Dielectric®

POWERLITE™ Series

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.

TABLE OF CONTENTS

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™ 600 W 36

POWERLITE™ 1.5 kW 38

POWERLITE™ 3-5 kW 40

Filter Masks 42

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

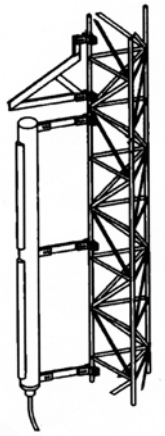
Specifications

MAXIMUM INPUT POWER RATING
DTV (AVERAGE)*

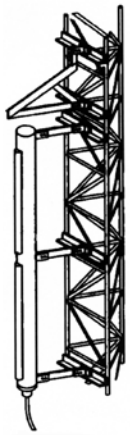
Antenna	Standard	Custom
TLP-4	4.0 kW	—
TLP-6	5.0 kW	—
TLP-8	5.0 kW	—
TLP-12	5.0 kW	—
TLP-16	4.0 kW	8.0 kW
TLP-24	4.9 kW	8.8 kW

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

Mounting Options

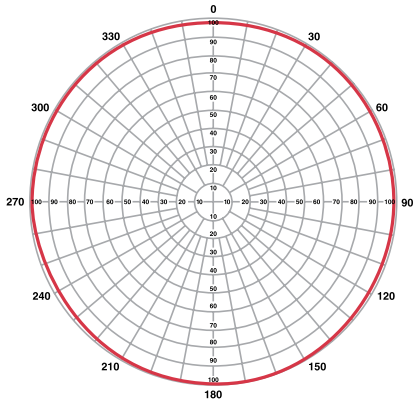


STANDARD LEG MOUNT



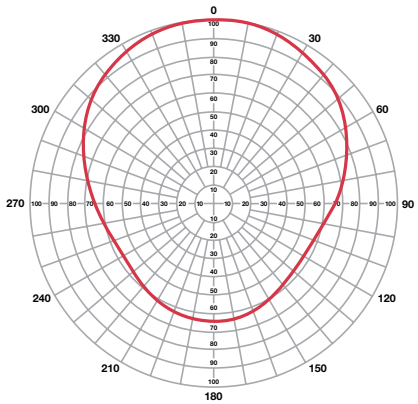
CUSTOM FACE MOUNTS
(OTHER OPTIONS AVAILABLE)

TLP-A



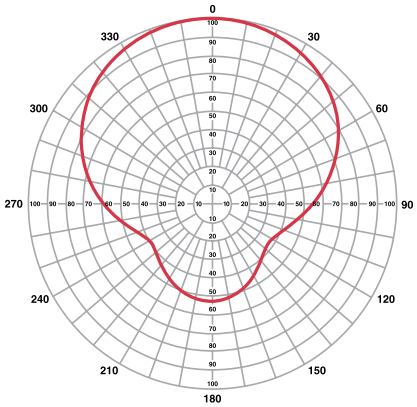
AZIMUTH GAIN: 1.0

TLP-B



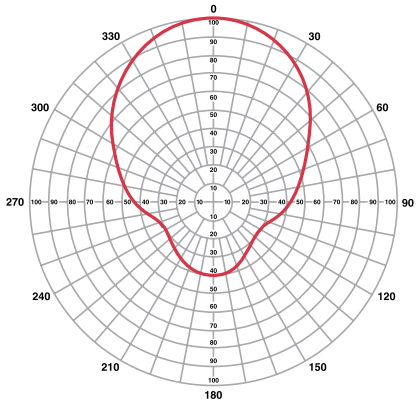
AZIMUTH GAIN: 1.7

TLP-C



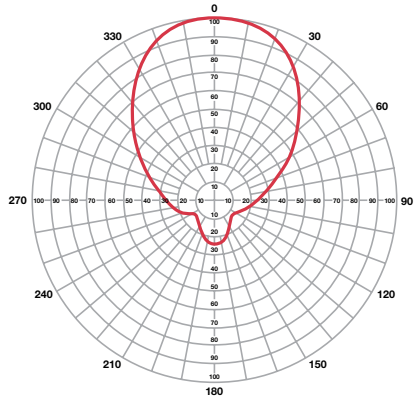
AZIMUTH GAIN: 2.1

TLP-D



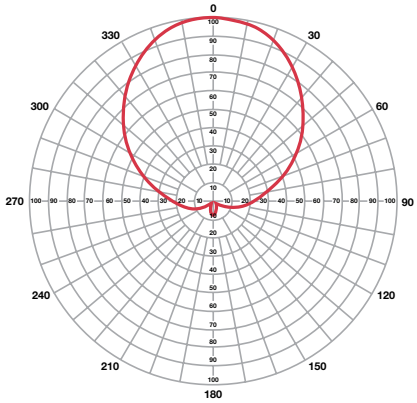
AZIMUTH GAIN: 2.9

TLP-E



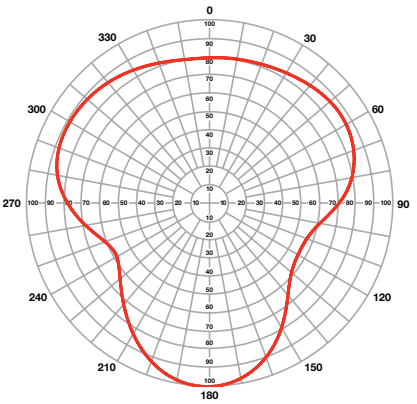
AZIMUTH GAIN: 3.9

TLP-F



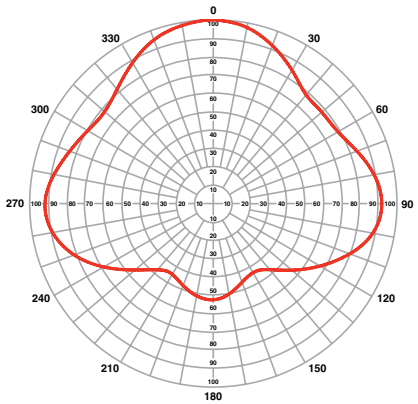
AZIMUTH GAIN: 3.6

TLP-G



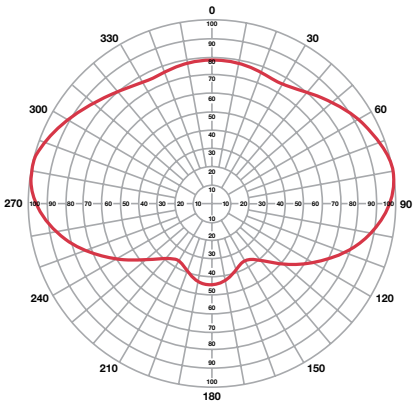
AZIMUTH GAIN: 1.6

TLP-H



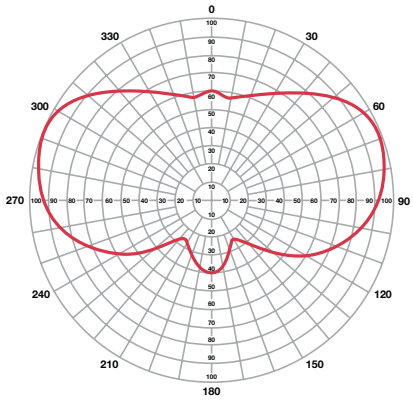
AZIMUTH GAIN: 1.7

TLP-I



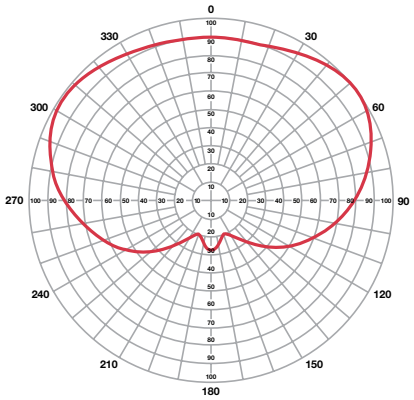
AZIMUTH GAIN: 1.8

TLP-J



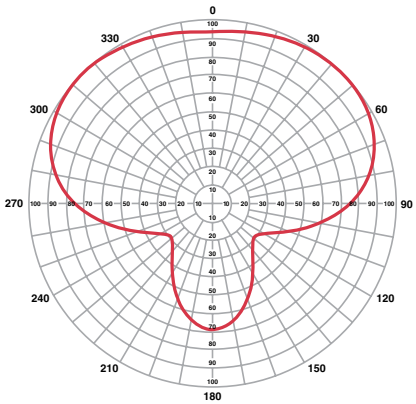
AZIMUTH GAIN: 2.0

TLP-M



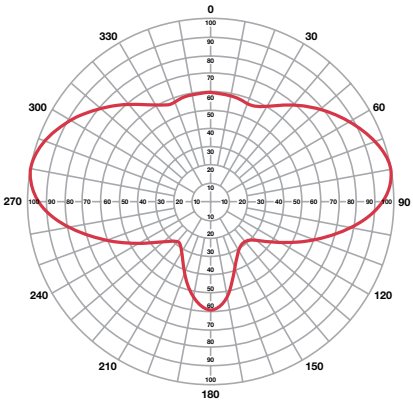
AZIMUTH GAIN: 1.9

TLP-L



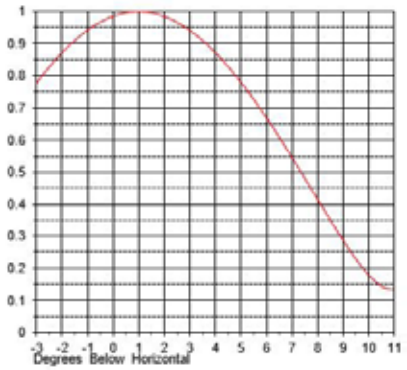
AZIMUTH GAIN: 1.7

TLP-O



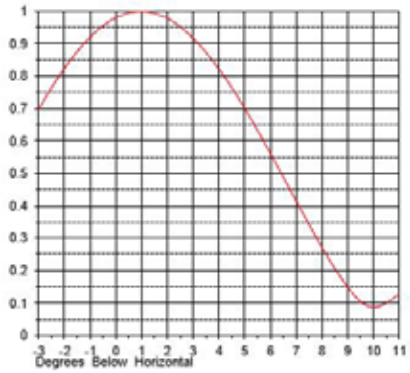
AZIMUTH GAIN: 2.2

TLP-4



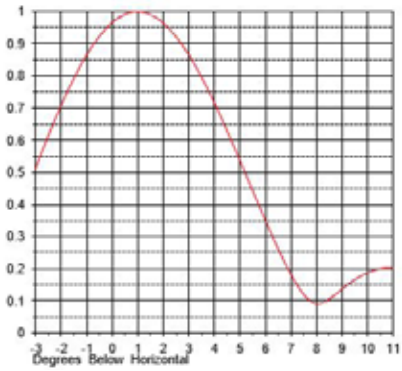
RMS GAIN: 3.9 (5.91 dB)

TLP-6



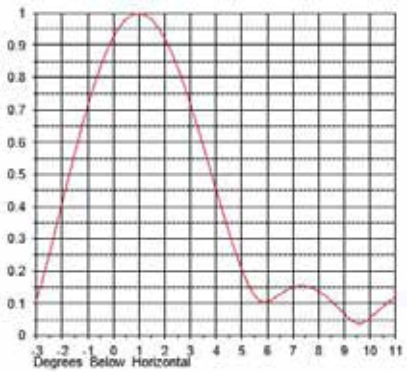
RMS GAIN: 6.1 (7.83 dB)

TLP-8



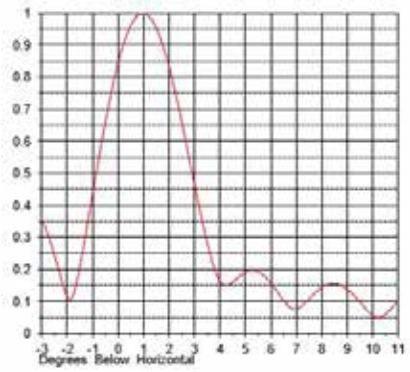
RMS GAIN: 8.1 (9.10 dB)

TLP-12



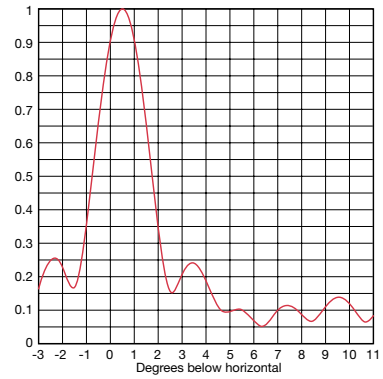
RMS GAIN: 12.3 (10.89 dB)

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	7.5	8.8		85 to 155	14.84 to 21.47	10.19 to 14.88
	J	8.5	9.3		85 to 150	14.22 to 22.77	9.98 to 14.42
	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

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	11.5	10.6		100 to 190	19.24 to 29.06	12.22 to 18.82
	J	13.1	11.2		100 to 185	18.48 to 31.21	11.93 to 18.17
	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

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	14.4	11.6		115 to 220	23.65 to 36.69	14.26 to 22.76
	J	16.0	12.0		115 to 215	23.2 to 40.82	13.88 to 21.92
	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

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	24.0	13.8		150 to 290	32.5 to 52.02	18.32 to 30.63
	J	27.2	14.3		150 to 280	34.39 to 63.3	17.77 to 29.42
	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

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	28.8	14.6		255 to 465	47.75 to 73.83	28.96 to 45.97
	J	32.0	15.1		255 to 450	46.86 to 82.09	28.2 to 44.29
	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

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	41.4	16.2		370 to 685	71.69 to 110.81	34.51 to 69.02
	J	46.0	16.6		370 to 665	70.35 to 123.21	42.37 to 66.51
	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

Dielectric's TLP-BB Series antenna is designed specifically for multichannel operation with low wind load.

