

Professional Solutions for Installed Sound



AKG and Crown® — a winning combination

World-renowned audio brands AKG and Crown both began in 1947 after World War II. These companies were founded by visionary leaders and engineers, who discovered a growing need for communication tools to reach a broader audience and expanded their brands from humble beginnings. While AKG began its business manufacturing film projectors and loudspeakers for movie theatres in Vienna, Austria, Crown focused on quality electronic products for the radio industry from Elkhart, Indiana in the central U.S.

In early 1950, AKG achieved its breakthroughs with patents for moving-coil technology and the principle of the mass-loaded diaphragm. This was the beginning of AKG as a legendary brand known for superb microphones the world over.

At the same time, Crown gained an international reputation for its family of rugged open-reel tape recorders that were designed and built to operate reliably in difficult conditions. Crown obtained a patent for the world's first tape recorder with a built-in 15-watt power amplifier (considered a large amplifier at that time).

Together, AKG and Crown have produced a huge range of electro-acoustic and electronic products for professional audio engineers and enthusiasts for more than 120 years! Both companies have made major contributions to the art and science of audio and can lay claim to a huge list of groundbreaking products that have become milestones in microphones, headphones, amplifiers and wireless systems.

In the 1993, Harman International, the world's largest professional audio company, acquired AKG and in 2000 purchased Crown to gain a foothold in the microphone market.

As microphone experts for more than 6 decades, AKG now manages the worldwide distribution of Crown microphones. For the audio professional, this new distribution is noteworthy: Crown microphones are among the elite, top-line products and are very well known for their outstanding performance. The diversity of the Crown microphone line is a perfect match to the breadth of AKG's own quality product line. With the AKG's expertise in microphone distribution the world over, the new partnership of AKG and Crown is not only logical; its true synergism is certainly greater than the sum of the parts.

	PZM®-10	PZM®-11LWR *	PZM®-30D	PZM®-6D *	PZM®-185 *	Soundgrabber II *	PCC®-130 *	PCC®-160	PCC®-170 *	MB-3	MB-4 *	CM-311A	CM-312A *
Fixed	•	•						•	•	•	•		
Mobile (tabletop)			•	•	•	•	•	•	•		•		
Omnidirectional	•	•	•	•	•	•							
Directional							•	•	•	•	•	•	•
Intercom												•	•
Lectern													•
Vocals (on stage)												•	
Theatre, onstage miking								•					
Houses of Worship							•	•	•				
Music recording	•		•	•	•	•							
Conferencing (Tele, Video, Boardroom)							•	•	•	•	•		
Distance Learning					•	•	•	•	•	•	•		
Courtroom	•	•	•	•	•	•	•	•	•	•	•		
Security, surveillance, speech/conference recording	•	•	•	•	•	•	•	•	•	•	•		
Ticket window, bank counter, reception desk, restaurant	•	•								•			
PC compatible/dictaphone compatible						•							
Switchable version available							•		•				
"Switch remote sensing output" version available									•				
AKG compatible MiniXLR version available												•	•
1/8" phone plug, PC compatible						•							
Battery instead of phantom power					•	•							

* This product must not be put on the market in any country applying the Restriction of Hazardous Substances (ROHS 2002/95/EC) Directive.

Tech Made Simple

Microphones often must be placed near hard reflective surfaces. Two situations where this occurs are (Fig. 1) picking up/recording a drama or opera with microphones near the stage floor, (Fig. 2) picking up/recording participants at a conference with microphones on desk stands on the conference table or (Fig. 3) recording a piano with the mics near the open lid, or recording an instrument surrounded by reflective baffles.

In these situations, sound travels from the sound source to the microphone via two paths: directly from the source to the microphone, and reflected off the surface (Fig. 1). Note that the reflected sound travels a longer distance than the direct sound, so the reflected sound is delayed relative to the direct sound. When the direct and delayed sounds combine at the microphone diaphragm, this results in phase cancellations of various frequencies. A series of peaks and dips is created in the net frequency response. This is called a comb-filter effect. It colors the tone quality and gives an unnatural sound.

To solve this problem, we need to shorten the delay of the reflected sound so that it arrives at the mic at the same time as the direct sound.

Fig.1

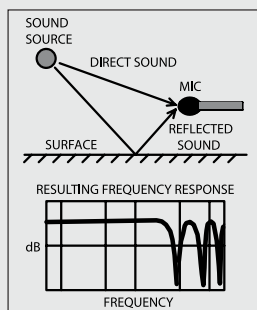


Fig.2

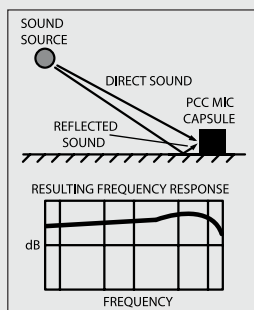


Fig.3

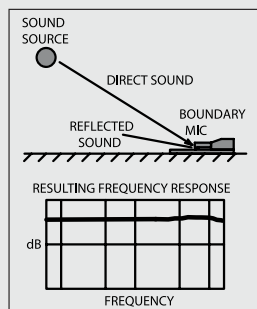
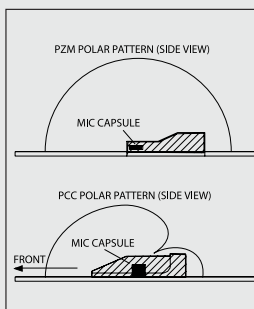


