed LS/HS	2-speed LS/HS	1 speed LS or HS
Water control	Proportional 0 - 10V	Proportional 0 - 10V	Proportional 0 - 10V	Proportional 0 - 10V	
Integrated temperature sensor	INCLUDED	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Remote on/off switch and fault summary	INCLUDED	NOT INCLUDED	NOT INCLUDED	NOT INCLUDED	NOT INCLUDED
MODBUS/LON and BACnet IP communication	OPTION	NO	NO	NO	NO
Fresh air control	YES	NO	NO	YES	NO
Accessories					
BOX CONTROL	7391284	7184939	7219774	7219774	7219774
Slave unit for Eco+ 3-PH BOX			7218912	7218912	
BMR Eco+ 3-PH BOX Multiple connection unit (controls max. 3 units)			7239492		
Eco+ ELEC BOX slave unit - 9.6 KW (for H4350 TE 3-PH)					7218907
Eco+ ELEC BOX slave unit - 18.9 KW (for H4400 TE 3-PH)					7218908
Eco+ ELEC BOX slave unit - 28.8 KW (for H4500 TE 3-PH)					7218910
Eco+ ELEC BOX slave unit - 43.2 KW (for H4500 TE 3-PH)					7218911
½" valve kit KV 1.6 (H4300)	B403210				
¾" valve kit - KV 2.5 (H4351-4352-4401-4451)		B400410			
¾" valve kit - KV 4 (H4353-4402-4403-4452-4501)		B400411			
1" ½ valve kit - KV 6.3 (H4453-4502-4503-4631)		B400412			
1" ½ valve kit - KV 10 (H4632-4633)		B400413			
220/24 Vac safety transformer (required for the electrical feed of the valve servomotor(s) (010V))	INCLUDED	7435107	INCLUDED	INCLUDED	
Change-over switch thermostat (for automatic Summer-Winter change-over)		7128892			
Padlockable proximity switch 6P for 3-PH Eco+ BOX			0596147	INCLUDED	INCLUDED
Padlockable proximity switch 3P for MONO or HEE Eco+ Box	0596142	0596142			
Remote sensor	7462538		7207381		
Fresh air kit (includes a damper servomotor and a frost protection thermostat)	B400414			B400414	

HELIOTHERME..... is also the solution for ATEX compliance

Ex II 2 G/D

II c 65°C - 105°C or 120 to 220°C

EEx d/de IIB or IIC T4 to T6 – IP 6X/5X T... °C

CIAT has put all its expertise and know-how into a special series of ATEX certified HELIOTHERME units.

This approval, issued by an independent external body, is your guarantee of complete compliance with the ATEX directives. The ATEX HELIOTHERME range is certified for your applications:

- In the presence of explosive gas or dust
- In Zone 1 or 2
- For IIB or IIC explosion groups
- With T4 to T6 gas auto-ignition temperatures
- Low pressure water, superheated water, steam, oil, compressed air etc.



CE **II 2 G/D**

What is ATEX?

ATEX or explosive atmosphere can be caused in atmospheric conditions by flammable gases, vapours or mists or by combustible dusts mixed with air. After ignition, combustion spreads through the whole of the unburnt mixture.

How is an ATEX zone defined?

ATEX zones are determined based on the probability and duration of the occurrence of an explosive atmosphere. This risk analysis enables zones, the explosion groups and maximum surface temperature classes to be defined. Such atmospheres are mainly found in paint workshops, metal processing workshops, waste recycling, wood processing, etc.

Who defines ATEX zones?

Any operator of a production facility where an explosive atmosphere may occur must define the relevant ATEX zones, explosion groups and temperature classes. By doing so, the operator will also be able to set up the necessary means of prevention (communication, documentation, recommendations, etc.).

"Directive 94/9/EC divides the equipment and protective systems which it covers into equipment groups and categories; this Directive (1999/92/EC) provides for a classification by the employer of the places where explosive atmospheres may occur in terms of zones and determines which equipment and protective systems groups and categories should be used in each zone."

