

CM-310A

CM-310ASW

DIFFEROID (DIFFERENTIAL CARDIOID) MICROPHONE



CM-310A



CM-310ASW SWITCH DETAIL

The Crown® CM-310A Differoid® is a handheld noise canceling microphone for singers, sporting events or other applications with high ambient sound level. It offers studio-quality sound, yet is rugged enough to withstand hard use on the road.

The CM-310ASW is the same, but also features a magnetic reed switch that turns the mic on and off. The smooth-operating switch operates silently.

Both microphones use Crown's patented Differoid technology. Each mic is differential or noise canceling, so it rejects sounds that are not close to the microphone. It also has a cardioid polar pattern, so it rejects sounds from the rear.

These features give the CM-310A and CM-310ASW exceptional gain before feedback. Each mic permits extremely loud monitor levels before feedback occurs. The mic also rejects unwanted background noise. It discriminates against distant sound sources such as monitor speakers or instruments. An announcer can sit in the stands with the audience, with the P.A. loudspeakers playing loudly, and not experience feedback.

The CM-310A and CM-310ASW offer a choice of FLAT or RISING frequency response. The FLAT position (Fig. 1) sounds warm and smooth, while the RISING position (Fig. 2) sounds clear and crisp. The FLAT position has slightly more gain before feedback than the RISING position. Announcers may prefer the RISING position for its extra intelligibility. A DIP switch inside the mic handle sets the frequency response.

The mic's outstanding performance is complemented with handsome styling and a comfortable balance in the hand.

A built-in pop filter suppresses explosive breath sounds. Handling noise is very low. The unit can withstand repeated drops and abuse, as well as extremely loud sound without distortion.

The output of the microphone is balanced, low impedance, which allows long cable runs without hum pickup or high-frequency loss. The unit can be phantom powered from a mixer or other remote power supply.

Included with the microphone is a convenient carrying pouch, the ASA-2 mic stand adapter, and the WS4 windscreen for outdoor use.

Features

- Differoid operation provides extremely high gain before-feedback and isolation
- Warm, smooth sound
- Low handling noise
- Adjustable frequency response for either music or announcing applications
- CM-310ASW has a magnetic reed on-off switch

Specifications

Transducer type: Electret condenser.

Frequency response (typical): 80 Hz to 15,000 Hz. (see Figs. 1 and 2).

Polar pattern: Cardioid. See Fig. 3.

Impedance: 200 ohms balanced. Recommended minimum load impedance 1000 ohms.

Open circuit sensitivity, typical, close talking: 1.7 mV/Pa* (-55.5 dBV/Pa).

Power sensitivity, typical, close talking: -54.5 dB re 1 mW/Pa*.

Equivalent noise level (self-noise): 21.5 dB SPL typical (0 dB = 0.0002 dyne/cm²), A-weighted.

S/N Ratio: 72.5 dB at 94 dB SPL.

Maximum SPL for 3% THD: 151 dB SPL with 48V phantom, 143 dB SPL with 12V phantom.

Operating voltage: Phantom power, 12V to 48V DC, positive voltage on pins 2 and 3 with respect to pin 1 of output connector.

Polarity: Positive pressure on the diaphragm produces a positive voltage on pin 2 with respect to pin 3 of output connector.

Current drain: 1.7 milliamperes.

Cable: None supplied; use 2-conductor shielded microphone cable.

Connector: 3-pin professional audio connector (XLR type).

Switches: Internal DIP switch on PC board sets frequency response to FLAT or RISING. The CM-310ASW also has a magnetic reed switch in the handle that turns the mic on and off.

Materials: Rugged aluminum alloy housing, steel grille.

Finish: Satin black.

Net weight: 7.1 oz. (200 g).

Dimensions: See Fig. 4.

Included accessories: Carrying pouch, ASA-2 microphone stand adapter and WS-4 windscreen.

Optional accessories: Crown PH-1A phantom power supply (1 channel, battery or AC adapter powered).

Replacement parts: Field-replaceable grillescreen is available from Crown's Parts Department.

Fig. 1 Frequency Response (switch set to FLAT)

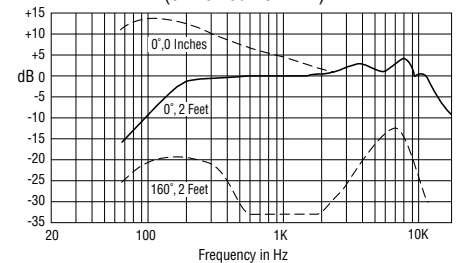


Fig. 2 Frequency Response (switch set to RISING)

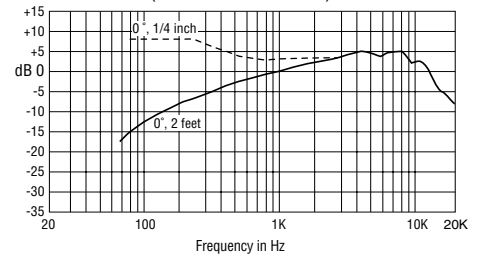
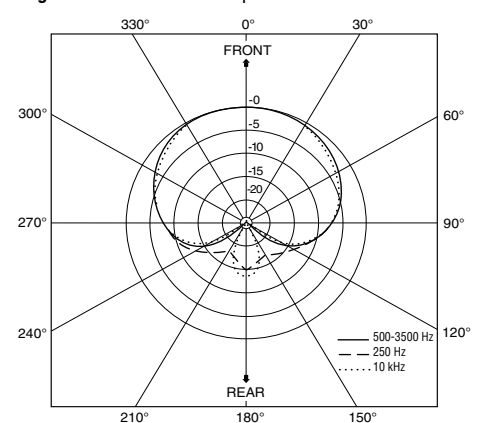


Fig. 3 Polar Response



*1 pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL.



