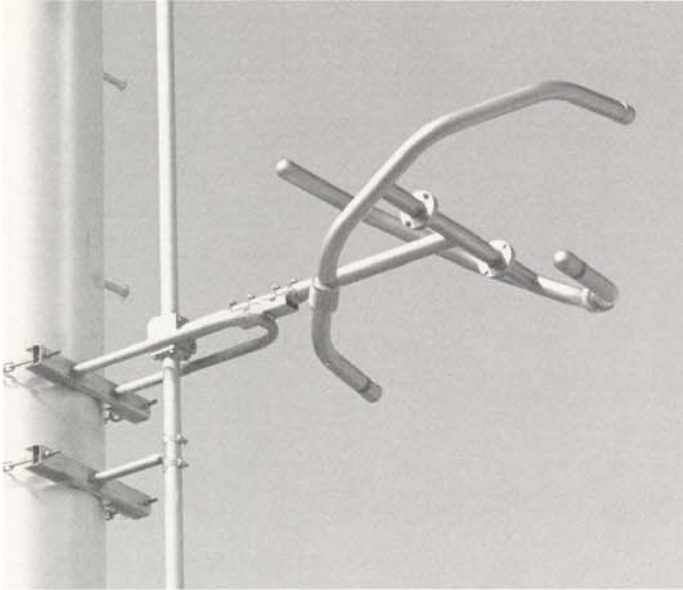


HARRIS FML LOW POWER CIRCULARLY POLARIZED FM ANTENNA



Features and Benefits:

- High performance design for lower power systems
- Rugged brass element construction with stainless steel support brackets to impede corrosion and ensure long, trouble-free life
- Excellent bandwidth to minimize VSWR and related signal degradation
- Custom pattern optimization available to meet special requirements

Harris' FML Low Power Circularly Polarized FM Antenna will give you excellent bandwidth characteristics and rugged construction for years of superb performance.

The FML antenna features rugged construction necessary to withstand the most severe weather and wind velocities of up to 150 miles per hour.

The brass radiating element, featuring tubular construction, has an outside diameter of 1 $\frac{3}{8}$ -inches. The feed point is completely internal with a pressurized environment up to the feed point. This Harris feature minimizes weather-related problems common in competitive FM antennas.

As a result of design excellence in the Harris FML antenna, deicers and radomes typically are not required at antenna heights where radial ice does not exceed $\frac{1}{2}$ -inch. Under icing conditions of up to $\frac{1}{2}$ -inch, typical VSWR is 1.5:1 or less, assuming the antenna exhibits normal VSWR of 1.1:1 or less.

Harris recommends optional FML radomes or electrical element deicers for antennas in environments subject to heavier icing.

Bandwidth Capability: The FML antenna has a low standing wave ratio of 1.1:1 or less, ± 200 kHz per give channel with field trimming. VSWR at antenna input without field trimming is 1.2:1 for pole mounting atop a tower, and 1.5:1 or less when side mounted on a tower.

Circularity: Harris' FML's horizontally polarized radiation pattern is omnidirectional when the antenna is pole-mounted, and circularity is ± 2 dB when the antenna is mounted on a 14-inch diameter steel pole. When side-mounted, the antenna pattern will be somewhat affected by the supporting structure.

Harris offers complete antenna patterning facilities for measuring the antenna radiation patterns. An electrically equivalent full size tower section approximately 20-feet long is set up on the antenna range. The exact size and location of the ladder, coaxial transmission lines, conduits and cables are duplicated on this tower section, and an identical antenna element is mounted on the tower for such measurements.

Pattern optimization for the vertical polarization component or both the vertical and horizontal polarization components is available to improve the pattern circularity.

Two versions of Harris' FML antenna are available. The "E" version is an end-fed model mounted on 1 $\frac{5}{8}$ -inch, 50 ohm rigid line. The "C" version is center-fed and uses 3 $\frac{1}{8}$ -inch, 50 ohm rigid line.

