

Comfort units COANDA effect cassette



COADIS LINE 600 the new generation of cassette comfort units

Innovative casing (Flexiway concept)
integrates perfectly into suspended ceilings
Air purification system

Cooling capacity: 1 kW to 6 kW Heating capacity: 2 to 10 kW











COADIS LINE, INNOVATION AHEAD OF ITS TIME...

- CIAT has once again exceeded the established standards by offering increasingly innovative products in terms of environmental protection, while ensuring the user remains the key concern.
- Combining energy efficiency, comfort and indoor air quality, the COADIS LINE is the all-in-one solution designed to meet the heating and cooling requirements of tertiary buildings, while offering users maximum comfort.
- An active, variable-speed comfort unit offering high energy efficiency (HEE system), it allows the indoor temperature to be autonomously and independently adapted over very short periods to ensure the comfort of occupants.
- The EPURE function (air purification system) ensures an exceptionally high quality of indoor air by maintaining the concentration of PM 2.5 particles below the threshold recommended by the WHO (10μg/m³).

- Thanks to its single-size casing, the COADIS LINE can be fitted with 180° and 360° diffusion in order to suit different building layouts (FLEXIWAY concept).
- The Coanda effect diffusion has been redesigned and optimised in accordance with standard NF EN ISO 7730, guaranteeing optimal management of thermal phenomena which create discomfort. In addition, the COADIS LINE eliminates the sensation of draughts that can occur with sweeping diffusion systems or those supplying air directly to the occupants.
- The innovative casing of the COADIS LINE an ecodesigned product which is 90% recyclable - reduces the environmental impact throughout the duration of its life cycle.



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RANGE

The range of COADIS LINE 600 cassettes features 7 sizes covering flow rates from 250 to 770 m³/h, and meeting the most stringent sound level requirements.

- → 2 diffusion models
- Visual 180 °: Coanda effect diffuser across 180 °
- Visual 360°: Coanda effect diffuser across 360°
- → The COADIS LINE is available as:
- A 2-pipe system, with heating or cooling mode
- A 2-pipe + 2-wire system, with cooling + heating/cooling + electric mode.
- A 4-pipe system, with heating and cooling mode.

ADVANTAGES

- Uses an ecological and long-lasting heat-transfer fluid.
- Individual adaptation of the indoor temperature.
- Responsiveness of the system.
- Extensive capacity range.
- Diffusion by Coanda effect across 180 °or 360 ° for comprehensive coverage, and perfect control of thermal phenomena which cause discomfort.
- Acoustic comfort.
- Optimum indoor air quality thanks to the EPURE function.

- Energy optimisation:
- High Energy Efficiency motor
- Epure filter.
- Optimised hydraulic coil.
- Modularity for indoor spaces (Flexiway).
- Condensate drain by gravity avoiding the need for a drain pump.
- Modern, elegant design to ensure perfect integration.
- Environmentally-responsible product.
- Ease of maintenance.

INNOVATIVE DESIGN

- New-generation casing combining high-density PSE integrating combined thermal and acoustic functionalities, ABS PC and a ribbed galvanised steel base panel to stiffen the assembly.
- Single-size casing for all unit sizes with base adapted to 600 x 600 mm suspended ceiling framework.
- Hydraulic, air and electrical connections on the same side for easier mounting, access and maintenance.
- Hygienic supply of fresh air with 100 mm diameter sleeve integrated directly in the casing with removable plug.



FUNCTION

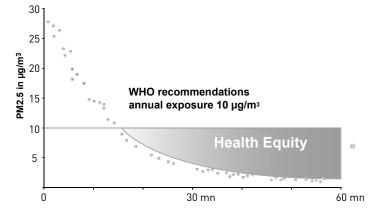


The air we breathe is full of fine particles which enter the respiratory system to varying degrees.

The EPURE function (air purification system) exceeds the WHO's recommendations on particle removal, reducing PM2.5 particulates to below 10 $\mu g/m^{_3}$ in less than an hour. This is equivalent to a reduction of 50% to 90% in particulate matter.

