



Cross Flow Fans

General Information and Product Number Code	·C-86
Comparisons of Characteristics	·····C-87
MF Series	·····C-88
MFD Series	·····C-92

Types of Cross Flow Fans

Length of impeller	Model		Page	
	Single-Phase 200/220/230V	DC 24V	AC	DC
300mm	MF930(B) -DC	MFD930(B) -24	C-88	C-92
150mm	MF915(B) -DC	MFD915(B) -24	C-90	C-94

Product Number Code

MF 9 30 B - D C

C: Built-in capacitor

Voltage

D: Single-Phase 200/220/230V

24: DC24V

Letter designation

No letter: Motor is on left when viewing the mounting holes

B: Motor is on right when viewing the mounting holes

Length of Impeller

30: 300mm

15: 150mm

Frame size

9: □ 90mm

Series

MF: AC Cross Flow Fans

MFD: DC Cross Flow Fans

General Specifications

Item	Specifications
Insulation Resistance	100MΩ or more when 500V DC is applied between the windings and the frame under normal ambient temperature and humidity. (MF Series : 10MΩ or more, 250V DC)
Dielectric Strength	Sufficient to withstand 1.5kV at 50Hz applied between the windings and the frame for 1 minute under normal ambient temperature and humidity. (MFD Series : 500V • 50Hz, 1 minute)
Temperature Rise	45°C or less measured by the thermometer method after the temperature of the coil has stabilized under normal operation at the rated voltage and frequency. (MFD Series : 15°C or less)
Operating Voltage Range	AC Cross Flow Fans : ±10% of the rated voltage DC Cross Flow Fans : +10%, -40% of the rated voltage
Insulation Class	Class E (120°C) [Recognized as Class A (105°C) by UL and CSA standards.]
Overheat Protection	MF Series has a built-in thermal protector (Automatic return type) Operating temperature Open : 120°C±5°C Close : 77°C±15°C MFD Series has an overheat protection function installed.
Ambient Temperature	-10°C~+60°C
Ambient Humidity	0~85% (noncondensing)
Color	Black

Safety Standards and CE Marking

Model	Standards	Certification Body	Standards File No.	CE Marking
MF Series	UL507	UL	E58377	Low Voltage Directives
	CAN/CSA-C22.2 No.113			
	EN60950	VDE	5854ÜG	

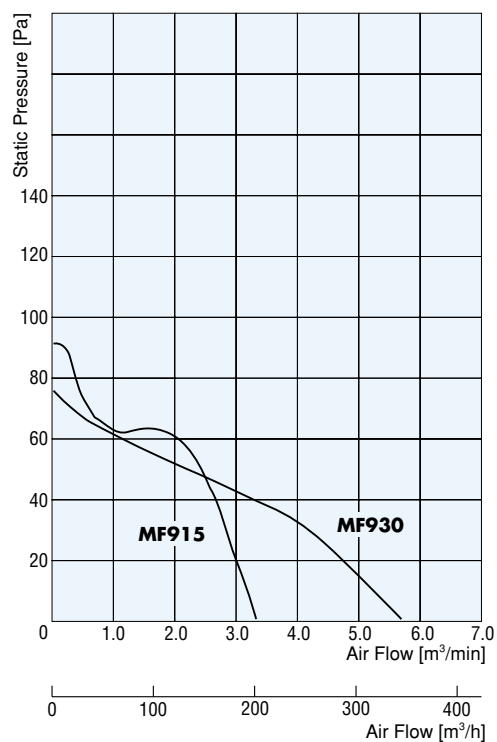
* For installation conditions for EN/IEC standards, refer to page D-2 for further detail.

* The file No. depends on the type of products. Refer to page D-10 for further detail.

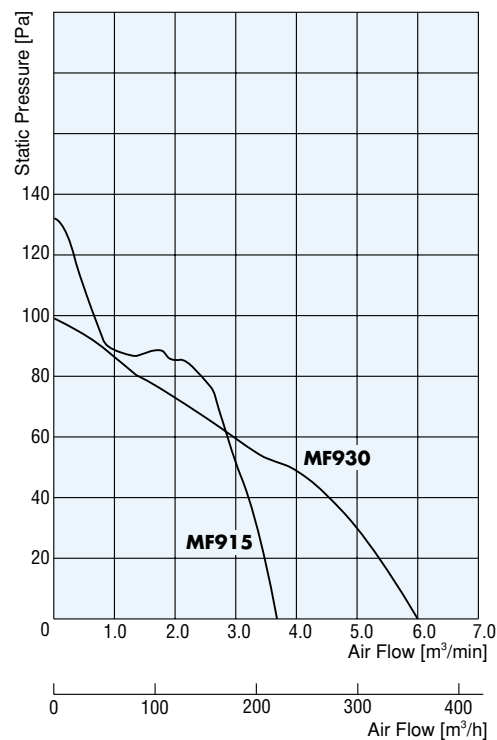
Comparisons of Characteristics

■ AC Cross Flow Fans MF Series

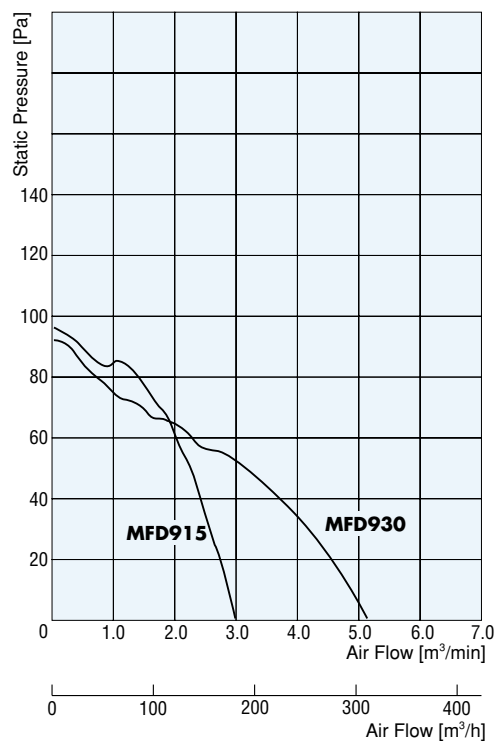
● 50Hz



● 60Hz



■ DC Cross Flow Fans MFD Series



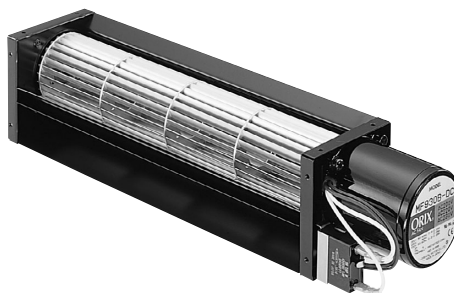
AC MF

DC MFD

Cross Flow Fans

MF Series**AC Cross Flow Fans**

Length of Impeller

300mm**Materials**

Impeller : Aluminum

Casing : Steel

Motor case : Die Cast Aluminum

Specifications

Model	Voltage V	Frequency Hz	Current A	Input Power W	Speed r/min	Max. Air Flow m ³ /min (m ³ /h)	Max. Static Pressure Pa	Noise Level dB (A)
MF930-DC MF930B-DC	Single-Phase 200	50	0.20	35	2500	6.0 (360)	74	58
	Single-Phase 200	60	0.25	45	2700	6.2 (372)	103	60
	Single-Phase 220	60	0.25	48	2950	6.6 (396)	106	62
	Single-Phase 230	50	0.20	40	2700	6.2 (372)	78	60
	Single-Phase 230	60	0.25	50	3000	6.8 (408)	106	63

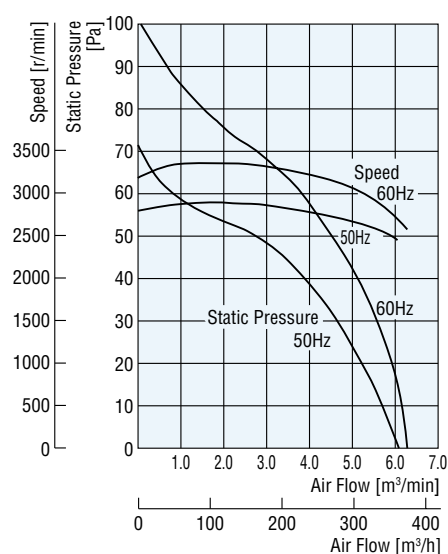
● Values for maximum air flow and maximum static pressure are measured by the double-chamber method.

● Noise level is measured in the A range, at a distance of 1m from the fan intake side.

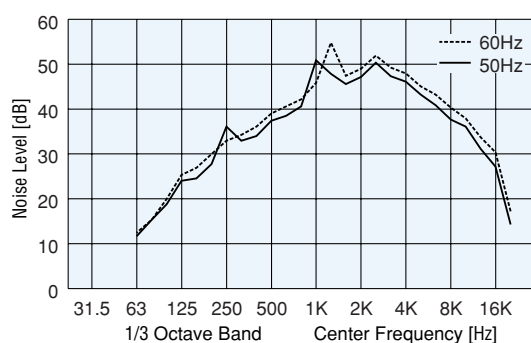
● A thermal protector is installed. If the fan heats up, the thermal protector goes into operation and the fan stops. Once the fan temperature drops, it will automatically restart. Perform inspection work after turning off the power source.

