



EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

TENTATIVE DATA

3KM3LB

POWER-AMPLIFIER
L-BAND KLYSTRON

The Eimac 3KM3LB is a three-cavity, magnetically focused, power-amplifier klystron designed for use at frequencies between 350 and 475 megacycles. This klystron will deliver a narrow-band CW output power of 2 kilowatts with a minimum power gain of 23 decibels. When adjusted for wide-band operation the 3KM3LB will deliver an output power of one kilowatt with a half-power bandwidth of 3 megacycles and a power gain of 20 decibels.

This klystron can be pulsed or amplitude modulated with minimum power by utilizing its modulating anode. Effective protection against internal arcs is provided by connecting the modulating anode to the beam supply through a resistor.

All tuning is accomplished outside of the vacuum envelope by means of external resonant cavities which enclose the cylindrical ceramic windows of the klystron. This design affords a wide tuning range and permits external cavity loading for broadband applications. For spares or replacements, only the basic vacuum tube, without cavities, need be purchased.

Eimac Klystron Amplifier Circuit Assembly H-157 has been designed for use with the 3KM3LB to cover the specified frequency range. This assembly includes a klystron supporting structure, magnetic focusing coils, tuning cavities, adjustable load coupler, and an Eimac SK-110 Air-System Socket.

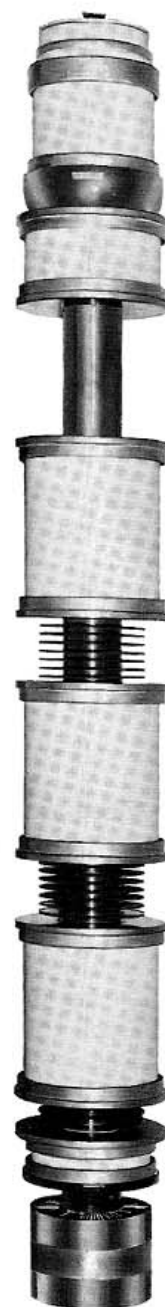
CHARACTERISTICS

ELECTRICAL

Heater:	Voltage - - - - -	7.5	volts
	Current - - - - -	31.0	amperes
	Maximum Starting Current - - -	62.0	amperes
	Nominal Cold Resistance - - -	0.02	ohms
Cathode:	Unipotential, Oxide Coated		
	Heating Time - - - - -	5	minutes
Power Gain: (Narrow Band) - - - - -		30	decibels
Output Power: (Narrow Band) - - - - -		2	kilowatts
Frequency Range (H-157 Assembly) -	350 to 475		megacycles

MECHANICAL

Operating Position - - - - -	Axis vertical, cathode up
RF Coupling:	
Input - - - - -	Type "N" coaxial fitting
Output - - - - -	1-5/8 inch, 50-ohm line
Cavity Loading	
(Input and 2nd) - - -	Type "N" coaxial fitting
(Supplied at customers option)	



MECHANICAL (continued)

Weights:	3KM3LB Klystron only - - - - -	46 lbs (Net), 130 lbs (Gross)
	H-157 RF Circuit Assembly - - - - -	570 lbs (Net), 798 lbs (Gross)
Cooling -	- - - - -	- - - - - Forced air

	Flow Rate	Pressure Drop
Cathode (with SK-110 Air-System Socket)	*5 cfm	0.4 inch H ₂ O
Output Cavity - - - - -	*50 cfm	1.0 inch H ₂ O
Klystron Collector - - - - -	*200 cfm	1.5 inches H ₂ O

FOCUS-COIL POWER-SUPPLY REQUIREMENTS

Prefocus Coil: Voltage - - - - -	0 to 25 volts
Current - - - - -	0 to 1.25 amperes
Each of Two Body Coils:	
Voltage - - - - -	0 to 175 volts
Current - - - - -	0 to 3.0 amperes
Collector-Coil Voltage - - - - -	0 to 50 volts
Collector-Coil Current - - - - -	0 to 1.5 amperes

MAXIMUM RATINGS

BEAM VOLTAGE - - - - -	9	KILOVOLTS
BEAM CURRENT - - - - -	750	MILLIAMPERES
BODY CURRENT (CONTINUOUS) - - - - -	75	MILLIAMPERES
BODY CURRENT (TUNING ONLY) - - - - -	100	MILLIAMPERES
FOCUS-ELECTRODE VOLTAGE - - - - -	-500	VOLTS
COLLECTOR DISSIPATION - - - - -	3	KILOWATTS

