



# 23 GHZ (21.2 - 23.6) HIGH-PERFORMANCE MICROWAVE ANTENNAS

## FEATURES

- **Antenna diameters**
  - 1' (30 cm)
  - 1.5' (45 cm)
  - 2' (60 cm)
  - 3' (90 cm)
  - 4' (120 cm)
- **Antenna weights**
  - 1' 17 lbs. (7.7 kg)
  - 1.5' 19 lbs. (8.6 kg)
  - 2' 27 lbs. (12.2 kg)
  - 3' 50 lbs. (22.5 kg)
  - 4' 85 lbs. (38.3 kg)
- **HP models:** high-performance, plane polarized
- **HPD models:** dual polarized
- **IEC or EIA flanges available**
- **Direct mounting** for RF units available
- **Ease of installation:** antennas shipped completely assembled, minimal mount required
- **Planar radomes** standard with high-performance model
- **Rugged and lightweight** cast aluminum mount with fine adjustment for both azimuth and elevation
- **Compact size,** due to Radio Waves innovative feed design
- **Standard white;** other colors and/or logos available on request
- **Corrosive resistant:** coated aluminum, hot dipped galvanized steel and stainless steel
- **Three year warranty**



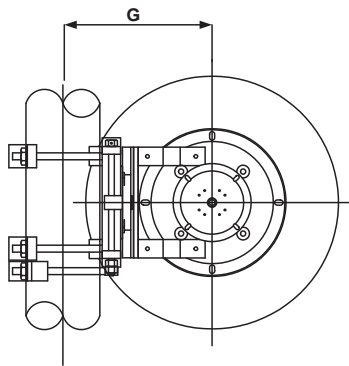
## 21.2 - 23.6 GHz ELECTRICAL SPECIFICATIONS (typical performance)\*

Model Number	Diameter ft (cm)	Gain, dBi			Beamwidth Degrees, 3dB	X Pol. Disc., dB	F/B Ratio, dB	VSWR Max. (R.L., dB)
		Low	Mid	High				
<b>Plane Polarized</b>								
HPLP1-23	1 (30)	34.7	35.1	35.5	2.7	30	62	1.4:1 (15.5)
HPLP1.5-23	1.5 (45)	36.8	37.2	37.8	2.1	30	64	1.4:1 (15.5)
HP2-23	2 (60)	39.7	40.2	40.7	1.7	30	68	1.4:1 (15.5)
HP3-23	3 (90)	43.2	43.7	44.2	1.1	30	71	1.4:1 (15.5)
HP4-23	4 (120)	45.7	46.2	46.6	0.8	30	72	1.4:1 (15.5)
<b>Dual Polarized</b>								
HPLPD1-23	1 (30)	34.5	34.9	35.3	2.7	30	62	1.4:1 (15.5)
HPLPD1.5-23	1 (45)	36.6	37.0	37.6	2.1	30	64	1.4:1 (15.5)
HPD2-23	2 (60)	39.5	40.0	40.5	1.7	30	68	1.4:1 (15.5)
HPD3-23	3 (90)	43.0	43.5	44.0	1.1	30	71	1.4:1 (15.5)
HPD4-23	4 (120)	45.5	46.0	46.4	0.8	30	72	1.4:1 (15.5)

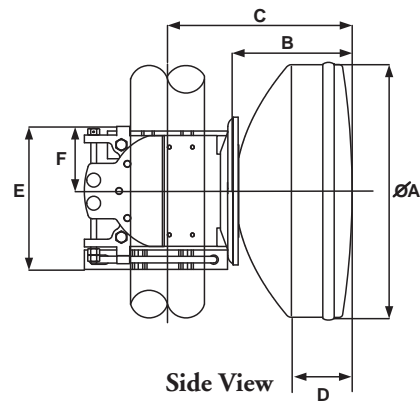
\* All specifications subject to change without notice.  
For regulatory compliances, contact Radio Waves.

# ANTENNA DIMENSIONS

HPLP SERIES: 1' (30 CM) & 1.5' (45 CM)



Rear View



Side View

\*Dimensions = Inches/cm.

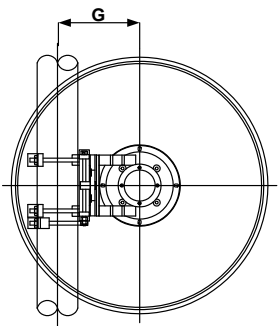
Reflector Diameter (ft, cm)	ØA	B	C	D	E	F	G
1 (30)	13.5 (34.3)	6.2 (15.8)	9.2 (23.4)	3.2 (8.0)	8.3 (21.1)	3.8 (9.7)	9.51 (24.2)
1.5 (45)	18.0 (45.7)	8.0 (20.32)	11.1 (28.1)	4.3 (10.8)	8.3 (21.1)	3.8 (9.7)	9.51 (24.2)

## Adjustment Ranges:

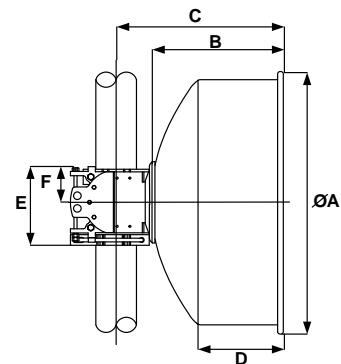
<b>Azimuth:</b>	Coarse	360°	<b>Elevation:</b>	Fine	±40°
	Fine	±10°			

Based on 4.5 inches (11.4 cm) pipemast. Mount designed to attach to pipemast between 2.0" (5.1 cm) and 4.5" (11.4 cm).