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 gain of 12 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	8 kW max. average	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

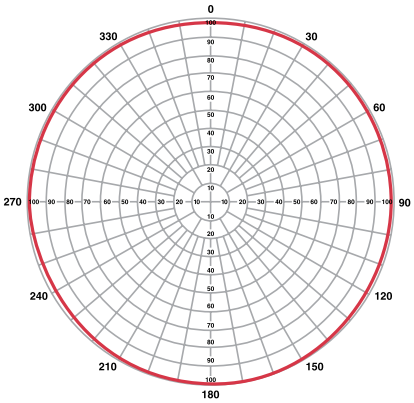
Center of radiation is one half of the height: C/R = 0.5 * H

- For elliptical polarization contact factory

Antenna Type	Azimuth Pattern	Peak Power Gain Ratio	Gain (dBd)	Height ft (m)	Weight lb (kg)	Wind Area[1] ft² (m²)
TLP-12-BB-B	TLP-B	Channel specific. Please contact factory.				
TLP-12-BB-M	TLP-M	Channel specific. Please contact factory.				

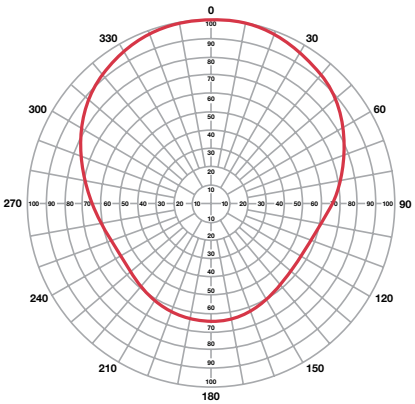
[1] Wind area TIA/EIA 222-G

TLP-BB-A



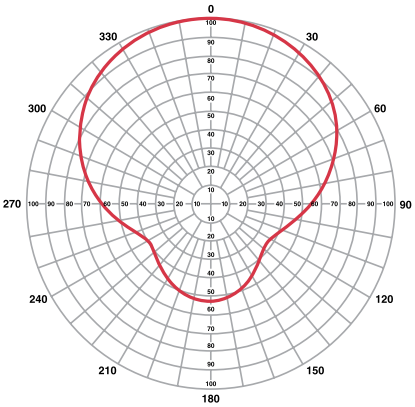
AZIMUTH GAIN: 1.0

TLP-BB-B



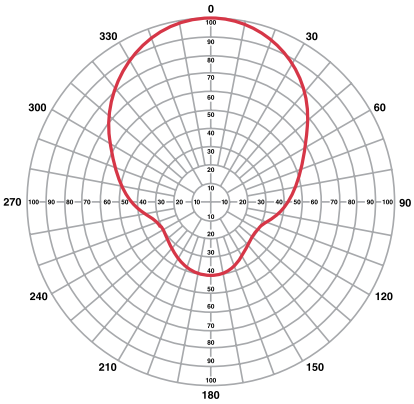
AZIMUTH GAIN: 1.7

TLP-BB-C



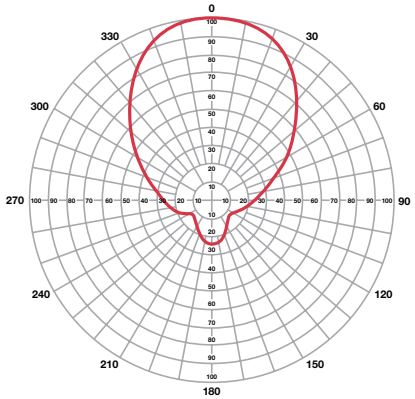
AZIMUTH GAIN: 2.1

TLP-BB-D



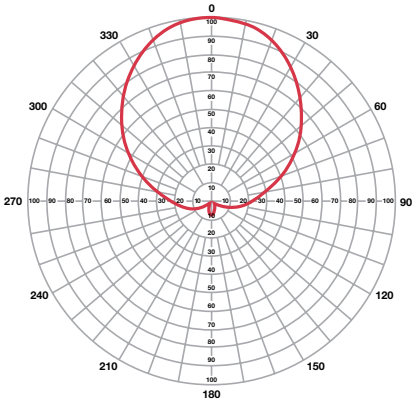
AZIMUTH GAIN: 2.9

TLP-BB-E



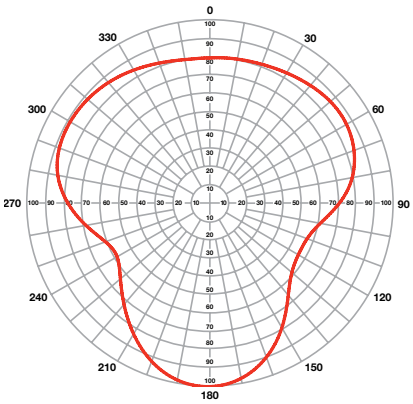
AZIMUTH GAIN: 3.9

TLP-BB-F



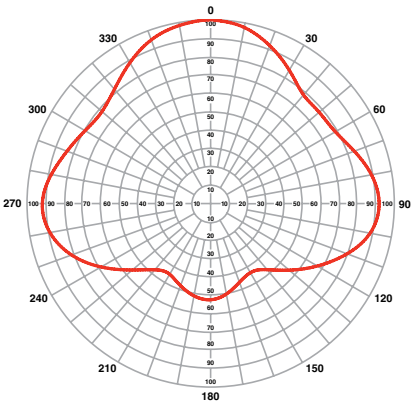
AZIMUTH GAIN: 3.6

TLP-BB-G



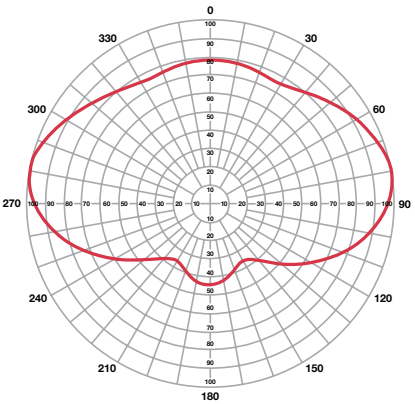
AZIMUTH GAIN: 1.6

TLP-BB-H



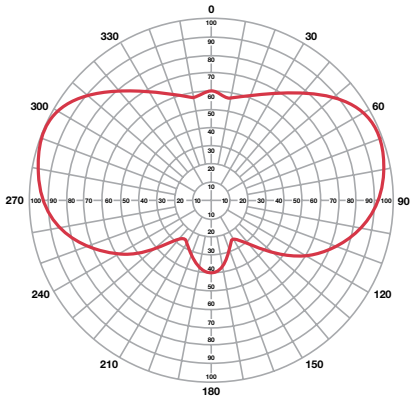
AZIMUTH GAIN: 1.7

TLP-BB-I



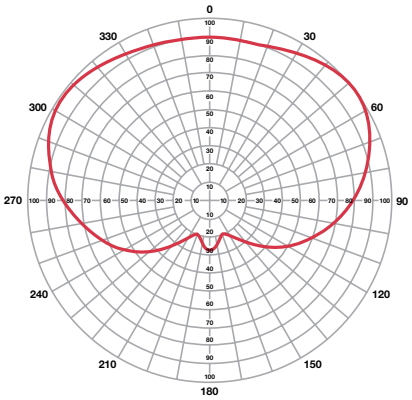
AZIMUTH GAIN: 1.8

TLP-BB-J



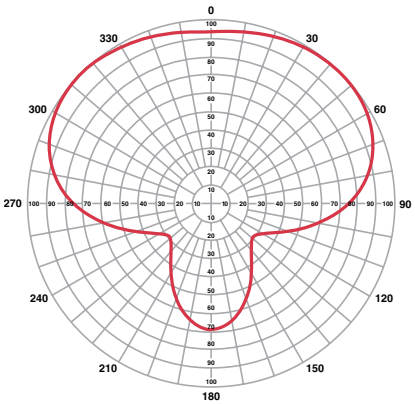
AZIMUTH GAIN: 2.0

TLP-BB-M



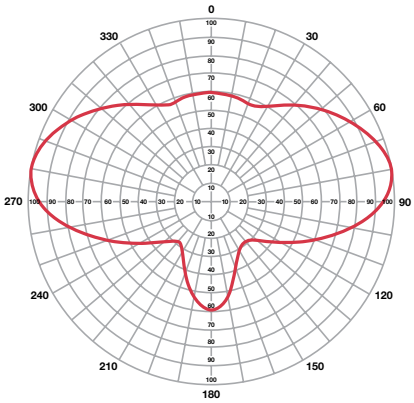
AZIMUTH GAIN: 1.9

TLP-BB-L



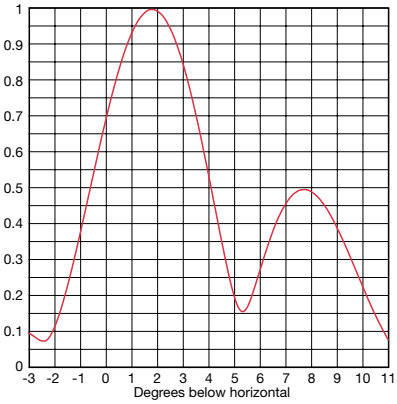
AZIMUTH GAIN: 1.7

TLP-BB-O



AZIMUTH GAIN: 2.2

TLP-BB-12



RMS GAIN: 10.0 (9.98 dB)

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

POWERLITE™ DLP LOW POWER ANTENNA

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, 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

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
	I		45 to 65	7.44 to 14.31
	J		45 to 65	9.36 to 18.23
	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
	I		65 to 95	10.97 to 21.54
	J		65 to 95	10.97 to 26.9
	M		65 to 95	15.36 to 30.49

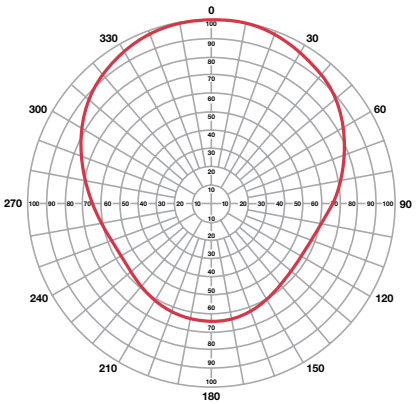
Antenna Type	Azimuth Pattern	Length (ft)	Weight (lb)	Wind Area (ft^2)
DLP-8B-8M	B	13.6 to 18.8	70 to 90	8.66 to 14.21
	C		70 to 90	11.91 to 18.76
	D		80 to 105	14.53 to 27.21
	E		85 to 125	20.57 to 41.21
	H		85 to 125	12.8 to 25.49
	I		85 to 125	15.13 to 30.08
	J		85 to 125	18.32 to 36.61
	M		85 to 125	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
	I		110 to 155	19.69 to 39.46
	J		110 to 155	23.69 to 47.62
	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
	I		130 to 190	24.67 to 49.68
	J		130 to 190	29.46 to 59.48
	M		130 to 190	32.38 to 65.46

