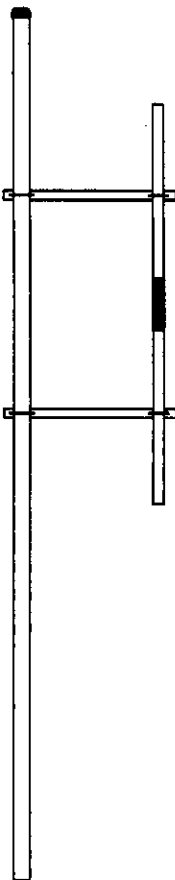


# **DIPOLE ANTENNAS**



## Features

- ◆ Wideband antenna - will operate over entire frequency range of 138-174 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions (Refer to Section on "Heavy Duty Antennas" )
- ◆ Field adjustable pattern antenna with external harness, Model A-1510A is available at extra cost.
- ◆ Other frequency bands, from 108 to 406 MHz, are available on request



## Dipole Antenna

# A-1510C

4.0 - 4.5 dBd

138-174 Mhz

*This unique broadband full-wave single dipole antenna is well suited for multicoupled systems due to its wide bandwidth (36 MHz) and very low intermodulation response.*

### Electrical Specifications

### A-1510C

Frequency Range:	MHz	138-174
Nominal Gain:	dBd	4.0-4.5
Bandwidth, 1.5:1 VSWR:	MHz	36
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	60
Front to Back Ratio:	dB	6
Power Rating:	Watts	300
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

- Note:**
- (1) VSWR is referenced to 50 ohms.
  - (2) Specify dipole-to-mast spacing when ordering.
  - (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

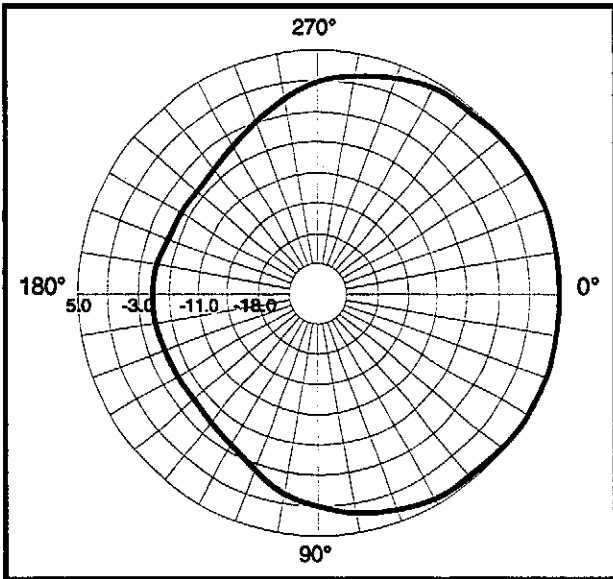
### A-1510C

Length:	in.(mm)	96 (2438)
Weight:	lbs.(kg)	12 (5.5)
Rated Wind Velocity:	mph(km/h)	175 (282)
Rated Wind Velocity with 0.5 in.(13 mm) radial ice:	mph(km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs(kg)	65 (29.5)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs)(Kg/m)	151 (21)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	1.57 (.15)

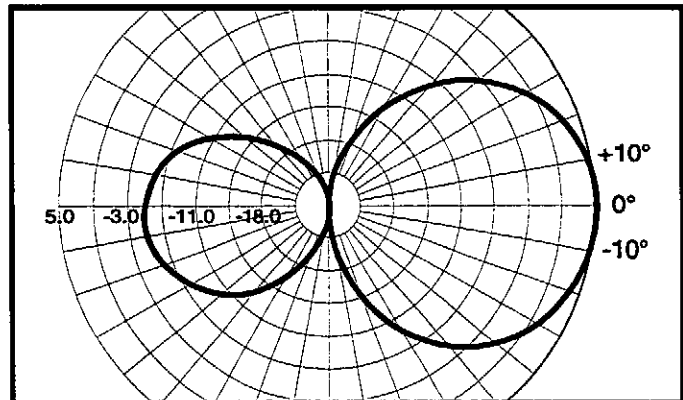
#### Mounting information:

No clamps supplied. Base pipe 1.9" O.D. (48mm).

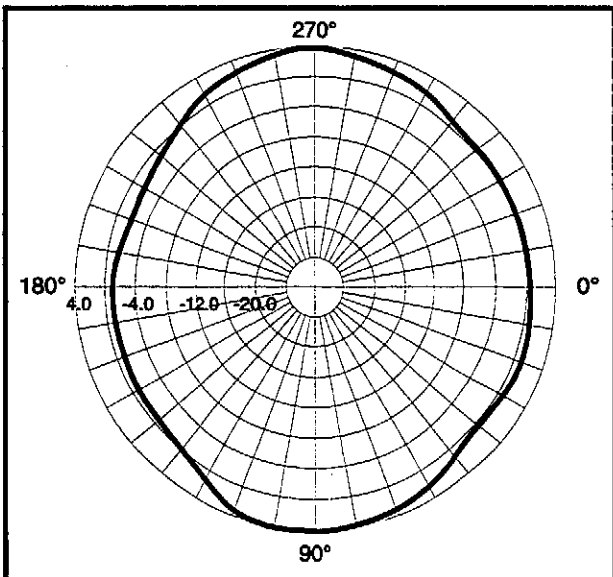
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



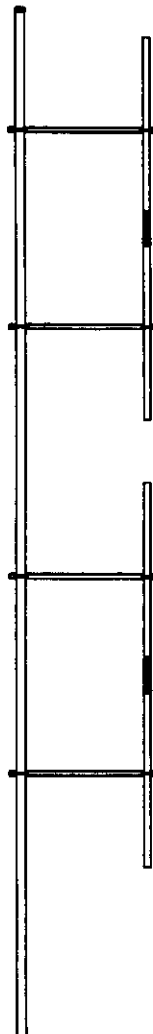
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**





## Features

- ◆ Wideband antenna - will operate over entire frequency range of 138-174 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions (Refer to Section on "Heavy Duty Antennas" )
- ◆ Field adjustable pattern antenna with external harness, model A-1510A2 is available at extra cost
- ◆ Other frequency bands, from 108 to 406 MHz, are available on request



## Dipole Array

## A-1510C2

7.0 - 7.5 dBd

138-174 MHz

*This unique broadband full-wave two dipole array, is well suited for multicoupled systems due to its wide bandwidth (36 MHz) and very low intermodulation response.*

### Electrical Specifications

### A-1510C2

Frequency Range:	MHz	138-174
Nominal Gain:	dBd	7.0 - 7.5
Bandwidth, 1.5:1 VSWR:	MHz	36
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	26
Front to Back Ratio:	dB	6
Power Rating:	Watts	500
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

- Note:
- (1) VSWR is referenced to 50 ohms.
  - (2) Specify dipole-to-mast spacing when ordering.
  - (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

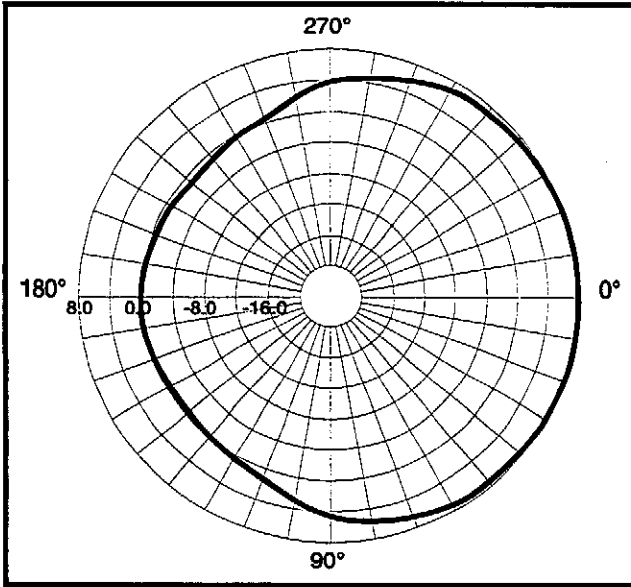
### A-1510C2

Length:	in. (mm)	168 (4267)
Weight:	lbs. (kg)	25 (11.5)
Rated Wind Velocity:	mph (km/h)	150 (241)
Rated Wind Velocity with 0.5 in. (13 mm) radial ice:	mph (km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs (kg)	122 (55.4)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	577 (79)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	2.93 (.27)

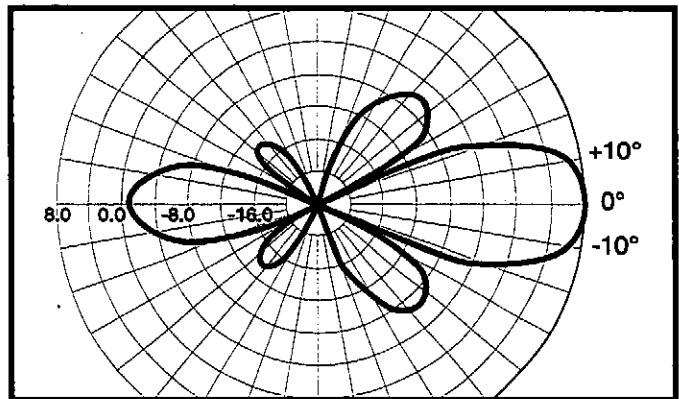
### Mounting information:

No clamps supplied. Base pipe 1.9" O.D. (48mm).

