

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	0.71	-1.51	20	8	2.54	4.04	40
3	1.02	0.08	30	10	3.14	4.97	40
4	1.32	1.19	40	12	3.75	5.74	40
5	1.62	2.10	40	14	4.37	6.40	40
6	1.92	2.84	40	16	4.98	6.97	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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Model 6810 size and weight:

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	1.5	14	4.3	25	7.6	177	787	247	1098	527	2343
3	10	3.0	19	5.8	30	9.1	235	1045	340	1512	771	3428
4	15	4.6	24	7.3	35	10.7	293	1303	433	1925	1015	4513
5	20	6.1	29	8.8	40	12.2	351	1561	526	2339	1259	5597
6	25	7.6	34	10.4	45	13.7	409	1818	619	2752	1503	6682
7	30	9.1	39	11.9	50	15.2	468	2081	713	3170	1747	7767
8	35	10.7	38	11.6	55	16.8	520	2312	800	3557	1966	8741
10	45	13.7	48	14.6	65	19.8	622	2765	972	4321	2429	10799
12	55	16.8	58	17.7	75	22.9	739	3286	1159	5153	2917	12969
14	65	19.8	68	20.7	85	25.9	855	3801	1345	5980	3405	15138
16	75	22.9	78	23.8	95	29.0	971	4317	1531	6807	3892	17303

Windload (TIA-222 Rev. G):

No. of Bays	Without radomes				With 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	8.1	0.8	8.3	0.8	12.1	1.1	11.6	1.1	14.0	1.3	13.1	1.2
3	11	1.0	11.6	1.1	17	1.6	16.5	1.5	19.7	1.8	18.7	1.7
4	14	1.3	14.9	1.4	22	2.0	21.4	2.0	25.4	2.4	24.2	2.2
5	16.9	1.6	18.2	1.7	26.9	2.5	26.3	2.4	31.1	2.9	29.8	2.8
6	19.8	1.8	21.5	2.0	31.8	3.0	31.3	2.9	36.8	3.4	35.4	3.3
7	22.7	2.1	24.8	2.3	36.8	3.4	36.2	3.4	42.5	3.9	41.0	3.8
8	25.6	2.4	28.1	2.6	41.7	3.9	41.1	3.8	48.2	4.5	46.6	4.3
10	31.5	2.9	34.7	3.2	51.5	4.8	51	4.7	59.7	5.5	57.8	5.4
12	37.3	3.5	41.4	3.8	61.4	5.7	60.8	5.6	71.1	6.6	69.0	6.4
14	43.2	4.0	48	4.5	71.3	6.6	70.7	6.6	82.5	7.7	80.2	7.5
16	49.0	4.6	54.6	5.1	81.1	7.5	80.6	7.5	93.9	8.7	91.4	8.5

Notes:

- The mounting structure must not flex more than $\pm 1/2$ in (± 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 fewer 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 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: $EPA_N = \sum(C_o A_o)_N$
 EPA_T - Effective projected area associated with the windward face at the side of the antenna: $EPA_T = \sum(C_o A_o)_T$
 Assumptions: Structure Class II; Exposure Category C; Topographic Category 1; Maximum basic windspeed 112 mph; with 1/2 inch design ice, 50 mph; Height about ground 200 ft.
- Deicers add approximately 1 lb (4.4 N) per bay in weight and a windload of $EPA_N = 0.7$ ft² and $EPA_T = 0.7$ ft² per bay.
- 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.