

ABOUT US ...technological innovation since 1986





OUR MISSION

Founded in 1986 as a manufacturer of industrial furnaces, **Comex Group** has built its history on a fundamental value: technological innovation.

Many years of experience in the heating and air-conditioning sectors, combined with the continuous acquisition of know-how on new technologies and applications, have enabled the company to apply solutions that are always up-to-date using heat pump systems, solar cooling, heat recovery, thermal power stations and, most recently, air sanitation.

Research and innovation have distinguished the company in the heating and air conditioning sector with important advantages for **Comex Group** customers in the areas of energy saving, safety and environmental protection.

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HYBRID ECOCLIMA

HIGH-EFFICIENCY HEAT PUMP + CONDENSING BOILER

Hybrid Ecoclima is a pre-assembled factory-made thermo-cooling unit, consisting of a condensing thermal unit and an air-water heat pump complete with inertial storage.

Hybrid Ecoclima offers a **highly efficient technology** that optimises the use of primary energy and renewable energy taken from the air, for air conditioning in every season, with real energy savings and a significant reduction of CO_2 emissions into the atmosphere.

Inverter modulating air-water heat pump:

High-efficiency modulating condensing boiler from:



Hybrid Ecoclima is designed for outdoor installation with IPX5D protection and the boiler uses a modulating (1:10) full pre-mix burner in NOx emission class 6.



As a power source, the thermo-refrigeration plant uses gas and electricity for the production of thermal energy in proportion to the demand of the user and the use of the heat pump in correlation with the outside temperature.

The thermal power supplied to the user is in continuous sliding modulation produced by a renewable source, through the inverter heat pump, with the possible integration of power and temperature through the gas thermal unit.

This technology with 'hybrid' thermal energy production, using thermal energy from the air, allows consumption to be minimised compared to traditional systems powered only with primary energy from methane gas or LPG.

Compared to the past, the demand for annual air-conditioning is shifting towards greater use of room air-conditioning, so the opportunity to finally have a single system for heating and air-conditioning greatly simplifies planning and fully satisfies the customer's comfort needs.

Why is HYBRID ECOCLIMA an ideal solution?

1 BECAUSE IT ALLOWS WELL-BEING WITH THE RIGHT CLIMATE IN ALL SEASONS

2 BECAUSE IT IS VERY EFFICIENT

3 BECAUSE THEY RESPECT THE ENVIRONMENT AND REDUCE CO2 EMISSIONS

All the advantages of choosing HYBRID ECOCLIMA:

- Flexibility of use for:
 - 1. New installations,
 - 2. Energy requalification,
 - **3. Power integration** in existing residential, tertiary and industrial installations.
- Reduction of consumption and greenhouse gas emissions
- Custom: it can be produced according to the design choices, the packaged plant is designed, assembled and tested in the factory as a factory made solution thanks to the Comex Group technical department's design.
- Offers safety as the gas supply is outside the premises
- Quiet in operation
- **Management:** centralised energy and remote system management

- Production of domestic hot water (optional)
- It is easy to set up as it is already assembled with a technical water storage tank, and allows the recovery of space occupied by the central heating plant and the cost of the paperwork for bringing the technical room up to standard (for the outdoor package version)
- Wide range of powers available: in addition to the HYBRID ECOCLIMA in the outdoor package version, the factory made range of high power 100 kW, 150 kW, 200 kW, 250 kW, 300 kW in skid and package versions is available
- Availability of a technician for site supervision, and also a single technical and maintenance service.



RESIDENTIAL SECTOR



COMMERCIAL SECTOR



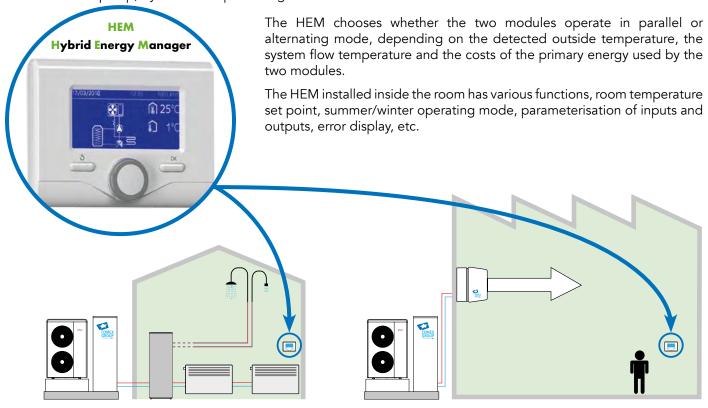
INDUSTRIAL SECTOR



HEM - the heart of the HYBRID ECOCLIMA system

The hybrid system is controlled by the Hybrid Energy Manager (HEM).

