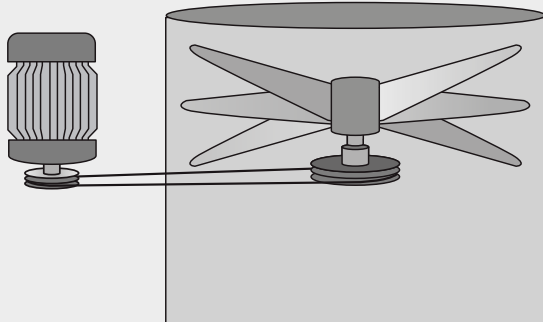
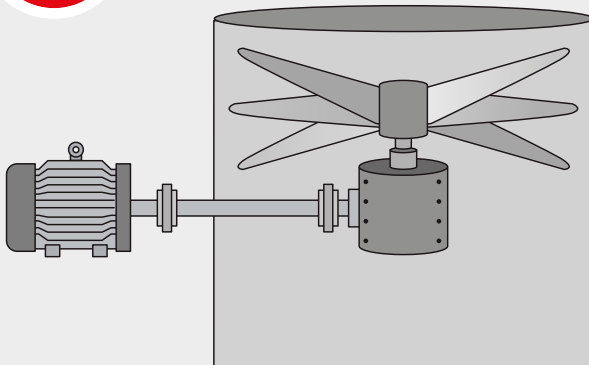


*Permanent Magnet Motors
for direct drive cooling towers fans*



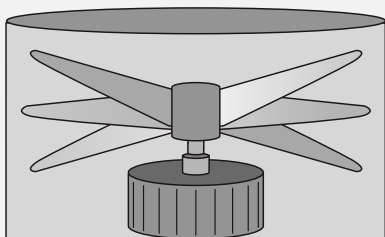
Belt and Pulley drive

- 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.

