

WDJV

WDJ

WDJ, WDJV

ROOF FANS

WITH AC AND EC MOTORS

APPLICATION

Roof fans are intended for the extraction of air from industrial halls, warehouses, retail pavilions, commercial facilities, offices, and residential buildings.

Extracted air may contain dust, provided concentrations remain within permissible environmental limits.

DESCRIPTION

Fans are available in two configurations: WDJ with horizontal discharge and WDJV with vertical discharge.

The WDJ/WDJV range includes four sizes for each configuration.

The fans are fitted with:

- › a high-efficiency radial impeller made of plastic, driven by an internal AC (asynchronous) or EC (electronically commutated) motor;
- › a mounting plate made of: galvanised steel sheet for type WDJ or laminate for type WDJV;
- › a cover made of plastic for WDJ or a housing made of laminate for WDJV.

The fans are designed to be mounted on roof sockets type PU.

OPERATING CONDITIONS

The fans are supplied with single-phase motors.

The permissible temperature of the extracted air is 50°C for AC motors and 60°C for EC motors.

DESIGNATIONS

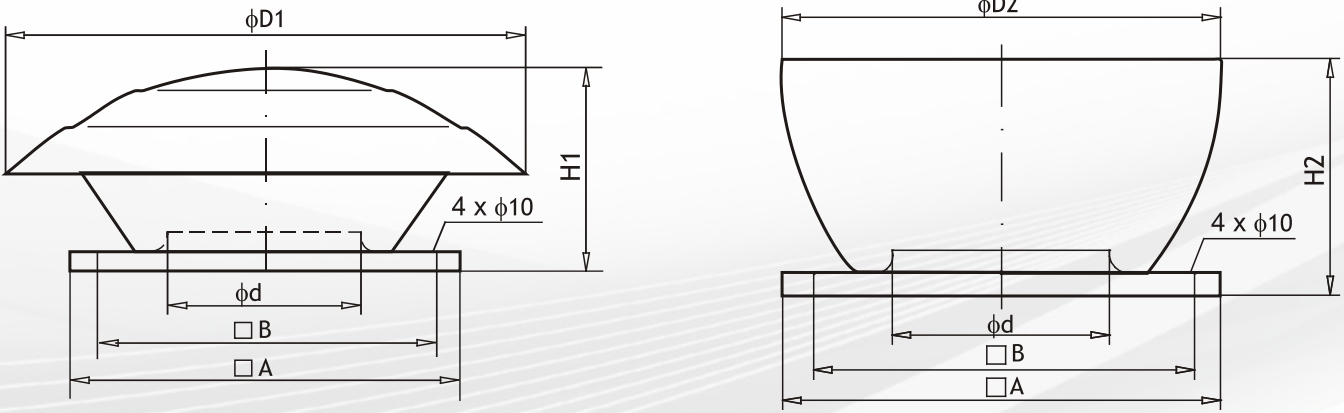
Roof fan

WDJV-19-EC

Type	WDJ; WDJV
Size	17,5; 19; 22; 22,5
Motor	asynchronous (no marking) electronically commutated motor (EC)

