S&P presents its new ranges of domestic and commercial fans with DC motors

TD-ECOWATT AND DECOR-ECOWATT Series

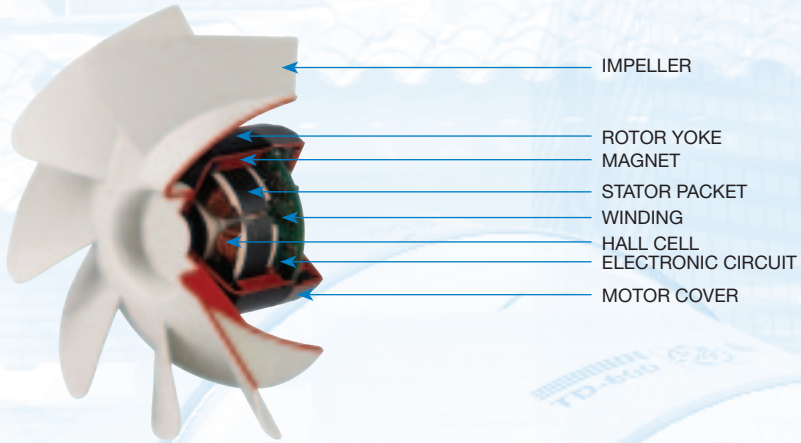
Up to 55% savings in energy consumption
Reduced CO_2 emissions
Improvement of the environment

ENERGY EFFICIENT VENTILATION SYSTEM

Efficient Ventilation Systems

Energy is scarce and expensive.
In S&P we are working to offer the market efficient ventilation products, which without sacrificing performance, generate savings in energy consumption and recycling costs, while at the same time contributing to reduce CO2 emissions and improve the environment.

DC motors by S&P



The DC motors by S&P, contrary to conventional motors, have no electro-mechanical contact between the stator and the rotor.
The role of the brushes in a conventional DC motor is carried out by an electronic assembly.
This type of motor consists of:
- **Rotor:** Mobile part containing the magnets.
- **Stator:** The static part comprising a block of plates where the copper wire is wound.
- **Control electronics**

Features

The operational features of this permanent magnet motor are the same as a conventional DC motor, with the added advantage that as there is no mechanical contact, wear is practically non-existent.
Thanks to this, it offers great advantages for use in machines:

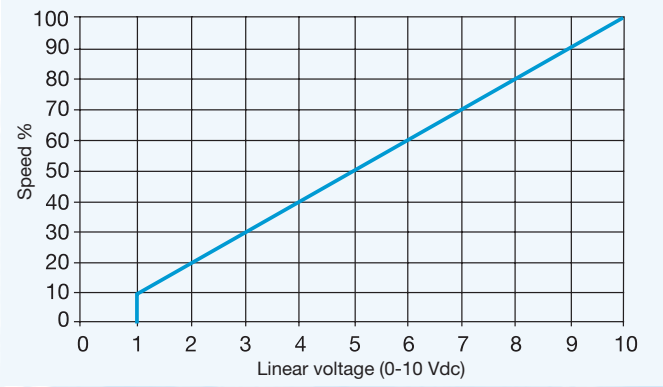
- Toughness and reliability.
- Requires no maintenance.
- Great versatility in the control of rotation speed.
- Characteristic performance of a DC motor.
- Long service life of the motor. Which would be unlimited if it were not for the wear of bearings.
- Protection devices built into the motor.
- An optimum solution for high performance applications and many hours of operation.

