

AIR HANDLING



THERMOVER™

RANGE

Energy recovery and reversible
unit, high-performance,
Thermodynamic system
Flow rate from 600 to 5000 m³/h





High efficiency, air treatment station with **active energy recovery** and integrated **reversible thermodynamic system** for optimal climate control in all seasons as well as for assured air quality.

Designed for air treatment in tertiary and industrial premises, this self-regulating, multi-functional station is **PLUG & PLAY** and meets directive ErP2009/125/EC requirements, RT2012 energy economy criteria and building active efficiency principles (EN15232).

For straightforward, high-performance and full installation, the **THERMOVER®** station can also enable **ECS** production.

RANGE

- Available in 4 models and 4 versions, the **THERMOVER®** range covers flow rates from 600 to 5 000 m³/h.

The **THERMOVER®** range is available in 4 versions in order to cater for all usage conditions:

FIRST : Self-regulating, **PLUG & PLAY**, **MODBUS RS485** networked station for use in a temperate climate supported by a reversible, thermodynamic system, active temperature management through optimised energy consumption and climate control as well as continued internal air quality control (IAQ) via a CO₂ sensor.

PREMIUM : Identical to FIRST but equipped with an electric battery for precision heating and air blow or ambient intake temperature control for external temperatures as low as -15°C.

MUST : identical features to FIRST with integrated hydraulic kit for **ECS** production in all seasons.

GENIUS : identical features to PREMIUM with integrated hydraulic kit for **ECS** production.

COMPOSITION

The **THERMOVER®** station is composed of 3 modules, 2 ventilation modules each comprised of a fan motor and a filter with the central module combining all energy recovery and thermodynamic functions for heating, cooling and The hydraulic kit for ECS production (**MUST**/**GENIUS**). Thanks to a straightforward setup, the **THERMOVER®** is systematically delivered in 3 modules.

- Freestanding aluminium profile structure and polyamide thermal break spacer.
- 10/10° double-skin panels.
 - Insulation: 50 mm, high density, M0 mineral wool A1 - 60 kg/m³ (Classe T3 and L1 for building envelope air-tightness in accordance with EN1886).
- Technical compartment acoustic treatment integrating the thermodynamic system.
- For external installations, a roof must be integrated (option).
- External face: RAL 7035 prelacquered metal with protective film.
- Internal face: galvanised steel.
 - Rectangular section aerodynamics connections with straightforward fastening to the aluminium structure.
- "**EASY**" technical compartment grouping electrical and regulating components. Lateral fixed panel housing the lockable proximity switch, the IP54 LCD display control screen and the power cord grommet.

- Fast and easy access via screw-secured panels.
- Technical compartment access via hinged doors with screws.
- Extractable, stainless steel condensate tray below the two thermodynamic system exchangers. Condensate drain on both sides via PE Ø 20-26mm pipe.
 - ECS network hydraulic valves on the 3/4 threaded male connector for quick connection to the buffer tank (optional).
- Set of 4 motorised dampers, 100% modulating with return spring and profiled, aluminium, counter-direction blades.

This set ensures the **FEF®** (Free Energy efficiency) function detailed in the equipment and functionality chapter.

FAN MOTOR

- Direct current high efficiency plug fan with electronic commutation (EC), integrated thermal overload and variable speed protection. EC technology is an **econological®** solution guaranteeing low energy consumption (RT2012) for the management, control and regulation of the operating point (flow rate regulation).

Fans are fitted with a signalling pressure transmitter for the regulation of an eventual fault.

Low noise levels for superior acoustic comfort.

EXCHANGER

- Variable speed, high efficiency aluminium rotary exchanger with drain section. Gasketed exchanger mounted on slide rail for easier removal and upkeep.

Rotary air exchanger - air products by Flakt Woods

- The variable speed of the exchanger enables improved **THERMOVER®** station performance particularly during the mid-season period.

The exchanger is fitted with a rotation detector which is associated with **EASY** regulation and indicates the (default) working order of the variable motor or the timing belt.

FILTERS

Fresh air Filtration :

The **THERMOVER™** in standard is equipped by a **F7 (ePm1 55%)** filter with low pressure drop.

As an option, the **THERMOVER™** can be equipped with a double filtration stage:

M5 filter (ePm10 50%) in order to obtain an M5 + F7 combination.

F9 filter (ePm1 80%) to obtain an F7 + F9 device.

Extract Air Filtration :

Standard filter : **F7 (ePm1 55%)**

THERMODYNAMIC SYSTEM

The thermodynamic system is reversible and works at R410A. The station is factory tested and pre-charged making the **THERMOVER®** 100% **PLUG & PLAY**.

- COPELAND Digital Scroll Compressor**. This technology improves system performance by perfectly adapting compressor power to your heating or cooling requirements. It enables compressor power to be modulated between 10 and 100% by supplying an optimal energy yield and heightened (EER/COP) performances.
- High performance (condenser/ evaporator battery) exchangers in copper tubes, hydrophilic treated aluminium fins limiting frost build-up and protecting the batteries from corrosion.
- Hermetically sealed equipment. Containing fluorinated greenhouse gases. Non-pressurised equipment subject to DESP 2014/68/UE regulation.
 - The reversible, thermodynamic system integrates all safety components for long-lasting functioning. It is therefore fitted with a low pressure switch, an high pressure switch, a liquid container, an anti-acid filter drier and a liquid sight glass with humidity indicator.

ECS HYDRAULIC SYSTEM

The **THERMOVER® MUST** and **GENIUS** versions are designed to Ensure **ECS** production, in addition to active summer/ winter air treatment. Optionally, a high performance, isolated buffer tank can be offered.

- Hydraulic unit composed of a high-efficiency, brazed plate exchanger in stainless steel and a self-regulated, low energy consumption electronic circulator.
- The (optional) **ECS** tank can measure 200, 300, 400 or 500 litres. A internal walls and components inclusive of the heating coil and additional electrical resistor are made of Polyarm® coated steel (ECS certification). The tank is insulated in 50mm of expanded, rigid polyurethane offering high heat insulation and a coefficient of conductivity of 0.023 W/mK. External and upper PVC cover.

EQUIPMENT AND FUNCTIONS

The **THERMOVER®** range is self-regulated, **PLUG & PLAY** and networked.



