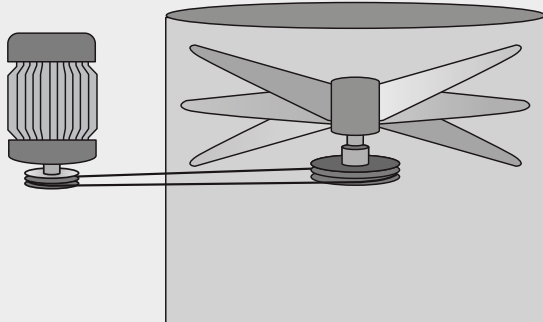
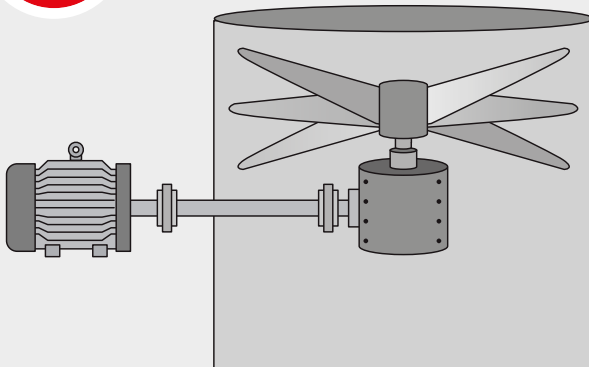


*Permanent Magnet Motors  
for direct drive cooling towers fans*



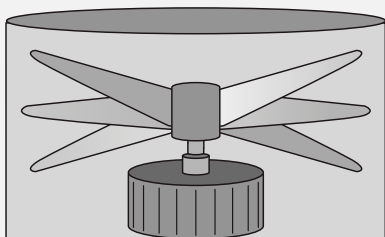
## **Belt and Pulley drive**

- High maintenance
- Low efficiency
- High vibrations and noise
- Complex assembling



## **GearBox drive**

- Recurring maintenance
- Intermediate efficiency
- Medium vibrations and noise
- Complex assembling



## **EVm Direct Drive motor**

- Low maintenance
- Long life time
- High efficiency
- Very low vibrations and noise
- Easy assembling
- Control systems and Monitoring

**SIMPLICITY. DURABILITY.  
EFFICIENCY. NOISELESSNESS.  
CONTROL.**

# Why EVm motors?

## ENERGY SAVING

The EVm direct drive motors allow strong energy reductions up to 8-10% less than traditional gear-boxed solutions.

## MAINTENANCE COST SAVING

Thanks to EVm direct drive motors, maintenance operations are reduced comparing to other traditional solutions; no belts changing or frequently pre-loaded, no oil and sealing changing needed. Only the 2 grease cartridges placed outside of the fan, in a place with easy access, require easy changing once a year.

## LESS VIBRATIONS

The "Naked" EVm special design allows to reduce the distance between the fan hub and the load-bearing structure. This means the typical vibrations value will be lowered under 1-2 mm/sec.

## LOW NOISE

The EVm direct drive series is the most silenced solution especially when in combination with low noise fans, very appreciated when close to residential areas.

## ADAPTABILITY & FLEXIBILITY

By setting a particular windings configuration on EVm series, the same motor can be set-up at 2 different levels for speed rotation / power. As EVm permanent magnet motors require an electronic drive, they are suitable for a large range of rotation speed allowing to adapt the air flow to the required performance, besides avoiding any resonant effect.

## EASY ASSEMBLING

Assembling of direct drive EVm motors is quick and easy, as there are not any pulley, belts, or shafts alignment. This allows a very strong time reduction in production or retrofit of cooling towers.

## SAFETY

Thanks to the reversibility of permanent magnet motor technology, the rotor of the fan will be "braked" by a simple short circuit switch placed externally of the cooling tower, to avoid any rotation due to windmilling. In this way, whenever a maintenance is needed, the cooling towers will be accessed by technicians with much higher safety.