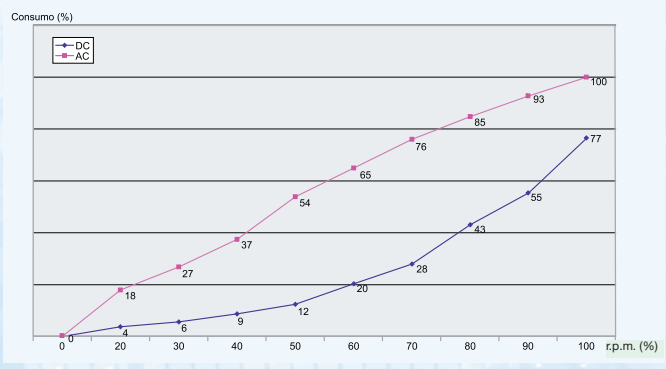
Operation principles

As is well known, two magnets of the same polarity repel each other, while two magnets of different polarity exert attraction.
The operating principle makes use of this phenomenon: The rotor, with two magnets, is opposite the stator windings, which by means of electronics, can generate magnetic fields that attract or repel the rotor magnets.
These motors have one or two sensors, called Hall sensors, that are able to detect the poles they are opposite to. With this information, the electronic system can switch the coils so that the combination of attraction and repulsion will generate movement in the motor.
The electronic system enables the motor to be controlled with specific performance:

- Progressive acceleration ramp.
- Overcurrent limitation built into the motor.
- Short circuit protection.
- Detects if the rotor is jammed.
- Speed can be controlled linearly from 10% to 100% of the motor's nominal speed by linear control (0-10V).
- Motor overheating protection with non-automatic reset

The motor must be disconnected and reconnected if the protection device comes into action.
To adjust the speed there is a motor input through which the user can connect an analogical signal of 0 to 10 Vdc.





Comparison of consumption between 2 adjustable fans fitted with DC (Direct current) or AC Alternating current) motors.

HELICAL CENTRIFUGAL VENTILATORS WITH CONTINUOUS CURRENT MOTOR

TD-ECOWATT Series

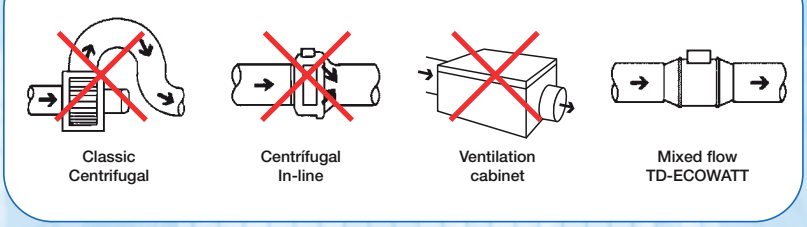
NEW

Reduction of consumption up to 70%, regulated up to 50%

Range of Low Profile Mixed flow fans **with ball bearings and brushless DC motors**, of high efficiency and **low consumption**.
Manufactured in plastic, removable fan body, and rated as standard 90/260V-50/60Hz,IP44, speed controllable from 10% to 100%.
Specially suitable for any kind of ventilation application, **where the fan must operate continuously** allowing a very important **energy saving**, or on those requiring a **Demand Controlled Ventilaton System** i nvolving the use of other sensors or controls

ENERGY EFFICIENT VENTILATION SYSTEM

Low profile



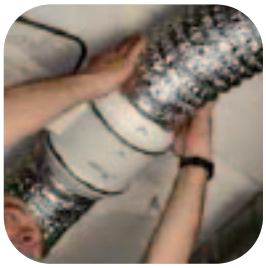
The low profile of the TD-ECOWATT fans makes them the most effective solution for installations where the space of installation is limited such as false ceilings.