TECHNICAL DATA

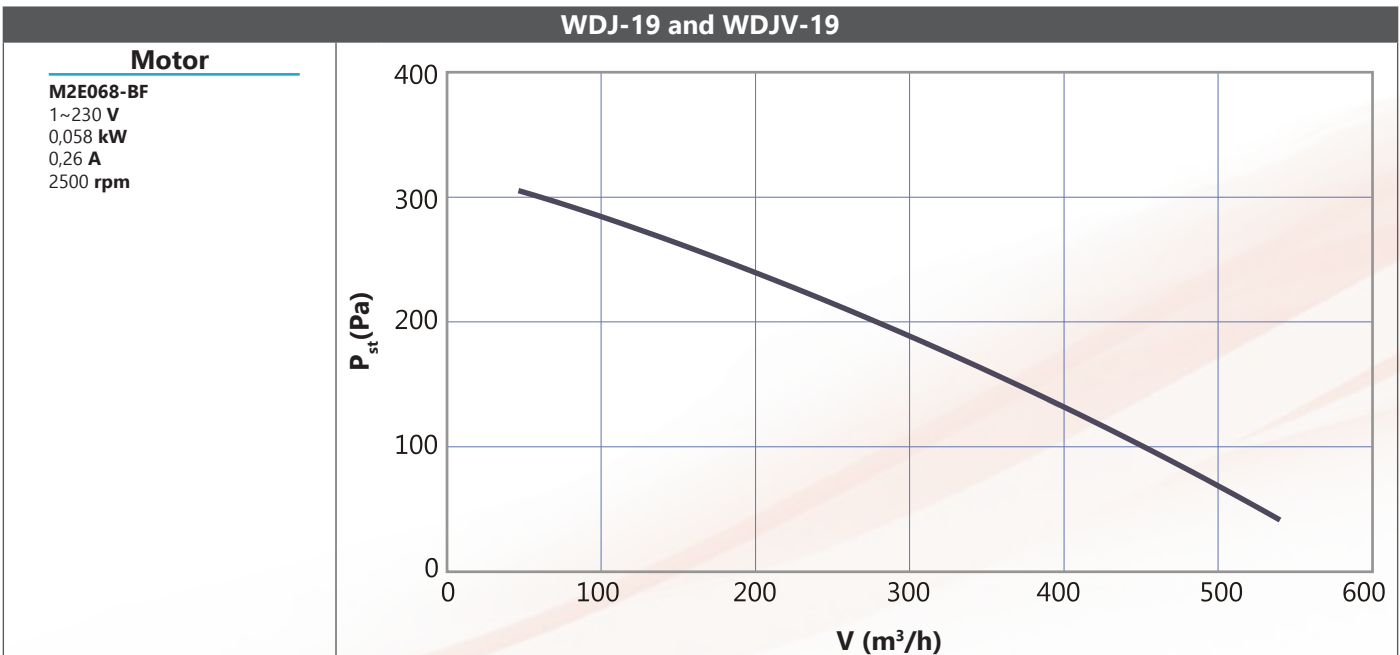
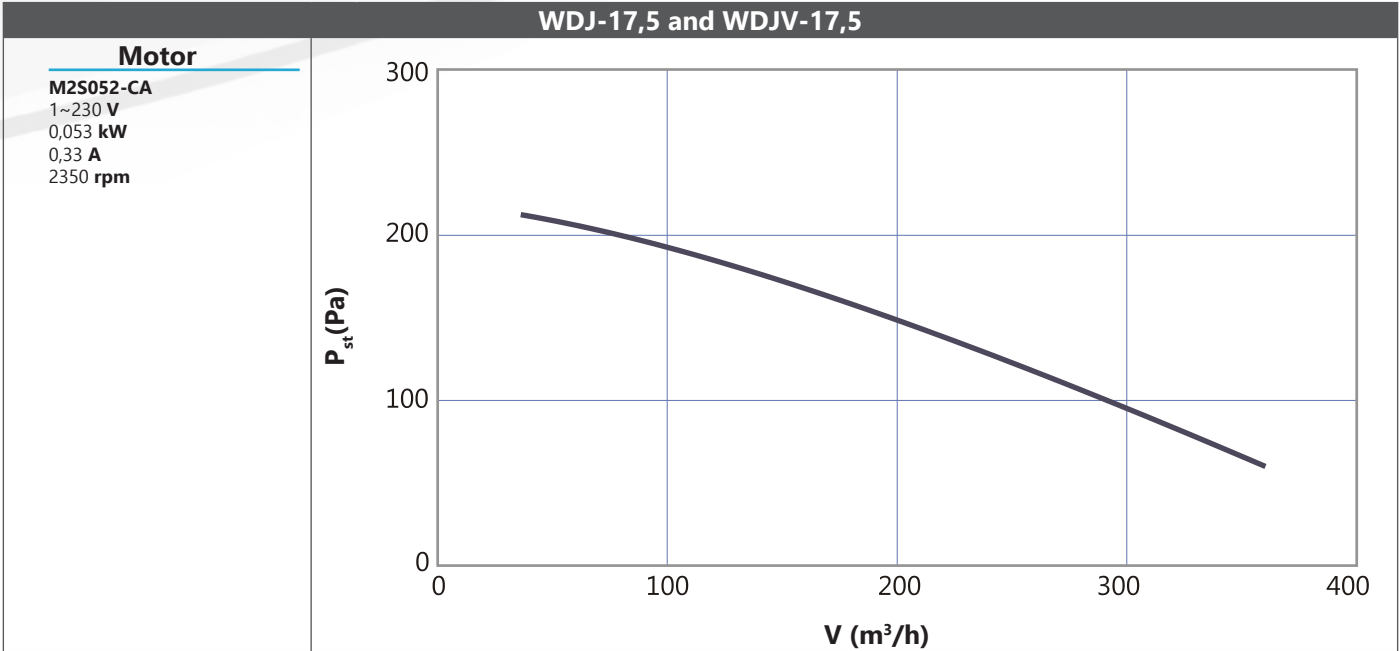
Basic dimensions

