

UML•SRT

Unrestricted Microphones

as thoughtfully researched by
our good friend

Pat Drumm

your humble professor says,
“Thanks Pat”

Sennheiser MD409

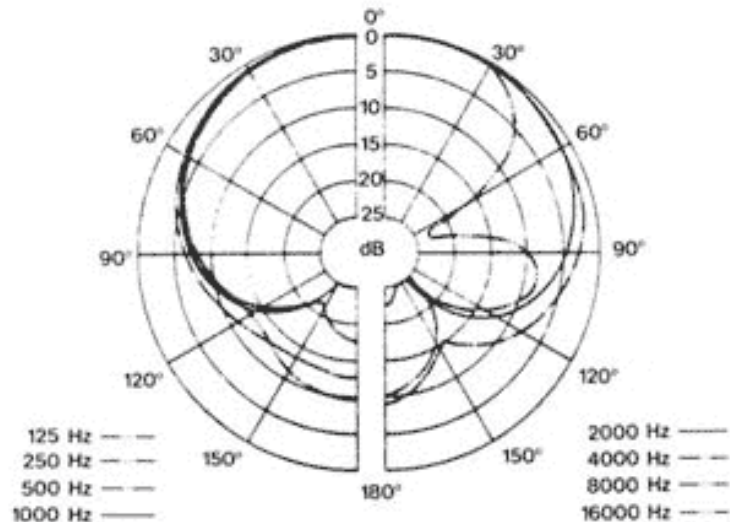


Dynamic,
Microphone MD 409



Sennheiser proudly introduces the MD 409-U3 dynamic microphone. Unique in appearance, this stylish microphone is especially well suited for close proximity mic'ing of high sound pressure levels. Capable of maintaining excellent acoustical separation of individual sound sources due to its tight cardioid characteristics, the MD 409 features a large transducer membrane which insures accurate transmission of powerful sound sources without distortion or coloration of the signal. Shock mounted to dampen handling noise and mechanical feedback, the MD 409 is an ideal mic for use in recording studios as well as on stage for sound reinforcement.

Dynamic,
Microphone MD 409



Acoustical mode of operation:

Pressure gradient transducer

Frequency response:

On-axis: 50...15000 Hz

Directional characteristics:

Cardioid

Rejection at 120° and 1000 Hz

24 dB-3dB

Open circuit output level

1.18 mV/Pa ±2.5dB

Electrical impedance at 1000 Hz

200 ohm

Minimum load

200 ohm

Insensitivity to magnetic field at 50 Hz

<5 μV/5μTelsa

Connection

3 Pin XLR

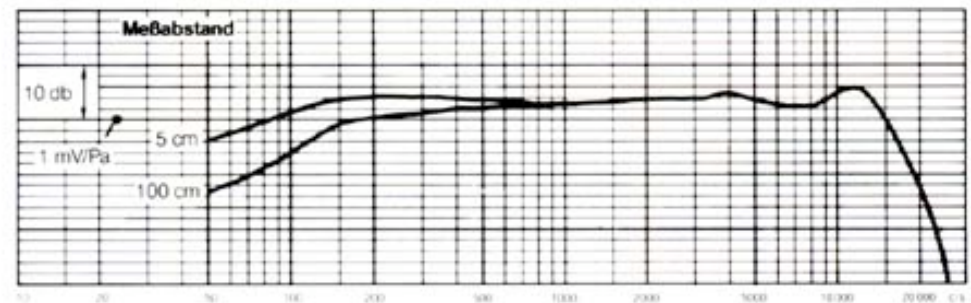
Microphone Dimensions:

55 x 34 x 134 mm

Weight:

6.3 oz.

Dynamic,
Microphone MD 409



Sennheiser MD421

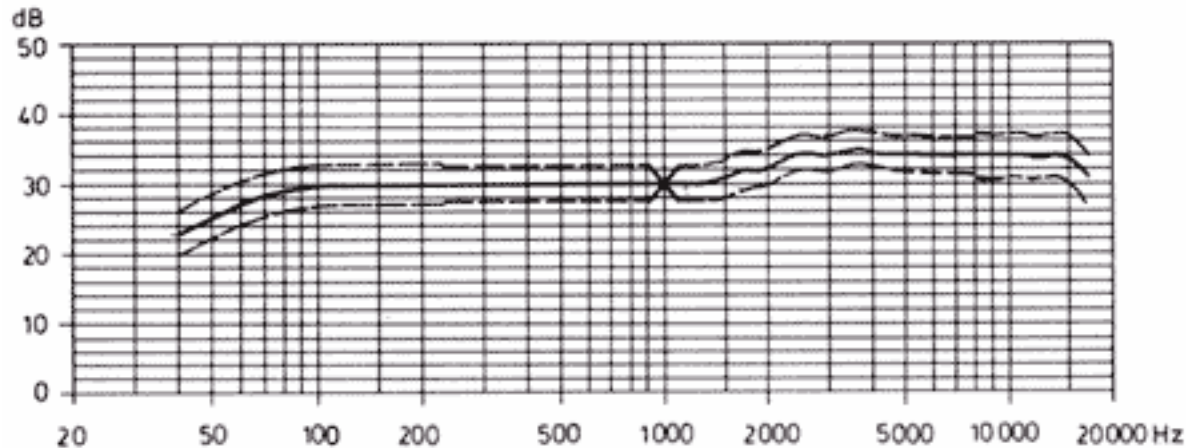


Dynamic,
Studio-Microphone MD 421

The MD 421 is a well known Sennheiser microphone of proven reliability and performance for many years now. Because of its excellent quality it is being used for almost all kinds of applications. The broadcast stations use it for radio and TV field work, the musician prefers it for stage work as well as the recording amateur for home and outdoor recordings. The studio cardioid microphone MD 421 features a wide frequency response from 30...17000 Hz. Its high sensitivity and slight increase in response towards high frequencies are responsible for its brilliant sound. Each microphone is custom calibrated and delivered with its own performance chart. Each individual frequency plot has to fall within the published limits of the standard performance curve. The cardioid directional characteristic of the MD 421 with its front-to-back ratio of approximately 18 dB is an important feature making the microphone suitable for use in sound reinforcement systems and all situations where it has to be used near loudspeakers. To prevent hum pickup by magnetic stray fields the MD 421 is fitted with a compensation coil.

Adjusting the Roll off Filter

When a directional microphone is spoken into from a close distance the lower frequencies are overemphasised. If this effect is not desired it is possible to counteract compensate for it by means of a roll off filter. From the diagram showing the influence of the roll off filter it can be seen that in position M (music) the frequency response curve is not altered to any way. In position S (speech) however, the frequencies below 500 Hz are reduced by appx. 6 dB/oct. Between the positions M and S the frequency response can be altered in three defined steps.



Acoustical mode of operation:

Pressure gradient transducer

Frequency response:

On-axis: 30...17000 Hz

Directional characteristics:

Cardioid

Rejection at 180° and 1000 Hz

18 dB-2dB

Open circuit output level

2 mV/Pa ±3dB (1000 Hz ref. 1 V/10 μbar)

Electrical impedance at 1000 Hz

200 ohm

Minimum load

200 ohm

Insensitivity to magnetic field at 50 Hz

<5 μV/ 5μTelsa

Bass attenuator switch

5 steps

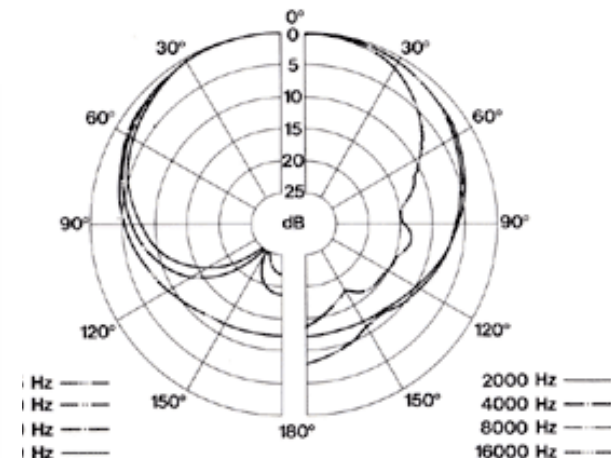
Microphone Dimensions:

215x46x49 mm

Weight:

appx. 370g

Dynamic,
Studio-Microphone MD 421



Sennheiser MD441



Dynamic,
Studio-Microphone MD 441

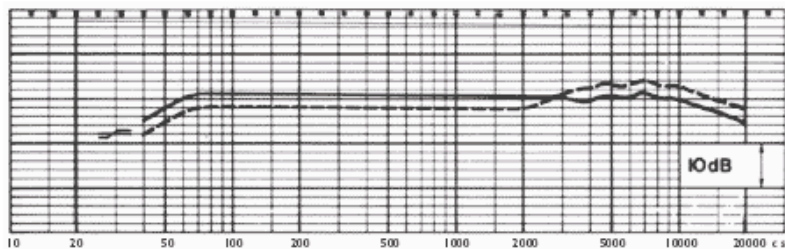
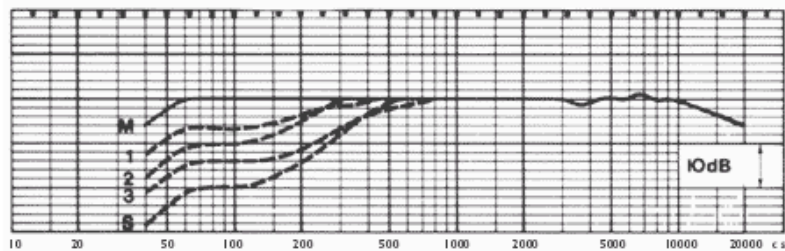


High quality, dynamic microphone with supercardioid-shaped directional characteristic. Suitable for vocal transmission and miking up instruments in all fields of live sound transmission. Its features include:

Hints for use

Roll-off filter and brilliance switch enable you to match the frequency response to the respective recording situation. As "sound" is judged individually only general recommendations for specific settings of both controls can be given:

- Roll-off filter position "M": Recording or transmission of music, vocals or speech at distances ≥ 30 cm
- Roll-off filter position "S": Vocals and speech recording/transmission at distances ≤ 10 cm.