Fig.4



THE PZM® SOLUTION

In a PZM®, the diaphragm can be placed as close to the surface as desired. Then the direct and reflected waves arrive at the microphone at the same time, in phase (Fig. 3). This eliminates phase cancellations and results in a smooth frequency response. The diaphragm is mounted in the "pressure zone" just above the plate, a region where the direct and reflected waves are effectively in-phase. This special microphone was designed to be used on surfaces such as floors, walls, tables, or even piano lids. It includes a miniature omnidirectional condenser mic capsule, which is mounted face-down next to a soundreflecting plate. The microphone diaphragm is parallel with and very close to the reflecting surface.

THE PCC® SOLUTION

In the Phase Coherent Cardioid or PCC® Solution, the microphone diaphragm is small enough so that any phase cancellations are above the audible range (Fig. 2). This results in a wide, smooth frequency response free of phase interference. Unlike the PZM® which uses an omnidirectional mic capsule facing down, the PCC® uses a supercardioid mic capsule facing horizontally across the surface. Its directional polar pattern improves gain-before-feedback, reduces unwanted room noise and acoustics, and rejects sound from the rear. Figure 4 shows the difference in construction and polar patterns of the PZM® and PCC®.

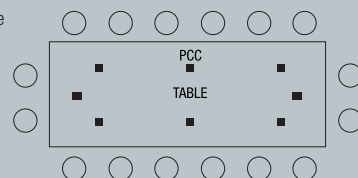
Microphone application guide

Conferences and courtrooms

Suppose you need to reinforce speech at a conference table or in courtrooms. You'll use several microphones fed into a mixer (either standard or automatic mixer). If you use a standard mixer, each user needs to manually switch his

or her mic on or off. Choose one of these switchable microphone models: PCC®-130SW or PCC®-170SW. The switches of these microphones can be configured to work three ways: On/Off the switch, Momentary on and Momentary off. The PCC®-170SWO additionally provides remote sensing of switch closure. This mic can be used e.g. with a video camera switcher. When somebody turns on his mic, the camera aiming at that person is switched on. If you want to use an automatic mixer, one of these non switch mic will do a perfect job: PCC®-130, PCC®-170, MB-3 or MB-4. Typical placement for each microphone is at arm's length from the user. Place one microphone in front of each person or one between every two people.

For teleconferencing applications, see tips for Distance Learning and Teleconferencing on the next page.

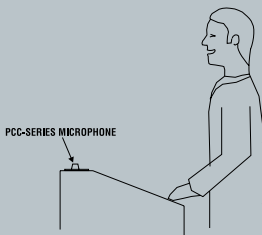


Microphone application guide

Minister/Speaker

One microphone at the pulpit/lectern gives a more consistent tone quality than two, so install only one. Place a unidirectional boundary mic such as the Crown® (PCC®-130, PCC®-160, PCC®-170) on top of the pulpit/lectern, near the edge furthest from the person speaking.

PCC-SERIES MICROPHONE

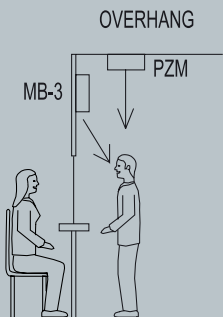


Ticket window

Mount a PZM®-10 in an overhang, or mount an MB-3 aiming down over the window. It is best not to expose the microphone to rainfall.

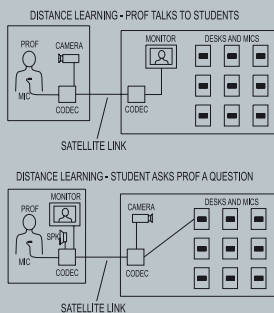
If you need a weather resistant microphone, the PZM®-11LLWR is the microphone of your choice.

By following the suggestions, you should be able to discreetly pick up speech and other sounds with clarity.



Distance learning and teleconferencing system

Typically, students will be in one or more classrooms, and a professor will be in another location. The professor talks to the students through a clip-on or lavalier microphone. The mic signal is sent by phone lines or satellite to the classrooms. There, several loudspeakers play the professor's voice to the students. The students can see the professor over a TV monitor.



In the classroom, each student or pair of students has a desk mic. Students can switch on the mic when they want to ask the teacher a question. The mic signals are sent by phone lines or satellite to the teacher. The teacher and student can talk back and forth, almost as if they were in the same room. The parts of a distance learning system are the same as in a teleconferencing system.