The Hybrid Energy Manager (HEM) intelligently manages the choice of thermal energy production of the two modules, boiler and heat pump, by means of specific logarithms.



HYBRID ECOCLIMA - Combinations with fans









HYBRID ECOCLIMA - Technical Data

Heat pump



Condensing thermal unit

Model	DII	MP 17	
Heating energy class	PO		
(W55 / W35) (W35 = A++ ready)		A++	
System energy class		A++ / A+++	
Max. heating power (A7W35)	kW	16,7	
Rated heating output (A7W35, EN14511)	kW	10,4	
Power input (A7W35, EN14511)	kW	2,1	
COP (A7W35, EN14511)		5	
Max. heating output (A2W35)	kW	15,6	
Rated heating output (A2W35, EN14511)	kW	8	
Power input (A2W35, EN14511)	kW	1,9	
COP (A2W35, EN14511)		4,15	
Max. heating output (A-7W35)	kW	12,4	
Rated heating output (A-7W35, EN14511)	kW	11	
Power input (A-7W35, EN14511)	kW	3,5	
COP (A-7W35, EN14511)		3,15	
Max. heating output (A-7W55)	kW	11,6	
Rated heating output (A-7W55, EN14511)	kW	10,3	
Power input (A-7W55, EN14511)	kW	4,8	
COP (A-7W55, EN14511)		2,17	
SCOP W35		4,8	
SCOP W55		3,38	
Max. cooling capacity (A35W18)	kW	16,64	
Rated cooling capacity (A35W18, EN14511)	kW	12,5	
Power input (A35W18, EN14511)	kW	2,74	
EER (A35W18, EN14511)		4,56	
Max. cooling capacity (A35W7)	kW	11,67	
Rated cooling capacity (A35W7, EN14511)	kW	11	
Power input (A35W7, EN14511)	kW	3,75	
EER (A35W7, EN14511)		2,93	
Refrigerant type		R-410A	
Refrigerant charge	kg	3,9	
CO ₂ Eq	t	8,143	
Compressor type	DC tv	DC twin-rotary	
Water pipe connection diameter (inlet / outlet)	inches	1″	
Nominal sound power level (A7W55)	dB(A)	63	
Rated sound pressure level (A7W55) (1)	dB(A)	58	
•			

CLIMAIR COND Model			COND 25	COND 35	
Appliance category			I2H3P		
Device type		C13, C43,	C13, C43, C53, C63		
D . 11	max	kW	24	32	
Rated heat capacity (HI)	min	kW	2,6	3,4	
Useful heat output (HS)	max	kW	25	33,5	
50/30°C	min	kW	2,7	3,5	
Useful heat output (HI)	max	kW	23	30,8	
80/60°C	min	kW	2,4	3,3	
Nominal heat output	max	%	95,9	104,5	
50/30°C *	min	%	103 <i>,7</i>	103,5	
Nominal heat output	max	%	96	96,6	
80/60°C *	min	%	96	96	
Efficiency at partial load (TR=30°C)		%	107,1	107,1	
NOx Class			6	6	
Maximum operating pressure		bar	3	3	
Maximum operating temperature °C		85	90		
Expansion tank capacity (at 1.5 bar)		9	9		
Hydraulic connections	Gas	"M	3/4"	3/4"	
	Out/In	"M	3/4"	3/4"	
Flue gas discharge	Coaxial	mm	60/100	60/100	
	Splitted	mm	80-80	80-80	
Condensation drain		mm	13	13	
Electrical protection degree	IP		IPX	(5D	

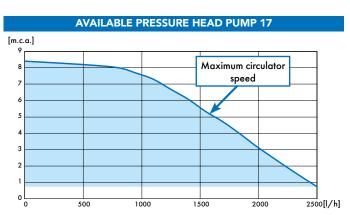
AVAILABLE PRESSURE HEAD CLIMAIR COND 25-35 Maximum circulator speed650 600 550

(1) Sound pressure level measured at 1 metre distance with directionality factor Q=4 These products contain fluorinated gases of type R 410A (GWP = 2088)

OPERATING RANGE PUMP 17

Heating with water temperature from 20 to 60°C and outside air temperature from -20 to 35°C

Cooling with water temperature from 5 to 23°C and outside air temperature from 10 to 43°C.