Epure is the combination of all the components that make up the COADIS LINE:

- A protected stream of air that is free of particulates present in suspended ceilings,
- Optimised air diffusion over 180 ° or 360 ° using the Coanda effect and a suitable mixing rate to ensure uniform treatment of the room,
- Very high-efficiency local room-by-room filtration of PM2.5 fine particles,
- Filter area x10.



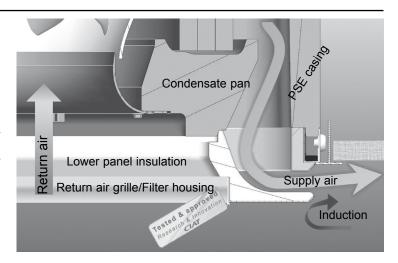


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THE COANDA EFFECT

VISUAL Coanda effect diffuser:

The single slot peripheral outlet with its narrow opening and specific internal profile will increase the initial speed of the air as it leaves the diffuser. The high speed of the moving flow of air causes an area of low pressure which keeps it close to the ceiling, (there is no direct blast on occupants) and the ambient air is drawn in by induction to be reinjected in the air stream. The air mix rate, the range and the coverage of the air flow are improved, which reduces thermal phenomena that cause discomfort in the occupied area (residual air flow rate, asymmetric temperatures, radiation caused by walls, etc.).



COOL AIR FALL PREVENTION SYSTEM

The new 180° diffusers are equipped with an "anti-cold shower" system which guarantees maximum comfort by preventing air from falling between two cassettes.

The system is specially designed by our Research and Innovation centre; two deflectors integrated in the insulation enable the air stream from the lateral channels to be slightly redirected. When the units are placed side by side in the same room, the air flows do not oppose one another and cross over in parallel, which avoids any cold air draughts.

This patented system removes the discomfort caused by draughts without having to reduce the outlets and with no increased noise levels, while maintaining the air flow necessary for the thermal requirements.

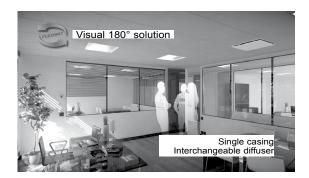
MODULARITY AND VISUAL COMFORT

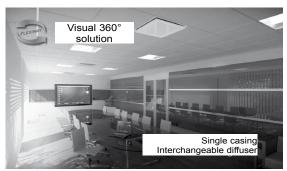
To ensure perfect visual integration within your building, the FLEXIWAY concept offers two Coanda effect single-vent diffusion systems (Visual 180° and 360°), interchangeable on site, suitable for partitioned offices and open plan spaces.

Designed in close collaboration with both architects and designers, each interface, in RAL 9010 white painted steel, will integrate perfectly into suspended ceiling tiles.

FI FXIWAY

Offers greater flexibility when modifying indoor partitioned spaces, in order to reduce operational costs. Enables optimal adaptation to the new configuration (offices or open spaces) without the need to replace the comfort unit. Based on a casing with a single format, Flexiway means that units already in place can be quickly switched for Visual 180° and 360° diffusers, which can be positioned in any direction thanks to their symmetrical mounting points. If the site to be altered only has a single diffuser model, it is possible to order the model of your choice which is supplied separately in its protective packaging.





Perfect for new buildings, harmonising enclosed and open plan spaces. The Visual 180° solution is particularly suited to partitioned spaces from 10 to 20 m^2 , with the unit positioned at the edge of the room. The Visual 360° solution is ideal for open plan areas with the unit positioned centrally.

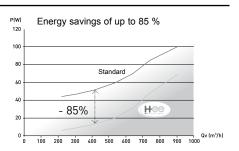
The diffusion panels, which are delivered individually packaged, allow the unit to be installed easily without the risk of damaging or soiling the visible part.



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COMPLIANCE WITH ENERGY REQUIREMENTS

- Exchanger coils specially developed to meet the requirements of low energy buildings.
- Exchanger coils optimised to reduce costs and consumption associated with other components in the installation.
- HEE motor (high energy efficiency) using Brushless technology.
- Reduced-power electric heating coils to better meet the requirements of new buildings.