REGULATION

- EASY** regulation integrated into the **THERMOVER®** station addresses the criteria of our **BLUETECH®** concept guaranteeing the optimal functioning of the **THERMOVER®** station which fulfils all national (RT2012) and European (ErP) requirements and through its efficiency contributes to active building management (EN15232).
- EASY** regulation is **MODBUS RS485** networked. Optionally, a card can be inserted enabling communication on (IP or MS/TP) BACNET, WEB, LON, MODBUS (IP).
- On a lateral facade of the electrical compartment the **THERMOVER®** station features an IP54, LCD display control and command panel enabling access to the different parameters, instructions and functions for straightforward use and maintenance.
- EASY** regulation provides optimal management of **THERMOVER®** performance and functions and particularly:

Blown air temperature with air or ambient regulation on intake. Defrost cycles.

Control of rotary exchanger rotation speed.

Recirculation and night cooling modes.

Energy gain optimisation through the positioning of the 4 modulating dampers guaranteeing the following functions: **FEE®**, cold recovery, insulation damper closure...

The exchanger anti-contamination rotary cycle when it is stopped during free cooling and recovery periods.

Power variation of the **digital SCROLL** compressor depending on cooling or heating requirements.

ECS production (**MUST** and **GENIUS** versions) and management of Legionella prevention cycles and the controlling of the electrical tank resistor.

Heating power optimisation by guaranteeing automatic distribution between the ECS and the building (**MUST** and **GENIUS** versions).

ECS BOOST function. Automatic function enabling accelerated ECS production to avoid drops in building temperature (**MUST** and **GENIUS** versions).

✧ To ensure optimal, building specific usage, for the usage functions energy performance of the **THERMOVER®** station, **EASY** regulation offers a programmed schedule (up to 8 daily slots) and a calendar enabling the planning for:

- Station shutdown, inoccupation, recirculation and occupation.
- The annual calendar enables communication of holiday periods and public holidays.

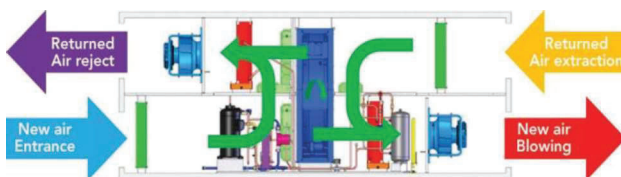
FEE®: FREE ENERGY EFFICIENCY

The **FEE®** function enables optimal temperature management of the **THERMOVER®** in all seasons thereby improving energy efficiency gains through recirculation based on internal air quality. (CO₂ sensor) This functionality guaranteed by all 4 integrated modulating dampers, can be determined in the computation motor of the RT2012 through indication of the defined recirculation rate.

The **FEE®** function is automatically managed through **EASY** regulation. Its principle of maximum energy efficiency gains employs the 4 track module device mounted as standard in the **THERMOVER®** range.

✧ On the basis of the external temperature, the blown air setpoint temperature (or that of the ambient intake), the 4 track module controlled by the modulating servomotors will ensure adapted recirculation (90% for maintenance of 10% new air, which is adjustable) in order to limit energy consumption and the heating or cooling by the reversible thermodynamic system. This function will be equally involved in the quality of intake air thanks to a CO₂ sensor integrated into the station which will determine the extent to which this **FEE®** function is to be used without degrading the quality of interior air (limit 1000ppm in accordance with governing documentation). This CO₂ setpoint limit can be adjusted on the site.

✧ As a result, the **FEE®** function enables energy efficiency gains of over 40%.

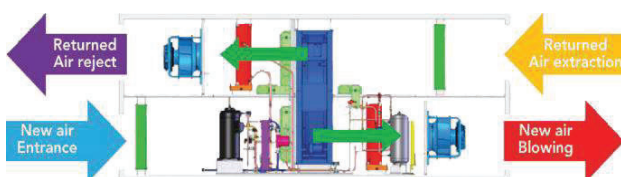


COLD RECOVERY

In summer or in mid-season, when the **THERMOVER®** station detects a requirement for cooling, when the interior temperature is lower than the exterior temperature, **EASY** regulation will launch the **FEE®** function and will then activate the rotary exchanger in order to recover energy and optimise energy consumption.

FREE COOLING

In order to optimise the energy input provided by the new air, the **THERMOVER®** station is fitted with temperature sensors for the exterior and ambient building air (intake sensor) thereby enabling control of the rotary exchanger motor through an optimised speed variation. Primarily in summer, whenever the exterior temperature falls below the interior temperature, the rotary exchanger is stopped. In the same way, the reversible thermodynamic system will switch to standby whenever the intake temperature falls below the setpoint limit. During this free cooling period the **THERMOVER®** station will function entirely with new air.





NIGHT COOLING

✧ The night cooling function enables the interior temperature to be reduced on the basis of the climatic conditions of the previous 24 hours. Therefore, between midnight and 07:00 (adjustable schedule slot) the night cooling function activates if the exterior temperature passes 22°C (adjustable) during the day (between 06:00 and 22:00). Night cooling becomes operational if the exterior temperature is between 10 and 18°C (adjustable) and if the intake temperature exceeds 18°C (adjustable).

✧ Furthermore, this function includes a ventilation setpoint specific to modulation of the chosen flow rate (**LOBBY** or **MAC**).

AIR QUALITY

The **THERMOVER**® station is fitted with 4 internal modulating dampers to guarantee optimal energy consumption on the basis of seasonal temperatures. This function in particular enabling the level of recirculated air to be adjusted is dependent on interior air quality (IAQ) as determined by a CO₂ sensor housed in the intake (adjustable setpoint of 1000ppm). Therefore the optimisation of the **THERMOVER**® station energy performance will never occur to the detriment of internal air quality (IAQ).

✧ Additionally, the **THERMOVER**® station can be associated with ducted **CLEARMOTION**® DU module using patented technology to ensure decontamination, purification and deodorisation of blown air (tests performed by an accredited lab. Performances validated according a test protocol based on the conditions of regulation XP B44-013).

FIRE SAFETY

As standard the **THERMOVER**® has a built in fire safety device enabling control of output and intake ventilators in accordance with 5 available modes within regulation parameters (function activated on the site).

“Shutdown”: Complete station shutdown.

“Active” Activation or continued operation of the station at High Speed. The fire function will take priority in the event of any other alarm.

“Auto”: Continued station operation in accordance with site configuration (Shutdown/ Low Speed/ High Speed).

“Output active”: Activation or continued high speed operation of the output ventilator (intake in shutdown).

“Intake active” Activation or continued high speed operation of the intake ventilator (output in shutdown).

