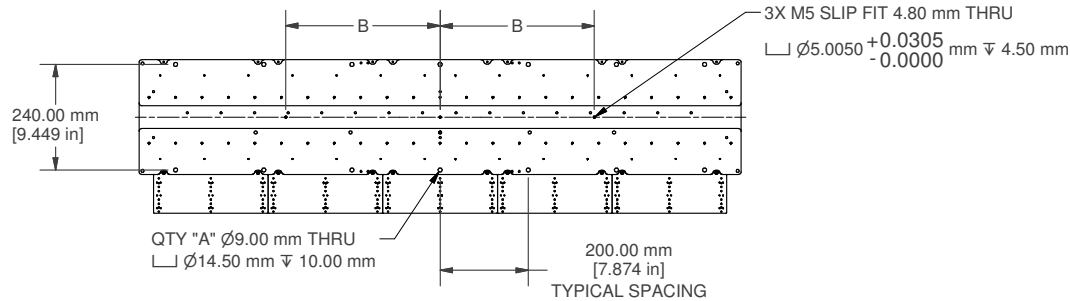
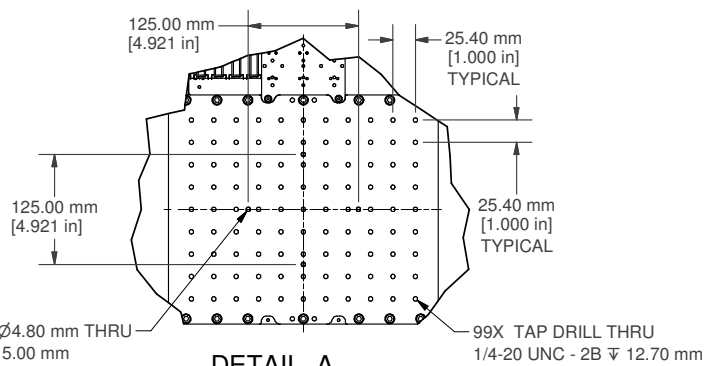


STANDARD FEATURES	
Stage	Linear Stage
Travel	100mm to 1000mm
Motor	Ironless Core Linear Motor
Feedback	Non-Contact Optical Encoder
Scale	Gold Tape Scale Optional: Near Zero CTE ZeroMet
Resolution	1Vp-p Analog Output (5nm with 4096 Interpolation) Digital Output Options: 5mm, 1mm, 0.5mm, 0.2mm, 100nm, 50nm, 20nm**, 10nm**, and 5nm** (** Reduced Speeds Apply)
Sensors	Integrated Home and End of Travel Limits
Bearings	Dual Recirculating Ball Rail Bearings
Cables	High Flex, 10M Cycle, 3m Length
Structure	Anodized Aluminum 6061-T6 Optional: Stainless Steel
Environment	Standard Optional: Clean Room and Vacuum (10-6 Torr)
Temperature	0°C to 50°C
Humidity	10% to 80% Non-Condensing
Precision	6-D Nano Precision™ Test Methods



TRAVEL (MM)	LENGTH (MM)	A	B (mm)
400	766	6	200
500	866	6	200
600	966	10	300
700	1066	10	300
800	1166	10	300
1000	1366	14	400
1500	1866	18	600
2000	2366	22	750

* All hole patterns centered on middle M5 dowel pin hole



DETAIL A
SCALE 0.18 : 1

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(Tel) 303.339.7500 - WWW.ALIOINDUSTRIES.COM

DRAWN K. CHAFFER	10/15/2020		
CHECKED			
		TITLE	
Tolerances: Surface Roughness: x.x ± 0.5 mm x.xx ± 0.13 mm x.xxx ± 0.05 mm ANGLES ± 0.5° MATERIAL		AI-LM-(TRAVEL)00-UII-XB	
FINISH	SEE NOTES	SIZE B	DWG NO 0010-08120
		SCALE	REV 001
		0090-07999-016 ALIO STD TEMPLATE SHEET 1 OF 2	

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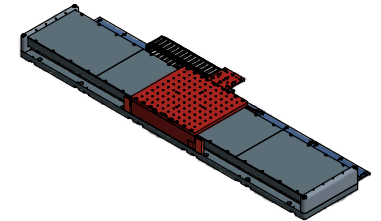
1

