

2731 Series Granger Rotatable Log-Periodic Antennas

- 2-30 MHz Frequency Range
- Up to 25 kW Peak Power Rating, Depending on Type
- Horizontally Polarized
- 2.0:1 VSWR
- High Gain
- Lightweight
- Easy to Install and Maintain
- Durable
- High Efficiency - Up to 98%
- Medium- and Long-Range Communications
- High Wind Survival Rating



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General Description

The 2731 Series RLP Antennas are comprised of wire radiators on a strong yet light weight support structure. These radiators are full electrical length, providing maximum possible efficiency. The radiator curtains are also offered in versions with optimal electrical loading permitting operation down to 2 MHz, with reduced efficiency and with the pattern tending to become high angle omnidirectional. The 2731 Series antenna radiators are deployed in a chevron configuration to minimize the turning radius while maintaining the front-to-back ratio and efficiency.

Features

Radiation Pattern Versatility. Horizontally polarized log-periodic antennas such as the 2701 and 2702 models have their radiators arranged at a constant electrical height above ground producing a uniform elevation radiation take-off angle with respect to frequency. The 2731 on the other hand, with its radiators parallel to ground has varying elevation take-off angles versus frequency. This design results in an antenna capable of communications over varying distances.

Construction. The 2731 Series Antennas are the most cost effective of their class. The electrical and structural designs are based upon more than 40 years of experience. Antennas are fabricated from materials that have proven records of long life through use in every conceivable environment.

Rotation System.

The 2731 Series Antennas may be used without a rotator for fixed direction services where their compact, single mast construction is advantageous.

The optional 2500 Series, electrical rotator system incorporates a field proven design with extra heavy-duty chain drive.

The rotators of the 2731 Series antennas utilize digital controls which provide improved operation at greater distances. Antenna bearing data and proper operation is monitored at each control point.

Remote Control System.

The 2500 Series Antenna Rotator Control System is a microprocessor based system consisting of three parts; a Master Control Unit (MCU) normally situated in the control room, an Antenna Control Unit (ACU) situated at the base of the support mast, and an Antenna Rotator Unit located at the top of the mast. The MCU and ACU are connected with a choice of RS422 and RS423 communications protocols.

Tower Lighting

A kit of lighting units is available for installation on the 2731 Series Antennas. The units provide obstruction lighting to meet all federal and commercial specifications. Lighting kits are typically required when a 2731 Series Antenna is installed near an airport.

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Erection Equipment (Optional)

Erection Kit with Manual Winch. Includes manual winch, gin pole, stabilization guys and rigging equipment.

Erection Kit with 115 VAC, 60 Hz. Electrical Winch. Includes same as above with 115 VAC, 60 Hz. electric winch.

Erection Kit with 230 VAC, 50 Hz. Electrical Winch. Includes same as above with 230 VAC, 50 Hz. electric winch.

Rigging Tool Kit. For tower Assembly and guy tensioning.