Easy to mount

Fix the support bracket

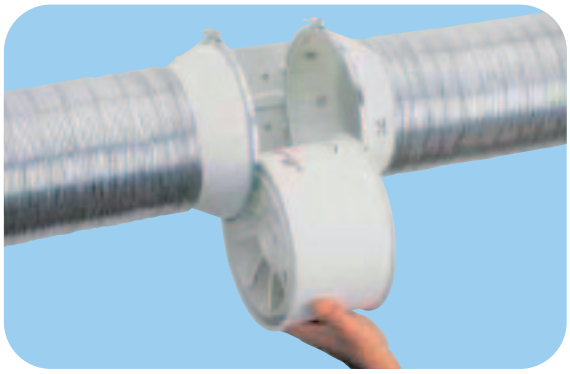
Place the impeller and motor

Carry out the wiring connections



Connect the ducts

Easy maintenance



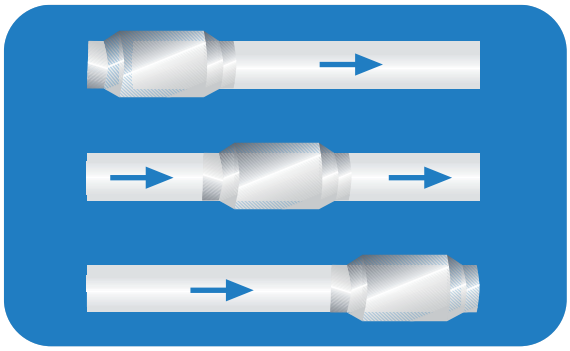
The unique design of the support bracket allows the motor and impeller assembly to be fitted or removed without dismantling the adjacent ducting

Continuous current motor

Electronics totally integrated in the product

Continuous current brushless motor, high performance and **low consumption**, adjustable in lineal form

Flexible mounting position



Can be mounted at any place of the air duct

Design characteristics

	160	250	350	500	800
Plastic housing	•	•	•	•	•
Plastic impeller	•	•	•	•	•
Insulation Class	II	II	II	II	II
Non self resetable thermal protection	•	•	•	•	•
Ball bearings	•	•	•	•	•

Technical characteristics

TD-MIXVENT	Speed (r.p.m.)	Maximum power absorbed (W)	Maximum absorbed current (A)	Airflow at free discharge (m^3/h)	Maximum operating temperature (°C)	Sound pressure level* (dB(A))	Ø Duct (mm)	Weight (kg)
TD-160/100 ECOWATT	2650	10	0,07	190	60	34	100	1,4
TD-250/100 ECOWATT	2400	22	0,17	275	60	35	100	2,0
TD-350/125 ECOWATT	2420	22	0,17	360	60	34	125	2,0
TD-500/150 ECOWATT	2600	48	0,35	580	60	36	150	2,7
TD-800/200 ECOWATT	2360	105	0,75	1030	60	38	200	4,9

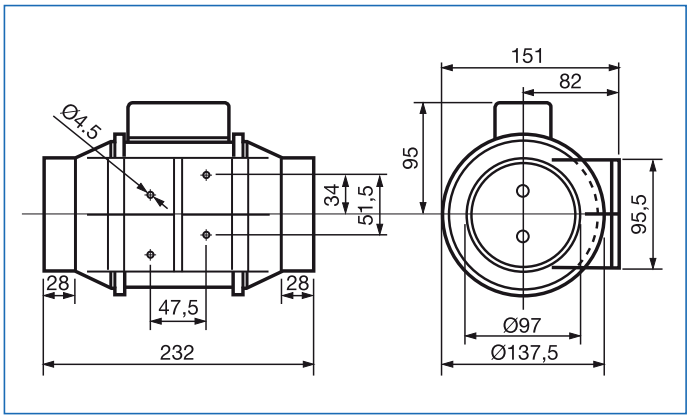
Sound characteristics

Sound Power Spectrum in dB(A), per band of frequency, at inlet, outlet or radiated, for working points low (B), medium(M) or high (A) on every fan curve. Tests made according to SO 13347-3 004.