Eco-design

Raw materials

- Weight reduced by 30 % and volume by 21 % thanks to compact, carefully designed architecture.
- Use of easily recyclable materials (EPS and ABS).

Transport

■ Raw material suppliers selected from those that are less than 100 km from our manufacturing and packaging factory, enabling a 50 % gain in volumes transported (reduction in CO₂ emissions).

Recycling and ease of disassembly

- 90 % recyclable products.
- Total material separability and 40 % reduction in the number of mountings for efficient processing by recycling companies.

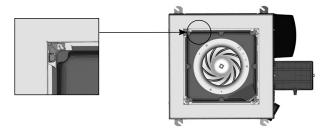




EASE OF INSTALLATION AND OPERATION

COADIS LINE has been designed to facilitate installation and reduce on-site interventions:

- Fitting template provided with each unit to mark out the anchoring points on the ceiling.
- Optimised weight and size to facilitate handling during installation.
- Mounting brackets equipped with anti-slip system to hold the threaded rods when attaching and levelling the unit.
- Safety lock enabling the diffuser to be left hanging, leaving the hands free during the mounting screw tightening phase.





- Technical panel with all connections (electrical, air and hydraulic) on one face.
- Hygienic fresh air supply sleeve with plug integrated directly in the casing (no installation necessary).
- Large electrics box with single closure point containing all the controller kits (quick fit plate with prewired electrical bundle) in the CIAT range.
- Internal components can be accessed without the need to remove the suspended ceiling tiles, via the quick-release filter door grille mounted on retaining hinges for greater freedom of movement during interventions.



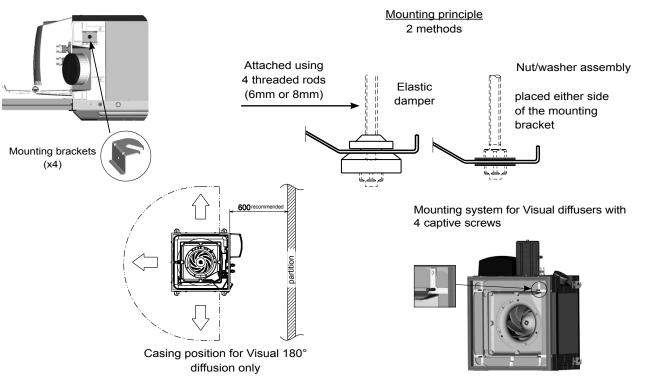
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OVERVIEW

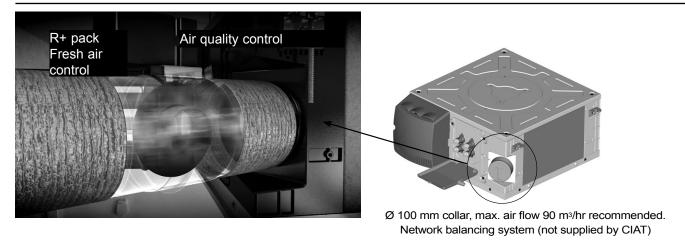
The air handling box is fitted inside the suspended ceiling at the edge of the room with the supply air opposite windows and the electrics box facing the interior of the building for models with a Visual 180° return/diffusion panel. For Visual 360° models, position the box in the centre of the room with the electrics box facing the interior of the building. Leave a minimum space of 300 mm to 600 mm at the rear of the unit to allow access to all of the air, electrical and hydraulic connections.

The COADIS LINE must be suspended from the ceiling using four 6 mm or 8 mm threaded rods (not supplied) to be fixed to the four unit mounting brackets with the anti-vibration resilient mounts or a nut/washer assembly positioned either side of the mounting bracket.





