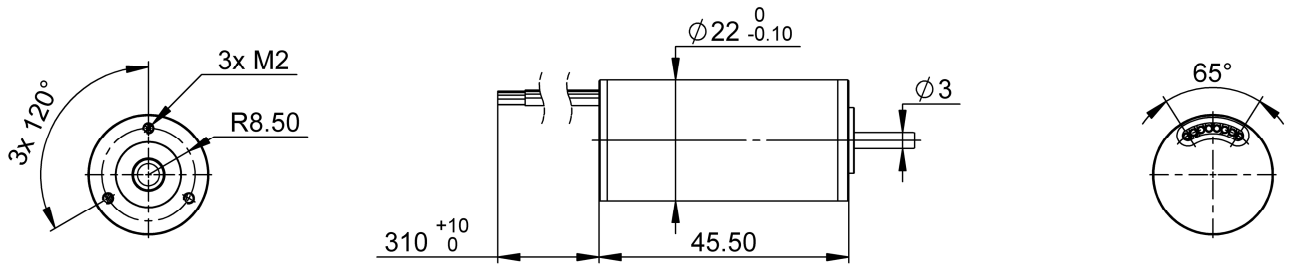
ELECTROMAG
ULTRA-QUIET HIGH-SPEED MOTORS

Ø22MM – 50W

BRUSHLESS MOTOR – HALL SENSORS OR SENSORLESS



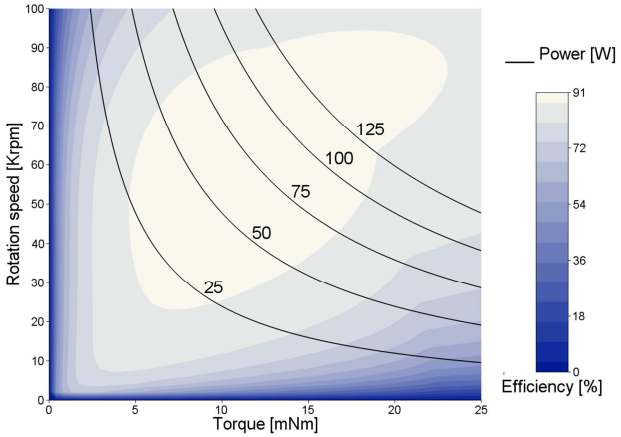
Motor parameters (25°C)			1	2	3
	Phase-Phase resistance	ohm	0.78	0.78	0.24
	Torque constant	mNm/A	7.54	6.02	3.51
	Back EMF constant	V/Krpm	0.79	0.63	0.368
	Phase-Phase inductance	mH	0.10	0.10	0.02
	Motor constant	mNm/√W	8.5	6.8	7.2
	Rotor inertia	10-7 Kg.m²	3.6	3.6	3.3
	Mechanical time constant	ms	4.9	7.8	6.4
	Electrical time constant	ms	0.12	0.12	0.1
Dynamic parameters at nominal voltage (25°C)					
	Nominal voltage	V	30	30	24
No load	Current	mA	115	85	190
	Speed	rpm	37'900	47'500	65'100
	Electrical input power	W	3.5	2.6	4.6
Peak efficiency	Current	A	1.72	1.48	3.55
	Torque	mNm	12.1	8.4	11.8
	Speed	rpm	35'400	44'900	61'700
	Electrical input power	W	51.5	44.3	85.2
	Mechanical output power	W	44.8	39.3	76.4
	Efficiency	%	87%	89%	90%

Motor specifications		
Number of pole pairs	-	1
Number of phases	-	3
Motor Mass	g	99
Thermal resistance	°C/W	16
Max permissible winding temperature	°C	155

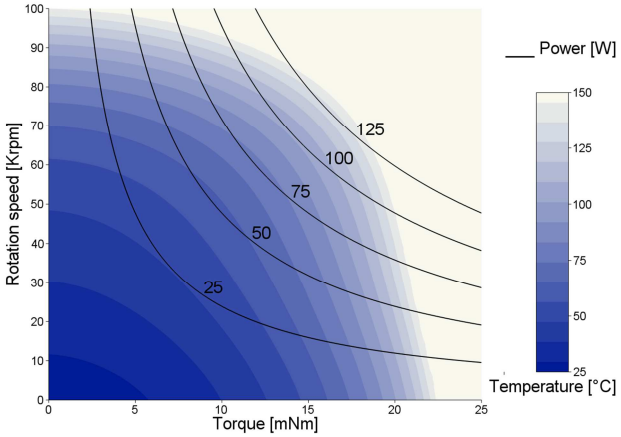
Motor configurations

All Electromag motors are available with custom configurations. Mechanical interface, windings and motor characteristics can be customized for each application.
This generic outline drawing only shows the envelope of the motor. For detail dimensions and tolerances, please contact the factory.

Efficiency & Mechanical power (motor 3)



Temperature & Mechanical power (motor 3)



Notes

Efficiency and temperature maps are obtained using a heat sink that reduces the motor thermal resistance by 50% (typical case). Continuous operation is allowed until the maximum winding temperature has been reached. Beyond this point, intermittent operation or additional cooling should be considered.

Rev 2014.08. Specifications are subject to change without prior notice

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