Monobloc model		HE32	HE40
Dimensions Monobloc WxHxD	mm	180,5 x 46,5 x 196,5	180,5 x 46,5 x 196,5
Empty weight	kg	185	190

LEADER - Technical Data





MODELLO LEADER			HE 18	HE 38
TOTAL HEAT OUTPUT	Max speed	kW	18	38
	Min speed	kW	12	23
AIR FLOW	Max speed	m^3/h	2.400	4.800
	Min speed	m^3/h	1.050	2.400
	ln	°C	16	16
AIR TEMPERATURE	Out max speed	°C	38	39
	Out min speed	°C	50	49
AIR THROW	Max speed	m	20	20
AIR ITROVY	Min speed	m	16	16
AIR CIRCUIT PRESSURE DROP	Max speed	mbar	0,48	0,64
AIR CIRCUIT PRESSURE DROP	Min speed	mbar	0,27	0,40
WATER CIRCULATION FLOW RATE		l/h	828	1. <i>7</i> 66
WATER TEMPERATURE	ln	°C	60	60
VYATER TEMPERATURE	Out max speed	°C	40	40
WATER CIRCUIT PRESSURE DROP		mbar	20	80
WEIGHT		kg	41	66
NOISE LEVEL	Max speed	dB(A)	47	49
NOISE LEVEL	Min speed	dB(A)	44	46

 ΔT MAX WORKING TEMPERATURE = 20°C and AMBIENT TEMPERATURE = 16°C

LEADER C			HE 18	HE 38			
AIR FLOW	Max speed	m^3/h	2.400	4.400			
	Min speed	m^3/h	1.400	2.200			
AIR THROW	Max speed	m	20	20			
	Min speed	m	16	16			
WATER TEMPERATURE IN/OUT 7 - 12 °C							
TOTAL HEAT OUTPUT	Max speed	kW	6,8	13			
IOIAL IILAI OOIFOI	Min speed	kW	5,7	10			
SENSIBLE HEAT OUTPUT	Max speed	kW	6,8	13			
SENSIBLE HEAT OUTPUT	Min speed	kW	5,7	10			
AIR TEMPERATURE	In	°C	26	26			
AIR IEMFERATORE	Out	°C	17	17			
RELATIVE HUMIDITY	In	%	50	50			
RELATIVE HOMIDITY	Out	%	88	86			
CIRCULATION WATER FLOW RATE		l/h	883	1766			
WATER CIRCUIT PRESSURE DROP		mbar	30	100			
WEIGHT		kg	43	68			
NOISELEVE	Max speed	dB(A)	47	49			
NOISE LEVEL	Min speed	dB(A)	44	46			

CARATTERISTICHE IDRAULICHE, ELETTRICHE - INGOMBRI				
LEADER AND LEADER C MODEL			HE 18	HE 38
HYDRAULIC CONNECTIONS	Out/In	"M	3/4"	3/4"
POWER SUPPLY VOLTAGE		V/Hz	230/50	230/50
ELECTRICAL POWER CONSUMPTION	Max	W	110	220
PROTECTION DEGREE		IP	IP44	IP44
	Н	mm	<i>7</i> 36	<i>7</i> 36
DIMENSIONS		mm	<i>7</i> 48	1.148
	D	mm	618	618

RANGE OF SPLIT SOLUTIONS WITH HYDRONIC HEAT PUMP

HPE

Electrically powered heat pump





Contributing to reducing • the greenhouse effect

HPE offer efficiency in all working conditions, designed for outdoor installation, with uses in industrial, residential and commercial contexts.

HPE uses R410A refrigerant, ensuring low energy consumption and high performance at the same time, available in 3 models and powers that can be combined with **LEADER HP**.

The electrical panel is built in compliance with EEC directives 73/23 and 89/336 on electromagnetic compatibility and related standards. Inside, a microprocessor automatically adapts HPE's set-point according to the conditions detected by the outdoor probe, allowing the unit to operate optimally even in the coldest winter conditions, always meeting the demands of the connected user.

