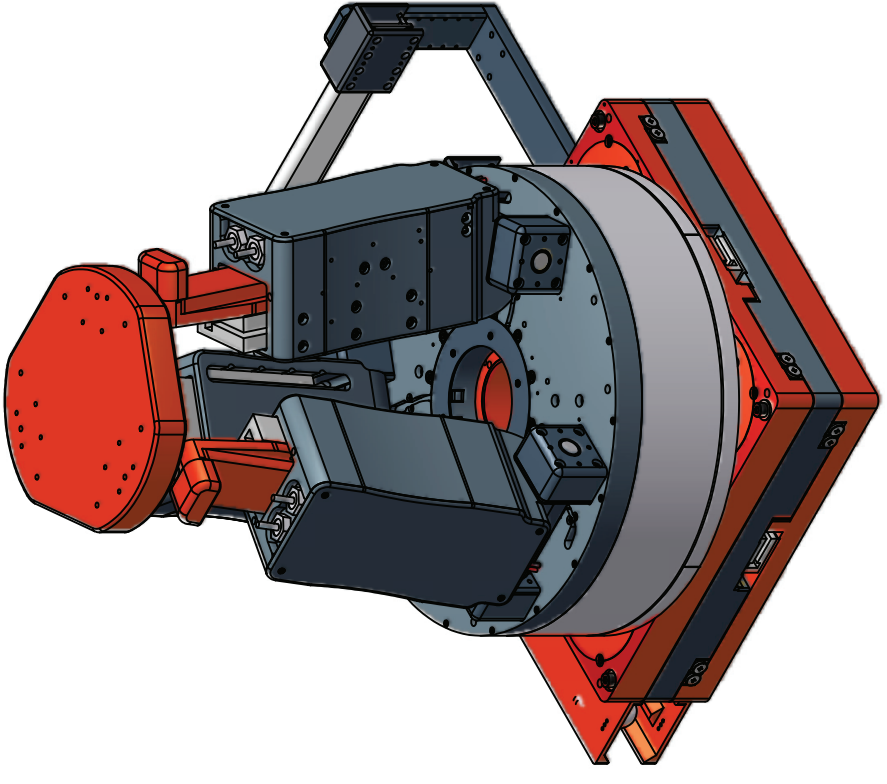




ALIO STAGE AND MOTOR SPECIFICATIONS

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MODEL	UNITS	AL-6D-250XY-92Z
OPTION	--	--
XY TRAVEL	mm	250
Z TRAVEL	mm	92
PITCH AND ROLL RANGE [9]	deg	+/- 20
YAW TRAVEL	deg	360 degrees continuous
MAX LINEAR VELOCITY [10]	m/s	0.3
MAX ANGULAR VELOCITY (PITCH & ROLL) [11]	deg/s	90
MAX ANGULAR VELOCITY (YAW) [10]	deg/s	180
ASSEMBLY MASS	kg	130
X MOVING MASS	kg	115
Y MOVING MASS	kg	93
Z MOVING MASS	kg	21
YAW MOVING MASS	kg	59
YAW MASS MOMENT OF INERTIA	kg*mm ²	1000000
MAX PAYLOAD [11]	kg	35
MAX CENTER OF GRAVITY HEIGHT [11,12]	mm	75
COUNTERBALANCE PRESSURE [13]	psi	40
LINEAR RESOLUTION	mm	~5
PITCH AND ROLL RESOLUTION	arc-sec	~0.02
YAW RESOLUTION	arc-sec	~0.01
YAW ROTARY STAGE	Model	ALTM-208R
XY LINEAR STAGE	Model	ALIM-25000-XY
TRIPOD MOTOR INFORMATION		
MOTOR TYPE -- LINEAR BRUSHLESS		
MOTOR MODEL	--	P20-2
MAGNETIC PITCH (N-N)	mm	60.96
MAX VOLTAGE (LINE TO LINE) [1]	V	500
ELECTRICAL TIME CONSTANT	msec	0.31
MAX MOTOR TEMP	°C	130
MOTOR CONNECTION	--	DELTA CONNECTED
FORCE CONSTANT	N/Apk	36.6
PHASE RESISTANCE (@25°C) [2,3]	Ohm	7.8
PHASE RESISTANCE (@130°C) [2,3]	Ohm	11.0
INDUCTANCE	mH	2.4
CONTINUOUS FORCE [4]	N	141
CONTINUOUS CURRENT [4]	Apk	3.9
PEAK FORCE [5]	N	447
PEAK CURRENT [5]	Apk	12.2
BACKEMF CONSTANT	V/m/s	36.6
YAW MOTOR INFORMATION		
MOTOR TYPE -- FRAMELESS TORQUE MOTOR		
MOTOR MODEL	--	178100-EY
MAGNETIC PITCH (N-N)	deg	40
MAX VOLTAGE (LINE TO LINE) [1]	VDC	340
MAX MOTOR TEMP	°C	155
TORQUE CONSTANT	Nm/Arms	2.5
PHASE RESISTANCE (@25°C) [14]	Ohm	3.1
INDUCTANCE	mH	19.1
CONTINUOUS TORQUE [15]	Nm	15
CONTINUOUS CURRENT [15]	Arms	6.0
PEAK TORQUE	Nm	48
PEAK CURRENT	Arms	19.1
BACKEMF CONSTANT	Vrms/krpm	152
XY MOTOR INFORMATION		
MOTOR TYPE -- LINEAR BRUSHLESS		
MOTOR MODEL	--	P16-3
MAGNETIC PITCH (N-N)	mm	30.48
MAX VOLTAGE (LINE TO LINE) [1]	V	500
ELECTRICAL TIME CONSTANT	msec	0.20
MAX MOTOR TEMP	°C	130
MOTOR CONNECTION	--	DELTA CONNECTED
FORCE CONSTANT	N/Apk	43.0
PHASE RESISTANCE (@25°C) [2,3]	Ohm	17.6
PHASE RESISTANCE (@130°C) [2,3]	Ohm	24.9
INDUCTANCE	mH	3.5
CONTINUOUS FORCE [4]	N	140
CONTINUOUS CURRENT [4]	Apk	3.2
