

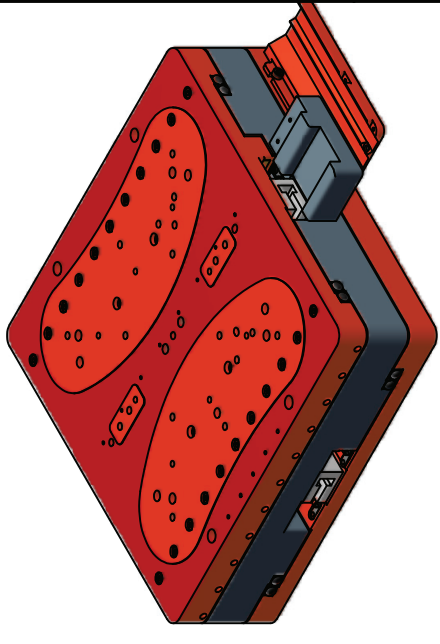


ALIO STAGE AND MOTOR SPECIFICATIONS

MODEL	UNITS	AI-LM-5000-XY	AI-LM-10000-XY	AI-LM-15000-XY	AI-LM-20000-XY	AI-LM-25000-XY	AI-LM-30000-XY	AI-LM-35000-XY	AI-LM-40000-XY	
XY TRAVEL	mm	50	100	150	200	250	300	350	400	
PERFORMANCE SPECIFICATIONS [1]		(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	
LINEAR DISPLACEMENT ACCURACY	um	+/- 3 +/- 0.5 +/- 0.2 +/- 0.1	+/- 3 +/- 0.7 +/- 0.4 +/- 0.3	+/- 3 +/- 1.0 +/- 0.7 +/- 0.4	+/- 3 +/- 1.0 +/- 0.4 +/- 0.4	+/- 5 +/- 1.0 +/- 0.5 +/- 0.5	+/- 5 +/- 1.0 +/- 0.6 +/- 0.6	+/- 8 +/- 1.5 +/- 0.8 +/- 0.8	+/- 12 +/- 1.5 +/- 1.0 +/- 1.0	
BIDIRECTIONAL LINEAR REPEATABILITY	nanometers	+/- 30	+/- 30	+/- 30	+/- 30	+/- 30	+/- 30	+/- 30	+/- 30	
RESOLUTION	nanometers	5 nm (standard) (options available)								
STRAIGHTNESS	um	+/- 1 +/- 0.5 +/- 0.2 +/- 0.1	+/- 1 +/- 0.7 +/- 0.3 +/- 0.3	+/- 1 +/- 1.5 +/- 0.7 +/- 0.4	+/- 1 +/- 1.5 +/- 1.0 +/- 0.4 +/- 0.4	+/- 2 +/- 1.0 +/- 0.5 +/- 0.5	+/- 2 +/- 1.0 +/- 0.6 +/- 0.6	+/- 4 +/- 1.5 +/- 0.8 +/- 0.8	+/- 6 +/- 1.5 +/- 1.0 +/- 1.0	
FLATNESS [2]	um	+/- 2.0 +/- 1.0 +/- 0.5 +/- 0.2	+/- 2.0 +/- 1.0 +/- 0.5 +/- 0.2	+/- 3.0 +/- 1.5 +/- 0.7 +/- 0.4	+/- 3.0 +/- 1.5 +/- 1.0 +/- 0.4 +/- 0.4	+/- 5 +/- 1.5 +/- 0.5 +/- 0.5	+/- 5 +/- 1.5 +/- 0.6 +/- 0.6	+/- 8 +/- 1.5 +/- 0.8 +/- 0.8	+/- 16 +/- 1.5 +/- 1.0 +/- 1.0	
PITCH	arc-sec	10	10	15	15	18	18	20	20	
YAW	arc-sec	10	10	15	15	18	18	20	20	
ROLL	arc-sec	6	6	8	8	10	10	14	14	
ORTHOGONALITY	arc-sec	20	20	20	20	20	20	20	20	
MOTION PROFILE SPECIFICATIONS		5	5	5	5	5	5	5	5	
MAX VELOCITY [3]	m/s	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
MAX ACCELERATION [3]	G	1.0	1.0	1.0	1.0	0.7	0.7	0.7	0.7	
MAX PAYLOAD CAPABILITY	kg	20	25	30	30	40	50	50	80	
ASSEMBLY MASS	kg	4.7	13	16	28	52	75	75	135	
X MOVING MASS	kg	3.5	10.2	12.1	20	37	54	54	94	
Y MOVING MASS	kg	1.4	3.6	4.4	7.6	15	22	22	40	
MOTOR INFORMATION										
MOTOR TYPE	--	LINEAR BRUSHLESS SERVO MOTOR								
MOTOR MODEL	--	P12-1	P12-2	P12-2	P16-2	P16-2	P16-3	P16-3	P16-4	
MAGNETIC PITCH (N-N)	mm	30.48	30.48	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	500	500	
ELECTRICAL TIME CONSTANT	msec	0.19	0.19	0.19	0.20	0.20	0.20	0.20	0.20	
MAX MOTOR TEMP	°C	130	130	130	130	130	130	130	130	
MOTOR CONNECTION	--	DELTA	DELTA	DELTA	DELTA	DELTA	DELTA	DELTA	DELTA	
FORCE CONSTANT	N/Apk	8.1	16.3	16.3	28.7	28.7	43.0	43.0	57.4	
PHASE RESISTANCE (@25°C) [5]	Ohm	5.8	11.6	11.6	11.7	11.7	17.6	17.6	23.5	
PHASE RESISTANCE (@130°C) [5]	Ohm	8.2	16.4	16.4	16.6	16.6	24.9	24.9	33.2	
INDUCTANCE	mH	1.1	2.1	2.1	2.3	2.3	3.5	3.5	4.7	
CONTINUOUS FORCE [6]	N	23	47	47	93	93	140	140	186	
CONTINUOUS CURRENT [6]	Apk	2.9	2.9	2.9	3.2	3.2	3.2	3.2	3.2	
PEAK FORCE [7]	N	75	151	151	295	295	442	442	589	
PEAK CURRENT [7]	Apk	9.2	9.2	9.2	10.3	10.3	10.3	10.3	10.3	
BACKEMF CONSTANT	V/m/s	8.1	16.3	16.3	28.7	28.7	43.0	43.0	57.4	

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 heatsink (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.



A

DRAWN
NBROWN
CHECKED



TITLE

AI-LM-(TRAVEL)00-XY

SIZE

B

DWG NO

0010-08000

REV

002

SCALE

SEE NOTES

ALIO STD TEMPLATE - REV 006

SHEET 1

OF 1

4

3

2

1

B

B

4

3

2

1