

-  FIRE SAFETY
- AIR MOVEMENT
- ROOF FANS

ROOFMASTER STEF-HT ROOF FAN

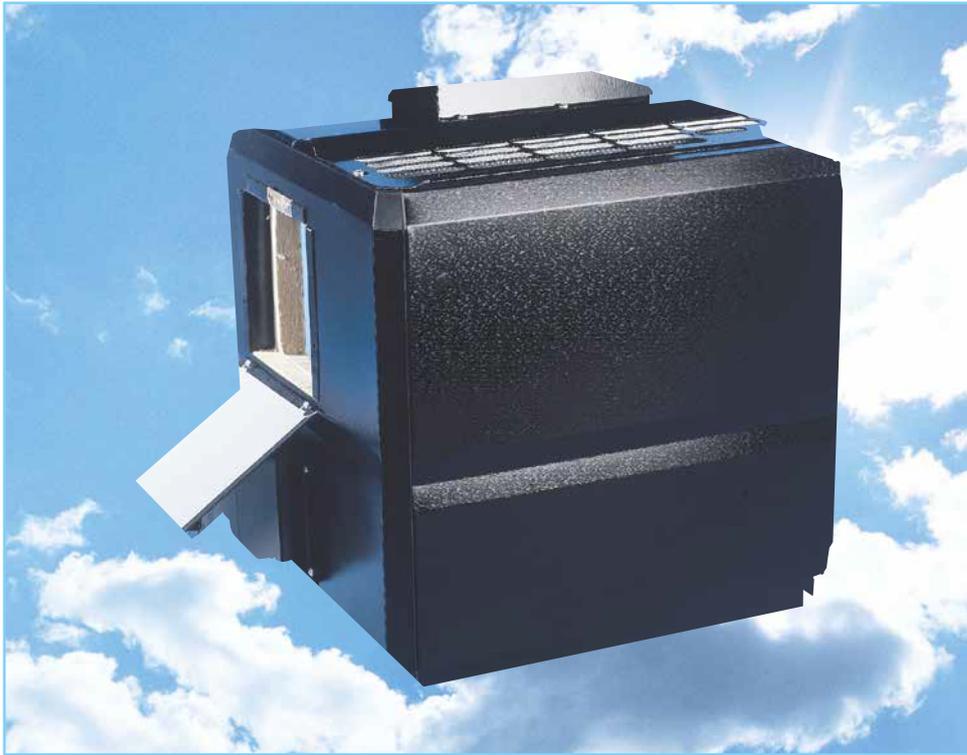
> TECHNICAL CATALOGUE



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ROOFMASTER STEF-HT



Features

Electrical supply

- 3x400 V 50 Hz

Ambient temperature range

- -20°C:C (40al purpose use)

Sizes

STEF -2, -3, -4, -5, -6, -7.

Material and design

The fan casing is made of black pre-painted galvanized sheet or aluminium and zinc coated sheet steel. The surface treatment meets the requirements of environmental class C4 (EN ISO 1294-2). The fan is insulated inside against noise. The fan discharges air upwards. The motor compartment is equipped with two hatches, which open in case of increased temperature. Additional cooling is arranged for the motor. The fan is equipped with a safety switch.

Impeller

The impeller is made of galvanized steel sheet (size 7 is made of welded steel and painted) and have a backward curved blades. The impeller is dynamically balanced to class Q6.3 in accordance with VDI 2060. The blades on the back side of the impeller support the cooling of the motor.

Motor

Three-phase fans are using IEC standard 3-phase AC-motors, which are located outside the air stream. They are cooled by the outside air. Cooling fan of the motor is made of steel.

