

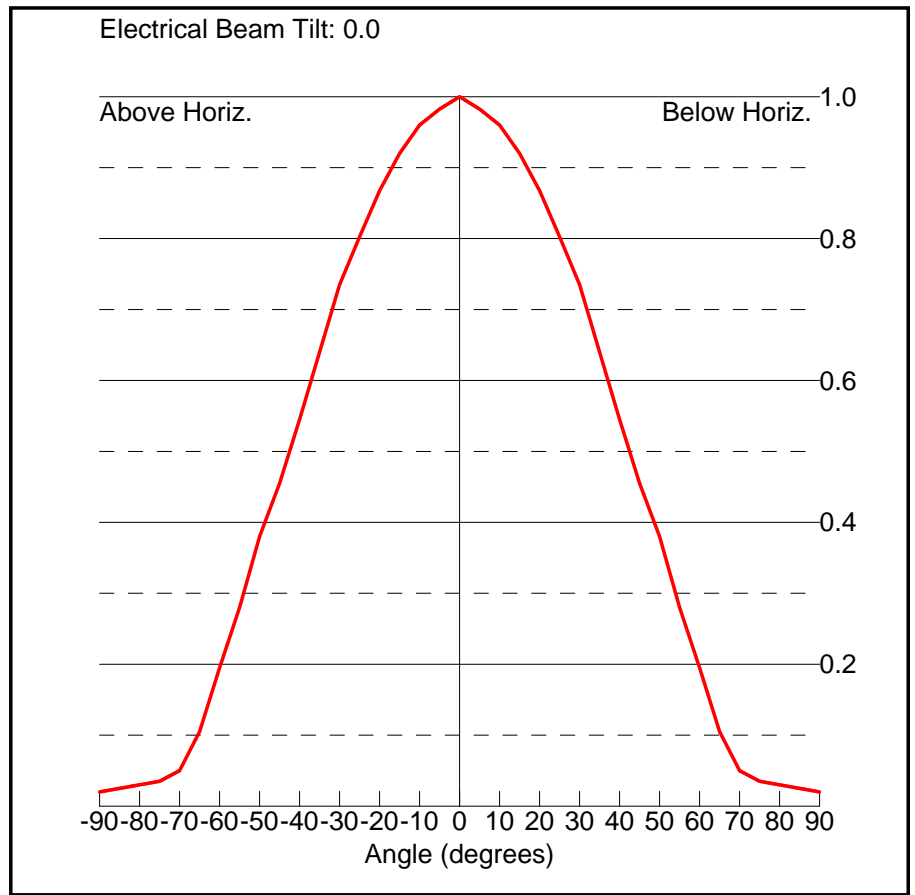
Azi	Rel	dBk	kW	dB
0	0.974	-21.20	0.008	-0.23
10	0.879	-22.08	0.006	-1.12
20	0.717	-23.86	0.004	-2.89
30	0.491	-27.14	0.002	-6.17
40	0.224	-33.98	0.000	-13.01
50	0.048	-47.34	0.000	-26.38
60	0.010	-60.97	0.000	-40.00
70	0.010	-60.97	0.000	-40.00
80	0.010	-60.97	0.000	-40.00
90	0.010	-60.97	0.000	-40.00
100	0.010	-60.97	0.000	-40.00
110	0.010	-60.97	0.000	-40.00
120	0.010	-60.97	0.000	-40.00
130	0.010	-60.97	0.000	-40.00
140	0.010	-60.97	0.000	-40.00
150	0.010	-60.97	0.000	-40.00
160	0.010	-60.97	0.000	-40.00
170	0.010	-60.97	0.000	-40.00

