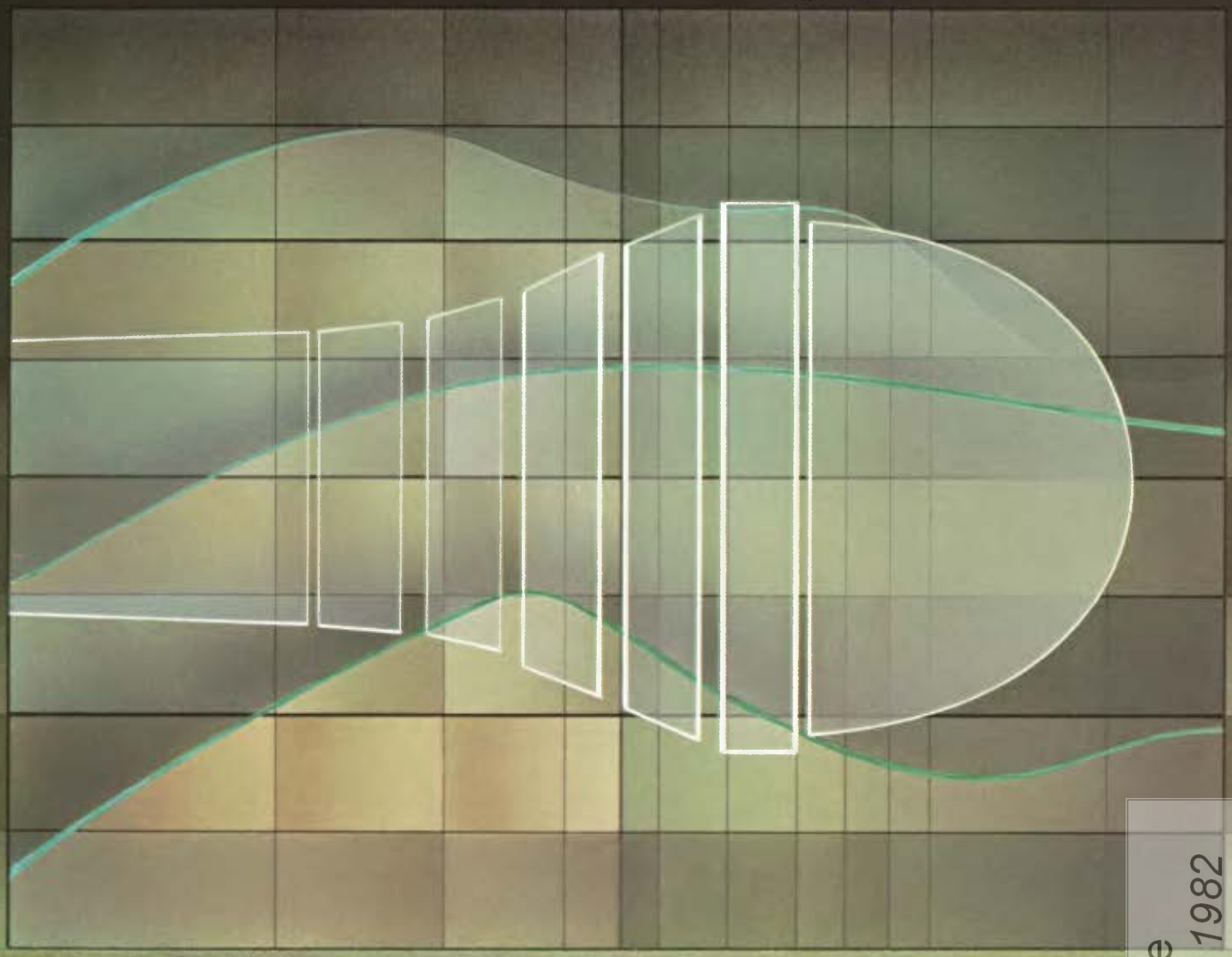
AKG
acoustics



AKG

The Right Mic in the Right Place
Musician Microphones

AKG
acoustics

Contents

Gestaltung · Atelier A. Bolnberger

Introduction to microphone technology

The choice of the correct type of microphone and its proper handling are of fundamental importance for the success of any performance. A microphone which is technically "ideal", with a completely flat frequency response and a transmission range from, say, 20 to 20,000 Hertz, provides optimum results only for certain applications. This whole area of technology is so complex that for practical purposes an extensive specialisation has proved to be necessary–that is, the adaptation of the frequency response, the frequency range, and the directional characteristics of a microphone to the volume, tone, and radiation characteristics of the particular sound source.

AKG has carried out lengthy programmes of research and development in this field, with the object of being able to offer the optimum microphone for every purpose and every instrument. In this they have been completely successful, and many well-known groups, bands, and orchestras now make exclusive use of AKG microphones: James Last, Jon Hiseman, Grobschnitt, Hölderlin, Frank Zappa, Wallenstein, Black Sabbath, Gentle Giant, Super Max, the Hollies, Roger Whittaker, Eela Craig, 10cc, Udo Jürgens.

In order to provide practical assistance in this complex area of acoustics, AKG has prepared a book on how to use microphones, based on scientific research, which can be obtained from specialist music dealers ("Microphone Technology and Techniques").

The most important types of microphone for musicians

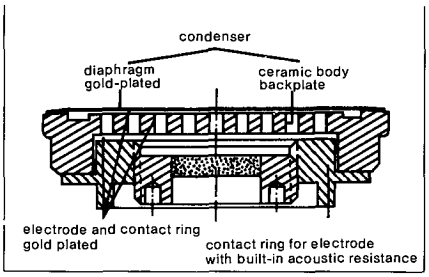
The microphones used on the stage are almost always of the dynamic type. They are robust, reliable, able to withstand climatic extremes, and relatively insensitive to wind noise and popping effects. They can cope with high sound pressures without problems.

Their sound quality is exceeded only by that of condenser microphones. These have an especially good transient response on account of their extremely light diaphragms (about 1.5 mg as against 75 mg in the case of dynamic microphones). This means that the diaphragm follows abrupt sound pressure changes with no time lag, and then returns immediately to rest.

Condenser microphones are, however, markedly more expensive than dynamic microphones, are mostly not so robust, and furthermore require a separate source of energising current in service. They are therefore used for the most part in studios, but also to an increasing extent by stage musicians, whose equipment nowadays is frequently well up to studio standard.

The condenser microphone

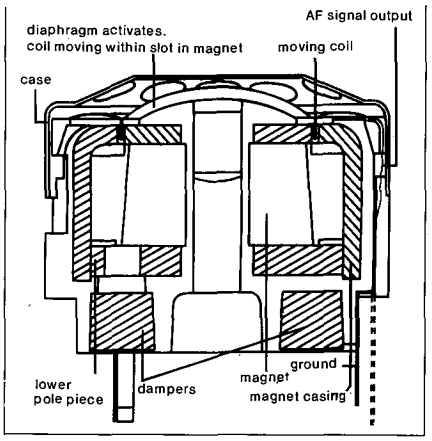
A thin foil or diaphragm, only a few thousandths of a millimetre thick, is free to move, at a minute distance from a fixed metal plate (back plate). Both of these "electrodes" together form a "condenser" which is charged with a direct-current "polarising voltage" from mains-driven apparatus or a so-called "phantom powering system", or is itself permanently charged on the electret principle. When sound waves cause the diaphragm to move, the electric charge across the electrodes of the condenser and, consequently, the electric output voltage produced changes in step with the sound. Condenser microphones need an impedance converter (preamplifier) in order to match the very high-impedance condenser capsule to a low-impedance amplifier input.



The dynamic moving-coil microphone

A wire coil attacted to a diaphragm moves between the poles of a magnet. When the diaphragm is activated by the sound waves, the resulting movement of the coil generates an electric current which is proportional to the sound pressure.

Dynamic moving-coil microphone capsule (cross section)



Technical ABC

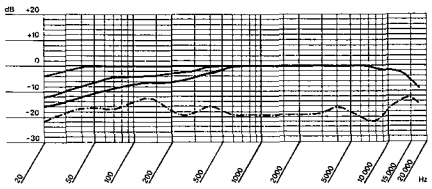
Sensitivity (Free field sensitivity):
This indicates the ratio between the alternating electric current produced by the microphone and the original sound pressure. The expression "sensitivity" was replaced by the more precise designation "free field sensitivity" in the course of standardisation. It is given in mV/Pa (previously mV/µbar) for a frequency of 1,000 Hz. The higher this value, the more sensitive the microphone.

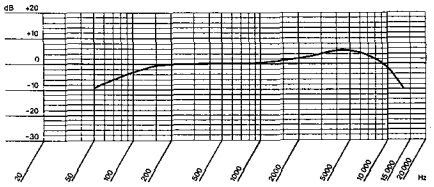
Impedance
This is the "internal resistance" (source or nominal impedance) of a microphone, which is given in the specifications. It is important for the right connection of a microphone to an amplifier. The input impedance of the amplifier should amount to at least three times that of the source impedance.

Frequency response
The frequency response of a high-quality microphone should demonstrate neither sharp peaks nor sharp dips over the whole frequency range. The frequency curve should be even, ideally a straight line–i.e. no frequency should be either boosted or attenuated.

It is, however, desirable to depart from this ideal for particular purposes, i.e. to emphasize certain frequencies and depress others.

Response curves:
D 222
D 130



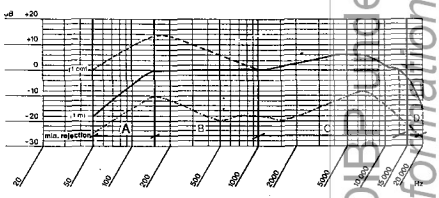


What information does a frequency response curve provide?

If the response curve dips at a certain point, it means that frequencies around that point will be heard as softer than the others. If the curve peaks there, those frequencies will be heard as louder. The frequency response curve at 1 kHz is used as a point of reference.

Example:
In the case of the vocalist microphone D 330 (with tone control at "normal", symbol –) the frequencies are transmitted more softly at point "A" than at point "B" (e.g. at 100 Hz by –6 dB; i.e. the microphone is only half as sensitive to the frequencies around 70 Hz). At point "C" the frequencies are transmitted louder, while at point "D" they are again softer than at "B". This frequency response is typical for a vocalist microphone of professional quality, when it is used at a distance of about one meter from the mouth.

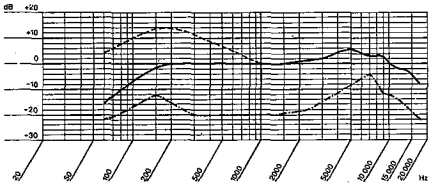
D 330 frequency response curve



It is also important for the singer to know what sort of reproduction the microphone gives when it is used close to the mouth (say at 1 cm distance), for then the "proximity effect" becomes evident (broken line). The "minimum rejection" curve (dot-dash line) shows (in dB) how much softer sound waves from behind the microphone are transmitted. It will be seen from the curve for the D 330 that the microphone is only one third as sensitive to sound waves of a frequency of about 150 Hz

coming from the rear, than it is to sounds originating in front of it. In the region of 1,000 Hz it is actually only one tenth as sensitive to sounds from the rear than to those of the same frequency from the front.

D 330 frequency response curve + proximity effect



Sensitivity to structure-borne noise

A good microphone for professional use ought to be insensitive to structure-borne and handling noise. The principles of the system determine that condenser microphones are less sensitive in these respects than dynamic microphones. Music microphones of both types must have their transducer systems suspended elastically. This can be achieved only by sophisticated construction.