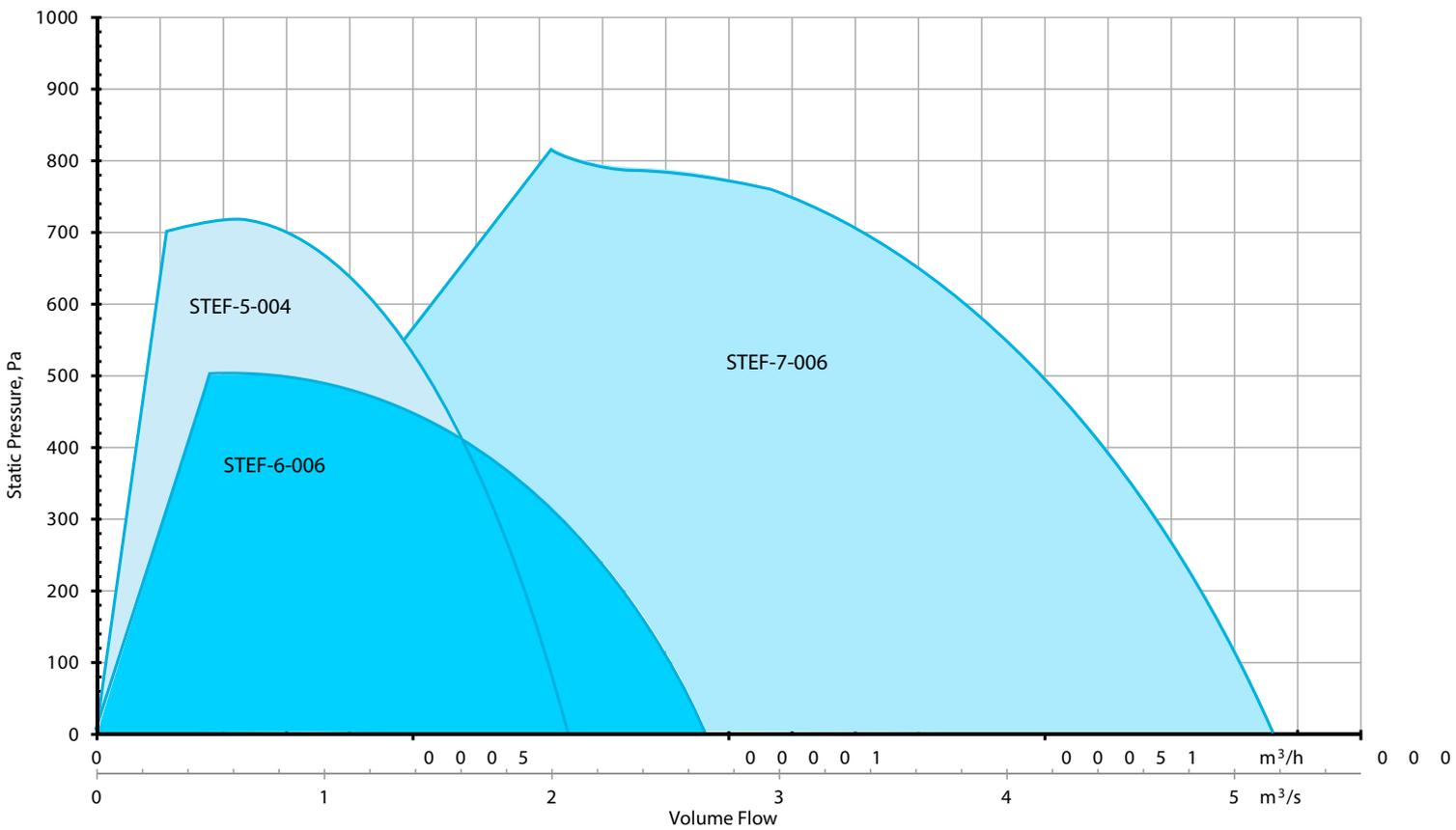
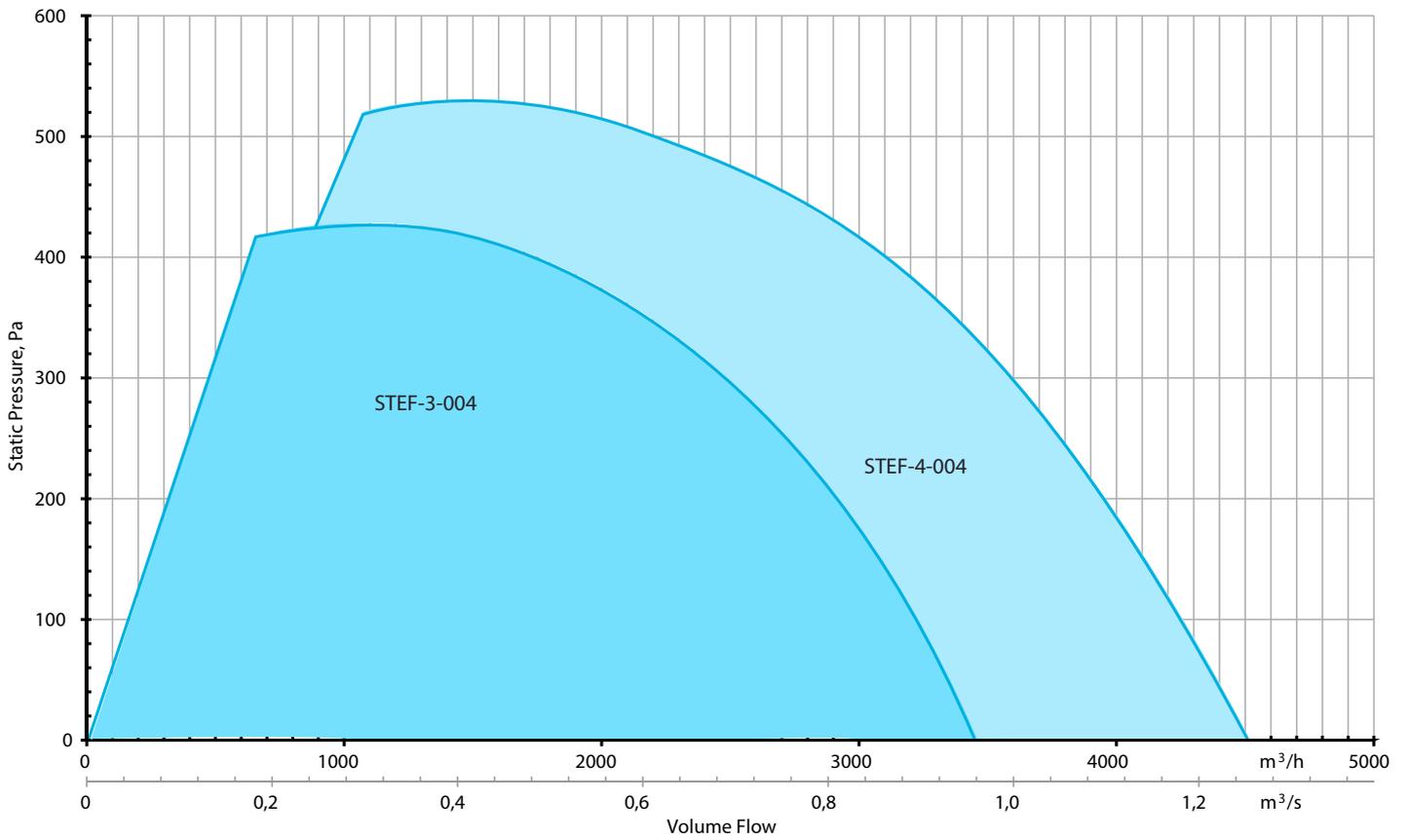
Product Code

