VK5DJ's YAGI CALCULATOR

Yagi design frequency =212.98 MHz
Wavelength =1408 mm
Parasitic elements insulated through a square section metal boom 29.50 mm across.
Folded dipole mounted same as directors and reflector
Director/reflector diam =6 mm
Radiator diam =6 mm

ELEMENT LENGTHS AND SPACING
The abbreviation "IT" means "Insert To", it is the construction distance from the element tip to the edge of the boom for through boom mounting

Reflector
693 mm long at boom position = 30 mm (IT = 334.0 mm)

Radiator
Single dipole 664 mm tip to tip at boom posn =312 mm (IT = 319.5 mm)
Folded dipole 683 mm tip to tip at boom posn =312 mm (IT = 329.0 mm)

Dir (no.)	Length (mm)	Spaced (mm)	Boom position (mm)	IT (mm)	Gain (dBd)	Gain (dBi)
1	627	106	417	301.0	5.0	7.2
2	621	253	670	298.0	6.6	8.8
3	615	303	973	295.0	7.9	10.0
4	609	352	1325	292.0	8.9	11.1
5	604	394	1719	289.5	9.8	12.0
6	599	422	2141	287.0	10.6	12.7
7	595	443	2585	285.0	11.2	13.4
8	591	465	3049	283.0	11.8	13.9

Spacings measured centre to centre from previous element
Tolerance for element lengths is +/- 4 mm

Boom position is the mounting point for each element as measured
from the rear of the boom and includes the 30 mm overhang.The total boom length is 3079 mm including two overhangs

The beam's estimated 3dB beamwidth is 41 deg

Here are some construction details for a folded dipole

Measurements are taken from the inside of bends
Folded dipole length measured tip to tip = 683mm
Total rod length =1397mm
Centre of rod=698mm
Distance HI=GF=319mm
Distance HA=GE=347mm
Distance HB=GD=374mm
Distance HC=GC=698mm
Gap at HG=10mm
Bend diameter BI=DF=35mm

If the dipole is considered as a flat plane (see ARRL Antenna Handbook) then its resonant frequency is 208.6MHz and K is 0.951