AZ8000 · AZ5000
DDS ROBOTIC MOUNTS
Direct Drive System

HIGHLIGHTS

- Direct drive high torque motors specially designed for astronomical application
- On-axis high resolution Renishaw absolute encoders
- High quality large diameter ball bearings
- Very stiff and compact fork to minimize vibrations
- Integrated electronics and onboard microserver with internal sky model capability
- Integrated interface with focuser/derotator
- Min. base height for improved stability and use with small domes
- Nasmyth focus(ers) with 100 mm or 180 mm hole diameter
- very fast pointing speed up to 30°/sec.
- very accurate tracking for long exposure unguided imaging
- optimized for satellite and space debris tracking
- Two line elements tracking available

15 YEARS OF HISTORY

10Micron mounts feature an onboard microserver with Linux operating system and ethernet connectivity. They have been chosen by astronomical observatories, universities and companies around the world for their reliability and precision. We think it is the best proof of quality, innovation, technology and affordability. SSD, satellite and comet tracking are directly implemented in the firmware for robotic operation.

One of 10Micron last projects is the AZ DDS (Direct Drive System), a new generation of professional robotic mounts, in altazimuthal fork configuration with software integrated derotator/focuser.

Thanks to a long experience in robotic astronomical mounts, 10Micron is proud to offer this solution specially developed for professional and research applications such as astronomical and satellite fields, which need a really demanding grade of quality and affordability; the AZ mounts integrate all the latest technologies and technical acquirements in mechanical, electrical, electronics, software and design fields: any single feature and component has been accurately studied in order to reach the highest level of efficiency that has always characterized 10Micron products; likewise 10Micron has integrated many new security features in order to ensure the safety of both the instrument and the operator.

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MECH. SPECIFICATIONS	AZ5000 DDS	AZ8000 DDS
Mount type	Alt-azimuth direct drive mount with on-axis high resolution absolute encoders	
Weight (mount without telescope and accessories)	300 kg	950 kg
Telescope payload capacity	up to 250 kg, 650 mm (26") diameter	up to700 kg, 1000 mm (40") diameter
Axes bearing	High quality large diameter, special ball bearings	
Motors	Professional grade direct drive motors; no worm gears or transmission systems, zero backlash	
Encoders	High Resolutions Renishaw absolute encoders	
Power supply	48 V	
Power consumption	15 A peak	20 A peak
Goto speed	≥ 30°/s	≥ 20°/s
Pointing accuracy	<5" rms with internal 25 stars software mapping, max 100 stars; possibility to use external software for automated alignment operation	
Average tracking accuracy	1" typical for 15 minutes	
Nasmyth holes diameters	1 on the motor side | 100mm diameter	2 (both sides) | 180mm diameter
Nasmyth focus payload capacity	30 kg	50 kg
Safety features	Mechanical stops in both axis, Anti-wrap logic, On board and remotable Emergency stop button with safety relay, Aural warning system, Unbalance/collision protection system	
Security stops	Mechanical stops at AZ: 600° (~2 turns) and ALT: 100°	
Security brakes	Electromechanical brake for unbalance security in altitude	
Dimensions (only mount with standard fork)	1350x550x1350 mm	1900x1000x1500 mm
Focuser/DeRotator standard	GO1 by 10Micron. 10Micron specific, software integrated control. 25kg payload capacity, internal temperature probe	GO2 by 10Micron. 10Micron specific, software integrated control interface. 50kg payload capacity, internal temperature probe

FIRMWARE SPECIFICATIONS

Communication ports	RS–232 port; GPS port; autoguide ST-4 protocol port; Ethernet port.
Integrated database	Stars: by name, Bayer designation, Flamsteed designation, Bright Star Catalogue, SAO, HIP, HD, PPM, ADS, GCVS. Deep-sky: M, NGC, IC, PGC ,UGC limited up to mV = 16. Solar system: Sun, Moon, planets, asteroids, comets, artificial satellites. Equatorial and altazimuth coordinates. User defined objects, fast slewing positions.
Integrated control electronics features	User defined mount parking position. Mount modeling with up to 100 stars / points. Storage of multiple pointing models. Configurable tracking speed. Adjustable movement limits. Assisted balance adjustment. Integrated leap second support. Direct dome control via RS-232. Configurable atmospheric refraction compensation.
Keypad control	Rugged keypad with metal housing, backlit micro switches, dimmable graphic display. All the functionality of the mount is available through the keypad without requiring an external PC.
PC control	Remote control via RS 232, Ethernet network. Update of firmware and orbital elements for satellite tracking and minor planet objects. Virtual keypad control panel replicating the functionality of the physical keypad. Mount manager software including advanced user interface. Usage of any client software supporting the ASCOM standard through proprietary ASCOM driver, or through the LX200 compatible protocol.