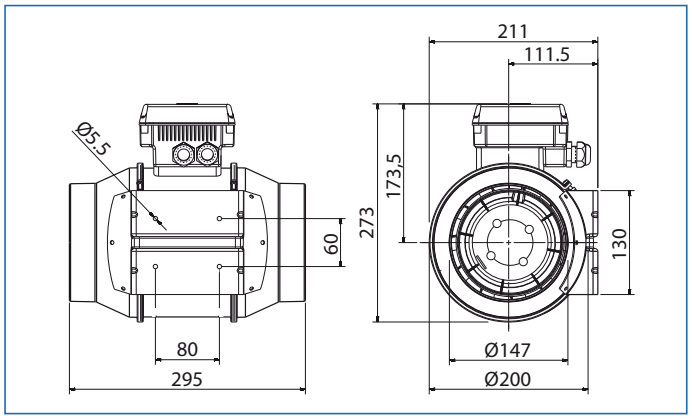
TD-160/100 ECOWATT		63	125	250	500	1.000	2.000	4.000	8.000	GLOBAL
INLET	B	30	31	43	50	58	58	44	34	61
	M	31	32	44	51	56	57	42	33	60
	A	36	37	47	54	56	59	41	31	62
OUTLET	B	29	29	40	51	56	56	45	34	60
	M	30	30	39	52	56	56	43	33	60
	A	32	36	40	54	55	53	43	33	59
RADIATED	B	24	31	43	47	46	52	38	25	54
	M	25	32	44	48	44	51	36	24	54
	A	30	37	47	51	44	53	35	22	56
TD-250/100 ECOWATT										
INLET	B	26	32	44	57	55	53	45	36	60
	M	27	32	46	55	55	53	44	36	60
	A	28	33	46	54	55	53	44	36	59
OUTLET	B	32	33	45	56	53	53	44	36	59
	M	29	32	47	56	52	52	43	35	59
	A	29	33	49	53	50	51	41	33	57
RADIATED	B	23	29	44	50	50	50	39	29	55
	M	24	29	46	48	50	50	38	29	55
	A	25	30	46	47	50	50	38	29	55
TD-350/125 ECOWATT										
INLET	B	24	29	44	52	55	54	44	33	59
	M	28	28	44	52	53	52	44	35	58
	A	29	35	50	53	55	55	45	35	60
OUTLET	B	32	33	46	56	55	54	43	34	60
	M	29	30	45	55	53	52	43	34	59
	A	31	35	50	56	52	52	42	33	59
RADIATED	B	18	20	44	42	48	50	36	23	53
	M	22	19	44	42	46	48	36	25	52
	A	23	26	50	43	48	51	37	25	55

TD-500/150 ECOWATT		63	125	250	500	1.000	2.000	4.000	8.000	GLOBAL
INLET	B	26	36	53	56	58	64	58	50	67
	M	26	34	50	55	57	61	55	48	64
	A	26	37	53	58	59	61	56	48	65
OUTLET	B	34	36	56	61	62	62	57	50	67
	M	29	34	51	60	61	59	55	48	66
	A	31	34	55	65	62	59	56	49	68
RADIATED	B	18	24	51	37	45	55	43	35	57
	M	18	22	48	36	44	52	40	33	54
	A	18	25	51	39	46	52	41	33	55
TD-800/200 ECOWATT										
INLET	B	27	35	51	55	66	66	61	51	70
	M	26	33	49	54	65	63	59	49	68
	A	36	47	63	64	66	63	59	51	71
OUTLET	B	48	47	51	61	65	67	62	50	71
	M	40	39	49	62	65	65	59	48	69
	A	36	43	61	68	67	65	60	51	72
RADIATED	B	27	22	41	36	54	56	48	33	59
	M	26	20	39	35	53	53	46	31	57
	A	36	34	53	45	54	53	46	33	59

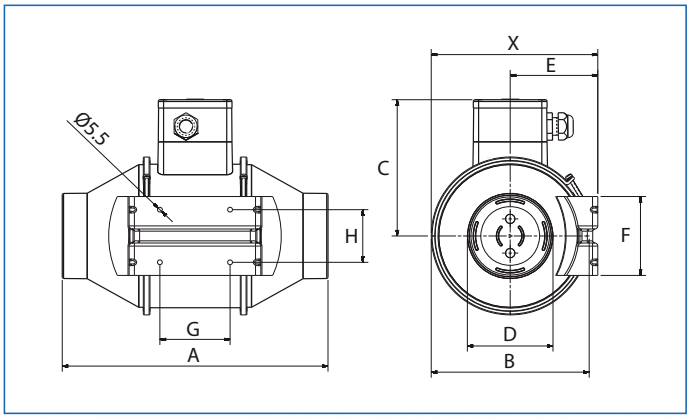
Dimensions (mm)