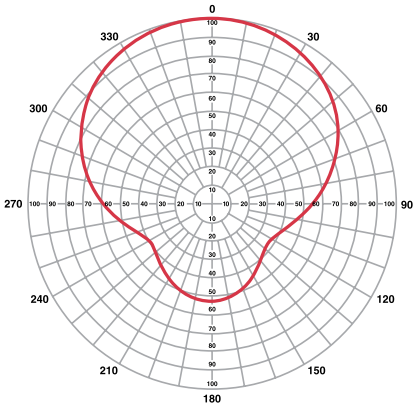
[1] Wind area CAAC per TIA/EIA-222-G

DLP-B



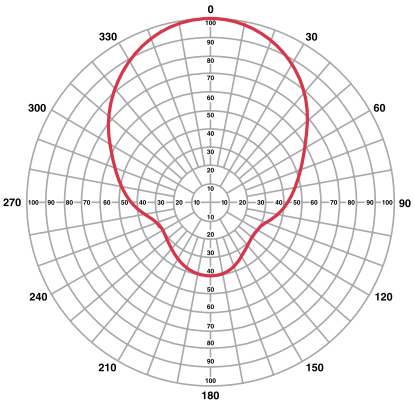
AZIMUTH GAIN: 1.7

DLP-C



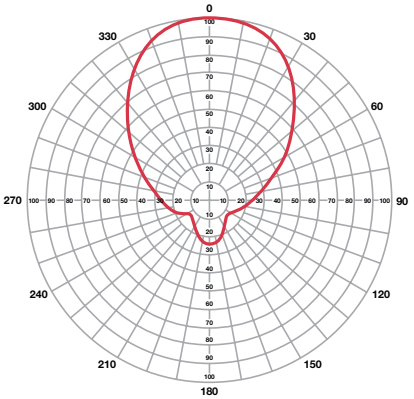
AZIMUTH GAIN: 2.1

DLP-D



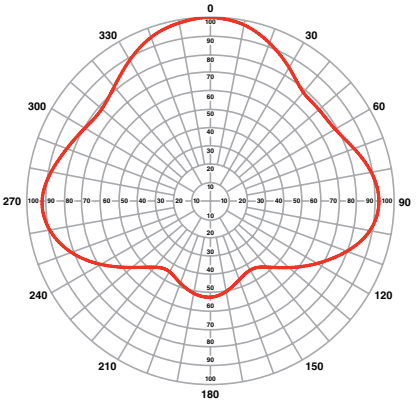
AZIMUTH GAIN: 2.9

DLP-E



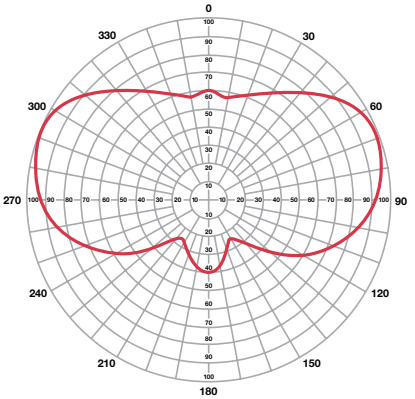
AZIMUTH GAIN: 3.9

DLP-H



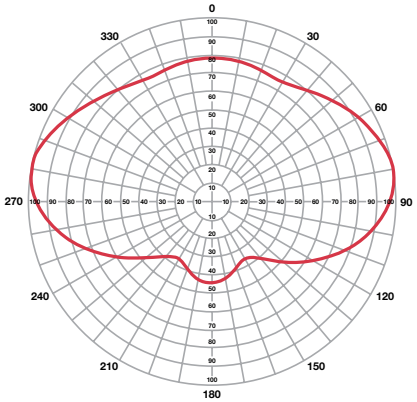
AZIMUTH GAIN: 1.7

DLP-I



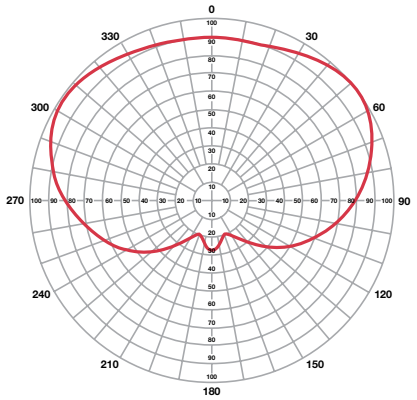
AZIMUTH GAIN: 1.8

DLP-J



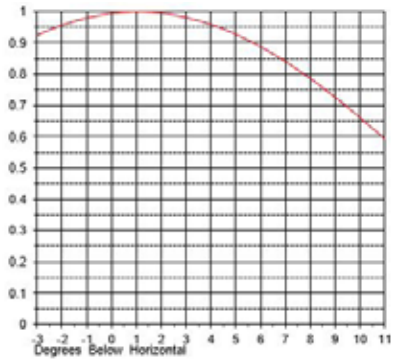
AZIMUTH GAIN: 2.0

DLP-M



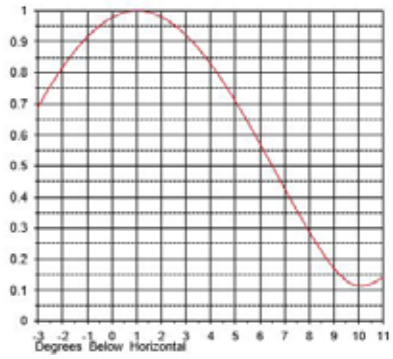
AZIMUTH GAIN: 1.9

DLP-4



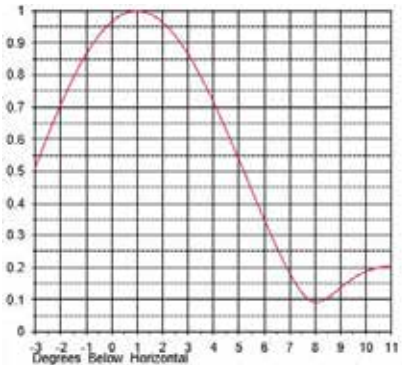
RMS GAIN: 3.6 (5.56 dB)

DLP-6



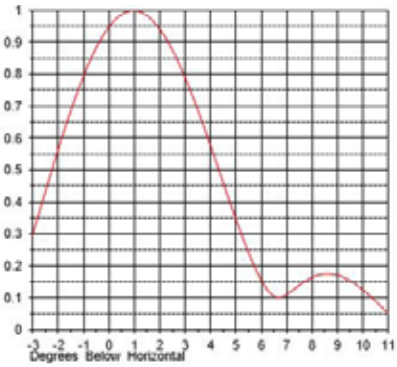
RMS GAIN: 5.9 (7.71 dB)

DLP-8



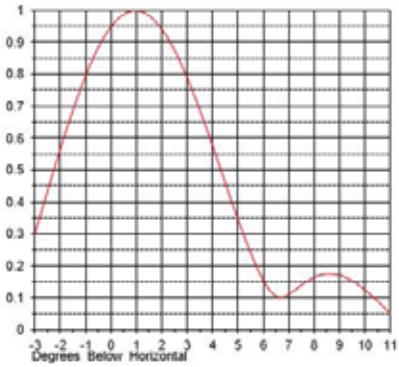
RMS GAIN: 8.1 (9.10 dB)

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

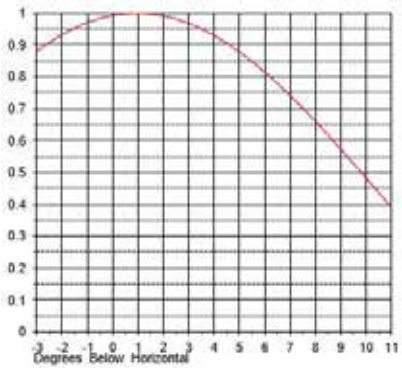
- Polarization: Horizontal or Elliptical
- Input Size: 1 5/8" EIA
- VSWR (Max 470-698 MHz): < 1.15:1
- Max Input Power: 2.5 kW per 4 bay section
- Max Input Power: 5.0 kW per 8 bay section
- Azimuth Directivity: See sheet 2
- Weight: 190 lbs per 4 bay / 370 lbs per 8 bay
- Height: 7.2 ft per 4 bay /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

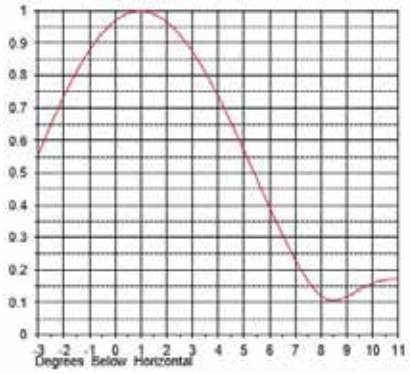
Wind Spec: TIA-222-G
BWS: 90 mph
Structure: II
Exposure: C
Topo Cat. 1

TFU-WB LP-4



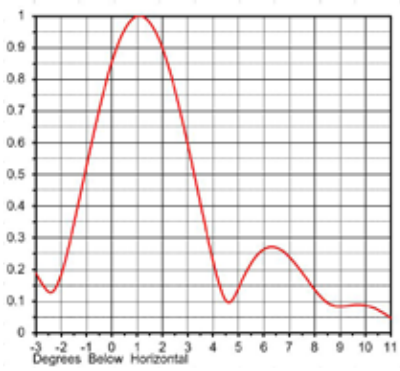
RMS GAIN: 3.5 (5.4 dB)

TFU-WB LP-8



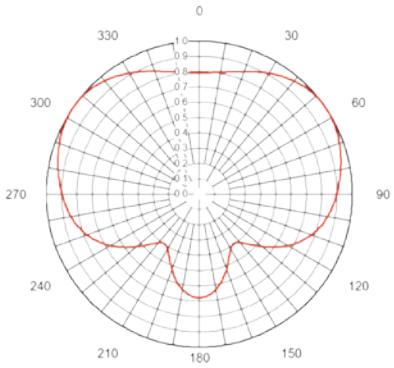
RMS GAIN: 8.0 (1.0 dB)

TFU-WB LP-16



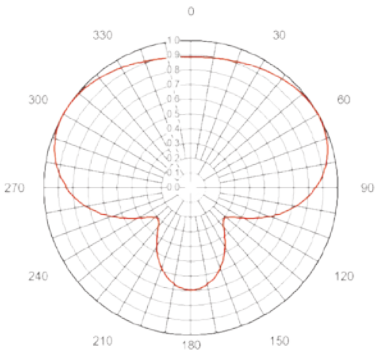
RMS GAIN: 17.0 (1.0 dB)

C160



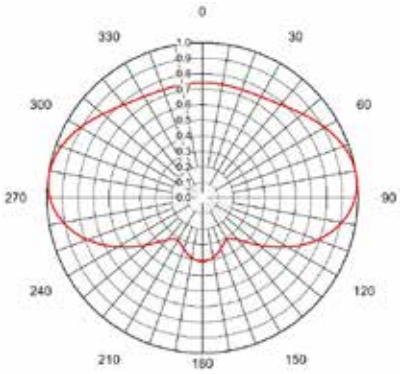
AZIMUTH GAIN 1.58 (1.99 dB)

C170



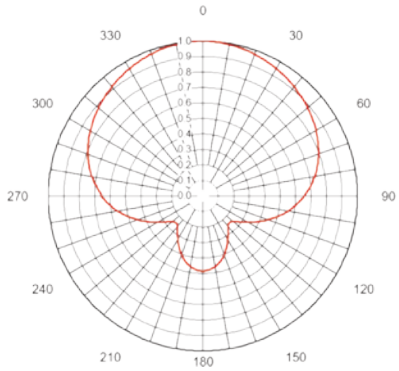
AZIMUTH GAIN 1.66 (1.99 dB)

C190



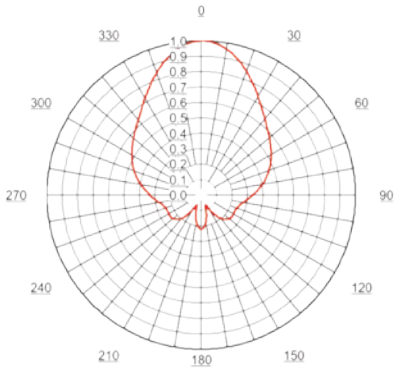
AZIMUTH GAIN:1.87 (2.71 dB)

S230



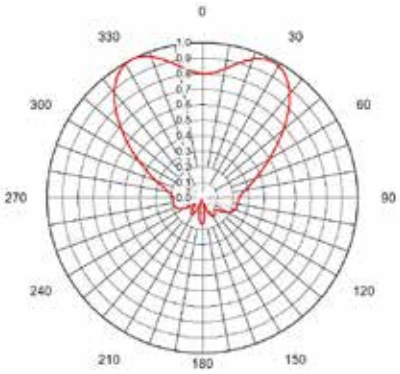
AZIMUTH GAIN: 2.09 (3.19 dB)

S380



AZIMUTH GAIN: 3.97 (5.99 dB)

DUCKFOOT



AZIMUTH GAIN: 3.74 (5.73 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

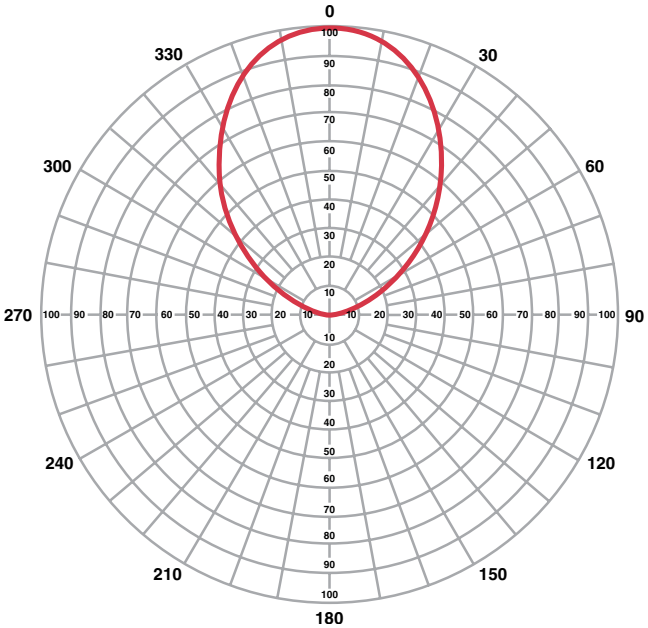
Band	Polarization	VSWR	Input	Power Rating
UHF ch. 14-23 ch. 24-32 ch. 33-41 ch. 42-52	Circular	1.1:1	7-16 DIN	500W per panel

Mechanical Specifications—Individual Panel

Model	Height ft (m)	Weight lb (kg)	Wind Area[1] ft² (m²)	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