FRESH AIR INLET SPIGOT



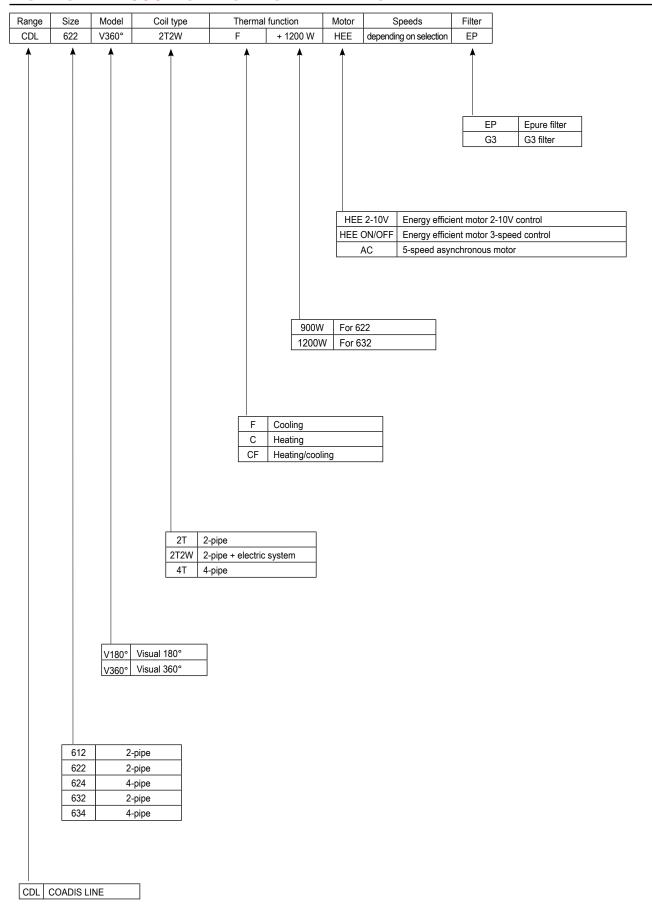
IAQ pack

- For offices, air quality control with presence sensor (R1 pack),
- For meeting rooms, air quality control with CO₂ sensor (R+ pack).



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COADIS LINE 600 MORPHO-DESCRIPTIVE CODE





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TECHNICAL DESCRIPTION

Return/supply air interface

VISUAL interfaces: Coanda effect diffusion via a single narrow opening vent and specific internal profile.

- 2 models available: Visual 180 °or 360 °.
- In sheet metal painted in RAL 9010 to be fitted over the chassis and exactly the same dimensions as a standard suspended ceiling tile.
- Micro-perforated hinge-mounted metal return air grille with housing for EPURE function filter, opens fully without tools.
- PSE insulation, M1 fire resistance with very low heat transfer coefficient.
- An "anti-cold shower" system which is patented (filed under No. 1451872) which prevents air from falling between the two cassettes when they are aligned around the edges of the room (only with Visual 180 ° diffuser).

Casing

- Single casing and reduced size for all unit sizes, fits in place of a 600 x 600 mm or 675 x 675 mm suspended ceiling tile (option).
- Reduced weight compared to the previous generation cassette.
- Ribbed galvanised steel motor support base panel, 10/10th thick
- High-density PSE casing integrating thermal and acoustic functionalities. 15 mm base and 25 mm to 30 mm thick vertical sides that make up the enclosure.
- Low emission of TVOCs and no halogenated compounds.
- ABS corner reinforcements fitted with open galvanised oneway steel mounting brackets for assembly of threaded rods.
- Fire rating: M1.
- Hydraulic, air and electrical connections on the same side of the technical panel at the rear of the unit providing a single access point.
- Finish frame in RAL 9010 galvanised steel, 8/10th thick, housing the diffusion interface.
- Centring of the unit between the suspended ceiling profiles using anti-vibration elastomer mounts fitted on the finish frame.

Water coil

- 1 hot or cold water circuit (2-pipe system).
- 1 hot water circuit + 1 cold water circuit (4-pipe system).
- Single piece sleeve with 40 mm centre to centre distance with integrated sealed flush fitting female revolving unions, for easy fitting of the control valves.
- Low pressure drop one, two, or three layer circular coils.
- Copper pipes, one-piece aluminium fins (1.6 mm pitch).
- Purge and drain.
- Rated pressure 16 bar (at 20°C).
- Test pressure 24 bar.
- Max. hot water inlet temperature:
 - 4-pipe application: 80 °C,
 - 2-pipe application: 70 °C,
 - 2-pipe/2-wire application: 55°C (min air flow rate: 200m³/h).
- Min cold water inlet temperature: 6°C.