HPE also consists of a scroll type **compressor** installed on anti-vibration supports, a **finned pack heat exchanger**, with 8mm copper tubes, aluminium fins, generously sized to speed up the defrosting phases, a **brazed plate heat exchanger made of stainless steel** and optimised for use with R410A.

The hydraulic circuit is complete with a Y filter, pressure gauge, relief and safety valves, temperature probes, differential pressure switch, etc.

The refrigeration circuit also includes: filter drier, safety valves, thermostatic, Schrader and 4-way valves for cycle reversal, high and low pressure switches. etc.

HPE Advantages

- Reduced consumption and ZERO greenhouse gas emissions, ecological renewable energy solution, no need for flues
- Rapid room start-up, thanks to the system's low thermal inertia
- Silent operation
- Modulation of thermal power
- High-efficiency heat exchange in the environment, thanks to fans supplied with hot water at a low temperature of 38°C, and designed to be combined with heat pumps
- Installable without the need for a central heating plant and low environmental impact for installation
- Fire prevention certificate exempt solution
- Three heat output models available
- "All in one 365" system unique wellness solution for all seasons of the year: heating, air conditioning and dehumidification
- Ideal for residential, commercial, tertiary, hospital and hotel use
- Operation in winter with outdoor temperatures down to - 20°C
- Single electrical power source
- Ease of design
- Ducted version in combination with Leader Jet fans
- Possibility of ambient air filtration and sanitisation (patented option)
- System lifetime: over 10 years

HPE the ideal GREEN solution

HPE

HPE Combinations with LEADER HE Combinations with LEADER JET HE













For further information on use, technical data, heat pump hybrid range combinations, etc., please contact the Comex Group technical department.

RANGE OF SPLIT SOLUTIONS WITH HYDRONIC HEAT PUMP

HPG

Heat pump with endothermic gas-powered engine



The **HPG** endothermic engine gas heat pumps recover both the renewable energy from the air and all the heat produced by the endothermic engine itself, offering maximum efficiency for winter and summer air conditioning.

The technology used in **HPG SMART** optimises both average seasonal and annual efficiencies, making it possible to comply with the Ecodesign directives and fully meet the comfort and environmental protection requirements of Ecodesign.

Among the advantages of using this technology, the system's high performance stands out, **in some conditions the yields even exceed 200%**, and even in very critical external environmental conditions, the system guarantees the continuous energy supply as indicated on the nameplate.

Such high performance is achieved thanks to the energy production of the endothermic motor, combined with the free thermal energy recovered from the residual heat of the motor itself. In this way, the system allows and guarantees the continuity of supply at maximum thermal power, to satisfy the energy demand of the user even with external temperatures as low as -20 °C.

Savings in use, very low electricity consumption and simplified routine maintenance every 10,000 hours are some of the other pluses for preferring to use the gas hydronic heat pump.

HPG Advantages

- Reduced consumption and reduced greenhouse gas emissions, environmentally friendly renewable energy solution
- Very low electricity consumption (1000W) of the heat pump with endothermic motor
- Quick set-up of the environment, thanks to the low thermal inertia of the system
- Quiet operation
- Modulation of thermal power
- Very high efficiency with the transformation of all primary energy into heating and cooling power
- Maximum heat output even at outside temperatures of - 10°C
- Highly efficient heat exchange in the room
- No hydronic connection required so no risk of frozen pipes as can occur with hydronic systems
- Installable without the need for a central heating plant and low environmental impact for installation
- Fire prevention certificate exempt solution
- Three heat output models available
- "All in one 365" system unique wellness solution for all seasons of the year: heating, air conditioning and dehumidification
- Ideal for residential, commercial, tertiary, hospital and hotel use
- Operation in winter with outdoor temperatures down to - 20°C
- Domestic hot water production kit (optional)
- Ease of design
- Ducted version in combination with Leader Jet fans
- Possibility of ambient air filtration and sanitisation (patented option)
- System lifetime: more than 15 years

HPG

HPG Combinations with LEADER HE Combinations with LEADER JET HE













For further information on use, technical data, heat pump hybrid range combinations, etc., please contact the Comex Group technical department.

FRIO-E

Heat pump with electrical power supply





Contributing to reducing the greenhouse effect

The FRIO-E is an innovative electrically driven heat pump, a technological solution for heating, air conditioning and dehumidification of rooms in medium to large industrial, tertiary and commercial buildings. This heat pump is completely autonomous in operation and thanks to its technology is ideal for the integration of heating power and air conditioning.

