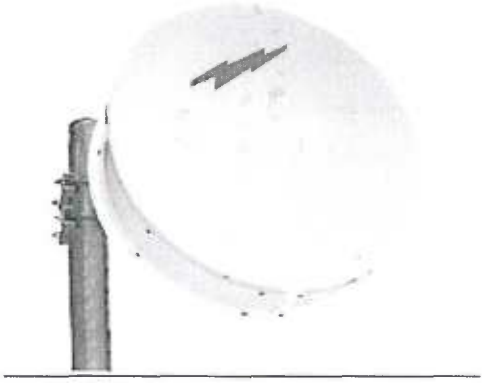


VHLP6-6W-6GR/A

1.8 m | 6 ft ValuLine® High Performance Low Profile Antenna, single-polarized, 5.925–7.125 GHz, CPR137G, gray antenna, polymer gray radome without flash, standard pack—one-piece reflector

General Specifications	
Antenna Type	VHLP - ValuLine® High Performance Low Profile Antenna, single-polarized
Diameter, nominal	1.8 m | 6 ft
Packing	Standard pack
Radome Color	Gray
Radome Material	Polymer
Reflector Construction	One-piece reflector
Antenna Input	CPR137G
Antenna Color	Gray
Antenna Type	VHLP - ValuLine® High Performance Low Profile Antenna, single-polarized
Diameter, nominal	1.8 m | 6 ft
Flash Included	No
Polarization	Single

Electrical Specifications	
Operating Frequency	5.925 – 7.125 GHz

Band	
Beamwidth, Horizontal	1.8 °
Beamwidth, Vertical	1.8 °
Cross Polarization Discrimination (XPD)	30 dB
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 307.1 | Canada SRSP 307.7 Part B | ETSI 302 217 Class 3 | US FCC Part 101B1 | US FCC Part 101B2
Front-to-Back Ratio	65 dB
Gain, Low Band	37.8 dBi
Gain, Mid Band	39.0 dBi
Gain, Top Band	39.8 dBi
Operating Frequency Band	5.925 – 7.125 GHz
Radiation Pattern Envelope Reference (RPE)	7138A
Return Loss	17.7 dB
VSWR	1.30

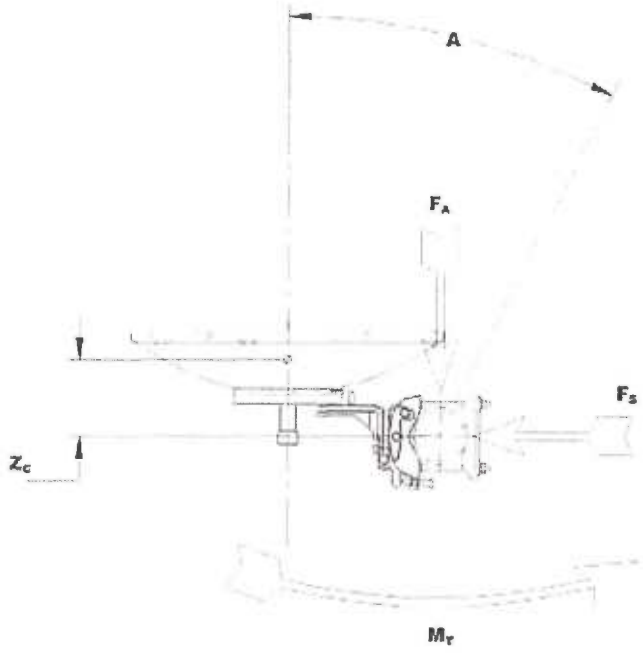
Mechanical Specifications	
Fine Azimuth Adjustment	±20°
Fine Elevation Adjustment	±15°
Mounting Pipe Diameter	115 mm | 4.5 in
Net Weight	62 kg | 137 lb
Side Struts, Included	1 inboard
Side Struts, Optional	1 inboard
Wind Velocity Operational	200 km/h | 124 mph
Wind Velocity Survival Rating	200 km/h | 124 mph

Wind Forces At Wind Velocity Survival Rating	
Axial Force (FA)	7128 N | 1602 lbf
Side Force (FS)	3531 N | 794 lbf
Twisting Moment (MT)	3197 N•m

Weight with 1/2 in (12 mm) Radial Ice	205 kg | 452 lb
Zcg with 1/2 in (12 mm) Radial Ice	450 mm | 18 in
Zcg without Ice	425 mm | 17 in

Wind Forces At Wind Velocity Survival Rating Image

Click on image below to enlarge.

