

# BLMA Linear Motor Driven Module

## Features

- Linear Servo Motor Drive
- $\pm 10.0 \mu\text{m}$  positional repeatability
- Velocity up to 7 meters/sec.
- Acceleration to 5 g's
- IP30 seal strip
- Standard travels to 6 meters

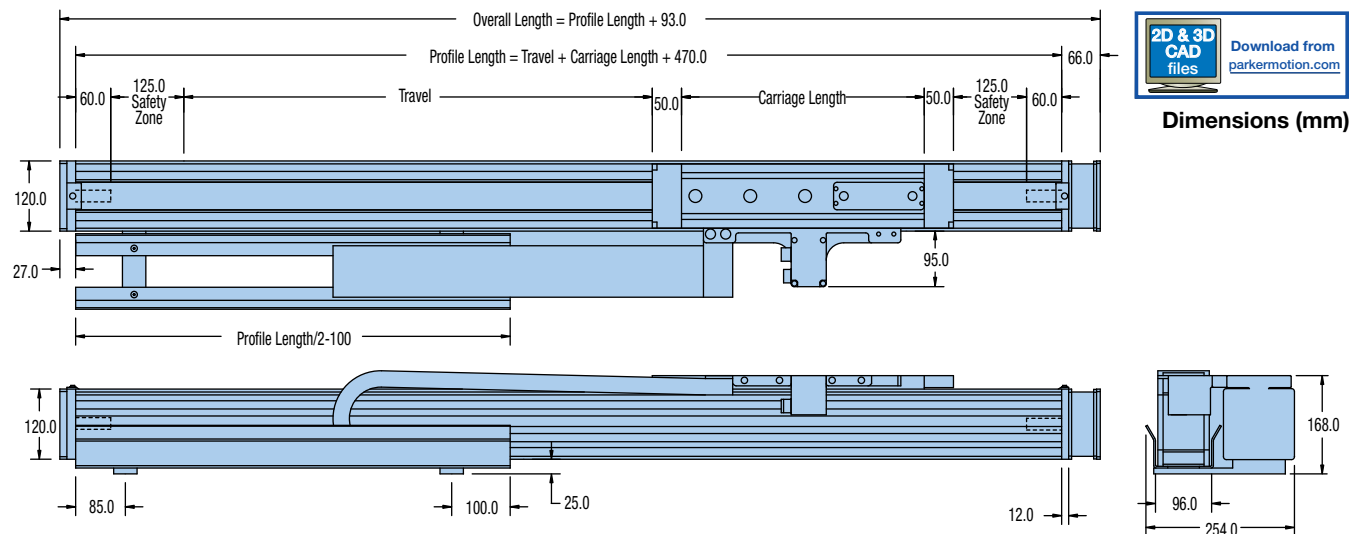


Parker's BLMA120 linear servo motor actuator offers high end, direct drive performance to the industrial actuator world for material handling and similar applications that require higher accelerations, higher speeds, instant settling, and precise positioning over long travels. (BLMA = Balanced Linear Motor Actuator). The BLMA is a plug and play linear motor actuator which houses a powerful linear servo motor (380 pounds of peak thrust) in a high strength rigid aluminum body to enable high end performance over long unsupported spans.

The direct, non-contact drive design eliminates the need for mechanical transmission components, creating several advantages:

- A low system mass moment of inertia, and as a result high acceleration and speed capability.
- The elimination of losses due to mechanics means higher system accuracy.
- Stiffness is improved through the elimination of mechanical components and their inherent sloppiness.
- Long service life, as there is no mechanical wear associated with the non-contact transmission of force.
- Quiet operation.

The external dimensions of the BLMA are identical to those of the belt-driven HPLA120, making it easy to combine with other Parker linear drive products. The linear motor is completely internal, and an IP30 steel strip seal protects the linear motor from dust and debris. An integrated SinCos linear encoder ensures the highest repeatability. The linear bearing system consists of proven polyamide-covered roller bearing wheels that are lubricated for life. Wheel play is eliminated through the use of eccentric adjustments on all sides. Two mounting grooves reside on both sides and on the underside of the bearing extrusion. The grooves allow the mounting of additional mechanical components as well as additional linear motion axes. Additional forcer-carriages on a single axis are possible.





