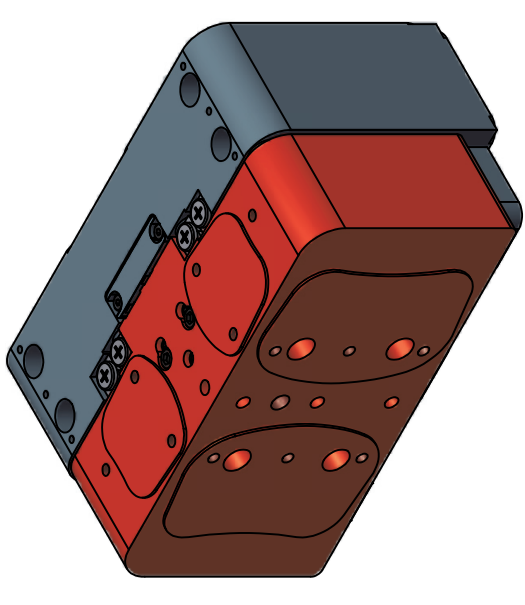




# ALIO STAGE AND MOTOR SPECIFICATIONS



MODEL	UNITS	AI-VC-600-24N-Z-CB	AI-VC-2400-11N-Z-CB	AI-LM-3000-47N-Z-CB	AI-LM-5000-15N-Z-CB					
Z TRAVEL (BETWEEN HARD STOPS)	mm	6	24	30	50					
PERFORMANCE SPECIFICATIONS [1]		(STD)	ULTRA	NANO	(STD)	ULTRA	NANO			
LINEAR DISPLACEMENT ACCURACY	um	+/- 3	+/- 0.5	+/- 0.2	+/- 0.3	+/- 0.6	+/- 0.8	+/- 0.5	+/- 1.0	+/- 0.5
BIDIRECTIONAL LINEAR REPEATABILITY	nanometers	+/- 75	+/- 45	+/- 45	+/- 75	+/- 45	+/- 75	+/- 45	+/- 75	+/- 45
RESOLUTION	nanometers	5 nm (standard) (options available)								
STRAIGHTNESS	um	+/- 1.5	+/- 1.0	+/- 1.0	+/- 2.0	+/- 4.0	+/- 2.0	+/- 5.0	+/- 2.5	+/- 2.5
FLATNESS [2]	um	+/- 1.5	+/- 1.0	+/- 1.0	+/- 2.0	+/- 4.0	+/- 2.0	+/- 5.0	+/- 2.5	+/- 2.5
PITCH	arc-sec	10	10	10	10	10	10	12	12	12
YAW	arc-sec	10	10	10	10	10	10	12	12	12
ROLL	arc-sec	10	10	10	10	10	10	12	12	12
MOTION PROFILE SPECIFICATIONS										
MAX VELOCITY [3]	m/s	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
MAX ACCELERATION [3]	G	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
MAX PAYLOAD CAPABILITY	kg	10	10	10	10	10	10	10	10	10
ASSEMBLY MASS	kg	3.8	3.8	3.8	3.8	4.4	4.4	4.4	4.4	4.4
MOVING MASS	kg	1.5	1.5	1.5	1.5	2.1	2.1	2.1	2.1	2.1
COUNTERBALANCE PRESSURE (@ MAX PAYLOAD)	psi	45	45	45	45	47	47	47	47	47
MOTOR INFORMATION										
MOTOR TYPE	--	VOICE COIL				LINEAR BRUSHLESS SERVO MOTOR				
MOTOR MODEL	--	VC15-16	VC15-26	VC15-26	VC15-26	P16-1	P16-1	P16-0.5	P16-0.5	P16-0.5
MAGNETIC PITCH (N-N)	mm	--	--	--	--	30.48	30.48	30.48	30.48	30.48
MAX VOLTAGE (LINE TO LINE) [4]	V	33	46	46	46	500	500	500	500	500
ELECTRICAL TIME CONSTANT	msec	0.3	0.5	0.5	0.5	0.20	0.20	0.14	0.14	0.14
MAX MOTOR TEMP	°C	155	155	155	155	130	130	130	130	130
MOTOR CONNECTION	--	--	--	--	--	DELTA	DELTA	DELTA	DELTA	DELTA
FORCE CONSTANT	N/Apk	12.7	8.8	8.8	8.8	14.3	14.3	7.2	7.2	7.2
PHASE RESISTANCE (@25° C) [5]	Ohm	4.7	9.1	9.1	9.1	5.9	5.9	2.9	2.9	2.9
PHASE RESISTANCE (@130° C) [5]	Ohm	--	--	--	--	8.3	8.3	4.2	4.2	4.2
INDUCTANCE	mH	1.3	4.2	4.2	4.2	1.2	1.2	0.6	0.6	0.6
CONTINUOUS FORCE [6]	N	24	11	11	11	47	47	15	15	15
CONTINUOUS CURRENT [6]	Apk	1.9	1.3	1.3	1.3	3.2	3.2	2.1	2.1	2.1
PEAK FORCE [7]	N	89	44	44	44	148	148	74	74	74
PEAK CURRENT [7]	Apk	7.0	5.0	5.0	5.0	10.3	10.3	10.3	10.3	10.3
BACKEMF CONSTANT	V/m/s	12.7	8.8	8.8	8.8	14.3	14.3	7.2	7.2	7.2

## 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	
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°	
RMS MAX. ✓	
MATERIAL	
FINISH	SEE NOTES

TITLE	
AI-(MOTOR)-(TRAVEL)00-(FORCE)-Z-CB	
SIZE	DWG NO
B	0010-08004
SCALE	ALIO STD TEMPLATE - REV 006
1	1
OF	1
REV	003

ALIO INDUSTRIES PROPRIETARY INFORMATION  
(Tel) 303.339.7500 - SALES@ALIOINDUSTRIES.COM - WWW.ALIOINDUSTRIES.COM



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