Ticket window Conferencing Surveillance and security

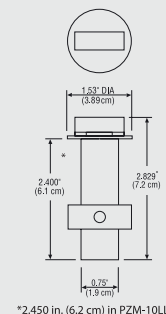
- Hemispherical polar pattern; clear, intelligible pickup of speech
- Low profile, cylindrical design, perfect for wall or tabletop installations
- Choice of mic level output (PZM®-10) or line-level output (PZM®-10LL)
- PZM®-10 powered by 12-48 V phantom power, inline XLR connector
- PZM®-10LL powered by 12-24 V/DC, unterminated wires



PZM®-10
PZM®-10LL

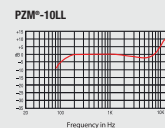
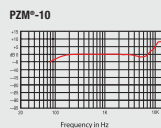
The PZM®-10 and PZM®-10LL, part of the Pressure Zone Microphone® line, are designed for security, surveillance, and conference-table use. Since they do not look like microphones, they are inconspicuous. The mics easily mount into tables, walls or ceilings.

Like other Pressure Zone Microphones®, the PZM®-10 and PZM®-10LL use a miniature mic capsule mounted close to a sound-reflecting plate or boundary, in the pressure zone. In this zone, direct sound from the sound source combines in phase at all frequencies with reflected sound off the boundary. The benefits are many: 6 dB more sensitivity, 6 dB less noise, a wide smooth frequency response free of phase interference, excellent clarity and "reach", and consistent pickup anywhere around the mic. The PZM®-10 and PZM®-10LL will pick up conversations or other desired sounds with extra clarity and definition.



*2.450 in. (6.2 cm) in PZM-10LL

Item number:	
PZM10	6000H50070
PZM10LL	6000H50060



• Polar pattern:	Hemispherical
• Frequency response:	PZM®-10: 80 to 20,000 Hz; PZM®-10LL: 100 to 20,000 Hz
• Sensitivity:	PZM®-10: 2.5 mV/Pa (-52 dBV); PZM®-10 LL: 1.4 V/Pa (+3 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	26 dB-A
• Signal/noise ratio:	68 dB (A-weighted)
• Impedance:	PZM®-10: 240 ohms; PZM®-10 LL: 75 ohms
• Finish:	Off-white. May be painted any color.
• Dimensions:	ø 3.9 cm x 7.2 cm (ø 1.53 x 2.829 in.)
• Net weight:	PZM®-10: 74 g (2.6 oz.); PZM®-10 LL: 93 g (3.3 oz.)
• Connector:	PZM®-10: 3-pin XLR; PZM®-10 LL: stripped and tinned leads
• ROHS:	PZM®-10: Ok

Ticket window

Surveillance and security

Conferencing

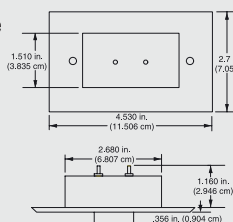
- Hemispherical polar pattern, excellent intelligibility
- Low frequency roll off to reduce HVAC rumble
- Inconspicuous, resembles a light switch
- Mounts a standard wall plate
- Screw terminal, no need for connectors



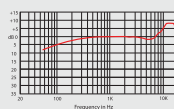
PZM®-11

The PZM®-11 present a low-cost solution for security and surveillance applications. Mounted on a standard wall plate the PZM®-11 doesn't look like a microphone but rather an ordinary light switch.

Like other Pressure Zone Microphones, the PZM®-11 utilize the Pressure Recording Process™ in which a miniature condenser microphone capsule is mounted very close to a sound reflecting plate or boundary. The benefits are a wide, smooth frequency response free of phase interference, excellent clarity and "reach", and consistent pickup anywhere around the microphone. Intelligibility is excellent, with low frequencies below the voice range rolled off to reduce the pickup of heating, ventilation or air-conditioning rumble (HVAC noise). The high-frequency response is boosted slightly to aid clarity and articulation. Electronics on the rear of the plate offer screw terminals, eliminating the need for connectors. The PZM®-11 has a mic-level output and is powered by 12-48 V phantom power.



Item number:
PZM11 6000H50050



• Polar pattern:	Hemispherical
• Frequency response:	80 to 20,000 Hz
• Sensitivity:	5 mV/Pa (-46 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	26 dB-A
• Signal/noise ratio:	68 dB (A-weighted)
• Impedance:	225 ohms
• Finish:	Off-white. May be painted any color.
• Dimensions:	11.506 x 7.05 x 2.946 cm (4.53 x 2.7 x 1.16 in.)
• Net weight:	71 g (2.5 oz.)
• Connector:	Screw terminal

Outdoor intercoms

Toll booths

Surveillance and security

Home automation

- Hemispherical polar pattern, excellent intelligibility
- Weather-resistant model for outdoor use
- Line-level output connects directly to video recorders
- Inconspicuous, mounts a standard wall plate
- Screw terminals for easy installation

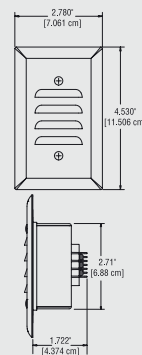


PZM®-11LLWR

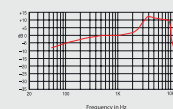
The PZM®-11LLWR is a weather resistant Pressure Zone Microphone® based on the PZM®-11 with a balanced, line-level output. A plastic membrane inside the microphone protects the mic capsule from water damage. The microphone will work during and after rainfall. If water freezes on the membrane, the mic's frequency response will change, but will return to normal when the ice melts and the membrane dries. Applications include fast-food restaurants, outdoor intercoms, toll booths, bridges, theme park security, home automation, and so on.