Acoustical mode of operation:
Pressure gradient transducer

Frequency response:

On-axis: 30...20000 Hz

Directional characteristics:

Supercardioid

Rejection at 130°

20 dB-3dB

Open circuit output level at 1 kHz

1.8 mV/Pa ± 3 dB (appx. -55 dBV)

Electrical impedance at 1000 Hz

200 ohm

Minimum load impedance

1000 ohm

Magnetic field interference factor

$5 \mu\text{V}/5\mu\text{T}$ Telsa

Bass attenuator switch

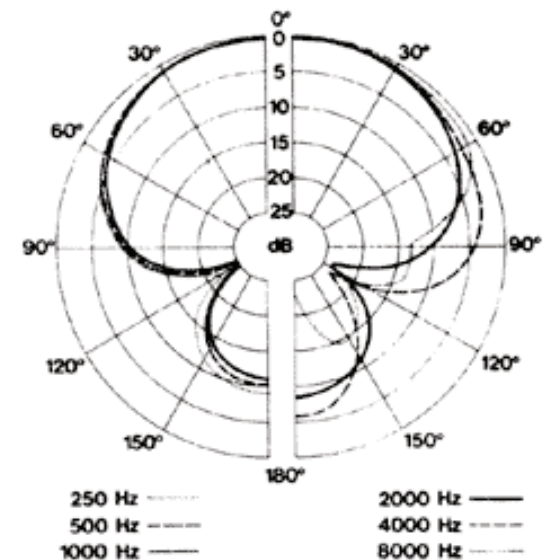
5 steps

Microphone Dimensions:

270x33x36 mm

Weight:

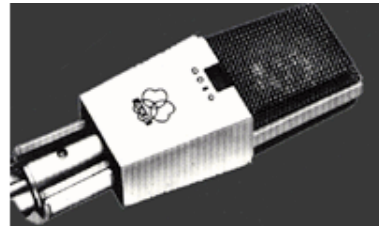
appx. 450g



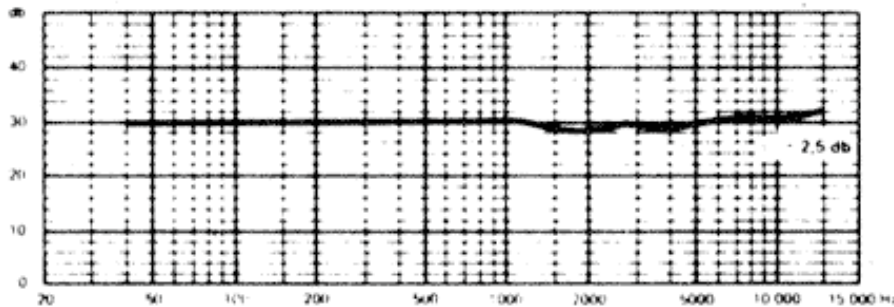
AKG C414



Large Diaphragm,
Studio Condenser Microphone
C414 EB



Omni-directional



Transducer Principle:

Pressure gradient transducer with twin-condenser diaphragm and FET-preamplifier

Directional Characteristic:

Cardioid, omni-directional, figure-eight and hypercardioid (selectable directly on the mic)

Frequency response:

20...20000 Hz

Sensitivity at 1000 Hz

0.6 mV/ μ bar = 6mV/Pa = -64.4 dBV

Impedance at 1000 Hz

\leq 150 ohms

Recommended Load Impedance

\geq 500 ohms

Equivalent Noise Level:

20 dB SPL (measured with filter CCITT-C/DIN 45 405)

Unweighted Noise Level:

\leq 10 μ V (measured with filter CCITT-C/DIN 45 405)

Powering:

Universal Phantom Powering according to DIN 45 596 with 9 to 52 volts

Current Consumption:

at 12 volts \leq 5.5 mA

Max. Sound Pressure Level for 0.5% T.H.D.

at 1kHz and 10kHz= 138 dB SPL

Hum Sensitivity at 50 Hz.

6 μ V/5 μ T appx.= 30 V/Vs/m squared

Climatic Conditions:

Temp. range: -10°C...+60°C

Microphone Dimensions:

5.6in. (H), 1.8in. (W), 1.4in. (D)

Weight:

14 ounces, 360g

Cardioid

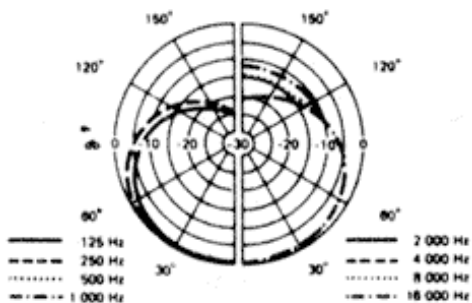
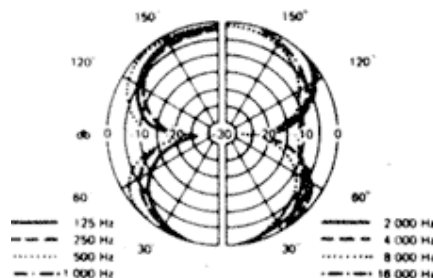
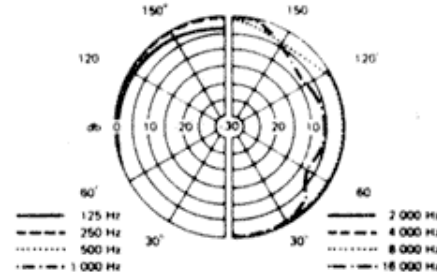


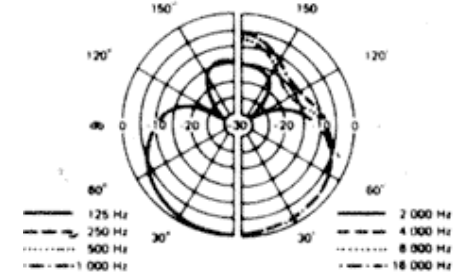
Figure-eight



Omni-directional



Hyper-cardioid





Large Diaphragm,
Low frequency Microphone
D112



AKG D-112

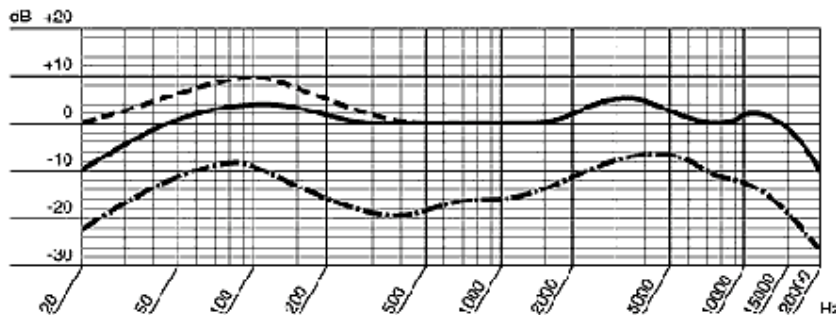
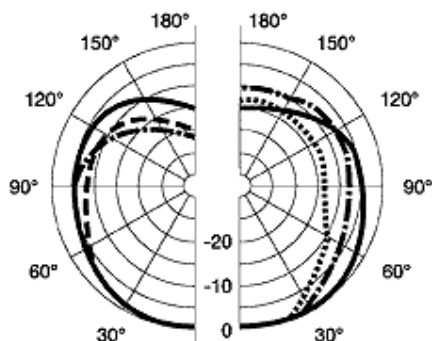
Similar to large-cone loudspeakers, large-diaphragm microphones reproduce bass frequencies with greater definition. However, loud levels can still cause distortion problem if great care is not spent at the design stage. The D112 is built to handle SPL levels up to 168dB without a problem. It is ideal for kick drum, bass guitar cabinets, trombone, and other low-frequency sources. Low bass is clean and powerful, plus mid- and high-frequency tailoring keep the instrument clearly distinguishable in the mix. A built in windscreen and SA40 Stand Adapter are included.

Electric Guitar: To mike ou a guitar amp, place the D112 close to the speaker. If your guitar sounds weak and thin through the PA, the D112 will restore the lacking punch and bass (e.g., of certain open-back combo amps with poor bass response).

Double Bass: The sound of a double bass amplified via a pickup can be improved by adding a microphone. The two signals are eq'ed separately and then mixed. Place the D112 about 4 to 8 inches away from the bridge for increased warmth and fullness of sound.

Bass Drum: Most engineers agree that it is beneficial to remove the front head when miking up the bass drum. A full drum sound is obtained by placing the microphone just outside the drum. The further inside, the drier and less boomy the sound and the better acoutic separation of the bass drum from the rest of the kit. Pointing the microphone right toward the beater produces a harder sound culminating in a "click" when the microphone is as close as 1 to 1.5 inches to where the beater strikes the head. Directing the microphone away from this point, toward the rim of the head, will mellow the sound.

Bass Guitar: Place the D112 up close to the bass speaker and aim it toward the center of the diaphragm to capture the high frequencies which are radiated over a very narrow angle only.



Transducer Principle:

Dynamic pressure gradient transducer

Polar Pattern:

Cardioid

Frequency response:

20...17000 Hz

Sensitivity at 1000 Hz

1.8 mV/Pa appx.= -75 dBV re 1 μ bar

Electrical impedance at 1000 Hz

210 ohms

Recommended Load Impedance

\geq 600 ohms

Max. Sound Pressure Level for 0.5% T.H.D.

Unmeasurable

Hum Sensitivity at 50 Hz.

