Energy-efficient roof fans. Vertical, horizontal, diagonal discharge.

The wide range of roof fans from Helios offers the optimal solution for every application.
From 460 to 26 500 m³/h air flow volume, with motors inside or outside the air flow, horizontal, diagonal or vertical air discharge.
In metal or polymer casing, for air flow temperatures of up to +70 °C, +120 °C and in temperature class F400 (120 min.) according to DIN 12101-3.

438on

DIAGONAL. HORIZONTAL. ENERGY-EFFICIENT.

DV EC and RD EC
Energy-saving EC centrifugal roof fans are available with diagonal or horizontal air discharge.

With extremely weather-resistant polymer casing and optional Eco/Pro versions, DV EC is suitable for different applications.

444on

VERTICAL OR HORIZONTAL DISCHARGE.

VD and RD
The new standard range includes vertically discharging models from the VD series and horizontally discharging models from the RD series with high-performance centrigugal impellers, as well as specially adapted speed-controllable AC motors in closed design.

458on

ACCESSORIES

Perfectly matched accessories for the roof fans round off the integrated overall solution.

484on

This information supplements the "General technical information" and statements on the product pages.

Common features in the VD and VDR types with vertical discharge.

- **Features**
  As the exhaust air is discharged vertically, this has the following advantages:
  - Less harmful impact on the environment through contamination.
  - Minimised solids deposits on roofs, roof windows and skylights.
  - Reduction of potentially disruptive influences (e.g. smells, damp) on the adjacent building, windows, open hatches and chimneys or other inflowing and exhaust air roof fans in the surrounding area.

Common features in the VD and VDR types with vertical discharge and horizontal RD types.

- **Noise**
  Information on this can be found on the product pages and under the "General technical product information".

- **Incorrect direction of rotation**
  The devices can only be used for exhaust air operations. Operating the device in an incorrect direction of rotation overloads the motor and trips any fitted thermal contacts or PTC thermistors. Typical concomitant features for this are the practical lack of air flow capacity, vibration and abnormal noise.

- **Installation**
  The roof fans must be installed horizontally. When the roofs are sloped, this is to be implemented using a suitable base frame design as otherwise water entry has to be expected. See the DV EC model on page 440 for details on the delivery and constructing the base frame.

- **VDR design**
  Centrifugal roof fan with vertical discharge and exterior override switch. Casing and base plate made of galvanised sheet steel. The fans are wired to the override switch by the manufacturer. The base plate of the casing is equipped with bores (hole pattern according to DIN 24155 page 3) for connecting suction-side accessories.

- **Motor**
  External rotor motors with a closed design (IP 44) located in the air flow are used. They are designed in accordance with DIN EN 60034 / VDE 0530 and DIN EN 60335-1 / VDE 0700-1, insulation class B and protection category I. They are equipped with low-maintenance ball bearings, which have enough lubricant supply for up to 30.000 hours of operation.

VDR

- **Impellers**
  High-performance centrifugal impellers with backwards curved vanes made of polymer. Low-vibration operation thanks to dynamic balancing in accordance with DIN ISO 1940 T.1 – grade 6.3.

- **Air flow temperatures**
  The devices can be used in the range of -40 °C to at least +60 °C. The upper limit is type-specific and is shown in the table on the product page. If the fan is speed-controlled, the value is to be reduced by around 10 °C.

- **Speed control**
  Information on this can be found on the product pages and under the "General technical product information".

- **Electrical connection**
  The supply feed can come from beneath via a cable bushing in the base plate and from above (via the roof). It is to be connected without dismantling further parts on the exterior terminal box according to the attached circuit diagram.

- **Motor protection**
  Information on this can be found on the product pages and under the "General technical product information".

- **VD design**
  Robust design, largely corrosion-resistant and weather-resistant. Motor bedplate and base plate with stainless steel inlet nozzle. Casing made of aluminium resistant to sea water with built-in interference protection. In all types with explosion protection, the base plate is made of galvanised sheet steel with an aluminium inlet nozzle. Quiet operation thanks to vibration-damping motor suspension. Flat construction design.

VD

- **Motor**
  VD: External rotor motors located in the air flow with degree of protection IP 44 or IP 54 and in insulation class F according to DIN EN 60034 / VDE 0530 and DIN EN 60335-1 / VDE 0700-1 are used for the AC types. The winding is also impregnated for moisture resistance. The low-maintenance ball bearings have enough lubricant for a service life of approximately 30.000 hours of operation. The motor and impeller are dynamically balanced as a single unit in accordance with DIN ISO 1940 T.1 – grade 6.3 for low-vibration operations.
  VD T120: Flange motors with self-ventilation (T120 design) with degree of protection IP 54 or IP 55 and in insulation class F according to DIN EN 60034 / VDE 0530 and DIN EN 60335-1 / VDE 0700-1 are used for the AC types. The motor is located outside the air flow. The winding is also impregnated for moisture resistance. The low-maintenance ball bearings have enough lubricant for a service life of approximately 30.000 hours of operation. The motor and impeller are dynamically balanced as a single unit in accordance with DIN ISO 1940 T.1 – grade 6.3 for low-vibration operations.

- **Impellers**
  VD/VD T120: High-performance centrifugal impellers with backwards curved vanes made of galvanised sheet steel, polymer or aluminium. Low-vibration operation thanks to dynamic balancing in accordance with DIN ISO 1940 T.1 – grade 6.3.

- **Protection against contact**
  All devices are delivered with a protective grille on the exhaust air side according to DIN EN ISO 13857 as standard. IF the system does not provide any protection against contact with rotating parts on the intake side, a guard is also to be attached here (accessory).