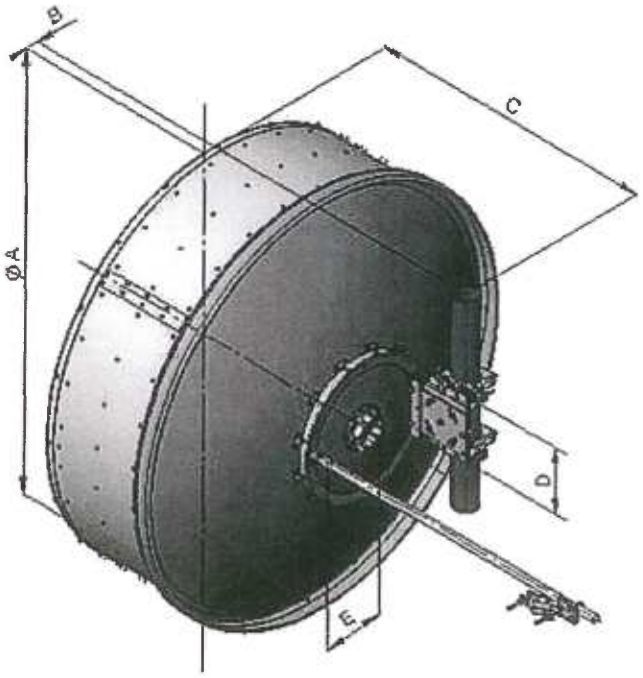


Packed Dimensions

Gross Weight, Packed Antenna	193.0 kg | 425.5 lb
Height	2110.0 mm | 83.1 in
Length	2070.0 mm | 81.5 in
Volume	3.8 m^3
Width	880.0 mm | 34.6 in

Antenna Dimensions And Mounting Information

Click on image below to enlarge.



Dimensions in Inches (mm)					
Antenna Size, ft (m)	A	B	C	D	E
6 (1.8)	76.3 (1938)	15 (381)	38.7 (984)	12.2 (310)	11.7 (297)

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

KATHREIN
SCALA DIVISION

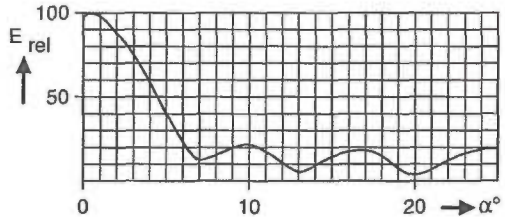
750 10068
OMNIDIRECTIONAL ANTENNA
10.5 dBd gain
470–862 MHz

Specifications:

Frequency range	470–862 MHz
Gain	10.5 dBd
Impedance	50 ohms
VSWR	<1.1:1
Polarization	Horizontal
Maximum input power	5 kW (at 50° C)
Azimuth pattern	Omni
Elevation pattern	6 degrees (half-power)
Connector	1⅝ inch EIA female flange
Weight	308.6 lb (140 kg)
Height	190.3 inches (4834 mm)
Radome diameter	13.1 inches (333 mm)
Wind load Front/Side/Rear	at 99 mph (160 kph) 270 lbf (1200 N)
Mounting	Mounts to an existing structure using an adapter. See mounting dimensions on reverse.

Material:	Omnidirectional antenna in protective fiberglass radome with a diameter of 333 mm.
Radome color:	e.g. light grey (RAL 7035) or orange (RAL 2009), other colors on request. Please specify when ordering.
Flange:	Hot-dip galvanized steel.
Attachment:	Onto a fitting counterflange or to tubular masts by using a steel adapter.
Grounding:	Via mounting parts.

