

## IP68 Fans from ebmpapst

Highest protection against harsh environments.

# ebmpapst

The engineer's choice



# About ebm-papst North America



## Headquarters - Farmington, CT

- 250,000 square feet
- 275 employees
- Value added
- Acoustic testing chamber
- Complete air testing lab on site
- ISO 9001 and ISO 14001 certifications
- Distribution centers in Farmington, CT and Toronto, Canada

ebm-papst is an innovator and market leader in fans, blowers, and motors with core competencies in motor technology, aerodynamics, and electronics. With over 15,000 products, we provide solutions to a wide range of markets including Air-conditioning and Ventilation, Appliance, Automotive, Commercial Refrigeration, Heating, Industrial, Lighting, IT / Telecom, Medical, Transportation and more.



## Support when and where you need it

Knowledgeable field sales professionals are close by for face-to-face meetings. Dedicated inside sales associates fulfill all of your ordering needs. To assist you with order management, our Customer Relations department provides automated services such as shipment notifications, reorder notifications, and invoicing.

## Design and manufacturing

Beginning with the initial product concept, our application engineers work in tandem with customers to select the best air moving solution to suit specific goals and requirements. Once the prototype has been established, it can then be tested in our state-of-the-art airflow testing chambers to optimize performance. Each chamber has been designed to meet AMCA 210 and ISO 5801 requirements. In addition to our airflow testing capabilities, ebm-papst can conduct comparative sound, temperature, and velocity tests. The electrical engineering team can design everything from simple fan controllers for monitoring fan speed to complex controllers and power supplies, filtering, and specific communication protocols.



## Logistics and inventory management programs

Our facilities feature over 90,000 square feet of climate-controlled warehousing, and utilize bar coding for real-time inventory management. Supply chain management programs such as Kanban, demand/pull, safety stock, consignment, and local warehousing can be customized to your needs.

# IP68 Defined

*Ingress Protection (IP) is a standard protection rating on electrical enclosures that defines the degree of protection provided against intrusion by solids (fingers, dust, etc.) and liquids. The importance of an IP68 rating on ebm-papst products is to ensure the highest level of protection of the electronics inside the enclosure against foreign objects and water, while also protecting the user against potentially harmful contact.*

## **Ingress Protection at a glance**

Ingress protection is the level of protection against the intrusion of solid objects, liquids, dust, and accidental contact with electrical enclosures inside a mechanical casing. This rating gives users a more detailed understanding of general terms such as waterproof or water-resistant.

The numerical digits represent conformity with the conditions outlined in the table below. For example, an electrical enclosure rated IP68 is completely protected against dust and can not be damaged or become unsafe during permanent immersion in water (to a depth greater than IPX7 which is to be defined between ebm-papst and the end user).

## **Applications and target markets**

Environmentally protected cooling solutions are highly beneficial to applications within the Alternative Energy, Appliance, Commercial Refrigeration, Heating, IT/Telecom, LED/Lighting and Transportation markets.

IP68 protection may be available beyond what is listed in this brochure. Please contact our application engineers for more information at [sales@us.ebmpapst.com](mailto:sales@us.ebmpapst.com)

## **IPXX Defined**

IP:	Ingress Protection
First Digit:	Rating of protection against solid objects
Second Digit:	Rating of protection against liquids



\*IP20 protection - for indoor (clean/dry) applications where no additional protection for motor (electronics or windings) is required.



