FBE

Centrifugal fan with high overall efficiency



MOVEX
PURE ADVANTAGE



Centrifugal fan with high overall efficiency

MOVEX FBE - an energy-efficient fan designed for industrial environments which can be installed both indoors and outdoors. For extraction of non-explosive gases, fumes, lighter particles and with an airflow of up to 7400 cfm. The backward curved blade impeller is made of aluminum for the FBE 076 / 156 / 206 / 406 models, and welded galvanized sheet metal for the FBE 556 / 1006 / 1506 models.

The fan is optimized for use together with the Movex fume extraction and automatic control range. All versions are tested according to ISO 5801 measurement category C. FEI (Fan Energy Index) are shown in the fan charts. Several accessories are available for the FBE series, designed to make installation and operation easier and more efficient.

Sound power level[1]

(Hz)	Lw dB(A)
63	55
125	59
250	73
500	76
1000	72
2000	68
4000	73
8000	63
Lwt dB(A)	**81**

[1] Data measured at energy-optimal operating point.



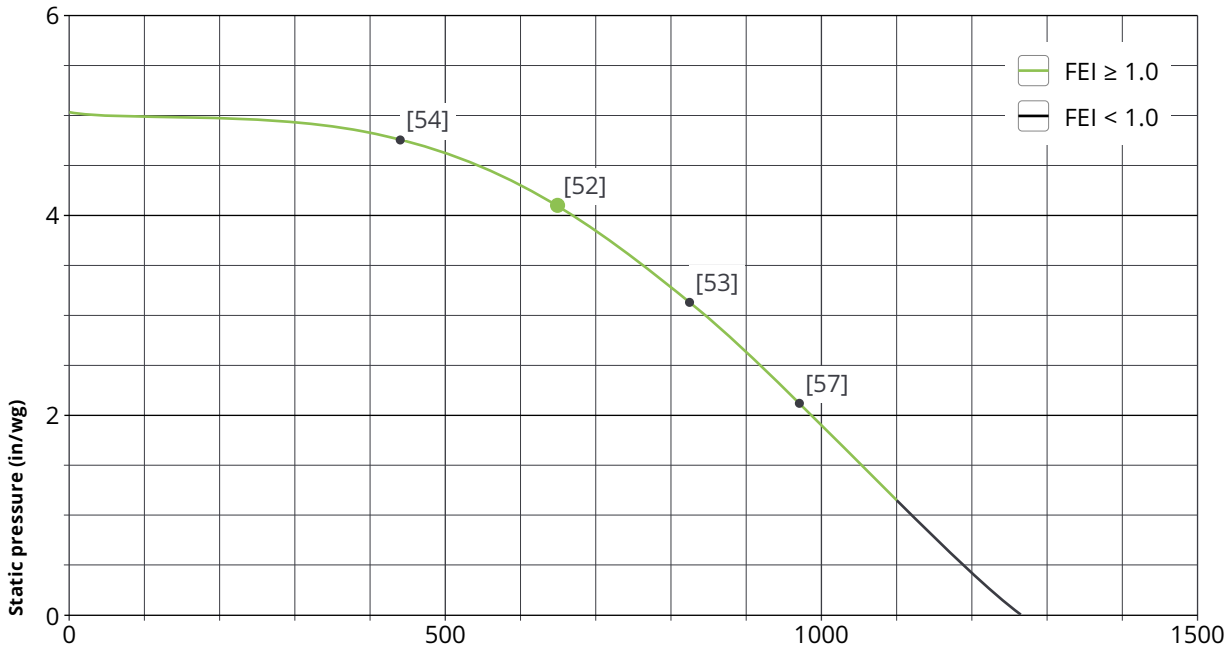


FBE **076**

Technical data (1-phase/3-phase)

Weight:..... 48/45 lb
Voltage:..... 115 V 1N~/208-230 V 3~/460 V 3~
Frequency:..... 60 Hz
Power:..... 0.75 Hp
Rated current: 6.8/2.43-2.46/1.23 A

Speed:..... 3430/3470/3470 rpm
Enclosure class:..... IP55
Max. operating temperature:. 176 °F
Ambient temperature:..... -4 °F to +104 °F



[ ] Sound pressure level Lp dB(A) 40 feet from fan at hemispherical sound propagation in free field with ducted inlet and free-blowing outlet side.

● Energy-optimal operating point





Sound power level[1]

(Hz)	Lw dB(A)
63	60
125	66
250	78
500	82
1000	81
2000	78
4000	74
8000	65
Lwt dB(A)	**86**

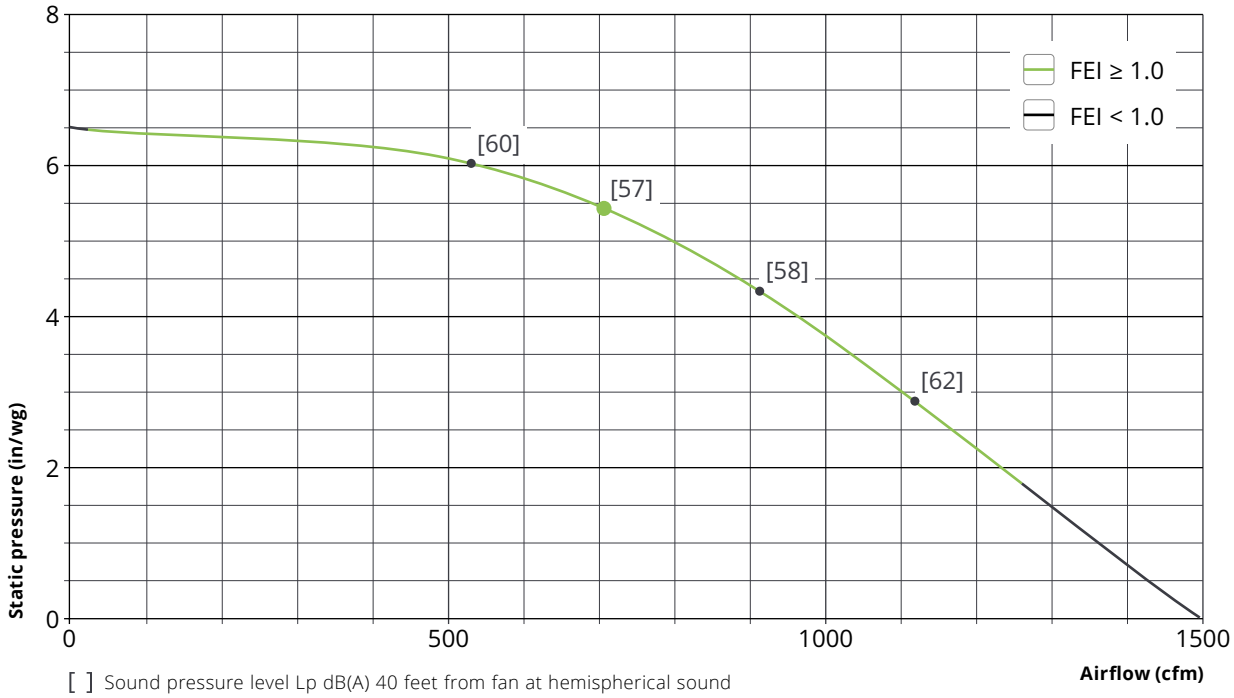
[1] Data measured at energy-optimal operating point.