- **Air flow temperatures**
  VD: The devices can be used in the range of –20 °C to at least +70 °C. The upper limit is type-specific and is shown in the table on the product page. If the fan is speed-controlled, the value is to be reduced by around 10 °C. Types with explosion protection are permitted for use up to a maximum of +40 °C.
  VD T120: The devices can be used in the range of –30 °C to at least +120 °C. If the fan is speed-controlled, the value is to be reduced by around 10 °C.

- **Speed control**
  Information on this can be found on the product pages and under the "General technical product information". The types with voltage control are marked by a value in the column "Current consumption when regulated".

- **Electrical connection**
  The supply feed can come from beneath via a cable bushing in the base plate and from above (via the roof). It is to be connected without dismantling further parts on the exterior terminal box or override switch according to the attached circuit diagram.

- **Full motor protection**
  Information on this can be found on the product pages and under the "General technical product information".

- **Explosion protection**
  The types with explosion protection are in line with equipment group II, category 3G for use in zone 2 in accordance with Directive 2014/34/EU. The types with explosion protection and diameters from 315 to 560 mm are in line with equipment group II, category 2G for use in zone 1 in accordance with Directive 2014/34/EU.
  The EU conformity declaration enclosed with every fan attests to the design according to DIN EN 60079-0 / VDE 0170-1 and DIN EN 60079-7 / VDE 0170-6. The degree of protection is in line with Ex e 2G. The temperature class is marked on the type side.
  The exterior terminal box also satisfies Ex e 2G. Further statements can be found in the sections "Project planning instructions for explosion protection" and "General technical information". Larger air gaps, which can reduce performance by up to 10 %, are required under EU Directive 2014/34/EU.

RD design
Robust design, largely corrosion-resistant and weather-resistant. Motor bedplate and base plate with stainless steel inlet nozzle. Casing made of aluminium resistant to sea water with built-in interference protection. In all types with explosion protection, the base plate is made of galvanised sheet steel with an aluminium inlet nozzle. Quiet operation thanks to vibration-damping motor suspension. Flat construction design.

Motor
External rotor motors located in the air flow with degree of protection IP 44 or IP 54 and in insulation class F according to DIN EN 60034 / VDE 0530 and DIN EN 60335-1 / VDE 0700-1 are used for the AC types. The winding is also impregnated for moisture resistance. The low-maintenance ball bearings have enough lubricant for a service life of approximately 30.000 hours of operation. The motor and impeller are dynamically balanced as a single unit in accordance with DIN ISO 1940 T.1 – grade 6.3 for low-vibration operations.

Impellers
High-performance centrifugal impellers with backwards curved vanes made of galvanised sheet steel, polymer or aluminium. Low-vibration operation thanks to dynamic balancing in accordance with DIN ISO 1940 T.1 – grade 6.3.

Protection against contact
All devices are delivered with a protective grille on the exhaust air side according to DIN EN ISO 13857 as standard. IF the system does not provide any protection against contact with rotating parts on the intake side, a protective grille is also to be attached here (accessory).

Air flow temperatures
The devices can be used in the range of –20 °C to at least +70 °C. Types with explosion protection are permitted for use up to a maximum of +40 °C. The upper limit is type-specific and is shown in the table on the product page. If the fan is speed-controlled, the value is to be reduced by around 10 °C.

Speed control
Information on this can be found on the product pages and under the "General technical information".

Electrical connection
The supply feed can come from beneath via a cable bushing in the base plate and from above (via the roof). It is to be connected without dismantling further parts on the exterior terminal box or override switch according to the attached circuit diagram.

Full motor protection
Information on this can be found on the product pages and under the "General technical product information".

Explosion protection
The types with explosion protection are in line with equipment group II, category 3G for use in zone 2 in accordance with Directive 2014/34/EU. The types with explosion protection and diameters from 315 to 560 mm are in line with equipment group II, category 2G for use in zone 1 in accordance with Directive 2014/34/EU.
The EU conformity declaration enclosed with every fan attests to the design according to DIN EN 60079-0 / VDE 0170-1 and DIN EN 60079-7 / VDE 0170-6. The degree of protection is in line with Ex e 2G. The temperature class is marked on the type page.
The exterior terminal box also satisfies Ex e 2G. Further statements can be found in the sections "Project planning instructions for explosion protection" and "General technical information". Larger air gaps, which can reduce performance by up to 10%, are required under EU Directive 2014/34/EU.

RD EC range
EC centrifugal fans with horizontal discharge for exhaust air operation.

Design
Robust design, largely corrosion-resistant and weather-resistant. Base plate made of galvanised sheet steel. Rain hood and protective grille made of galvanised sheet steel, for nominal diameter 225 – 400 mm made of aluminium. Quiet operation thanks to vibration-damping motor suspension. Flat construction design. Rain hood with cover extending far above and below the fan offers effective protection against rainfall.

Motor
External rotor motors with degree of protection IP 44 and in insulation class B according to DIN EN 60034 / VDE 0530 and DIN EN 60335-1 / VDE 0700-1 are used for the AC types. The winding is also impregnated for moisture resistance. The low-maintenance ball bearings have enough lubricant for a service life of approximately 30.000 hours of operation. The motor and impeller are dynamically balanced as a single unit in accordance with DIN ISO 1940 T.1 – grade 6.3 for low-vibration operations.

Impellers
Centrifugal impellers with optimised efficiency and high power density and backwards curved vanes made of stainless sheet steel. Pressed on to the motor and dynamically balanced as a single unit.

Protection against contact
All devices are delivered with a protective grille on the exhaust air side according to DIN EN ISO 13857 as standard. IF the system does not provide any protection against contact with rotating parts on the intake side, a guard is also to be attached here (accessory).

Air flow temperatures
The range of application for EC types is up to +40 °C. At higher temperatures, the built-in thermal fuses will be activated.

Speed control
The speed can be controlled in all EC types using a potentiometer, universal control system or electronic differential pressure/temperature controller (in conjunction with NG24 power supply unit, accessory). Sample power levels are shown in the characteristic curve. Suitable control units are listed in the type table. Further information on this is available in the "General technical information".

