



Dielectric[®]

POWERLITE™ Series

5G
COMPATIBLE

ANTENNAS | ANTENNA SYSTEMS | FILTERS

Trusted for Decades. Ready for Tomorrow.



POWERLITE™: LOW-POWER, HIGH-QUALITY

Long the undisputed leader for high-power North American systems, Dielectric continues to gain low-power market share thanks to our continually evolving POWERLITE™ Series, which now ships worldwide, with systems operational in Africa, Asia, and throughout the Americas.

Broadcasters have accelerated their adoption of POWERLITE™ for modern transmission systems, including single-frequency networks (SFNs), for FM Radio, ATSC 3.0 Next-Gen TV, and other leading digital TV standards worldwide. Dielectric employs many of today's brightest RF engineering minds, blending years of expertise with a forward-looking philosophy that embraces software-defined planning and design.

We developed the POWERLITE™ Series specifically for low-power TV and FM radio broadcasters that lacked affordable, all-inclusive, high-quality solutions for broadcast power requirements of 6 kW or less. All POWERLITE™ solutions include the following Dielectric products:

- Single-Channel and Broadband Antennas
- Elbow Complexes
- Transmission Line
- RF Combiners, Filters and Switches

We engineer and build all Dielectric products for longevity and endurance in the most challenging outdoor conditions, using only the highest quality materials. POWERLITE™ systems are equally robust: many of our antennas remain in service for decades, ensuring long-term value to protect the broadcaster's investment. POWERLITE™ antennas are available in all standard azimuth and elevation patterns, with custom-engineered solutions available. Dielectric's support services for all products, including POWERLITE™ systems, extend to consultation across pre-sales, installation and commissioning.



ANTENNAS

POWERLITE™ TLP UHF Antenna 2

POWERLITE™ TLP-BB Antenna 9

POWERLITE™ DLP Low Power Antenna 12

POWERLITE™ TFU-WB LP Antenna Series 17

POWERLITE™ TUL UHF CP Antenna 19

POWERLITE™ TUM-LP UHF CP Antenna 22

POWERLITE™ TUA-M Broadband UHF Antenna 25

POWERLITE™ TFU-UT Bowtie Slot Turnstile Antenna 28

POWERLITE™ TLS-V & TLS-V-BB Series 30

POWERLITE™ DCR-T FM Antenna 33

**ATSC FULL MASK & STRINGENT MASK COMPLIANCE
TUNABLE UHF BANDPASS FILTERS**

POWERLITE™ 100-250 W 34

POWERLITE™ 1.5 kW 37

POWERLITE™ 3-5 kW 39

Filter Masks 41

Specifications subject to change without notice.



Dielectric has received two Emmy awards for technical innovation.





Dielectric’s TLP Series antenna is designed for single channel, low wind load, horizontal, circular or elliptically polarized operation.

Dielectric Advantages

- Standard bandwidth 6 MHz. Other bandwidths available.
- Pattern optimization available—factory test using location and orientation on supporting tower to minimize tower effects. Might require custom mounts.
- Suitable for analog or DTV applications
- DTV ERPs up to 1300 kW
- 17 different standard azimuth patterns available
- 6 standard elevation gains available
- Available horizontally, elliptically or circularly polarized
- Low VSWR, < 1.1:1 over operating channel
- Slot covers standard, radome optional
- Standard brackets or custom mounting options available
- 1 5/8" EIA input standard; custom 3 1/8" EIA available
- Custom azimuth and elevation patterns available

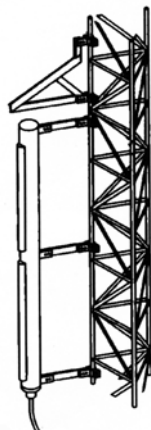
Specifications

**MAXIMUM INPUT POWER RATING
DTV (AVERAGE)***

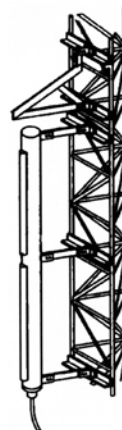
| Antenna | Standard | Custom |
|---------|----------|--------|
| TLP-4 | 4.0 kW | — |
| TLP-6 | 5.0 kW | — |
| TLP-8 | 5.0 kW | — |
| TLP-12 | 5.0 kW | — |
| TLP-16 | 4.0 kW | 8.0 kW |
| TLP-24 | 4.9 kW | 8.8 kW |

Input: 1 5/8" EIA on Standard, 3 1/8" EIA on Custom.
*NTSC: Peak Sync + 10% aural

Mounting Options

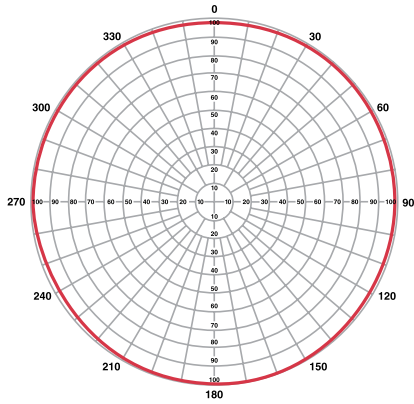


STANDARD LEG MOUNT



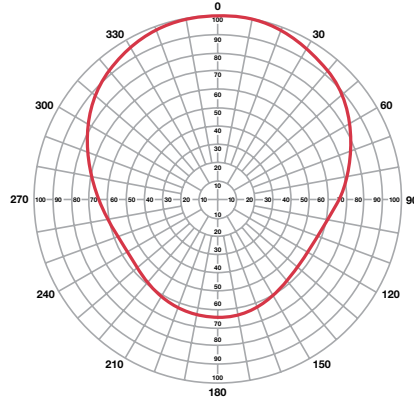
CUSTOM FACE MOUNTS
(OTHER OPTIONS AVAILABLE)

TLP-A



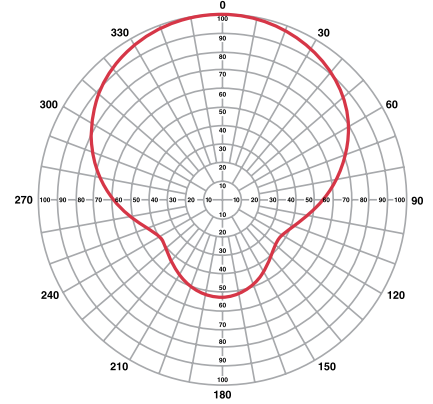
AZIMUTH GAIN: 1.0

TLP-B



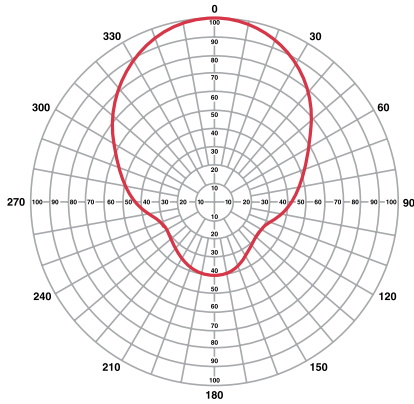
AZIMUTH GAIN: 1.7

TLP-C



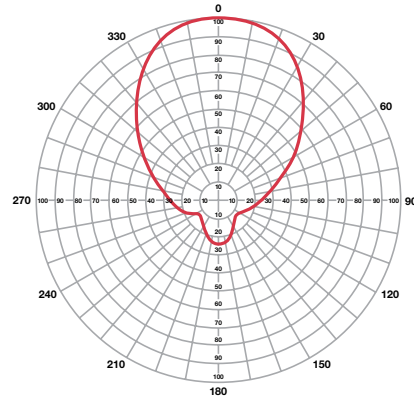
AZIMUTH GAIN: 2.1

TLP-D



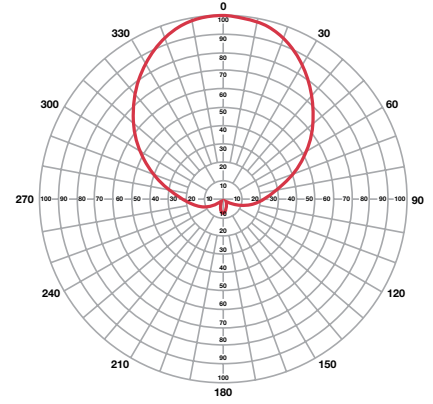
AZIMUTH GAIN: 2.9

TLP-E



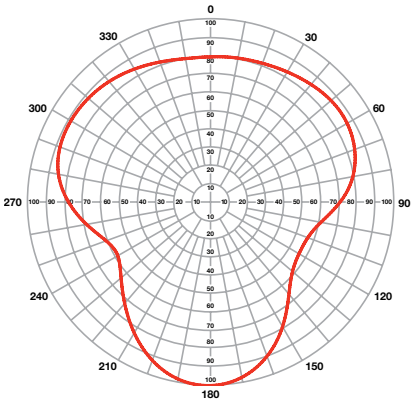
AZIMUTH GAIN: 3.9

TLP-F



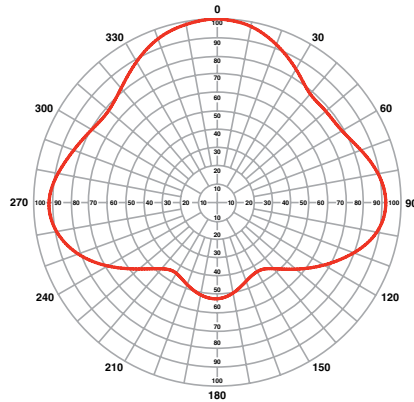
AZIMUTH GAIN: 3.6

TLP-G



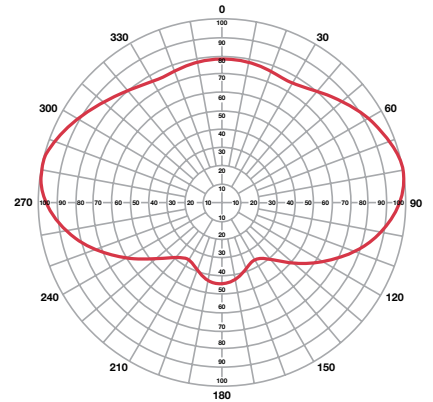
AZIMUTH GAIN: 1.6

TLP-H



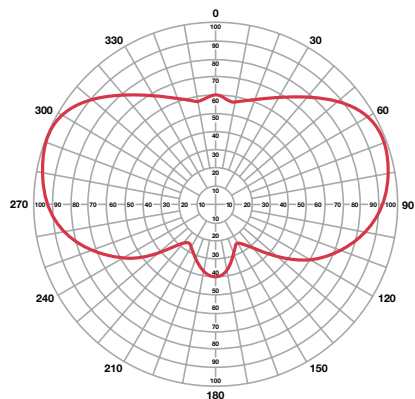
AZIMUTH GAIN: 1.7

TLP-I



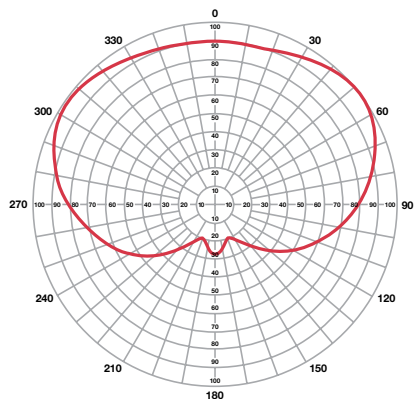
AZIMUTH GAIN: 1.8

TLP-J



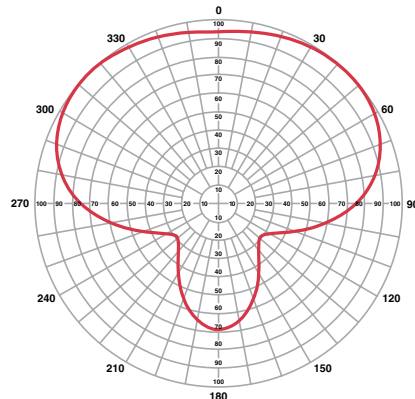
AZIMUTH GAIN: 2.0

TLP-M



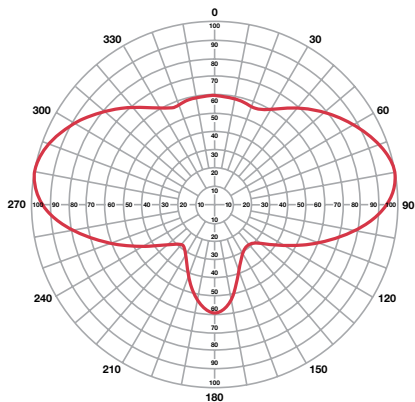
AZIMUTH GAIN: 1.9

TLP-L



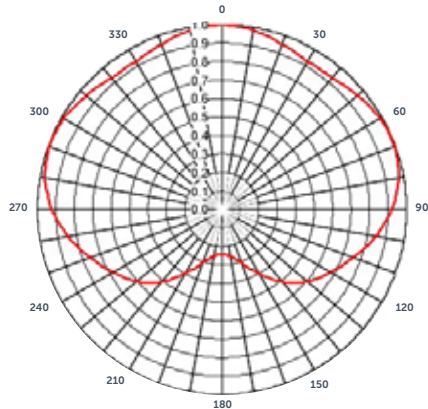
AZIMUTH GAIN: 1.7

TLP-O



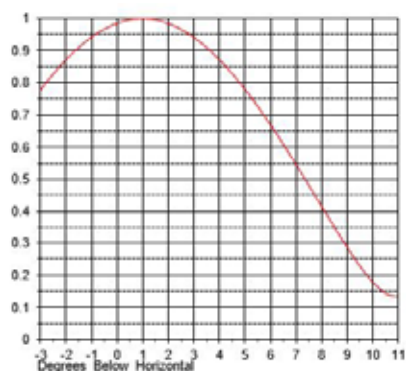
AZIMUTH GAIN: 2.2

TLP-W



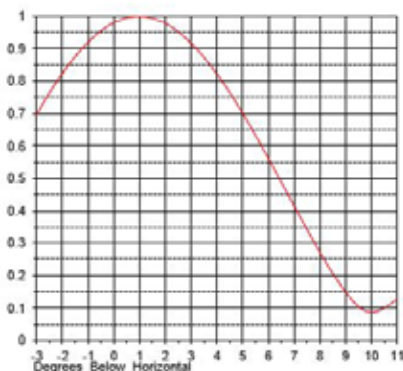
AZIMUTH GAIN: 1.57

TLP-4



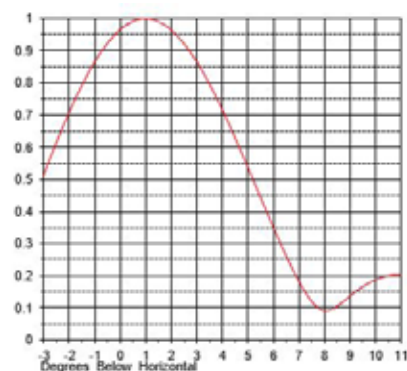
RMS GAIN: 3.9 (5.91 dB)

TLP-6



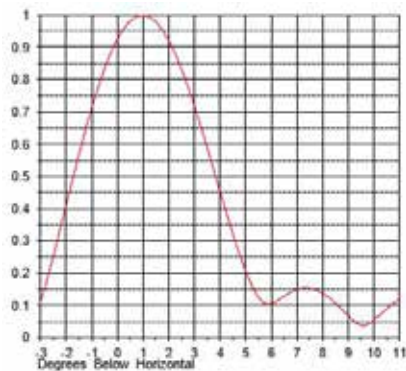
RMS GAIN: 6.1 (7.83 dB)

TLP-8



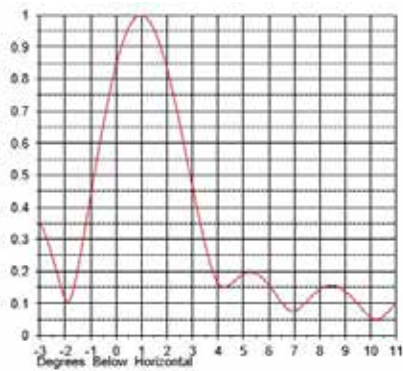
RMS GAIN: 8.1 (9.10 dB)

TLP-12



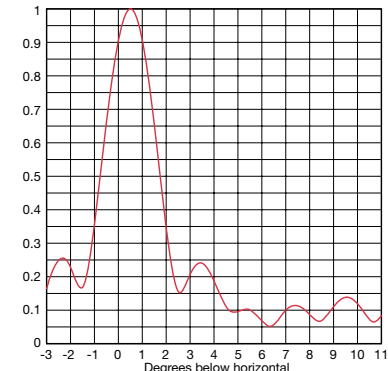
RMS GAIN: 12.3 (10.89 dB)

TLP-16



RMS GAIN: 15.4 (11.87 dB)

TLP-24



RMS GAIN: 24.0 (13.80 dB)

Custom beam tilts available to meet your specific requirements. Please contact Dielectric for more information.