Proximity effect

In the case of microphones with omnidirectional characteristics the tone quality is independent of the distance, and the current output increases as the distance from the sound source decreases. Microphones with directional characteristics, on the other hand, increase the output of the lower frequencies to a considerably greater degree than that of the rest of the range, when the distance from the sound source is reduced. This is known as the proximity effect.

The sound volume of many instruments can be amplified by using this effect, while singers especially use it very readily. A particularly mellow and intimate tone character can be achieved when the proximity effect reaches its maximum between 150 and 200 Hz. This is the case with all AKG vocalist microphones.

At high volumes, however, there is a risk of unintelligibility and of overloading the amplifier.

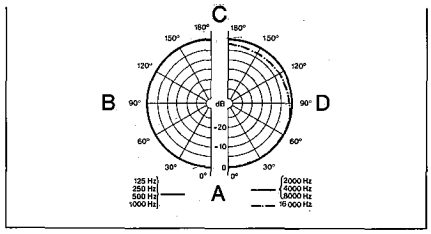
For this reason specialist microphones for vocal and speech applications have a frequency response which rolls off at the lower frequencies. Universal microphones often have a tone control which allows the bass frequencies to be attenuated in one or two steps.

Directional effect

Not every microphone is designed to "hear" equally well in all directions. Depending on the particular application, it may be necessary to cut out neighbouring instruments or extraneous noises, as well as avoid echoes (from reflection) or feedback (from picking up and amplifying the sound from the loudspeakers). Therefore, when choosing a microphone, its directional characteristics should be considered very carefully.

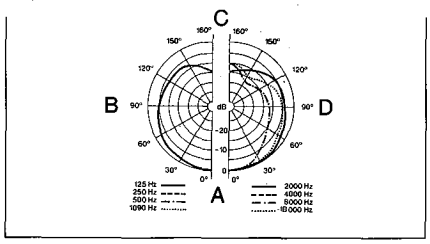
Omnidirectional microphone
This microphone is sensitive to sounds from all directions equally. Such microphones are used chiefly for recording purposes, but not for live performances.
Sound sources A to D: Acceptance with full sensitivity

D 130 Polar diagram



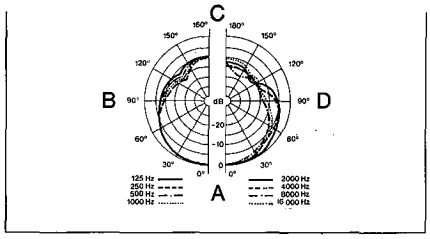
Cardioid microphone
The most generally used directional microphone today. Its greatest sensitivity lies in a heart-shaped field in front of the capsule. This gives the cardioid a broad angle of acceptance, which is especially advantageous when it is used hand-held.
Sound source A: Acceptance with full sensitivity
Sound sources B and D: Acceptance with about half sensitivity
Sound source C: Acceptance with about 10% of full sensitivity

D 222 Polar diagram



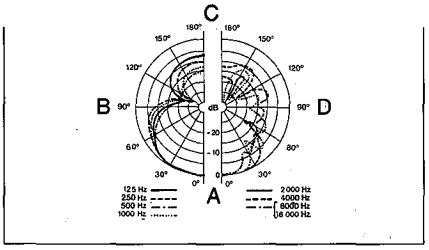
Hypercardioid microphone
An intermediate form with a somewhat narrower angle of acceptance (about 120°).
Sound source A: Acceptance with full sensitivity
Sound sources B and D: Acceptance with less than half sensitivity
Sound source C: Acceptance with less sensitivity than in the case of A, B, D.

D 330 Polar diagram



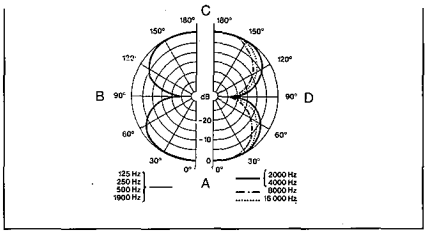
Shotgun microphone
A still narrower acceptance angle is the main feature of the tubelike shotgun microphone. It is used when for any reason the microphone must remain at some distance from the sound source, or good rejection of sound from the sides and rear is desired. It can also be used to good effect in reflection-free surroundings or in the open air. Many of them, the CK 8 for example, can be used close to the mouth without a windscreen, the length of the tube preventing disturbing pop effects.
Sound source A: Acceptance with full sensitivity
Sound sources B to D: Acceptance with minimum sensitivity

CK 8



Bidirectional (Figure 8) microphone
This microphone is used for special situations (e.g. piano in acoustically difficult rooms, choir, radio dramas etc.)
Sound sources A and C: Acceptance with full sensitivity
Sound sources B and D: Acceptance with minimum sensitivity

CK 4



Frequency range

The human ear can pick up a range of frequencies which at birth extends roughly from 20 up to 20,000 Hertz. Every ten years thereafter its upper frequency limit sinks by about 1000 to 2000 Hz. Just how important this hearing ability is for the subjective experience of sound can be seen from the following table of the fundamental ranges of various instruments and voices.

The overtones or harmonics and the formants determine the typical tonal character of an instrument.
The expression "frequency range" in connection with the microphone refers to the ability to pick up all frequencies within the specified limits at a usable level. In the case of a good-quality microphone intended for musical applications this should certainly be designed to cover the tonal range of the desired instrument or human voice.

Two-way technique

Utilizing a principlesimilar to that of loudspeakers, two-way microphones have two transducer systems: one for high frequencies and the other for low, phased together by a crossover network. The advantages of this arrangement are an exceptionally flat frequency response, cardioid reception independent of the frequency, and a sound spectrum which is uninfluenced by the distance from the sound source–i.e. there is no proximity effect.

The two-way cardioid system is based on AKG patents, and is distributed by AKG throughout the world.

Connections:

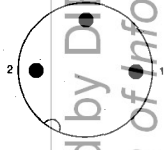
Connector types:

XLR: Professional connector to the international standard IEC 268-14B; commonly used in studios and on the stage.

DIN: Deutsche Industrie-Norm (German Industrial standard)

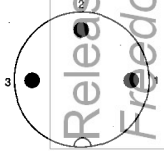
Connector wiring:

3-pin XLR: to IEC 268-14B



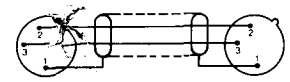
pin 1 = ground
pin 2 = AF inphase
pin 3 = AF return

3-pin DIN:
to IEC 130-9 & DIN 41524

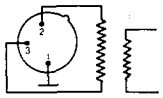


pin 1 = AF inphase
pin 2 = ground
pin 3 = AF return

Cable wiring:
balanced cable (two-conductor screened cable)

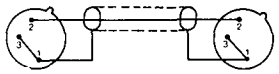


female XLR microphone connector — XLR connector (male)



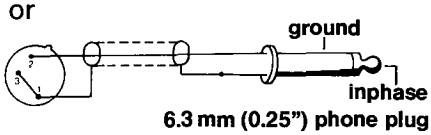
mixer (built-in jack)

unbalanced cable (single-conductor screened cable)



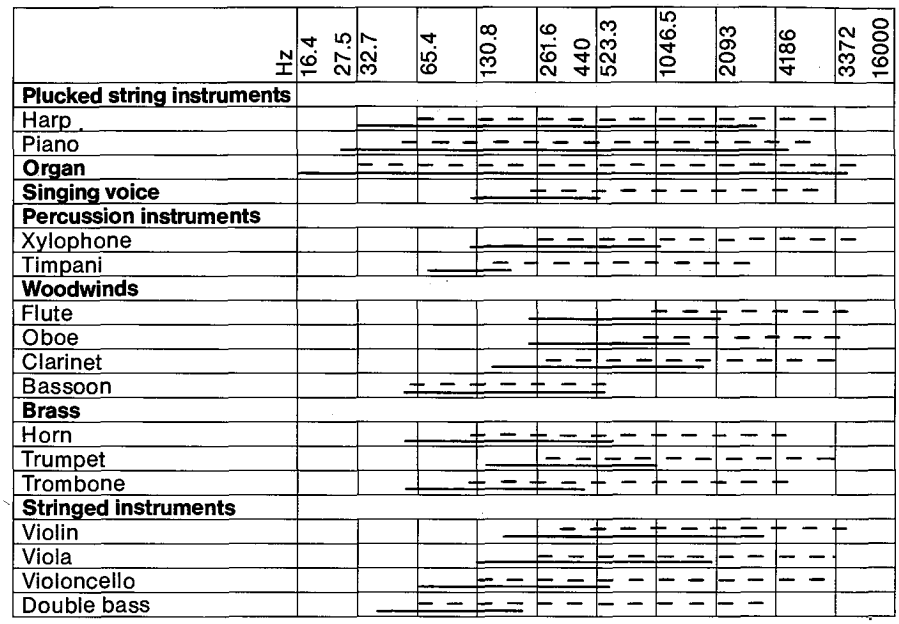
female XLR microphone connector — XLR connector (male)

or



6.3 mm (0.25") phone plug

Sound spectrum of various instruments and voices



Criteria for the purchase of a microphone

- Where will the microphone be used? (Transmission/recording, stage, studio, concert hall)
- For what purpose will it be used? (Vocal instrument)
- Will it be used for hard rock, for intimate songs, or for both?
- Will the microphone need an integral windscreen or pop filter? (Singers, wind instruments)
- Does the microphone capsule need an elastic suspension in its casing? (Hand-held, or subject to considerable shocks when stand-mounted)
- How high is the quality of the rest of the sound system? (A microphone capable of handing on frequencies up to 18,000 Hz is unnecessary, if the output stage and loudspeaker cannot handle anything above 15,000 Hz.)
- What sensitivity and impedance have the inputs of amplifiers and mixers?
- Are the microphone inputs on the mixer balanced? (Otherwise there is a danger of inducing hum from the lighting system or output stage.)
- Can condenser microphones be polarised from the control console, can a supplementary phantom powering system be built in, or will a separate mains unit be necessary?
- Are the microphones equipped with professional XLR connectors? (Other forms of connection are not so mechanically stable, nor do they provide such reliable contact.)
- Can the microphone be used on the stage? (The microphone shaft and grille/sound port must be particularly robust.)

Recommended Microphone Types

	topclass	budgetclass
Singing		
Solo	D 330/D 320	D 310
Background vocals	D 330/D 320	D 310
Choir	D 330/D 320	D 310
Speech		
Speeches, public address	D 222	D 125
Reporting	D 222	D 130
Disc jockey	D 320	D 1200
Percussion instruments		
Bass drum	D 12	D 125
Tom-tom	D 222	D 125
Hi-hat	D 224	D 1200
Snare drum	D 224	D 1200
Cymbals	D 224	D 1200
Congas	D 222	D 125
Bongos	D 222	D 125
Timbales	D 224	D 1200
Timpani	D 12	D 125
Gong	C 451 + CK 1S	D 1200
Vibraphone	D 224	D 1200
Triangle	D 224	D 1200
Mechanical Keyboard instruments		
Piano/grand piano: lower range	C 414	D 222
upper range	C 451 + CK 1	D 125
Electrically amplified instruments		
Electric piano	D 1200	D 125
Electric guitar	D 1200	D 125
Electric bass	D 12	D 2000
Leslie speaker cabinet: upper range 2x	D 224	D 125
lower range	D 12	D 2000
Plucked/Bowed String instruments		
Acoustic guitar	D 330/D 320	D 1200
Mandoline	D 330/D 320	D 1200
Banjo	D 222	D 125
Double bass	D 222	D 125
Zither	C 567	D 125
Violin, Viola, Violoncello	C 567	D 125
Wind instruments		
Saxophone	D 330/D 320	D 1200
Clarinet	D 222	D 1200
Flute	D 330 (+D 224)	D 310
Trumpet	D 222	D 125
Trombone	D 222	D 125
Tuba	D 222	D 125
Horn	D 222	D 125
Mouth organ/Harmonica	D 330	D 310

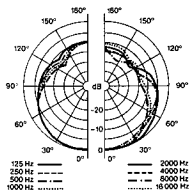
Further Information will be found in the AKG Microphone Handbook: "Microphone Technology and Techniques".

