



HELIOTHERME® 4000

Axial air heaters



The best **technical/economical** solution
for heating large areas

Ensures buildings warm up ultra fast

Excellent diffusion via **patented JET+**
double deflection technology
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 speeds 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 environment.

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 application + 1-PH AC FMA:
 - 1-PH Eco+ BOX can control up to 3 1-PH H4000 ACs.
- LP water application + THREE-PHASE AC FMA:
 - THREE-PHASE Eco+ BOX can control up to 9 THREE-PHASE H4000s.
- LP water application + 1-PH HEE FMA:
 - 1-PH HEE BOX can control:
 - 6 1-PH HEE H4000s
 - 6 1-PH HEE TPL 4000s
 - 3 1-PH HEE H4000s + 3 1-PH HEE TPLs
 - 4 1-PH HEE H4000s + 2 1-PH HEE TPLs

OPTIONS AND ACCESSORIES

- Wall bracket, ceiling bracket, IPN additional kit
- Filter box
- Specific diffuser (on door, high-level etc.)
- Room thermostat for THREE-PHASE or SINGLE-PHASE installation
- LS/HS switch for 3-PH fan motor assembly
- 5 speed autotransformer for 1-PH AC FMAs
- Proximity switch
- Circuit breaker unit

RANGE

Heating/cooling medium	LP water	HP superheated water - Oil	HP steam	Electrical
Standard drive	THREE-PHASE 2 speeds – SINGLE-PHASE 1 variable speed IP 44 (H4350) and IP54 (H4400 to H4630)			
Reinforced variant	CORROBLOC version – IP 55/65 – 700-hour salt spray test			
Coil (tubing/row)	Copper/Alu	316L stainless steel/Alu	316L stainless steel/Alu	Stainless steel/Alu
Reinforced versions	316L stainless steel tubes/ HERESITE coating	HERESITE coating		
Casing	Precoated off-white (RAL 7035) galvanised steel			
Reinforced versions	304L stainless steel			
ATEX versions	LCIE 13 ATEX 1015 X – Zone 1 or 2 – IICT4			

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 (H4300 and H4350) and IP55 (H4400 to H4630)
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

H4000 MORPHO CODES

Range	Series	Size	Model	Coil	Thermal function	Specific options
H4000	4350	1R/1-PH AC	Wall-mounted	2T	Heating	Without

Heliotherme 4000 Helio 4000 HEE motor Heliotherme ATEX AMBIANCE (Gaseous atmospheres and zone 2 only) Heliotherme ELEC 4000 TPL SERIES 4000 TPL SERIES 4000 HEE MOTOR	1R/1-PH AC 3R/1-PH C AC 1R/3-PH AC 3R/3-PH AC	1R/1-PH HEE 2R/1-PH C HEE 2R/1-PH F HEE 3R/1-PH C HEE 3R/1-PH F HEE	1R/3-PH AC/IICT4 3R/3-PH C AC/IICT4 3R/3-PH C AC/IICT4 3R/3-PH F AC/IICT4	3-PH AC FMA	1-PH AC 3-PH AC	1-PH HEE
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Heliotherme 4000	4350 4400 4450 4500 4630 4630S
Helio 4000 HEE motor	4300 4350 4400 4450 4500 4630
Heliotherme ATEX AMBIANCE	4350 ATEX 4400 ATEX 4500 ATEX
Heliotherme ELEC 4000	4350 4400 4500
TPL SERIES 4000	4400 4450 4500 4630
TPL SERIES 4000 HEE MOTOR	4400 4450 4500 4630

Wall-mounted
Ceiling unit⁽¹⁾

2T: 2-pipe standard
2TI: 2-pipe stainless
TE: All electric⁽³⁾

Heating
Cooling
Heating/Cooling
Superheated water⁽²⁾
HP steam⁽²⁾
9 600 W⁽³⁾
18 900 W⁽³⁾
28 800 W⁽³⁾
42 300 W⁽³⁾

Without
Stainless steel casing
Corrobloc FMA⁽⁴⁾
Heresite coated coil
Altena coated coil

Units in Hot Water only, Superheated Water or Steam versions are delivered as standard with left-hand connection (opposite the air heater). Right-hand connection is possible simply by reversing the unit.

Units in Cold Water only or Hot Water/Cold Water versions are delivered as standard with left-hand connection. To request right-hand connection, please consult us.

ATEX versions are only available with left-hand connection.

Note:

- (1) Except HELIO THERME ATEX AMBIANCE
- (2) Except HELIO THERME 4000 HEE motor
- (3) HELIO THERME ELEC 4000 only
- (4) HELIO THERME 4000 only

DESCRIPTION

High-efficiency fan motor assembly

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

The ROTOREX design, with its electrical coils inserted into the fan hub, guarantees perfect cooling of the motor to ensure it runs with optimum efficiency.



