TECNOTION THE LINEAR MOTOR COMPANY | UM Series Ironless

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	Parameter	Remarks	Symbol	Unit	UM3		UM6		UM9		UM12	
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	100		200		300		400	
	Continuous Force*	coils @ 110°C	F_c	N	29		58		87		116	
	Maximum Speed**	@ 300 V	v_{max}	m/s	10	18	10	18	10	17	10	16
	Motor Force Constant	coils @ 25°C	K	N/A_{rms}	36.3	19.9	36.3	19.9	36.3	19.9	36.3	19.9
	Motor Constant	coils @ 25°C?	S	N^2/W	24		48		71		95	
Electrical	Peak Current	magnet @ 25°C	I_p	A_{rms}	2.8	5.0	5.5	10.0	8.3	15.0	11.0	20.0
	Maximum Continous Current	coils @ 110°C	I_c	A_{rms}	0.8	1.5	1.6	2.9	2.4	4.4	3.2	5.8
	Back EMF Phase-Phase		B_{emf}	V_{rms} / m/s	30	16	30	16	30	16	30	16
	Resistance per Phase	coils @ 25°C ex. cable	R_f	Ω	18.5	5.5	9.3	2.8	6.2	1.8	4.6	1.4
	Induction per Phase	I < 0.6 Ip	L_f	mH	6	1.8	3	0.9	2	0.6	1.5	0.4
	Electrical Time Constant	coils @ 25°C	τ_e	ms	0.35		0.35		0.35		0.35	
Thermal	Maximum Continuous Power Loss	all coils	P_c	W	47		95		142		190	
	Thermal Resistance		R_{th}	°C/W	1.8		0.9		0.6		0.45	
	Thermal Time Constant	minimum	τ_{th}	s	36		36		36		36	
	Temperature Sensors				PTC 1kΩ and NTC							
Mechanical	Coil Unit Weight	ex. cables	M	kg	0.084		0.162		0.240		0.318	
	Coil Unit Length	ex. cables	L	mm	78		138		198		258	
	Motor Attraction Force		F_a	N	0		0		0		0	
	Magnet Pitch NN		τ	mm	30		30		30		30	
	Cable Weight		m	gr/m	80		80		80		80	
	Cable Type (Power)	length 1 m	d	mm (AWG)	5.3 (22)							
	Cable Type (Sensor)	length 1 m	d	mm (AWG)	3.2 (26)							

UM3 in 150mm magnet yoke shown

All specifications ±10%

Magnet yoke dimensions				
Le (mm)	90	120	150	390
M4 bolts	3	4	6	13
Mass (kg/m)	4.8			
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.

Purchase Source: GROUP SIX (USA & CAN)
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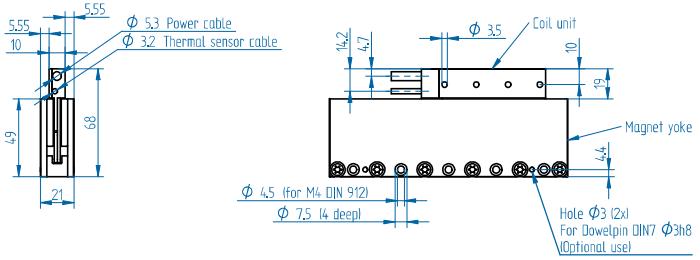
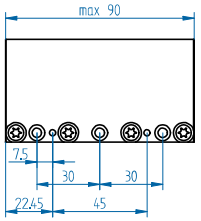
Mounting instructions and flatness or parallelism requirements can be found in the Ironless installation manual. CAD files and 3D models can be downloaded from our website.

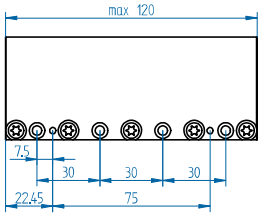
MAGNET YOKES



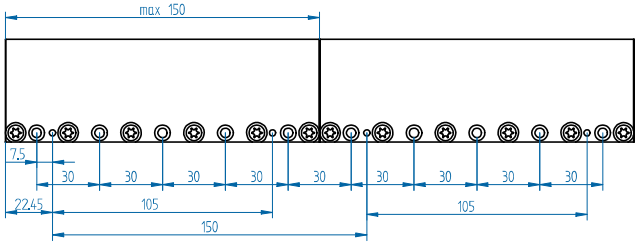
UM 90mm



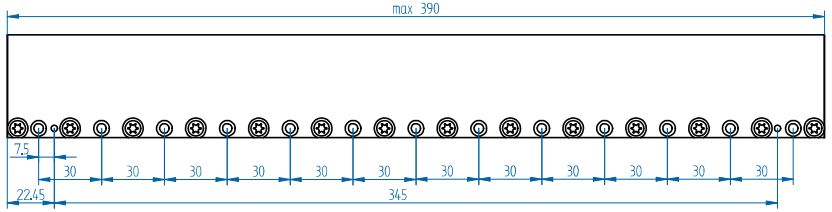
UM 120mm



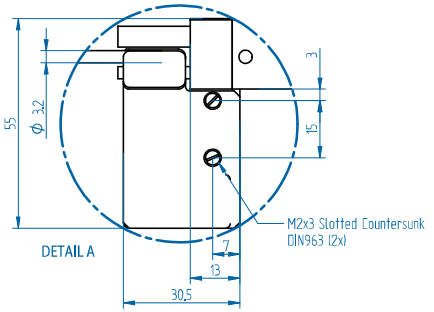
2x UM 150mm



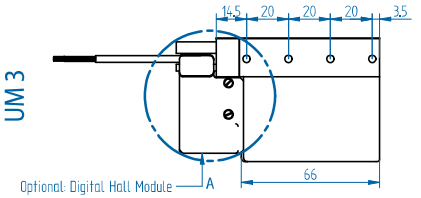
UM 390mm



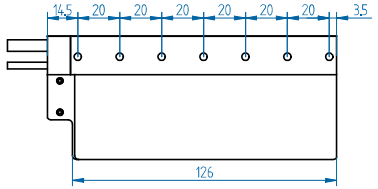
COIL UNITS



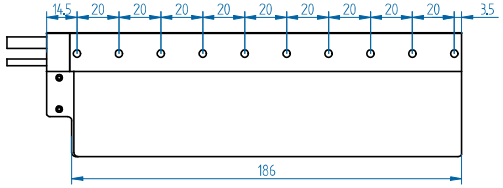
UM 3



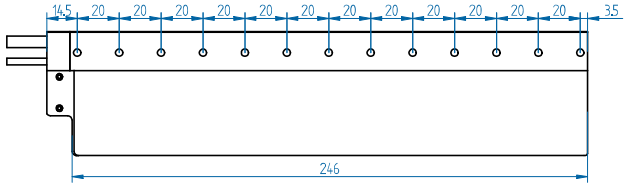
UM 6



UM 9



UM 12



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