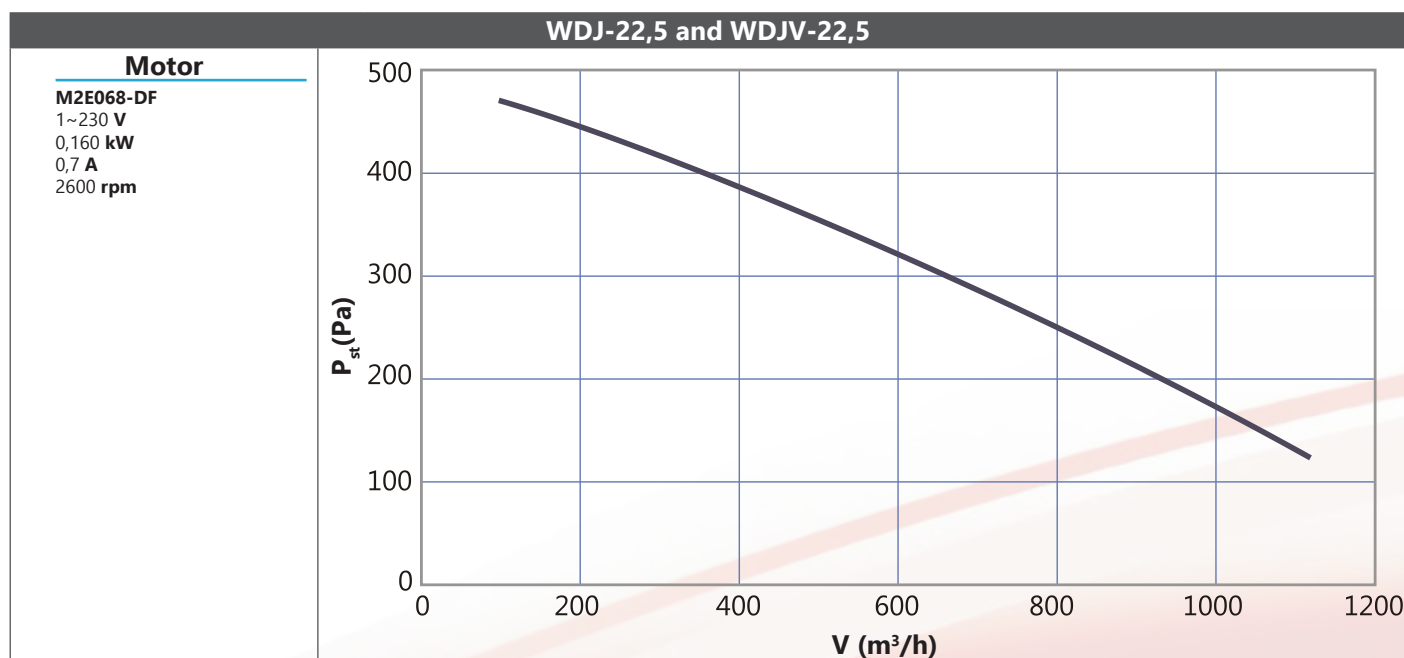
