

CAD

professional microphones

V5M

Large Diaphragm
Tube Condenser Microphone



Featuring the CAD
Optema™ OS 110
Condenser Capsule

Specifications
and User's Guide

Valve Series



Large Diaphragm Condenser Tube Microphone

The VSM is a cardioid single tube true condenser microphone that features servo-valve technology and the exclusive CAD Optema™ OS 110 capsule. The VSM is a natural bridge between the valve technology developed for the VX2 microphone and the servo opamp technology developed for the Equitek series microphones. The head amp in the VSM microphone is a 12AX7 tube in a circuit that is optimized for maximum headroom and low noise. The output stage is a high speed dual opamp in a balanced differential configuration that allows long cables to be used without affecting microphone performance.

The VSM has extremely wide frequency response and dynamic range with a slight rising response characteristic at 15KHz. The VSM is ideal for both vocal and instrument recording applications. The VSM comes complete with an elastic suspension mount, heavy duty analog power supply, and a 30 foot professional 7 conductor cable.



Optema™ Series, OS 110 Condenser Capsule

The VSM comes with an OS 110 series capsule that is manufactured in our capsule facility in Conneaut, Ohio. The OS 110 capsule features:

- True large diameter capsule with 1.1" inside diameter. (1.34" outside diameter.)
- 3 Micron thick high tension, diaphragms made from the latest high strength polymer film.
- 24K Gold sputtered diaphragm coating.
- Each capsule is hand adjusted for proper damping and consistent frequency response.
- Other capsule components made from precision machined brass and stainless steel.

Use and Operation

Mount the microphone in the desired location. Plug the included seven pin cable into the microphone and the power supply. The output of the microphone is at the 3 pin XLR connector on the power supply. Use a standard balanced 3 pin XLR cable to connect the microphone output to the input of your mixer or recorder. Phantom power is not required. Plug the power supply into your AC mains supply. Turn the power supply on using the rocker switch on the right side of the front panel of the power supply. The LED on the rocker switch will light. Allow a few minutes for the vacuum tube in the microphone to warm-up and stabilize. The output level of the VSM is quite high. It is recommended that you start with trim control or input level control turned down on your mixer or recorder. It is also recommended that you turn down your input level whenever changing any of the switch settings on the microphone.

VSM Shock Mount

The VSM shock mount is an integral part of the VSM microphone and only needs to be removed to service the microphone. To remove the shock mount, unscrew the two knurled knobs on either side of the microphone and the knurled knob in the back of the microphone.

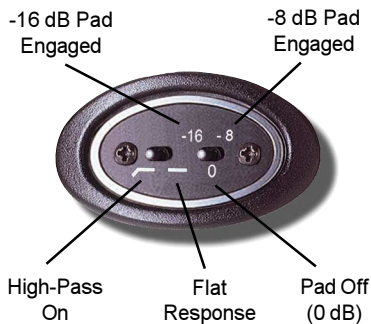
Power Supply

The VSM power supply is set for 117VAC operation at the factory. (For units sold in the U.S.A.) For 220VAC operation, change the switch on the rear panel of the supply to 220V.



VSM Power Supply

VSM Switch Functions



For most applications, the pad switch should be left in the 0dB position, and the Hi-Pass switch should be in the flat position. When miking loud sources such as drums and amplified instruments, the pad switch may be needed. If audible clipping occurs, first try adjusting the input pad or trim control on your mixer. If this has no effect, then engage either the -8 dB or -16 dB pad on the microphone. The HI-Pass filter can be engaged when it is desired to reduce low frequency levels.

Care and Maintenance

The VSM should be kept in clean dry environment, free from temperature extremes. If the housing becomes soiled, it can be cleaned with a cloth moistened in isopropyl alcohol.

This Microphone Demands Respect!!*

* For the potentially lethal voltages inside the microphone and power supply during operation. Never open the microphone housing when it is connected to the power supply. The power supply has no user serviceable parts inside. The power supply should only be opened by a qualified service technician.

Fuse

The fuse holder for the VSM power supply is located on the rear panel. The fuse is a 5mm X 20mm size, .160 A. Slow Blow, @ 250V. In the event that the fuse needs to be replaced, make sure to select a replacement fuse of equal rating.

Tube Replacement

The tube used in the VSM has been hand selected for low noise, and burned in to provide years of service. The tube used in the VSM is 12AX7 type. The actual number that appears on the tube in your microphone may be different. This tube is a very popular type used in a variety music and recording related products. However, to insure continued operation within factory specs, it is recommended that you purchase replacement tubes from CAD. Contact the CAD Customer Service Department at 1-888-702-7075.

To gain access to the tube, first disconnect the microphone from its power supply. Remove the microphone from the shock mount by unscrewing the two knurled knobs on either side of the microphone head. Then unscrew the single knurled knob on the back of the mic near the XLR connector. Remove the switch bezel by removing the screws on the sides of the bezel. Remove the mic housing by unscrewing the two screws on the end of the mic near the XLR connector. Carefully slide the housing off, making sure the housing clears the small toggle switches.