The microphone can be plugged directly into a VCR line input – no costly mic preamp is needed. Output (via screw terminals) can be balanced or unbalanced. Because of its tailored response and PZM® construction, the PZM®-11LLWR will pick up conversations or other desired sounds with extra clarity.

Powering is by 12-24 V AC or DC.



Item number:
PZM11LLWR 6000H50040



• Polar pattern:	Hemispherical
• Frequency response:	80 to 10,000 Hz
• Sensitivity:	5 mV/Pa (-46 dBV)
• Maximum SPL:	100 dB
• Equivalent noise level:	26 dB-A
• Signal/noise ratio:	68 dB (A-weighted)
• Impedance:	75 ohms
• Finish:	Silver. May be painted any color.
• Dimensions:	7.061 x 11.506 x 4.374 cm (2.78 x 4.53 x 1.722 in.)
• Net weight:	71 g (2.5 oz.)
• Connector:	Screw terminal

Music recordings
Houses of worship and conferencing
Theater on stage recording
Broadcasting

- Hemispherical polar pattern
- Pressure Zone Microphone® design prevents coloration from surface sound reflections
- Switchable dual-frequency response offers a choice of flat response or rising high-frequency response
- Rugged detachable cable



PZM®-30D

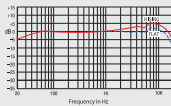
The PZM®-30D is a Pressure Zone Microphone® designed for professional recording, sound reinforcement and broadcasting. Fitting many applications, from miking full orchestras or individual musical instruments to security or teleconferencing, film and video productions.

The PZM®-30D has a switchable dual frequency response: rising or flat. The “rising” position adds brilliance. This makes it useful wherever a crisp attack is desired, such as on percussion, drums, or piano. The capsule is mounted in the “Pressure Zone” just above the boundary, a region where sound coming directly from the sound source combines in phase with sound reflected off the boundary. The benefits are excellent clarity and “reach” a hemispherical polar pattern, uncolored off-axis response, and a wide smooth frequency response free of phase interference.

The PZM®-30D is low profile, sturdy and reliable.

Item number:

PZM30D 6000H50020



• Polar pattern:	Hemispherical
• Frequency response:	20 Hz to 20,000 Hz
• Sensitivity:	7 mV/Pa (-43 dBV)
• Maximum SPL:	150 dB
• Signal/noise ratio:	74 dB (A-weighted)
• Impedance:	240 ohms
• Finish:	black
• Dimensions:	15.2 x 12.7 x 1.9 cm (6 x 5 x 0.75 in.)
• Net weight:	184 grams (6.5 ounces)
• Cable:	None supplied; use 2-conductor shielded microphone cable.
• Connector:	3-pin XLR
• ROHS:	Ok

Music recordings
Houses of worship and conferencing
Theater on stage recording
Broadcasting

- Hemispherical polar pattern
- Pressure Zone Microphone® design prevents coloration from surface sound reflections
- Switchable dual-frequency response offers a choice of flat response or rising high-frequency response
- Smaller, lighter, and has a permanently attached cable



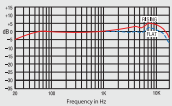
PZM®-6D

The PZM®-6D is a Pressure Zone Microphone® designed for professional recording, sound reinforcement and broadcasting. A smaller integral boundary makes the PZM®-6D even more inconspicuous than the PZM®-30D. It has many applications, from miking full orchestras or individual musical instruments to security or teleconferencing, as well as on television, film and video productions.

The PZM®-6D has a switchable dual frequency response: rising or flat. The “rising” position adds brilliance. This makes it useful wherever a crisp attack is desired, such as on percussion, drums, or piano. The user can get a bright sound without boosting high frequencies on the recording console; the result is lower noise. The “flat” position provides a smooth, flat, high-frequency response for natural sound reproduction.