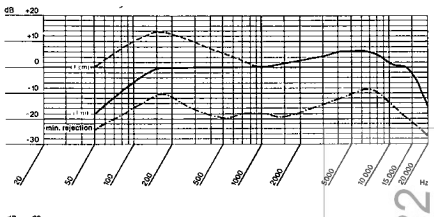
Dynamic Microphones
Vocalist microphones

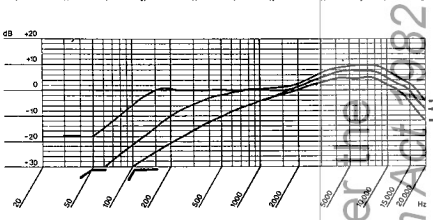
The D 300 series– Studio sound +stage quality

D 330 BT

For experienced and expert singers, who want to have their voices reproduced with no distortion. Top entertainers.







The new vocalist microphones, D 330 BT, D 320 B, and D 310, meet the highest professional requirements. With these models an absolutely "live" sound for the stage has been achieved for the first time. The diversity of the three models means that everyone now has the chance to acquire an instrument suitable for any individual purpose, and which meets the requirements of the international music scene.

At the same time, a stage microphone has to be extraordinarily robust. Therefore, the D 300 microphones have an especially effective form of protection for the high-quality transducer systems in the shape of a protective inner grille inside the outer wire-mesh grille. Together with the strong die-cast housing these two grilles prevent damage to the sysem in the event of the microphone being dropped to a hard surface.

The heart of these microphones, the transducer system, is given additional protection by a novel elastic suspension, which also prevents cable noises being transmitted to the transducer system via the microphone housing. In the case of the D 330 BT, this protection is supplemented by an additional compensation system against hand noise.

An excellent protection against pop effects is also provided by a filter system of foam material and a special fabric. The models D 330 BT and D 320 B have tone controls, with which it is possible to eliminate or reduce the proximity effect. In this way it is possible to give the voice a quality of mildness or aggression, as desired.

In order effectively to suppress sounds impinging on the microphone from off-axis directions, the D 330 BT and the D 320 B have hypercardioid directional characteristics. This means that it is possible to work near the most powerful monitoring systems, or beside the loudspeakers, without fear of the usual feedback.
Some microphones may transmit hum caused by magnetic stray fields from amplifiers. This danger has been guarded against in the D 330 BT and D 320 B microphones. On the transducer system there is a compensation coil which effectively prevents the development of hum from external sources.

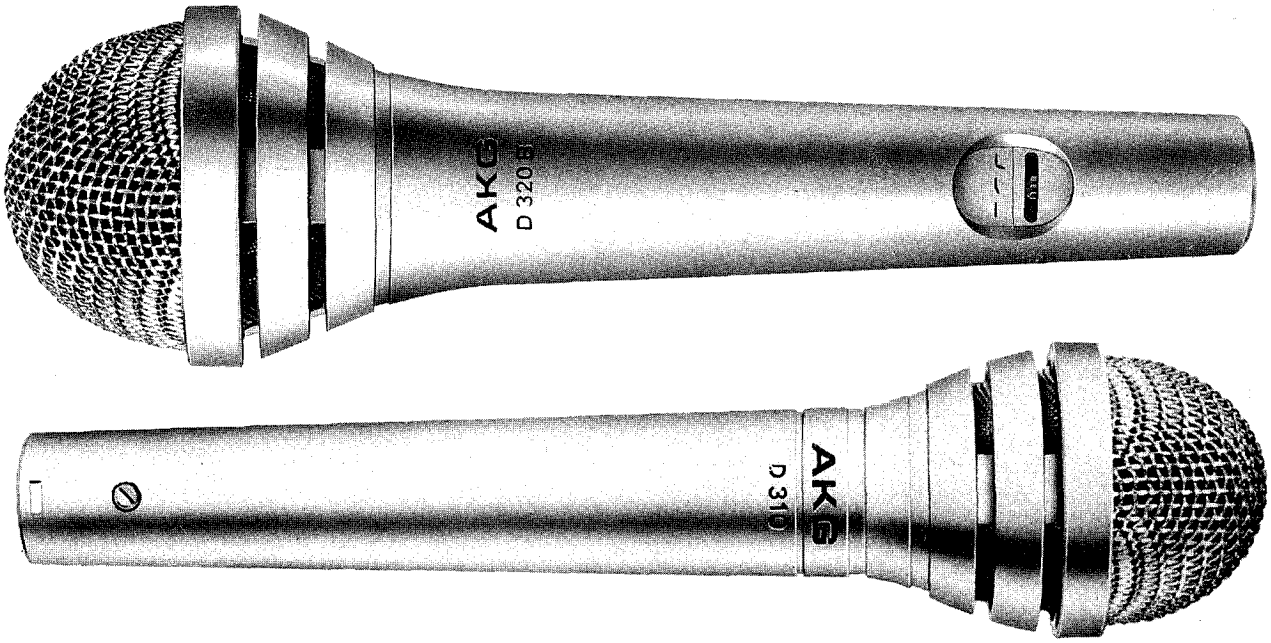
There are no problems of connection with AKG microphones, since they use the professional XLR 3-pin-connector which is in use throughout the world.

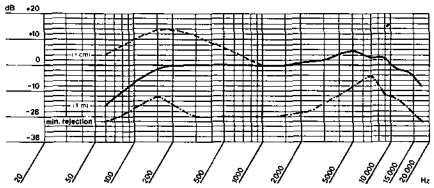
D 320 B

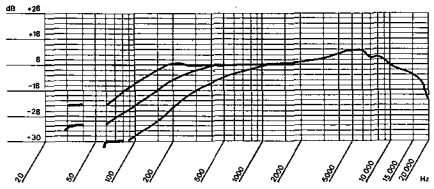
For singers who want to give their voices "punch" and volume through bass emphasis, who specialise in rock, pop, etc.

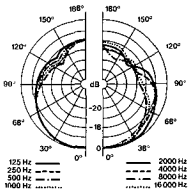
D 310

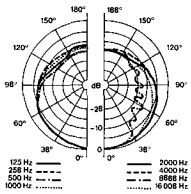
For the ambitions young singer looking for a "no-frills" top-class microphone.

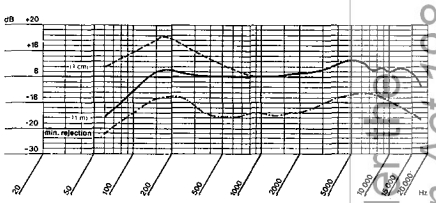












Technical Date:	D 330 BT	D 320 B	D 310
Transducer type:	Dynamic pressure gradient receiver	Dynamic pressure gradient receiver	Dynamic pressure gradient receiver
Directional characteristic	hypercardioid	hypercardioid	cardioid
Frequency range	50...20,000 Hz	60...18,000 Hz	60...18,000 Hz
Free field sensitivity at 1,000 Hz	1.2 mV/Pa	1.4 mV/Pa	1.3 mV/Pa
Electrical impedance at 1,000 Hz	370 ohms	290 ohms	270 ohms
Maximum sound pressure level for 0.5% THD	50 Pa ≙ 128 dB SPL	50 Pa ≙ 128 dB SPL	50 Pa ≙ 128 dB SPL
3-step bass-cut	"normal" (–), –15 dB (–) and –25 dB (⌒) at 100 Hz	"normal" (–), –10 dB (⌒) and –25 dB (⌒) at 100 Hz	
3-step presence boost	"normal" (–), +2 dB (⌒) or +4 dB (⌒) at 4 KHz		
Dimensions	Length: ca. 185 mm (7.3") max. diameter: ca. 53 mm (2.1")	Length: ca. 185 mm (7.3") max. diameter: ca. 53 mm (2.1")	Length: ca. 190 mm (7.5") max. diameter: ca. 45 mm (1.8")
Net weight	340 g (12 oz)	300 g (10.1 oz)	240 g (8.5 oz)
Connector	3-pin standard-XLR	3-pin standard-XLR	3-pin standard-XLR

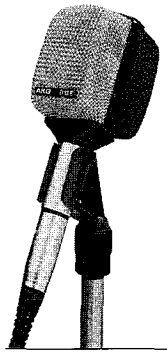
Instrumental Microphones

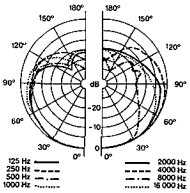
D 12 E

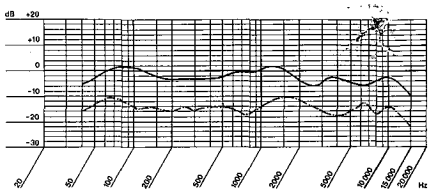
An integral "bass compartment" emphasises the lower frequencies round 100 Hz, and thus gives the bass drum or bass guitar "body" and "punch".

A large diameter diaphragm makes possible the undistorted reproduction of lower frequencies, even at extreme volumes.

A magnetic noise field compensation suppresses hum effects from lighting systems, power amplifiers, etc.



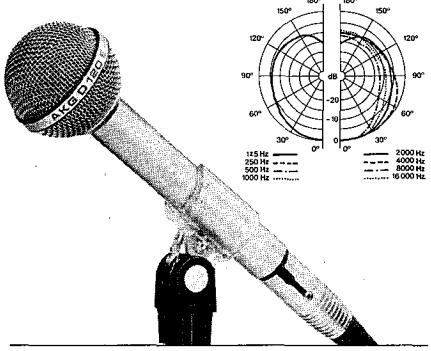




Transducer type:	Dynamic pressure gradient receiver
Directional characteristic:	Cardioid
Frequency range:	40 to 15,000 Hz
Free field sensitivity at 1,000 Hz:	2.2 mV/Pa
Electrical impedance at 1,000 Hz:	290 ohms
Maximum sound pressure level for 0.5% THD:	50 Pa≙128 dB SPL
Dimensions:	76 x 55 x 140 mm (3 x 2.2 x 5.5 in)
Net weight:	580 g (20.5 oz)
Included accessory:	SA 30
Recommended accessory:	St 12

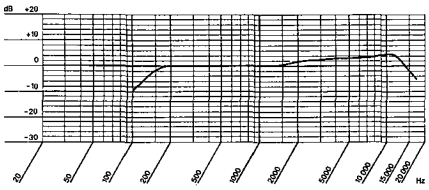
D 120

Built-in windscreen and pop filter. Capsule elastically suspended, therefore suppression of handling noise.



D 120 HL

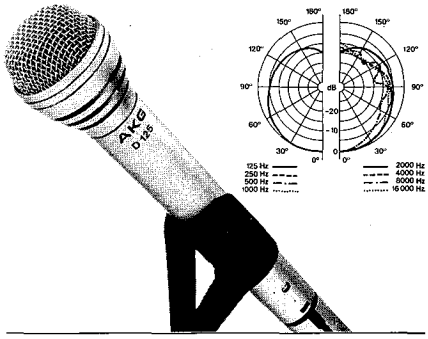
Same as D 120, but with built-in transformer (high/low) and 3 m permanently attached two-conductor screened cable with free end.

