

ALIO STAGE AND MOTOR SPECIFICATIONS

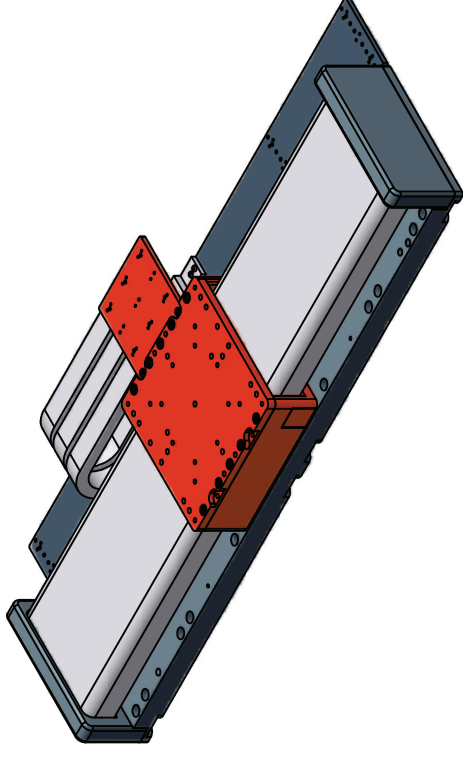
MODEL	UNITS	AI-LM-10000-UJI	AI-LM-15000-UJI	AI-LM-20000-UJI	AI-LM-25000-UJI	AI-LM-30000-UJI	AI-LM-40000-UJI	AI-LM-50000-UJI	AI-LM-60000-UJI	AI-LM-70000-UJI	AI-LM-80000-UJI	AI-LM-100000-UJI
TRAVEL	mm	100	150	200	250	300	400	500	600	700	800	1000
PERFORMANCE SPECIFICATIONS [1]		(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO	(STD) ULTRA NANO
LINEAR DISPLACEMENT ACCURACY	um	+/-5	+/-6	+/-8	+/-10	+/-12	+/-16	+/-20	+/-24	+/-28	+/-32	+/-40
BIDIRECTIONAL LINEAR REPEATABILITY	um	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5
RESOLUTION	nanometers											
STRAIGHTNESS	um	+/-3	+/-3	+/-4	+/-5	+/-5	+/-5	+/-6	+/-8	+/-8	+/-8	+/-10
FLATNESS [2]	um	+/-3	+/-3	+/-4	+/-5	+/-5	+/-5	+/-6	+/-8	+/-8	+/-8	+/-10
PITCH	arc-sec	10	10	15	15	18	18	18	18	20	25	25
YAW	arc-sec	10	10	15	15	18	18	18	18	20	25	25
ROLL	arc-sec	6	6	8	8	10	10	10	10	12	15	15
MOTION PROFILE SPECIFICATIONS												
MAX VELOCITY [3]	m/s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
MAX ACCELERATION [3]	G	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MAX (VERTICAL) PAYLOAD CAPABILITY	kg	100	100	100	100	100	100	100	100	100	100	100
MAX (HORIZONTAL) PAYLOAD CAPABILITY	kg	70	70	70	70	70	70	70	70	70	70	70
MAX MOMENT LOAD (YAW AND PITCH)	Nm	80	80	80	80	80	80	80	80	80	80	80
MAX MOMENT LOAD (ROLL)	Nm	70	70	70	70	70	70	70	70	70	70	70
ASSEMBLY MASS	kg	11	12.0	13	14	15	17	19	21	23	25	29
MOVING MASS	kg	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7

MOTOR INFORMATION	DEFAULT MOTOR
MOTOR TYPE	LINEAR BRUSHLESS SERVO MOTOR
MOTOR MODEL	P16-2
MAGNETIC PITCH (N-N)	30.48
MAX VOLTAGE (LINE TO LINE) [4]	500
ELECTRICAL TIME CONSTANT	0.20
MAX MOTOR TEMP	130
MOTOR CONNECTION	DELTA
FORCE CONSTANT	28.7
PHASE RESISTANCE (@25°C) [5]	11.7
PHASE RESISTANCE (@130°C) [5]	16.6
INDUCTANCE	2.3
CONTINUOUS FORCE [6]	93
CONTINUOUS CURRENT [6]	3.2
PEAK FORCE [7]	295
PEAK CURRENT [7]	10.3
BACK EMF CONSTANT	28.7

OPTIONAL MOTOR WINDING
P16-2P (parallel)
30.48
500
0.20
130
DELTA
14.3
2.9
4.1
0.6
93
6.5
295
20.5
14.3

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.
- Parallel coil motor "P16-2P" is an optional motor winding. Selection is designated by a "P" at the end of the stage model number.



A

DRAWN
NBROWN
CHECKED



TITLE

AI-LM-(TRAVEL)00-μ II

SIZE

B

DWG NO

0010-08050

REV

002

FINISH SEE NOTES

SCALE

ALIO STD TEMPLATE - REV 006

SHEET 1

OF 1