EITEL-McCULLOUGH, INC.
SAN BRUNO · CALIFORNIA

TENTATIVE DATA

6K50,000LQ

POWER-AMPLIFIER L-BAND KLYSTRON

The Eimac 6K50,000LQ is a six-resonant-cavity, magnetically focused, cascade amplifier klystron designed primarily for CW high-power, broad-band communication service in the frequency range of 720 to 980 megacycles.

When tuned for narrow-band operation, this tube type will provide 10 kilowatts of CW r-f output power with a power gain of more than 50 db. When tuned for broad-band operation, this tube type will provide more than 6 kilowatts of CW r-f output power with a power gain of more than 30 db and bandwidths of 15 to 20 megacycles between the 3-db power points

The resonant cavities of the Eimac 6K50,000LQ have cylindrical ceramic windows and are completed by tuning boxes external to the tube. Klystron amplifier circuit assemblies designed for use with this tube provide the required external tuning boxes, magnetic focusing frame, and magnetic focusing coils. Such circuit assemblies also provide both input and output coaxial-type radio-frequency fittings. In addition, these circuit assemblies include an air-system socket which provides for cooling and making connections to the electron-gun portion of the tube.

CHARACTERISTICS

ELECTRICAL

Filament:	Tungsten	
	Voltage	8.0 volts
	Current	40 amperes
	Maximum Starting Current	80 amperes
	Minimum Warm-Up Time	30 seconds
Cathode:	Unipotential, Bombardment Heated	
	Voltage	2280 volts
	Current	0.7 ampere
	Power	1596 watts
▶ Frequency Range		720 to 985 mc

MECHANICAL

Operating Position	Vertical, cathode end up
Recommended Socket	Eimac SK-110
R-F Coupling:	
Input	Type "N" coaxial fitting
Output	3 1/8-inch coaxial line
Approximate Weights:	
Net	63 pounds
Shipping	390 pounds

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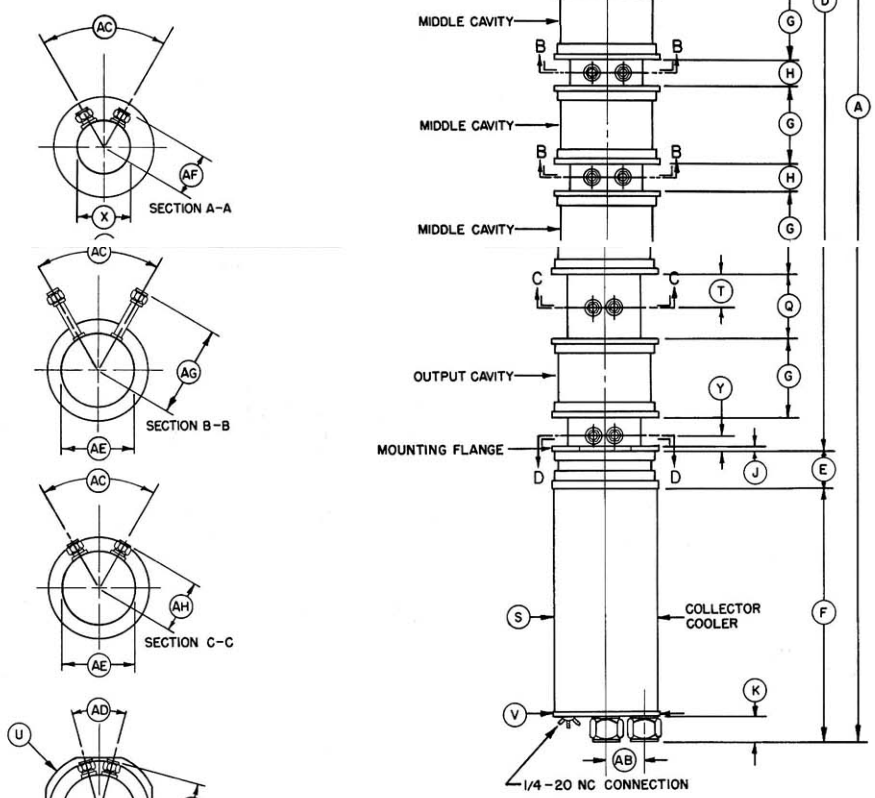
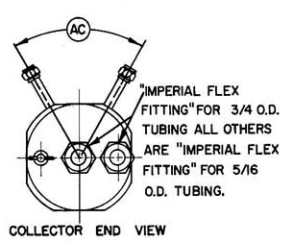
▶ Indicates change from sheet dated 2-10-58