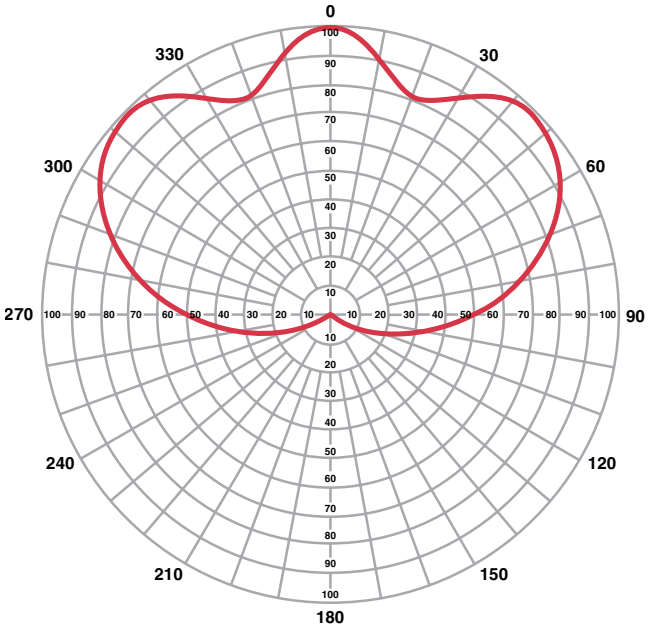
[1] Wind area C_AA_C per TIA/EIA-222-G

TUL-C1



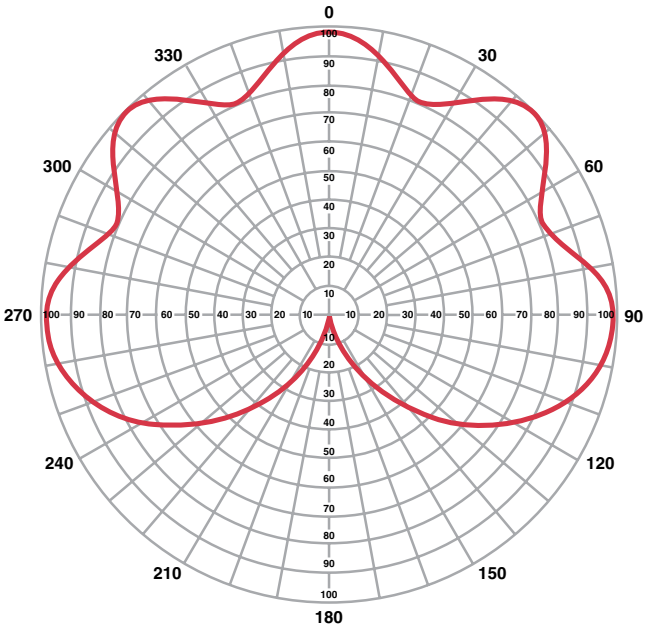
AZIMUTH GAIN: 5.2

TUL-C2



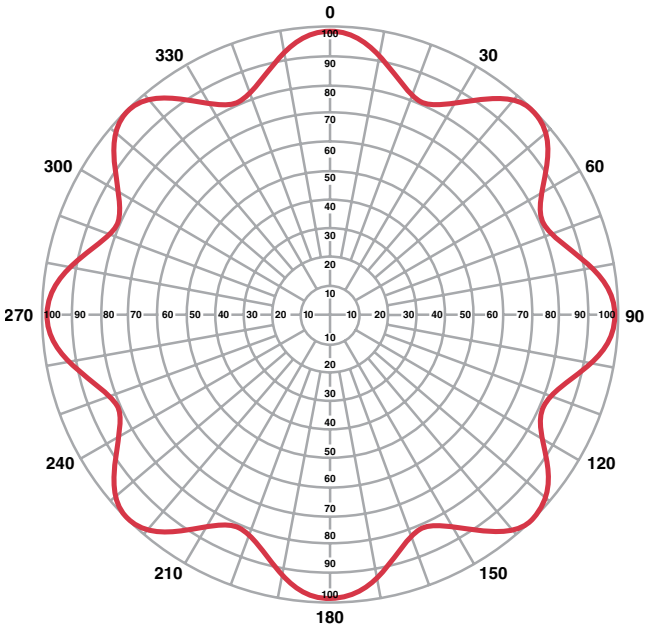
AZIMUTH GAIN: 2.6

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_AA_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

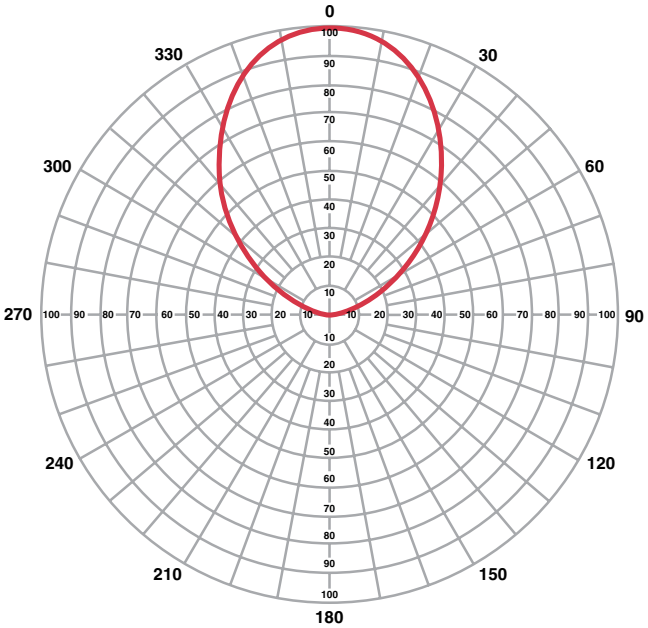
Band	Polarization	VSWR	Input	Power Rating
UHF 470-806 MHz	Variable Elliptical Circular	1.1:1	Dual 7-16 DIN	1 kW per panel

Mechanical Specifications—Individual Panel

Model	Height ft (m)	Weight lb (kg)	Wind Area[1] ft² (m²)	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

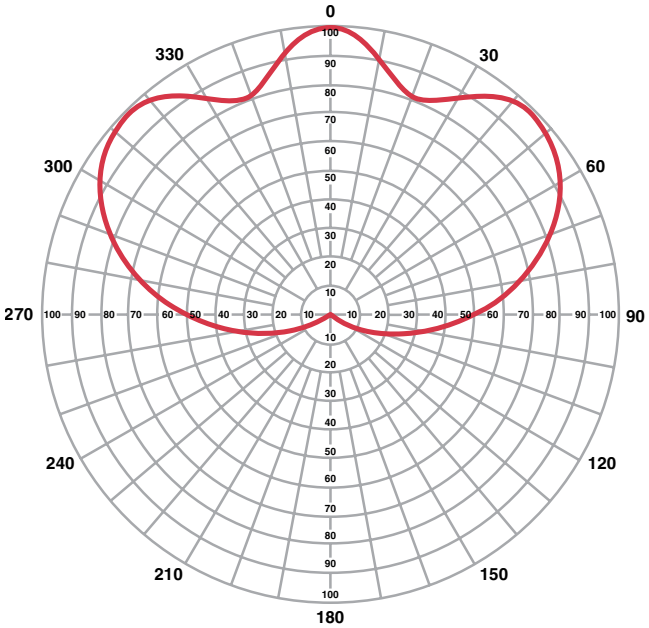
[1] Wind area C_AA_C per TIA/EIA-222-G

TUM-LP-C1



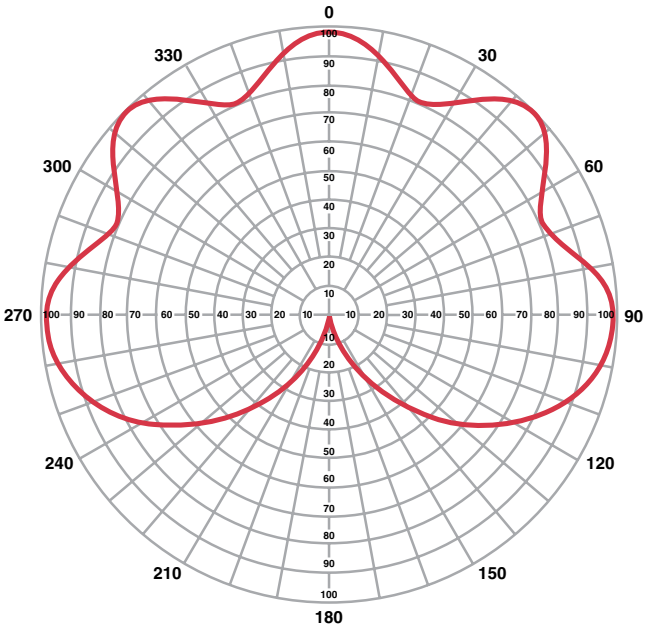
AZIMUTH GAIN: 5.2

TUM-LP-C2



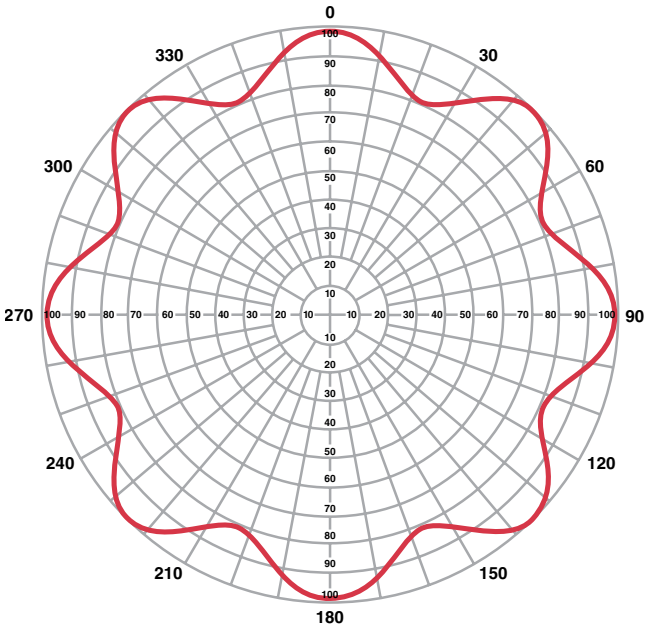
AZIMUTH GAIN: 2.6

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_AA_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

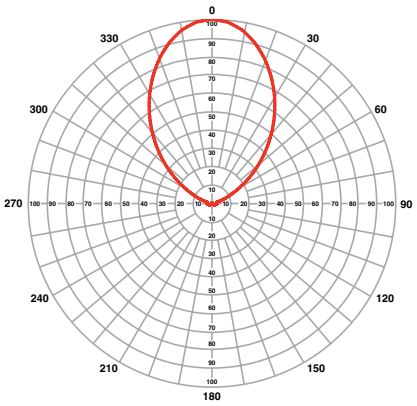
Band	Polarization	VSWR	Input	Power Rating
UHF 470-806 MHz	Horizontal	1.1:1	7-16 DIN	1 kW per panel

Mechanical Specifications—Individual Panel

Model	Height ft (m)	Weight lb (kg)	Wind Area[1] ft² (m²)	Dimensions LxWxD (in)
TUA-M	3.2 (1.0)	25 (11.4)	6.8 (0.63)	38.25 x 18.25 x 8.10

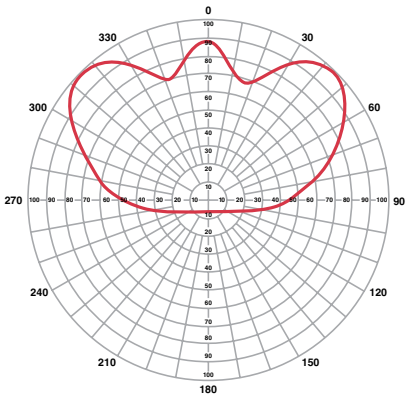
[1] Wind area C_AA_C per TIA/EIA-222-G

TUA-M-C1



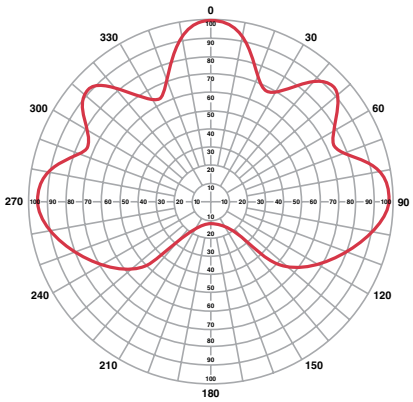
AZIMUTH GAIN: 6.0

TUA-M-C2



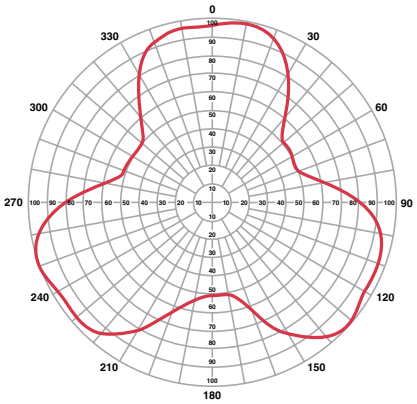
AZIMUTH GAIN: 2.9

TUA-M-C3



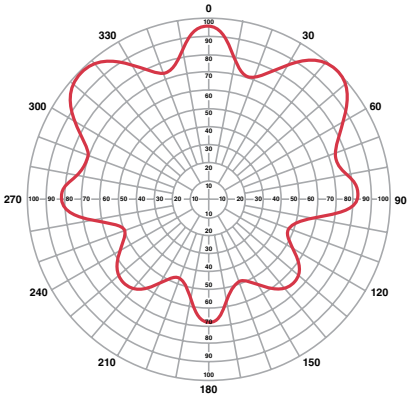
AZIMUTH GAIN: 1.9

TUA-M-T3



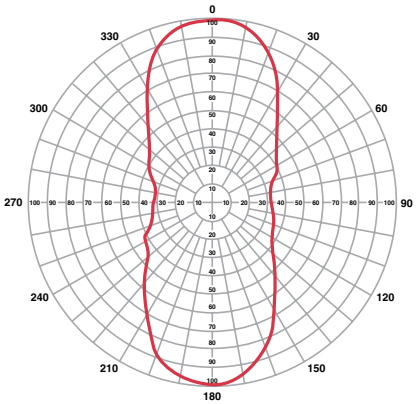
AZIMUTH GAIN: 1.6

TUA-M-S4



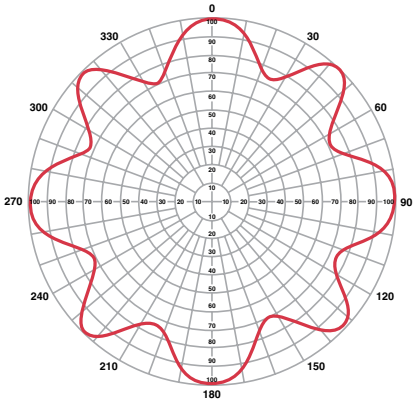
AZIMUTH GAIN: 1.9

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_AA_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.