STEF-a-bbb-c-6-e

- = a (size, 2, 3, 4, 5, 6, 7)
- bbb = three phase motor
- bb = b
- c = painted galvanized sheet metal, black
= Al/Zn coated sheet steel
- d = high temperature (HT) version
- = e generation

Performance Data

ROOFMASTERSTEF-HT – 3 phase



Performance Table

ROOFMASTERSTEF-HT – 3 phase

Airflow m³/has function of static pressure

	Pressure (Pa)														
	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700
STEF-3-004	3485	3341	3175	2981	2754	2480	2146	1710	925						
STEF-4-004	4536	4352	4158	3953	3722	3470	3175	2822	2369	1706					
STEF-5-004	7459	7268	7063	6840	6595	6329	6041	5720	5364	4968	4518	3992	3341	2347	
STEF-6-006	9616	9288	8906	8460	7924	7283	6520	5612	4432						
STEF-7-006	18623	18227	17798	17327	16808	16240	15628	14958	14238	13464	12629	11718	10696	9475	7754
	Airflow m ³ /h														

General description

Application/specification

The smoke extract roof fan STEF is designed to be used as an exhaust fan in ventilation systems conveying the media up to a maximum of 400°C for 120 min and conforming with the standard EN 12101-3 and being CE-marked according to this standard.

Product type	STEF
Fan type:	Powered smoke and heat exhaust ventilator
Class:	F400(120)
Notified body:	SP Technical Research Institute of Sweden
Certificate nr:	0402-CPD-406105
Temperature class:	F400(120)
Motor:	F400(120) classified class B/class F motor for fan

The capacity measurement has been performed according to ISO 5801:2007 and the sound power level to surrounding according to ISO 3741:1999.

Can be used as a standard roof fan up to an air temperature of 40°C.

The fan casing is made of black pre-painted galvanized sheet or aluminium and zinc coated sheet steel.