### BLMA Table Specifications

	Units	12 Pole				20 Pole			
		Series		Parallel		Series		Parallel	
		Polyamide Wheels	Steel Wheels	Polyamide Wheels	Steel Wheels	Polyamide Wheels	Steel Wheels	Polyamide Wheels	Steel Wheels
Nominal Speed	m/s (in/s)	5 (200)		5 (200)		5 (200)		5 (200)	
Peak Speed	m/s (in/s)	7 (280)		7 (280)		7 (280)		7 (280)	
Nominal Acceleration	m/s <sup>2</sup> (in/s <sup>2</sup> )	20 (786)		20 (786)		20 (786)		20 (786)	
Peak Acceleration	m/s <sup>2</sup> (in/s <sup>2</sup> )	50 (1965)		50 (1965)		50 (1965)		50 (1965)	
Carriage Length	mm (in)	515 (20.3)	45 (1.5)	695 (27.4)	725 (28.5)	680 (26.8)	710 (28.0)	860 (33.9)	890 (35.0)
Maximum Stroke	mm (in)	6329 (249)	6299 (248)	6149 (242)	6119 (240)	6164 (242)	6134 (241)	5984 (235)	5954 (234)
Carriage Weight	kg (lb)	11.6 (25.5)		14.2 (31.2)		16.3 (35.9)		18.9 (41.6)	
Weight of Base Unit	kg (lb)	25.7 (56.5)		27.9 (61.4)		32.8 (72.2)		35.0 (77.0)	
Static Friction	N	30 (6.7)		30 (6.7)		30 (6.7)		30 (6.7)	
Damping	N/m/s (lb/in/s)	15 (0.086)		25 (0.143)		15 (0.086)		25 (0.143)	
Repeatability	µm (in <sup>-3</sup> )	±10 (0.4)		±10 (0.4)		±10 (0.4)		±10 (0.4)	
Ambient Temperature	°C	5 to 30		5 to 30		5 to 30		5 to 30	

### BLMA Motor Specifications

	Units	12 Pole				20 Pole			
		Series		Parallel		Series		Parallel	
		Polyamide Wheels	Steel Wheels	Polyamide Wheels	Steel Wheels	Polyamide Wheels	Steel Wheels	Polyamide Wheels	Steel Wheels
Continuous Force, Water Cooled	N (lb)	419 (94)	520 (117)	419 (94)	520 (117)	689 (155)	844 (190)	689 (155)	844 (190)
Continuous Current, Water Cooled	A	6.5	8.0	13.0	16.1	11.9	14.6	23.8	29.1
Continuous Force, Air Cooled	N (lb)	310 (70)	385 (87)	310 (70)	385 (87)	510 (115)	625 (141)	510 (115)	625 (141)
Continuous Current, Air Cooled	A	4.8	6.0	9.6	11.9	8.8	10.8	17.6	21.6
Peak Force	N (lb)	892 (200)	892 (200)	892 (200)	892 (200)	1693 (380)	1693 (380)	1693 (380)	1693 (380)
Peak Current	A	16.8	16.8	33.6	33.6	30.8	30.8	61.6	61.6
Resistance	Ohm	4.2	4.2	1.05	1.05	2.8	2.8	0.7	0.7
Inductance	mH	23.85	23.85	5.96	5.96	13.09	13.09	3.27	3.27
Back EMF	V/m/s (V/in/s)	59 (1.5)	59 (1.5)	30 (0.8)	30 (0.8)	59 (1.5)	59 (1.5)	30 (0.8)	30 (0.8)
Resolver Offset	degrees	58	58	58	58	58	58	58	58
Max. Coil Temperature	°C	90	130	90	130	90	130	90	130
Carriage Temperature	°C	55	75	55	75	65	95	65	95
Magnetic Pitch Motor	mm (in)	42 (1.654)	42 (1.654)	42 (1.654)	42 (1.654)	42 (1.654)	42 (1.654)	42 (1.654)	42 (1.654)
Feedback	-	SinCos	SinCos	SinCos	SinCos	SinCos	SinCos	SinCos	SinCos
Magnetic Pitch (feedback)	mm (in)	1 (0.0394)	1 (0.0394)	1 (0.0394)	1 (0.0394)	1 (0.0394)	1 (0.0394)	1 (0.0394)	1 (0.0394)
Time at Peak Current	sec	5	5	5	5	5	5	5	5
Recommended Compax 3 Power Level*		S063V2 or S075V4		S150V4		S150V4		S300V4	

\*Refer to the Drive and Controllers section for Compax 3 Drive Information

Belt Driven Tables