\*IP68 protection - the motor (electronics and windings) are completely encapsulated



# DC axial fans

Series 600 NU 60 x 60 x 25 mm



### Highlights:

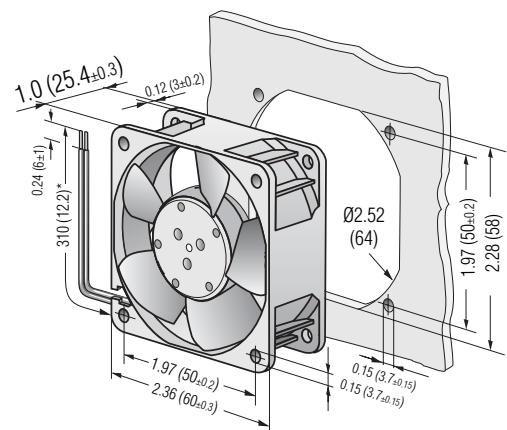
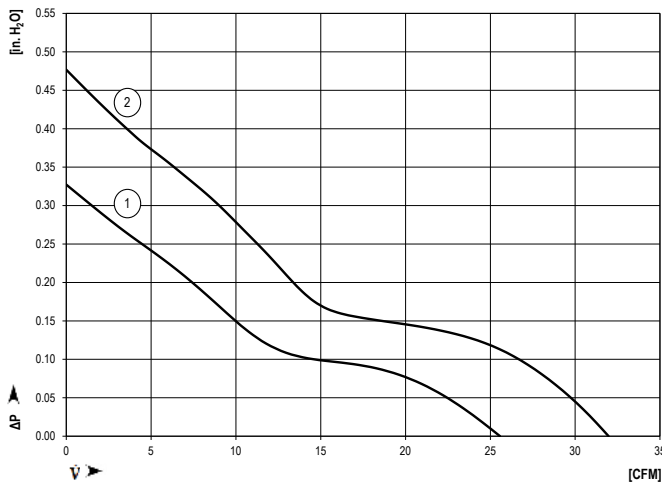
- Motor protection against reverse polarity and locking.
- Air exhaust over struts
- Connection via 310 mm strands AWG 22, TR 64, bared and tin-plated
- Ingress protection rating of IP68

**Material:** Housing: Fiberglass-reinforced PBT composite  
Impeller: Fiberglass-reinforced PA composite

**Direction of rotation:** Clockwise, seen on rotor

Nominal Data		Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Ball bearings	Power input	Speed	Temperature range	Mass	Ingress Protection Rating	UL Approval	Curves
Type		CFM	VDC	VDC	dB(A)	Bel(A)		Watts	RPM	°C	g			
612 NHU-181		<b>25.3</b>	12	8...15	37	5.3	Yes	1.8	5600	-20...70	66	IP68	Yes	1
614 NHU		<b>25.3</b>	24	18...26	37	5.3	Yes	2.1	5600	-20...70	66	IP68	Yes	1
614 NHHU-286		<b>33.0</b>	24	18...26	41	5.7	Yes	2.9	6850	-20...70	66	IP68	Yes	2

### Curves









# DC axial fans

Series 3300 NU 92 x 92 x 32 mm



### Highlights:

- Motor protection against reverse polarity and locking.
- Air exhaust over struts
- Connection via 310 mm strands AWG 22, TR 64, bared and tin-plated
- Ingress protection rating of IP68

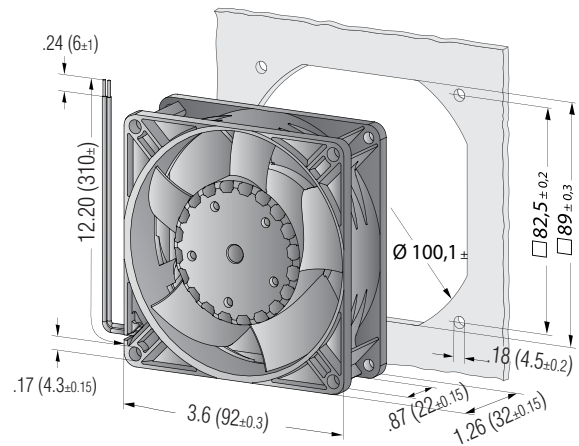
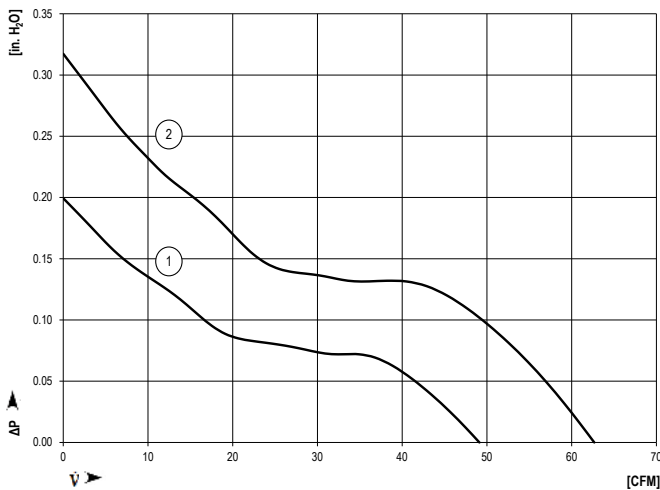
**Material:** Housing: Fiberglass-reinforced PBT composite

