TECNOTION
THE LINEAR MOTOR COMPANY

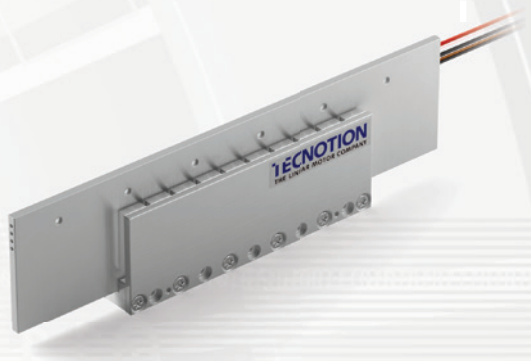
Vacuum Ironless Series

	Parameter	Remarks	Symbol	Unit	UMV12		ULV9	
Performance	Winding type				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	400		720	
	Continuous Force*	coils @ 110°C	F_c	N	20..80		45..150	
	Maximum Speed**	@ 300 V	v_{max}	m/s	10	16	5	12
	Motor Force Constant	coils @ 25°C	K	N/A_{rms}	36.3	19.9	68	27.5
	Motor Constant	coils @ 25°C	S	N^2/W	95		290	
Electrical	Peak Current	magnet @ 25°C	I_p	A_{rms}	11.0	20.0	10.6	26
	Maximum Continous Current	coils @ 110°C	I_c	A_{rms}				
	Back EMF Phase-Phase Peak		B_{emf}	V_{dc} / m/s	30	16	55.5	25.5
	Resistance per Phase	coils @ 25°C ex. cable	R_f	Ω	4.6	1.4	5.3	0.85
	Induction per Phase	I < 0.6 Ip	L_f	mH	1.5	0.4	4.2	0.7
	Electrical Time Constant	coils @ 25°C	τ_e	ms	0.3		0.8	
	Thermal Resistance		R_{th}	°C/W	0.6		1.0	
	Temperature Sensors				NTC 10KΩ			
Mechanical	Coil Unit Weight	ex. cables	M	kg	0.330		0.720	
	Coil Unit Length	ex. cables	L	mm	260		272	
	Motor Attraction Force		F_a	N	0		0	
	Magnet Pitch NN		τ	mm	30		42	
	Cable Weight		m	kg/m	0.060		0.060	

All specifications ±10%

** Depends on environmental conditions in the application. Lower values when depending on thermal radiation, upper values when using water cooling.*

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



UMV12 in 150mm magnet yoke shown

UMV Magnet yoke dimensions	
Le (mm)	150
M4 bolts	5
Mass (kg/m)	6.7
Magnet yokes can be butted together.	

ULV Magnet yoke dimensions	
Le (mm)	126
M5 bolts	6
Mass (kg/m)	13.6
Magnet yokes can be butted together.	

Outgassing

Information and specifications concerning outgassing of the UMV and ULV series are available on request. Since these values depend on materials and environmental conditions, please contact us directly so we can advise you about your specific vacuum application. The knowledge and experience we've gained from designing and implementing custom vacuum motors for large OEMs enable us to provide a fitting solution for any application.

Suited for pressures of 10^{-7} mbar and lower, due to:

- Custom stainless steel coil unit housing
- Special high vacuum cables
- Low outgassing yoke design
- Cleanroom manufacturing process

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