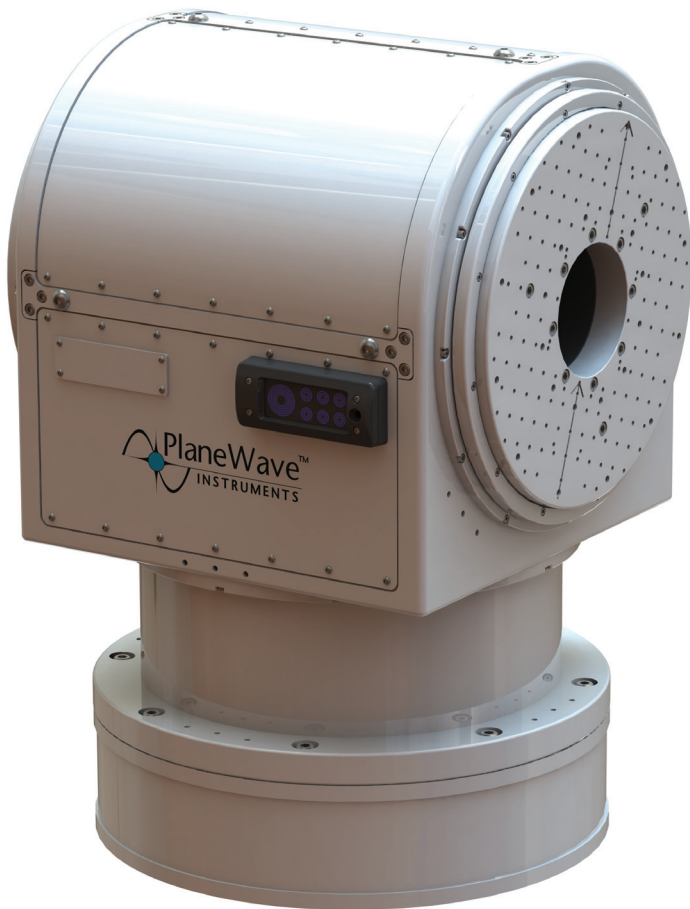


T-600 DIRECT-DRIVE GIMBAL



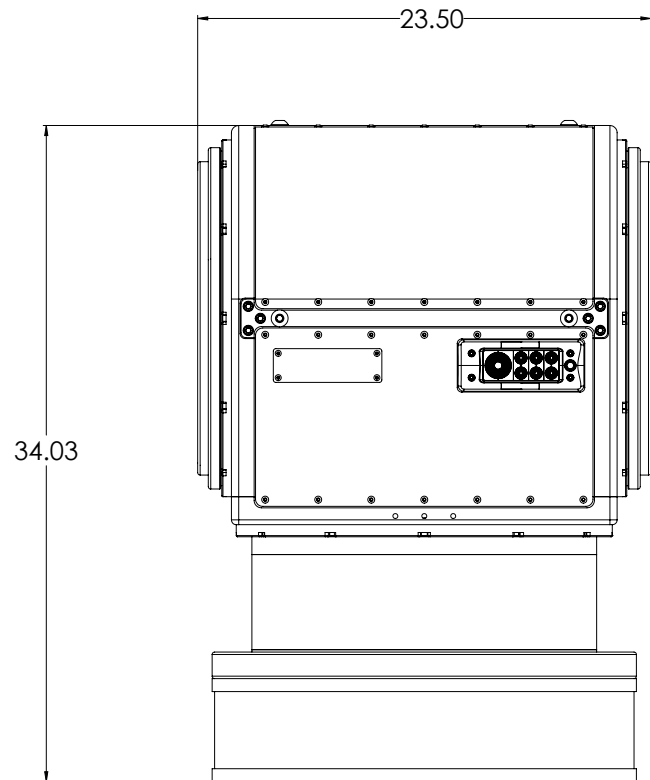
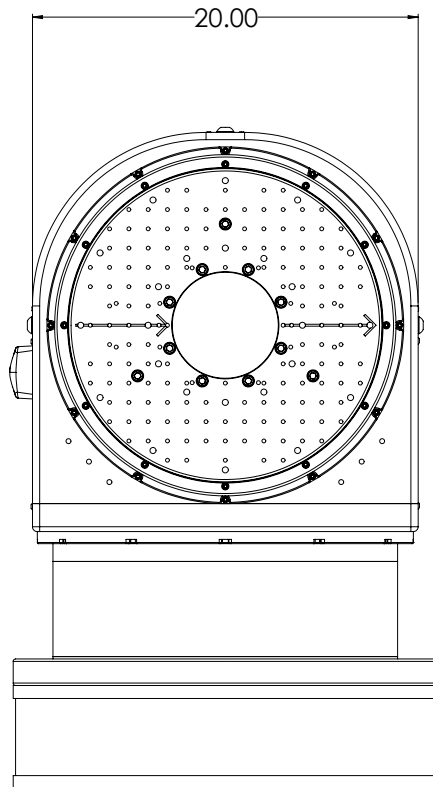
System Performance