Impeller: Fiberglass-reinforced PA composite

**Direction of rotation:** Clockwise, seen on rotor

Nominal Data		Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Ball bearings	Power input	Speed	Temperature range	Mass	Ingress Protection Rating	UL Approval	Curves
Type		CFM	VDC	VDC	dB(A)	Bel(A)		Watts	RPM	°C	g			
3312 NNU		<b>47.1</b>	12	6...15	35	4.7	Yes	1.8	2650	-20...75	190	IP68	Yes	1
3312 NHHU		<b>63.0</b>	12	6...15	42	5.4	Yes	3.4	3450	-20...75	190	IP68	Yes	1
3314 NNU		<b>47.1</b>	24	18...28	35	4.7	Yes	1.8	2650	-20...75	190	IP68	Yes	1
3314 NHHU		<b>63.0</b>	24	18...28	42	5.4	Yes	3.5	3450	-20...75	190	IP68	Yes	2

### Curves





# DC axial fans

Series 3200 JU 92 x 92 x 38 mm



**Highlights:**

- Motor protection against reverse polarity and locking.
- Air exhaust over struts
- Connection via 310 mm strands AWG 24, TR 64, bared and tin-plated
- Ingress protection rating of IP68

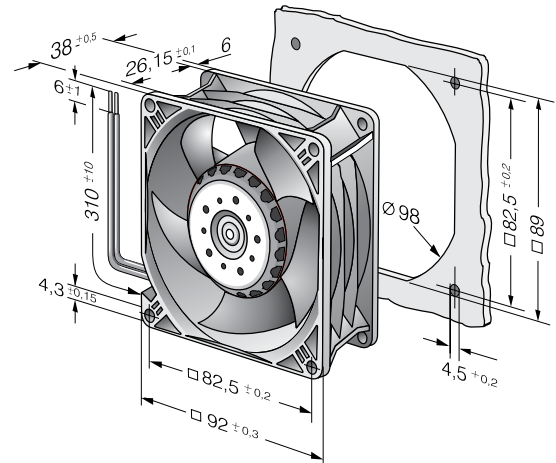
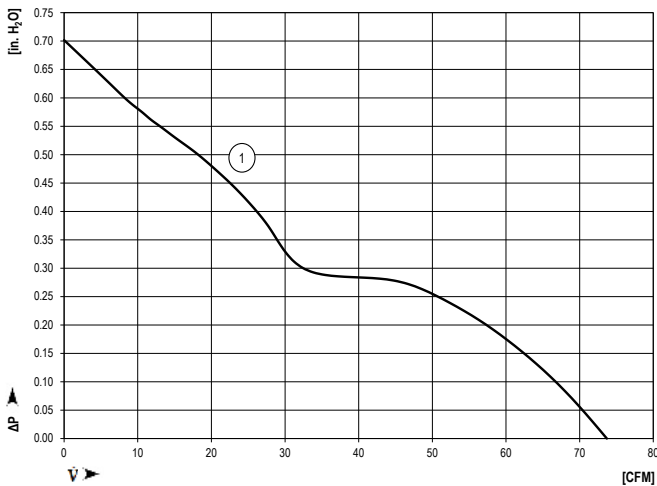
**Material:** Housing: Fiberglass-reinforced PBT composite  
 Impeller: Fiberglass-reinforced PA composite

