TECNOTION THE LINEAR MOTOR COMPANY | UL Series Ironless

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	Parameter	Remarks	Symbol	Unit	UL3		UL6		UL9		UL12	
Performance	Winding type				N	S	N	S	N	S	N	S
	Motortype, max voltage ph-ph				3-phase synchronous Ironless, 300V_{dc}							
	Peak Force @ 20°C/s	magnet @ 25°C	F_p	N	240		480		720		960	
	Continuous Force*	coils @ 110°C	F_c	N	70		140		210		280	
	Maximum Speed**	@ 300 V	v_{max}	m/s	5	12	5	12	5	12	5	12
	Motor Force Constant	coils @ 25°C	K	N/A_{rms}	68	27.5	68	27.5	68	27.5	68	27.5
	Motor Constant	coils @ 25°C	S	N^2/W	97		195		290		390	
Electrical	Peak Current	magnet @ 25°C	I_p	A_{rms}	3.5	8.7	7	17.5	10.5	26.2	14.1	35
	Maximum Continous Current	coils @ 110°C	I_c	A_{rms}	1.03	2.6	2.1	5.1	3.1	7.6	4.2	10.2
	Back EMF Phase-Phase		B_{emf}	V_{rms} / m/s	55.5	22.5	55.5	22.5	55.5	22.5	55.5	22.5
	Resistance per Phase	coils @ 25°C ex. cable	R_f	Ω	15.9	2.6	8.0	1.28	5.3	0.85	4.0	0.64
	Induction per Phase	I < 0.6 Ip	L_f	mH	13	2.0	6.5	1.0	4.2	0.7	3.2	0.5
	Electrical Time Constant	coils @ 25°C	τ_e	ms	0.8		0.8		0.8		0.8	
Thermal	Maximum Continuous Power Loss	all coils	P_c	W	67		134		200		270	
	Thermal Resistance		R_{th}	°C/W	1.3		0.65		0.43		0.32	
	Thermal Time Constant	minimum	τ_{th}	s	72		72		72		72	
	Temperature Sensors				PTC 1kΩ and NTC							
Mechanical	Coil Unit Weight	ex. cables	M	kg	0.250		0.470		0.690		0.910	
	Coil Unit Length	ex. cables	L	mm	106		190		274		358	
	Motor Attraction Force		F_a	N	0		0		0		0	
	Magnet Pitch NN		τ	mm	42		42		42		42	
	Cable Weight		m	gr/m	90		90		90		105	
	Cable Type (Power)	length 1 m	d	mm (AWG)	5.8 (20)						6.4 (18)	
	Cable Type (Sensor)	length 1 m	d	mm (AWG)	4.3 (26)						4.3 (26)	

UL3 in 210mm magnet yoke shown

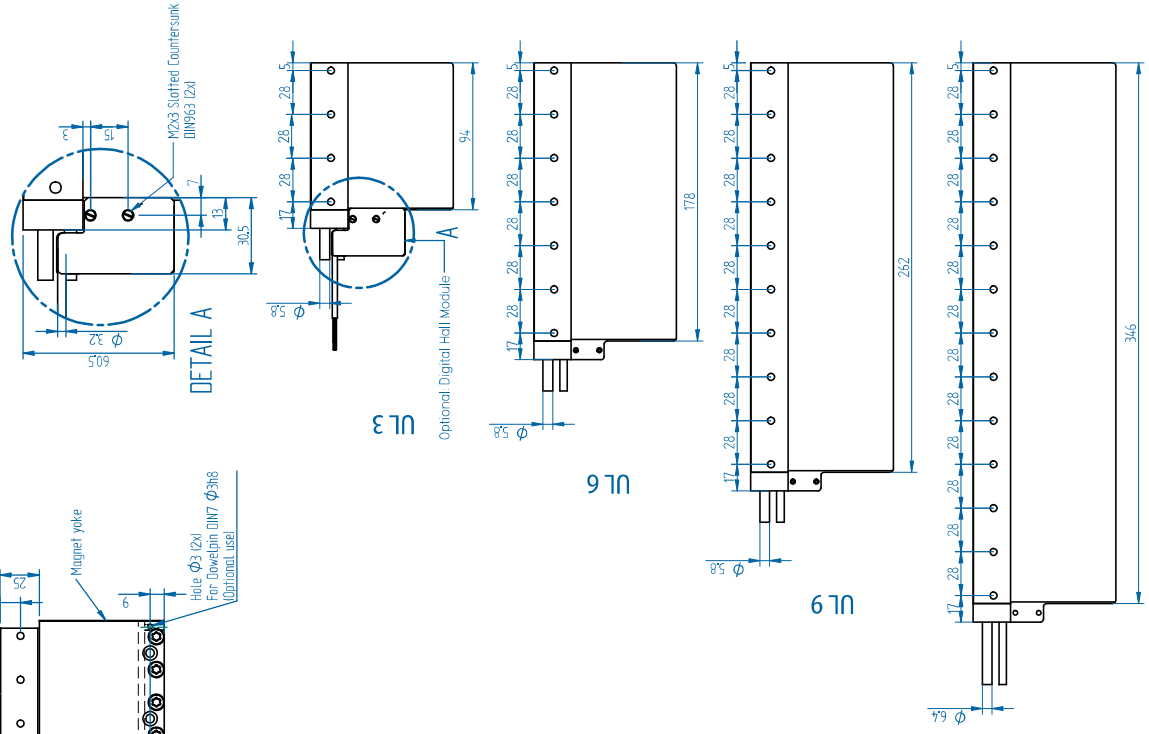
All specifications ±10%

Magnet yoke dimensions				
Le (mm)	126	168	210	546
M5 bolts	3	4	5	13
Mass (kg/m)	11.2			
Magnet yokes can be butted together.				

