

## Features:

- EL/AZ Configuration
- Portable, Compact, Lightweight
- Rugged Construction
- Supports Solid Reflectors up to 2.4 meters (8 ft.)
- High Reliability and Accuracy
- High Torque and Low Backlash
- Rotary Joint and Slipping for Continuous Azimuth Rotation
- Fast Slew Rates
- Brushless DC Motors
- Supports L-Band through Ka-Band
- PC-based Automated Computer Control with P-Series ACU
- Camera (Optional)
- Acquisition-Aid Antenna (Optional)
- Compass and Inclinometer (Optional)
- Fiber-Optic Control (Optional)
- Transit Case (Optional)

A member of CPI Malibu's HD Series of harmonic drive pedestals, the HD-50 is designed to support solid reflectors in the range of 1.8 to 2.4 meters in winds of 65 MPH. High output torque with low backlash is accomplished with the use of planocentric gearboxes and brushless DC motors. The rugged gearboxes use built-in angular ball bearing construction, which improves the ability to support external loads, increases moment rigidity, and increases maximum allowable moment, resulting in increased reliability and a reduction in maintenance. The use of roller bearings throughout the gearbox yields low backlash (less than 1 arcmin).



For added reliability, the pedestal is designed with servo amplifiers that have protection for over-current, voltage, and temperature. O-ring seals on all panels allow for positive air pressurization of the pedestal.

The HD-50 provides both electronic and mechanical stops and all components are modular. Strategically placed and sized access hatches ensure that all pedestal components are easily accessible. Safety switches are implemented to protect the operator.

## Related Data Sheets

- Acquisition-Aid Antenna
- Conically Scanning Feed
- P-Series Antenna Control Unit

Model **HD-50 Series**  
Antenna Pedestal



# Model HD-50 SERIES

## Specifications\*

### KEY PERFORMANCE VALUES WITH STANDARD HARDWARE COMPLEMENT

Antenna	Reflector Diameter (meters)	
	1.8 (6 ft.)	2.4 (8 ft.)
Operating Frequency <sup>1</sup>	1435-2400 MHz	
Polarization <sup>2</sup>	Simultaneous Right Hand and Left Hand Circular	
VSWR	2.0:1 maximum	
Feed Type	Conically Scanning	
<b>Antenna Gain (minimum) Antenna gains, beamwidth, G/T are estimates and feed configurations may change the final values.</b>		
1435 MHz	25.6 dBi	28.1 dBi
1540 MHz	26.3 dBi	28.8 dBi
1710 MHz	27.2 dBi	29.7 dBi
1850 MHz	27.8 dBi	30.3 dBi
2200 MHz	29.4 dBi	31.8 dBi
2400 MHz	30.1 dBi	32.6 dBi
<b>Antenna Beamwidth (3 dB) (nominal)</b>		
1435 MHz	8.1°	6.1°
1540 MHz	7.6°	5.7°
1710 MHz	6.8°	5.1°
1850 MHz	6.3°	4.7°
2200 MHz	5.3°	4.0°
2400 MHz	4.9°	3.6°
<b>Sidelobes (nominal) G/T @ 10° elevation<sup>3</sup></b>		
1435 MHz	≤ -18 dBp	≤ -20 dBp
1540 MHz	3.3 dB/°K	5.8 dB/°K
1710 MHz	3.9 dB/°K	6.4 dB/°K
1850 MHz	4.9 dB/°K	7.4 dB/°K
2200 MHz	5.5 dB/°K	8.0 dB/°K
2400 MHz	7.0 dB/°K	9.5 dB/°K
2400 MHz	7.8 dB/°K	10.3 dB/°K
<b>Pedestal</b>		
Type	Elevation/Azimuth	
Velocity	≤ 25°/sec	≤ 20°/sec
Acceleration	≤ 25°/sec <sup>2</sup>	≤ 20°/sec <sup>2</sup>
Travel	Azimuth	360° continuous with slipping
	Elevation	-10° to +190° (mechanical)
Torque	Continuous	900 ft. lbs.
	Peak	1,800 ft. lbs.
Compliance	2.0 x 10 <sup>-5</sup> radians/ ft. lbs.	
<b>Environmental</b>		
Temperature	Operating	-20°C to +52°C
	Storage	-54°C to +71°C
Relative Humidity	Up to 100%, including condensation	
Rain	Up to 4 Inches per Hour	
Ice	One-half Inch, Radial	
Wind (Estimate)	Operating	80 km/h / 50 MPH (gusting to 105 km/h / 65 MPH)
	Storage	193 km/h / 120 MPH
Weight	398 kg / 875 lbs.	500 kg / 1100 lbs.
Power Requirements	110-220 VAC, 50-60 Hz, 1Ø	

**NOTES:**

- Other frequency bands available upon request.
- Simultaneous orthogonal linear polarizations available.

3. G/T specifications are nominal and may vary based upon system configuration.

\*Specifications subject to change.

## Model HD-50 Series Antenna Pedestal



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