TYPICAL OPERATION

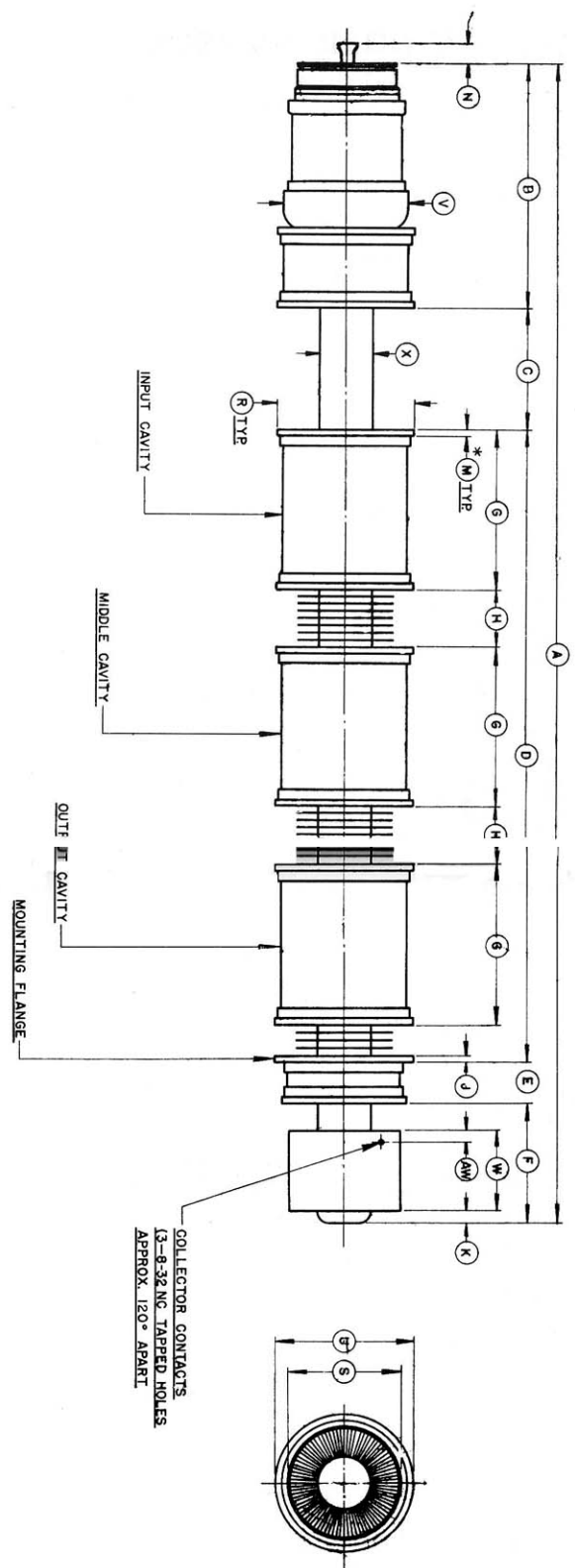
	Narrow Band		Wide Band	
Frequency - - - - -	350	475	350	megacycles
Output Power - - - - -	2.4	2.3	1	kilowatts
Driving Power - - - - -	10	10	10	watts
Power Gain - - - - -	23.8	23.6	20	decibels
Beam Voltage - - - - -	9	9	8	kilovolts
Beam Current - - - - -	590	590	540	milliamperes
Beam Power Efficiency - - - - -	45.2	43.4	23.3	percent
Body Current - - - - -	30	40	30	milliamperes
Focus-Electrode Voltage - - - - -	-200	-200	-135	volts
Half-Power Bandwidth - - - - -	0.7	0.9	3	megacycles
Cavity Loading:				
1st Cavity - - - - -	---	---	9	watts
2nd Cavity - - - - -	---	---	25	watts
Focus-Coil Currents:				
Prefocus - - - - -	0.7	0.7	0.7	ampere
First Body - - - - -	2	2	2	amperes
Second Body - - - - -	1.3	1.3	1	amperes
Collector - - - - -	1	1	1	ampere

* At sea level with 20° C inlet air temperature.