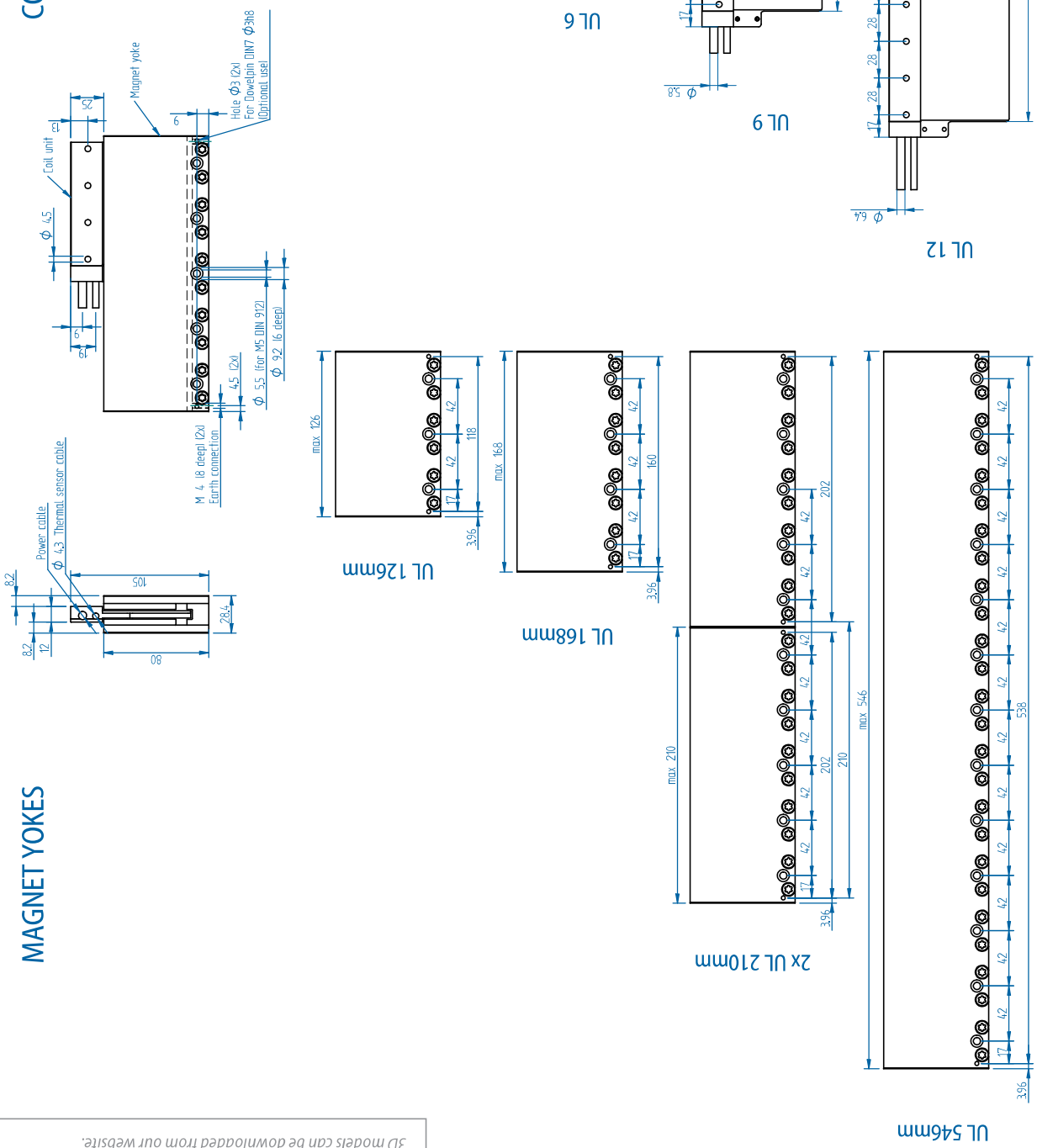
*Max. continuous force depends on the thermal resistance, cooling surface and ambient temperature of your application. Download our simulation tool to check the motor's thermal behavior in the application.

** Actual values depend on bus voltage. Please check the F/V diagram in our simulation tool.

COIL UNITS



MAGNET YOKES



Mounting instructions and flatness or parallelism requirements can be found in the Ironless installation manual. CAD files and 3D models can be downloaded from our website.