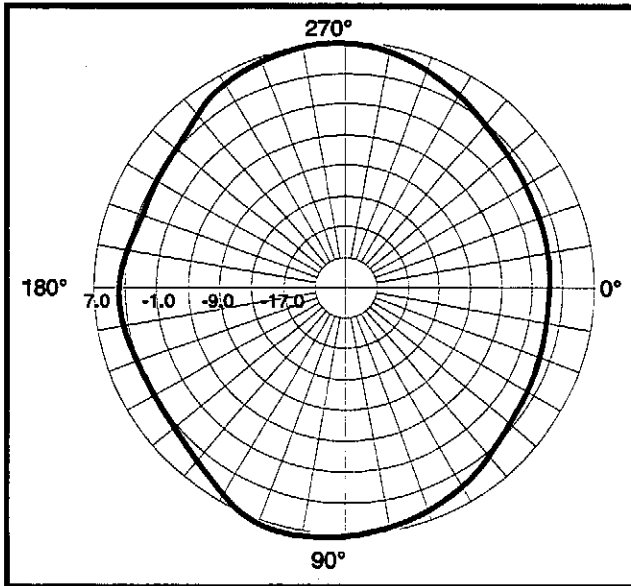
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**

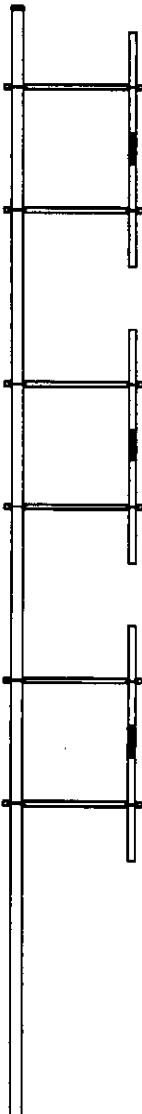


**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**



## Features

- ◆ Wideband antenna - will operate over entire frequency range of 138-174 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty versions are available: either top-mount (TM) or sidemount (SM) for extreme wind & ice conditions (Refer to Section on "Heavy Duty Antennas" )
- ◆ Field adjustable pattern antenna with external harness, model A-1510A3 is available at extra cost
- ◆ Other frequency bands, from 108 to 406 MHz, are available on request



## Dipole Array

# A-1510C3

8.5 - 9.0 dBd

138-174 MHz

*This unique broadband full-wave three dipole array is well suited for multicoupled systems due to its wide bandwidth (36 MHz) and very low intermodulation response.*

### Electrical Specifications

**A-1510C3**

Frequency Range:	MHz	138-174
Nominal Gain:	dBd	8.5 - 9.0
Bandwidth, 1.5:1 VSWR:	MHz	36
Horizontal Beamwidth (half power points):	Deg.	170
Vertical Beamwidth (half power points):	Deg.	18
Front to Back Ratio:	dB	6
Power Rating:	watts	750
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

NOTE: (1) VSWR is referenced to 50 ohms.  
 (2) Specify dipole-to-mast spacing when ordering.  
 (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

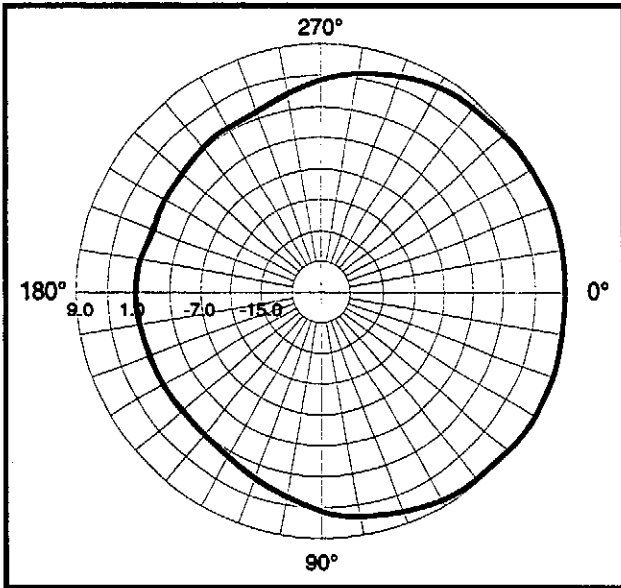
**A-1510C3**

Length:	in. (mm)	240 (6096)
Weight:	lbs. (kg)	45 (20.4)
Rated Wind Velocity:	mph (km/h)	125 (200)
Rated Wind Velocity with 0.5 in. (13 mm) radial ice:	mph (km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and ice load:	lbs. (kg)	193 (87.6)
Bending Moment at top mounting clamp (100 mph - no ice)	Ft lbs (Kg m)	1453 (200)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	4.82 (.45)

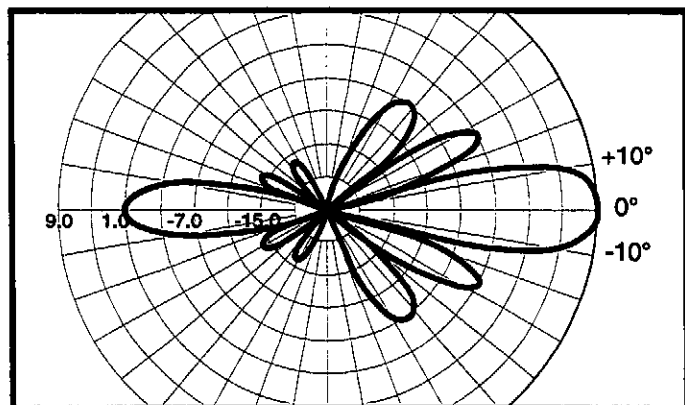
#### Mounting information

No clamps supplied. Base pipe: 2.38" O.D. (60 mm).

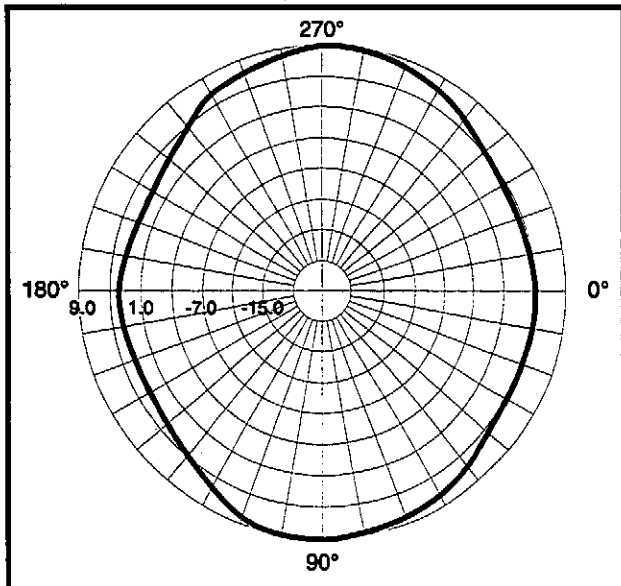
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**





## Features

- ◆ Wideband antenna - will operate over entire frequency range of 138-174 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty versions are available: either top-mount (TM) or sidemount (SM) for extreme wind & ice conditions (Refer to Section on "Heavy Duty Antennas" )
- ◆ Field adjustable pattern antenna with external harness, model A-1510A6 is available at extra cost
- ◆ Other frequency bands, from 108 to 406 MHz, are available on request

## Dipole Array

## A-1510C6

11.5 - 12.0 dBd

138-174 MHz

*This unique broadband full-wave six dipole array is well suited for multicoupled systems due to its wide bandwidth and very low intermodulation response. This array consists of two A-1510C3 antennas harnessed together to provide a very high gain antenna needed in certain systems application. This array may be side-mounted or partially top mounted to a supporting structure.*

### Electrical Specifications

### A-1510C6

Frequency Range:	MHz	138-174
Nominal Gain:	dBd	11.5 - 12.0
Bandwidth, 1.5:1 VSWR:	MHz	36
Horizontal Beamwidth (half power points):	Deg.	170
Vertical Beamwidth (half power points):	Deg.	8
Front to Back Ratio:	dB	6
Power Rating:	watts	750
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

NOTE: (1) VSWR is referenced to 50 ohms.  
 (2) Specify dipole-to-mast spacing when ordering.  
 (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

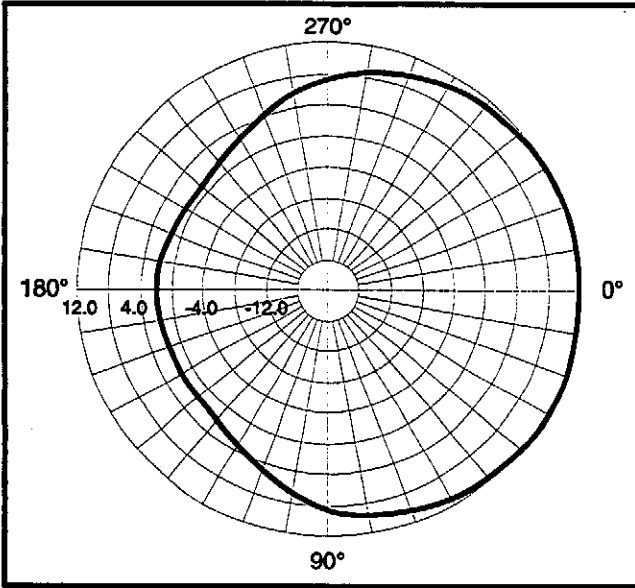
### A-1510C6

Length:	in. (mm)	456 (11582)
Weight:	lbs. (kg)	92 (41.8)
Rated Wind Velocity:	mph (km/h)	125 (200)
Rated Wind Velocity with 0.5 in. (13 mm) radial ice:	mph (km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and ice load:	lbs. (kg)	122 (55.4)
Bending Moment at top mounting clamp (100 mph - no ice)	Ft lbs (Kg m)	1453 (200)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	9.64 (.90)

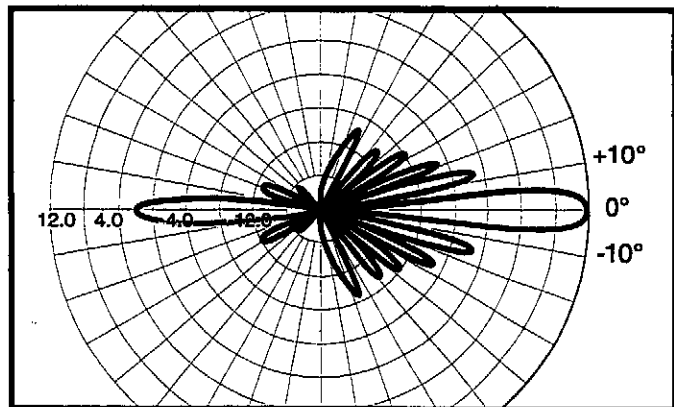
### Mounting information

No clamps supplied. Base pipes: 2.38" O.D. (60 mm) / each.

