sanken

The world's most original microphone maker

CS-3e Short Shotgun Condenser Microphone with new low frequency response

In the CS-3e, three directional capsules are arranged in a front-back array to combine line microphone performance and second-order pressure gradient response in a single system. With this unique design, the CS-3e achieves phenomenal supercardioid directivity in the lowest frequencies and throughout the full range in a microphone 27cm (10 inches) in length. It is significant that the CS-3e picks up the targeted frontal sound sources with exceptional clarity over a wide frequency range - even in noisy ambient environments or in long reverberation spaces - by rejecting undesired noise and sounds coming from the rear and sides.

Background

Conventional shotgun microphones use a line capsule array and a pipe with slits in front of the capsule to create high directivity by utilizing phase interference inside the casing. With this conventional design, high-directivity in the middle-low frequency range is not achieved, although high-directivity in the high frequency range is maintained. Conventional shotgun microphones are at a disadvantage because they invariably pick up unwanted sounds coming from the back and sides. In order to solve this problem, conventional shotgun microphones designed for high directivity in the middle-low frequencies require a length of more than one meter (39 inches) in length. However, long shotgun microphones seriously affect mobility and are not ideal for field recording.

Unique Design

The remarkable performance of the CS-3e is based on the combination of a second-gradient and line microphone with three directional condenser elements, using new PPS (Poly-Gold-Phenylene-Sulfide) diaphragms to provide optimum humidity/temperature stability. The CS-3e incorporates the revolutionary technology of the CSS-5 shotgun stereo microphone (switchable shotgun-stereo/mono/wide) and the COS-11s lavalier microphone developed in conjunction with NHK.

The CS-3e is small and lightweight with a low-cut switch to satisfy the various needs of location and studio recording. The standard 19mm diameter permits use of a wide range of accessories developed for enhanced performance and field mobility.

Non-Proximity Effect

When a conventional shotgun microphone is near the sound source, proximity effect results in a boosting of certain low frequencies and slight masking of others. Some designs utilize this effect to reduce surrounding noises, but microphone response greatly varies with the changing distance between the source and the microphone. This effect becomes more pronounced when the directionality becomes greater. By contrast, the CS-3e virtually eliminates the proximity effect and maintains sharp directivity, while the sonic characteristics do not change with varied distances between sources and microphone. This is a significant advantage over all other directional microphones.

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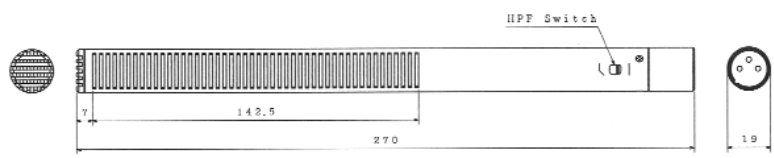
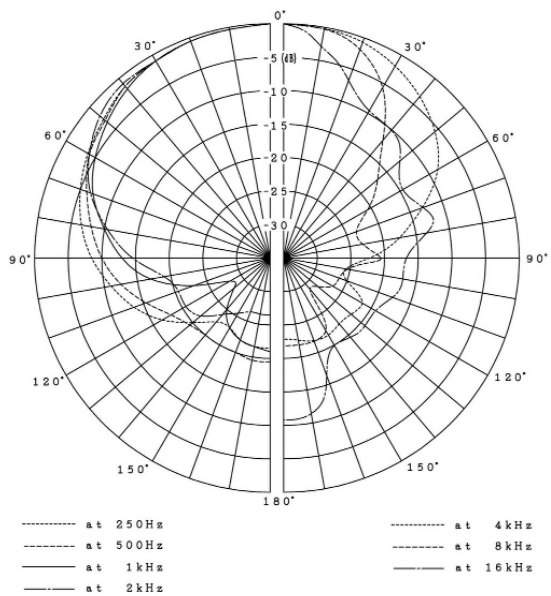
Specifications

Transducer Type	DC biased condenser
Directional Pattern	Supercardioid
Sensitivity	-28dB (40mV) ±1dB (0dB=1V/Pa)
Frequency Response	50Hz-20kHz
Equivalent Noise Level	15dB or less (A weighted rms,IEC179)
Output Impedance	50 Ω
Maximum SPL for1% THD at 1kHz	120dB
Low frequency rolloff	-3dB at 100Hz,switchable
Powering	48V Phantom +4V/-18V
Current Consumption	2.5mA
Output Connector	Pin 1=ground, Pin 2=audio (hot), Pin 3=audio (cold)
Dimensions	270mm long by 19mm diameter (10.6in×0.75in)
Weight	120g
Case	Brass
Finish	Fired Painted, Lusterless Black (Soft Touch Coating)

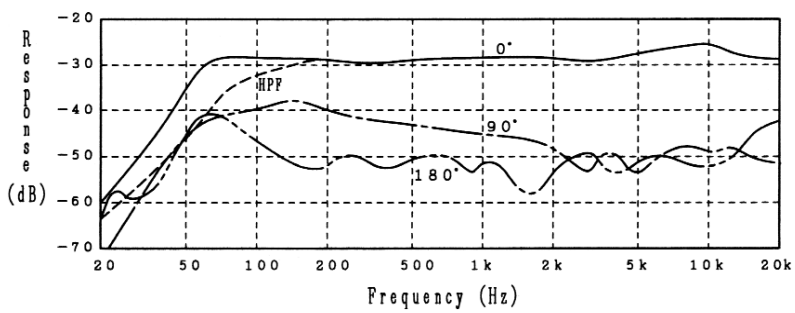
CS-3e dimension drawing



CS-3e POLAR PATTERN



CS-3e Frequency Response



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