

## Maximizer® & Optimizer® Fixed Tilt Antennas

**Polarization:** Vertical

**Electrical Downtilt:** Fixed or Variable

**Horizontal beamwidth:** 65°, 80° or 90°

### Applications

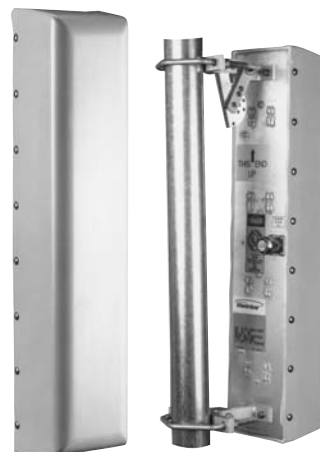
This well-known ranges of fixed or variable tilt antennas are vertically polarized for space diversity with an option of 65°, 80° or 90 degree horizontal beamwidths for use in the following systems:

Cellular (824-849, 869-894MHz)

Trunking / SMR (806-824, 851-869MHz)

Trunking (896-901, 935-940MHz)

Due to its monolithic mechanical design these highly reliable antennas are IM3 free with extremely stable ageing. Maximizer® or Optimizer® antennas are available in a variety of gain options varying from 11.1 to 18.1 dBi with with fixed or variable electrical tilt options. These antennas are covered by a UV stabilized high impact ABS radome and have one 7-16 connectors mounted at the back. They are all designed for use with either our APM18/19 fixed mount or our APM20/21 downtilt mount.



APL866516 Series

### Features & Benefits

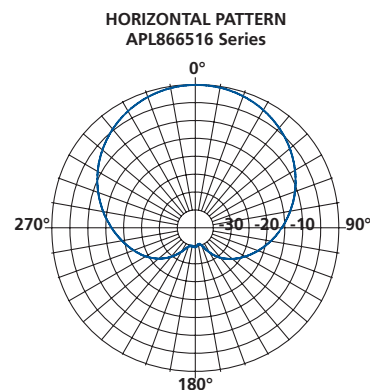
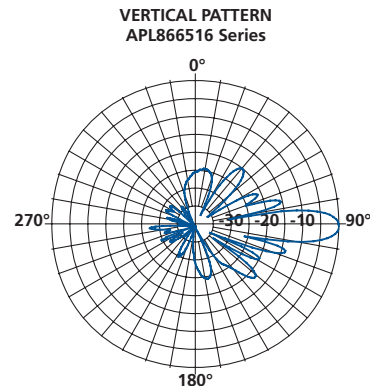
- High gain
- Stable horizontal and vertical beamwidths
- Optimized null fill
- 45 dB Front-to-Back ratio
- Fast horizontal pattern roll-off
- Efficient co-channel interference reduction
- High reliability no solder joints

### Performance Optimization Techniques

The RFS Maximizer® log periodic dipole array boasts the highest front-to-back ever achieved: 45dB.

The Maximizer's upper lobe suppression reduces co-channel interference in TDMA systems and its heavy null fill delivers exceptional close-in coverage. For CDMA systems the Maximizer helps to maximize capacity by minimizing the soft hand-off zone as well as a pilot pollution.

The RFS Optimizer® allows a carrier to optimize system performance without service interruption, protecting the revenue stream. The continuous adjustable electrical down tilt feature and high front to back ratio reduces co-channel interference. The Optimizer offers the easiest and most cost effective solution to increase wireless capacity.