Remove the tube through the opening in the microphone chassis. Make sure that the replacement tube is seated firmly in the socket.

Replace the body by sliding it over the chassis, being careful to clear the toggle switches. Center the body over the XLR connector at the end of the chassis. Replace the screws in the end of the housing. Replace the switch bezel and the switch bezel screws. Note: If the screws in the switch bezel do not align properly, the body may not be fully seated. Loosen the screws on the body and realign it first. Replace the microphone in the shock mount.

VSM Specifications

Type:

Side address, true condenser.

Capsule:

Optema™ OS 110 series, 1.1" inside diameter, gold sputtered.

Frequency Response:

10Hz - 20 kHz.

Polar Pattern:

Cardioid.

Impedance:

Low (200 ohms nominal).

Output Level At 1 kHz.:

Open Circuit Voltage:

-53 dB (0 dB = 1 volt per microbar).

22.4 mV/Pascal.

Dynamic Range:

118 dB (Noise floor to max SPL @ less than 0.5% THD).

119.5 dB (Noise floor to max SPL @ less than 5.0% THD).

Equivalent Noise Level:

15 dB Equivalent SPL, A weighted.

Maximum Output Level:

+7.5 dBV (@ 134.5 dB SPL, less than 5.0% THD).

Maximum SPL:

149 dB SPL (With 16 dB pad, less than 0.5% THD).

150.5 dB SPL (With 16 dB pad, less than 5.0% THD).

Total Harmonic Distortion:

Less than 0.5% @ 133dB SPL without pad.

Less than 5.0% @ 134.5 dB SPL without pad.

Signal-To-Noise Ratio:

79 dB (At 94 dB SPL).

Switches:

Hi-Pass: (3dB @ 80Hz.)

Pad: 0dB, -8dB, & -16dB (Non-Capacitive)

Capsule Capacitance:

60 pF.

Powering:

Included VSM analog power supply

Connector:

7 pin XLR, gold plated, on microphone and power supply.

3 pin XLR, audio out from power supply, gold plated

Cable:

Professional quality 7 conductor, 30 ft. long. Gold plated connectors.

Finish:

Matte grey housing, nickel plated screen assembly with black accents.

Dimensions (Microphone):

2.42" x 2.87" x 6.84" long.

Included Accessories:

30 ft. professional quality 7 conductor cable with gold plated XLR male and female connectors.

VSM Power Supply.

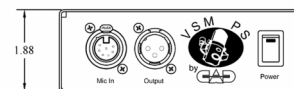
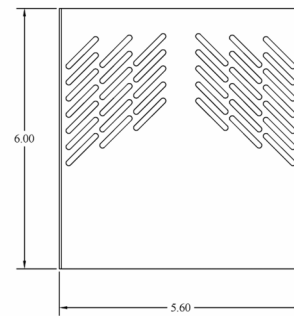
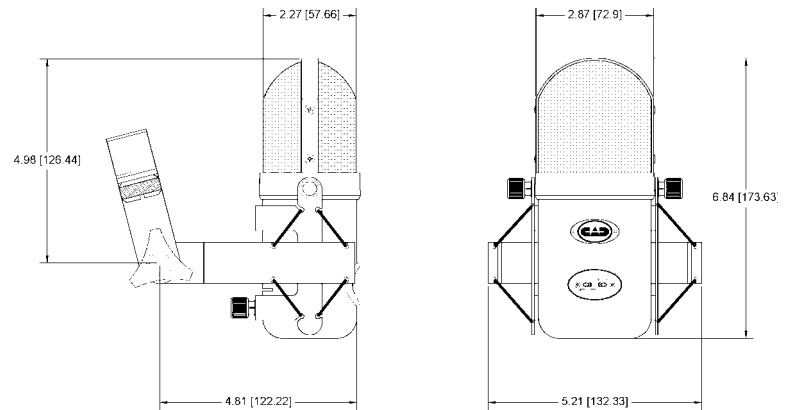
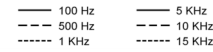
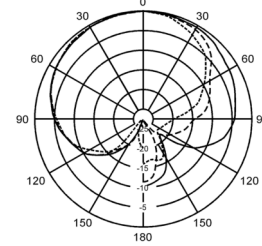
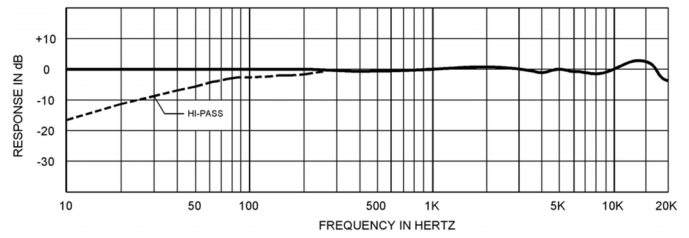
Line Cord.

Rugged carrying case.

Optional Accessories:

EPF-15 pop filter with 15" gooseneck.

VSM Frequency Response and Polar Characteristics



Professional Microphones