For that, the **THERMOVER**® station features the digital input “External Shutdown” In this case, the external command takes priority over fire safety if subsequently activated by any of the 5 modes below.

Whatever the selected mode, the **EASY** regulation screen will display “Fire alarm” whenever this function has been activated.

FLOW RATE MODULATION

As standard, the **THERMOVER**® station is designed to function in **CONSTANT PRESSURE** mode (**LOBBY**®) or at **CONSTANT FLOW RATE/S** (**MAC**). The choice of flow rate modulation is made on the site on activation.

In order to cater for any kind of installation, the **THERMOVER**® station is available with air flow modulation:

LOBBY®: air flow modulation at **CONSTANT PRESSURE**, adjustable on the output ventilator with the air flow rate copied on the intake ventilator. This function enables implementation of the **THERMOVER**® in a multizone building, with large-scale intake also possible. Associated with our **WONDERROOM**® zone regulator (see regulation chapter) the energy efficiency of the building will be ensured.

MAC : modulation at **CONSTANT FLOW RATE/S**. As standard **EASY** regulation enables adjustment of 1 to 4 flow rates adapted to each functioning situation: inoccupation, occupation, recirculation night cooling.

CONFIGURATIONS

As standard, the **THERMOVER**® station is provided for interior installation. Optionally, a roof (prelacquered RAL7035 finish) is available for exterior installation.

The internal elements are accessed from the front face, on the right in the direction of the new air flux with the exception of the batteries, accessed via the rear face.

As standard, the **THERMOVER**® station is provided for the installation of superimposed online air fluxes.

✧ Possibility of connecting discharged air to the upper or rear exit (panel option PA --- RA).

In the same way output air can be connected to the rear exit (full panel option PA --- RA).

• These configurations can be easily combined and activated on the site.

DESIGNATIONS-FUNCTION DESCRIPTION

Model	Energy recovery	Reversible thermodynamic system warm/cold R410A	Heating complement integrated regulated electric battery	Air quality control CO ₂	Modulation rates to choose		CLEARMOTION® DU Duct-type module for decontamination, cleanup deodorization of the internal air (QAI)	ECS production	Water tank ECS 200 to 500L Electric resistance of supplement integrated and regulated
					Constant pressure	Constant rates			
THERMOVER --S FIRST	✓	✓	-	✓	✓	✓	✓	-	-
THERMOVER --S PREMIUM BE	✓	✓	✓	✓	✓	✓	✓	-	-
THERMOVER --S MUST	✓	✓	-	✓	✓	✓	✓	✓	OPTION
THERMOVER --S GENIUS BE	✓	✓	✓	✓	✓	✓	✓	✓	OPTION

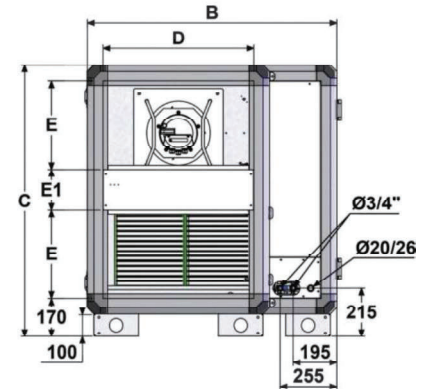
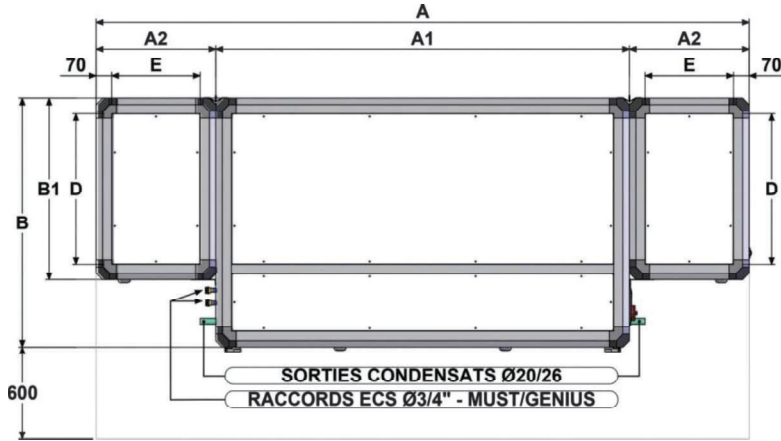
Hermetically sealed system containing greenhouse gases covered by the Kyoto Protocol



Valeurs justifiées par essais validés
par le CETIAT suivant EN13141-7
et EN14511.



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	C mm	D mm	E mm	E1 mm	FIRST PREMIUM BE	MUST GENIUS BE
THERMOVER® 180S	2920	1850	535	1115	815	1215	675	395	185	665 kg	685 kg
THERMOVER® 280S	3130	1950	590	1385	1065	1475	925	450	335	845 kg	870 kg
THERMOVER® 400S	3220	1950	635	1455	1135	1535	995	495	305	935 kg	960 kg
THERMOVER® 500S	3340	1950	695	1655	1335	1645	1195	555	295	1120 kg	1150 kg



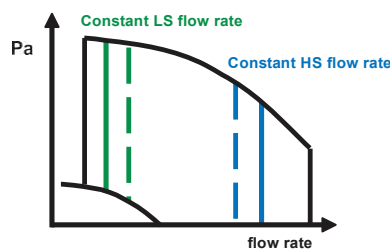
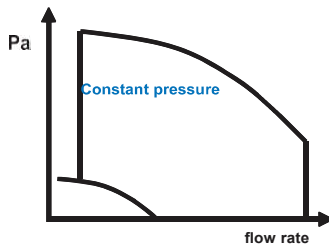
ELECTRICAL CHARACTERISTICS THERMOVER®

THERMOVER® model	Power supply voltage (V / Ph / Hz)	Usage temp. (°C / °C)	VENTILATION Protection index Classe	Thermal protection *	FIRST / MUST Electrical power (KW)	FIRST / MUST Protection current (A)	PREMIUM BE / GENIUS BE Electrical power (KW)	PREMIUM BE / GENIUS BE Protection current (A)
180S	400 / 3+N / 50	-20 / 40	IP54 / B	PTI	9,7	10,0	13,5	15,4
280S	400 / 3+N / 50	-20 / 55	IP54 / B	PTI	11,3	13,2	16,6	20,8
400S	400 / 3+N / 50	-20 / 40	IP54 / B	PTI	15,5	17,3	23,0	28,1
500S	400 / 3+N / 50	-20 / 50	IP54 / B	PTI	19,6	23,4	30,1	38,6

* PTI: Integrated thermal cutout

SOLUTIONS MODULATION THERMOVER®

As standard, the THERMOVER® range can function in **CONSTANT PRESSURE** mode or at **CONSTANT FLOW RATE/S**. The choice of flow rate modulation is made on the site on setup.