| Antenna Type | Azimuth Pattern | Peak Power Gain Ratio | Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) w/o Radome | Wind Area (ft ²) w/ Radome |
|--------------|-----------------|-----------------------|------------|---------------|-------------|---|--|
| TLP-4A-4O | A | 4.0 | 6.0 | 7.3' to 10.6' | 115 to 200 | 14.32 to 20.99 | 7.99 to 9.8 |
| | B | 7.2 | 8.6 | | 75 to 105 | 10.39 to 13.99 | 7.69 to 9.31 |
| | C | 8.6 | 9.3 | | 90 to 120 | 10.71 to 14.40 | 8.76 to 11.39 |
| | D | 11.6 | 10.7 | | 80 to 155 | 14.79 to 22.41 | 9.76 to 14.68 |
| | E | 15.9 | 12.0 | | 85 to 180 | 17.54 to 28.28 | 11.11 to 17.11 |
| | F | 15.8 | 12.0 | | 95 to 180 | 15.62 to 25.52 | 11.11 to 17.11 |
| | G | 6.5 | 8.1 | | 85 to 125 | 13.00 to 17.34 | 8.81 to 12.09 |
| | H | 7.1 | 8.5 | | 85 to 150 | 15.19 to 22.18 | 10.03 to 14.46 |
| | I | 8.5 | 9.3 | | 85 to 150 | 14.22 to 22.77 | 9.98 to 14.42 |
| | J | 7.5 | 8.8 | | 85 to 155 | 14.84 to 21.47 | 10.19 to 14.88 |
| | M | 7.7 | 8.9 | | 85 to 180 | 15.40 to 25.11 | 11.00 to 16.88 |
| | N | 7.1 | 8.5 | | 85 to 120 | 11.13 to 16.81 | 8.76 to 11.39 |
| | O | 9.2 | 9.7 | | 85 to 140 | 12.38 to 17.11 | 9.68 to 13.53 |
| | W | 6.3 | 7.98 dB | | 77 to 139 | 13.8 to 17 | 10.2 to 12.1 |

| Antenna Type | Azimuth Pattern | Peak Power Gain Ratio | Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) w/o Radome | Wind Area (ft ²) w/ Radome |
|--------------|-----------------|-----------------------|------------|----------------|-------------|---|--|
| TLP-6A-6O | A | 6.0 | 7.8 | 10.1' to 14.7' | 145 to 265 | 19.14 to 29.71 | 9.09 to 11.62 |
| | B | 11.0 | 10.4 | | 85 to 130 | 13.41 to 18.09 | 8.67 to 10.95 |
| | C | 13.1 | 11.8 | | 110 to 150 | 13.81 to 19.47 | 10.19 to 13.88 |
| | D | 17.8 | 12.5 | | 95 to 185 | 19.32 to 30.63 | 11.62 to 18.53 |
| | E | 24.3 | 13.9 | | 100 to 220 | 23.47 to 39.49 | 13.53 to 21.96 |
| | F | 24.2 | 13.8 | | 115 to 220 | 20.59 to 35.34 | 13.53 to 21.96 |
| | G | 10.0 | 10.0 | | 100 to 155 | 18.02 to 25.79 | 10.27 to 14.87 |
| | H | 10.8 | 10.3 | | 100 to 185 | 19.78 to 30.12 | 11.99 to 18.22 |
| | I | 13.1 | 11.2 | | 100 to 185 | 18.48 to 31.21 | 11.93 to 18.17 |
| | J | 11.5 | 10.6 | | 100 to 190 | 19.24 to 29.06 | 12.22 to 18.82 |
| | M | 11.8 | 10.7 | | 100 to 215 | 20.27 to 34.73 | 13.37 to 21.65 |
| | N | 10.9 | 10.4 | | 100 to 150 | 14.46 to 23.39 | 10.19 to 13.88 |
| | O | 14.1 | 11.5 | | 100 to 170 | 15.85 to 23.54 | 11.49 to 16.91 |
| | W | 9.42 | 9.74 | | 94 to 175 | 18.5 to 23.8 | 12.2 to 14.9 |

Wind area TIA/EIA 222-G

The tables reflect minimum values for 860 MHz and maximum for 470 MHz. For other frequencies the height (H), weight (W) and windload (WL) can be interpolated using formula: H, W, or WL at f = MAX – (f-860) * (MIN-MAX)/390

Center of radiation is one half of the height: C/R = 0.5 * H

- For circular polarization divide Peak gain by 2 (subtract 3 dB)
- For elliptical polarization contact factory
- Peak gain is relative to half wave dipole

| Antenna Type | Azimuth Pattern | Peak Power Gain Ratio | Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) w/o Radome | Wind Area (ft ²) w/ Radome |
|--------------|-----------------|-----------------------|------------|----------------|-------------|---|--|
| TLP-8A-8O | A | 13.6 | 11.3 | 12.9' to 18.9' | 180 to 330 | 24.59 to 39.75 | 10.19 to 13.44 |
| | B | 16.8 | 12.3 | | 95 to 160 | 16.46 to 21.82 | 9.65 to 12.59 |
| | C | 27.2 | 14.4 | | 125 to 180 | 16.74 to 25.62 | 11.63 to 16.38 |
| | D | 23.2 | 13.7 | | 110 to 220 | 24.13 to 40.17 | 13.47 to 22.38 |
| | E | 31.2 | 14.9 | | 115 to 255 | 29.43 to 50.72 | 15.87 to 26.82 |
| | F | 28.8 | 14.5 | | 135 to 255 | 25.58 to 45.4 | 15.94 to 26.82 |
| | G | 12.8 | 11.1 | | 115 to 185 | 23.82 to 35.33 | 11.73 to 17.65 |
| | H | 13.6 | 11.3 | | 115 to 215 | 24.36 to 38.1 | 13.96 to 21.99 |
| | I | 16.0 | 12.0 | | 115 to 215 | 23.2 to 40.82 | 13.88 to 21.92 |
| | J | 14.4 | 11.6 | | 115 to 220 | 23.65 to 36.69 | 14.26 to 22.76 |
| | M | 15.2 | 11.8 | | 115 to 250 | 25.18 to 44.73 | 15.74 to 26.41 |
| | N | 13.6 | 11.3 | | 115 to 180 | 18.33 to 30.89 | 11.63 to 16.38 |
| | O | 17.6 | 12.4 | | 115 to 205 | 19.86 to 30.89 | 13.31 to 20.29 |
| | W | 12.6 | 11.00 | | 111 to 210 | 24 to 31.5 | 14.2 to 17.7 |

| Antenna Type | Azimuth Pattern | Peak Power Gain Ratio | Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) w/o Radome | Wind Area (ft ²) w/ Radome |
|--------------|-----------------|-----------------------|------------|----------------|-------------|---|--|
| TLP-12A-12O | A | 12.0 | 10.8 | 18.6' to 27.2' | 240 to 460 | 37.32 to 58.96 | 12.38 to 17.08 |
| | B | 22.9 | 13.6 | | 120 to 210 | 21.53 to 29.27 | 11.61 to 15.86 |
| | C | 27.2 | 14.4 | | 160 to 235 | 23.75 to 38.14 | 14.49 to 21.37 |
| | D | 36.9 | 15.7 | | 135 to 285 | 35.74 to 62.28 | 17.18 to 30.09 |
| | E | 50.5 | 17.0 | | 150 to 325 | 42.7 to 77.09 | 20.77 to 36.53 |
| | F | 50.4 | 17.0 | | 175 to 325 | 37.89 to 70.17 | 20.77 to 36.53 |
| | G | 20.8 | 13.2 | | 150 to 245 | 36.64 to 50.32 | 14.63 to 23.22 |
| | H | 22.5 | 13.5 | | 150 to 280 | 33.57 to 54.14 | 17.88 to 29.52 |
| | I | 27.2 | 14.3 | | 150 to 280 | 34.39 to 63.3 | 17.77 to 29.42 |
| | J | 24.0 | 13.8 | | 150 to 290 | 32.5 to 52.02 | 18.32 to 30.63 |
| | M | 24.5 | 13.9 | | 150 to 320 | 37.36 to 69.16 | 20.48 to 35.94 |
| | N | 22.6 | 13.5 | | 150 to 235 | 26.00 to 48.40 | 14.49 to 27.37 |
| | O | 29.3 | 14.7 | | 150 to 265 | 29.04 to 48.10 | 16.94 to 27.05 |
| | W | 18.8 | 12.74 | | 145 to 281 | 34.9 to 43.3 | 18.3 to 23.3 |

| Antenna Type | Azimuth Pattern | Peak Power Gain Ratio | Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) w/o Radome | Wind Area (ft ²) w/ Radome |
|--------------|-----------------|-----------------------|------------|--------------|-------------|---|--|
| TLP-16A-16O | A | 16.0 | 12.0 | 26' to 38.0' | 375 to 685 | 49.62 to 79.95 | 20.83 to 27.33 |
| | B | 27.2 | 14.3 | | 215 to 335 | 33.38 to 44.09 | 19.75 to 25.62 |
| | C | 33.6 | 15.3 | | 270 to 380 | 33.94 to 51.69 | 23.71 to 33.21 |
| | D | 46.4 | 16.7 | | 240 to 460 | 48.71 to 80.79 | 27.39 to 45.22 |
| | E | 62.4 | 18.0 | | 255 to 530 | 59.31 to 101.89 | 32.34 to 54.1 |
| | F | 57.6 | 17.6 | | 290 to 530 | 51.61 to 91.25 | 32.34 to 54.1 |
| | G | 25.6 | 14.1 | | 250 to 395 | 48.09 to 71.12 | 23.9 to 35.76 |
| | H | 27.2 | 14.3 | | 255 to 450 | 49.18 to 76.64 | 28.36 to 44.43 |
| | I | 32.0 | 15.1 | | 255 to 450 | 46.86 to 82.09 | 28.2 to 44.29 |
| | J | 28.8 | 14.6 | | 255 to 465 | 47.75 to 73.83 | 28.96 to 45.97 |
| | M | 30.4 | 14.8 | | 255 to 520 | 50.82 to 89.9 | 31.94 to 53.28 |
| | N | 27.2 | 14.3 | | 250 to 380 | 37.1 to 62.22 | 23.71 to 33.21 |
| | O | 35.2 | 15.5 | | 255 to 430 | 40.16 to 62.23 | 27.07 to 41.04 |
| | W | 25.1 | 14.00 | | 267 to 466 | 48.4 to 63.4 | 28.9 to 35.8 |

| Antenna Type | Azimuth Pattern | Peak Power Gain Ratio | Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) w/o Radome | Wind Area (ft ²) w/ Radome |
|--------------|-----------------|-----------------------|------------|----------------|-------------|---|--|
| TLP-24A-24O | A | 23.0 | 13.6 | 39.1' to 57.0' | 555 to 1015 | 74.51 to 119.99 | 31.32 to 41.07 |
| | B | 39.1 | 15.9 | | 310 to 495 | 50.14 to 66.21 | 29.7 to 38.5 |
| | C | 48.3 | 16.8 | | 400 to 555 | 50.98 to 77.61 | 35.63 to 49.88 |
| | D | 66.7 | 18.2 | | 345 to 675 | 73.14 to 121.26 | 41.16 to 67.89 |
| | E | 89.7 | 19.5 | | 370 to 785 | 89.03 to 152.9 | 48.58 to 81.21 |
| | F | 82.8 | 19.2 | | 425 to 785 | 77.48 to 136.95 | 48.58 to 81.21 |
| | G | 36.8 | 15.7 | | 365 to 580 | 72.21 to 106.74 | 35.92 to 53.71 |
| | H | 39.1 | 15.9 | | 370 to 670 | 73.84 to 115.04 | 42.61 to 66.72 |
| | I | 46.0 | 16.6 | | 370 to 665 | 70.35 to 123.21 | 42.37 to 66.51 |
| | J | 41.4 | 16.2 | | 370 to 685 | 71.69 to 110.81 | 34.51 to 69.02 |
| | M | 43.7 | 16.4 | | 370 to 770 | 76.29 to 134.93 | 47.98 to 79.99 |
| | N | 39.1 | 15.9 | | 365 to 555 | 55.72 to 93.41 | 35.63 to 49.88 |
| | O | 50.6 | 17.0 | | 370 to 630 | 60.31 to 93.42 | 40.67 to 61.63 |
| | W | 36.1 | 15.58 | | 335 to 608 | 70.3 to 87 | 37 to 47 |



Dielectric’s TLP-BB Series antenna is designed specifically for multichannel operation with low wind load. Available in 8 and 12 bay configurations.

Dielectric Advantages

- Operating Range: 60 MHz band within 470-860 MHz
- Economical broadband design
- Suitable for multiplexing many channels
- DTV ERPs up to 100 kW
- 13 Standard azimuth patterns available
- Stable elevation pattern with 2 degrees nominal beam tilt
- Available horizontally, elliptically or circularly polarized
- Low VSWR, < 1:2 over operating band. Channel selection and addition of VPOL can affect VSWR spec.
- Slot covers standard, radomes optional
- Standard mounting brackets available for 1 1/4" to 4 1/2" OD pipes. Custom mounting options also available.
- 3 1/8" EIA input standard
- Survives winds up to 125 mph (56 m/s)

Antenna Specifications

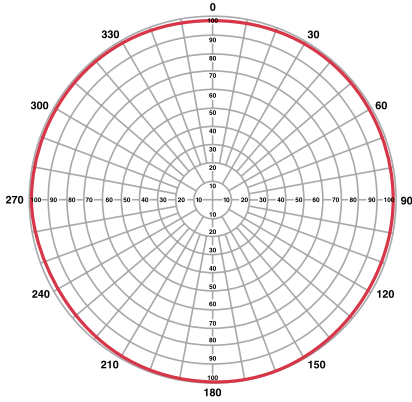
| Band | Polarization | VSWR | Input | Power Rating | Beam Tilt |
|----------------------|-----------------------------|---|-----------------|---|--------------|
| UHF (470-860 MHz) | Horizontal or Elliptical | 1:2 Channel selection & addition of VPOL can affect VSWR spec | 3 1/8" 50 Ω EIA | 5 kW max. average 8 bay 8 kW max. average 12 bay | 2.0° nominal |

The tables reflect minimum values for 860 MHz and maximum for 470 MHz. For other frequencies the height (H), weight (W) and windload (WL) can be interpolated using formula: H, W, or WL at f = MAX – (f-860) * (MIN-MAX)/390

Center of radiation is one half of the height: C/R = 0.5 * H

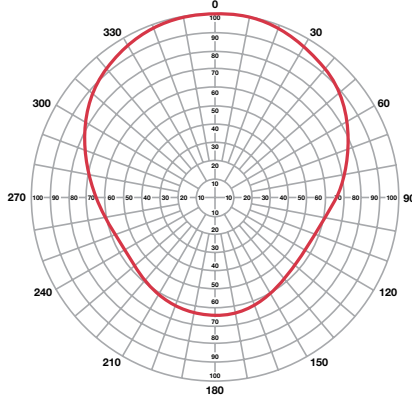
- For elliptical polarization contact factory
- For mechanical specs. contact factory

