

# EM36

## Exhaust fan

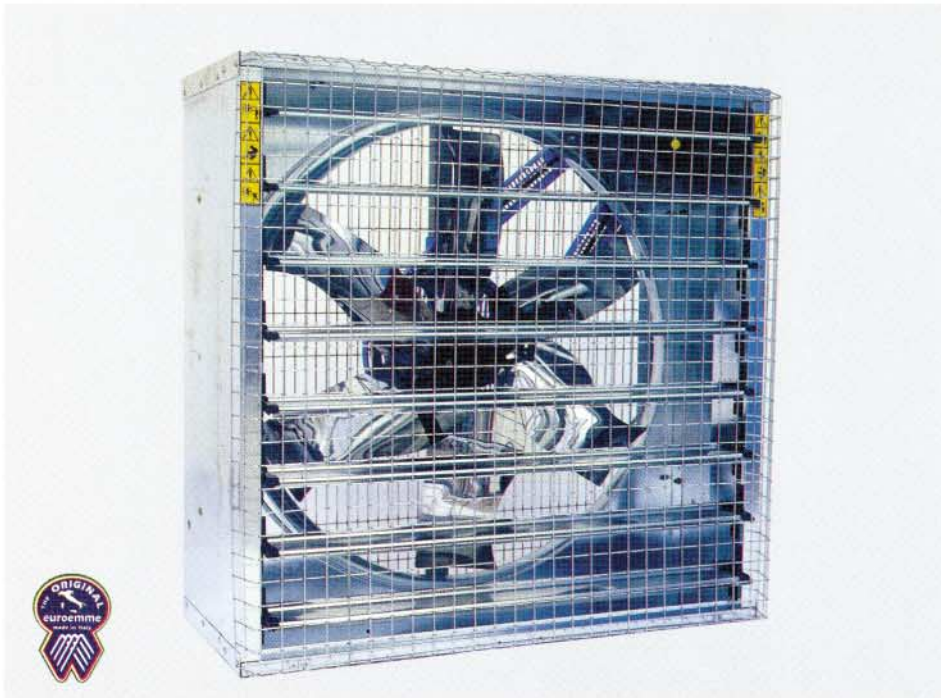


Photo shows fully equipped fan EM36.

EM36 is the ideal exhaust fan whenever high airflow capacity is required. The unique propeller design is self-cleaning and allows the highest efficiency to be reached.

The square fan housing and air conveyor (venturi) are made of a strong galvanised sheet-steel. The 6-blade propeller is statically and dynamic balanced for low noise and low vibration. The propeller is available in stainless steel, galvanised steel and pre-coated and galvanised steel.

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 airtightness have been verified by personnel of the BESS Lab at the Agricultural Engineering Department, University of Illinois – USA.

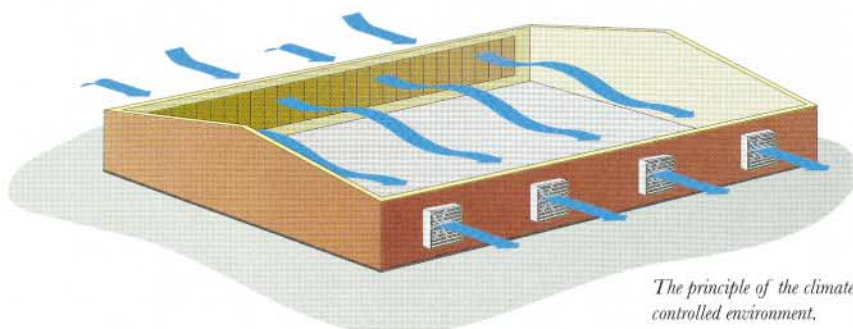
### Propeller and shutter

The propeller is attached to a large v-belt pulley in which is embedded a double ball bearing protected against water. The belt transmission ensures low propeller rpm, which ensures 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 hinders the shutter from being closed by air pressure, keeping the efficiency of the fan at a peak at all times by keeping 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 acetalic plastic with UV protection.

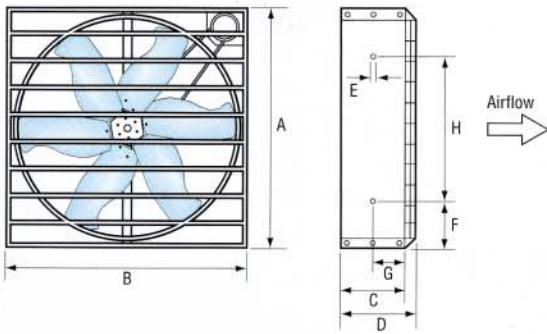
# EM36

### Equipment

- Fan housing and venturi made of strong galvanised sheet-steel
- Shutters are made of pressed galvanised steel in order to ensure highest strength
- Each motor is individually tested for 100% quality control
- Central hub and v-belt pulley are made from die-cast aluminium
- Propeller is statically and dynamically balanced
- Shutter bearings are maintenance free
- Patented centrifugal system permits a fully and firm opening of the shutter
- Shutter is opened by rotating weights placed over centrifugal system arms
- Shutter opening is not affected by the weight of dust deposited on shutter blades
- A powerful couple of springs keep the shutters firmly closed when the fan is not operating
- Every fan is individually checked for quality

