

The SETI League, Inc.

User specifies variables shown in

Bold

**Cylindrical Waveguide
Feedhorn Analysis**

Freq =	1.42	GHz ;	21.1 cm	Wavelength	
Waveguide Diameter =	5.9	in =	15.0 cm		
TE ₁₁ Cutoff =	1.17	GHz ;	25.6 cm	Wavelength	Margin = 21 %
TM ₀₁ Cutoff =	1.53	GHz ;	19.6 cm	Wavelength	Margin = 7 %
Guide Wavelength =	14.77	in =	37.5 cm		
Probe placement =	3.69	in =	9.4 cm		
Feedhorn Length =	11.08	in =	28.1 cm		
Z ₀ =	669	ohms;	1.78	vswr	
Choke Ring Depth =	4.16	in =	10.6 cm		
Choke Ring Diameter =	14.22	in =	36.1 cm		
Dish F/D Ratio =	0.3	(Valid range: 0.25 to 0.50)			
Feedhorn Placement:	focal point of reflector falls inside lip of feedhorn by				
	0.54	in =	1.4 cm		
Choke Ring Placement:	distance from front of feedhorn to back of choke ring, for				
Max. Gain (10 dB taper)	5.23	in =	13.3 cm =	0.63	Wavelengths
Min. Noise (15 dB taper)	4.82	in =	12.2 cm =	0.58	Wavelengths

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