● Fans bearing the CE mark should only be used with Class I equipment. When installing into the equipment, either earth the fan or ensure that there is no contact with bare hands. For protection, use the optional finger guard. Standards specifications are listed on page D-2.

● Refer to page D-4 for VDE certified products.

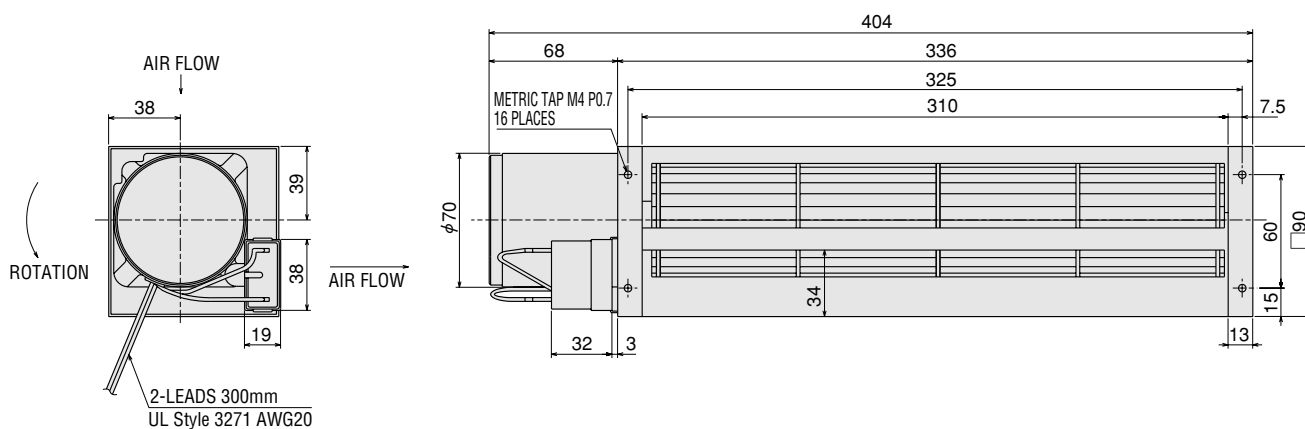
Air Flow – Static Pressure Characteristics**Audible Noise Frequency Analysis**

Measure at a distance of 1m from the fan intake side

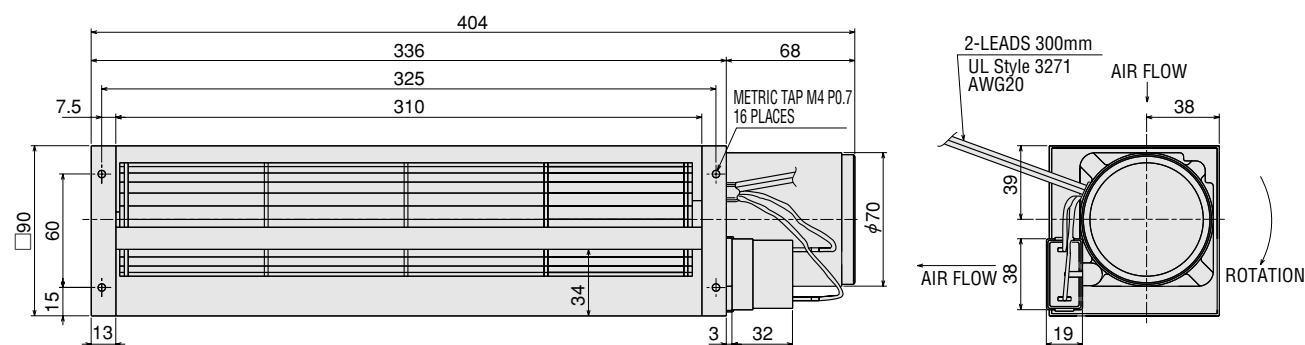


■ Dimensions (scale1/4, Unit=mm)

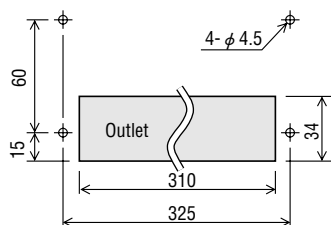
● **MF930-DC** Mass: 1.9kg



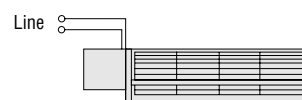
● **MF930B-DC** Mass: 1.9kg



■ Panel Cut-Out (unit=mm)



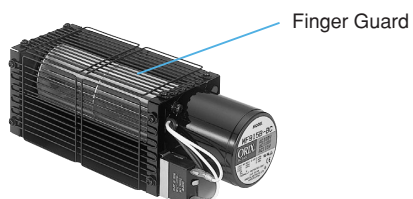
■ Wiring Diagram



■ Accessories (Sold separately)

Item	Model	Safety Standards	Page
Finger Guard	FG930D		C-98

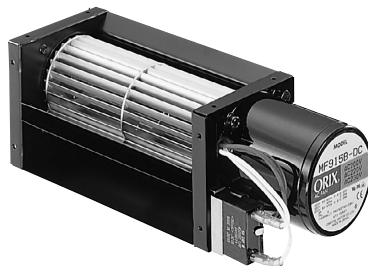
* These products have been designed to pass tests set forth under the UL and CSA standards for equipment used in fans. They conform to the standards only when used in an **ORIX.FAN**.



- * The photo shows two finger guards.

MF Series**AC Cross Flow Fans**

Length of Impeller

150mm**Materials**

Impeller : Aluminum

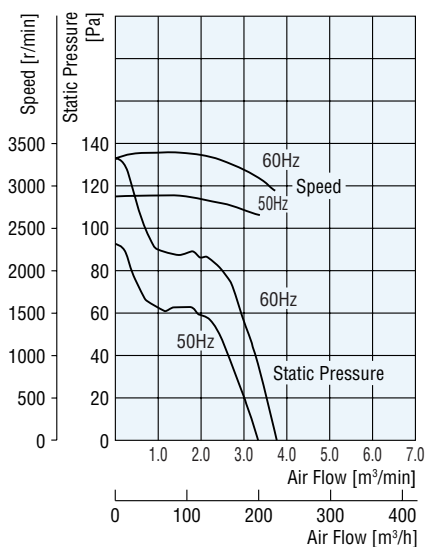
Casing : Steel

Motor case : Die Cast Aluminum

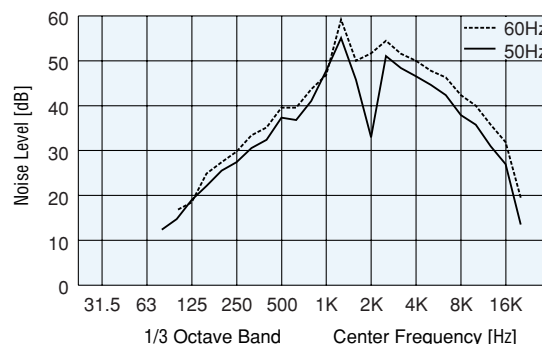
Specifications

Model	Voltage V	Frequency Hz	Current A	Input Power W	Speed r/min	Max. Air Flow m³/min (m³/h)	Max. Static Pressure Pa	Noise Level dB (A)
MF915-DC MF915B-DC	Single-Phase 200	50	0.20	30	2650	3.4 (204)	88	60
	Single-Phase 200	60	0.25	40	2950	3.7 (222)	127	63
	Single-Phase 220	60	0.25	42	3200	4.0 (240)	132	64
	Single-Phase 230	50	0.20	33	2800	3.6 (216)	92	61
	Single-Phase 230	60	0.25	43	3250	4.1 (246)	132	64

- Values for maximum air flow and maximum static pressure are measured by the double-chamber method.
- Noise level is measured in the A range, at a distance of 1m from the fan intake side.
- A thermal protector is installed. If the fan heats up, the thermal protector goes into operation and the fan stops. Once the fan temperature drops, it will automatically restart. Perform inspection work after turning off the power source.
- Fans bearing the CE mark should only be used with Class I equipment. When installing into the equipment, either earth the fan or ensure that there is no contact with bare hands. For protection, use the optional finger guard. Standards specifications are listed on page D-2.
- Refer to page D-4 for VDE certified products.