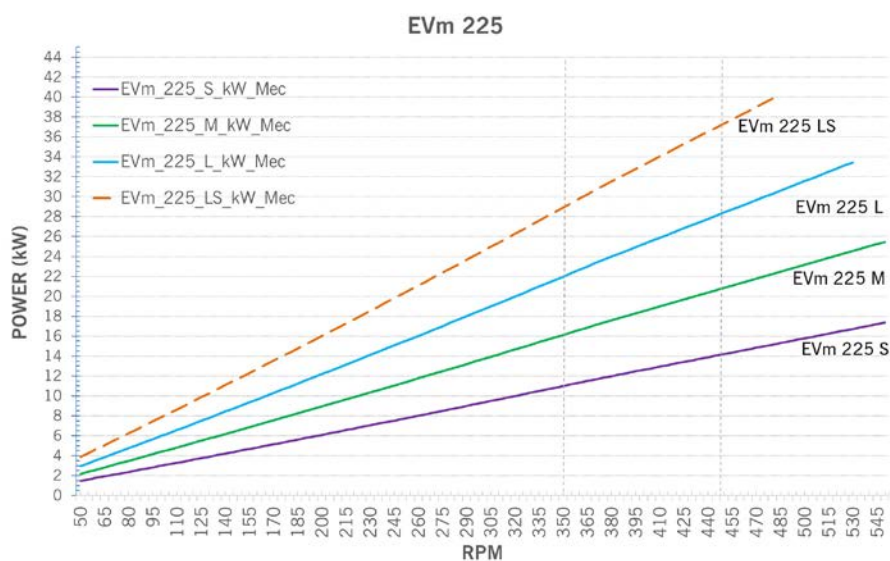
GENERAL FEATURES

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 - - - - -

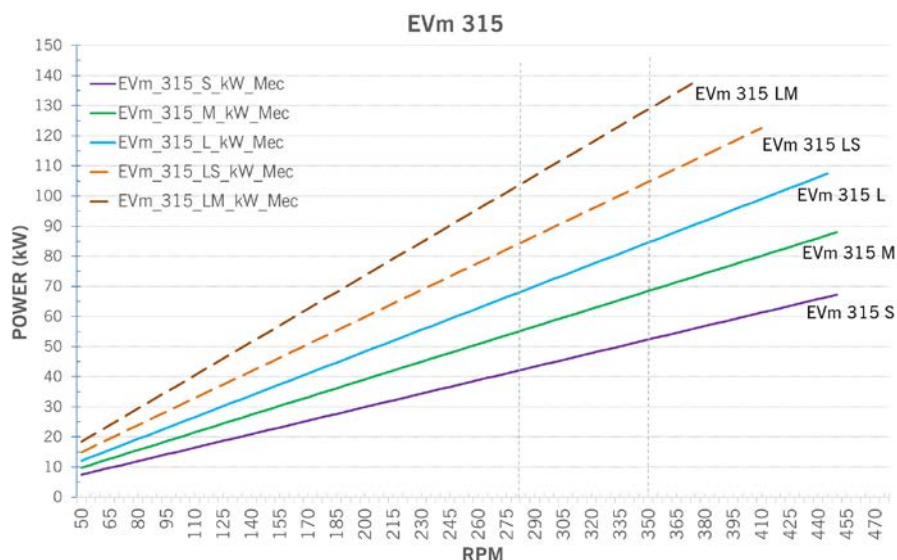
EVm 225

- 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



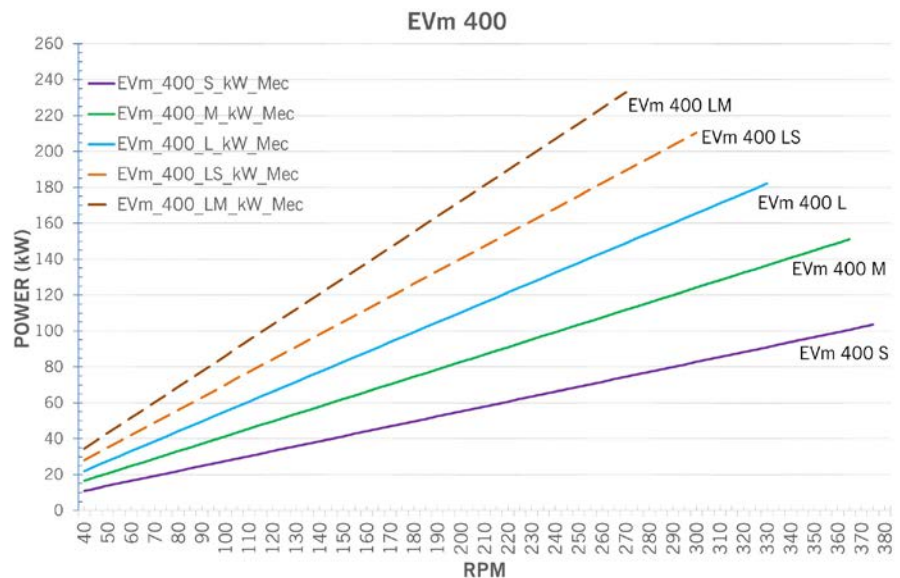
EVm 315

- 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



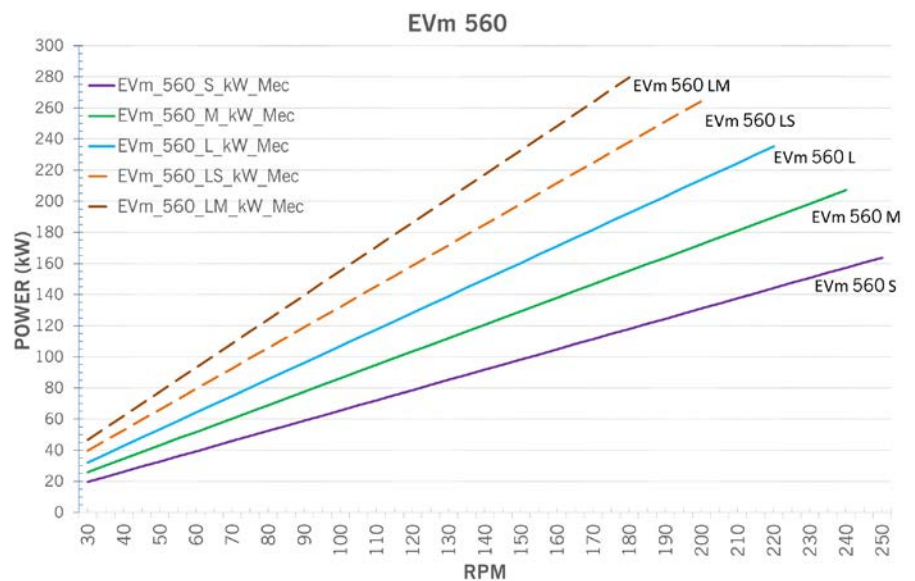
EVm 400

- 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)



