

DRAFT

100 mi/h W6NL/Moxon for K3LR

The winds aloft at K3LR have proven to be greater than anticipated, and the original 2007-design W6NL/Moxon 40m Yagis have suffered wind damage. A new design has been developed, using a new stronger center section along with the original parts of the 2007 design. Element guying is not required for the new configuration.

The new center sections are 1-1/4 IPS Schedule 40 6061-T6 aluminum pipe, which has an inner diameter that will accept telescoped 1.375" tubing that was the center section of the 2007 design. This will require new custom clamps from DX Engineering to fit the 1.66" OD of the pipe. It is believed that the clamps will fit into the original Cushcraft XM240 aluminum channel that was used to mount the elements to the boom.

The tee loading sections are unchanged in the new design. Here are the dimensions (in inches) of the 2007 and 2010 element sections:

2007			2010		
Driven Element					
Diameter	Section	Total	Section	Total	
1.66			48	48	New
1.375	42	42	39	87	
1.25	45	87	45	132	
1.125	44	131	44	176	
1	29	160	29	205	
0.875	44.5	204.5	2	207	New
0.75	3	207.5	3	210	
0.625	3	210.5	3	213	
0.5	39	249.5	39	252	
0.375	32.5	282	32.5	284.5	
Reflector					
Diameter	Section	Total	Section	Total	
1.66			48	48	New
1.375	42	42	39	87	
1.25	45	87	45	132	
1.125	44	131	44	176	
1	29	160	29	205	
0.875	44.5	204.5	25	230	New
0.75	27	231.5	3	233	New
0.625	3	234.5	3	236	
0.5	39	273.5	39	275	
0.375	13.25	286.75	13.25	288.25	

As can be seen, all of the original element tubing can be used (except for the bent sections, which should be replaced). The 0.875" OD sections are cut shorter, as are the 0.75" OD sections of the reflector. This design has the same electrical performance as the 2007 design, but has sufficiently reduced element deflection that element guying is not necessary.

D. B. Leeson, W6NL/HC8L 2-16-10