## Maximizer® & Optimizer® Fixed Tilt Antennas

### APL866513-42T0

**Horizontal Beamwidth, deg** 65

**Gain, dBi** 15.1

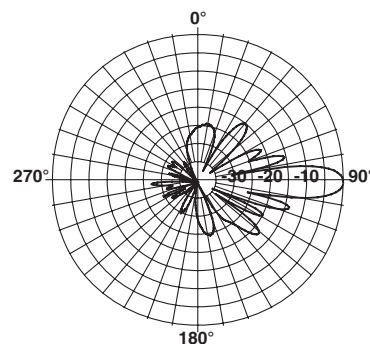
**Electrical Downtilt, deg** 0

#### ELECTRICAL SPECIFICATIONS

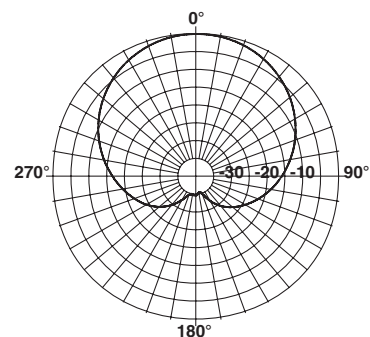
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	65
Vertical Beamwidth, deg	15
Gain, dBi (dBd)	15.1 (13)
1st Upper Sidelobe Suppression, dB	> 20
Upper Sidelobe Suppression, dB	> 20
Front-To-Back Ratio, dB	45
VSWR	< 1.35:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1219 x 234 x 203 (48 x 9.2 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.376 (4.05)
Rated Wind Speed, km/h (mph)	180 (112)
Maximum Thrust @ Rated Wind, N (lbf)	903 (203)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	7 (15.7)
Packing Dimensions, HxWxD, mm (in)	1594 x 343 x 349 (62.75 x 13.5 x 13.75)



Vertical Pattern



Horizontal Pattern

### APL866513-42T6

**Horizontal Beamwidth, deg** 65

**Gain, dBi** 15.1

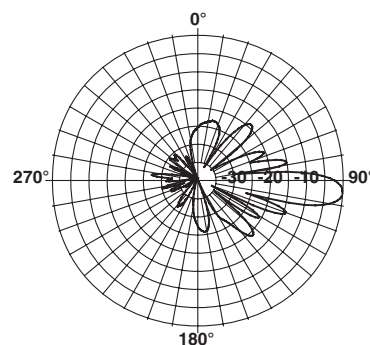
**Electrical Downtilt, deg** 6

#### ELECTRICAL SPECIFICATIONS

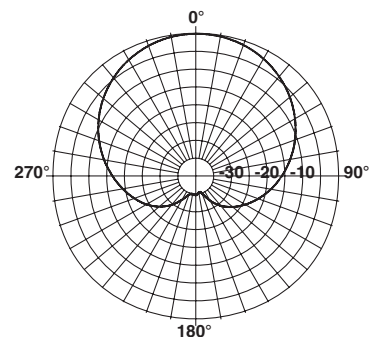
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	65
Vertical Beamwidth, deg	15
Gain, dBi (dBd)	15.1 (13)
1st Upper Sidelobe Suppression, dB	> 20
Upper Sidelobe Suppression, dB	> 20
Front-To-Back Ratio, dB	45
VSWR	< 1.35:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1219 x 234 x 203 (48 x 9.2 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.376 (4.05)
Rated Wind Speed, km/h (mph)	180 (112)
Maximum Thrust @ Rated Wind, N (lbf)	903 (203)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	7 (15.7)
Packing Dimensions, HxWxD, mm (in)	1594 x 343 x 349 (62.75 x 13.5 x 13.75)



