



*New generation
of water loop cassette
comfort units
360° Coanda effect diffusion
Energy efficient motor
and high-efficiency filtration*



Cooling capacity: 3 to 11 kW
Heating capacity: 3 to 20 kW



USE

The active water loop comfort unit, for installation in suspended ceilings, can be used to autonomously and individually adapt the indoor temperature over very short periods to ensure the

comfort of occupants. Designed for offices, open plan areas, meeting rooms, commercial premises and entrance halls.

RANGE

The **COADIS LINE 900** range of cassettes features 9 sizes covering flow rates from 550 to 1400 m³/h, and meeting the most stringent sound level requirements.

- 1 Visual 360° diffusion model:
 - Coanda effect diffuser across 360°.

- The Coadis Line is available as:
 - A 2-tube system, with heating or cooling mode,
 - A 2-tube, 2-wire system, with heating or cooling/cooling + electric mode,
 - A 4-tube 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 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 with low pressure drop,
 - Optimised hydraulic coil.
- Maintenance facilitated by access to the filter and the highly accessible internal components.
- Modern, elegant design to ensure perfect integration.
- Environmentally-responsible product.

COADIS LINE 900 MORPHO-DESCRIPTIVE CODES

Range	Size	Model	Coil type	Thermal function		Motor	Speeds	Filter
CDL	922	V360°	2T2F	F	+ 2000W	HEE	As selected	G3

EP	EPURE filter
G3	G3 filter

HEE 2-10V	Energy efficient motor 2-10V control
HEE ON/OFF	Energy efficient motor 3-speed control
AC	5-speed asynchronous motor

2000W	For 922
3000W	For 932 and 932SP

F	Cooling
C	Heating
CF	Heating/cooling

2T	2 pipes
2T2F	2-tube + wiring
4T	4 pipes

V360°	Visual 360°
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922	2 tubes
924	4 tubes
932	2 tubes
934	4 tubes
932SP	2 tubes
934SP	4 tubes

CDL	COADIS LINE
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TECHNICAL DESCRIPTION

Return/supply air interface

- VISUAL 360°

Painted galvanised steel.

PSE insulation, 10 to 40 mm thick.

Uniform RAL 9010 white colour for all components. Integration within a suspended ceiling, fitting in the centre of four tiles.

Perforated metal return air grille with filter housing with quick opening via 2 lugs.

Interface secured by 4 screws, to be removed to gain full access to the internal components (coil, FMA, temperature limiters, condensate pan, condensate drain pump).

Coanda effect diffusion which allows a jet of air to follow the ceiling, preventing cold air from dropping into the comfort area. Coanda effect offers 360° coverage of the surface area of the room to be treated, with no dead zone.

Narrow opening single-slot and specific internal profile.

Base

- Ribbed galvanised steel motor support base panel.
- High-density PSE packaged casing, ensuring the thermal and acoustic functionalities. 18 mm thick for the base and 25 mm to 30 mm thick for the vertical walls which form the casing. M1 fire rating.
- Low emission of TVOCs and no halogenated compounds.
- ABS technical plate supporting the electrics box, hydraulic and air couplings (fresh air).
- Reinforcing ABS angle bars fitted in the corners and equipped with open galvanised steel mounting brackets with check valve for fitting threaded rods.
- Fixed frame in RAL 9010 painted (white) galvanised steel, housing the return/supply air interface and providing rigidity to the casing assembly.

Water coil

- 1 hot water or cold water circuit (2-tube system),
- 1 hot water + 1 cold water circuit (4-tube system),
- one-piece coupling (40 mm centre distance) with rotating female couplings with integrated flat face and seals, for easy fitting of control valves,
- one, two or three-row circular coil with low pressure drop,
- copper tubes, continuous aluminium fins (1.8 mm spacing),
- bleeding and draining,
- nominal pressure of 16 bar (at 20°C),
- test pressure of 24 bar,
- max. hot water inlet temperature:
 - 4-tube application: 80°C,
 - 2-tube application: 70°C,
 - 2-tube/2-wire application: 55°C (min. air flow rate: 200m³/h)
- min. cold water inlet temperature: 6°C.

Electric heater

(2-tube + electric system)

230V/1/50 single-tube electrical elements inserted into the aluminium housing.

Two temperature limiters with manual and automatic reset, inserted into the aluminium housing and easily accessible via the return/supply air interface without the need to open the suspended ceiling.

Heater power supply connected to the terminal block inside the electrics box.

Option of deactivating a heater on site by removing a shunt from the terminal block, to reduce the electrical power.

Condensate drain pan

One-piece main pan with all-climate insulation in high-density PSE, with sealing treatment on the upper section. Removable from below.

Condensate drainage (internal Ø 32 connection) provided by an internal drain pump equipped with a safety float, check valve and fitted on anti-vibration mounts.

Auxiliary pan available as an accessory for recovery of condensate from the valves.

Fan motor assembly

■ HEE motor

High energy efficiency motor enabling a reduction of up to 85% in electricity consumption.

- BLAC (Brushless Alternating Current) technology offering more linear torque progression and a lower operating sound level than BLDC (Brushless Direct Current) technology,
- sealed, tropicalised, with protected shaft,
- 3-speed gradual operation by 0-10V or on/off control signal, without expansion board,
- ball bearings,
- internal automatic overload protection as standard on winding,
- "DFS" motor fault output using a photocoupler for potential alarm feedback via a Konnex protocol communication bus (via the V3000 controller),
- fitted on anti-vibration mounts,
- 230V/1Ph/50 Hz power supply (60Hz compatible).

Note: The minimum voltage required for start-up of the motor is 2V.

Or

■ Asynchronous motor

5 factory-fitted cabled speeds (connected and available at the terminal) for customised adjustment.

- sealed, tropicalised, with protected shaft,
- permanent capacitor,
- ball bearings,
- internal automatic overload protection as standard on winding,
- resilient mounts,
- 230V/1Ph/50 Hz power supply (60Hz compatible),
- high efficiency and power factor.

■ Fan(s)

- balanced centrifugal impeller (Ø 476mm) with airfoil blades,
- polymer impeller,
- single-point mounting system with foolproofing device.

Electrics box

- Large ABS electrics box, with a hinge to keep it open and screw closure.
- Protection rating: IP20.
- Terminal block on DIN rail in accordance with EN 50022, depth 7.5 mm.
- Junction block located with tension clamp. Cross section 0.5 to 2.5 mm² - Max current: 24A – Shock resistance: 8 kV.
- Cable routing for customer electrical connections.

Fresh air supply sleeve

- Ø 100mm sleeve integrated into the casing with removable plug.

Air filter

- **EPURE function**
 - a protected air stream which prevents particles present in the suspended ceilings from being drawn in,
 - uniform treatment of the room thanks to optimised diffusion (Coanda effect) and an adapted 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,
 - longer 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.

Or

- flexible filter medium made of regenerative polyester fibre,
- efficiency class EN 779: G3,
- fire rating: M1,
- rigid metal frame,
- accessible via the hinged air recovery grille.

Standard wiring diagram without control

- **2-tube and 4-tube application:** 7320074.
- **2-tubes + electric application:** 7320075.

Securing the device

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 assembly printed on the box.
- Visual return/supply air interface delivered separately in its own protective cardboard packaging.
- Delivered on a plastic-wrapped pallet.

Controls

- RTR-E electromechanical thermostat range.
- V30 electronic range.
- V300 electronic range.
- V3000 networked electronic range (KNX).
- V-Lon networked electronic range (LON).

