

# 1.8M Ka-Band Antenna

## Series 3180

### Technical Specifications

Electrical		Ka-Band Circular	Ka-Band Circular	Ka-Band Linear
Antenna Size		1.8 M	1.8 M	1.8 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 ( +/- .5 dB)	Receive	49.40 dBi	49.20 dBi	49.20 dBi
	Transmit	52.60 dBi	52.40 dBi	52.40 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: 0.56° Tx: 0.38°	Rx: 0.57° Tx: 0.39°	Rx: 0.58° Tx: 0.40°
	-15 dB	Rx: 1.26° Tx: 0.86°	Rx: 1.28° Tx: 0.87°	Rx: 1.31° Tx: 0.88°
Sidelobe Envelope, Co-Pol (dBi)				
100λ / D < θ ≤ 20°		29 - 25 Logθ dBi	29 - 25 Logθ dBi	29 - 25 Logθ dBi
20° < θ ≤ 26.3°		-3.5 dBi	-3.5 dBi	-3.5 dBi
26.3° < θ ≤ 48°		32 - 25 Logθ dBi	32 - 25 Logθ dBi	32 - 25 Logθ dBi
θ > 48°		-10 dBi (averaged)	-10 dBi (averaged)	-10 dBi (averaged)
Antenna Noise Temperature				
5° Elevation		162 K	162 K	165 K
10° Elevation		131 K	131 K	134 K
20° Elevation		108 K	108 K	111 K
40° Elevation		94 K	94 K	97 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 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		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		± 10°Fine Adjustment, 360°Continuous		
Shipping Specifications		295 lbs. (134 kg.)		
<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		
Solar Radiation		360 BTU/h/ft2		