FBE **156**

Technical data (1-phase/3-phase)

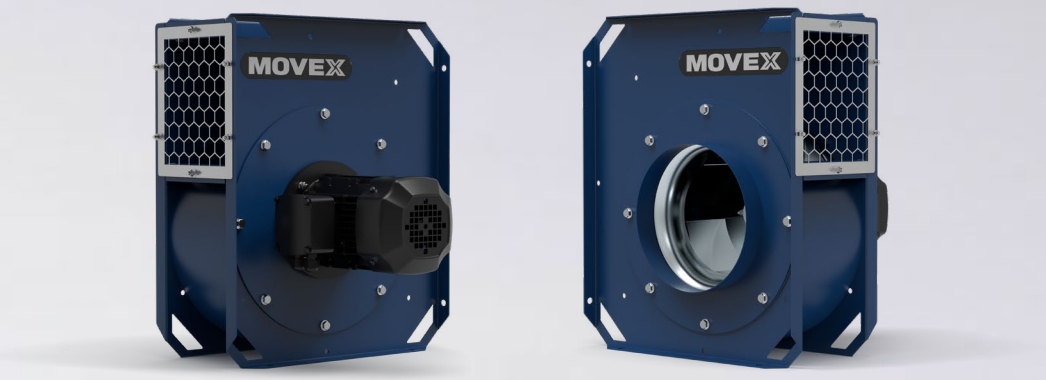
Weight: ..... 58/56 lb
Voltage: ..... 115 V 1N~/230 V 1N~
208-230 V 3~/460 V 3~
Frequency:..... 60 Hz
Power: ..... 1.5 Hp
Rated current: 14.6/7.3/4.14-4.10/2.05 A

Speed: 3390/3390/
3510/3510 rpm
Enclosure class: IP55
Max. operating temperature:. 176 °F
Ambient temperature:..... -4 °F to +104 °F



[ ] Sound pressure level Lp dB(A) 40 feet from fan at hemispherical sound propagation in free field with ducted inlet and free-blowing outlet side.

● Energy-optimal operating point



Sound power level[1]

(Hz)	Lw dB(A)
63	69
125	70
250	80
500	86
1000	82
2000	79
4000	77
8000	67
Lwt dB(A)	**89**

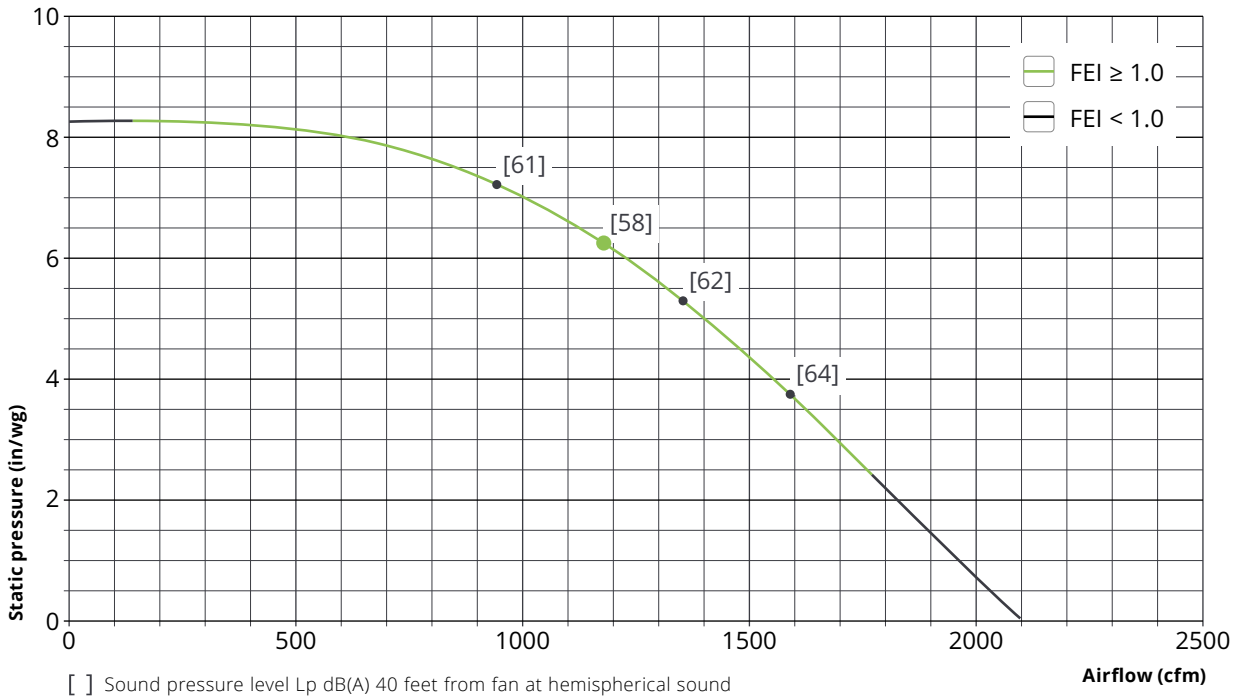
[1] Data measured at energy-optimal operating point.