## LONG LIFETIME

EVm series is engineered for 20 years lifetime.

- Only a simple maintenance activity is required. Thanks to the regreasable bearings, EVm motors can be equipped with automatic grease dispensers ensuring a long durability while requiring the grease cartridge changing just once a year.
- EVm motors will be driven by the inverter progressively by eliminating any sudden startup peak. In this way, also the fan blades lifetime will be extended.
- The typical operation is expected at temperature class between B and F, so the winding will not be stressed and a longer durability over time can be guaranteed.
- The windings are protected by any external agent thanks to a totally encapsulated treatment.
- A double treatment of zinc and painting coating ensures a long life protection of the magnets.

## OPTIONALS

EVm motors are suitable to be equipped with some accessories to improve control and monitoring:

- Temperature and vibration probe.
- Micro PLC 4.0 industry to manage the motor as well as the cooling tower probes.

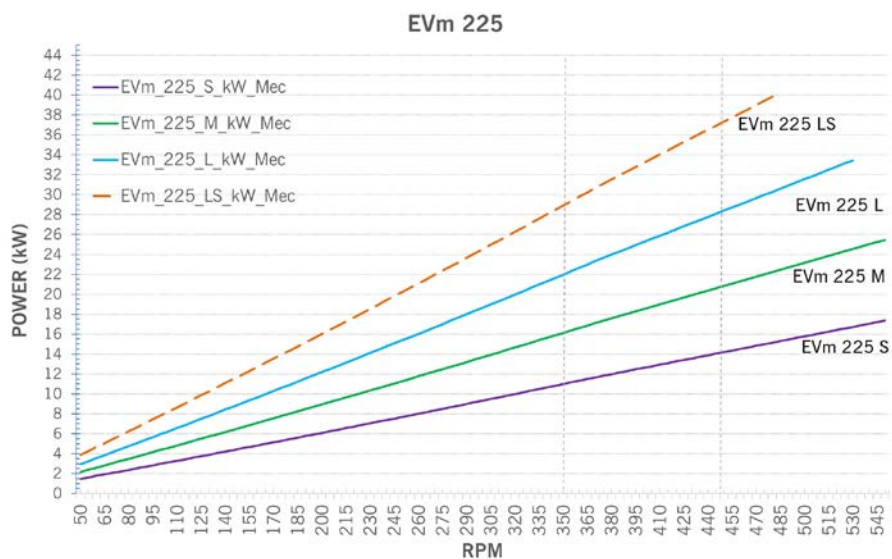
## GENERAL FEATURES

Windings and bearings with thermal protection probes.  
Drive End bearing protected by labyrinth and / or seal (optional).  
Vibration probe (optional).  
Voltage from 360 V to 420 V and custom if required.  
Minimum air cooling flow 3 m/sec.  
Fitted for automatic grease dispensers.