End-fed models have a power input capability of 9 kW, limited by the average power capability of the 1 $\frac{5}{8}$ -inch rigid coaxial line (conservatively derated from 15 kW to 9 kW). Center-fed versions have a power input capability of 12 kW with the 3 $\frac{1}{8}$ -inch input feed.

Each antenna comes with a six-foot input transformer. For end-fed models, the feed point is six feet below the bottom bay. For center-fed models, the feed point is approximately six feet below the center of the antenna. Input is a standard 1 $\frac{5}{8}$ -inch EIA female flange for end-fed models and a 3 $\frac{1}{8}$ -inch EIA female flange for center-fed models.

The element stem is constructed of heavy brass wall tubing to ensure its ability to withstand rugged environmental conditions.

At the factory, all antennas are completely assembled, tuned to the customer's frequency, and pressure-tested to ensure delivery of a leak-free antenna.

Stainless steel mounting brackets and hardware are supplied for standard constant cross section towers with less than four-foot face dimensions or steel poles. Optional brackets for mounting on tapered towers also are available.

FML options are available to meet your special requirements and include:

- DC shorting stub for lightning protection
- FML radomes or electrical deicers
- Mounting brackets for special tower configurations
- FML custom pattern measurement and optimization.

HARRIS FML SPECIFICATIONS

TYPE NO.	POWER GAIN ¹		INPUT	POWER ² INPUT CAPABILITY	CALCU-LATED WEIGHT [LBS.]	CALCU-LATED WIND LOAD [LBS.]	WITH RADOMES	
	POWER	dB					CALCU-LATED WEIGHT [LBS.]	CALCU-LATED WIND LOAD [LBS.]
FML-1E	0.4611	-3.3623	1 ⁵ / ₈ "	9 kW	57	102	83	224
FML-2E	0.9971	-0.0128	1 ⁵ / ₈ "	9 kW	114	212	166	457
FML-3E	1.5588	1.9278	1 ⁵ / ₈ "	9 kW	170	323	248	689
FML-4E	2.1322	3.2903	1 ⁵ / ₈ "	9 kW	227	433	331	922
FML-4C	2.1322	3.2903	3 ¹ / ₈ "	12 kW	260	509	364	998
FML-5E	2.7154	4.3384	1 ⁵ / ₈ "	9 kW	283	543	413	1154
FML-5C	2.7154	4.3384	3 ¹ / ₈ "	12 kW	317	620	447	1231
FML-6E	3.3028	5.1888	1 ⁵ / ₈ "	9 kW	340	654	496	1387
FML-6C	3.3028	5.1888	3 ¹ / ₈ "	12 kW	373	730	529	1463
FML-7E	3.8935	5.9034	1 ⁵ / ₈ "	9 kW	396	764	578	1619
FML-7C	3.8935	5.9034	3 ¹ / ₈ "	12 kW	430	840	612	1696
FML-8E	4.4872	6.5197	1 ⁵ / ₈ "	9 kW	453	874	661	1852
FML-8C	4.4872	6.5197	3 ¹ / ₈ "	12 kW	486	950	694	1928
FML-9C	5.0826	7.0608	3 ¹ / ₈ "	12 kW	543	1060	777	2160
FML-10C	5.6800	7.5435	3 ¹ / ₈ "	12 kW	599	1171	859	2393
FML-11C	6.2783	7.9785	3 ¹ / ₈ "	12 kW	656	1281	942	2626
FML-12C	6.8781	8.3747	3 ¹ / ₈ "	12 kW	712	1391	1024	2858
FML-13C	7.4785	8.7381	3 ¹ / ₈ "	12 kW	769	1501	1107	3090
FML-14C	8.0800	9.0741	3 ¹ / ₈ "	12 kW	825	1612	1189	3323

FOOTNOTES: 1. Horizontal and vertical power gain and dB gain are the same. 2. Power input capability up to 2,000 ft. above mean sea level. Derating required above 2,000 ft. 3. Wind load based on 112 mph wind velocity (50/33 psf) and the wind blowing normal to the side of the antenna. Weight and wind load calculations include brackets, interbay line and the transformer section. Calculations based on the frequency of 95 MHz.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.