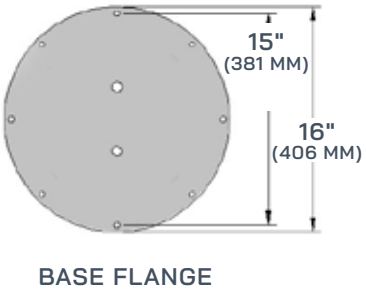
Mechanical Specifications

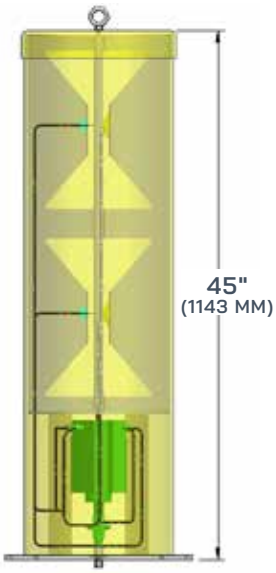
Model	Height ft (m)	Weight lb (kg)	Windload[1] ft² (m²)
TFU-UT	3.74 (1.14)	55 (25)	3.2

Electrical Specifications

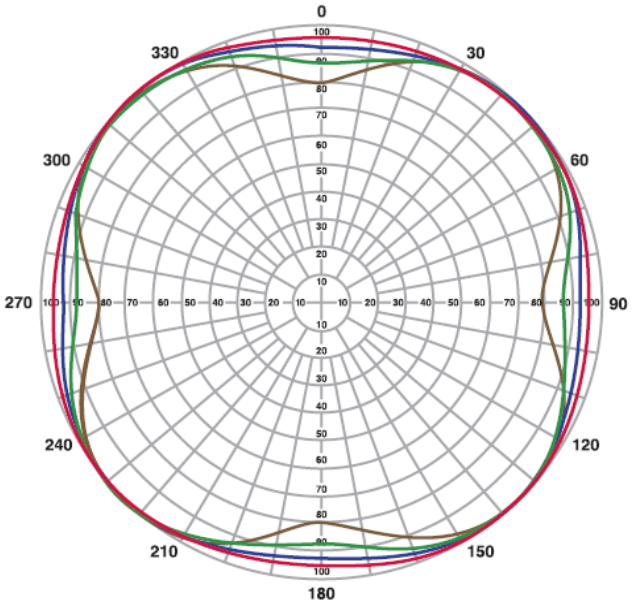
	VSWR	Input	Power Rating per Input	Gain
TFU-UT-1	1.2:1	7-16 DIN	1 kW	5 dBd

All specifications are subject to change.

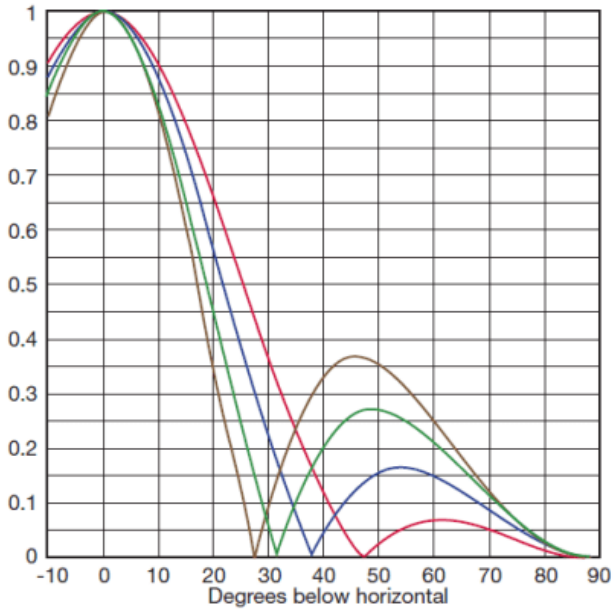




POWERLITE™ TFU-UT BOWTIE SLOT TURNSTILE ANTENNA



AZIMUTH PATTERN: 500, 600, 700, 800 MHz



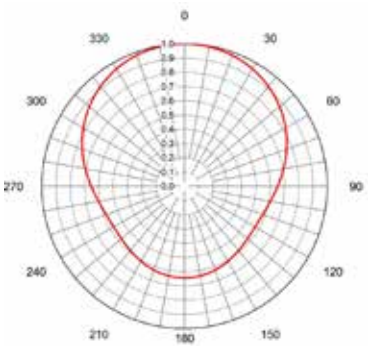
ELIVATION PATTERN: 500, 600, 700, 800 MHz

TLS-V SERIES

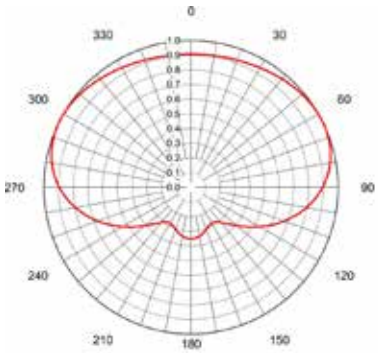
The TLS-V Series antenna is a low-cost, low-windload alternative to side-mount on an existing structure. It is designed for the VHF broadcaster requiring quick compliance with FCC deadlines, gap filling, SFN, translator/repeater markets and standby facilities. The TLS-V can be used for either analog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



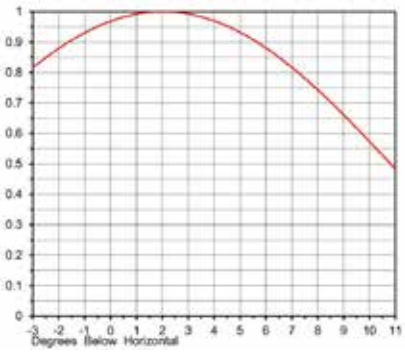
TLS-V-B
AZ GAIN: 1.6



TLS-V-M
AZ GAIN: 1.6

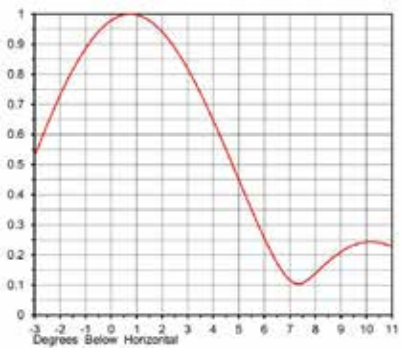
Antenna	Average Power Input Rating	RMS Gain
TLS-V2	3.5 kW	2.0 (2.94 dB)
TLS-V4	7.5 kW	4.2 (6.18 dB)
TLS-V8	Up to 15 kW	8.3 (9.21 db)
TLS-V12	Up to 22.5 kW	12.5 (10.98 db)

TLS-V4



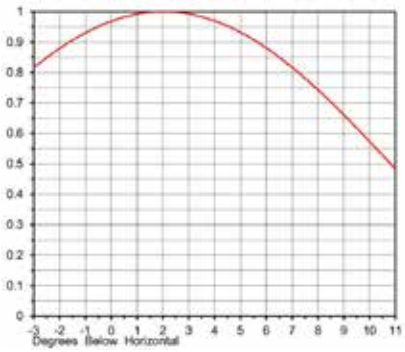
RMS GAIN: 4.2 (6.18 dB)

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.

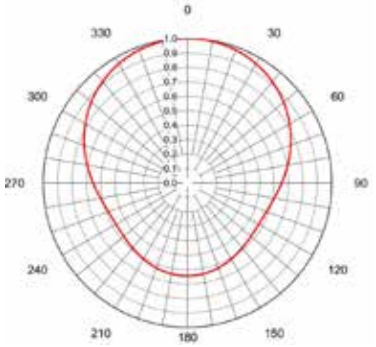
Dielectric Advantages

- 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

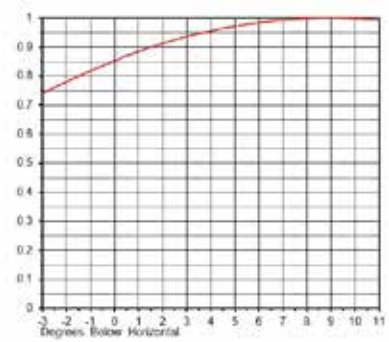
- Polarization: Horizontal or Elliptical
- Beam Tilt: 2 Degrees Standard
- Input Size: 1 $^{5}/_{8}$" EIA (per section)
- VSWR (Max 174-213 MHz): < 1.25:1
- Input Power: 7.5 kW avg. per section (3.5 kW avg. for TLS-V2)

TLS-V-B



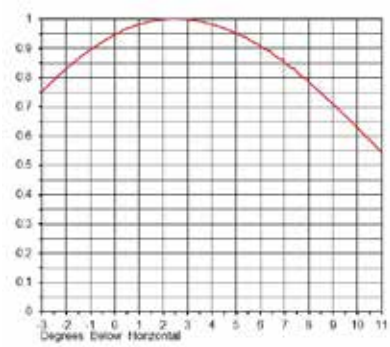
AZIMUTH GAIN: 1.6 (WITH VPOL)

TLS-V2-BB



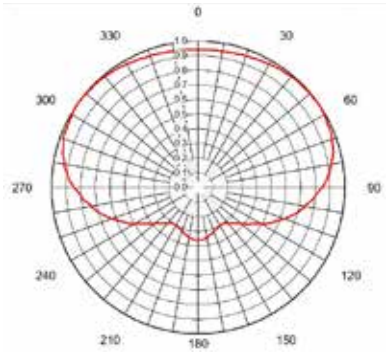
RMS GAIN: 2.0 (2.94 dB)

TLS-V4-BB



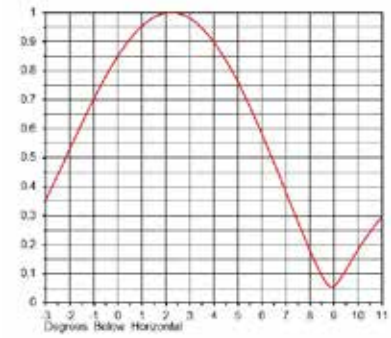
RMS GAIN: 4.1 (6.10 dB)

TLS-V-M-BB



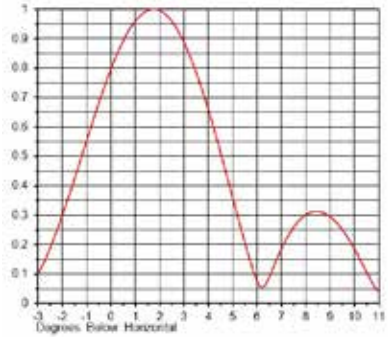
AZIMUTH GAIN: 1.6

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.