CORROBLOC FMA
IP65/700-hour salt spray test

Available versions:

- **THREE-PHASE 2** speed (230/400 V - 3-Ph - 50 Hz) (accessory LS/HS switch)
- **SINGLE PHASE 1** variable speed (230 V - 1-Ph - 50 Hz) (accessory 5-speed autotransformer)

CORROBLOC version guaranteed to withstand corrosive environments.

HEE FMA

Fan motor assembly equipped with a powerful HEE EC (electronically commutated) motor. These EC motors (single-phase 230 V - 1-Ph - 50/60 Hz 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).
- Built-in condensate drain pan for cooling applications, featuring an antibacterial design (perforated bottom) and quick-release fitting (diameter 1'1/4).
- Inlet cone 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 the 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 streams, limit the stratification phenomenon and thereby reduce energy consumption.

■ 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%.

DESCRIPTION

Heat exchanger

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

- **LP hot or cold water version** – Available with 1 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:
 - 316L stainless steel Ø 16 mm thick pipe
 - 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:
 - 316L stainless steel Ø 16 mm thick pipe
 - 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.
- **Electric 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 protection standards (CH37)
 - Advantage: Heating elements inserted directly into the finned block ensure excellent heat transfer.

HELIO THERME PERFORMANCE - SUPERHEATED WATER AND STEAM - 230 V/1-Ph/50 Hz MOTOR - AC AND HEE

HEATING - 230 V/1-Ph/50 Hz motor - AC and HEE										
Model	No. of rows	Supply air speed SINGLE-PHASE	Flow rate m³/h	Air speed m/s	Range (metres)		Heating capacity (kW)			Sound pressure dB(A)
					Wall-mounted	Suspended	HW	SW	HPS	
H4300	2	Direct	1 420	3,16 m/s	15	3	12,9			45
H4350	1	Direct	2 600	3,92 m/s	22	6	10,3	28,7	49	48
		R3 ⁽¹⁾	2 360	3,56 m/s	18	4	9,93	27	46,5	46
	3	Direct	2 075	3,13 m/s	15	2,5	22,3			50
		R3 ⁽¹⁾	1 780	2,68 m/s	14	2	20,4			48
H4400	1	Direct	4 200	4,57 m/s	26	8,5	14,9	45,4	69,6	54
		R3 ⁽¹⁾	3 914	4,26 m/s	24	7,5	14,5	43,5	66,7	52
	3	Direct	3 450	3,75 m/s	23	7	34,6			56
		R3 ⁽¹⁾	3 220	3,50 m/s	20	5,5	33,2			54
H4450	1	Direct	5 200	4,20 m/s	27	8,5	20,3			56
		R3 ⁽¹⁾	4 100	3,31 m/s	24	6	18,5			49
	3	Direct	4 550	3,68 m/s	18	3,5	47			59
		R3 ⁽¹⁾	3 650	2,95 m/s	17	3	41,2			52
H4500	1	Direct	7 100	4,22 m/s	28	9	26,9	77,9	120	56
		R3 ⁽¹⁾	5 700	3,39 m/s	26	7	24,7	67,9	104	50
	3	Direct	6 200	3,69 m/s	24	6,5	64,1			58
		R3 ⁽¹⁾	5 055	3,01 m/s	23	5,5	56,9			52
H4630	1	Direct	10 450	4,19 m/s	28	10,5	39,3	130	171	54
		R3 ⁽¹⁾	8 900	3,57 m/s	22	8	37	118	155	47
	3	Direct	8 280	3,32 m/s	21	6,5	91,4			56
		R3 ⁽¹⁾	6 270	2,52 m/s	19	5	77			44

HEATING - COOLING - 230 V/1-Ph/50 Hz Motor - HEE										
Model	No. of rows	Air supply speed	Air flow m³/h	Air speed m/s	Range (metres)	Heating capacity (kW)		Cooling capacity (kW)		Sound pressure dB(A)
					Wall-mounted	HW	TCC	SCC		
H4300 HEE	2	Direct	1200	2,67 m/s	12	11,8	2,6	2,6	43	
H4350 HEE	3		1640	2,47 m/s	23	19,4	5,6	5,2	30	
H4400 HEE			2160	2,35 m/s	26	26,1	7,7	7	48	
H4450 HEE			3025	2,44 m/s	24	36,9	11,6	10,2	45	
H4500 HEE			4060	2,41 m/s	23	48,1	15,7	13,8	54	
H4630 HEE			5960	2,39 m/s	21	72,1	24,4	20,8	53	

Specifications determined using the following information:

Hot water: Temperature: 80 - 60°C / RT=15°C - RH 50%

Superheated water (HP SW): Temperature: 180 - 100°C / RT=15°C - RH 50 %

Steam (HPS): Temperature: 175°C - 8 bar/RT=15°C - RH 50 %

Cooling: Temperature: 7 - 12°C / RT=27°C - RH 50 %

Air stream: (1) With JET+ diffuser for a residual speed of 0.1 m/s

(1) Defined with Δt OT/RT of 15°C (heating) and 7°C (cooling)

(1) 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⁽¹⁾** (version with AC motor): supply air velocity 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.

