

## TM-125C Supercardioid Condenser Stage-Floor Microphone

### DESCRIPTION

The Bartlett TM-125C is a supercardioid boundary mic designed for use on the theater stage to pick up actors in drama or musicals. Other intended uses are capturing the footwork of dance groups, and picking up speech in boardrooms, conferences, pulpits, and altar tables.

Miniature capsule technology prevents phase cancellations due to sound reflections off the stage floor or table top. This results in a wide, smooth frequency response free of comb filtering, so speech sounds clear and natural.

With its thick steel housing and robust construction, the TM-125C can withstand heavy footsteps. All electronics are inside the housing. A 6-foot, permanently attached, rugged cable exits the side of the mic.

The supercardioid polar pattern of the TM-125C helps gain-before-feedback, and provides excellent isolation from sounds behind the mic, such as a pit orchestra.

### FEATURES

- Wide, smooth frequency response provides natural speech reproduction
- High-frequency rise compensates for off-axis pickup of speech
- Tight pickup pattern reduces feedback and isolates the mic from the pit orchestra
- Picks up sound while rejecting mechanical vibrations
- High sensitivity and low-impedance balanced output provide a strong, hum-free signal
- Low profile rugged housing
- Permanently attached 6-foot cable with XLR connector prevents connector breakage
- Made in Elkhart, Indiana, USA

### SPECIFICATIONS

**Type:** Supercardioid condenser boundary microphone.

**Transducer:** Electret condenser.

**Frequency response:** 80 Hz to 18 kHz with sound source 30° above the boundary plane. See Figure 1.

**Polar pattern:** Supercardioid in the horizontal plane; half-supercardioid in the vertical plane. See Figure 2.

**Impedance:** 85 ohms. Recommended load impedance >1000 ohms.

**Sensitivity:** 22 mV/Pa (-33 dBV/Pa). 1 Pa = 94 dB SPL.

**Equivalent noise level (self noise):** 22 dBA (0 dB = .0002 dyne/cm<sup>2</sup>).

**Signal-to-noise ratio:** 72 dB at 94 dB SPL.

**Maximum SPL:** 120 dB SPL produces 3% THD. The mic will not audibly distort in normal use.

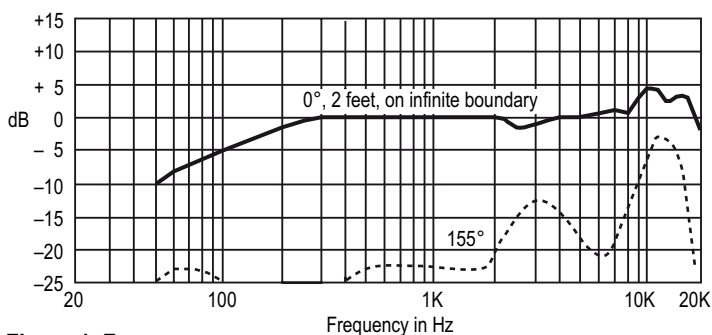


Figure 1. Frequency response

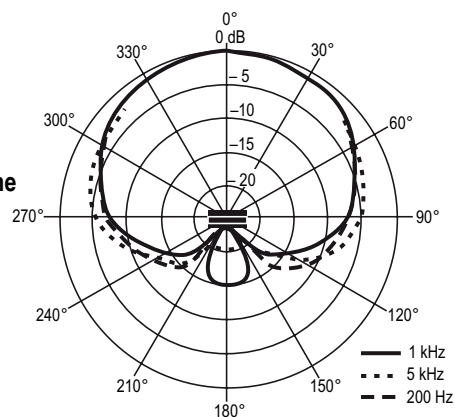


Figure 2. Horizontal plane polar pattern

**Cable:** Permanently attached, 6-foot, black 2-conductor shielded cable with XLR-type 3-pin connector.

**Operating voltage:** 12–48V phantom power.

**Current draw:** 4 mA.

**Materials:** Steel housing.

**Finish:** Black.

**Net weight:** 10.9 oz (0.31 kg).

**Dimensions:** 5.1" long x 3" wide x 0.92" high (13 cm long x 7.6 cm wide x 2.3 cm high).

### Bartlett Microphones

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## OPERATION AND PLACEMENT

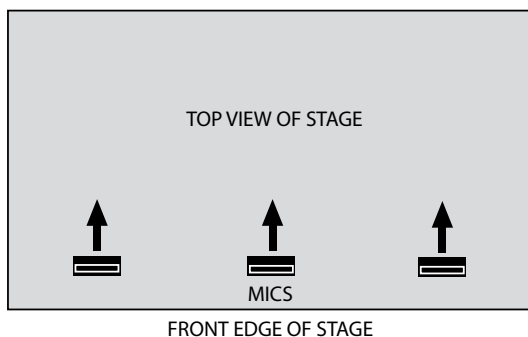
1. Plug the mic cable's XLR connector into a mic cable connected to a mixer mic input that supplies phantom power. Or plug the XLR connector into a phantom power supply, then connect the phantom supply output to a mixer mic input.