POWERLITE™ DCR-T FM ANTENNA

*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 compatable
- 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 8-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

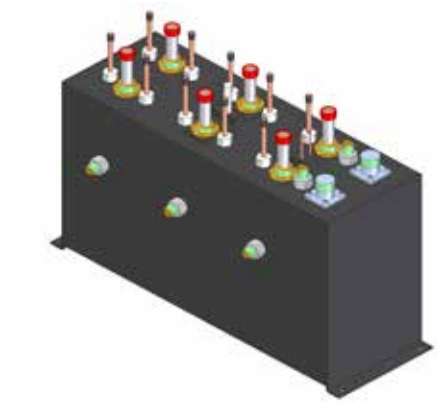
Height ft (m)	Diameter in (m)	Weight lb (kg)	Windload[1] ft² (m³)
20 (0.503)	20.7 (0.526)	17.5 (8.0)	2.4 (2.2)

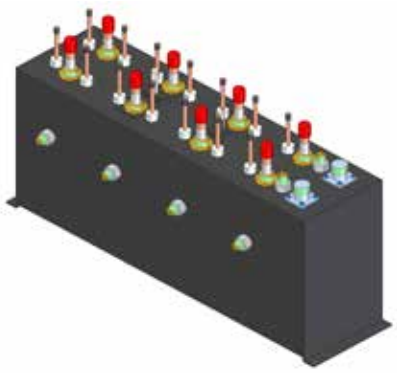
1 Wind area CAAC per TIA/EIA-222-F (CA = 1.4)

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 ft² (m³)	With Radome Weight lb (kg)	With Radome Wind Area ft² (m³)	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
DCRT5	5	2.7	4.31	1.5	1.76	114.0 (51.8)	106.5 (48.4)	17.8 (1.65)	15.4 (1.43)	5
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
DCRT7	7	3.8	5.8	2.1	3.22	168.3 (76.5)	168.3 (76.5)	24.6 (2.29)	22.0 (2.04)	7
DCRT8	8	4.3	6.34	2.3	3.62	190.4 (82.7)	182.0 (82.7)	28.7 (2.67)	25.3 (2.35)	8

Notes:

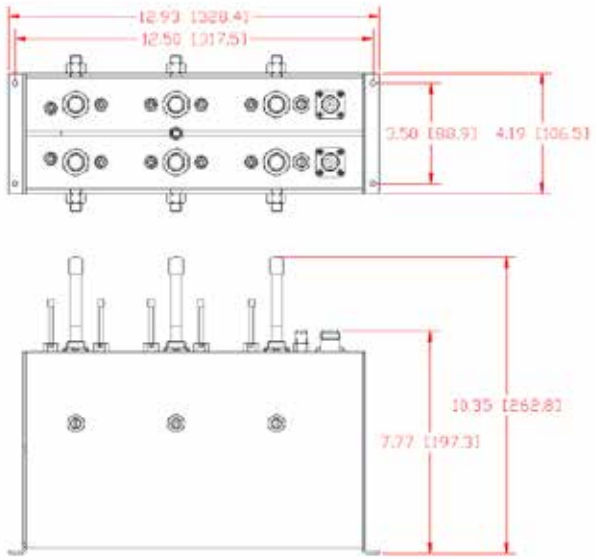
- Wind area C_AA_C is calculated per the TIA/EIA-222-F standard
- RMS gain are for midband and include feed system losses. Actual gain will vary depending on feed systems, frequency, null fill and beam tilt.
- C_AA_C include bays, power dividers, inter-bay feed lines and standard brackets for mounting.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

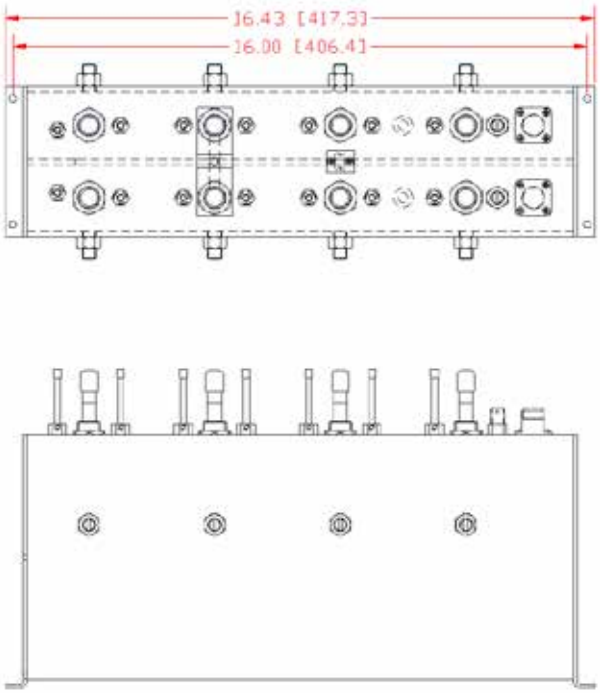




DIELECTRIC ADVANTAGES

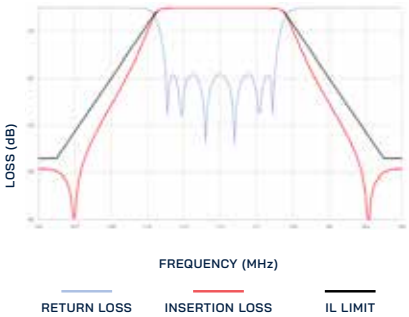
- Tunable 470–806 MHz
- Power levels up to 250 Watts
- ATSC 3.0-compliant
- Temperature-stable versions available
- 6-pole single or dual cross-coupled and 8-pole dual cross-coupled versions
- Type N input & output connectors
- Optional voltage probe monitoring of input and output available



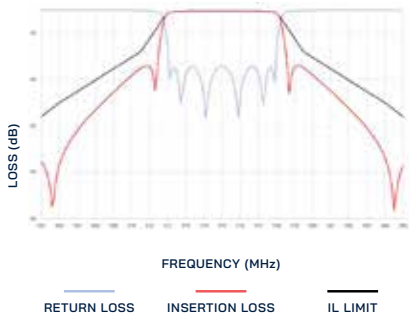


POWERLITE™ 100–250 W TUNABLE BANDPASS FILTERS

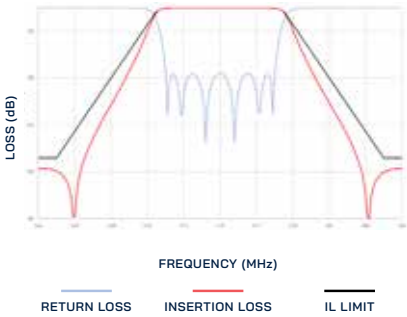
6-POLE ATSC FULL MASK



6-POLE ATSC DUAL-CROSS

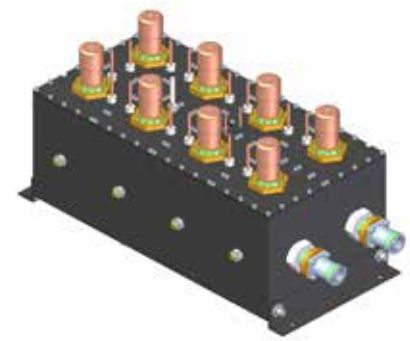


8-POLE ATSC SHARP-TUNED MASK



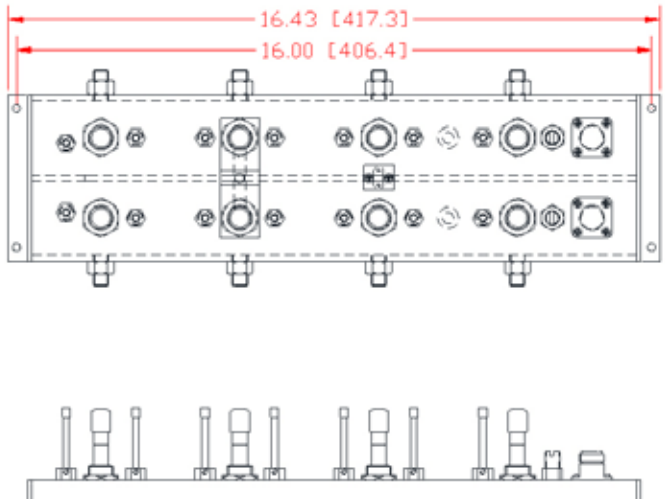
Number of Poles		**6**			**8**	
Model - Single Cross-Coupling		UT6E2F-100	UT6E2F-150	UT6E2F-250	—	—
Model - Dual Cross-Coupling		—	—	UT6D2F-250	UT8D2F-25	UT8D2F-130
Port Size		Type N Female				
Power Rating		100 Watts	150 Watts	250 Watts	130 Watts	130 Watts
Tunable Frequency Range		470–806 MHz				
Channel Range		14–69 US, E21–E62 European				
Rejection		>1.5 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		0–40^0 C				

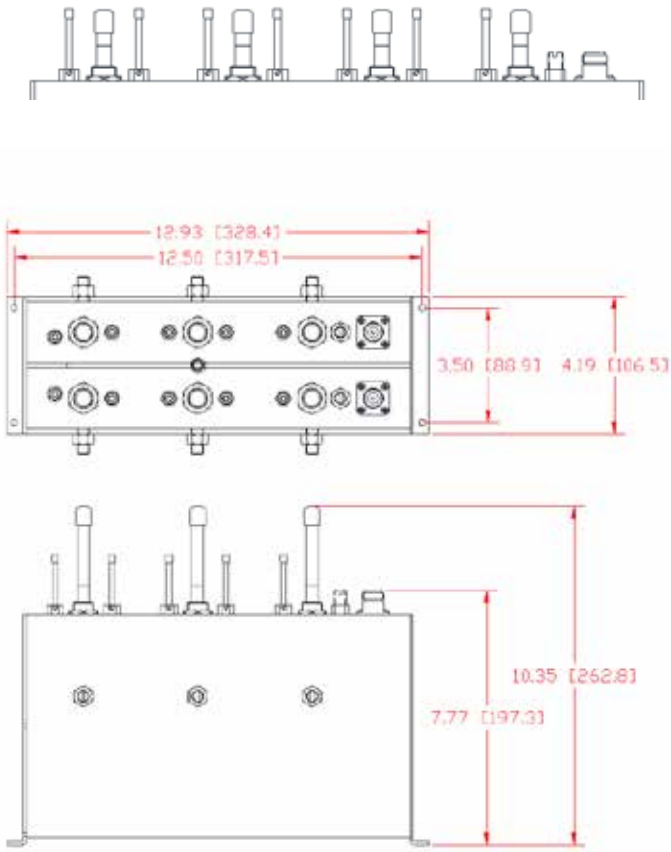
- Insertion loss shown is typical; maximum is 0.1 dB higher than typical.
- Specifications based on ATSC full mask for the 6-pole, ATSC sharp-tuned mask for the 8-pole.
- May be tuned to other channel bandwidth and mask requirements; specifications provided upon request.
- Specifications for altitudes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



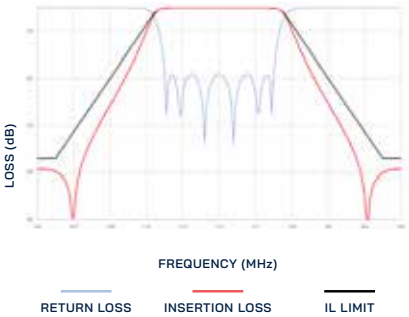
DIELECTRIC ADVANTAGES

- 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, any combination of:
  - › DIN 7/16
  - › 7/8" EIA
  - › 1 5/8" EIA
- Optional voltage probe monitoring of input and output available

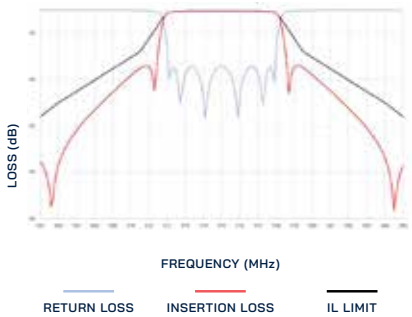




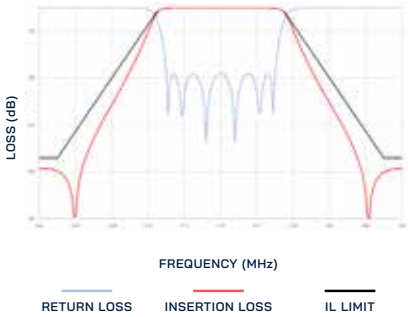
6-POLE ATSC FULL MASK



6-POLE ATSC DUAL-CROSS

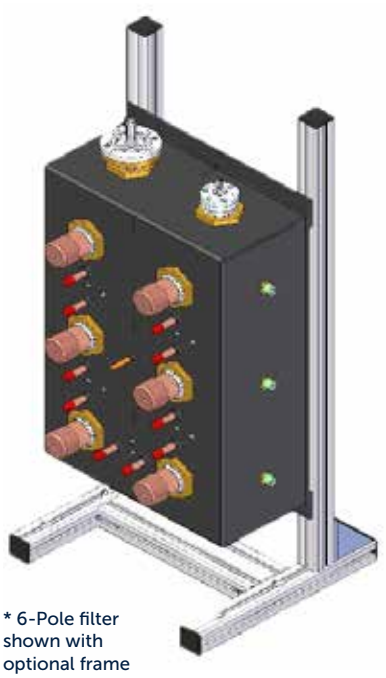


8-POLE ATSC SHARP-TUNED MASK



Number of Poles		6	8
Power Rating		600 Watts	500 Watts
Model - Single Cross-Coupling		UT6E4F-600	—
Model - Dual Cross-Coupling		UT6D4F-600	UT8D4F-500
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 >60 dB, Fc +/- 9 MHz	>15 dB, Fc +/- 3.25 MHz >60 dB, Fc +/- 9 MHz
Typical Insertion Loss @ Fc		0.60 dB @ 473; 0.70 dB @ 605 MHz	0.70 dB @ 473; 0.80 dB @ 605 MHz
Insertion Loss ATSC 1.0	@ Fc +/- 2.69 MHz	0.75 dB @ 473; 0.85 dB @ 605 MHz	1.10 dB @ 473; 1.30 dB @ 605 MHz
	Integrated	0.65 dB @ 473; 0.75 dB @ 605 MHz	0.80 dB @ 473; 0.90 dB @ 605 MHz
Insertion Loss ATSC 3.0	@ Fc +/- 2.92 MHz	0.90 dB @ 473; 1.00 dB @ 605 MHz	1.60 dB @ 473; 1.80 dB @ 605 MHz
	Integrated	0.70 dB @ 473; 0.80 dB @ 605 MHz	0.85 dB @ 473; 1.00 dB @ 605 MHz
Return Loss		>23 dB	>23 dB
Group Delay; ATSC 1.0		<150 nS	<500 nS
Group Delay; ATSC 3.0		<200 nS	<730 nS
Size		15.25" x 8.5" x 10"	19.25" x 8.5" x 10"
Weight		13 lbs	15 lbs
Ambient Temperature Range		0–40^0 C	

