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.

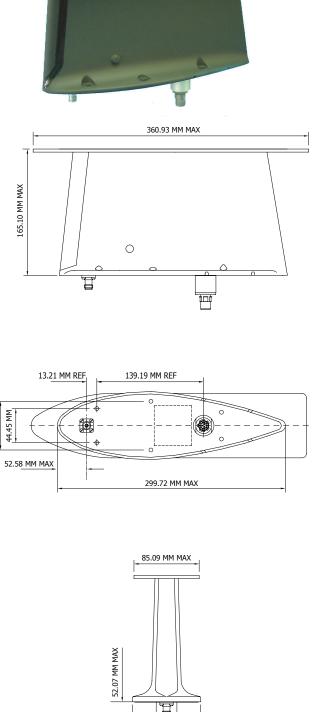
The VHF element is a top loaded monopole, fed via a PIN-diode switched network of binarily related lumped inductive elements. This provides a structure of high Q and therefore high efficiency at low VHF frequencies and also offers a degree of selectivity.

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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63.50 MM



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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	
	Predominantly vertical when mounted vertically		
Polarisation		vertical when mounted	
Polarisation Radiation Pattern	vertically	idirectional in azimuth	
Radiation	vertically	idirectional in azimuth	
Radiation Pattern	vertically Nominally omn	idirectional in azimuth mum)	
Radiation Pattern RF Power	vertically Nominally omn 25 W CW (maxi	idirectional in azimuth mum)	
Radiation Pattern RF Power Impedance	vertically Nominally omn 25 W CW (maxi 50 Ohm nomin	idirectional in azimuth mum) al	
Radiation Pattern RF Power Impedance VSWR	vertically Nominally omn 25 W CW (maxi 50 Ohm nomin ≤ 2.5:1	idirectional in azimuth mum) al male	

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, 1	1 ms, sawtooth	
	Crach safety: 40 g, 1	1 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 50	ID-810E, Method 506.3, Procedure I	
	Normal operation when exposed to driving rain		
Humidity MIL-STD-810E, Method 507.3,		7.3, Procedure III	
	95% relative humidity at 60°C		
Salt Fog	MIL-STD-810E, Method 50	9.3, 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		
ЕМС	MIL-STD-810E, CE101, CE102, RE102		

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