

PLR110



Features

- Direct drive servo motor
- +/- 60 degrees travel
- 38mm tall
- 110mm center aperture
- 0.43 arc-sec resolution
- Single electrical cable connection
- Class 10 option

Overview

The Primatics PLR110 rotary stage is an advanced, direct drive rotary axis. It features large center aperture and a high resolution rotary encoder. High repeatability and fast settle times making the PLR110 ideal for semiconductor wafer inspection, high speed laser machining and precision metrology. The compact design also yields a smaller footprint than comparable worm drives.

Applications

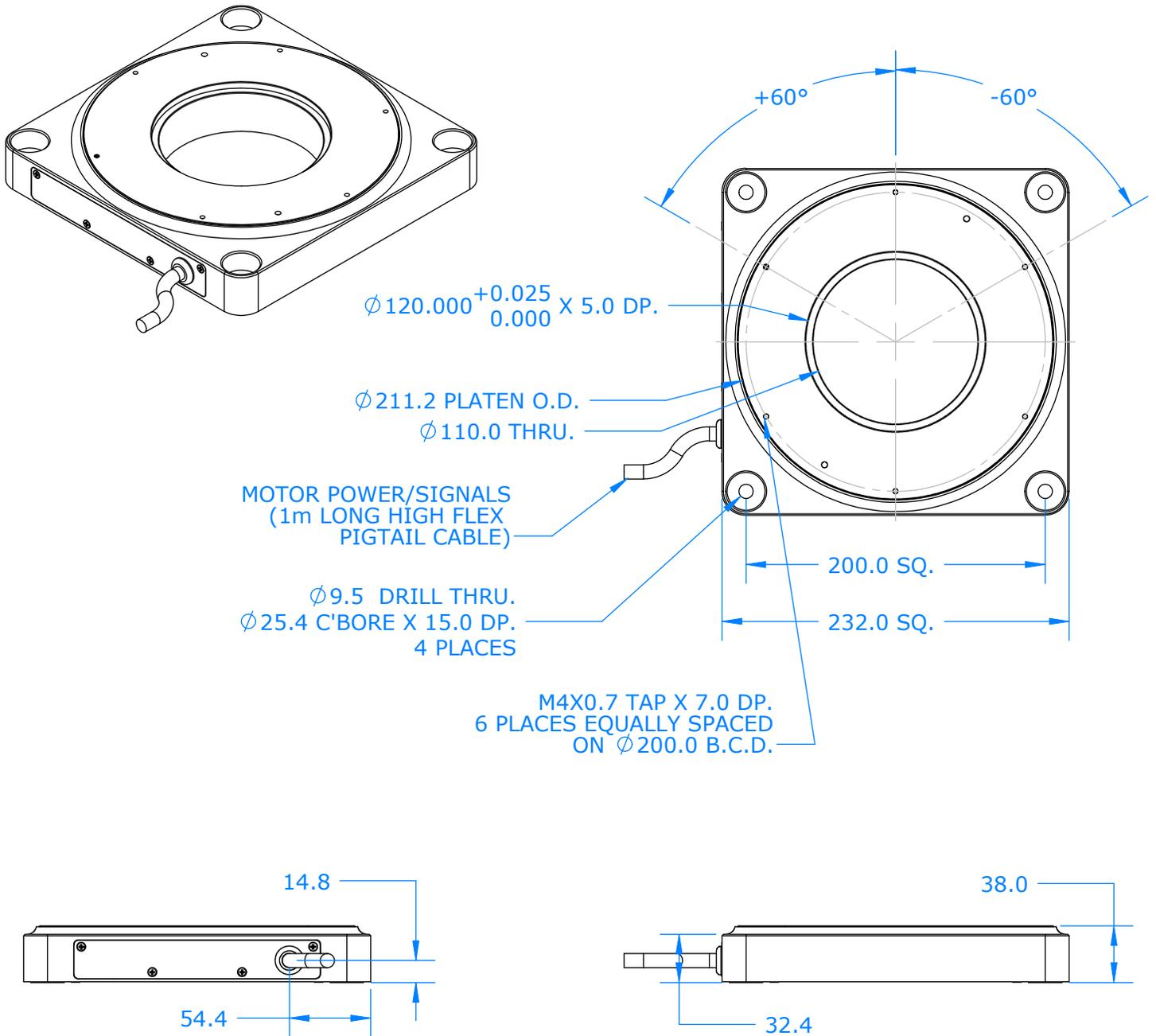
The PLR110 has a high pole count motor which aids in obtaining low velocity ripple. The PLR110's high performance motor coupled with its high resolution optical encoder results in high servo stiffness over a wide dynamic range.

Features

Standard features include forward and reverse limit sensors and a protective hard cover. The large 110mm diameter center aperture facilitates top and bottom side access to an attached payload.



Dimensions



Specifications

Specification	Notes	PLR110
Travel (degrees)		+/- 60
Resolution (arc-sec)	2	0.43
Accuracy (arc-sec)	1, 2	+/- 30
Bi-directional Repeatability (arc-sec)	1	+/- 2
Axial Runout (μm)	1	+/- 3
Radial Runout (μm)	1	+/- 5
Axial Load Capacity (kg)		2.0
Radial Load Capacity (kg)		0.8
Maximum Speed (deg/sec)		45
Platen Inertia ($\text{kg}\cdot\text{m}^2$)		0.0066
Stage Weight (kg)		3.8

Notes: 1 - Stage affixed to flat continuous surface, 2 - Slope Corrected. All specifications subject to change without notice.

