



FMVee

- Full 20 MHz bandwidth
- Power ratings up to 10 class C stations
- Stainless steel element for excellent reliability
- Designed for -10 dB IBOC signals
- Single or dual EIA inputs
- ABS feed point radome standard
- Low downward radiation
- Near omni-directional pattern performance
- RH circular polarization standard
- Low windload, flanged, top mount design
- Lightning resistant – grounded radiating elements
- Ideal for common amplification or high level combining

The FMVee (arrowhead dipole) antenna offers ideal characteristics for FM stations desiring the advantages of top mounting and combined station operation.

The Dielectric FMVee radiator consists of a crossed dipole radiator fed in phase quadrature and mounted three around on a structural pipe mast. Rotating RF energy is produced when the element is fed in phase quadrature by an integral element hybrid divider. The wings between each element shape the element patterns and also help isolate adjacent elements.

The element used in the Dielectric FMVee circularly polarized antenna is a welded stainless steel grid. The element is supported off a mounting pole, which also serves as a mounting for the balun assembly. The aerodynamic elements and screens significantly reduce weight and windload requirements of the supporting structure. This often represents substantial savings in support structure cost compared with panel style designs.

Multi-station FM operation where two or more stations share the same antenna has increased in popularity due to the inherent cost savings that can be realized. Multi-station operation with excellent pattern circularity can be achieved with the wide bandwidth characteristics the FMVee antenna offers. These characteristics are achieved through the use of broadband radiating elements in conjunction with high-power element hybrids.

Dielectric also offers the associated combining equipment necessary for multi-station operation. Dielectric's experience with multiplexer installations ensures proper combiner operation to optimize the system performance.

For omnidirectional operation, the shape of the standard azimuth pattern will vary from omni by less than +/- 2 dB for top mount configurations.

The unique design of the FMVee antenna offers precise control of the elevation pattern, which is critical in auto receiver reception. Vertical pattern contouring to introduce beam tilt and null fill may be provided by means of standard phase and power distribution techniques.

The FMVee antenna is designed for high-power operation enabling station flexibility in transmission system design. Our conservative power rating ensures adequate design headroom for long-term reliability. The Dielectric FMVee antenna can be configured with one or two input ports. This feature allows the top and bottom four bays of a typical eight-bay antenna to be fed by two independent transmission lines. Should standby operation be necessary, one half of the eight-bay antenna may be used at reduced power.

Mechanical Specifications

Model	Length ft (m)	CfAc ft ²	Ma ft (m)	Weight lbs (kg)
FMVee-O3-2FM/6U-1	21.66 (6.49)	92	8.83 (2.65)	6,500 (2,925)
FMVee-O3-4FM/12U-1	39.00 (11.70)	184	17.50 (5.25)	12,500 (5,625)
FMVee -O3-6FM/18U-1	56.33 (16.90)	276	26.16 (7.85)	19,000 (8,550)
FMVee O3-8FM/24U-1	73.66 (22.09)	368	34.83 (10.45)	26,000 (11,700)
FMVee -O3-10FM/30U-1	Contact Factory			
FMVee -O3-12FM/36U-1	Contact Factory			

Notes:

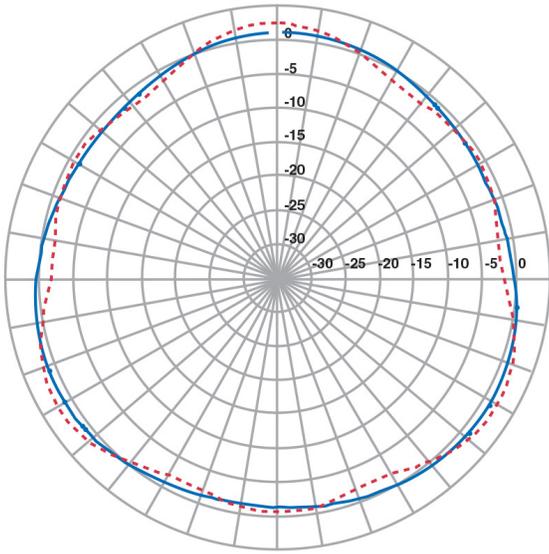
1. FMVee antennas must be pressurized with dry air or nitrogen.
2. Loads provided assume TIA/EIA-222-F, 80 mph basic wind speed, 1,200 ft (360 m) tower, 42.6 psf. No ice.
3. Length includes standard 4 ft (1.2m) lightning rods.
4. Windloads will vary depending on design wind speed & conditions at installation location.

Electrical Specifications

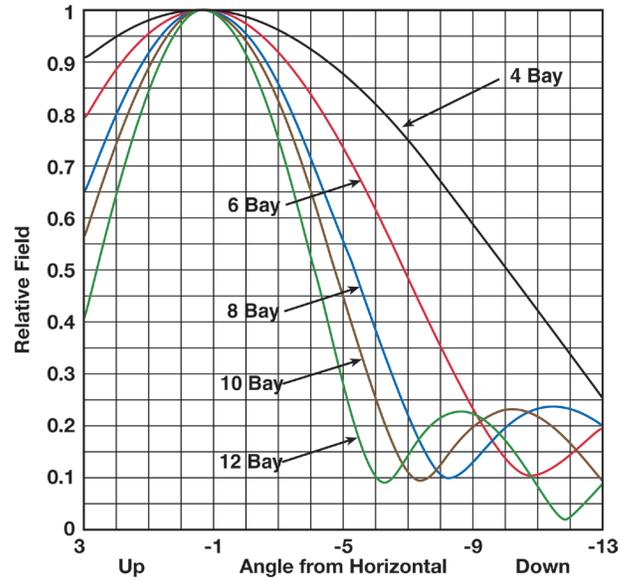
Model	# of Bays	RMS Gain Ea. Pol. (ratio)	RMS Gain Ea. Pol. (ratio)	Input	Max. Avg. Power (kW)	Max. Peak Windload (kW)	Rad. Center Above Tower Top ft (m)
FMVee-O3-2FM/6U-1	2	.90	-.46	6-50	125	2700	8.83 (2.65)
FMVee-O3-4FM/12U-1	4	1.8	2.56	6-50	135	3300	17.50 (5.25)
FMVee -O3-6FM/18U-1	6	2.7	4.31	6-50 EHT	185	3900	26.16 (7.84)
FMVee O3-8FM/24U-1	8	3.7	5.68	6-50 EHT	185	3900	34.83 (10.45)
FMVee -O3-10FM/30U-1	10	4.6	6.63	6-50 EHT	185	3900	43.50 (13.05)
FMVee -O3-12FM/36U-1	12	5.6	7.48	6-50 EHT Dual	250	6000	52.16 (15.64)

Notes:

1. RMS gain data is given relative to dipole. Values given are for each polarization, nominal for mid band and include standard harness configurations. Gain will vary depending on feed system, frequency, null fill and beam tilt.
2. Null fill 10% is standard for 4 bays or greater. Beam tilt .75 degrees assumed. Other values of tilt and fill are available upon request.
3. Power ratings are nominal @ 40°C (104°F) and assume pressurization with dry air or nitrogen to 5 psi minimum. Power ratings may vary dependent on specific feed system design, and local conditions.
4. Higher power ratings and dual inputs are available on request.
5. Antenna components and feed harnesses are optimized for FM channels of interest.



CALCULATED ELEVATION PATTERN



VSWR VS. FREQUENCY

