



Models LP-1001 LP-1002 LP-1005

25 KW ROTATABLE HF LOG PERIODIC ANTENNAS



LP1001CA on 3002FA Guyed Tower



LP1001CA on 3002FS Freestanding Tower

The LP-1001, LP-1002 and LP-1005 antenna heads are designed for medium and long range high frequency applications. These antennas provide high reliability coupled with high efficiency while exhibiting low VSWR, high effective radiated power and flexibility of use. These antennas may be mounted on a tower for fixed azimuth / path applications or mounted on a rotator where multiple azimuths can be selected. The LP-1001 and LP-1005 are log periodic dipole arrays consisting of linear dipoles from 6 through 30 MHz and inductively taper-loaded dipoles from 3-6 MHz for the LP-1005 and 4-6 MHz for the LP-1001. The LP-1002 is a log periodic consisting of linear dipoles from 6-40 MHz. These antennas are all capable of 25 kW Avg./50 kW PEP power. The design of these antennas results in antennas of minimum physical size, while providing a high efficiency antenna. They are designed to withstand the rigors of extreme environmental conditions.

The boom support structure is manufactured of 6061-T6 aluminum extruded members secured with high strength stainless steel, galvanized steel and corrosion resistant hardware. The transmission line connecting the dipole elements is composed of a unique, balanced to unbalanced feedline terminating in a standard EIA coaxial line. The coaxial portion is air dielectric with Teflon* spacers separating the center conductor and outer conductor at specified intervals. It is recommended the transmission line be pressurized with dry air or SF 6 for high power applications. The extreme ends of all coaxial transmission lines are terminated with a 15 PSI relief valve allowing automatic line purging simply by increasing line pressure to beyond 15 PSI. All radiating elements are structurally tapered telescoping aluminum tube sections providing minimum weight consistent with maximum strength and minimum drag.

The longest four elements on the LP- 1001 and LP-1005 are base inductively loaded with helical copper coils connected to their respective transmission line and elements at stainless steel terminals. All element center insulators are composed of fiberglass for high electrical, as well as mechanical strength.

Model Number	LP-1005	LP-1001	LP-1002
Military nomenclature	Part of AS-3515/GRC	Part of 0E-175/FRC	Part of AS-2178/G
National stock number	5985-00-121-4334	5985-00-009-0131	5985-00-145-2962
<i>Electrical Characteristics</i>			
Frequency range	3.0 - 30.0 MHz	4.0 - 30.0 MHz	6.0 - 40.0 MHz
Power handling capability			
PEP/average	50/25 kW	50/25 kW	50/25 kW
Polarization	Horizontal	Horizontal	Horizontal
Cross polarization (in db, +/- down)	20	20	20
Forward gain over average sod Conditions at 100 ft/30.5 in (in dBi)	10-13.5	10-13.5	10-13.5
Front to back ratio (on de, nominal)	14	14	14
Nominal VSWR (with respect to 50Ω)	3:1 (3-4 MHz) 2:1 (4-30 MHz)	2:1	2:1
Input impedance	50Ω	50Ω	50Ω
In connector	1-5/8" EIA	1-5/8" EIA	1-5/8" EIA
Azimuth half power beam width (average)	70°	70°	70°
<i>Structural Characteristics</i>			
Boom length	72 feet/21.95 meters	72 feet/21.95 meters	64 feet/19.66 meters
Longest element	104.16 feet/31.75 meters	87 feet/26.65 meters	81 feet/24.69 meters
Turning radius	63.5 feet/19.35 meters	54 feet/16.46 meters	51 feet/14.94 meters
Total number of elements	19	19	14
Wind loading capability No ice	120 mph/193.08 kph	120 mph/193.08 kph	140mph/225 kph
Radial ice 0.25' (6.3 mm)	80 mph/128.7 kph	100 mph/161 kph	100 mph/161 kph
Net weight	2100 lbs/955 kg	1695/700.45 kg	1400 lbs/636.36 kg
Shipping weight	3650 lbs/1659 kg	3408 lbs/1546 kg	2102 lbs/955.3 kg
Shipping volume	242 cu ft/6.85 cu m	280 cu ft/7.94 cu m	121.9 cu ft/3.45 cu m
Wind surface area	120 sq ft/11.15 sq m	108sq ft/10.03 sq m	88sq ft/8.13 sq m

THE FOLLOWING OPTIONAL ACCESSORIES ARE AVAILABLE AND RECOMMENDED:

- 1) **Model T-3002** Heavy duty 80 foot tower structure with 100 foot rotating mast and provisions for ground mounted heavy duty rotator.
- 2) **Model R3503** Heavy duty rotator with DRC3 control system. Rotator capable of continuous rotation. Controller provides for control at the tower, at the radio, and anywhere in the world via the internet.
- 3) **Model 3715AA** Dual light tower obstruction lighting kit.

*VSWR depends upon the height of the antenna above ground, ground conditions, and the influence of other structures or antennas in the vicinity. The specification is for ideal conditions.