

5.25 GHz (5.250 - 5.850) STANDARD PARABOLIC ANTENNAS

FEATURES

- **Antenna diameters;**
 - 1' (30 cm)
 - 2' (60 cm)
 - 3' (90 cm)
 - 4' (120 cm)
 - 6' (180 cm)
- **Antenna weights**
 - 1' 15 lbs. (6.8 kg)
 - 2' 22 lbs. (9.9 kg)
 - 3' 35 lbs. (15.8 kg)
 - 4' 60 lbs. (27.0 kg)
 - 6' 90 lbs. (40.5 kg)
- **SP models:** standard parabolic, plane polarized
- **SPD models:** dual polarized
- **Connector interface:** type "N" female
- **Ease of installation:** antennas shipped completely assembled, minimal mount required
- **Optional molded radomes;** radomes shipped factory installed
- **Rugged and lightweight** cast aluminum mount with and without fine adjustment
- **Standard white;** other colors and/or logos available on request
- **Corrosive resistant:** all mount materials are coated aluminum, hot dipped galvanized steel and stainless steel (300 series)
- **Three year warranty**



5.25 - 5.850 GHz ELECTRICAL SPECIFICATIONS (typical performance)*

Model Number	Diameter ft (cm)	Gain, dBi Mid-band	Beamwidth Degrees, 3dB	X Pol Disc., dB	Isolation, dB Port - Port	F/B Ratio, dB	VSWR Max. (R.L., dB)
Plane Polarized							
SP1-5.2	1 (30)	22.0	12.0	17	—	30	1.4:1 (15.5)
SP2-5.2	2 (60)	28.3	6.2	28	—	36	1.4:1 (15.5)
SP3-5.2	3 (90)	31.4	4.2	30	—	38	1.4:1 (15.5)
SP4-5.2	4 (120)	34.6	3.1	30	—	42	1.4:1 (15.5)
SP6-5.2	6 (180)	37.7	2.1	30	—	44	1.4:1 (15.5)
Dual Polarized							
SPD2-5.2	2 (60)	28.1	6.2	28	30	36	1.4:1 (15.5)
SPD3-5.2	3 (90)	31.1	4.2	30	30	38	1.4:1 (15.5)
SPD4-5.2	4 (120)	34.4	3.1	30	30	42	1.4:1 (15.5)
SPD6-5.2	6 (180)	37.5	2.1	30	30	44	1.4:1 (15.5)

* All specifications subject to change without notice.

RD SERIES

FEATURES

- **Radome diameters**
 - 2' (60 cm)
 - 3' (90 cm)
 - 4' (120 cm)
 - 6' (180 cm)
- **Radome weights**
 - 2' 4 lbs. (1.8 kg)
 - 3' 8 lbs. (3.6 kg)
 - 4' 20 lbs. (9.0 kg)
 - 6' 30 lbs. (13.5 kg)
- **Factory installed** prior to shipping
(6 ft radome shipped loose)
- **Reduces wind loading** on the tower or associated antenna structure
- **Molded radomes** are made of ABS plastic
- U.V. inhibited and protect the antenna from severe environmental conditions
- Radomes are paintable
- Attachment kits are available for existing antennas in the field



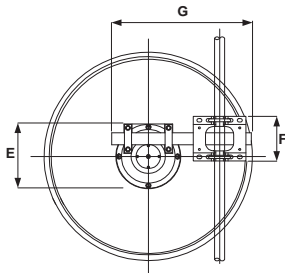
GHz ELECTRICAL SPECIFICATIONS (typical performance)*

Model Number	Diameter ft. (cm)	Attenuation		Add to antenna VSWR Max.	
		2 GHz	5 GHz	2 GHz	5 GHz
RD2	2 (60)	0.2	0.4	0.02	0.04
RD3	3 (90)	0.2	0.4	0.02	0.04
RD4	4 (120)	0.2	0.4	0.02	0.04
RD6	6 (180)	0.2	0.4	0.02	0.04

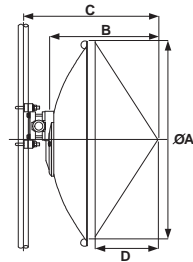
* All specifications subject to change without notice.

ANTENNA DIMENSIONS

SP2-NL SERIES: 2' (60CM)



Rear View



Side View

*Dimensions = Inches/cm.