FRIO-E is a viable alternative to traditional radiant and/ or air heating systems with direct gas-fired exchange, or hydronic systems with boilers. The high efficiency of the air source heat pump is also guaranteed by the integrated inverter modulation, FRIO-E is designed for use both inside and outside of rooms, the hydrophilic heat exchange coil of the fan on the other hand, is fuelled with R410A gas.

FRIO-E in combination with LEADER fans becomes a "**FRIO-E LEADER**" split heating unit consisting of a heat pump combined with a direct expansion fan, integrating two modulating step fans that guarantee silent operation. LEADER e units are prepared for filtration and sanitisation of recirculated room air (optional patented technology). **FRIO-E is also available in combination with LEADER JET ductable fans** composed of centrifugal fans, thus becoming "**FRIO-E LEADER JET**".

The system is specially designed to meet the high demands of climatic comfort for people, respect for the environment and the nature of the planet, and the possibility of accessing tax deductions if required by the laws and regulations in force in the country where the system is installed.

FRIO-E Advantages

- Reduced consumption and ZERO greenhouse gas emissions, ecological renewable energy solution, no need for flues
- Rapid room start-up, thanks to the system's low thermal inertia
- Silent operation
- Modulation of thermal power
- . Highly efficient heat exchange in the room
- No need for hydronic connection so no risk of frozen pipes as can occur with hydronic systems
- Installable without the need for a central heating plant and low environmental impact for installation
- Fire prevention certificate exempt solution
- Two heat output models available
- "All in one 365" system unique wellness solution for all seasons of the year: heating, air conditioning and dehumidification
- Ideal for residential, commercial, tertiary, hospital and hotel use
- Operation in winter with outdoor temperatures down to - 20°C
- Single electrical power source
- Ease of design
- Ducted version in combination with Leader Jet fans
- Possibility of ambient air filtration and sanitisation (patented option)
- System lifetime: over 10 years

FRIO-E the ideal GREEN solution

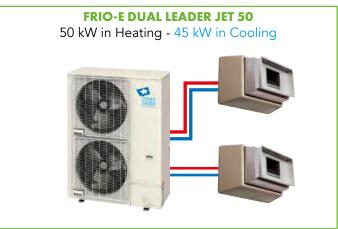
FRIO-E

FRIO-E Combinations with LEADER HE Combinations with LEADER JET HE









For further information on use, technical data, heat pump hybrid range combinations, etc., please contact the **Comex Group technical department.**



FRIO-G

Heat pump with endothermic engine gas supply



The **FRIO-G** gas heat pumps with endothermic engine recover both the renewable energy from the air and all the heat produced by the endothermic engine itself, offering maximum efficiency for winter and summer air conditioning. The technology used in FRIO-G optimises both average seasonal and annual efficiencies, allowing it to comply with the Ecodesign directives and fully satisfying the requirements of comfort and environmental protection provided by Ecodesign. Among the advantages of using this technology, **the system's high performance stands out, in some conditions the yields even exceed 200%**, and even in very critical external environmental conditions, the system guarantees the continuous energy supply as indicated on the nameplate.

Such high performance is achieved thanks to the energy production of the endothermic motor, combined with the free thermal energy recovered from the residual heat of the motor itself. In this way, the system allows and guarantees the continuity of supply at maximum thermal power, to satisfy the energy demand of the user even with external temperatures as low as -20 °C.

Savings in use, very low electricity consumption and simplified routine maintenance every 10,000 hours are some of the other pluses for preferring to use the direct expansion gas heat pump.

FRIO-G in combination with LEADER fans becomes a "**FRIO-G LEADER**" split heat pump unit, made up of a heat pump combined with a direct expansion fan, which integrates two modulating step fans that guarantee silent operation. **It is also available in combination with ductable LEADER JET** fans composed of centrifugal fans, thus becoming "**FRIO-G LEADER JET**".