FBE **206**

Technical data (3-phase)

Weight: ..... 69 lb
Voltage: ..... 208-230/460 V 3~
Frequency:..... 60 Hz
Power: ..... 2.0 Hp
Rated current: 6.16-5.57/2.79 A

Speed: ..... 3520 rpm
Enclosure class: IP55
Max. operating temperature:. 176 °F
Ambient temperature:..... -4 °F to +104 °F



[ ] Sound pressure level Lp dB(A) 40 feet from fan at hemispherical sound propagation in free field with ducted inlet and free-blowing outlet side.

● Energy-optimal operating point





Sound power level[1]

(Hz)	Lw dB(A)
63	69
125	80
250	81
500	85
1000	85
2000	82
4000	80
8000	80
Lwt dB(A)	**90**

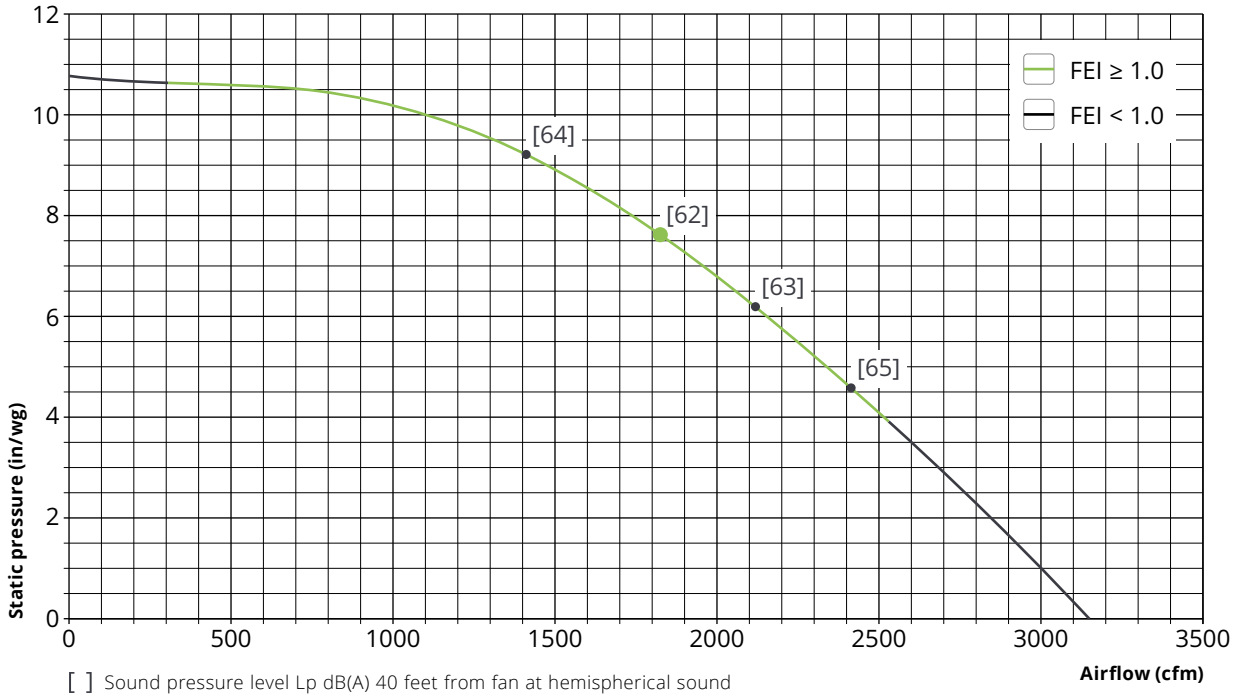
[1] Data measured at energy-optimal operating point.

FBE **406**

Technical data (3-phase)

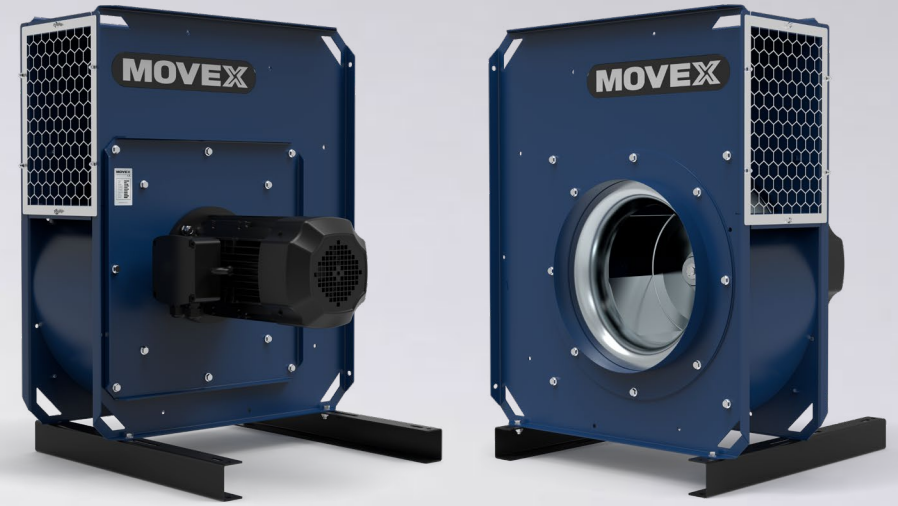
Weight:..... 91 lb
Voltage:..... 208-230/460 V 3~
Frequency:..... 60 Hz
Power:..... 4.0 Hp
Rated current:..... 10.7-9.89/4.95 A

Speed:..... 3500 rpm
Enclosure class:..... IP55
Max. operating temperature:. 176 °F
Ambient temperature:..... -4 °F to +104 °F



[ ] Sound pressure level Lp dB(A) 40 feet from fan at hemispherical sound propagation in free field with ducted inlet and free-blowing outlet side.