Azi	Rel	dBk	kW	dB
180	0.010	-60.97	0.000	-40.00
190	0.010	-60.97	0.000	-40.00
200	0.010	-60.97	0.000	-40.00
210	0.010	-60.97	0.000	-40.00
220	0.010	-60.97	0.000	-40.00
230	0.010	-60.97	0.000	-40.00
240	0.010	-60.97	0.000	-40.00
250	0.010	-60.97	0.000	-40.00
260	0.010	-60.97	0.000	-40.00
270	0.010	-60.97	0.000	-40.00
280	0.010	-60.97	0.000	-40.00
290	0.010	-60.97	0.000	-40.00
300	0.048	-47.34	0.000	-26.38
310	0.224	-33.98	0.000	-13.01
320	0.491	-27.14	0.002	-6.17
330	0.717	-23.86	0.004	-2.89
340	0.879	-22.08	0.006	-1.12
350	0.974	-21.20	0.008	-0.23

Rotation Angle = 0

Monterey Vertical Elevation Pattern

Angle (deg)	Relative Field
-90.0	0.02
-89.0	0.021
-88.0	0.022
-87.0	0.023
-86.0	0.024
-85.0	0.025
-84.0	0.026
-83.0	0.027
-82.0	0.028
-81.0	0.029
-80.0	0.03
-79.0	0.031
-78.0	0.032
-77.0	0.033
-76.0	0.034
-75.0	0.035
-74.0	0.038
-73.0	0.041
-72.0	0.044
-71.0	0.047
-70.0	0.05
-69.0	0.061
-68.0	0.072
-67.0	0.083
-66.0	0.094
-65.0	0.105
-64.0	0.123
-63.0	0.141
-62.0	0.159
-61.0	0.177
-60.0	0.195
-59.0	0.212
-58.0	0.229
-57.0	0.246
-56.0	0.263
-55.0	0.28
-54.0	0.3
-53.0	0.32
-52.0	0.34
-51.0	0.36
-50.0	0.38
-49.0	0.395
-48.0	0.41
-47.0	0.425
-46.0	0.44
-45.0	0.455
-44.0	0.473
-43.0	0.491



-42.0	0.509
-41.0	0.527
-40.0	0.545
-39.0	0.564
-38.0	0.583
-37.0	0.602
-36.0	0.621
-35.0	0.64
-34.0	0.659
-33.0	0.678
-32.0	0.697
-31.0	0.716
-30.0	0.735
-29.0	0.749
-28.0	0.762
-27.0	0.776
-26.0	0.789
-25.0	0.803
-24.0	0.816
-23.0	0.829
-22.0	0.842
-21.0	0.855

-20.0	0.868	32.0	0.697
-19.0	0.878	33.0	0.678
-18.0	0.889	34.0	0.659
-17.0	0.899	35.0	0.64
-16.0	0.91	36.0	0.621
-15.0	0.92	37.0	0.602
-14.0	0.928	38.0	0.583
-13.0	0.936	39.0	0.564
-12.0	0.944	40.0	0.545
-11.0	0.952	41.0	0.527
-10.0	0.96	42.0	0.509
-9.0	0.965	43.0	0.491
-8.0	0.969	44.0	0.473
-7.0	0.974	45.0	0.455
-6.0	0.978	46.0	0.44
-5.0	0.983	47.0	0.425
-4.0	0.986	48.0	0.41
-3.0	0.99	49.0	0.395
-2.0	0.993	50.0	0.38
-1.0	0.997	51.0	0.36
0.0	1.0	52.0	0.34
1.0	0.997	53.0	0.32
2.0	0.993	54.0	0.3
3.0	0.99	55.0	0.28
4.0	0.986	56.0	0.263
5.0	0.983	57.0	0.246
6.0	0.978	58.0	0.229
7.0	0.974	59.0	0.212
8.0	0.969	60.0	0.195
9.0	0.965	61.0	0.177
10.0	0.96	62.0	0.159
11.0	0.952	63.0	0.141
12.0	0.944	64.0	0.123
13.0	0.936	65.0	0.105
14.0	0.928	66.0	0.094
15.0	0.92	67.0	0.083
16.0	0.91	68.0	0.072
17.0	0.899	69.0	0.061
18.0	0.889	70.0	0.05
19.0	0.878	71.0	0.047
20.0	0.868	72.0	0.044
21.0	0.855	73.0	0.041
22.0	0.842	74.0	0.038
23.0	0.829	75.0	0.035
24.0	0.816	76.0	0.034
25.0	0.803	77.0	0.033
26.0	0.789	78.0	0.032
27.0	0.776	79.0	0.031
28.0	0.762	80.0	0.03
29.0	0.749	81.0	0.029
30.0	0.735	82.0	0.028
31.0	0.716	83.0	0.027

VHF-TV Log-periodic Antenna
174 to 216 MHz (Channels 7–13)

The Kathrein Scala Division CL-713 is a ruggedly built, horizontally polarized log-periodic antenna, designed for professional VHF-TV transmit and receive applications.

