

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 kW	No. of Bays	Gain		Power Rating kW
	Power	dB			Power	dB	
1	0.46	-3.40	10	7	3.87	5.88	40
2	0.99	-0.04	20	8	4.46	6.50	40
3	1.55	1.90	30	10	5.65	7.52	40
4	2.12	3.26	40	12	6.85	8.36	40
5	2.70	4.31	40	14	8.05	9.06	40
6	3.28	5.16	40	16	9.25	9.66	40

Performance Specifications:

Polarization: Right circular

VSWR: 1.06 : 1 ± 100 kHz
 1.1 : 1 ± 200 kHz
 1.08 : 1 ± 100 kHz for dual-frequency version
 1.12 : 1 ± 100 kHz for dual-frequency version

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

Input Connection: Female 3-1/8 in EIA

Document No. ds-6810-fw (0702)

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.

Model 6810 Size and Weight (Full-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
1	2	0.7	9	3.0	20	6.6	133	593	168	749	309	1378
2	10	3.3	19	6.2	30	9.8	191	852	261	1164	552	2462
3	20	6.6	29	9.5	40	13.1	249	1111	354	1579	796	3550
4	30	9.8	39	12.8	50	16.4	307	1369	447	1994	1040	4638
5	40	13.1	49	16.1	60	19.7	365	1628	540	2408	1284	5727
6	50	16.4	59	19.4	70	23.0	423	1887	633	2823	1528	6815
7	60	19.7	69	22.6	80	26.2	482	2150	727	3242	1772	7903
8	70	23.0	73	23.9	90	29.5	534	2382	814	3630	1991	8880
10	90	29.5	93	30.5	110	36.1	650	2899	1000	4460	2479	11056
12	110	36.1	113	37.1	130	42.6	767	3421	1187	5294	2967	13233
14	130	42.6	133	43.6	150	49.2	883	3938	1373	6124	3455	15409
16	150	49.2	153	50.2	170	55.8	999	4456	1559	6953	3942	17581

Windload (Full-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
1	148	660	267	1191	313	1396	4.3	0.4	7.1	0.7	8.1	0.8
2	288	1284	528	2355	616	2747	9.2	0.9	14.8	1.4	17.5	1.6
3	428	1909	788	3514	919	4099	14.0	1.3	22.3	2.1	26.4	2.5
4	569	2538	1048	4674	1223	5455	18.7	1.7	29.9	2.8	35.4	3.3
5	709	3162	1308	5834	1526	6806	23.5	2.2	37.4	3.5	44.3	4.1
6	849	3916	1568	6993	1829	8157	28.3	2.6	45.0	4.2	56.2	5.2
7	990	4415	1829	8157	2132	9509	33.0	3.1	52.5	4.9	62.2	5.8
8	1112	4960	2071	9237	2412	10758	37.1	3.4	59.4	5.5	70.2	6.5
10	1393	6213	2591	11556	3019	13465	46.6	4.3	74.5	6.9	88.1	8.2
12	1674	7466	3111	13875	3625	16168	56.1	5.2	89.6	8.3	106.0	9.8
14	1954	8715	3632	16199	4232	18875	65.7	6.1	104.7	9.7	123.9	11.5
16	2235	9968	4152	18518	4839	21582	75.2	7.0	119.8	11.1	141.7	13.2

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 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/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 (C₀A₀).
- Deicers add approximately 1 lb (4.4 N) per bay in weight and 2 lb (8.9 N) or 0.05 ft² (0.005 m²) 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.