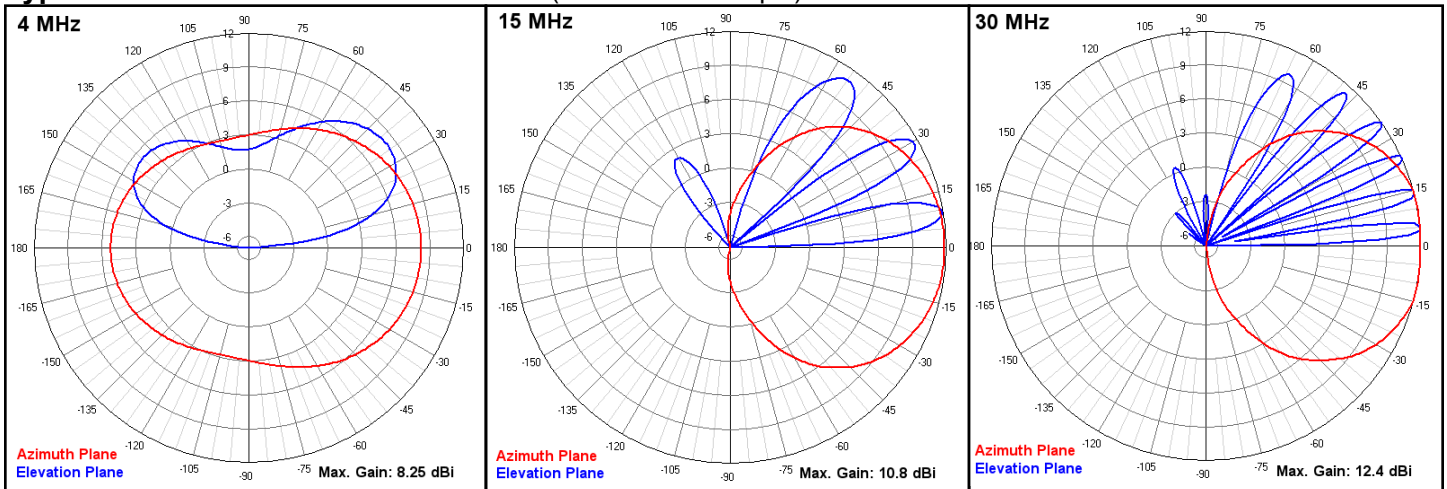
Characteristics - 2731 Series Antenna

Polarization	Horizontal
Gain, 4-30 MHz	10 dBi nominal
Directional Gain, 2-4 MHz	8 dBi nominal
Front-to-Back Ratio	14 dB nominal
Azimuth Beamwidth (at half power points)	70° nominal
Cross Polarization	20 dB nominal
VSWR	2.0:1
Wind & Ice Capabilities Survival Rating, mph (km/h)	
Without Ice	140 (225)
With 0.5 in (12 mm) Radial Ice	87 (139)
Rotation*	360°
Tower Height**	100 ft (30 m)
AC Power Required	115/230 VAC; 50/60 Hz, 2KVA

* Available without rotator and control for fixed bearing operation.

**Towers 60 ft (18.3 m) and 80 ft (24.4 m) are also available.

Typical 2731 Series Radiation Patterns (Relative to Isotropic)



Ordering Information - 2731 Antenna Model

Type Number	Frequency Range, MHz	Power kW	Input Connector Female	Gain, dBi	F/B Ratio dB	VSWR Max.	Efficiency, Percentage	Turning Radius, ft (m)
2731A-1-1	4-30	25	3 1/8" EIA	10 to 12	14	2.0:1	98	49 (14.9)
2731A-1-2	4-30	10	1 5/8" EIA	10 to 12	14	2.0:1	98	49 (14.9)
2731A-1-3	4-30	5	7/8" EIA	10 to 12	14	2.0:1	98	49 (14.9)
2731A-1-4	4-30	1	Type N Jack	10 to 12	14	2.0:1	98	49 (14.9)
2731A-11-41	2-30†	Receive	Type N Jack	directional gain 7 to 12	up to 14	2.0:1	90-98 (4.0-30 MHz) 25-90 (3.0-4.0 MHz)	49 (14.9)
2731A-11-42	2-30†	1	Type N Jack	directional gain 7 to 12	up to 14	2.0:1	90-98 (4.0-30 MHz) 25-90 (3.0-4.0 MHz) 10-25 (2.0-3.0 MHz)	49 (14.9)
2731A-2-1	5.8-30	25	3 1/8" EIA	10	14	2.0:1	98	34 (10.3)
2731A-2-2	5.8-30	10	1 5/8" EIA	10	14	2.0:1	98	34 (10.3)
2731A-2-3	5.8-30	5	7/8" EIA	10	14	2.0:1	98	34 (10.3)
2731A-2-4	5.8-30	1	Type N Jack	10	14	2.0:1	98	34 (10.3)
2731A-21-41	2-30†	Receive	Type N Jack	directional gain 5 to 12	up to 14	2.0:1	90-98 (5.8-30 MHz) 25-90 (3.0-5.8 MHz) 10-25 (2.0-3.0 MHz)	34 (10.3)
2731A-21-42	2-30†	1	Type N Jack	directional gain 5 to 12	up to 14	2.0:1	90-98 (5.8-30 MHz) 25-90 (3.0-5.8 MHz) 10-25 (2.0-3.0 MHz)	34 (10.3)

† Electrically loaded. VSWR increases below 4 MHz to a value of approximately 3.0:1 at 2 MHz.

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