RD EC

Electrical connection
The supply feed can come from beneath via a cable bushing in the base plate and from above (via the roof). The connection is to be made at the terminal box (degree of protection IP 55) located under the rain hood. An additional control line is required for EC types.

Full motor protection
The EC motors are protected by the built-in electronic temperature monitoring system.

Noise
Information on this can be found on the product pages and under the "General technical product information".

DV EC range
Centrifugal fans with a diagonal discharge for exhaust air operation. With EC motor technology for energy-saving use and minimum operating costs.

Design
Extremely weather-resistant EC roof fan with polymer design in a comprehensive area of applications. Aerodynamically designed polymer casing made of grey polypropylene with diagonal discharge. air flow temperatures from –30 to +60 °C.

Motor
Energy-efficient EC external rotor motor with degree of protection IP 54. Optimised efficiency also with speed control for low operating costs. Seamless speed control. Low-maintenance and interference-free, ball bearing mounted.

Impellers
Diagonal aluminium impeller. The motor impeller unit is dynamically balanced for quiet operation.

Protection against contact
All devices are delivered with a protective grille on the exhaust air side according to DIN EN ISO 13857 as standard. If the system does not provide any protection against contact with rotating parts on the intake side, a protective grille is also to be attached here (accessory).

DV EC

Air flow temperatures
Air flow temperatures from –30 to +60 °C.

Speed control
DV EC Pro
- ☐ Ideal as a central exhaust air fan for multi-storey apartment buildings according to DIN 18017-3.
- ☐ In conjunction with further components (accessories), a complete central ventilation system can be established according to DIN 18017-3 with demand-based ventilation.
- ☐ Built-in pressure regulation for air flow volume stabilising in adjacent rooms by automatic speed adjustment with an almost constant, high degree of efficiency.
- ☐ Integrated pressure sensor 0–300 Pa.
- ☐ Short amortisation period thanks to high energy savings.
- ☐ Operating data settings at the four potentiometers integrated in the control to set the desired operating point on-site.
- ☐ Built-in bus interface (RS 485) as standard for connecting to a PC/laptop in conjunction with the interface (accessories).

DV EC Eco
- ☐ The speed can be controlled in all EC types using a potentiometer, universal control system or electronic differential pressure / temperature controller (in conjunction with NG24 power supply unit, accessory). Sample power levels are shown in the characteristic curve. Suitable control units are listed in the type table. Further information on this is available in the "General technical information".

Electrical connection
Polymer operating switch (degree of protection IP 65) as standard, fitted on the outside of the casing.
Supply voltage 1 ph., 230 V, 50 Hz.

Full motor protection
Integrated electronic temperature monitoring for EC motor and electronics.

Noise
Information on this can be found on the product pages and under the "General technical product information".

Base frame construction, installation, delivery
Delivered ready for installation in individual shipping boxes or crates. The fans are quick and easy to install, they are equally suited to installation on flat, gable, monopitch, saw-tooth, angular, trapezoidal or arched roofs. In principle, the base frames are always to be designed such that the fan base plate lies flat and level.
We recommend the use of flat, slanted or wavy roof base frames available in our accessories range. This keeps the costs for planning, design and installation to a minimum. The base frames can also be made on-site, for example from concrete, wood, bricks or the like. However, a level and flat surfaces is just as vital as proper sealing at the roof edge.
After it is placed, the base plate is connected to the base frame with four screws. Helios flat roof base frames and base frame attenuators with nominal diameters 180 – 450 mm have a folding mechanism that is advantageous when it comes to cleaning and inspections.
For on-site base frames, spacer discs are to be used to balance out any unevenness. A gap arising between the base plate and base frame is to be sealed off with elastic or similar material. After the screws are tightened equally, check the impeller's freedom of movement.

By combining the parameters of static pressure increase Δp_{fa}, air flow volume $\dot{V}$, R.P.M. min^{-1}, sound level at 4 m and impeller-diameter DN mm, the following table facilitates the selection of roof fans Ø 180 to 710.

Diameter	R.P.M.	Sound pressure intake	Air flow volume $\dot{V}$ m^3/h in relation to static pressure = N / m^2 = freely available pressure												
mm	min^{-1}	L_{PA} dB(A)	(Δp_{fa}) in Pa												
		at 4m													
Series VD/VDR/RD			**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**500**	**600**	**700**	**800**
180	2300	46	2300	46	550	500	430	380	300	240	150				
200	2300	53	1050	960	920	860	760	700	560	460	300				
200	1400	37	550	430	280										
225	2700	56	1300	1240	1180	1120	1060	1000	920	840	760	520			
225	1400	42	650	550	400										
250	1400	43	920	800	640	440									
315	1400	51	2900	2700	2500	2350	2100	1800	1500	700					
355	1400	54	4500	4300	4000	3800	3500	3250	3000	2500	1500				
400	1400	57	6000	5800	5400	5100	4800	4500	4200	3800	3400	2000			
400	900	49	4000	3600	3200	2700	2000	500							
450	1400	62	8600	8400	8000	7800	7500	7300	6900	6700	6400	5500	4200	2200	
			0	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**	**1000**	**1100**	**1200**
500	1400	65	12000	11300	10400	9600	9000	8200	7200	5600	3500				
500	900	56	7200	6300	5050	3300									
560	1400	69	14200	13500	12800	12000	11200	10400	9600	8500	7400	6000	4700	3200	
560	900	60	9300	8400	7500	6400	4800								
630	900	66	15000	13800	12600	11000	9100	5600							
710	900	66	26500	24800	23000	21200	18800	16500	14700	11200	7500				