Item number:

PZM6D 6000H50010



• Polar pattern:	Hemispherical
• Frequency response:	20 Hz to 20,000 Hz
• Sensitivity:	7 mV/Pa (-43 dBV)
• Maximum SPL:	150 dB
• Signal/noise ratio:	74 dB (A-weighted)
• Impedance:	240 ohms
• Finish:	black
• Dimensions:	7.62 x 6.35 x 0.95 cm (3 x 2.5 x 0.375 in.)
• Net weight:	184 grams (6.5 ounces)
• Cable:	4.58 m (15 foot) black cable with XLRM connector. Model PZM®-6D has a 1.83 m (6 foot) cable.
• Connector:	XLRM

Music recordings

Conferencing and lectern

Home video production

Broadcasting

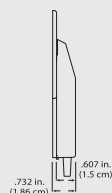
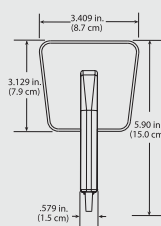
- Hemispherical polar pattern
- Clear, bright sound quality with excellent bass
- Works on internal AAA battery or phantom power
- Low-impedance XLR-type output
- Boundary "paddle" can be detached



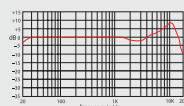
PZM®-185

The PZM®-185 Pressure Zone Microphone® is a budget microphone designed for general-purpose use. Ideal for applications such as conferences, group discussions, interviews, broadcast, homevideo production, lectures, and recordings. The mic can be placed on a large surface such as a table, floor, wall, or lectern.

The PZM®-185 is powered either by an internal AAA 1.5 V battery or 12-48 V phantom power. The boundary "paddle" can be detached so the mic will fit in your pocket. It is nearly invisible on camera. The PZM®-185 minimizes pickup of vibration and handling noise. It provides a wide, smooth frequency response from 50 Hz to 16 kHz. The mic's hemispherical polar pattern allows clear pickup of everyone surrounding the microphone. The PZM®-185 is protected against static and RFI. The output is balanced, low impedance, which allows long cable runs without hum pickup or high-frequency loss.



Item number:
PZM185 6000H50030



• Polar pattern:	Hemispherical
• Frequency response:	50 to 16 kHz
• Sensitivity:	0.8 mV/Pa (-62 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	21 dB-A
• Signal/noise ratio:	73 dB (A-weighted)
• Impedance:	150 ohms
• Finish:	Satin black
• Dimensions:	8.7 x 15 x 1.86 cm (3.409 x 5.9 x 0.732 in.)
• Net weight:	115 g (4 oz.)
• Cable:	2.4 m (8 ft.)
• Connector:	3-pin XLR

Theater

Conference

Houses of worship

Home video production

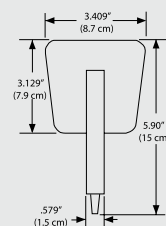
- PZM® design makes the sound clearer and more natural
- Ideal for recording conferences, interviews, home videos
- AAA battery powered
- Medium-impedance unbalanced output
- 1/8" (3.5 mm) phone connector



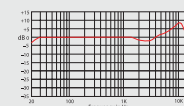
SOUND GRABBER II

The Crown® Sound Grabber II utilizes the Pressure Zone Microphone® technology in which sound waves reinforce themselves in the area nearest a flat surface.

Because of this new technology, Sound Grabber II offers you the opportunity for vast improvement in the quality of your recordings. The Sound Grabber II will pick up sounds at distances you never thought possible and it will pick them up with a clarity that other microphones, because of the limitations of their construction, simply cannot match. The Sound Grabber II does not need to follow the action, since it has a wide-angle pickup pattern. So long as the mic "sees" the sound, in whatever direction or angle, it will pick it up clearly; it does not need to be between you and the other person. Speakers or vocalists can move freely around the Sound Grabber II without their tone quality changing.



Item number:
SNDGRABBER2 6000H50000



• Polar pattern:	Hemispherical
• Frequency response:	50 Hz to 16 kHz
• Sensitivity:	20 mV/Pa (-54 dBV)
• Maximum SPL:	120 dB
• Signal/noise ratio:	73 dB (A-weighted)
• Impedance:	1,600 ohms
• Finish:	Satin black
• Dimensions:	8.7 x 15 x 1.86 cm (3.409 x 5.9 x 0.732 in.)
• Net weight:	115 g (4 oz.)
• Cable:	10 foot with mini phone plug, 1/4 phone plug and micro phone plug adapters

Houses of worship Conference and lectern Distance learning and security Courtrooms

- Cardioid polar pattern reduces background noise and provides an impressive gain-before-feedback
- PCC® technologie (phase coherent cardioid) prevents phase interference due to table sound reflections
- Wide and smooth frequency response
- Exceptional performance and small size
- Three-position bass-tilt switch

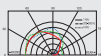
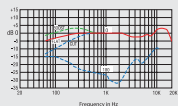


PCC®-130 PCC®-130SW

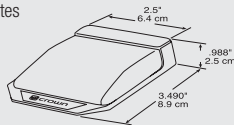
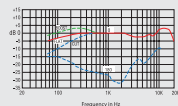
The Crown PCC®-130 and the PCC®-130SW are surface-mounted small cardioid microphones of professional quality. With its small size, the PCC®-130 is less conspicuous on a conference table than comparable mics. Because of its highly directional pickup pattern, the PCC®-130 minimizes background noise and feedback. The PCC®-130SW has a silent-operating membrane switch which is normally off. The switch can be configured for touch on/off, momentary on or momentary off. A high-intensity LED lights when the unit is on. The PCC®-130SW is intended for multiple-microphone use on a conference table where each person wants control of his or her microphone. The microphone attenuates 70 dB when the switch is in the off position.