TLP-BB-A



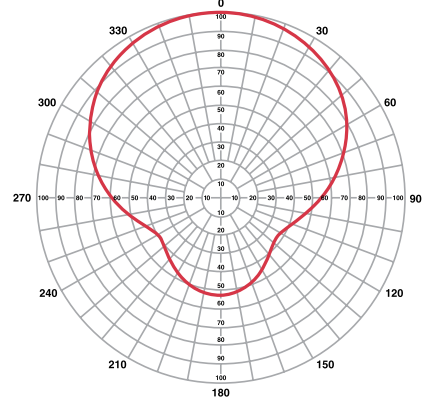
AZIMUTH GAIN: 1.0

TLP-BB-B



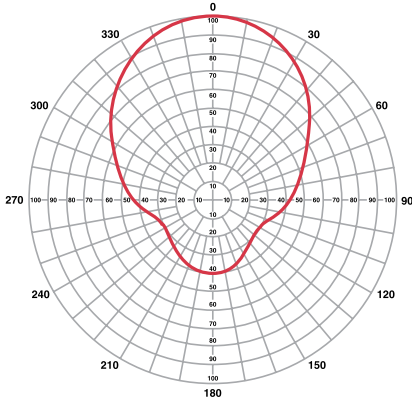
AZIMUTH GAIN: 1.7

TLP-BB-C



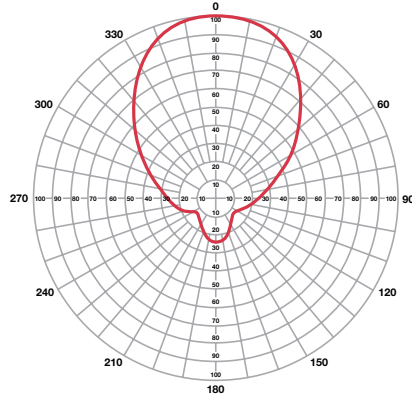
AZIMUTH GAIN: 2.1

TLP-BB-D



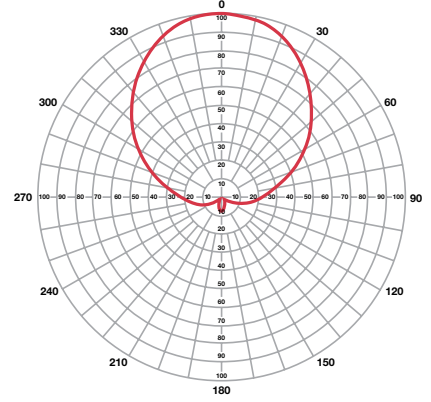
AZIMUTH GAIN: 2.9

TLP-BB-E



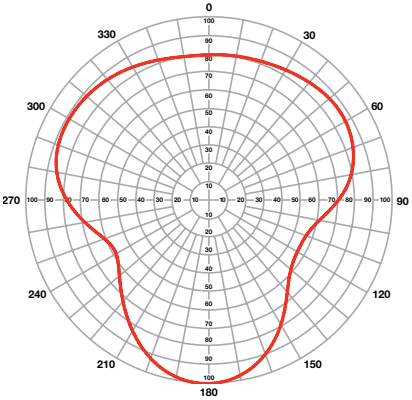
AZIMUTH GAIN: 3.9

TLP-BB-F



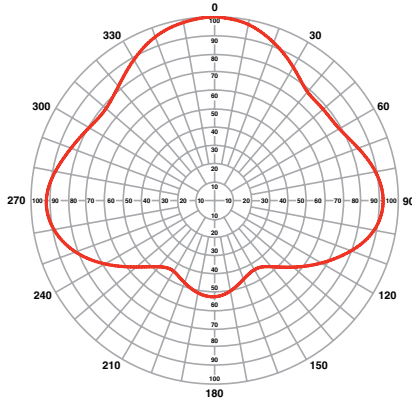
AZIMUTH GAIN: 3.6

TLP-BB-G



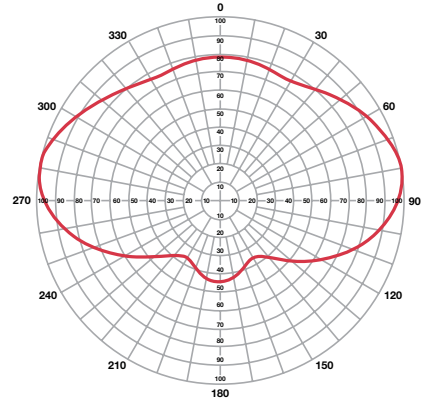
AZIMUTH GAIN: 1.6

TLP-BB-H



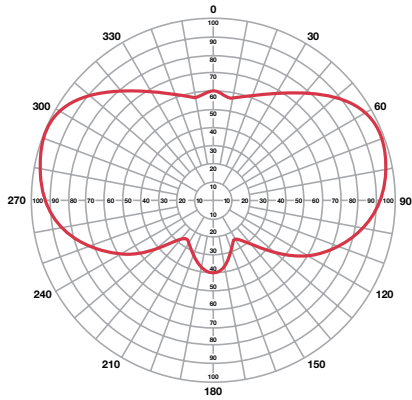
AZIMUTH GAIN: 1.7

TLP-BB-I



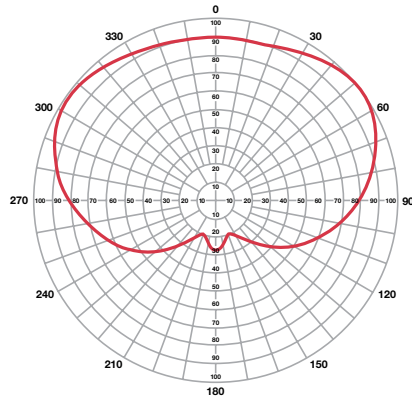
AZIMUTH GAIN: 1.8

TLP-BB-J



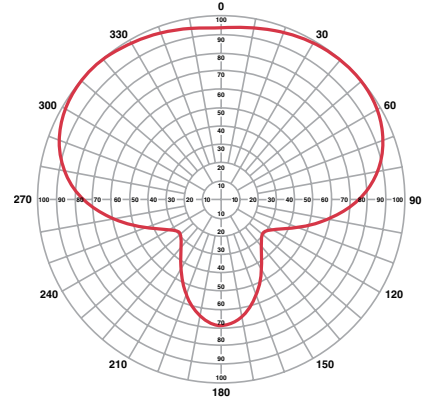
AZIMUTH GAIN: 2.0

TLP-BB-M



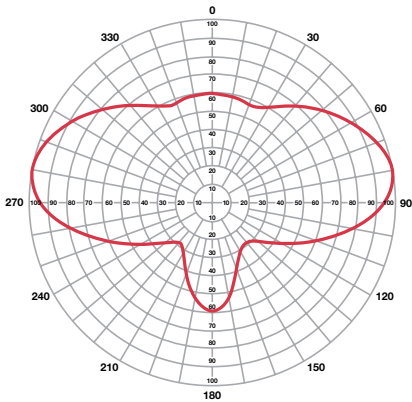
AZIMUTH GAIN: 1.9

TLP-BB-L



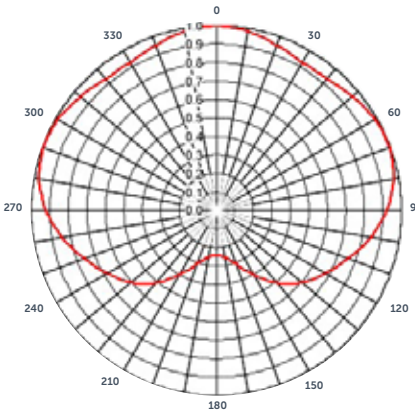
AZIMUTH GAIN: 1.7

TLP-BB-O



AZIMUTH GAIN: 2.2

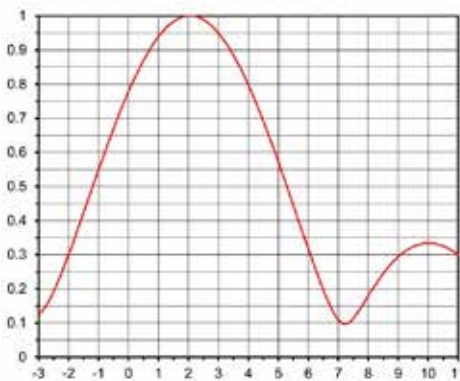
TLP-W



AZIMUTH GAIN: 1.57

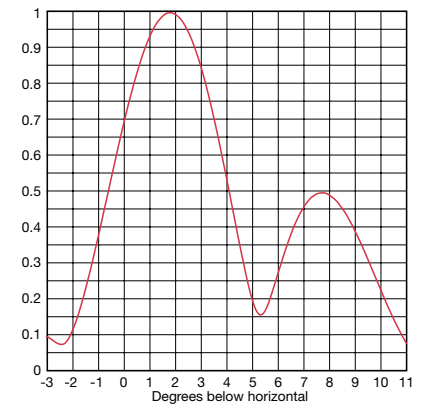
Custom beam tilts available to meet your specific requirements. Please contact Dielectric for more information.

TLP-BB-8



RMS GAIN: 7.6 (8.81 dB)

TLP-BB-12



RMS GAIN: 10.0 (9.98 dB)

Dielectric's DLP Series antenna is designed specifically as an economical single channel choice for low power TV, DTV, and gap filling. Available in multiple azimuth and elevation gains as well as horizontal, circular or elliptically polarized.



Dielectric Advantages

- Operating Range: 6 MHz band within 470-860 MHz
- Economical single section 4, 6, 8, 10 and 12 bay designs
- Suitable for analog or DTV applications on a channel
- 8 standard azimuth patterns, and custom patterns, available
- 5 standard elevation gains
- Available horizontally, circular and elliptically polarized
- Low VSWR, < 1.1:1 over operating channel
- Slot covers provide environmental protection
- Standard mounting brackets included for 1 1/4" to 4 1/2" OD pipes
- Low weight and windload
- 1 5/8" EIA input
- Survives winds up to 125 mph (56 m/s)

Antenna Specifications

| Band | Polarization | VSWR | Input | Power Rating | Beam Tilt |
|----------------------|-----------------------------|-------|-----------------|-------------------|--------------|
| UHF (470-860 MHz) | Horizontal or Elliptical | 1.1:1 | 1 5/8" 50 Ω EIA | 2.5 kW average | 1.0° nominal |

The tables reflect minimum values for 860 MHz and maximum for 470 MHz. For other frequencies the height (H), weight (W) and windload (WL) can be interpolated using formula: $H, W, \text{ or } WL \text{ at } f = \text{MAX} - (f-860) * (\text{MIN}-\text{MAX})/390$

Center of radiation is one half of the height: $C/R = 0.5 * H$

- For elliptical polarization contact factory

| Antenna Type | Azimuth Pattern | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|-----------------|-------------|-------------|------------------------------|
| DLP-4B-4M | B | 8.0 to 10.5 | 35 to 45 | 3.79 to 6.3 |
| | C | | 40 to 50 | 6.18 to 9.75 |
| | D | | 40 to 55 | 7.09 to 12.59 |
| | E | | 40 to 65 | 10.71 to 20.99 |
| | H | | 45 to 65 | 5.91 to 11.5 |
| | J | | 45 to 65 | 7.44 to 14.31 |
| | M | | 45 to 65 | 10.53 to 20.62 |

| Antenna Type | Azimuth Pattern | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|-----------------|--------------|-------------|------------------------------|
| DLP-6B-6M | B | 10.8 to 14.6 | 50 to 65 | 6.02 to 10.43 |
| | C | | 55 to 70 | 9.4 to 14.6 |
| | D | | 60 to 80 | 10.52 to 19.39 |
| | E | | 65 to 95 | 15.63 to 31.04 |
| | H | | 65 to 95 | 9.1 to 18 |
| | J | | 65 to 95 | 10.97 to 21.54 |
| | M | | 65 to 95 | 15.36 to 30.49 |

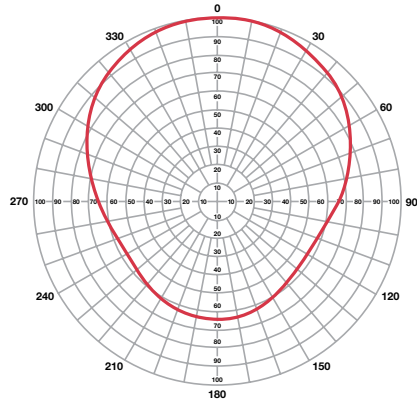
| Antenna Type | Azimuth Pattern | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|-----------------|--------------|-------------|------------------------------|
| DLP-8B-8M | B | 13.6 to 18.8 | 70 to 90 | 8.66 to 14.21 |
| | C | | 70 to 90 | 11.91 to 18.76 |
| | D | | 80 to 105 | 14.53 to 27.21 |
| | E | | 85 to 125 | 20.57 to 41.21 |
| | H | | 85 to 125 | 12.8 to 25.49 |
| | J | | 85 to 125 | 15.13 to 30.08 |
| | M | | 85 to 125 | 20.27 to 40.6 |

| Antenna Type | Azimuth Pattern | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|-----------------|--------------|-------------|------------------------------|
| DLP-10B-10M | B | 16.5 to 22.9 | 85 to 105 | 10.78 to 17.66 |
| | C | | 90 to 110 | 14.39 to 22.91 |
| | D | | 95 to 130 | 18.95 to 35.88 |
| | E | | 110 to 155 | 26.5 to 53.38 |
| | H | | 110 to 155 | 16.89 to 33.78 |
| | J | | 110 to 155 | 19.69 to 39.46 |
| | M | | 110 to 155 | 26.12 to 52.61 |

| Antenna Type | Azimuth Pattern | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|-----------------|--------------|-------------|------------------------------|
| DLP-12B-12M | B | 19.3 to 27.1 | 100 to 465 | 12.85 to 21.14 |
| | C | | 105 to 130 | 16.86 to 27.07 |
| | D | | 115 to 155 | 23.77 to 45.39 |
| | E | | 130 to 190 | 32.83 to 66.38 |
| | H | | 130 to 190 | 21.38 to 42.9 |
| | J | | 130 to 190 | 24.67 to 49.68 |
| | M | | 130 to 190 | 32.38 to 65.46 |

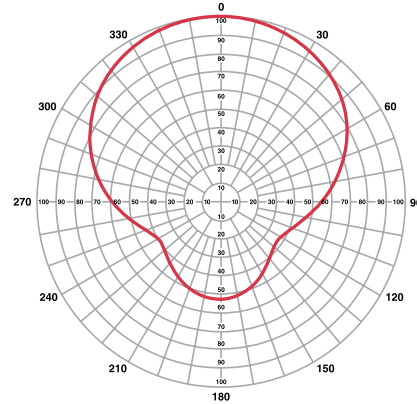
¹ Wind area CAAC per TIA/EIA-222-G

DLP-B



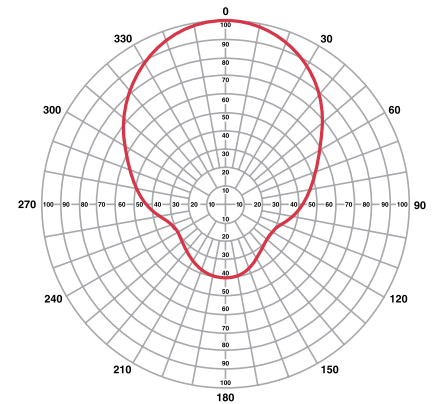
AZIMUTH GAIN: 1.7

DLP-C



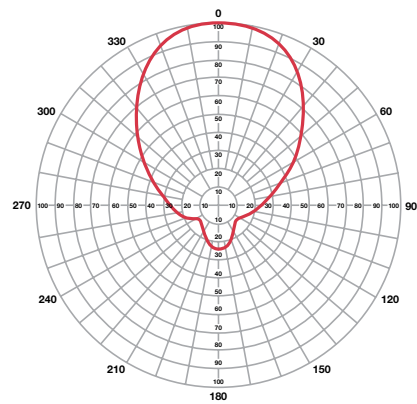
AZIMUTH GAIN: 2.1

DLP-D



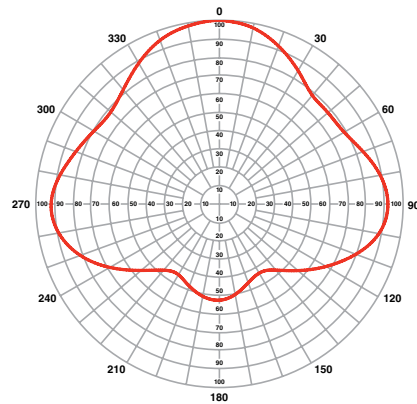
AZIMUTH GAIN: 2.9

DLP-E



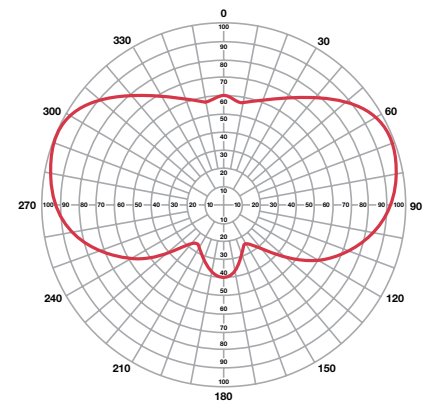
AZIMUTH GAIN: 3.9

DLP-H



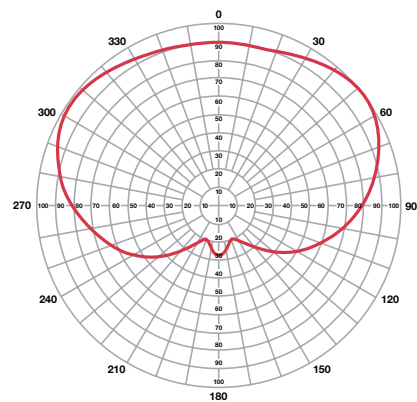
AZIMUTH GAIN: 1.7

DLP-J



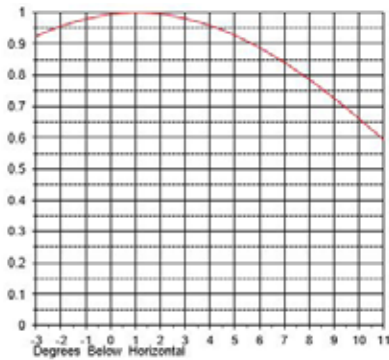
AZIMUTH GAIN: 1.8

DLP-M



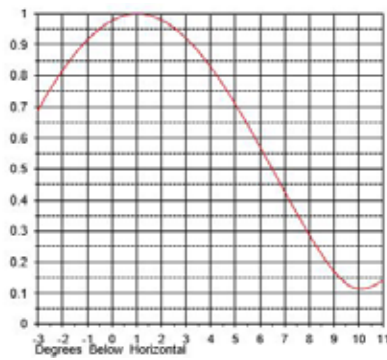
AZIMUTH GAIN: 1.9

DLP-4



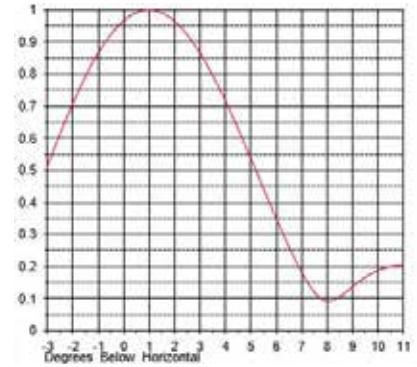
RMS GAIN: 3.6 (5.56 dB)

DLP-6



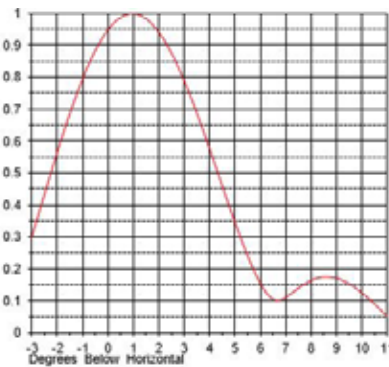
RMS GAIN: 5.9 (7.71 dB)

DLP-8



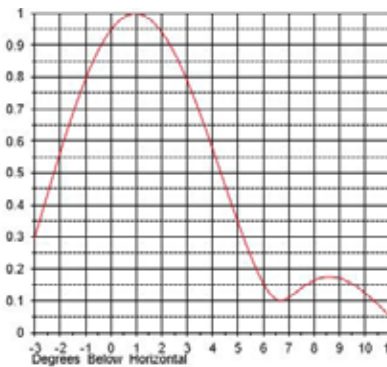
RMS GAIN: 8.1 (9.10 dB)

DLP-10



RMS GAIN: 10.3 (10.13 dB)

DLP-12



RMS GAIN: 12.3 (10.89 dB)

In addition to these standard patterns, we can customize a pattern to meet your specific needs. Please contact us for more information.



The TFU-WB LP Series antenna is a new addition to the Powerlite™ portfolio. It is designed as a broadband, low-cost, low-windload alternative to UHF panel antennas.

Dielectric Advantages

- Broadband: Channels 14-51
- Economical alternative to panel antennas
- Low weight and 75% less windload than panels
- Input powers up to 5 kW
- Includes standard mounting brackets
- Quick delivery
- Available in HPOL or EPOL
- Designed for side mounting on existing structures
- Stripline slot design
- 4, 8 and 16 bays
- Multiple azimuth patterns

Specifications

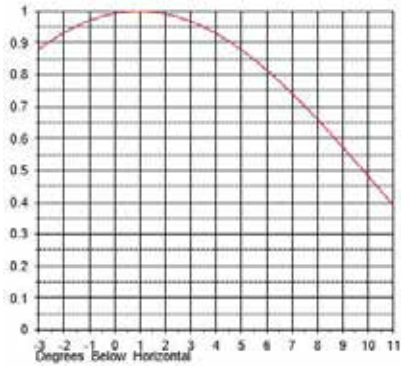
- Polarization: Horizontal or Elliptical
- Input Size: 1 5/8" EIA
- VSWR (Max 470-698 MHz): < 1.15:1
- Max Input Power: 2.5 kW per 4 bay section
- Max Input Power: 5.0 kW per 8 bay section
- Azimuth Directivity: See sheet 2
- Weight: 190 lbs per 4 bay / 370 lbs per 8 bay
- Height: 7.2 ft per 4 bay / 14.4 ft per 8 bay / 21.6 ft per 16 bay

Mechanical Specifications

| Antenna Type | Pattern | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|---------|-------------|-------------|------------------------------|
| TFU-4WB LP | C160 | 7.4 | 300 | 11 |
| | S230 | | | 11 |
| | C170 | | | 11 |
| | S380 | | | 12.1 |
| | C190 | | | 12.1 |
| TFU-8WB LP | C160 | 14.4 | 400 | 20.8 |
| | S230 | | | 20.8 |
| | C170 | | | 20.8 |
| | S380 | | | 22.9 |
| | C190 | | | 22.9 |
| TFU-16WB LP | C160 | 29.3 | 850 | 46.3 |
| | S230 | | | 46.3 |
| | C170 | | | 46.3 |
| | S380 | | | 50.4 |
| | C190 | | | 50.4 |
| TFU-24WB LP | C160 | 44.2 | 1300 | 69.2 |
| | S230 | | | 69.2 |
| | C170 | | | 69.2 |
| | S380 | | | 75.3 |
| | C190 | | | 75.3 |

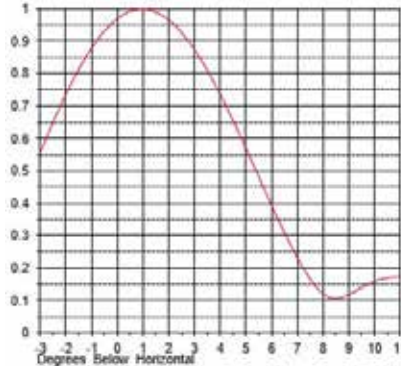
Wind Spec: TIA-222-G
 BWS: 90 mph
 Structure: II
 Exposure: C
 Topo Cat: 1

TFU-WB LP-4



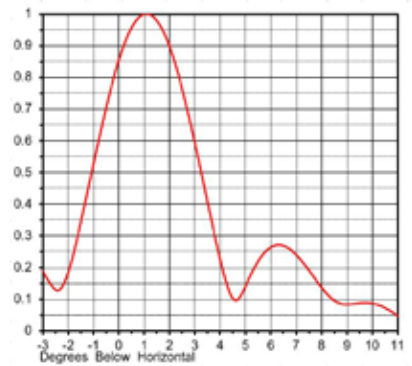
RMS GAIN: 3.5 (5.4 dB)