6 μ V/5 μ T appx.= 30 V/Vs/m squared

Climatic Conditions:

Temp. range: -10°C...+70°C

Microphone Dimensions:

5.9in. (H), 2.8in. (W), 4.5in. (D)

Weight:

13.4 ounces, 380g

Shure SM81

SHURE



Unidirectional,
Condenser Microphone SM81

Type:
Cardioid condenser (electret bias)

Directional Pattern:
Cardioid (unidirectional)

Frequency response:
20...20000 Hz

Sensitivity:
Open circuit voltage: -65 dB
(0.56mV)
re 1V/ μ bar
Power Level: -40.5 dB
re 1 mW/10 μ bar

Rated impedance:
150 ohms

Minimum load impedance:
800 ohms

Total Harmonic Distortion:
< 0.5% (131 dB SPL at 250 Hz
into 800 ohm load)

Maximum SPL (at 1 kHz):
128 dB (attenuator at 0); 138 dB
(attenuator at 10) with 150 ohm
load

Hum pickup:
-3 dB equivalent SPL in a 1
millioersted field (60Hz)

Output Noise:
16 dB typ., A-weighted
19 dB typ., weighted per DIN 45
405

Signal-to-noise ratio:
78 dB (IEC 179) at 94 dB SPL¹

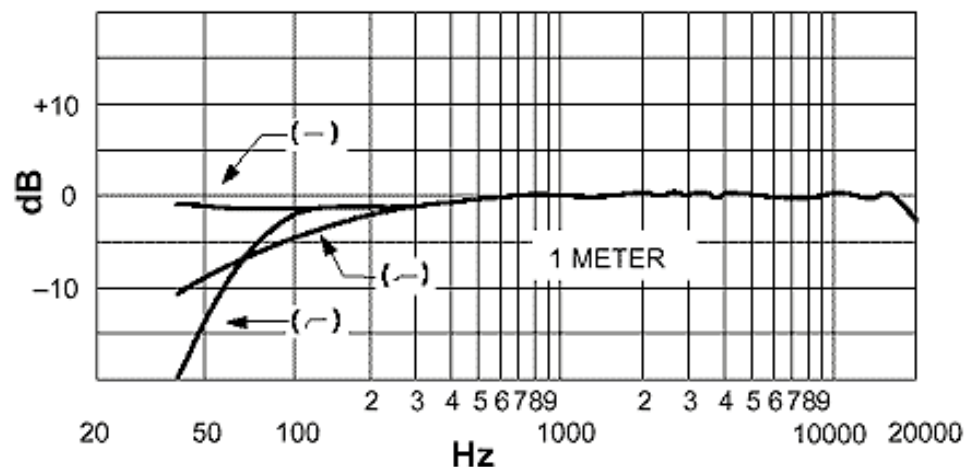
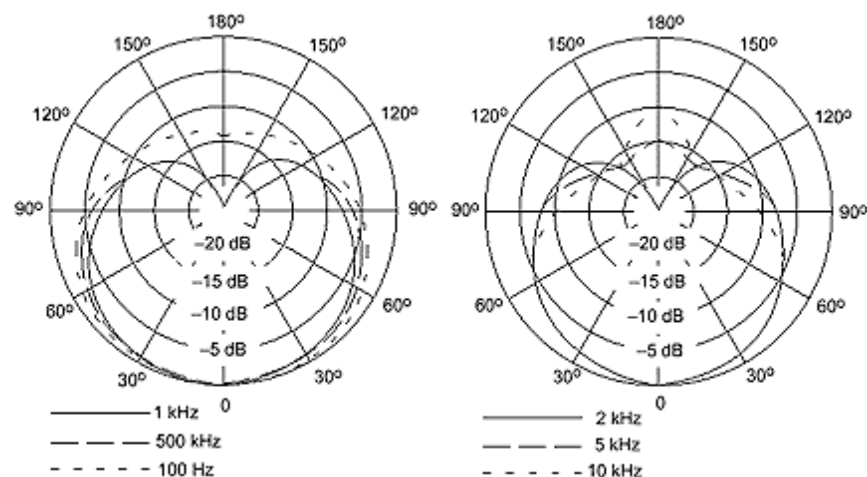
LF response switch:
Flat,
-6 dB/octave below 100 Hz,
-18 dB/octave below 80 Hz

Attenuator switch:
0 to 10 dB (120 pF)

Power:
Supply voltage: 11 to 52 Vdc, pos.
pins 2&3
Current drain: 1.0 mA to 1.2 mA

Microphone Dimensions:
32 x 157 mm

284 g



1) S/N ratio is difference between mic output at 94 dB SPL and mic self-noise A-weighted

Shure SM57

SHURE®

Unidirectional,
Dynamic Microphone SM57



Type:

Dynamic

Directional Pattern:

Cardioid (unidirectional)

Frequency response:

40...15000 Hz

Sensitivity:

Open circuit voltage: -75.5 dB
(0.17mV)

re 1V/ μ bar

Power Level: -56.0 dB

re 1 mW/10 μ bar

Rated impedance:

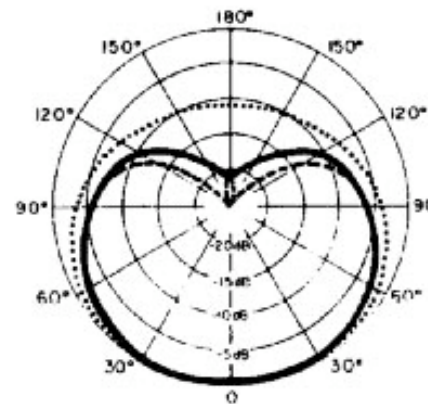
150 ohms

Microphone Dimensions:

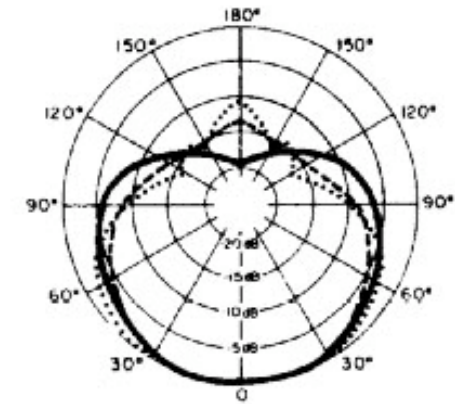
32 x 157 mm

Weight:

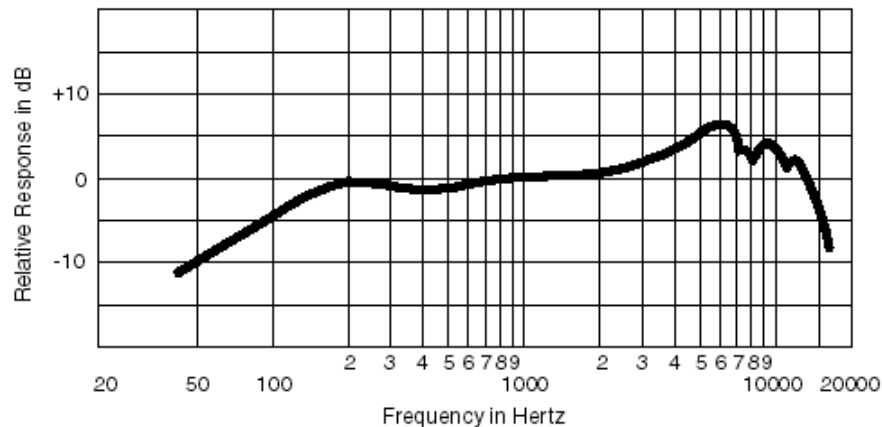
284 g



..... 125 Hz
- - - - 500 Hz
— 1000 Hz



— 2000 Hz
- - - - 4000 Hz
..... 8000 Hz



Shure SM58

SHURE

Unidirectional,
Dynamic Microphone SM58



Type:
Dynamic

Directional Pattern:
Cardioid (unidirectional)

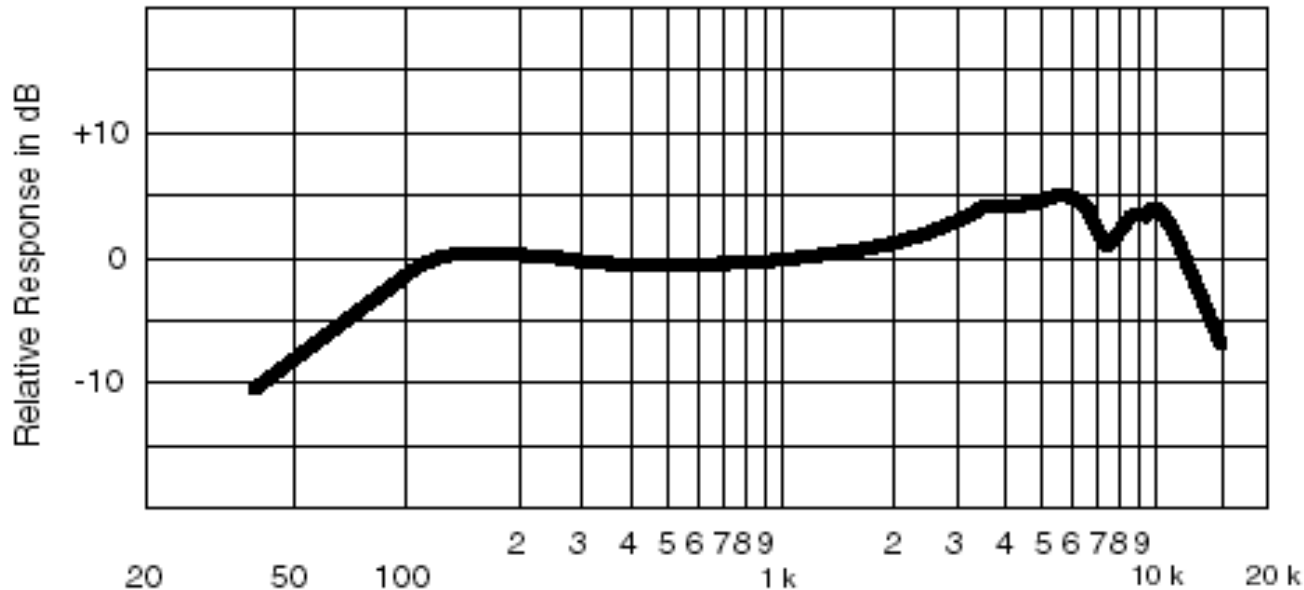
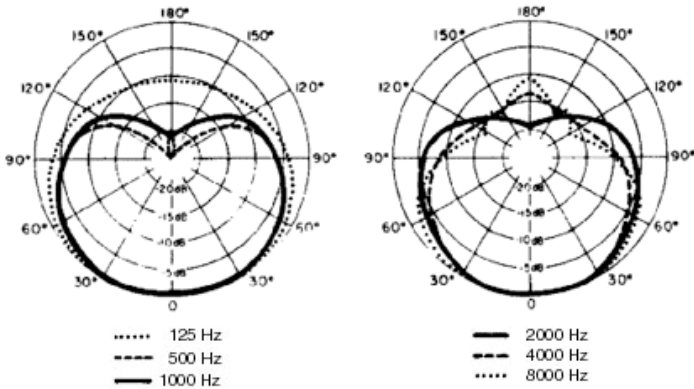
Frequency response:
50...15000 Hz