PORTABLE PA



INSTALLED



TOURING

CM-310A CM-310ASW

Fig. 4

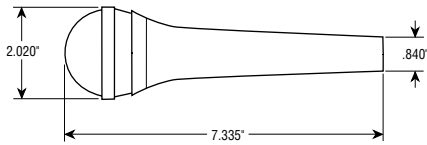


Fig. 5

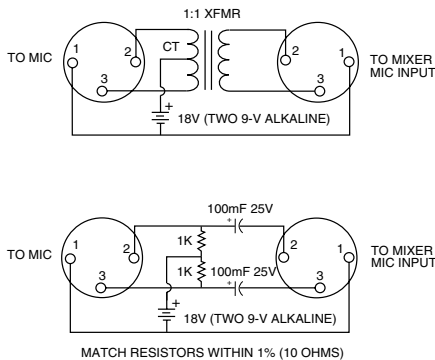


Fig. 6

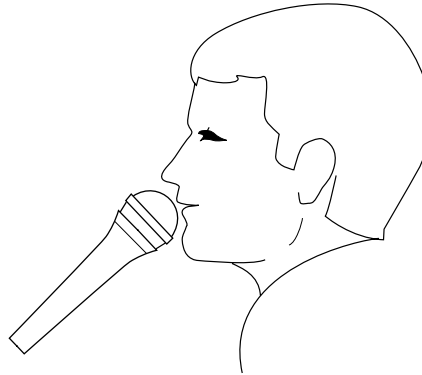
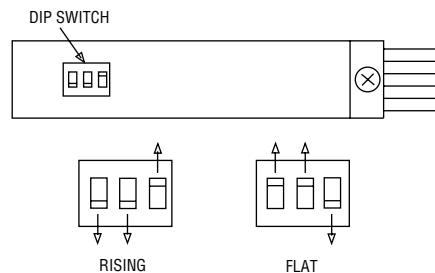


Fig. 7



1. In the handle, unscrew the screw near the connector.
2. Using the pliers, pull on the XLR-connector pins to pull out the PC board. **Caution: Do not pull so hard that you break the leads going to the board.**
3. Locate the DIP switch shown in Fig. 7. Using the ball-point pen or pencil, set the switches to the FLAT or RISING position shown in Fig. 7. FLAT gives the frequency response shown in Fig. 1. RISING gives the frequency response shown in Fig. 2.

Architects' and Engineers' Specifications CM-310A

The microphone shall be the Crown model CM-310A Differoid or equivalent. The microphone shall be a hand-held differential-type condenser microphone requiring 12 to 48 volts phantom power. The microphone shall have a 2-position dip switch for setting the frequency response to flat or rising high frequencies.

A smooth frequency response from 80 Hz to 15 kHz shall be obtained, with a uniform off-axis response. The polar pattern shall be cardioid. The microphone shall have an open-circuit sensitivity of 1.7 mV/Pa. The microphone shall accept a 151-dB SPL input while providing no greater than 3% THD (open-circuit termination). Equivalent noise shall be 21.5 dBA typical (0 dB = .0002 dyne/cm²). The Crown model CM-310A microphone is specified.

Operating Instructions

Using a 2-conductor shielded microphone cable, plug the microphone into a mixer mic input with 12 to 48 volts phantom power or use a phantom power supply. Crown makes a phantom power supply, model PH-1A (1 channel, battery or AC-adaptor powered). For special applications, you can make your own phantom supply as shown in Fig. 5.

Since the microphone cancels sounds that are not close to the mic, you must **talk close to the microphone with lips touching the grille screen; talk directly into the front of the microphone** (as in Fig. 6).

To reduce wind noise, place the included foam windscreen on the microphone. **Note:** This will reduce the mic's noise-canceling ability by about 5 dB.

The switch inside the **CM-310A** is factory-set to FLAT for a warm, smooth sound and the most gain before feedback. You can set the switch to RISING for a brighter, crisper sound, but this will slightly reduce the gain before feedback. Announcers may prefer the RISING position for its extra intelligibility. The switch inside the **CM-310ASW** is factory-set to RISING to enhance articulation.

If you want to change the switch setting, follow these steps:

You'll need a small Phillips screwdriver, a needle-noise pliers and a ball-point pen or pencil.

CM-310ASW

The microphone shall be the Crown model CM-310ASW Differoid or equivalent. The microphone shall be a hand-held differential-type condenser microphone requiring 12 to 48 volts phantom power. The microphone shall have a 2-position dip switch for setting the frequency response to flat or rising high frequencies. The microphone shall have a magnetic reed switch that turns the microphone on and off.

A smooth frequency response from 80 Hz to 15 kHz shall be obtained, with a uniform off-axis response. The polar pattern shall be cardioid. The microphone shall have an open-circuit sensitivity of 1.7 mV/Pa. The microphone shall accept a 151-dB SPL input while providing no greater than 3% THD (open-circuit termination). Equivalent noise shall be 21.5 dBA typical (0 dB = .0002 dyne/cm²). The Crown model CM-310ASW microphone is specified.

Warranty

Crown professional microphones are guaranteed against malfunction for a period of three years from date of original purchase. Please refer to the enclosed full warranty statement for more detail.

Service

If the unit fails to work, first replace or repair the mic cables and check the power supply. If service is required, return the microphone in its original packaging to: **Crown Factory Service, 1718 West Mishawaka Road, Elkhart, Indiana 46517-9439.** A Service Return Authorization (SRA) is required for product being sent to the factory for service. An SRA can be completed on line at www.crown-audio.com/support/factserv.htm. For further assistance or technical support call **800-342-6939.**



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