Defined performance without accessories (unit only)

HELIO THERME PERFORMANCE HOT WATER, SUPERHEATED WATER AND STEAM 400 V/3-Ph/50 Hz MOTOR

HEATING - 400 V/3-Ph/50 Hz motor											
Model	No. of rows	Air supply speed		Flow rate	Air speed	Range (metres)		Heating capacity (kW)			Sound pressure
		THREE-PHASE		m³/h	m/s	Wall-mounted	Suspended	HW	SW	HPS	dB(A)
H4350	1	HS	△	2 600	3,92 m/s	22	6	10,3	28,7	49	48
		LS	★	2 210	3,33 m/s	17	3,5	9,7	25,9	44,9	44
	3	HS	△	2 165	3,26 m/s	18	4,5	22,9			50
		LS	★	1 775	2,67 m/s	14	2	20,4			46
H4400	1	HS	△	4 000	4,35 m/s	25	8	14,6	44,1	67,7	55
		LS	★	3 480	3,79 m/s	21	5	13,9	40,5	62,2	51
	3	HS	△	3 400	3,70 m/s	22	6,5	34,3			56
		LS	★	2 960	3,22 m/s	17	3,5	31,7			52
H4450	1	HS	△	5 400	4,36 m/s	28	9	20,6			56
		LS	★	3 910	3,16 m/s	23	5,5	18,2			49
	3	HS	△	5 000	4,04 m/s	24	7,5	49,6			59
		LS	★	3 910	3,16 m/s	20	4	43,1			52
H4500	1	HS	△	7 500	4,46 m/s	30	10	27,4	80,4	124	56
		LS	★	5 740	3,41 m/s	26	7	24,8	68,2	105	50
	3	HS	△	6 500	3,86 m/s	26	8,5	65,9			58
		LS	★	5 020	2,98 m/s	23	5,5	56,7			52
H4630	1	HS	△	11 140	4,47 m/s	29	11,5	40,2	136	178	55
		LS	★	9 635	3,87 m/s	24	8,5	38,1	124	163	48
	3	HS	△	9 175	3,68 m/s	25	10	97			57
		LS	★	7 545	3,03 m/s	21	7	86,5			49

ELECTRIC HEATING - 400V/3Ph/50 Hz motor									
Model	Air supply speed		Flow rate	Air speed	Range (metres)	Electrical power (kW)			Sound pressure
			m³/h	m/s	Wall-mounted	Total	No. of stages	Power per stage	dB(A)
H4350	HS	△	2600	3,92 m/s	22	9,6 kW	2	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	2	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	2	10,8 kW	56
	LS	★	5740	3,41 m/s	26			18 kW	50
	HS	△	7500	4,10 m/s	30	43,2 kW	3	14.4 kW x 3	56
	LS	★	5740	3,21 m/s	26				50

Specifications determined using the following information:

Hot water:	Temperature: 80 - 60°C / RT=15°C - RH 50%
Cold water:	Temperature: 7 - 12°C / RT=27°C - RH 50%
Superheated water (HP SW):	Temperature: 180 - 100°C / RT=15°C - RH 50 %
Steam (HPS):	Temperature: 175°C - 8 bar/RT=15°C - RH 50 %
Air stream:	(1) With JET+ diffuser for a residual speed of 0.1 m/s
	(1) Defined with Δt OT/RT of 15°C
	(1) With LP water or electric heating
Air speed:	JET+ diffuser outlet
Sound pressure:	Measured 5 metres from unit, directivity 2, attenuation of 22 dB

Defined performance without accessories (unit only)

TPL AIR FLOW AND ACOUSTIC PERFORMANCE

TPL	4400		4450		4500		4630	
230/400V-3Ph-50 Hz Motor (3-phase 400V coupling)	HS	LS	HS	LS	HS	LS	HS	LS
	△	★	△	★	△	★	△	★
230 V-1-Ph-50 Hz AC and HEE motor	Direct	-	Direct	-	Direct	-	Direct	-
Flow rate m³/h	4400	3000	6000	4100	8000	5500	11500	8800
Maximum air stream m	15	8	14	9	16	10	19	14
Sound pressure dB (A)	54	43	56	46	57	47	55	50

Specifications determined using the following information:

Air stream: (1) With JET+ diffuser for a residual speed of 0.1 m/s

Sound pressure: (1) Measured 8 metres from unit, directivity 2, attenuation of 26 dB