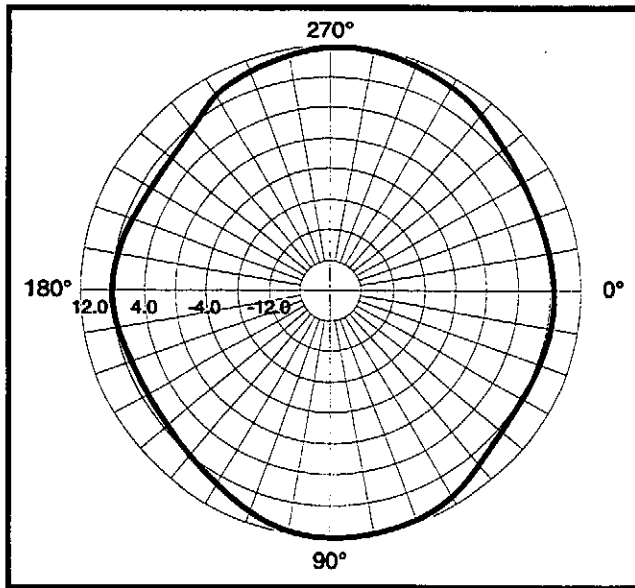
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



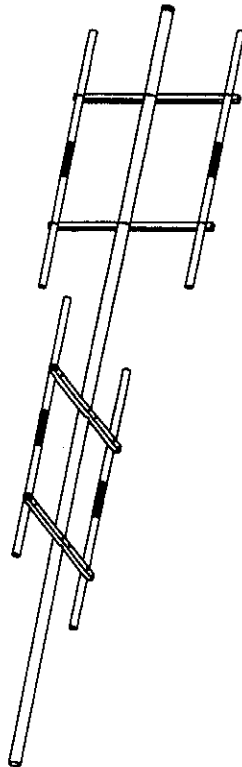
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**





# Features

- ◆ Wideband antenna - will operate over entire frequency range of 138-174 MHz
- ◆ Field adjustable pattern for omnidirectional (4.0 dBd) or bidirectional (7.0 dBd) coverage
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature & humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions. (Refer to Section on "Heavy Duty Antennas")
- ◆ Other frequency bands, from 108 to 406 MHz, are available on request



## Dipole Array

# A-1535

4.0 - 7.0 dBd

138-174 MHz

*Unique full-wave broadband two bay array featuring omnidirectional or bidirectional pattern coverage. The cable harness is fully internal except for the dipole-to-boom harness to permit pattern adjustment.*

### Electrical Specifications

**A-1535**

Frequency Range:	MHz	138-174
Nominal Gain:	dBd	4.0(omni.) 7.0(bidirectional)
Bandwidth, 1.5:1 VSWR:	MHz	36
Horizontal Beamwidth (Half power points):	Deg.	60(bidirectional)
Vertical Beamwidth (Half power points):	Deg.	30
Front to Back Ratio:	dB	N/A
Power Rating:	Watts	500
Polarization:		Vertical
Pattern:		Omnidirectional or bidirectional
Lightning Protection:		DC ground
Termination:		Type "N" Male

Note: (1) VSWR is referenced to 50 ohms.

### Mechanical Specifications

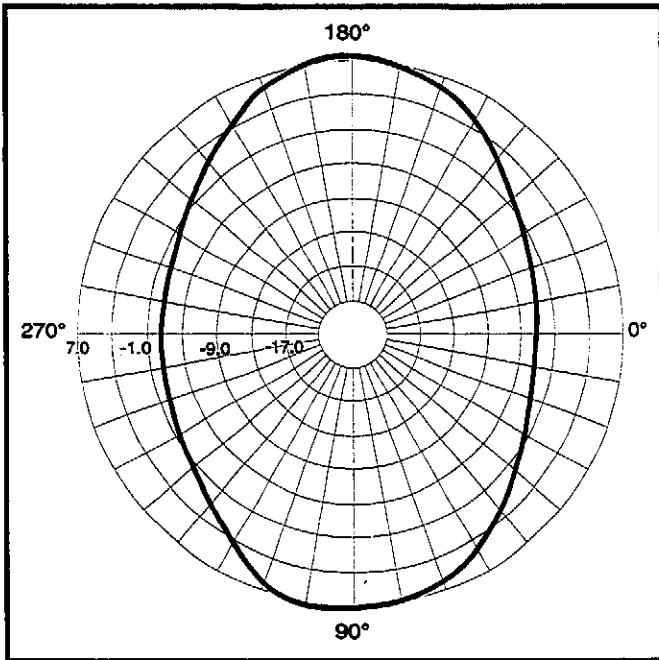
**A-1535**

Length:	in.(mm)	168 (4267)
Weight:	lbs.(kg)	38 (17.3)
Rated Wind Velocity:	mph(km/h)	125 (201)
Rated Wind Velocity with 0.5 in. (13 mm) radial ice:	mph(km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs.(kg)	193 (87.6)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	775 (107)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	4.75 (.44)

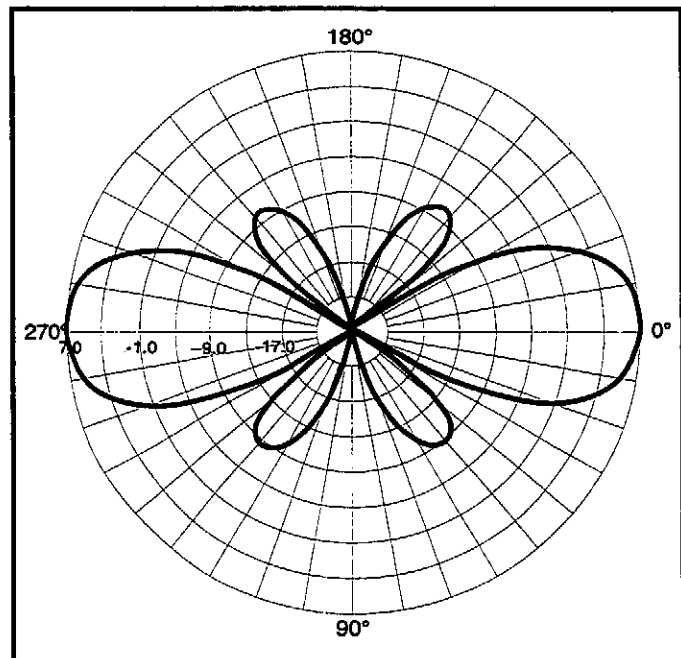
Mounting information:

No clamps supplied. Base pipe: 2.38" O.D. (60 mm).

HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
BIDIRECTIONAL PATTERN



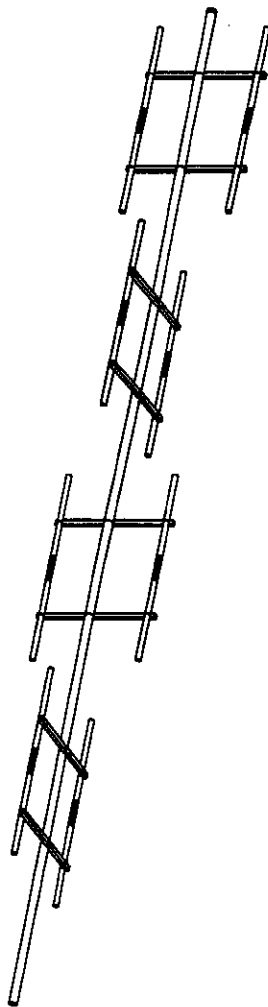
VERTICAL PATTERN FOR VERTICAL POLARIZATION





# Features

- ◆ Wideband antenna - will operate over entire frequency range of 138-174 MHz
- ◆ Field adjustable pattern for omnidirectional (7.0 dBd) or bidirectional (10.0 dBd) coverage
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature & humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions (Refer to Section on "Heavy Duty Antennas")
- ◆ Other frequency bands, from 108 to 406 MHz, are available on request



# Dipole Array **A-1535-2**

7.0 - 10.0 dBd

138-174 MHz

*Unique full-wave broadband four bay array for increased gain in the omnidirectional or bidirectional pattern coverage. The cable harness is fully internal except for the dipole-to-boom harness to permit pattern adjustment.*

Electrical Specifications		A-1535-2
Frequency Range:	MHz	138-174
Nominal Gain:	dBd	7.0 (omni.) 10.0 (bidirectional)
Bandwidth, 1.5:1 VSWR:	MHz	36
Horizontal Beamwidth (Half power points):	Deg.	90 (bidirectional)
Vertical Beamwidth (Half power points):	Deg.	24
Front to Back Ratio:	dB	N/A
Power Rating:	Watts	750
Polarization:		Vertical
Pattern:		Omnidirectional or bidirectional
Lightning Protection:		DC ground
Termination:		Type "N" Male

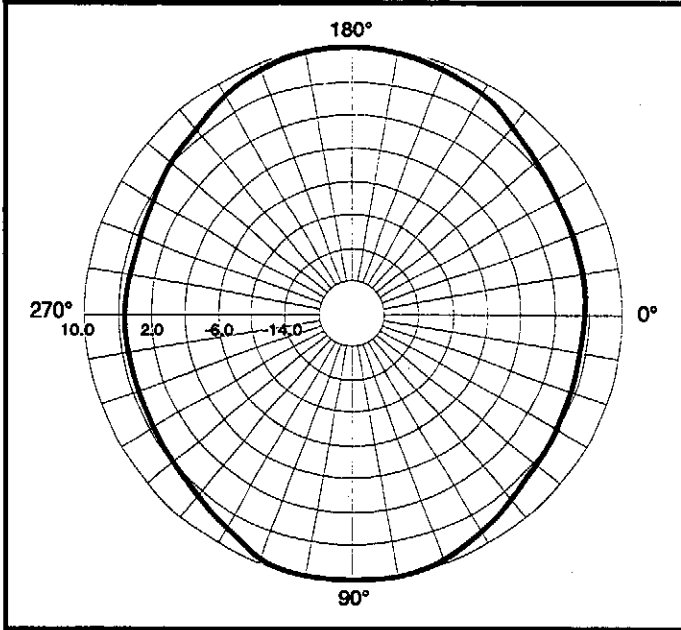
Note: (1) VSWR is referenced to 50 ohms.

