



DIRECTIVE SYSTEMS

177 DIXON RD.
LEBANON, ME. 04027
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www.directivesystems.com

2304 MHz Loop Yagi Kit, Model 1352LYK

Frequency range:	2.2 to 2.35 GHz	Gain:	≈ 21 dBi
Number of elements:	52	3 dB Beamwidth (E plane):	$\approx 14^\circ$
Boom length:	96 inches	F/B ratio:	≥ 20 dB
Boom diameter:	0.5 inch	Maximum Power:	400 W average
Mast diameter:	1 1/2 in. max	Stacking distance:	14 inches vertical
Weight:	3 pounds		16 inches horizontal
Connector:	Type-N female		

PARTS LIST

<i>Quantity</i>	<i>Description</i>	<i>Quantity</i>	<i>Description</i>
2 pcs	drilled boom	1 pkg	4-40 stainless steel screws
2	reflectors 1, 2		nuts, lockwashers, 8-32
1	driven element		misc. hardware
12	directors 1-12	1	small boom angle bracket
5	directors 13-17	1	3 x 5" boom to mast plate
6	directors 18-23	1	U-bolt with nuts & saddle
12	directors 24-35	1 pkg	cable assembly with
7	directors 36-42		connector
7	directors 43-49		

ASSEMBLY INSTRUCTIONS

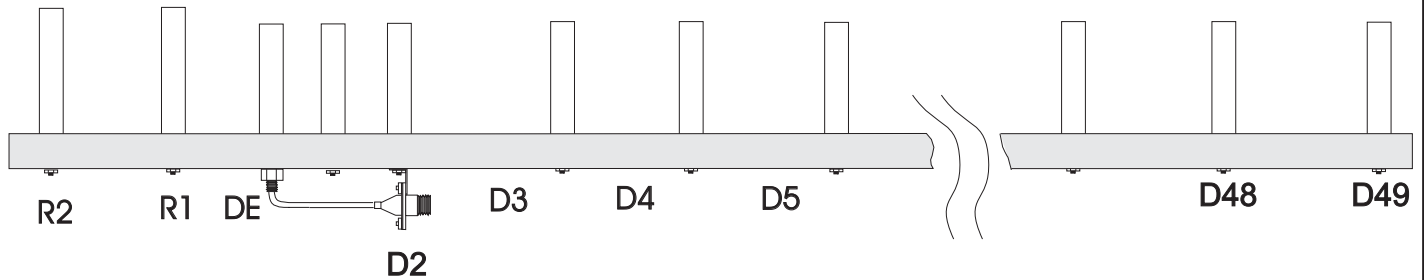
- 1) Put the boom together. The splice is between elements D25 & D26 and is secured by the loop mounting screws. Attach loops to the boom with 4-40 x 3/4" screws, lock washers and nuts in proper sequence. Loops go on the side of the boom marked "TOP" or "X". When tightening the nuts on the parasitic elements, be careful not to torque them too tightly. Snug down the nuts, align the elements and use a screwdriver for the final tightening. A 1/4" nut driver is almost mandatory for this job! Attach the driven element with the 1/4-20 stainless steel nut. If only a single antenna is being built, it does not matter which way the loop is oriented. If antennas are to be stacked, see "Instructions for Stacking Loop Yagis" supplied as a separate sheet.
- 2) Attach the boom-to-mast bracket with the angle bracket and 8-32 hardware. The mounting center is D-20. Install U-bolts so that the mast is directly under the boom.
- 3) Install the connector-cable assembly through the hole in the driven element mounting bolt and and solder the coax ends to the ends of the loop. Solder the inner conductor first. Bend the connector bracket forward and secure it to the boom. (The bracket is secured by the nut for D-2) Attach the feedline and tape it to the bottom of the boom. Seal all connections with silicone RTV or equivalent.
- 4) The SWR should be 1.5:1 or better. Additional tweaking can be accomplished by adjusting the distance between the driven element and R1 or by adjusting the shape of



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"SUPER LOOPER" DIMENSIONS OF 2304 MHz LOOP YAGI, MODEL 1352LY(K)



Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference
R2	0.500	5.480	D15	25.903	4.534	D32	59.945	4.335
R1	2.244	5.480	D16	27.905	4.534	D33	61.948	4.335
DE	2.728	5.125	D17	29.908	4.534	D34	63.950	4.335
D1	3.408	4.676	D18	31.910	4.392	D35	65.953	4.335
D2	3.875	4.676	D19	33.913	4.392	D36	67.955	4.279
D3	4.876	4.676	D20	35.915	4.392	D37	69.958	4.279
D4	5.878	4.676	D21	37.918	4.392	D38	71.960	4.279
D5	6.581	4.676	D22	39.920	4.392	D39	73.963	4.279
D6	7.880	4.676	D23	41.923	4.392	D40	75.965	4.279
D7	9.883	4.676	D24	43.925	4.335	D41	77.968	4.279
D8	11.885	4.676	D25	45.928	4.335	D42	79.970	4.279
D9	13.888	4.676	D26	47.930	4.335	D43	81.972	4.229
D10	15.890	4.676	D27	49.933	4.335	D44	83.975	4.229
D11	17.893	4.676	D28	51.935	4.335	D45	85.977	4.229
D12	19.895	4.676	D29	53.938	4.335	D46	87.980	4.229
D13	21.898	4.534	D30	55.940	4.335	D47	89.982	4.229
D14	23.900	4.534	D31	57.943	4.335	D48	91.985	4.229
						D49	93.987	4.229

Note: All dimensions are in inches

The boom diameter is 0.5 inch, and it is drilled for 4-40 hardware (no. 33 drill bit). The driven element hole is enlarged to 1/4 inch. All elements are 0.032 inch thick and 0.250 inch wide. Note that the element spacing from D7 on is 2.0025 inches. To bend elements, wrap the strip around a suitable form (such as a piece of pipe or tubing). The driven element is formed in the same way, then soldered to the mounting bolt as shown. The feed coaxial cable (0.141 inch semi rigid) goes through the mounting bolt and is soldered to the open ends of the element. For best match, the driven element should be approximately 1.375 inches high; this makes it wider than it is tall. This shape can be adjusted for best match. This antenna is based on work done by G3JVL.