ELECTRIC MOTOR CHARACTERISTICS

Use	Model	Motor	Speed of rotation (rpm)	Nom. current A	Max power input (W)	IP	Thermal cut-out	Class	Operating T°
HEATING	H4350	THREE-PHASE 230/400V - 3Ph - 50 Hz	HS - △ 1385	0,35	110	44	YES 6,3 A - 165°C	F	-40°C / +60°C
	LS - ★ 1175		0,15	70	54				-40°C / +70°C
	H4400 TPL4400		HS - △ 1404	0,5		260			
	LS - ★ 1176		0,3	170					
	H4450 TPL4450		HS - △ 1385	1,13		550			
	LS - ★ 1040		0,64	380					
	H4500 TPL4500		HS - △ 1391	1,51		770			
	LS - ★ 1176		0,9	520					
H4630 TPL4630	HS - △ 870	1,3	590	54	-40°C / +70°C				
LS - ★ 750	0,63	250							
HEATING	H4350	SINGLE-PHASE 230 V - 1 Ph - 50 Hz - 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			-40°C / +70°C
	H/TPL4450		Direct 1380	2,01	480				
	H/TPL4500		Direct 1403	2,78	630				
	H/TPL4630		Direct 913	2,6	580				
	HEE FMA								
HEATING	H4300	SINGLE-PHASE 230 V - 1-Ph - 50/60 Hz - HEE	1530	0,8	85	54	PTC	B	-25°C/+55°C
	H4350		1480	1,35	165	54	PTC	B	-25°C/+50°C
	H/TPL4400		1760	2,2	500	55	Thermal cut-out	B	-25°C/+60°C
	H/TPL4450		1500	2,2	500	55	Thermal cut-out	B	-25°C/+60°C
	H/TPL4500		1440	3,25	740	55	Thermal cut-out	B	-40°C/+60°C
	H/TPL4630		1020	3,2	730	55	Thermal cut-out	B	-40°C/+60°C
COOLING	H4300	SINGLE-PHASE 230 V - 1-Ph - 50/60 Hz - HEE	1530	0,8	85	54	PTC	B	-25°C/+55°C
	H4350		1040	0,65	73	54	PTC	B	-25°C/+60°C
	H4400		1760	2,2	500	55	Thermal cut-out	B	-25°C/+60°C
	H4450		1500	2,2	500	55	Thermal cut-out	B	-25°C/+60°C
	H4500		970	1,1	250	55	Thermal cut-out	B	-25°C/+60°C
	H4630		770	1,1	250	55	Thermal cut-out	B	-25°C/+60°C

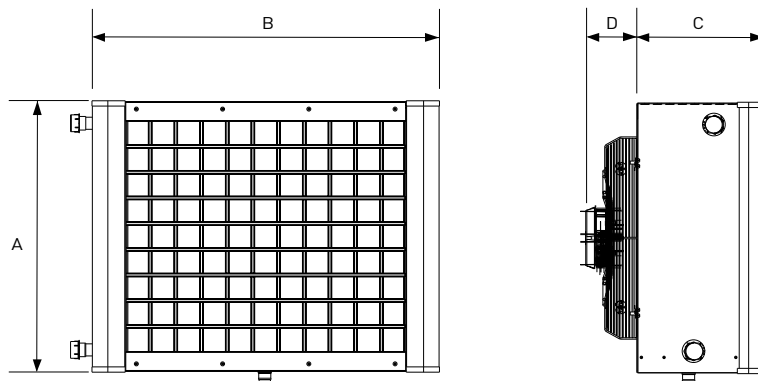
COIL SPECIFICATIONS

		4300		4350		4400		4450		4500		4630	
LOW PRESSURE WATER COIL	Number of heating rows	2		1	3	1	3	1	3	1	3	1	3
	Number of cooling rows	2		3									
	Coil capacity (L)	0,8		0,68	1,66	0,96	2,28	1,38	3,22	2,18	4,55	2,97	6,4
	Connection diameter	½"		¾"				1"		1" ¼			
	Connection type	Threaded unions 243 GCU F/M											
	Maximum operating pressure	13 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		-		2,66		3,69	
	Connection diameter			33,7 mm		42,4 mm		-		42,4 mm			
	Connection type			Smooth 316L stainless steel tube (to be welded)									
	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		-		1,95		2,86	
	Connection diameter			26,9 mm		33,7 mm		-		48,3 mm			
	Connection type			Smooth 316L stainless steel tube (to be welded)									
	Maximum operating pressure			16 bar									
	Test pressure			24 bar									
	Max T°			200°C									

Version with Heresite coating available on request. Contact our sales network.

