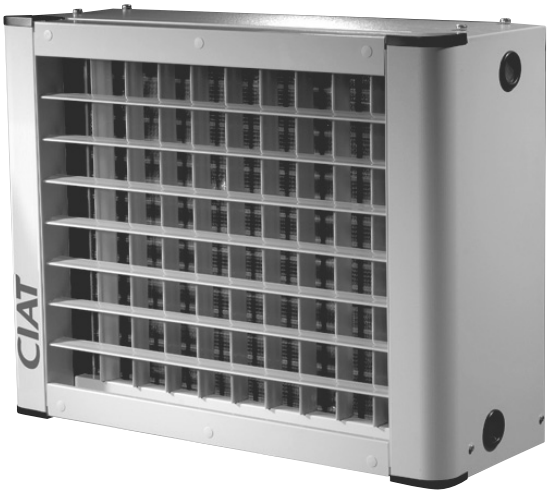
Heliotherme range

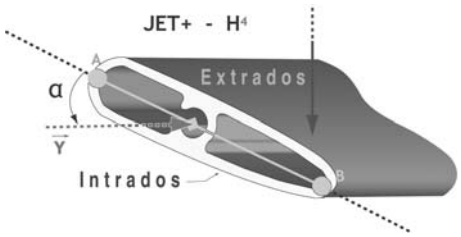


New range

Hear the difference...
Feel the power...
Experience the performance...

HEAR THE DIFFERENCE

Rotorex technology: fan motor assembly with maximised airflow and minimised airflow noise levels.



The design of CIAT's innovative JET+ diffuser is based on Bernouilli's principle of fluid dynamics and NACA 0012 aircraft airfoils.

FEEL THE POWER

Providing the best combination of tube geometry and fin design on the market, **CIAT yet again proves its excellence** in coil design.

Incoming and outgoing flows of air are purified to ensure efficient heat transfer and the tapered intake baffles drive noise levels even lower.

EXPERIENCE THE PERFORMANCE

This new **HELIOTHERME** range features CIAT's full **spectrum of expertise** so that you can fully benefit from:

- all the advantages of a **standard** high-efficiency diffuser
- the quiet operation and efficiency of a high-efficiency **Rotorex** fan motor,
- heating capacity provided by a high-efficiency coil.

HELIOTHERME H4000

APPLICATIONS

Available as a wall-mounted or ceiling-mounted version, **HELIOTHERME** is the simple and economic heating or cooling solution in the following applications:

- **Industry:** workshops, garages, storage warehouses, distribution centres, etc.
- **Tertiary:** shops, sports halls, multi-purpose rooms, etc.

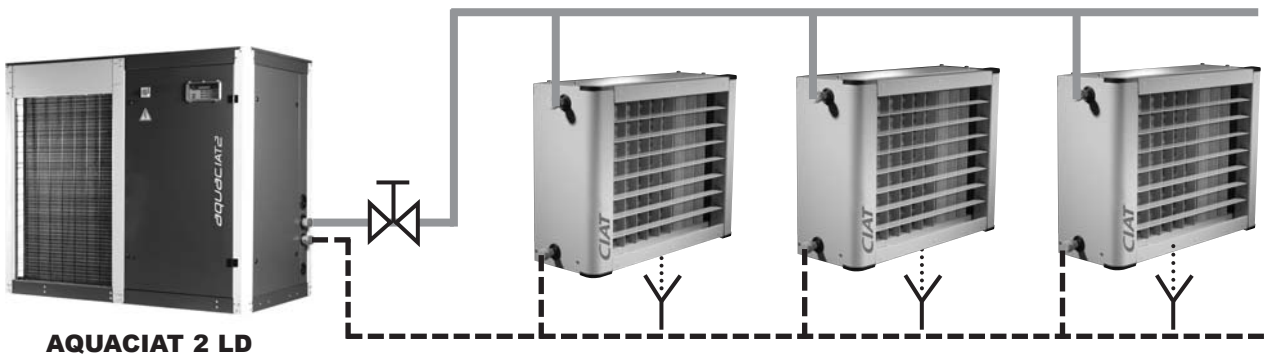
Storage warehouses and distribution centres

Supermarkets

Exhibition halls

HOW IT WORKS

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

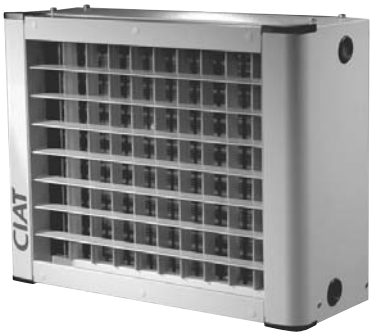


AQUACIAT 2 LD

Heliotherme range

RANGE

Supply medium	LP water	HP superheated water - Oil	HP steam	Electricity
Standard drive	THREE-PHASE 2 speeds – SINGLE-PHASE 1 variable speed IP44/54 depending on the model			
Reinforced versions	**Corrobloc** version – IP55/65 – TBS 700 hours			
Coil (tube/sheet)	Copper/Aluminium	Steel/Aluminium	Cupronickel/Alu	Stainless steel/Alu
Reinforced versions	304L 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 – Epoxy coating			
ATEX versions	LCIE 03 ATEX 6392 X – Zone 1 or 2 – IIB or IIC – T4 or T6			



Standard

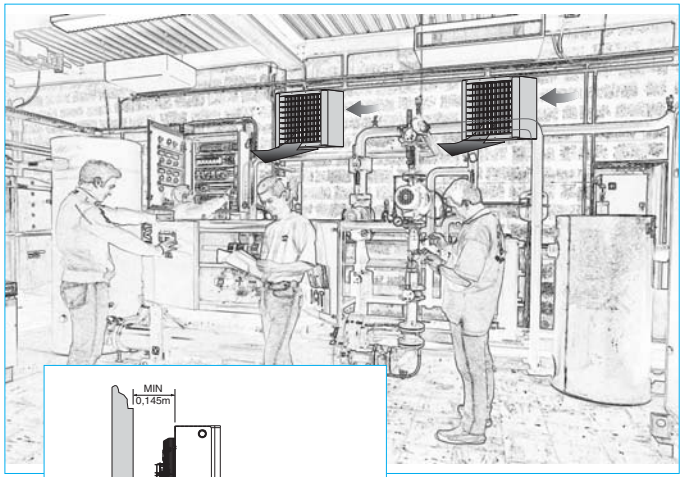
Reinforced version
(high corrosion resistance)