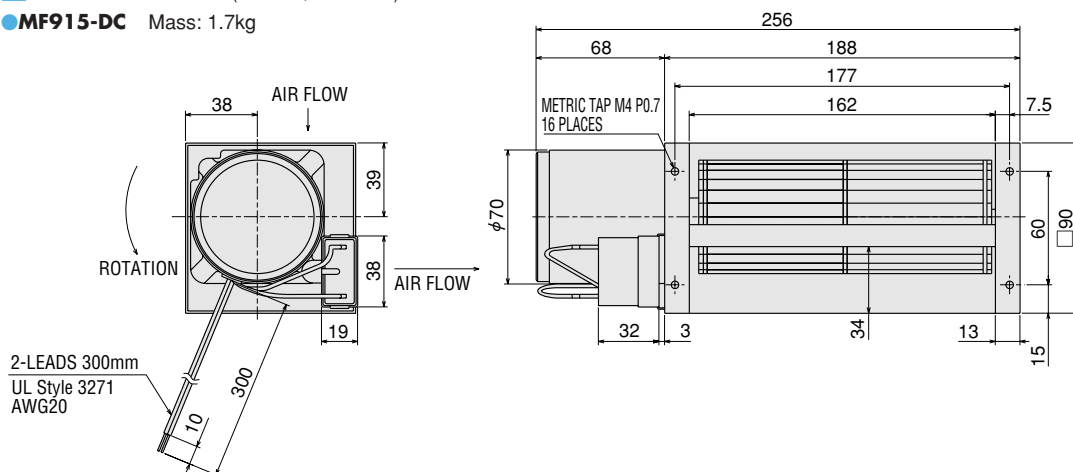
Air Flow – Static Pressure Characteristics**Audible Noise Frequency Analysis**

Measure at a distance of 1m from the fan intake side

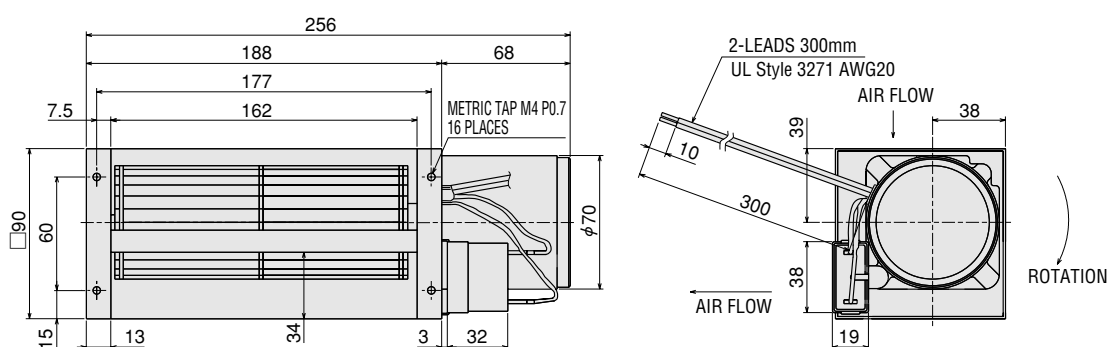


■ Dimensions (scale 1/4, Unit=mm)

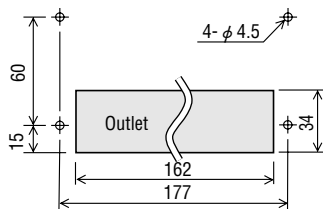
● **MF915-DC** Mass: 1.7kg



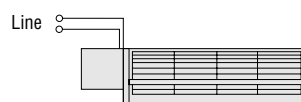
● **MF915B-DC** Mass: 1.7kg



■ Panel Cut-Out (unit=mm)



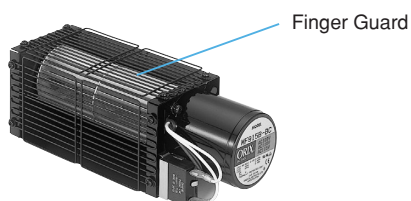
■ Wiring Diagram



■ Accessories (Sold separately)

Item	Model	Safety Standards	Page
Finger Guard	FG915D	*	C-98

* These products have been designed to pass tests set forth under the UL and CSA standards for equipment used in fans. They conform to the standards only when used in an **ORIX.FAN**.



* The photo shows two finger guards.

MFD Series

DC Cross Flow Fans

Length of Impeller

300mm**Materials**

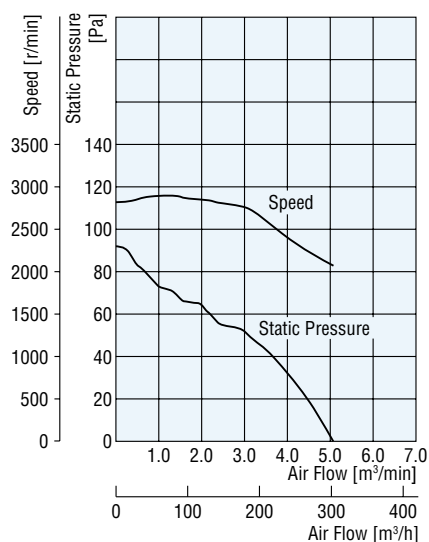
Impeller : Aluminum
Casing : Steel
Motor case : Die Cast Aluminum

Specifications

Model	Rated Voltage DC V	Rated Current A	Rated Speed r/min	Max. Air Flow m³/min(m³/h)	Max. Static Pressure Pa	Noise Level dB (A)
MFD930-24	24	1.0	2100	5.2 (312)	83	60
MFD930B-24						

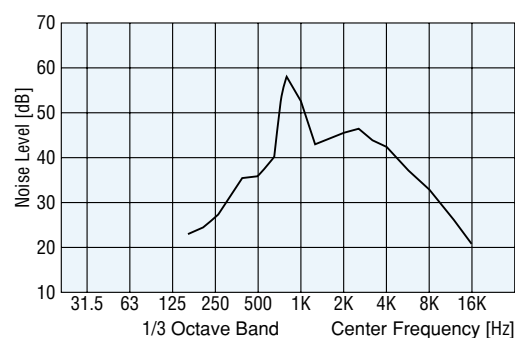
- Values for maximum air flow and maximum static pressure are measured by the double-chamber method.
- Noise level is measured in the A range, at a distance of 1m from the fan intake side
- Operating Voltage Range: $\pm 10\%$ of the rated voltage
- An overheat protection function is installed.

Air Flow – Static Pressure Characteristics



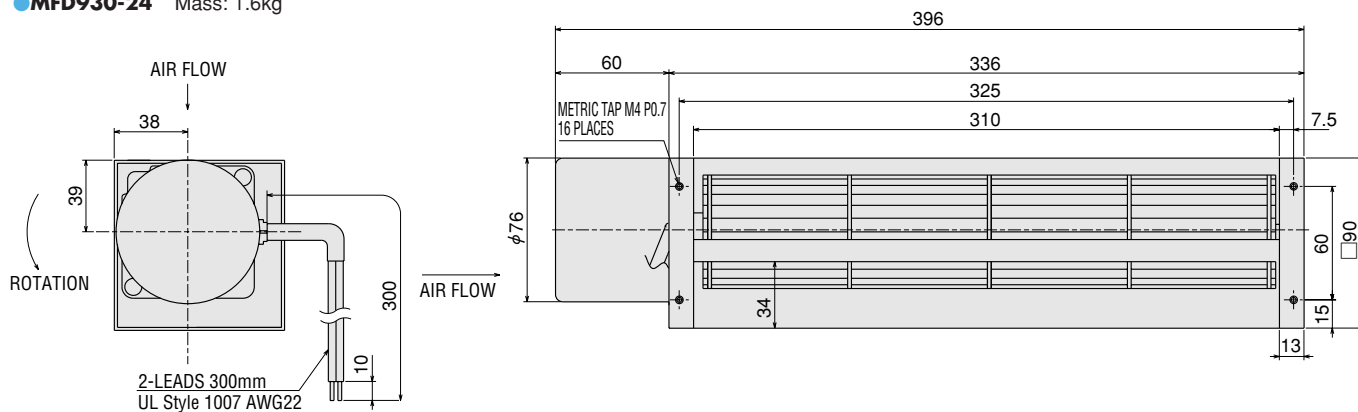
Audible Noise Frequency Analysis

Measure at a distance of 1m from the fan intake side

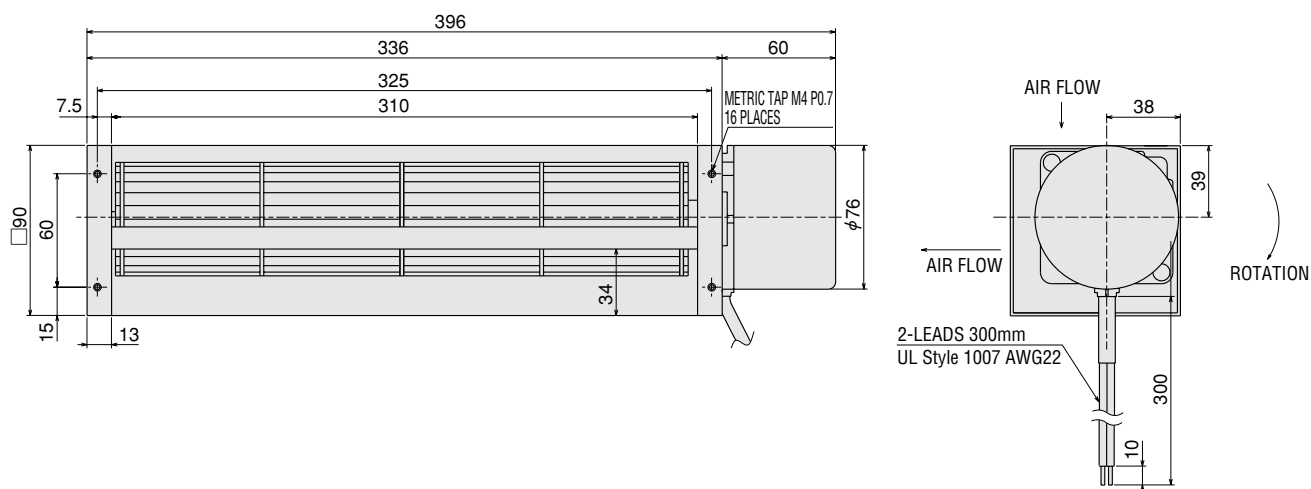


■ Dimensions (scale 1/4, Unit=mm)

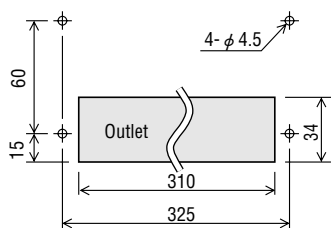
● **MFD930-24** Mass: 1.6kg



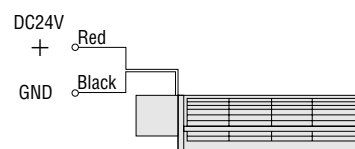
● **MFD930B-24** Mass: 1.6kg



■ Panel Cut-Out (unit=mm)



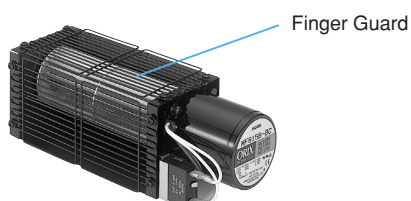
■ Wiring Diagram



■ Accessories (Sold separately)

Item	Model	Safety Standards	Page
Finger Guard	FG930D	*	C-98

* These products have been designed to pass tests set forth under the UL and CSA standards for equipment used in fans. They conform to the standards only when used in an **ORIX.FAN**.



