



UHF Satcom Ground Station Helical Antenna

AH-312

240-380 MHz

12 dBi Gain

High-Gain UHF SATCOM Helical Antenna Performance: The Model AH-312 is a high-gain broadband helical antenna engineered for **satellite communication ground stations**, operating seamlessly across the **240–380 MHz** UHF frequency range with a typical gain of **12 dBi**. This commercial-grade antenna utilizes advanced **circular polarization technology** (available in RHCP or LHCP) to ensure excellent signal penetration through environmental obstructions while mitigating multipath interference. By leveraging an innovative extended-stubs design, the low-profile AH-312 achieves superior directional performance with **45-degree horizontal and vertical half-power beamwidths**, allowing a single lightweight unit to replace larger, costlier conventional Yagi arrays. For scalable or defense-grade installations requiring ultra-high-gain capabilities, the system supports **dual- or quad-stacked phased array beamforming configurations** using specialized power splitter/combiner harnesses.

Circular Polarized Helical Antenna Model # AH-312 (RHCP or LHCP) Mfd. By: ANTENNA EXPERTS

Ruggedized Aerospace and Tracking Specifications: Engineered for **mission-critical reliability**, the **AH-312** boasts an input power handling capacity of **500 Watts** at 50 Ohms and a VSWR better than 2.0:1 via a durable N-Female termination. The hardware is housed in a sleek, **MIL-STD-810G compliant** fiberglass radome measuring 430 mm in diameter, which minimizes wind loading up to **200 Km/Hr** and prevents ice formation under extreme operating temperatures from **(-) 30 to +70 °C**. The robust physical architecture features high-quality copper radiating elements, an aluminum alloy reflector, and a **specialized tracking mount** that enables full 360-degree azimuth and 90-degree elevation steering, offering a highly adaptable multi-band satellite tracking solution for terrestrial and aerospace links.

Electrical Specifications:

Frequency Range	240 -380 MHz.
Gain	12 dBic. Typical
Bandwidth	243-318MHz and 240-380MHz
Polarization	Circular - LHCP or RHCP
Input Impedance	50 Ohms.
Radiation Pattern	Directional
Beam-width –Half Power Points	45 Degrees Typical
VSWR – Better than	2.0:1
RF Power Handling Capacity	500 Watts.
Input Termination	N-Female

Mechanical Specifications:

Mounting Hardware	High Grade Stainless Steel
Gross Weight with AZ & EL Tracking	25 Kgs.
Wind Rating	200 Km/Hr.
Overall Length	1500 mm
Shipping Length	1650 mm
Radiating Materials	High Quality Copper
Enclosure Materials	High Strength Fiber Glass
Mast Diameter	52 mm
Reflector Materials	6061T6 Aluminum Alloy
Reflector Size	500 x 500 mm

Environmental Specifications:

Operating Temperature	(-)30 to +70 Degrees Celsius
Storage Temperature	(-)40 to +80 Degrees Celsius
Humidity	0 to 95% RH

Please contact us for further information like Azimuth & Elevation radiation patterns, Image and frequency Vs VSWR graph.