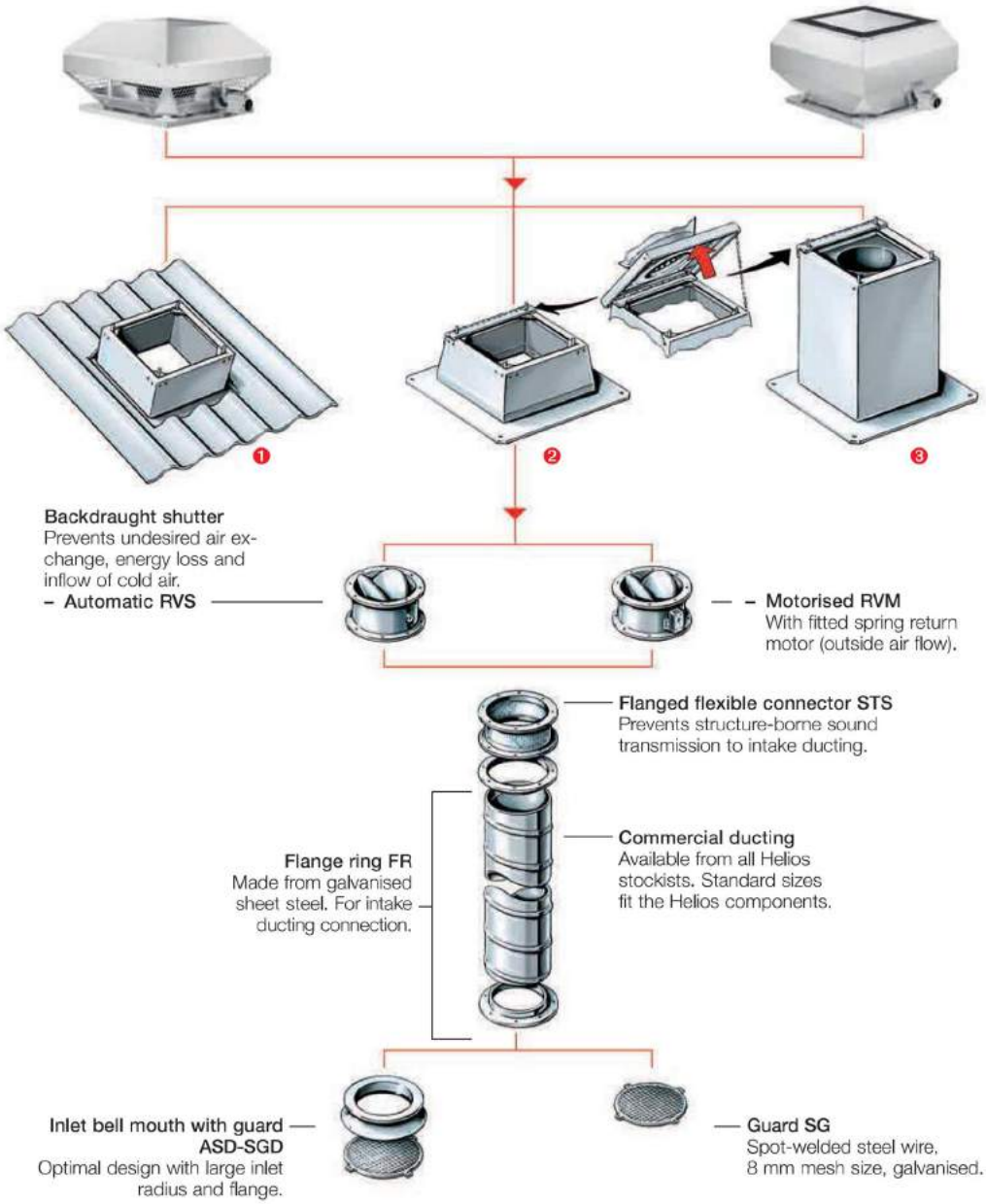
By combining the parameters of static pressure increase Δp_{fa}, air flow volume $\dot{V}$, R.P.M. min^{-1}, sound level at 4 m and impeller-diameter DN mm, the following table facilitates the selection of roof fans Ø 200 to 450.

Diameter	R.P.M.	Sound pressure intake	Air flow volume $\dot{V}$ m^3/h in relation to static pressure = N / m^2 = freely available pressure																	
mm	min^{-1}	L_{PA} dB(A)	(Δp_{fa}) in Pa																	
		at 4 m	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850
Series DV EC – diagonal discharge																				
200	1810	50	2010	1830	1660	1480	1270	1030	720	350										
250	1640	55	3700	3480	3210	2930	2700	2420	2090	1690	1240	240								
400 A	1020	48	4070	3660	3220	2720	2200	1610	980											
400 B	1425	60	5650	5470	5100	4760	4480	4150	3800	3440	3000	1870								
Series RD EC – horizontal discharge																				
225	1850	51	2200	2060	1910	1750	1580	1390	1060											
315	1260	50	4320	3970	3730	3440	3000	2290	1000											
400	1470	57	6670	6340	6000	5630	5320	5000	4650	4310	3920	3350	2590	700						
450	1180	53	8360	8000	7480	6970	6440	5970	5480	5000	4390	1100								

Centrifugal roof fan RD
Horizontal discharge
Affordable price-performance relationship. Horizontally discharging roof fan with efficiency-optimised aluminium casing and newly developed high-performance centrifugal impeller.

EC roof fans DV
Diagonal discharge
With energy-saving EC motor technology for lowest operating costs. Extremely weather-resistant, in polymer design. Optional in Pro version with integrated pressure control for maintaining constant air flow volume (without illustration).

Centrifugal roof fans VD and VDR
Vertical discharge
Affordable price-performance relationship. Vertically discharging roof fan with efficiency-optimised aluminium casing or casing made from galvanised sheet steel and newly developed high-performance centrifugal impeller.