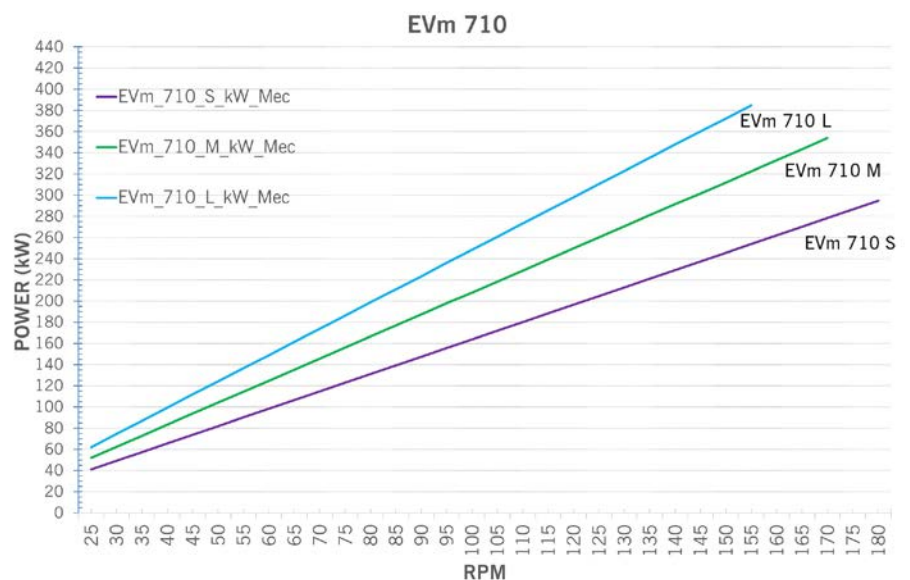
EVm 560

- 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

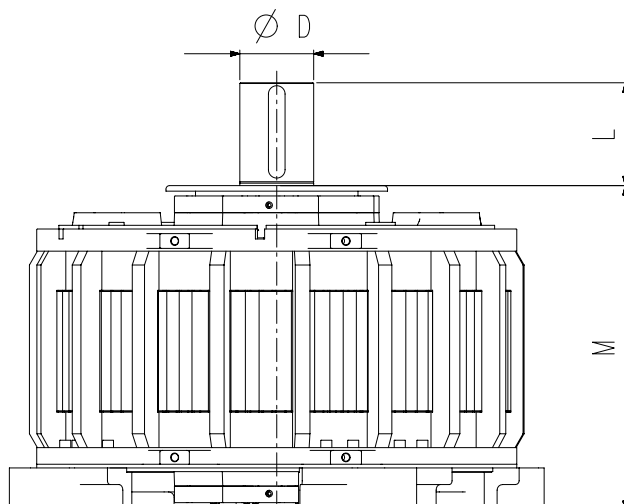
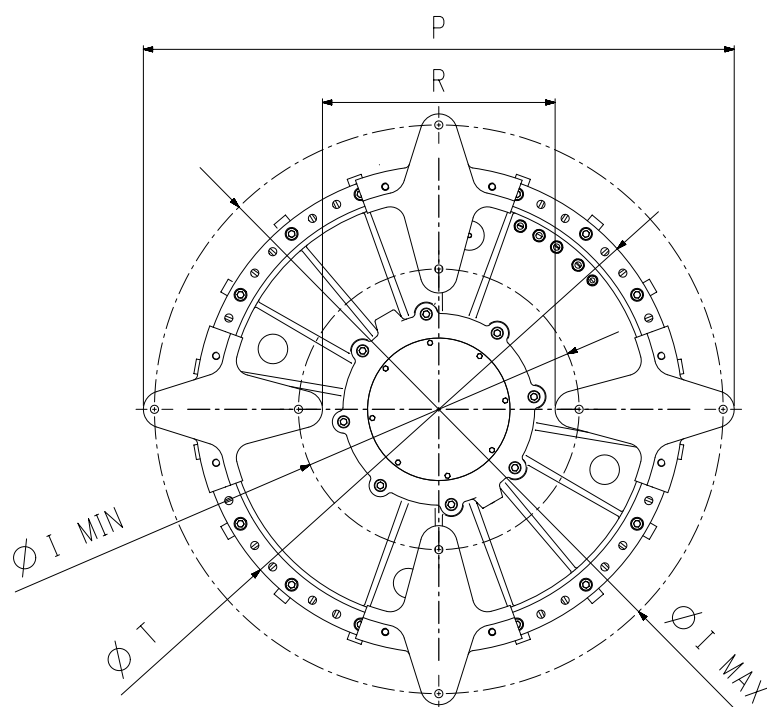
2) = max custom diam. 85 mm (3.3 in)