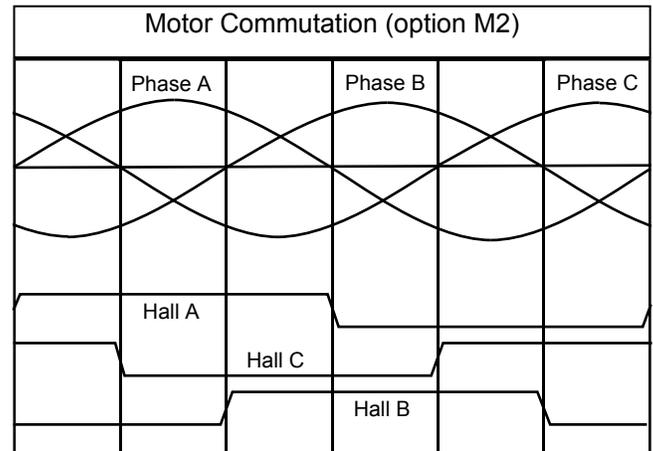
Motor / Encoder, Limit Data

Parameter	Notes	Value
Motor		
Motor Type		Brushless Servo
Continuous Torque (N-m)	1	0.5
Continuous Current (Arms)	1	1.52
Peak Torque (N-m)	2	1.8
Peak Current (Arms)	2	5.45
Torque Constant (N-m/Arms)		0.33
Back EMF Constant (V/Krpm)		28.5
Winding Resistance (ohms)		3.7
Winding Inductance (mH +/- 25%)		3.5
Thermal Resistance (C/W)		1.2
Poles		36
Hall Sensor Power		5 to 24VDC, 50mA
Hall Outputs		Open collector, current sinking, 20mA max
Encoder		
Encoder power		5VDC +/- 5%, 150mA
Output		Square wave differential line driver
Index		Synchronized pulse, duration equal to one resolution bit
Limit Sensors		
Limit Power		12 to 24VDC, 50mA
Output - L1 and L2 options		Current sinking, 50mA max

Notes: 1 - At 15°C temperature rise; 2 - At 10% duty cycle and 1 second maximum. All specifications subject to change without notice.

Connectors

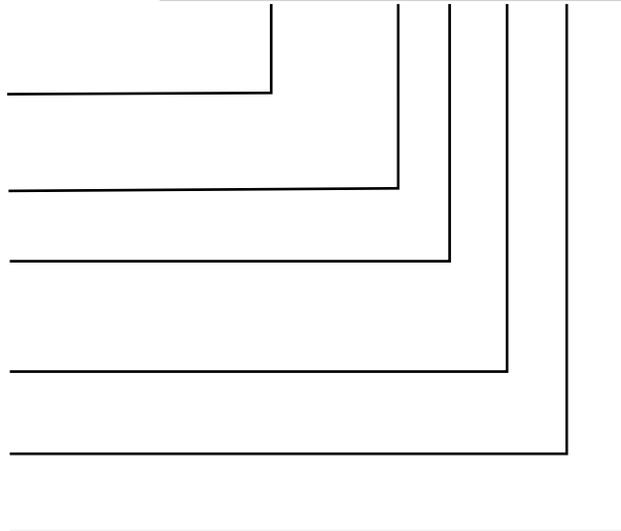
Servo Motor (option M2)	
Connector: Cannon 192926-0480 Size 20, 28 pins	
Pin	Function
A	Motor Phase A
B	Motor Phase B
C	Motor Phase C
D	Motor Shield
E	Encoder 5V
F	Encoder Ch A+
G	Encoder Ch A-
H	Encoder Ch B+
J	Encoder Ch B-
K	Encoder Shield
L	Limit Power
M	Limit Return and Signal Common
N	Home Sensor
P	Not Used
R	Not Used
S	Signal Shield
T	Hall V+
U	Hall V-
V	Encoder Power Return
W	Encoder Ch I+
X	Encoder Ch I-
Y	Forward Limit - Activates at Full Forward Travel
Z	Reverse Limit - Activates at Full Reverse Travel
a	KEY
b	Hall A
c	Hall B
d	Temp Sensor
e	Hall C



Model Configuration

Example: **PLR110ALP E1 L1 M1 P1**

- Model Series**
PLR110ALP - PLR110 series, aluminum base, precision grade
- Encoder Resolution**
E1- 0.46 arc-sec
- Home and Limit Sensors**
L1 - N.C., Current sinking
L2 - N.O., Current sinking
- Motor Type**
M1- Direct Drive Brushless Servo
- Protection**
P1- Hardcovers
- Customization**, if any.
Consult factory



Not all configurations are valid - consult factory for assistance

Accessories

Model	Description
CABLE-SENSORS-PIGTAIL	Cable assembly for Limit connector. Un-terminated at user end. 12 ft standard.
CABLE-SERVO-STAGE-PIGTAIL	Cable assembly for M2 option. Un-terminated at user end. 12 ft standard
CABLE-SERVO-STAGE-DMC40X0-I200	Cable assembly for M2 option for use with Galil DMC-40x0-I200 with trap servo drives. 12 ft standard.
CABLE-SERVO-STAGE-DMC40X0-I200-SINE	Cable assembly for M2 option for use with Galil DMC-40x0-I200 with sine servo drives. 12 ft standard.
CABLE SERVO STAGE MC4U W/ HALLS	Cable assembly for M2 option for use with ACS MC4U. 12 ft standard.
CABLE-SERVO-ACS-CMNT-DIG	Cable assembly for M2 option for use with ACS MC4U. 12 ft standard.