MODEL	UNITS	AI-LM-40000-UII	AI-LM-50000-UII	AI-LM-60000-UII	AI-LM-70000-UII	AI-LM-80000-UII	AI-LM-100000-UII	AI-LM-150000-UII	AI-LM-200000-UII	
TRAVEL	mm	400	500	600	700	800	1000	1500	2000	
PERFORMANCE SPECIFICATIONS [1]		(STD) ULTRA ELITE	(STD) ULTRA ELITE	(STD) ULTRA ELITE	(STD) ULTRA ELITE	(STD) ULTRA ELITE	(STD) ULTRA ELITE	(STD) ULTRA ELITE	(STD) ULTRA ELITE	
LINEAR DISPLACEMENT ACCURACY	um	+/-16 +/-2 +/-1	+/-20 +/-2 +/-1	+/-24 +/-2 +/-1	+/-28 +/-2 +/-1	+/-32 +/-2 +/-1	+/-40 +/-2 +/-1	+/-75 +/-2 +/-1	+/-200 +/-2 +/-1	
BIDIRECTIONAL LINEAR REPEATABILITY	um	+/-0.5		+/-0.5		+/-0.5		+/-0.5		
RESOLUTION	nanometers	5 nm (standard) (options available)								
STRAIGHTNESS	um	+/-5 +/-3 +/-3	+/-6 +/-4 +/-4	+/-8 +/-4 +/-4	+/-8 +/-4 +/-4	+/-8 +/-4 +/-4	+/-10 +/-5 +/-5	+/-20 +/-7 +/-7	+/-50 +/-10 +/-10	
FLATNESS [2]	um	+/-5 +/-3 +/-3	+/-6 +/-4 +/-4	+/-8 +/-4 +/-4	+/-8 +/-4 +/-4	+/-8 +/-4 +/-4	+/-10 +/-5 +/-5	+/-20 +/-7 +/-7	+/-200 +/-15 +/-15	
PITCH	arc-sec	+/-9	+/-9	+/-9	+/-10	+/-12	+/-12	+/-17	+/-50	
YAW	arc-sec	+/-9	+/-9	+/-9	+/-10	+/-12	+/-12	+/-17	+/-25	
ROLL	arc-sec	+/-5	+/-5	+/-5	+/-6	+/-7	+/-7	+/-10	+/-13	
MAX VELOCITY [3]	m/s	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	
MAX (VERTICAL) PAYLOAD CAPABILITY	kg	100	100	100	100	100	100	100	100	
MAX (HORIZONTAL) PAYLOAD CAPABILITY	kg	70	70	70	70	70	70	70	70	
MAX MOMENT LOAD (YAW AND PITCH)	Nm	80	80	80	80	80	80	80	80	
MAX MOMENT LOAD (ROLL)	Nm	70	70	70	70	70	70	70	70	
ASSEMBLY MASS	kg									
MOVING MASS	kg	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	--	P16-3
MAGNETIC PITCH (N-N)	mm	30.48
MAX VOLTAGE (LINE TO LINE) [4]	V	500
ELECTRICAL TIME CONSTANT	msec	0.20
MAX MOTOR TEMP	°C	130
MOTOR CONNECTION	--	DELTA
FORCE CONSTANT	N/Apk	43.0
PHASE RESISTANCE (@25°C) [5]	Ohm	17.6
PHASE RESISTANCE (@130°C) [5]	Ohm	24.9
INDUCTANCE	mH	3.5
CONTINUOUS FORCE [6]	N	140
CONTINUOUS CURRENT [6]	Apk	3.2
PEAK FORCE [7]	N	442
PEAK CURRENT [7]	Apk	10.3
BACK EMF CONSTANT	V/m/s	43.0

OPTION
HIGH FORCE MOTOR
P16-4
30.48
500
0.20
130
DELTA
57.4
23.5
33.2
4.7
186
3.2
589
10.3
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 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.



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SCALE		0090-07999-016 ALIO STD TEMPLATE SHEET 2 OF 2		

4

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