



DIRECTIVE SYSTEMS

177 DIXON RD.
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2401 MHz Loop Yagi Kit, Model 1245LYK

Frequency range:	2.3 to 2.45 GHz	Gain:	20 dBi
Number of elements:	45	3 dB Beamwidth	16°
Boom length:	80 inches	(E plane):	≥ 20 dB
Boom diameter:	0.5 inches	F/B ratio:	400 W average
Mast diameter:	1 1/2 in. max	Maximum Power:	13 inches vertical
Weight:	3 pounds	Stacking distance:	15 inches horizontal
Connector:	Type-N female		

PARTS LIST

Quantity	Description	Quantity	Description
2 pcs	drilled boom	1 pkg	4-40 stainless steel screws
2	reflectors 1, 2		4-40 stainless steel nuts,
1	driven element		lock washers, 8-32 hdwre
12	directors 1-12	1	small 1/2" boom - mast
5	directors 13-17		bracket
6	directors 18-23	1	large boom to mast bracket
12	directors 24-35	1	U-bolt with nuts & saddle
7	directors 36-42	1 pkg	cable assembly with
			connector

ASSEMBLY INSTRUCTIONS

Note: The 1245LY is designed for vertical polarization on a vertical support mast, or as a horizontal polarized antenna on an OSCAR type satellite cross-boom. If you require other mounting schemes, please consult the factory for the correct hardware needed.

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."

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.

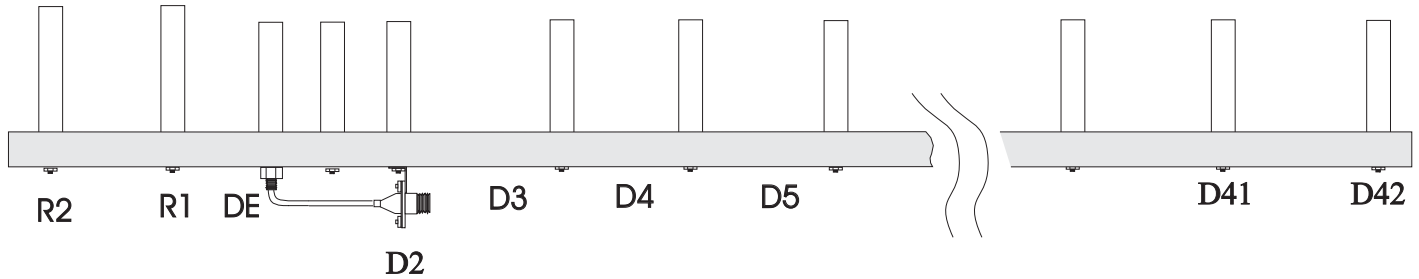
3) Install the connector-cable assembly through the hole in the driven element mounting bolt and and solder the coax ends to the ends of the loop. Solder the inner conductor first. Bend the connector bracket forward and secure it to the boom. (The bracket is secured by the nut for D-2) Attach the feedline 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



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DIMENSIONS OF 2401 MHz LOOP YAGI, MODEL 1245LY(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	5.259	D13	21.898	4.351	D28	51.935	4.160
R1	2.244	5.259	D14	23.900	4.351	D29	53.938	4.160
DE	2.728	4.918	D15	25.903	4.351	D30	55.940	4.160
D1	3.408	4.487	D16	27.905	4.215	D31	57.943	4.160
D2	3.875	4.487	D17	29.908	4.215	D32	59.945	4.160
D3	4.876	4.487	D18	31.910	4.215	D33	61.948	4.160
D4	5.878	4.487	D19	33.913	4.215	D34	63.950	4.160
D5	6.581	4.487	D20	35.915	4.215	D35	65.953	4.160
D6	7.880	4.487	D21	37.918	4.215	D36	67.955	4.106
D7	9.883	4.487	D22	39.920	4.160	D37	69.958	4.106
D8	11.885	4.487	D23	41.923	4.160	D38	71.960	4.106
D9	13.888	4.487	D24	43.925	4.160	D39	73.963	4.106
D10	15.890	4.487	D25	45.928	4.160	D40	75.965	4.106
D11	17.893	4.487	D26	47.930	4.160	D41	77.968	4.106
D12	19.895	4.487	D27	49.933	4.160	D42	79.970	4.106

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.

