



SOFTWARE BISQUE

Paramount Apollo™ 600 and 800 Direct Drive Specifications



PlaneWave Instruments CDK20 telescope and telescope mounting hardware sold separately.

When speed and accuracy matter, you'll love this altazimuth mount.

Apart from exceptional engineering, what makes the Paramount Apollo™ so extraordinary is its control software. ProTPoint™, integrated with TheSky™, provides extreme pointing accuracy — it is used by many of the world's largest optical, infrared, and radio observatories. Apollo's telescope control system also utilizes TPoint's Telescope Control System Pointing Kernel (TCSpk™) to provide unparalleled pointing and tracking performance.

Model	Price	Maximum Instrument Capacity	OTA Aperture
Paramount Apollo™ 600	\$59,500	400 pounds (180 kg)	Up to 24 inches (0.6 meter)
Paramount Apollo™ 800	\$79,500	800 pounds (360 kg)	Up to 32 inches (0.8 meter)

The Apollo is proudly designed, manufactured, and assembled at our production facility in Golden, Colorado.

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Software and Hardware Specifications

Specification	Description	Apollo 600	Apollo 800
Astronomy Software	TheSky™ Space edition controls the telescope, imaging devices, and dome or roll-off roof. Advanced satellite tracking capabilities included.	✓	✓
Cross Platform Support	TheSky™ Space edition is compatible with macOS, Windows, and Linux (ARM32, ARM64, and x86_64) operating systems. All platforms are included.	✓	✓
Direct Software Control	The Apollo can be directly controlled through its Ethernet connection (TCP/IP) by scripting TheSky™ Space edition, or using third-party tools based on Microsoft .NET®, C/C++ source code, Microsoft COM®, or MathWorks MATLAB®. Contact Software Bisque for details.	✓	✓
Maximum Slew Speeds	Generally, 30 degrees per second is a reasonable maximum limit with typical telescope loads. Configurable slew speeds up to 60 degrees per second where applicable.	✓	✓
Motor Controller	A three-axis industrial direct drive motor controller (10-20A, 20 kHz control algorithm rate) and 120-220V AC 15A power supply unit is integrated within the mount base.	✓	✓
Connection	An Ethernet port is located on the mount base. TCP/IP protocol is used for communications with an external computer.	✓	✓
On-Axis Absolute Encoders	5.9 in. (15 cm), 26-bit on-axis absolute encoders on the azimuth, altitude, and rotator axes.	✓	✓
Components	320 lb. (145 kg) total mount weight can be disassembled into four components: <ul style="list-style-type: none"> • Base: 115 lb. (52 kg) • Fork center: 50 lb. (14 kg) • Drive tine: 88 lb. (40 kg) • Support tine: 62 lb. (28 kg) 	✓	✓
Drive Tine	Primary bearing: Secondary bearing:	8 in. (20 cm) 5 in. (12.5 cm)	8 in. (20 cm) 5 in. (12.5 cm)
Motor Torque Constant		8.7 Nm/Arms	13.1 Nm/Arms
Support Tine	3.9-in. (12.5 cm) self-aligning bearing, multi-axis OTA stress relief mechanism.	✓	✓

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Specification	Description	Apollo 600	Apollo 800
Azimuth Axis	Primary bearing size: Secondary bearing size:	8 in. (20 cm)	10 in. (25.4 cm)
		5 in. (12.5 cm)	6 in. (15 cm)
Azimuth Axis Travel	540° with spring-loaded “soft” stops at the limits of travel.	✓	✓
Altitude Axis Travel	0 – 90° with spring dampened “soft” physical stops at end of travel.	✓	✓
Internal Brake	In the event of power loss, an integrated brake in the altitude axis stops rotation. The azimuth axis does <i>not</i> employ a brake but has spring-dampened hard limits to gently slow rotation.	✓	✓
Slew Speed Range	Double-precision speed specification, driven by TheSky Space™ edition and TPoint’s TCSpk™ pointing kernel.	✓	✓
Cabling	Cables required for mount operation and the controller are enclosed within the Apollo™ housing. A large access conduit through each fork accommodates custom instrument cables.	✓	✓
Cable Covers	Removable cable covers provide easy access to internal cabling.	✓	✓
Locking Pins	Altitude and azimuth axes can be locked in place to prevent rotation while mounting the telescope and other instrumentation.	✓	✓
Assembly	The four individual mount components can be fully assembled by a two-person team in an about hour.	✓	✓
Motor Torque	The continuous torque (not <i>maximum torque</i>) that is supplied to the altitude and azimuth axes.	65 Nm	103 Nm
Fork Width	The distance between the inside of both tines.	24 in. (60 cm)*	24-28 in. (60-75 cm)*
Fork Width Adjustments	A high compression clamping mechanism on both tines and the fork base allows the fork’s width to be adjusted to match the width of the telescope or instrumentation.	✓	✓
Fork Arm Length	Distance from fork base to center of telescope mounting.	28 in. (70 cm)*	28-34 in. (75-86 cm)*
Instrument Rotator (optional)	The instrument rotator is the third axis on the direct-drive motor controller and plugs into the motor drive tine. The TCSpk corrects field rotation.	✓	✓
Telescope/OTA Attachment (optional)	The optional Scope Rail System permits “drop-in” telescope mounting. See Optional Accessories below.	✓	✓

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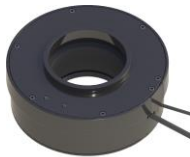

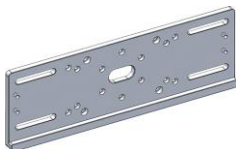
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Specification	Description	Apollo 600	Apollo 800
Operating Temperatures	<p>The operating range for the mount's control system is 0°– 40° C. A built-in heating unit automatically turns when the temperature drops below 5° C and turns off when the temperature exceeds 10° C.</p> <p>At higher temperatures, two cooling fans can be turned on to cool the electronics.</p>	✓	✓

*Custom height and width fork arms for non-standard payloads are available for an additional fee. Email FrontDesk@bisque.com for pricing and availability.

Optional Accessories

Accessory	Photo	Description	Price
Direct-Drive Instrument Rotator		The optional direct-drive instrument rotator incorporates large diameter internal bearings that produce a 3.5 in. (8.9 cm) clear aperture.	\$8,625
Universal Adapter Plate		The optional 6061 all aluminum adapter plate can be mounted to an existing surface and includes mounting holes to attach the Apollo's base plate.	\$865
Telescope Mounting Hardware		<p>The optional Scope Rail System includes mounting hardware to attach the OTA to the fork. Short, medium, and long OTA-side mounting plates are available for different size telescopes.</p> <p>See the Apollo User Guide for details about this accessory.</p>	Price based on telescope and mounting plate length.

If the standard Apollo does not meet your needs, please email systems@bisque.com so that our staff can help design a system to satisfy your project's requirements.



S O F T W A R E B I S Q U E

Superior imaging solutions for astronomy and space applications.

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