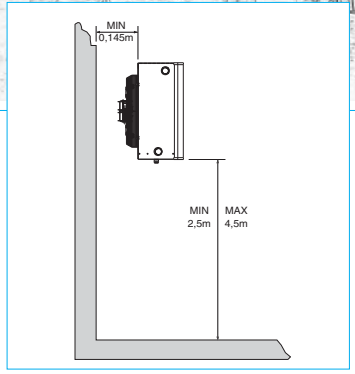
ATEX version

INSTALLATION

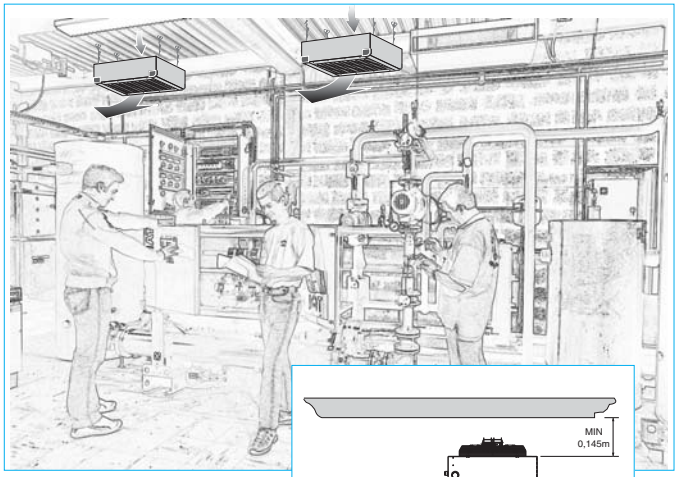
The **HELIOTHERME** range meets **APSAD** and **NFPA** recommendations on air velocities along the edges of units.

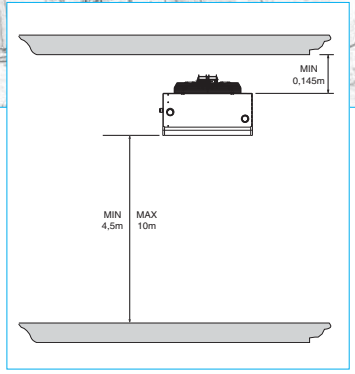
All are less than 5 m/s at 0.5 m from the diffuser and thus do not interfere with sprinkler systems.





Wall mounted





Ceiling mounted

TECHNICAL DESCRIPTION

High-efficiency fan motor assembly:

Silent **FMA** features a contoured 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** with 2 speeds *(accessory: LS/HS switch)*
- **Single-phase** with 1 variable speed *(accessory: 5-speed autotransformer)*
- Corrobloc version guaranteed to withstand corrosive environments.

Corrobloc FMA
IP65 / TBS 700 hours

Heat exchanger:

HIGH EFFICIENCY heat exchanger with tapered intake baffles available in four versions:

- **LP hot or cold water version** – Available with 1, 2 or 3 rows**:**
  - ✖ dia. 9.52 mm copper tube
  - ✖ Embossed aluminium fins – Thickness 0.1 mm
  - ✖ 2.1 mm fin pitch
  - ✖ 32 mm equilateral geometry
  - ⇨ Advantage: Excellent thermal yield (dry transfer coefficient) > 50 W/m2.k)

- **HP superheated water - oil version** – Available with 1 row**:**
  - ✖ Heavy-gauge steel tube (dia. 16 mm) (Stainless steel available on request)
  - ✖ Embossed aluminium fins – Thickness 0.285 mm
  - ✖ 2.5 mm fin pitch
  - ✖ Usable 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.

Options available:
- Stainless steel tube
- Heresite coating
- Precoated fins

- **HP steam version** – Available with 1 row**:**
  - ✖ Heavy-gauge cupronickel tube (dia. 16 mm)
  - ✖ Embossed aluminium fins – Thickness 0.1 mm
  - ✖ 2.5 mm fin pitch
  - ⇨ Advantage: excellent corrosion resistance thanks to chemicals pumped through steam network piping.

- **Electric version:** – Available with 4 power options:
  - ✖ Stainless steel single-tube heating element
  - ✖ Embossed aluminium fins – Thickness 0.1 mm
  - ✖ 2.5 mm fin pitch
  - ✖ 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.

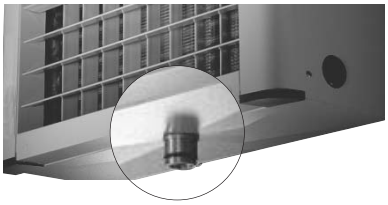
Heliotherme range

Casing:

- ✖ Elegant galvanised steel casing precoated in off-white (stainless steel or epoxy paint available on request)
- ✖ Built-in COOLING condensate drain pan for with antibacterial design (performated bottom) and nautical coupling.
- ✖ Intake section optimised for improved air flow performance and acoustic comfort levels

⇨ Advantages:

- Its classic design means that it can be easily installed anywhere.
- No need to add an unsightly condensate drain pan.
- Quick and extremely simple connection of the condensate tube without any need for a clamp.



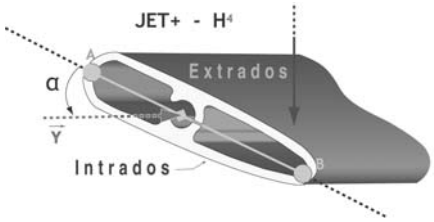
Diffuser:

■ **Basic version:**

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

■ **JET+ version** (fitted as standard):

- ✖ Double-deflection diffuser
- ✖ JET+ aluminium louvre with NACA 0012 airfoil design
- ✖ Each louvre is directional