## HP2 SERIES: 2' (60 CM)



Rear View



Side View

\*Dimensions = Inches/cm.

Reflector Diameter (ft, cm)	ØA	B	C	D	E	F	G
2 (60)	25.5 (64.8)	12.7 (32.3)	15.15 (38.5)	8.5 (21.6)	8.3 (21.1)	3.8 (9.7)	12.4 (31.4)

## Adjustment Ranges:

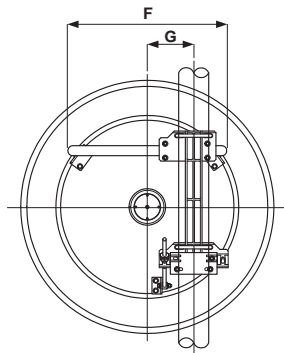
<b>Azimuth:</b>	Coarse	360°	<b>Elevation:</b>	Fine	±40°
	Fine	±10°			

Based on 4.5 inches (11.4 cm) pipemast. Mount designed to attach to pipemast between 2.0" (5.1 cm) and 4.5" (11.4 cm).

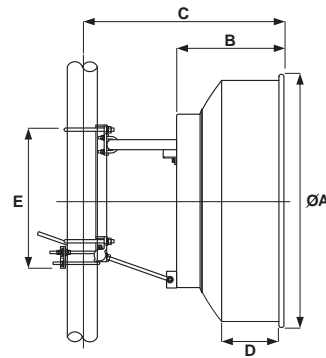
Radio Waves, Inc.  
<http://www.radiowavesinc.com>

# ANTENNA DIMENSIONS

HP3, HP4 & HP6 SERIES: 3' (90 CM), 4' (120 CM) & 6' (180 CM)



Rear View



Side View

\*Dimensions = Inches/cm.

Reflector Diameter (ft, cm)	ØA	B	C	D	E	F	G
3 (90)	38.0 (91.4)	16.0 (40.6)	30.2 (76.7)	9.3 (23.6)	21.0 (53.3)	25.7 (65.3)	7.0 (17.8)
4 (120)	50.0 (127.0)	20.8 (52.8)	35.0 (89.0)	12.0 (30.5)	21.0 (53.3)	25.7 (65.3)	7.0 (17.8)
6 (180)	70.0 (177.8)	25.2 (64.0)	39.4 (100.1)	12.0 (30.5)	21.0 (53.3)	25.7 (65.3)	7.0 (17.8)

## Adjustment Ranges:

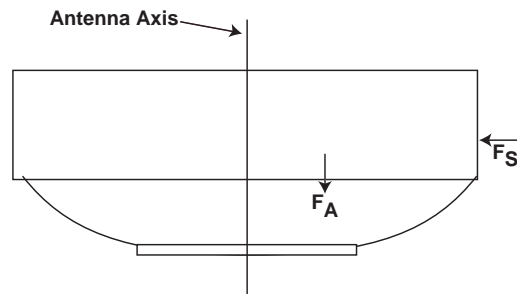
<b>Azimuth:</b>	Coarse	360°	<b>Elevation:</b>	Fine	±25°
	Fine	±10°			

Based on 4.5 inches (11.4 cm) pipemast. Mount designed to attach to pipemast between 4.5" (11.4 cm) and 5.0" (12.7 cm).

## NOTES:

# ANTENNA WIND FORCES AND LOADS

HP SERIES: 1' (30 cm), 1.5' (45 cm), 2' (60 cm), 3' (90 cm), 4' (120 cm) & 6' (180 cm)



Top View

\*Dimensions = Inches/cm.

Antenna Windloading		1.5' (45 cm)		2' (60 cm)	
<b>Fa max</b>	46 lbs. (204N)	<b>Fa max</b>	89 lbs. (395N)	<b>FA max</b>	178 lbs. (791N)
<b>Fs max</b>	13 lbs. (58N)	<b>Fs max</b>	21 lbs. (93N)	<b>Fs max</b>	69 lbs. (306N)

Antenna Windloading		4' (120 cm)		6' (180 cm)	
<b>Fa max</b>	394 lbs. (1750N)	<b>Fa max</b>	682 lbs. (3034N)	<b>Fa max</b>	1415 lbs. (6294N)
<b>Fs max</b>	136 lbs. (604N)	<b>Fs max</b>	278 lbs. (1237N)	<b>Fs max</b>	594 lbs. (2642N)

Loading applied to tower at survival windspeed of 125 mph (210km/h)

## NOTES: