

TECNOTION[®]

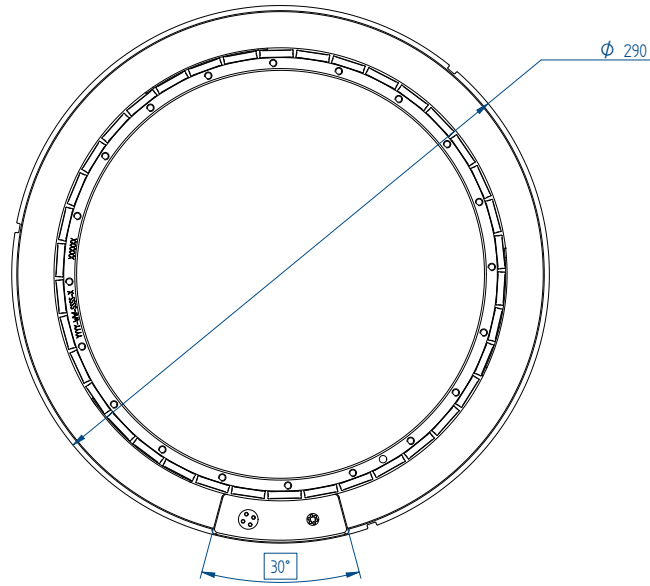
THE LINEAR MOTOR COMPANY

Frameless torque motor series

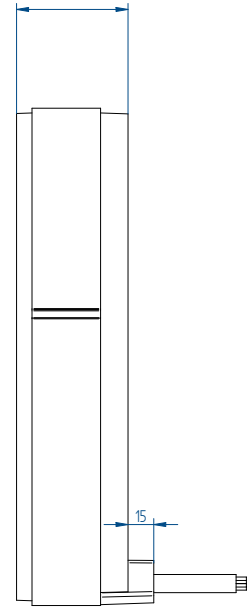


Mounting instructions and tolerances can be found in the torque installation manual. Manuals and 3D CAD files can be downloaded from our website.

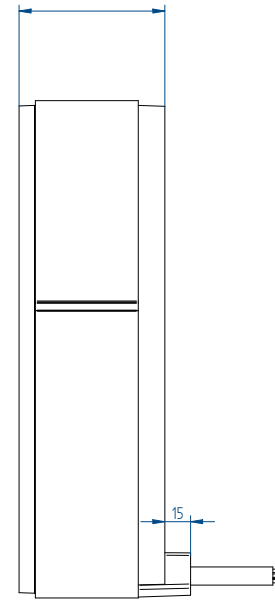
STATOR



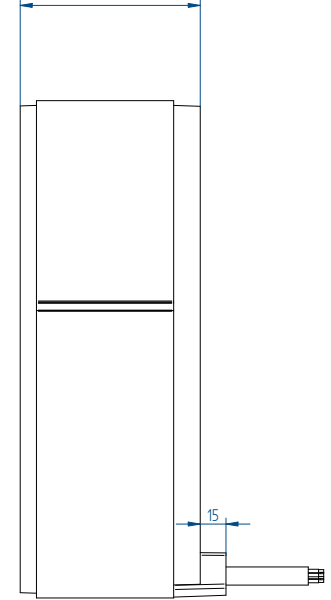
QTL-A 290-65



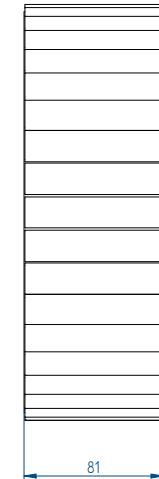
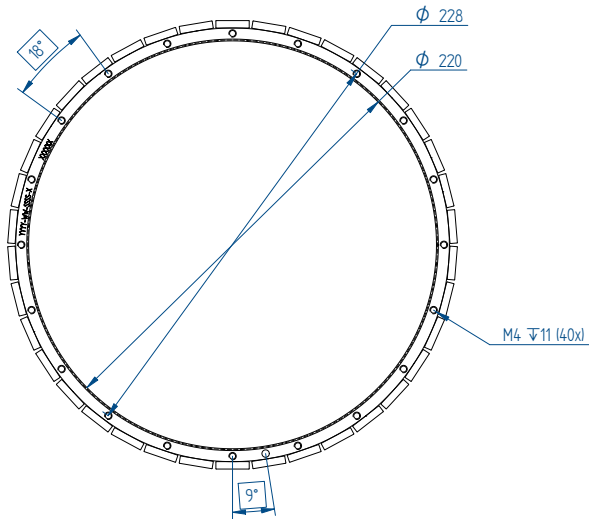
QTL-A 290-85