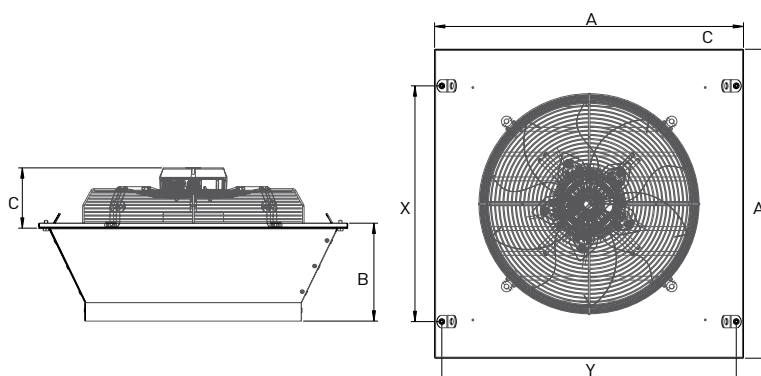
DIMENSIONS

HELIOTHERME



Size	A	B	C	D			Weight (kg)		
				STD	HEE	ATEX			
	mm			mm			1 row	2 rows	3 rows
H4300	395	600	286	-	115	-	-	18	-
H4350	460	646	286	101	126	-	21	-	26
H4350 ATEX	460	646	286	-	-	301	28	-	33
H4400	557	700	286	142	143	-	30	-	34
H4400 ATEX	557	700	286	-	-	336	36	-	40
H4450	620	813	286	142	143	-	40	-	44
H4500	716	918	336	142	188	-	50	-	56
H4500 ATEX	716	918	336	-	-	356	58	-	64
H4630	876	1050	336	142	200	-	62	-	72

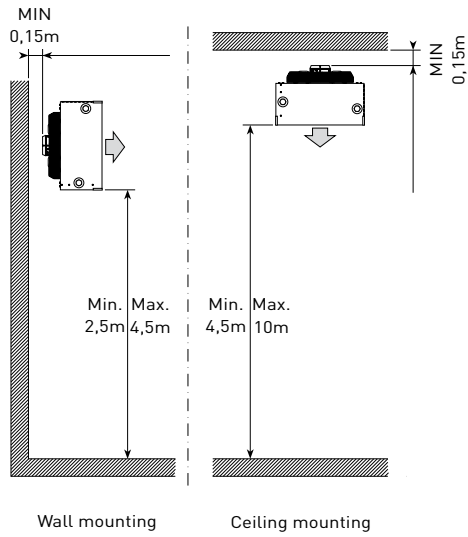
TPL DESTRATIFIER



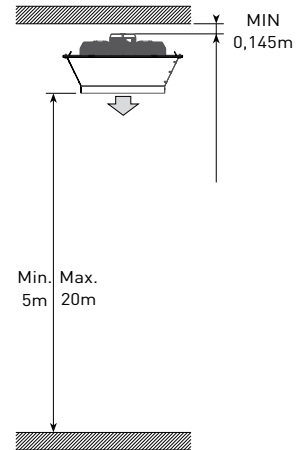
TPL	A	B	C		X	Y	Weight (kg)
			STD	HEE			
TPL4400	586	183	143	143	370	552	17
TPL4450	666	212	143	143	470	632	22
TPL4500	747	225	143	188	570	712	25
TPL4630	907	273	143	200	705	872	33

INSTALLATION

HELIOTHERME

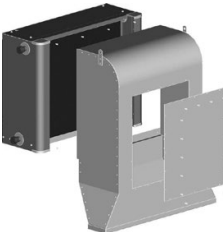
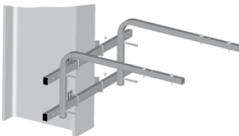


DESTRATIFIER (Recommended for buildings between 5 and 20 metres high)

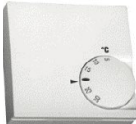


ASSEMBLY ACCESSORIES

A different assembly for each use.

RETURN AIR MODULE						
	Size	A	B	C	Codes	Filter box (G1 filter in accordance with EN 779) Prevents premature clogging of exchanger coils Not ductable
	4300	395		220	7417083	
	4350	440			7185105	
	4400	520			7185106	
	4450	600			7185107	
	4500	680			7185108	
	4630	840			7185110	
DIFFUSION MODULE						
	Size	A	B	C	Codes	Diffuser on door Create an air curtain that limits energy loss when doors are opened. Warning: Use a system that is suited to the diffuser mounting.
	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	
	4630	1250	1170	400	7185137	
	Size	A	B	C	Codes	Diffuser for large spaces Reduction cone for increasing the air throws.
	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	Additional kit for fastening on an IPN
	500 to 630				7181230	
	Size				Codes	Suspension support for ceiling mounting
	All				7282116	