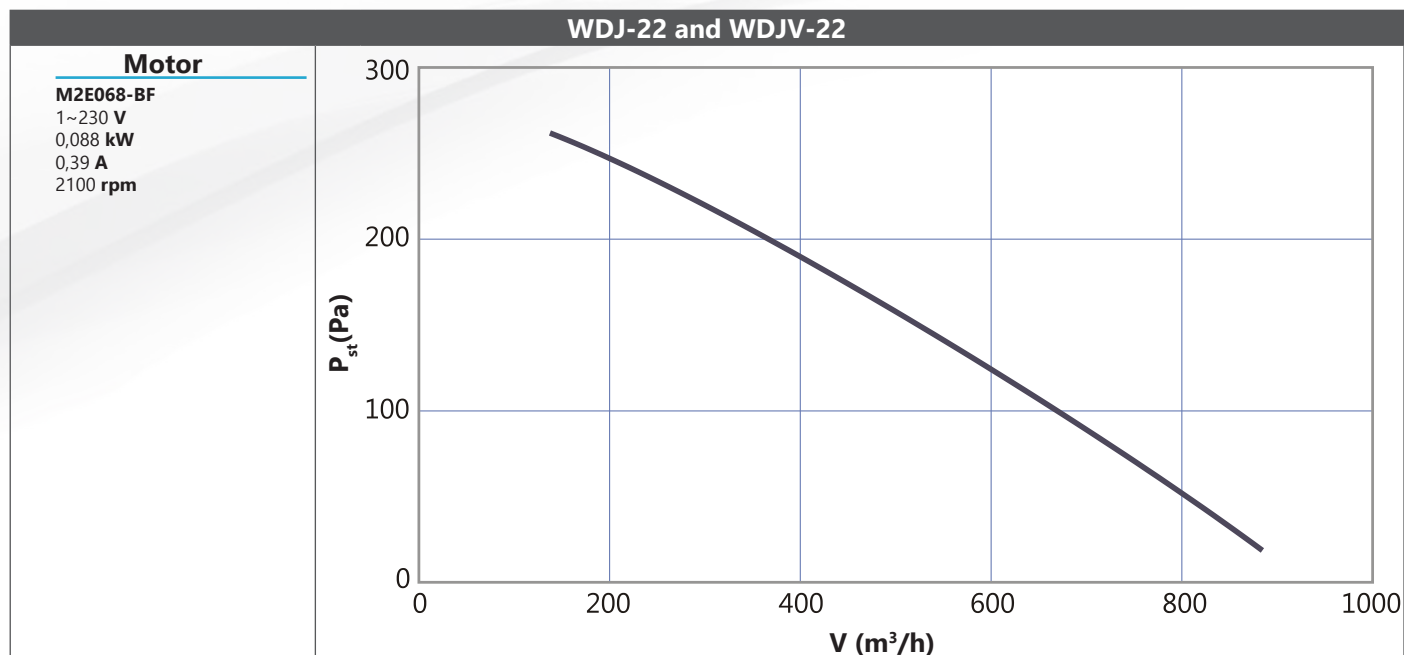


