

# 0.89M Ka-Band Antenna

## Series 3890

### Technical Specifications

Electrical		Ka-Band Circular	Ka-Band Circular	Ka-Band Linear
Antenna Size		0.89 M	0.89 M	0.89 M
Operating Frequency (GHz)	Receive	20.20 - 21.20 GHz	19.40 - 21.20 GHz	18.70 - 21.20 GHz
	Transmit	30.00 - 31.00 GHz	29.20 - 31.00 GHz	27.00 - 31.00 GHz
Midband Gain (+/- .2 dB)	Receive	43.30 dBi	43.10 dBi	43.10 dBi
	Transmit	46.50 dBi	46.40 dBi	46.30 dBi
VSWR		1.25:1 Max	1.3:1 max	Rx: 1.5:1 max Tx: 1.3:1 max
Pattern Beamwidth (in degrees at midband)	-3 dB	Rx: 1.14° Tx: 0.77°	Rx: 1.16° Tx: 0.78°	Rx: 1.15° Tx: 0.80°
	-15 dB	Rx: 2.55° Tx: 1.73°	Rx: 2.60° Tx: 1.75°	Rx: 2.58° Tx: 1.79°
Sidelobe Envelope, Mainbeam < $\theta$ < 7° 7° < $\theta$ < 9.2° 9.2° < $\theta$ < 48° 48° < $\theta$ < 180°		29 - 25 Log $\theta$ dBi +8 dBi 32 - 25 Log $\theta$ dBi -10 dBi (averaged)	29 - 25 Log $\theta$ dBi +8 dBi 32 - 25 Log $\theta$ dBi -10 dBi (averaged)	29 - 25 Log $\theta$ dBi +8 dBi 32 - 25 Log $\theta$ dBi -10 dBi (averaged)
Antenna Noise Temperature				
5° Elevation		187 K	187 K	189 K
10° Elevation		141 K	141 K	144 K
20° Elevation		107 K	107 K	110 K
40° Elevation		87 K	87 K	90 K
Power Handling		100 W	100 W	100 W
Cross Polarization Isolation				
On Axis		24.80 dB	Rx: 17.70 dB Tx: 21.30 dB	Rx: 30.00 dB Tx: 35.00 dB
Within 1.0 dB Beamwidth		24.80 dB	Rx: 17.70 dB Tx: 21.30 dB	26.00 dB
Output Waveguide Interface Flange		Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28
<b>Mechanical</b>				
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		360° Continuous Coarse Adjustment, 10° Fine Adjustment		
Shipping Specifications		61 lbs		
<b>Environmental Performance</b>				
Wind Loading	Operational Survival	50 mph (80 km/h) 125 mph (201 km/h)		
Temperature (operational)		- 40° to 140°F (- 40° to 60°C)		
Rain (operational)		½" / hr		
Atmospheric Conditions		Salt, Pollutants and Contaminants as Encountered in Coastal and Industrial Areas		
Relative Humidity		0 to 100% with Condensation		
Solar Radiation		360 BTU/h/ft <sup>2</sup>		

## GENERAL DYNAMICS SATCOM Technologies

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