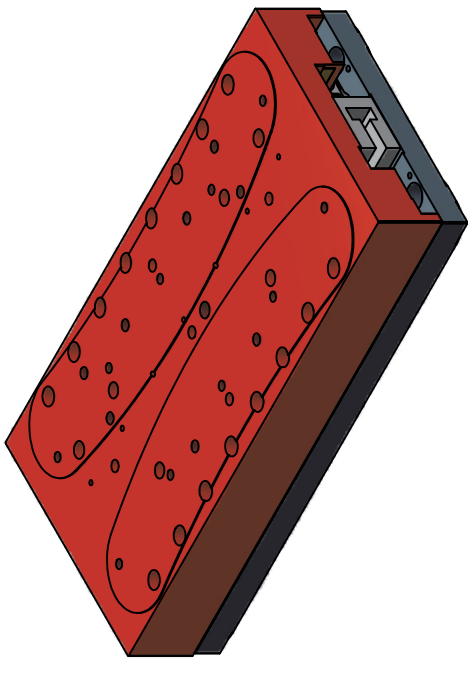




ALIO STAGE AND MOTOR SPECIFICATIONS

MODEL	UNITS	AI-LM-5000	AI-LM-10000	AI-LM-15000	AI-LM-20000	AI-LM-25000	AI-LM-30000
TRAVEL	mm	50	100	150	200	250	300
PERFORMANCE SPECIFICATIONS [1]		(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO
LINEAR DISPLACEMENT ACCURACY	um	+/- 0.5	+/- 0.7	+/- 0.7	+/- 1.0	+/- 1.0	+/- 1.0
BIDIRECTIONAL LINEAR REPEATABILITY	nanometers	+/- 30	+/- 30	+/- 30	+/- 30	+/- 30	+/- 30
RESOLUTION	nanometers	5 nm (standard) (options available)					
STRAIGHTNESS	um	+/- 2.5	+/- 1.5	+/- 1.5	+/- 1.2	+/- 3	+/- 4.5
FLATNESS [2]	um	+/- 2.0	+/- 1.0	+/- 1.5	+/- 1.5	+/- 5	+/- 5
PITCH	arc-sec	10	10	15	15	18	18
YAW	arc-sec	10	10	15	15	18	18
ROLL	arc-sec	6	6	8	8	10	10
MOTION PROFILE SPECIFICATIONS							
MAX VELOCITY [3]	m/s	0.7	0.7	0.7	1.0	1.0	1.0
MAX ACCELERATION [3]	G	1.0	1.0	1.0	1.0	0.7	0.7
MAX PAYLOAD CAPABILITY	kg	20	25	25	30	40	50
ASSEMBLY MASS	kg	2.2	4.0	4.4	7.8	9.4	15.2
MOVING MASS	kg	1.4	2.4	2.7	4.7	4.6	9.0
MOTOR INFORMATION							
MOTOR TYPE	--	LINEAR BRUSHLESS SERVO MOTOR					
MOTOR MODEL	--	P12-1	P12-2	P12-2	P16-2	P16-2	P16-3
MAGNETIC PITCH (N-N)	mm	30.48	30.48	30.48	30.48	30.48	30.48
MAX VOLTAGE (LINE TO LINE) [4]	V	500	500	500	500	500	500
ELECTRICAL TIME CONSTANT	msec	0.19	0.19	0.19	0.20	0.20	0.20
MAX MOTOR TEMP	°C	130	130	130	130	130	130
MOTOR CONNECTION	--	DELTA	DELTA	DELTA	DELTA	DELTA	DELTA
FORCE CONSTANT	N/Apk	8.1	16.3	16.3	28.7	28.7	43.0
PHASE RESISTANCE (@25° C) [5]	Ohm	5.8	11.6	11.6	11.7	11.7	17.6
PHASE RESISTANCE (@130° C) [5]	Ohm	8.2	16.4	16.4	16.6	16.6	24.9
INDUCTANCE	mH	1.1	2.1	2.1	2.3	2.3	3.5
CONTINUOUS FORCE [6]	N	23	47	47	93	93	140
CONTINUOUS CURRENT [6]	Apk	2.9	2.9	2.9	3.2	3.2	3.2
PEAK FORCE [7]	N	75	151	151	295	295	442
PEAK CURRENT [7]	Apk	9.2	9.2	9.2	10.3	10.3	10.3
BACKEMF CONSTANT	V/m/s	8.1	16.3	16.3	28.7	28.7	43.0



Notes:

- Specifications measured on stage centerline, 50mm above mounting surface. ALIO provides NIST traceable proof for all options/specs per quote.
- Flatness specifications dependent on system base. Contact ALIO for more information.
- Stage limitation at no load. Does not account for drive or resolution limitations.
- Back EMF plus IR drop must not exceed maximum line to line bus voltage.
- Resistance values do not include cable resistance. Cable resistance adds 0.146 ohm/m for Delta connection and 0.44 ohm/m for Wye Connection.
- Continuous operating limits are based on continuous operation at maximum temperature with aluminum heat sink (300mm x 12.5mm x motor length).
- Maximum on time at peak operating limits is 10 seconds.
- All electrical specifications may vary by 12% from listed values.
- Additional motor and travel options are available for optimized performance as necessary per customer requirements.

DRAWN	5/12/2012
NBROWN	
CHECKED	
TITLE	
AI-LM-(TRAVEL)00	
SIZE	DWG NO
B	0010-08002
SCALE	ALIO STD TEMPLATE - REV 006
FINISH	SEE NOTES
REVISION	REV
1	004

Tolerances: Surface Roughness:	
x.x ± .05 in [1.3 mm]	✓ RMS MAX.
x.xx ± .01 in [0.25 mm]	
x.xxx ± .005 in [0.13 mm]	
Angles ± 0.5°	
MATERIAL	
FINISH	SCALE
SEE NOTES	2
1	1
OF	1

A

4

3

4

2

1

1

1