Electrical heater (2-pipe + electric system)

- 230/1/50 single-pipe electrical elements inserted into the aluminium housing.
- 2 temperature limiters, manually and automatically reset, inserted in the aluminium block with easy access that does not require the suspended ceiling to be opened, via the Intake / outlet interface.

- Heater element feed on the terminal block inside the electrics box.
- It is possible to deactivate a heater element on site by means of a shunt on the terminal to reduce the electrical power.

Condensate drain pan

- Single unit main pan in high-density sealed PSE for use in all climates, naturally sloped and removable from below without the need to open the suspended ceiling.
- Fire rating: M1.
- ABS PC auxiliary pan with no water retention provided as an accessory for the recovery of condensates from the valves and coming from the main pan.
- Gravity drain: height 70 mm.
- Drainage bushing: external Ø 15 to 20 mm.

Fan motor assembly

HEE motor

Low energy motor making it possible to reduce electrical consumption by up to 85%.

- Brushless technology.
- Sealed type, tropicalised with protected shaft.
- 3-speed gradual operation by 0-10V or on/off control signal, without expansion board.
- Internal normally closed series automatic overload protection on the windings.
- "DFS" motor fault output using a photocoupler for potential alarm feedback via a Konnex protocol communication bus (via the V3000 controller).
- Mounted on anti-vibration mounts.
- 230 V/1-Ph/50 Hz feed (60 Hz compatible).

Note: The minimum voltage to start up the motor is 2 V.

Or

Asynchronous motor

5 factory-wired speeds connected to a terminal strip for customisation.

- Sealed type, tropicalised with protected shaft.
- Permanent capacitor.
- · Roller bearings.
- Internal normally closed series automatic overload protection on the windings
- · Resilient mounts.
- 230 V/1-Ph/50 Hz feed (60 Hz compatible).
- High output and Displacement Power Factor (Cos Phi).

Fan(s)

- Balanced centrifugal turbine Ø 282 mm with profiled blades.
- Polymer turbine.
- Single point mounting system with foolproofing device.

Electrics box

- Large ABS electrics box with supported hinge and closed with a bolt.
- IP20 Index of Protection.
- Electrical connection terminal on DIN rail in compliance with EN 50022, 7.5 mm deep.
- Marked outterminal strip with spring connectors. 0.5 to 2.5 mm² cross section Max. current: 24 A Shock resistance: 8 kV. Cable grommet for field connection.

Fresh air supply sleeve

Connection sleeve for fresh air inlet, Ø100 mm, integral to the frame with removable plug.



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Air filter

- Epure function for superior indoor air quality.
- A protected air stream which prevents particles from being drawn into suspended ceilings.
- Uniform treatment of the room thanks to optimised diffusion over 180° or 360° using the Coanda effect.
- · Suitable mixing rate.
- Local filtration by high efficiency filter medium effective on fine particles up to 2.5 microns.
- Filter area 10 times greater than the intake grille surface.
- No discharge from the filter during replacement thanks to the folded filter medium with heat-sealed lateral inserts to make it more rigid.
- Improved service life compared to a conventional flat filter, thanks to its high retention capacity.
- Low energy impact. Fire rating: M1.
- No release of glass fibres.
- 100% incinerable at end of life.

Device mounting

Open mounting brackets, factory-fitted, made from galvanised steel, 15/10th thick, with check valve for securing the threaded rods during fitting and levelling.

Packaging

- Strapped cardboard crate for the casing.
- Fitting template and direction of fitting printed on the cardboard.
- Visual return/supply air interface supplied separately in protective cardboard packaging.
- Delivered on film wrapped pallet from the factory.