Mechanical Specifications		A-1535-2
Dimensions:	in.(mm)	288 (7315)
Weight:	lbs.(kg)	74 (33.6)
Rated Wind Velocity:	mph(km/h)	100 (161)
Rated Wind Velocity with 0.5 in. (13 mm) radial ice:	mph(km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs.(kg)	383 (173.9)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	3104 (427)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	9.65 (.9)

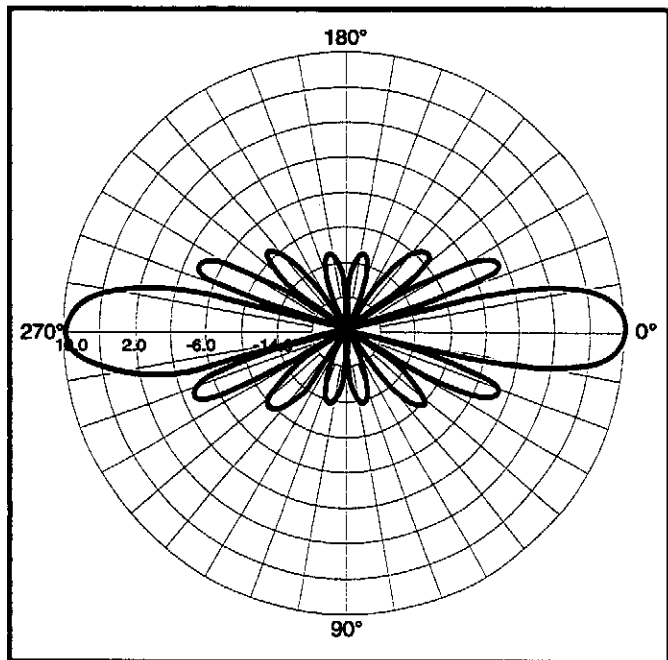
Mounting information:

No clamps supplied, base pipe: 2.88" O.D. (73mm).

**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
BIDIRECTIONAL PATTERN**



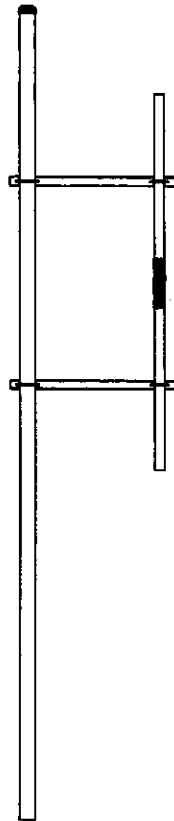
**VERTICAL PATTERN FOR VERTICAL POLARIZATION**





## Features

- ◆ Wideband antenna - will operate over entire frequency range of 270-340 MHz or 330-406 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions.
- ◆ Field adjustable pattern antenna with external harness, Model A-3510A is available at extra cost.



## Dipole Antenna

# A-3510C

4.0 - 4.5 dBd

270-406 MHz

*This unique broadband full-wave single dipole antenna is well suited for multicoupled systems due to its wide bandwidth and very low intermodulation response.*

### Electrical Specifications

### A-3510C

Frequency Range:	MHz	270-340/330-406
Nominal Gain:	dBd	4.0-4.5
Bandwidth, 1.5:1 VSWR:	MHz	70
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	60
Front to Back Ratio:	dB	6
Power Rating:	Watts	150
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

Note: (1) VSWR is referenced to 50 ohms.  
 (2) Specify dipole-to-to mast spacing when ordering.  
 (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

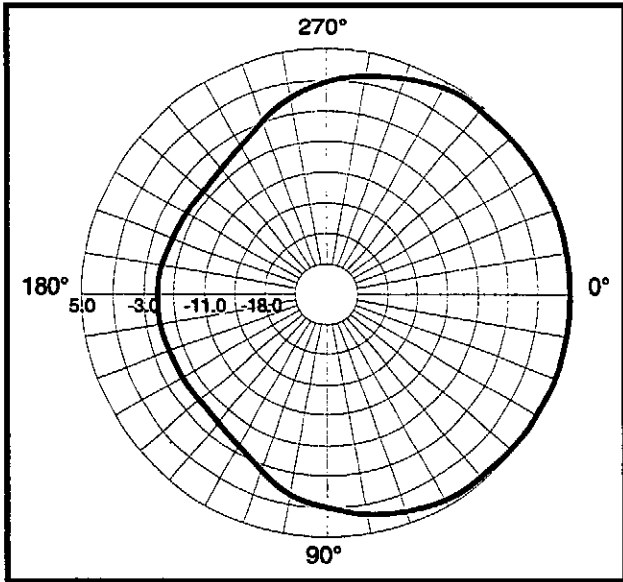
### A-3510C

Length:	in. (mm)	60 (1524)
Weight:	lbs. (kg)	6 (2.7)
Rated Wind Velocity:	mph (km/h)	260 (322)
Rated Wind Velocity with 0.5 in. (12.7 mm) radial ice:	mph (km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs. (kg)	37 (16.8)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	35 (4.7)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	0.79 (.08)

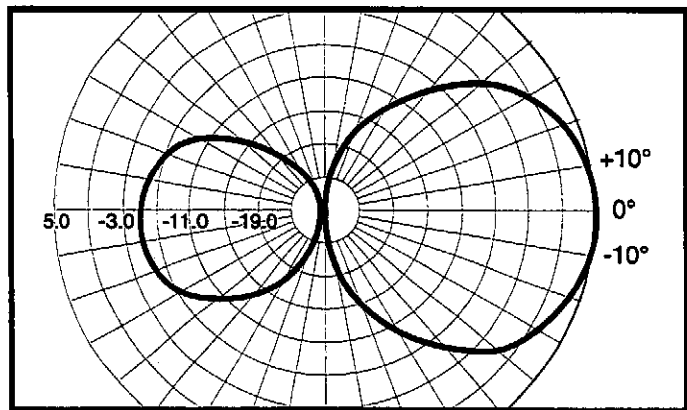
Mounting information:

No clamps supplied, base pipe: 1.9" O.D. (48.3) (73mm)

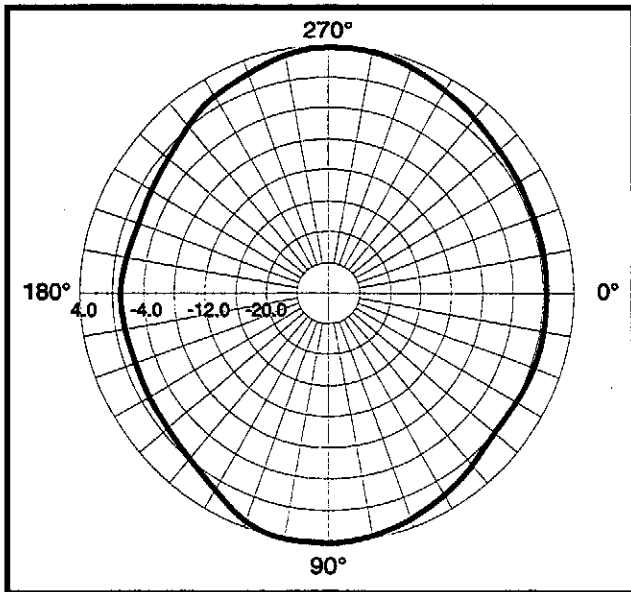
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



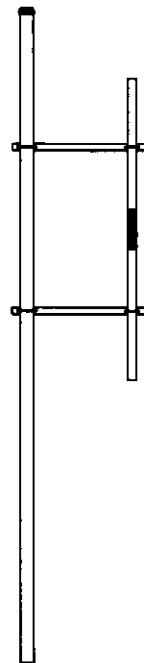
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**





## Features

- ◆ Wideband antenna - will operate over entire frequency range of 406-512 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions (Refer to Section on "Heavy Duty Antennas")



## Dipole Antenna

# A-4510C

4.0-4.5 dBd

406-512 MHz

*This unique broadband full wave single dipole antenna is well suited for multicoupled systems due to its wide bandwidth (106 MHz) and very low intermodulation response.*

### Electrical Specifications

**A-4510C**

Frequency Range:	MHz	406-512
Nominal Gain:	dBd	4.0-4.5
Bandwidth, 1.5:1 VSWR:	MHz	106
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	60
Front to Back Ratio:	dB	6
Power Rating:	Watts	150
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

Note: (1) VSWR is referenced to 50 ohms.  
 (2) Specify dipole-to-mast spacing when ordering  
 (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

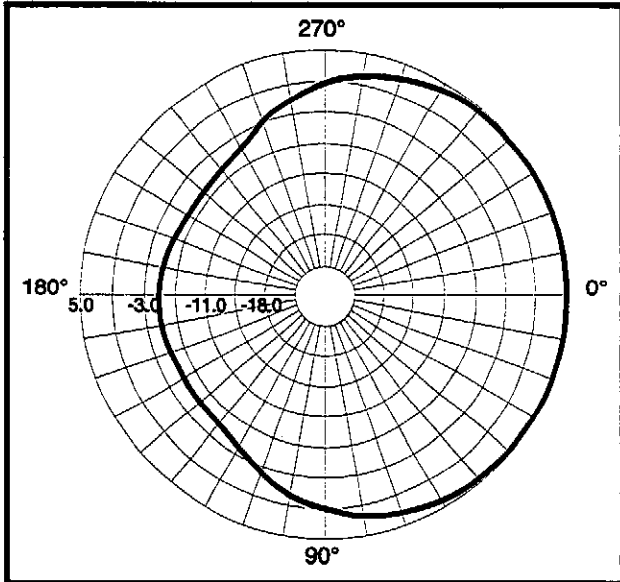
**A-4510C**

Length:	in.(mm)	60 (1524)
Weight:	lbs.(kg)	6 (2.7)
Rated Wind Velocity:	mph(km/h)	260 (322)
Rated Wind Velocity with 0.5 in.(13.mm) radial ice:	mph(km/h)	95 (154)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs.(kg)	31 (14.1)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	30 (4.1)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	0.73 (.07)