Like all Kathrein Scala Division antennas, the CL-713 is made of the finest materials using state of the art electrical and mechanical designs, resulting in superior performance and long service life.

The CL-713 may be used stand alone or in arrays for higher gains, increased side-lobe suppression or custom azimuth patterns.

Specifications:

Frequency range	174–216 MHz (broadband)
Gain	9 dBd
Power gain	7.84
Impedance	50 or 75 ohms
VSWR	< 1.5:1
Polarization	Horizontal
Front-to-back ratio	>25 dB
Maximum input power	250 watts (higher power rating optional)
Azimuth pattern	50 degrees (half-power)
Elevation pattern	62 degrees (half-power)
Connector	N female (50Ω or 75Ω)
Wind load Front	at 100 mph (160 kph) 121 lbf (537 N) maximum
Wind survival rating*	120 mph (200 kph)
Mounting	For masts of 2.375 inches (60 mm) OD.

CL-713/HCM Center-mount

CL-713/HRM Rear-mount

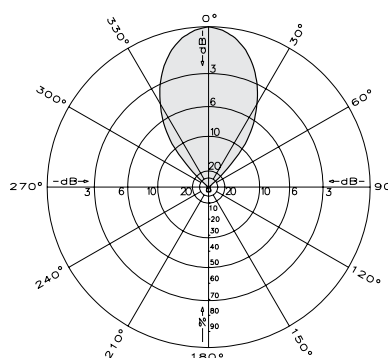
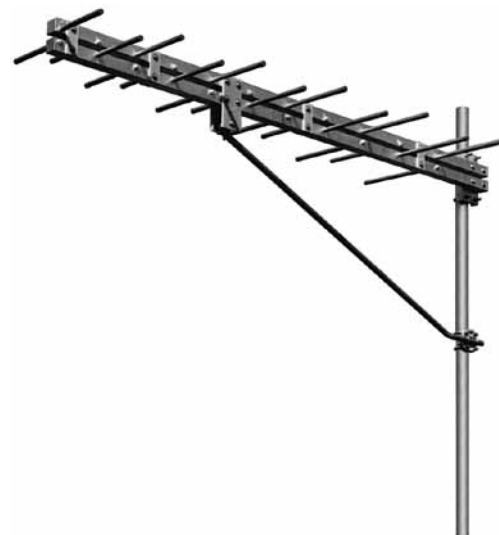
See reverse for order information.

Specifications: CL-713/HCM

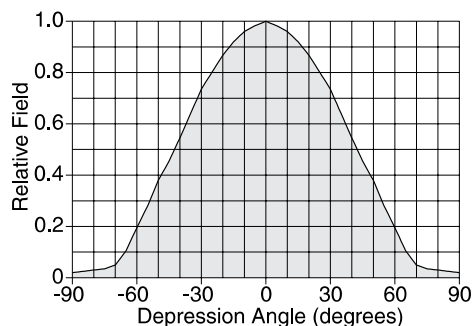
Weight	28.5 lb (12.9 kg)
Dimensions	89.2 x 33.9 x 9.9 inches (2266 x 862 x 252 mm)
Shipping dimensions	95 x 10 x 6 inches (2413 x 254 x 153 mm)
Shipping weight	42 lb (19.1 kg)

Specifications: CL-713/HRM

Weight	40 lb (18.2 kg)
Dimensions	104 x 38.5 x 33.9 inches (2642 x 978 x 862 mm)
Shipping dimensions	112 x 14 x 6 inches (2845 x 356 x 153 mm)
Shipping weight	79 lb (35.9 kg)



Azimuth pattern (E-plane)