QTL-A 290-105



ROTOR



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QTL 290 series, with a height of 65 mm

	Parameter	Remarks	Symbol	Unit	QTL-A 290-65	QTL-A 290-85	QTL-A 290-105
Performance	Winding type				N	N	N
	Motortype max. voltage ph-ph	3-phase synchronous		$V_{ac\ rms} (V_{dc})$		480 (680)	
	Ultimate torque @ 20°C/s increase	magnet @ 25°C	T_u	Nm	389	583	778
	Peak torque @ 6°C/s increase	magnet @ 25°C	T_p	Nm	316	474	632
	Continuous torque	coil @ 100°C	T_c	Nm	140	222	305
	Stall torque	coil @ 100°C	T_s	Nm	99	157	215
	Maximum speed ⁽¹⁾	@ Tc @ 680 Vdc	n_{max}	rpm	306	189	130
	Motor torque constant	up to Ic	K_t	Nm/A _{rms}	19.7	29.5	39.3
	Motor constant	coils @ 25°C	K_m	(Nm) ² /W	27.0	45.5	64.7
	Electrical	Ultimate current	magnet @ 25°C	I_u	A _{rms}	22.0	22.0
Peak current		magnet @ 25°C	I_p	A _{rms}	16.9	16.9	16.9
Maximum continuous current ⁽²⁾		coils @ 100°C	I_c	A _{rms}	7.14	7.54	7.75
Stall current ⁽²⁾		coils @ 100°C	I_s	A _{rms}	5.05	5.33	5.48
Back EMF phase-phase _{peak}			K_e	V/krpm	1681	2521	3362
Back EMF phase-phase _{RMS}			K_e	V/krpm	1189	1783	2377
Coil resistance per phase		coils @ 25°C ex. cable	R	Ω	4.77	6.37	7.96
Coil induction per phase		l < 0.6 lp	L	mH	23.9	34.7	45.5
Electrical time constant			τ_e	ms	5.0	5.5	5.7
Poles			N_{mgn}	nr	38	38	38
Thermal	Continuous power loss	coils @ 100°C	P_c	W	948	1410	1864
	Thermal resistance ⁽³⁾	coils to mount. sfc.	R_{th}	°C/W	0.084	0.057	0.043
	Thermal time constant		τ_{th}	s	57	52	49
	Temperature cut-off / sensor				PTC 1kΩ (3x) / PT1000 (3x)		
Mechanical	Stator OD		OD _s	mm	290		
	Rotor ID		ID _R	mm	220		
	Motor height		H _{motor}	mm	65	85	105
	Lamination stack height		H _{arm}	mm	40	60	80
	Rotor inertia		J _R	kg*m ²	0.031	0.046	0.061
	Stator mass	excluding cables	M _s	kg	6.0	8.3	10.8
	Rotor mass		M _R	kg	2.3	3.5	4.7
	Total mass	excluding cables	M _T	kg	8.3	11.8	15.5
	Cable mass	all cables	m	g	500		
	Cable type (power)	length 2 m	d	mm (AWG)	10.6 (13)		
Cable type (sensor)	length 2 m	d	mm (AWG)	6.4 (25)			

All specifications ±0%

1. Actual values depend on bus voltage. Please check the T/n diagram in our manual or online simulation tool.
2. These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool or manual.
3. R_{th} based on radial mounting of stator lamination stack.

This catalogue is offered to you by:

Tecnotion Headquarters

Twentepoort West 15
7609 RD Almelo
The Netherlands

Tel. +31 (0)546 536 300
Fax +31 (0)546 536 380
sales@tecnotion.com

Tecnotion GmbH

Elsenheimerstraße 59
80687 München
Deutschland

Tel. +49 89 381537-400
Fax +49 89 381537-409
info@tecnotion.de

Tecnotion Sp. z o.o.

Ul. Ryżowa 49
02-495 Warszawa
Poland

Tel. +48 606 544 046
info@tecnotion.pl

Tecnotion Rep. of Korea

Room #409,
Seoul Forest Halla Eco Valley
25, Ttukseom-ro 1-gil
04778 Seongdong-gu,
Seoul South Korea

Tel. +82 (0)10 4540 5599
korea@tecnotion.com

Tecnotion USA

200 Broad Hollow Rd -
Suite 207
Melville, NY, 11747
United States

Tel.+01 (631) 983-2833
sales@tecnotion.com