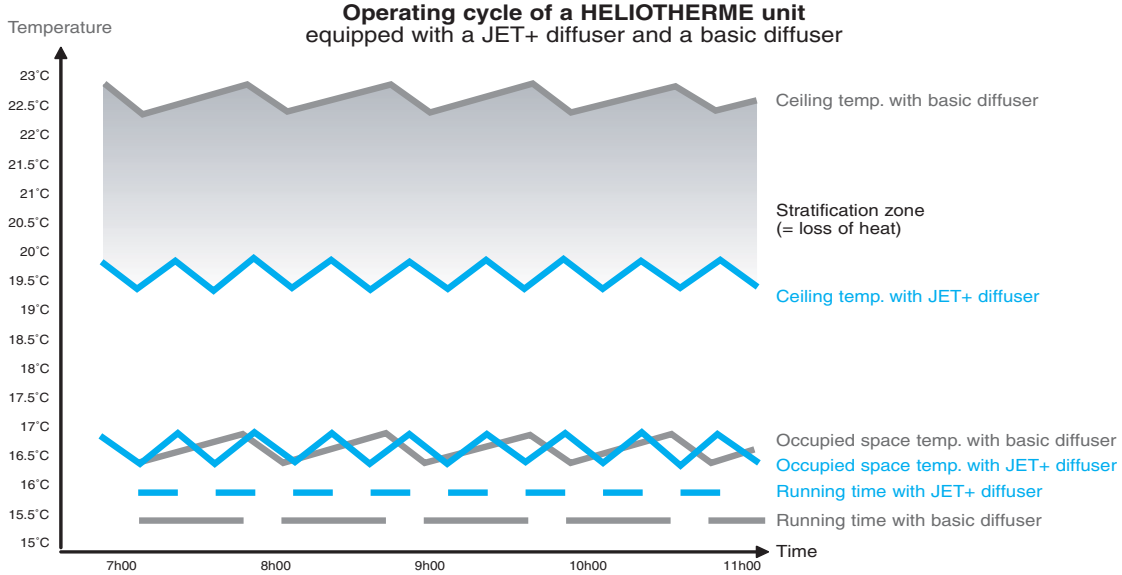


⇨ Advantages:

- Air streams can be adjusted in four directions to optimally cover all sections of a space and limit draughts.
- Laminar air flows for better acoustic comfort (zero turbulence at the diffuser outlet).
- The resulting aerodynamics, related to the curve of the airfoil, increase the velocity of air streams (pressure drop along the lower surface of the blade) and thereby increase the reach of the air streams and the induction rate.
- Limited stratification.
- Reduced building warm-up times:

⇨ **Proven energy savings of 15-20%.**

Operating cycle of a HELIOTHERME unit
equipped with a JET+ diffuser and a basic diffuser



ECONOMIC COMPARISON OF A JET+ DIFFUSER AND A BASIC DIFFUSER

Comparison between a HELIOTHERME air heater equipped with a JET+ diffuser and a HELIOTHERME air heater equipped with a basic supply outlet.

Space volume:	600 m² with a 6 m ceiling, or **3600 m³**
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** or **48 kW** (at 5°C)

BASIC DIFFUSER	JET+ DIFFUSER
INSTALLATION COST	
Mixing rate: **6** (or 21,600 m³ to be provided)	Mixing rate: **4** (or 14,400 m³ to be provided) *(Rate lower thanks to longer throw and better induction)*
Unit selected: - Three H4501 single-phase units Total flow rate delivered = 21,300 m³/h Total heating capacity delivered = 97 kWh	Unit selected: - Three H4451 single-phase units Total flow rate delivered = 15,600 m³/h Total heating capacity delivered = 73 kWh
Total price of air heaters	**Total price of air heaters**
 	  (savings of nearly 18%)
OPERATING COST	
Average ceiling temperature = 23°C	Average ceiling temperature = 20°C *(Temperature lower thanks to better induction and higher air velocities)*
Basis of the analysis: 1 kWh with a gas-fired boiler = € 0.047/kW (installationη=80%) 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 480 minutes a day ➠ or **800 hours a year** 	Running time needed each day to maintain 17°C in the comfort zone 380 minutes a day ➠ or **634 hours a year**  **166 less hours of operation**
38,400 kW of boiler power used Annual heating cost ➠ **€ 1,805** 	**30,432 kW** of boiler power used Annual heating cost ➠ **€ 1,430** **(savings of 20%)** 

PERFORMANCE SPECIFICATIONS OF THREE-PHASE HELIOTHERME UNITS

HEATING - THREE-PHASE motor

Model	No. rows	Supply air velocity		Flow rate	Air velocity	Throw (metres)		Heating cap. (kW)			Sound pressure
		Three-phase motor		m3/h	m/s	Wall	Suspended	LP HW	SHW	STEAM	dB(A)
4350	1	**HIGH**	Δ	**2600**	**3.92 m/s**	**22**	**6**	**13,90 kW**	**35.87 kW**	**40.57 kW**	**48**
		LOW	★	2210	3.33 m/s	17	3.5	13,10 kW	32.07 kW	36.92 kW	44
	2	**HIGH**	Δ	**2480**	**3.74 m/s**	**20**	**5**	**25,20 kW**	-		**49**
		LOW	★	2040	3.07 m/s	15	2.5	22,90 kW			45
	3	**HIGH**	Δ	**2165**	**3.26 m/s**	**18**	**4.5**	**30,90 kW**			**50**
		LOW	★	1775	2.67 m/s	14	2	27,40 kW			46
4400	1	**HIGH**	Δ	**4000**	**4.35 m/s**	**25**	**8**	**19,80 kW**	**48.85 kW**	**56.71 kW**	**55**
		LOW	★	3480	3.79 m/s	21	5	18,80 kW	44.55 kW	52.75 kW	51
	2	**HIGH**	Δ	**3800**	**4.13 m/s**	**23**	**7**	**3710 kW**	-		**55**
		LOW	★	3310	3.60 m/s	18	4	34,70 kW			51
	3	**HIGH**	Δ	**3400**	**3.70 m/s**	**22**	**6.5**	**46,10 kW**			**56**
		LOW	★	2960	3.22 m/s	17	3.5	42,60 kW			52
4450	1	**HIGH**	Δ	**5400**	**4.36 m/s**	**28**	**9**	**27,70 kW**	-		**56**
		LOW	★	3910	3.16 m/s	23	5.5	24,40 kW			49
	2	**HIGH**	Δ	**5300**	**4.28 m/s**	**25**	**8**	**51,40 kW**			**57**
		LOW	★	4140	3.34 m/s	21	4.5	45,50 kW			50
	3	**HIGH**	Δ	**5000**	**4.04 m/s**	**24**	**7.5**	**66,50 kW**			**59**
		LOW	★	3910	3.16 m/s	20	4	52,60 kW			52
4500	1	**HIGH**	Δ	**7500**	**4.46 m/s**	**30**	**10**	**37,10 kW**	**100.55 kW**	**100 kW**	**56**
		LOW	★	5740	3.41 m/s	26	7	33,50 kW	83.79 kW	86.82 kW	50
	2	**HIGH**	Δ	**6900**	**4.10 m/s**	**28**	**9**	**66,90 kW**	-		**57**
		LOW	★	5400	3.21 m/s	24	6	59,30 kW			51
	3	**HIGH**	Δ	**6500**	**3.86 m/s**	**26**	**8.5**	**88,40 kW**			**58**
		LOW	★	5020	2.98 m/s	23	5.5	75,90 kW			52
4630	1	**HIGH**	Δ	**11140**	**4.47 m/s**	**29**	**11.5**	**54,50 kW**	**155.4 kW**	**149.8 kW**	**55**
		LOW	★	9635	3.87 m/s	24	8.5	51,60 kW	141 kW	139 kW	48
	2	**HIGH**	Δ	**10510**	**4.22 m/s**	**26**	**10.5**	**102,00 kW**	-		**56**
		LOW	★	8820	3.54 m/s	22	7.5	93,90 kW			49
	3	**HIGH**	Δ	**9175**	**3.68 m/s**	**25**	**10**	**130,00 kW**			**57**
		LOW	★	7545	3.03 m/s	21	7	115,00 kW			49