● Energy-optimal operating point



Sound power level[1]

(Hz)	Lw dB(A)
63	67
125	78
250	86
500	91
1000	89
2000	88
4000	82
8000	75
Lwt dB(A)	**95**

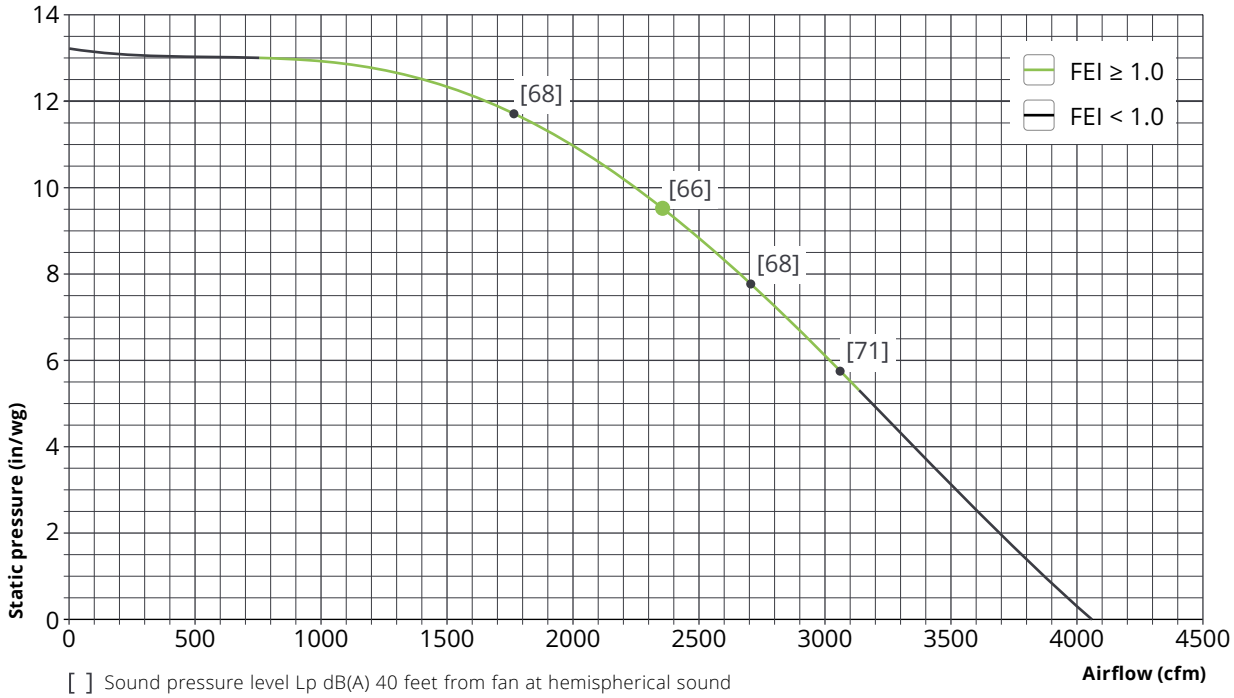
[1] Data measured at energy-optimal operating point.

FBE **556**

Technical data (3-phase)

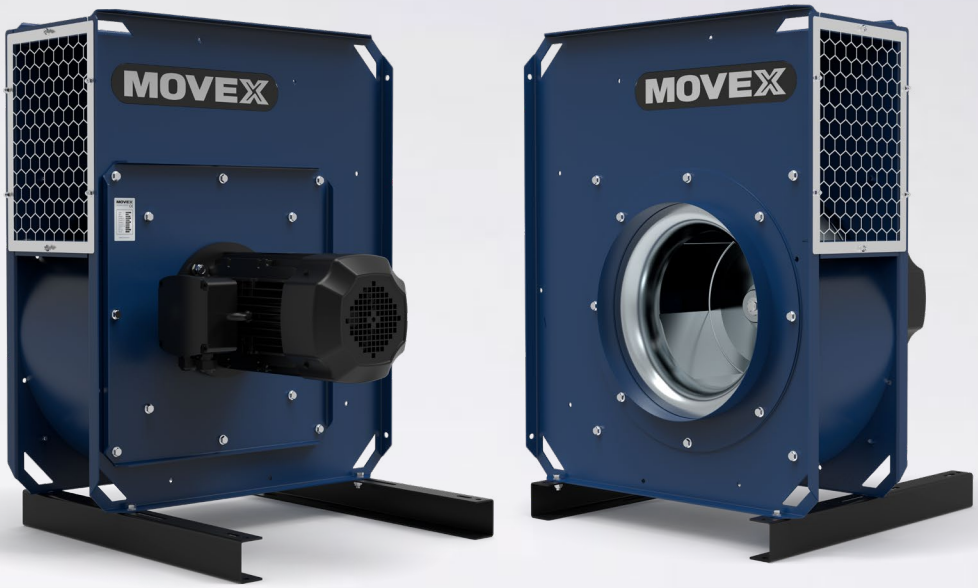
Weight: ..... 164 lb
Voltage: ..... 208-230/460 V 3~
Frequency: ..... 60 Hz
Power: ..... 5.5 Hp
Rated current: ..... 13.6-12.6/6.3 A

Speed: ..... 3510 rpm
Enclosure class: IP55
Max. operating temperature: . 176 °F
Ambient temperature: ..... -4 °F to +104 °F



[ ] Sound pressure level Lp dB(A) 40 feet from fan at hemispherical sound propagation in free field with ducted inlet and free-blowing outlet side.