- The L_{p4m} dB(A) curves correspond to a 4m level of acoustic pressure in a hemispherical free field over a reflecting plane, with the “new air intake” and “air return discharge” sides not associated, and “blown new air” and “extracted intake air” sides associated.
- To achieve the overall acoustic pressure L_p dB(A), at a certain distance, add the values below to L_{p4m} .

Distance	1,5	3	4	5	7	10
Distance weighting dB(A)	9	3	0	-2	-5	-8

- The curves for “ L_w output air cond dB(A)” correspond to the overall acoustic power emitted on the “new output air” side or “discharge intake air”. To achieve the range of acoustic power L_w cond output dB(A), on the “new output air” or “discharge intake air”, add the above values to the acoustic power “ L_w cond output” displayed on the curves.

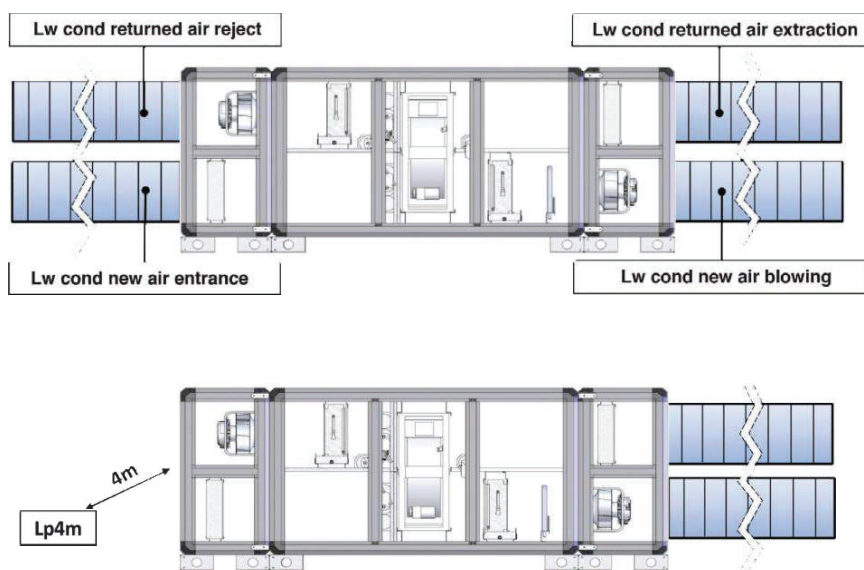
Downstream acoustic spectrum weighting function “ L_w cond blower dB(A)” Indicated on the curves								
Frequency	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz
Weighting THERMOVER® 180S dB(A)	-32	-26	-12	-8	-5	-5	-11	-18
Weighting THERMOVER® 280S dB(A)	-34	-24	-11	-10	-4	-5	-10	-15
Weighting THERMOVER® 400S dB(A)	-36	-27	-10	-9	-4	-6	-11	-16
Weighting THERMOVER® 500S dB(A)	-35	-23	-12	-7	-4	-7	-10	-17

- The curves for “ L_w cond extraction dB(A)” correspond to the overall acoustic power emitted on the “air intake extraction” side and the “new air input” side. To achieve the range of acoustic power L_w cond extraction dB(A), on the “intake air extraction” and “new input air” add the above values to the acoustic power “ L_w cond extraction” displayed on the curves.

Upstream acoustic spectrum weighting function “ L_w cond extraction dB(A)” Indicated on the curves								
Frequency	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz
Weighting THERMOVER® 180S dB(A)	-27	-21	-6	-6	-7	-9	-13	-20
Weighting THERMOVER® 280S dB(A)	-26	-16	-5	-6	-8	-7	-13	-18
Weighting THERMOVER® 400S dB(A)	-28	-21	-5	-6	-9	-6	-13	-19
Weighting THERMOVER® 500S dB(A)	-27	-16	-7	-5	-7	-8	-12	-19

- To achieve the acoustic range NSC4 dB(A) (noise level 4m in a hemispherical free field, with the device placed on the ground on a reflecting plane, station terminals connected to intakes and discharges via ducts with the same sound insulation as the device), deduct 18 dB(A) from the L_{p4m} value.

Tolerance = Global Values + / - 3 dB(A)
Acoustic spectra +/- 5 dB(A)



Note: the curves are created on the basis of new air (Static Pressure) all pressure gauges connected (configuration D in accordance with regulation NF EN 13141-4)



