

## PHASE COHERENT CARDIOID MICROPHONE

# PCC160



The AKG/Crown PCC160 (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 PCC160 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 PCC160, 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 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 PCC160 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 and Fig. 3.

**Impedance:** 150 ohms nominal (85 ohms actual), balanced. (Recommended load impedance 1000 ohms or greater.)

**Open-circuit sensitivity:** 22mV/Pa\* (-33 dB re 1 V/Pa\*).

**Power sensitivity:** -31 dB re 1 milliwatt/Pa\*  
EIA rating: -123 dBm.

**Equivalent noise level (self noise):** 22 dB typical (0 dB = 0.0002 dyne/cm<sup>2</sup>), 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 A3M connector.

**Operating voltage:** Standard phantom power: 12 to 48 volts DC positive on pins 2 and 3 with respect to pin 1.

**Safe Operating Temperature:** -10° to +50° C or +14° to +122° F.

**Current drain:** 4 mA nominal.

**Materials:** All steel body construction.

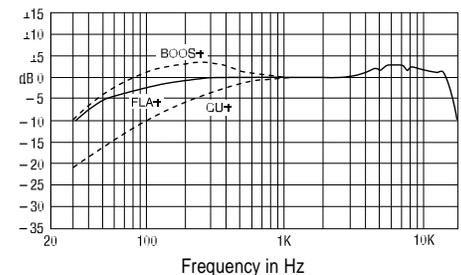
**Finish:** black.

**Net weight:** 11.5 oz. (326 g).

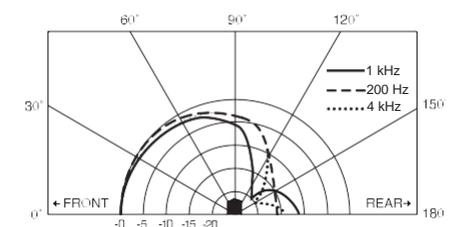
**Dimensions:** See Fig. 5.

**Optional accessories:** AKG/Crown PH1A phantom power supply (one channel, battery or AC-adaptor powered).

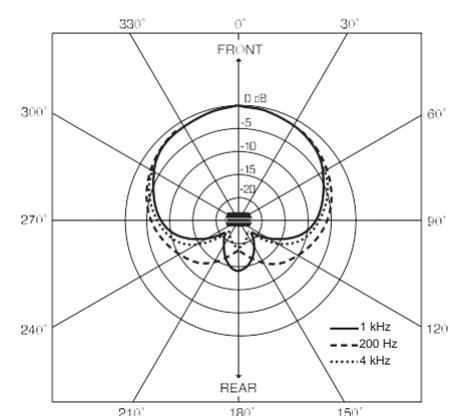
**Fig. 1** Frequency Response



**Fig. 2** Vertical Plane Polar Response



**Fig. 3** Horizontal Plane Polar Response



\*1 pascal = 10 dynes/cm<sup>2</sup> = 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 AKG/Crown PH1A 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. 4 and Fig. 5.

**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 applica-

tions. 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 AKG/Crown Model PCC160. 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 TA3F and A3M connectors shall be supplied with the microphone.

The microphone shall have a sensitivity of 22 mV/Pa\*. 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 AKG/Crown Model PCC160 is specified.



**Warranty**

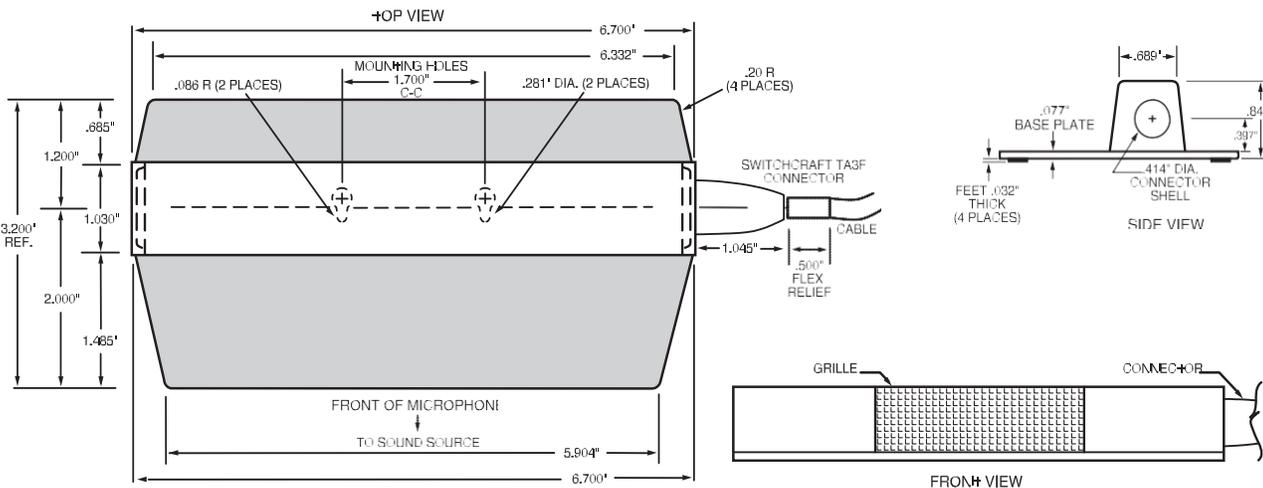
AKG/Crown professional microphone products are guaranteed against malfunction for a period of three years from date of original purchase. Please refer to the enclosed full warranty statement for more detail.

**Service**

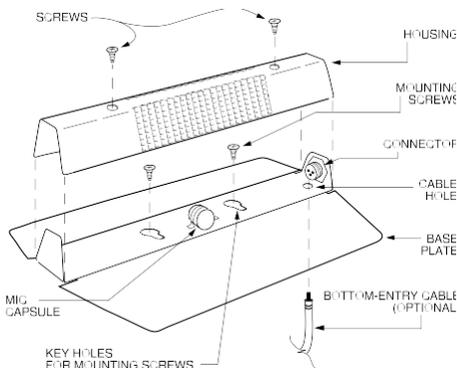
If the microphone does not function properly, check to verify that it is aimed correctly and is connected as described in the Operating Instructions. If there is hum or no signal, repair or replace the cable.

If you determine that the microphone product is defective, return the complete product in its original packaging to one of the addresses below. For further assistance or technical support call the international helpdesk at **+43 676 83200 888.**

**Fig. 5 Dimensions**



**Fig. 4 Removing the Cover**



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