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)

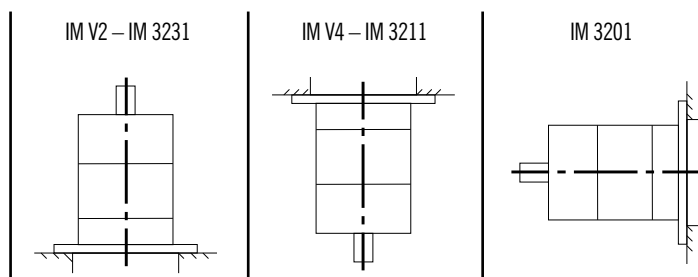
6) = max custom diam. 300 mm (11.8 in)



MOUNTING CONFIGURATIONS

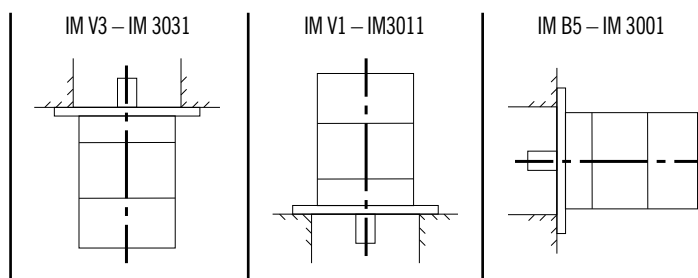
STANDARD FORMS

- 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

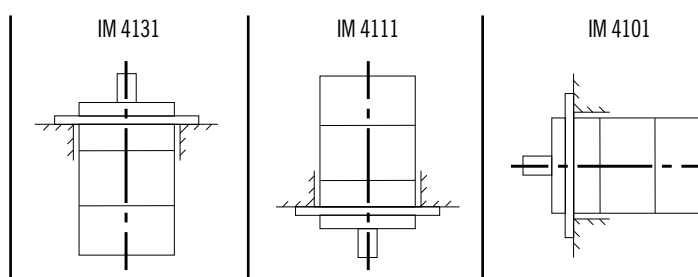
- Endshield flange at D-end with access to back (pass-through holes)
- Shaft D-end up (IM V3 – IM 3031)
- Shaft D-end down (IM V1 – IM 3011)
- Horizontal shaft (IM B5 – IM 3001)



CUSTOM FORMS

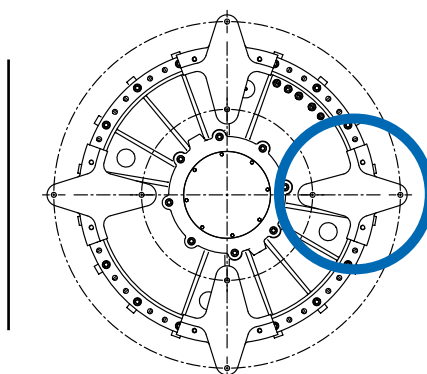
EVm series, thanks to its special design with high structural performances, through some specific modifications will be suitable to any working position, enlarging the application range in a flexible way.

- 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



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FOR *POWER GENERATION, MOTION & CONTROL*



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EVM 10/2021