EQUIPEMENT	FIRST	PREMIUM BE	MUST	GENIUS BE
50 mm, RAL7035 double skin	●	●	●	●
Lockable proximity switch	●	●	●	●
Technical compartment for straightforward maintenance	●	●	●	●
Low energy consumption, DC fan motors	●	●	●	●
Opacimetric, F7 new air filter	●	●	●	●
Opacimetric, F7 intake air filter	●	●	●	●
High efficiency, rotary heat exchanger	●	●	●	●
Rotary heat exchanger speed variation	●	●	●	●
FEE® module: Free Energy Efficiency	●	●	●	●
Insulation damper New Air/Intake Air	●	●	●	●
Thermodynamic system: reversible heat pump	●	●	●	●
Direct expansion batteries with hydrophilic cover	●	●	●	●
Inclined, stainless steel, removable condensate trays for the 2 batteries	●	●	●	●
Digital SCROLL compressor with modulating power	●	●	●	●
Electronic pressure reducer	●	●	●	●
Fluid container	●	●	●	●
Anti-acid filter dryer	●	●	●	●
Liquid sight-glass, humidity indicator	●	●	●	●
Facade LCD command	●	●	●	●
MODBUS RS485 networked regulation	●	●	●	●
Exterior temperature sensor	●	●	●	●
Output air temperature sensor	●	●	●	●
Intake air temperature sensor	●	●	●	●
Compressor discharge temperature sensor	●	●	●	●
Compressor intake temperature sensor	●	●	●	●
High Pressure (HP) transmitter	●	●	●	●
Low Pressure (LP) transmitter	●	●	●	●
LP pressure switch	●	●	●	●
HP pressure switch	●	●	●	●
Freeze-up pressure transmitter	●	●	●	●
High energy-efficiency, stainless steel, brazed plates heat exchanger (ECS)	-	-	●	●
Self-regulating, low energy consumption electronic circulator (ECS)	-	-	●	●
Heating safety thermostat electric battery	-	●	-	●
FUNCTIONS	FIRST	PREMIUM BE	MUST	GENIUS BE
FEE® module management: Free Energy Efficiency	●	●	●	●
Free-Cooling Management	●	●	●	●
CO2 management	●	●	●	●
Night Cooling management	●	●	●	●
Ambient temperature management (intake)	●	●	●	●
Output air temperature management (air regulation)	●	●	●	●
Management of movement from hot setpoint to cold setpoint	●	●	●	●
Management of occupation and inoccupation temperature setpoints	●	●	●	●
Management of the electric battery for additional heating	-	●	-	●
Weekly timer (up to 8 slots)	●	●	●	●
Holiday and public holiday timer	●	●	●	●
New Air filter pressure switch	●	●	●	●
Intake Air filter pressure switch	●	●	●	●
Air flow rate control (output and intake)	●	●	●	●
Output fan air flow rate measurement	●	●	●	●
Intake fan air flow rate measurement	●	●	●	●
Output pressure measurement	●	●	●	●
LOBBY®: air flow modulation at CONSTANT PESSURE	●	●	●	●
MAC : modulation of CONSTANT AIR FLOW/S	●	●	●	●
Fire safety in accordance with 5 available modes	●	●	●	●
Automatic defrosting through freeze-up detection an cycle inversion	●	●	●	●
Weekly timer for ECS production forcing	-	-	●	●
Anti-Legionella cycles (can be deactivated)	-	-	●	●
Heating power optimisation (automatic distribution between the ECS and the building)	-	-	●	●
Automatic ECS BOOST function	-	-	●	●
Control of the ECS tank additional electrics	-	-	●	●
CLEARMOTION® DU module working order (decontamination, purification, deodorisation)	◆	◆	◆	◆
CLEARMOTION® DU module default return (decontamination, purification, deodorisation)	◆	◆	◆	◆
FACTORY ASSEMBLED OPTIONS	FIRST	PREMIUM BE	MUST	GENIUS BE
Roof for external assembly	○	○	○	○
Networking from a choice of: LON, BACNET, MODBUS TCP/IP, WEB	○	○	○	○
OPTIONS	FIRST	PREMIUM BE	MUST	GENIUS BE
CLEARMOTION® DU Module (pollution decontamination deodorisation)	◆	◆	◆	◆
ECS tank with additional electrical resistor	◆	◆	◆	◆
WONDEROOM®, zone regulator automatically communicating with the THERMOVER®	◆	◆	◆	◆
Flexible sleeve	◆	◆	◆	◆
Canopy	◆	◆	◆	◆

● : Standard equipment or functions.

○ : OPTIONAL equipment or functions. Supplied assembled and cabled at the factory.

◆ : OPTIONAL equipment or functions. Supplied unassembled.



• SECURITY AND CONTROL



MANOMETER WITH LIQUID J
ref. MANO

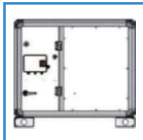


SMOKS ALARM
ref. CDAD
Cabinet (IP54)



BOX RELEASE
ref. BD
TBTS 24 or 48Vcc
CASE (IP67)

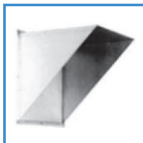
• INSTALLATION



**DECONTAMINATION
CLEANUP
DEODORIZATION**
ref. CLEARMOTION DU
Duct-type module for QAI



FLEXIBLE SLEEVE
ref. MTS M0
Fire classification: M0



CANOPY WIRE
réf. AGT



ROOF
réf. TCT
Sheet prelacquered



WATER TANK ECS
ref. BTE
Capacity 200, 300 or 500 L. With resistance
electrical regulated by THERMOVER®.
Plan a supply (400/3/50) and protection of the
resistance of the water tank

• MODULATION FLOW



**COMMANDED OUTSTRIP
COMFORT ref. CDC2V2**
STOP /PV/GV 2 Ventilators CASE (IP54)



**COMMANDED OUTSTRIP
COMFORT ref. CDC PVGV2**
PV/GV 2 Ventilators CASE (IP54)



**COMMANDED OUTSTRIP
COMFORT ref. CDC1V2**
On/off/PV/GV 2 Ventilators CASE (IP54)



PRESENCE DETECTOR
ref. 360 TOR SA
ON/OFF or PV/GV(

• REGULATION



COMMUNICATION CARD
ref. BACNET THERMOVER
Communication language in BACNET MS/TP



COMMUNICATION CARD
ref. WMBIP THERMOVER
Communication language in MODBUS IP,
BACNET IP and WEB



COMMUNICATION CARD
ref. LON THERMOVER
Communication language in LON



**MULTIFUNCTION ZONE
REGULATOR**
ref. WONDEROOM

To associate with the versions modulation of
flow miss LOBBY® (Constant pressure). Besides
the management of the zone. Regulator
communicates with the power plant
THERMOVER®.