Optional accessories

■ Delivered separately:

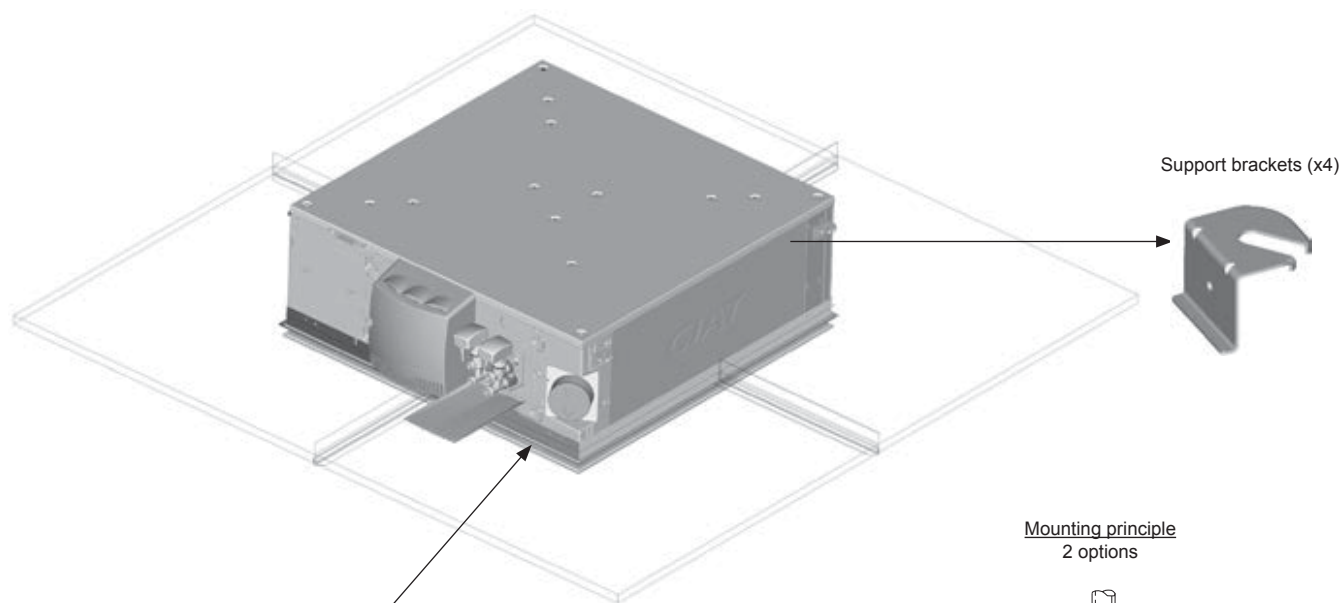
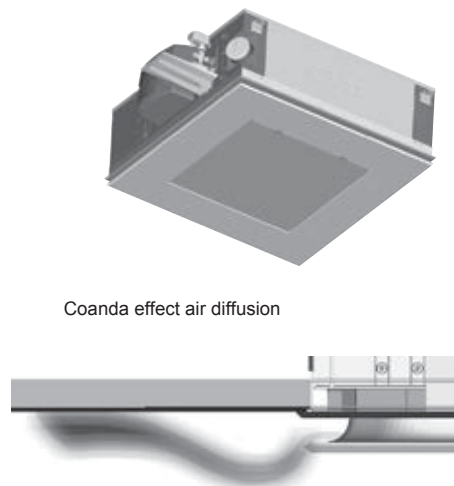
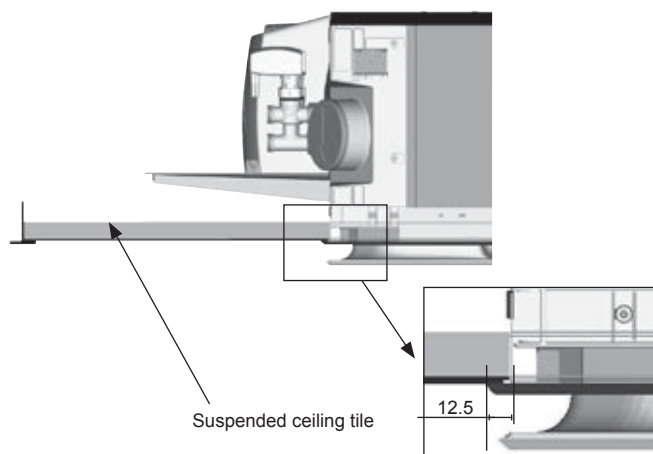
- self-adjusting fresh air module kit:
 - 15/30/45 m³/h flow rates,
 - 60/75/90 m³/h flow rates,
- Ø100/125 mm adapter for fresh air sleeve,
- resilient mounts,
- finish frame for STAFF ceiling,
- fresh air pack:
 - R1: fresh air managed via presence sensor,
 - R+: fresh air management via CO₂ sensor (max. air flow 90 m³/h recommended, network balancing system not supplied by CIAT).

Option (contact us)

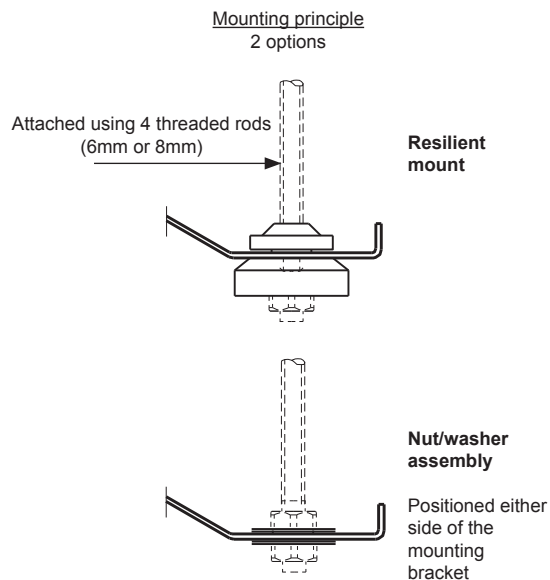
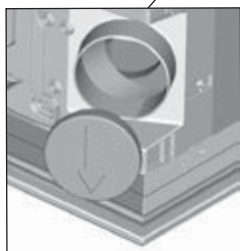
- Hydraulic coil with blades protected for use in harmful/corrosive atmospheres (coastal locations, or areas close to chemical industries).