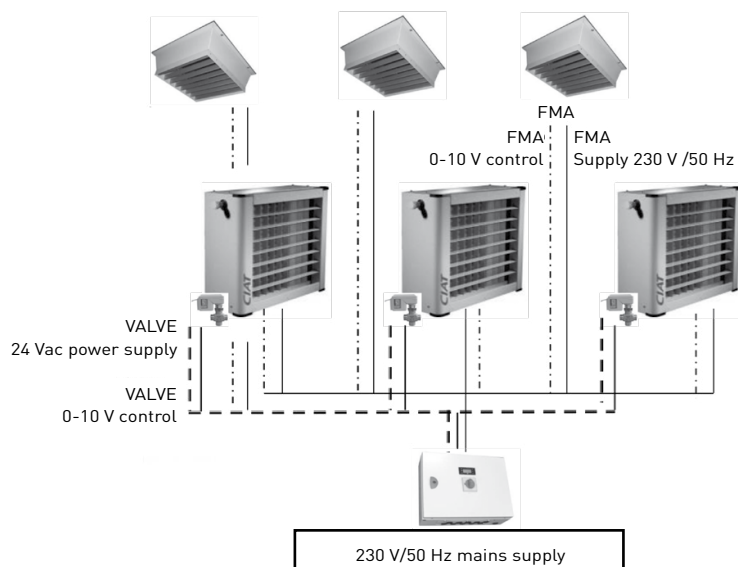
ELECTRICAL ACCESSORIES

ELECRHICAL & USER SAFETY					
	Codes		Padlockable proximity switch		
	0596142		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.		
	0596147				
	Use	Circuit breaker unit - 1-PH AC FMA heating	Circuit breaker unit - 1-PH HEE FMA heating	Circuit breaker unit - 1-PH HEE FMA cooling	Circuit breaker unit THREE-PHASE AC
	H4300		7252526	7252526	
	H4350	7252526	7252527	7252526	7252523
	H4400	7252527	7252528	7252528	7252525
	H4450	7252528	7252528	7252528	7252527
	H4500	7252529	7252529	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 – 1-PH AC/1-PH HEE installation		
	7486653		3-speed EC thermostat kit (for SINGLE-PHASE HEE FMA) - Heating and cooling with manual toggle switch - Inductive breaking capacity 3.53 A		
	7486654		1-speed AC thermostat kit (for SINGLE-PHASE AC FMA) - Heating and cooling with manual toggle switch - Inductive breaking capacity 3.53 A		
	5201027		Summer or Winter thermostat - 1-PH AC FMA		
	5201028		Summer or Winter thermostat - 1-PH AC FMA		
	Codes		IP54 industrial environment thermostat – THREE-PHASE AC installation		
	7113335		Summer or Winter thermostat - 3-PH AC FMA - 1 Stage		
	7113336		Summer or Winter thermostat - 3-PH AC FMA - 2 Stages		
SUPPLY AIR SPEED SELECTION					
	Codes		LS/HS switch		
	7169961		For 3-phase AC motor, selects two motor rotation speeds and stop.		
	Codes		Autotransformer with selector switch (3.5 A)		
	7166982		Used to obtain 5 supply air speeds by varying the voltage on the variable speed AC 1 single-phase motors.		

SINGLE-PHASE HEE HELIOTHERME CONTROL (EC MOTOR)

HEE 1-PH BOX range, controls: 6 Heliotherme units, 6 TPLs, 3 Heliotherme units + 3 TPLs, 4 Heliotherme units + 2 TPLs