The casing and motor-impeller section can be swung out for easy service and maintenance.

Impeller is made of galvanized sheet steel (size 7 is made of welded steel and painted) and has backward curved blades.

The motor is outside the airstream and has additional cooling by outside air.

The fan discharges air upwards.

Quiet operation

The inside of the fan casing and the side plates of the motor compartment have sound insulation. The fan itself has very low sound values.

Material and design

The fan casing is made of black pre-painted galvanized sheet or aluminium and zinc coated sheet steel. STEF-HT can be used in industrial areas or close to the sea as the surface treatment meets the requirements of environmental class C4 (EN ISO 1294-2). The fan is insulated inside against noise. The fan discharges air vertically.

Easy installation and service



STEF-HT can be installed by using a roof curb BOGA or directly on to the concrete. It is equipped with opening hinges as standard. The impeller and duct can be easily cleaned. The roof can be removed to perform the maintenance of the motor.

Motor and impeller

Three-phase fans are using IEC standard 3-phase AC-motors, which are located outside of the air stream. The motors have cooling fans made of metal and additional cooling from outside temperature.

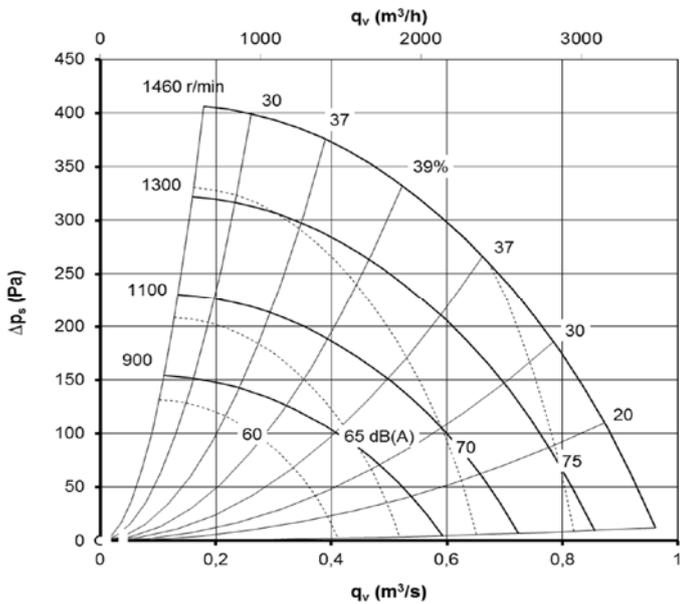
The motor compartment is equipped with hatches, which will open when the temperature has reached the level where locking fuse smelts.

In standard ventilation the maximum exhaust temperature is + 40°C.

Impeller is made of galvanized sheet steel (size 7 is made of welded steel and painted) and has backward curved blades.

Fan chart-explanation and definitions

Symbols



Q_v	Airflow	m^3/s
Δp_s	Static pressure rise	Pa
η	Overall efficiency (impeller and motor) at max rotation speed	%
L_{wA}	A-weighted total sound level to surroundings	dB(A)
L_{woct}	Sound power level by octave bands (without A-weighting)	dB
K_{oct}	Correction when diving into different octave bands	dB
ΔL	Remote attenuation (given values calculated for an ideal case in a halfspace)	dB

Sound data

The total A-weighted sound power level to surroundings, L_{wA} , can be read in the fan chart. The correction coefficients by octave bands can be read in the chart below. The sound power level by octave band to the duct or to the surroundings (without A-weighting) can be obtained by using the following formula.

$$L_{woct} = L_{wA} + K_{oct}$$

Sound pressure level and remote attenuation

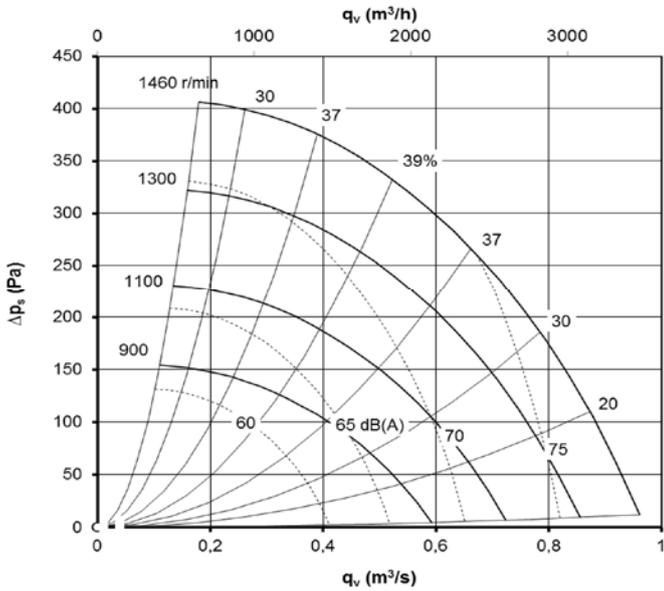
Distance L (m)	1	3	5	10	15	20	25	30	40
Attenuation ΔL (dB)	7	17	22	28	31	34	36	37	40