**Direction of rotation:** Clockwise, seen on rotor

**Nominal Data**

Type	Air flow CFM	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Ball bearings	Power input Watts	Speed RPM	Temperature range °C	Mass g	Ingress Protection Rating	UL Approval	Curves
3212J/2NU-343	<b>76.5</b>	12	7...13.8	51	6.0	Yes	8.1	6000	-20...60	240	IP68	Yes	1

**Curves**





# DC axial fans

Series 4300 NU 119 x 119 x 32 mm



### Highlights:

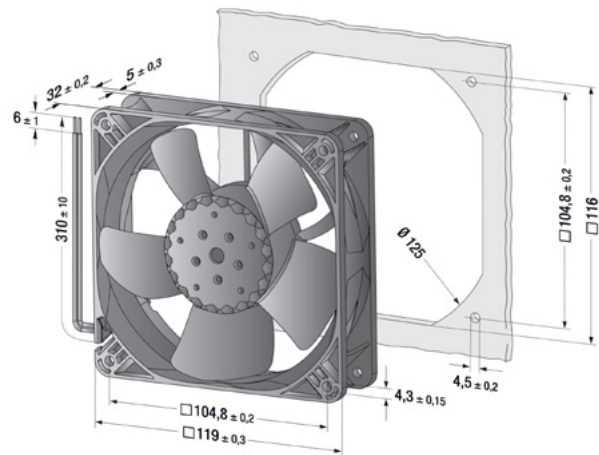
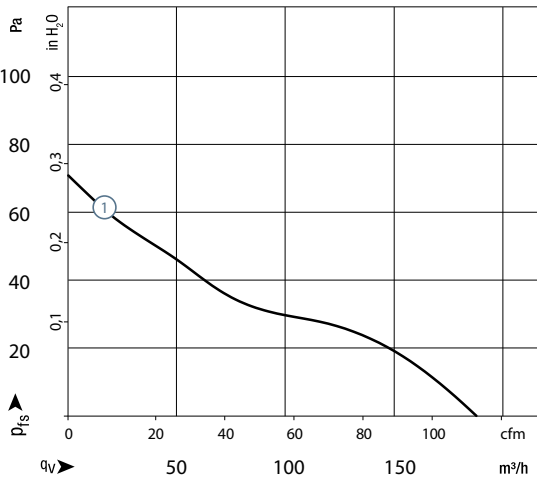
- Motor protection against reverse polarity and locking.
- Air exhaust over struts
- Connection via 310 mm strands AWG 22, TR 64, bared and tin-plated
- Ingress protection rating of IP68

**Material:** Housing: Fiberglass-reinforced PBT composite  
Impeller: Fiberglass-reinforced PA composite

**Direction of rotation:** Clockwise, seen on rotor

Nominal Data		Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Ball bearings	Power input	Speed	Temperature range	Mass	Ingress Protection Rating	UL Approval	Curves
Type		CFM	VDC	VDC	dB(A)	Bel(A)		Watts	RPM	°C	g			
4312 NNU		<b>112</b>	12	6...15	41	5.5	Yes	4.0	2700	-20...75	250	IP68	Yes	1
4314 NNU		<b>112</b>	24	12...28	41	5.5	Yes	4.0	2700	-20...75	250	IP68	Yes	1