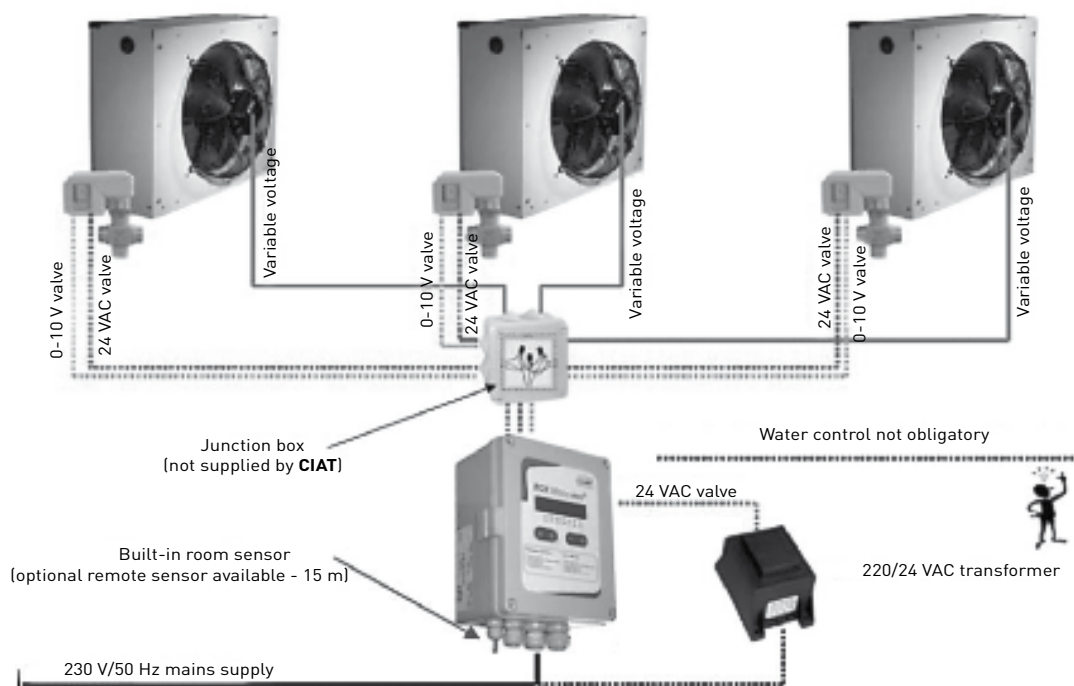
Figure A



SINGLE-PHASE HELIOTHERME CONTROL (AC MOTOR)

Eco+ 1-PH BOX range

Figure B



THREE-PHASE HELIOTHERME CONTROL (AC MOTOR)

3-PH Eco+ BOX range

Figure C

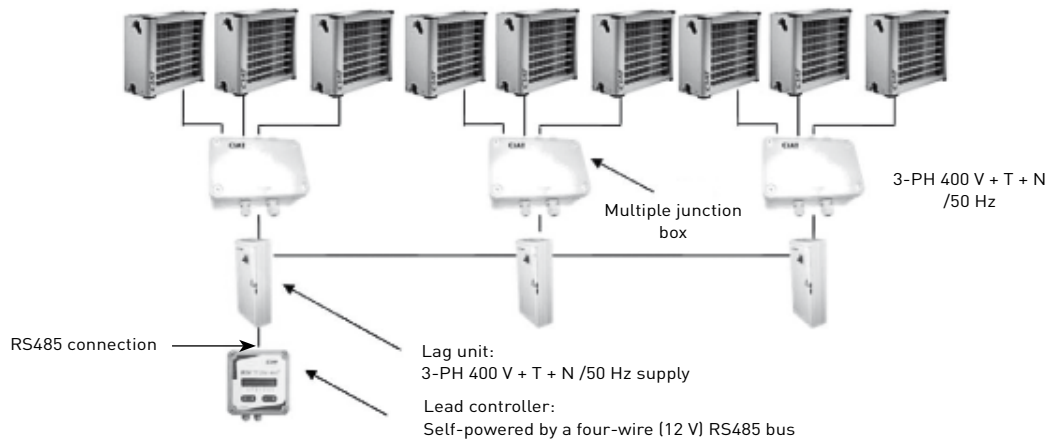
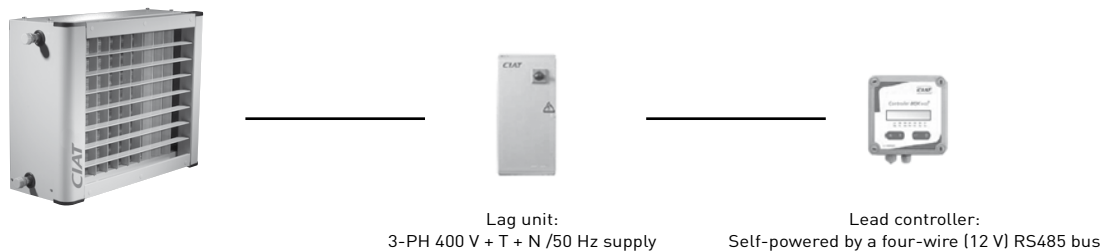


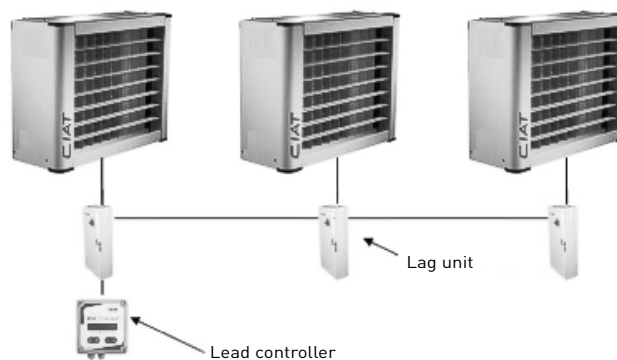
Figure D



ALL-ELECTRIC HELIOTHERME CONTROL (DIAGRAM IN Eco+ ELEC BOX USER MANUAL)