The total sound pressure level to surroundings at different distances can be estimated using the following formula:

$$L_{pA} = L_{wA} - \Delta L$$

STEF-3

STEF-3-004



Sound data

Correction Koct (dB)											
Octave band mid-frequency (Hz)											
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-3	Surroundings	0	1500	-8	3	6	-4	-8	-13	-17	-16
STEF-3	To the inlet duct	0	1500	-9	-6	-6	-6	-6	-10	-15	-19

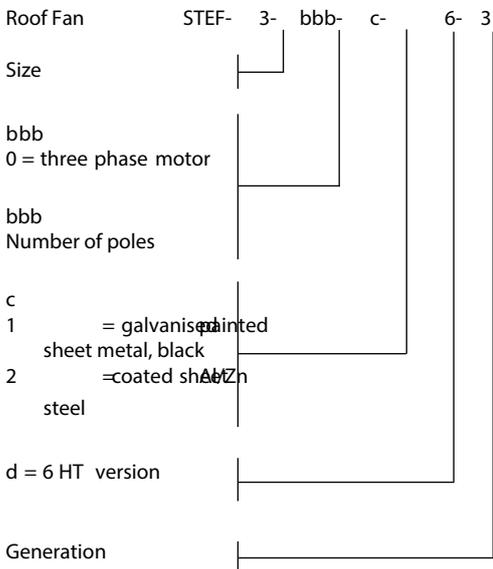
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

Motor data

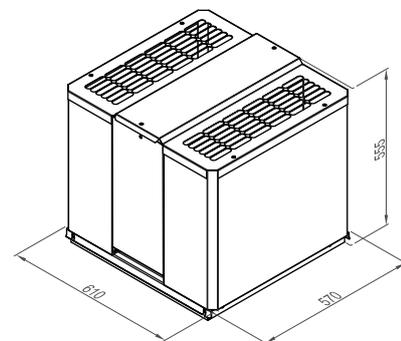
Motor nominal data at 50 Hz				
STEF-	Speed r/min	Output kW	Voltage V	Current A
3-004-c	1400	0,55	3x400/3x230	1,65/2,9

Totally enclosed squirrel cage motors for power roof ventilator STEF-HT. IP 55 IC 411. Insulation class F.

Product code



Dimensional drawing

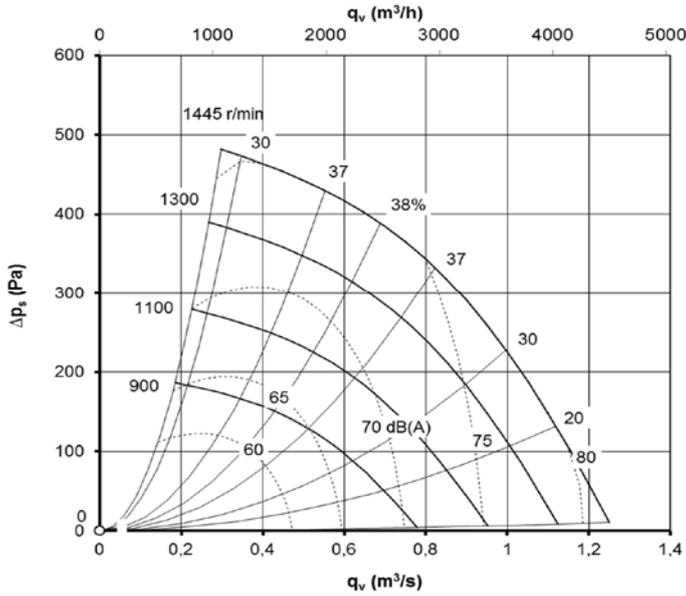


Weight 45 kg

Safety switch SAFE is automatically included in STEF HT delivery

STEF-4

STEF-4-004



Sound data

Correction Kocf (dB)											
Octave band mid-frequency (Hz)											
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-4	Surroundings	0	1500	-8	3	6	-5	-10	-15	-20	-25
STEF-4	To the inlet duct	0	1500	-8	-6	-8	-7	-5	-10	-17	-22