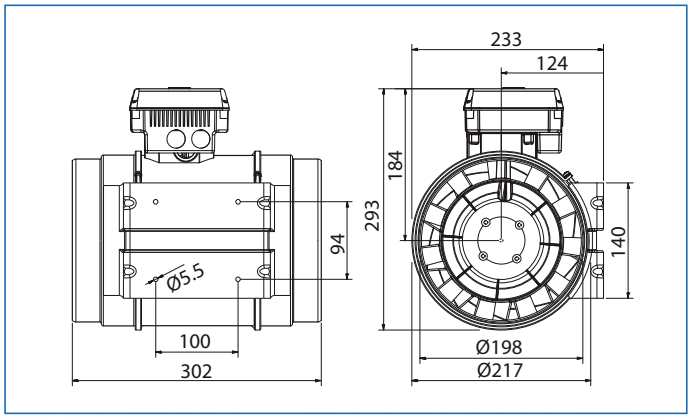
TD-160/100 ECOWATT



TD-500/150 ECOWATT



TD-250/100 and TD-350/125 ECOWATT

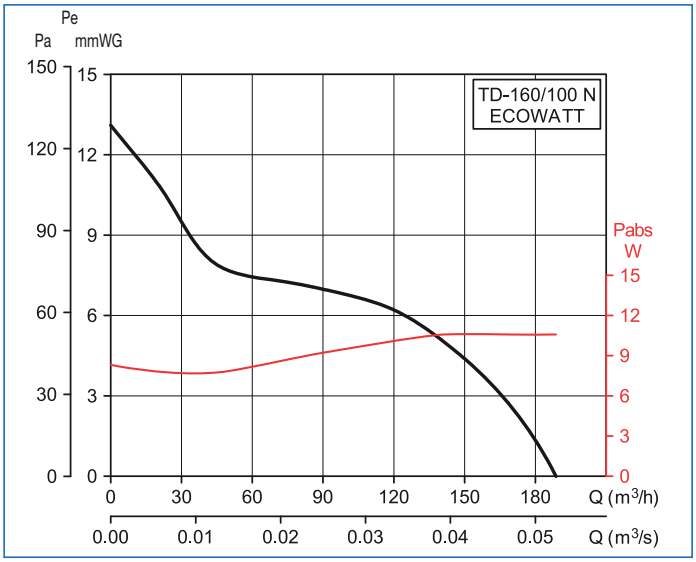


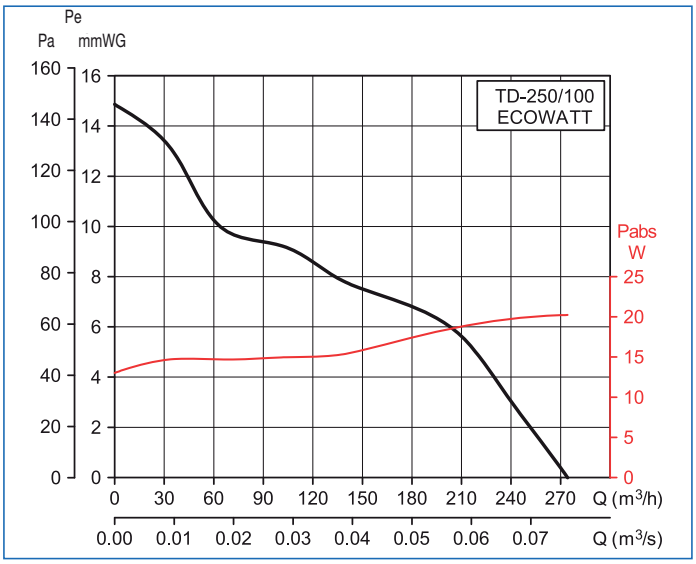
TD-800/200 ECOWATT

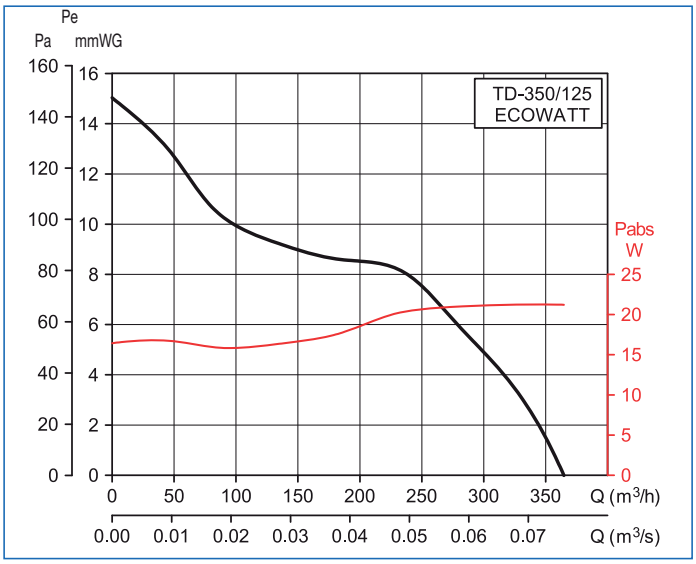
Model	X	A	ØB	C	ØD	E	F	G	H
TD-250/100 ECOWATT	188	303	176	156	97	100	90	80	60
TD-350/125 ECOWATT	188	258	176	156	123	100	90	80	60

