Shively Labs®

Model 6513 Vertically-Polarized FM Antenna Half-Wave-Spaced

Vertical Polarization

3 kW Power Rating per Bay

Radomes & Deicers Not Required

Shively Standard Features:

- Low Weight and Windload
- Adjustable Transformer Standard Equipment
- Rugged Corrosion-Resistant Mounts
- Easy to Install - Minimum Maintenance
- Pressure Relief Valve for Easy Purging
- Pattern Studies and Directional Patterns Available

Performance Specifications:

Polarization:	Vertical only.
VSWR:	1.04 : 1 ± 100 kHz 1.06 : 1 ± 100 kHz.
Input Connection:	Female 1-5/8" EIA.
Feedline:	1-5/8" rigid.

Electrical Specifications:

No. of Bays	Gain		Power Rating	No. of Bays	Gain		Power Rating
	Power	dB	kW		Power	dB	kW
2	1.40	1.46	6	6	3.84	5.83	12
3	2.02	4.05	9	7	4.94	6.47	12
4	2.62	4.17	10	8	5.06	7.03	12
5	3.24	5.08	12				

Notes:

1. Our gain figures are derived from the computed directivity and include the losses in the antenna feed system.

   Gain is provided for vertical polarization only. Gain will be reduced if null fill, beam tilt, or special wavelength spacing is provided. Gain will increase in a directional array by the directivity of the azimuth pattern.

Pub. No. ds-6513-hw (0702)

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An Employee-Owned Company
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Model 6513 Size and Weight (Half-Wave-Spaced):

No. of Bays	Vertical Tower Space						Weight			
	Antenna Radiation Aperture		Physical Space Used		Total Tower Space Recommended		Without ice		With 1/2" (1.2 cm) radial ice	
	ft	m	ft	m	ft	m	lb	N	lb	N
2	5	1.6	14	4.6	25	8.2	98	437	300	1338
3	10	3.3	19	6.2	30	9.8	156	696	453	2020
4	15	4.9	24	7.9	35	11.5	214	954	606	2703
5	20	6.6	29	9.5	40	13.1	272	1213	759	3385
6	25	8.2	34	11.2	45	14.8	330	1472	912	4068
7	30	9.8	39	12.8	50	16.4	389	1735	1065	4750
8	35	11.5	38	12.5	55	18.0	441	1967	1200	5352

Windload (Half-Wave-Spaced):

No. of Bays	Revision 'C'				Revision 'F'			
	Without ice		With 1/2" (1.2 cm) radial ice		Without ice		With 1/2" (1.2 cm) radial ice	
	lb	N	lb	N	(ft2)	m2	(ft2)	m2
2	206	919	317	1414	6.8	0.63	9.6	0.89
3	318	1418	490	2185	10.5	0.98	15.1	1.40
4	430	1918	664	2961	14.2	1.32	20.6	1.91
5	543	2422	838	3737	17.9	1.66	25.9	2.41
6	655	2921	1011	4509	21.6	2.01	31.4	2.92
7	767	3421	1184	5281	25.3	2.35	36.7	3.41
8	869	3876	1343	5990	29.0	2.69	41.6	3.86

Notes:

2. The mounting structure must not flex more than ± 1/2 in (± 1.2 cm) in any ten-ft (3-meter) section. Five feet (1.5 m) of mounting structure is required above and below the antenna bays for proper pattern formation.
3. Antenna radiation aperture is the distance from the center of the top bay to the center of the bottom bay. Physical space used is from the top of the top bay to the input flange at the bottom of the array, or the bottom of the bottom bay in a center-fed array. Total tower space recommended allows ten feet (3 m) of clear tower space above and below the antenna to protect from pattern interference by other antennas. At frequencies lower than 98 MHz, each of these dimensions will increase by up to 1 ft (0.3 m) per bay.
4. Seven bays or less are normally end-fed. All antennas supplied with beam tilt will be center-fed. Antennas with an odd number of bays are normally not available with center feed.
5. Windload and weight tabulations are estimates and assume 98 MHz. They include the bay, interbay feedline, input connection, and a fine-matching transformer. No values have been included in these tabulations for mounts. Actual values vary with the specific installation. Contact us with details of your installation if more precise values are needed.
6. Antenna windloads are calculated for 112 mph (180 kph), using 50 psf (2400 N/m^2) for flats and 33 psf (1600 N/m^2) for rounds] per EIA standard RS-222-C and CSA standard S37-94. The surface area is calculated per EIA standard RS-222-F (C_aA_c).
7. Ask for technical assistance at Shively if you are planning to mount antennas on AM towers or install them at alti-