Controls

- RTR-E electromechanical thermostat range
- V30 electronic range
- V300 electronic range
- V3000 networked electronic range (KNX)
- Networked electronic range (LON): V-LON2

Options (factory-fitted)

- Hydraulic coil with protected blades for aggressive / corrosive areas (locations close to the sea or with chemical industries located close by).
- · Condensate drain pump.
- G3 filter.
- Extension.
- Finishing trim frame for 675 x 675 mm suspended ceiling tiles.
- Finishing trim frame for STAFF ceilings.

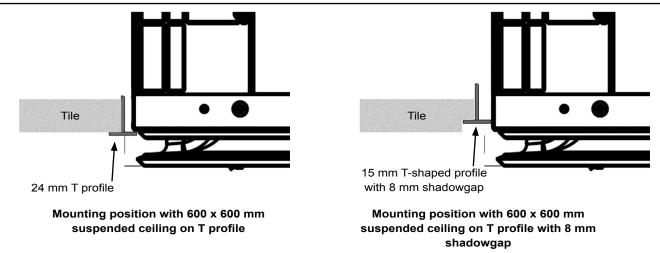
Accessories (available separately)

- Anti-vibration resilient mounts for mounting brackets.
- Self-regulating conditioned fresh air inlet module (3 flow rates adjustable using a set of shims).
- Ø 100-125 mm sleeve adapter.
- Condensate drain pump kit with high safety device.
- 230 V thermo valve kit.
- Prewired controller kit mounted on the plate.
- 80 mm riser kit for gravity drainage without condensate drain pump.
- Finish counter frame kit for 675 mm suspended ceiling tile.
- 300 mm connecting hose kit with or without 9 mm insulation.
- · Fresh air pack:
- R1: Fresh air managed via presence sensor.
- R+: Fresh air management via CO_2 sensor (max. air flow 90 m³/h recommended, network balancing system not supplied by CIAT).
- Speed control unit kit for HEE motors with 3-speed on/off control.



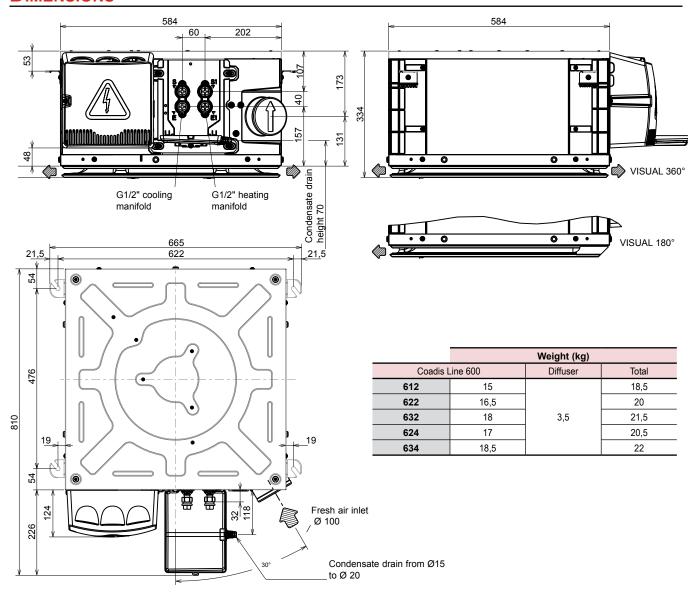
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INTEGRATION INTO THE SUSPENDED CEILING



Note: not compatible with steel tray suspended ceilings and clip-in type mountings.

DIMENSIONS





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TECHNICAL CHARACTERISTICS

Coil capacity (L)

COADIS LINE 600		612	622	622E	632	632E	624	634
2-pipe coil		0,407	0,796	0,608	1,212	1,017		
4-pipe coil	Cold water coil						0,608	1,017
	Hot water coil						0,231	0,237

Coil coupling diameters

Coil connection type: flush fit female threaded union nuts Valve outlet coupling type: "male" threaded couplings to be used

COADIS LINE 600		612	622	624	632	634
2-pipe system		G1/2"	G1/2"	G1/2"	G1/2"	G1/2"
4-pipe system	Cold water coil	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"
	Hot water coil	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"

