

# Type 845: 84cm Rx/Tx Ku-Band Elliptical Antenna System



- ISO 9001:2008 Certificate of Registration
- All materials comply with EU Directive No. 2002/95/EC (RoHS).
- One-piece precision elliptical offset thermoset-molded reflector.
- Single bolt fine elevation adjustment.
- Extruded aluminum feed support arm.
- Pre-assembled Az/El/Skew mount for optimum alignment capability.
- Plated hardware for maximum corrosion resistance.
- Includes Rx/Tx feed assembly.
- Available with Co-Pol or Cross-Pol feed.
- Designed for typical 1W and 2W Ku-band Block Up Converters (BUCs)\*

\* 2 kg or 4.5 lb max. weight for RF electronics (BUC and LNB)



The **Skyware Global 84cm Rx/Tx Ku-Band Elliptical Antenna** is a rugged commercial grade product suitable for the most demanding applications.

- The reflector is thermoset-molded for strength and surface accuracy. Molded into the rear of the reflector is a network of support ribs which strengthens the antenna and sustains the critical parabolic shape necessary for transmit performance.
- The heavy-gauge galvanized steel Az/El/Skew mount provides a rigid support to the reflector.
- The mount secures the antenna to any 60 mm (2.38”) O.D. mast and prevents slippage in high winds.
- This mount allows for precise alignment of the elliptical reflector to the geostationary arc, taking full advantage of the antenna’s performance.



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## • PRODUCT SPECIFICATIONS

### RF Performance

Effective Aperture. . . . . 84cm equivalent (33 in)  
(70 cm x 100 cm Elliptical Aperture)

Operating Frequency  
TX . . . . . 13.75-14.50GHz  
RX . . . . . 10.90-12.75GHz

Polarization . . . . . Linear, Orthogonal

Gain ( $\pm 0.2$  dB)  
TX . . . . . 40.3 dBi @ 14.3GHz  
RX . . . . . 38.8 dBi @ 12.0GHz

3 dB Beamwidth  
TX . . . . . 1.5° @ 14.3GHz  
RX . . . . . 1.9° @ 12.0GHz

Sidelobe Envelope (Tx, Co-Pol dBi)  
1.8° <  $\theta$  < 20° . . . . . 29-25 log  $\theta$  dBi  
20° <  $\theta$  < 26.3° . . . . . -3.5dBi  
26.3° <  $\theta$  < 48° . . . . . 32-25 log  $\theta$  dBi  
48° <  $\theta$  < 180° . . . . . -10

Antenna Cross-Polarization . . . . . 30db on Axis

Antenna Noise Temperature  
30° EL . . . . . 48K

VSWR  
TX . . . . . 1.3:1  
RX . . . . . 1.5:1

Isolation (Port to Port)  
TX . . . . . 80db  
RX . . . . . 35db

Feed Interface  
TX . . . . . WR75 Flat Flange  
RX . . . . . WR75 Flat Flange

(All specifications typical)

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### Mechanical Performance

Reflector Material. . . . . Glass Fiber Reinforced Polyester

Antenna Optics . . . . . One-Peice Offset Feed Prime Focus

Mount Type . . . . . Three Axis, Skew, Elevation and Azimuth

Polarization (Skew) Adjustment Range . . .  $\pm 90^\circ$  Continuous

Elevation Adjustment Range . . . . . 5°-90° Continuous  
Fine Adjustment

Azimuth Adjustment Range . . . . . 360° Continuous

Mast Pipe Interface. . . . . .60 mm  
(2.38 in) Diameter

### Environmental Performance

Wind Loading  
Operational. . . . . 50 mph (80 km/h)

Functional Survival . . . . . 80 mph (128 km/h)

Ultimate Survival . . . . . 125 mph (200 km/h)

Operational Temperature. . . . . -40°C to +55°C

Survival Temperature. . . . . -50°C to +80°C

Humidity. . . . . 0 to 100% (Condensing)

Atmosphere. . . . . Standard Hardware 500 Hrs  
SST Requirements (ASTM B-117)

Solar Radiation . . . . . .360 BTU/h/ft<sup>2</sup>

Shock and Vibration. . . . . As Encountered during  
Shipping and handling



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Satcom solutions for the long haul