Sensitivity:
Open circuit voltage: -75.5 dB
(0.17mV)
re 1V/ μ bar
Power Level: -56.0 dB
re 1 mW/10 μ bar

Rated impedance:
150 ohms

Microphone Dimensions:
51 x 162 mm

Weight:
298 g



beyerdynamic))))

Hypercardioid Moving Coil,
Microphone M88 Classic



Beyer M88N

Features:

- Highly defined hypercardioid polar characteristic
- Sensitive, accurate response
- Extended frequency range with rising high end and exceptional bass reproduction
- High SPL handling capability
- Integral -20 dB humbucking filter

Applications

The M 88 offers both a wide frequency response and rugged construction making an ideal combination for many applications. In the studio and live use its high SPL capability allows the microphone to be placed close to loud sound sources such as kick drum and bass guitar. It is also equally impressive as a vocal microphone or for brass and windwood instruments.

Tranducer Type / operating principle:

Dynamic moving coil / Pressure gradient

Frequency reponse:

30...20000 Hz

Polar response:

Hypercardioide

Open circuit voltage at 1 kHz

2.3 mV/pa appx.= -53 dBV

Nominal output impedance:

200 ohms

Load impedance:

>1000 ohm

Max. SPL for 0.5% THD at 1 kHz

134 dB (144 dB with pre-attention)

Net weight:

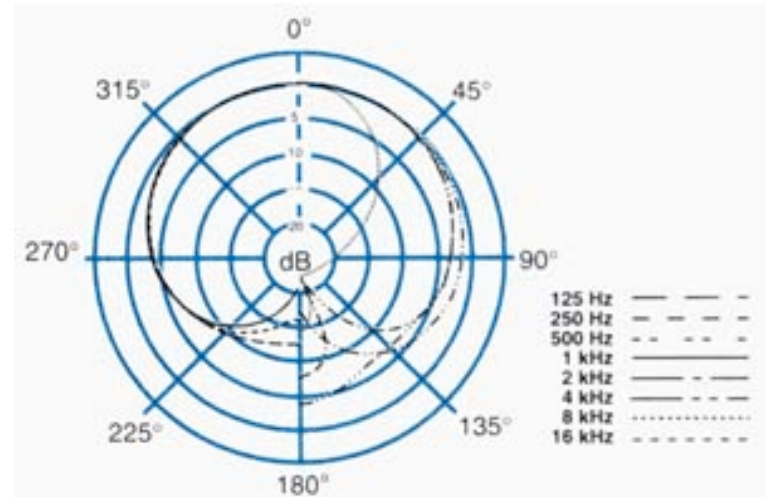
approx. 336g

Neumann TLM-103

Neumann USA

Large Diaphragm,
Studio Condenser Microphone
TLM 103

The TLM 103 Condenser microphone is a studio microphone of the fet 100 series with a cardioid polar pattern.



The letters TLM stand for Transformerless Microphone.

Acoustical operating principle:

Pressure gradient transducer

Equivalent noise level:

17.5 dB (DIN 45 590/DIN 45 405, CCIR 468-3)

Directional Pattern:

Cardioid

A-weighted equivalent SPL due to inherent noise:

7 dB (DIN/IEC 651)

Frequency response:

20...20000 Hz

Max SPL for less than 0.5% THD

138 dB = 158 Pa

Sensitivity:

21 mV/Pa \pm 1dB at 1000 Hz into 1 kohm impedance (1 Pa=94 dB SPL)

Maximum output voltage:

13 dBu = 3.5 V

Rated impedance:

50 ohms

Phantom powering (P 48, DIN 45 596)

48 V \pm 4 V

Rated loaded impedance:

1000 ohms

Current consumption per channel

3 mA

S/N ratio, related to Pa at 1kHz:

76.5 dB (DIN 45 590/DIN 45 405, CCIR 468-3)

Microphone Dimensions:

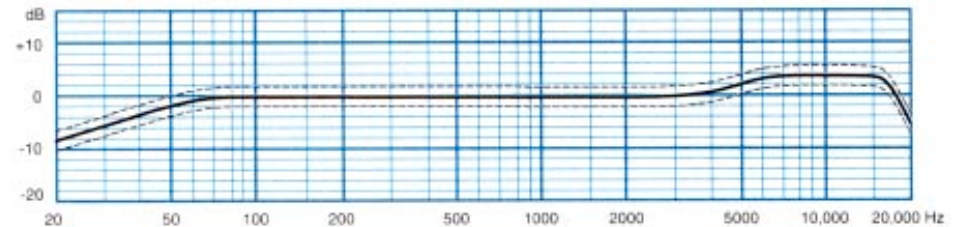
60 x 132 mm

A-weighted:

87 dB

Weight:

approx. 500 g



AKG 451/452



Modular,
Microphone Series C451 E



The C451 Series is the world's most successful modular microphone series, with a loyal following world-wide. There are two preamps, the C451E and the C451EB. The C451EB features the addition of a two-position bass roll-off switch, at 75 and 150 Hz. Capsules are available for most microphone directional patterns. The VR Tube Series allows the capsule to be located on a long, thin wand at a distance from the preamp for a professional appearance in sound reinforcement and broadcast applications. Other accessories include the A51 Swivel, allowing the capsule to be angled up to 90 degrees from the preamp, and the A50/10 and A50.20 pads, adding -10 and -20 dB pads before the preamp to prevent overload distortion.

Transducer Principle:

Pressure gradient transducer

Active diaphragm diameter
appx. 15 mm

Frequency response:

20...20000 Hz ± 1 dB from
standard curve

Sensitivity at 1000 Hz

9.5 V/Pa = 0.95 mV/ μ bar = -60
dBV on open circuit re 1 μ bar

Nominal impedance

≤ 200 ohms, transformer
balanced

Recommended Load Impedance

≥ 500 ohms

Max. Sound Pressure Level for 0.5%
T.H.D.

Unmeasurable

Hum Sensitivity at 50 Hz.

6 μ V/5 μ T appx. = 30 V/Vs/m
squared

Climatic Conditions:

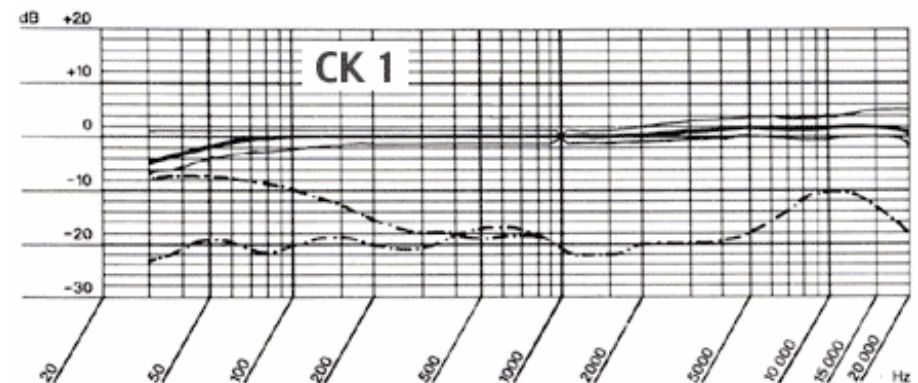
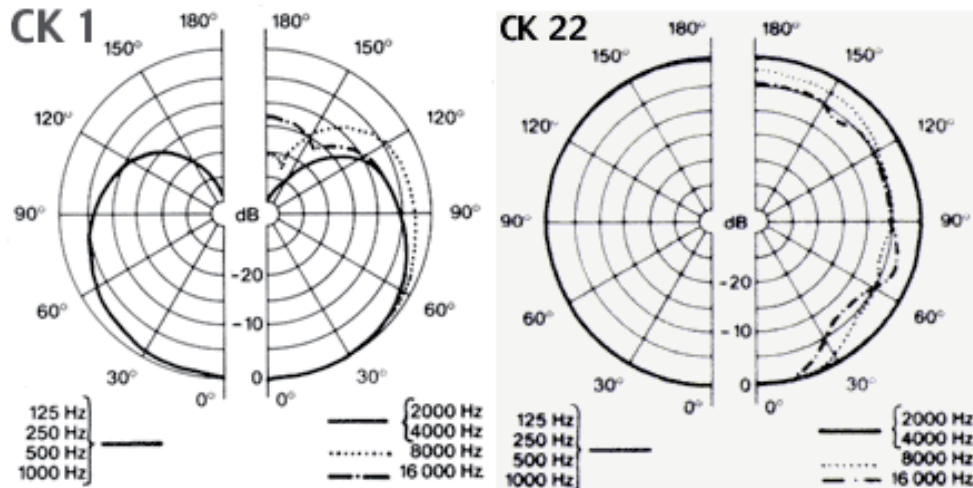
Temp. range: -10°C...+70°C

Microphone Dimensions:

5.9in. (H), 2.8in. (W), 4.5in. (D)

Weight:

13.4 ounces, 380g



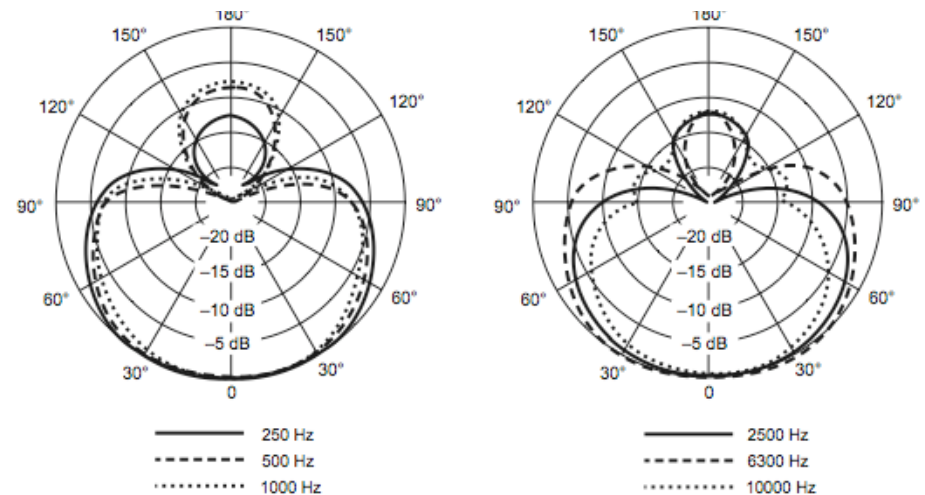
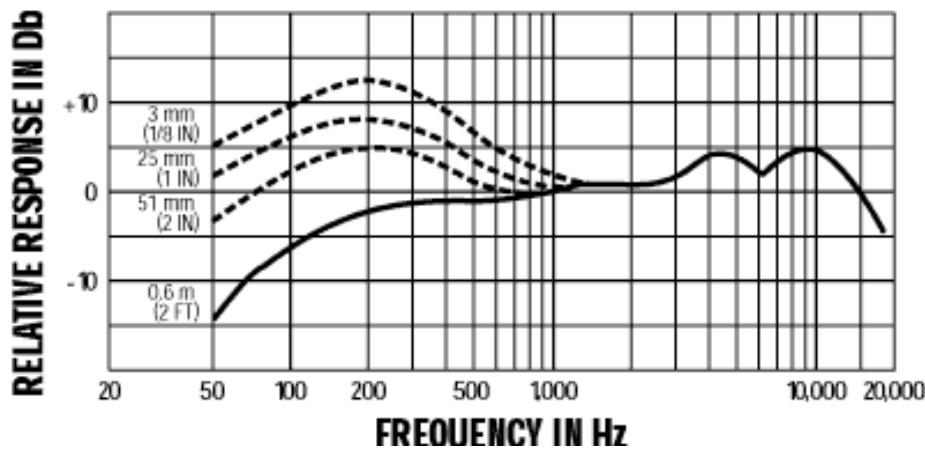


MODEL BETA 58A[®] SUPERCARDIOID DYNAMIC VOCAL MICROPHONE



SHURE Beta 58A

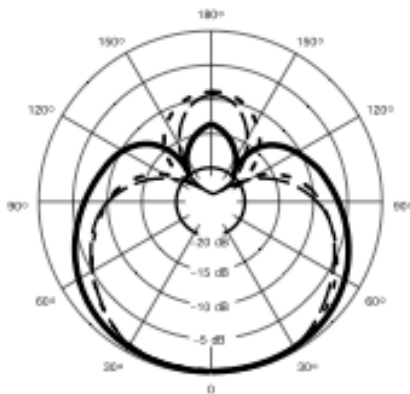
SUGGESTED MICROPHONE PLACEMENT	TONE QUALITY
Lips less than 15 cm (6 in.) away or touching the windscreen, on axis to microphone.	Robust sound, emphasized bass, maximum isolation from other sources.
15 to 60 cm (6 in. to 2 ft.) away from mouth, just above nose height.	Natural sound, reduced bass.
20 to 60 cm (8 in. to 2 ft.) away from mouth, slightly off to one side.	Natural sound, reduced bass and minimal "s" sounds.
90 cm to 1.8 m (3 to 6 ft.) away.	Thinner, distant sound; noticeable levels of ambient noise.



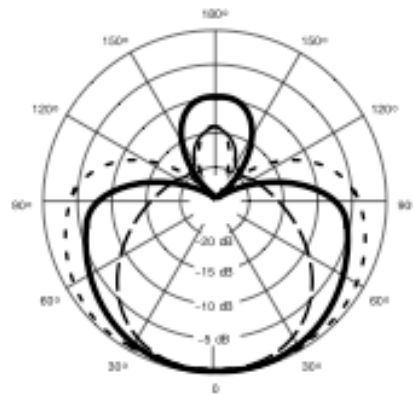
SHURE Beta 57A



MODEL BETA 57A[®]
SUPERCARDIOID DYNAMIC
PERFORMANCE MICROPHONE

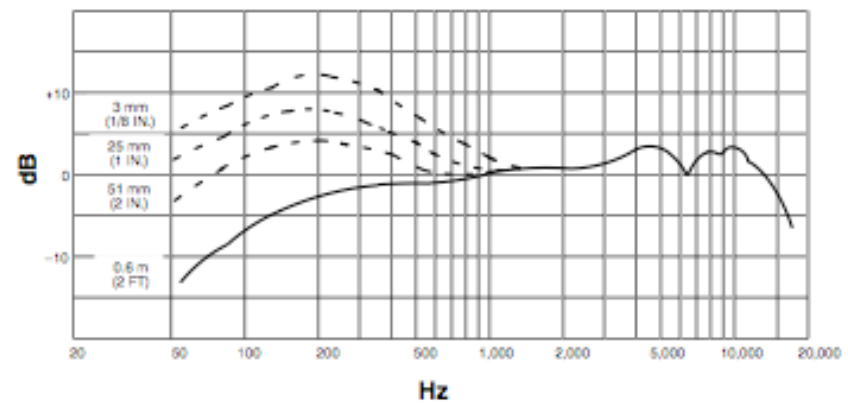


— 250 Hz
 - - - 500 Hz
 - - - 1000 Hz



— 2500 Hz
 - - - 6300 Hz
 - - - 10000 Hz

APPLICATION	SUGGESTED MICROPHONE PLACEMENT	STONE QUALITY
Tom-Toms	One BETA 57A on each tom, or between each pair of toms, 2.5 to 7.5 cm (1 to 3 in.) above drum heads. Aim each mic at top drum heads.	Medium attack, balanced sound.
	On double head toms, you can also remove bottom head and place a mic inside, pointing up toward top head.	Medium attack, balanced sound.
Snare Drum	2.5 to 7.5 cm (1 to 3 in.) above the rim of the top drum head. Aim the mic at the drum head.	Most "snap" from drumstick impact
	If desired, place a second mic just below rim of bottom head.	More "snare" sound.
Guitar & Bass Amplifiers	2.5 cm (1 in.) from speaker, on-axis with speaker cone.	Sharp attack; emphasized bass.
	2.5 cm (1 in.) from speaker, at edge of speaker cone.	Sharp attack; higher frequency sound.
	15 to 30 cm (6 to 12 in.) away from speaker and on-axis with speaker cone.	Medium attack; full, balanced sound.
	2 to 3 ft. (60 to 90 cm) back from speaker, on-axis with speaker cone.	Softer attack; thin, reduced bass sound.
Vocals	2.5 to 15 cm (1 to 6 in.) from the vocalist's mouth.	Rich, warm sound.
Brass & Woodwinds	Brass: 30 to 90 cm (1 to 3 ft.) away, on-axis with bell of instrument.	Bright, clear sound.
	Woodwinds: 2.5 to 15 cm (1 to 6 in.) away, on-axis with bell of instrument.	Bright, clear sound.
	Bell of the instrument 90° off-axis from the front of the mic.	Softer, mellow sound.

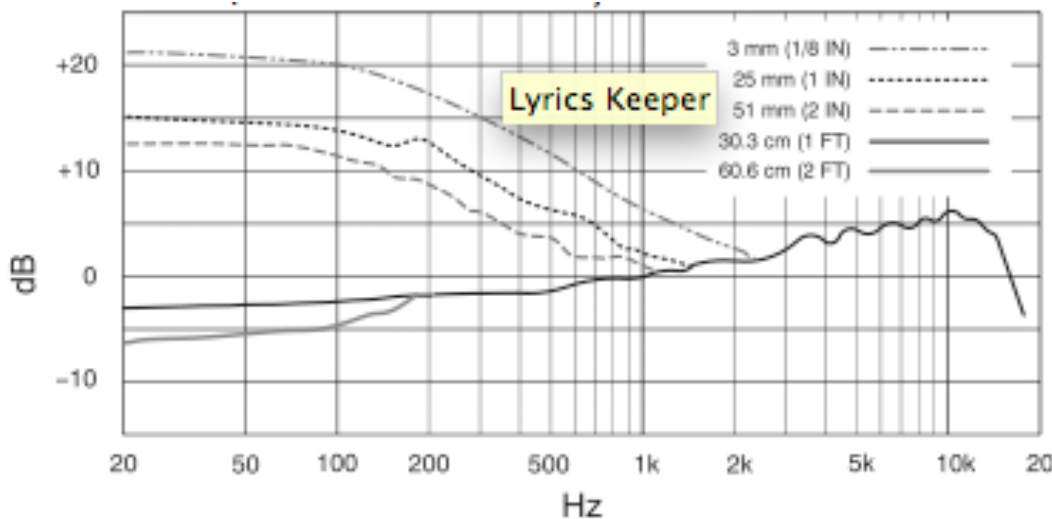


Shure Beta 98

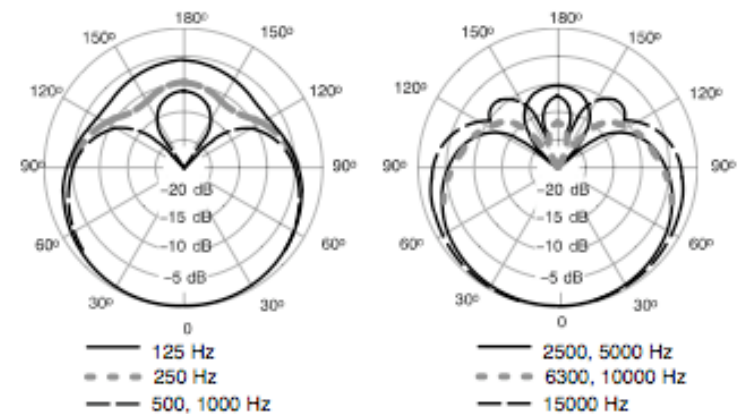


MODEL BETA 98/S
SUPERCARDIOID CONDENSER MICROPHONE

Maximum SPL
 (20 Hz to 20 kHz, less than 1% THD)
 2.5 k Ω load 160 dB
 1 k Ω load 156 dB



APPLICATION	SUGGESTED MICROPHONE PLACEMENT	STONE QUALITY
Tom-Toms	Using the A98D drum mount, place one on each tom, or between each pair of toms, 1 to 3 in. (2.5 to 7.6 cm) above drum heads. Aim each mic at top drum heads.	Medium attack; full, balanced sound.
	On double head toms, remove bottom head and place mic inside pointing up toward top drum head.	Medium attack; full, balanced sound.
Snare Drum	1 to 3 in. (2.5 to 7.5 cm) above rim of top head of drum. Aim mic at drum head.	More "snap" from drumstick.
	If desired, place a second mic just below rim of bottom head.	More "snare" sound.
Hi-Hat Cymbals	Using the A98D drum mount, place the mic close to the cymbal, but far enough away that it doesn't touch it when cymbal is struck.	Bright, with plenty of attack.
Reed Instruments	Place microphone a few inches from and aiming into bell.	Bright, minimizes feedback and leakage.
Guitar Amplifier	Place microphone 4 inches from grille at center of speaker cone.	Natural, well-balanced.