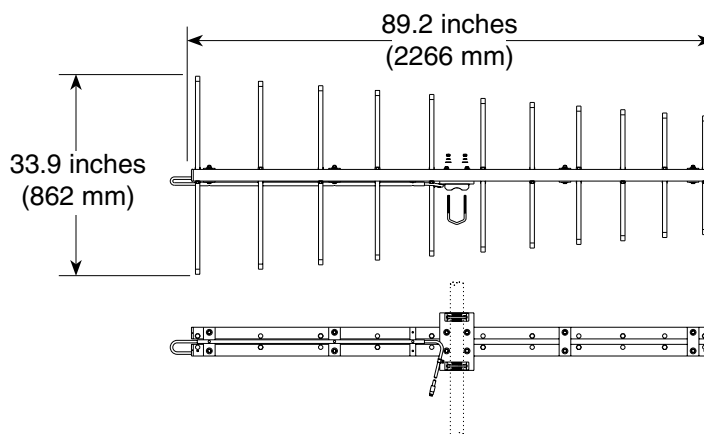
Elevation pattern (H-plane)



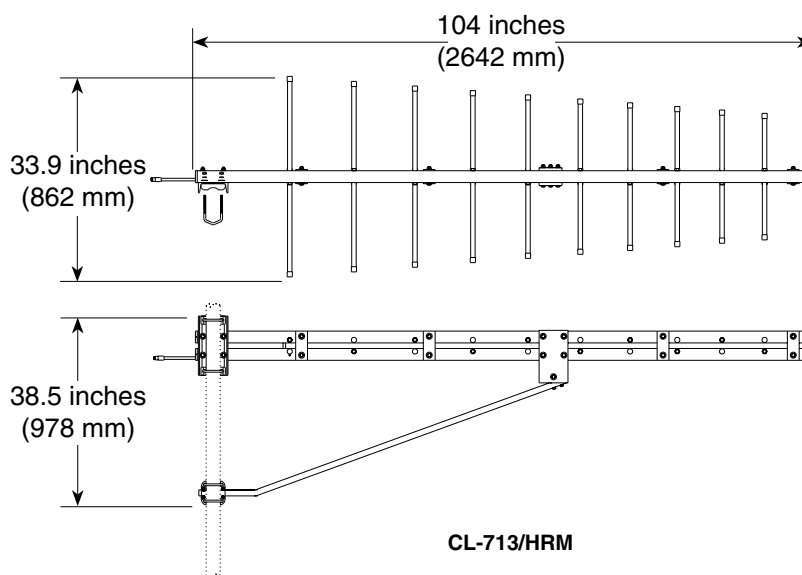
10280-D



* Mechanical design is based on environmental conditions as stipulated in TIA-222-G-2 (December 2009) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.



CL-713/HCM



CL-713/HRM

Order Information:

Model	Description
CL-713/HCM/50N	Antenna with 50 Ω N connector
CL-713/HCM/75N	Antenna with 75 Ω N connector
CL-713/HRM/50N	Antenna with 50 Ω N connector
CL-713/HRM/75N	Antenna with 75 Ω N connector

All specifications are subject to change without notice. The latest specifications are available at www.kathrein-scala.com.