INTEGRATION IN SUSPENDED CEILING

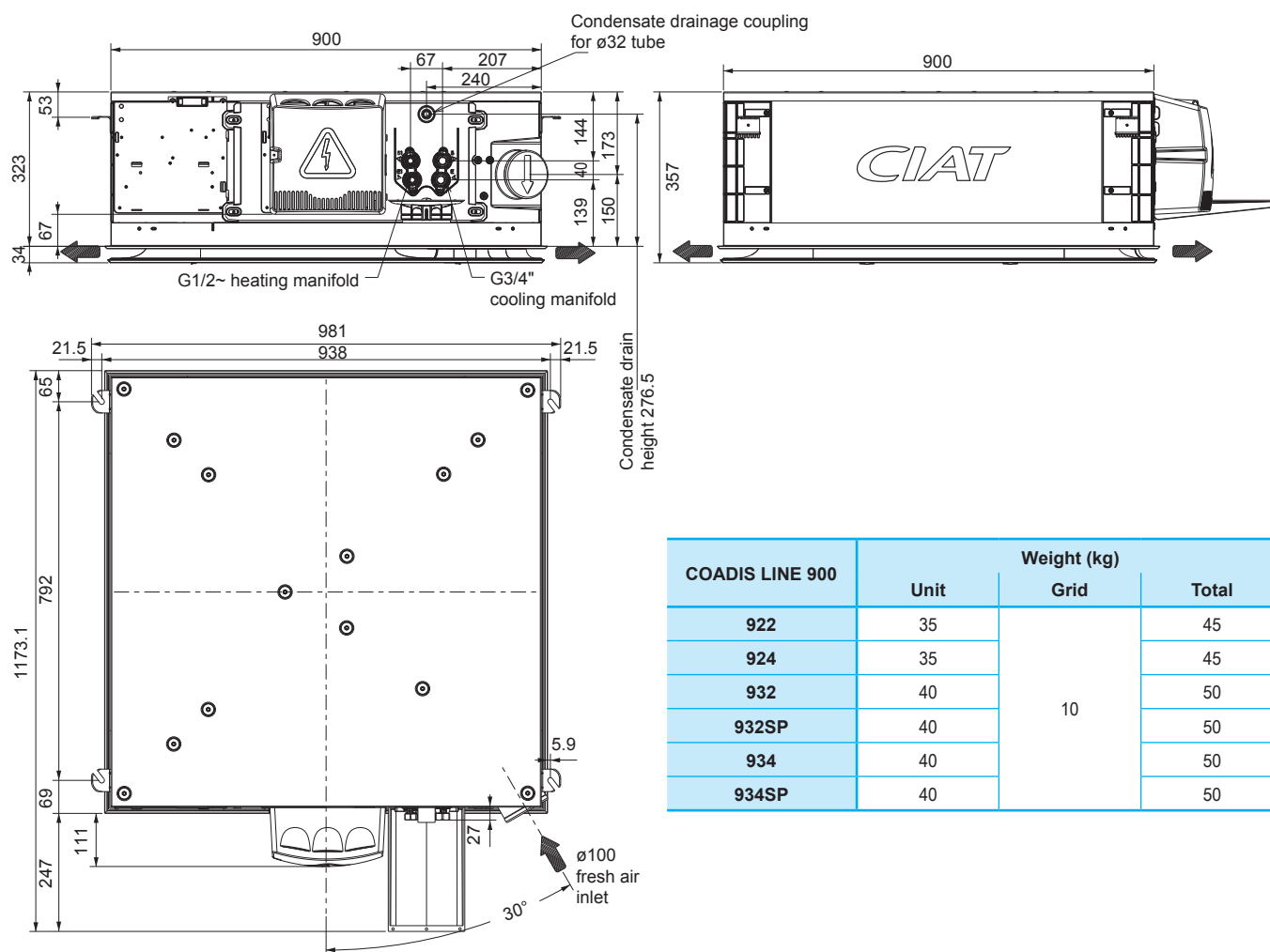
The air handling casing is fitted inside the suspended ceiling, in the centre of 4 tiles, to be positioned in the centre of the room. The COADIS LINE must be suspended from the ceiling using 4 threaded rods either 6 mm or 8 mm in diameter (not supplied), which are fixed to the unit's 4 support brackets using resilient mounts or a nut/washer assembly positioned on either side of the mounting bracket.



Ø 100 mm fresh air inlet collar, max.
air flow 90 m³/hr recommended.
Network balancing system
(not supplied by CIAT)

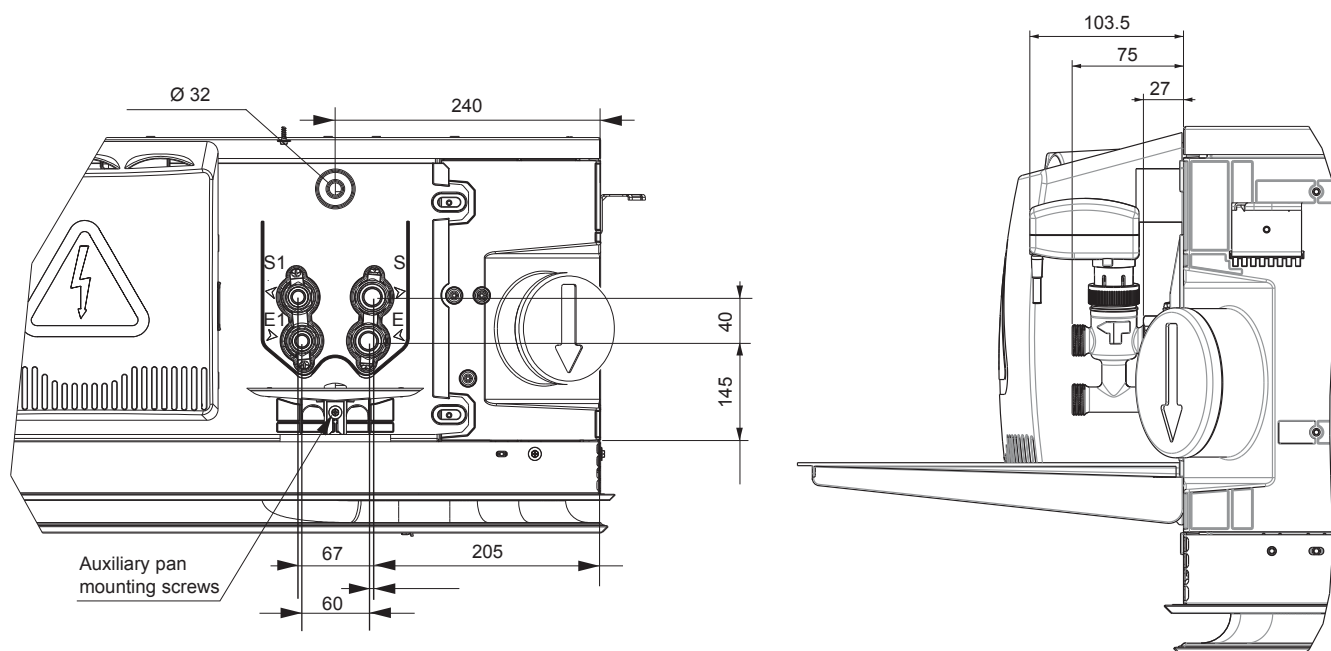


DIMENSIONS



COADIS LINE 900	Weight (kg)		
	Unit	Grid	Total
922	35	10	45
924	35		45
932	40		50
932SP	40		50
934	40		50
934SP	40		50

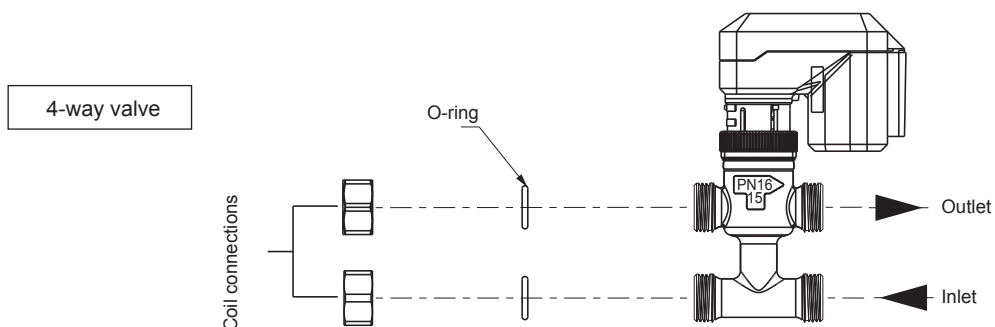
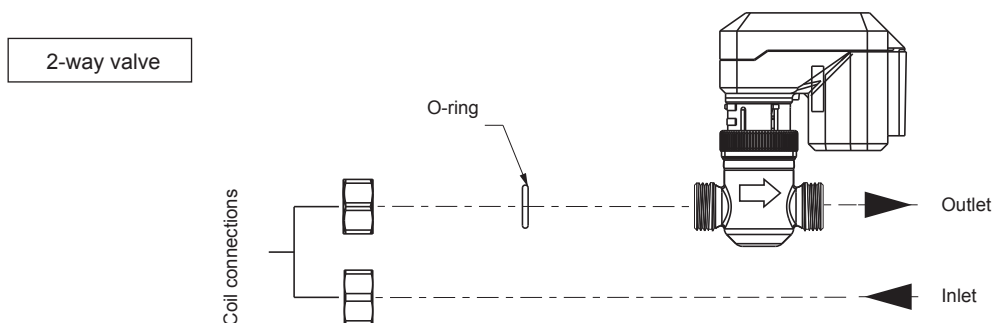
POSITIONING OF PIPES AND VALVES