### Curves









# DC axial fans

Series 6300 U Ø172 x 51 mm



**Highlights:**

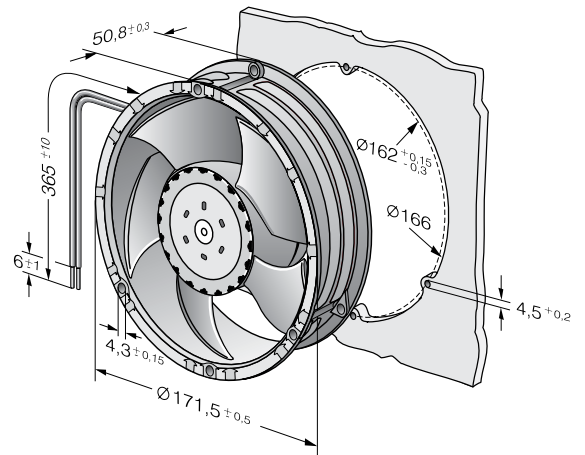
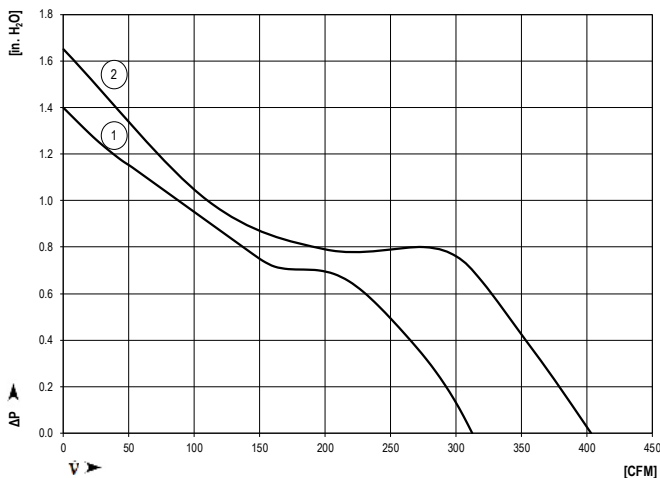
- Motor protection against reverse polarity and locking.
- Air exhaust over struts
- Connection via leads 365 mm AWG 22, TR 64, bared and tin-plated
- Ingress protection rating of IP68

**Material:** Housing: Die-cast aluminum  
 Impeller: Fiberglass-reinforced PA composite

**Direction of rotation:** Counterclockwise, seen on rotor

Nominal Data		Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Ball bearings	Power input	Speed	Temperature range	Mass	Ingress Protection Rating	UL Approval	Curves
Type		CFM	VDC	VDC	dB(A)	Bel(A)		Watts	RPM	°C	g			
6314 HU-227		<b>321.0</b>	24	16...30	58	6.9	Yes	31	5000	-20...50	910	IP68	Yes	1
6318/2 HPU-216		<b>321.0</b>	48	36...60	58	6.9	Yes	31	5000	-20...65	910	IP68	Yes	1
6318 N/2H3PU		<b>403.0</b>	48	36...72	-	7.5	Yes	53	5000	-20...70	935	IP68	Yes	2

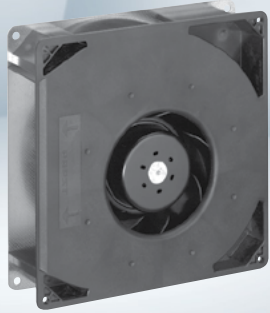
**Curves**





# DC centrifugal fans

Series RG 160 NU 220 x 220 x 56 mm



### Highlights:

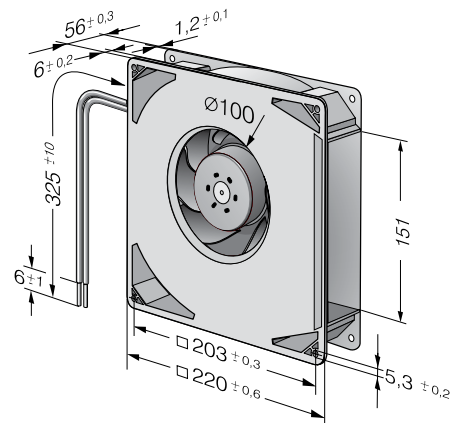
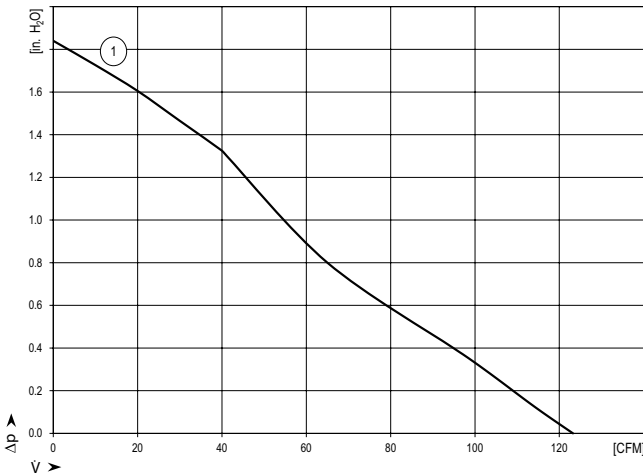
- Backward curved impeller
- Motor protection against reverse polarity and locking.
- Direction of air flow: axial air intake, centrifugal air exhaust
- Connection via single strands AWG 22, TR 64, bared and tin-plated
- Ingress protection rating of IP68