AEREAULIC	DESIGNATION		180S*	280S	400S	500S
	Nominal flow	[m³/h]	1800	2800	4000	5000
	Minimum flow	[m³/h]	600	800	1500	2000
	Maximum flow	[m³/h]	1800	2800	4000	5000
	Acoustic power in the blowing duct	[dB(A)]	See curves "Lw cond blow"			
	Acoustic power in the exhaust duct	[dB(A)]	See curves "Lw cond extraction"			
	Radiated sound pressure	[dB(A)]	See curves "Lp4m"			
	Blowing temperature (-7 ° C / 73% outside 20 ° X / 50% inside)					
	Without extra battery (FIRST / MUST)	[° C]	21,8	23,7	22,4	23,1
	With electric booster battery (PREMIUM BE / GENIUS BE) / Battery Power	[° C/kW]	28,1/3,75	29,3/5,25	28/7,5	29,4/10,5
	Blowing temperature (-15 ° C / 90% outside 20 ° C / 50% inside)					
	Without extra battery with 50% recycling (FIRST / MUST)	[° C]	24,3	24,4	24,1	24,4
	With electric booster battery with 50% recycling (PREMIUM BE / GENIUS BE) / Battery Power	[° C/kW]	30,6/3,75	30/5,25	29,7/7,5	30,7/10,5
	Useful values for engine calculations RT 2012⁽¹⁾					
	Recovery efficiency (EN308)	[%]	See aeraulic curves			
	Power absorbed by fan	[W]	See aeraulic curves			
THERMODYNAMIC FEATURES	HEATING (+ 7 ° C / 87% outside 20 ° c / 50% inside)					
	Heat output recovery	[kW]	4,5	9,4	13,0	16,7
	Useful values for engine calculations RT 2012⁽¹⁾					
	Thermodynamic heating power	[kW]	8,9	12,0	16,1	20,8
	Thermodynamic COP	[W/W]	4,87	5,54	6,06	5,63
	EN14511					
	Global heat capacity (Salvage dealer + Thermodynamics)	[kW]	13,4	21,5	29,1	37,4
	Net COP THERMOVER®	[W/W]	4,75	5,99	5,80	5,89
	HEATING (+ 2 ° C / 84% outside 20 ° C / 50% inside)					
	Heat output recovery	[kW]	6,2	15,2	20,5	26,6
	Useful values for engine calculations RT 2012⁽¹⁾					
	Thermodynamic heating power	[kW]	8,6	10,5	14,3	18,2
	Thermodynamic COP	[W/W]	4,96	5,13	5,67	5,31
	EN14511					
	Global heat capacity (Salvage dealer + Thermodynamics)	[kW]	14,8	25,6	34,8	44,8
	Net COP THERMOVER®	[W/W]	5,43	7,41	7,14	6,67
	HEATING (-7°C/ 73% outside 20°C/50% inside)					
	Heat output recovery	[kW]	10,9	25,0	34,1	43,9
	Useful values for engine calculations RT 2012⁽¹⁾					
	thermodynamic heating power	[kW]	8,2	9,4	12,8	16,4
Thermodynamic COP	[W/W]	5,14	4,89	5,32	5,13	
EN14511						
Global heat capacity (Salvage dealer + Thermodynamics)	[kW]	19,1	34,4	46,9	60,3	
Net COP THERMOVER®	[W/W]	7,36	10,30	9,83	10,28	
REFRESH (+ 35 ° C / 40% outside 27 ° C / 47% inside)						
Cooling power recovery	[kW]	2,7	5,8	8,0	10,2	
Useful values for the engine RT2012 calculations⁽¹⁾						
Thermodynamic cooling capacity	[kW]	8,9	12,2	15,0	20,3	
Thermodynamic EER	[W/W]	3,06	3,80	3,79	3,65	
EN14511						
Global Cooling capacity (boiler + Thermodynamics)	[kW]	11,6	18,0	23,0	30,5	
ERA net THERMOVER®	[W/W]	2,98	3,89	3,63	3,70	
ECS (+ 7 ° C / 87% outside 20 ° C / 50% inside)						
Temperature rise time		2h25	2h00	1h30	1h15	
Water tank volume associated / Temp. set DHW	[L / ° C]	300 / 55				

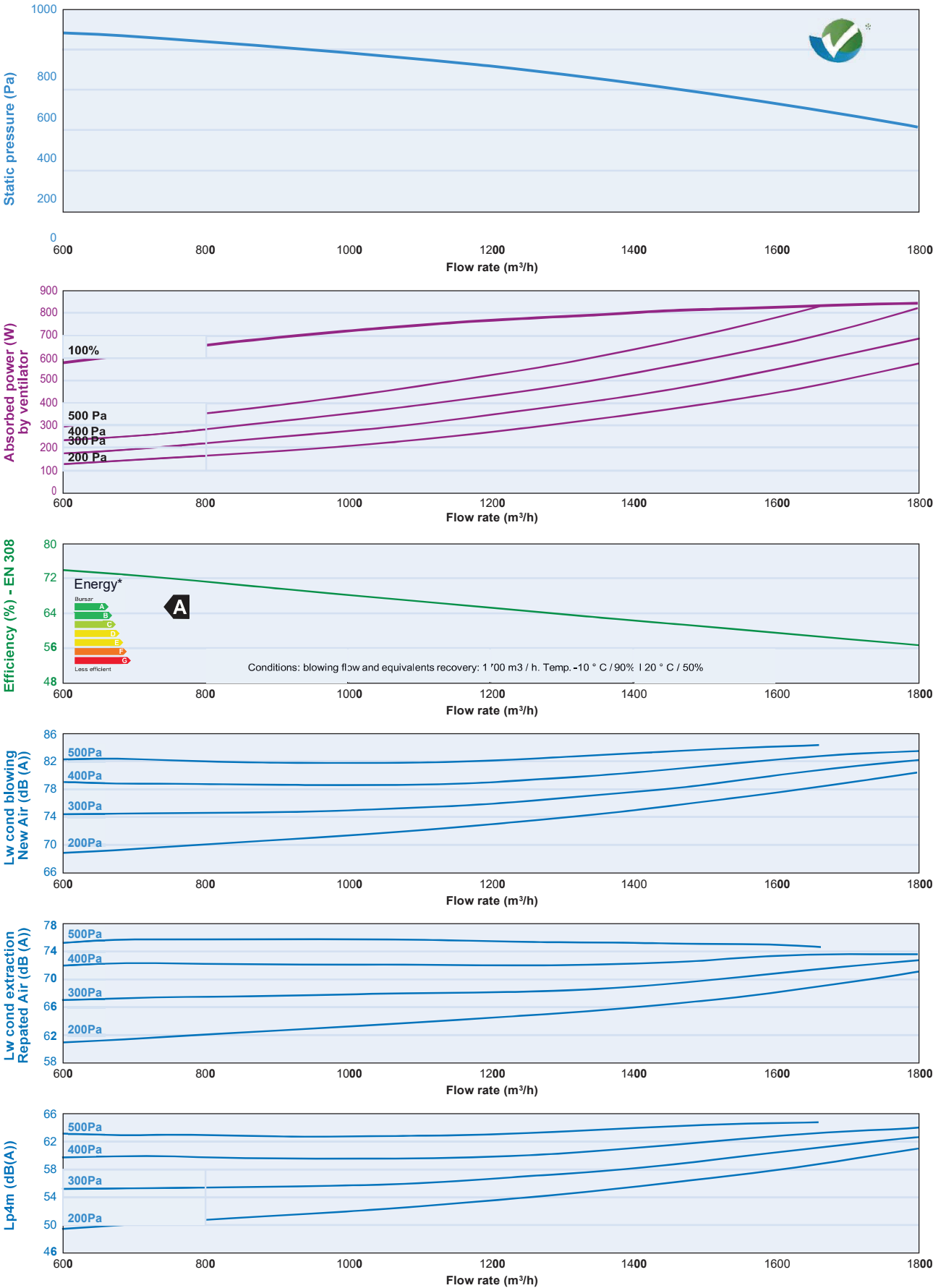
⁽¹⁾ The THERMOVER® Central is a multifunction equipment (central double flow + integrated heat pump) you must fill in the RT2012 software:

- The efficiency (%) of the plant design flow of your sizing (see Aerodynamic curves).
- Fan of consumption (W) at rated speed of your sizing (see Aerodynamic curves).
- The recycling rate (%) of your sizing thanks to the function FEE® (Free Energy Efficiency).
- The thermodynamic performance (fresh air heat pump system / air extracted from the THERMOVER®) validated when tested at CETIAT (see RT2012 values of the performance table: heat outputs + COP / thermodynamics ERA).