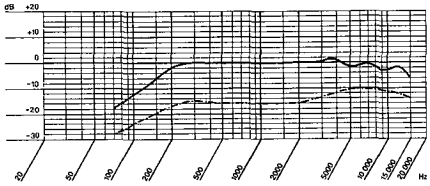


Transdducer type:	Dynamic pressure gradient receiver
Directional characteristic:	Cardioid
Frequency range:	100 to 17,000 Hz
Free field sensitivity at 1,000 Hz:	1.8 mV/Pa
Impedance at 1,000 Hz:	250 ohms
Maximum sound pressure level for 1% THD:	50 Pa≙128 dB SPL
Dimensions:	ø ca. 52.5 mm (2.1"), l = 163 mm (6.4")
Net weight:	ca. 150 g (5.3 oz)
Standard accessory:	SA 23/2
Recommended accessories:	W 23, St 30, H 24A

D 125

Specially developed for picking up the sound from electrically amplified instruments and drums such as tom-toms, congas, etc. A built-in hum compensation coil suppresses magnetic interference from power amplifiers and lighting systems.
Elastically suspended transducer system.
Especially robust microphone housing made of die-cast zinc-aluminium alloy.
An outer steel wire-mesh grille, with an inner supporting grille, prevents damage to the transducer system.

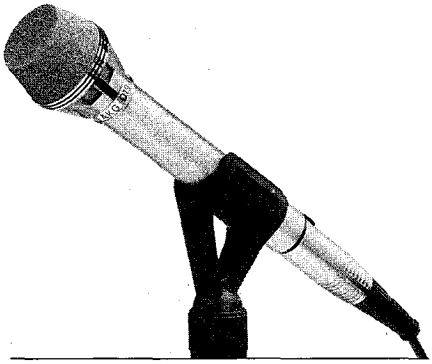




Transducer type:	Dynamic pressure gradient receiver
Directional characteristic:	Cardioid
Frequency range:	70 to 15,000 Hz
Free field sensitivity at 1,000 Hz:	1.9 mV/Pa
Impedance at 1,000 Hz:	200 ohms
Maximum sound pressure level for 1% THD:	50 Pa≙128 dB SPL
Dimensions:	ø ca. 43 mm (1.7"), l = 178 mm (7")
Net weight:	225 g (8 oz)
Included accessory:	SA 30
Recommended accessories:	W 31, H 10. H 24A

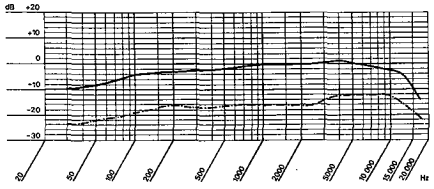
D 190 E

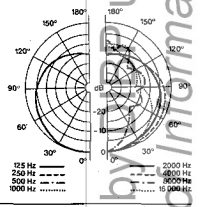
The Capsule is elastically suspended, therefore suppression of handling noise. Windscreen made of sintered bronze.



D 190 S

Same as D 190, but with on-off switch

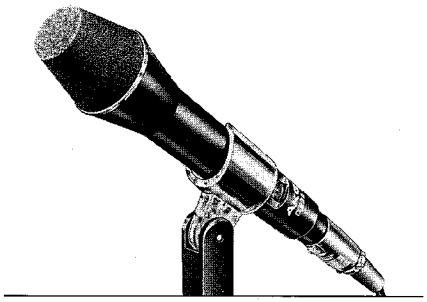


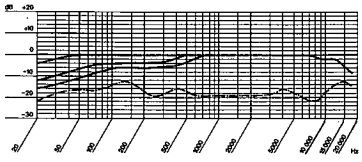


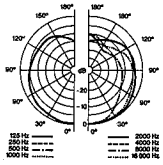
Transducer type:	Dynamic pressure gradient receiver
Directional characteristic:	Cardioid
Frequency range:	30 to 16,000 Hz
Free field sensitivity at 1,000 Hz:	2.3 mV/Pa
Impedance at 1,000 Hz:	200 ohms
Maximum sound pressure level for 0.5% THD:	50 Pa≙128 dB SPL
Dimensions:	ø 40 mm (1.6"), l = 161 mm (6.3")
Net weight:	140 g (5 oz)
Included accessory:	SA 30
Recommended accessories:	H 10, H 24A, W 31

D 222 EB

Two-way microphone (no proximity effect), elastically suspended transducer system, compensation coil against magnetic stray field interference (e.g. from amplifier output stages, lighting systems, etc.). 3-step bass attenuation for suppression of low-frequency noise (structure-borne noise like footsteps, etc.)



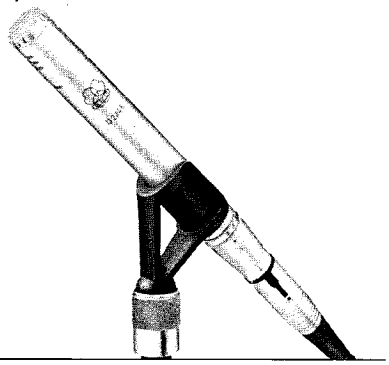


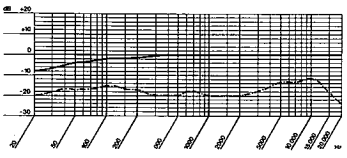


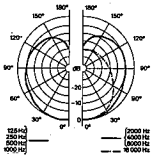
Transducer type:	Double element, dynamic pressure gradient receiver
Directional characteristic:	Cardioid
Frequency range:	20 to 18,000 Hz
Free field sensitivity at 1,000 Hz:	1.5 mV/Pa
Impedance at 1,000 Hz:	320 ohms
Maximum sound pressure level for 0.5% THD:	50 Pa≙128 dB SPL
Dimensions:	⌀ 45 mm (1.8"), l=205 mm (8.1")
Net weight:	240 g (8.5 oz)
Bass control:	3 step switch (0, –6 and –12 dB at 50 Hz) to filter out low-frequency noise (footsteps).
Included accessory:	SA 30
Recommended accessories:	W 29 + W 29A, H 10

D 224 E

Two-way microphone, no proximity effect. Noise field compensation, hum compensation coil.



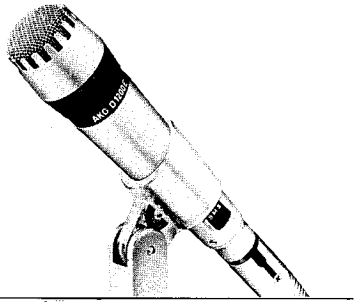


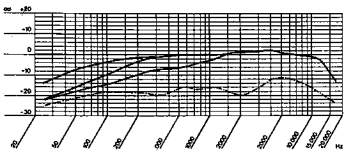


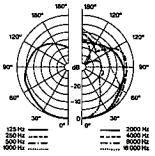
Transducer type:	Double element, dynamic pressure gradient receiver
Directional characteristic:	Cardioid
Frequency range:	20 to 20,000 Hz
Free field sensitivity at 1,000 Hz:	1.3 mV/Pa
Impedance at 1,000 Hz:	260 ohms
Maximum sound pressure level for 0.5% THD:	50 Pa≙128 dB SPL
Dimensions:	⌀ 23 mm (0.9"), l=195 mm (7.7")
Net weight:	280 g (9.9 oz)
Bass control:	3-step switch (0, –7 and –12 dB at 50 Hz) to filter out extraneous noise such as footsteps.
Included accessories:	SA 30, W 2 and W 2A
Recommended accessory:	Individual frequency response curve H 10

D 1200

Elastic suspension of the capsule in order to suppress handling noises. Very effective windscreen and pop filter, important e.g. for wind instruments, with 3-step bass attenuator.



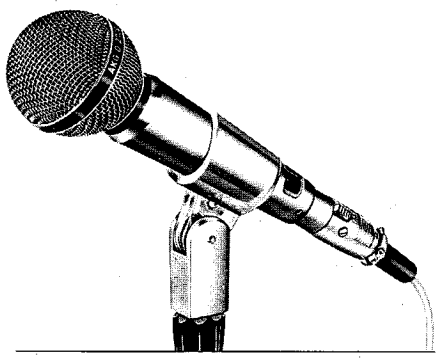


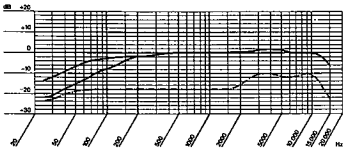


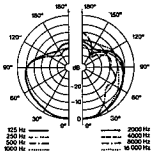
Transducer type:	Dynamic pressure gradient receiver
Directional characteristic:	Cardioid
Frequency range:	25 to 17,000 Hz
Free field sensitivity at 1,000 Hz:	2.3 mV/Pa
Impedance at 1,000 Hz:	200 ohms
Maximum sound pressure level for 1% THD:	50 Pa≙128 dB SPL
Dimensions:	⌀ 37 mm (1.5"), l=148 mm (5.8")
Net weight:	275 g (9.7 oz)
Bass control:	Position D: –6 dB at 50 Hz Position M: –14 db at 50 Hz Position S: –16 dB at 50 Hz
Included accessory:	SA 12/1
Recommended accessories:	H 10, W 29

D 2000

Integral windscreen and pop filter for the suppression of unwanted noise. On-off switch and 2-step bass control.







Transducer type:	Dynamic pressure gradient receiver
Directional characteristic:	Hypercardioid, therefore extremely free from feedback problems
Frequency range:	25 to 15,000 Hz
Free field sensitivity at 1,000 Hz:	2.3 mV/Pa
Impedance at 1,000 Hz:	200 ohms
Maximum sound pressure level for 1% THD:	50 Pa≙128 dB SPL
Dimensions:	⌀ 53 mm (2.1"), l=165 mm (6.5")
Net weight:	310 g (11 oz)
Bass control:	B: –6 dB at 50 Hz roll-off begins at 200 Hz M: –14 dB at 50 Hz roll-off begins at 700 Hz
Included accessory:	SA 12/1
Recommended accessories:	H 10, W 23

Other dynamic microphones

D 58 E

Noise-cancelling close-talk microphone.

Frequency range:	70 to 10,000 Hz
Free field sensitivity at 1,000 Hz:	0.72 mV/Pa
Impedance:	200 ohms
Connector:	Standard XLR
Recommended accessories:	MSH 58, W 32

D 130

Dynamic omnidirectional microphone

Frequency range:	50 to 13,000 Hz
Free field sensitivity at 1,000 Hz:	1.7 mV/Pa
Impedance:	200 ohms
Connector:	Standard XLR
Included accessory:	SA 30

D 558 B

Close-talking microphone, with marked hypercardioid directional characteristics, permanently mounted on flexible goose neck. With 1.2 metres (4 ft) of permanently attached cable with free end.

Frequency range:	300 to 12,000 Hz
Free field sensitivity:	0.72 mV/Pa
Impedance:	200 ohms
Included accessories:	Installation material

D 40

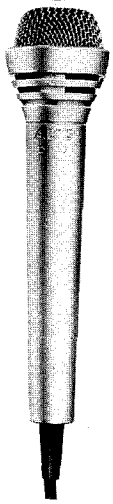
Dynamic cardioid microphone with 2.5 metres (8.2 ft) of permanently attached cable and 6.3 mm (0.2") jack plug.