**Material:** Impeller: Fiberglass-reinforced composite  
 Housing: Fiberglass-reinforced composite scroll  
 Baseplate: Steel

**Direction of rotation:** Counterclockwise, seen on rotor

Nominal Data		Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Ball bearings	Power input	Speed	Temperature range	Mass	Ingress Protection Rating	UL Approval	Curves
Type		CFM	VDC	VDC	dB(A)	Bel(A)		Watts	RPM	°C	g			
RG 160-28/14NU		<b>123.0</b>	24	12...28	-	6.6	Yes	20	2850	-20...70	1400	IP68	Yes	1
RG 160-28/18NU		<b>123.0</b>	48	28...60	-	6.6	Yes	20	2850	-20...70	1400	IP68	Yes	1

### Curves





# DC centrifugal fans

Series RER 160 NTDU Ø165 x 51 mm



### Highlights:

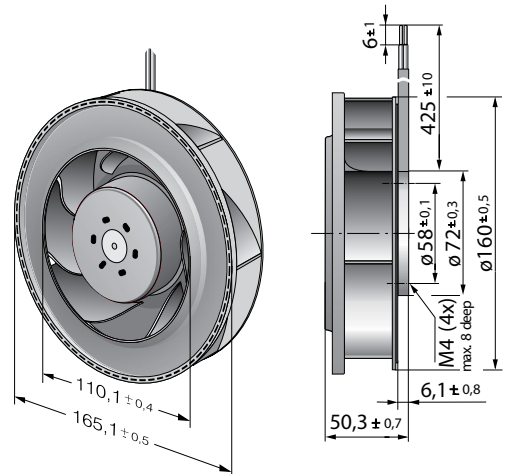
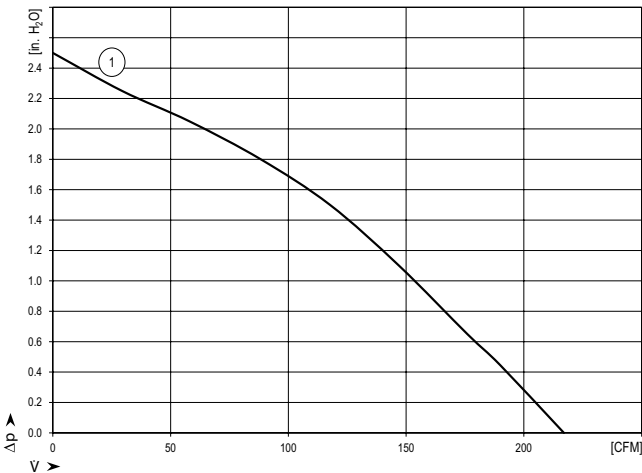
- Backward curved impeller
- Motor protection against reverse polarity and locking
- Direction of air flow: axial air intake, centrifugal air exhaust
- Connection via single strands AWG 22, TR 64, bared and tin-plated
- Ingress protection rating of IP68