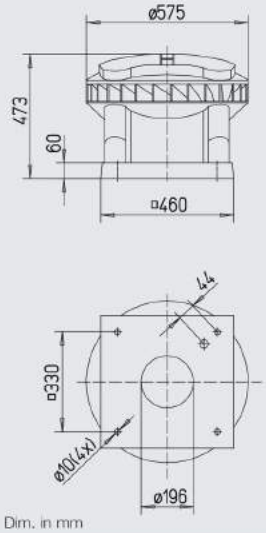


❶
Soaker sheet WDS
For installation of roof fans and roof cowls on corrugated roofs. Weather resistant and corrosion-free made of glass fibre reinforced polyester.
Sloping roof base SDS (S. 486)
For installation of roof fans/roof cowls on pitched or sloping roofs. Inner surface lined with sound and thermal insulation.

❷
Flat roof base FDS
For low priced and efficient mounting of roof fans and roof cowls on flat roofs. In corrosion-resistant glass fibre reinforced polyester or galvanised sheet steel. Nominal size 180 to 450 with hinged mechanism for simple inspection and cleaning.

❸
Base attenuator SSD
For intake-side sound insulation.
All metal parts made of galvanised steel.
Incl. fixing screws, profile rubber and sealing between base and base plate.
Nominal size 180 to 450 mm with hinged mechanism and foamed material core with free cross-section. Allows access to ducting or ventilation system.

DV EC



40% Saving *

* with speed control

■ **Extremely weather-proof diagonally discharging EC-roof fan from polymer for an extensive area of application.**

■ **Similarities DV EC Pro and DV EC Eco**

□ **Casing**
Aerodynamically designed casing from high-quality polypropylene in grey with diagonal air discharge direction. Air flow temperatures from –30 to +60 °C.

□ **Impeller**
Diagonal impeller made from aluminium, the motor-impeller unit is dynamically balanced for low-noise operation.

□ **Motor**
Optimised efficiency also with speed control for low operating costs. Stepless speed control. Ball bearing mounted, maintenance-free and interference-free.

□ **Motor protection**
Integrated electronic temperature monitoring for EC-motor and electronics.

□ **Electrical connection**
Standard external terminal box (protection to IP 65) on the casing. Connection voltage single-phase, 230 V, 50 Hz.

□ **Installation**
Horizontal alignment on the roof. With pitched roofs, a suitable upstand must be constructed, to prevent water entry.
Extensive accessories facilitate the assembly of the fan to the ducting system in the building.

■ **Sound levels**
Total sound power levels and the spectrum figures in dB(A) are given for:
– Sound power intake
– Sound power exhaust
In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 4 m (free field conditions).

■ **Specification DV EC Pro**

■ **Speed control**
□ Ideal as a central exhaust air fan for multi-storey building DIN 18017-3.
□ In connection with further components (accessories) a complete central ventilation system can be developed according to DIN 18017-3 with ventilation according to need.
□ Integrated pressure control for air flow volume stabilisation in the connected rooms by automatic speed adaptation with nearly consistently good efficiency.
□ Integrated pressure sensor 0–300 Pa.
□ Short payback period due to high energy conservation.
□ Four potentiometers integrated in the control permit an adjustment to the operating data. The desired operating point can be set directly on site.
□ Integrate serial Bus port (RS 485) for connection of a PC / laptop in combination with the interface (accessories).

■ **Specification DV EC Eco**

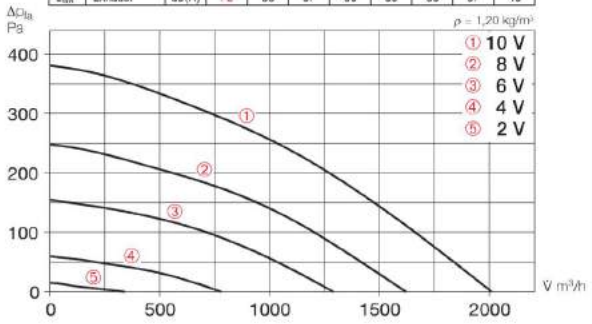
■ **Speed control**
□ Stepless speed control with a speed potentiometer PU/PA 10 (accessories, see table below).
□ In connection with the universal control system EUR EC or electronic pressure/temperature controllers EDR/ETR (accessories, see table below), the fan can be used for steplessly controlling differential pressure, differential temperature or flow velocity.
The performance stages are shown in the characteristic curves.

Type	Ref. no.	Maximum R.P.M. approx.	Air flow volume (FID)	Sound pressure case breakout	Motor power at maximum speed		Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system		Speed-potentiometer flush		surface	
		min^{-1}	$\dot{V}$ m^3/h	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Type DV EC Pro, single phase motor, 230 V, 50/60 Hz, EC motor, IP 54															
DV EC 200 Pro	8385	1810	2010	52	0.18	1.38	863.1	60	17.0	—	—	—	—	—	—
Type DV EC Eco, single phase motor, 230 V, 50/60 Hz, EC motor, IP 54															
DV EC 200 Eco	8320	1810	2010	52	0.18	1.38	991	60	17.0	**EUR EC** [1) 2)]	1347	**PU 10** [3)]	1734	**PA 10** [3)]	1735

1) several EC fans can normally be connected
2) alternative electronic pressure/temperature controller (EDR/ETR, No. 1437/1438) in connection with the power supply NG24, No. 1439, see accessories

DV EC 200

Frequency		Hz	Total	125	250	500	1k	2k	4k	8k
L_{WA}	Intake	dB(A)	70	54	64	64	65	61	55	46
L_{WA}	Exhaust	dB(A)	72	53	57	66	69	66	57	46

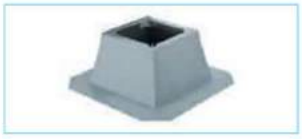


Voltage V	n min⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1810	2010	180	1,38	52	—
8	1480	1620	108	0,90	47	—
6	1200	1290	60	0,54	41	—
4	720	780	21	0,20	31	—

Accessories for all types

Hinged base attenuator
Type SSD 200 Ref. no. 5290
With folding mechanism for easy inspection and cleaning.