Eco+ ELEC BOX range

Figure E



TECHNICAL CHARACTERISTICS OF THE DIFFERENT CONTROLLERS

HELIOTHERME or TPL CONTRHOL AND ACCESSORIES				
CONRHOL	1-PH HEE BOX	1-Ph ECO+ BOX unit	3-PH ECO BOX + multiple junction box	ECO + ELEC BOX
Figure	a	b	C and D	e
FUNCTION				
Number of heliotherms or TPLs that can be controlled	1 to 6	1 to 3	1 to 9	1 to 3
Protection rating	54	55	55	55
Weekly timer (Comfort/ECO/frost protection)	Included	Included	Included	Included
Supply Voltage/Phase/Frequency	230 V/1/50 Hz	230 V/1/50 Hz	400 V/3/50 Hz+N	400 V/3/50 Hz+N
Electrical protection (circuit breakers, connectors, disconnect switches)	Included	TO BE FITTED	Included	Included
Air control	Proportional 0 - 10V	Proportional 110 - 230 V	2-speed LS/HS	1 speed LS or HS
Water control	Proportional 0 - 10V	Proportional 0 - 10V	Proportional 0 - 10V	
Integrated temperature sensor	INCLUDED	INCLUDED	INCLUDED	INCLUDED
Remote on/off switch and fault summary	INCLUDED	NOT INCLUDED	NOT INCLUDED	NOT INCLUDED
MODBUS/LON and BACnet IP communication	OPTION	no	no	no
Fresh air control	yes	no	no	no
ACCESSORIES				
BOX CONTRHOL	7391284	7184939	7219774	7219774
Lag unit for 3-PH Eco+ BOX			7218912	
BMR 3-PH Eco+ BOX Multiple connection unit (controls max. 3 units)			7239492	
Eco+ ELEC BOX lag unit - 9.6 KW (for H4350 TE 3-PH)	-	-	-	7218907
Eco+ ELEC BOX lag unit - 18.9 KW (for H4400 TE 3-PH)	-	-	-	7218908
Eco+ ELEC BOX lag unit - 28.8 KW (for H4500 TE 3-PH)	-	-	-	7218910
Eco+ ELEC BOX lag 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 power supply of the valve servomotor(s) (010 V)	INCLUDED	7435107	INCLUDED	
Change-over switch thermostat (for automatic Summer-Winter change-over)		7128892		
6P padlockable proximity switch for 3-PH Eco+ BOX			0596147	INCLUDED
3P padlockable proximity switch for 1-PH or HEE Eco+ Box	0596142	0596142		
Remote sensor	7462538		7207381	

TECHNICAL CHARACTERISTICS OF THE DIFFERENT CONTROLLERS

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

Ex II 2 G
II c 65°C - 105°C or 120 to 220°C
EEx d/de IIB or IIC T4 to T6

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 agent
- In zone 1 or 2
- For IIB or IIC explosion groups
- With T1 to T4 gas auto-ignition temperatures
- Low pressure water, superheated water, steam, oil, compressed air, etc.



What is ATEX?

An ATEX (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 is used to define zones, explosion groups and maximum surface temperature classes. These atmospheres are mainly found in painting 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."

TECHNICAL CHARACTERISTICS OF THE DIFFERENT CONTROLLERS

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 (on request)
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						
II A	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

OPERATING LIMITS

	Cooling mode	Heating mode	Steam mode	Superheated water mode
Water circuit	Min. water inlet temp.: 5°C Max. operating pressure: 13 bar	Max. water inlet temp.: 110°C Max. operating pressure: 13 bar	Max.temp./Operating pressure: 200°C/16 bar	Max. water inlet temp.: 200°C Max. operating pressure: 16 bar
Indoor temperature	Tmax: 60°C and Tmin -15°C			
1-PH AC motor		230 V(+/-6 %)/50 Hz - 1 Ph H4350: IP44 H4400 - 4450-4500-4630: IP 54	230 V(+/-6 %)/50 Hz - 1 Ph H4350: IP44 H4400 - 4450-4500-4630: IP 54	230 V(+/-6 %)/50 Hz - 1 Ph H4350: IP44 H4400 - 4450-4500-4630: IP 54
3-PH AC motor		400 V(+/-6%) / 50 Hz - 3 Ph H4350: IP44 H4400 - 4450-4500-4630: IP 54	400 V(+/-6%) / 50 Hz - 3 Ph H4350: IP44 H4400 - 4450-4500-4630: IP 54	400 V(+/-6%) / 50 Hz - 3 Ph H4350: IP44 H4400 - 4450-4500-4630: IP 54
1-PH EC motor	230 V (+/-6%)/50/60 Hz - 1 Ph IP54: H4300 and H4350 IP 55: H4400-H4450-H4500-H4630	50/60 Hz - 1-Ph IP54: H4300 and H4350 IP 55: H4400-H4450-H4500-H4630		