Motor electrical data notes

COADIS LINE	Motor code	AC	asynchronous mo	otor	HEE brushless motor			
	Motor code	612	622 - 624	632 -634	612	622 - 624	632 -634	
	V5	70	70	101	38	38	56	
	V4	45	45	77	17	17	38	
Input power (W)	V3	41	41	56	12	12	21	
	V2	38	38	47	8	8	15	
	V1	34	34	40	5	5	11	
	V5	0,30	0,30	0,32	0,18	0,18	0,40	
	V4	0,21	0,21	0,29	0,09	0,09	0,28	
Input current (A)	V3	0,19	0,19	0,24	0,07	0,07	0,17	
	V2	0,18	0,18	0,22	0,04	0,04	0,13	
	V1	0,17	0,17	0,21	0,02	0,02	0,10	

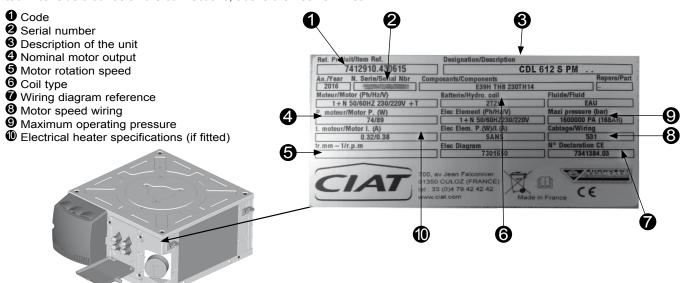
Note: Specifications determined for 230V +/-10% - 50Hz supply.

For operation at 60Hz, the power input and rotation speed values are generally higher.

- Motor operating range: minimum return T°C: 0°C maximum return T°: 40°C

Unit information plate

The information plate shows all the information needed to identify the unit and its configuration. This plate is placed on the technical side that has all the connections, above the fresh air inlet.





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2T/4T AC MOTOR PERFORMANCE

COADIS LINE	Motor code	Air flow m³/h	2-pipe and 4-pipe systems					00000	Average increase of ai temperature (in K)	
			Cooling capacity (W)		Heating	Power input W	LW dB(A)	Comfort level (ISO or NR)	230/1/50 auxiliary electrical heater	
			Total	Sensible	capacity (W)				21	2R
	V5	610	2 180	1 991	2 563	70	59	42		
612	V4	440	1 765	1 582	2 051	45	49	32		
	V3	380	1 599	1 425	1 852	41	46	29		
	V2	310	1 429	1 256	1 627	38	42	25		
	V1	235	1 250	1 058	1 379	34	37	19		
	V5	590	3 501	2 790	3 618	70	59	42		
	V4	420	2 662	2 054	2 713	45	51	34		
622	V3	360	2 347	1 779	2 363	41	47	30		
	V2	290	2 016	1 488	1 988	38	42	25		
	V1	215	1 630	1 173	1 592	34	35	18		
622E	V5	590	2 635	2 336	2 992	70	59	42	900 W - (2R)	4,5
	V4	420	2 114	1 818	2 385	45	51	34		6,4
	V3	360	1 930	1 604	2 140	41	47	30		7,4
	V2	290	1 699	1 362	1 868	38	42	25		9,2
	V1	215	1 468	1 108	1 565	34	35	18		12,4
	V5	590	2 635	2 336	2 984	70	59	42		
	V4	420	2 114	1 818	2 464	45	51	34		
624	V3	360	1 930	1 604	2 257	41	47	30		
	V2	290	1 699	1 362	2 029	38	42	25		
	V1	215	1 468	1 108	1 781	34	35	18		
	V5	775	5 173	3 881	4 853	101	62	44		
	V4	660	2 262	3 318	4 176	77	58	40		
632	V3	525	3 630	2 664	3 359	56	51	34		
	V2	460	3 226	2 348	2 962	47	48	30		
	V1	405	2 907	2 097	2 648	40	45	27		
	V5	775	4 401	3 493	4 633	101	62	44		4,6
	V4	660	3 833	3 009	4 006	77	58	40		5,4
632E	V3	525	3 169	2 442	3 263	56	51	34	1200 W (2R)	6,8
	V2	460	2 854	2 173	2 901	47	48	30	. /	7,7
	V1	405	2 600	1 955	2 615	40	45	27		8,8
634	V5	775	4 401	3 493	3 363	101	62	44		
	V4	660	3 833	3 009	3 025	77	58	40		
	V3	525	3 169	2 442	2 623	56	51	34		
	V2	460	2 854	2 173	2 430	47	48	30		
	V1	405	2 600	1 955	2 275	40	45	27		