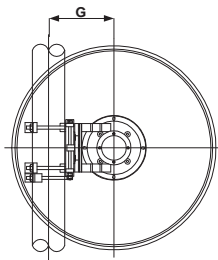
Reflector Diameter (ft, cm)	ØA	B	C	D	E	F	G
2 (60)	25.3 (64.1)	10.9 (27.7)	16.5 (41.9)	5.8 (14.7)	8.0 (20.3)	5.5 (14.0)	17.0 (43.2)

Adjustment Ranges:

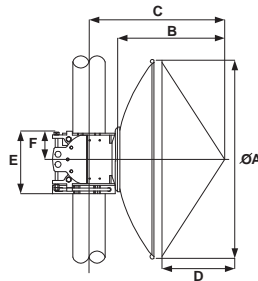
Azimuth: Coarse 360° **Elevation:** Coarse ±40°

Based on 4.5 inches (11.4 cm) pipemast. Mount designed to attach to pipemast between 1.5" (3.8 cm) and 4.5" (11.4 cm).

SP2-NS SERIES: 2' (60 CM)



Rear View



Side View

*Dimensions = Inches/cm.

Reflector Diameter (ft, cm)	ØA	B	C	D	E	F	G
2 (60)	25.3 (64.1)	10.9 (27.7)	13.7 (34.8)	5.8 (14.7)	8.3 (21.1)	3.8 (9.7)	8.1 (20.5)

Adjustment Ranges:

Azimuth: Coarse 360° **Elevation:** Coarse ±40°

Fine ±10°

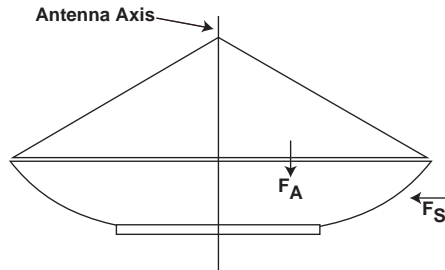
Based on 4.5 inches (11.4 cm) pipemast. Mount designed to attach to pipemast between 1.0" (2.5 cm) and 4.5" (11.4 cm).

Radio Waves, Inc.

<http://www.radiowavesinc.com>

ANTENNA WIND FORCES AND LOADS

SP1 SERIES



Top View

*Dimensions = Inches/cm.

Antenna Windloading 1' (30 cm)		2' (60 cm)	
Fa max	46 lbs. (204N)	Without Radome	
Fs max	13 lbs. (58N)	Fa max	222 lbs. (988N)
		Fs max	14 lbs. (62N)
		With Radome	
		Fa max	122 lbs. (543N)
		Fs max	24 lbs. (107N)

Antenna Windloading 3' (90 cm)		4' (120 cm)		6' (180 cm)	
Without Radome		Without Radome		Without Radome	
Fa max	492 lbs., (2189N)	Fa max	855 lbs., (3803N)	Fa max	1768 lbs., (7865N)
Fs max	40 lbs (178N)	Fs max	45 lbs., (200N)	Fs max	98 lbs., (436N)
With Radome		With Radome		With Radome	
Fa max	271 lbs., (1206N)	Fa max	469 lbs., (2087N)	Fa max	973 lbs., (4329N)
Fs max	64 lbs., (285N)	Fs max	93 lbs., (414N)	Fs max	162 lbs., (723N)

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

Standard & High Performance Plane - Dual Polarized Unlicensed "NII" and Spread Spectrum / "ISM" Bands

(National Information Infrastructure) (Industrial, Scientific & Medical)

Facts & Features

- Gabriel Quality and Dependability.
- Innovative Feed Design.
- Feed input is Type N Female, 50 ohm.
- Isolation is 35 dB on Dual Polarized models.
- Optional radomes available.
- 2 ft. (0.6) model feeds are installed from the front of the antenna. 4 ft. (1.2), 6 ft. (1.8) and 8 ft. (2.4) model feeds are installed from the rear of the antenna, and allow for inspection or replacement from the rear.

These models allow for smooth polarization adjustment from the back of the antenna.

- Gabriel's Quick Align Mount comes standard on the SSP2, SSD2 and HSSP2 models. This mount allows for quick installation and easy alignment of the antenna with two hand tools. The Quick Align Mount will mount to a 1.9 - 4.5 in OD mast pipe.
- New environmentally pleasing neutral colors.
- Dual band models are available.