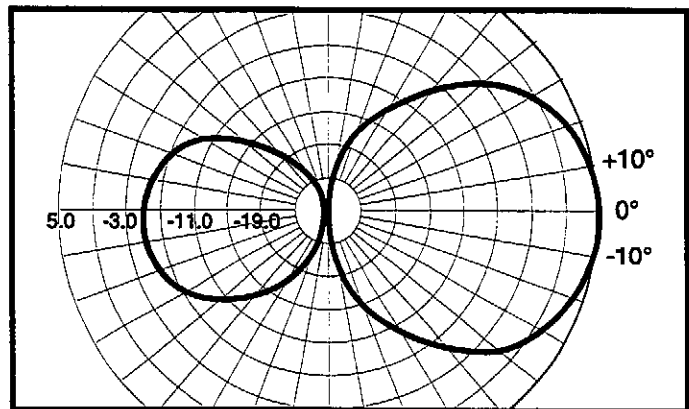
Mounting information:

No clamps supplied. Base pipe 1.9" O.D. (48mm)

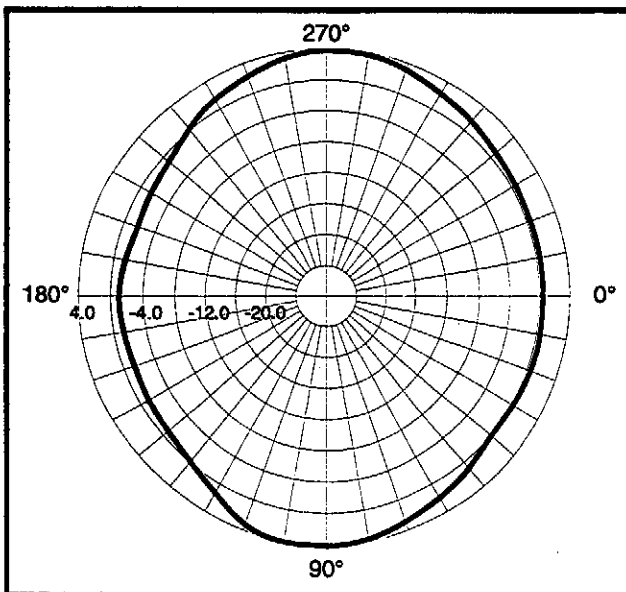
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



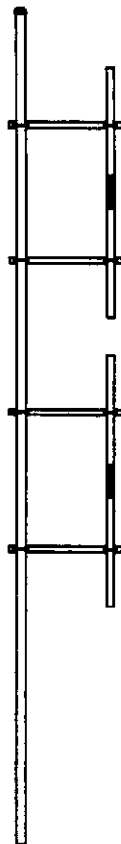
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**





## Features

- ◆ Wideband antenna - will operate over entire frequency range of 406-512 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions. (Refer to Section on "Heavy Duty Antennas")



## Dipole Array

## A-4510C2

7.0 - 7.5 dBd

406-512 MHz

*This unique broadband full wave two dipole array is well suited for multicoupled systems due to its wide bandwidth (106 MHz) and very low intermodulation response.*

Electrical Specifications		A-4510C2
Frequency Range:	MHz	406-512
Nominal Gain:	dBd	7.0-7.5
Bandwidth, 1.5:1 VSWR:	MHz	106
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	26
Front to Back Ratio:	dB	6
Power Rating:	Watts	250
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

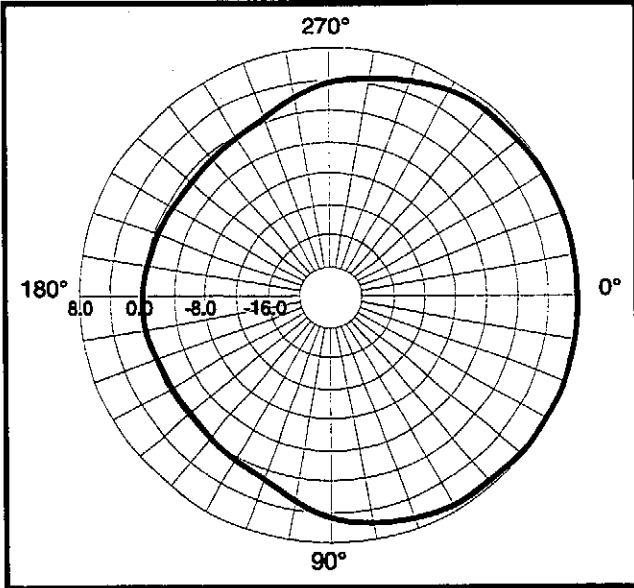
Note: (1) VSWR is referenced to 50 ohms.  
 (2) Specify dipole-to-mast spacing when ordering.  
 (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

Mechanical Specifications		A-4510C2
Length:	in.(mm)	84 (2134)
Weight:	lbs.(kg)	9 (4.1)
Rated Wind Velocity:	mph(km/h)	200 (322)
Rated Wind Velocity with 0.5 in.(13mm) radial ice:	mph(km/h)	95 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs.(kg)	49 (22.2)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	87 (12)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	1.15 (.11)

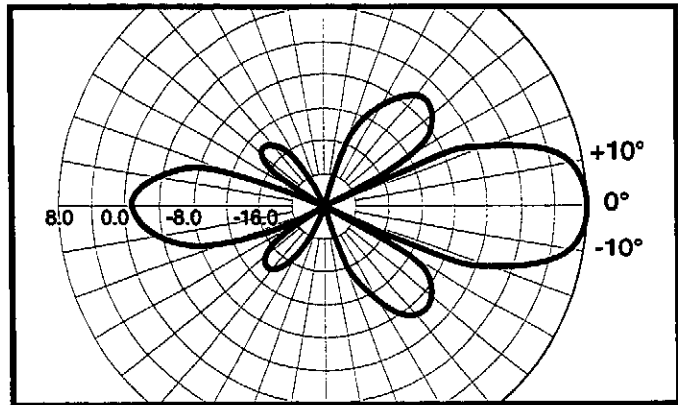
Mounting information:

No clamps supplied. Base pipe 1.9" O.D. (48mm).

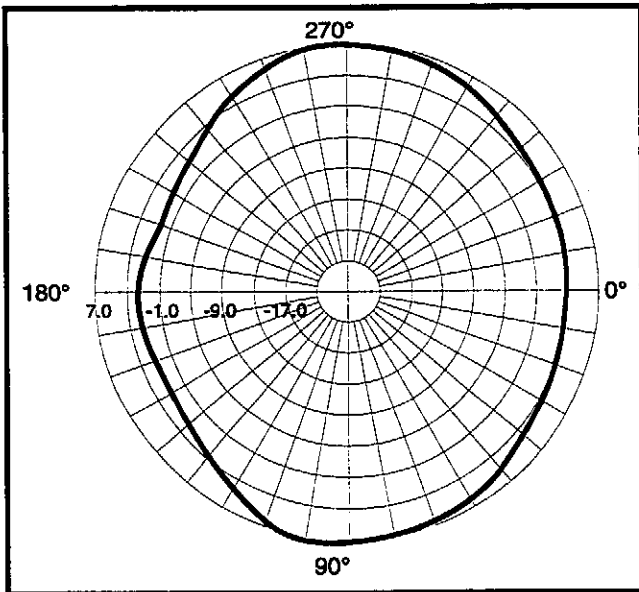
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**

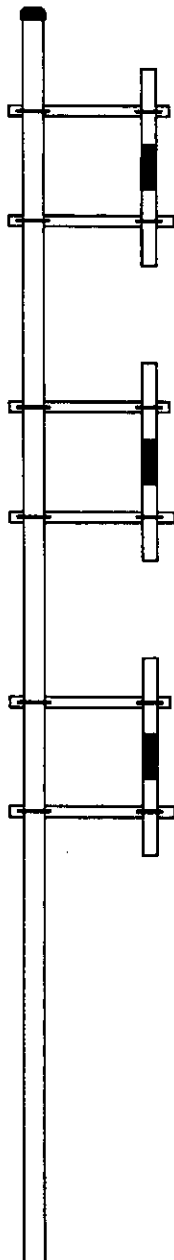


**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**



## Features

- ◆ Wideband antenna - will operate over entire frequency range of 406-512 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions (Refer to Section on "Heavy Duty Antennas")



## Dipole Array

## A-4510C3

8.5 - 9.0 dBd

406-512 MHz

*This unique broadband full-wave three dipole array is well suited for multicoupled systems due to its wide bandwidth (106 MHz) and very low intermodulation response.*

### Electrical Specifications

### A-4510C3

Frequency Range:	MHz	406-512
Nominal Gain:	dBd	8.5-9.0
Bandwidth, 1.5:1 VSWR:	MHz	106
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	18
Front to Back Ratio:	dB	6
Power Rating:	Watts	500
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

- Note:
- (1) VSWR is referenced to 50 ohms.
  - (2) Specify dipole-to-mast spacing when ordering.
  - (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

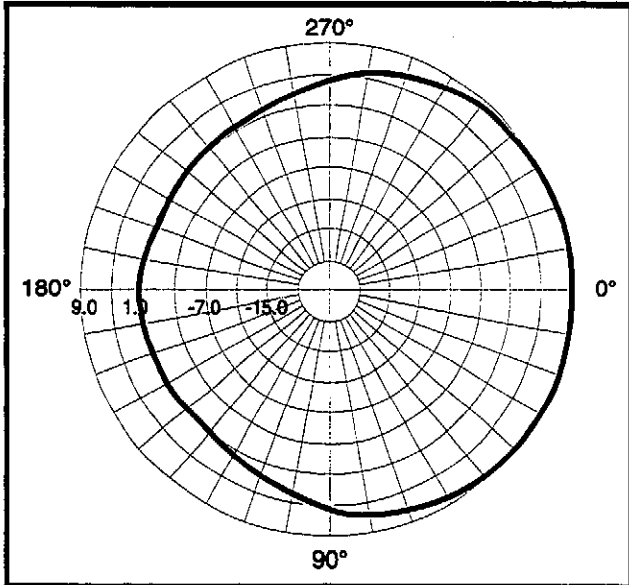
### A-4510C3

Length:	in.(mm)	108 (2743)
Weight:	lbs.(kg)	17 (7.7)
Rated Wind Velocity:	mph(km/h)	150 (241)
Rated Wind Velocity with 0.5 in.(13mm) radial ice:	mph(km/h)	95 (154)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs.(kg)	67 (30.4)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	172 (24)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	1.56 (.14)

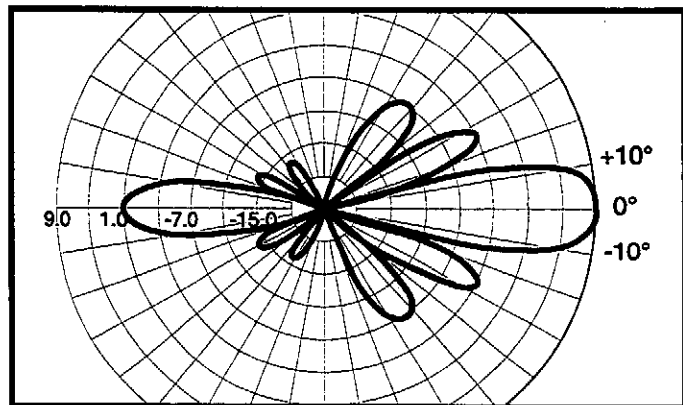
### Mounting information:

No clamps supplied. Base pipe 1.9" O.D. (48mm).

