

# Engineering News



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**ALTEC LANSING**

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Technical Letter No. 159

## OBJECTIVE TECHNICAL SPECIFICATION M50 SOLID STATE CONDENSER MICROPHONE SYSTEM

### Description:

The M50 Condenser Microphone System consists of a 29B Condenser Microphone, a 195A Base, a 540A Power Supply and a 194A Cable Set.

The 29B microphone is a single diaphragm, directional (cardioid) type. The diaphragm is of minimum size for superior high frequency smoothness and its small size and low mass permit excellent transient response. The cardioid characteristic is obtained by controlling relative phase of sound pressure reaching the back side of the diaphragm. This method provides the greatest front-to-back discrimination over a wide frequency range.

The 195A Base, in its small size of 0.75 x 2.812 inches, contains a field-effect transistor, 3 resistors, a tantalum capacitor and houses a standard 3-pin Cannon XLR3-12 connector. No RF or balanced bridge arrangements critical of adjustment are used. The field-effect transistor converts the extremely high impedance of the microphone to a level suitable for connection to standard 2-conductor microphone cable. One conductor of the cable carries both signal current and DC current for the field-effect transistor. The second conductor provides microphone polarizing potential of 64 volts. Both DC and AC returns are through the cable shield. Output from the base is unbal-

anced until it joins the power supply where a balanced output of 150/250 ohms is provided.

A rugged die-cast housing measuring 1-5/16 x 3-1/8 x 3-15/16 contains the elements of the 540A Power Supply. The housing is equipped with 3-pin Cannon XLR male and female connectors to allow its insertion at any point in the microphone line. Power is supplied by two 4.2 volt mercury batteries and three 21.0 volt mercury batteries. The expected life from these batteries is 2500 hours of operation or 2 years whichever occurs first. Battery drain is suspended either by disconnecting the base from the power supply or by means of a recessed power switch mounted on the power supply housing. An additional feature of the system is a meter which shows battery condition when the base is connected and turned on. The final element of the 540A Power Supply is a transformer which provides balanced output for standard 150/250 ohm microphone preamplifier inputs.

The 194A Cable Set consists of a 25 foot length of 2 wire shielded, jacketed microphone cable equipped with one XLR-12 and one XLR3-11C connector. This cable may be used between base and power supply, power supply and amplifier or in multiples as extensions.

### Specifications:

Type:	Condenser.	Battery Disconnect:	Recessed switch on power supply or by removing 195A Base.
Frequency Range:	20 to 20,000 cycles	Connector:	Cannon XLR3-12 on base, Cannon XLR3-11C and XLR3-12 on power supply.
Pickup Pattern:	Cardioid.	Pin Connections:	1 shield, 2 signal, 3 signal.
Output Level:	-53 dbm re 10 dynes/cm <sup>2</sup> .	Size:	0.75" diameter x 3.5" (195A Base with 29B microphone)
Output Configuration:	2 wire shielded. Balanced from 540A Power Supply.	Finish:	Base - non-reflective electroless nickel Power Supply - Chrome.
Load Impedance:	150/250 ohms.	Weight:	Base - 2.2 ounces, Power Supply - 17 ounces.
Circuitry:	Solid-state.		
Operating Temperature:	55° C maximum.		
Power:	Two, 4.2 volt mercury batteries, three, 21.0 volt mercury batteries.		
Battery Indicator:	Meter provided to show battery condition.		