ELECTRIC HEATING - THREE-PHASE motor

Model	Supply air velocity		Flow rate	Air velocity	Throw (metres)	Electric heating cap. (kW)			Sound pressure
	Three-phase motor		m3/h	m/s	Wall	Total	No. of stages	Capacity per stage	dB(A)
4350	**HIGH**	Δ	**2600**	**3.92 m/s**	**22**	**9.6 kW**	2	**2.4 kW**	**48**
	LOW	★	2210	3.33 m/s	17			7.2 kW	44
4400	**HIGH**	Δ	**4000**	**4.35 m/s**	**25**	**18.9 kW**	2	**5.4 kW**	**55**
	LOW	★	3480	3.79 m/s	21			13.5 kW	51
4500	**HIGH**	Δ	**7500**	**4.46 m/s**	**30**	**28.8 kW**	2	**10.8 kW**	**56**
	LOW	★	5740	3.41 m/s	26			18 kW	50
	HIGH	Δ	**6900**	**4.10 m/s**	**28**	**43.2 kW**	3	14.4 kW x 3	**57**
	LOW	★	5400	3.21 m/s	24				51

Specifications determined using the following information:

- **Hot water (LP HW):** 90-70°C / 15°C RT – 50% RH
- **Superheated water (HP SHW):** 180-120°C / 15°C RT – 50% RH
- **Steam (HP STEAM):** 175°C – 8 bar / 15°C RT – 50% RH
- **Electric:** 3-ph 400 V coil supply / 15°C RT – 50% RH
- **Air throw:**
  * with **JET+** diffuser for a residual velocity of 0.1 m/s
  * defined with **Δt** ST/RT of 15°C
  * with LP water or electric heating
- **Air velocity**: exiting **JET+ diffuser**
- **Sound pressure:** measured 5 metres from unit, directivity 2, attenuation of 22 dB

HELIOTHERME H4000

PERFORMANCE SPECIFICATIONS OF SINGLE-PHASE HELIOTHERME UNITS

HEATING - SINGLE-PHASE motor

Model	No. rows	Supply air velocity	Flow rate	Air velocity	Throw (metres)		Heating cap. (kW)			Sound pressure
		SINGLE-PHASE	m3/h	m/s	Wall	Suspended	LP HW	SHW	STEAM	dB(A)
4350	1	**Direct**	**2600**	**3.92 m/s**	**22**	**6**	**13,90 kW**	**35.87 kW**	**40.57 kW**	**48**
		R3*	2360	3.56 m/s	18	4	13,40 kW	33.57 kW	38.86 kW	46
	2	**Direct**	**2400**	**3.62 m/s**	**20**	**5**	**24,80 kW**	-		**49**
		R3*	2030	3.06 m/s	15	2.5	22,80 kW			47
	3	**Direct**	**2075**	**3.13 m/s**	**15**	**2.5**	**30,10 kW**			**50**
		R3*	1780	2.68 m/s	14	2	27,40 kW			48
4400	1	**Direct**	**4200**	**4.57 m/s**	**26**	**8.5**	**20,20 kW**	**50.39 kW**	**58.12 kW**	**54**
		R3*	3914	4.26 m/s	24	7.5	19,70 kW	48.18 kW	56.09 kW	52
	2	**Direct**	**3800**	**4.13 m/s**	**23**	**7**	**37,10 kW**	-		**55**
		R3*	3550	3.86 m/s	19	4.5	35,90 kW			53
	3	**Direct**	**3450**	**3.75 m/s**	**23**	**7**	**46,50 kW**			**56**
		R3*	3220	3.50 m/s	20	5.5	44,70 kW			54
4450	1	**Direct**	**5200**	**4.20 m/s**	**27**	**8.5**	**27,30 kW**	-		**56**
		R3*	4100	3.31 m/s	24	6	24,90 kW			49
	2	**Direct**	**4700**	**3.80 m/s**	**21**	**4.5**	**48,50 kW**			**58**
		R3*	3700	2.99 m/s	18	4	42,90 kW			51
	3	**Direct**	**4550**	**3.68 m/s**	**18**	**3.5**	**63,00 kW**			**59**
		R3*	3650	2.95 m/s	17	3	55,20 kW			52
4500	1	**Direct**	**7100**	**4.22 m/s**	**28**	**9**	**36,30 kW**	**96.91 kW**	**97.29 kW**	**56**
		R3*	5700	3.39 m/s	26	7	33,40 kW	83.38 kW	86.49 kW	50
	2	**Direct**	**6600**	**3.92 m/s**	**26**	**7**	**65,50 kW**	-		**57**
		R3*	5380	3.20 m/s	24	6	59,20 kW			51
	3	**Direct**	**6200**	**3.69 m/s**	**24**	**6.5**	**85,90 kW**			**58**
		R3*	5055	3.01 m/s	23	5.5	76,10 kW			52
4630	1	**Direct**	**10450**	**4.19 m/s**	**28**	**10.5**	**53,20 kW**	**149 kW**	**145 kW**	**54**
		R3*	8900	3.57 m/s	22	8	50,00 kW	133.4 kW	133.2 kW	47
	2	**Direct**	**9610**	**3.86 m/s**	**24**	**8.5**	**97,90 kW**	-		**55**
		R3*	7630	3.06 m/s	20	6	87,20 kW			46
	3	**Direct**	**8280**	**3.32 m/s**	**21**	**6.5**	**122,00 kW**			**56**
		R3*	6270	2.52 m/s	19	5	103,00 kW			44