* The photo shows two finger guards.

MFD Series

DC Cross Flow Fans

Length of Impeller

150mm**Materials**

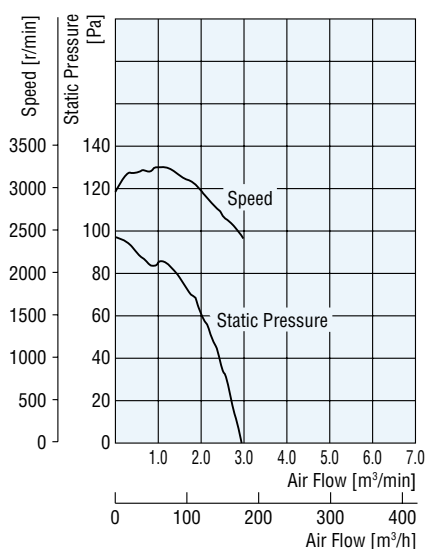
Impeller : Aluminum
Casing : Steel
Motor case : Die Cast Aluminum

Specifications

Model	Rated Voltage DC V	Rated Current A	Rated Speed r/min	Max. Air Flow m³/min(m³/h)	Max. Static Pressure Pa	Noise Level dB (A)
MFD915-24	24	1.0	2500	3.0 (180)	98	60
MFD915B-24						

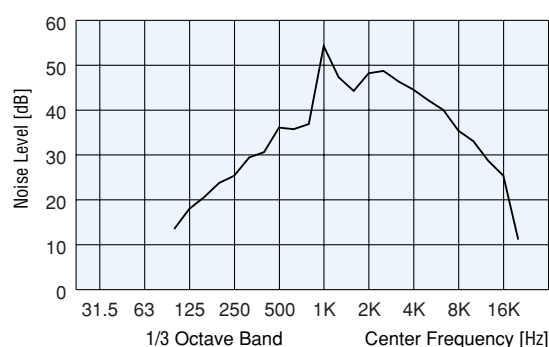
- Values for maximum air flow and maximum static pressure are measured by the double-chamber method.
- Noise level is measured in the A range, at a distance of 1m from the fan intake side
- Operating Voltage Range: $\pm 10\%$ of the rated voltage
- An overheat protection function is installed.

Air Flow – Static Pressure Characteristics



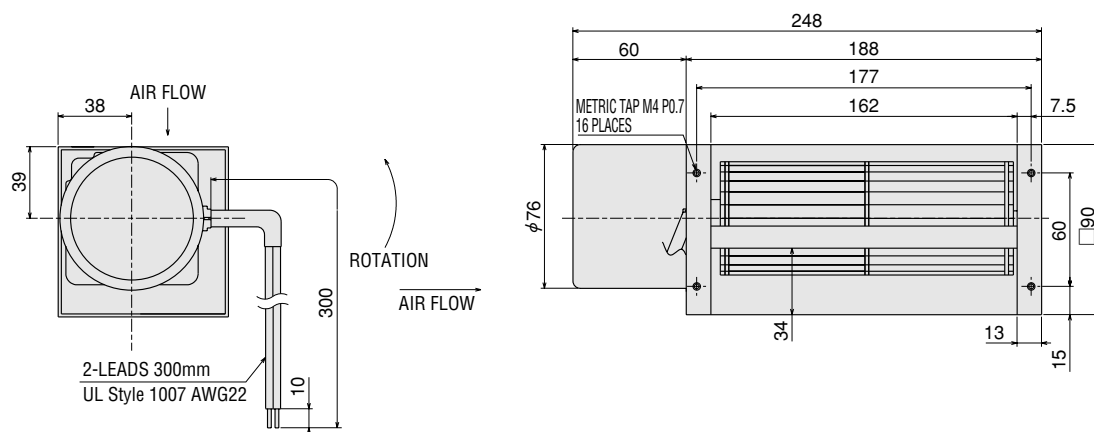
Audible Noise Frequency Analysis

Measure at a distance of 1m from the fan intake side

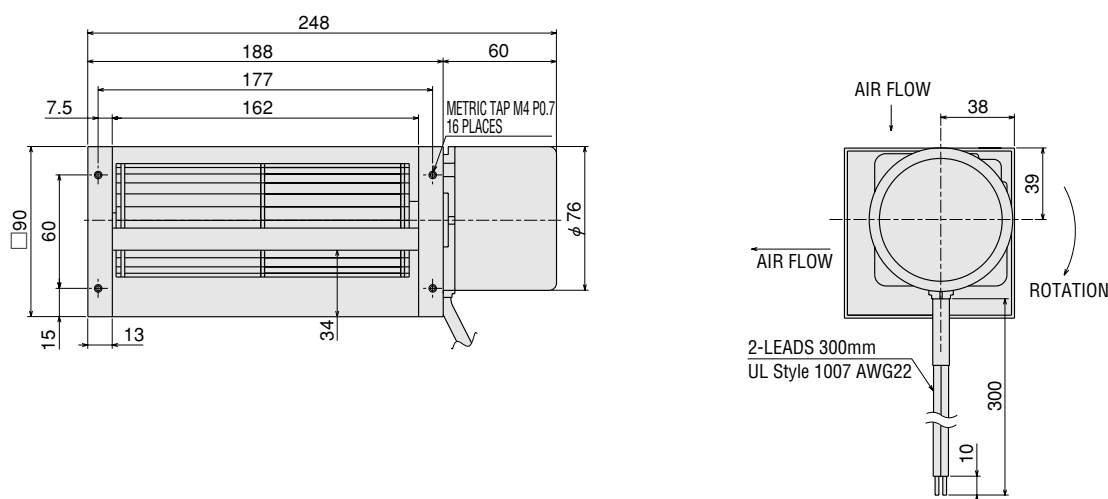


■ Dimensions (scale 1/4, Unit=mm)

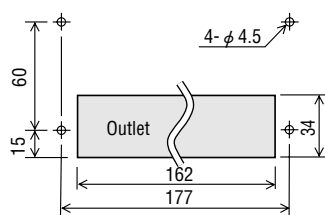
● **MFD915-24** Mass: 1.4kg



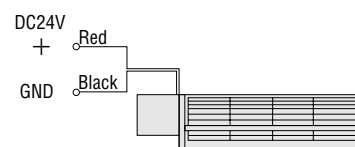
● **MFD915B-24** Mass: 1.4kg



■ Panel Cut-Out (unit=mm)



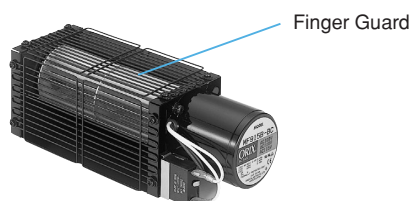
■ Wiring Diagram



■ Accessories (Sold separately)

Item	Model	Safety Standards	Page
Finger Guard	FG915D	*	C-98

* These products have been designed to pass tests set forth under the UL and CSA standards for equipment used in fans. They conform to the standards only when used in an **ORIX.FAN**.



* The photo shows two finger guards.



COOLING FANS

Axial Flow Fans	DC Long life MDE	AC MMS	AC MU	DC MDS-MD	Variable Flow		
Centrifugal Blowers		AC MB		DC MBD			
Cross Flow Fans		AC MF		DC MPD			
							Accessories



Accessories

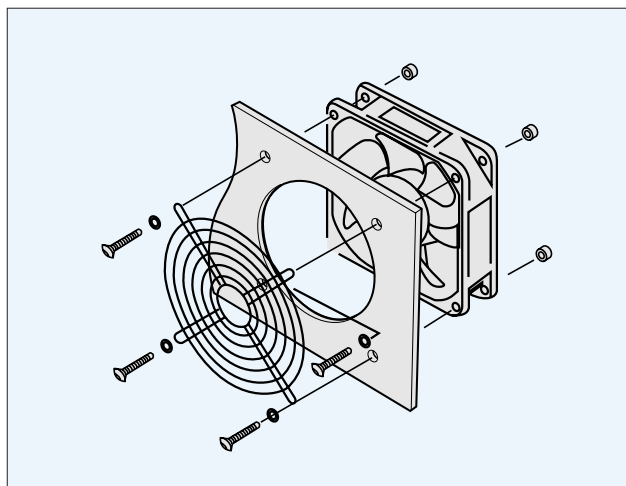
Finger Guards	C-98
Filters	C-101
Screens	C-103
Plug Cords	C-104
Duct Joints	C-104
Mountings for Centrifugal Blowers	C-105

Finger Guards

Finger guards are provided to eliminate the hazard posed by rotating fan blades. Finger guards are mounted by means of bolts and the mounting holes on the fan frame. New models have been added to meet safety standards.

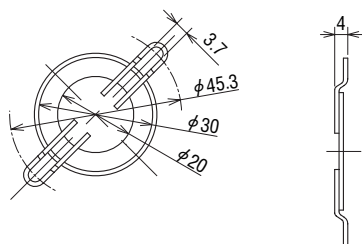
Material : Steel wire
(**FGB8, FGB10, FGB12** : Resin)
Finishing : Chrome plating
(**FG915D, FG930D** : Coating Black)

***Standards Conformance** : These finger guards are designed to pass tests required for devices that use fans as stipulated by UL and CSA standards. However, they conform to these standards only when used with **ORIX.FAN** products.

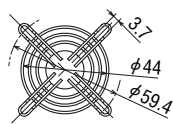


■ Dimensions (scale 1/4, unit=mm)

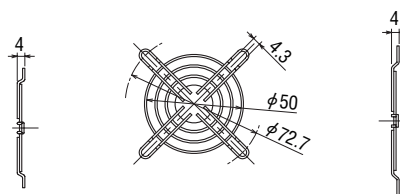
● **FG4D**...for **MDS410** (scale 1/2)
Mass: 4.2g
* Standards Conformance



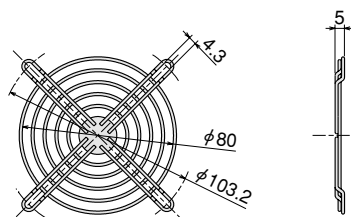
● **FG5D**...for **MDS510**
Mass: 7.7g
* Standards Conformance



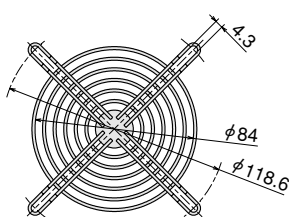
● **FG6D**...for **MD625**
Mass: 8.3g
* Standards Conformance



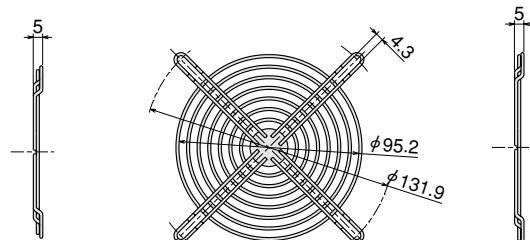
● **FG8D**...for **MD825, MU825**
Mass: 24g
* Standards Conformance



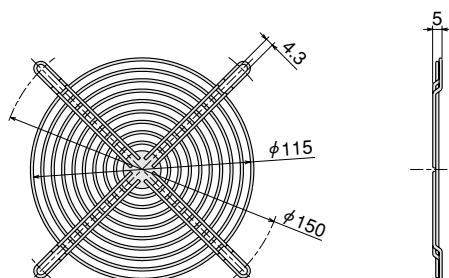
● **FG9D**...for **MD925, MU925**
Mass: 28g
* Standards Conformance



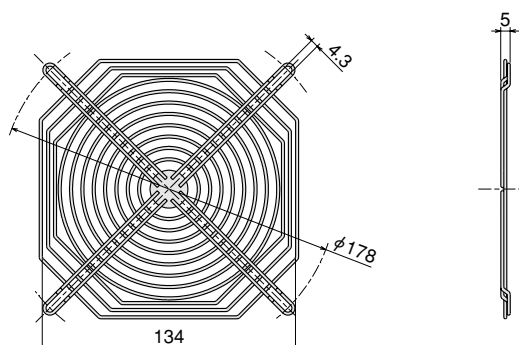
● **FG10D**...for **MU1025**
Mass: 34g
* Standards Conformance



● **FG12D**...for **MDS1225, MU1225, MU1238**
Mass: 45g
* Standards Conformance



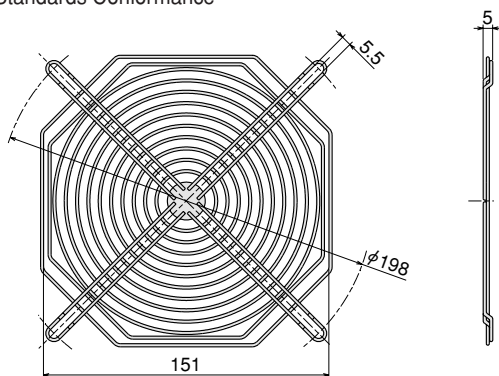
● **FG14D**...for **MU1428**
Mass: 64g
* Standards Conformance