Frequency range:	60 to 16,000 Hz
Free field sensitivity at 1,000 Hz:	2.5 mV/Pa
Impedance:	400 ohms
Included accessory:	Table stand

D 590 B

Close-talking microphone, with marked hypercardioid directional characteristics, permanently mounted on a flexible goose neck. Elastic suspension of capsule. Windscreen and pop filter in the form of a sintered cap. 1.2 metres (4 ft) of permanently attached cable with free end.

Frequency range:	250 to 17,000 Hz
Free field sensitivity:	1.3 mV/Pa
Impedance:	200 ohms
Included accessories:	Installation material



D 100

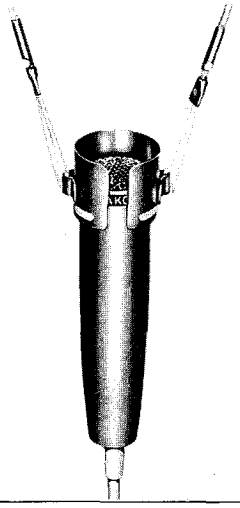
Dynamic cardioid microphone with 6 metres (20 ft) of permanently attached cable and 6.3 mm (0.2") jack plug.

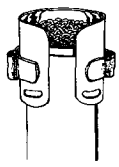
Frequency range:	60 to 17,000 Hz
Free field sensitivity at 1,000 Hz:	1.8 mV/Pa
Impedance:	200 ohms
Included accessory:	SA 23/2

D 109

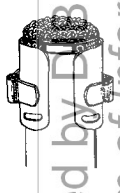
Dynamic lavaliere microphone with omnidirectional characteristic, 10 metres (33 ft) of two-conductor screened cable with free end. A presence boost of about +10 dB can be achieved by turning the lavaliere clip.

Frequency range:	50 to 15,000 Hz
Free field sensitivity at 1,000 Hz:	1.1 mV/Pa
Impedance:	200 ohms
Included accessories:	Lavaliere clip Tie-pin clip Neck cord





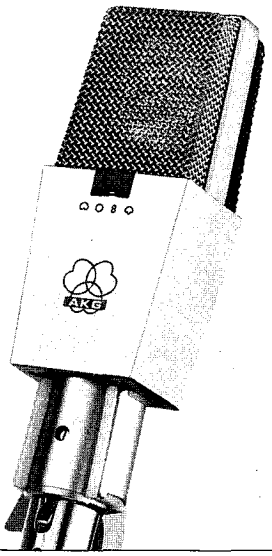
with boost



without boost

Condenser Microphones

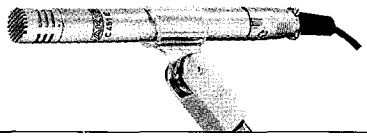
C 414 EB



Built in attenuation selector for reduced sensitivity (0, –10 dB, –20 dB).
Elastically suspended double diaphragm system with large diameter 25 mm (1").

Transducer system:	Condenser microphone with 4 directional characteristics: cardioid, omni, figure of eight, and hypercardioid.
Frequency range:	20 to 20,000 Hz
Free field sensitivity at 1,000 Hz:	6 mV/Pa
Impedance at 1,000 Hz:	≦ 150 ohms
Maximum sound pressure level for 0.5% THD:	f = 1 kHz to 10 kHz = 160 Pa ≙ 138 dB SPL
Powering:	Universal phantom 9–52 volts
Dimensions:	141 x 45 x 35 mm (5.6 x 1.8 x 1.4 in.)
Net weight:	360 g (12.7 oz)
Bass control:	Switchable roll-of (0, –7 or –20 dB at 50 Hz)
Included accessories:	SA 18/3, W 26, and individual frequency response curves.
Recommended accessories:	H 17A, N 66 E, N 46 E1

CMS Condenser Microphone Modular System



C 451 E comb

Condenser capsule CK 1, FET preamplifier C 451 E with integral 3-pin standard XLR connector, stand adapter SA 15/1 and windscreen W 32.

C 451 EB comb

matte black

Condenser capsule CK 1, FET preamplifier C 451 EB, integral 3-pin standard XLR connector, stand adapter SA 15/1, and windscreen W 32.

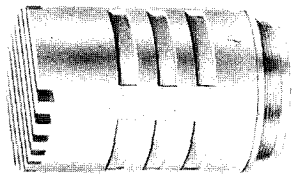
CK 1*

CK 1 can only be used with FET preamplifier C 451 or C 452.

*) also available in matte black

CK 1 S (no illustration)

As CK 1, but with 6 dB presence boost at 10,000 Hz.



Transducer type:	pressure gradient receiver
Directional characteristic:	Frequency independent cardioid
Frequency range:	20 to 20,000 Hz
Free field sensitivity at 1,000 Hz:	9.5 mV/Pa (with C 451/C 452)
Impedance at 1,000 Hz:	(with C 451/C 452): 200 Ohms
Maximum sound pressure level for 0.5% THD:	110 Pa ≙ 135 dB SPL (C 451/C 452)
Dimensions:	⌀ 18 mm (1.1"), l = 28 mm (1.1")

CK 5

Elastically suspended transducer system, built-in windscreen and pop filter, therefore especially suitable for vocalists.

CK 5 can only be used with C 451 and C 452.
Only available in matte black

Transducer type:	pressure gradient receiver
Directional characteristic:	Frequency independent cardioid
Frequency range:	20 to 20,000 Hz
Free field sensitivity at 1,000 Hz:	9.5 mV/Pa (with C 451/C 452)
Impedance at 1,000 Hz:	(with C 451/C 452): 200 Ohms
Maximum sound pressure level for 0.5% THD:	110 Pa ≙ 135 dB SPL
Dimensions:	⌀ 49 mm (~ 2"), l = 72 mm (2.8")
Net weight:	100 g (3.5 oz)

CK 8

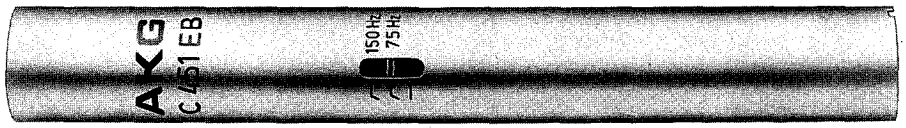
Particularly suitable for percussion instruments from a distance (overhead), without picking up the sound of the other instruments.
CK 8 is delivered with W 18.
It can be used only with C 451/C 452.

Transducer type:	pressure gradient interference
Directional characteristic:	Frequency independent hypercardioid
Frequency range:	30 to 18,000 Hz
Free-field sensitivity at 1,000 Hz:	15 mV/Pa (with C 451/C 452)
Maximum sound pressure level for 0.5% THD:	110 Pa ≙ 135 dB SPL
Dimensions:	⌀ 18 mm (0.7"), l = 215 mm (8.5")
Net weight:	75 g (2.7 oz)

C 451 EB*

FET preamplifier for universal phantom powering (9 to 52 volts). Can only be used with CMS capsules (CK1, etc.).

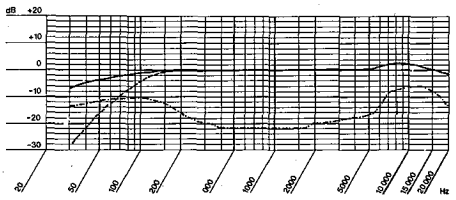
Recommended accessories: C 451 E (no bass attenuation).
Available versions: C 451 EB*) (as described). C 452 EB*) (C 451 EB, but for 48 volt phantom powering only [at 0,5 mA]).

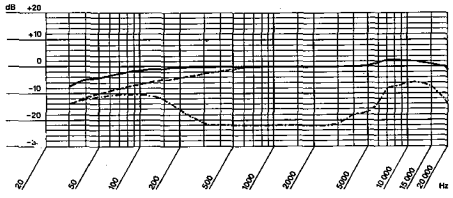


Frequency range:	5 to 30.000 Hz
Impedance at 1,000 Hz:	200 Ohms
Bass control:	Switchable attenuation 0, –7 dB at 50 Hz (roll-off begins at 75 Hz) –20 dB at 50 Hz (roll-off begins at 150 Hz)
Powering:	Phantom from 9 to 52 volts
Current consumption:	5.5 mA (depending on source resistance and operating voltage)
Dimensions:	⌀ 18 mm (0.7"), l=140 mm (5.5")
Net weight:	85 g (3 oz)
Connector:	Standard XLR
Finish:	*) Satin nickel

C 535 EB

Condenser microphone for stage use.
- Elastically suspended system (to minimize handling noise)
- Robust zinc-alloy die-cast housing.
- Rigid wire-mesh grille protects the transducer system from hard knocks.
- Integral windscreen and pop filter make it especially suitable for vocalists.

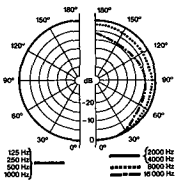


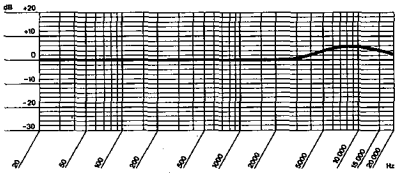


Transducer type:	Condenser pressure gradient receiver with FET preamplifier and filter, pre-polarized.
Directional characteristic:	Cardioid
Frequency range:	20 to 20,000 Hz
Free field sensitivity at 1,000 Hz:	9 mV/Pa
Impedance at 1,000 Hz:	200 ohms
Maximum sound pressure level for 0.5% THD:	50 Pa ≙ 128 dB SPL (without preattenuation) 250 Pa ≙ 142 dB SPL (with preattenuation)
Bass control:	1) Cut-off filter (under 100 Hz with about 12 dB/octave, to filter out footsteps and other low-frequency noise) 2) Roll-off filter (flat slope from 500 Hz, to counter ract proximity effect)
Powering:	Universal phantom powering system from 9 to 52 volts (DIN 45,596), current consumption: 1 mA
Dimensions:	⌀ 45/25 mm (1.8"/1"), l=183 mm (7.2")
Net weight:	300 g (10.6 oz)
Connector:	Standard XLR
Standard accessory:	C 535 EB with SA 31
Finish:	Satin charcoal
Recommended accessories:	W 23, H 10, N 46 E 1, N 66 E, B 46 E

C 567

Condenser lavaliere microphone.
Particularly suitable for interviews, conferences, and instruments like guitar, violin and mandoline which demand freedom of movement.
The transducer system is elastically suspended to avoid noise caused by the cable or clothes.



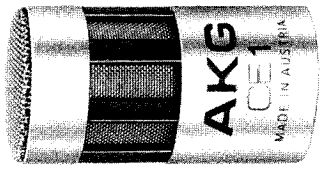


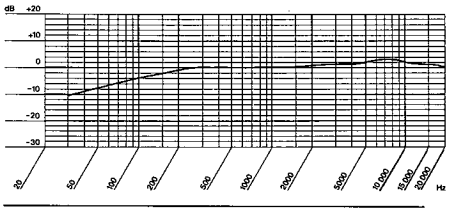
Transducer type:	Pressure receiver, pre-polarized.
Directional characteristic:	omnidirectional
Frequency range:	20 to 20,000 Hz
Free field sensitivity at 1,000 Hz:	6 mV/Pa
Impedance at 1,000 Hz:	200 ohms
Maximum sound pressure level for 1% THD:	80 Pa ≙ 132 dB SPL
Powering:	Universal phantom powering system, 9 to 52 volt (DIN 45,596)
Current consumption:	0.5 mA
Dimensions:	Capsule without windscreen: ⌀ ca. 11 mm (0.4"), l=24 mm (~1") Capsule with windscreen: ⌀ ca. 17 mm (0.67"), l=ca. 36 mm (1.4")
Net weight:	100 g (3.5 oz)
Connector:	Standard XLR
Finish:	Satin charcoal
Included accessories:	H 21 tie clip, H 20 tie pin W 37 windscreen, H16 belt mount adapter
Recommended accessories:	N 66 E, N 46 E, B 46 E
Length of cable:	1.3 metres (4.3 ft)

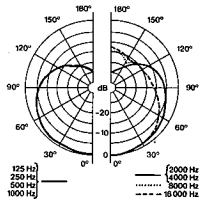
CE 1

Capsule module with cardioid characteristic and built-in FET preamplifier, polarized.

