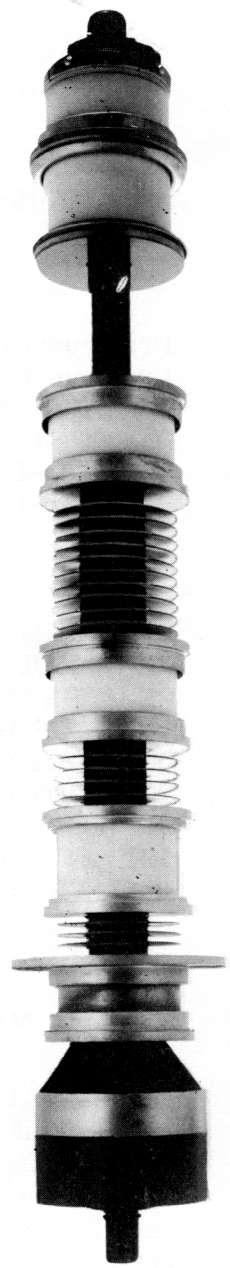
EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

TENTATIVE DATA

3KM4000LT

PULSE AMPLIFIER L-BAND KLYSTRON



The Eimac 3KM4000LT is a three-cavity, magnetically focused, pulse-amplifier klystron. It will deliver a peak output power of 40 kilowatts with an average power of one kilowatt at frequencies between 960 and 1215 megacycles. Nominal power gain is 33 db.

This klystron employs the Eimac Modulating Anode which provides an effective means of pulse modulating the output power without changing the beam voltage. A modulating anode voltage of approximately one half the beam voltage is sufficient to realize full rated pulse output power.

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-116 has been designed for use with the 3KM4000LT to cover the frequency range of 960 to 1215 megacycles. This assembly includes a klystron supporting structure, focus coils, tuning cavities and an adjustable output load coupler.

CHARACTERISTICS

ELECTRICAL

Cathode:	Unipotential, Oxide-Coated		
	Minimum Heating Time	5	minutes
Heater:	Voltage	7.5	volts
	Current	5.5	amperes
	Maximum Starting Current	11	amperes
Modulating Anode Capacitance (To all other electrodes)		22	uuf
Power Gain (Nominal)		33	db
Average Output Power		1	kilowatt
Peak Output Power		40	kilowatts
Frequency Range (In H-116 Assembly)		960 to 1215	megacycles

MECHANICAL

Operating Position	Vertical, cathode end up	
RF Input Coupling	50-ohm Type "N"	
RF Output Coupling	1-5/8 inch, 50-ohm line	
Weight (Tube Only)	21	pounds
Approximate Shipping Weight (Klystron only)	120	pounds
Weight (H-116 Circuit Assembly)	240	pounds

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MECHANICAL (Cont'd)

Maximum Dimensions (Tube):

Length	31	inches
Diameter	5.3	inches

Maximum Dimensions (Tube and Circuit Assembly):

Length	31	inches
Diameter	19	inches

Cooling:

Cathode and Drift Tubes - Convection air cooling is adequate at sea level up to 25° C ambient air temperature. Forced-air cooling may be required at higher altitudes or higher temperatures.

Collector - 150 cfm air with pressure drop of 1.85 inches H_2O (25° C inlet air at sea level).

FOCUS COIL POWER-SUPPLY REQUIREMENTS

Prefocus-Coil Voltage	0 to 25	volts
Prefocus-Coil Current	0 to 1.5	amperes
Body-Coil Voltage	0 to 25	volts
Body-Coil Current	0 to 10	amperes
Collector-Coil Voltage	0 to 50	volts
Collector-Coil Current	0 to 2.5	amperes

MAXIMUM RATINGS

DC BEAM VOLTAGE	28	KILOVOLTS
PEAK MODULATING-ANODE VOLTAGE	14	KILOVOLTS
PEAK BEAM CURRENT	6	AMPERES
AVERAGE BEAM CURRENT	500	MILLIAMPERES
DC BODY CURRENT (CONTINUOUS)	20	MILLIAMPERES
DC BODY CURRENT (TUNING ONLY)	40	MILLIAMPERES
DC FOCUS ELECTRODE VOLTAGE	-400	VOLTS
COLLECTOR DISSIPATION	4	KILOWATTS
SEAL TEMPERATURE	175	DEGREES C

TYPICAL OPERATION

(In H-116 Circuit Assembly)

NARROW-BAND PULSE AMPLIFIER, SQUARE PULSE, 0.025 DUTY, MODULATING ANODE PULSED

DC Beam Voltage	24	26	28	kilovolts
Peak Output Power	30	36	40	kilowatts
Peak Driving Power	5	5	5	watts
Power Gain	37.7	38.5	39	db
Peak Beam Current	2.8	3.3	3.7	amperes
Average Beam Current	71	82	90	milliamperes
DC Body Current	13	14	15	milliamperes
Peak Modulating-Anode Voltage	12	13	14	kilovolts
Focus-Electrode Voltage	-75	-75	-75	volts
Focus Coil Currents:				
Prefocus	0.92	1.1	1.2	amperes
Body	6.8	7	7	amperes
Collector	0.95	1.0	1.0	ampere

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