Standard sizes S, M, L \_\_\_\_\_  
Custom sizes LS, LM - - - - -

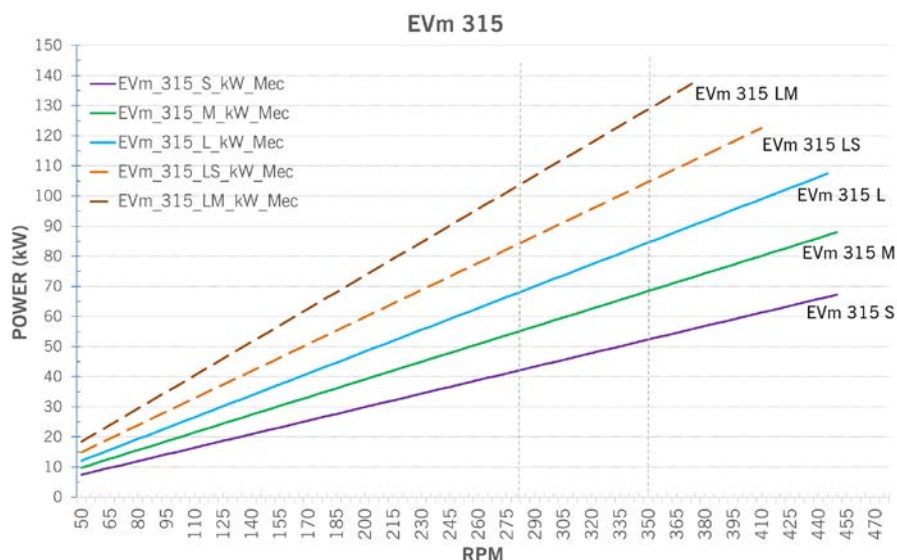
## EVm 225

- 4 size models
- Nominal torque from 300 Nm to 790 Nm
- 32 poles
- Efficiency range 90 - 93%
- Recommended for 1,8 - 2,8 m fans (6 - 9 ft)
- Customized for two nominal working points



## EVm 315

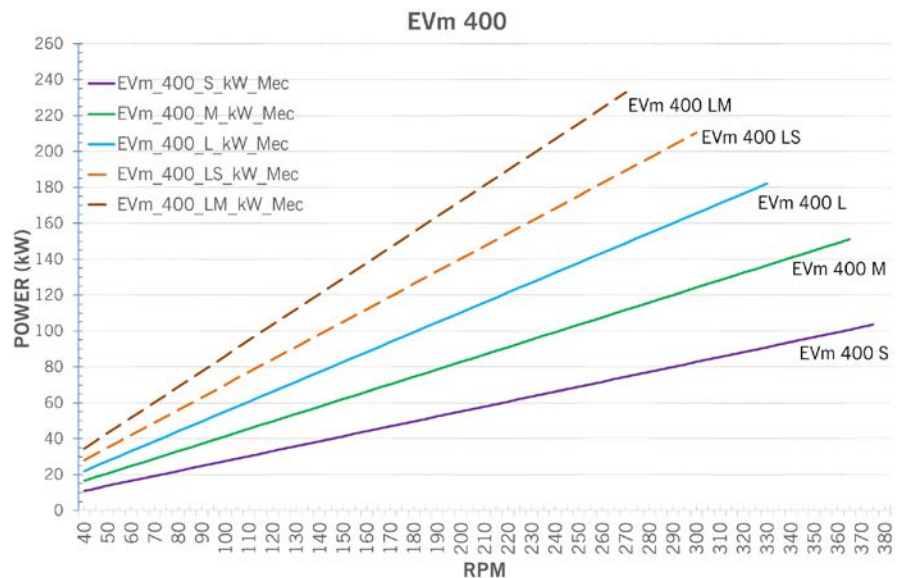
- 5 size models
- Nominal torque from 1400 Nm to 3500 Nm
- 32 poles
- Efficiency range 94 - 96%
- Recommended for 2,8 - 4,3 m fans (9 - 14 ft)
- Customized for two nominal working points