Frequency Range: 30 to 20,000 Hz
Sensitivity: 3.5 mV/Pa
Usable only with SE 5 E.

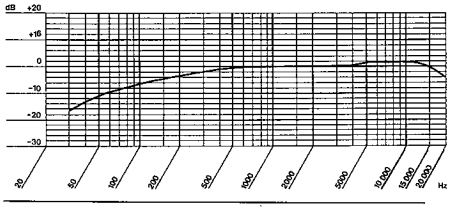


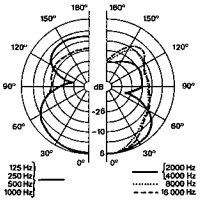




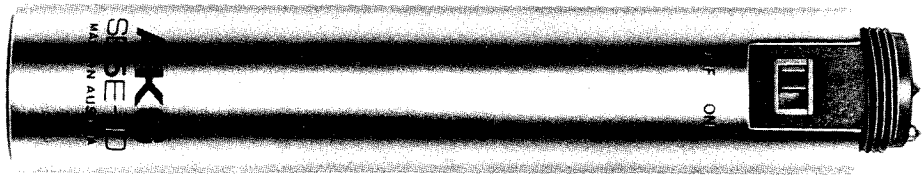
CE 8

Short shotgun capsule module, with very narrow acceptance angle and integrated FET preamplifier, pre-polarized.
Frequency Range: 70 to 20,000 Hz
Free field Sensitivity: 6 mV/Pa
Usable only with SE 5 E
Included accessory: W18





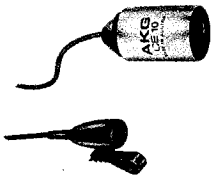
SE 5E-10



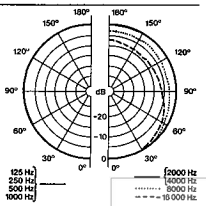
Feeding module for all CMSE capsule modules. Compartment for 5.6 volt battry (IEC 4 F16) with on-off switch. Built-in network for universal phantom powering system (9 to 52 volts), standard XLR connector.
Frequency range: 20 to 20,000 Hz
Impedance: 200 ohms
Recommended accessories: SA 26, SA 30, H 10, H 24 A

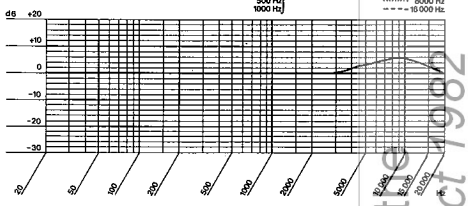
C 501 E 10

Lavaliere capsule module with omnidirectional characteristics and integrated FET preamplifier, permanently pre-polarized.
Consisting of SE 5 E, CE 1 and SA 30



Frequeny Range: 20 to 18,000 Hz
Free field Sensitivity: 2.5 mV/Pa
Included accessory: Adjustable tie-clip, 1.3 metres of 2 core screened cable with srew adaptor for SE 5 E, belt mounting H16, and two W 6





CE 10-7

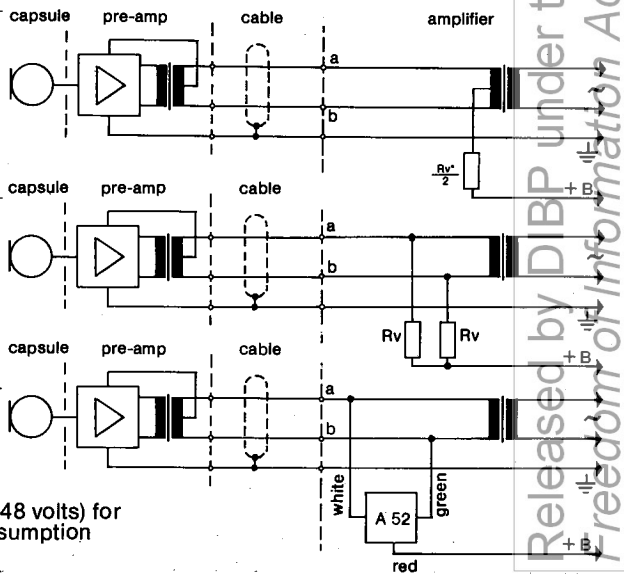
Same as CE 10-1, but with 7-metre permanently attached cable.

Universal Phantom Powering:
The IEC and DIN Standard Authorities specify two types of microphone powering (AB and Phantom Powering). All AKG Condenser microphones may be powered according to DIN 45596 by phantom circuitry as follows:

a) via floating centre tap of input transformer (symmetrical) with common resistor $\frac{Rv}{2}$ *)

b) via two resistors Rv *) creating an artificial centre tap.
The resistors should be of the 1% tolerance type as follows:
12 volts = 680 ohms,
48 volts = 6800 ohms

c) via A 52 powering module connected to any voltage between 12 and 52 volts (+ B). Current adjusted for 3 mA (for C 451, C 414 EB only).



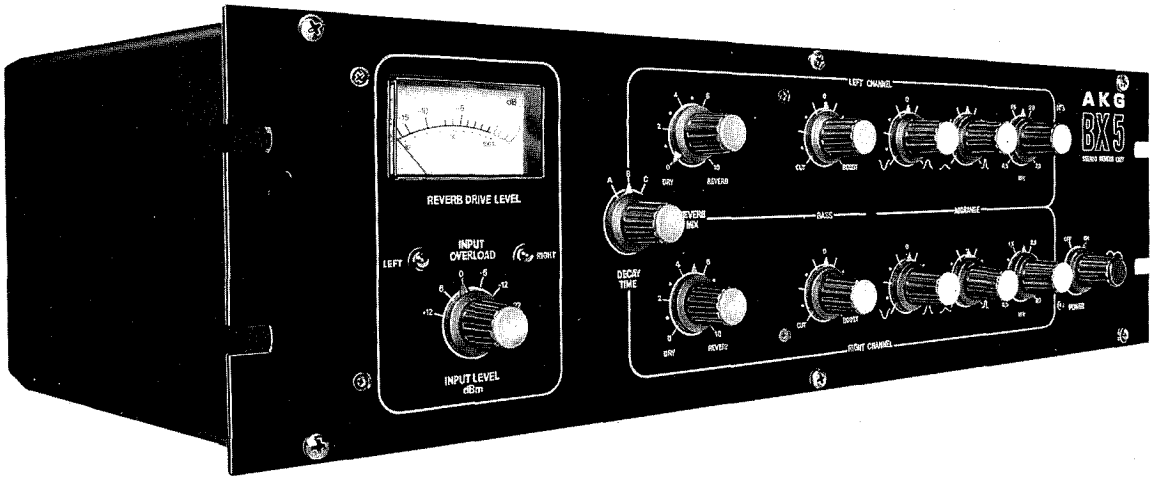
Note:
For C 451 pre-amplifiers, the resistor value Rv may be higher than specified by DIN (e.g. 22,000 ohms at 48 volts) for lowest possible current consumption (appr. 3 mA).

*) Rv is specified within DIN 45596

Reverberation units

BX 5 E

Portable stereo reverberation unit.



The BX 5 E is particularly compact and small in size. The unit has two separate inputs and outputs but utilizes one common reverberation system. It also incorporates a parametric equalizer. There is a reverberation drive level readout on the illuminated VU-meter on which the sum of the two input levels is indicated. The stereo signal is available at the three-pin XLR-type connectors in a transformer balanced form. Input sensitivity of both channels may be set at –22, –12, –6, 0, +6, and +12 dBm by one common six-position control.

Any signal peaks causing overload of the reverberation system are indicated without delay by an LED for each input channel.
Decay time: three preset decay times (approx. 1, 2 or 3 sec.) may be selected on the front panel.

For each channel one reverb intensity control mixes signals from dry to pure reverb. The parametric equalizer provides perfect individual sound control of the reverb signal for each channel.

Bass: Bass cut or boost of about 10 dB respectively at 100 Hz.

Midrange: Three controls influence this part of the sound spectrum.
Both outputs are through 3-pin XLR connectors.

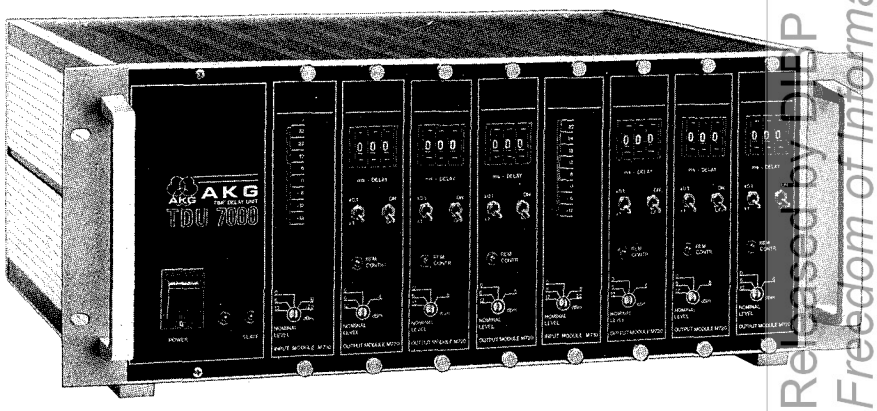
Specifications

Nominal input level:	–22, –12, –6, 0, +6, +12 dBm, switchable on from the front panel.
Input impedance:	10 k/ohms balanced (–12 dBm to +12 dBm) 45 k/ohms balanced (–22 dBm)
Nominal output level:	–22, 0, +6 dBm (switchable on from the output board).
Frequency range of the reverb signal:	50 to 8,000 Hz
Bass control range:	+/–11 dB at 80 Hz (reverb channel)
Midcontrol range:	+/–15 dB from 500 to 5,000 Hz infinitely variable, as is sound quality (reverb channel).
Dimensions:	47 x 15 x 27 cm (width/height/depth) (19 x 6 x 11 in.)
Net weight:	Appr. 5.5 kg (12 lb.)

BX 15 and BX 20

Details of the entire model range can be obtained from the AKG studio catalogue.

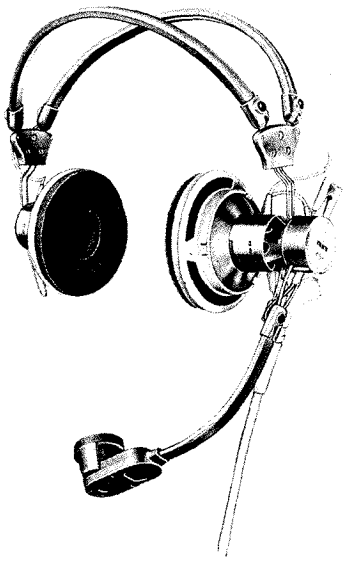
TDU 7000 Time Delay Unit



Housing with power supply unit and clock generator, one or more input modules M 710, output modules M 720, delay extension M 730, and effects module M 750.
The basic unit N 700 comprises eight module receptacles, the configuration may be chosen as desired. Automatic by-pass in case of sudden voltage loss, or for fuse change during operation.