Vertical Pattern



Horizontal Pattern

## Maximizer® & Optimizer® Fixed Tilt Antennas

### APL866516-42T0

**Horizontal Beamwidth, deg** 65

**Gain, dBi** 18.1

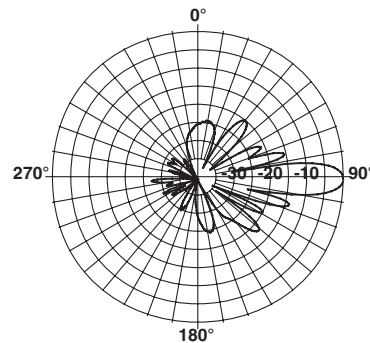
**Electrical Downtilt, deg** 0

#### ELECTRICAL SPECIFICATIONS

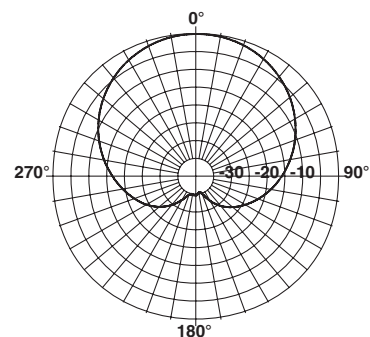
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	65
Vertical Beamwidth, deg	8
Gain, dBi (dBd)	18.1 (16)
1st Upper Sidelobe Suppression, dB	> 20
Upper Sidelobe Suppression, dB	> 20
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2362 x 234 x 203 (93 x 9.2 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.734 (7.9)
Rated Wind Speed, km/h (mph)	180 (112)
Maximum Thrust @ Rated Wind, N (lbf)	1761 (396)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	14 (31.4)
Packing Dimensions, HxWxD, mm (in)	2629 x 356 x 349 (103.5 x 14 x 13.75)



Vertical Pattern



Horizontal Pattern

### APL866516-42T4

**Horizontal Beamwidth, deg** 65

**Gain, dBi** 18.1

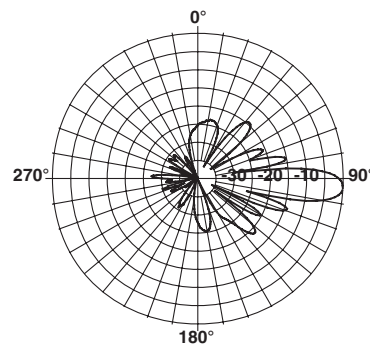
**Electrical Downtilt, deg** 4

#### ELECTRICAL SPECIFICATIONS

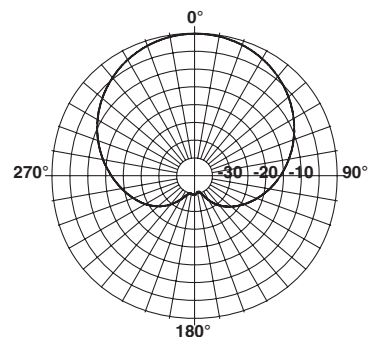
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	65
Vertical Beamwidth, deg	8
Gain, dBi (dBd)	18.1 (16)
1st Upper Sidelobe Suppression, dB	> 20
Upper Sidelobe Suppression, dB	> 20
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2362 x 234 x 203 (93 x 9.2 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.734 (7.9)
Rated Wind Speed, km/h (mph)	180 (112)
Maximum Thrust @ Rated Wind, N (lbf)	1761 (396)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	14 (31.4)
Packing Dimensions, HxWxD, mm (in)	2629 x 356 x 349 (103.5 x 14 x 13.75)



Vertical Pattern



Horizontal Pattern

## Maximizer® & Optimizer® Fixed Tilt Antennas

### APL868010-42T0

**Horizontal Beamwidth, deg** 80

**Gain, dBi** 12.1

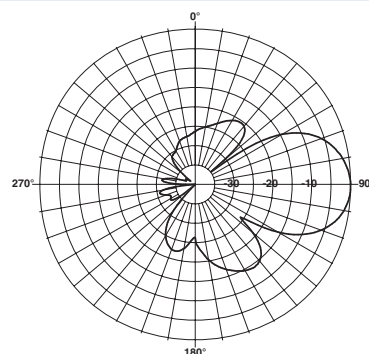
**Electrical Downtilt, deg** 0

#### ELECTRICAL SPECIFICATIONS

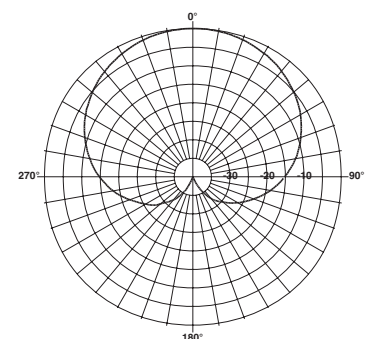
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	80
Vertical Beamwidth, deg	30
Gain, dBi (dBd)	12.1 (10)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	610 x 152 x 203 (24 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.093 (1)
Rated Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	280 (63)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	1.4 (3.27)
Packing Dimensions, HxWxD, mm (in)	813 x 330 x 254 (32 x 13 x 10)



