

# 1.2 Meter Ka-Band Antenna Transmit Recieve Series 3122

## Technical Specifications

Electrical		Ka-Band-Linear	Ka-Band-Circular
Antenna Size		1.2 M	1.2 M
Operating Frequency (GHz)	Recieve	18.30 - 22.20 GHz	19.40 - 21.20 GHz
	Transmit	27.00 - 32.00 GHz	29.20 - 31.00 GHz
Midband ( $\pm 0.5$ dB)	Recieve	46.1 dBi	45.8 dBi
	Transmit	49.2 dBi	49.4 dBi
VSWR		Rx: 1.5:1 max Tx: 1.3:1 max	1.3:1 max
Pattern Beamwidth (in degrees at midband)	-3 dB	Rx: 0.84° Tx: 0.54°	Rx: 0.85° Tx: 0.57°
	-15 dB	Rx: 1.88° Tx: 1.30°	Rx: 1.90° Tx: 1.28°
Sidelobe Envelope, Co-Pol (dBi)			
100l / $D < \theta \leq 20^\circ$		29 - 25 Log $\theta$ dBi	29 - 25 Log $\theta$ dBi
$20^\circ < \theta \leq 26.3^\circ$		-3.5 dBi	-3.5 dBi
$26.3^\circ < \theta \leq 48^\circ$		32 - 25 Log $\theta$ dBi	32 - 25 Log $\theta$ dBi
$\theta > 48^\circ$		-10 dBi (averaged)	-10 dBi (averaged)
Antenna Noise Temperature			
5° Elevation		175 K	178 K
10° Elevation		135 K	137 K
20° Elevation		105 K	107 K
40° Elevation		86 K	89 K
Power Handling		100 W	100 W
Cross Polarization Isolation On Axis Within 1.0 dB Beamwidth		Rx: 30.00 dB Tx: 35.00 dB 26.00 dB	Rx: 17.70 dB Tx: 21.30 dB Rx: 17.70 dB Tx: 21.30 dB
Output Waveguide Interface Flange		Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28
Maximum Feed Support Weight		8 lbs. (3.5 kg.)	8 lbs. (3.5 kg.)
Mechanical			
Reflector Material		Glass Fiber Reinforced Polyester SMC, Ka-Band Formulation	
Antenna Optics		1-piece Offset, Prime Focus	
Mast Pipe Size		2.5" SCH 40 Pipe (2.88" OD) 73.2 mm	
Elevation Adjustment Range		5° to 90°, Continuous Fine Adjustment	
Azimuth Adjustment Range		$\pm 10^\circ$ Fine Adjustment, 360° Continuous	
Shipping Specifications		80 lbs. (36 kg.)	
Environmental Performance			
Wind Loading	Operational Survival	45 mph (72 km/h) *0.5 dB Loss @ 30.00 GHz 125 mph (201 km/h)	
Temperature (operational)		- 40° to 140°F (- 40° to 60°C)	
Rain (operational)		½" / hr	
Ice (operational)		-----	
Atmospheric Conditions		Salt, Pollutants and Contaminants as Encountered in Coastal and Industrial Areas	
Solar Radiation		360 BTU/h/ft <sup>2</sup>	