FRIO-G Advantages

- Reduced consumption and greenhouse gas emissions, environmentally friendly renewable energy solution
- Very low electricity consumption (1000W) of the heat pump with endothermic motor
- Quick set-up of the environment, thanks to the low thermal inertia of the system
- Quiet operation
- Modulation of thermal power
- Very high efficiency by converting all primary energy into heating and cooling power
- Maximum heat output even at outside temperatures of - 10°C
- Highly efficient heat exchange in the room, thanks to fans supplied with hot water at a low temperature of 38°C, and designed to be combined with heat pumps
- Installable without the need for a central heating plant and low environmental impact for installation
- Fire prevention certificate exempt solution
- Three heat output models available
- "All in one 365" system unique wellness solution for all seasons of the year: heating, air conditioning and dehumidification
- Ideal for residential, commercial, tertiary, hospital and hotel use
- Operation in winter with outdoor temperatures down to - 20°C
- Domestic hot water production kit (optional)
- Ease of design
- Ducted version in combination with Leader Jet fans
- Possibility of ambient air filtration and sanitisation (patented optional)
- System lifetime: more than 15 years

FRIO-G

FRIO-G Combinations with LEADER HE Combinations with LEADER JET HE









For further information on use, technical data, heat pump hybrid range combinations, etc., please contact the **Comex Group technical department.**



DUALTOP

The condensing split system

The DUALTOP split system consists of a wall-hung "CLIMAIR COND" high-efficiency condensing boiler for outdoor use, combined with one or more "LEADER" fan heaters to be installed in the room to be heated. In the "C" version, the system is designed to be combined with a cooling unit for summer cooling.

The package includes:

- Climair range wall-mounted condensing boiler
- On-site flue gas exhaust kit
- Internal fan heater(s) from the Leader range
- External probe for climatic compensation
- Room thermostat kit w/double speed



The DUALTOP split system is ideal for heating rooms where regulations prevent the installation of gas appliances inside the premises, as the heat generator is installed outside the building and safety is one of the main prerogatives for installation.

DUALTOP 30









DUALTOP 50







DUALTOP 70











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DUALTOP 100











DUALTOP 115









For more information on use, plant design, etc. contact the Comex Group technical department.

DUALIET

The ducted condensing centrifugal split system

The DUALJET split system consists of a wall-mounted 'CLIMAIR COND' high-efficiency condensing boiler for outdoor use, combined with one or more 'LEADERJET' fan heaters to be installed, also in combination with air diffusion ducts, in the room to be heated.

The package includes:

- Climair range wall-mounted condensing boiler
- On-site flue gas exhaust kit
- Indoor fan heater(s) from the LeaderJet range
- External probe for climatic compensation
- Room thermostat kit w/double speed



The DUALTOP split system is ideal for heating rooms where regulations prevent the installation of gas appliances inside the premises, as the heat generator is installed outside the building and safety is one of the main prerogatives for installation.

DUALIET 30



DUALIET 50



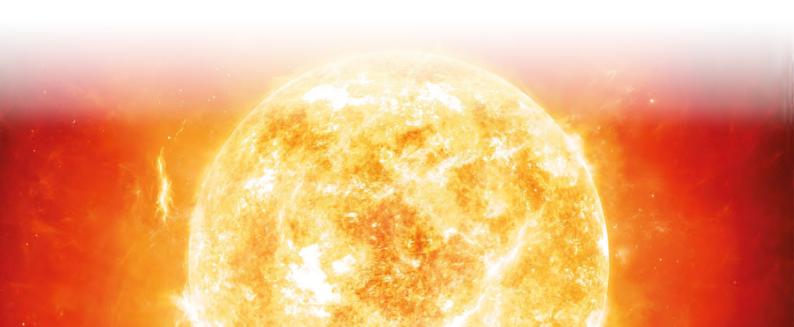


DUALIET 70









DUALIET 100







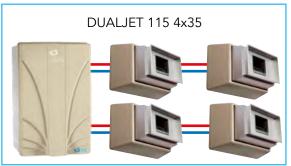


DUALIET 115









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HEAT RECOVERY UNITS





LITHIUM BROMIDE ABSORBERS













OUR MISSION

Founded in 1986 as a manufacturer of industrial furnaces, Comex Group has built its history on a fundamental value: technological innovation. Many years of experience in the heating and air-conditioning sectors, combined with the continuous acquisition of know-how on new technologies and applications, have enabled the company to apply solutions that are always up-to-date using heat pump systems, solar cooling, heat recovery, thermal power stations and, most recently, air sanitation. Research and innovation have distinguished the company in the heating and air-conditioning sector with important advantages for Comex Group customers in the areas of energy saving, safety and environmental protection.

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