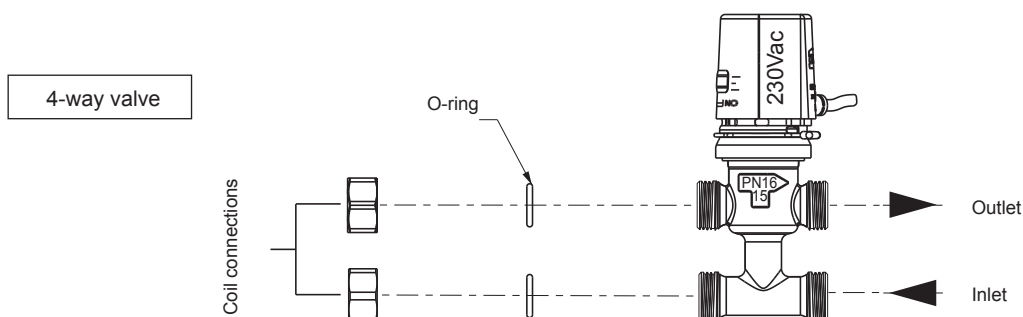
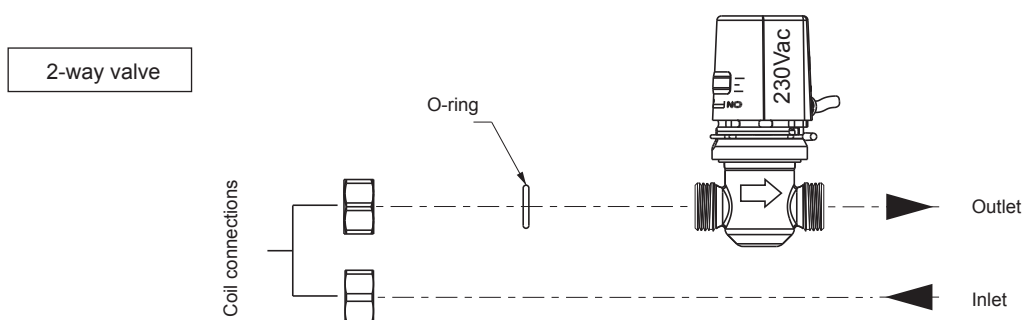
HYDRAULIC CONNECTIONS WITH VALVE ASSEMBLY

Valve and motor assembly (24V or 230V)

- Heating/cooling assembly for valves with 3-point motors



- Heating/cooling assembly for valves with thermo-actuators



TECHNICAL CHARACTERISTICS

Motor electrical specifications

COADIS LINE 900	Motor code	AC asynchronous motor						HEE Brushless motor					
		922	932	932SP	924	934	934SP	922	932	932SP	924	934	934SP
Input power (W)	V5	102	102	157	102	102	157	51	51	113	51	51	113
	V4	89	89	136	89	89	136	38	38	91	38	38	91
	V3	69	69	119	69	69	119	24	24	72	24	24	72
	V2	53	53	105	53	53	105	15	15	56	15	15	56
	V1	35	35	93	35	35	93	10	10	42	10	10	42
Input current (A)	V5	0.44	0.44	0.68	0.44	0.44	0.68	0.37	0.37	0.39	0.37	0.37	0.39
	V4	0.39	0.39	0.59	0.39	0.39	0.59	0.28	0.28	0.61	0.28	0.28	0.61
	V3	0.30	0.30	0.52	0.30	0.30	0.52	0.20	0.20	0.50	0.20	0.20	0.50
	V2	0.23	0.23	0.46	0.23	0.23	0.46	0.14	0.14	0.39	0.14	0.14	0.39
	V1	0.15	0.15	0.40	0.15	0.15	0.40	0.10	0.10	0.31	0.10	0.10	0.31

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

Important:

The new European ErP (Energy related Products) directive applies to all manufacturers of equipment fitted with a fan with a power input of between 125 watts and 500 kilowatts (inclusive); in this directive, the European Union specifies the minimum efficiency values which must be respected for this equipment to be authorised for use within its territory.

The 1st stage of this directive is applicable from 1st January 2013 and establishes more stringent requirements for fan energy efficiency. A second stage to come into force in 2015 will extend these requirements further. The aim is to ensure that fans are more energy efficient so that they contribute to the reduction in CO₂ emissions of at least 20% by 2020 as stipulated in the Kyoto agreement, and to promote the use of low energy motors.

USE OF COADIS LINE PRODUCTS IN ESTABLISHMENTS OPEN TO THE PUBLIC APPLICABLE FROM 1 JANUARY 2013



COADIS LINE 600 (all sizes)	Eurozone	Outside of Eurozone
With 5-speed asynchronous motor	OK	
With HEE motor		

COADIS LINE 900	Eurozone	Outside of Eurozone
With 5-speed asynchronous motor		
922 ; 924	OK	OK
932 ; 934		
932SP; 934SP	NO	
With HEE motor		
922 ; 924	OK	OK
932 ; 934		
932SP; 934SP		

Coil capacity (L)

COADIS LINE 900		922	932	932SP	924	934	934SP
2-tube coil		2.2	3.5	3.5			
4-tube coil	Cold water coil				2.2	3.5	3.5
	Hot water coil				0.6	0.6	0.6

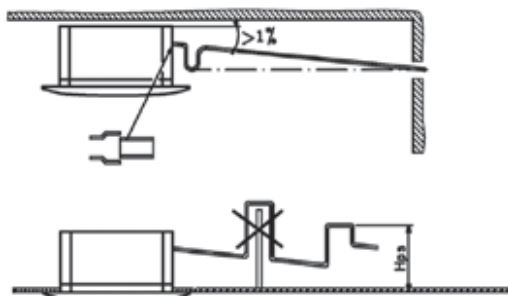
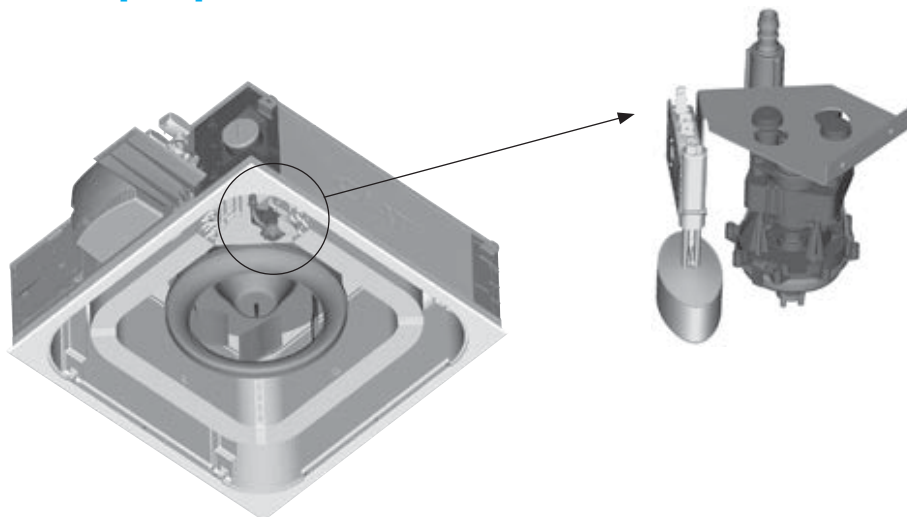
Diameters of coil couplings