TFU-WB LP-8



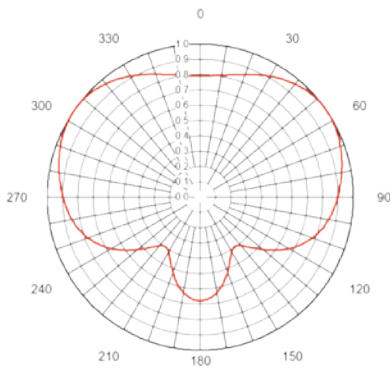
RMS GAIN: 8.0 (1.0 dB)

TFU-WB LP-16



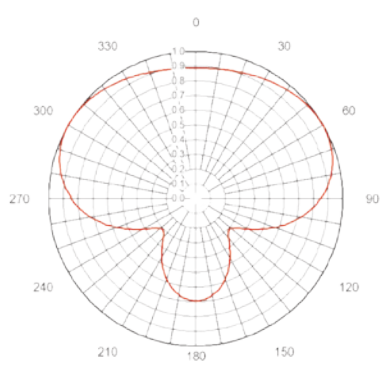
RMS GAIN: 17.0 (1.0 dB)

C160



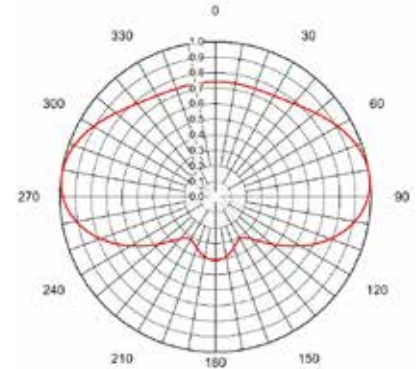
AZIMUTH GAIN 1.58 (1.99 dB)

C170



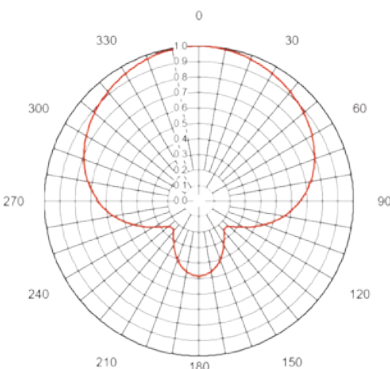
AZIMUTH GAIN 1.66 (1.99 dB)

C190



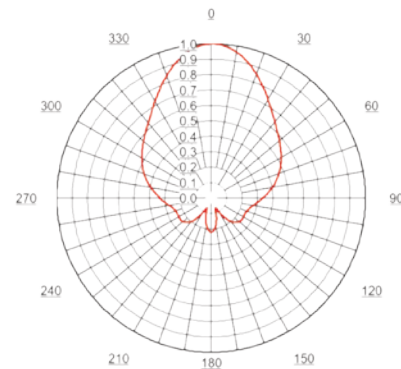
AZIMUTH GAIN:1.87 (2.71 dB)

S230



AZIMUTH GAIN: 2.09 (3.19 dB)

S380



AZIMUTH GAIN: 3.97 (5.99 dB)



The TFU-WB Series antenna is designed as a broadband, low-cost, low-windload alternative to UHF panel antennas.

Dielectric Advantages

- Broadband: Channels 14-51
- Economical alternative to panel antennas
- Low weight and 75% less windload than panels
- Input powers up to 90 kW
- Includes standard mounting brackets
- Quick delivery
- Available in HPOL or EPOL
- Designed for side mounting on existing structures
- ATSC 3.0 & DVB-T2 ready
- 4, 8, 16 and 24 bays
- Cardioid azimuth pattern

Specifications

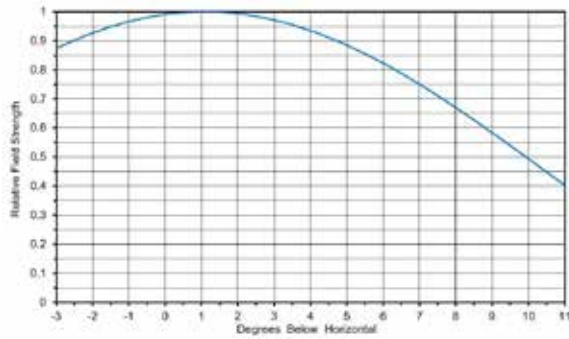
- **Polarization:** Horizontal or Elliptical
- **Beam Tilt Standards:**
 - 1 degree for 4, 8, 16 and 24 bay
- **Input Size:** 4 1/16" EIA (others available)
- **Max VSWR (470-698 mHz):** < 1.15:1
- **Input Power:** 30 kW per 8 bay section
- **Azimuth Gain:** See following pages
- **Windload:** 27.4 ft2 per 8 bay section
- **Weight:** 260 lbs per 4 bay / 510 lbs per 8 bay
- **Height:** 7.4 ft per 4 bay / 14.4 ft per 8 bay
- **EPA:** 14.1 ft2 per 4 bay / 25.4 ft2 (Using G-Code: BWS: 90mph, Structure Class: II, Exp. Cat: C, Topo. Cat: 1)

Mechanical Specifications

| Antenna Type | Pattern | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|---------|-------------|-------------|------------------------------|
| TFU-4WB HP | C160 | 7.4 | 350 | 14.1 |
| | S230 | | | 14.1 |
| | C170 | | | 14.1 |
| | S380 | | | 15.2 |
| | C190 | | | 15.2 |
| TFU-8WB HP | C160 | 14.4 | 550 | 25.4 |
| | S230 | | | 14.1 |
| | C170 | | | 25.4 |
| | S380 | | | 27.4 |
| | C190 | | | 27.4 |
| TFU-16WB HP | C160 | 29.3 | 1200 | 54.3 |
| | S230 | | | 54.3 |
| | C170 | | | 54.3 |
| | S380 | | | 58.5 |
| | C190 | | | 58.5 |
| TFU-24WB HP | C160 | 44.2 | 2000 | 90.5 |
| | S230 | | | 90.5 |
| | C170 | | | 90.5 |
| | S380 | | | 96.6 |
| | C190 | | | 96.6 |

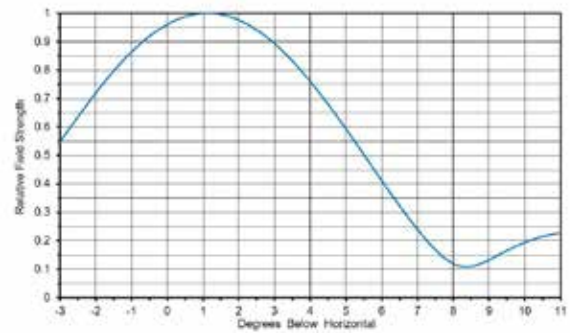
Wind Spec: TIA-222-G
 BWS: 90 mph
 Structure: II
 Exposure: C
 Topo Cat: 1

TFU-WB HP-4



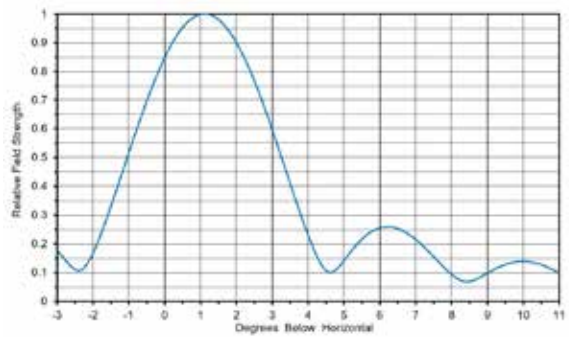
RMS GAIN: 4.0

TFU-WB HP-8



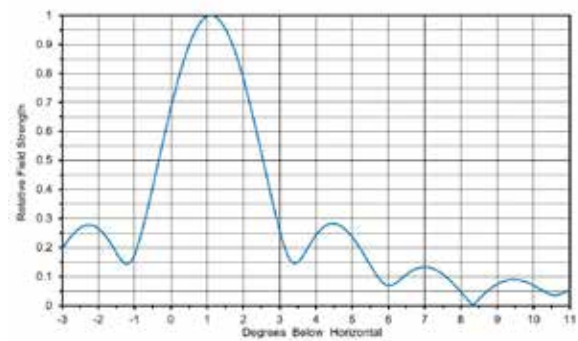
RMS GAIN: 8.5

TFU-WB HP-16



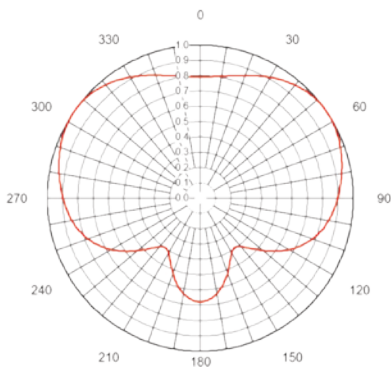
RMS GAIN: 17.0

TFU-WB HP-24



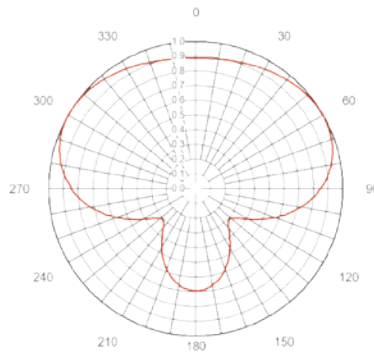
RMS GAIN: 25.0

C160



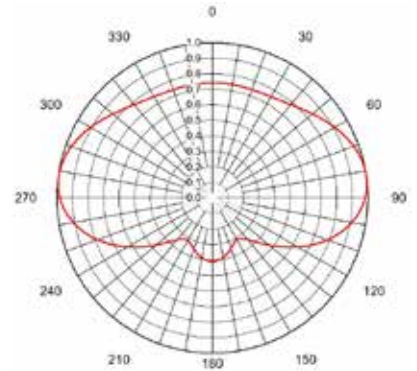
AZIMUTH GAIN 1.58 (1.99 dB)

C170



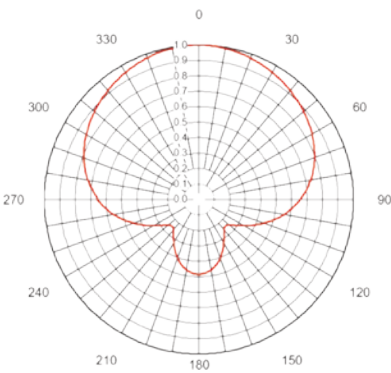
AZIMUTH GAIN 1.66 (1.99 dB)

C190



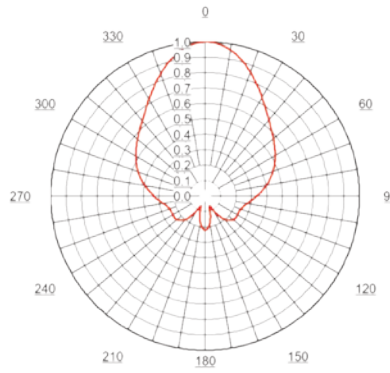
AZIMUTH GAIN:1.87 (2.71 dB)

S230



AZIMUTH GAIN: 2.09 (3.19 dB)

S380



AZIMUTH GAIN: 3.97 (5.99 dB)



Dielectric's TUL Series panel antenna is designed for medium bandwidth using circular polarization.

Dielectric Advantages

- Operating Range: 60 MHz band within 470-860 MHz
- Circularly polarized panel
- Economical broadband design
- A key building block for antennas with different azimuth and elevation patterns
- Suitable for analog or DTV applications on many channels
- 500 W average power per panel with 7-16 DIN input
- 4 standard azimuth patterns available
- Low VSWR, <1.1:1 over operating band
- Aluminum construction
- ABS radome for environmental protection
- Custom azimuth and elevation patterns available upon request
- Panels are equipped with a bracket for mounting to a 2" nominal pipe
- Elliptical polarization available

Electric Specifications—Individual Panel

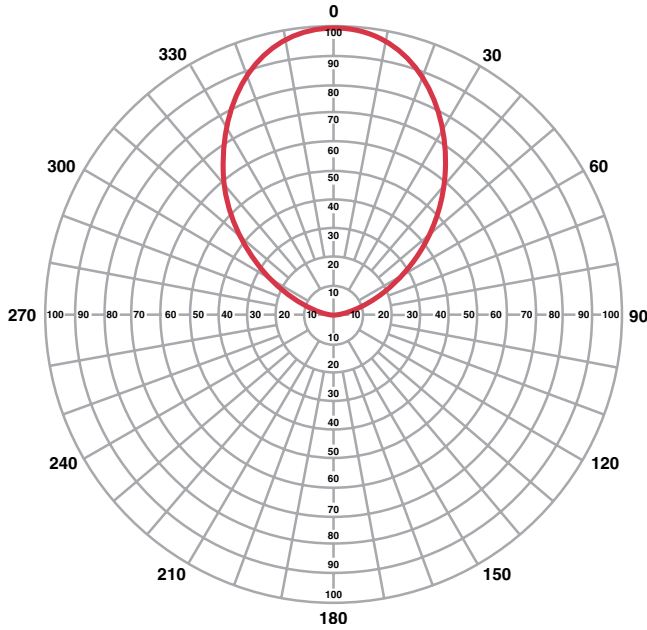
| Band | Polarization | VSWR | Input | Power Rating |
|---|--------------|-------|----------|----------------|
| UHF ch. 14-23 ch. 24-32 ch. 33-41 ch. 42-52 | Circular | 1.1:1 | 7-16 DIN | 500W per panel |

Mechanical Specifications—Individual Panel

| Model | Height ft (m) | Weight lb (kg) | Wind Area ¹ ft ² (m ²) | Dimensions LxWxD (in) |
|------------|---------------|----------------|---|--------------------------|
| TUL UHF CP | 3.2 (1.0) | 20 (9.1) | 6.8 (0.63) | 32.25 x 18.25 x 8.10 |

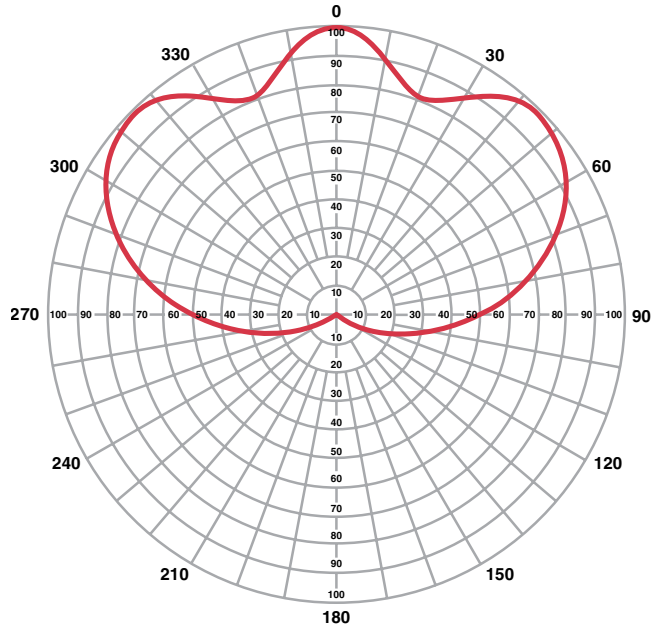
¹ Wind area C_AA_c per TIA/EIA-222-G

TUL-C1



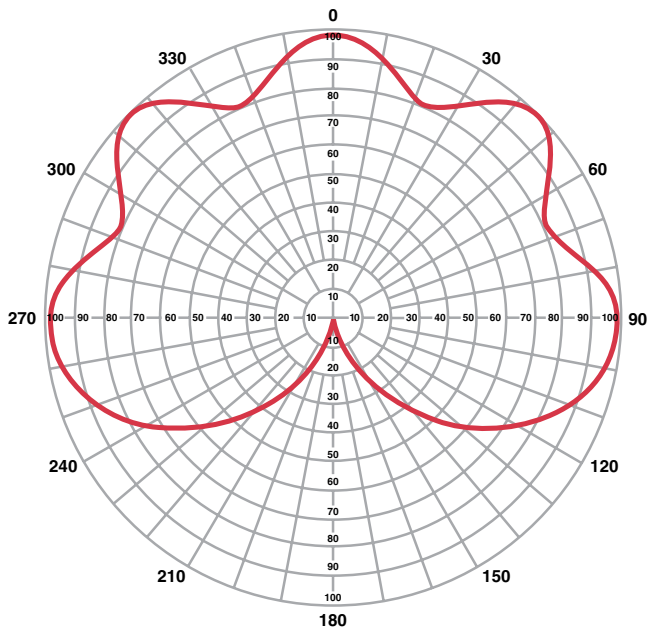
AZIMUTH GAIN: 5.2

TUL-C2



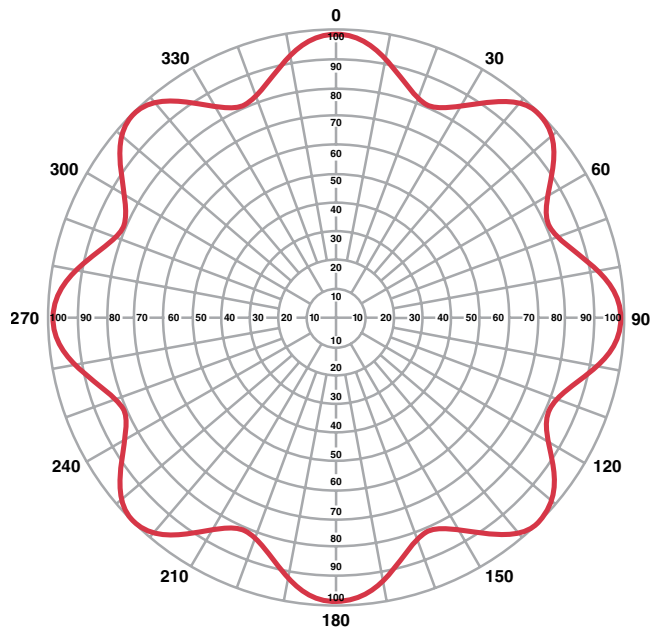
AZIMUTH GAIN: 2.6

TUL-C3



AZIMUTH GAIN: 1.8

TUL-O4



AZIMUTH GAIN: 1.3

Notes:

1. Patterns shown are typical and calculated using a 24" square tower at 587 MHz. Specific gains and patterns will be supplied with the proposal.

| Antenna Type | Azimuth Pattern | Peak Gain (Ratio) | Peak Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|-----------------|-------------------|-----------------|-------------|-------------|------------------------------|
| TUL-C1-1/1 | C1 | 5.2 | 7.2 | 3.2 | 20 | 5.83 |
| TUL-C1-2/2 | C1 | 11.5 | 10.6 | 6.78 | 51.8 | 13.82 |
| TUL-C1-3/3 | C1 | 17.7 | 12.5 | 10.36 | 74.05 | 20.85 |
| TUL-C1-4/4 | C1 | 23.4 | 13.7 | 13.94 | 97.2 | 28.36 |
| TUL-C2-1/2 | C2 | 2.6 | 4.2 | 3.2 | 51.8 | 11.92 |
| TUL-C2-2/4 | C2 | 5.7 | 7.6 | 6.78 | 95.4 | 23.6 |
| TUL-C2-3/6 | C2 | 8.9 | 9.5 | 10.36 | 140.8 | 36.24 |
| TUL-C2-4/8 | C2 | 11.7 | 10.7 | 13.94 | 188 | 49.84 |
| TUL-C3-1/3 | C3 | 1.8 | 2.6 | 3.2 | 72.7 | 14.9 |
| TUL-C3-2/6 | C3 | 4.0 | 6.0 | 6.78 | 138.1 | 30.04 |
| TUL-C3-3/9 | C3 | 6.1 | 7.9 | 10.36 | 206.2 | 46.62 |
| TUL-C3-4/12 | C3 | 8.1 | 9.1 | 13.94 | 297 | 67.04 |
| TUL-O4-1/4 | O4 | 1.3 | 1.1 | 3.2 | 93.6 | 18.79 |
| TUL-O4-2/8 | O4 | 2.9 | 4.6 | 6.78 | 180.8 | 38.3 |
| TUL-O4-3/12 | O4 | 4.4 | 6.4 | 10.36 | 291.6 | 62.13 |
| TUL-O4-4/16 | O4 | 5.9 | 7.7 | 13.94 | 386 | 85.48 |

- Peak gain is per polarization
- Wind area C_{A_C} per TIA/EIA-222-G
- Weight excludes brackets and mounting hardware, includes typical feed system



Dielectric’s TUM-LP Series panel antenna is designed for broadband circular or elliptical polarization.

