PCC®-160
PCC-160W

PHASE COHERENT
CARDIOID MICROPHONE

The Crown® PCC®-160 (Phase Coherent Cardioid) is a surface-mounted half-supercardioid microphone intended for professional applications on stage floors, lecterns, conference tables, and news desks—wherever improved gain-before-feedback and articulation are important.

Similar to the Pressure Zone Microphone® (PZM®), the PCC is designed to be used on a relatively large boundary surface. Unlike the PZM, the Phase Coherent Cardioid uses a subminiature supercardioid mic capsule. Its directional polar pattern improves gain-before-feedback, reduces unwanted room noise and rejects sounds from the rear. Surface-mounting creates a "half-supercardioid" polar pattern and increases directivity 3 dB.

Since the microphone capsule is placed on a boundary, direct and reflected sounds arrive at the diaphragm in-phase. This coherent addition of direct and reflected waves increases sensitivity 6 dB and prevents phase cancellations. The mic capsule is small enough to ensure phase coherency up to the highest frequencies in the audible spectrum, resulting in a wide, smooth frequency response free of phase interference. Clarity and reach are also enhanced.

Self-contained electronics eliminate the need for an in-line preamp box. The PCC-160 can be phantom powered directly from the console or other remote power source providing 12 to 48 volts. If battery power is required, a battery supply unit can be inserted anywhere in the mic line right up to the console or mixer. A "bass tilt" switch allows the user to tailor the low-end response for particular applications.

Thanks to its low profile and black finish, the microphone becomes almost invisible in use. A side-mounted connector complements the form factor of the PCC-160, allowing the unit to be placed effectively at the stage edge, at the top of a lectern or in other tight spots. If desired, the cable can be hard-wired for bottom entry.

The PCC-160W is finished in off-white to blend with church altars and other surroundings where lighter color is appropriate.

The heavy-gauge, all-steel body protects the unit from accidental abuse. Permanent mounting is enabled by screw holes in the base. Engineering attention-to-detail has assured years of trouble-free use from this reliable microphone.

Capable of withstanding up to 120 dB SPL without distorting, the PCC-160 will never overload in practical use. Its electret condenser capsule provides a wide, smooth frequency response from 50 Hz to 18 kHz. RFI suppression is included.

Self-noise is low, and sensitivity is very high to override mixer noise in distant-miking applications. Output impedance is 150 ohms, balanced.

Features
- Industry-standard stage floor microphone
- Phase Coherent Cardioid design prevents coloration from surface sound reflections
- High output overrides mixer input noise
- Half-supercardioid polar pattern rejects the pit orchestra and offers high gain-before-feedback
- Very rugged
- Low profile

Specifications
Type: Phase Coherent Cardioid.
Element: Electret condenser.
Frequency response (typical): 50 Hz to 18,000 Hz at 30 degrees incidence to surface. See Fig. 1.
Polar pattern: Half-supercardioid (supercardioid in the hemisphere above the primary boundary). See Fig. 2.
Impedance: 150 ohms nominal (85 ohms actual), balanced. (Recommended load impedance 1000 ohms or greater.)
Open-circuit sensitivity: 22 mV/Pa* (~33 dB re 1 V/Pa*).
Power sensitivity: -31 dB re 1 milliwatt/Pa~7/123 dBm EIA.
Equivalent noise level (self noise): 22 dB typical. (0 dB = .0002 dyne/cm²), A-weighted.
S/N ratio: 72 dB at 94 dB SPL.
Maximum SPL for 3% THD: 120 dB SPL.
Polarity: Positive pressure on the diaphragm produces positive voltage on pin 2 with respect to pin 3 of output connector.
Cable: 15-foot, black, two-conductor shielded cable with Switchcraft TA3F connector and AS3 connector.
Operating voltage: Standard phantom power: 12 to 48 volts DC positive on pins 2 and 3 with respect to pin 1.
Current drain: 4 mA nominal.
Materials: All steel body construction.
Net weight: 11.5 oz. (326 g).
Dimensions: See Fig. 4.
Optional accessories: Crown PH-1A phantom power supply (one channel, battery or AC-adapter powered).

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

Unbalanced operation: If you are using a phantom power supply that does NOT include an isolation transformer, and you desire an unbalanced output, use pin 2 as hot and pin 1 as ground. This procedure prevents distortion in the PCC circuit. Do not unbalance the output of the supply by connecting pin 3 to pin 1. If you are using a phantom supply containing an isolation transformer (such as the Crown PH-1A AC/Battery Supply), then you can unbalance the output by connecting pin 3 to pin 1 in the cable feeding the mixer. This results in 6 dB more sensitivity.

The PCC includes two keyhole slots in its base to accept mounting screws. To screw the PCC to a surface, refer to Fig. 3.

Note: The porous foam liner in the housing must go toward the front of the microphone; the dense foam liner goes toward the rear. Otherwise, the frequency response and polar pattern will be degraded.


BASS TILT SWITCH: On the bottom of the microphone is a bass-tilt switch which allows the user to tailor the low-end response for particular applications. In general, use the FLAT position. Use the CUT position to reduce room rumble and air-handler noise. Use the BOOST position to compensate for low-frequency losses when the PCC is placed on small boundaries such as lectern shelf-tops.

Architects’ & Engineers’ Specifications

The microphone shall be the Crown Model PCC-160 (black) or PCC-160W (off-white). The microphone shall be a half-supercardioid electret condenser type, utilizing a subminiature transducer of rugged construction. A smooth frequency response from 50 Hz to 18,000 Hz shall be obtained, with a uniform off-axis response, over 20 dB down at the rear nulls. The microphone will exhibit excellent off-axis response and gain-before-feedback.

The microphone shall employ the principle of phase coherency achieved by mounting a small-diameter element very near a boundary, thus eliminating comb filtering in the audible spectrum. A 15-foot (4.6-m), two-conductor shielded cable with the TS and A8M connectors shall be supplied with the microphone.

The microphone shall have a sensitivity of 22 mV/Pa². The microphone shall accept a 120 dB SPL input while providing no greater than 3 percent THD (open-circuit termination). Equivalent noise shall be 22 dBA typical. The Crown Model PCC-160 is specified.

Fig. 4