HEATING - COOLING - SINGLE-PHASE motor

Model	No. rows	Supply air velocity	Flow rate	Air velocity	Throw (metres)	Capacity (kW)		Sound pressure
		Single-phase motor	m3/h	m/s	Wall	Heating	Cooling	dB(A)
4350	3	**Direct**	**1640**	**2.47 m/s**	**23**	**24,00 kW**	**4,78**	**30**
4400		**Direct**	**2160**	**2.35 m/s**	**26**	**32,60 kW**	**6,68**	**48**
4450		**Direct**	**3025**	**2.44 m/s**	**24**	**46,80 kW**	**10,1**	**45**
4500		**Direct**	**4060**	**2.41 m/s**	**23**	**61,70 kW**	**13,8**	**54**
4630		**Direct**	**5960**	**2.39 m/s**	**21**	**93,50 kW**	**21,4**	**51**

ELECTRIC HEATING - SINGLE-PHASE motor

Model	Supply air vel.	Flow rate	Air velocity	Throw (metres)	Electric heating capacity (kW)			Sound pressure
	Single-phase	m3/h	m/s	Wall	Total	No. of stages	Capacity per stage	dB(A)
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	**6600**	**3.92 m/s**	**26**	**43.2 kW**	**3**	**14.4 kW x 3**	**57**
	R3*	5380	3.20 m/s	24				51

Specifications determined using the following information:

- **Hot water (LP HW):** 90-70°C / 15°C RT – 50% RH
- **Superheated water (HP SHW):** 180-120°C / 15°C RT – 50% RH
- **Steam (HP STEAM):** 175°C – 8 bar / 15°C RT – 50% RH
- **Cold water:** 7-12°C / 25°C RT – 50% RH
- **Air throw:**
  * with **JET+** diffuser for a residual velocity of 0.1 m/s
  * defined with **Δt** ST/RT of 15°C (heating) and 7°C (cooling)
  * with LP water or electric heating
- **Air velocity**: exiting **JET+ diffuser**
- **Sound pressure:** measured 5 metres from unit, directivity 2, attenuation of 22 dB

⇨ **Direct**: velocity obtained when wired directly to single-phase motor.
⇨ **R3***: supply air velocity obtained with autotransformer set to "3". Other operating points (5 altogether) can be provided on request by your CIAT representative using our technical selection software.

ELECTRIC MOTOR SPECIFICATIONS

Use	Model	Motor	Rotation speed	Rated current	Input power	IP	OTP	Class	Operating temp.
HEATING	4350	THREE-PHASE 230/400 V – 50/60 Hz	GV - △ 1400	0.35 A	120 W	44	YES 6.3 A - 165°C	F	-40°C / +60°C
			PV - ✶ 1000	0.15 A	70 W				-40°C / +70°C
	4400		GV - △ 1400	0.8 A	300 W	54			
			PV - ✶ 1000	0.6 A	200 W				
	4450		GV - △ 1400	1.1 A	620 W				
			PV - ✶ 1000	0.6 A	430 W				
	4500		GV - △ 1400	1.1 A	620 W				
			PV - ✶ 1000	0.63 A	380 W				
	4630		GV - △ 1000	1.3 A	590 W				
			PV - ✶ 750	0.64 A	400 W				
HEATING	4350	SINGLE-PHASE 230 V – 50/60 Hz	Direct 1400	0.7 A	150 W	44	YES 6.3 A - 165°C	F	-40°C / +60°C
	4400		Direct 1400	1.3 A	300 W	54			-40°C / +70°C
	4450		Direct 1400	2.8 A	630 W				
	4500		Direct 1400	2.65 A	600 W				
	4630		Direct 1000	2.00 A	450 W				
COOLING	4350	SINGLE-PHASE 230 V – 50/60 Hz	Direct 1000	0.3 A	70 W	44	YES 6.3 A - 165°C	F	40°C / +60°C
	4400		Direct 1000	0.5 A	110 W	54			40°C / +70°C
	4450		Direct 750	0.85 A	140 W				
	4500		Direct 750	0.83 A	150 W				
	4630		Direct 750	1.9 A	370 W				

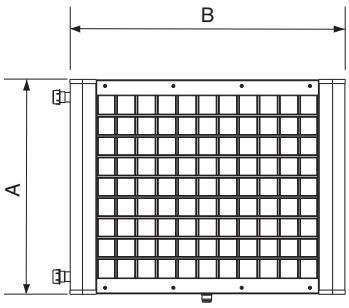
COIL SPECIFICATIONS

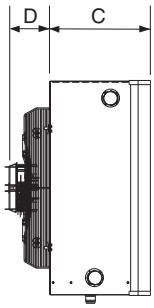
		4350			4400			4450			4500			4630		
LP WATER COIL	Number of heating rows	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	Number of cooling rows	3														
	Coil capacity (L)	0.68	1.18	1.66	0.96	1.59	2.28	1.38	2.27	3.22	2.18	3.38	4.55	2.97	4.7	6.4
	Connection diameter	¾ "						1"			1" ¼					
	Connection type	Threaded unions 243 GCU F/M														
	Operating pressure	16 bar														
	Pressure test	24 bar														
	Maximum temperature	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	Weld-on smooth steel tube														
	Operating pressure	16 bar														
	Pressure test	24 bar														
	Maximum temperature	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	Weld-on smooth steel tube														
	Operating pressure	16 bar														
	Pressure test	24 bar														
	Maximum temperature	200°C														

Stainless steel tubes or Sakafen coating are available upon request. Contact our sales network.

HELIOTHERME H4000

DIMENSIONS



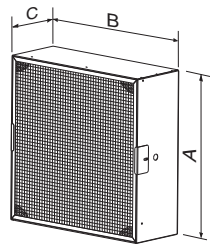


Sizes	A	B	C	D	Weight (kg)		
	mm				1 row	2 rows	3 rows
4350	460	713	286	101	21	23	25
4400	555	767	286	142	29	31	33
4450	618	880	286	142	38	40	42
4500	714	985	336	142	48	51	54
4630	874	1115	336	142	59	64	69

ASSEMBLY ACCESSORIES

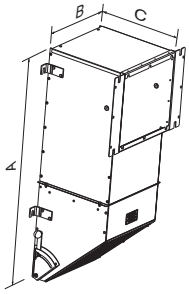
A different assembly for each use.