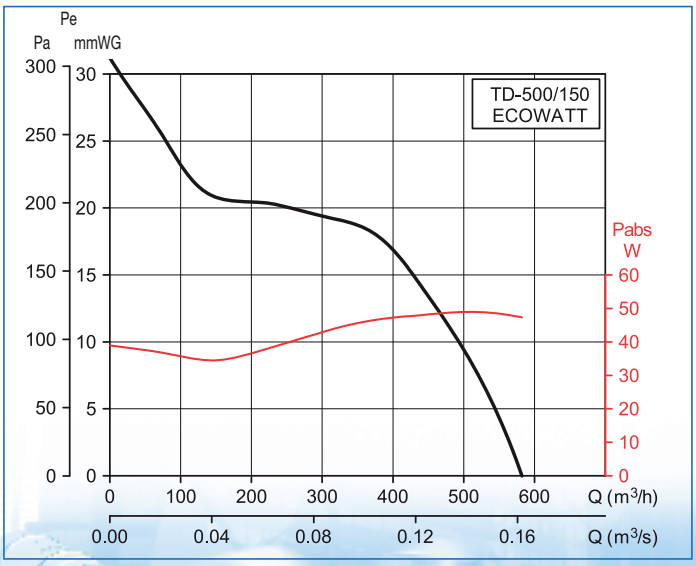
Characteristic curves

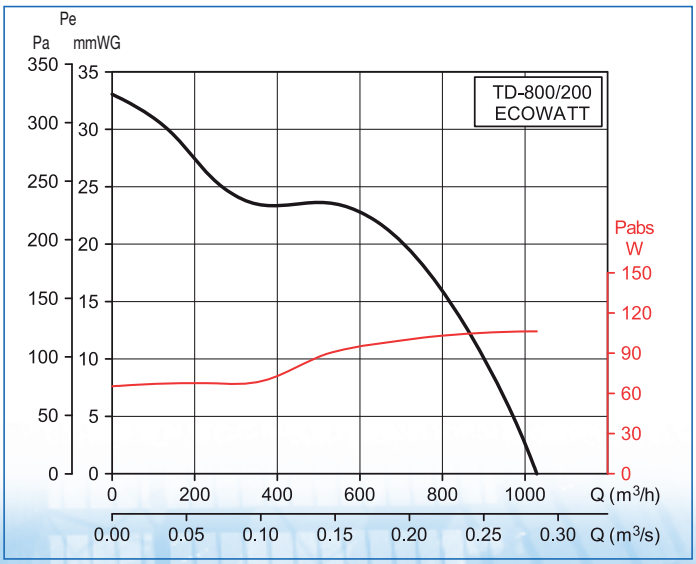
– Q = Air volume in, m^3/hr and m^3/s.
– Pe = Static pressure in mmWG and Pa.
– Dry air at 20ºC and 760 mmHg.
– Air flow data in accordance with the following standards: UNE 100-212-89, BS 848, Part 1; AMCA 210-85 and ASHRAE 51-1985.











