

0.74M Ka-Band Rx/Tx Antenna

Series 3740

Technical Specifications

Electrical		Ka-Band Circular	Ka-Band Circular	Ka-Band Linear
Antenna Size		0.74M	0.74M	0.74M
Operating Frequency (GHz)	Receive Transmit	20.20 - 21.20 GHz 30.00 - 31.00 GHz	18.30 - 21.20 GHz 29.20 - 31.00 GHz	18.70 - 21.20 GHz 27.00 - 31.00 GHz
Midband Gain (\pm .5dB)	Receive Transmit	42.10 dBi 45.30 dBi	41.60 dBi 45.20 dBi	41.90 dBi 45.00 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 -15 dB	Rx: 1.20° Tx: 0.80° Rx: 2.60° Tx: 1.80°	Rx: 1.20° Tx: 0.80° Rx: 2.60° Tx: 1.80°	Rx: 1.20° Tx: 0.80° Rx: 2.60° Tx: 1.80°
Sidelobe Envelope, Co-Pol (dBi)				
100 λ / D < θ \leq 20°		29 - 25 Log θ dBi	29 - 25 Log θ dBi	29 - 25 Log θ dBi
20° < θ \leq 26.3°		-3.5 dBi	-3.5 dBi	-3.5 dBi
26.3° < θ \leq 48°		32 - 25 Log θ dBi	32 - 25 Log θ dBi	32 - 25 Log θ dBi
θ > 48°		-10 dBi (averaged)	-10 dBi (averaged)	-10 dBi (averaged)
Antenna Noise Temperature				
5° Elevation		194 K	194 K	196 K
10° Elevation		144 K	144 K	147 K
20° Elevation		100 K	100 K	113 K
40° Elevation		90 K	90 K	93 K
Cross Polarization Isolation	On Axis Within 1.0 dB Beamwidth	24.80 dB 24.80 dB	Rx: 17.70 dB Tx: 21.30 dB Rx: 17.70 dB Tx: 21.30 dB	Rx: 30.00 dB Tx: 35.00 dB 26 dB
Power Handling		100 W	100 W	100 W
Output Waveguide Interface Flange		Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28

Mechanical

Reflector Material	Galvanized Steel with Powder Paint
Antenna Optics	1-piece Offset, Prime Focus
Mast Pipe Size	2.0" SCH 40 Pipe (2.375" OD) 60.3 mm
Elevation Adjustment Range	5° to 90° Continuous Fine Adjustment
Azimuth Adjustment Range	360° Continuous Coarse Adjustment, 10° Fine Adjustment
Polarization Adjustment Range	\pm 180° Continuous Coarse Adjustment
Shipping Specifications	
Approximate Net Weight:	20 Pounds (9kg)
Approximate Packaged Weight:	28 Pounds (12.7kg)

Environmental Performance

Wind Loading	Operational Survival	50 mph (80 km/h) (0.5dB Tx Loss) 125 mph (201 km/h) with no permanent damage; 150mph (240 km/h) no breakaway.
Temperature Range	Operational Survival	- 40° to 140° F (- 40° to 60° C) - 58° to 176° F (- 50° to 80° C)
Rain (operational)		1/2" (13mm) / 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 ²

GENERAL DYNAMICS

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1000-064 Rev. 10/13