



EITEL-McCULLOUGH, INC.
S A N B R U N O · C A L I F O R N I A

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

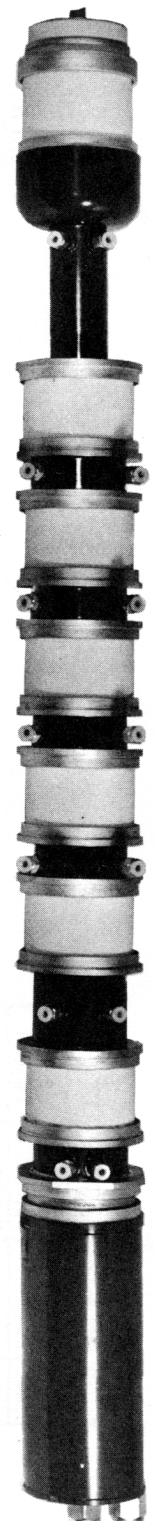
Operating Position - Vertical, cathode end up
Recommended Socket - - - Eimac SK-110

R-F Coupling:

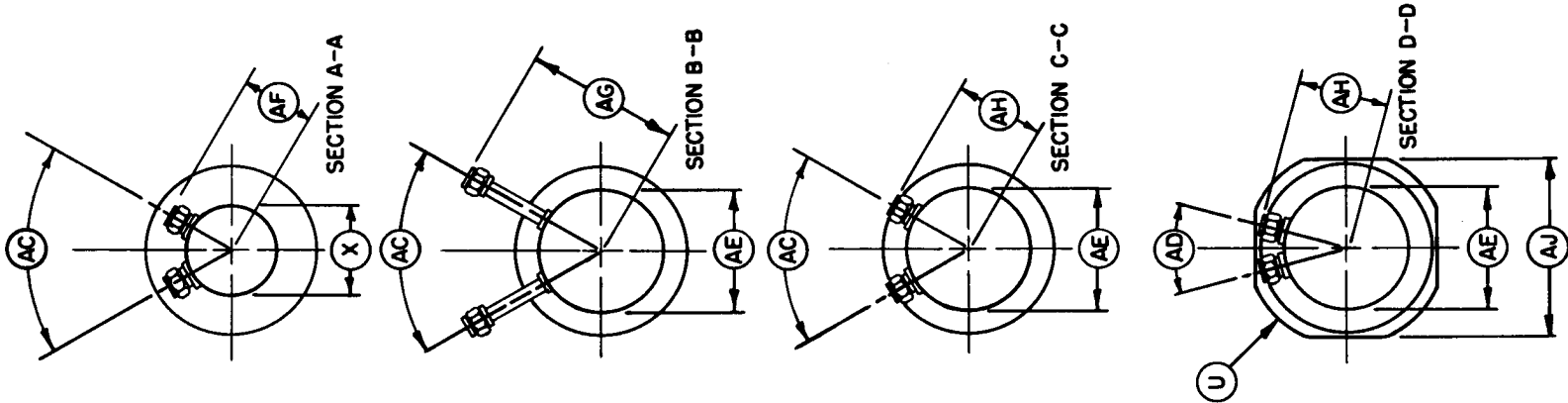
Input	-	-	-	Type "N" coaxial fitting
Output	-	-	-	3 1/8-inch coaxial line

Approximate Weights:

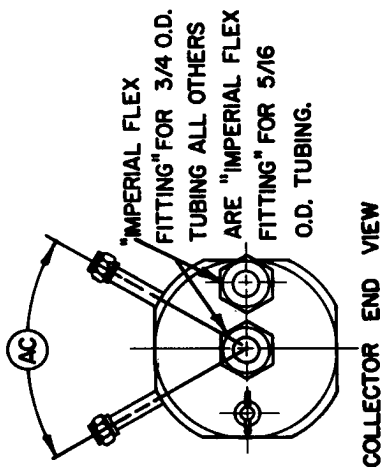
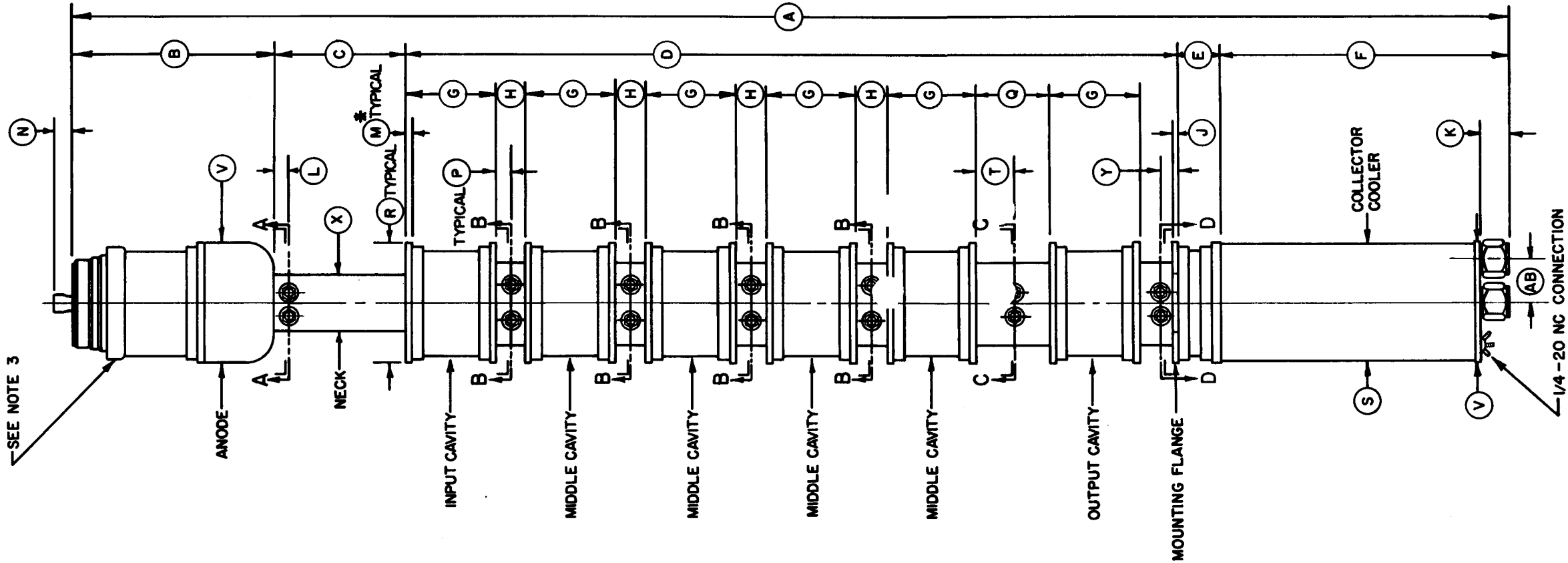
Net	-	-	-	63	pounds
Shipping	-	-	-	390	pounds



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





► COOLING REQUIREMENTS

				Volume	Pressure Drop
Cathode (With Eimac SK-110)	-	-	-	52 cfm air	5 inches H ₂ O
Fifth Cavity (Broad-Band Applications Only)	-	-	-	50 cfm air	1.5 inches H ₂ O
Output Cavity	-	-	-	50 cfm air	1.5 inches H ₂ O
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.