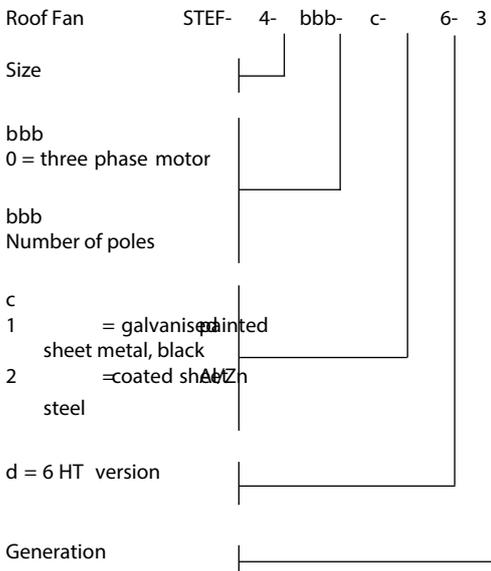
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

Motor data

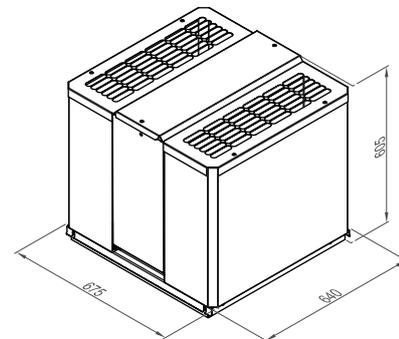
Motor nominal data at 50 Hz				
STEF-	Speed r/min	Output kW	Voltage V	Current A
4-004-c	1410	0,75	3x400/3x230	2,0/3,5

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Product code



Dimensional drawing

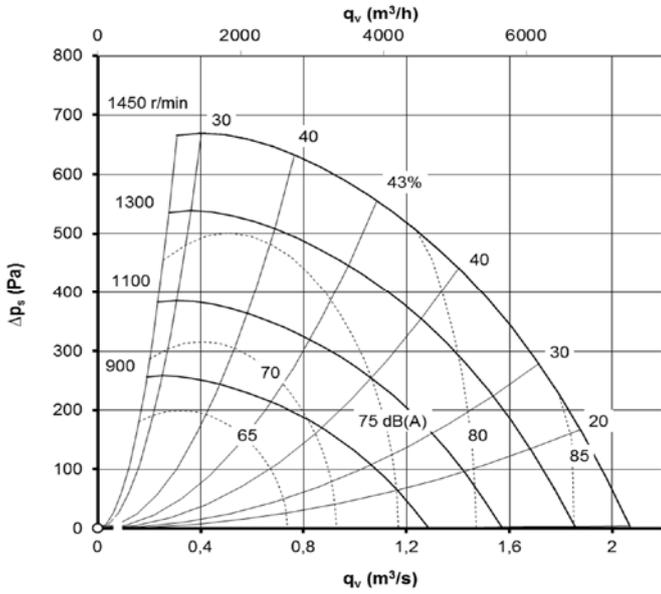


Weight 50 kg



STEF-5

STEF-5-004



Sound data

Correction Kocf (dB)											
Octave band mid-frequency (Hz)											
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-5	Surroundings	0	1500	-8	3	6	-5	-12	-16	-19	-22
STEF-5	To the inlet duct	0	1500	-11	-7	-8	-9	-11	-11	-18	-25

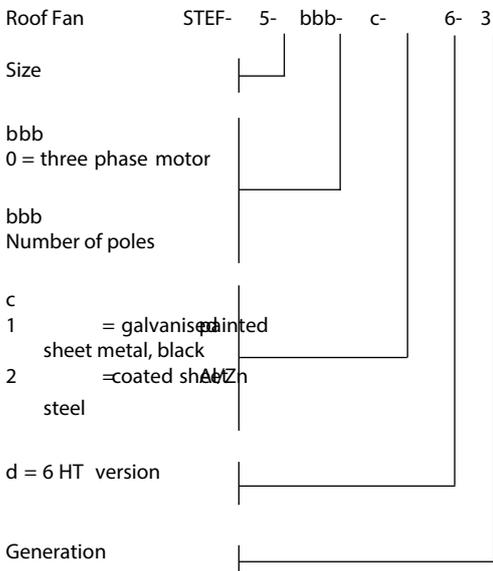
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