Flange connecting plate
Type FAP 200 Ref. no. 8382
Made from galvanised sheet steel. Makes the connection of the duct system plus accessories to the roof fans DV EC possible, if no base attenuator SSD is used.



Flat roof base
Type FDS 200 Ref. no. 1378
With folding mechanism for easy inspection and cleaning.

Counterflange
Type DFR 200 Ref. no. 1201
Made from galvanised sheet steel, for intake duct connections.

Flanged flexible connector
Type DSTS 200 Ref. no. 1218
To reduce vibration transmission in intake air ducting. Flanges made of galvanised steel.

Backdraught shutter
Type DRVS 200 Ref. no. 2591
Automatic, made of galvanised sheet steel. To prevent cold air backdraught when the fan is not in use. For vertical air flow bottom-up position.

Accessories for DV EC Pro

Interface
Type ZLS-IF Ref. no. 8391
Interface for the start-up and/or control of the fan in connection with a PC/Laptop.
Power supply unit, adaptor cable and software included.

Electronic timer module
Type ZLS-ZU 31 Ref. no. 8388
Allows parallel operation of max. 31 DV EC roof fans. The rocker main switch activates the timer module.
The day and night regulation is carried out by adjustment in the display. Main switch 230 V, 50 Hz included.

Accessories for DV EC Eco

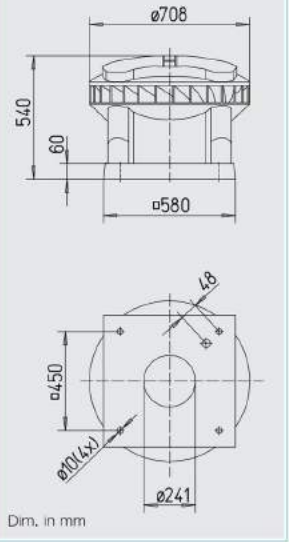
Universal control system
Type EUR EC Ref. no. 1347
For stepless control or adjustment of single- and 3-phase EC-fans with an input control signal of 0–10 V DC.

Speed potentiometer
Type PU/PA 10 see type table
For direct control or nominal value preset of EC-fans with potentiometer input.

	Timer for controlling up to 31 fans	
	Type	Ref. no.
	ZLS-ZU 31	8388
	—	—

3) without LED power supply

DV EC



40% Saving *
* with speed control

■ **Extremely weather-proof diagonally discharging EC-roof fan from polymer for an extensive area of application.**

■ **Similarities**
DV EC Pro and DV EC Eco

□ **Casing**
Aerodynamically designed casing from high-quality polypropylene in grey with diagonal air discharge direction. Air flow temperatures from –30 to +60 °C.

□ **Impeller**
Diagonal impeller made from aluminium, the motor-impeller unit is dynamically balanced for low-noise operation.

□ **Motor**
Optimised efficiency also with speed control for low operating costs. Stepless speed control. Ball bearing mounted, maintenance-free and interference-free.

□ **Motor protection**
Integrated electronic temperature monitoring for EC-motor and electronics.

□ **Electrical connection**
Standard external terminal box (protection to IP 65) on the casing. Connection voltage single-phase, 230 V, 50 Hz.

□ **Installation**
Horizontal alignment on the roof. With pitched roofs, a suitable upstand must be constructed, to prevent water entry. Extensive accessories facilitate the assembly of the fan to the ducting system in the building.

■ **Sound levels**
Total sound power levels and the spectrum figures in dB(A) are given for:
– Sound power intake
– Sound power exhaust
In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 4 m (free field conditions).

■ **Specification**
DV EC Pro

■ **Speed control**
□ Ideal as a central exhaust air fan for multi-storey building DIN 18017-3.
□ In connection with further components (accessories) a complete central ventilation system can be developed according to DIN 18017-3 with ventilation according to need.
□ Integrated pressure control for air flow volume stabilisation in the connected rooms by automatic speed adaptation with nearly consistently good efficiency.
□ Integrated pressure sensor 0–300 Pa.
□ Short payback period due to high energy conservation.
□ Four potentiometers integrated in the control permit an adjustment to the operating data. The desired operating point can be set directly on site.
□ Integrate serial Bus port (RS 485) for connection of a PC / laptop in combination with the interface (accessories).

■ **Specification**
DV EC Eco

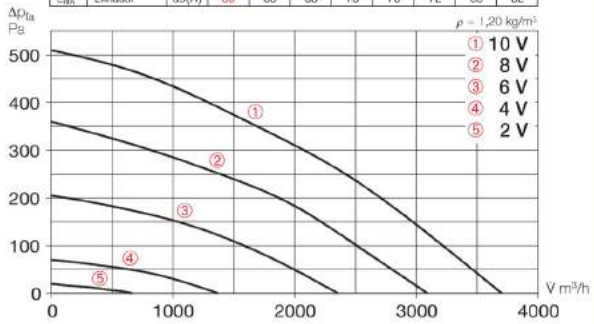
■ **Speed control**
□ Stepless speed control with a speed potentiometer PU/PA 10 (accessories, see table below).
□ In connection with the universal control system EUR EC or electronic pressure/temperature controllers EDR/ETR (accessories, see table below), the fan can be used for steplessly controlling differential pressure, differential temperature or flow velocity.
The performance stages are shown in the characteristic curves.

