

Optional Exhaust Fan

INTRODUCTION

Exhaust fans are used for ventilation in small spaces such as the work area of Ducted Fume Hoods or Class II Type B2 Biological Safety Cabinets. The fan moves large volumes of air through ducts and removes fumes from the area. The EQR/FC-FAN-PP0 is a centrifugal exhaust fan that has air entering from the axial direction and then discharges to the radial direction.

Key Features

- Chemical and corrosion-resistant plastic impeller and casing, specifically designed for corrosive fume hood applications.
- Single-block, high-density, UV-treated, and recyclable polypropylene homopolymer (PPH). No welded joints. Available in polypropylene (PP) construction suitable for most general fume hoods.
- Forward-curved centrifugal type impeller made of injection molded PPH. Fan wheel supplied with motor shaft bushing and hub cap constructed of PPH.
- Performance in accordance with AMCA 210-85 and ISO 5801.



EFD-B



LB2



EFA



PPH



FUME HOOD FAN SELECTION PROCEDURE

Calculate the air volume required by the hood; take the product of the sash height at which minimum inflow velocity will be considered, the inflow velocity specified, and the length (from side to side) of the hood.

A common inflow velocity specified is 0.5m/s or 100fpm; however, consult with your Laboratory Safety Officer for more information or contact your local Esco representative for advice on the appropriate hood inflow velocities; bear in mind that a higher inflow velocity does not necessarily result in a greater factor of containment and safety.

For example, when working in metric units:

Minimum inflow velocity at sash height of 0.65m


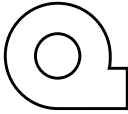



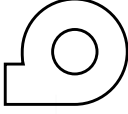
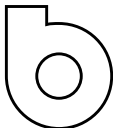

Minimum hood inflow velocity to be 0.5m/s 4ft hood size

Internal dimensions 1.12m across

Required hood exhaust volume = $0.65\text{m} \times 0.5\text{m/s} \times 1.12\text{m} = 0.364\text{m}^3/\text{s} = 1310\text{m}^3/\text{h}$

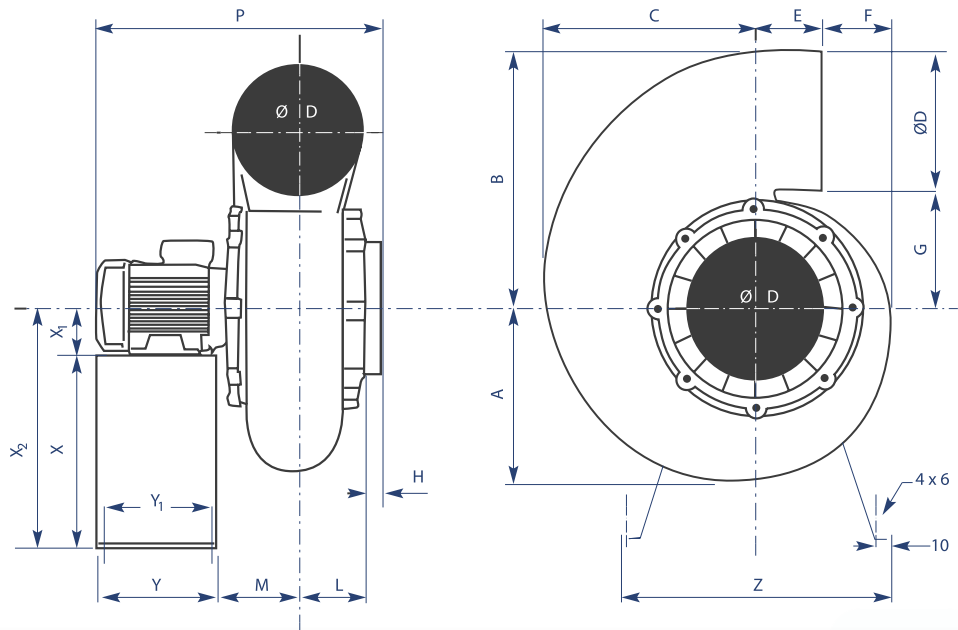
- Based on the requirements of the local installation site (length of ductwork, number of elbows, etc.), calculate the total system pressure loss of the ductwork run at the specified air volume.
- Correlating total system pressure loss with air volume, select an appropriate fan using the performance curves; as long as the fan can deliver the required air volume at system pressure loss equal or more than the calculated value, it can be used; we recommend, however, that a 20% contingency factor be included in the theoretical system pressure loss calculation.