ZONE		Category	The explosive agent is:
Gas (G)	Dust (D)		
0	20	0	Occurs continuously, often and over extended periods: NOT APPLICABLE TO ANY CIAT PRODUCTS
1	21	1	Occasionally present during normal use
2	22	2	Rarely or briefly present

GAS - EXPLOSION GROUP AND TEMPERATURE CLASS						
Temperature class	T1	T2	T3	T4	T5	T6
Max surface temp	450°C	300°C	200°C	135°C	100°C	85°C
Explosion group						
IIA	Acetone Ammonia Benzene Acetic acid Ethane Ethyl acetate Ethyl chloride Methanol Naphthalene Phenol Propane	i-Amyl acetate Butane Butyl alcohol	Petrol Diesel Hot oil Hexane	Acetaldehyde		
II B	Town gas	Ethylene	Hydrogen sulphide	Ethyl ether		
II C	Hydrogen	Acetylene				Carbon disulphide



HELIOTHERME 4000

CODES

Model		Water / LP Oil							
		Standard version					Stainless steel options (available at additional cost)		
		SINGLE-PHASE - HEATING	SINGLE-PHASE HEE HEATING	SINGLE-PHASE - COOLING	SINGLE-PHASE HEE COOLING	3-PH	Coil	Casing	
H4302	Code		7423791		7432008		B403209	B403203	B403204
H4351	Code	7184359	7406211			7184346	B400030	B400094	
H4352	Code	7184366	7406216			7184365	B400031	B400094	
H4353	Code	7184375	7406221	7184379	7406227	7184372	B400032	B400094	B400095
H4401	Code	7184387	7406212			7184384	B400039	B400097	
H4402	Code	7184391	7406217			7184390	B400040	B400097	
H4403	Code	7184395	7406222	7184439	7406228	7184393	B400041	B400097	B400098
H4451	Code	7184360	7406213			7184367	B400048	B400100	
H4452	Code	7184388	7406218			7184392	B400049	B400100	
H4453	Code	7184440	7406223	7184445	7406229	7184443	B400050	B400100	B400101
H4501	Code	7184446	7406214			7184448	B400057	B400103	
H4502	Code	7184493	7406219			7184496	B400058	B400103	
H4503	Code	7184500	7406224	7184449	7406230	7184501	B400059	B400103	B400104
H4631	Code	7184509	7406215			7184510	B400066	B400106	
H4632	Code	7184511	7406220			7184512	B400067	B400106	
H4633	Code	7184514	7406225		7406231	7184516	B400068	B400106	B400107

Model		Superheated water / Oil				Steam			
		Standard version		Stainless steel options (available at additional cost)		Standard version		Stainless steel options (available at additional cost)	
		SINGLE PHASE	3-PH	Coil	Casing	SINGLE PHASE	3-PH	Coil	Casing
H4351	Code	7192192	7192199	B400030	B400094	7192204	7192209	B400033	B400094
H4401	Code	7192196	7192200	B400039	B400097	7192205	7192210	B400042	B400097
H4501	Code	7192197	7192201	B400057	B400103	7192206	7192226	B400060	B400103
H4631	Code	7192198	7192202	B400066	B400106	7192208	7192227	B400069	B400106

Model				Electrical			
				Standard version			Stainless steel casing option
				SINGLE PHASE		3-PH	
H4350	9.6 kW		Code	7192213		7192220	B400096
H4400	18.9 kW		Code	7192214		7192222	B400099
H4500	28.8 kW		Code	7192217		7192223	B400105
	43.2 kW		Code	7192218		7192228	B400105

Size		Options available at additional cost (H4000 with AC FMA)					
		CORROBLOC motor option		3-PH 400 V 6P ATEX motor option			
		SINGLE PHASE	3-PH	IIB T4	IIC T4	IIB T5	IIC T6
H4350	Code	B400119	B400121	B400252	B400256	B400254	B400258
H4400	Code	B400122	B400124	B400260	B400264	B400262	B400266
H4450	Code	B400125	B400127	B400268	B400272	B400270	B400274
H4500	Code	B400128	B400130	B400276	B400280	B400278	B400282
H4630	Code	B400131	B400133	-	-	-	-



→ Axial air heaters

HELIOTHERME 4000

This document is non-contractual. As part of its policy of continual product improvement, CIAT reserves the right to make any technical modification it feels appropriate without prior notification.

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