AKG D-12e

Technical Specifications

Transducer Principle:
dynamic pressure gradient transducer.

Polar Pattern:
cardioid.

Frequency Range:
30-15,000Hz.

Sensitivity at 1000Hz:
2.2 mV/Pa \pm -74 dBV re 1 μ bar.

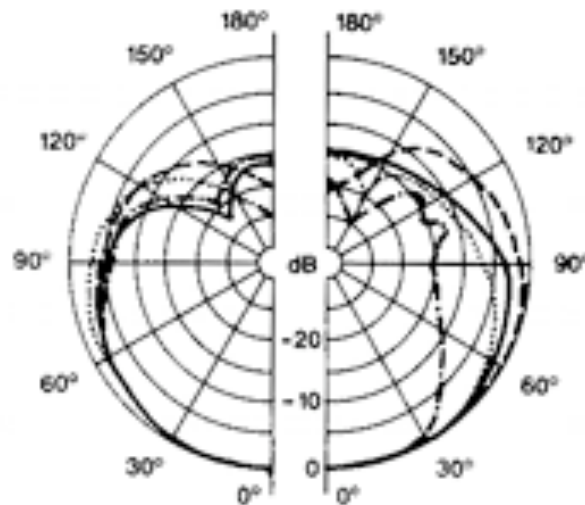
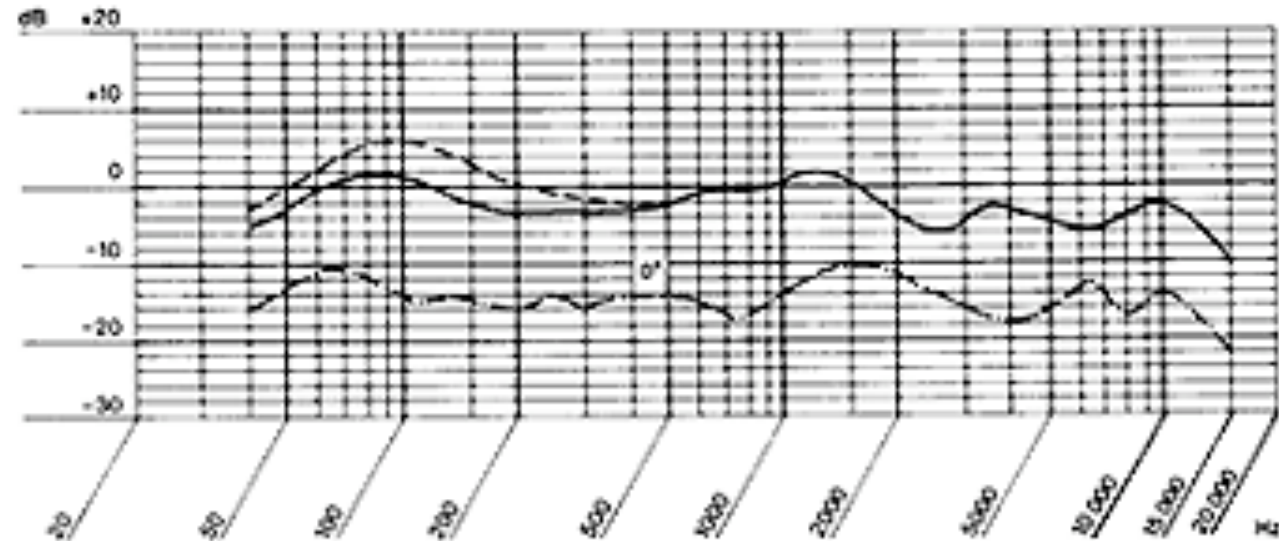
Electrical Impedance at 1000 Hz:
260 ohms.

Recommended Load Impedance:
600 ohms.

Maximum SPL for 0.5% T.H.D.:
50 Pa \pm 128 dB SPL.

Hum Sensitivity at 50 Hz:
10 μ V/5 \pm T.

Climatic Conditions:
temp. range: -10°C to +70°C
rel. humidity at +20°C: 90%.

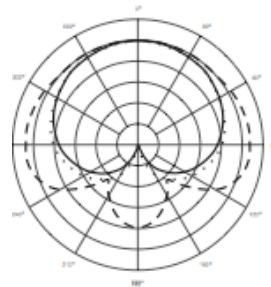


Audio Technica 4050

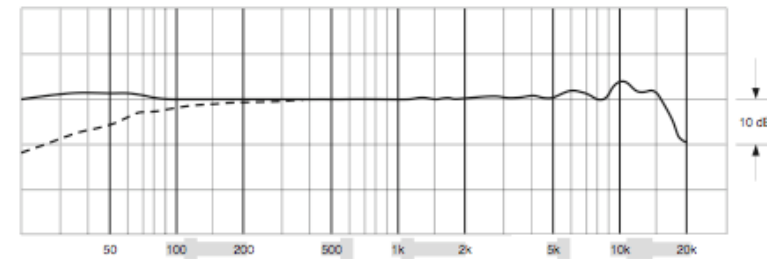
AT4050 MULTI-PATTERN CONDENSER.



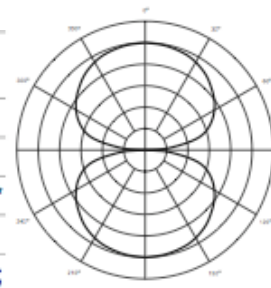
Polar Pattern (Cardioid)



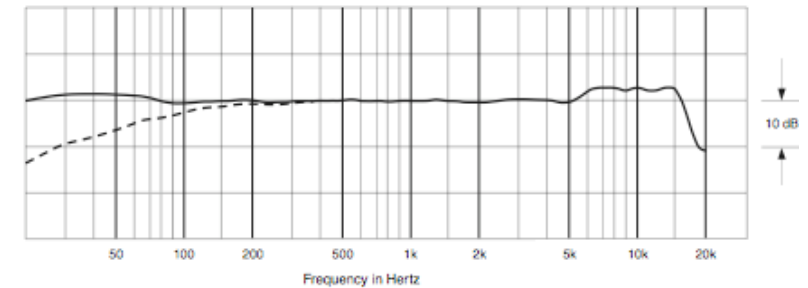
Frequency Response (Cardioid)



Polar Pattern (Fig. Eight)



Frequency Response (Fig. Eight)

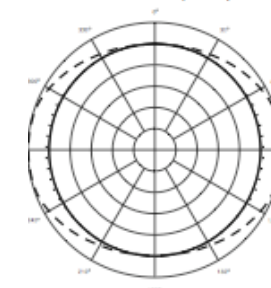


POLAR PATTERN	Cardioid, Omnidirectional, Figure-of-eight
FREQUENCY RESPONSE	20-18,000 Hz
LOW FREQUENCY ROLL-OFF	80 Hz, 12 dB/octave
OPEN CIRCUIT SENSITIVITY	-36 dB (15.8 mV) re 1V at 1 Pa*
IMPEDANCE	100 ohms
MAXIMUM INPUT SOUND LEVEL	149 dB SPL, 1 kHz at 1% T.H.D.; 159 dB SPL, with 10 dB pad (nominal)
NOISE¹	17 dB SPL
DYNAMIC RANGE (typical)	132 dB, 1 kHz at Max SPL
SIGNAL-TO-NOISE RATIO¹	77 dB, 1 kHz at 1 Pa*
PHANTOM POWER REQUIREMENTS	48V DC, 4.2 mA typical

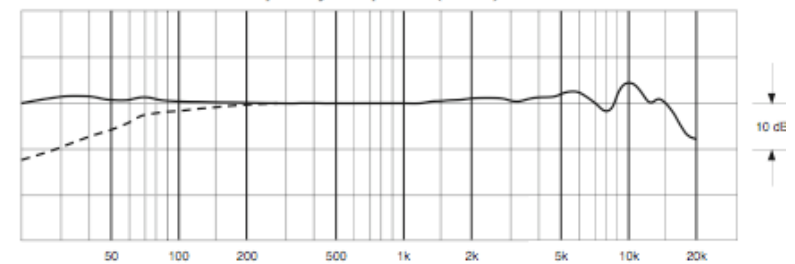
SCALE IS 5 DECIBELS PER DIVISION
END
0 Hz same as 1 kHz
1 kHz same as 1 kHz
1 kHz same as 1 kHz

LEGEND ——— 12° or more on axis
- - - - - Roll-off

Polar Pattern (Omni)



Frequency Response (Omni)



SCALE IS 5 DECIBELS PER DIVISION
END
1 Hz same as 1 kHz
1 Hz same as 1 kHz
1 Hz same as 1 kHz