AVAILABLE FAN ROTATIONS (VIEW FROM MOTOR END)

RD180 	RD 270 
RD 0 	RD 90 
LG 180 	LG 270 
LG 0 	LG 90 

Explosion-proof Motor Option is available upon request only. Contact Esco or your local distributor for more information.

ENGINEERING DRAWING



General Specifications	EQR/FC-FAN-PP025	EQR/FC-FAN-PP030	EQR/FC-FAN-PP035
Dimensions A	248 mm / 9.8"	300 mm / 11.8"	370mm / 14.6"
Dimensions B	365 mm / 14.3"	450 mm / 17.7"	570 mm / 22.4"
Dimensions C	310 mm / 12.2"	373 mm / 14.7"	450 mm / 17.7"
Dimensions D	200 mm / 7.9"	250 mm / 9.8"	315 mm / 12.4"
Dimensions E	103 mm / 4.1"	117 mm / 4.6"	130 mm / 5.1"
Dimensions F	92 mm / 3.6"	112 mm / 4.4"	170 mm / 6.7"
Dimensions G	165 mm / 6.5"	198 mm / 7.8"	255 mm / 10.0"
Dimensions H	35 mm / 1.4"	35 mm / 1.4"	60 mm / 2.4"
Dimensions L	95 mm / 3.7"	110 mm / 4.3"	150 mm / 5.9"
Dimensions M	105 mm / 4.1"	120 mm / 4.7"	170 mm / 6.7"
Dimensions P	430 mm / 16.9"	540 mm / 21.3"	792 mm / 31.2"
Dimensions X	300 mm / 11.8"	370 mm / 14.6"	468 mm / 18.4"
Dimensions X ₁	71 mm / 2.8"	90 mm / 3.5"	112 mm / 4.4"
Dimensions X ₂	371 mm / 14.6"	460 mm / 18.1"	580 mm / 22.8"
Dimensions Y	180 mm / 7.1"	240 mm / 9.4"	350 mm / 13.8"
Dimensions Y ₁	160 mm / 6.3"	220 mm / 8.7"	314 mm / 12.4"
Dimensions Z	420 mm / 16.5"	460 mm / 18.1"	600 mm / 23.6"
Motor Speeds	1450 rpm		
Inlet / Outlet Diameters	254 mm / 10" internal measurements; or 305 mm / 12" internal measurements		
Motor / Fan Speeds	1500 rpm (motor) / Approx 1400 rpm (fan)		
Power Consumption	0.37 kW	1.1 kW	5.5 kW
Power Supply	220-240V/415V, 3 phase, 50/60 Hz		

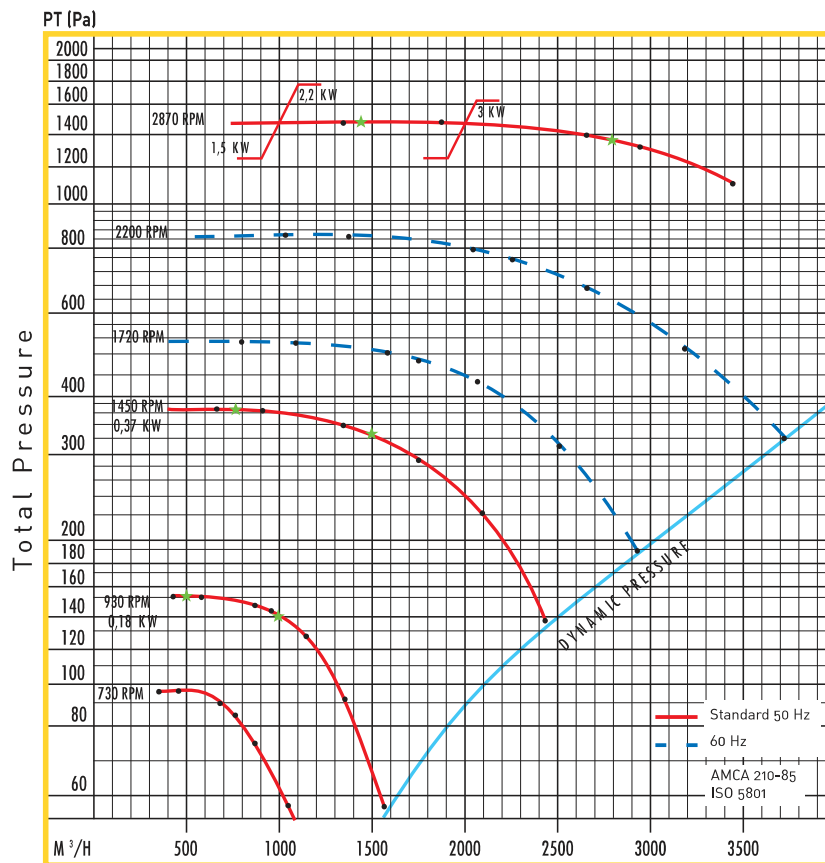
When ordering exhaust fans, please specify: desired fan rotation (refer to page 3), inlet / outlet diameters (should be the same as that of fume hood with which fan will be used), and the power supply.

NOTE: For fans with inlet diameters smaller than the exhaust collar diameter (see Dimension D above), i.e. PP025 with 7.9" for an EFH-4AX with 10" exhaust collar, a reducer is necessary for connection. However, to maintain low pressure loss, do not install reducer with the exhaust collar. Use 10" ductwork, and install reducer at the connection of the ductwork to the exhaust fan.

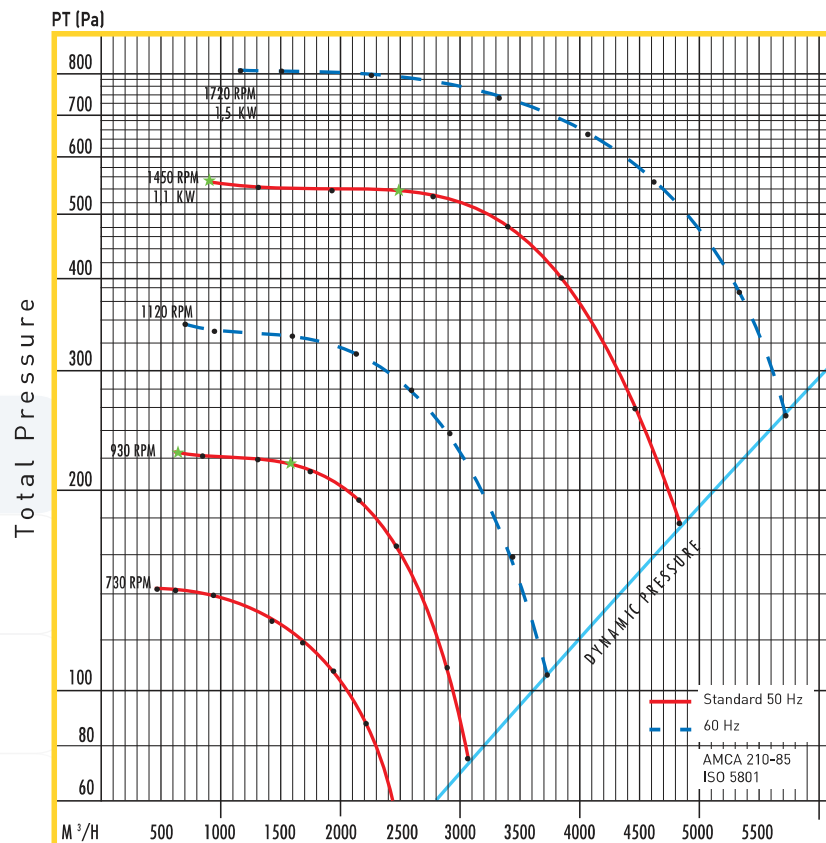
Optional Exhaust Fan

ESCO FUME HOOD FAN PERFORMANCE CURVES

EQR/FC-FAN-PP025

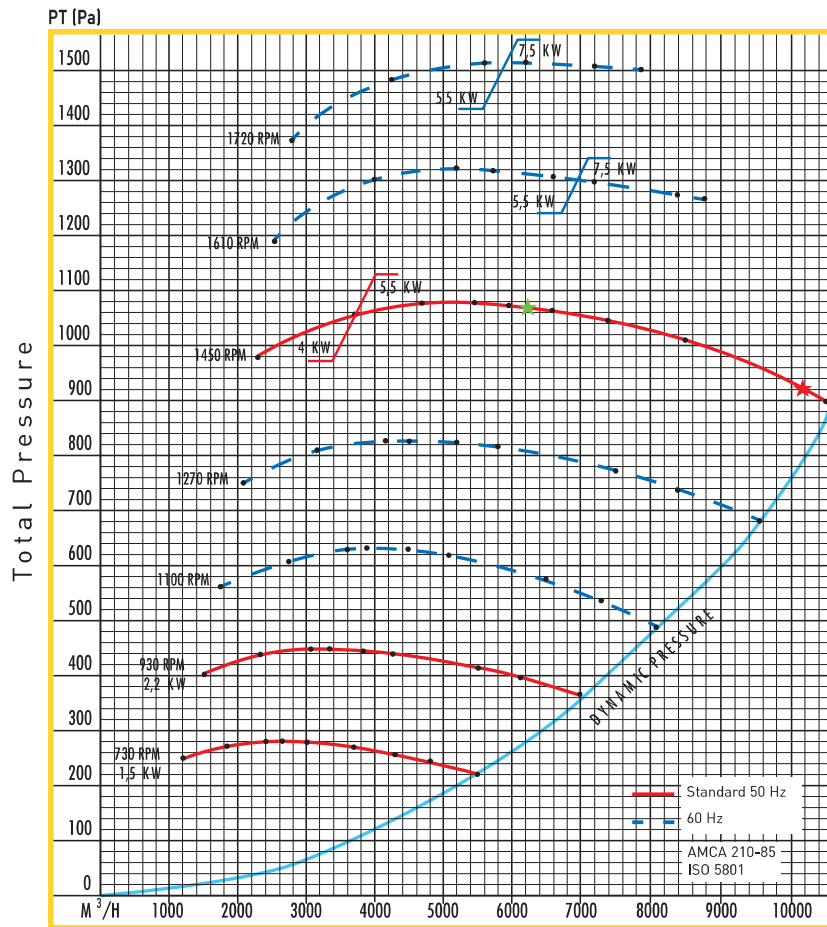


EQR/FC-FAN-PP030



ESCO FUME HOOD FAN PERFORMANCE CURVES

EQR/FC-FAN-PP035

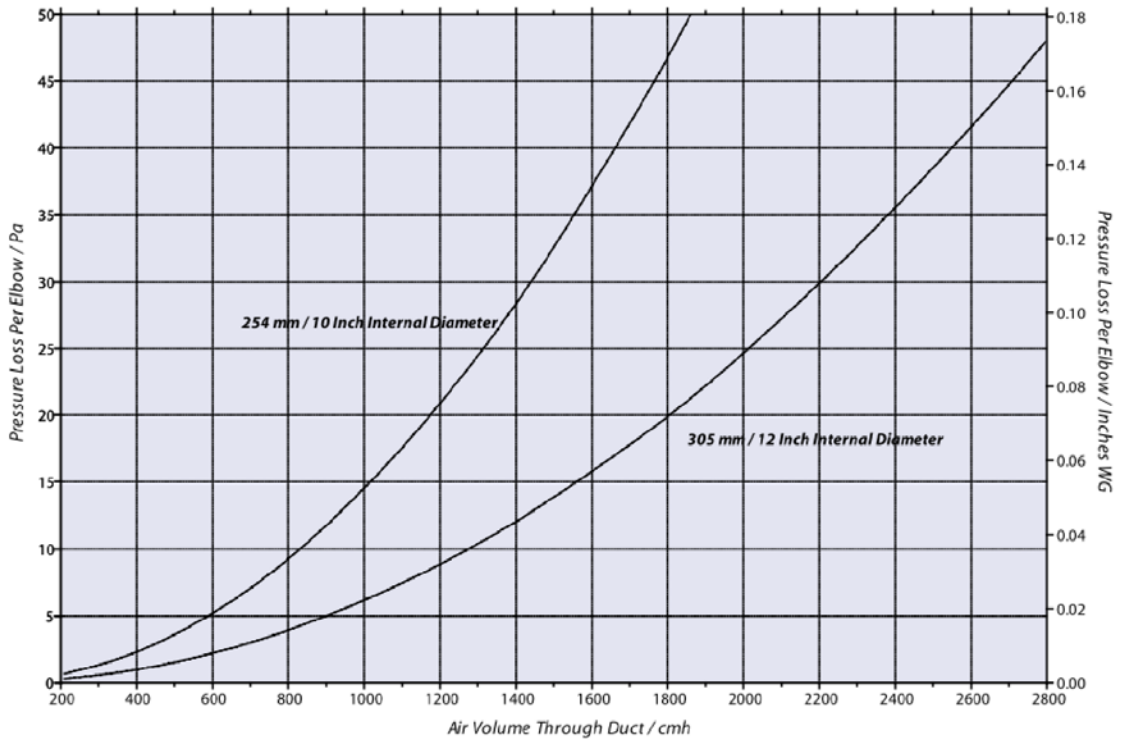


To convert cubic metres per hour (CMH) to cubic feet per minute (CFM) divide value in CMH by 1.7.