Coil coupling type: flat face swivel nuts with a female thread

Valve outlet coupling type: "male flat face" threaded couplings to be used

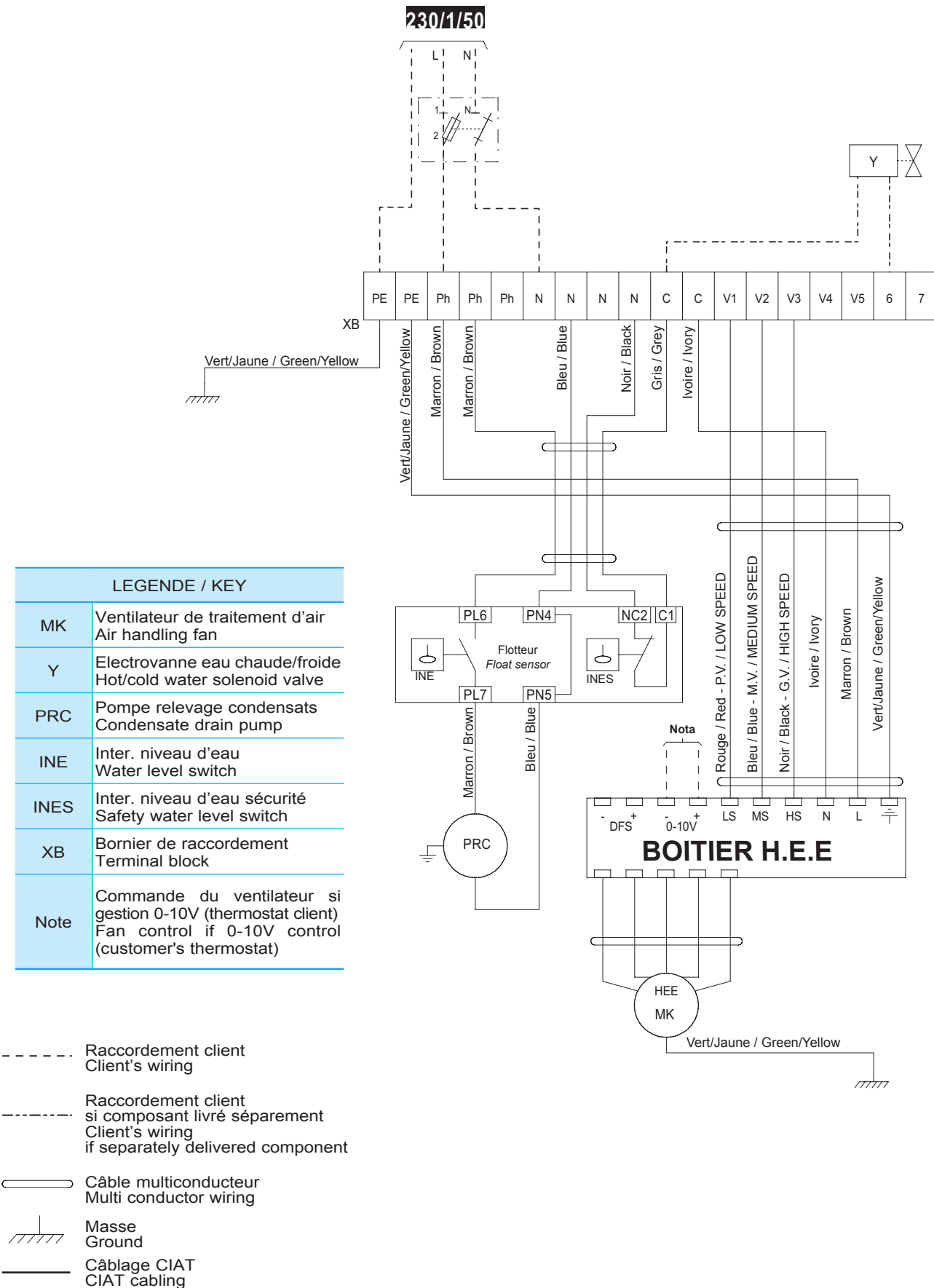
COADIS LINE 900		922	932	932SP	924	934	934SP
2-tube system	Hot or cold water coil	G3/4"	G3/4"	G3/4"			
	Cold water coil				G3/4"	G3/4"	G3/4"
4-tube system	Hot water coil				G1/2"	G1/2"	G1/2"

Condensate drain pump



TECHNICAL CHARACTERISTICS	
Maximum flow rate	100 l/h
Maximum discharge height	120 cm (flow rate = 24 l/h)
Sound level during application at 1 m: (measurements taken at the Sauermann acoustic lab, pump in water)	< or = 30 dBA
Power supply	230 V - 50/60 Hz - 10 W/8W
Insulation class	double insulation
Detection levels	ON: 18 mm, OFF: 13 mm, AL: 21 mm
Safety contact	0.001-5A for 5V up to 230V
Heat protection (overheating)	90°C (automatic restart)
Service life	15 000 hours (15s OFF, 5s ON)
Protection	IP54
Safety standard	CE
RoHS Directive	Compliant
DEEE Directive	Compliant