Rode NT-1



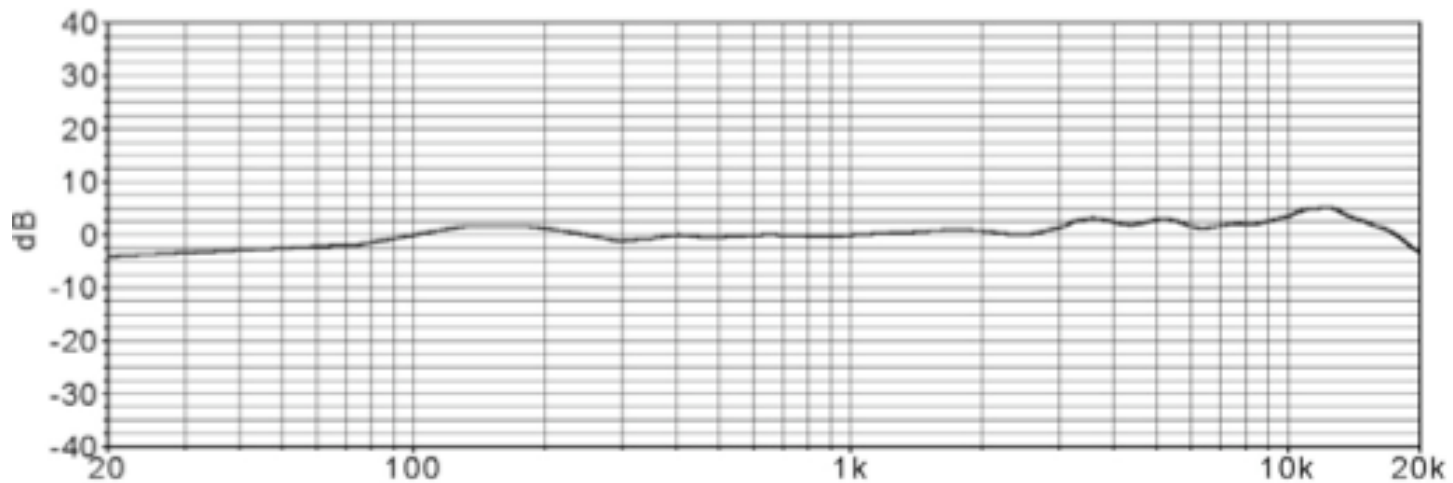
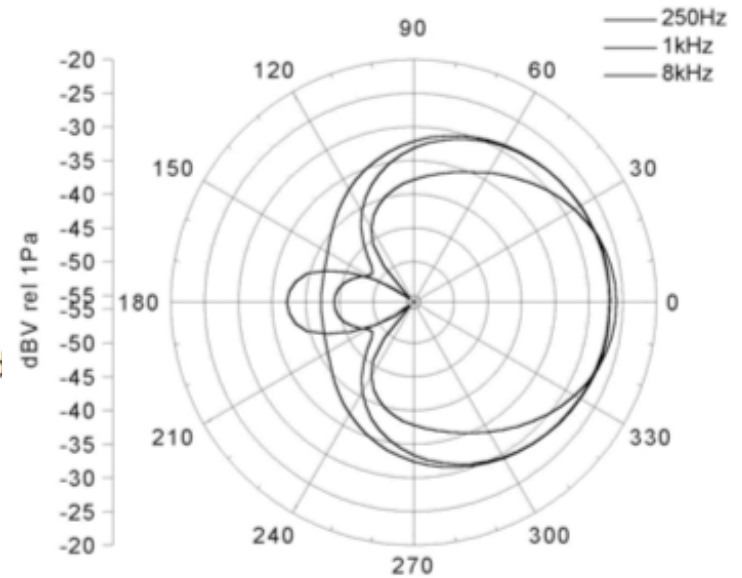
Pickup Pattern:
Cardioid.

Frequency Response:
20 Hz ~ 20 kHz.

Output Impedance:
100 Ω .

Sensitivity:
-31.9 dB re 1 volt/pascal (25 mV @ 94dB SPL) +/- 2 dB

Equivalent Noise:
5 dBA SPL (per IEC651, IEC268-15)



Rode NT-2



Frequency range:
20 Hz ~ 20 000 Hz (see graphs over)

Polar patterns:
(See graphs over)

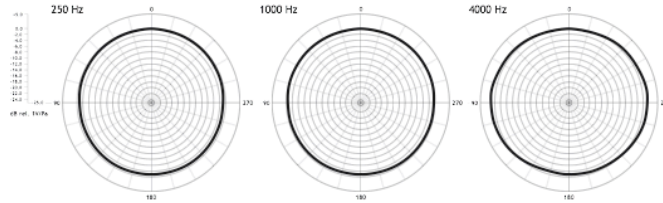
Output impedance:
200 Ω

Signal/Noise ratio DIN/IEC 651:
87 dB (1 kHz rel 1 Pa; per IEC651, IEC268-15)

Equivalent noise:
7 dBA SPL (per IEC651, IEC268-15)

Maximum SPL:
147 dB (@ 1% THD into 1 k Ω)
157 dB (@ 1% THD into 1 k Ω) - pad at maximum

Omni - 250 Hz, 1000 Hz & 4000 Hz



Cardioid - 250 Hz, 1000 Hz & 4000 Hz

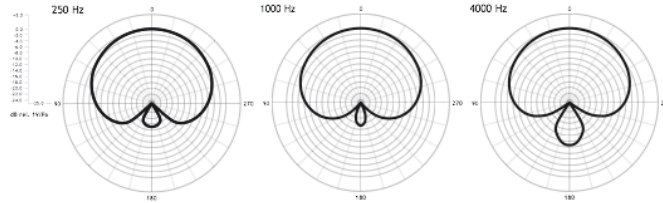
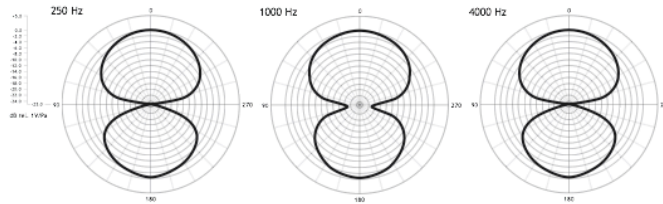
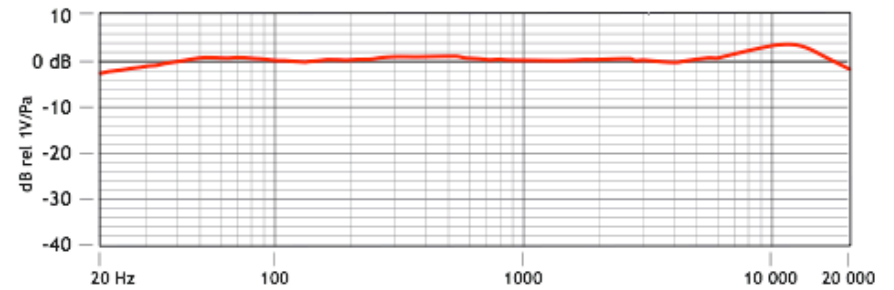


Figure 8 - 250 Hz, 1000 Hz & 4000 Hz



Omni - 0°, Flat Filter.



Cardioid - 0°, Flat Filter.

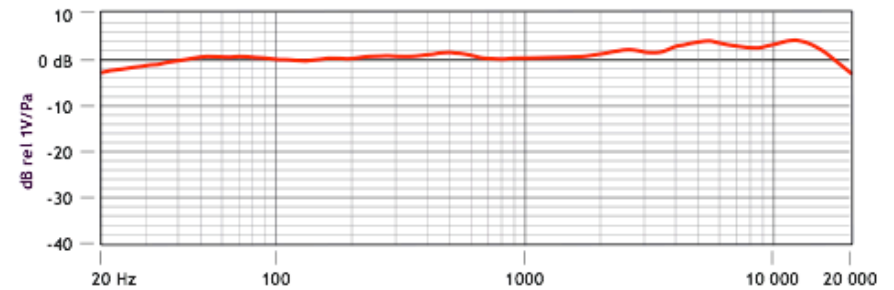
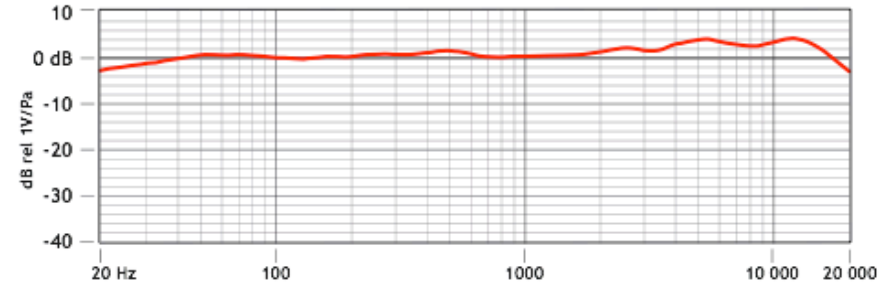