INTELLIGENT ELEMENTS TO CONTROL VENTILATION DEMAND

ECOWATT CONTROL

A control element for demand controlled ventilation systems in public, commercial and residential buildings that automatically modifies fan speed according to the requirements defined in the system and measured by means of sensors.

There are three basic modes of operation:
1. Integral proportional control at constant pressure.
2. Proportional control with maximum demand criteria using the input of multiple sensors: temperature, CO2 and relative humidity.
3. Maximum/minimum control using the input of three sensors: CO2, temperature, relative humidity or presence detectors.
DC output signal from 1 to 10 V or signal output for variation of AC in 230 V single phase motors.
ECOWATT AC CONTROL: for single phase ventilation units.
ECOWATT AC CONTROL for DC ventilation units.
Power supply:
AC model: 1~230 V.
DC model: 1~230 V or 24 VDC.

BEAS

A control module interpreting the on/off or proportional input signal of a detector or probe to control a motorized shutter or a 2-speed single phase or DC, setting to either maximum or minimum option.
Power supply: 24 VAC / 24 VDC.

SHT-G

Temperature and relative humidity duct probe.
Facilitates the control of ventilation systems in sections of duct by measuring air temperature and relative humidity.
Output signal: 0-10 V.
Power supply: 24 VDC.

SCO2-G

CO2 sensor duct probe.
Facilitates the control of ventilation systems in sections of duct by measuring the concentration of CO2 present.
Output signal: 4-20 mA.
Power supply: 24 VDC.

SCHT-AD

Ambient CO2, temperature and relative humidity sensors with display.
CO2 range: 0-2000 ppm.
Temperature range: 0-50ºC.
RH range: 0-100%.
Output signal: 0-10 V.
Power supply: 24 VDC.

SCO2-A

Ambient CO2 and temperature sensor.
CO2 range: 0-2000 ppm.
Temperature range: 0-50ºC.
Output signal: 4-20 mA.
Power supply: 24 VDC.

SCO2-AD

Ambient CO2 and temperature sensor, with display.
CO2 range: 0-2000 ppm.
Temperature range: 0-50ºC.
Output signal: 4-20 mA.
Voltage supply: 24 VDC.

TDP-S

Pressure sensor.
Enables the pressure at the fan inlet to be controlled.
Pressure range: 0-2500 Pa.
Output signal: 0-10 V / 4-20 mA.
Voltage supply: 24 VDC.

TDP-D

Pressure sensor, with display.
Enables the pressure at the fan inlet to be controlled.
Pressure range: 0-2500 Pa.
Output signal: 0-10 V / 4-20 mA.
Voltage supply: 24 VDC.

CPFL-S

Wall-fitting presence detector, sensitive to infrared radiation from body heat of people moving, with a 360º detection angle.
Power supply: 1~230 V.

CPFL-E

Wall-fitting presence detector,, sensitive to infrared radiation from body heat of people moving, with a 360º detection angle.
Power supply: 1~230 V.

REB-ECOWATT

Remote controlled speed regulator.
Enables fan speed to be controlled continuously, either manually or by remote control.
Power supply: 1~230 V.

REMP

Motorized shutters with modulating proportional opening/closing controlled by the BEAS control module.
Power supply: 24 VAC or 24 VDC, depending on the model.

