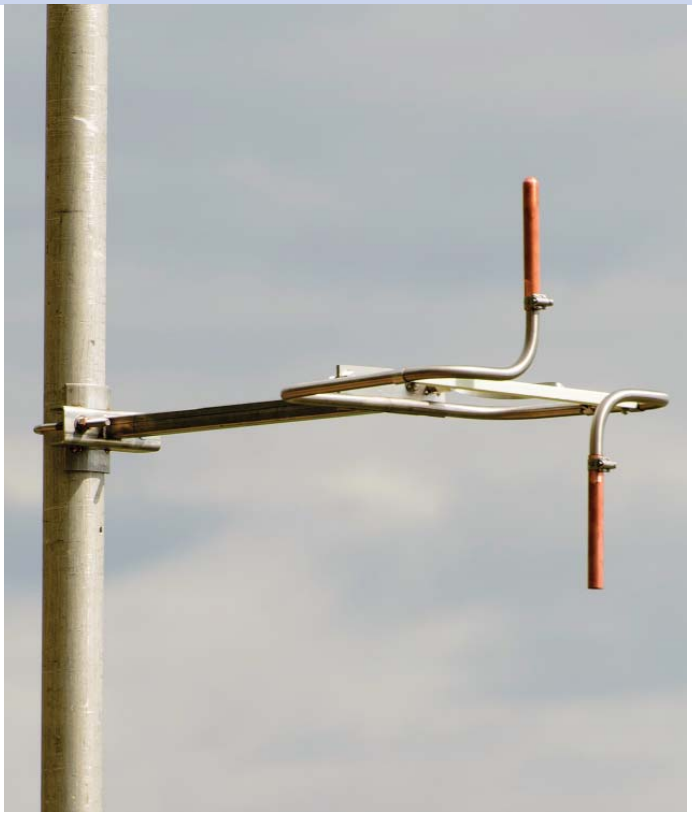
Shively Labs®

Model 6812C Circularly-polarized FM antenna - full-wave-spaced



- True circular polarization
- Perfect for translators
- No pressurization needed
- The choice of campus and religious broadcasters
- Designed for leg mounting on up to 36" face tower, or pipe mounting on larger towers
- Economical
- No factory personnel needed to install
- Radomes and de-icers available
- Special spacing, H/V ratios 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

Input Connection: Type "N" female standard

Mounting: 18-inch standoff allows mounting on tower leg or metal pipe 1" (2.5 cm) to 3-1/2" (8.9 cm) outside diameter. Requires 5 ft (1.5 m) of clear space on pipe above and below antenna.

Electrical specifications:

Center- or end-fed, Type N connection	Gain		Power rating	Center- or end-fed, Type N connection	Gain		Power rating
	Power	dB	W		Power	dB	W
1 bay	0.46	-3.39	1000	5 bay	2.63	4.20	1500
2 bay	1.01	0.03	1500	6 bay	3.16	4.99	1500
3 bay	1.56	1.92	1500	8 bay	4.23	6.26	1500
4 bay	2.09	3.21	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 maxmum 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 special H/V ratio, or special wavelength spacing is provided.

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Antenna size & weight (full-wave-spaced):

No. of Bays	Vertical Tower Space						Weight					
	Antenna Radiation Aperture		Pipe Length Required (if applicable)		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
1	0.0	0.0	15.0	4.6	15.0	4.6	8	36	37	164	174	774
2	4.8	1.5	14.8	4.5	24.8	7.6	17	76	68	302	364	1618
3	9.7	2.9	19.7	6.0	29.7	9.0	26	116	100	445	554	2463
4	14.5	4.4	24.5	7.5	34.5	10.5	35	156	131	582	744	3308
5	19.3	5.9	29.3	8.9	39.3	12.0	44	196	163	725	933	4148
6	24.2	7.4	34.2	10.4	44.2	13.5	53	236	194	863	1123	4993
8	33.8	10.3	43.8	13.4	53.8	16.4	70	311	257	1143	1503	6682

Antenna windload, Rev. G (full-wave-spaced)

No. of Bays	90 mph (145 kph) without radomes				90 mph (145 kph) with radomes				40 mph (64 kph) 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
1	0.7	0.1	0.7	0.1	3.4	0.3	2.4	0.2	4.8	0.4	3.4	0.3
2	1.6	0.1	1.7	0.2	6.7	0.6	5.2	0.5	9.7	0.9	9.3	0.9
3	2.6	0.2	2.7	0.3	10.1	0.9	8	0.7	14.6	1.4	15.2	1.4
4	3.5	0.3	3.7	0.3	13.4	1.2	10.8	1.0	19.5	1.8	21.1	2.0
5	4.5	0.4	4.8	0.4	16.8	1.6	13.6	1.3	24.3	2.3	27.0	2.5
6	5.4	0.5	5.8	0.5	20.2	1.9	16.4	1.5	29.2	2.7	32.9	3.1
8	7.3	0.7	7.9	0.7	26.9	2.5	21.9	2.0	39.0	3.6	44.6	4.1

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 the pipe is required above the top of the top bay and below the bottom bay. Total tower space recommended allows ten feet (3 m) of clear tower space above the center line of the top bay and below the center line of the bottom bay, 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 full-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; Maximum 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.