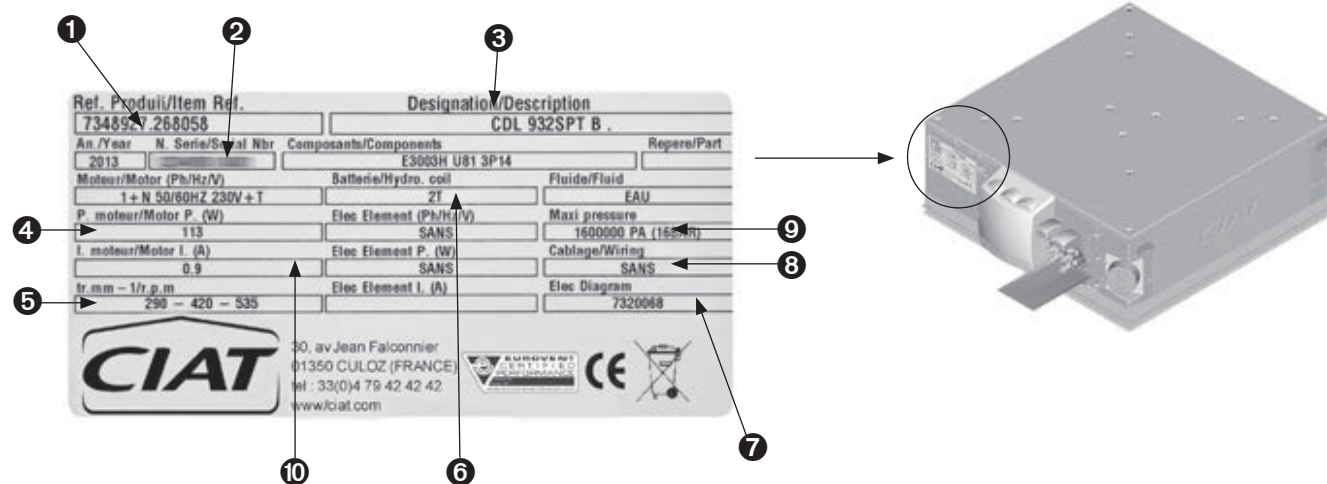
Condensate drain pump wiring



Name plate of the unit

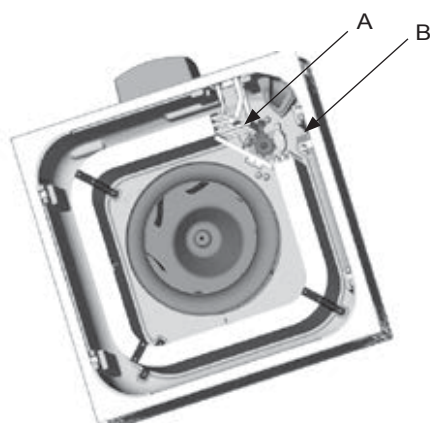
The name plate contains all the information required to identify the unit and its configuration. This plate is placed on the electrics box side.

- ❶ Code
- ❷ Serial number
- ❸ Description of the unit
- ❹ Rated motor output
- ❺ Motor rotation speed
- ❻ Coil type
- ❼ Wiring diagram reference
- ❽ Motor speed wiring
- ❾ Maximum service pressure
- ❿ Electric heater specifications (if fitted)



Electrical heater

2 or 3 single-tube 230/1/50 electrical elements inserted into the aluminium housing and bent around the hydraulic coil.



A: temperature limiter with manual reset
B: temperature limiter with automatic reset

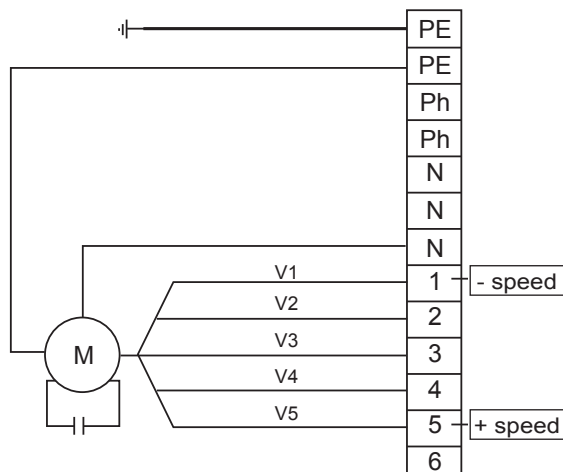


Removal of shunt to deactivate a heater
(drop of 1000W)

Operating speed selection

■ Asynchronous motor

All speeds are connected and wired to the terminal.



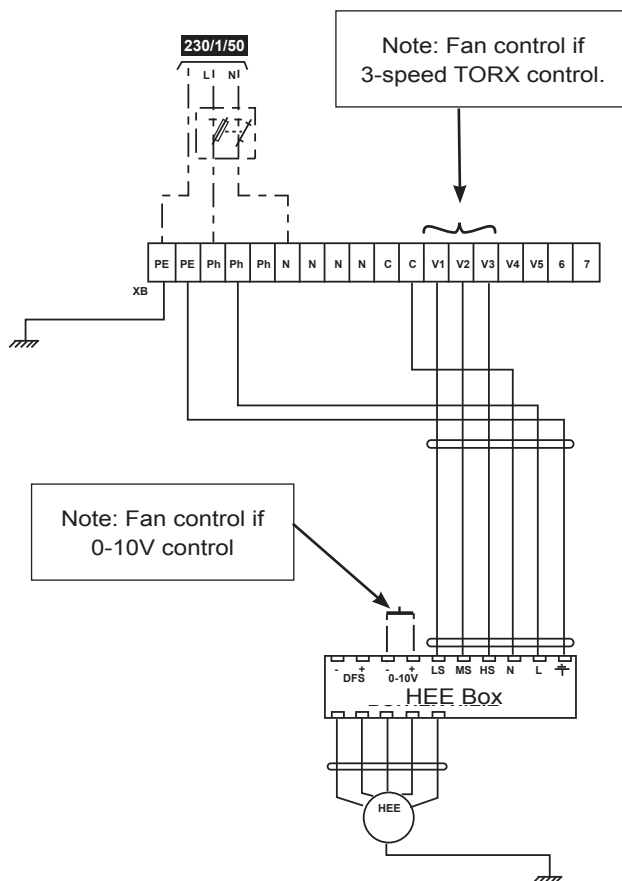
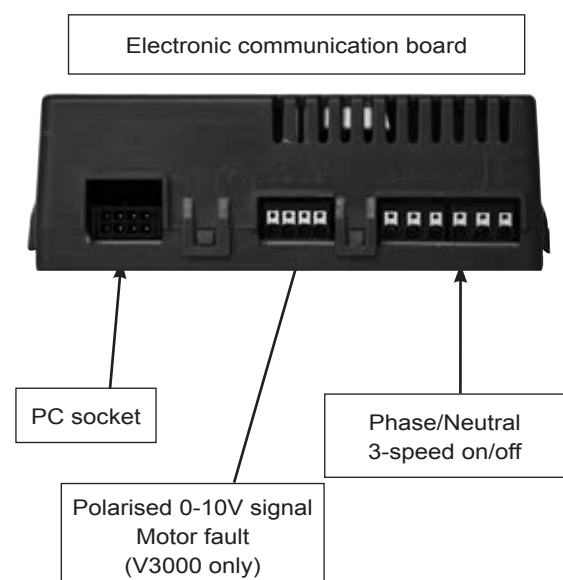
The customer must cable the speeds for the thermostat at the top of the terminal block between V1 and V5

■ HEE motor

Operating speed selection:

- With 0 - 10 V control, adjustment via the controller,
- with 3-speed on/off control, adjustment via the control unit (option).

Note: For more information, refer to instruction manual N11-47.



PERFORMANCE

COADIS LINE 900	Motor code	Air flow m ³ /h	2-tube system and 4-tube system			LW dB (A)	Comfort level (ISO or NR)	Average air temperature rise in K	
			Cooling power (W)		Heating capacity (W)			Auxiliary electric heater 230/1/50	
			Total	Sensible				2R or 3R	
922	V5	1100	6 060	4 890	7 760	51	33	2000 W (2R)	5.4
	V4	990	5 570	4 460	7 240	49	31		6.0
	V3	845	4 990	3 960	6 460	46	28		7.0
	V2	700	4 320	3 400	5 590	43	24		8.5
	V1	550	3 610	2 760	4 620	40	20		10.8
932	V5	1090	7 600	5 690	9 030	50	33	3000 W (3R)	8.2
	V4	985	6 980	5 190	8 240	48	32		9.0
	V3	850	6 130	4 510	7 220	44	26		10.5
	V2	710	5 210	3 800	6 100	41	22		12.5
	V1	570	4 230	3 070	4 910	37	18		15.6
932SP	V5	1420	9 350	7 210	11 200	59	42	3000 W (3R)	6.3
	V4	1325	8 860	6 770	10 600	56	39		6.7
	V3	1225	8 330	6 310	9 940	54	37		7.3
	V2	1120	7 770	5 840	9 250	51	34		8.0
	V1	1020	7 170	5 340	8 500	48	32		8.7
924	V5	1100	6 060	4 900	4 110	51	33		
	V4	990	5 570	4 470	3 880	49	31		
	V3	845	4 990	3 970	3 590	46	28		
	V2	700	4 320	3 410	3 250	43	24		
	V1	550	3 610	2 770	2 870	40	20		
934	V5	1090	7 600	5 710	5 090	50	33		
	V4	985	6 980	5 210	4 820	48	32		
	V3	850	6 130	4 530	4 410	44	26		
	V2	710	5 210	3 820	3 940	41	22		
	V1	570	4 230	3 080	3 400	37	18		
934SP	V5	1420	9 350	7 230	5 720	59	42		
	V4	1325	8 860	6 790	5 570	56	39		
	V3	1225	8 330	6 330	5 390	54	37		
	V2	1120	7 770	5 860	5 160	51	34		
	V1	1020	7 170	5 360	4 900	48	32		