Type	Ref. no.	Maximum R.P.M. approx.	Air flow volume (FID)	Sound Sound pressure	Motor power at maximum speed		Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system		Speed-potentiometer flush		surface	
		min^{-1}	$\dot{V}$ m^3/h	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Type DV EC Pro, single phase motor, 230 V, 50/60 Hz, EC motor, IP 54															
DV EC 250 Pro	8386	1640	3700	60	0.41	1.78	863.1	60	23.0	—	—	—	—	—	—
Type DV EC Eco, single phase motor, 230 V, 50/60 Hz, EC motor, IP 54															
DV EC 250 Eco	8322	1640	3700	60	0.41	1.78	991	60	23.0	**EUR EC** [1) 2)]	1347	**PU 10** [3)]	1734	**PA 10** [3)]	1735

1) several EC fans can normally be connected 2) alternative electronic pressure/temperature controller (EDR/ETR, No. 1437/1438) in connection with the power supply NG24, No. 1439, see accessories

DV EC 250

Frequency		Hz	Total	125	250	500	1k	2k	4k	8k
L_{WA}	Intake	dB(A)	75	60	64	70	69	67	61	52
L_{WA}	Exhaust	dB(A)	80	63	65	75	76	72	63	52

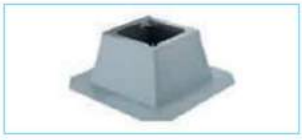


Voltage V	n min⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1640	3700	412	1,78	60	—
8	1380	3100	264	1,14	55	—
6	1100	2350	138	0,60	49	—
4	650	1370	40	0,20	36	—

Accessories for all types

Hinged base attenuator
Type SSD 250 Ref. no. 5292
With folding mechanism for easy inspection and cleaning.

Flange connecting plate
Type FAP 250 Ref. no. 8383
Made from galvanised sheet steel. Makes the connection of the duct system plus accessories to the roof fans DV EC possible, if no base attenuator SSD is used.



Flat roof base
Type FDS 250 Ref. no. 1379
With folding mechanism for easy inspection and cleaning.

Counterflange
Type FR 250 Ref. no. 1203
Made from galvanised sheet steel, for intake duct connections.

Flanged flexible connector
Type STS 250 Ref. no. 1220
To reduce vibration transmission in intake air ducting. Flanges made of galvanised steel.

Backdraught shutter
Type RVS 250 Ref. no. 2592
Automatic, made of galvanised sheet steel. To prevent cold air backdraught when the fan is not in use. For vertical air flow bottom-up position.

Accessories for DV EC Pro

Interface
Type ZLS-IF Ref. no. 8391
Interface for the start-up and/or control of the fan in connection with a PC/Laptop.
Power supply unit, adaptor cable and software included.

Electronic timer module
Type ZLS-ZU 31 Ref. no. 8388
Allows parallel operation of max. 31 DV EC roof fans. The rocker main switch activates the timer module.
The day and night regulation is carried out by adjustment in the display. Main switch 230 V, 50 Hz included.

Accessories for DV EC Eco

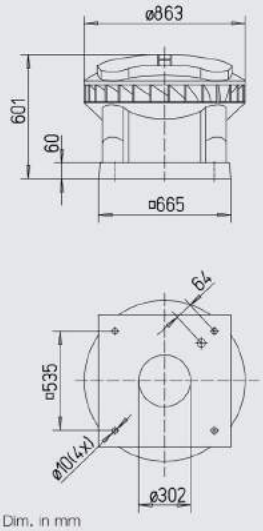
Universal control system
Type EUR EC Ref. no. 1347
For stepless control or adjustment of single- and 3-phase EC-fans with an input control signal of 0–10 V DC.

Speed potentiometer
Type PU/PA 10 see type table
For direct control or nominal value preset of EC-fans with potentiometer input.

	Timer for controlling up to 31 fans	
	Type	Ref. no.
	ZLS-ZU 31	8388
	—	—

31 without LED power supply

DV EC



45% Saving *
* with speed control

■ **Extremely weather-proof diagonally discharging EC-roof fan from polymer for an extensive area of application.**

■ **Similarities**
DV EC Pro and DV EC Eco

☐ **Casing**
Aerodynamically designed casing from high-quality polypropylene in grey with diagonal air discharge direction. Air flow temperatures from –30 to +60 °C.

☐ **Impeller**
Diagonal impeller made from aluminium, the motor-impeller unit is dynamically balanced for low-noise operation.

☐ **Motor**
Optimised efficiency also with speed control for low operating costs. Stepless speed control. Ball bearing mounted, maintenance-free and interference-free.

☐ **Motor protection**
Integrated electronic temperature monitoring for EC-motor and electronics.

☐ **Electrical connection**
Standard external terminal box (protection to IP 65) on the casing. Connection voltage single-phase, 230 V, 50 Hz.

☐ **Installation**
Horizontal alignment on the roof. With pitched roofs, a suitable upstand must be constructed, to prevent water entry. Extensive accessories facilitate the assembly of the fan to the ducting system in the building.

■ **Sound levels**
Total sound power levels and the spectrum figures in dB(A) are given for:
– Sound power intake
– Sound power exhaust
In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 4 m (free field conditions).

■ **Specification**
DV EC Pro

■ **Speed control**
☐ Ideal as a central exhaust air fan for multi-storey building DIN 18017-3.
☐ In connection with further components (accessories) a complete central ventilation system can be developed according to DIN 18017-3 with ventilation according to need.
☐ Integrated pressure control for air flow volume stabilisation in the connected rooms by automatic speed adaptation with nearly consistently good efficiency.
☐ Integrated pressure sensor 0–300 Pa.
☐ Short payback period due to high energy conservation.
☐ Four potentiometers integrated in the control permit an adjustment to the operating data. The desired operating point can be set directly on site.
☐ Integrate serial Bus port (RS 485) for connection of a PC / laptop in combination with the interface (accessories).