Item number:
PCC130 6000H50130
PCC130SW 6000H50120

PCC®-130



PCC®-130SW



Theater on stage miking Houses of worship Conference and lectern

- Supercardioid polar pattern rejects the pit orchestra and offers an impressive gain before feedback
- Phase coherent cardioid® design prevents coloration from surface sound reflections
- Finely crafted, rugged housing withstand the rigors of the stage
- Low profile to be inconspicuously placed on the stage-floor
- Industry standard stage-floor microphone

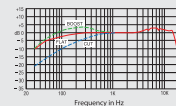
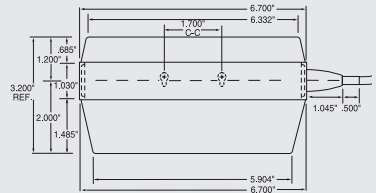


PCC®-160

The PCC®-160 is a surface-mounted supercardioid microphone and an industry-standard for lecterns, conference tables, and news desks – wherever improved gain-before-feedback and articulation are important.

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. The mic capsule ensures phase coherency up to the highest frequencies, resulting in a wide, smooth frequency response. Capable of withstanding up to 120 dB SPL with-out distorting, the PCC®-160 will never overload in practical use. 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.

Item number:
PCC160 6000H50110



• Polar pattern:	PCC®-130: Cardioid; PCC®-130SW: Supercardioid
• Frequency range:	50 to 20,000 Hz
• Sensitivity:	22 mV/Pa (-30 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	22 dB-A
• Signal/noise ratio:	72 dB (A-weighted)
• Impedance:	150 ohms
• Connector:	Switchcraft TB3M
• Powering:	12 to 48 V phantom power to DIN/IEC
• Finish:	Satin black
• Dimensions:	6.4 x 8.9 x 2.5 cm (2.5 x 3.49 x 0.988 in.)
• Net weight:	269 g (9.5 oz.) incl. cable
• Cable:	4.6 m (15 ft.)

• Polar pattern:	Supercardioid
• Frequency range:	50 to 18,000 Hz
• Sensitivity:	22 mV/Pa (-30 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	22 dB-A
• Signal/noise ratio:	72 dB (A-weighted)
• Impedance:	150 ohms
• Finish:	Black
• Dimensions:	17 x 8 x 2 cm (6.7 x 3.2 x 0.8 in.)
• Net weight:	170 g (6 oz.)
• Cable:	4.6 m (15ft.)
• Connector:	Switchcraft TA3F
• ROHS:	Ok

Houses of worship

Conference and lectern

Distance learning

Security

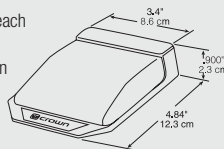
- Supercardioid polar pattern offers high-gain-before-feedback
- Phase coherent cardioid® design prevents coloration from surface sound reflections
- Wide and smooth frequency response
- Three-position bass-tilt switch
- Small and inconspicuous



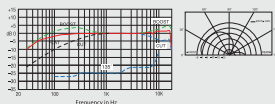
PCC®-170

The Crown PCC®-170 is a surface-mounted supercardioid microphone of professional quality. This handsomely styled unit is appropriate for use on the most elegant boardroom table or lectern. Other applications include churches, courtrooms and council chambers. Because of its highly directional pickup pattern, the PCC®-170 minimizes background noise and feedback. The microphone reproduces the voice with a clean, clear and natural sound.

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. RFI suppression is included. Self-noise is low and sensitivity is very high and an RFI suppression is included. A bass-tilt switch allows the user to tailor the low-end response for particular applications.



Item number:
PCC170 6000H50100



Houses of worship

Conference and lectern

Distance learning

Security

- Supercardioid polar pattern reduces muddy-sounding room acoustics and background noise
- PCC® technologie (phase coherent cardioid) for clear and natural sound
- Programmable, silent operating on/off membrane switch
- Extra leads in mic cable allow remote sensing of mic switch closure
- Small and inconspicuous

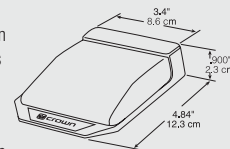


PCC®-170SW

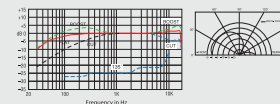
PCC®-170SWO

Additionally to the features of the PCC®-170 the PCC®-170SW/SWO offer a silent-operating membrane switch which is normally off. The switch can be configured for touch on/off, momentary on or momentary off. This configuration is set by a bottom-mounted DIP switch. A high-intensity LED lights when the unit is on. The microphones attenuate 70 dB when the switch is in the off position.

A pair of extra leads in the mic cable allow the PCC®-170SWO isolated remote sensing of the microphone switch closure. In a typical distance-learning application, a video camera would track to the person who switched on the microphone. Remote sensing is done by a patented opto-coupled MOS switching circuit. At the remote-sensing leads, the resistance goes low when the mic is on. The microphones attenuate 70 dB when the switch is in the off position.