RETURN AIR MODULE



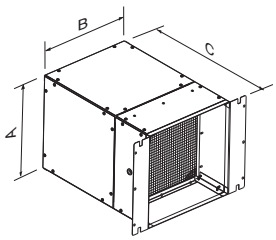
Size	A	B	C	Codes	●
4350	440		220	7185105	●
4400	520			7185106	●
4450	600			7185107	●
4500	680			7185108	●
4630	840			7185110	●

Filter box (G1 filter in accordance with EN 779)
Prevents premature clogging of exchanger coils
Not ductable



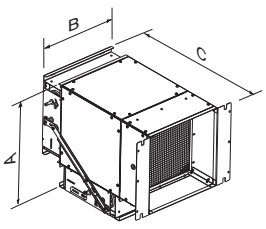
Size	A	B	C	Codes	●
4350	1316	440	510	7185111	●
4400	1386	520	590	7185112	●
4450	1541	623	669	7185113	●
4500	1701	704	750	7185114	●
4630	2076	864	910	7185116	●

Indoor/outdoor return air duct with built-in filter
Adjusts the supply of fresh air to levels required by current regulations and mixes it with return air. G1 filter.
Promotes the mixing of return air and supply air for better comfort levels.



Size	A	B	C	Codes	●
4350	455		659	7185118	●
4400	535		739	7185120	●
4450	615		819	7185122	●
4500	695		899	7185123	●
4630	855		1059	7185125	●

Outdoor air intake box with built-in filter
Adjusts the supply of fresh air to rooms to levels required by current regulations.
Built-in G1 filter and connecting flange for cubic ducts.
Air inlet side configurable on site

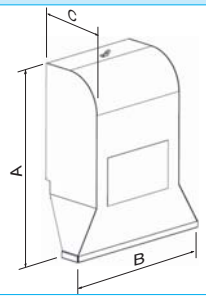


Size	A	B	C	Codes	●
4350	585	455	788	7185127	●
4400	665	535	868	7185128	●
4450	745	615	949	7185129	●
4500	825	695	1029	7185131	●
4630	985	855	1189	7185132	●

2-channel mixing box with built-in filter
Adjusts the supply of fresh air to levels required by current regulations and mixes it with return air.
Built-in G1 filter and connecting flange for cubic ducts.
Air inlet sides configurable on site

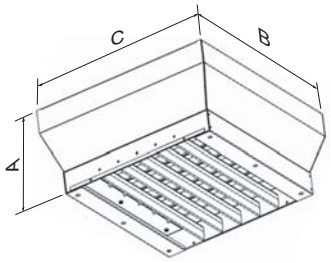
Heliotherme range

DIFFUSION MODULE



Size	A	B	C	Codes	●
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	

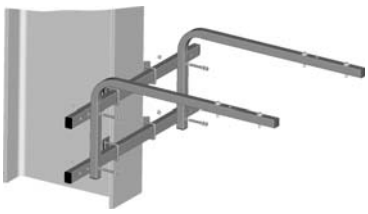
Diffuser on door
Create an air curtain that limits heat loss when doors are opened.



Size	A	B	C	Codes	●
4350	–	–	–	–	–
4400	178	555	522	7185138	●
4450	136	637	618	7185139	●
4500	132	740	714	7185140	●
4630	282	872	814	7185141	●

Diffuser for large spaces
Reduction cone for increasing the throw of air streams

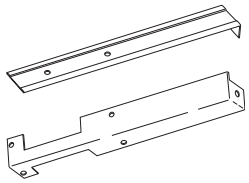
MOUNTING ACCESSORIES



Size	Codes	●
All	7181226	●
350 to 450	7181228	●
500 to 630	7181230	●

Wall bracket

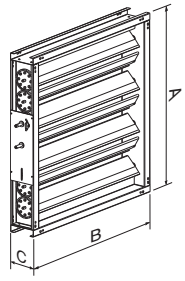
Additional kit for fastening on an I-beam



Size	Codes	●
4350 to 4450	7185142	●
4500 and 4630	7185146	●

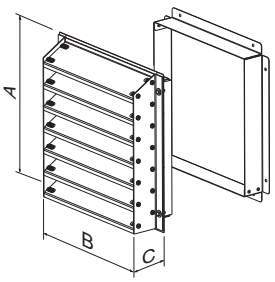
Ceiling bracket

DUCT ACCESSORIES



Size	A	B	C	Codes	●
4350	443			7043051	●
4400	523			7043052	●
4450	603		130	7043053	●
4500	683			7043054	●
4630	843			7043055	●

Antifreeze damper



Size	A	B	C	Codes	●
4350	438			7043033	●
4400	518			7043034	●
4450	598		125	7043035	●
4500	678			7043036	●
4630	838			7043037	●

Outdoor kit
Rain shield frame with bird screen, automatic shutter and metal connection

ELECTRICAL ACCESSORIES:

ELECTRICAL & USER SAFETY:

Codes	●	**Padlockable proximity switch** Available in a 1 or 2-speed version. Must be placed at least 2 metres from any rotating machinery (French standard IT 246, Art. 4-7-3, and EC requirements)
0596142	●	
0596147	●	

	Use	Codes	●	
SINGLE-PHASE	H4350	7124708	●	**Thermal-magnetic circuit breaker** All installations must be protected from overcurrents and overvoltages (French standard NFC 15-100)
	H4400	7124709		
	H4450 and 4500	7124711		
	H4630	7124710		
THREE-PHASE	H4350	7124705		
	H4400	7124708		
	H4450 to 4630	7124709		

THERMOSTATS:

Codes	●	**IP30 indoor environment thermostat – Single-phase installation**
5201027	●	5201027: heating only or cooling only (RTR-E 6721) Inductive cut-off capacity 4A
5201028	●	5201028: heating and cooling with manual toggle switch (RTR-E 6731) Inductive cut-off capacity 2A

Codes	●	**IP54 industrial environment thermostat – Three-phase installation**
7113335	●	7133335: 1 stage
7113336	●	7133336: 2 stages