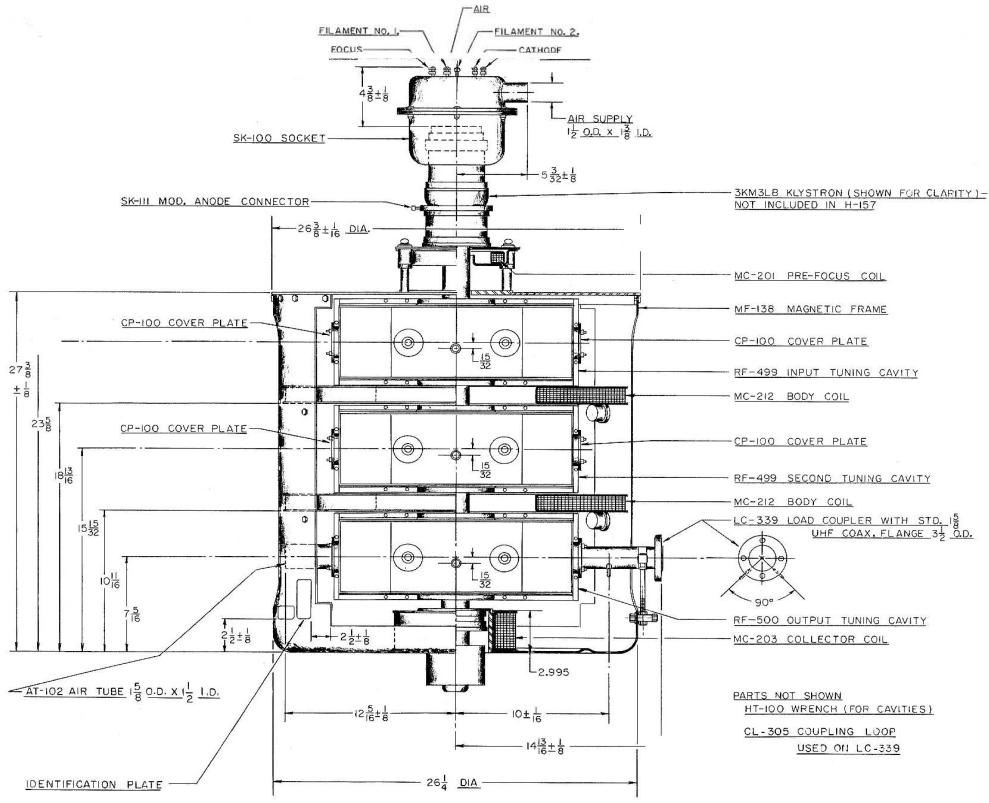
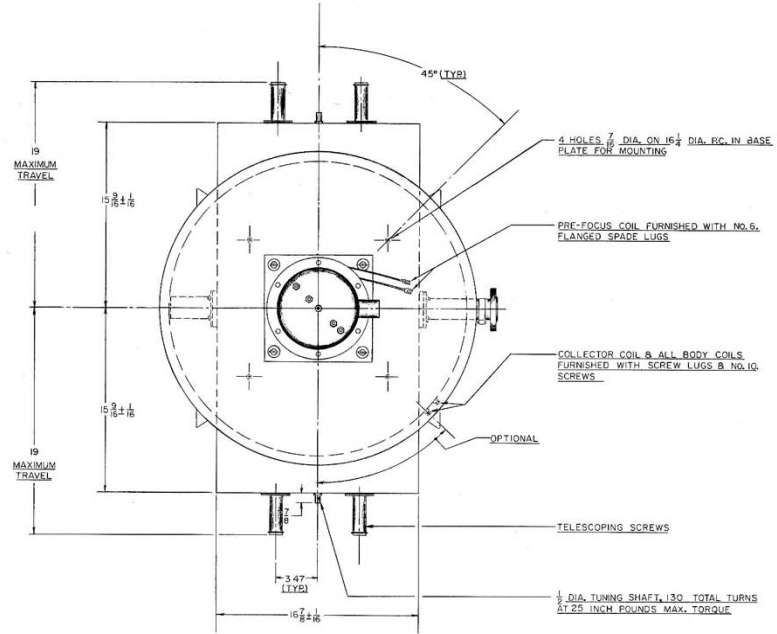
For additional information or information regarding a specific application write to Eitel-McCullough, Inc., San Carlos, California.

DIMENSION DATA			
REF	NOM.	MIN.	MAX.
A		42.895	43.485
B		9.125	9.330
C		4.450	4.520
D		23.500	23.700
E		1.480	1.540
F		4.340	4.450
G		5.995	6.030
H		2.085	2.155
J		.235	.260
K			.435
M		.187	.260
N			1.500
R		5.118	5.132
S		4.110	4.140
U		5.118	5.132
V		4.615	4.650
W		2.950	3.125
X		1.990	2.010
AW		.340	.505

- NOTES:
1. DIMENSIONS IN INCHES.
 2. FOR ELECTRICAL CONTACT SURFACE DIMENSIONS SEE OUTLINE GUN NO. 1-6001.
 3. * MINIMUM CONTACT SURFACES



3KM31B KLYSTRON



H-157 KLYSTRON AMPLIFIER CIRCUIT ASSEMBLY