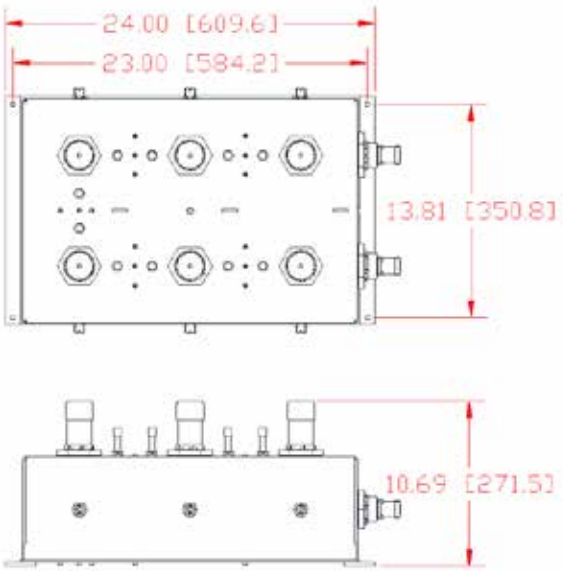
- Insertion loss shown is typical; maximum is 0.05 dB higher than typical.
- Specifications based on ATSC full mask for the 6-pole, ATSC sharp-tuned mask for the 8-pole.
- May be tuned to other channel bandwidth and mask requirements; specifications provided upon request.
- Specifications for altitudes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

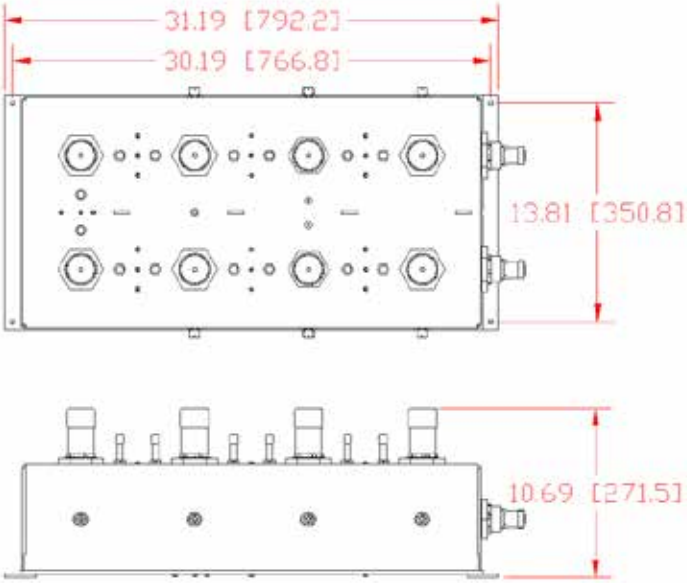


* 6-Pole filter shown with optional frame

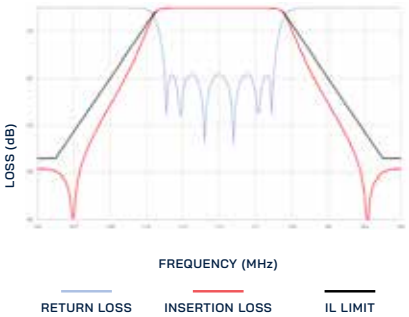
DIELECTRIC ADVANTAGES

- 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

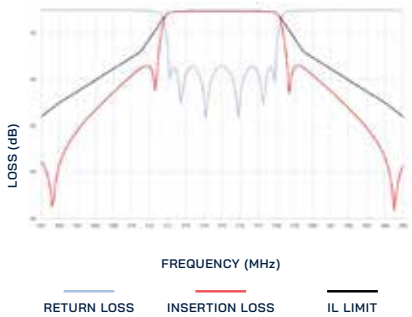




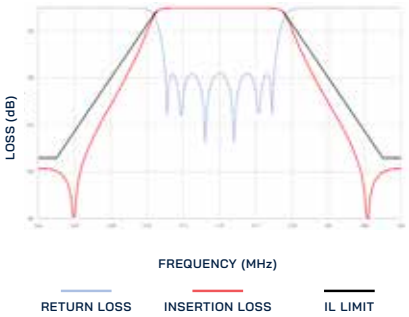
6-POLE ATSC FULL MASK



6-POLE ATSC DUAL-CROSS

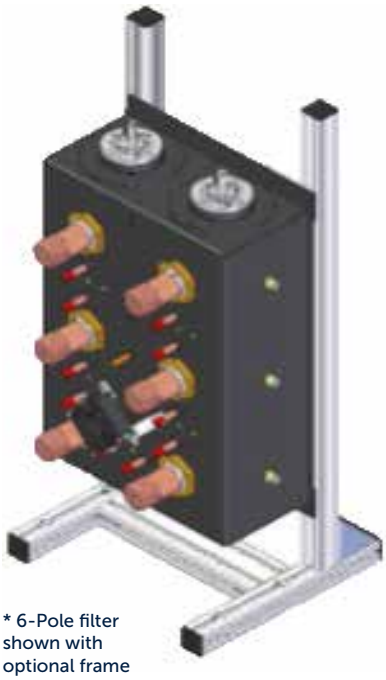


8-POLE ATSC SHARP-TUNED MASK



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	

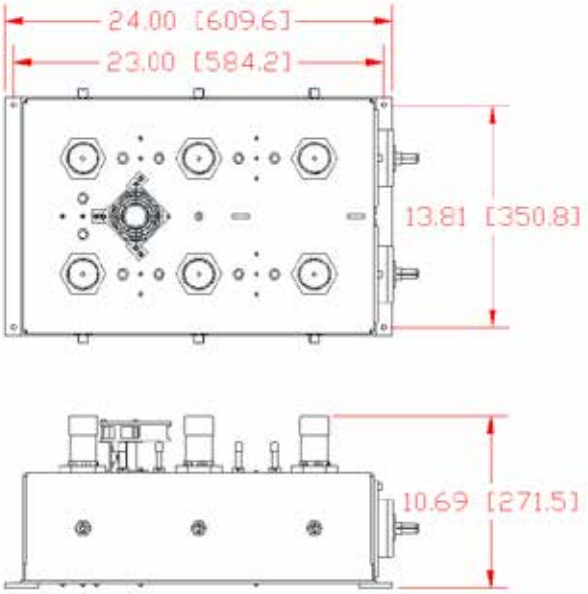
- Insertion loss shown is typical; maximum is 0.05 dB higher than typical.
- Specifications based on ATSC full mask for the 6-pole, ATSC sharp-tuned mask for the 8-pole.
- May be tuned to other channel bandwidth and mask requirements; specifications provided upon request.
- Specifications for altitudes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

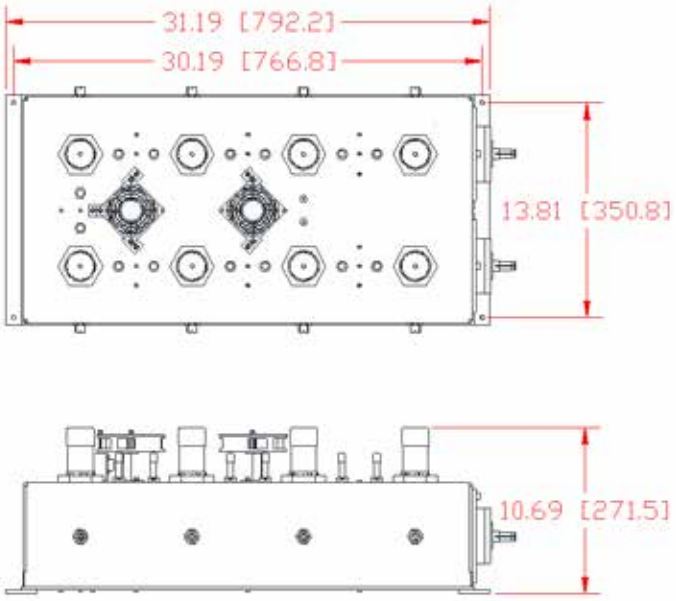


* 6-Pole filter shown with optional frame

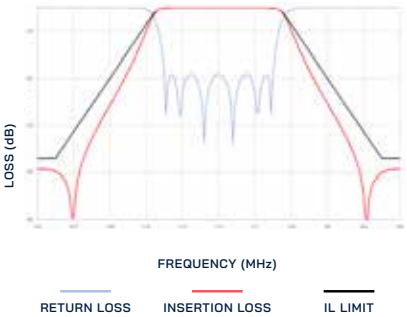
DIELECTRIC ADVANTAGES

- 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

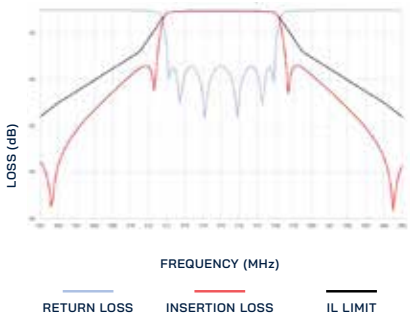




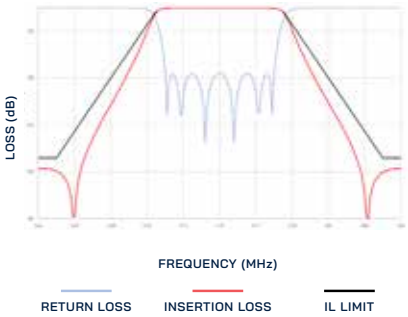
6-POLE ATSC FULL MASK



6-POLE ATSC DUAL-CROSS



8-POLE ATSC SHARP-TUNED MASK

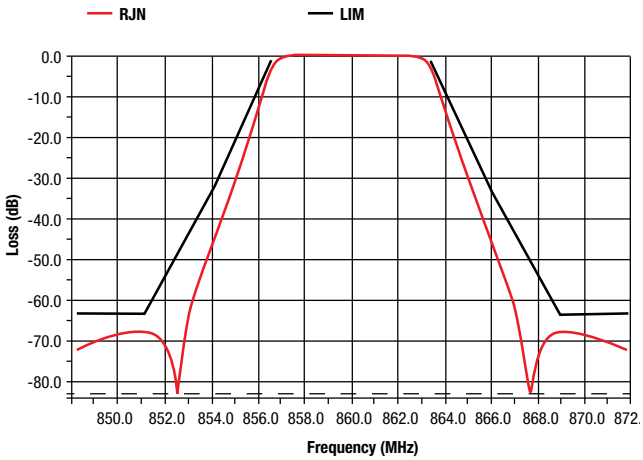


Number of Poles		**6**			**8**	
Model - Single Cross-Coupling		UT6E7F-3K	UT6E7F-4K	UT6E7F-5K	—	—
Model - Dual Cross-Coupling		UT6D7F-3K	—	—	UT8D7F-3K	UT8D7F-4K
Port Size		1 5/8" or 3 1/8	1 5/8" EIA	3 1/8 EIA	1 5/8" or 3 1/8	1 5/8" or 3 1/8
Power Rating		3 kW	4 kW	5 kW	3 kW	4 kW
Tunable Frequency Range		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				

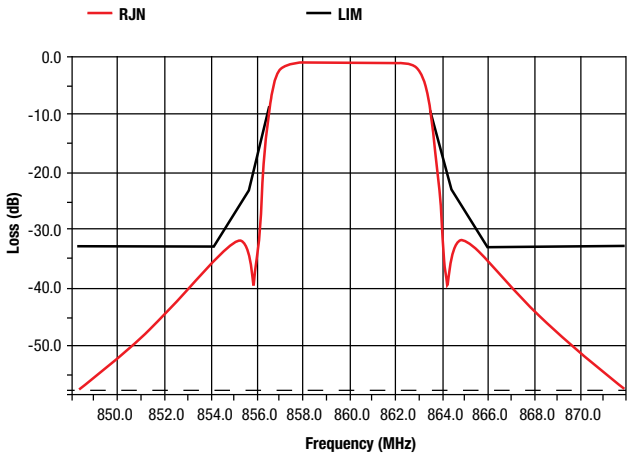
- Insertion loss shown is typical; maximum is 0.05 dB higher than typical.
- Specifications based on ATSC full mask for the 6-pole, ATSC sharp-tuned mask for the 8-pole.
- May be tuned to other channel bandwidth and mask requirements; specifications provided upon request.
- Specifications for altitudes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