● Energy-optimal operating point



Sound power level[1]

(Hz)	Lw dB(A)
63	77
125	78
250	89
500	94
1000	93
2000	92
4000	85
8000	78
Lwt dB(A)	**99**

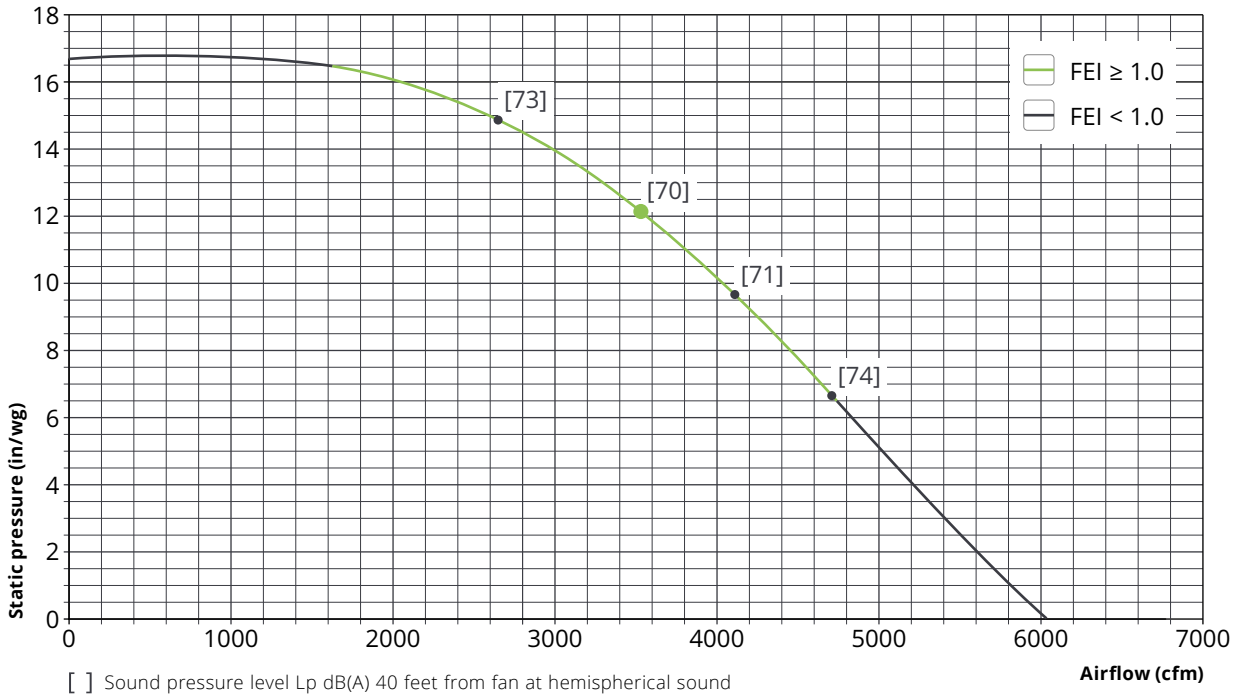
[1] Data measured at energy-optimal operating point.

FBE **1006**

Technical data (3-phase)

Weight: ..... 262 lb
Voltage: ..... 208-230/460 V 3~
Frequency: ..... 60 Hz
Power: ..... 10.0 Hp
Rated current: ..... 25.8-22.6/11.3 A

Speed: ..... 3520 rpm
Enclosure class: IP55
Max. operating temperature: . 176 °F
Ambient temperature: ..... -4 °F to +104 °F



[ ] Sound pressure level Lp dB(A) 40 feet from fan at hemispherical sound propagation in free field with ducted inlet and free-blowing outlet side.

● Energy-optimal operating point



Sound power level[1]

(Hz)	Lw dB(A)
63	79
125	80
250	91
500	97
1000	95
2000	93
4000	87
8000	80
Lwt dB(A)	**101**

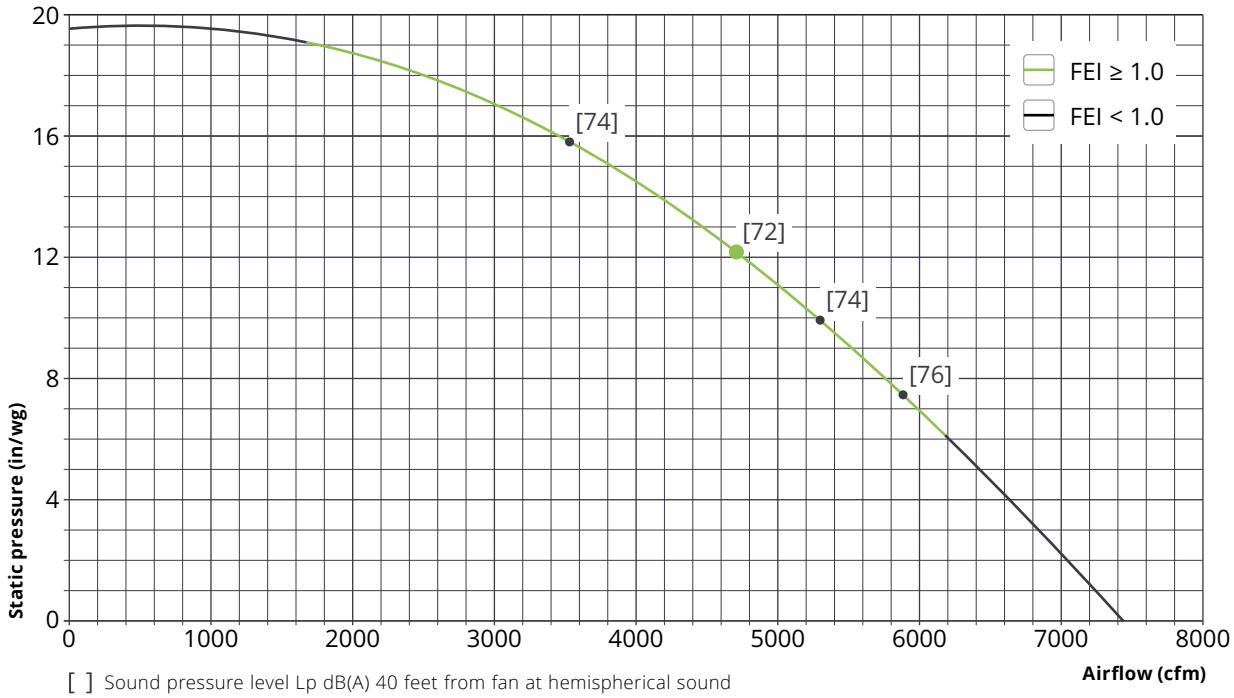
[1] Data measured at energy-optimal operating point.