**Material:** Impeller: Fiberglass-reinforced composite  
**Direction of rotation:** Counterclockwise, seen on rotor

### Nominal Data

Type	Air flow CFM	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Ball bearings	Power input Watts	Speed RPM	Temperature range °C	Mass g	Ingress Protection Rating	UL Approval	Curves
RER 160-28/18NTDAU	<b>217.0</b>	48	38...57	-	7.4	Yes	51	4200	-20...60	700	IP68	Yes	1

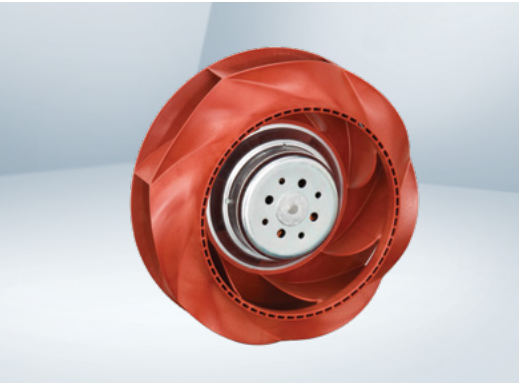
### Curves





# DC centrifugal fans

Series RER 190 TDU Ø190 x 69 mm



### Highlights:

- Backward curved RadiCal impeller with maximum efficiency and 3-phase motor
- Motor protection against reverse polarity and locking
- Direction of air flow: axial air intake, centrifugal air exhaust
- Connection via single strands AWG 22, TR 64, speed signal and control input AWG 22, bared and tin-plated
- Ingress protection rating of IP68

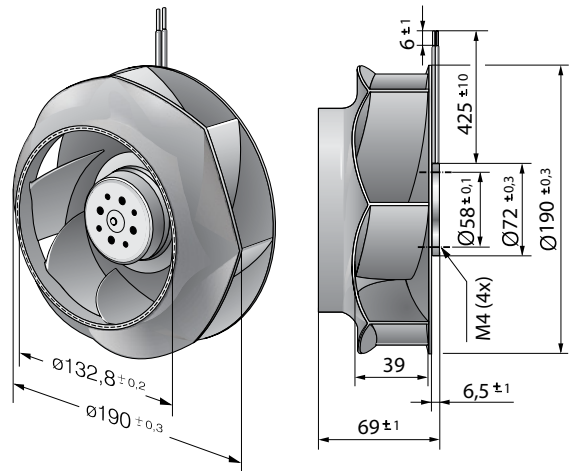
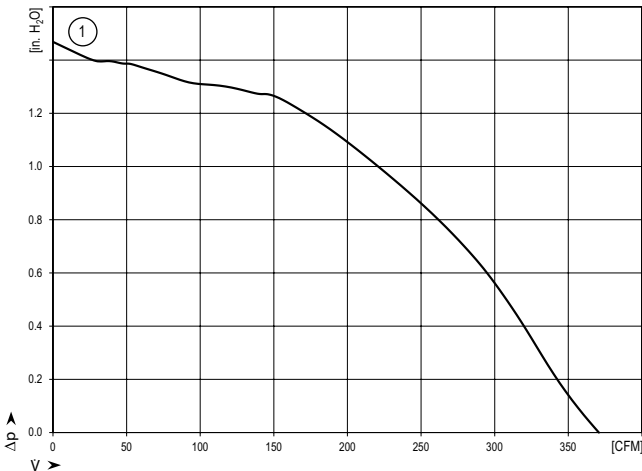
**Material:** Impeller: Fiberglass-reinforced composite

**Direction of rotation:** Clockwise, seen on rotor

### Nominal Data

Type	Air flow CFM	Nominal voltage VDC	Voltage range VDC	Sound pressure level dB(A)	Sound power level Bel(A)	Ball bearings	Power input Watts	Speed RPM	Temperature range °C	Mass g	Ingress Protection Rating	UL Approval	Curves
RER 190-39/14/2TDLOU	<b>376.7</b>	24	16...30	-	6.8	Yes	57.1	2900	-20...60	870	IP68	Yes	1

### Curves





# Notes

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