Azimuth pattern (E-plane)



Typical elevation pattern (H-plane)

11379-A

Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991
Email: communications@kathrein.com Internet: www.kathrein-scala.com

KATHREIN
SCALA DIVISION

750 10068
OMNIDIRECTIONAL ANTENNA
10.5 dBd gain
470–862 MHz

Mounting Notes:

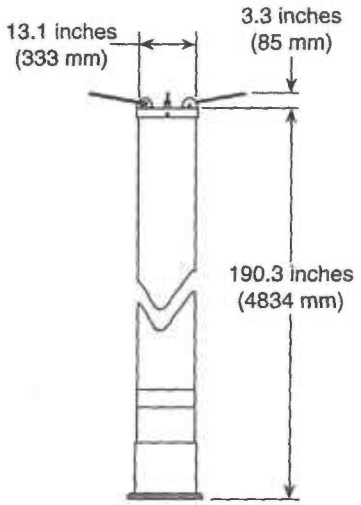
Cylindrical structures can show crosswind response due to vortex excitations.

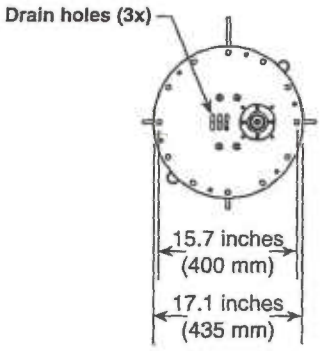
According to EN 1991-1-4 or EN 1993-3-1 fatigue calculations are required for structures having cylindrical parts. So a fatigue analysis must be carried out by a stress engineer for the supporting structure (mast) with the antenna.

Antenna 750 10068:
length of cylindrical part: 4.834 m
diameter of cylinder: 0.333 m

The antenna can be considered as a cantilever with uniform mass distribution and an additional mass at the bottom (flange level) of the antenna:
length: 4.834 m
stiffness E·I: $1.0 \cdot 10^6$ Nm²
mass per length: 20 kg/m
mass at bottom: 30 kg
logarithmic decrement of damping: 0.07
The antenna is not fatigue critical in accordance with EN 1993-1-9.

Fixing: 12x M12 grade 8.8, tightening torque 70 Nm





Order Information:

Model	Description
750 10068	Antenna with 1⅝ inch EIA female flange connector

Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991
Email: communications@kathrein.com Internet: www.kathrein-scala.com

Shively Labs®

Model 6828 FM Antenna

True circular polarization

Handles up to 20 kW per 2-Bays

Multiplexes over 10 MHz bandwidth,

Shively standard features:

- Ring stub design
- Consistently predictable patterns
- Digital-ready
- Pattern studies available
- No factory personnel needed to install
- Radomes and deicers available
- Rugged stainless steel corrosion-resistant mounts
- Works with regular towers; no need for special frequency-sensitive tower sections
- Pressure relief valve for easy purging of the system
- Null fill and beam tilt available

Performance Specifications:

Polarization: Right circular.

VSWR: < 1.2:1 over 10 MHz.

Azimuth Pattern Circularity: Horizontal component ± 1.5 dB on pole.

Input Connection: Standard up to 40 kW: 3-1/8" flange
Over 40 kW: 6-1/8" male flange.

Electrical Specifications:

No. of Bays	Gain		Power Rating
	Power	dB	kW
2	0.99	-0.04	20
4	2.12	3.26	40
6	3.28	5.16	60
8	4.46	6.50	80
10	5.65	7.52	100
12	6.85	8.36	100

Notes:

1. Our gain figures are derived from the computed directivity and include the losses in the antenna feed system. Gain is provided for one polarization and is equal in circularly polarized antennas for both horizontal and vertical components. Gain will be reduced if null fill, beam tilt is provided. Gain will increase in a directional array by the directivity of the azimuth pattern.