Electrical Specifications

Frequency GHz	Model Number	Size ft (m)	Standard	Low	Gain at			Nominal Mid-Band Beamwidth degrees	XPD dB	F/B ratio dB	VSWR max.	(R.L. dB)
					Mid dBi	High	High					
Standard - Plane Polarized												
5.250 - 5.850	SSP2-52B	2 (0.6)	-	28.1	28.5	29.0	6.1	25	38	1.50	(14.0)†	
	SSP4-52B	4 (1.2)	-	33.6	34.2	34.6	3.1	30	46	1.50	(14.0)†	
	SSP6-52A	6 (1.8)	-	37.0	37.5	38.0	2.1	30	49	1.50	(14.0)†	
	SSP8-52	8 (2.4)	-	39.4	39.8	40.3	1.6	30	52	1.50	(14.0)†	
Standard - Dual Polarized												
5.250 - 5.850	SSD2-52A	2 (0.6)	-	28.0	28.4	28.9	6.1	30	38	1.50	(14.0)†	
	SSD4-52A	4 (1.2)	-	33.5	34.1	34.5	3.1	30	46	1.50	(14.0)†	
	SSD6-52	6 (1.8)	-	36.9	37.4	37.9	2.1	30	49	1.50	(14.0)†	
	SSD8-52	8 (2.4)	-	39.3	39.7	40.2	1.6	30	52	1.50	(14.0)†	
High Performance - Plane Polarized												
5.250 - 5.850	HSSP2-52	2 (0.6)	-	27.7	28.1	28.6	6.1	30	43	1.50	(14.0)†	
	HSSP4-52A	4 (1.2)	-	33.3	33.9	34.3	3.1	30	48	1.50	(14.0)†	
	HSSP6-52A	6 (1.8)	-	36.7	37.2	37.7	2.1	30	53	1.50	(14.0)†	
	HSSP8-52	8 (2.4)	-	39.2	39.6	40.1	1.6	30	62	1.50	(14.0)†	

See the Special Application section of this catalog for Gabriel's Directional Flat Panel antennas for Spread Spectrum operation.



Gabriel "UNII" and "ISM" Band
2-ft. (0.6 m) - Plane Polarized - Standard Parabolic Antenna

Associated Equipment Information

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NOTE:

† Improved VSWR available.
Product information subject to change without notice.

SOURCE CONTROL DRAWING**100499-001**

Part Number: 100499-001
 PART: 12" x 12" integral flat panel
 DATE: 10/08/2001
 DOCUMENT REVISION: Release 1
 PART REVISION: 1
 ORIGINATOR: Lam Huynh / Stuart Taylor
 ECN: C00442

Antenna Type: Integral panel antenna
 Operating Frequency: 5.25 – 5.35 GHz and 5.725 – 5.825 GHz
 Bore-sight gain: 21.0 dBi, including cable loss, (21 dBi + / - 0.5 dB)
 Beamwidth –3 dB: $11 \pm 2^\circ$ on both azimuth and elevation planes
 Beamwidth –20 dB:
 5.25 – 5.35 GHz: 36° max on azimuth, 48° max on elevation planes
 5.725 – 5.825 GHz: 36° max on both azimuth and elevation planes
 Polarization: either vertical or horizontal by 90° plane rotation
 Side lobe peaks: 20 dB min on both planes
 (when mounted in 45° diamond position)
 Antenna radiation envelop: see typical antenna profile
 Front-to-back ratio: -30 dB min when mounted on CX radio mechanical box
 Cross-polarization: -30 dB min within 3dB beamwidth, -20 dB elsewhere
 VSWR (with radome): 1.5:1 nom, 1.7:1 max
 RF interface: SMP female on 0.085" flex cable, 6" long
 (Recommended CDI P/N P657-3705-1CC female straight to flex cable or equivalent. Recommended double-shielded cable but single-shielded cable is acceptable if min antenna gain is met)

Labeling: Frequency and polarization must be labeled at RF interfaces. Part must be labeled with Vendor Name or ID

SOURCE CONTROL DRAWING**100499-001**

I and Date Code.

Radome: white, molded

Antenna finish: TBD

Antenna mount: integral to radio mechanics, in diamond position
See attached mechanical interface drawing

Weight: TBD

Size: fit in 12" x 12" radome

Wind load: N/A

Operating temperature: -40°C to +60°C

Environmental exposure: Humidity test, dust test, salt fog test performed in accordance with FA-903000, Rev.1, which references MIL-STD-810E

Vendor: TBD

Vendor Part Number: TBD

Appendix A: typical azimuth beam pattern