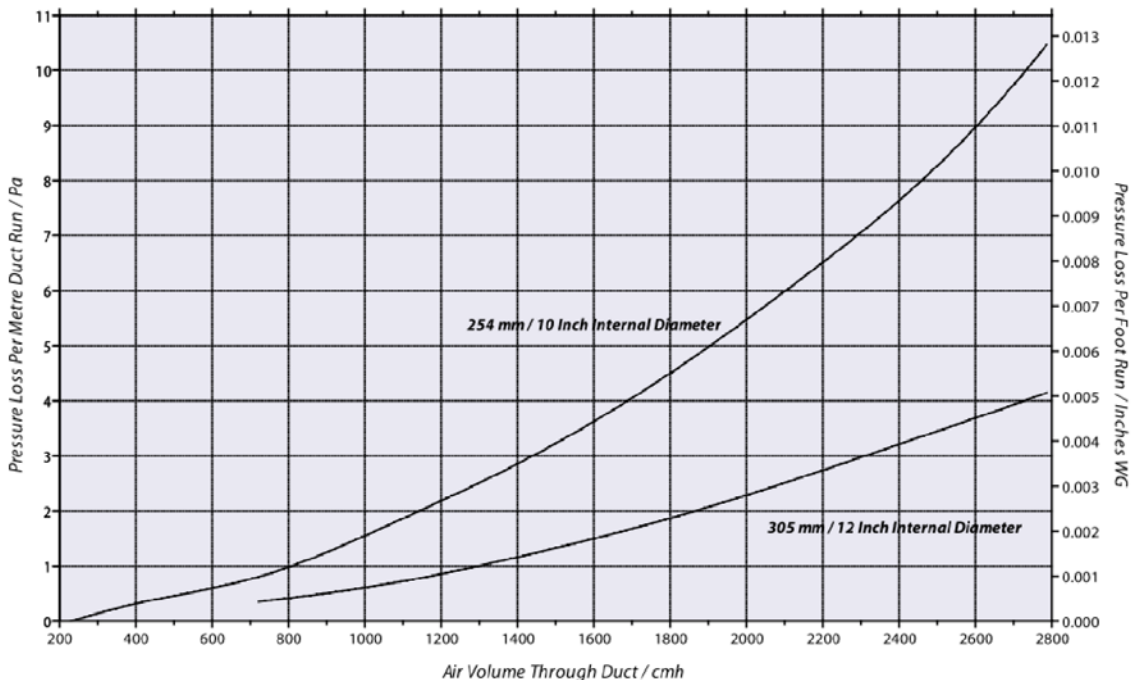


REFERENCE TABLES

STATIC PRESSURE LOSS CHART FOR 10-INCH DIAMETER 90° ELBOW BENDS



STATIC PRESSURE LOSS CHART FOR CIRCULAR DUCTWORK

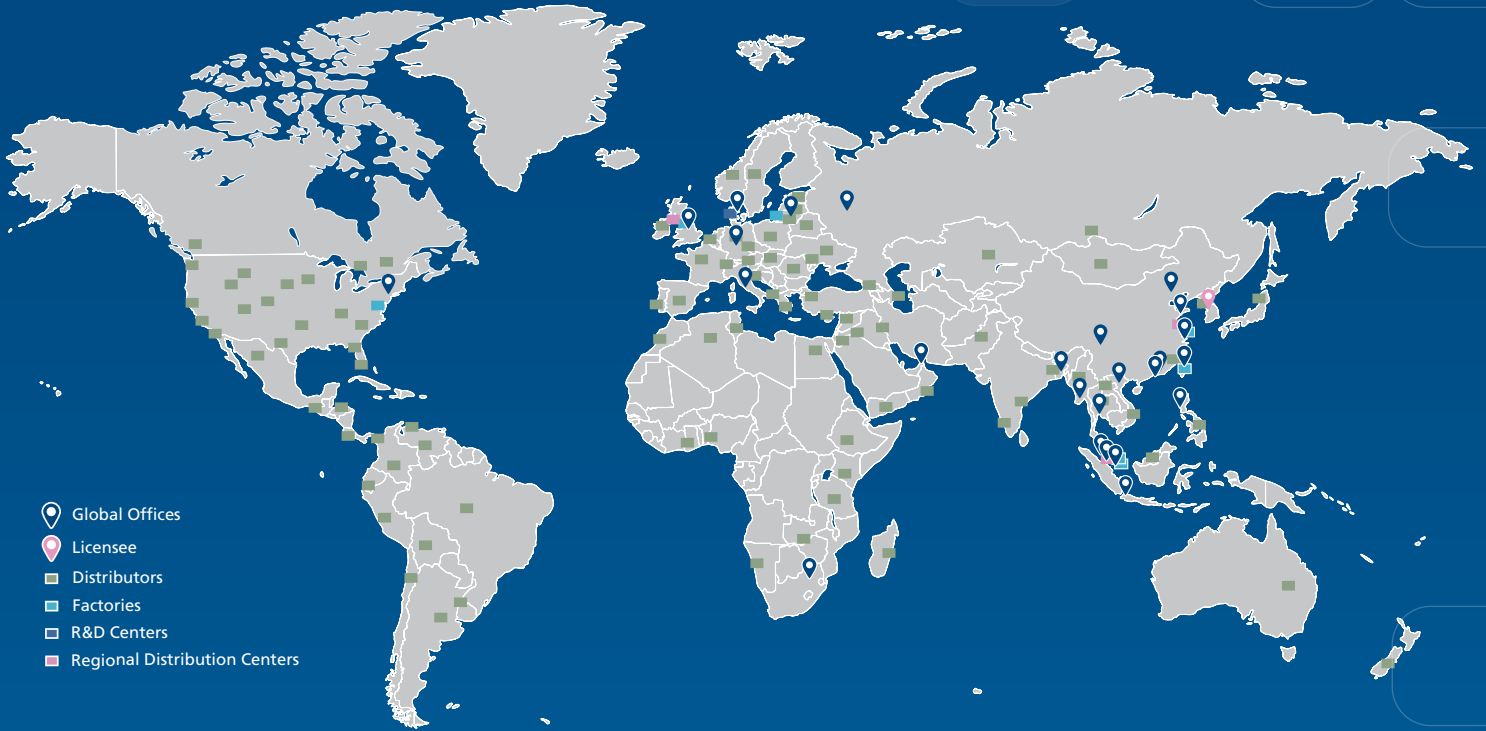


To convert cubic feet minute (CFM) to cubic metres per hour (CMH) multiply value in CFM by 1.7.

NOTE: Charts reflect values for standard air density at sea level; approx 14°C. When the exhaust system is designed to operate above 610m altitude, below 0°C or above 49°C, the duct pressure loss obtained must be corrected for air density. Ductwork in use is assumed to be typical uPVC or uncoated / galvanised steel. The use of different duct materials will affect real-life static losses.

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