FBE **1506**

Technical data (3-phase)

Weight: ..... 336 lb
Voltage: ..... 208-230/460 V 3~
Frequency: ..... 60 Hz
Power: ..... 15.0 Hp
Rated current: ..... 35.6-33.0/16.5 A

Speed: ..... 3530 rpm
Enclosure class: IP55
Max. operating temperature: . 176 °F
Ambient temperature: ..... -4 °F to +104 °F



[ ] Sound pressure level Lp dB(A) 40 feet from fan at hemispherical sound propagation in free field with ducted inlet and free-blowing outlet side.

● Energy-optimal operating point

Sound pressure *Lp* dB (A)

Measures of the sound pressure presented in the diagrams are tested in accordance with ISO 3746, at a distance of 40 feet from the fan. Guidance for sound pressure regarding other distances, see table to the right.

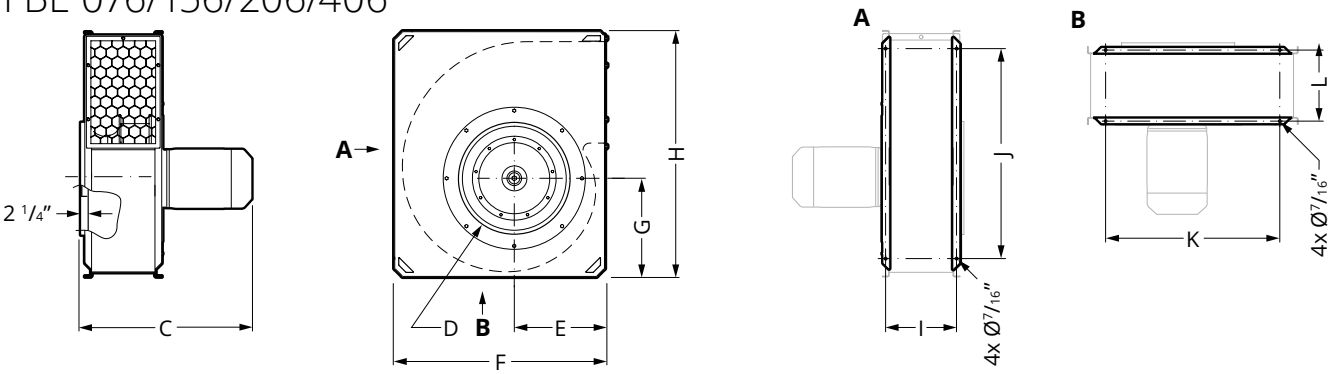
Distance from fan	Sound pressure level
20 feet	+7 dB
80 feet	-6 dB
100 feet	-8 dB
150 feet	-12 dB

For selection of silencer

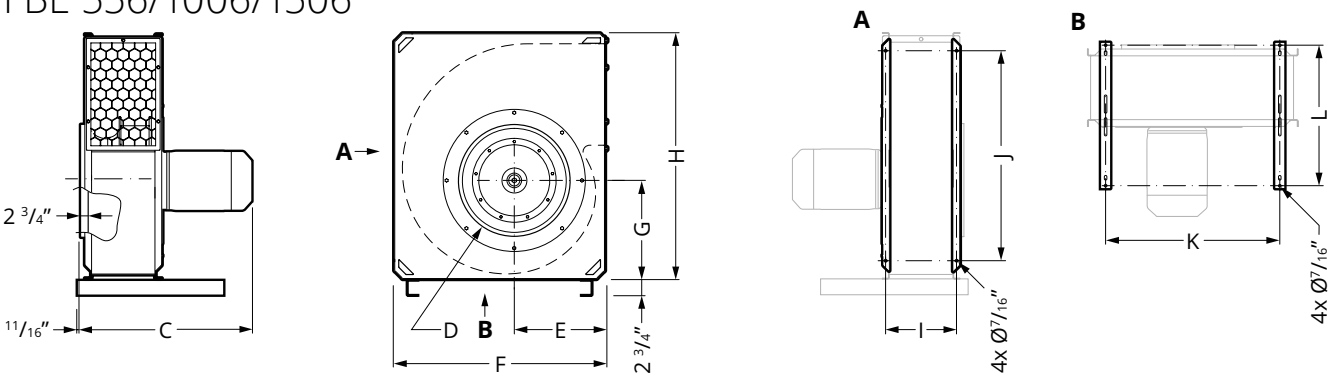
For the MOVEX FBE fan range, 250 Hz is always the determining frequency band for selection of silencer in the duct system. For reference, see tables under “Sound power level” for each fan model (page 3-9).

Dimensional drawing (in)

FBE 076/156/206/406



FBE 556/1006/1506



Version	Dimensions (in)									
	C	D	E	F	G	H	I	J	K	L
FBE 076	16 15/16	Ø9 3/4	7 3/16	16 15/16	8 3/8	20 1/2	7 3/16	14 3/16	10 5/8	7 3/16
FBE 156	18 1/8	Ø9 3/4	7 3/16	16 15/16	8 3/8	20 1/2	7 3/16	14 3/16	10 5/8	7 3/16
FBE 206	18 11/16	Ø9 3/4	8 1/16	18 11/16	9 7/16	22 13/16	7 15/16	16 9/16	12 3/8	7 15/16
FBE 406	22 1/4	Ø12 5/16	9 1/16	21 1/16	10 7/16	25 3/8	9 1/4	19 1/8	14 3/4	9 1/4
FBE 556	25 9/16	Ø12 5/16	10 3/16	23 5/8	11 7/8	28 3/4	9 5/8	22 7/16	17 5/16	9 5/8
FBE 1006	27 3/4	Ø15 11/16	11 11/16	28 3/8	9 13/16	34 5/8	10 1/2	28 3/8	22 1/16	24 7/16
FBE 1506	30 7/8	Ø19 5/8	13	31 11/16	15 3/16	38 3/16	12 3/16	31 7/8	25 3/8	24 7/16

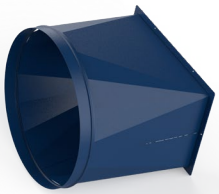
Accessories



FDS
Flexible Duct
For connection to the inlet side, including 2 mounting clamps.