Vertical Pattern



Horizontal Pattern

### APL868013-42T0

**Horizontal Beamwidth, deg** 80

**Gain, dBi** 14.1

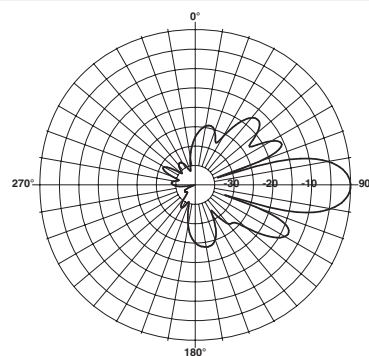
**Electrical Downtilt, deg** 0

#### ELECTRICAL SPECIFICATIONS

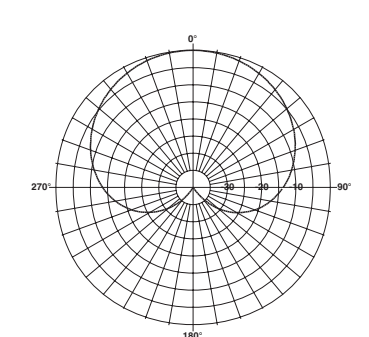
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	80
Vertical Beamwidth, deg	15
Gain, dBi (dBd)	14.1 (12)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1219 x 152 x 203 (48 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.307 (3.3)
Rated Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	916 (206)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	2.8 (6.32)
Packing Dimensions, HxWxD, mm (in)	1270 x 305 x 203 (50 x 12 x 8)



Vertical Pattern



Horizontal Pattern

## Maximizer® & Optimizer® Fixed Tilt Antennas

### APL868013-42T4

**Horizontal Beamwidth, deg** 80

**Gain, dBi** 14.1

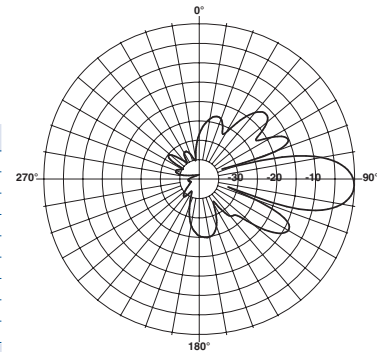
**Electrical Downtilt, deg** 4

#### ELECTRICAL SPECIFICATIONS

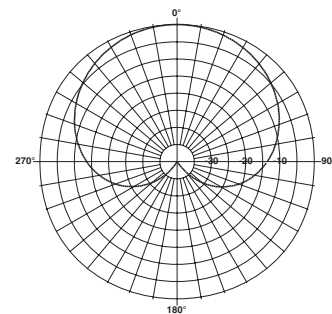
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	80
Vertical Beamwidth, deg	15
Gain, dBi (dBd)	14.1 (12)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1219 x 152 x 203 (48 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.307 (3.3)
Rated Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	916 (206)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	2.8 (6.32)
Packing Dimensions, HxWxD, mm (in)	1270 x 305 x 203 (50 x 12 x 8)



