

Model 6812 Circularly-Polarized FM Antenna (Half-Wave-Spaced)

- True Circular Polarization
- Perfect for Translators
- Digital-Ready
- No Pressurization Needed
- The Choice of Campus Broadcasters
- All Stainless Steel Construction
- Designed for Pipe Mounting
- Economical
- No Factory Personnel Needed to Install
- Radomes and Deicers Available
- Transformer Available
- Special Spacing, H/V Ratios, Null Fill, Beam Tilt Available



Performance Specifications:

Polarization: Right circular

VSWR: 1.1 : 1 ± 100 kHz

Azimuth Pattern Circularity: Horizontal component ± 1.5 dB

Input Connection: Type "N" female

Mounting: Must be mounted on a metal pipe, 2" IPS (2-3/8 in; 60 mm) to 3" IPS (3-1/2 in; 89 mm) outside diameter. Pipe not supplied by Shively; requires 5 ft (1.5 m) of clear space on pipe above and below antenna.

Electrical Specifications:

No. of Bays	Gain		Power Rating	No. of Bays	Gain		Power Rating
	Power	dB	W		Power	dB	W
2	0.7	-1.54	1500	6	1.92	2.83	1500
3	1.01	1.05	1200	8	2.53	4.03	1500
4	1.31	1.17	1500	10	3.14	4.96	1500
5	1.62	2.08	1000	12	3.75	5.24	1500

Notes:

1. Our gain figures are calculated by factoring the directivity to allow for losses in the radiating system. Due to this conservative approach, you are assured of radiating maximum ERP by using Shively's published gain figures.

Gain is provided for one polarization and is equal in circularly polarized antennas for both horizontal and vertical components. Gain will be reduced if null fill, beam tilt, special H/V ratio, or special wavelength spacing is provided.

Antenna Size & Weight (Half-Wave-Spaced):

No. of Bays	Vertical Tower Space						Weight					
	Antenna Radiation Aperture		Pipe Length Required		Total Tower Space Recommended		Without radomes		With radomes		With radomes & 1/2" (1.2 cm) radial ice	
	ft	m	ft	m	ft	m	lb	N	lb	N	lb	N
2	5	1.6	15	4.9	25	8.2	10	45	80	357	170	758
3	10	3.3	20	6.6	30	9.8	17	76	122	544	259	1155
4	15	4.9	25	8.2	35	11.5	24	107	164	731	348	1552
5	20	6.6	30	9.8	40	13.1	31	138	206	919	438	1953
6	25	8.2	35	11.5	45	14.8	38	169	248	1106	527	2350
8	35	11.5	45	14.8	55	18.0	52	232	332	1481	705	3144
10	45	14.8	55	18.0	65	21.3	66	294	416	1855	883	3938
12	55	18.0	65	21.3	75	24.6	80	357	500	2230	1062	4737

Antenna Windload (Half-Wave-Spaced):

No. of Bays	Revision 'C'						Revision 'F'					
	Without radomes		With radomes		With radomes & 1/2" (1.2 cm) radial ice		Without radomes		With radomes		With radomes & 1/2" (1.2 cm) radial ice	
	lb	N	lb	N	lb	N	(ft ²)	m ²	(ft ²)	m ²	(ft ²)	m ²
2	14	62	243	1084	273	1218	0.5	0.0	6.2	0.6	6.9	0.6
3	21	94	366	1632	413	1842	0.7	0.1	9.3	0.9	10.6	1.0
4	29	129	488	2176	554	2471	1	0.1	12.4	1.2	14.3	1.3
5	37	165	611	2725	694	3095	1.3	0.1	15.5	1.4	17.9	1.7
6	45	201	734	3274	834	3720	1.6	0.1	18.6	1.7	21.5	2.0
8	61	272	979	4366	1115	4973	2.1	0.2	24.9	2.3	28.7	2.7
10	77	343	1225	5464	1396	6226	2.7	0.3	31.1	2.9	36	3.3
12	93	415	1470	6556	1677	7479	3.2	0.3	37.4	3.5	43.3	4.0

Notes:

- Antenna radiation aperture is the distance from the center of the top bay to the center of the bottom bay. Five ft (1.5 m) of pipe is required above the top of the top bay and below the bottom of the bottom bay. Total tower space recommended allows ten ft (3 m) of clear tower space above and below the pipe to protect from pattern interference by other antennas.
- Antennas with two bays or an odd numbers of bays are end-fed; antennas with even numbers of bays are center-fed.
- Windload and weight numbers given are typical. Actual values vary with the specific installation. Contact us with details of your installation if more precise values are needed.
- Weight, windload, and space tabulations assume 98 MHz and include the bay, interbay feedline, input connection, and standard mounting brackets. At lower frequencies, length will increase by approximately 1 ft (0.3 m) per bay.
- Antenna windloads are calculated for 112 mph (180 kph), using 50 psf (2400 N/m²) for flats and 33 psf (1600 N/m²) 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).
- Deicers add approximately 1 lb (4.4 N) per bay in weight and 2 lb (8.9 N) or 0.3 ft² (0.028m²) per bay in windload.
- Transformer adds approximately 5 lb (22 N) in weight and 5 lb (2.3 m²) or 0.117 ft² (0.011 m²) in windload and reduces power rating to 750 W.
- Ask for technical assistance at Shively when you are planning to mount antennas on AM towers or install them at altitudes over 3,000 ft (915 m) above mean sea level.