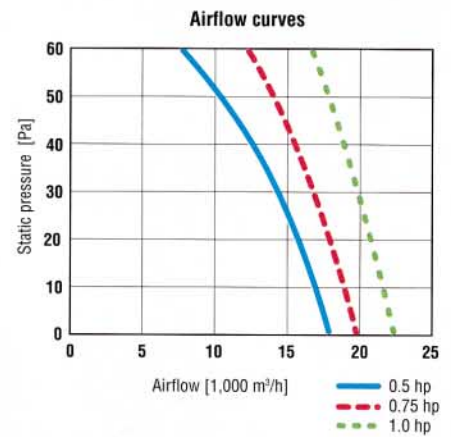


The principle of the climate controlled environment.



Dimensions [mm]			
Main			
A	B	C	D
1090	1090	450	530
For mounting			
E	F	G	H
M8	245	305	600

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



Curves refer to EM36 3Ph 50 Hz single speed motor. Fan tested with shutter and wire mesh.

## Motor specifications

EM36 Code	Nominal power		Type phases	Speed	Frequency [hz]	Voltage [V]	Current [A]	rpm
	[W]	[hp]						
a	370	0.5	1	single	50	230	3	1,380
b	370	0.5	1	multi*	50	230	3	1,380
c	370	0.5	1	single	60	220-240	3.3	1,700
d	370	0.5	3	single	50	230/400	2.3/1.3	1,400
e	370	0.5	3	single	60	230/400	2.3/1.3	1,700
f	370	0.5	3	multi*	50	230/400	3/1.7	1,380
g	370	0.5	3	multi*	60	230/400	3/1.7	1,670
h	550	0.75	1	single	50	230	4	1,400
i	550	0.75	1	multi*	50	230	4	1,400
k	550	0.75	1	single	60	220-240	4.4	1,700
l	550	0.75	3	single	50	230/400	2.8/1.6	1,400
m	550	0.75	3	single	60	230/400	2.8/1.6	1,700
n	550	0.75	3	multi*	50	230/400	3.7/2.1	1,380
o	550	0.75	3	multi*	60	230/400	3.7/2.1	1,650
p	735	1.0	1	single	50	230	5	1,380
q	735	1.0	1	multi*	50	230	5	1,380
r	735	1.0	1	single	60	220-240	5.7	1,700
s	735	1.0	3	single	50	230/400	3.5/2	1,400
t	735	1.0	3	single	60	230/400	3.5/2	1,700
u	880	1.2	3	multi*	50	230/400	4.3/2.5	1,380
v	880	1.2	3	multi*	60	230/400	4.3/2.5	1,600

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

## Technical specifications

	0.5 hp	0.75 hp	1.0 hp
Weight of fully equipped fan <sup>1</sup> [kg]	64	65	67
Nominal propeller speed [rpm]	460	510	580
Airflow at 0 Pa <sup>1</sup> [m³/h] [cfm]	17,900 [10,535]	19,880 [11,700]	22,250 [13,095]
Airflow at 20 Pa <sup>1</sup> [m³/h] [cfm]	15,700 [9,240]	17,930 [10,550]	20,750 [12,210]
Specific performance at 0 Pa <sup>1</sup> [m³/wh] [cfm/w]	25.1 [14.8]	22.3 [13.1]	18.5 [10.9]
Propeller diameter [mm] [inch]	915 [36]		
Number of blades	6		
Number of shutter blades	8		
Max operating temperature [°C] [°F]	50 [122]		
IEC protective class of electric motor	IP55		
Electric motor winding insulation grade	F		

<sup>1</sup>All values refer to 3 phases 50 Hz single speed motor.

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

EM36 is developed and produced by Munters euroemme S.p.A., Italy.



Munters Europe AB, HumiCool Division, Kung Hans Väg 8, P O Box 434, SE-191 24 Sollentuna, Sweden. Phone +46/(0)8/626 63 00, Fax +46/(0)8/754 56 66.  
Munters euroemme S.p.A., Strada Piani 2, IT-18027 Chiusavecchia, Italy. Phone +39/(0)183/52 11, Fax +39/(0)183/521 333.

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# EM50

## Exhaust fan



Photo shows fully equipped fan EM50.