Vertical Pattern



Horizontal Pattern

### APL869009-42T0

**Horizontal Beamwidth, deg** 90

**Gain, dBi** 11.1

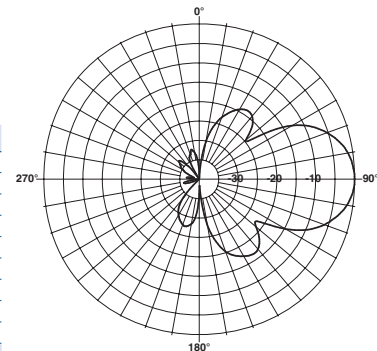
**Electrical Downtilt, deg** 0

#### ELECTRICAL SPECIFICATIONS

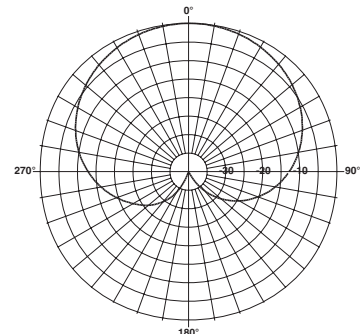
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	90
Vertical Beamwidth, deg	30
Gain, dBi (dBd)	11.1 (9)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	610 x 152 x 203 (24 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.093 (1)
Rated Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	280 (63)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	1.4 (3.27)
Packing Dimensions, HxWxD, mm (in)	660 x 305 x 203 (26 x 12 x 8)



Vertical Pattern



Horizontal Pattern

## Maximizer® & Optimizer® Fixed Tilt Antennas

### APL869012-42T0

**Horizontal Beamwidth, deg** 90

**Gain, dBi** 14.1

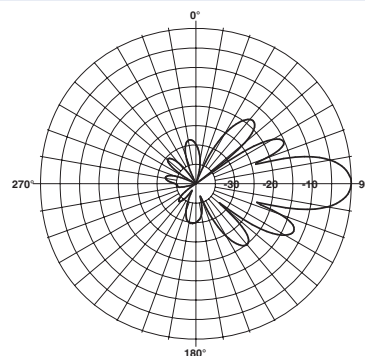
**Electrical Downtilt, deg** 0

#### ELECTRICAL SPECIFICATIONS

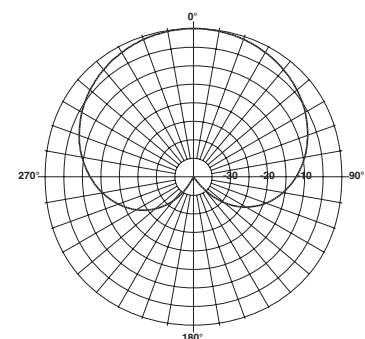
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	90
Vertical Beamwidth, deg	15
Gain, dBi (dBd)	14.1 (12)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1219 x 152 x 203 (48 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.307 (3.3)
Rated Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	916 (206)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	3 (6.75)
Packing Dimensions, HxWxD, mm (in)	1270 x 305 x 203 (50 x 12 x 8)



Vertical Pattern



Horizontal Pattern

### APL869012-42T3

**Horizontal Beamwidth, deg** 90

**Gain, dBi** 14.1

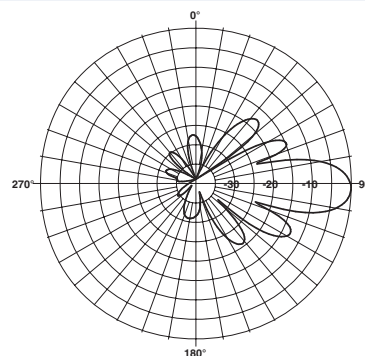
**Electrical Downtilt, deg** 3

#### ELECTRICAL SPECIFICATIONS

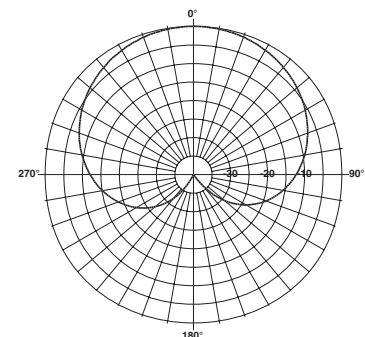
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	90
Vertical Beamwidth, deg	15
Gain, dBi (dBd)	14.1 (12)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1219 x 152 x 203 (48 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.307 (3.3)
Rated Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	916 (206)
Reflector Material	5052-H32 Aluminum
Radiating Element Material	Aluminum Alloy
Radome Material	UV Stabilized High Impact ABS
Weight w/o Mtg Hardware, kg (lb)	3 (6.75)
Packing Dimensions, HxWxD, mm (in)	1270 x 305 x 203 (50 x 12 x 8)