Item number:
PCC170SW 6000H50090
PCC170SWO 6000H50080



• Polar pattern:	Supercardioid
• Frequency range:	50 to 20,000 Hz
• Sensitivity:	22 mV/Pa (-30 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	22 dB-A
• Signal/noise ratio:	72 dB (A-weighted)
• Impedance:	150 ohms
• Powering:	12 to 48 V phantom power to DIN/IEC
• Finish:	Black
• Dimensions:	8.6 x 12.3 x 2.3 cm (3.4 x 4.84 x 0.9 in.)
• Net weight:	170 g (6 oz.)
• Cable:	4.6 m (15ft)
• Connector:	Switchcraft TB3M

• Polar pattern:	Supercardioid
• Frequency range:	40 to 20,000 Hz
• Sensitivity:	22 mV/Pa (-30 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	22 dB-A
• Signal/noise ratio:	72 dB (A-weighted)
• Impedance:	150 ohms
• Powering:	12 to 48 V phantom power to DIN/IEC
• Finish:	PCC®-170SW: black; PCC®-170SWO: satin black
• Dimensions:	8.6 x 12.3 x 2.3 cm (3.4 x 4.84 x 0.9 in.)
• Net weight:	170 g (6 oz.)
• Cable:	4.6 m (15ft)
• Connector:	Switchcraft TB3M

Houses of worship
Conference and lectern
Security
Fixed installed systems

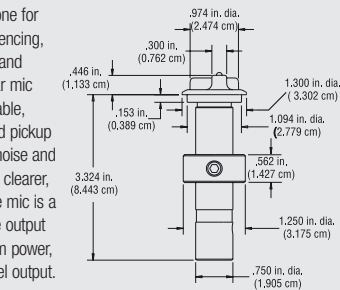
- Supercardioid polar pattern for extended reach and clarity
- PCC® technology (phase coherent cardioid) for clear and natural sound
- Miniature design, virtually disappears when installed
- LED indicator illuminates when mic is active
- Mounts easily into tabletops, walls and ceilings



MB-3

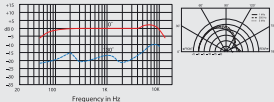
Featuring an incredibly small size, the MB Series of mini-boundary™, supercardioid microphones MB-3 offer a wide range of features and flexibility. The miniature, low-profile designs virtually disappear when installed, yet provide the same great sound as our highly-acclaimed PCC® microphone series. Best of all, the MB Series provides substantial savings compared to traditional microphones.

The MB-3 is a miniature boundary microphone for multi-miking applications such as teleconferencing, distance learning, boardrooms, courtrooms, and security applications. This low-profile, circular mic permanently installs into a hole drilled in a table, lectern, or ceiling. Thanks to its supercardioid pickup pattern, the MB-3 greatly reduces ambient noise and pickup of room reverberation. The result is a clearer, more intelligible sound. On the bottom of the mic is a tubular power module with a 3-pin XLR-type output connector. It is powered by 12-48 V phantom power, and has a low-impedance balanced mic-level output.



Item number:
MB3

6000H50150



Houses of worship
Conference and lectern
Security
Distance learning

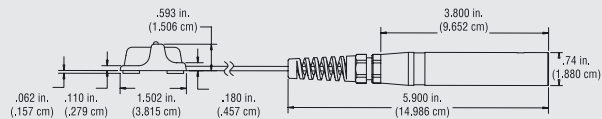
- Supercardioid polar pattern and PCC® technology (phase coherent cardioid) for clear, natural sound and high gain before feedback
- Miniature design, virtually disappears when installed
- Removable grille assembly can be painted
- LED indicator illuminates when mic is active
- Low-Z balanced output prevents hum and high-frequency loss



MB-4

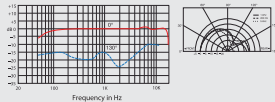
Featuring an incredibly small size, the MB Series of mini-boundary™, supercardioid microphones offer a wide range of features and flexibility. The miniature, low-profile designs virtually disappear when installed, yet provide the same great sound as our highly-acclaimed PCC® microphone series.

MB-4 is a miniature boundary microphone for multi-miking applications such as teleconferencing, distance learning, boardrooms, courtrooms, and TV or theatrical applications. Double-sided sticky tape is provided for attaching the unit under shelves, on walls, etc. Thanks to its supercardioid pickup pattern, the MB-4 greatly reduces ambient noise and pickup of room reverberation. The result is a clearer sound. The MB-4 has an attached cable leading to an XLR-type output connector with built-in mic electronics. It is powered by 12-48 V phantom power, and is low-impedance balanced.