Motor data

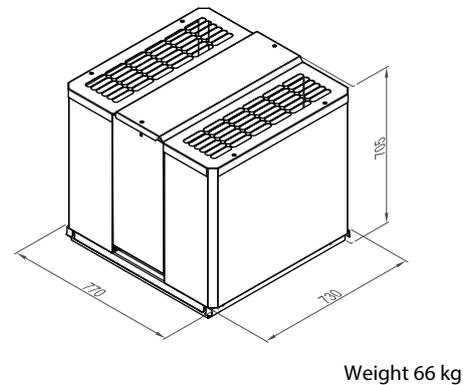
Motor nominal data at 50 Hz				
STEF-	Speed r/min	Output kW	Voltage V	Current A
5-004-c	1420	1,5	3x400/3x230	3,6/6,1

Totally enclosed squirrel cage motors for power roof ventilator STEF-HT. IP 55 IC 411. Insulation class F.

Product code



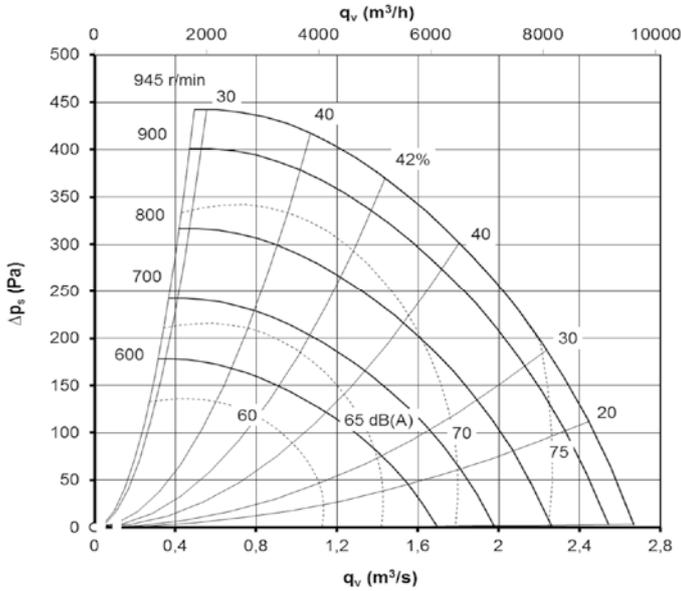
Dimensional drawing



Safety switch SAFE is automatically included in STEF HT delivery

STEF-6

STEF-6-006



Sound data

Correction Kocf (dB)											
Octave band mid-frequency (Hz)											
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-6	Surroundings	0	1500	3	8	3	-2	-8	-12	-15	-21
STEF-6	To the inlet duct	0	1500	3	6	1	-2	-7	-7	-12	-15

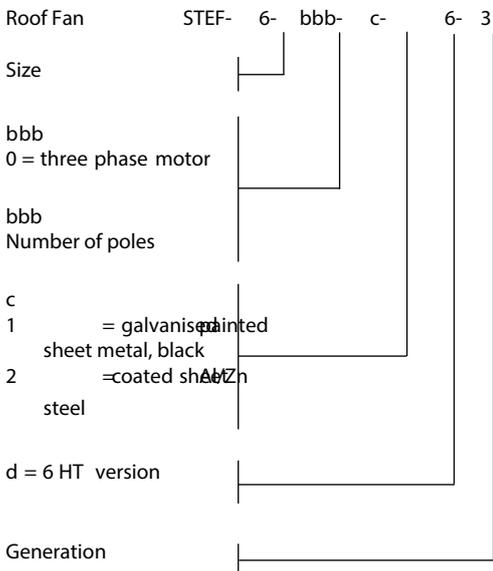
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

Motor data

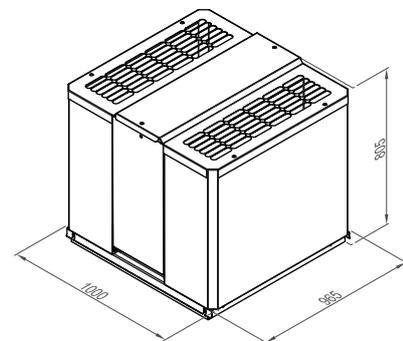
Motor nominal data at 50 Hz				
STEF-	Speed r/min	Output kW	Voltage V	Current A
6-006-c	930	1,1	3x400/3x230	3,3/5,7

Totally enclosed squirrel cage motors for power roof ventilator STEF-HT. IP 55 IC 411. Insulation class F.

