

VHF/FM Antenna Array



The 19-415 is an electrically small, high efficiency antenna, consisting of two glass reinforced plastic composite masts surmounted by an aluminium top loading. The antenna covers the VHF band 30 MHz to 88 MHz.

The **19-415** is a top loaded monopole.

The top loading is fed via a gain enhancing reactive circuit and a resistive loading network to improve the radiation performance at lower frequencies while maintaining a good match response over the whole frequency band.

The **19-415** array consists of two pressure moulded grp masts of aerodynamic form. Each mast is fitted with an aluminium alloy base plate. The lead-in mast houses an electronics assembly and is fed via a TNC female connector.

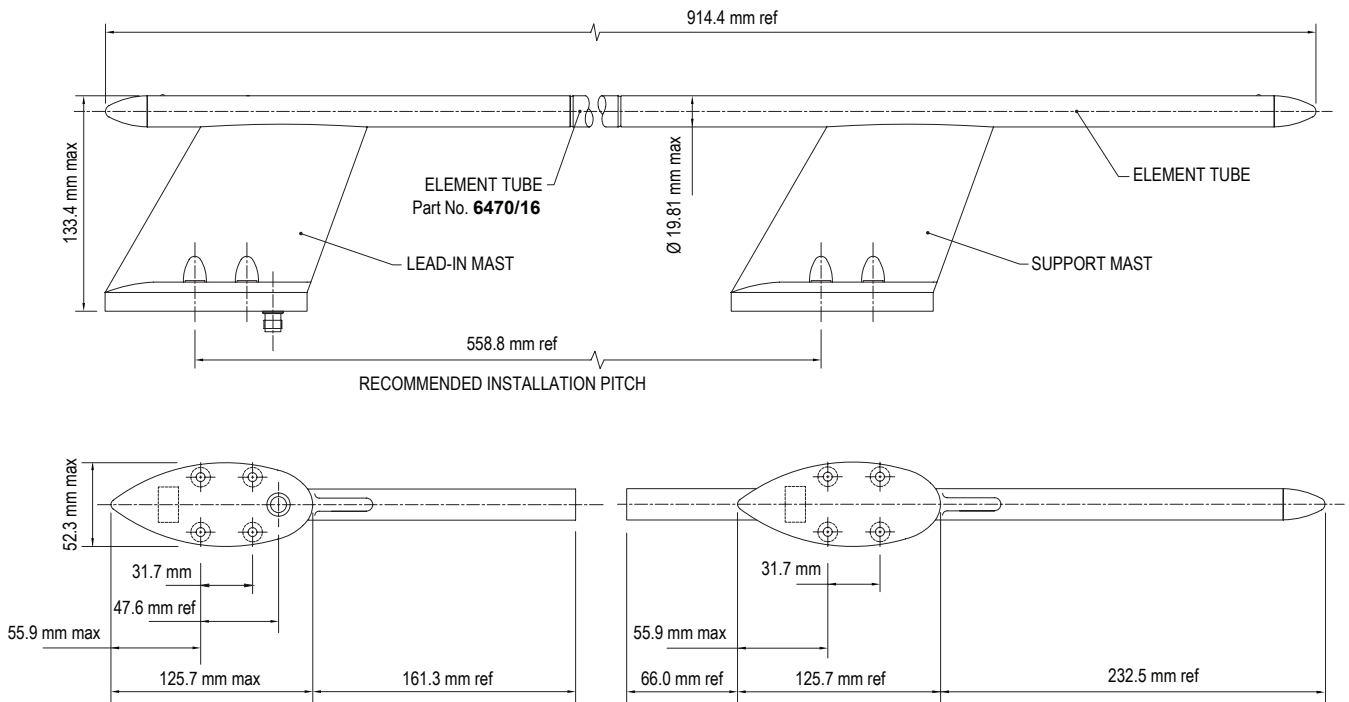
The masts are surmounted by stainless steel top tubes which are joined via a separate length of stainless steel tubing to create a 914.4 mm (36 inch) long element. Both masts are foam filled to prevent long term moisture ingress.

ELECTRICAL

Frequency	30 MHz - 88 MHz	
Gain	Gain	Frequency
	≥ -25 dBi	30 MHz
	≥ -10 dBi	88 MHz
Polarisation	Essentially vertical when mounted vertically	
Power Rating	50 W cw (maximum)	
Impedance	50 ohm (nominal)	
VSWR	2.5:1 (maximum)	
Radiation	Nominally omnidirectional in Azimuth	
Connector	TNC Type Female	



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MECHANICAL

Dimensions (mm)	133.3 x 914.4 x 52.3 (maximum)
Weight (kg)	1.0 (maximum)
Mounting	8 holes fixed location

ENVIRONMENTAL

Temperature	Operational Continuous: -54°C to +55°C Operational Continuous: -54°C to +55°C Storage: -57°C to +85°C
Altitude	15240 m
Shock	Functional: 20 g, 11 ms, sawtooth Crash Safety: 40 g, 11 ms, sawtooth
Vibration	MIL-STD-810E, Method 514.4, Categories 4 (Propeller Aircraft and Turbine Engines) and 6 (Helicopter)
Temperature Shock	+10°C per minute between operational limits
Rain	Normal operation when exposed to blowing rain
Humidity	Normal operation with relative humidity up to 95% throughout the operational temperature range
Salt Fog	The equipment shall not be degraded by salt exposure up to 48 hours at 5% salinity
Magnetic Effect	Less than 1° deflection at 300 mm

General applications environment MIL-T-5400 Class 1.

Qualification and verification to MIL-STD-810 applicable methods and procedures