● **FG16D** ...for **MRS16**

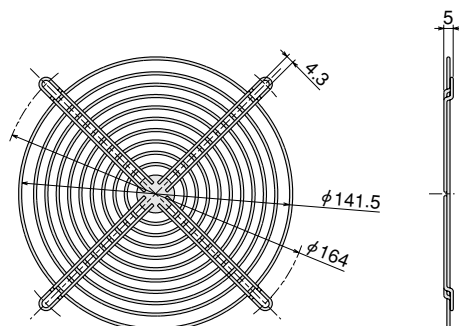
Mass: 75g

* Standards Conformance

● **FG17D** ...for **MDS1751**

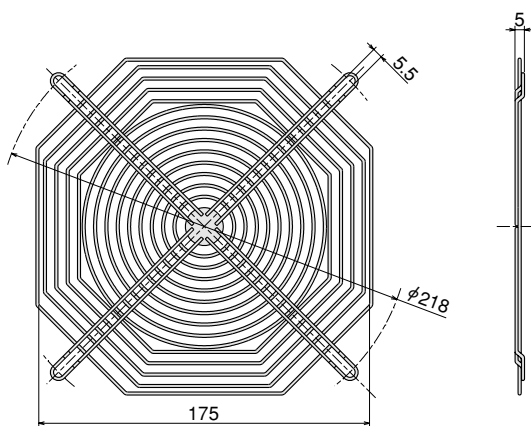
Mass: 57g

* Standards Conformance

● **FG18D** ...for **MRS18**

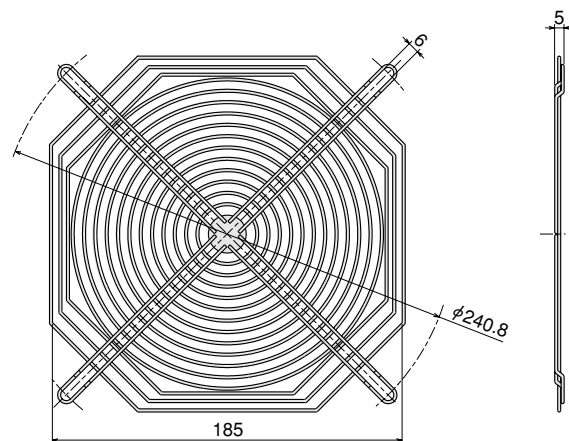
Mass: 95g

* Standards Conformance

● **FG20D** ...for **MRS20**

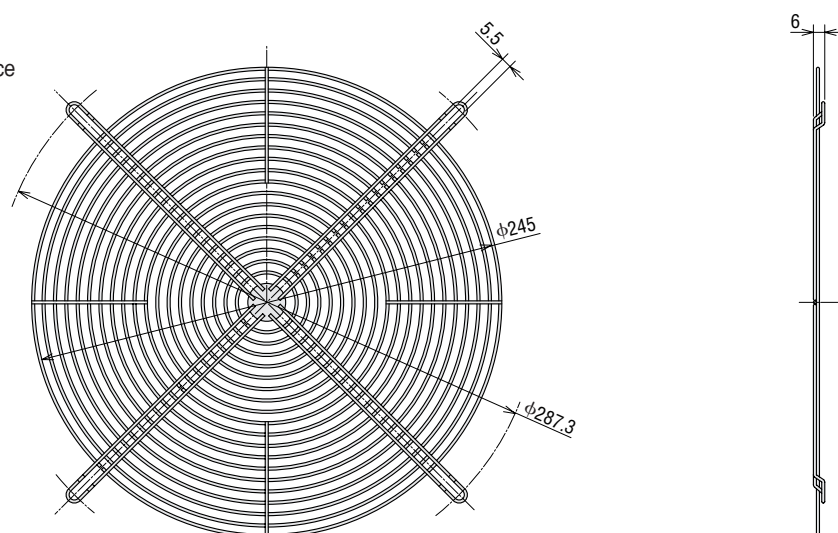
Mass: 105g

* Standards Conformance

● **FG25D** ...for **MRS25**

Mass: 160g

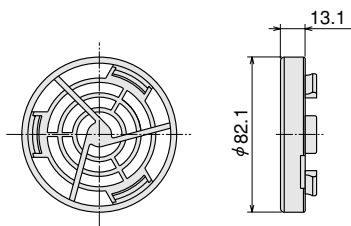
* Standards Conformance



● **FGB8** ...for **MB840, MBD8**

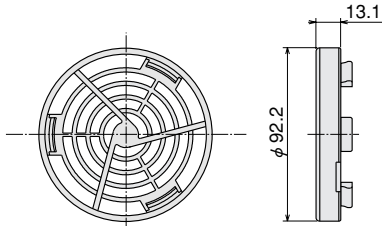
Mass: 34g

* Standards Conformance

● **FGB10** ...for **MB1040, MBD10**

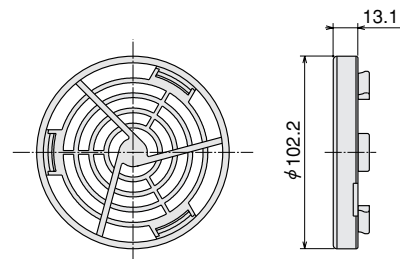
Mass: 38g

* Standards Conformance

● **FGB12** ...for **MB1255, MBD12**

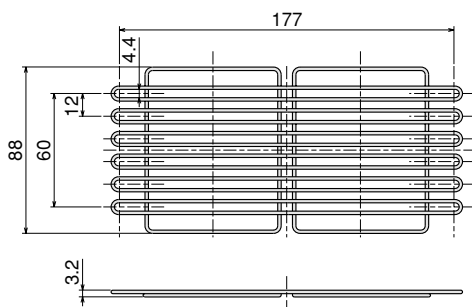
Mass: 40g

* Standards Conformance

● **FG915D** ...for **MF915 (B), MFD915 (B)**

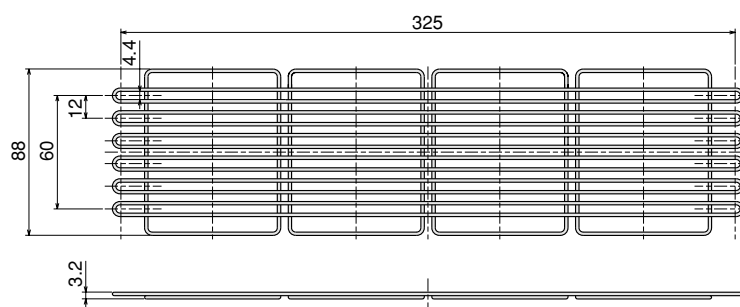
Mass: 45g

* Standards Conformance

● **FG930D** ...for **MF930 (B), MFD930 (B)**

Mass: 82g

* Standards Conformance



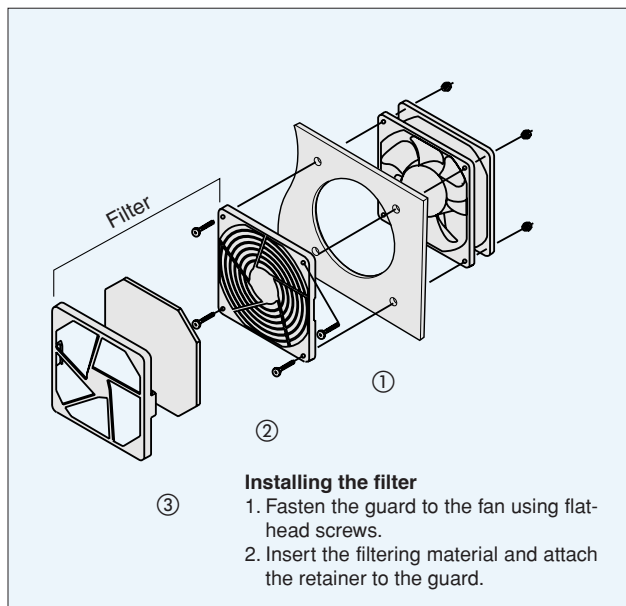
Filters

When using a fan to cool equipment, dust may accumulate inside the equipment after long periods of operation. Depending on the parts involved, this could cause a malfunction. These filters prevent dust from entering the device.

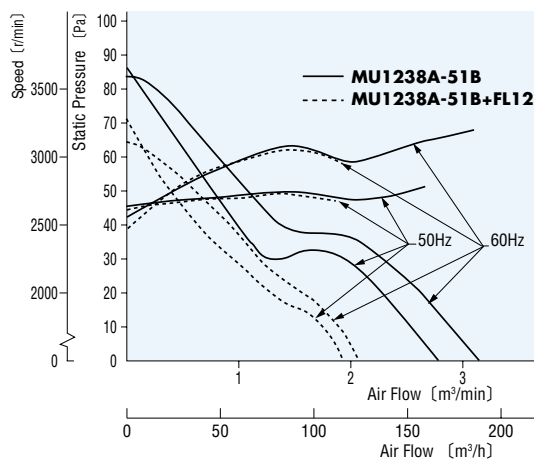
The filter consists of the following three parts.

- ① **Guard** Plastic finger guard
Flammability grade : V-0
- ② **Filtering material** : Polyurethane air-cleaning filter 20 ~ 45PPI
Treated with fire-resistant agent
- ③ **Retainer** : Plastic retainer for filtering material
Flammability grade : V-0

These filters are detachable and washable.



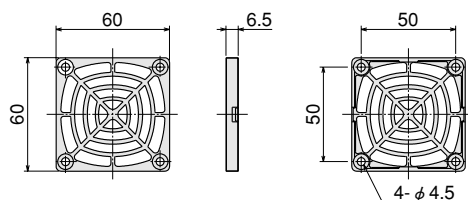
Air Flow-Static Pressure Characteristics When Using Filters



Dimensions (scale 1/4, unit=mm)

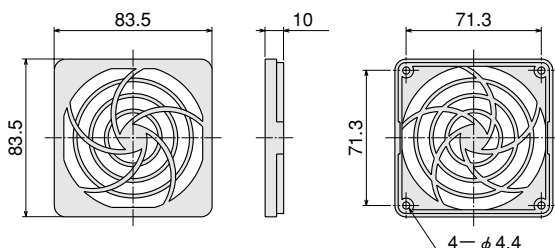
FL6 ...for MD625

Mass: 11g Filtering material: 45PPI



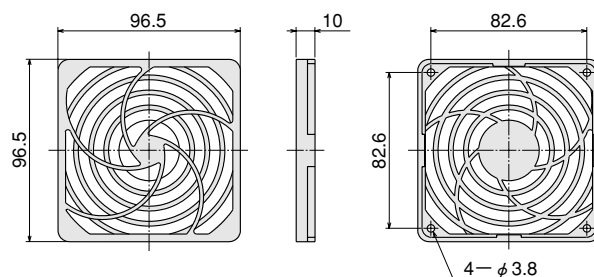
FL8 ...for MD825, MU825

Mass: 19g Filtering material: 20PPI

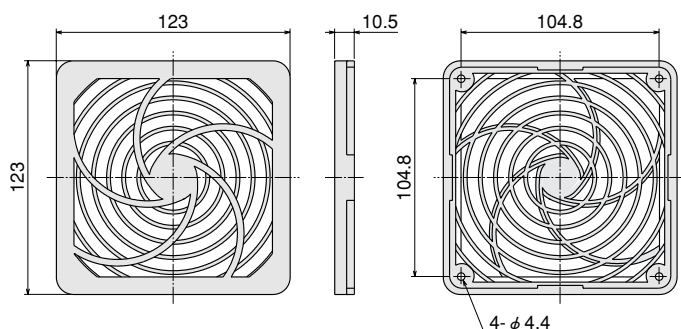


FL9 ...for MD925, MU925

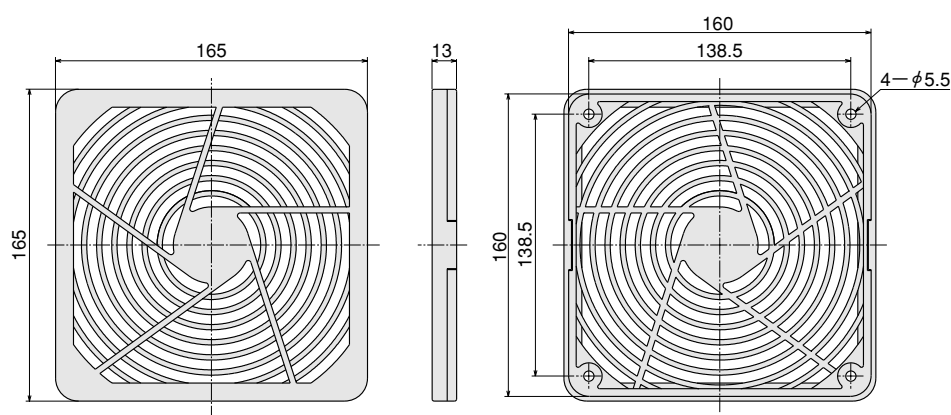
Mass: 26g Filtering material: 20PPI



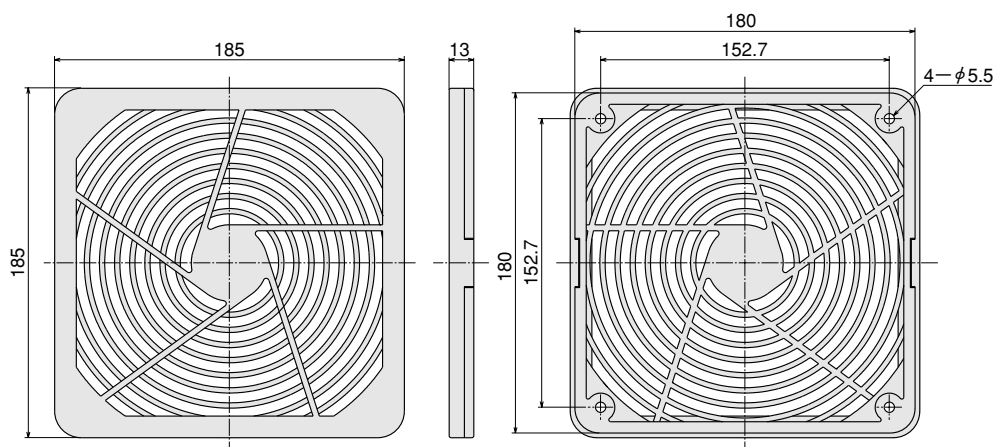
● **FL12** ...for **MDS1 225, MU1 225, MU1 238**
Mass: 46g Filtering material: 20PPI