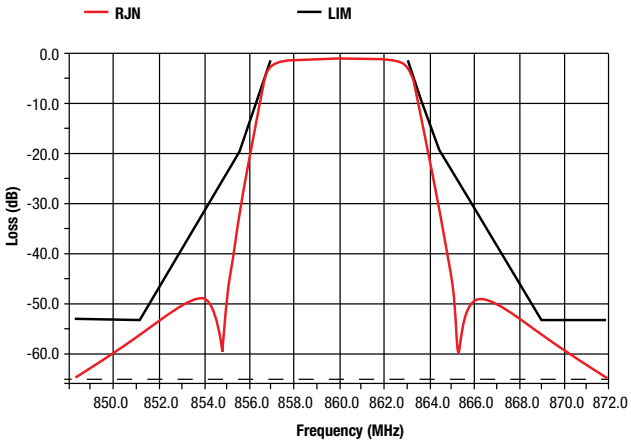
ATSC FULL MASK



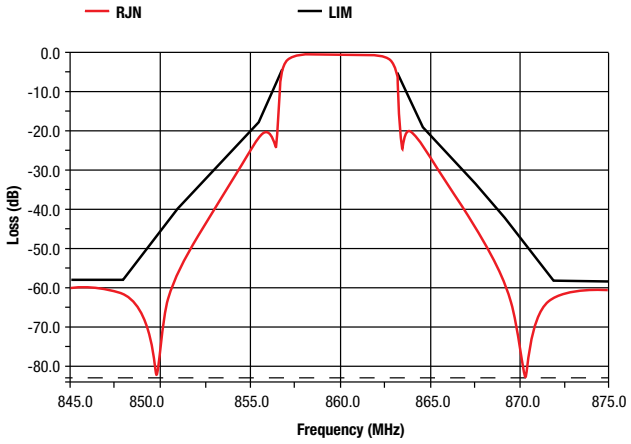
ATSC STRINGENT MASK



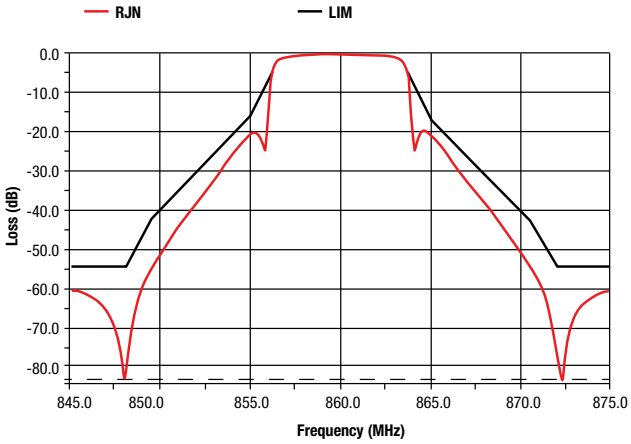
ISDB-T NON-CRITICAL MASK



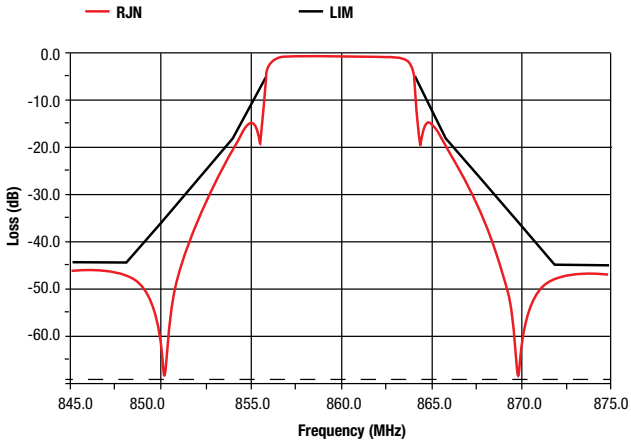
6 MHz DVB-T NON-CRITICAL MASK



7 MHz DVB-T NON-CRITICAL MASK

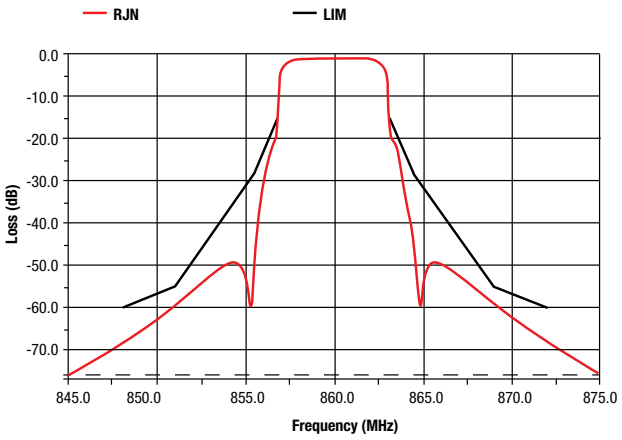


8 MHz DVB-T NON-CRITICAL MASK

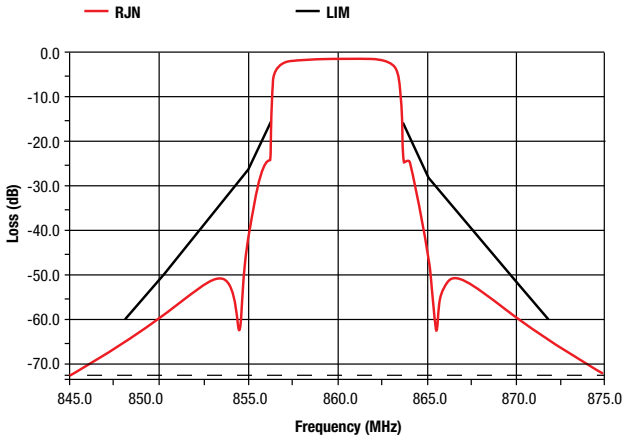


POWERLITE™ UHF 8-POLE FILTER STANDARD MASKS

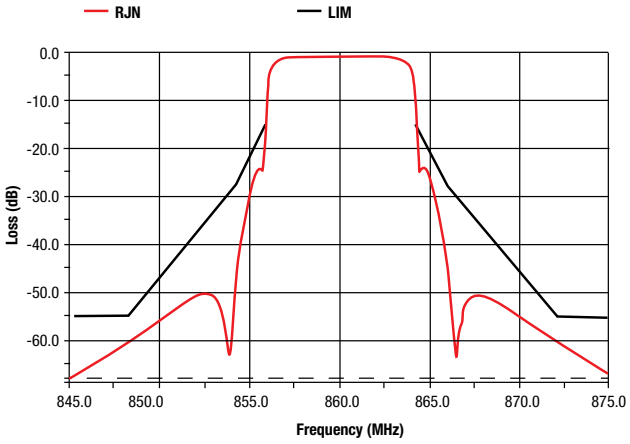
6 MHz DVB-T CRITICAL MASK



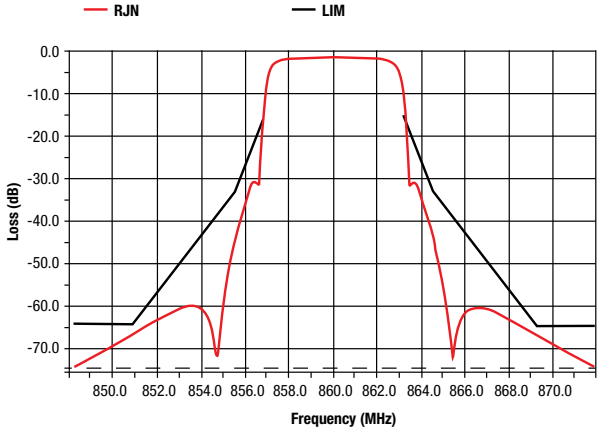
7 MHz DVB-T CRITICAL MASK



8 MHz DVB-T CRITICAL MASK



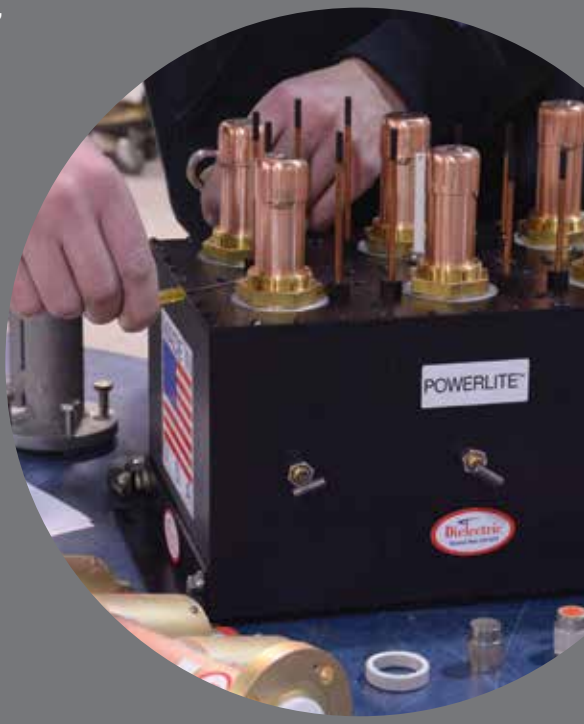
ISDB-T CRITICAL MASK



Dielectric®

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.

Specifications subject to change without notice.

Dielectric®

NORTH AMERICA

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

SOUTH AMERICA

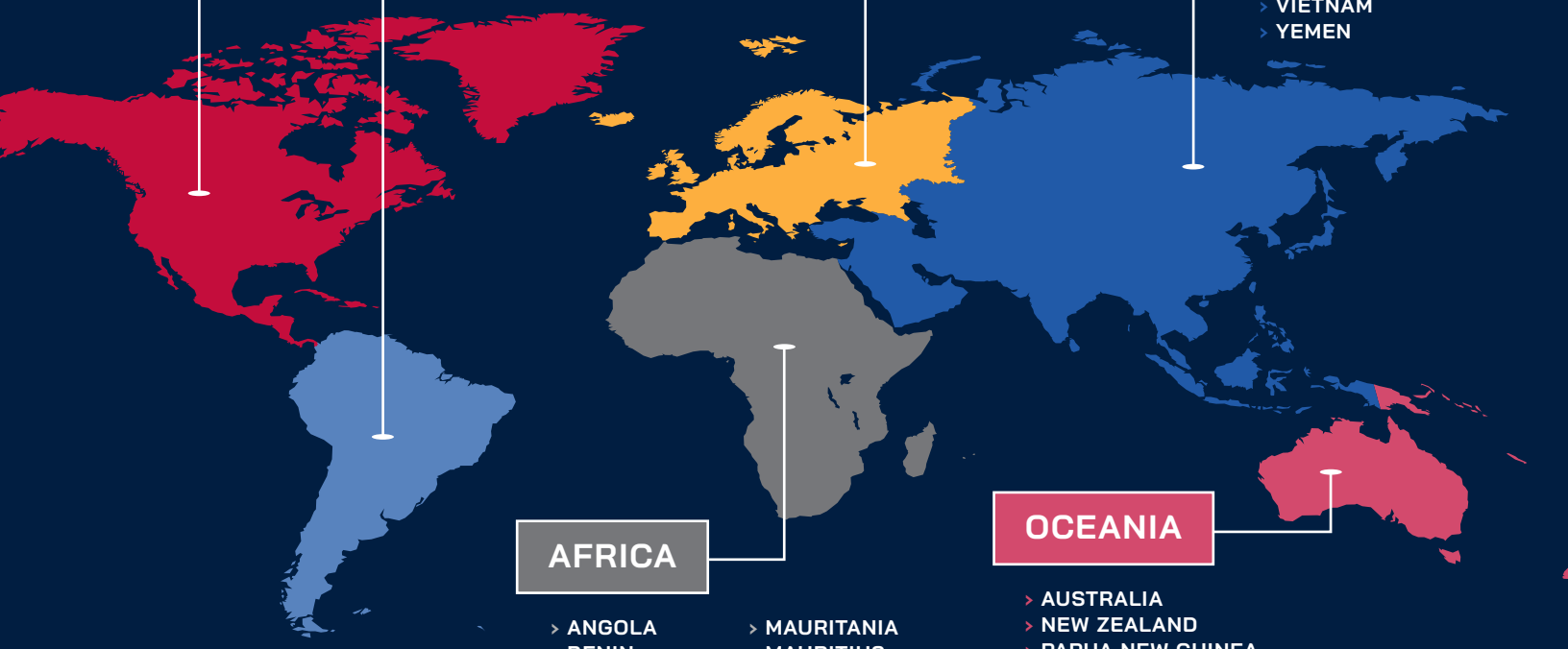
- ARGENTINA
- BRAZIL
- CHILE
- COLOMBIA
- ECUADOR
- PERU
- VENEZUELA

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

Dielectric.com

APRIL 3, 2023