Document No. ds-6828 (130717)

A Division of Howell Laboratories, Inc., P. O. Box 389, Bridgton, Maine 04009 USA
(207) 647-3327 1-888-SHIVELY Fax: (207)647-8273
An Employee-Owned Company
www.shively.com
sales@shively.com
Certified to ISO-9001

Size and Weight:

No. of Bays	Vertical Tower Space						Weight					
	Antenna radiation aperture		Physical space used		Total tower space recommended		Without radomes		With radomes		With radomes & 1/2" (1.2 cm) radial ice	
	ft	m	ft	m	ft	m	lb	N	lb	N	lb	N
2	9.00	2.74	16.50	5.03	36.50	11.03	500	227	657	298	996	452
4	27.00	8.23	34.50	10.52	54.50	16.52	1150	521	1464	664	2215	976
6	45.00	13.72	52.50	16.00	72.50	22.00	1650	748	2121	962	3211	1428
8	63.00	19.20	70.50	21.49	90.50	27.49	2300	1043	2928	1328	4430	1952
10	81.00	24.69	88.50	26.97	108.50	32.97	2800	1270	3585	1626	5426	2404
12	99.00	30.17	106.50	32.46	126.50	38.46	3300	1497	4242	1924	6422	2856

Windload:

No. of Bays	Revision 'G'					
	Without radomes		With radomes		With radomes & 1/2" (1.2 cm) radial ice	
	ft^2	m^2	ft^2	m^2	ft^2	m^2
2	17.6	1.6	21	2.0	48	4.4
4	45.2	4.2	52	4.8	131	12.2
6	62.8	5.8	73	6.8	179	16.6
8	90.4	8.4	104	9.7	262	24.4
10	108.0	10.0	125	11.6	310	28.8
12	125.6	11.7	146	13.6	358	33.3

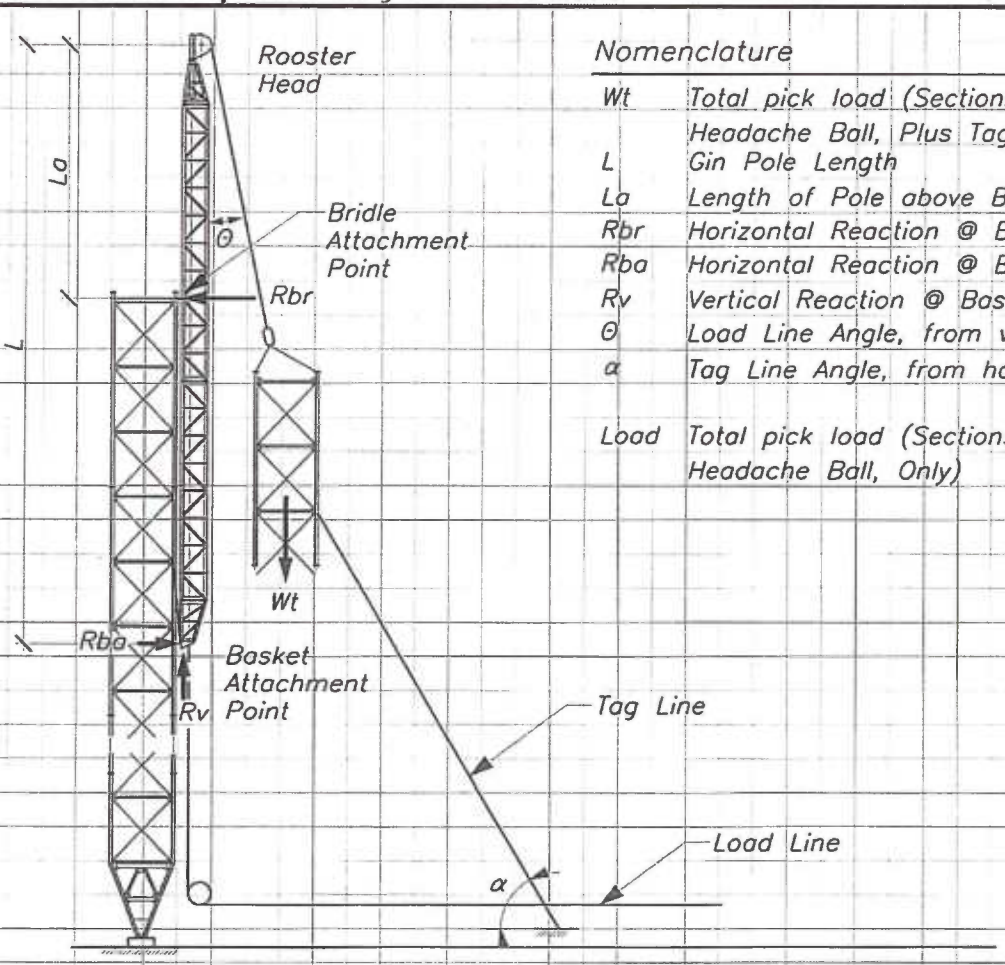
Notes:

2. The mounting structure must not flex more than ± 1/2 in (± 1.2 cm) in any 10-ft (3-meter) section. 5 feet (1.5 m) of mounting structure is required above and below the antenna bays for proper pattern formation.
3. Antenna radiation aperture is the distance from the center of the top bay to the center of the bottom bay. Physical space used is from the top of the top bay to the input flange at the bottom of the array, or the bottom of the bottom bay in a center-fed array. Total tower space recommended allows ten feet (3 m) of clear tower space above and below the antenna to protect from pattern interference by other antennas. At frequencies lower than 98 MHz, each of these dimensions will increase by up to 1 ft (0.3 m) per bay.
4. Windload and weight tabulations are estimates. They include the bay, interbay feedline, feed system, and input connection. No values have been included in these tabulations for mounts. Actual values vary with the specific installation. Contact us with details of your installation if more precise values are needed.
5. The surface area is calculated per EIA standard RS-222-G (C_aA_c).
7. Deicers add approximately 1 lb (4.4 N) per bay in weight and 2 lb (8.9 N) or 0.05 ft^2 (0.005 m^2) per bay in windload.
8. Ask for technical assistance at Shively if you are planning to mount antennas on AM towers or install them at altitudes over 3,000 ft (915 m) above mean sea level.

TOWER EQUIPMENT CO., INC.
22601 S 560 Rd
Fairland, OK 74343
(918) 257-8411

Title: 18 Inch Triangle Gin Pole
Load Chart Load Case #2
3° Line Angle – Rope Tag
68 Ft Long – 1-Part Cable

By M. Paulding | Page 6 of 8
Gin Pole Model PT18 Gin Pole
Length 68 Feet | Class B
Job No. PT18 | Date 7/15/05



Nomenclature

Wt	Total pick load (Sections, Headache Ball, Plus Tag Force)
L	Gin Pole Length
La	Length of Pole above Bridle
Rbr	Horizontal Reaction @ Bridle
Rba	Horizontal Reaction @ Basket
Rv	Vertical Reaction @ Basket
θ	Load Line Angle, from vertical
α	Tag Line Angle, from horizontal
Load	Total pick load (Sections, Headache Ball, Only)

Values in Pounds

Parameters	Ext.	20%	30%	40%	50%
	La	14 Feet	20 Feet	27 Feet	34 Feet
Load Angle = 3°	Wt	3,400	2,800	2,200	1,770
	Load	2,950	2,395	1,850	1,455
	Rbr	470	465	455	475
Tag Angle = 60°	Rba	265	285	290	320
	Rv	8,660	7,375	6,090	5,150

Note:
1. The load line must be rigged as shown with a single-part 7/16" diameter, minimum, IWRC cable in order to use these load values.
2. The Erector should always use caution so as to not exceed these values.
3. Reduce listed values by one half when lifting personnel.
4. The maximum wind speed for lift values is 30 mph.