EUROVENT conditions

Eurovent certified values

Cooling mode: water temperature: 7/12°C, inlet air temperature: 27°C - 19°C (WB) Heating temperature (2P): water temperature: 45/40 °C, inlet air temperature: 20 °C Heating temperature (4P): water temperature: 65/55 °C, inlet air temperature: 20 °C



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2T/4T HEE MOTOR PERFORMANCE

COADIS LINE	Control voltage (V)	Air flow m ³ /h	2-pipe and 4-pipe systems						Average increase of ai temperature (in K)	
			Cooling capacity (W)		Heating	Power input W	LW dB(A)	Comfort level (ISO or NR)	230/1/50 auxiliary electrical heater	
			Total	Sensible	capacity (W)				2R	
	6,7	610	2 160	1 969	2 582	38	59	42		
612 HEE	4,9	440	1 745	1 561	2 070	17	49	32		
	4,2	380	1 577	1 401	1 872	12	46	29		
	3,4	310	1 403	1 229	1 650	8	42	25		
	2,5	235	1 221	1 029	1 404	5	37	19		
	6,7	590	3 468	2 758	3 644	38	59	42		
	4,9	420	2 637	2 027	2 737	17	51	34		
622 HEE	4,2	360	2 322	1 752	2 389	12	47	30		
	3,4	290	1 984	1 457	2 016	8	42	25		
	2,5	215	1 596	1 142	1 620	5	35	18		
622E HEE	6,7	590	2 609	2 309	3 014	38	59	42	900 W - (2R)	4,5
	4,9	420	2 090	1 792	2 408	17	51	34		6,4
	4,2	360	1 904	1 577	2 164	12	47	30		7,4
	3,4	290	1 666	1 331	1 895	8	42	25		9,2
	2,5	215	1 430	1 076	1 594	5	35	18		12,4
	6,7	590	2 609	2 309	2 997	38	59	42		
	4,9	420	2 090	1 792	2 477	17	51	34		
624 HEE	4,2	360	1 904	1 577	2 272	12	47	30		
	3,4	290	1 666	1 331	2 045	8	42	25		
	2,5	215	1 430	1 076	1 799	5	35	18		
	7,9	775	5 132	3 839	4 891	56	62	44		
	6,7	660	4 425	3 281	4 200	38	58	40		
632 HEE	5,3	525	3 596	2 630	3 389	21	51	34		
	4,6	460	3 194	2 317	2 990	15	48	30		
	3	290	2 190	1 530	1 970	6	38	19		
	7,9	775	4 364	3 454	4 670	56	62	44		4,6
	6,7	660	3 798	2 973	4 038	38	58	40		5,4
632E HEE	5,3	525	3 136	2 410	3 292	21	51	34	1200 W (2R)	6,8
	4,6	460	2 822	2 142	2 929	15	48	30		7,7
	4,1	405	2 570	1 927	2 640	11	45	27		8,8
634 HEE	6,7	660	3 798	2 973	3 039	38	58	40		
	5,3	525	3 136	2 410	2 637	21	51	34		
	4,6	460	2 822	2 142	2 444	15	48	30		
	4,1	405	2 570	1 927	2 288	11	45	27		
	3	290	2 040	1 470	1 960	6	38	19		

EUROVENT conditions

Eurovent certified values

Cooling mode: water temperature: 7/12°C, inlet air temperature: 27°C - 19°C (WB) Heating temperature (2P): water temperature: 45/40 °C, inlet air temperature: 20 °C Heating temperature (4P): water temperature: 65/55 °C, inlet air temperature: 20 °C