FBEK
Mounting Rail
For easy and safe installation. (FBEK included as standard on FBE 556-1506).



FBO
Transition
Transition on outlet side to round connection.



FBV M10
Vibration Damper Kit
Kit with four vibration dampers in natural rubber with hardness 60° IRH.



SSB/SSB EMC
Safety Switch
With lockable toggle. Two M25 bushings included. SSB EMC is copper-sheathed.



SKO
Contactor
3-pin contactor with overcurrent relay for manual reset. The over-current relay has phase loss protection. Used together with external switches or control.



SMB
Motor Protection Switch
3-pin motor protection switch with thermal magnetic release equipped with phase fault protection. Designed for operating and protecting fan motors.

The right version for the right accessories

When ordering accessories for your MOVEX fan, it is important that you specify your fan model at the time of order. Talk to your dealer or directly with Movex sales staff to ensure the best service.

To meet the requirements of the CE standard, the fan must be equipped with safety switches and overcurrent protection. For speed control, see the separate product sheet for control units.



Reduces ambient noise by up to 20 dB(A)

MOVEX FH – Weather protection and sound enclosures specially designed for Movex FBE fans. The galvanized sheet steel construction with sound-insulating material protects the fan from dirt and corrosion in outdoor environments and aggressive indoor environments, while also reducing noise levels in the surrounding area.

FHD and FHV feature opening access panels for easy service access. FHD includes a sound attenuator (FLD), made from the same material, for installation on the discharge side to further reduce ambient noise. Together with the recommended sound attenuators, the noise level can be reduced by **up to 20 dB(A).**

Available in two versions

FHD – Sound enclosure

A sound enclosure designed to reduce fan noise in noise-sensitive work environments, while also providing robust weather protection.

The construction is made of Z 275 galvanized sheet steel, lined with sound-insulating material, and equipped with opening access panels for easy service access. It is suitable for demanding indoor and outdoor environments.

FHD is supplied with an FLD sound attenuator for installation on the discharge side. Mounting components and the outlet hood are not included and should be adapted and installed on site.

FLD is constructed from Z 275 galvanized sheet steel, with the intermediate space filled with mineral wool covered by fiber cloth to prevent fibers from the sound-absorbing material from entering the duct system. The sound attenuator can be cleaned using rotating nylon brushes, a vacuum cleaner, or a damp cloth.

The ambient noise level can be reduced by up to 20 dB(A). Sound attenuation on the inlet side, based on installation conditions and noise requirements, is not included.

Suitable for FBE 206, FBE 406, FBE 556, FBE 1006, and FBE 1506.



FHV – Weather protection

Weather protection for Movex FBE fans. Manufactured from Z 275 galvanized sheet steel, it protects against dirt and corrosion in outdoor environments and aggressive indoor environments. Lined with sound-insulating material, it reduces the noise level emitted to the surroundings by approximately 5 dB(A).

Equipped with opening access panels for easy service access. Suitable when protection against weather and contamination is the main requirement.

Suitable for FBE 206, FBE 406, FBE 556, FBE 1006, and FBE 1506.



Corrosivity category C3

The weather protection is manufactured from galvanized sheet steel, providing corrosion protection suitable for C3 environments according to ISO 12944-2, such as moderate industrial and light marine environments.

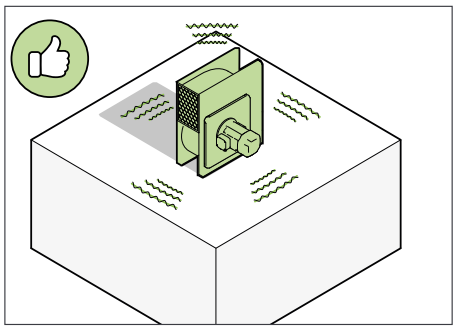
For more demanding applications, a C5 version is available upon request, suitable for severe industrial and severe marine or coastal environments.

Sound directivity factor

The perceived noise from the fan is affected by how the fan is positioned relative to its surroundings. The materials and properties of surrounding surfaces, such as floors, walls, and ceilings, also have a significant impact on the perceived noise level.

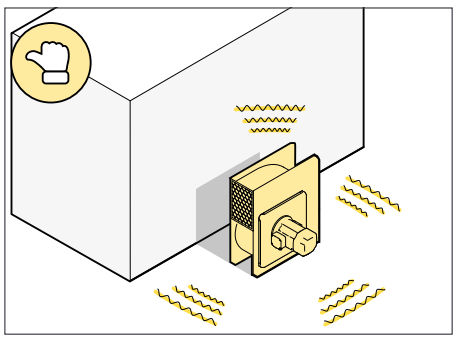
When it comes to materials, there are a few basic principles to consider. Hard materials provide very little sound absorption and instead reflect much of the sound. Soft materials, on the other hand, have better sound-absorbing properties and can help reduce noise. All materials vibrate to some degree when subjected to external forces, and these vibrations can in turn amplify the sound.

Fan placement



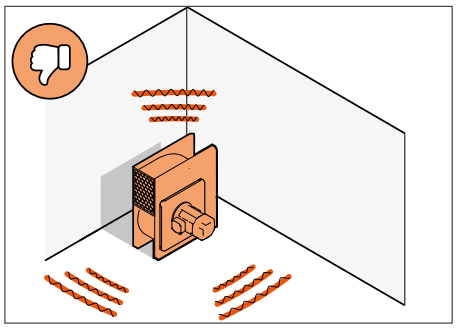
Placement A

The fan is positioned with free space around it, allowing sound to travel freely without reflecting off adjacent surfaces. Placing the fan on a sound-absorbing surface can further reduce fan noise. Movex recommends this placement, as it is the most favorable for achieving a low noise level.



