

### True Circular Polarization

Power Rating: 10 kW per Bay

Best Sidemount in the Industry for Directionals

Will Duplex over 2.4 MHz Bandwidth

### Shively Standard Features:

- Ring Stub Design
- Consistently Predictable Patterns
- Digital Ready
- Pattern Studies Available
- No Factory Personnel Needed to Install
- Adjustable Fine-Matching Transformer
- Radomes and Deicers Available
- Rugged Corrosion-Resistant Mounts
- Works with Regular Towers; No Need for Special Frequency-Sensitive Tower Sections
- Pressure Relief Valve for Easy Purging of the System
- Special Spacing, H/V Ratios, Null Fill and Beam Tilt Available



### Electrical Specifications:

No. of Bays	Gain		Power Rating	No. of Bays	Gain		Power Rating
	Power	dB	kW		Power	dB	kW
2	0.70	-1.54	20	8	2.53	4.03	40
3	1.01	1.05	30	10	3.14	4.96	40
4	1.31	1.17	40	12	3.75	5.74	40
5	1.62	2.08	40	14	4.35	6.39	40
6	1.92	2.83	40	16	4.96	6.96	40

### Performance Specifications:

Polarization: Right circular

VSWR: 1.05 : 1 ± 100 kHz  
 1.09 : 1 ± 200 kHz  
 1.06 : 1 over ± 100 kHz for dual-frequency version  
 1.1 : 1 over ± 200 kHz for dual-frequency version

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

Input Connection: Female 3-1/8 in EIA

### Notes:

1. Our gain figures are derived from the computed directivity and include the losses in the antenna feed system.  
 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. Gain will increase in a directional array by the directivity of the azimuth pattern.

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 Certified to ISO-9001:2000

## Model 6810 Size and Weight (Half-Wave-Spaced):

No. of Bays	Vertical Tower Space						Weight					
	Antenna Radiation Aperture		Physical Space Used		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	14	4.6	25	8.2	177	789	247	1102	527	2350
3	10	3.3	19	6.2	30	9.8	235	1048	340	1516	771	3439
4	15	4.9	24	7.9	35	11.5	293	1307	433	1931	1015	4527
5	20	6.6	29	9.5	40	13.1	351	1565	526	2346	1259	5615
6	25	8.2	34	11.2	45	14.8	409	1824	619	2761	1503	6703
7	30	9.8	39	12.8	50	16.4	468	2087	713	3180	1747	7792
8	35	11.5	38	12.5	55	18.0	520	2319	800	3568	1966	8768
10	45	14.8	48	15.7	65	21.3	622	2774	972	4335	2429	10833
12	55	18.0	58	19.0	75	24.6	739	3296	1159	5169	2917	13010
14	65	21.3	68	22.3	85	27.9	855	3813	1345	5999	3405	15186
16	75	24.6	78	25.6	95	31.2	971	4331	1531	6828	3892	17358

## 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 <sup>2</sup> )	m <sup>2</sup>	(ft <sup>2</sup> )	m <sup>2</sup>	(ft <sup>2</sup> )	m <sup>2</sup>
2	245	1093	485	2163	559	2493	8.2	0.8	13.8	1.3	16.1	1.5
3	385	1717	745	3323	862	3845	13.0	1.2	21.3	2.0	25.0	2.3
4	526	2346	1005	4482	1166	5200	17.7	1.6	28.9	2.7	34.0	3.2
5	666	2970	1265	5642	1469	6552	22.5	2.1	36.4	3.4	42.9	4.0
6	806	3595	1525	6802	1772	7903	27.3	2.5	44.0	4.1	51.8	4.8
7	947	4224	1786	7966	2075	9255	32.0	3.0	51.5	4.8	60.8	5.6
8	1069	4768	2028	9045	2355	10503	36.1	3.4	58.4	5.4	68.8	6.4
10	1307	5829	2505	11172	2905	12956	45.6	4.2	72.4	6.7	85.3	7.9
12	1588	7082	3025	13492	3511	15659	55.1	5.1	87.5	8.1	103.0	9.6
14	1868	8331	3546	15815	4118	18366	64.7	6.0	103.0	9.6	121.0	11.2
16	2149	9585	4066	18134	4725	21074	74.2	6.9	118.0	11.0	139.0	12.9

## Notes:

- The mounting structure must not flex more than  $\pm 1/2$  in ( $\pm 1.2$  cm) in any 10-ft (3-meter) section. 5 feet (1.5 m) of mounting structure is required above and below the antenna bays for proper pattern formation.
- 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.
- 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.
- 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.
- Antenna windloads are calculated for 112 mph (180 kph), using 50 psf (2400 N/m<sup>2</sup>) for flats and 33 psf (1600 N/m<sup>2</sup>) 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<sub>0</sub>A<sub>0</sub>).
- Deicers add approximately 1 lb (4.4 N) per bay in weight and 2 lb (8.9 N) or 0.05 ft<sup>2</sup> (0.005 m<sup>2</sup>) per bay in windload.
- 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.