

# EM50n

## Exhaust fan

### E-line



*Photo shows fully equipped fan EM50n.*

EM50n is a further development of the well-recognized and proven EM50 and is the ideal exhaust fan whenever extra high airflow capacity is required. The unique propeller design is self-cleaning and allows the highest efficiency to be reached, features which characterize the high quality and excellent performance E-line product segment.

The square fan housing and air conveyor (venturi) are made of a strong galvanised sheet-steel. The 6-blade propeller is statically and dynamically balanced for low noise and low vibration. The propeller is available in stainless steel, galvanised steel and pre-coated galvanised steel. The v-belt pulley attached to the propeller is made of die-cast aluminium, with reinforced ribs which will increase strength.

To improve aerodynamic efficiency, the fan has been developed in Munters Euroemme's R&D lab. The test chamber has been built according to ANSI/AMCA 210-85 Figure 15 specifications. Construction details and air tightness have been verified by personnel of the BESS Lab at the Agricultural Engineering Department, University of Illinois – USA. All declared values in this leaflet are measured and certified by BESS Lab (test #02333 and #02332).

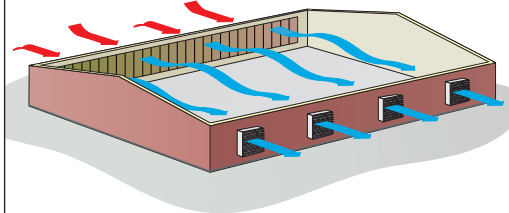
#### Propeller and shutter

The propeller is attached to a large v-belt pulley, featuring a new and improved design, in which is embedded a double ball bearing protected against water. The belt transmission ensures low propeller rpm, which in turn entails high efficiency and low energy consumption as well as low noise. The shutter is made of galvanised steel for all models, which is stronger than aluminium and plastic. The fan shutter is tightly closed when the fan is not working, preventing any air leakage through the fan. The patented centrifugal system consisting of rotating weights, which are placed over the system arms, hinders the shutter from being closed by air pressure. This keeps the efficiency of the fan at a peak at all times by maintaining the shutter fully and firmly opened. The shutter does not have to be cleaned regularly as dust does not affect its opening and closing movement. All the plastic parts are made of black acetalic plastic with UV protection. The motor slide has been given a special design which will reduce stress on the motor bearings and the new high efficiency electric motor results in a longer life time along with energy savings. A special plastic support fixes the mesh, thereby eliminating any vibrations.

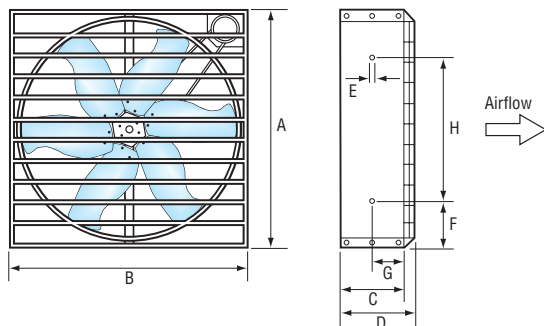
#### EQUIPMENT

## EM50n

- Central hub and v-belt pulley are made from die-cast aluminium, with reinforced ribs for prolonged lifetime
- Reduced stress on motor bearings
- Class A motor featuring excellent efficiency and low energy consumption
- Each motor is individually tested for 100% quality control
- Fan housing and venturi made of strong galvanised sheet-steel
- Welded wire guards designed for easy maintenance fitted with noise reduction supports
- Propeller is statically and dynamically balanced
- Shutters are made of pressed galvanised steel in order to ensure highest strength
- Shutter bearings are maintenance free
- Patented centrifugal system permits an energy efficient solution
- Dust-safe opening and closing
- Powerful springs keep shutters firmly closed when fan is not operating
- Every fan is individually checked for quality