Dielectric Advantages

- Operating Range: 470-806 MHz
- Circularly or elliptically polarized panel
- Economical broadband design
- A key building block for antennas with different azimuth and elevation patterns
- Suitable for multiplexing many channels
- 500 W average power per panel with 7-16 DIN input
- Dual input allows for field adjustability of H/V ratio
- 4 standard azimuth patterns available
- Low VSWR, <1.1:1 over operating band
- Aluminum construction
- ABS radome for environmental protection
- Custom azimuth and elevation patterns available upon request
- Panels are equipped with a bracket for mounting to a 2" nominal pipe

Electric Specifications—Individual Panel

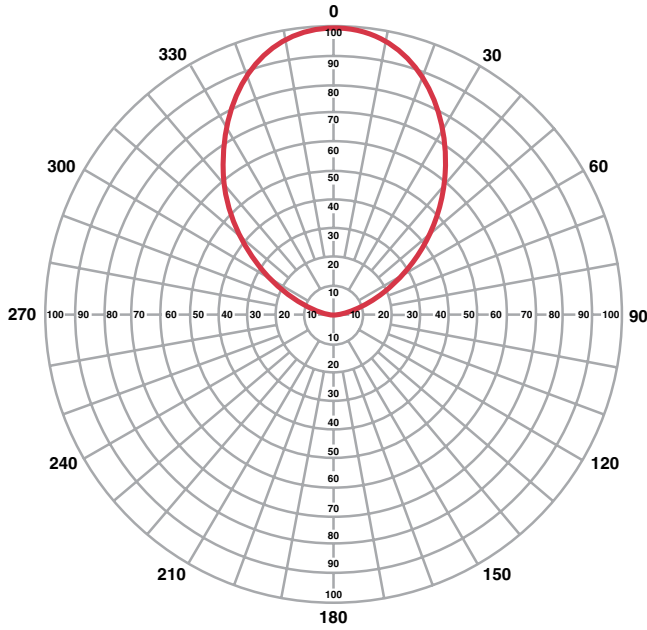
| Band | Polarization | VSWR | Input | Power Rating |
|--------------------|------------------------------------|-------|------------------|----------------|
| UHF 470-806 MHz | Variable Elliptical Circular | 1.1:1 | Dual 7-16 DIN | 1 kW per panel |

Mechanical Specifications—Individual Panel

| Model | Height ft (m) | Weight lb (kg) | Wind Area ¹ ft ² (m ²) | Dimensions LxWxD (in) |
|---------------|---------------|----------------|---|--------------------------|
| TUM-LP UHF CP | 3.2 (1.0) | 40 (18.1) | 6.8 (0.63) | 38.25 x 18.25 x 8.10 |

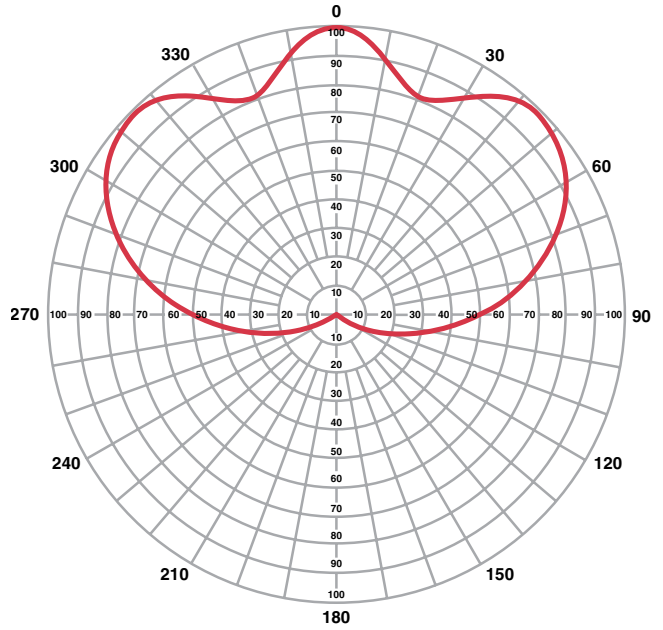
¹ Wind area C_AA_C per TIA/EIA-222-G

TUM-LP-C1



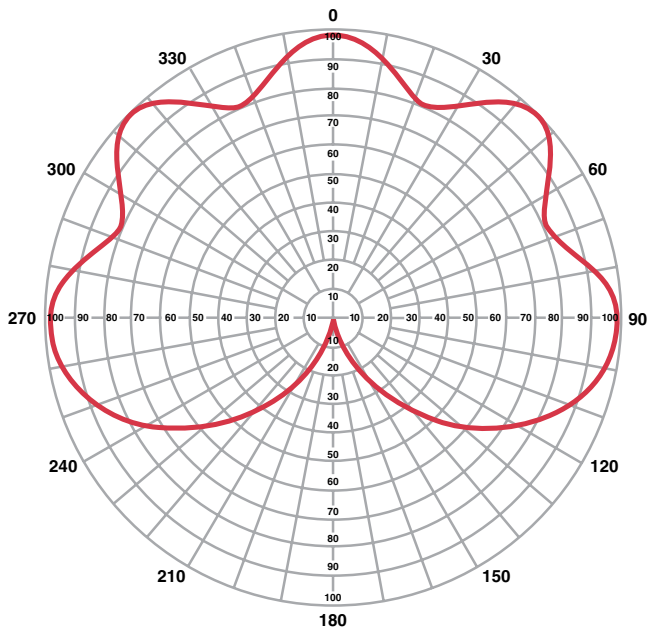
AZIMUTH GAIN: 5.2

TUM-LP-C2



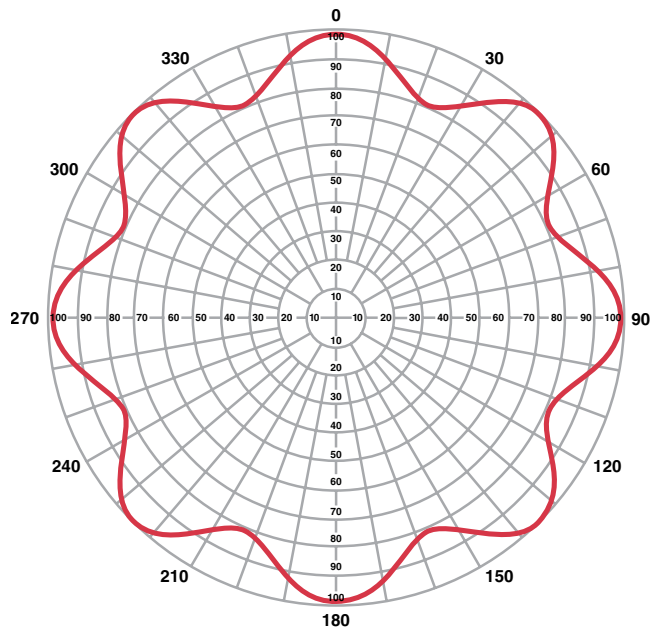
AZIMUTH GAIN: 2.6

TUM-LP-C3



AZIMUTH GAIN: 1.8

TUM-LP-O4



AZIMUTH GAIN: 1.3

Notes:

1. Patterns shown are typical and calculated using a 24" square tower at 587 MHz. Specific gains and patterns will be supplied with the proposal.

| Antenna Type | Azimuth Pattern | Peak Gain (Ratio) | Peak Gain (dBd) | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|--------------|-----------------|-------------------|-----------------|-------------|-------------|------------------------------|
| TUM-C1-1/1 | C1 | 5.2 | 7.2 | 3.2 | 40 | 5.83 |
| TUM-C1-2/2 | C1 | 11.5 | 10.6 | 6.78 | 91.8 | 13.82 |
| TUM-C1-3/3 | C1 | 17.7 | 12.5 | 10.36 | 134.05 | 20.85 |
| TUM-C1-4/4 | C1 | 23.4 | 13.7 | 13.94 | 177.2 | 28.36 |
| TUM-C2-1/2 | C2 | 2.6 | 4.2 | 3.2 | 91.8 | 11.92 |
| TUM-C2-2/4 | C2 | 5.7 | 7.6 | 6.78 | 175.4 | 23.6 |
| TUM-C2-3/6 | C2 | 8.9 | 9.5 | 10.36 | 260.8 | 36.24 |
| TUM-C2-4/8 | C2 | 11.7 | 10.7 | 13.94 | 348 | 49.84 |
| TUM-C3-1/3 | C3 | 1.8 | 2.6 | 3.2 | 132.7 | 14.9 |
| TUM-C3-2/6 | C3 | 4.0 | 6.0 | 6.78 | 258.1 | 30.04 |
| TUM-C3-3/9 | C3 | 6.1 | 7.9 | 10.36 | 386.2 | 46.62 |
| TUM-C3-4/12 | C3 | 8.1 | 9.1 | 13.94 | 537 | 67.04 |
| TUM-O4-1/4 | O4 | 1.3 | 1.1 | 3.2 | 173.6 | 18.79 |
| TUM-O4-2/8 | O4 | 2.9 | 4.6 | 6.78 | 340.8 | 38.3 |
| TUM-O4-3/12 | O4 | 4.4 | 6.4 | 10.36 | 531.6 | 62.13 |
| TUM-O4-4/16 | O4 | 5.9 | 7.7 | 13.94 | 706 | 85.48 |

- Wind area $C_A A_C$ per TIA/EIA-222-G
- Weight excludes brackets and mounting hardware, includes typical feed system



Dielectric’s TUA-M Series panel antenna is designed for broadband horizontally polarized operation.

Dielectric Advantages

- Operating Range: 470-860 MHz
- Horizontally polarized panel
- Economical broadband design
- A key building block for antennas with different azimuth and elevation patterns
- Suitable for multiplexing many channels
- 1 kW average power per panel with 7-16 DIN input
- 7 different standard azimuth patterns available
- Low VSWR, < 1.1:1 over operating band
- Aluminum construction
- ABS radome for environmental protection
- Custom azimuth and elevation patterns available upon request
- Panels are equipped with a bracket for mounting to a 2" nominal pipe

Electric Specifications—Individual Panel

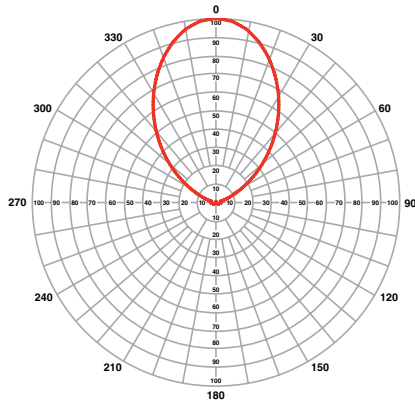
| Band | Polarization | VSWR | Input | Power Rating |
|--------------------|--------------|-------|----------|----------------|
| UHF 470-806 MHz | Horizontal | 1.1:1 | 7-16 DIN | 1 kW per panel |

Mechanical Specifications—Individual Panel

| Model | Height ft (m) | Weight lb (kg) | Wind Area ¹ ft ² (m ²) | Dimensions LxWxD (in) |
|-------|---------------|----------------|---|--------------------------|
| TUA-M | 3.2 (1.0) | 25 (11.4) | 6.8 (0.63) | 38.25 x 18.25 x 8.10 |

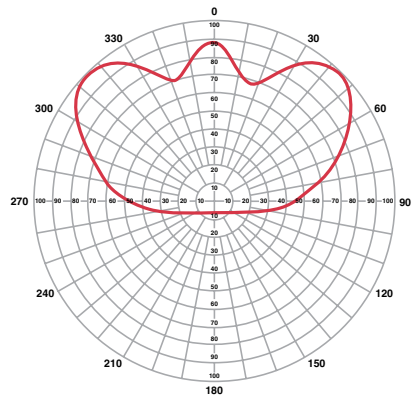
¹ Wind area C_AA_C per TIA/EIA-222-G

TUA-M-C1



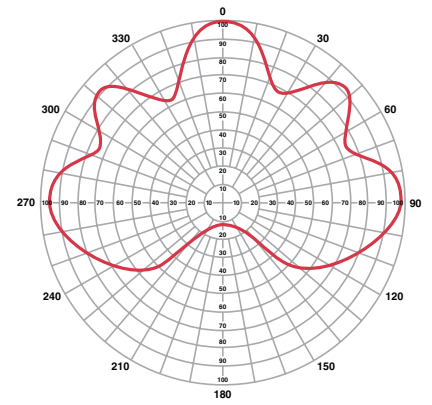
AZIMUTH GAIN: 6.0

TUA-M-C2



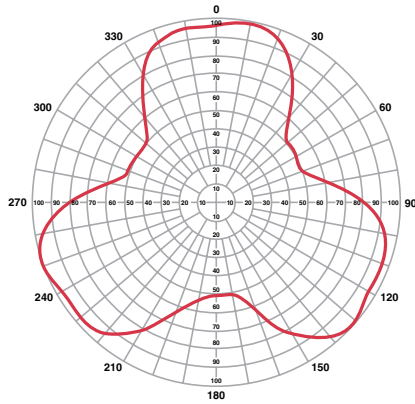
AZIMUTH GAIN: 2.9

TUA-M-C3



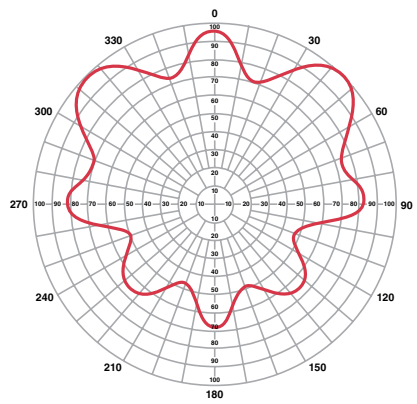
AZIMUTH GAIN: 1.9

TUA-M-T3



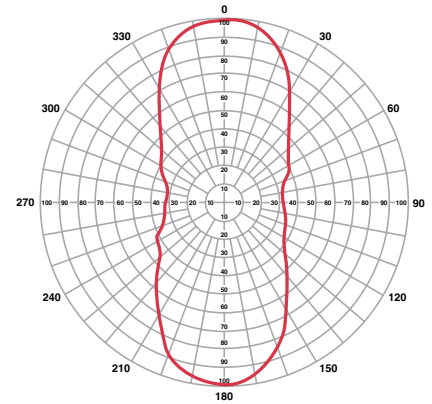
AZIMUTH GAIN: 1.6

TUA-M-S4



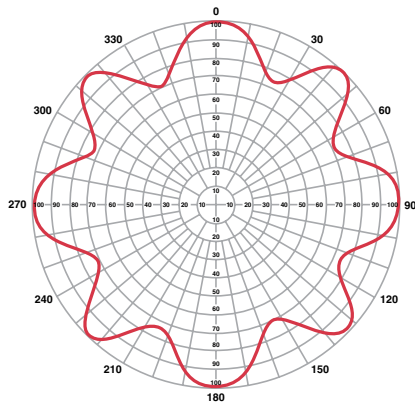
AZIMUTH GAIN: 1.9

TUA-M-P4



AZIMUTH GAIN: 2.5

TUA-M-O4



AZIMUTH GAIN: 1.3

Notes:

1. Patterns shown are typical and calculated using a 24" square tower at 587 MHz. Specific gains and patterns will be supplied with the proposal.

| Antenna Type | Azimuth Pattern | Peak Gain (Ratio) | Peak Gain (dBD) | Length (ft) | Weight (lb) | Wind Area (ft ²) |
|---------------|-----------------|-------------------|-----------------|-------------|-------------|------------------------------|
| TUA-M-C1-1/1 | C1 | 12.0 | 10.8 | 3.2 | 25 | 5.83 |
| TUA-M-C1-2/2 | C1 | 26.4 | 14.2 | 7 | 61.8 | 14.06 |
| TUA-M-C1-3/3 | C1 | 40.8 | 16.1 | 10.8 | 89.05 | 21.39 |
| TUA-M-C1-4/4 | C1 | 54.0 | 17.3 | 14.6 | 117.2 | 29.32 |
| TUA-M-C2-1/2 | C2 | 5.8 | 7.6 | 3.2 | 61.8 | 12.16 |
| TUA-M-C2-2/4 | C2 | 12.8 | 11.1 | 7 | 115.4 | 24.32 |
| TUA-M-C2-3/6 | C2 | 19.7 | 12.9 | 10.8 | 170.8 | 37.68 |
| TUA-M-C2-4/8 | C2 | 26.1 | 14.2 | 14.6 | 228 | 52.24 |
| TUA-M-C3-1/3 | C3 | 3.8 | 5.8 | 3.2 | 87.7 | 15.26 |
| TUA-M-C3-2/6 | C3 | 8.4 | 9.2 | 7 | 168.1 | 31.12 |
| TUA-M-C3-3/9 | C3 | 12.9 | 11.1 | 10.8 | 251.2 | 48.78 |
| TUA-M-C3-4/12 | C3 | 17.1 | 12.3 | 14.6 | 357 | 70.64 |
| TUA-M-T3-1/4 | T3 | 3.2 | 5.1 | 3.2 | 87.7 | 14.35 |
| TUA-M-T3-2/8 | T3 | 7.0 | 8.5 | 7 | 168.1 | 29.3 |
| TUA-M-T3-3/12 | T3 | 10.9 | 10.4 | 10.8 | 251.2 | 46.05 |
| TUA-M-T3-4/16 | T3 | 14.4 | 11.6 | 14.6 | 357 | 67 |
| TUA-M-S4-1/4 | S4 | 3.8 | 5.8 | 3.2 | 113.6 | 19.27 |
| TUA-M-S4-2/8 | S4 | 8.4 | 9.2 | 7 | 220.8 | 39.74 |
| TUA-M-S4-3/12 | S4 | 12.9 | 11.1 | 10.8 | 351.6 | 65.01 |
| TUA-M-S4-4/16 | S4 | 17.1 | 12.3 | 14.6 | 466 | 90.28 |
| TUA-M-P4-1/4 | P4 | 5 | 7.0 | 3.2 | 113.6 | 19.27 |
| TUA-M-P4-2/8 | P4 | 11.0 | 10.4 | 7 | 220.8 | 39.74 |
| TUA-M-P4-3/12 | P4 | 17.0 | 12.3 | 10.8 | 351.6 | 65.01 |
| TUA-M-P4-4/16 | P4 | 25.5 | 13.5 | 14.6 | 466 | 90.28 |
| TUA-M-O4-1/4 | O4 | 2.6 | 4.1 | 3.2 | 113.6 | 19.27 |
| TUA-M-O4-2/8 | O4 | 5.7 | 7.6 | 7 | 220.8 | 39.74 |
| TUA-M-O4-3/12 | O4 | 8.8 | 9.5 | 10.8 | 351.6 | 65.01 |
| TUA-M-O4-4/16 | O4 | 11.7 | 10.7 | 14.6 | 466 | 90.28 |

- Wind area $C_A A_C$ per TIA/EIA-222-G
- Weight excludes brackets and mounting hardware, includes typical feed system

POWERLITE™ TFU-UT BOWTIE SLOT TURNSTILE ANTENNA



Dielectric's TFU-UT Series turnstile antenna is designed for broadband omnidirectional horizontally polarized operation. The TFU-UT features a simple feed system and durable construction.

