CPI
Communications & Power Industries

malibu division

# Model **HD20 SERIES**

## Antenna Pedestal

**FEATURES:**

- **EL/AZ Positioner Configuration**
- **Portable, Compact, Lightweight**
- **Rugged Construction**
- **Supports Solid Reflectors up to 1.2 meters (4 ft)**
- **High Reliability and Accuracy**
- **High Torque and Low Backlash**
- **Fast Slew Rates**
- **Brushless DC Motors**
- **PC-based Automated Computer Control with P500 / P600 ACU**
- **Optional Acquisition-Aid Antenna**
- **Optional Compass & Inclinometer Available**
- **Optional Fiber-Optic Control Available**
- **Optional Transit Cases Available**

A member of the CPI Malibu Division HD series of harmonic drive pedestals, the HD20 is designed to support solid reflectors up to 1.2-meters or a FLAPS™ reflector up to 1.5-meters, in winds of 45 MPH. High output torque with low backlash is accomplished with the use of harmonic gearboxes and brushless DC motors. The gearboxes use built-in angular ball bearing construction, which improves the ability to support external loads, increases moment rigidity and maximum allowable moment. The result is increased reliability and a reduction in maintenance. The use of roller bearings throughout the gearbox yields low backlash (less than 1 arc. min.).

For added reliability, the pedestal is designed with servo amplifiers that have protection for over-current, voltage, and temperature.

The HD20 pedestal is ideally suited for transportable applications where weight and shipping volume are key factors. Such features as a sectional solid reflector or a sectional FLAPS™ reflector, fiber-optic interface cables and a tripod mount or a small riser base, ensure that the system is lightweight and compact during transport.

The HD20 pedestal can be supplied with a tripod mount, with extendable legs, for transportable applications where no antenna-mounting pad is available at the test site or supplied with a small base for rigid mounting to mobile platforms, such as vans or RVs.

**MODEL HD20 WITH 54" FLAPS™ REFLECTOR**

## Related Data Sheets

- **P500 / P600 Antenna Control Unit**
- **Single Channel Monopulse Feed**
- **Local/Remote ACU**
- **Acquisition-Aid Antenna**
- **Fiber-Optic Interfaces**
- **Maximum Range Curves**
- **Conically Scanning Feed**

# MODEL HD20 SERIES SPECIFICATIONS

| Parameter | Specification | |
|---|---|---|
| **Antenna** | **Number of Array Elements** | |
| | **1.2 (4 ft)** | |
| Operating Frequency[1] | 2200 - 2400 MHz | |
| Polarization[2] | Simultaneous Right Hand and Left Hand Circular | |
| VSWR | 2.0:1 maximum | |
| Feed Type | Single Channel Monopulse | |
| **Antenna Gain (minimum)** | | |
| 2200 MHz | 24.6 dBi | |
| 2300 MHz | 24.9 dBi | |
| 2400 MHz | 25.3 dBi | |
| **Antenna Beamwidth (3 dB) (nominal)** | | |
| 2200 MHz | 7.5° | |
| 2300 MHz | 7.2° | |
| 2400 MHz | 6.9° | |
| **Sidelobes (nominal)** | 12 dBp | |
| **G/T @ 10° elevation[3]** | | |
| 2200 MHz | 0.7 dB/°K | |
| 2300 MHz | 1.2 dB/°K | |
| 2400 MHz | 1.5 dB/°K | |
| **Pedestal** | | |
| Type | Elevation / Azimuth | |
| Velocity | ≤ 25°/sec | |
| Acceleration | ≤ 40°/sec$^2$ | |
| Travel | Azimuth | ± 420° minimum (cable wrap) |
| | Elevation | - 5° to +185° (mechanical) |
| Torque | Continuous | 30 ft-lbs |
| | Peak | 45 ft-lbs |
| Compliance | 4.0 x 10$^{-5}$ radians/ ft-lbs | |
| **Environmental** | | |
| Temperature | Operating | -40°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 | Operating | 65 km/h / 40 MPH (gusting to 88 km/h / 55 MPH) |
| | Stowed | 129 km/h / 80 MPH |
| Weight | 68 kg / 150 lbs (without transit cases) | |
| Power Requirements | 110-220 VAC, 50-60 Hz, 1Ø | |

NOTES

Subject to change without notice.

1. Other frequency bands available upon request.
2. Simultaneous orthogonal linear polarizations available.
3. G/T specifications are nominal and may vary based upon system configuration.
4. Use of 1.3 meter FLAPS™ reflector results in the same RF performance as the 1.2 meter solid reflector.

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