■ **Specification**
DV EC Eco

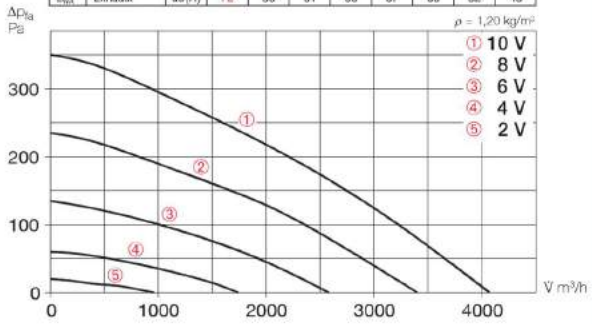
■ **Speed control**
☐ Stepless speed control with a speed potentiometer PU/PA 10 (accessories, see table below).
☐ In connection with the universal control system EUR EC or electronic pressure/temperature controllers EDR/ETR (accessories, see table below), the fan can be used for steplessly controlling differential pressure, differential temperature or flow velocity.
The performance stages are shown in the characteristic curves.

Type	Ref. no.	Maximum R.P.M. approx.	Air flow volume (FID)	Sound Sound pressure	Motor power at maximum speed		Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system		Speed-potentiometer flush		surface	
		min^{-1}	$\dot{V}$ m^3/h	dB(A) in 4 m	kW	A	No.	+ °C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Type DV EC Pro, single phase motor, 230 V, 50/60 Hz, EC motor, IP 54															
DV EC 400 A Pro	8387	1020	4070	51	0.30	1.33	863.1	60	33.0	—	—	—	—	—	—
DV EC 400 B Pro	8389	1425	5650	65	0.75	3.32	863.1	60	35.0	—	—	—	—	—	—
Type DV EC Eco, single phase motor, 230 V, 50/60 Hz, EC motor, IP 54															
DV EC 400 A Eco	8324	1020	4070	51	0.30	1.33	991	60	33.0	**EUR EC** [1) 2)]	1347	**PU 10** [3)]	1734	**PA 10** [3)]	1735
DV EC 400 B Eco	8326	1425	5650	65	0.75	3.32	991	60	35.0	**EUR EC** [1) 2)]	1347	**PU 10** [3)]	1734	**PA 10** [3)]	1735

1) several EC fans can normally be connected 2) alternative electronic pressure/temperature controller (EDR/ETR, No. 1437/1438) in connection with the power supply NG24, No. 1439, see accessories

DV EC 400 A

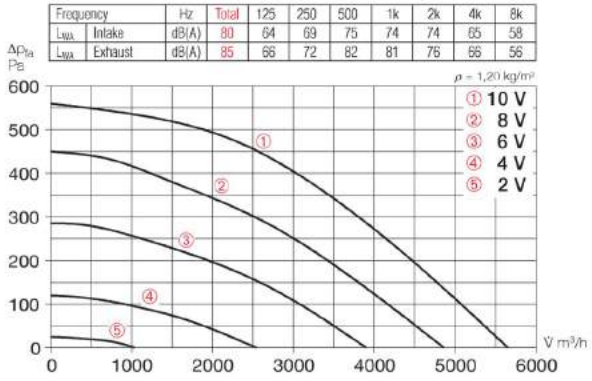
Frequency		Hz	Total	125	250	500	1k	2k	4k	8k
L_{WA}	Intake	dB(A)	68	55	62	63	63	58	51	44
L_{WA}	Exhaust	dB(A)	72	56	61	68	67	60	52	43



Voltage V	n min⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1020	4070	303	1,33	51	—
8	850	3400	176	0,77	46	—
6	650	2580	85	0,40	40	—
4	450	1740	33	0,20	31	—

DV EC 400 B

Frequency		Hz	Total	125	250	500	1k	2k	4k	8k
L_{WA}	Intake	dB(A)	80	64	69	75	74	74	65	58
L_{WA}	Exhaust	dB(A)	85	66	72	82	81	76	66	56



Voltage V	n min⁻¹	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	1425	5650	755	3,32	65	—
8	1225	4860	485	2,10	60	—
6	1000	3900	265	1,15	54	—
4	650	2540	90	0,40	43	—

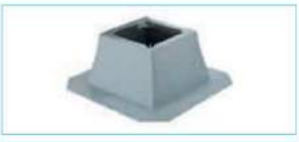
	Timer for controlling up to 31 fans	
	Type	Ref. no.
	ZLS-ZU 31	8388
	ZLS-ZU 31	8388
	—	—
	—	—

3) without LED power supply

Accessories for all types

Hinged base attenuator
Type SSD 400 Ref. no. 5291
With folding mechanism for easy inspection and cleaning.

Flange connecting plate
Type FAP 400 Ref. no. 8384
Made from galvanised sheet steel. Makes the connection of the duct system plus accessories to the roof fans DV EC possible, if no base attenuator SSD is used.



Flat roof base
Type FDS 400 Ref. no. 1380
With folding mechanism for easy inspection and cleaning.

Counterflange
Type FR 400 Ref. no. 1206
Made from galvanised sheet steel, for intake duct connections.

Flanged flexible connector
Type STS 400 Ref. no. 1223
To reduce vibration transmission in intake air ducting. Flanges made of galvanised steel.

Backdraught shutter
Type RVS 400 Ref. no. 2596
Automatic, made of galvanised sheet steel. To prevent cold air backdraught when the fan is not in use. For vertical air flow bottom-up position.

Accessories for DV EC Pro

Interface
Type ZLS-IF Ref. no. 8391
Interface for the start-up and/or control of the fan in connection with a PC/Laptop. Power supply unit, adaptor cable and software included.

Electronic timer module
Type ZLS-ZU 31 Ref. no. 8388
Allows parallel operation of max. 31 DV EC roof fans. The rocker main switch activates the timer module.
The day and night regulation is carried out by adjustment in the display. Main switch 230 V, 50 Hz included.

Accessories for DV EC Eco

Universal control system
Type EUR EC Ref. no. 1347
For stepless control or adjustment of single- and 3-phase EC-fans with an input control signal of 0–10 V DC.

Speed potentiometer
Type PU/PA 10 see type table
For direct control or nominal value preset of EC-fans with potentiometer input.