Shively Labs®

Model 6812B Circularly-polarized FM antenna Half-wave-spaced

- True circular polarization
- Perfect for translators
- No pressurization needed
- The choice of low-power broadcasters
- Designed for pipe mounting
- Economical
- No factory personnel needed to install
- Radomes and deicers available
- Special spacing, H/V ratios, null fill, beam tilt available

Performance specifications:

Polarization: Right circular

VSWR: 1.1 : 1 ± 100 kHz
1.2 : 1 ± 200 kHz

Azimuth Pattern Circularity: Horizontal component ± 1.5 dB on pole.

Input Connection: Type "N" female standard

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	0.71	-1.51	1000	5	1.62	2.1	1500
3	1.02	0.08	1500	6	1.92	2.84	1500
4	1.32	1.19	1500	8	2.54	4.04	1500

Notes:

1. Gain values are for 93.1 MHz (low-band) and 103.1 MHz (high-band) and vary less than 5% at the edges.

   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.

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Model 6812B 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	4.8	1.5	14.8	4.5	24.8	7.6	12	53	62	276	318	1414
3	9.7	2.9	19.7	6.0	29.7	9.0	19	84	94	418	488	2170
4	14.5	4.4	24.5	7.5	34.5	10.5	25	111	125	556	658	2925
5	19.3	5.9	29.3	8.9	39.3	12.0	32	142	157	698	828	3681
6	24.2	7.4	34.2	10.4	44.2	13.5	38	169	188	836	998	4437
8	33.8	10.3	43.8	13.4	53.8	16.4	51	227	251	1116	1338	5949

Antenna windload (half-wave-spaced):

No. of Bays	Revision "G", 90 mph								Revision "G", 40 mph			
	Without radomes				Without radomes				With radomes & 1/2" (1.2 cm) radial ice			
	EPA (N)		EPA (T)		EPA (N)		EPA (T)		EPA (N)		EPA (T)	
	ft^2	m^2	ft^2	m^2	ft^2	m^2	ft^2	m^2	ft^2	m^2	ft^2	m^2
2	1.0	0.1	1.8	0.2	7.6	0.7	7.3	0.7	11.6	1.1	10.9	1.0
3	1.5	0.1	2.9	0.3	11.7	1.1	11.1	1.0	18.7	1.7	17.7	1.6
4	2.0	0.2	4.0	0.4	15.7	1.5	15.0	1.4	25.8	2.4	24.4	2.3
5	2.5	0.2	5.1	0.5	19.7	1.8	18.8	1.7	32.8	3.0	31.2	2.9
6	3.0	0.3	6.2	0.6	23.7	2.2	22.6	2.1	39.9	3.7	37.9	3.5
8	4.1	0.4	8.4	0.8	31.7	2.9	30.3	2.8	54.1	5.0	51.4	4.8

Notes:

2. Antenna radiation aperture is the distance from the center of the top bay to the center of the bottom bay. Five feet (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 feet (3 m) of clear tower space above and below the pipe to protect from pattern interference by other antennas. At frequencies lower than 98 MHz, each of these dimensions will increase by up to 1 foot (0.3 m) per bay.
3. Windload and weight tabulations assume half-wave bay spacing and include the bay, mounts and interbay feedline.
4. Antenna areas and weights calculated in accordance with TIA-222-G:
   EPA(N) - Effective projected area associated with the windward face normal to the azimuth of the antenna: EPA(N) = $\sum(C_a A_A)_N$
   EPA(T) - Effective projected area associated with the windward face at the side of the antenna: EPA(T)=$\sum(C_a A_A)_T$
   Assumptions: Structure Class II; Exposure Category C; Topographic Category 1; Maximum basic windspeed 90 mph; with 1/2 inch design ice, 40 mph; Height above ground 200 ft.
5. Ask for technical assistance at Shively if you are planning to mount antennas on AM towers or install them at altitudes over 3,000 ft (915 m) above mean sea level.
6. Deicers add approximately 1 lb (4.4 N) per bay in weight and a windload of EPA(N) = 0.7 ft^2 and EPA(T) = 0.7 ft^2 per bay.