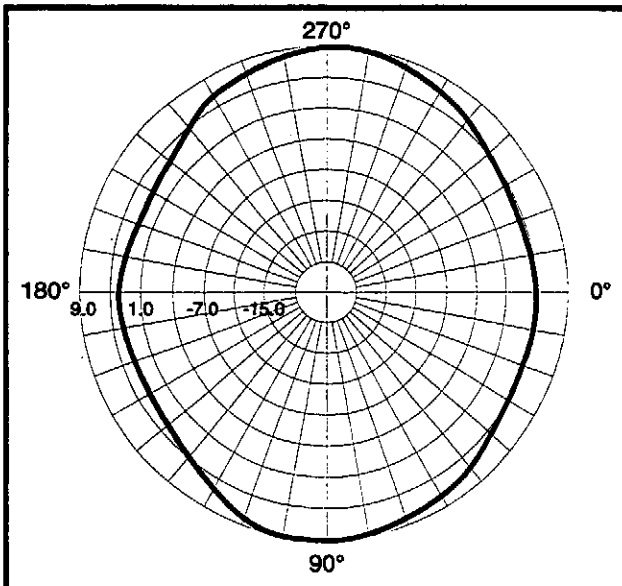
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



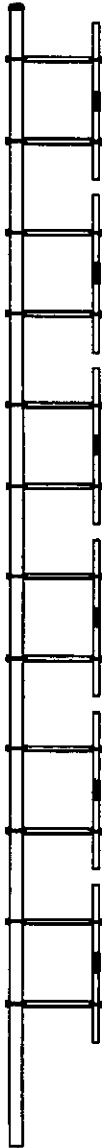
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**





# Features

- ◆ Wideband antenna - will operate over entire frequency range of 406-512 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty versions are available, either top-mount (TM) or sidemount (SM), for extreme wind & ice conditions. (Refer to section on "Heavy Duty Antennas")



## Dipole Array

## A-4510C6

11.5 - 12.0 dBd

406-512 MHz

*This unique broadband full-wave six dipole array is well suited for multicoupled systems due to its wide bandwidth (106 MHz) and very low intermodulation response.*

### Electrical Specifications

### A-4510C6

Frequency Range:	MHz	406-512
Nominal Gain:	dBd	11.5-12.0
Bandwidth, 1.5:1 VSWR:	MHz	106
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	8
Front to Back Ratio:	dB	6
Power Rating:	Watts	500
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

Note: (1) VSWR is referenced to 50 ohms.  
 (2) Specify dipole-to-mast spacing when ordering.  
 (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

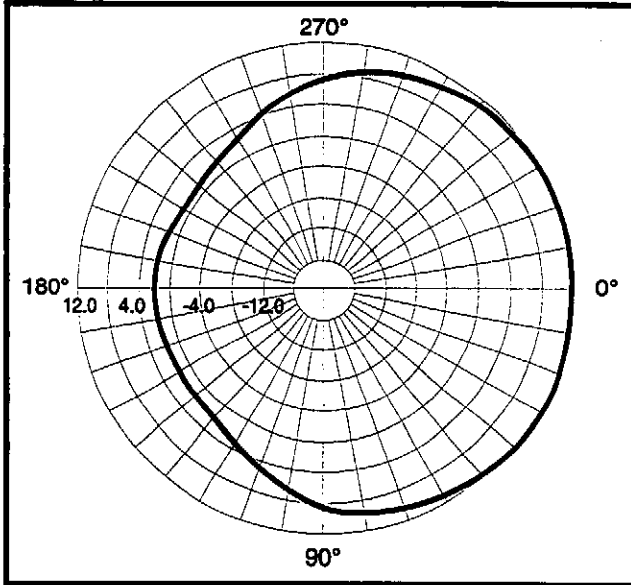
### A-4510C6

Length:	in. (mm)	192 (4877)
Weight:	lbs. (kg)	27 (12.3)
Rated Wind Velocity:	mph (km/h)	125 (201)
Rated Wind Velocity with 0.5 in. (12mm) radial ice:	mph (km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	lbs. (kg)	137 (62.2)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	799 (110)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	3.34 (.31)

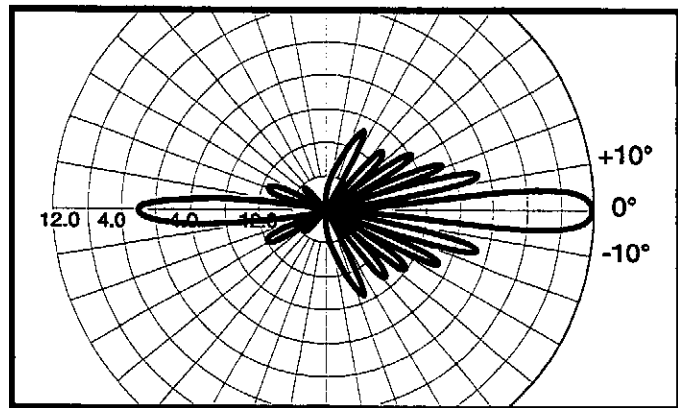
Mounting information:

No clamps supplied. Base pipe 2.38" O.D. (60mm).

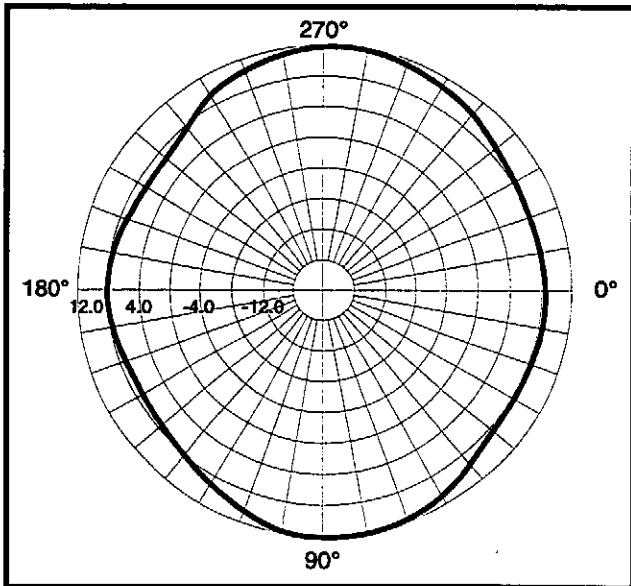
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**

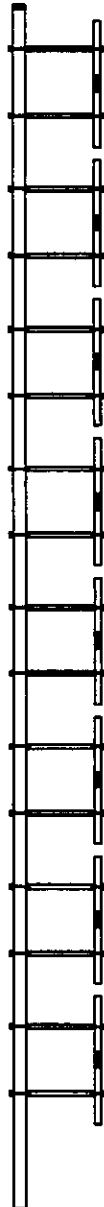


**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**



## Features

- ◆ Wideband antenna - will operate over entire frequency range of 406-470 MHz
- ◆ Fixed dipole-to-mast spacings of 1/4, 3/8 or 1/2 wave for controlled radiation pattern based on system applications
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature and humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty versions are available, either top-mount (TM) or sidemount (SM), for extreme wind & ice conditions. (Refer to section on "Heavy Duty Antennas")



## Dipole Array

# A-4510C8

13.0 - 13.5 dBd

406-470 MHz

*Unique broadband full wave eight dipole array which provides very high gain needed in certain system applications. A special harness design along with proper dipole-to-dipole spacing provide a certain amount of null fill for close-in application without degradation to the main signal. It is an ideal antenna for wide area coverage.*

### Electrical Specifications

**A-4510C8**

Frequency Range:	MHz	406-470
Nominal Gain:	dBd	13.0-13.5
Bandwidth, 1.5:1 VSWR:	MHz	64
Horizontal Beamwidth (Half power points):	Deg.	170
Vertical Beamwidth (Half power points):	Deg.	6
Front to Back Ratio:	dB	10
Power Rating:	Watts	500
Polarization:		Vertical
Pattern:		Offset
Lightning Protection:		DC ground
Termination:		Type "N" Male

Note: (1) VSWR is referenced to 50 ohms.  
 (2) Specify dipole-to-mast spacing when ordering.  
 (3) Horizontal & vertical beamwidth values are measured at quarterwave spacing.

