

APPLICATIONS

The SPR-230/330 log spiral antennas are suitable for short range (0-300 miles) skywave circuits. The horizontal polarization permits operation over all types of soil without the need for a ground screen. The antenna operates over the frequency band of 2 to 30 MHz with out need for a coupler. The designs permit operation from receiving applications to transmitting applications up to 50 kW Peak Envelope Power (PEP). Harsh environmental capabilities are achieved through appropriate material selection.

FEATURES

The SPR-230/330 antennas are designed using log periodic principles to achieve broadband performance while mounted over earth. At frequencies below 20 MHz, the antenna provides a broad, horizontally polarized beam directed at the zenith to accommodate short range skywave circuits. At higher frequencies the beam maximum occurs at lower elevation angles to accommodate longer paths. The spiral radiating elements are continuous runs of aluminum wire ensuring long life noise-free performance. The spiral curtain is supported by six radial catenaries which are pre-assembled from aluminum strand and are supported at the center by a galvanized steel mast. The extremities of the radial catenaries are supported by aluminum towers. The military standard versions use wood poles instead of towers. Custom versions use counterweights to limit tensions in severe environments.

CHARACTERISTICS

The antenna is elliptically polarized. In the northern hemisphere, the transmit antennas are normally polarized in the right hand sense and receive antennas are polarized in the left hand sense to accommodate the characteristic wave (lowest loss mode) in the ionosphere where reflection occurs. For longer paths utilizing lower radiation angles, a circularly polarized wave is refracted by the ionosphere instead of reflected and the sense of elliptical polarization becomes unimportant.

OMNIDIRECTIONAL

HIGH TAKE-OFF

HORIZONTAL POLARIZATION

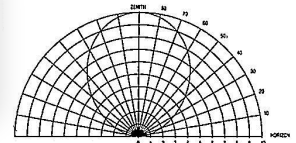
LOG PERIODIC SPIRAL

EQUIPMENT SUPPLIED

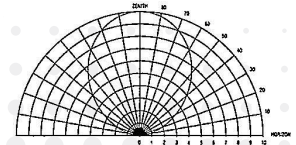
Radiating element, radial catenaries, towers and guys, center support mast, balun transformer, resistive terminations, and 6061-T6 aluminum towers.

OPTIONAL EQUIPMENT

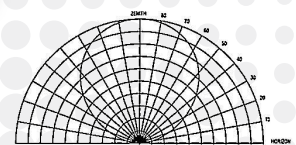
Obstruction lights, erection kit, repair kit, repair tool kit, wood poles, counterweights. (Military standard utilizes wood poles)



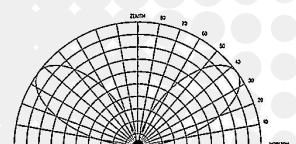
ELEVATION PATTERN (VOLAGES) AT 3 MHz
SPR-230 ANTENNA, PERFECT GROUND



ELEVATION PATTERN (VOLAGES) AT 4 MHz
SPR-230 ANTENNA, PERFECT GROUND



ELEVATION PATTERN (VOLAGES) AT 10 MHz
SPR-230 ANTENNA, PERFECT GROUND



ELEVATION PATTERN (VOLAGES) AT 30 MHz
SPR-230 ANTENNA, PERFECT GROUND

SPECIFICATIONS

POWER CAPABILITY	/1	1 kW avg/2 kW PEP
	/2	10 kW avg/20 kW PEP
	/3	25 kW avg/50 kW PEP
INPUT CONNECTOR	/1	Type "N" female
	/2	1 1/8" EIA
	/3	3 1/8" EIA
INPUT IMPEDANCE		50 Ohms unbalanced
VSWR		2.0:1 maximum
GAIN		5 dB over average ground
AZIMUTH PATTERN		Omnidirectional ± 3 dB
WIND LOADING		140 MPH no ice
		90 MPH, 1/2" ice

MODEL

	SPR-230	SPR-330
FREQUENCY RANGE	2-30 MHz	3-30 MHz
MAXIMUM HEIGHT (H)	40 ft	33 ft
CURTAIN DIAMETER (C)	250 ft	167 ft
SITE DIAMETER (D)	297 ft	212 ft
SHIPPING WEIGHT (lbs)	2,850	2,500
SHIPPING VOLUME (cu ft)	75	65
MILITARY NOMENCLATURE	AS-3476/G	AS-3477/G AS-3478/G