Fan Size	Ød (mm)	ØD1* (mm)	ØD2** (mm)	□A (mm)	□B (mm)	H1* (mm)	H2** (mm)	WDJ Weight (kg)	WDJV Weight (kg)
WDJ(V)-17,5	125	440	350	367	330	245	156	4	3.5
WDJ(V)-19	125	495	350	367	330	260	156	5	3.5
WDJ(V)-22	155	495	371	367	330	270	189	5	4.5
WDJ(V)-22,5	146	615	420	367	330	340	209	6	5.5

* – dimension applies to WDJ fans

** – dimension applies to WDJV fans





P_{st} – static pressure at fan inlet

Operating Noise Level of Fans with AC Motors

Fan Size	Speed (rpm)	Noise Level [dB(A)] for WDJ		Noise Level [dB(A)] for WDJV	
		on the air outlet side* at a distance of 1 m	on the air inlet side** at a distance of 1 m	on the air outlet side* at a distance of 1 m	on the air inlet side** at a distance of 1 m
WDJ(V)-17,5	2350	57	56	62	58
WDJ(V)-19	2500	59	58	65	60
WDJ(V)-22	2100	62	61	67	63
WDJ(V)-22,5	2500	65	63	71	65

*Noise level [dB(A)] – sound pressure level measured on the air outlet side in a free field, considering a directivity factor $Q = 2$, at a distance of 1 m from the fan.

**Noise level [dB(A)] – sound pressure level measured on the air inlet side, taking into account a room absorption area of $A = 100 \text{ m}^2$, a directivity factor $Q = 2$, and a distance of 1 m from the air inlet to the fan.

WDJV fans show variation in outlet-side noise levels depending on the measurement direction.

When measured at a distance of 1 m perpendicular to the fan axis, in a plane parallel to the roof surface, the noise level **decreases by approximately 3 dB**.

When measured along the fan axis at the same distance, the noise level **increases by approximately 1 dB**.

WDJ-17,5-EC and WDJV-17,5-EC

Motor

EC072/25E3G01-B175/24P1-01

1~230 V

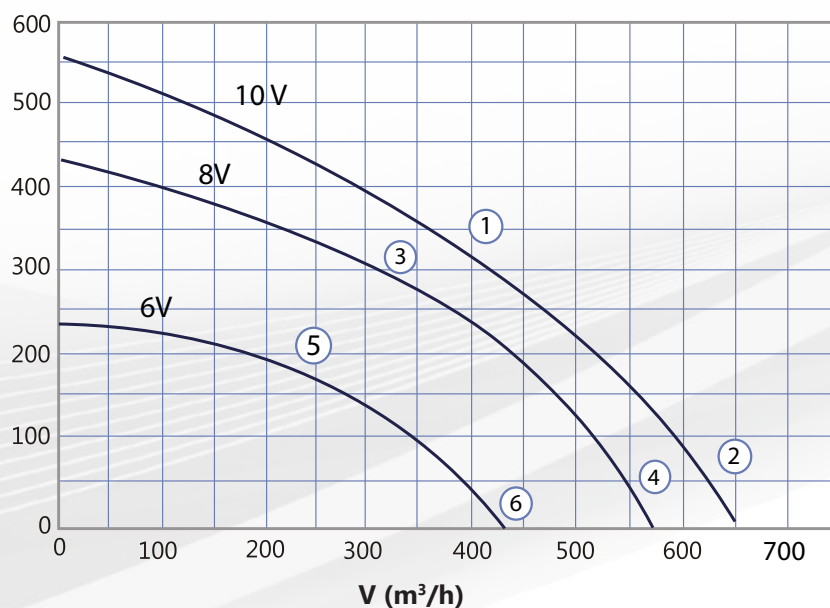
0,057 kW

0,6 A

4070 rpm

IP 54

-25°C to 60°C

 P_{st} (Pa)Noise Level L_p [dB(A)]

Operating Point	Air Outlet Side*		Air Inlet Side**			
			for fan mounted on PU roof base		for fan mounted on PUT roof base	
	R=1 m	R=5 m	R=1 m	R=5 m	R=1 m	R=5 m
1	69	55	70	64	58	52
2	71	57	72	66	60	54
3	63	49	64	58	52	56
4	65	51	66	60	54	58
5	59	45	60	54	48	40
6	60	46	61	55	49	43

