



# ALIO STAGE AND MOTOR SPECIFICATIONS



MODEL	UNITS	AI-LM-5000-AB	AI-LM-10000-AB	AI-LM-15000-AB	AI-LM-20000-AB	AI-LM-30000-AB	AI-LM-40000-AB	AI-LM-50000-AB	AI-LM-60000-AB	AI-LM-80000-AB
TRAVEL	mm	50	100	150	200	300	400	500	600	800
MAX VELOCITY [7]	m/s					2.0				
MAX ACCELERATION [7]	G					2.0				
ASSEMBLY MASS	kg	4.6	5.2	5.9	6.5	7.8	9.1	10.4	11.7	14.3
X MOVING MASS	kg					1.5				
MAX Z LOAD	N					300				
MAX Y LOAD	N					150				
MAX PITCH MOMENT	N-m					20				
MAX ROLL MOMENT	N-m					24				
MAX YAW MOMENT	N-m					10				
AIR SUPPLY REQUIRED [7]	psi					60-100				
AIR CONSUMPTION	NLPM					7				
VERTICAL Z STIFFNESS	N/um					250				
HORIZONTAL Y STIFFNESS	N/um					105				

MOTOR INFORMATION	DEFAULT MOTOR
MOTOR TYPE	LINEAR BRUSHLESS
MOTOR MODEL [6]	P12-1
MAGNETIC PITCH (N-N)	30.48
MAX VOLTAGE (LINE TO LINE) [1]	V
ELECTRICAL TIME CONSTANT	msec
MAX MOTOR TEMP	°C
DELTA CONNECTION	
FORCE CONSTANT	N/Apk
PHASE RESISTANCE (@25° C) [2]	Ohm
PHASE RESISTANCE (@130° C) [2]	Ohm
INDUCTANCE	mH
CONTINUOUS FORCE [3]	N
CONTINUOUS CURRENT [3]	Apk
PEAK FORCE [4]	N
PEAK CURRENT [4]	Apk
BACKEMF CONSTANT	V/m/s
WYE CONNECTION	
FORCE CONSTANT	N/Apk
PHASE RESISTANCE (@25° C) [2]	Ohm
PHASE RESISTANCE (@130° C) [2]	Ohm
INDUCTANCE	mH
CONTINUOUS FORCE [3]	N
CONTINUOUS CURRENT [3]	Apk
PEAK FORCE [4]	N
PEAK CURRENT [4]	Apk
BACKEMF CONSTANT	V/m/s

Notes:

1. Back EMF plus IR drop must not exceed maximum line to line voltage.
2. 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.
3. Continuous operating limits are based on continuous operation at maximum temperature with aluminum heat sink (300mm x 12.5mm x motor length).
4. Maximum on time at peak operating limits is 10 seconds.
5. All specifications may vary by 12% from listed values.
6. Additional motor options are available for each stage for optimized performance as necessary per customer requirements.
7. Specifications are dependent on load and center of gravity.

**AIR QUALITY REQUIREMENTS**  
 AIR SUPPLY MUST BE FREE OF CONTAMINANTS  
 AND MOISTURE (<85% RELATIVE HUMIDITY). FILTERED  
 AIR SUPPLY TO ISO 8573.1 QUALITY CLASS 3 OR BETTER

CLASS: 3 (MINIMUM)  
 DIRT: 5 MICRON PARTICAL SIZE OR SMALLER  
 WATER: -4 F, PRESSURE DEWPOINT  
 (128 ppm. vol.) AT 100 psig  
 OIL: 1.0 mg/m\*\*3 (INCLUDING VAPOR)

CLASS: 2 (RECOMMENDED)  
 DIRT: 1 MICRON PARTICAL SIZE OR SMALLER  
 WATER: -40 F, PRESSURE DEWPOINT  
 (16 ppm. vol.) AT 100 psig  
 OIL: 1 mg/m\*\*3 (INCLUDING VAPOR)

ALIO INDUSTRIES PROPRIETARY INFORMATION  
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DRAWN	5/12/2012
NBROWN	
CHECKED	
TITLE	
Tolerances: Surface Roughness: x.x ± .05 in [1.3 mm] x.xx ± .01 in [0.25 mm] x.xxx ± .005 in [0.13 mm] Angles ± 0.5° MATERIAL	
SIZE	DWG NO
B	0010-08016
FINISH	SEE NOTES
SCALE	ALIO STD TEMPLATE - REV 006

**AI-LM-(TRAVEL)00-AB**

REV	001
OF	1
SHEET	1