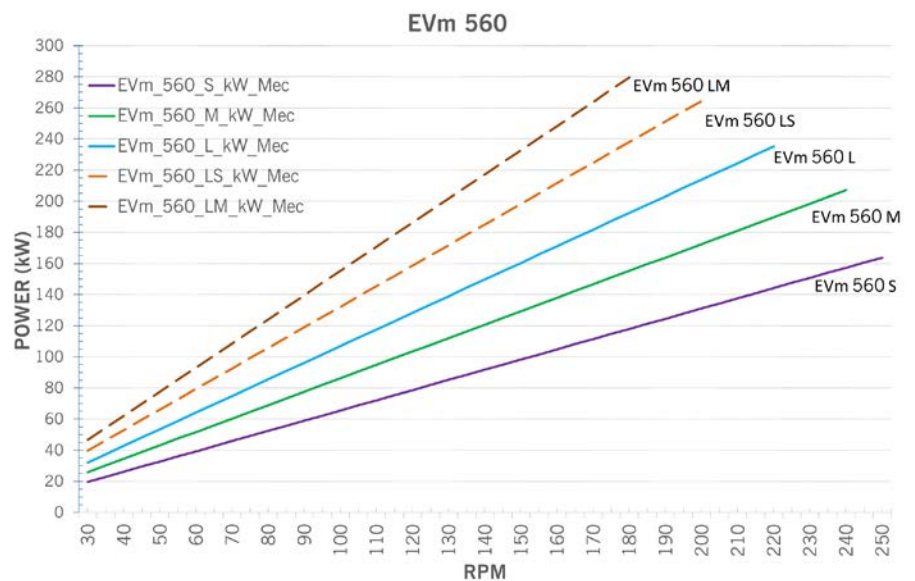
## EVm 400

- 5 size models
- Nominal torque from 2600 Nm to 8200 Nm
- 40 poles
- Efficiency range 94 - 96 %
- Recommended for 5,5 - 7,3 m fans (18 - 24 ft)



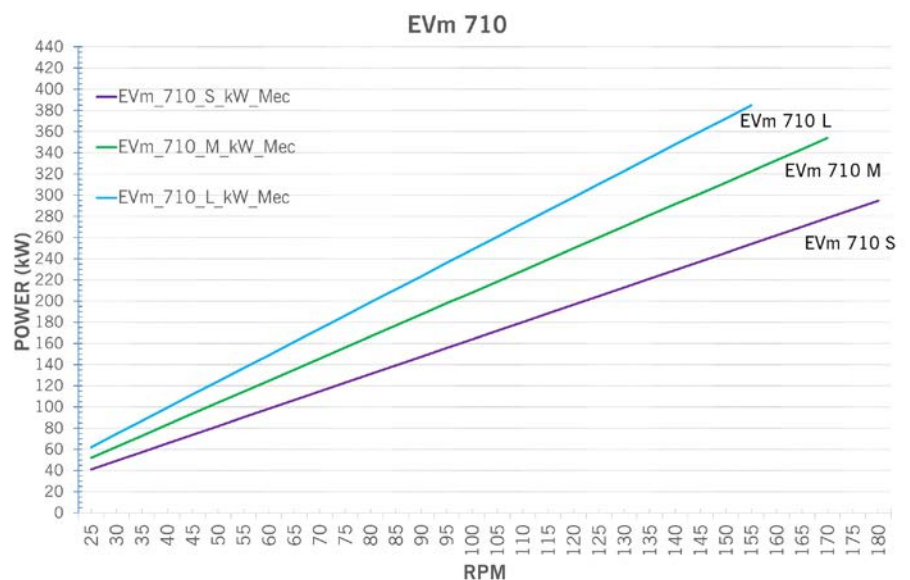
## EVm 560

- 5 size models
- Nominal torque from 6200 Nm to 14800 Nm
- 50 poles
- Efficiency range 94 - 96 %
- Recommended for 9,7 - 11 m fans (32 - 36 ft)



## EVm 710

- 3 size models
- Nominal torque from 15600 Nm to 23700 Nm
- 80 poles
- Efficiency range 95 - 96,5 %
- Recommended for 9,7 - 15 m fans (32 - 50 ft)