Placement B

When positioned against a single vertical surface, the sound pressure level increases by approximately 3 dB(A) compared with Placement A.



Placement C

When positioned in a corner, the sound pressure level increases by approximately 6 dB(A) compared with Placement A.

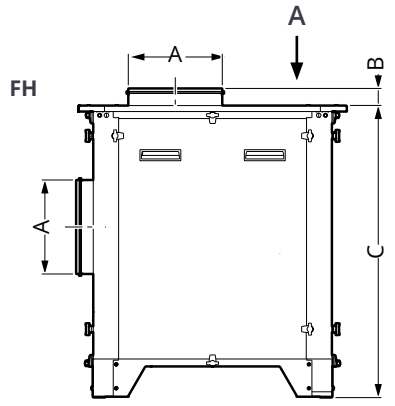
Indoor placement
When installing the fan indoors, additional conditions must be considered, and in most cases, sound-reducing measures are required. Contact Movex for consultation.

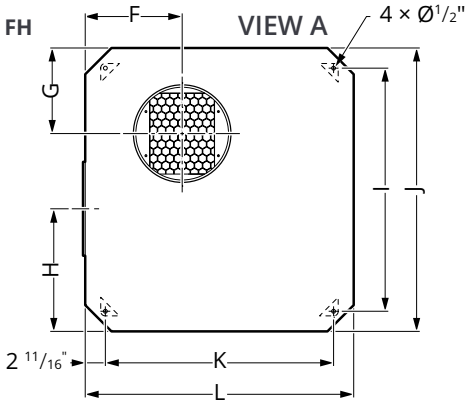
Dimensional drawing (in)

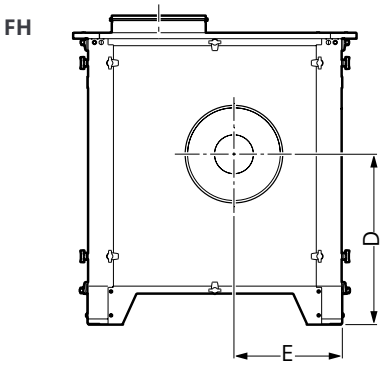
FHV (weather protection) and FHD (sound enclosure) have the same enclosure dimensions. FHD comes with a sound attenuator (FLD).

	DIMENSIONS – FHV/FHD ENCLOSURE (IN)				
	FH 206	**FH 406**	**FH 556**	**FH 1006**	**FH 1506**
FBE	206	406	556	1006	1506
A	Ø9 13/16	Ø12 3/8	Ø12 3/8	Ø15 3/4	Ø19 11/16
B	2 1/4	2 1/4	2 1/4	2 13/16	2 3/4
C	33 13/16	38 1/2	38 1/2	46 15/16	46 15/16
D	19 13/16	22 1/2	22 1/2	28 5/8	27 3/8
E	11 5/8	14 5/16	14 5/16	19 1/2	19 3/16
F	11 7/8	12 13/16	12 13/16	14 1/4	15 13/16
G	9 3/4	11 5/16	11 5/16	16 7/16	15 1/2
H	13 1/2	16 3/16	16 3/16	21 7/16	21 1/16
I	25 13/16	32 1/16	32 1/16	44 11/16	44 11/16
J	31 1/8	37 3/8	37 3/8	50	50
K	25 13/16	27 3/4	27 3/4	35 7/16	35 7/16
L	31 1/8	33 1/16	33 1/16	40 3/4	40 3/4
lbs*	126	165	165	278	304

**Weight excluding fan*

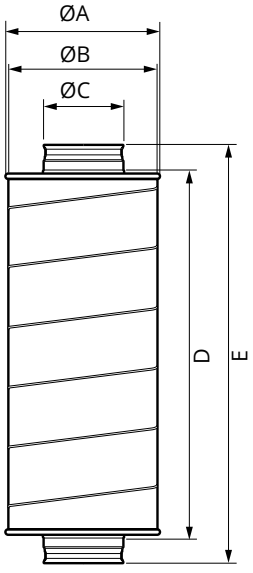




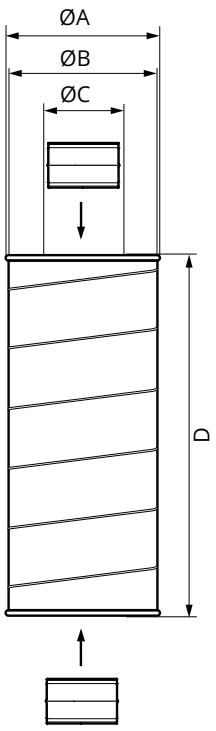


FLD – Sound attenuator

Sound attenuator for FHD. FLD 250 and FLD 315 are supplied with preinstalled connections, while FLD 400 and FLD 500 are supplied with loose connections.



FLD 250/315



FLD 400/500

	DIMENSIONS – FLD (IN)			
	FLD 250	**FLD 315**	**FLD 400**	**FLD 500**
FHD	206	406/556	1006	1506
ØA	18 1/4	20	24 1/4	28 9/16
ØB	17 3/4	19 11/16	23 5/8	27 15/16
ØC	9 7/8	12 7/16	15 3/4	19 11/16
D	47 1/4	47 1/4	47 1/4	47 1/4
E	51 15/16	51 13/16	–	–
lbs	50	64	84	99

Specifications

Delivery version

The fan is delivered as standard in version LG 90. Can be adapted on installation to the customer's needs in the LG versions.



LG 0 **LG 90** LG 180 LG 270

■ Standardised delivery version

Surface finish

Sheet metal parts: ..... Stainless steel, powder-coated or electro-galvanized.

Production

The FBE range of fans is manufactured in accordance with the following directives and standards:

- Machinery Directive 2006/42/EC
- EMC Directive 2014/30/EU
- EN ISO 12100:2010
- EN 60204-1
- ErP2015 2009/125/EC

MOVEX

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