PEAK FORCE [5]	N	442
PEAK CURRENT [5]	Apk	10.3
BACKEMF CONSTANT	V/m/s	43.0

- Notes:
1. Back EMF plus IR drop must not exceed maximum line to line voltage.
 2. Resistance values do not include cable resistance. For P16 motors cable resistance adds 0.146 ohm/m for Delta connection and 0.44 ohm/m for Wye Connection.
 3. Resistance values do not include cable resistance. For C12 motors cable resistance adds 0.251 ohm/m for Delta connection.
 4. Continuous operating limits are based on continuous operation at maximum temperature with aluminum heat sink (300mm x 12.5mm x motor length).
 5. Maximum on time at peak operating limits is 10 seconds.
 6. Motor Connection type is internal to motor. All stages provided with default Delta connection unless otherwise specified.
 7. All electrical specifications may vary by 12% from listed values.
 8. Additional motor options are available for optimized performance as necessary per customer requirements.
 9. Angular travel is measured when the Z axis is at mid-stroke and the other angle is zero degrees. Deviation from this specified off axis position reduces angular travel.
 10. Maximum velocity specified is for motor in unloaded state. Stage velocity limitations vary greatly depending on stage load and motion profile.
 11. Higher payload options available upon special request.
 12. Contact ALIO technical sales for questions concerning high or offset centers of gravity.
 13. Pneumatic counterbalance supply pressure listed is the estimated pressure required at the max payload.
 14. Resistance values do not include cable resistance. Cable resistance adds 0.3 ohm/m.
 15. Continuous operating limits are based on continuous operation at maximum temperature with a aluminum heat sink (300mm x 300mm x 25mm).

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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°		
MATERIAL		
FINISH	SCALE	REV
SEE NOTES	0010-08035	001
	ALIO STD TEMPLATE - REV 006	1 OF 1

ALIO INDUSTRIES PROPRIETARY INFORMATION
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ALIO 6-D
AI-6D-(XY TRAVEL)XY-
(R DIAMETER)R-(Z TRAVEL)Z-
(OPTION)