Product code



Dimensional drawing

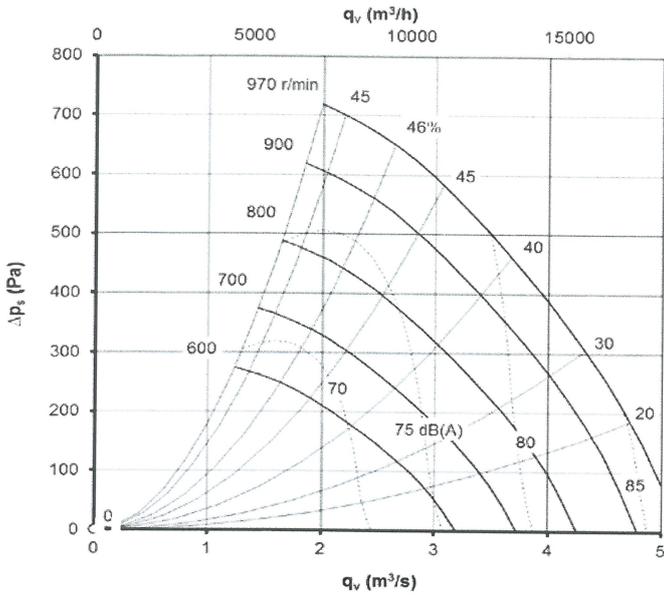


Weight 116 kg

Safety switch SAFE is automatically included in STEF HT delivery

STEF-7

STEF-7-006



Sound data

		Correction Koct [dB]									
		Octave band mid-frequency [Hz]									
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-7	Surroundings	0	1500	3	7	3	-3	-7	-12	-15	-21
STEF-7	To the inlet duct	0	1500	1	3	5	1	-2	-4	-10	-15

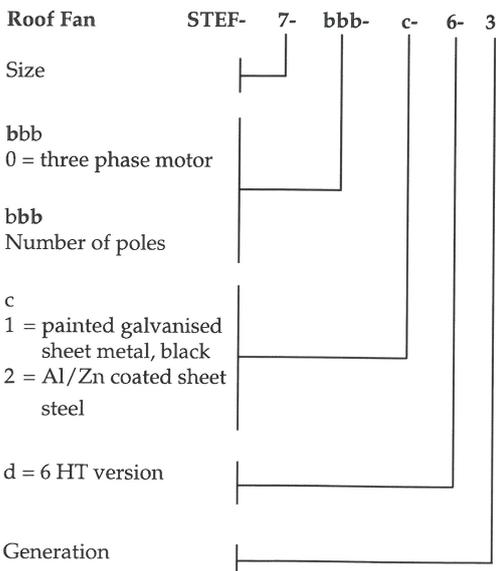
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

Motor data

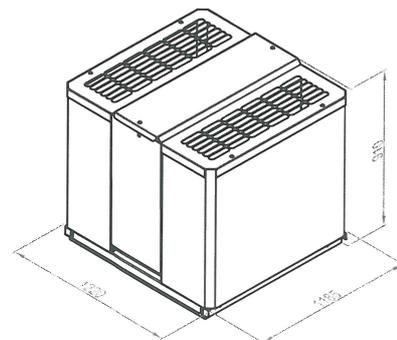
Motor nominal data at 50 Hz				
STEF-	Speed r/min	Output kW	Voltage V	Current A
7-006-c	960	4,0	3x400/3x230	8,9/15,4

Totally enclosed squirrel cage motors for power roof ventilator STEF-HT. IP 55 IC 411. Insulation class F.

Product code



Dimensional drawing



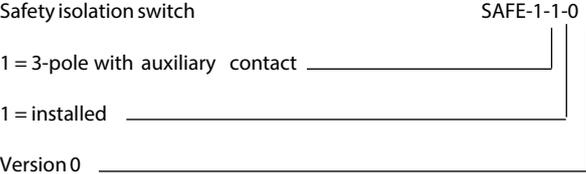
Weight 199 kg



Accessories

Safety switch SAFE

The safety isolation switch has been tested to IEC 947-3.
It is available in standard version and can be supplied loose.
Safety switch is automatically included in the delivery of STEF-HT.



Wiring

Star connection
Three phase motor, single speed