DIMENSION DATA			
REF.	NOM.	MIN.	MAX.
A		54.750	55.500
B		7.437	7.687
C		4.968	5.031
D		29.875	30.125
E	1.625		
F		10.812	11.062
G		3.468	3.531
H		1.156	1.218
J	.250		
K	1.062		
L	.562		
M		.187	
N	.500		
P	.593		
Q		2.718	2.781
R		4.615 DIA.	4.635 DIA.
S	4.500 DIA.		
T	1.375		
U	5.125 DIA.		
V	4.625 DIA.		
X	2.125 DIA.		
Y	.687		
AB	1.625		
AC	60°		
AD	30°		
AE	3.500 DIA.		
AF	1.875		
AG	4.000		
AH	2.565		
AJ	4.625		





NOTES:

1. * MINIMUM CONTACT SURFACES FOR ALL CAVITY PLATES.
2. DIMENSIONS IN INCHES.
3. FOR ELECTRICAL CONTACT SURFACE DIMENSIONS SEE GUN NO. 2 OUTLINE, DRWG. NO. GUN NO. 2-6001.

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▶COOLING REQUIREMENTS

	Volume	Pressure Drop
Cathode (With Eimac SK-110)	52 cfm air	5 inches H_2O
Fifth Cavity (Broad-Band Applications Only)	50 cfm air	1.5 inches H_2O
Output Cavity	50 cfm air	1.5 inches H_2O
Drift-Tube Jackets (Series Connected)	1 gpm water	11 psi
Collector Assembly	25 gpm water	28 psi

MAXIMUM RATINGS

D-C BEAM VOLTAGE	20 MAX. KILOVOLTS
D-C BEAM CURRENT	2.5 MAX. AMPERES
D-C BODY CURRENT (CONTINUOUS)	0.1 MAX. AMPERE
D-C BODY CURRENT (TUNING ONLY)	0.15 MAX. AMPERE
D-C FOCUS-ELECTRODE VOLTAGE	-500 MAX. VOLTS
BOMBARDED CATHODE:	
▶ VOLTAGE	2400 MAX. VOLTS
CURRENT	0.75 MAX. AMPERE
POWER	1600 MAX. WATTS
COLLECTOR DISSIPATION	50 MAX. KILOWATTS

TYPICAL OPERATION

Frequency	880	880	megacycles
Output Power	6.4	9	kilowatts
Bandwidth (3-db power points)	20	15	megacycles
Driving Power	1.7	2.3	watts
Power Gain	35.6	35.9	db
D-C Beam Voltage	17	19.5	kilovolts
D-C Beam Current	1.88	2.30	amperes
Beam Input Power	31.96	44.85	kilowatts
Beam-Power Efficiency	20	20	percent
D-C Body Current	50	50	milliamperes
D-C Collector Current	1.83	2.25	amperes
D-C Focus-Electrode Voltage	-175	-200	volts
Filament Voltage	8	8	volts
Filament Current	40	40	amperes
Bombarded Cathode:			
Voltage	2280	2280	volts
Current	0.7	0.7	ampere
Power	1596	1596	watts
▶ Collector Dissipation	24.71	34.88	kilowatts

APPLICATION

For additional information or information regarding a specific application, write to the Application Engineering Department, Eitel-McCullough, Inc., San Bruno, California. All such requests will be handled confidentially and without charge.