2. Turn on phantom power before use.

3. Place one to three microphones about 1 foot from the front edge of the stage (Figure 3). The FRONT of the mic is indicated on the bottom of the microphone.

Three mics should be able to cover a 40-foot wide stage. Place the mics as close to the actors as possible where the mics won't get stepped on. Point out the microphones to the custodian so that the microphones are not mopped (they are not waterproof).

Figure 3. Typical mic placement on a stage



### Suggested mic placements based on stage width:

20' stage: 1 mic center stage.

30' stage: 2 mics 15 feet apart.

40' stage: 3 mics 15 feet apart.

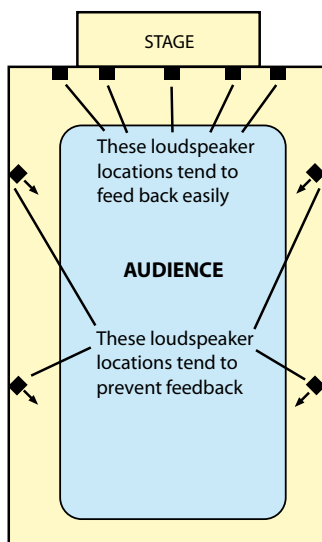
50' stage: 3 mics 17 feet apart.

## TO PREVENT FEEDBACK

You might want to supplement the TM-125C mics with headworn wireless mics on the main actors and actress

■ **IMPORTANT:** Place the loudspeakers close to the audience and far from the microphones. You might buy or rent 2 or 4 small portable PA speakers and place them on the side walls (Figure 4). These loudspeaker placements are effective in reducing feedback. Of course, your existing loudspeaker layout might work fine. *Continued...*

Figure 4.



- Have a sound person turn the mic faders up or down on the mixer to follow the action on stage. Ideally only one mic is on at a time. The more mics that are turned up, the more feedback.
- Do not use compression. It reduces the gain of loud sounds, and you might need that extra volume.
- Train the actors to project so the mics have something to pick up.
- Optional: Use a feedback suppressor (such as Sabine FBX1200) between the mixing console and the power amplifier, Or use a graphic equalizer connected between your mixer output and the system's power amplifier input. Follow this procedure:
  1. Set the mixer master faders to design center (about 3/4 up).
  2. Set the mixer channel faders all the way down.
  3. Set all the equalizer sliders to "flat" (at 0 dB).
  4. Gradually turn up the mic faders until the sound system starts to ring.
  5. Find the frequency that is feeding back and turn down the corresponding EQ slider until feedback stops.
  6. Repeat steps 4 and 5 until the mic faders are about 6 dB higher than when you started. Make sure the system is not ringing.
- Optional: You might want to delay the signal going to the loudspeakers so that the audience will localize the sound on stage. The Behringer Shark DSP110 is a low-cost audio delay unit.

## ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The microphone shall be the Bartlett model TM-125C or equivalent. The microphone shall be a half-supercardioid, electret condenser, boundary type. Its microphone capsule shall be small enough so that acoustic phase cancellations due to surface reflections occur above the audible band of frequencies. The microphone shall have a smooth frequency response from 60 Hz to 18 kHz and a uniform off-axis response attenuated at least 15 dB at 1 kHz at 165° off axis. A 6-foot (1.8 meter) 2-conductor shielded cable with an XLR connector shall be permanently attached to the microphone. The microphone shall have a nominal sensitivity of 22 mV/Pa, maximum SPL of 120 dB SPL at 3% THD, and nominal self-noise of 22 dBA. The Bartlett model TM-125C is specified.

## WARRANTY

Bartlett professional microphones are guaranteed not to malfunction (except in cases of abuse) for a period of three years from the date of first purchase. Mic cables and paint finish are excluded from this warranty.

## SERVICE

If the microphone does not operate correctly, first check its cable and other connected cables. Repair or replace them if necessary. Make sure that phantom power is turned on and that the microphone's fader is up in the mixer.

If the microphone still fails to operate, obtain a return authorization number from us by emailing [bruce@bartlettmics.com](mailto:bruce@bartlettmics.com). Then return the mic and its cable in its original packaging to Bartlett Microphones. Please include proof of purchase and a note about the problem. For tech support email [bruce@bartlettmics.com](mailto:bruce@bartlettmics.com).

If the microphone's specifications change, any changes will appear in the latest data sheet available online at [www.bartlettmics.com](http://www.bartlettmics.com).