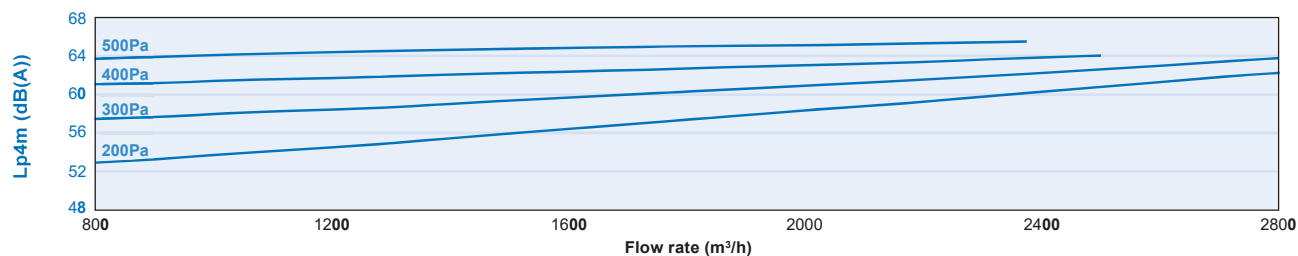
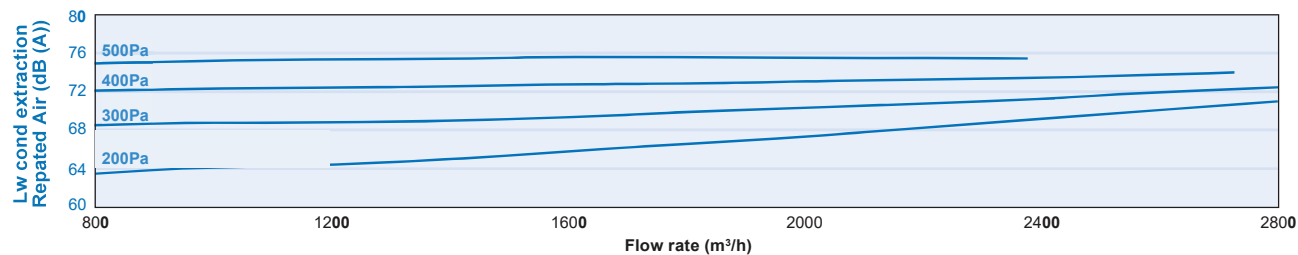
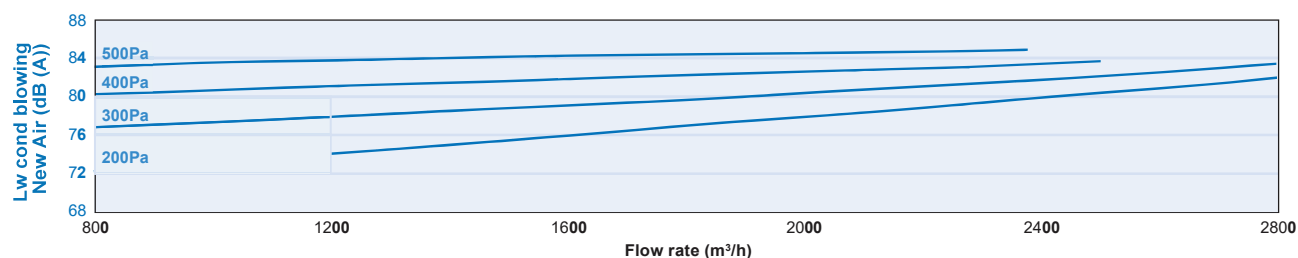
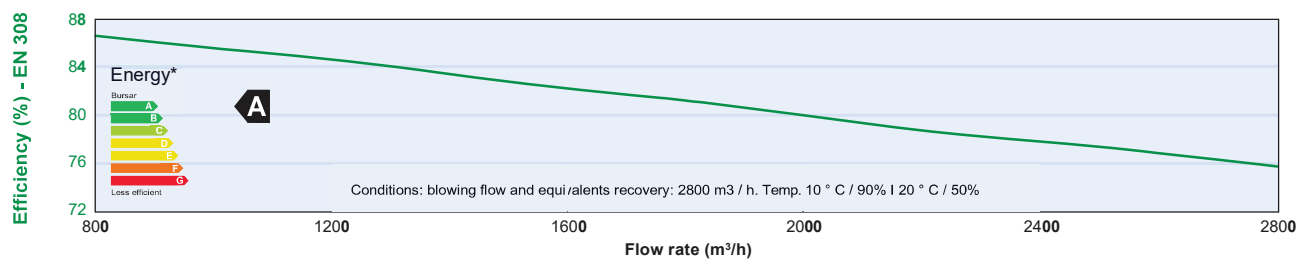
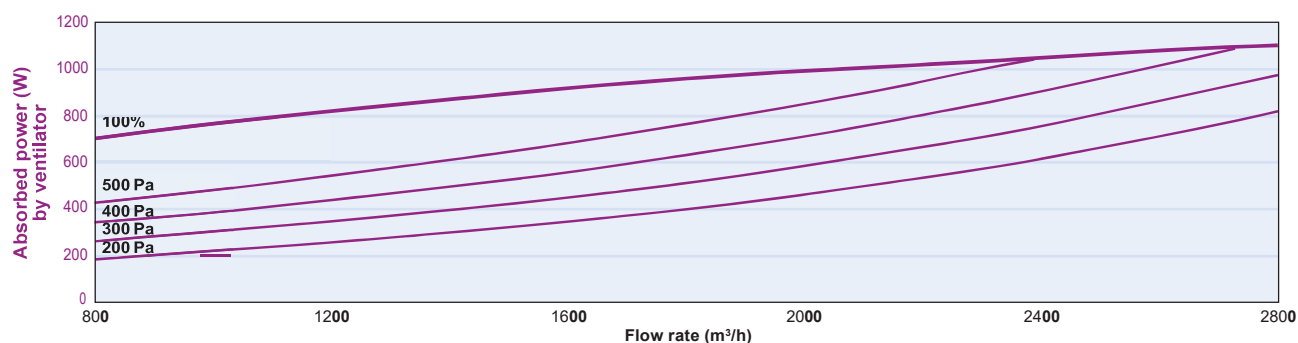
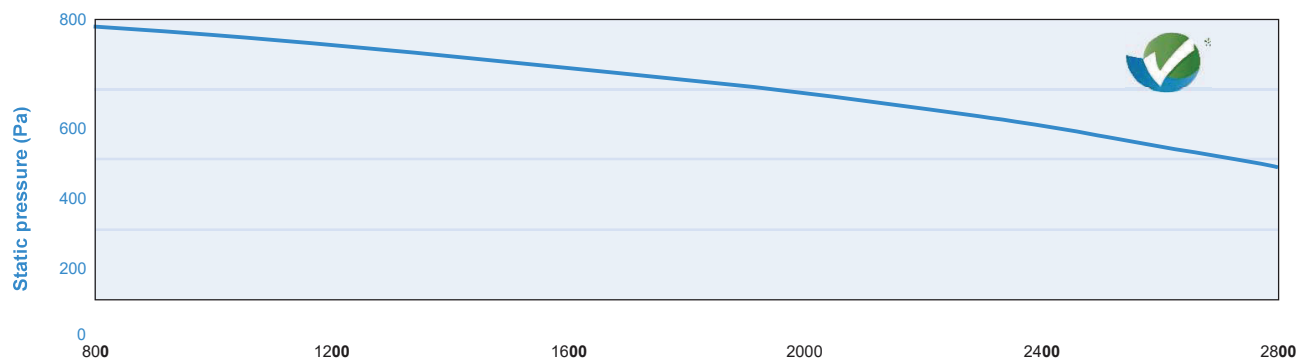
*Values justified by tests conducted CETIAT according to EN13141-7 and EN14511 standards.