Headphones

Microphone-headphone combinations



K 36/1

Especially robust circumaural headphone-microphone combination with noise-cancelling close-talk microphone.
1.6 metres (5 ft) of 2 x 2-conductor screened cable with free end.

Headphone frequency range:
20 to 16,000 Hz
Impedance: 600 ohms
Microphone frequency range:
100 to 12,000 Hz
Free field sensitivity at 1,000 Hz:
0.8 mV/Pa
Impedance: 240 ohms
Net weight: 400 g (14 oz) without cable

K 158

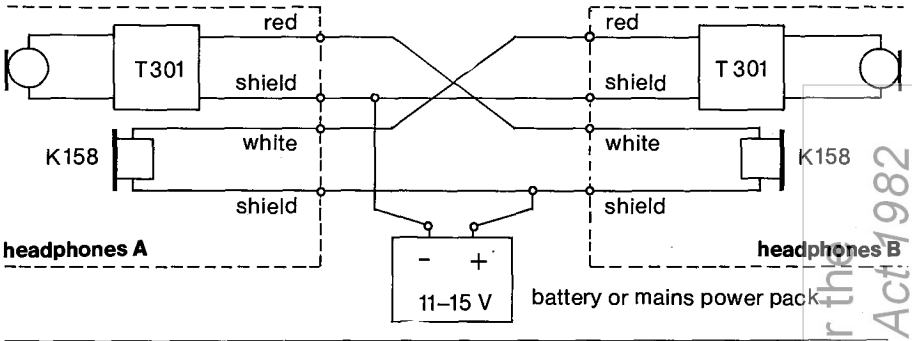
Dynamic microphone-headphone combination, with noise-cancelling close-talking microphone. Extensive elimination of ambient noise by use of the differential principle. 2 metres (6.5 ft) of 2 x 1-conductor screened cable with free end.

Headphone frequency range:
30 to 15,000 Hz
Impedance: 300 ohms
Microphone frequency range:
100 to 12,000 Hz
Free field sensitivity at 1,000 Hz:
0.8 mV/Pa
Impedance: 230 ohms
Net weight: 350 g (12.4 oz) without cab
For stage work we recommend fitting the ear pads Z 60 and Z 61.
(Without illustration)

K 158/T 301

K 158 with built-in microphone preamplifier for the construction of a talk-back system.

Circuit diagram



HiFi stereo headphones

K 340

These headphones combine top-class technology with unequalled comfort. This results from AKG's unique two-way approach of combining a condenser capsule with a dynamic system plus multidiaphragm system.
(Without illustration)

The product range offers a comprehensive choice for every application and all demands.

Detailed information about the complete range of HiFi-headphones can be found in the AKG headphone catalogue.

Monitor headphones

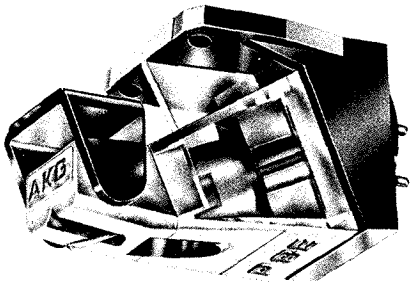
K 160/4

Dynamic stereo headphones of the closed type. Comfortable to wear because of the double headband. Specially developed as monitoring headphones for studios. Exchangeable ear pads.

With 3-conductor coiled cord 6.3 mm (0.3") stereo jack plug.

Frequency range: 16 to 20,000 Hz
Impedance: 600 ohms per system
(Without illustration)

AKG TS system



HiFi stereo phono cartridge

P 8 ES

De luxe pickup system of the lowest mass, the result of the very latest technological research. Excellent frequency response, and outstanding tracking at the lowest possible tracking force.

AKG offers a suitable pickup for every turntable and every taste. Comprehensive information can be found in the AKG HiFi stereo pickup catalogue.

Accessories

Floor Stands

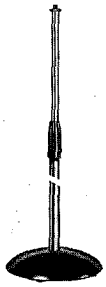
St12 Stand with massive base and telescopic tube (35 cm [14"] to 55 cm [21"]). Base diameter 18 cm. For universal use.

St30 Light, telescopic boom stand (80 cm [2.6 ft] to 140 cm [4.6 ft] height adjustment) with collapsible feet (tripod radius 50 cm [1.6 ft]) and 70 cm (2.3 ft) long boom with fixing screw.

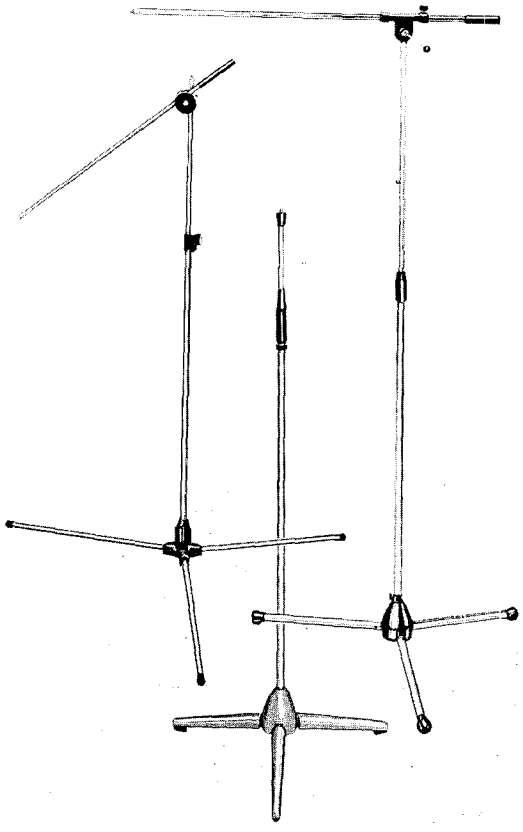
St102A Studio stand with telescopic tube (90 cm [3 ft] to 165 cm [5.5 ft] height adjustment), 70 cm long boom and screw-in feet (tripod radius 37 cm [14.5"]).

St200 Stand with telescopic tube (110 cm [3.6 ft] to 180 cm [6 ft] height adjustment) and folding feet (tripod radius 30 cm [12"]); built-in shock absorber.

St 12



St 30 **St 102 A** **St 200**



Stand adapters

SA 18/1*) Swivelling all-metal adapter, mate nickel-plated, with locking screw and ca. 18 mm clamp diameter.

SA 18/3*) As SA 18/1, but with 23 mm diameter. For D 224.

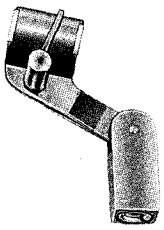
SA 26 Swivelling plastic adapter, 19 to 32 mm clamp diameter. Suitable also for cronical microphones.

SA 30 Swivelling adapter of flexible material. For diameters from 19 to 30 mm.

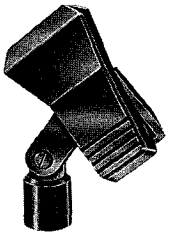
SA 31 As SA 30, but for conical microphones.

1) Available in grey and yellow.
*) Also available in matte black.

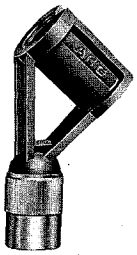
SA 18/1*)



SA 26



SA 31



W 32

Windscreens

W17A*) Stable steel wire-mesh grille with foam lining. Internal diameter 20 mm (0.8"). For CMS.

W 23[1]) Foam windscreen for microphone head diameters of ca. 51 mm (~2"). For D120, D 310, D 320, D 330, D 2000.

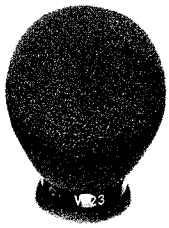
W 29[1]) + W 29 A Set consisting of front and rear foam windscreens. For D 222, D1200.

W31 (Form similar to W 29) Windscreen of polyurethane filter material. For double conical of spherical microphone heads with a diameter of ca. 40 mm (1.6"). For D100, D125, D130, D190, D 310, D 590, C 535.

W32[1]) (Form similar to W 2) Windscreen of polyurethane filter material. For microphones of 18 mm (0.7") to 20 mm (0.8") diameter. For CE1, CE 2, CK1, CK1S, D 58, D 558 B.

W 17 A*)

W 23[1])



29[1]) + W 29 A

Goose neck

MSH 58 E Lenght 200 mm (8"). Shaft diameter 10 mm (0.4"). Intended for the lighter types of microphone with standard XLR connectors.

Microphone cables

MK 9/10 10 metres (33 ft) of 2-conductor screened cable with 3-pin standard XLR connector NC 3 MC and standard XLR socket NC 3 FC.

MK 9/20 AS MK 9/10, but 20 metres (66 ft) long.

Connectors

NC 3 FC*) 3-pin XLR socket.

NC 3 MC*) 3-pin XLR connector.

A 12 Adapter plug for connecting a 3-pin DIN connector with a 3-pin standard XLR microphone socket.

Mountings

H 10 Metal stereo arm with two 3/8" knurled screws. Distance between the screws adjustable between 35 mm (1.4") and 78 mm (3"). Particularly suitable for CMS microphones.

H 15 Elastic microphone suspension with securing screw. Usable as a stand adapter. Especially insensitive to structure-borne noise. Clamp diameter 18 mm (0.7") to 19 mm (0.75").

H 24 A Swivelling, shockproof, microphone mounting, satin nickelplated. Clamp diameter 21 mm (0.8").

CMS accessories

A 50/10*) Attenuation element for recording of especially high sound pressures. Attenuation of 10 dB.

A 50/20*) Same as A 50/10, but attenuation of 20 dB.

A 51*) Swivelling joint with a range of ± 90° from the microphone axis.

A 52 Electronic phantom unit for C 451 C 452, or C 414 EB.

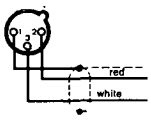
B 46 E Battery unit for condenser microphones with the exception of C 452.

N 46 E1 Mains unit for powering two condenser microphones with the exception of C 452 (each channel has an electronic roll-off filter and cut-off filter). For mains voltage from 100 to 250 volt, with automatic adjustment.

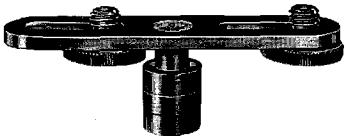
N 66 E 6-channel mains unit for simultaneously powering up to six condenser microphones. Adaptable for 110 or 220 volt mains voltage.