### Mechanical Specifications

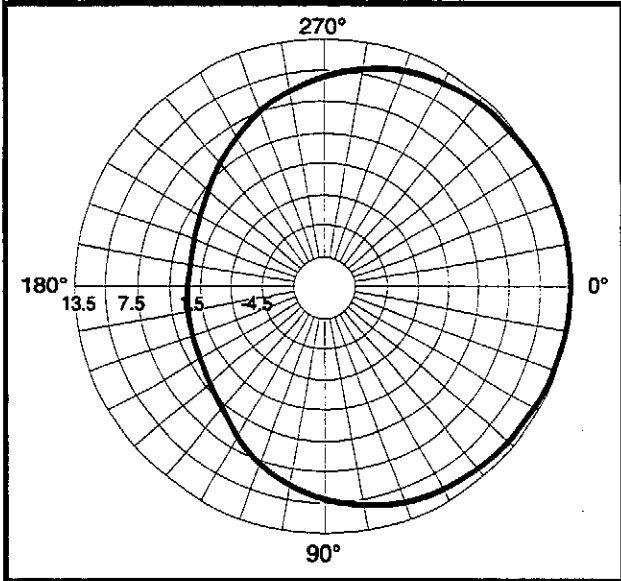
**A-4510C8**

Length:	in.(mm)	240 (6096)
Weight:	lbs.(kg)	62 (136.4)
Rated Wind Velocity:	mph(km/h)	150 (241)
Rated Wind Velocity with 0.5 in.(13mm) radial ice:	mph(km/h)	85 (137)
Horizontal Thrust at Rated Wind velocity and Ice Load:	lbs.(kg)	137 (62.2)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	864 (118)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	4.75 (.45)

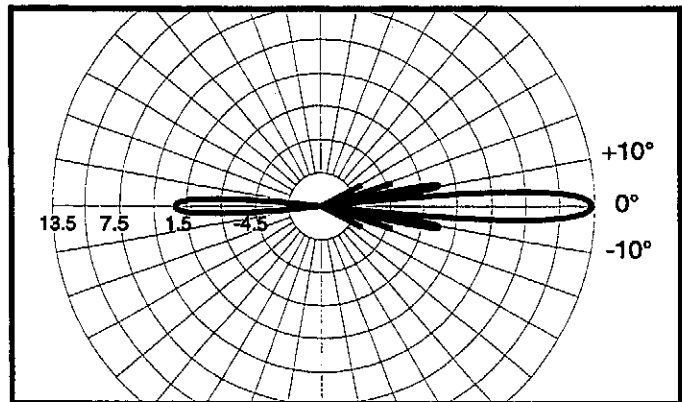
Mounting information:

No clamps supplied. Base pipe 2.88" O.D. (73mm).

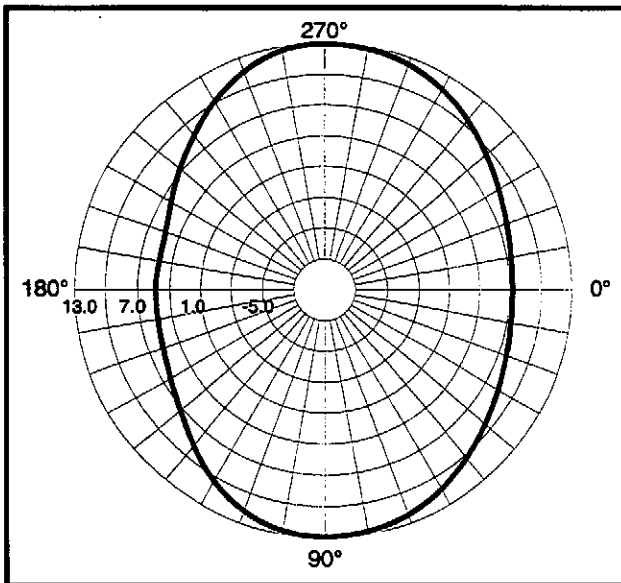
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



**VERTICAL PATTERN FOR VERTICAL POLARIZATION  
QUARTERWAVE SPACING**



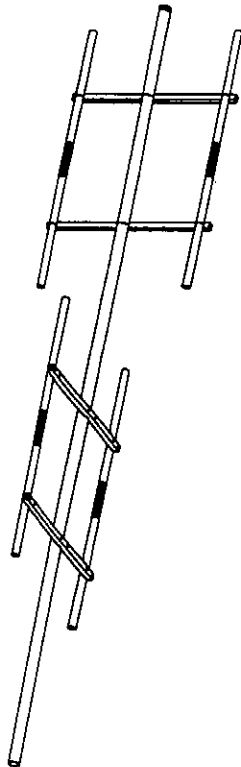
**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
HALFWAVE SPACING**





## Features

- ◆ Wideband antenna - will operate over entire frequency range of 406-512 MHz
- ◆ Field adjustable pattern for omnidirectional (4.0 dBd) or bidirectional (7.0 dBd) coverage
- ◆ Improved cable harness design for increased weather protection
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature & humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions



## Dipole Array

# A-4535

4.0 - 7.0 dBd

406-512 MHz

*Unique full-wave broadband two bay array featuring omnidirectional or bidirectional pattern coverage. The cable harness is fully internal except for the dipole-to-boom harness to permit pattern adjustment.*

### Electrical Specifications

**A-4535**

Frequency Range:	MHz	406-512
Nominal Gain:	dBd	4.0(omni.) 7.0 (bidirectional)
Bandwidth, 1.5:1 VSWR:	MHz	106
Horizontal Beamwidth (Half power points):	Deg.	60 (bidirectional)
Vertical Beamwidth (Half power points):	Deg.	30
Front to Back Ratio:	dB	N/A
Power Rating:	Watts	500
Polarization:		Vertical
Pattern:		Omnidirectional or bidirectional
Lightning Protection:		DC ground
Termination:		Type "N" Male

Note: (1) VSWR is referenced to 50 ohms.

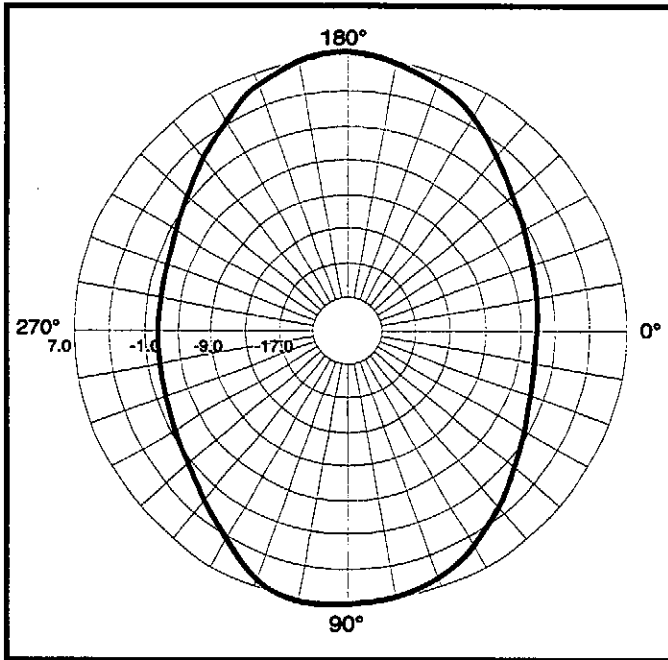
### Mechanical Specifications

**A-4535**

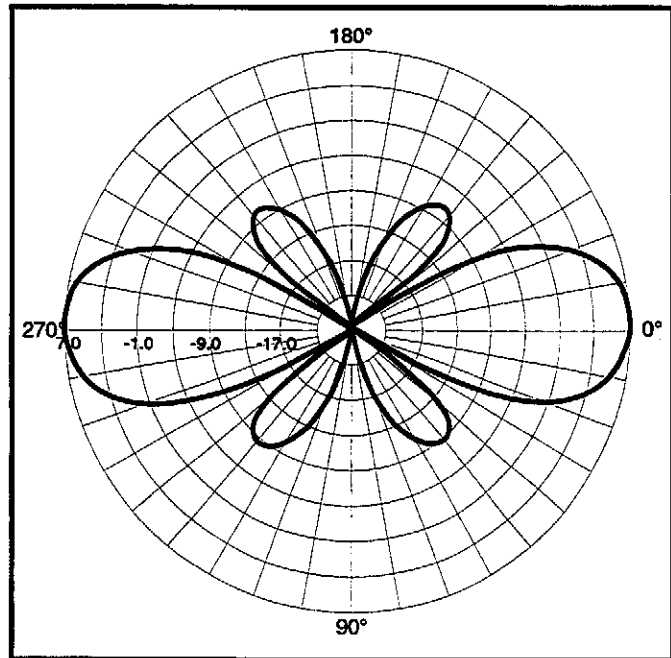
Length:	in. (mm)	84 (2134)
Weight:	lbs. (kg)	14 (6.4)
Rated Wind Velocity:	mph (km/h)	125 (201)
Rated Wind Velocity - with 0.5 in. (13 mm) radial ice:	mph (km/h)	95 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	Lbs (Kg)	73 (33.1)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	114 (16)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	1.75 (.16)

Mounting information: No clamps supplied, base pipe: 2.38" (60mm) to 3.5" (89 mm) O.D. mast.

HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
BIDIRECTIONAL PATTERN



VERTICAL PATTERN FOR VERTICAL POLARIZATION



# Dipole Array

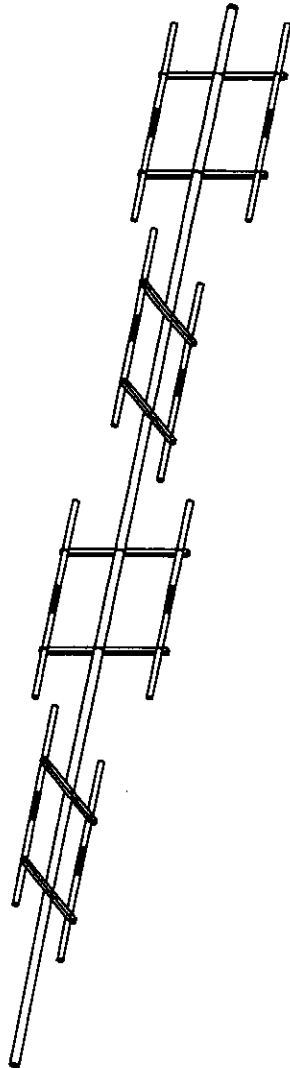
# A-4535-2

7.0 - 10.0 dBd

406-512 MHz

## Features

- ◆ Wideband antenna - will operate over entire frequency range of 406-512 MHz
- ◆ Field adjustable pattern for omnidirectional (7.0 dBd) or bidirectional (10.0 dBd) coverage
- ◆ Improved cable harness design for increased weather protection
- ◆ Weatherproof design - completely sealed internal harness to eliminate moisture problems and improve resistance to temperature & humidity extremes
- ◆ Extremely rugged design to withstand harsh environmental conditions
- ◆ DC grounded to protect against damage from lightning strikes
- ◆ Icing immunity due to its unique dipole configuration
- ◆ 6061-T6 aluminum elements and stainless steel hardware for high strength, low weight and corrosion resistance
- ◆ Heavy duty version available for extreme wind & ice conditions



*Unique full-wave broadband four bay array for increased gain in the omnidirectional or bidirectional pattern coverage. The cable harness is fully internal except for the dipole-to-boom harness to permit pattern adjustment.*

### Electrical Specifications

**A-4535-2**

Frequency Range:	MHz	406-512
Nominal Gain:	dBd	7.0(omni.) 10.0 (bidirectional)
Bandwidth, 1.5:1 VSWR:	MHz	106
Horizontal Beamwidth (Half power points):	Deg.	90 (bidirectional)
Vertical Beamwidth (Half power points):	Deg.	15
Front to Back Ratio:	dB	N/A
Power Rating:	Watts	500
Polarization:		Vertical
Pattern:		Omnidirectional or bidirectional
Lightning Protection:		DC ground
Termination:		Type "N" Male

Note: (1) VSWR is referenced to 50 ohms.

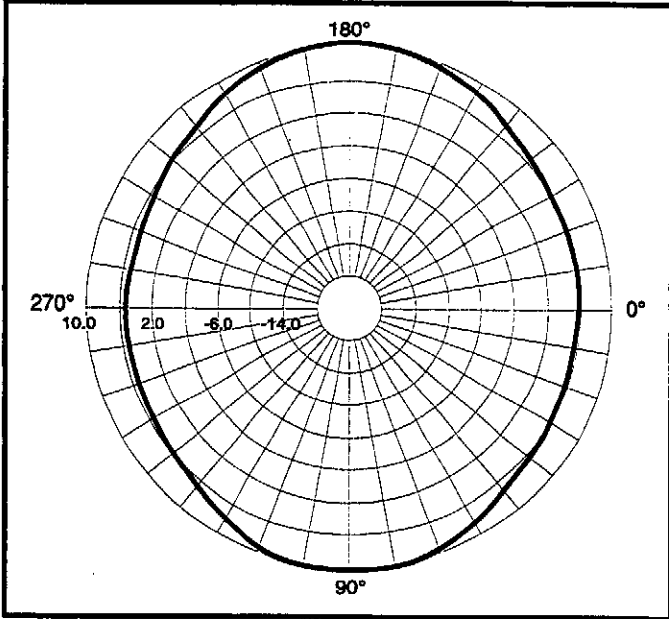
### Mechanical Specifications

**A-4535-2**

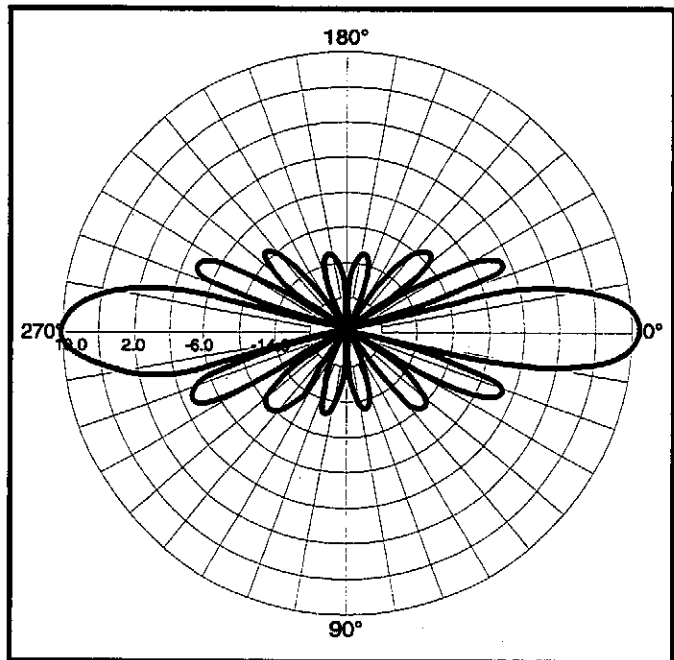
Length:	in.(mm)	138 (3505)
Weight:	lbs.(kg)	30 (13.6)
Rated Wind Velocity:	mph(km/h)	100 (161)
Rated Wind Velocity with 0.5 in.(13 mm) radial ice:	mph(km/h)	85 (137)
Horizontal Thrust at Rated Wind Velocity and Ice Load:	Lbs (kg)	133 (60)
Bending Moment at top mounting clamp (100 mph - no ice)	(Ft/lbs) (Kg/m)	432 (59)
Equivalent Flat Plate Area	Ft <sup>2</sup> (m <sup>2</sup> )	3.17 (.29)

Mounting information: No clamps supplied, base pipe: 2.38" (60mm) to 3.5" (89 mm) O.D. mast.

**HORIZONTAL PATTERN FOR VERTICAL POLARIZATION  
BIDIRECTIONAL PATTERN**



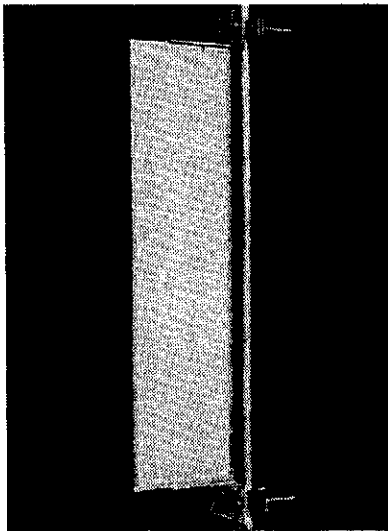
**VERTICAL PATTERN FOR VERTICAL POLARIZATION**





## Features

- ◆ Low sidelobe levels above the horizon (E-Plane)
- ◆ Rugged, lightweight design for reduced wind loading
- ◆ Weather tight radomes to protect elements and feed system in hostile environments
- ◆ Irridited aluminum to inhibit corrosion and reduce intermodulation susceptibility
- ◆ Customized beam tilt for close-in system performance
- ◆ DC grounded for lightning protection



## Bidirectional Antenna **A-8014**

9.5 dBd

806-960 MHz

*This high gain bidirectional antenna is specially designed to provide coverage along service corridors. Dual high impact, low loss, UV stabilized radomes protect the radiating elements from hostile environments.*

### Electrical Specifications

### A-8014

Frequency Range:	MHz	806-960
Nominal Gain:	dBd	9.5
Bandwith, 1.5:1 VSWR:	MHz	See Note 2
E-Plane Beamwidth (-3dB):	Deg.	18
Power Rating:	Watts	500
Polarization:		Vertical
Cross-Polarization Discrimination:	dB	25 min.
Pattern:		Bidirectional
Lightning Protection:		DC ground
Termination:		Type «N» Female (7/16 jack optional)

NOTE: (1) vswr is referenced to 50 ohms.  
 (2) Specify frequency band when ordering. Standard frequency bands are 806-866, 815-895 and 872-960 MHz.  
 (3) For electrical downtilt, add suffix 0 to 6 to the product number; i.e. A-8014-4 for a 4° downtilt.

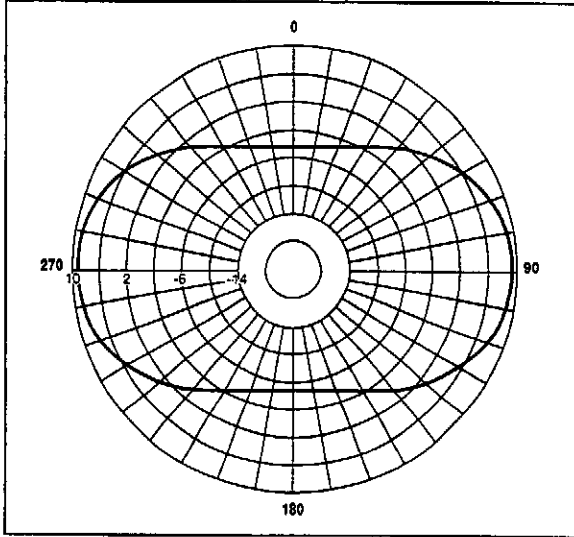
### Mechanical Specifications

### A-8014

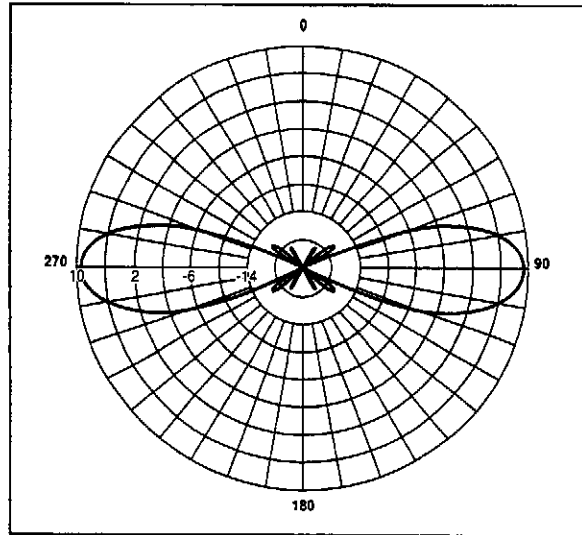
Length:	in.(mm)	48 (1220)
Width:	in.(mm)	6 (152)
Depth:	in.(mm)	13 (330)
Weight Including Clamps:	lbs(kg)	40.0 (18.2)
Rated Wind velocity:	mph(km/h)	125 (200)
Horizontal Thrust at Rated Wind Velocity:	lbs.(kg)	270 (123)

Mounting Information: Clamps included for mounting to a 1.75" - 4.00" (45-102) pipe.

**HORIZONTAL PATTERN**



**VERTICAL PATTERN with 0° downtilt**



**VERTICAL PATTERN with 6° downtilt**