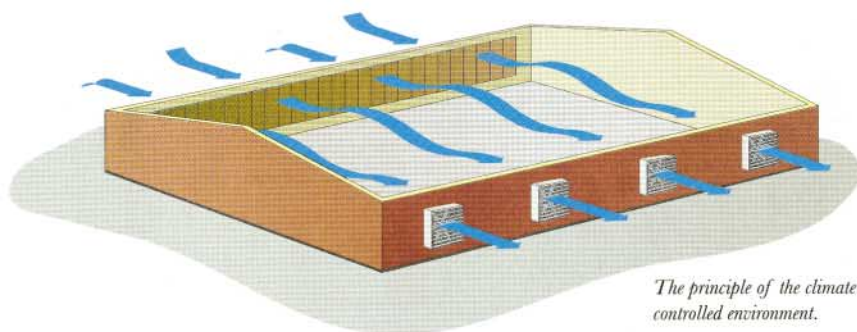
EM50 is the ideal exhaust fan whenever extra high airflow capacity is required. The unique propeller design is self-cleaning and allows the highest efficiency to be reached.

The square fan housing and air conveyor (venturi) are made of a strong galvanised sheet-steel. The 6-blade propeller is statically and dynamic balanced for low noise and low vibration. The propeller is available in stainless steel, galvanised steel and pre-coated and galvanised steel.

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 airtightness have been verified by personnel of the BESS Lab at the Agricultural Engineering Department, University of Illinois – USA.

### Propeller and shutter

The propeller is attached to a large v-belt pulley in which is embedded a double ball bearing protected against water. The belt transmission ensures low propeller rpm, which ensures 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 hinders the shutter from being closed by air pressure, keeping the efficiency of the fan at a peak at all times by keeping 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 acetalic plastic with UV protection.

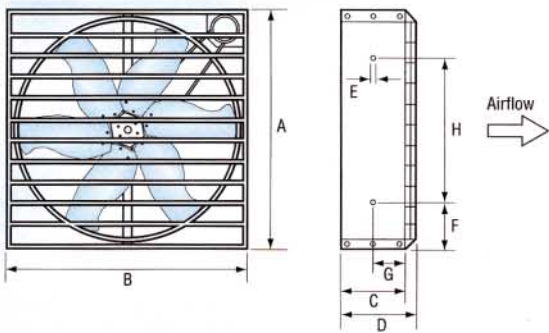


The principle of the climate controlled environment.

# EM50

## Equipment

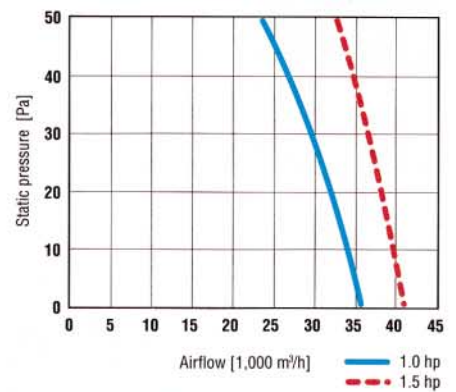
- Fan housing and venturi made of strong galvanised sheet-steel
- Shutters are made of pressed galvanised steel in order to ensure highest strength
- Each motor is individually tested for 100% quality control
- Central hub and v-belt pulley are made from die-cast aluminium
- Welded wire guards divided into two parts ensure easy maintenance
- Propeller is statically and dynamically balanced
- Shutter bearings are maintenance free
- Patented centrifugal system permits a fully and firm opening of the shutter
- Shutter is opened by rotating weights placed over centrifugal system arms
- Shutter opening is not affected by the weight of dust deposited on shutter blades
- A powerful couple of springs keep the shutters firmly closed when the fan is not operating
- Every fan is individually checked for quality



Dimensions [mm]			
Main			
A	B	C	D
1380	1380	450	530
For mounting			
E	F	G	H
M8	270	308	830

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

Airflow curves



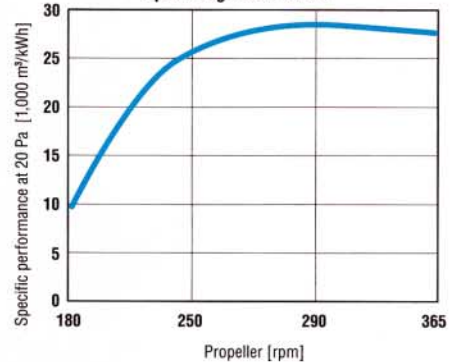
Curves refer to EM50 3Ph 50 Hz single speed motor.

## Motor specifications

EM50 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.

Performance vs. propeller revolutions while using speed regulated motor



Curve refers to EM50 1.0 hp 3Ph 50 Hz multi speed motor.

## 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]	365	430
Airflow at static pressure 0 Pa <sup>1</sup>	[m³/h] [cfm]	35,300 [20,760]	40,800 [24,000]
Airflow at 20 Pa <sup>1</sup>	[m³/h] [cfm]	31,500 [18,530]	37,850 [22,260]
Specific performance at 0 Pa <sup>1</sup>	[m³/Wh] [cfm/w]	30.4 [17.9]	24.8 [14.6]
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 values refer to 3 phases 50 Hz single speed motor.

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

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## Order information

EM50-X-X-X e.g., EM50-b-2-wp-wm

Code for electric motor according to above table.

Code for the type of propeller blades.

- Galvanised propeller blades.
- Precoated propeller blades.
- Stainless steel propeller blades.

Options 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).



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