

# 1.8M Ka-Band Antenna Receive Only

## Series 3180

### Technical Specifications

Electrical		Ka-Band Circular	Ka-Band Linear
Antenna Size		1.8 M	1.8 M
Operating Frequency (GHz)	Receive	19.20 - 20.20 GHz	18.20 - 21.20 GHz
Antenna Gain at Midband ( $\pm .5$ dB)	Receive	49.50 dBi	49.50 dBi
VSWR		1.3:1 max	1.5:1 max
Pattern Beamwidth (in degrees at midband)	-3 dB -15 dB	0.60° 1.30°	0.60° 1.30°
Sidelobe Envelope, Co-Pol (dBi)			
$100\lambda / D < \theta \leq 20^\circ$		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		149 K	152 K
10° Elevation		118 K	121 K
20° Elevation		95 K	98 K
40° Elevation		81 K	84 K
Power Handling		N/A	N/A
Cross Polarization Isolation			
On Axis		17.70 dB	30.00 dB
Within 1.0 dB Beamwidth		17.70 dB	26.00 dB
Output Waveguide Interface Flange		WR42	WR42

Mechanical		
Reflector Material		Glass Fiber Reinforced Polyester SMC, Ka-Band Formulation
Antenna Optics		Prime Focus, Offset Feed
Mast Pipe Size		5.0" SCH 40 Pipe (5.56" OD) 14.1 cm
Elevation Adjustment Range		5° to 90°, Continuous Fine Adjustment
Azimuth Adjustment Range		360° Continuous coarse, $\pm 15$ Fine Adjustment
Shipping Specifications		
Approximate Net Weight		245 lbs. (111 kg.)
Approximate Packaged Weight		295 lbs. (134 kg.)

Environmental Performance		
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
Ice (operational)		-----
Atmospheric Conditions		Salt, Pollutants and Contaminants as Encountered in Coastal and Industrial Areas
Solar Radiation		360 BTU/h/ft <sup>2</sup>

## GENERAL DYNAMICS SATCOM Technologies

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