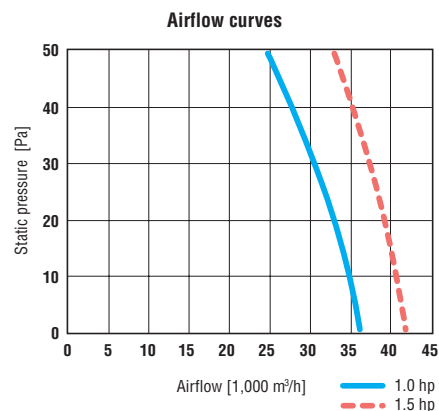


*The principle of the climate controlled environment.*



Dimensions [mm]			
Main			
A	B	C	D
1,380	1,380	450	530
For mounting			
E	F	G	H
M8	270	308	830

D depth refers to the fan with supplementary CE shutter safety mesh.



Curves refer to data measured on EM50n by Bess Lab.

## Motor specifications

EM50n Code	Nominal power		Type phases	Speed	Frequency [Hz]	Voltage [V]	Current [A]	rpm
	[W]	[hp]						
a	735	1.0	1	single	50	230	5	1,380
b	735	1.0	1	multi*	50	230	5	1,380
c	735	1.0	1	single	60	220-240	5.7	1,700
d	735	1.0	3	single	50	230/400	3.5/2	1,400
e	735	1.0	3	single	60	230/400	3.5/2	1,700
f	880	1.2	3	multi*	50	230/400	4.3/2.5	1,380
g	880	1.2	3	multi*	60	230/400	4.3/2.5	1,600
h	1,100	1.5	1	single	50	230	7.3	1,400
i	1,100	1.5	1	single	60	220-240	7.3	1,700
k	1,100	1.5	3	single	50	230/400	5.2/3	1,400
l	1,100	1.5	3	multi*	50	230/400	5.2/3	1,380
m	1,100	1.5	3	single	60	230/400	5.2/3	1,700
n	1,100	1.5	3	multi*	60	230/400	5.2/3	1,670

\* Multi speed motors must be regulated with auto-transformer which is not supplied.



EM50n is equipped with a high efficiency electric motor.



V-belt pulley in a new and improved design.

## Technical specifications

	1 and 1.2 hp	1.5 hp
Weight of fully equipped fan <sup>1</sup> [kg]	84	86
Nominal propeller speed [rpm]	368	427
Airflow at 0 Pa <sup>1</sup> [m³/h] [cfm]	36,180 [21,300]	42,125 [24,800]
Airflow at 25 Pa <sup>1</sup> [m³/h] [cfm]	31,594 [18,600]	38,048 [22,400]
Airflow at 50 Pa <sup>1</sup> [m³/h] [cfm]	25,139 [14,800]	33,293 [19,600]
Specific performance at 0 Pa <sup>1</sup> [m³/Wh] [cfm/hw]	34.5 [20.3]	28.0 [16.5]
Propeller diameter [mm] [inch]	1,270 [50]	
Number of blades	6	
Number of shutter blades	10	
Max operating temperature [°C] [°F]	50 [122]	
IEC protective class of electric motor	IP55	
Electric motor winding insulation grade	F	

<sup>1</sup>All declared values are measured and certified by Bess Lab (test #02333 and #02332).

N.B. Airflow data are measured at standard condition (20 °C, 1013 hPa).

EM50n is developed and produced by Munters Italy S.p.A., Italy.

## Order information

EM50n-X-X-X

Code for electric motor according to above table.

Code for the type of propeller blades.

- 1 Galvanised propeller blades.
- 2 Precoated propeller blades.
- 3 Stainless steel propeller blades.

Option codes

- wp Fan equipped with plastic CE protection for belt and pulleys (on mesh side, standard in Europe).
- np Fan delivered without plastic CE protection for belt and pulleys (on mesh side, standard outside Europe).
- wm Fan delivered with pyramidal shape mesh for CE protection on shutter side.
- nm Fan delivered without pyramidal shape mesh for CE protection on shutter side (standard).

e.g., EM50n-b-2-wp-wm



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