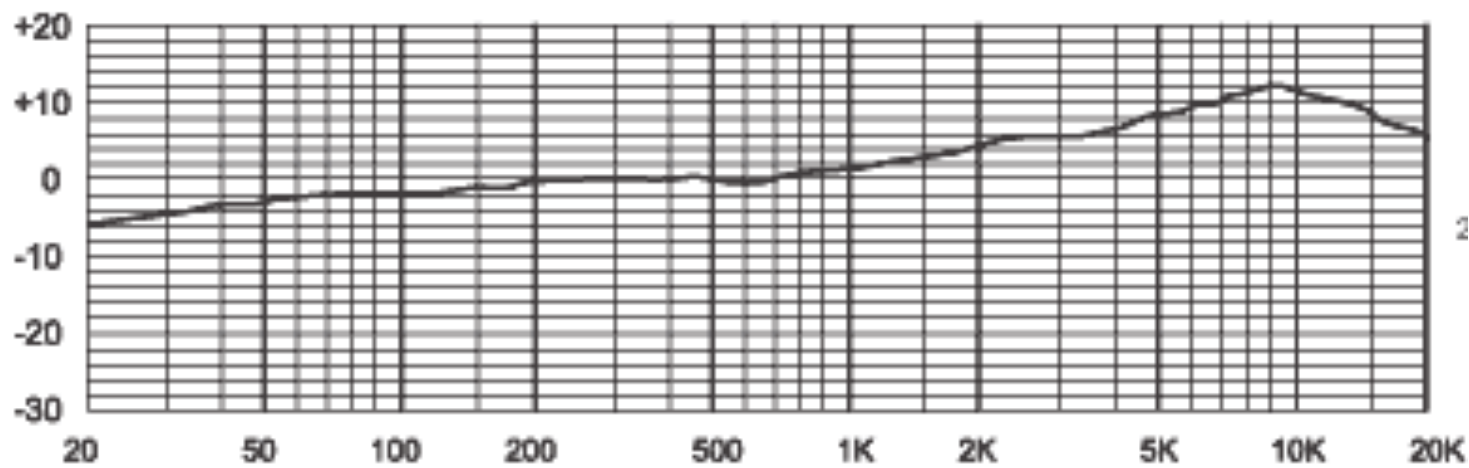
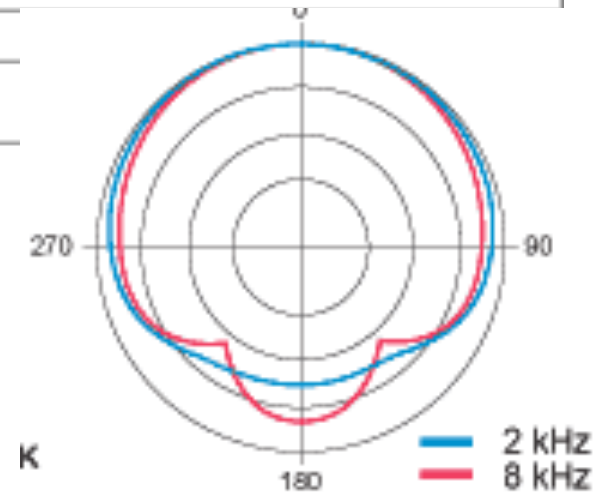
Figure 8 - 0°, Flat Filter.



MXL 2001



Type:	Condenser pressure gradient mic with large 25mm diaphragm capsule
Frequency Range:	30Hz-20kHz
Polar Pattern:	Cardioid
Sensitivity:	15mV/Pa
Impedance:	200 Ω
S/N Ratio:	80dB (Ref. 1Pa A-weighted)
Equivalent Noise Level:	18dB(A weighted IEC 268-4)
Max SPL for 0.5% THD:	130dB



CAD E-100

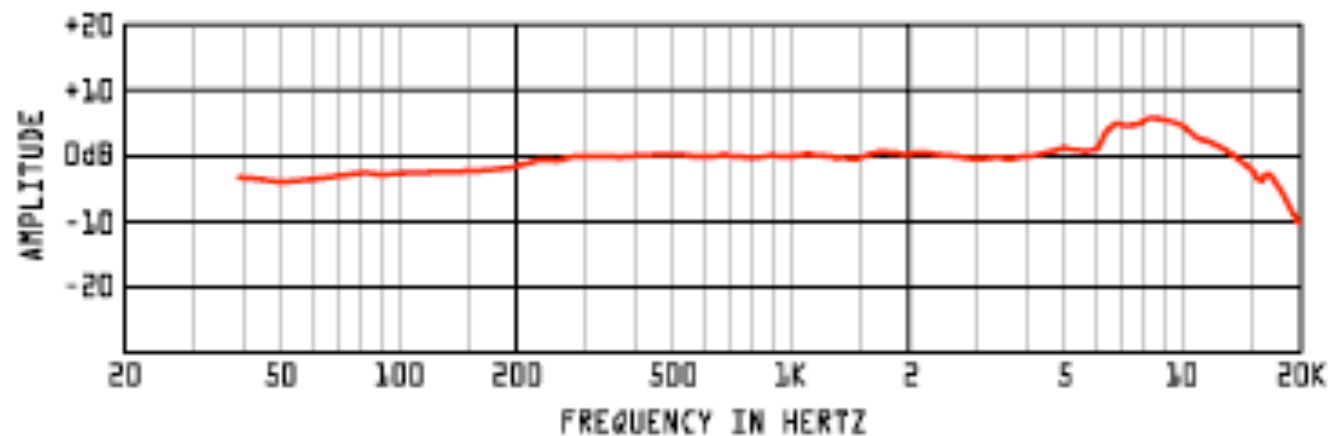
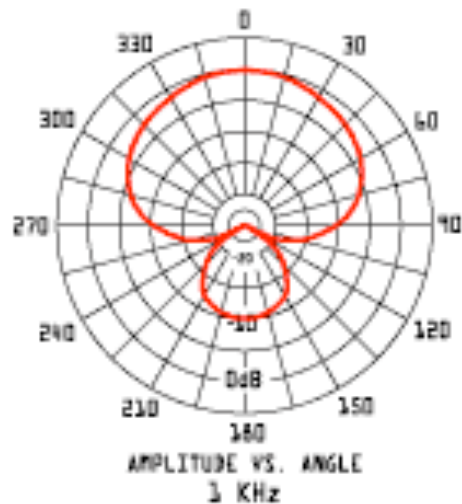


Applications

Studio Vocals, Choir, Acoustic Instrument, Guitar Cabinets, Bass Cabinets, Strings, Piano, Cymbals/Overheads.

equitek e100 Specifications

Operating Principle:	Condenser
Polar Pattern:	Supercardioid
Frequency Response:	30Hz to 18KHz
Sensitivity:	-38dBV (13mV) @ 1 Pa
Impedance:	200 ohms
Max SPL:	145dB, 1% THD, attenuator engaged
Self Noise:	20dBA
Hi-pass Filter:	80Hz, 6dB/oct
Attenuator:	20dB
Power Requirements:	P48, 8mA

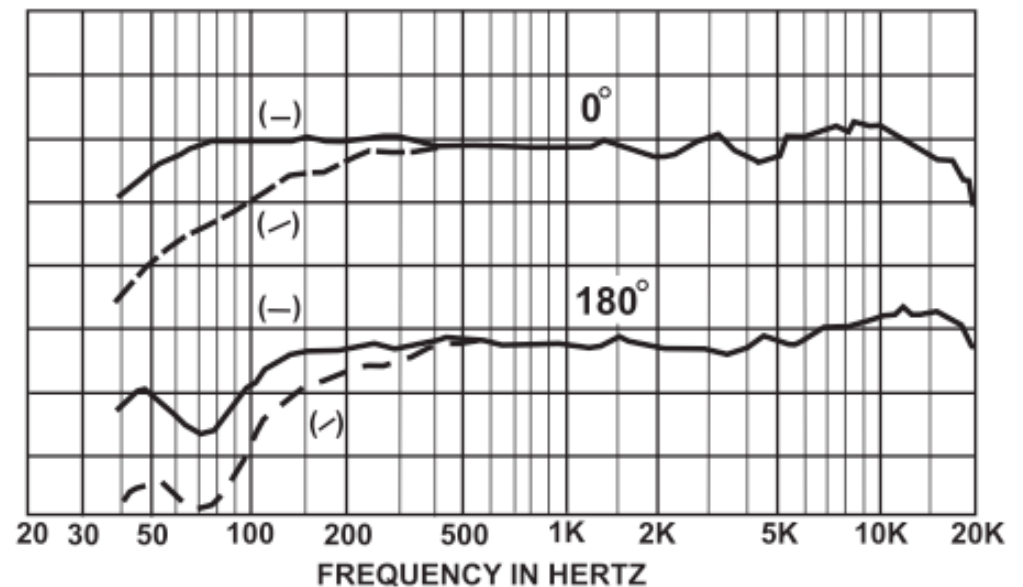
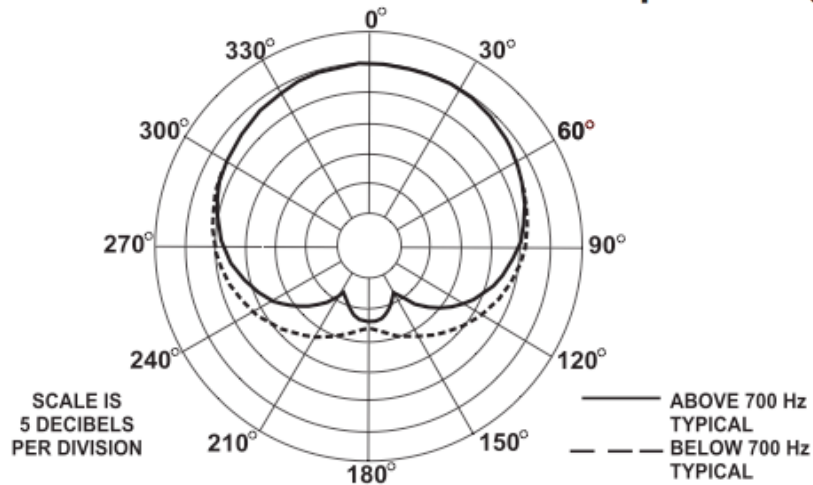


EV RE-20



Key Features:

- **Favorite of broadcast show hosts and voice-over studios**
- **Ideal for instrument recording, especially kick drums and acoustic guitars**
- **Studio condenser response yet no powering required and immune to overloading**
- **Large Acoustalloy diaphragm and low-mass aluminum voice coil**
- **Dual-ported, continuously Variable-D[®] with minimal proximity effect**
- **Steel case and hum-bucking coil provide exceptional magnetic shielding**





MXL 2003

Type:	Condenser pressure gradient mic with large 27mm diaphragm capsule
Frequency Range:	20Hz-23kHz
Polar Pattern:	Cardioid
Preattenuation Switch:	0/-10dB
Bass Cut Switch:	6dB/octave @ 150Hz
Sensitivity:	16mV/Pa
Impedance:	150 Ω
S/N Ratio:	76dB (Ref. 1Pa A-weighted)
Equivalent Noise Level:	18dB(A weighted IEC 268-4)
Max SPL for 0.5% THD:	130dB
Max SPL with -10dB cut:	140dB