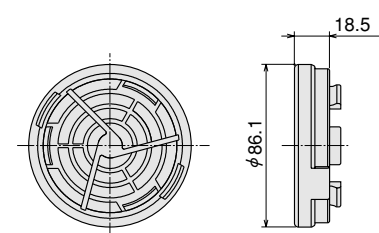
● **FL16** ...for **MRS16**
Mass: 126g Filtering material: 30PPI



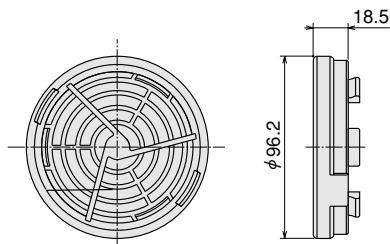
● **FL18** ...for **MRS18**
Mass: 165g Filtering material: 30PPI



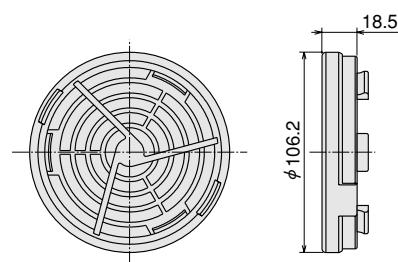
● **FLB8** ...for **MB840, MBD8**
Mass: 41g Filtering material: 30PPI



● **FLB10** ...for **MB1040, MBD10**
Mass: 47g Filtering material: 30PPI

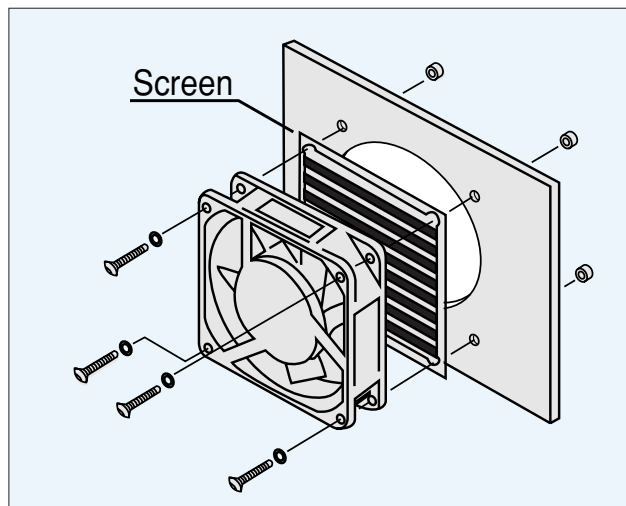


● **FLB12** ...for **MB1255, MBD12**
Mass: 52g Filtering material: 30PPI

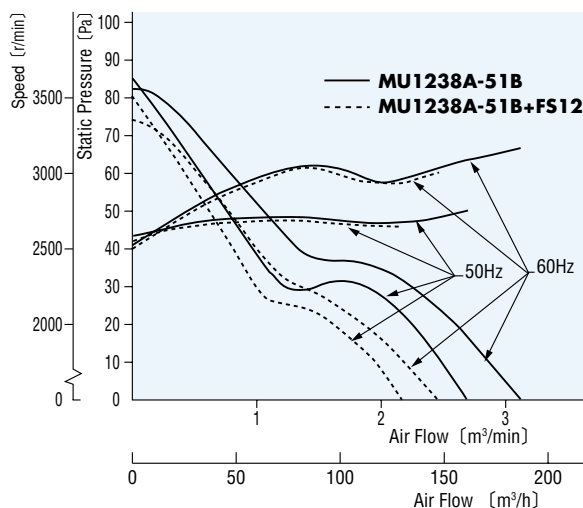


Screens

If fans are used to cool or ventilate equipment such as electronic devices that generate electromagnetic waves. These waves can escape from the fan cooling holes, causing interference to computers and measuring instruments. These screens allow the passage of air but block electromagnetic waves. By using an aluminum mesh fixed to a durable magnetic shield, screens are easily attachable to the fan using screws.

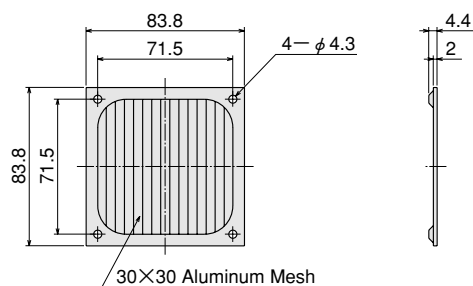


Air Flow-Static Pressure Characteristics when Using Screens.

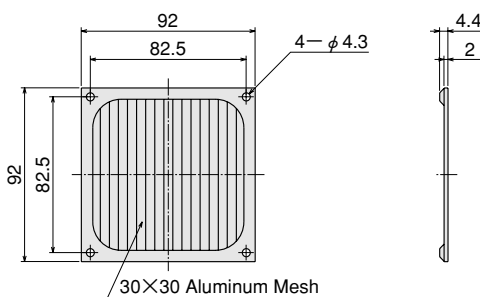


Dimensions (scale 1/4, unit=mm)

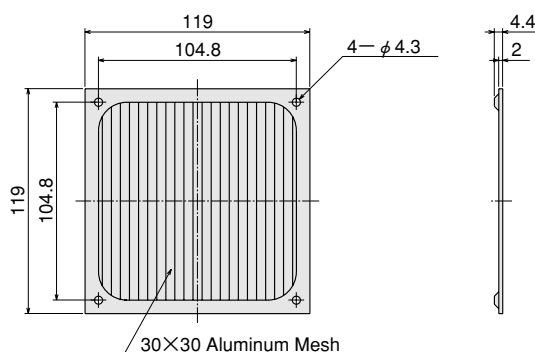
- **FS8** ...for **MD825, MU825**
Mass: 11g



- **FS9** ...for **MD925, MU925**
Mass: 12g



- **FS12** ...for **MD51225, MU1225, MU1238**
Mass: 18g



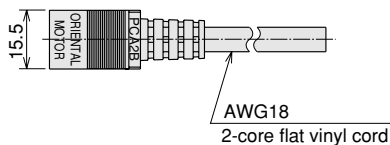
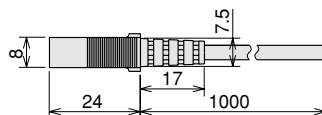
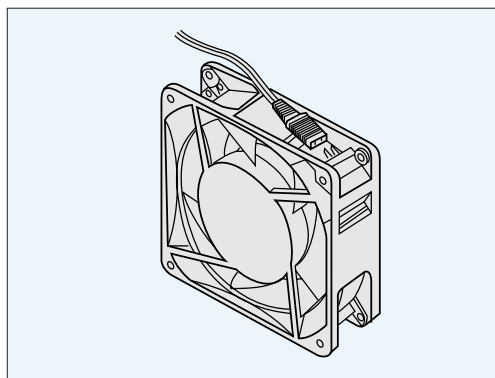
Plug Cords

These plug cords are for use with **MU** series axial flow fans and provide terminals for connection to the power supply.

*They conform to UL standard only when used in **ORIX.FAN**, and certified by CSA.

■ Dimensions (scale 1/2, unit=mm)

- **PCA2B...** for **MU** Series 1 m
UL recognized: UL File No.E58377(SP)
CSA certified: CSA File No.LR64028
Electrical Appliance and Material Control Law



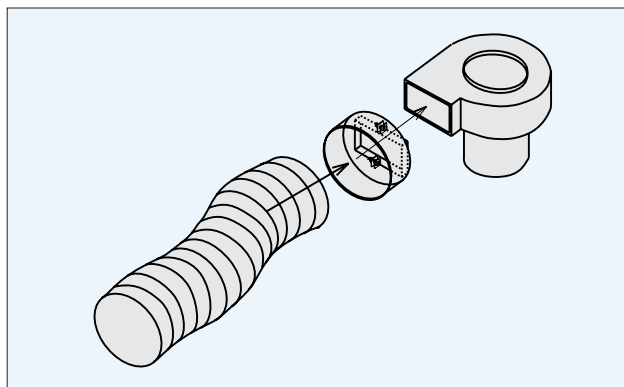
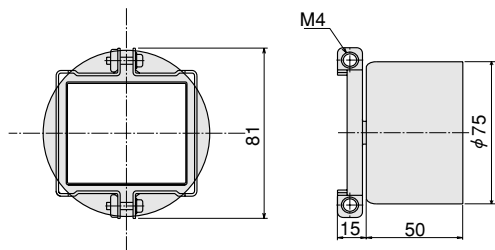
Duct Joints

These duct joints are used to connect the outlet side of the centrifugal blower and the duct.