Operation, 2-tube system

Summer: cold water inlet 7/12°C, air 27°C WB 19°C.

Winter: hot water inlet 50°C for water flow rate identical to summer mode, air 20°C.

Operation, 4-tube system

Summer: cold water inlet 7/12°C, air 27°C WB 19°C.

Winter: hot water inlet 70/60°C, air 20°C.

Comfort level: attenuation level of the space and installation: 12 dB.

* The values are given for information purposes and may be changed at a later date.

CODES

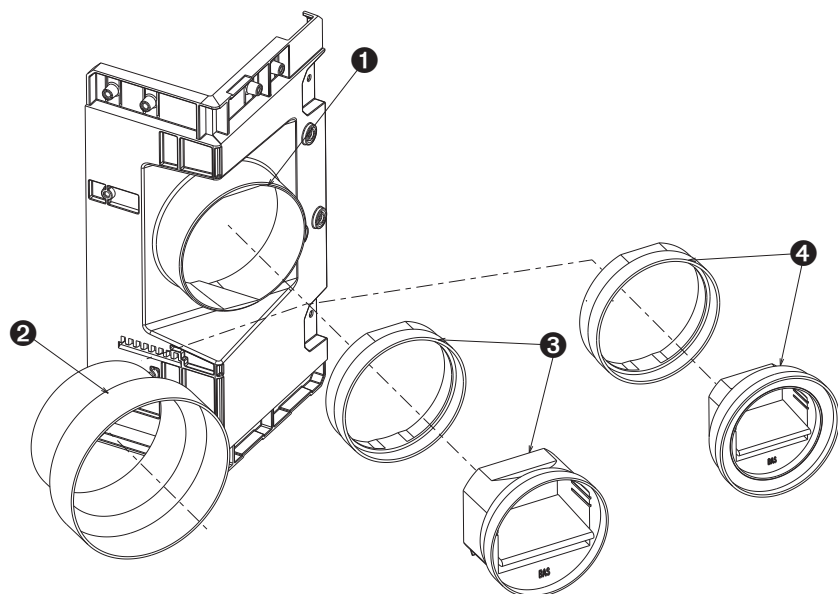
With EPURE filter

VISUAL 360°	Coil →		2 heating or cooling tubes					
	Motor →		HEE motor			5-speed motor		
	Size →		922	932	932SP	922	932	932SP
	Air handling section + auxiliary pan	Code	7344015	7344016	7351393	7344009	7344010	7351311
	Diffusion interface VISUAL 360° with EPURE filter	Code	7335537					
	Coil →		4 heating and cooling tubes					
	Motor →		HEE motor			5-speed motor		
	Size →		924	934	934SP	924	934	934SP
	Air handling section + auxiliary pan	Code	7344017	7344018	7351394	7344011	7344012	7351313
	Diffusion interface VISUAL 360° with EPURE filter	Code	7335537					
	Coil →		2 heating or cooling tubes + electric heater					
	Motor →		HEE motor			5-speed motor		
	Electrical heaters →		2000W	3000W		2000W	3000W	
	Size →		922	932	932SP	922	932	932SP
	Air handling section + auxiliary pan	Code	7344019	7344020	7351396	7344013	7344014	7351314
	Diffusion interface VISUAL 360° with EPURE filter	Code	7335537					

With G3 filter

VISUAL 360°	Coil →		2 heating or cooling tubes					
	Motor →		HEE motor			5-speed motor		
	Size →		922	932	932SP	922	932	932SP
	Air handling section + auxiliary pan	Code	7344015	7344016	7351393	7344009	7344010	7351311
	Diffusion interface VISUAL 360° with G3 filter	Code	7335538					
	Coil →		4 heating and cooling tubes					
	Motor →		HEE motor			5-speed motor		
	Size →		924	934	934SP	924	934	934SP
	Air handling section + auxiliary pan	Code	7344017	7344018	7351394	7344011	7344012	7351313
	Diffusion interface VISUAL 360° with G3 filter	Code	7335538					
	Coil →		2 heating or cooling tubes + electric heater					
	Motor →		HEE motor			5-speed motor		
	Electrical heaters →		2000W	3000W		2000W	3000W	
	Size →		922	932	932SP	922	932	932SP
	Air handling section + auxiliary pan	Code	7344019	7344020	7351396	7344013	7344014	7351314
	Diffusion interface VISUAL 360° with G3 filter	Code	7335538					

OPTIONAL ACCESSORIES (SUPPLIED SEPARATELY)



- ❶ Fresh air inlet on unit
- ❷ Adapter (Ø100 Ø125mm)
- ❸ Air flow rate controller kit (60/75/90 m³/h)
- ❹ Air flow rate controller kit (15/30/45 m³/h)

Description		
Resilient mounts supplied separately (4 per unit required)	Code	0219453
Self-adjustable module assembly (Ø100mm). Three flow rates available using a set of shims.	15/30/45 m ³ /h	Code 7320014
	60/75/90 m ³ /h	Code 7320015
Adapter sleeve frame (Ø100/125 mm)	Code	7320016
Finish frame for STAFF ceiling	Code	Available 2015
Speed control unit kit for HEE motor (for on/off 3-speed control only)	Code	7213179

Assembly	Figure	Description	Code	900
For 2-tube coils				G3/4" customer side coupling
All without valve		Two M1 9 mm thick insulated flexible couplings EPDM pipe + PN10 stainless steel braid length 300 mm male coupling with flat face/female rotary coupling on customer side	Code	2 x 7247867
All 4-way valve		Two M1 9 mm thick insulated flexible connections EPDM pipe + PN10 stainless steel braid length 300 mm Female rotary couplings on both sides	Code	2 x 5202298
All 2-way valve		Two M1 9 mm thick insulated flexible connections EPDM pipe + PN10 stainless steel braid length 300 mm: 1 with male coupling with flat face/female rotary coupling on the customer side 1 with Female rotary couplings on both sides	Code	7247867 + 5202298
For 4-tube coils				Customer side coupling Heating G1/2" Cooling G3/4"
All without valve		EPDM pipe + PN10 stainless steel braid length 300 mm male coupling with flat face/female rotary coupling on customer side Heating: 2 non-insulated Cooling: 2 insulated - M1 9 mm thick	Code	Heating: 2 x 7247868 Cooling: 2 x 7247867
All 4-way valve		EPDM pipe + PN10 stainless steel braid length 300 mm Female rotary couplings on both sides Heating: 2 non-insulated Cooling: 2 insulated - M1 9 mm thick	Code	Heating: 2 x 7247837 Cooling: 2 x 5202298
All 2-way valve		4 EPDM pipe flexible connections + PN10 stainless steel braid length 300 mm: 2 with Male coupling with flat face / Female rotary coupling on the customer side 2 with Female rotary couplings on both sides Heating: 2 non-insulated Cooling: 2 insulated - M1 9 mm thick	Code	Heating: 7247868 + 7247837 Cooling: 7247867 + 5202298

SPECIFICATION TEXT

Terminal units must comply with standards and regulations in force, in particular: EN ISO 7730 (thermal comfort), EN 779 (filters), EN 1216 (water coils), EN 50022 (DIN rails), NF C15-100 (electrical components), NF S90-351 (health, airborne contamination control) and the circular DGS no. 97/311 (disinfection of air conditioning systems). Eco designed in accordance with standard EN 14062 and in compliance with environmental certification ISO 14001. They will be manufactured according to the quality assurance standard ISO 9001, EUROVENT and will have the CE mark. The unit will be easy to maintain and the supply air/return air system of the all-in-one type.