Item number:
MB4

6000H50140



• Polar pattern:	Supercardioid
• Frequency response:	50 Hz to 15,000 Hz
• Sensitivity:	22 mV/Pa (-33 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	22 dB-A
• Signal/noise ratio:	72 dB (A-weighted)
• Impedance:	150 ohms
• Finish:	Satin black
• Dimensions:	ø 2.74 x 8.4 cm (ø 0.974 x 3.324 in.)
• Net weight:	78 g (2.7 oz.)
• Cable:	Non supplied
• Connector:	3-pin XLR
• ROHS:	Ok

• Polar pattern:	Supercardioid
• Frequency response:	50 Hz to 15,000 Hz
• Sensitivity:	22 mV/Pa (-33 dBV)
• Maximum SPL:	120 dB
• Equivalent noise level:	22 dB-A
• Signal/noise ratio:	72 dB (A-weighted)
• Impedance:	150 ohms
• Finish:	Satin black
• Dimensions:	3.8 x 1.5 cm (1.5 x 0.5 in.)
• Net weight:	Microphone: 19 g (0.7 oz.); Power Module: 78 g (2.8 oz.)
• Cable:	4.6 m (15 ft.)
• Connector:	3-pin XLR

Premium head-worn microphone

Handfree use

Lead and backing vocals

Lectern

Intercom systems

- Cardioid polar pattern
- Defferoid® noise cancelling technologie
- Outstanding gain-before-feedback and isolation

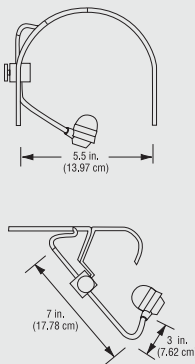


CM-311

The CM-311 offers the best of both worlds: Differoid® performance in a comfortable head-worn microphone. Designed for touring and live-sound applications it sounds like the best handheld microphones—full, clear, and distortion-free, even with the loudest singers.

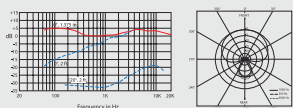
Differoid® stands for differential cardioid—it is a noise-cancelling mic, which cancels sounds beyond a few inches away—such as floor monitors, instruments on stage, and crowd noise. Controlled field tests showed that the Differoid® provides up to 12 dB more gain before feedback than conventional cardioid microphones. This results in the CM-311 having outstanding gain-before-feedback and isolation. Many users of the Differoid® say that their house mix is better because the mic's isolation is nearly complete.

Lightweight and comfortable, the mic's headband and boom adjust to fit any singer.



Item number:

CM311L 6000H50190
CM311A 6000H50180



Head-worn microphone

Handfree use

Intercom Systems

Lectern

- Hypercardioid polar pattern
- Lightweight head-worn microphone with smooth, articulate sound
- Outstanding gain-before-feedback and isolation

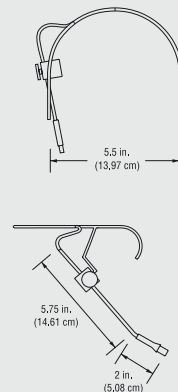


CM-312

The CM-312 is rugged, lightweight head-worn microphone designed for aerobics, live entertainment, and sports broadcasting. It is intended for wireless-mic application that require a light, inconspicuous mic.

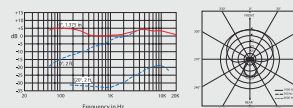
The CM-312 sounds like the best handheld microphones. Its hypercardioid pickup pattern reduces feedback and aids isolation. In difficult situations, the CM-311 head-worn mic is recommended because it picks up even less feedback and leakage than the CM-312. Because the microphone is to the side of the mouth, breath pops are eliminated.

Designed for comfort, the headband fits behind the head and disappears in use. Both the headband and boom adjust to fit any head. Because of the boom's unique behind-the-ear design, it does not cover up the user's face.



Item number:

CM312L 6000H50170



• Polar pattern:	Cardioid
• Frequency response:	50 to 17,000 Hz
• Sensitivity:	CM-311A: 4 mV/Pa (-48 dBV); CM-311L: 1.25 mV/Pa (-58 dBV)
• Maximum SPL:	148 dB
• Equivalent noise level:	26 dB-A
• Signal/noise ratio:	68 dB (A-weighted)
• Impedance:	75 ohms balanced
• Powering:	18 to 48 V phantom power to DIN/IEC
• Finish:	Satin black
• Dimensions:	See picture.
• Net weight:	61g (2.1 oz.)
• Cable:	106 cm (42 in.)
• Connector:	CM-311A: 3-pin XLR; CM-311L: 3-pin Mini XLR

• Polar pattern:	Hypercardioid
• Frequency response:	50 to 17,000 Hz
• Sensitivity:	2.9 mV/Pa (-51 dBV)
• Maximum SPL:	148 dB
• Equivalent noise level:	31 dB-A
• Signal/noise ratio:	63 dB (A-weighted)
• Impedance:	6 kohms
• Finish:	Satin black
• Dimensions:	See picture.
• Net weight:	43g (1.5 oz.)
• Cable:	1.14 m (45 in.)
• Connector:	3-pin Mini XLR



PROA 08/08/1573

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