Vertical Pattern



Horizontal Pattern

## Maximizer® & Optimizer® Fixed Tilt Antennas

### APL869014-42T0

**Horizontal Beamwidth, deg** 90

**Gain, dBi** 16.1

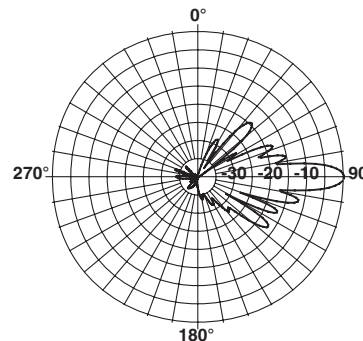
**Electrical Downtilt, deg** 0

#### ELECTRICAL SPECIFICATIONS

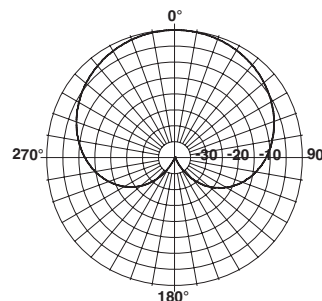
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	90
Vertical Beamwidth, deg	7.8
Gain, dBi (dBd)	16.1 (14)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2337 x 152 x 203 (92 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.587 (6.32)
Rated Wind Speed, km/h (mph)	180 (112)
Maximum Thrust @ Rated Wind, N (lbf)	1409 (317)
Reflector Material	Aluminum Alloy
Radiating Element Material	Aluminum Alloy
Radome Material	Weather-Resistant Plastic
Weight w/o Mtg Hardware, kg (lb)	5.4 (12.11)
Packing Dimensions, HxWxD, mm (in)	2438 x 305 x 203 (96 x 12 x 8)



Vertical Pattern



Horizontal Pattern

### APL869014-42T6

**Horizontal Beamwidth, deg** 90

**Gain, dBi** 16.1

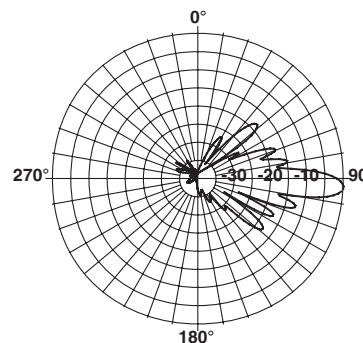
**Electrical Downtilt, deg** 6

#### ELECTRICAL SPECIFICATIONS

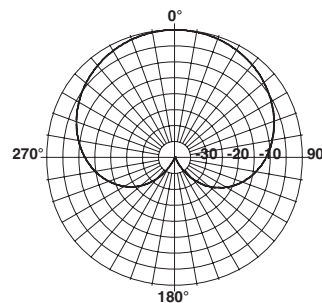
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	90
Vertical Beamwidth, deg	7.8
Gain, dBi (dBd)	16.1 (14)
Front-To-Back Ratio, dB	45
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	2337 x 152 x 203 (92 x 6 x 8)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m <sup>2</sup> (ft <sup>2</sup> )	0.587 (6.32)
Rated Wind Speed, km/h (mph)	180 (112)
Maximum Thrust @ Rated Wind, N (lbf)	1409 (317)
Reflector Material	Aluminum Alloy
Radiating Element Material	Aluminum Alloy
Radome Material	Weather-Resistant Plastic
Weight w/o Mtg Hardware, kg (lb)	5.4 (12.11)
Packing Dimensions, HxWxD, mm (in)	2438 x 305 x 203 (96 x 12 x 8)