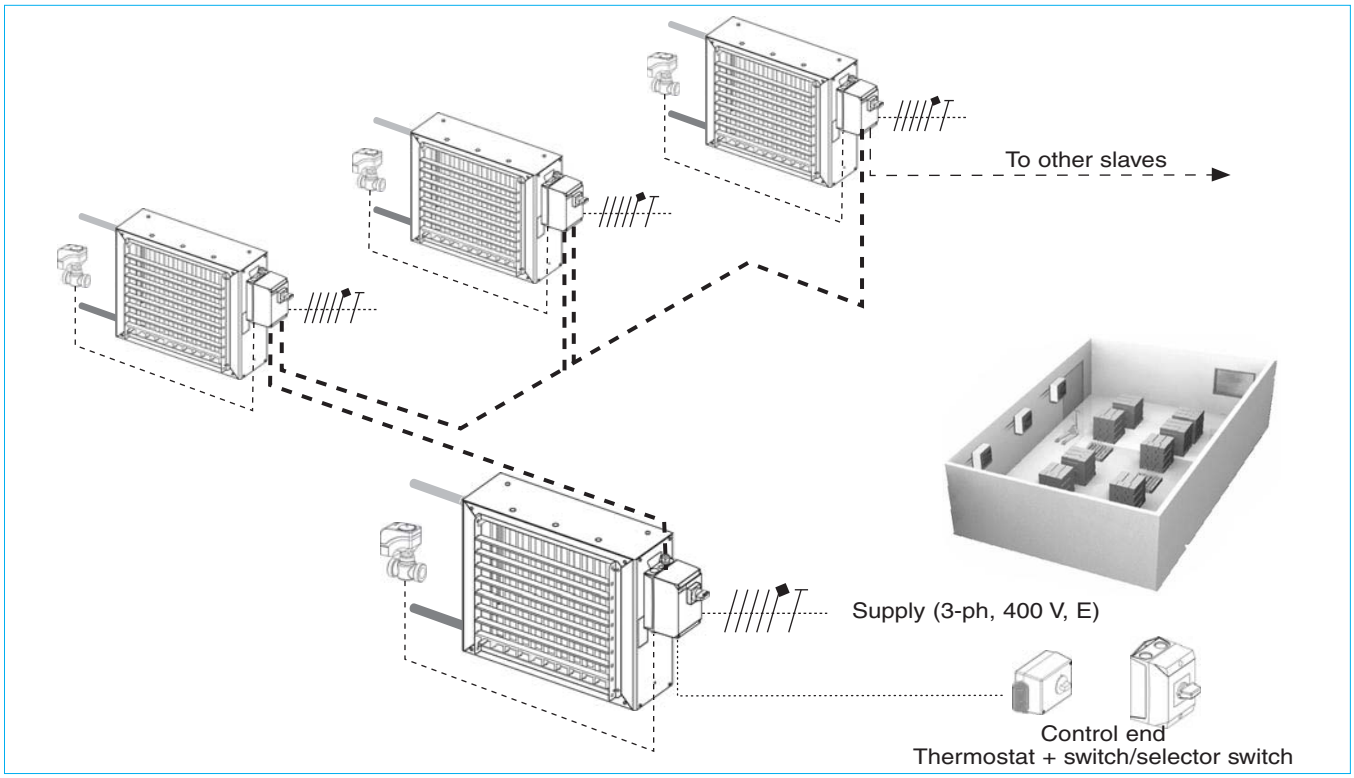
AIR VELOCITY SELECTION:

Codes	●	**LS/HS switch** For three-phase motor. Two speeds and off.
7169961	●	

Codes	●	**Autotransformer with selector switch (3.5 A)** Adjusts the voltage on single-phase motors with one variable speed to achieve up to five supply air speeds.
7166982	●	

THREE-PHASE HELIOTHERME CONTROL:

THREE-PHASE BOX UNIT RANGE



DESCRIPTION:

Air and water control solution for a three-phase air heater.

⇨ Advantages:

- **PLUG & HEAT** solutions eliminate the need to size or wire electrical components: **faster installation**
- **Master/slave** or **independent** control.
- **AUTOMATIC** or **MANUAL** supply.
- Built-in protection against short-circuits and overcurrents.
- Built-in padlockable proximity switch for isolating system from mains and ensuring compliance with electrical codes.

COMPONENTS AND PRICES

Description		Components					
		Unit	●	TCO	●	Switch	●
AUTO control of 1 supply air speed	C1VN/B1-S1V	C1VN 7043056	●	B1 7113335	●	S1V 7119659	●
MANU control of 2 supply air speeds	C2VN/B1-S2V	C2VN 7043058	●	B1 7113335		S2V 7119660	●
AUTO control of 2 supply air speeds	C2VN/B2-S1V			B2 7113336	●	S1V 7119659	●
Use		CONTROL LOOP or INDEPENDENT UNIT					
		SLAVE LOOP					

SINGLE-PHASE HELIOTHERME CONTROL:

SINGLE-PHASE Eco+ BOX UNIT RANGE

Unit description

- Electronic **air** (FMA) and **water** (3-way valve) control for SINGLE-PHASE air heaters.
- Proportional control system adjusts the supply air rates and coil water supply based on the difference between the indoor temperature (measured by the built-in sensor) and the programmed temperature setpoint (summer or winter).
- Built-in weekly timer for three operating modes: COMFORT, ECONOMY and FROST PROTECTION

⇨ Advantages:

- **Master/slave** or **independent** control for total control of a set of HELIOTHERME units.
- **Economical**, **responsible management** of your entire installation. Use the proportional control system to heat and cool only when needed.
- Front **digital display** for quick and easy viewing of the status of your HELIOTHERME units.
- Extremely easy to configure without the need for technicians or programmers.
- *All-in-one solution. Simply plug it in and feel the effects!*

⇨ Specifications:

- Power supply: Single phase, 230 V, 50/60Hz
- 10 A rated current
- IP50 housing
- Digital display and adjustment keys on front
- 0-10 V outputs for valve control available
- Built-in sensor
- Optional remote sensor (length 15m)

PRICES

Description	Codes	●
SINGLE-PHASE Eco+ UNIT ***(one unit controls up to three Heliotherme H4000s)***	7184939	●
3/4" - 2.5 Kvs valve kit (H4351-4352-4401-4451)	B400410	●
3/4" - 4 Kvs valve kit (H4351-4402-4403-4452-4501)	B400411	●
1"1/4 - 6.3 Kvs valve kit (H4452-4501-4502-4631)	B400412	●
1"1/4 - 10 Kvs valve kit (H4632-4633)	B400413	●
Changeover thermostat (automatic summer/winter changeover)	7128892	●
220/24 Vac safety transformer (necessary for the electric supply of the valve(s) servomotor(s) 0-10V	5203542	●
Remote sensor (length 15m)	7207381	●

Heliotherme range

Elec BOX UNIT RANGE

Description

Control unit for electric heaters on HELIOTHERME TEs equipped with single-phase motors.