Note: Performances off defrost without extra at rated speed for an external pressure equal to 200 Pa on fresh air and return air. Auxiliary consumption are taken into account.

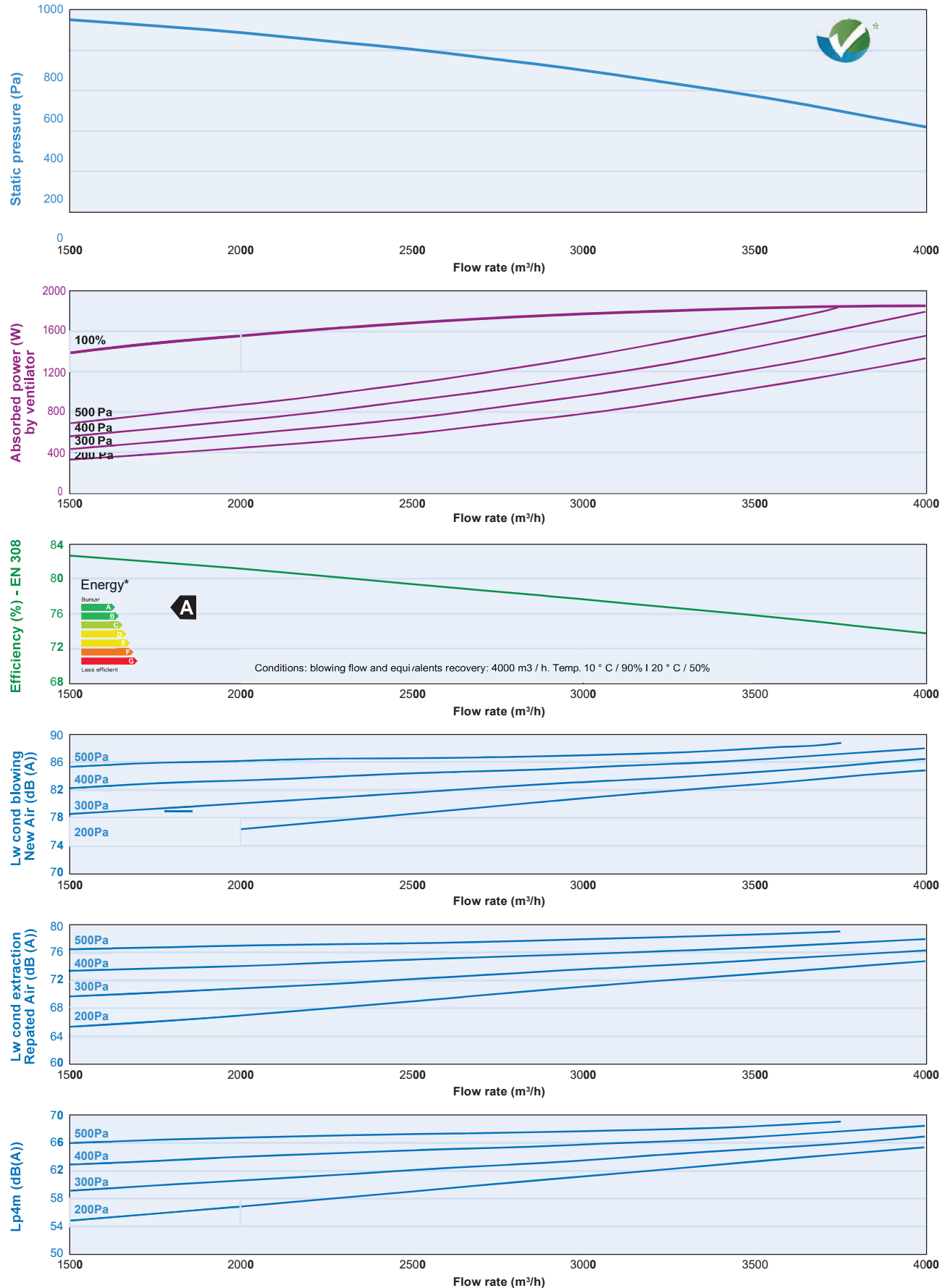
THERMOVER® 180S



THERMOVER® 280S



THERMOVER® 400S





THERMOVER® 500S