Vertical Pattern



Horizontal Pattern

## Maximizer® & Optimizer® Fixed Tilt Antennas

### ALE866513-42T0

**Horizontal Beamwidth, deg** 65

**Gain, dBi** 15.1

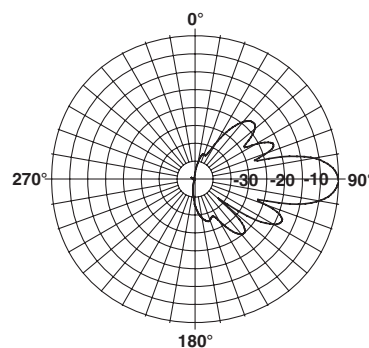
**Electrical Downtilt, deg** 0-14

#### ELECTRICAL SPECIFICATIONS

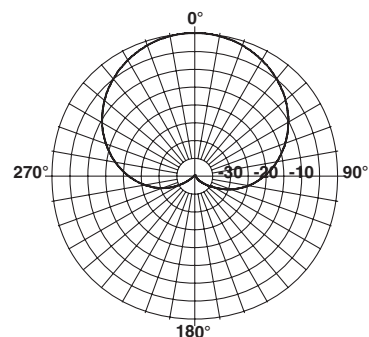
Frequency Range, MHz	806-894
Horizontal Beamwidth, deg	65
Vertical Beamwidth, deg	17
Gain, dBi (dBd)	15.1 (13)
Front-To-Back Ratio, dB	40
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1219 x 254 x 234 (48 x 10 x 9.2)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.418 (4.5)
Rated Wind Speed, km/h (mph)	160 (100)
Maximum Thrust @ Rated Wind, N (lbf)	800 (180)
Reflector Material	Aluminum Alloy
Radiating Element Material	Aluminum Alloy
Radome Material	UV Resistant ABS
Weight w/o Mtg Hardware, kg (lb)	10 (21)
Packing Dimensions, HxWxD, mm (in)	1372 x 508 x 381 (54 x 20 x 15)



Vertical Pattern



Horizontal Pattern

### ALE859012-42T0

**Horizontal Beamwidth, deg** 90

**Gain, dBi** 13.6

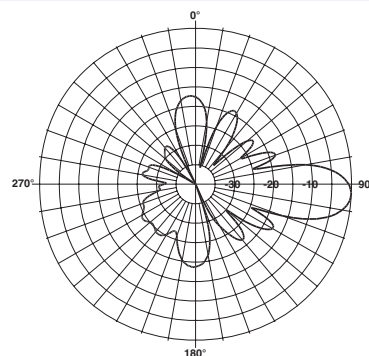
**Electrical Downtilt, deg** 0-14

#### ELECTRICAL SPECIFICATIONS

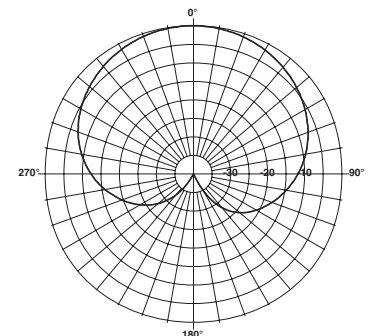
Frequency Range, MHz	806-941
Horizontal Beamwidth, deg	90
Vertical Beamwidth, deg	16
Gain, dBi (dBd)	13.6 (11.5)
Front-To-Back Ratio, dB	40
VSWR	< 1.5:1
Maximum Power Input, W	500
Polarization	Vertical
3rd Order IMP @ 16 x 41 dBm, dBm	< -100

#### MECHANICAL SPECIFICATIONS

Dimensions - HxWxD, mm (in)	1227 x 257 x 197 (48.3 x 10.1 x 7.75)
Survival Wind Speed, km/h (mph)	200 (125)
Max Wind Loading Area, m² (ft²)	0.39 (4.2)
Rated Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	1169 (263)
Reflector Material	Aluminum Alloy
Radiating Element Material	Aluminum Alloy
Radome Material	UV Resistant ABS
Weight w/o Mtg Hardware, kg (lb)	8 (18)
Packing Dimensions, HxWxD, mm (in)	1448 x 406 x 305 (57 x 16 x 12)



Vertical Pattern



Horizontal Pattern