# Overall dimensions

models		dimensions mm (in)								weight
frame size	size	M	T	L	P	R	I_MAX	I_MIN	D	kg (lb)
EVm 225	S	390 (15.4)	485 (19.1)	110 (4.3)	525 (20.7)	1)	505 (19.9)	1)	65 (2.5) 2)	165 (364)
	M	440 (17.3)								220 (485)
	L	490 (19.3)								260 (573)
	LS	540 (21.3)								300 (661)
EVm 315	S	490 (19.3)	640 (25.2)	130 (5.1)	720 (28.3)	560 (22.0)	690 (27.2)	530 (20.9)	65 (2.5) 3)	560 (1235)
	M	590 (23.2)								620 (1367)
	L	690 (27.2)								660 (1455)
	LS	790 (31.1)								730 (1609)
	LM	890 (35.0)								800 (1764)
EVm 400	S	550 (21.7)	790 (31.1)	CUSTOM	900 (35.4)	600 (23.6)	860 (33.9)	640 (25.2)	CUSTOM 4)	940 (2072)
	M	630 (24.8)								1060 (2337)
	L	710 (28.0)								1190 (2624)
	LS	790 (31.1)								1320 (2910)
	LM	870 (34.3)								1460 (3219)
EVm 560	S	586 (23.1)	1090 (42.9)	CUSTOM	1200 (47.2)	900 (35.4)	1160 (45.7)	940 (37)	CUSTOM 5)	1630 (3594)
	M	680 (26.8)								1800 (3968)
	L	750 (29.5)								2070 (4564)
	LS	820 (32.3)								2140 (4718)
	LM	890 (35.0)								2660 (5864)
EVm 710	S	850 (33.5)	1300 (51.2)	CUSTOM	1500 (59.1)	1100 (43.3)	1440 (56.7)	1160 (45.7)	CUSTOM 6)	3000 (6614)
	M	960 (37.8)								3270 (7209)
	L	1070 (42.1)								3550 (7826)

1) = not available

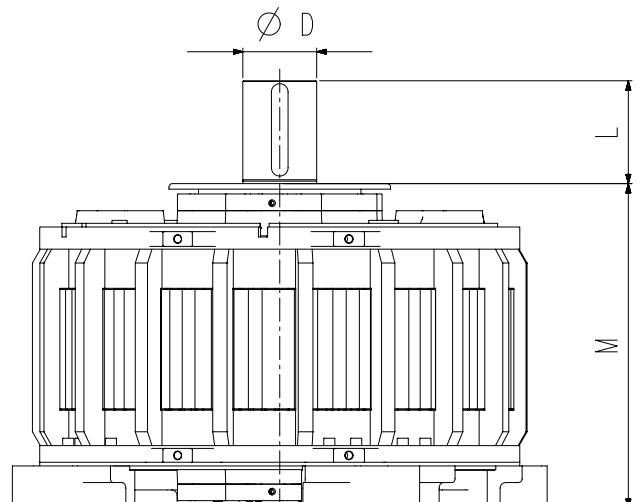
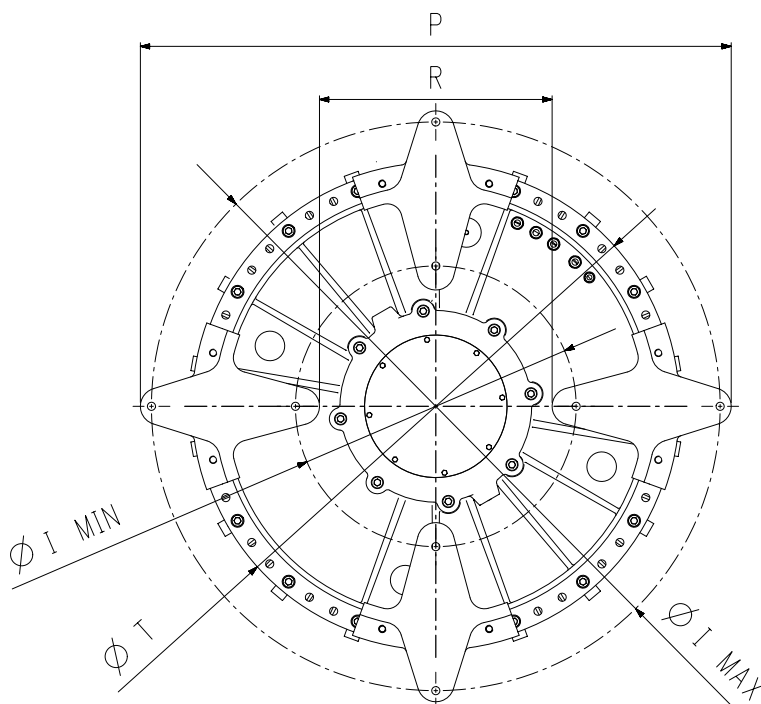
2) = max custom diam. 85 mm (3.3 in)