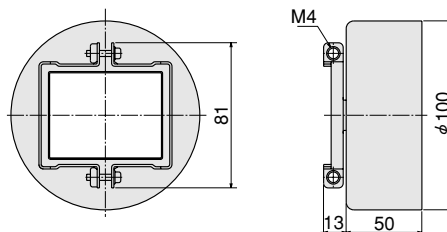
Material : Steel
Color : Dark gray

■ Dimensions (scale 1/4, unit=mm)

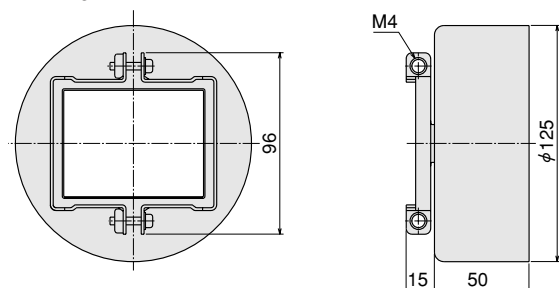
- **FD8...** for **MB840, MBD8**
Mass: 173g



- **FD10...** for **MB1040, MBD10**
Mass: 244g



- **FD12...** for **MB1255, MBD12**
Mass: 331g



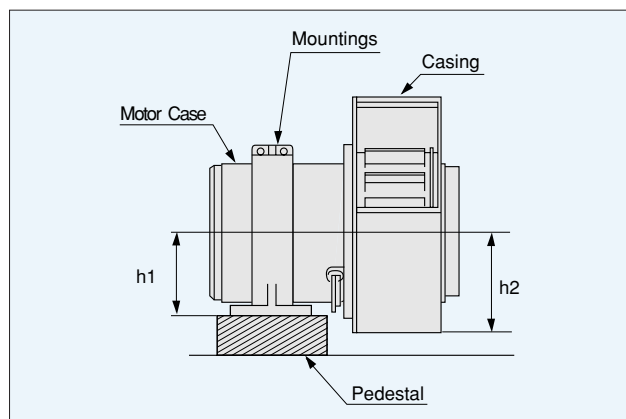
Mountings for Centrifugal Blowers

These mounting brackets are used to mount centrifugal blowers.

Material : **PAS2B, PAS4B** : Steel

PAS6A, PAS5A : Aluminum alloy

Color : Dark gray



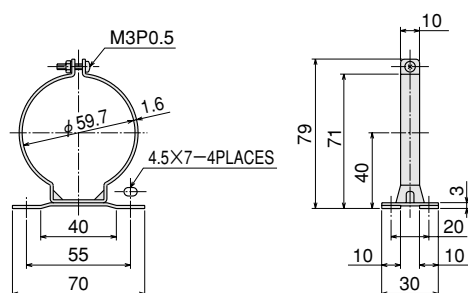
Note

For all the blowers except **MB520** and **MB630**, h2 is longer than h1. They are a pedestal must be used when mounting the blower so that the casing does not touch the surface to which the fan is fixed.

■ Dimensions (scale 1/4, unit=mm)

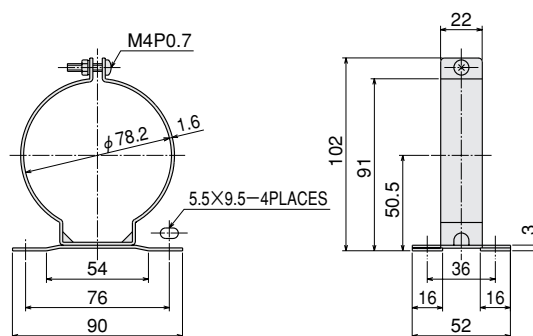
● PAS2B...for MB520, MB630

Mass: 52g



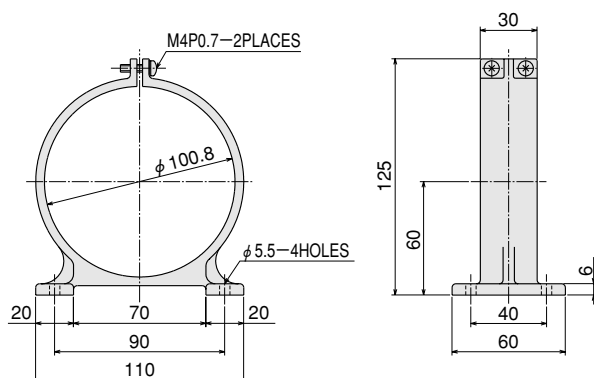
● PAS4B...for MB840, MB1040, MBD8, MBD10, MBD12

Mass: 125g



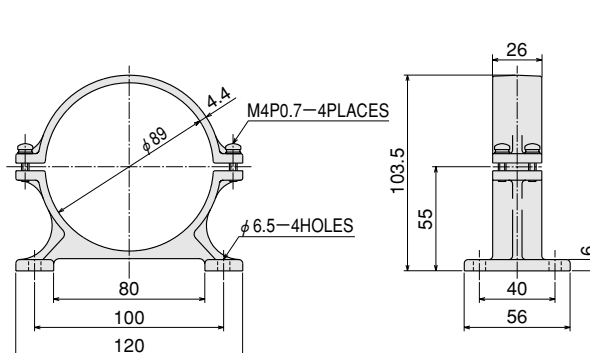
● PAS6A...for MB1255

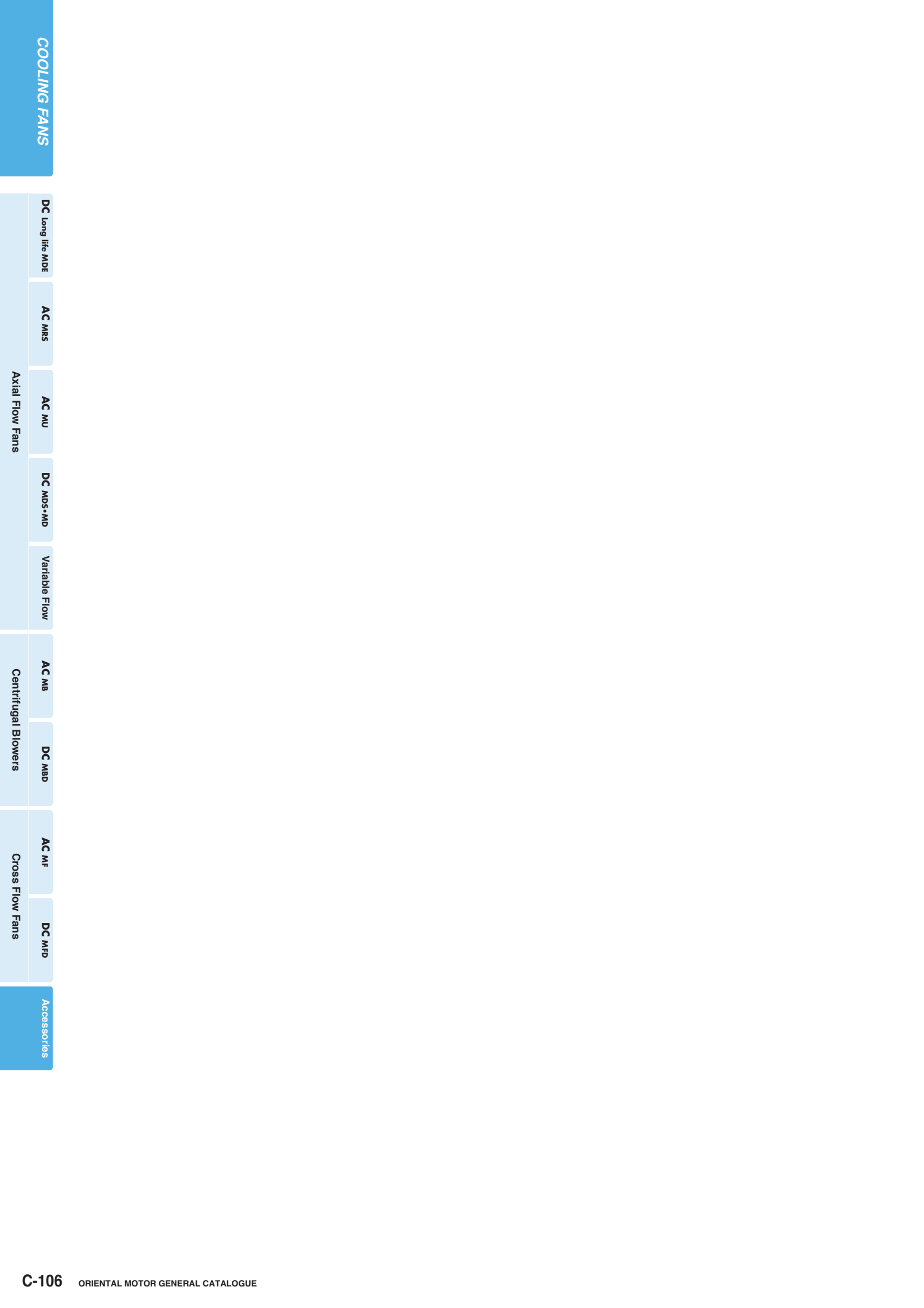
Mass: 177g



● PAS5A...for MB1665

Mass: 156g





COOLING FANS

Axial Flow Fans	DC Long life MDE	AC MMS	AC MU	DC MDS-MD	Variable Flow			
Centrifugal Blowers		AC MB		DC MBD				
Cross Flow Fans		AC MF		DC MFD				
Accessories								