N. Lat. = 382039.4 W. Lng. = 793546.1
 HAAT and Distance to Contour,
 FCC OET,TV 3.2 - 16.1, 130 pts - NED 03 SEC

WVPT3, Shenandoah Valley Educationa, BLEDT20130214ACP

Azi.	AV EL	HAAT	ERP kW	dBk	Field	DAng	VFld	D-kW	%Max	D-dBk	36-F9
000	931.9	406.1	0.0076	-21.20	0.974	0.558	0.998	0.0076	99.8	-21.20	44.74
010	949.0	389.0	0.0062	-22.09	0.879	0.546	0.998	0.0062	99.8	-22.09	42.26
020	921.5	416.5	0.0041	-23.86	0.717	0.565	0.998	0.0041	99.8	-23.86	40.71
030	978.8	359.2	0.0019	-27.15	0.491	0.525	0.998	0.0019	99.8	-27.15	31.65
040	1057.0	281.0	0.0004	-33.96	0.224	0.464	0.998	0.0004	99.8	-33.96	20.24
050	989.2	348.8	0.0000	-47.34	0.048	0.517	0.998	0.0000	99.8	-47.34	9.63
060	873.0	465.0	0.0000	-60.97	0.010	0.597	0.998	0.0000	99.8	-60.97	2.85
070	831.7	506.3	0.0000	-60.97	0.010	0.623	0.998	0.0000	99.8	-60.97	2.88
080	809.7	528.3	0.0000	-60.97	0.010	0.637	0.998	0.0000	99.8	-60.97	2.90
090	764.9	573.1	0.0000	-60.97	0.010	0.663	0.998	0.0000	99.8	-60.97	2.92
100	745.1	592.9	0.0000	-60.97	0.010	0.674	0.998	0.0000	99.8	-60.97	2.93
110	736.0	602.0	0.0000	-60.97	0.010	0.680	0.998	0.0000	99.8	-60.97	2.93
120	709.9	628.1	0.0000	-60.97	0.010	0.694	0.998	0.0000	99.8	-60.97	2.94
130	706.2	631.8	0.0000	-60.97	0.010	0.696	0.998	0.0000	99.8	-60.97	2.94
140	682.3	655.7	0.0000	-60.97	0.010	0.709	0.998	0.0000	99.8	-60.97	2.94
150	675.7	662.3	0.0000	-60.97	0.010	0.713	0.998	0.0000	99.8	-60.97	2.94
160	688.8	649.2	0.0000	-60.97	0.010	0.706	0.998	0.0000	99.8	-60.97	2.94
170	718.4	619.6	0.0000	-60.97	0.010	0.689	0.998	0.0000	99.8	-60.97	2.93
180	759.0	579.0	0.0000	-60.97	0.010	0.667	0.998	0.0000	99.8	-60.97	2.92
190	842.2	495.8	0.0000	-60.97	0.010	0.617	0.998	0.0000	99.8	-60.97	2.87
200	844.5	493.5	0.0000	-60.97	0.010	0.615	0.998	0.0000	99.8	-60.97	2.87
210	855.4	482.6	0.0000	-60.97	0.010	0.609	0.998	0.0000	99.8	-60.97	2.86
220	753.7	584.3	0.0000	-60.97	0.010	0.670	0.998	0.0000	99.8	-60.97	2.92
230	874.8	463.2	0.0000	-60.97	0.010	0.596	0.998	0.0000	99.8	-60.97	2.85
240	848.3	489.7	0.0000	-60.97	0.010	0.613	0.998	0.0000	99.8	-60.97	2.87
250	827.8	510.2	0.0000	-60.97	0.010	0.626	0.998	0.0000	99.8	-60.97	2.88
260	899.5	438.5	0.0000	-60.97	0.010	0.580	0.998	0.0000	99.8	-60.97	2.83
270	963.0	375.0	0.0000	-60.97	0.010	0.536	0.998	0.0000	99.8	-60.97	2.78
280	977.0	361.0	0.0000	-60.97	0.010	0.526	0.998	0.0000	99.8	-60.97	2.76
290	1052.8	285.2	0.0000	-60.97	0.010	0.468	0.998	0.0000	99.8	-60.97	2.68
300	1011.6	326.4	0.0000	-47.34	0.048	0.500	0.998	0.0000	99.8	-47.34	9.27
310	1006.9	331.1	0.0004	-33.96	0.224	0.504	0.998	0.0004	99.8	-33.96	21.80
320	1013.8	324.2	0.0019	-27.15	0.491	0.499	0.998	0.0019	99.8	-27.15	30.05
330	1018.1	319.9	0.0041	-23.86	0.717	0.495	0.998	0.0041	99.8	-23.86	35.55
340	998.8	339.2	0.0062	-22.09	0.879	0.510	0.998	0.0062	99.8	-22.09	39.66
350	965.5	372.5	0.0076	-21.20	0.974	0.535	0.998	0.0076	99.8	-21.20	42.95

Ave El= 868.93 M HAAT= 469.07 M AMSL= 1338 M