The base will be designed in high-density PSE with very low TVOC emissions, to provide thermal and sound insulation. The PSE will be classed A+ in accordance with the order of 19th April 2011 concerning the classification of construction materials based on their volatile pollutant emissions. A base panel in galvanised steel to support the internal components and lateral reinforcements in ABS will ensure a rigid construction. It will be easy to wash from the inside and non-erodible. The fire rating will be M1. The components that make up the base must be able to be separated to enable optimal recycling of the materials at the end of life and reduce the environmental impact. Bonded insulation will not be permitted. The dimensions of the base must allow it to be integrated in the centre of four suspended ceiling tiles. Its lightweight design will enabling optimal handling and quicker commissioning on site. The mounting brackets, which are equipped with an anti-slip system for the threaded rods, will make the unit easier to fit.

The Coanda effect diffusion system will be integrated in the unit. The naturally optimised single-slot design with narrow opening means it does not require adjustment to operate efficiently in any type of room and in all seasons. Any adjustment system that changes the sound of the unit by reducing the supply air section (e.g. dampers) will not be permitted. It will enable horizontal diffusion at an angle of 360° (Visual interface), completely eliminating radiation transfer caused by the walls when the jet is falling vertically outside the occupied space (NF EN 13779) and ensure uniform comfort in line with the stipulations of standard ISO 7730. Its peripheral single-slot design will allow a high rate of induction (injection of ambient air in the air stream) over the entire length so that the desired comfort temperature can be reached more quickly.

The VISUAL 360° supply/return interface in RAL 9010 will be completely insulated by a PSE unit which will completely surround the panel. It is removable to enable easy maintenance, and will allow complete access from underneath to all of the internal components (fan motor assembly, coil, condensate pan, etc.) without the need to remove the unit or open the suspended ceiling. Smooth and free from corners where dust could accumulate, the single-slot diffusion system enables quick, easy cleaning. The VISUAL 360° interface will be primarily suited to large spaces, small shopping centres and meeting rooms.

The air intake is via a micro-perforated return air grille in RAL 9010, integrated in the unit and hiding the filter. It can be opened easily without tools, allowing the filter to be accessed in under 3 seconds to keep maintenance costs down. The hinge-mounted grille will allow work to be carried out on the unit in complete safety.

The EPURE function (air purification system) is to exceed the WHO's recommendations on particle removal, reducing PM2.5 particulates to below 10 µg/m³ in less than an hour. It is to be fitted with an air filter made of polypropylene with an M1 fire rating, that will not release glass fibres. The filter should be high energy efficiency and multi-pleated with a filter area of at least 8 times the intake grille surface area. A minimum space of 20 mm must be left between the air intake and the filter in order to ensure that the entire filter area is used, thereby improving the ambient air quality. Its high retention capacity ensures an increased service life (flat filters will not be permitted). In order to reduce waste at the end of the service life, it must be able to be completely incinerated with no sorting of materials necessary. It must be accessible via the return air grille to enable its replacement in less than one minute.

The water coil will be made of copper tubes and continuous fins in seamed aluminium. The connections will have one-piece couplings with a 40 mm centre distance and an integrated swivel nut to reduce the number of intermediate couplings, thereby reducing the risk of leaks (direct assembly of valves). The coils will be equipped with air bleed and draining valves. They will be tested under extreme conditions with a minimum test pressure of 24 bar. In order to reduce energy consumption and simplify commissioning, it will be possible to fit them with automatically adjusted differential pressure valves to ensure the water flow rate is maintained, once it has been set with the manual handle.

The main condensate pan will be in high-density sealed non-corrodible PSE. Its naturally sloped design will allow it to drain condensate directly to the integrated condensate drain pump. It will be possible to remove the main pan from underneath without the need to open the suspended ceiling.

Mounted on the outside of the unit, **the auxiliary condensate pan** in ABS will enable the condensate produced by the cold water control valve to be recovered. The condensate will also be drained by the condensate drain pump.

The additional electric heater running in 230V single-phase must be shielded with stainless steel. It should be placed downstream of the water coil in order to save energy (for simultaneous hot water and auxiliary electric heater usage). The unit is to be fitted with safety limiters that comply with the applicable standards. All electric heaters with incandescent wires or sacrificial fuses will be prohibited. It will be possible to reduce the power of the electric heater on site.

The fan motor assembly, mounted on anti-vibration mounts, will be fitted with a low-consumption HEE motor with BLAC (BrushLess Alternate Current) technology, which offers more linear torque progression and a lower operating sound level than BLDC (Brushless Direct Current) technology. All BLDC motors will be prohibited. Single-phase 230V 50/60Hz, it may be controlled by a progressive control signal 0-10V or 3-speed ON/OFF with no need for an additional electronic board. It will be fitted with an automatic overload protection with alarm report via KNX bus. The centrifugal impeller with airfoil blades will be balanced to prevent noise from vibrations. The system mounting it on the drive shaft will be fitted with a foolproofing device which prevents installation if incorrectly positioned, in order to simplify maintenance. The fan motor assembly will be removable from underneath.

An electrics box that is enclosed and of large dimensions, fitted with a DIN rail, will be able to accommodate and protect all the control components from dust. The safety of the electrical cables must be ensured using cable glands. The electrical and hydraulic feeds must both be on the same side to facilitate maintenance operations. In order to ensure reliability, the control will be factory-fitted (except for the room terminal) to eliminate any risks of leaks, for electrical safety and for the proper protection of components.

The fresh air enters through a smooth metal sleeve (with no flow control) or via a self-adjusting collar and module assembly designed to supply the determined flow rate with a ΔP between 50 and 100 Pa.

Resilient mounts will be placed between the unit's mountings and the threaded rods to prevent any transmission of noise.

Guarantees

The manufacturer guarantees the equipment's performance, and will provide the documents attesting to the equipment's compliance with the attached specifications and with the STANDARDS, in particular the heating and cooling capacity (total and sensible), the air flow, the motor power input, the efficiency of the filters and the sound power spectrum. Using a simulation tool, the manufacturer of the terminal units must be able to give the relevant comfort indices or the values in compliance with the standard EN ISO 7730. The system start-up and maintenance guide for the unit must be in the language used in the country of installation. The manufacturer's technical specifications and the equipment's sound pressure must be given in the documents to be appended to the submission.

This document is non-contractual. As part of its policy of continual product improvement, CIAT reserves the right to make any technical modification it feels appropriate without prior notification.

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