Dielectric Advantages

- Operating Range: 470-728 MHz
- Horizontally polarized
- Economical broadband design
- Self-supporting
- Can be side- or top-mounted on tower
- 7-16 DIN input 1000 W average power rating
- Low VSWR
- Aluminum construction
- ABS radome for environmental protection
- Side-mount applications are available.

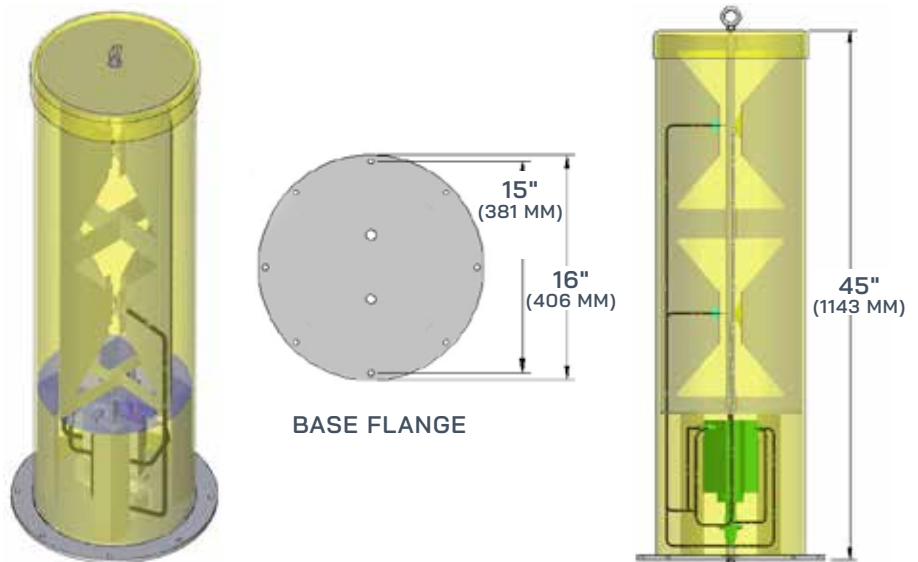
Mechanical Specifications

| Model | Height ft (m) | Weight lb (kg) | Windload ¹ ft ² (m ²) |
|--------|------------------|-------------------|--|
| TFU-UT | 3.74 (1.14) | 55 (25) | 3.2 |

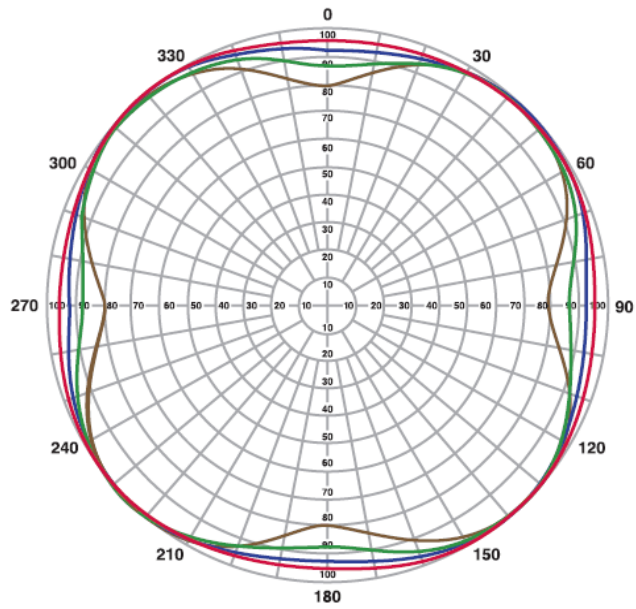
Electrical Specifications

| | VSWR | Input | Power Rating per Input | Gain |
|----------|-------|----------|---------------------------|-------|
| TFU-UT-1 | 1.2:1 | 7-16 DIN | 1 kW | 5 dBd |

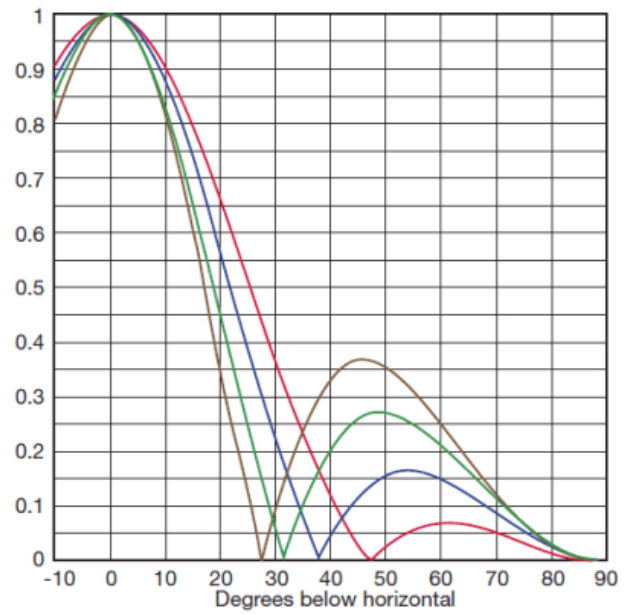
All specifications are subject to change.



POWERLITE™ TFU-UT BOWTIE SLOT TURNSTILE ANTENNA



AZIMUTH PATTERN: 500, 600, 700, 800 MHz



ELEVATION PATTERN: 500, 600, 700, 800 MHz

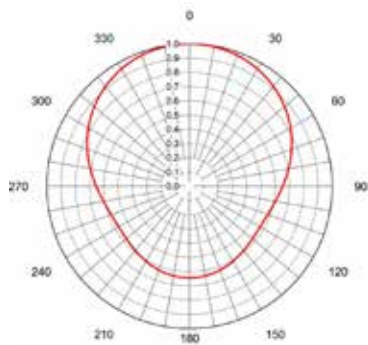


TLS-V SERIES

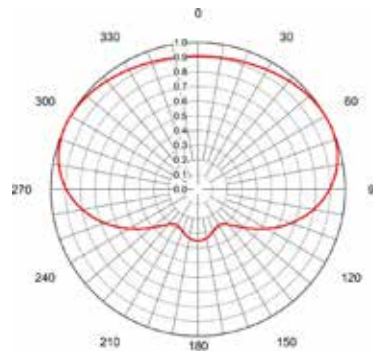
The TLS-V Series antenna is a low-cost, low-windload alternative to side-mount on an existing structure. It is designed for the VHF broadcaster requiring quick compliance with FCC deadlines, gap filling, SFN, translator/repeater markets and standby facilities. The TLS-V can be used for either analog or digital service.

Specifications

- Input Size: 1 5/8" EIA
- VSWR 1.10:1.0 Channel
- Multiple Electrical Beam Tilts available
- Available in a broadband version
- Economical alternative to panel antennas
- Extremely low weight and windload
- Available in 2-, 4-, 8- and 12-bay configurations
- Includes standard mounting brackets
- Quick delivery
- Radome and slot cover options
- Available in HPOL, CPOL and EPOL
- Cardioid and Omnioid Azimuth patterns



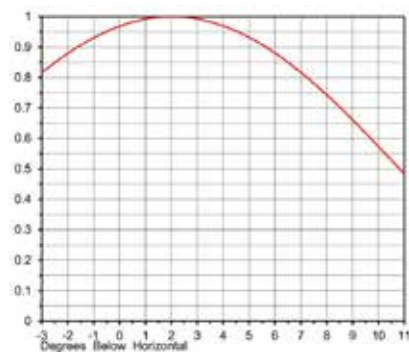
TLS-V-B
AZ GAIN: 1.6



TLS-V-M
AZ GAIN: 1.6

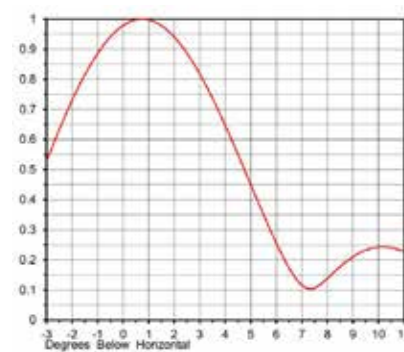
| Antenna | Average Power Input Rating | RMS Gain |
|---------|----------------------------|-----------------|
| TLS-V2 | 3.5 kW | 2.0 (2.94 dB) |
| TLS-V4 | 7.5 kW | 4.2 (6.18 dB) |
| TLS-V8 | Up to 15 kW | 8.3 (9.21 dB) |
| TLS-V12 | Up to 22.5 kW | 12.5 (10.98 dB) |

TLS-V4



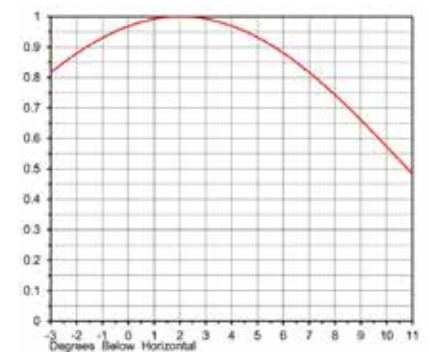
RMS GAIN: 4.2 (6.18 dB)

TLS-V8



RMS GAIN: 8.3 (9.21 dB)

TLS-V12



RMS GAIN: 12.5 (10.98 dB)



TLS-V-BB SERIES

The TLSV-BB Series antenna is designed as a broadband, low-cost, low-windload alternative for the high-band VHF broadcaster.

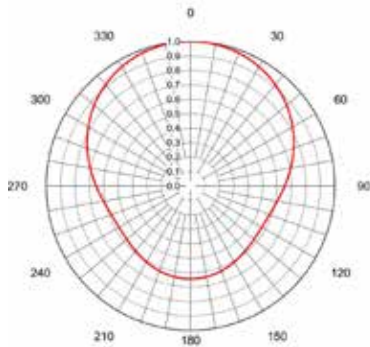
Dielectric Advantages

- Broadband: Channels 7-13
- Economical alternative to panel antennas
- Low weight and 75% less windload than panels
- Input powers up to 22.5 kW avg.
- Includes standard mounting brackets
- Quick delivery
- Available in HPOL, CPOL and EPOL
- Designed for side-mounting on existing structures
- Stripline slot design
- Available in 2-, 4-, 8- and 12-bay configurations
- Cardioid and Omnioid Azimuth Pattern

Specifications

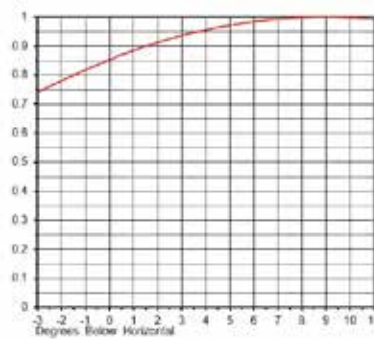
- Polarization: Horizontal or Elliptical
- Beam Tilt: 2 Degrees Standard
- Input Size: 1 5/8" EIA (per section)
- VSWR (Max 174-213 MHz): < 1.25:1
- Input Power: 7.5 kW avg. per section (3.5 kW avg. for TLS-V2)

TLS-V-B



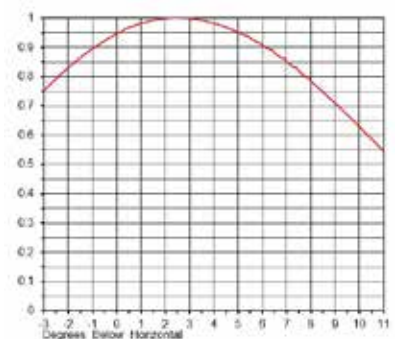
AZIMUTH GAIN: 1.6 (WITH VPOL)

TLS-V2-BB



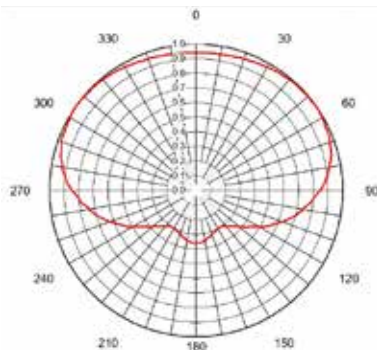
RMS GAIN: 2.0 (2.94 dB)

TLS-V4-BB



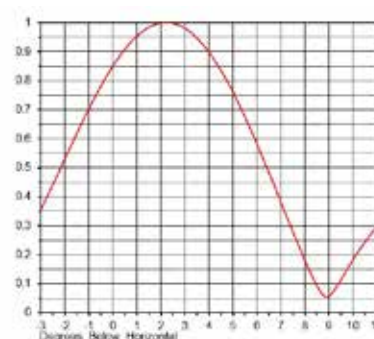
RMS GAIN: 4.1 (6.10 dB)

TLS-V-M-BB



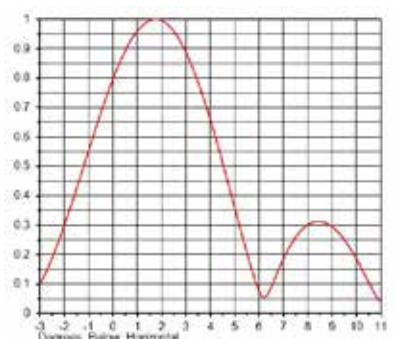
AZIMUTH GAIN: 1.6

TLS-V8-BB



RMS GAIN: 7.9 (8.98 dB)

TLS-V12-BB



RMS GAIN: 10.7 (10.29 dB)

TLS-V-BB SERIES (CONTINUED)

TYPICAL MECHANICAL CHARACTERISTICS*

R = Radomed
V = with VPOL

CaAc = Force Coefficient Projected Area (4 foot lighting protector and beacon included)

| | Channel | Height (ft) | CaAc (ft ²) | Weight (lbs) |
|-------------------|---------|-------------|-------------------------|--------------|
| TLS-V4 Slot Cover | 7 | 23.3 | 25.4 | 465 |
| | 8 | 22.6 | 24.6 | 450 |
| | 9 | 21.9 | 23.9 | 435 |
| | 10 | 21.3 | 23.2 | 420 |
| | 11 | 20.7 | 22.5 | 405 |
| | 12 | 20.1 | 21.9 | 390 |
| | 13 | 19.6 | 21.3 | 375 |
| TLS-V4-R | 7 | 23.3 | 33.6 | 560 |
| | 8 | 22.6 | 32.6 | 525 |
| | 9 | 21.9 | 31.6 | 505 |
| | 10 | 21.3 | 30.7 | 490 |
| | 11 | 20.7 | 29.8 | 465 |
| | 12 | 20.1 | 29.0 | 445 |
| | 13 | 19.6 | 28.2 | 425 |
| TLS-V4-V | 7 | 23.3 | 33.6 | 580 |
| | 8 | 22.6 | 32.6 | 545 |
| | 9 | 21.9 | 31.6 | 525 |
| | 10 | 21.3 | 30.7 | 510 |
| | 11 | 20.7 | 29.8 | 485 |
| | 12 | 20.1 | 29 | 465 |
| | 13 | 19.6 | 28.2 | 445 |

Note: Contact factory for application-specific mechanical details.



*shown with radome option

The DCR-T antenna is a low-power version of Dielectric’s popular DCR Series FM antennas.

