

12-190-160

CHELTON

V/UHF Broadband Antenna

The 12-190-160 V/UHF Tuneable Antenna is a low profile, tuneable, V/UHF blade antenna operating in the frequency band 30 MHz to 512 MHz, and intended for use in general, rotary wing applications.

The 12-190-160 meets the stringent requirements of our military customers and provides unrivalled RF, mechanical and environmental performance.

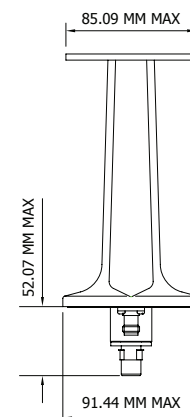
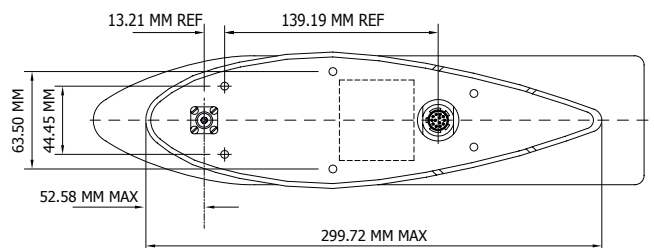
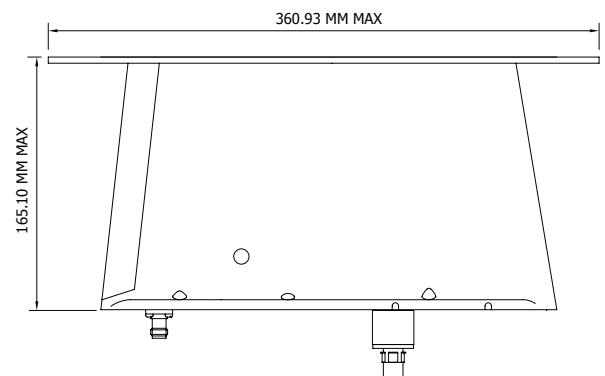
The antenna is configured as two separate radiating structures, fed from a single RF connector.

The VHF element is a top loaded monopole, fed via a PIN-diode switched network of binarily related lumped inductive elements. This provides a structure of high Q and therefore high efficiency at low VHF frequencies and also offers a degree of selectivity.

The UHF element is a passive broadband element, which is predominantly reactively matched. The structure couples to the VHF element, so is coded to optimise the radiation performance.

The 12-190-160 comprises a moulded composite radome of aerofoil section surmounted by a flat plate which provides the top loading for the

VHF element. The blade houses the electronic assembly and is enclosed by an aluminium alloy baseplate that supports the RF and dc connectors.



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ELECTRICAL

Frequency	MHz	
	30 - 88	
	118 - 174	
	225 - 512	
Gain	dBi	MHz
	≥ -15	30
	≥ -7	88
	≥ -3 average	118 - 174
	≥ 0 average	225 - 512
Polarisation	Predominantly vertical when mounted vertically	
Radiation Pattern	Nominally omnidirectional in azimuth	
RF Power	25 W CW (maximum)	
Impedance	50 Ohm nominal	
VSWR	≤ 2.5:1	
Connectors	RF Type TNC female DC D38999 / 49WB35PN	

MECHANICAL

Dimensions	165.10 x 360.93 x 91.44mm
Weight	1.6kg
Mounting	6 holes fixed location

ENVIRONMENTAL

High Temperature	MIL-STD-810E, Method 501.3, Procedures I and II, Diurnal Continuous Operation: +55°C Intermittent Operation: +71°C Storage: +85°C
Low Temperature	MIL-STD-810E, Method 502.3, Procedures I and II Operational: -54°C Storage: -57°C
Altitude	MIL-STD-810E, Method 500.3, Procedures I and II Operational: 30,000 ft Storage: 50,000 ft
Acceleration	MIL-STD-810E, Method 513.4, Procedure I 13.5 g all axes
Shock	MIL-STD-810E, Method 516.4, Procedures I and V Functional: 20 g, 11 ms, sawtooth Crash safety: 40 g, 11 ms, sawtooth
Vibration	MIL-STD-810E, Method 514.4, Procedures I, Category 10 Figure 514.4.17
Temperature Shock	MIL-STD-810E, Method 503.3
Rain	MIL-STD-810E, Method 506.3, Procedure I Normal operation when exposed to driving rain
Humidity	MIL-STD-810E, Method 507.3, Procedure III 95% relative humidity at 60°C
Salt Fog	MIL-STD-810E, Method 509.3, Procedure I 48 hours exposure to 5% salt solution
Fungus	MIL-STD-810D, Method 508.3
Contaminants	BS 3G100, Part 2, Section 3:3.12, Class A
Magnetic Effect	Less than 1° deflection at 300 mm
EMC	MIL-STD-810E, CE101, CE102, RE102

