

Model **UHFH SERIES** **HELIX ANTENNA**

FEATURES:

- **Wide Frequency Bandwidth**
- **Low VSWR**
- **Low Axial Ratio**
- **High Power Handling**

The UHFH Series of helical antennas are designed for UHF communications. Used for either receive, transmit or simultaneous operation, the antennas provide a high gain figure in either the right-hand or left-hand circular polarization. Due to their low VSWR, the antennas can be used to transmit high power levels, such as for command destruct purposes.

The UHF antennas can be provided with a manual EI/AZ rotator or installed on any of CPI Malibu Division HD-series of pedestals. The model HD40 pedestal is ideally suited to position the UHFH series of helical antennas, should a remotely controlled positioning system be desired.

The UHFH Series of helical antennas can be used as stand-alone antennas, fixed or mounted on a positioner, or mounted in conjunction with another antenna system. As an example, a UHF antenna could be mounted next to the 2.4-meter reflector of a model HD50-2.4M S-Band telemetry antenna system, with the two antennas moving coincidentally.

A large ground plane is used in order to minimize backlobes. When the helix antenna is mounted onto a positioning mount a lead counterweight is attached to the rear of the helical antenna's center tube.

Manufactured entirely of chemically treated aluminum, the helical antennas are painted using a two-part polyurethane paint for added corrosion protection.

While an N-type female (UG-58 A/U) interface connector is typically provided, other connector types such as HN-series & LC-series can be used for higher power handling. When very high power handling is required various type of circular waveguide interfaces can be provided.



**MODEL UHFH2-9N HELIX ON
MODEL HD40 PEDESTAL**

Related Data Sheets

- **P500/P600 Antenna Control Unit**
- **HD Pedestal Series**

UHFH SERIES HELIX ANTENNA SPECIFICATIONS

Antenna	Specification	
	Model	
	UHFH1-9N	UHFH2-9N
Operating Frequency ¹	215-320 MHz	400-450 MHz
Polarization ²	RHCP or LHCP	RHCP or LHCP
VSWR ³	1.5:1 maximum	1.5:1 maximum
Axial Ratio	2.0 dB maximum	2.0 dB maximum
Power Handling ⁴	250WW minimum	250WW minimum
Connector	N-Type female	N-Type female
Antenna Gain (minimum)⁵		
	215 MHz - 11 dBi 270 MHz - 12 dBi 320 MHz - 13 dBi	400 MHz - 11 dBi 425 MHz - 12 dBi 450 MHz - 13 dBi
Antenna Beamwidth (3 dB) (nominal)		
	215 MHz - 45° 270 MHz - 40° 320 MHz - 35°	400 MHz - 45° 425 MHz - 40° 450 MHz - 35°
Sidelobes (nominal)	8 dBp	
Physical Dimensions		
Overall Length	108 inches	60 inches
Helix Diameter	16 inches	9.5 inches
Ground plane Diameter	44 inches	24 inches
Weight	< 35 lbs (16 kg) without pedestal & counterweight	< 25 lbs (11 kg) without pedestal & counterweight
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	1 Inch, Radial	
Sand and Dust	As encountered in desert areas	
Salt Spray	As encountered in coastal areas and shipboard locations	
Vibration	3 Gs. From 5 to 30 Hz. 0.4 double amplitude from 30 to 2000 Hz.	
Wind	Operating	161 km/h / 100 MPH
	Tied Down	242 km/h / 150 MPH

NOTES:

- Other frequency bands available upon request.
- Circular polarization must be selected at time of order.
- Lower VSWR figures obtained with narrower frequency band.
- High power handling antennas can be provided with different interface connector.
- Gain figures provided are for 9-turn helices. Antennas having lower gains and wider beamwidth are available upon request.

Subject to change without notice.