Dielectric Advantages

- Circularly polarized
- Branch feed
- Band tunable
- Ideal for Class A and B stations
- IBOC compatible
- Low VSWR, <1.1:1 over operating channel (+/- 100 kHz)
- 1 kW per bay power handling
- Light weight
- Easy Installation
- All-aluminum construction
- Null fill and beam tilt available
- Bay input 7-16 DIN
- Standard array input 1 5/8" EIA
- 1- to 6-bay configurations, full- or half-wave spaced
- Available with optional radome (as shown in picture)
- Directional patterns available

Electrical Specifications

| Band | Polarization | Circularity | VSWR | Input | Power Rating |
|--------------------|--------------|----------------------|--|----------------------------------|--------------|
| FM (88-108 MHz) | Circular | ± 1 dB free space | w/o field trim 1.2:1 Top Mounted 1.5:1 Side Mounted with field trim 1.07:1 (± 100 kHz) | Bay 7-16 DIN Array 1 5/8" EIA | 500 W/Input |

Mechanical Specifications—Individual Bay

| Height ft (m) | Diameter in (m) | Weight lb (kg) | Windload ¹ ft ² (m ³) |
|---------------|-----------------|----------------|---|
| 20 (0.503) | 20.7 (0.526) | 17.5 (8.0) | 2.4 (2.2) |

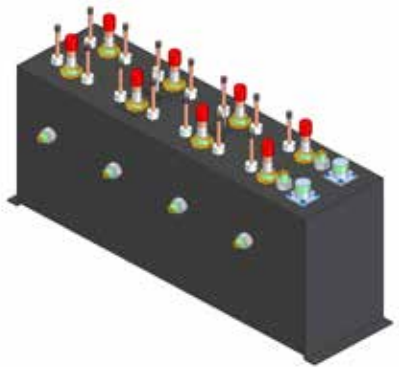
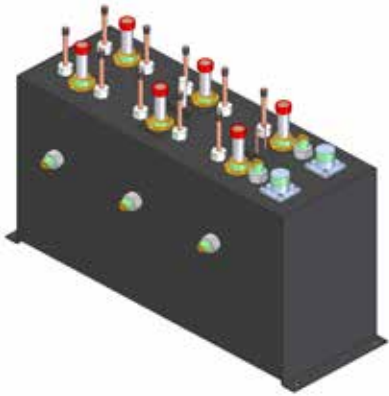
¹ Wind area CAAC per TIA/EIA-222-F (CA = 1.4)

| Antenna Type | # of Bays | RMS Gain Full Wave Spaced (ratio) | RMS Gain Full Wave Spaced (dBd) | RMS Gain Half Wave Spaced (ratio) | RMS Gain Half Wave Spaced (dBd) | Weight lb (kg) | Wind Area ft ² (m ³) | With Radome Weight lb (kg) | With Radome Wind Area ft ² (m ³) | Power Rating kW |
|--------------|-----------|-----------------------------------|---------------------------------|-----------------------------------|---------------------------------|----------------|---|----------------------------|---|-----------------|
| DCRT1 | 1 | 0.46 | -3.37 | 0.46 | -3.37 | 17.5 (8.0) | 17.5 (8.0) | 2.4 (0.22) | 2.4 (0.22) | 1 |
| DCRT2 | 2 | 1 | 0 | 0.7 | -1.55 | 47.4 (21.5) | 46.5 (21.1) | 6.0 (0.56) | 5.7 (0.53) | 2 |
| DCRT3 | 3 | 1.5 | 1.76 | 1 | 0 | 67.9 (30.9) | 66.1 (30.0) | 9.4 (0.87) | 8.8 (0.82) | 3 |
| DCRT4 | 4 | 2.1 | 3.22 | 1.2 | 0.79 | 90.2 (40.1) | 56.0 (39.1) | 13.3 (1.24) | 12.0 (1.11) | 4 |
| DCRT6 | 6 | 3.2 | 5.05 | 1.8 | 2.55 | 145.8 (66.3) | 142.2 (64.6) | 20.3 (1.89) | 18.8 (1.74) | 6 |

Notes:

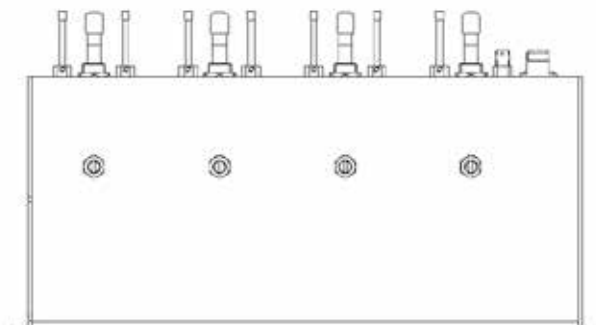
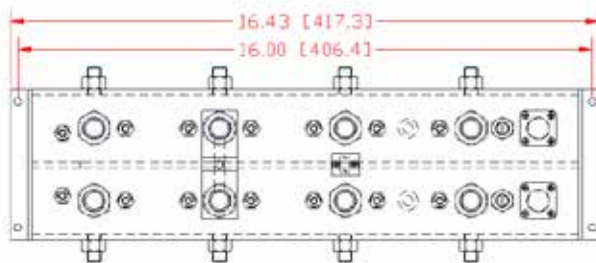
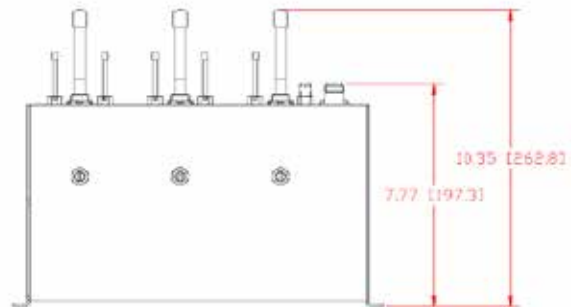
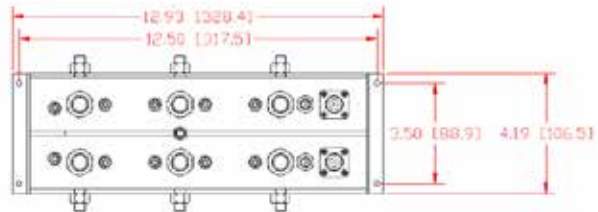
- Wind area C_AA_C is calculated per the TIA/EIA-222-F standard
- RMS gain are for midband and include feed system losses. Actual gain will vary depending on feed systems, frequency, null fill and beam tilt.
- C_AA_C include bays, power dividers, inter-bay feed lines and standard brackets for mounting.
- For more information, reference the Dielectric pattern viewer software at Dielectric.com/Software.
- Contact factory for mechanicals for antenna with radomes.

POWERLITE™ 100–250 W TUNABLE BANDPASS FILTERS



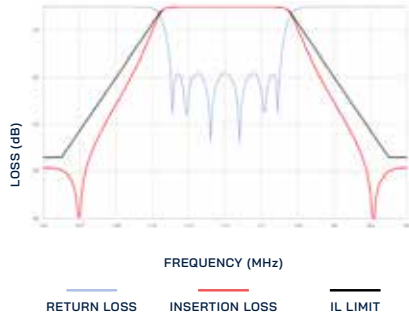
DIELECTRIC ADVANTAGES

- Tunable 470–806 MHz
- Power levels up to 250 Watts
- ATSC 3.0-compliant
- Temperature-stable versions available
- 6-pole single or dual cross-coupled and 8-pole dual cross-coupled versions
- Type N input & output connectors
- Optional voltage probe monitoring of input and output available

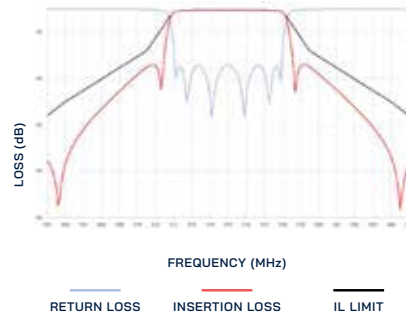


POWERLITE™ 100–250 W TUNABLE BANDPASS FILTERS

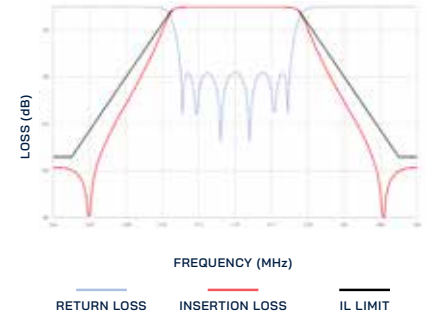
6-POLE ATSC FULL MASK



6-POLE ATSC DUAL-CROSS



8-POLE ATSC SHARP-TUNED MASK

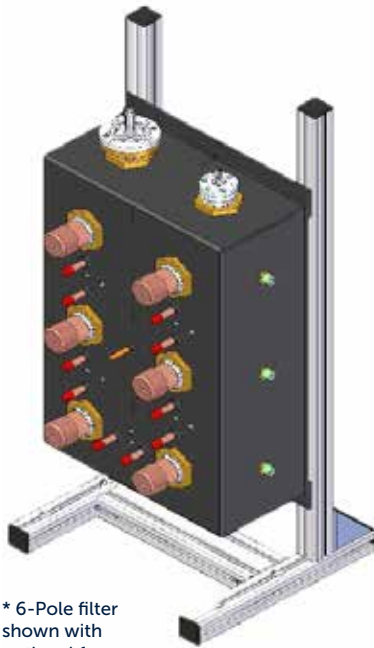


| Number of Poles | | 6 | | | 8 | |
|-------------------------------|-------------------|--|------------|------------|---|------------|
| Model - Single Cross-Coupling | | UT6E2F-100 | UT6E2F-150 | UT6E2F-250 | — | — |
| Model - Dual Cross-Coupling | | — | — | UT6D2F-250 | UT8D2F-25 | UT8D2F-130 |
| Port Size | | Type N Female | | | | |
| Power Rating | | 100 Watts | 150 Watts | 250 Watts | 130 Watts | 130 Watts |
| Tunable Frequency Range | | 470–806 MHz | | | | |
| Channel Range | | 14–69 US, E21–E62 European | | | | |
| Rejection | | >15 dB, Fc +/- 3.5 MHz >60 dB, Fc +/- 9 MHz | | | >15 dB, Fc +/- 3.25 MHz >60 dB, Fc +/- 9 MHz | |
| Typical Insertion Loss @ Fc | | 0.80 dB @ 473; 0.90 dB @ 605 MHz | | | 1.10 dB @ 473; 1.20 dB @ 605 MHz | |
| Insertion Loss ATSC 1.0 | @ Fc +/- 2.69 MHz | 1.00 dB @ 473; 1.10 dB @ 605 MHz | | | 2.50 dB @ 473; 2.90 dB @ 605 MHz | |
| | Integrated | 0.85 dB @ 473; 0.95 dB @ 605 MHz | | | 1.50 dB @ 473; 1.70 dB @ 605 MHz | |
| Insertion Loss ATSC 3.0 | @ Fc +/- 2.92 MHz | 1.10 dB @ 473; 1.20 dB @ 605 MHz | | | 3.40 dB @ 473; 3.90 dB @ 605 MHz | |
| | Integrated | 0.90 dB @ 473; 1.00 dB @ 605 MHz | | | 1.60 dB @ 473; 1.80 dB @ 605 MHz | |
| Return Loss | | >22 dB | | | >22 dB | |
| Group Delay; ATSC 1.0 | | <150 nS | | | <500 nS | |
| Group Delay; ATSC 3.0 | | <200 nS | | | <730 nS | |
| Size | | 13" x 4.2" x 10.35" | | | 16.5" x 4.2" x 10.35" | |
| Weight | | 6.6 lbs | | | 8.5 lbs | |
| Cooling | | Convection | | | | |
| Ambient Temperature Range | | 0–40° C | | | | |

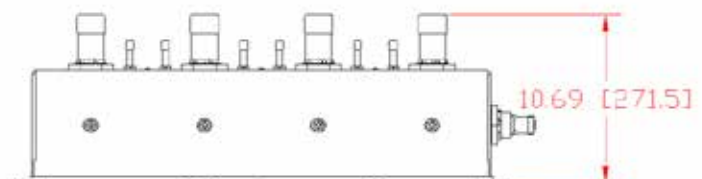
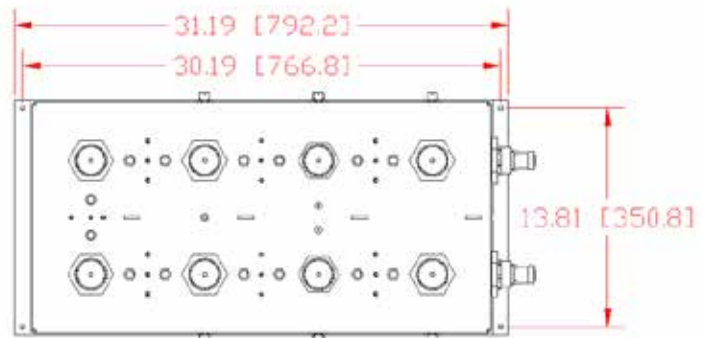
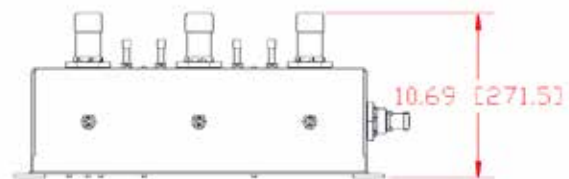
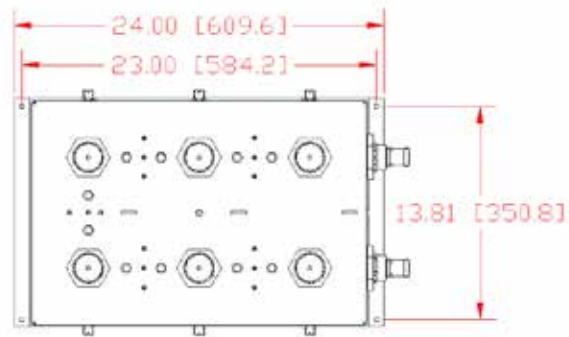
- Insertion loss shown is typical; maximum is 0.1 dB higher than typical.
- Specifications based on ATSC full mask for the 6-pole, ATSC sharp-tuned mask for the 8-pole.
- May be tuned to other channel bandwidth and mask requirements; specifications provided upon request.
- Specifications for altitudes up to 2000 feet. For higher altitudes, please consult the factory for ratings.

DIELECTRIC ADVANTAGES

- Tunable 470–806 MHz
- ATSC 3.0-compliant
- Temperature-stable
- 6-pole single or dual cross coupled and 8-pole dual cross-coupled versions
- Configurable input and output connectors, for any combination of:
 - > DIN 7/16
 - > 7/8" EIA
 - > 1 5/8" EIA
- Optional voltage probe monitoring of input and output available
- Optional 180° F (82° C) thermal interlock
- Optional floor mount frame for vertical mounting



* 6-Pole filter shown with optional frame



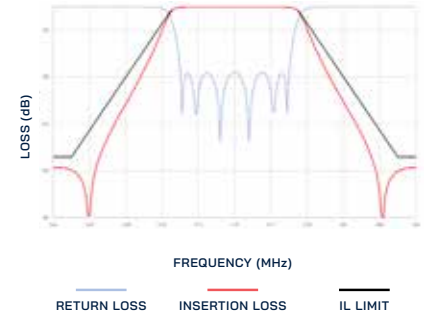
6-POLE ATSC FULL MASK



6-POLE ATSC DUAL-CROSS



8-POLE ATSC SHARP-TUNED MASK

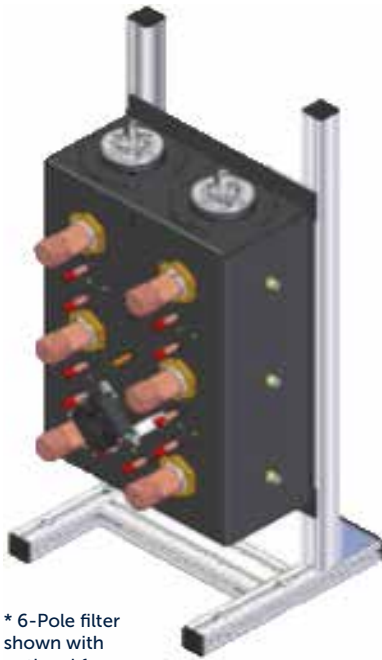


| Number of Poles | | 6 | 8 |
|-----------------------------|-------------------|--|---|
| Model—Single Cross-Coupling | | UT6E7F-1.5K | — |
| Model—Dual Cross-Coupling | | UT6D7F-1.5K | UT8D7F-1.5K |
| Port Size | | Specify any combination - DIN 7/16, 7/8" EIA, 1 5/8" EIA | |
| Tunable Frequency Range | | 470–806 MHz | |
| Channel Range | | 14–36 US, E21–E62 European | |
| Rejection | | >1.5 dB, Fc +/- 3.5 MHz >64 dB, Fc +/- 9 MHz | >15 dB, Fc +/- 3.25 MHz >64 dB, Fc +/- 9 MHz |
| Typical Insertion Loss @ Fc | | 0.35 dB @ 473; 0.45 dB @ 605 MHz | 0.40 dB @ 473; 0.50 dB @ 605 MHz |
| Insertion Loss ATSC 1.0 | @ Fc +/- 2.69 MHz | 0.50 dB @ 473; 0.60 dB @ 605 MHz | 1.10 dB @ 473; 1.30 dB @ 605 MHz |
| | Integrated | 0.38 dB @ 473; 0.48 dB @ 605 MHz | 0.50 dB @ 473; 0.60 dB @ 605 MHz |
| Insertion Loss ATSC 3.0 | @ Fc +/- 2.92 MHz | 0.55 dB @ 473; 0.65 dB @ 605 MHz | 1.30 dB @ 473; 1.50 dB @ 605 MHz |
| | Integrated | 0.40 dB @ 473; 0.50 dB @ 605 MHz | 0.54 dB @ 473; 0.64 dB @ 605 MHz |
| Return Loss | | >26 dB | >26 dB |
| Group Delay; ATSC 1.0 | | <150 nS | <500 nS |
| Group Delay; ATSC 3.0 | | <200 nS | <730 nS |
| Size | | 14.81" x 24" x 11" | 14.81" x 31.19" x 11" |
| Weight | | 45 lbs | 60 lbs |
| Ambient Temperature Range | | 0–40° C | |

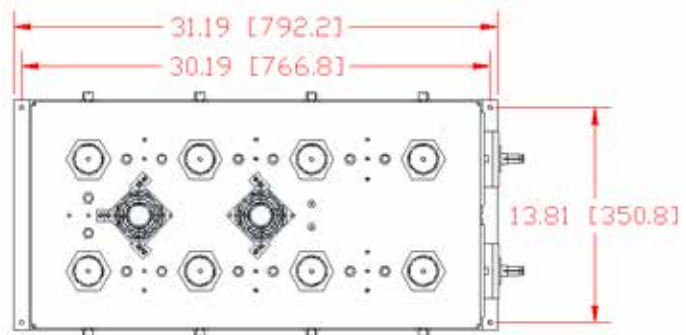
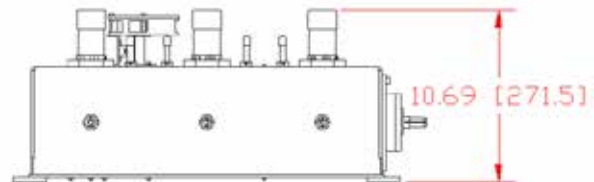
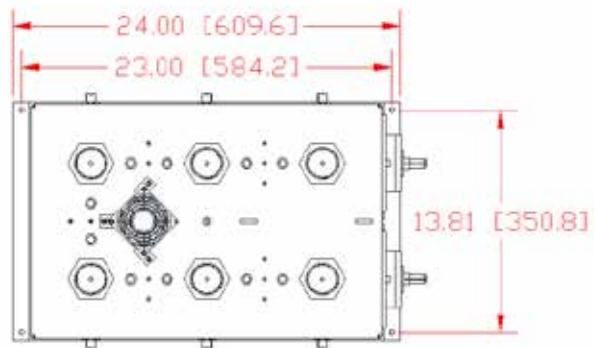
- Insertion loss shown is typical; maximum is 0.05 dB higher than typical.
- Specifications based on ATSC full mask for the 6-pole, ATSC sharp-tuned mask for the 8-pole.
- May be tuned to other channel bandwidth and mask requirements; specifications provided upon request.
- Specifications for altitudes up to 2000 feet. For higher altitudes please consult the factory for ratings.