RMVT

Motorized shutters for the Twin-Flow system.
Maximum/minimum opening.
Controlled by a presence detector that activates the shutter motor.
Voltage supply: 1~230 V.

BM2D

Suction inlets for the Twin flow system.
Maximum/minimum opening.
Controlled by a presence detector that activates the motorised shutter in the inlet.
Voltage supply: 1~230 V.

MPC

Flow deflectors designed to correctly measure pressures at the inlet of Series TD-ECOWATT devices, unaffected by airflow.

ECOWATT DECOR-100 Series

NEW

Extra-flat, helicoidal fans with ball-bearings and **high-performance**, l**ow-consumption Brushless motors**. Flow of 80 m^3/h approx. Fitted with anti-return valve and pilot light, feed motor 90-260V-50/60Hz, IP44, Class II supply, for working at temperatures of up to 40ºC. With **consumption of only 5W**, the DECOR ECOWATT series extractors are especially recommended toilets, bathrooms and installations **where the extractor will require long working hours** resulting in a considerable reduction in energy costs.

ENERGY EFFICIENT VENTILATION SYSTEM

Anti-return valve

Avoids inflow of exterior air and heating leaks when the extractor is not switched on. Air pressure opening mechanism

Uses only 5W/h!

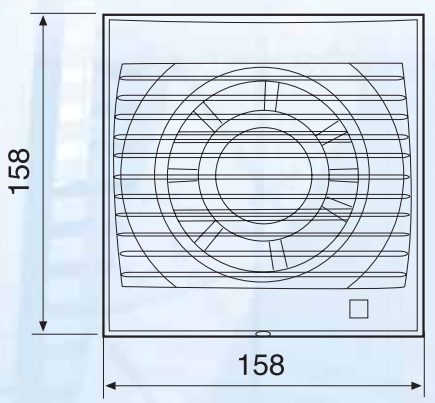
Technical characteristics

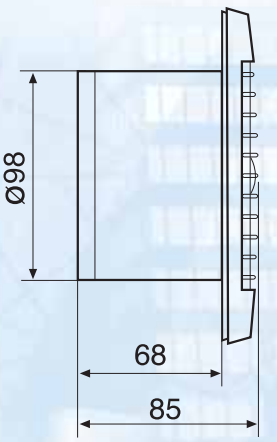
Model	Speed (r.p.m.)	Potential absorbed in free discharge (W)	Voltage (V) 50 Hz	Free discharge flow (m^3/h)	Sound pressure level at 1,5 m (dB(A))	Weight (kg)	Protection/ Insulation
DECOR-100 CZ ECOWATT	2500	5	90/260	80	40	0,44	IP44
DECOR-100 CRZ ECOWATT	2500	5	90/260	80	40	0,44	IP44
DECOR-100 CHZ ECOWATT	2500	5	90/260	80	40	0,44	IP44

Models features

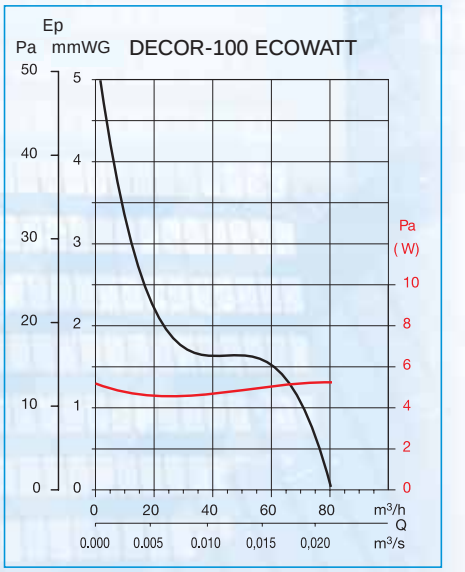
	CZ	CRZ	CHZ
Pilot light	•	•	•
Anti-return valve	•	•	•
Adjustable timer		•	•
Adjustable hygrostat			•
Ball bearings	•	•	•

Dimensions (mm)





Performance curve



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