Acceleration (Azimuth and Altitude)	70 degrees per second/second (depends upon installed payload induced moment of inertia)
Velocity	Up to 150 degrees per second
Pointing Accuracy	<10-arcsecond RMS with PointXP Model
Pointing Precision	2 arcseconds at sidereal velocity
Open Loop Tracking Accuracy	0.2 arcseconds RMS over 300 second exposure at sidereal rate
Open Loop Axis Following Error	<0.15 arcseconds RMS at sidereal rate, <0.3 arcseconds RMS at 1 degree per second, <2 arcseconds RMS at 10 degrees per second
Internal Servo-Loop (Drive to Motor)	10 kHz cascaded velocity/position controller, PID + Filters
Software Command Round-Trip	5 - 25 msec (depending on application)
System Natural Frequency	20 Hz or greater

Mount System

Type	Alt-Azimuth / Equatorial Direct-Drive Mount
Weight	605 lbs
Max. Load Capacity	600 lbs (with payload limited to 100 kg-m ² moment per port with center of gravity ≤ 15 inches from mounting surface and an lowest eigenmode frequency of 20 Hz. i.e. dual mounted CDK24 telescopes are compatible)
Dimensions	34" x 20" x 23.5" (H/D/W)
Latitude Range	0 to 90 degrees, Northern and Southern hemispheres
Motor Torque (Azimuth and Altitude)	127 ft-lbs (peak)
Azimuth Axis Range of Motion	660 degrees (optional limitless range available)
Altitude Axis Range of Motion	Fully Adjustable (-45 to +225 degree default range)
Cable Management	Through-the-mount cabling
Coudé Path	Optional (limits elevation axis range of motion to 180 degrees)
Power Requirement	100 to 240 VAC (50-60 Hz)
Operating Temperature Range	-30 C to +50 C
Storage Temperature Range	-50 C to +70 C

T-600 DIRECT-DRIVE GIMBAL



Mechanical Structure

Gimbal Assembly	Fully CNC machined construction (Surface finish treated with UV resistant coating on all exposed metal surfaces)
Default Weatherization	2-Layer non-contact labyrinth sealing at each motion-surface to prevent water (light-to-moderate rain) and debris entry. *Optional rubber seals may be added for further ruggedization.
Azimuth Bearing	4-way loaded radial ball bearings
Altitude Bearing	4-way loaded radial ball bearings
Instrument Mounting	Breadboard plate on both mounting surfaces (see interface document for complete mounting information)
Lifting Points	Present for lifting in "any orientation"

Motion Control

Drive Electronics (Azimuth and Altitude)	Elmo Motion Control Systems industrial grade off-the-shelf brushless motor drives
Motors (Azimuth and Altitude)	Each axis includes a double stacked direct-drive 3 phase axial-flux torque motor
Encoders (Azimuth and Altitude)	Renishaw 255 mm diameter, 26-bit absolute encoder ring with readhead
User Interface	PlaneWave Interface 4 (PWI4) Control Software with integrated PointXP mount modeling software by Dave Rowe. Includes ASCOM driver.
Time Source Recommendation	GPS Time Card, or PTP Server