WDJ-19-EC and WDJV-19-EC

Motor

EC072/25E3G01-B190/40P1-04

1~230 V

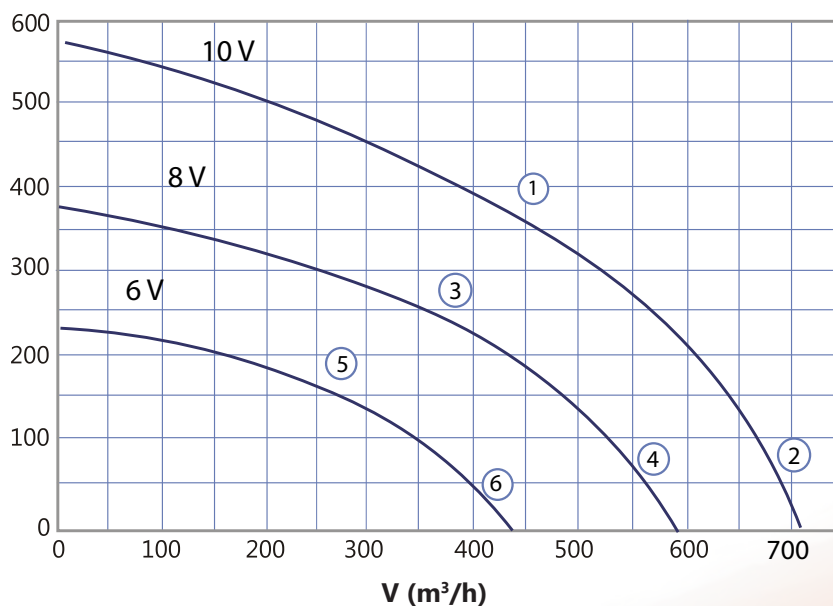
0,080 kW

0,7 A

3480 rpm

IP 54

-25°C to 60°C

 P_{st} (Pa)Noise Level L_p [dB(A)]

Operating Point	Air Outlet Side*		Air Inlet Side**			
			for fan mounted on PU roof base		for fan mounted on PUT roof base	
	R=1 m	R=5 m	R=1 m	R=5 m	R=1 m	R=5 m
1	67	53	68	62	56	50
2	69	55	70	64	58	52
3	62	48	63	57	51	45
4	64	50	65	59	53	47
5	56	42	57	51	45	39
6	58	44	59	53	47	41

Operating Noise Level of Fans with EC Motors

*Noise level [dB(A)] – sound pressure level measured on the air outlet side in a free field, considering a directivity factor $Q = 2$ and distances R as specified in the tables.

**Noise level [dB(A)] – sound pressure level measured on the air inlet side, taking into account a room absorption area of $A = 100 \text{ m}^2$, a directivity factor $Q = 2$, and distances R as specified in the tables.

WDJV fans with EC motors show variation in outlet-side noise levels depending on the measurement direction. When measured at a distance of 1 m perpendicular to the fan axis, in a plane parallel to the roof surface, the noise level decreases by approximately 3 dB.

When measured along the fan axis at the same distance, the noise level **increases by approximately 1 dB**.

ADDITIONAL INFORMATION

WDJ and WDJV roof fans can be equipped with optional accessories, including:

- › Universal roof bases
- › Additional components

Fan Size	Universal Roof Base Size		Additional Components			
			Mounting Plate	Non-Return Damper	Inlet Diffuser	Flexible Connector
WDJ(V)-17,5	PU-1	PUT-1	PM-1	SWD-1	DW-1	KEO-1
WDJ(V)-19	PU-1	PUT-1	PM-1	SWD-1	DW-1	KEO-1
WDJ(V)-22	PU-1	PUT-1	PM-1	SWD-1	DW-1	KEO-1
WDJ(V)-22,5	PU-1	PUT-1	PM-1	SWD-1	DW-1	KEO-1

Accessories required for the installation **WDJ** and **WDJV** fans:

- › Universal roof bases **PU**
- › Universal roof bases with silencer **PUT**

Additional components supplied for **WDJ** and **WDJV** fans:

- › Mounting plates **PM**
- › Non-return damper **SWD** or single-blade damper with manual or actuator control
- › Inlet diffusers **DW**
- › Flexible connectors **KEO**

Technical data for fan accessories is provided in the product sheet for universal roof bases included in this catalogue.

CONTROLS

A description of the operation and selection of control systems for fans can be found in the FAN CONTROLS section of this catalogue.