⇨ Advantages:

- **PLUG & HEAT** solution fitted and wired on a HELIOTHERME unit. No need to size or wire electrical components: **faster installation**
- Control of coil capacity stages: **easy use**

⇨ Specifications:

- IP54 housing.
- Three-phase 400 V electric heater motor
- Single-phase 230 V motor power supply.
- Electronic controller for managing the setpoint temperature and activating the heating stages.
- Surface-mounted control unit (delivered separately) for easy management of the setpoint temperature of each operating mode (ventilation only in summer; heating and ventilation in winter).
- Built-in sensor can be placed up to 6 m away.
- Fan delay relay for extra ventilation after electric heater turned off.
- Double overheating thermostat with automatic and manual reset for compliance with fire safety standards (CH37).
- Built-in protection against short-circuits and overcurrents.
- Built-in padlockable proximity switch for isolating system from mains and ensuring compliance with electrical codes.

PRICES

Description		For H4350 9.6 kW	For H4400 18.9 kW	For H4500 28.8 kW	For H4500 43.2 kW
Control unit for three-phase 400 V coil and single-phase 230 V motor (delivered fitted)	Codes	B400400	B400401	B400402	B400403
	●	●	●	●	●
Surface-mounted control unit (delivered not fitted)	Codes	5204003			
	●	●			

HELIOTHERME H4000

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.
They are identified by the following code: LCIE 03 ATEX 6392X.
This approval, issued by an independent external body, is your guarantee of complete compliance with the ATEX directives.

The HELIOTHERME ATEX range is certified for applications under the following conditions:

- explosive atmospheres containing gases or dusts
- Zone 1 or 2 areas
- II B or II C explosion groups
- T4 to T6 gas autoignition temperatures
- low pressure water, superheated water, vapour, oil, compressed air, etc.

What does ATEX mean?

ATEX stands for explosive atmosphere. An explosive atmosphere is a mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapours, mists or dusts in which, after ignition has occurred, combustion spreads to the entire unburned mixture.

How are ATEX zones defined?

ATEX zones are determined based on the probability and duration of the occurence of an explosive atmosphere. This risk analysis is used to define ATEX zones, explosion groups and maximum surface temperature classes. These atmospheres are mainly found in such places as paint shops, metal processing operations, waste recycling plants and wood processing plants.

Who is responsible for defining 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.).

ZONE		Category	The explosive atmosphere:
Gas (G)	Dust (D)		
0	20	0	occurs continuously, often and over extended periods: **NOT APPLICABLE TO ANY CIAT PRODUCTS**
1	21	1	occurs occasionally during normal use
2	22	2	occurs rarely and only for a short period

GASES – EXPLOSION GROUPS AND TEMPERATURE CLASSES						
Temperature class	**T1**	**T2**	**T3**	**T4**	**T5**	**T6**
Max. surface temperature	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 acétate Butane Butanol	Petrols Diesels Heating oils Hexane	Acetaldehyde		
II B	Town gas	Ethylene	Hydrogen sulphide	Ethylether		
II C	Hydrogen	Acetylene				Carbon disulphide

Heliotherme range

LP WATER

Model		Water / LP Oil					
		Standard version			Stainless steel options (supplement)		
		Single-phase - Heating	Single-phase - Cooling	Three-phase	Coil	Casing	
						Heating	Cooling
H4351	Code	7184359		7184346	B400030	B400094	
	●	●		●	●	●	-
H4352	Code	7184366		7184365	B400031	B400094	
	●	●		●	●	●	
H4353	Code	7184375	7184379	7184372	B400032	B400094	B400095
	●	●	●	●	●	●	●
H4401	Code	7184387		7184384	B400039	B400097	
	●	●		●	●	●	-
H4402	Code	7184391		7184390	B400040	B400097	
	●	●		●	●	●	
H4403	Code	7184395	7184439	7184393	B400041	B400097	B400098
	●	●	●	●	●	●	●
H4451	Code	7184360		7184367	B400048	B400100	
	●	●		●	●	●	-
H4452	Code	7184388		7184392	B400049	B400100	
	●	●		●	●	●	
H4453	Code	7184440	7184445	7184443	B400050	B400100	B400101
	●	●	●	●	●	●	●
H4501	Code	7184446		7184448	B400057	B400103	
	●	●		●	●	●	-
H4502	Code	7184493		7184496	B400058	B400103	
	●	●		●	●	●	
H4503	Code	7184500	7184449	7184501	B400059	B400103	B400104
	●	●	●	●	●	●	●
H4631	Code	7184509		7184510	B400066	B400106	
	●	●		●	●	●	-
H4632	Code	7184511		7184512	B400067	B400106	
	●	●		●	●	●	
H4633	Code	7184514	7184491	7184516	B400068	B400106	B400107
	●	●	●	●	●	●	●

SUPERHEATED WATER / HP OIL & STEAM

Model		Superheated water / Oil				Steam			
		Standard version		Stainless steel options (supplement)		Standard version		Stainless steel options (supplement)	
		SINGLE-PHASE	THREE-PHASE	Coil	Casing	SINGLE-PHASE	THREE-PHASE	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
	●	●	●	●	●	●	●	●	●

ELECTRIC HEATING

Model			Electric		
			Standard version		Stainless steel Casing
			Single-phase	Three-phase	
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					
		Corrobloc motor		3-ph, 400 V - 6P ATEX motor			
		Single-phase	Three-phase	II B - T4	II C - T4	II B - T5	II C - T6
350	Code	B400119	B400121	B400252	B400256	B400254	B400258
	●	●	●	●	●	●	●
400	Code	B400122	B400124	B400260	B400264	B400262	B400266
	●	●	●	●	●	●	●
450	Code	B400125	B400127	B400268	B400272	B400270	B400274
	●	●	●	●	●	●	●
500	Code	B400128	B400130	B400276	B400280	B400278	B400282
	●	●	●	●	●	●	●
630	Code	B400131	B400133	-			
	●	●	●				

Heliotherme range

Head Office
Avenue Jean Falconnier - B.P. 14
01350 - Culoz - France
Tel. +33 (0)4 4 42 42 42 04 – Fax. +33 (0)4 79 42 42 10
e-mail: info@ciat.fr - www.ciat.com

CIAT Service
Tel.: +33 (0)4 79 42 42 90 - Fax: +33 (0)4 79 42 42 13

Compagnie **I**ndustrielle d'**A**pplications **T**hermiques - S.A. au capital de 26 000 000 € - R.C.S. Belley B 545 620 114