DIELECTRIC ADVANTAGES

- Tunable 470–806 MHz
- Power levels up to 5 kW
- ATSC 3.0-compliant
- Temperature-stable
- 6-pole single or dual cross-coupled and 8-pole dual cross-coupled versions
- 1 5/8" EIA, 1 5/8" unflanged and 3 1/8" EIA versions available
- Optional 180°F (82°C) thermal interlock (standard on forced-air-cooled units)
- Optional floor mount frame for vertical mounting



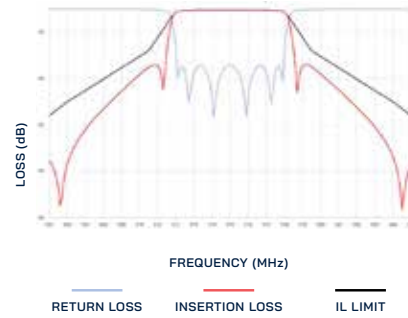
* 6-Pole filter shown with optional frame



6-POLE ATSC FULL MASK



6-POLE ATSC DUAL-CROSS



8-POLE ATSC SHARP-TUNED MASK

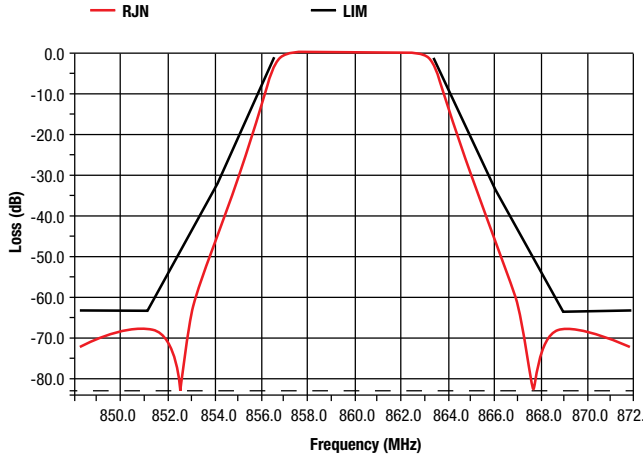


| Number of Poles | | 6 | | | 8 | |
|-------------------------------|-------------------|---|------------|------------|---|------------------|
| Model - Single Cross-Coupling | | UT6E7F-3K | UT6E7F-4K | UT6E7F-5K | — | — |
| Model - Dual Cross-Coupling | | UT6D7F-3K | — | — | UT8D7F-3K | UT8D7F-4K |
| Port Size | | 1 5/8" or 3 1/8" | 1 5/8" EIA | 3 1/8" EIA | 1 5/8" or 3 1/8" | 1 5/8" or 3 1/8" |
| Power Rating | | 3 kW | 4 kW | 5 kW | 3 kW | 4 kW |
| Tunable Frequency Range | | 470–806 MHz | | | | |
| Channel Range | | 14–69 US, E21–E62 European | | | | |
| Rejection | | >1.5 dB, Fc +/- 3.5 MHz >64 dB, Fc +/- 9 MHz | | | >15 dB, Fc +/- 3.25 MHz >64 dB, Fc +/- 9 MHz | |
| Typical Insertion Loss @ Fc | | 0.35 dB @ 473; 0.45 dB @ 605 MHz | | | 0.40 dB @ 473; 0.50 dB @ 605 MHz | |
| Insertion Loss ATSC 1.0 | @ Fc +/- 2.69 MHz | 0.50 dB @ 473; 0.60 dB @ 605 MHz | | | 0.80 dB @ 473; 1.00 dB @ 605 MHz | |
| | Integrated | 0.38 dB @ 473; 0.48 dB @ 605 MHz | | | 0.50 dB @ 473; 0.60 dB @ 605 MHz | |
| Insertion Loss ATSC 3.0 | @ Fc +/- 2.92 MHz | 0.55 dB @ 473; 0.65 dB @ 605 MHz | | | 1.30 dB @ 473; 1.50 dB @ 605 MHz | |
| | Integrated | 0.40 dB @ 473; 0.50 dB @ 605 MHz | | | 0.54 dB @ 473; 0.64 dB @ 605 MHz | |
| Return Loss | | >26 dB | | | >26 dB | |
| Group Delay; ATSC 1.0 | | <150 nS | | | <500 nS | |
| Group Delay; ATSC 3.0 | | <200 nS | | | <730 nS | |
| Size | | 14.81" x 24" x 12" | | | 14.81" x 31.19" x 12" | |
| Weight | | 45 lbs | | | 60 lbs | |
| Cooling | | Convection | Forced Air | Forced Air | Convection | Forced Air |
| Ambient Temperature Range | | 0–40° C | | | | |

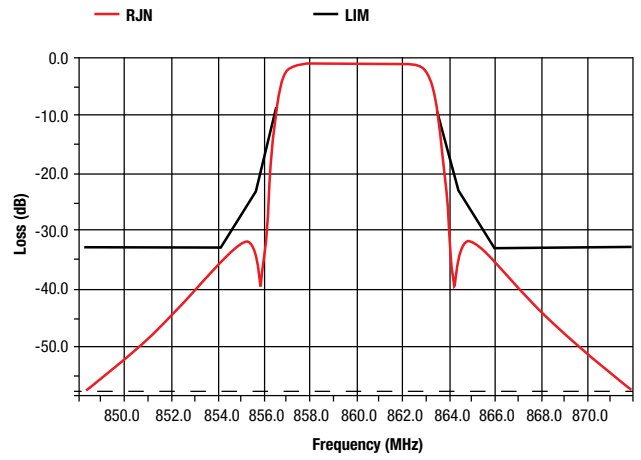
- Insertion loss shown is typical; maximum is 0.05 dB higher than typical.
- Specifications based on ATSC full mask for the 6-pole, ATSC sharp-tuned mask for the 8-pole.
- May be tuned to other channel bandwidth and mask requirements; specifications provided upon request.
- Specifications for altitudes up to 2000 feet. For higher altitudes, please consult the factory for ratings.
- Forced-air-cooled units require 4.5 watt AC source for the 6-pole, 9 watt for the 8-pole, 11-240 VAC.

POWERLITE™ UHF 6-POLE FILTER STANDARD MASKS

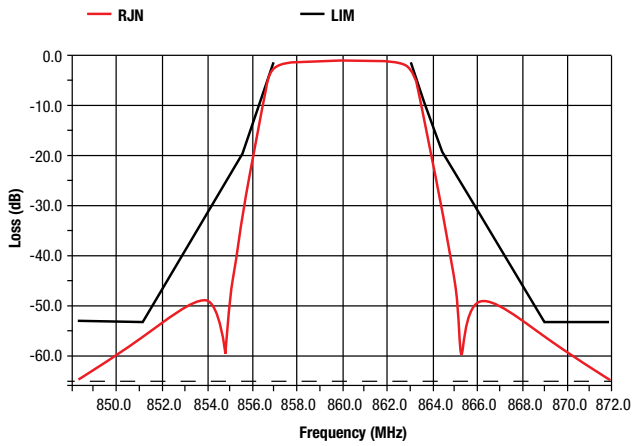
ATSC FULL MASK



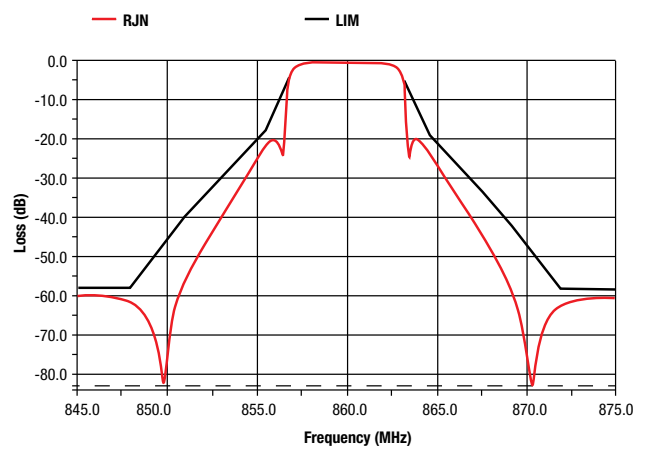
ATSC STRINGENT MASK



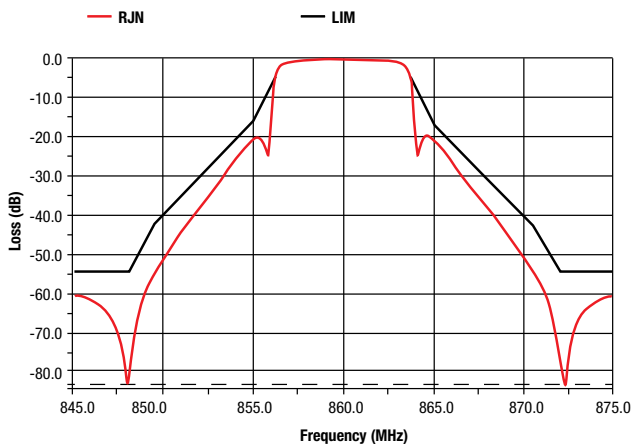
ISDB-T NON-CRITICAL MASK



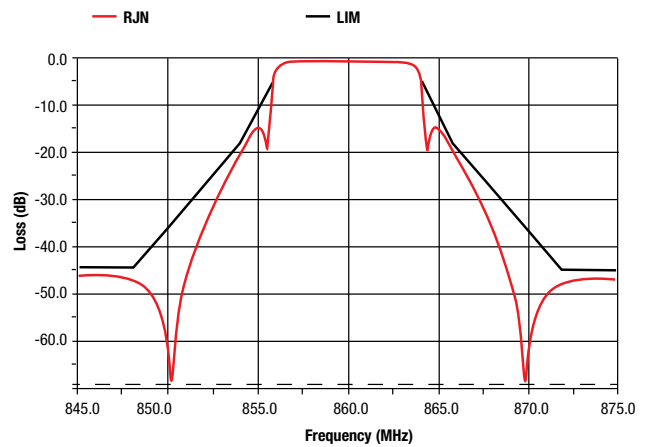
6 MHz DVB-T NON-CRITICAL MASK



7 MHz DVB-T NON-CRITICAL MASK

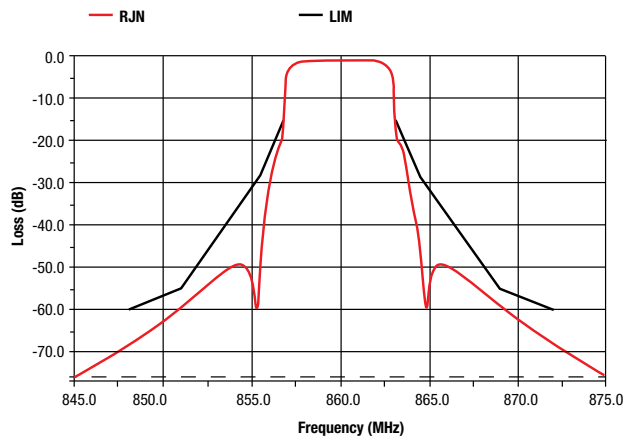


8 MHz DVB-T NON-CRITICAL MASK

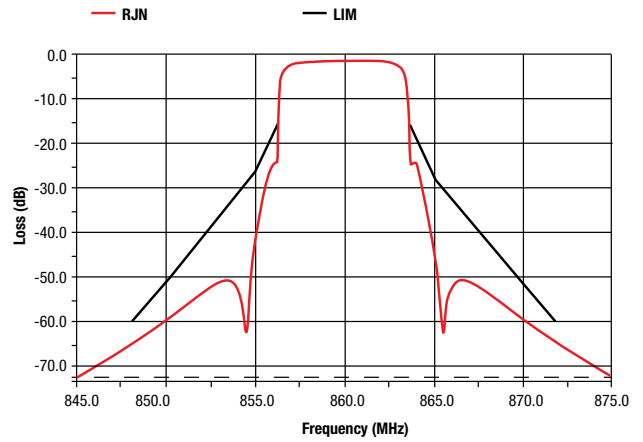


POWERLITE™ UHF 8-POLE FILTER STANDARD MASKS

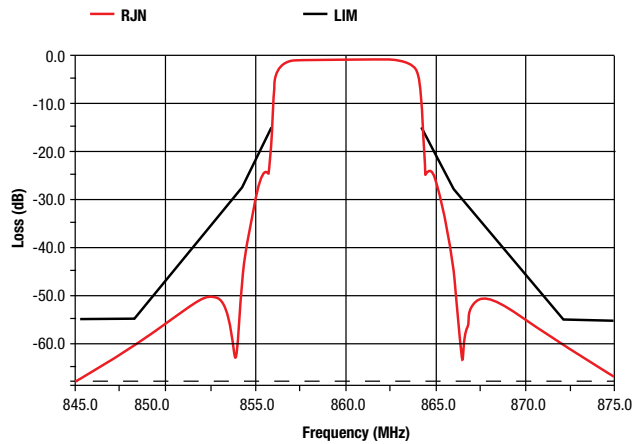
6 MHz DVB-T CRITICAL MASK



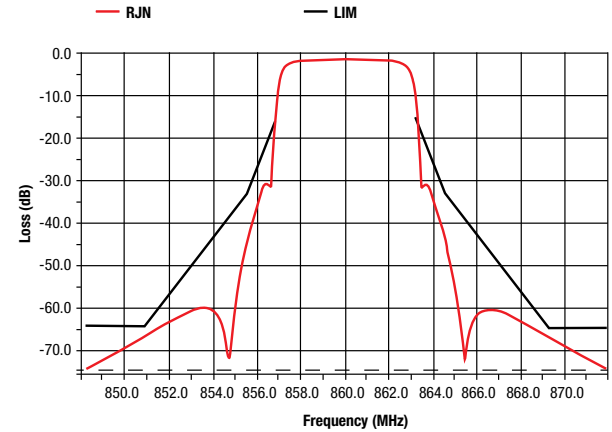
7 MHz DVB-T CRITICAL MASK



8 MHz DVB-T CRITICAL MASK

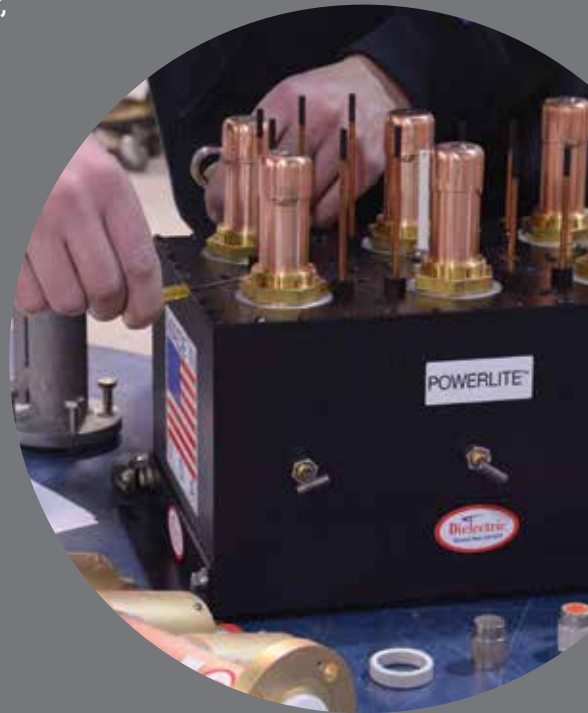


ISDB-T CRITICAL MASK



TRUSTED FOR DECADES. READY FOR TOMORROW.

Since we helped pioneer broadcasting in 1942, Dielectric has been a leading innovator, with more than 100 patents in RF transmission technology, and continues to be the world's most trusted manufacturer and supplier of antennas and RF systems for TV and radio networks. Dielectric blends decades of experience with a forward-looking embrace of software-defined planning and design. We employ many of today's brightest RF engineering minds, who are helping us drive unforeseen innovation into the convergence of RF and IP technologies, beginning with our new RFHAWKEYE® monitoring system, which will change the way broadcasters monitor, manage and troubleshoot antenna and RF systems for generations to come. Whatever new technologies emerge, there's a good chance they'll start here at Dielectric world headquarters in Maine, USA. We look forward to meeting your customized needs for the future.



Dielectric products are represented in 90 countries around the world. With the rapid expansion of communications, Dielectric is positioned to service the broadcast needs of small & large stations, DTV, FM & specialty RF systems, complete systems and components.

Dielectric®

Specifications subject to change without notice.

NORTH AMERICA

- > BELIZE
- > CANADA
- > COSTA RICA
- > DOMINICAN REPUBLIC
- > EL SALVADOR
- > GREENLAND
- > GUATEMALA
- > MEXICO
- > NICARAGUA
- > PUERTO RICO
- > UNITED STATES

SOUTH AMERICA

- > ARGENTINA
- > BRAZIL
- > CHILE
- > COLOMBIA
- > ECUADOR
- > PERU
- > VENEZUELA

EUROPE

- > AUSTRIA
- > BELGIUM
- > DENMARK
- > ENGLAND
- > FINLAND
- > FRANCE
- > GERMANY
- > GREECE
- > ICELAND
- > IRELAND
- > ITALY
- > MALTA
- > NETHERLANDS
- > NORWAY
- > POLAND
- > PORTUGAL
- > ROMANIA
- > RUSSIA
- > SPAIN
- > SWEDEN
- > SWITZERLAND

ASIA

- > ABU DHABI
- > CHINA
- > GUAM
- > HONG KONG
- > INDIA
- > INDONESIA
- > ISRAEL
- > JAPAN
- > JORDAN
- > KOREA
- > KUWAIT
- > LEBANON
- > MALAYSIA
- > MONGOLIA
- > NEPAL
- > OMAN
- > PAKISTAN
- > PHILIPPINES
- > QATAR
- > SAIPAN
- > SAUDI ARABIA
- > SINGAPORE
- > SRI LANKA
- > SYRIA
- > TAIWAN
- > THAILAND
- > VIETNAM
- > YEMEN

AFRICA

- > ANGOLA
- > BENIN
- > BOTSWANA
- > CHAD
- > EGYPT
- > ETHIOPIA
- > GHANA
- > LIBERIA
- > MADAGASCAR
- > MALI
- > MAURITANIA
- > MAURITIUS
- > MOROCCO
- > NIGERIA
- > SAO TOME
- > SOUTH AFRICA
- > TOGO
- > UGANDA
- > ZAMBIA
- > ZIMBABWE

OCEANIA

- > AUSTRALIA
- > NEW ZEALAND
- > PAPUA NEW GUINEA