3) = max custom diam. 100 mm (3.9 in)

4) = max custom diam. 125 mm (4.9 in)

5) = max custom diam. 165 mm (6.4 in)

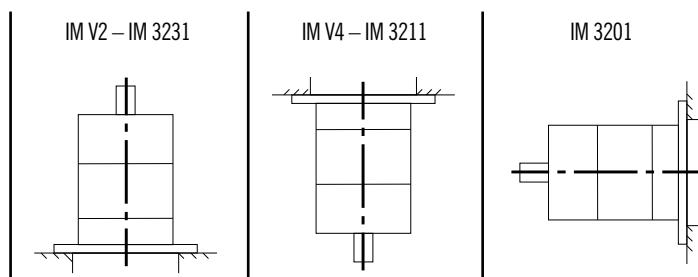
6) = max custom diam. 300 mm (11.8 in)



# MOUNTING CONFIGURATIONS

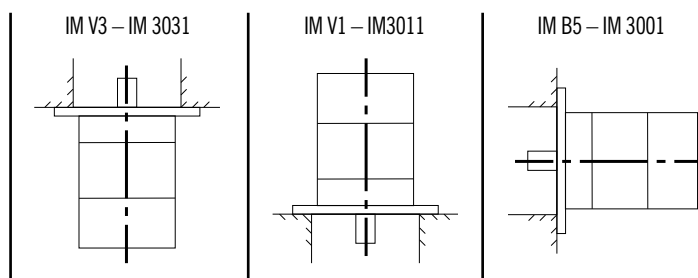
## STANDARD FORMS

- Endshield flange at N-end with access to back (pass-through holes)
- Shaft D-end up (IM V2 – IM 3231)
- Shaft D-end down (IM V4 – IM 3211)
- Horizontal shaft (IM 3201)



## OPTIONAL FORMS

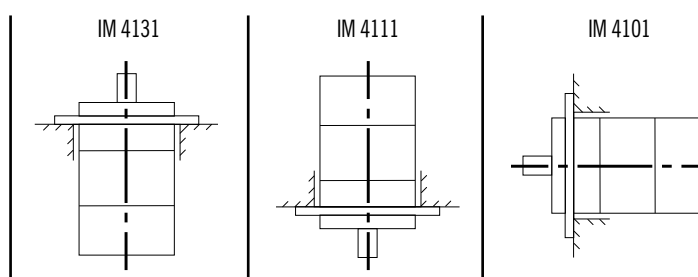
- Endshield flange at D-end with access to back (pass-through holes)
- Shaft D-end up (IM V3 – IM 3031)
- Shaft D-end down (IM V1 – IM 3011)
- Horizontal shaft (IM B5 – IM 3001)



## CUSTOM FORMS

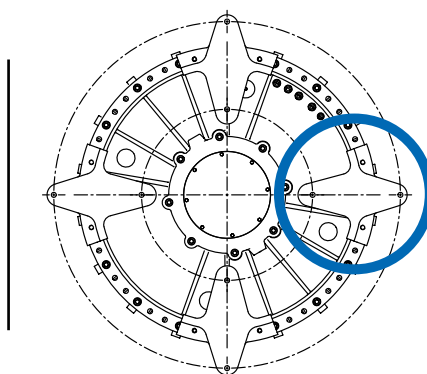
EVm series, thanks to its special design with high structural performances, through some specific modifications will be suitable to any working position, enlarging the application range in a flexible way.

- Interface flange to allow the following forms:  
IM 4131, IM 4111, IM 4101



## ACCESSORIES

- Raising feet for endshield flange at N-end
- Depending to the motor model the fixing can be in 3, 4, 5, 6, 8 points



# WE MAKE INNOVATION

ITALIAN DESIGN & INDUSTRIAL MANUFACTURING OF  
MOTORS, GENERATORS, CONTROLLERS, DRIVES  
FOR *POWER GENERATION, MOTION & CONTROL*



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