[1]) Available in green and yellow.
*) Also available in matte black

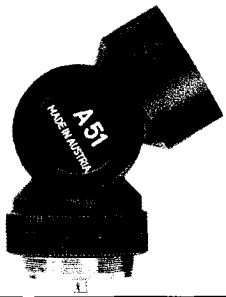
MK 4/5



H 10

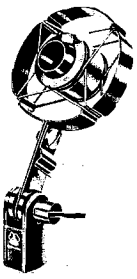


A 51*)

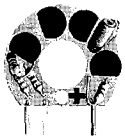


NC 3 FC*), NC 3 MC*)

H 15

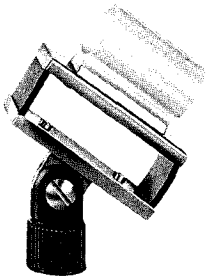


A 52

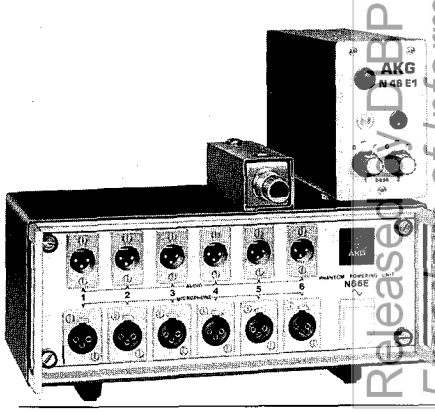


NC 3 FP, NC 3 MP

H 24 A



N 46 E1 B 46 E N 66 E



A 12

A 50/10*)

AKG PATENTS

Reverberations units:

Etching technique for springs (all equipment)	
Australia	423.746
Austria	279.203
CDN	897.784
France	1,572.809
GB	1,206.868
Japan	594.743
USA	3,566.310
West-Germany	1,762.545
Dented spring (all equipment)	
Austria	292.332
CDN	899.917
France	7,028.322
GB	1,278.884
Japan	743.053
USA	3,697.059
Compensation (all equipment)	
Austria	300.400
CDN	936.476
France	7,113.452
GB	1,304.118
Japan	938.812
USA	3,719.908
West-Germany	● AS 2,188.292
Spring diversion BX 20	
CDN	852.351
Italy	848.507
Japan	611.508
USA	3,564.462
Spring diversion BX 10, BX 15, BX 5	
Austria	327.586
CDN	998.121
France	7,429.975
GB	1,444.830
Japan	● OS 50-57.362
USA	3,933.345
West-Germany	● OS 2,442.853
MFB decay-time adjustment (all equipment)	
Austria	298.826
GB	1,306.194
Japan	981.143
USA	3,742.140

Microphones:

Sintered microphone cap D 202, D 222, D 190, D 590, D 130	
Austria	252.343
GB	1,102.306
Japan	495.817
USA	3,652.810
West-Germany	1,290.978
Two-way system for microphones D 202, D 222, D 224	
USA	3,204.031
Pad A 50	
GB	1,305.303
Japan	716.376
West-Germany	2,020.611

Pick-up:

Knife edge suspension (TS SYSTEM)	
Austria	341.798
Belgium	830.444
CDN	1,069.057
Denmark	● AS 138.500
GB	1,448.053
Italien	1,039.088
USA	4,054.758
West-Germany	● OS 2,526.903
Plastic casing of pole rods	
Austria	341.240
GB	1,521.825
Japan	● OS 52-17.802
USA	4,124.782
West-Germany	● OS 2,633.722

Headphones:

Gimbal-suspended earpieces in K 340, K 241, K 240, K 141, K 140 S	
Japan	GM10.257/79
West-Germany	GM 7,417.123
Selfadjusting headband in K 340, K 241, K 240, K 141, K 140 S	
Austria	321.388
GB	1,476.653
Japan	893.720
USA	3,919.501
West-Germany	2,425.834
Mass loaded diaphragm. Basic patent used in all AKG headphones	
USA	3,157.750
Integrated open headphones	
Austria	334.992
GB	1,521.582
Japan	● OS 51-123.136
USA	4,071.717
West-Germany	● OS 2,614.729
Passive radiators in K 340, K 240	
Australia	491.211
Austria	330.868
CDN	1,032.479
GB	1,483.829
Japan	893.736
Switzerland	600.725
USA	4,005.278
West-Germany	2,540.680
Two-way system K 340	
Austria	323.823
CDN	998.162
GB	1,426.142
Japan	● OS 50-37.423
USA	3,943.304
West-Germany	● OS 2,428.933

General:

Plastic encased magnetic system.

Most of the dynamic AKG microphone or headphone capsules are built according to one of these inventions.

	I
Austria	236.474
CDN	791.877
USA	3,342.953
West-Germany	1,243.240
	II
Austria	289.916
GB	1,263.442
Japan	767.044
USA	3,621.420
West-Germany	2,001.223

● Patent applications.

Win an AKG microphone!

It would be a pleasure for us to send you the very latest information about developments in the microphone sector. Of course, we are always at your service to answer other general questions about acoustics in the audio field.

My favourite microphones are: .....

I play solo ☐
in the group ☐
I am a vocalist ☐
I am an instrumentalist ☐
My group has been in existence for months: years:
I am under 15 years old ☐
between 15 and 20 ☐
between 20 and 25 ☐
between 25 and 30 ☐
over 30 years old ☐
I play as a ☐ professional ☐ amateur

I play most of my gigs between:
January to March ☐
April to June ☐
July to September ☐
October to December ☐

I/my group perform each month on average
1 to 6 times ☐
6 to 9 times ☐
10 to 20 times ☐
more than 20 times ☐

The number of microphones which I use in my group:
1 to 3 ☐
4 to 6 ☐
7 to 10 ☐
more than 10 ☐

This is/are the brand/s I mostly use in my group
AKG ☐
Beyer ☐
Dynacord ☐
Electro Voice ☐
Sennheiser ☐
Shure ☐
Others: ☐

My group baught their last microphone
within the last 3 months ☐
within the last 6 months ☐
within the last 12 months ☐
longer than one year ago ☐

These music periodicals i read mostly:

.....

Should a microphone windscreen be:
grey? ☐
coloured? ☐
What colours? ☐

I also use high impedance microphones. ☐ **Peaces:**

My greatest problems with microphone connections are:

.....

After every performance we put the microphone back into its plastic case. ☐
We throw the case away immediately after purchase. ☐

Please send me information brochures about the following:
Phono cartridges ☐
Headphones ☐
Studio microphones and equipment ☐

Name and address of my microphone dealer:

.....

Name:

Occupation:

Address:

Thank your for answering this questionnaire so fully. Please send it to:

AKG Akustische u. Kino-Geräte Gesellschaft m.b.H.
A-1150 VIENNA, AUSTRIA
Brunhildengasse 1
1150 Wien.

This is the condition that enables you to take part in the competition. If you are lucky and win your favourite microphone, we will send it to you immediately after the draw, which will take place in December 1980. The organizers will not accept any legal liability.
Which the best wishes for your success.

AKG, Ltd.

AKG acoustics

AKG Akustische u. Kino-Geräte Ges. m. b. H.
Brunhildengasse 1, A-1150 Wien, Austria
TF: (43 222) 95 6517-0*, TX: 131839 akgac a

MICROPHONES

A wide variety to meet individual needs

TOA Sound & Communications

TOA ELECTRIC CO., LTD.

KOBE, JAPAN

Toa—the right mike for every voice, every occasion.

You will find in this catalogue a very wide variety of top-quality microphones. The Toa range includes mikes specifically designed for stage use, desk-top dynamic mikes, remote mikes with preamplifiers and tone chimes, and many other types. Practically every conceivable use has been considered by our engineers to make mike selection easier and to allow users to match mikes more accurately to thier individual needs.

Toa mikes are characterized by their wide frequency responses, low handling noise, simplified and reliable switching mechanisms and handsome styling. Some are fitted with wind screens, while others have swivel mount adaptors or stand mount adaptors. Some Toa remote mikes comes with the mike section and a separate cord-connected amp section. All have been engineered to meet specific PA needs, no matter what those needs might be. They provide long-lasting, service-free operation, are extremely rugged in construction, and give sensitive, crystal-clear sound.

Omnidirectional Microphones

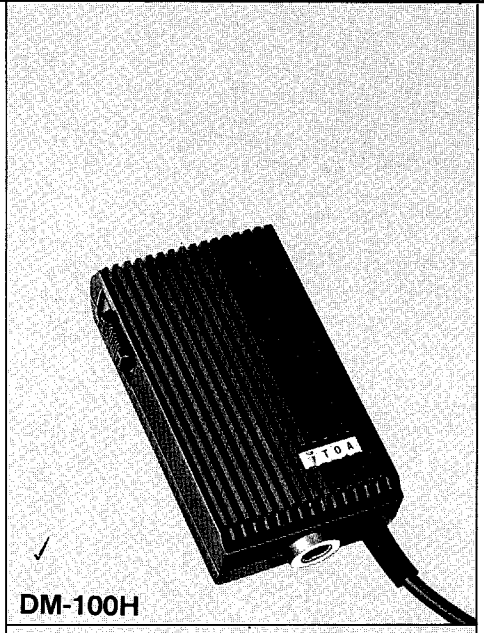
Hand-Held Mike with Switch

Features

Hand-held type with mounting thread included • Built-in on/off talk-switch • Weighs only 170 grams • 50 kohms output impedance at 1KHz • Omnidirectional directivity.

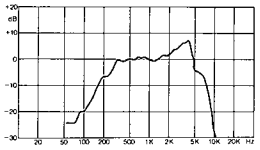
Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Omnidirectional
Output Impedance at 1KHz:	50kΩ Unbalanced
Frequency Range: (See frequency response corve)	150—7,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−57dB (1.4mV) ±3dB
Cables:	2m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread for stand mounting
Dimensions in mm:	48×85×25
Weight:	170 g



DM-100H

Frequency Response



Hand-Held Mike with Switch

Features

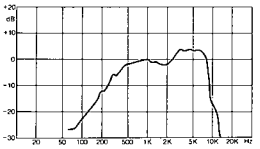
Hand-held type with mounting thread included • Built-in on/off talk-switch • Weighs only 170 grams • 600 ohms output impedance at 1KHz • Omnidirectional directivity.

Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Omnidirectional
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	150—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−76dB (0.16mV) ±3dB
Cables:	2m sigle-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread for stand mounting
Dimensions in mm:	48×85×25
Weight:	170 g

DM-100L

Frequency Response



Low Impedance Hand-Held Mike

Features

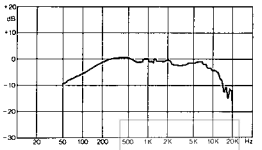
Hand-held type low impedance mike • Built-in on/off talk-switch • 600 ohms output impedance at 1KHz • Low handling noise • Stand mount available • Omnidirec tional directivity.

Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Omnidirectional
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	100—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−71dB (0.28mV) ±3dB
Cables:	5m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W3/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	32Ø×166.5
Weight:	215 g

DM-403

Frequency Response



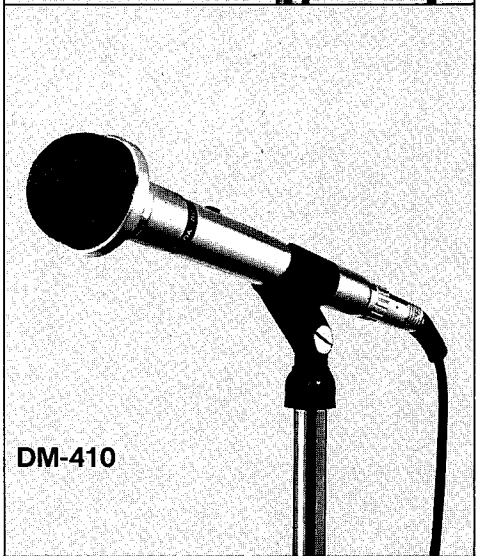
Dual Impedance Stand-Mount Mike

Features

Swivel stand-mount type mike with adaptor • Dual impedance, 600 ohms or 50 Kohms, selected with cable connection • Built-in wind/POP screen • Built-in on/off talk-switch • Can be hand-held.

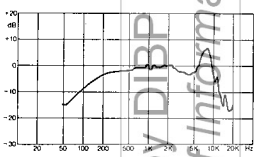
Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Omnidirectional
Output Impedance at 1KHz:	600Ω or 50KΩ Unbalanced (Selectable by plug-in position of connector)
Frequency Range: (See frequency response corve)	600Ω: 70—12,000Hz 50KΩ: 70— 9,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	600Ω: −78dB (0.13mV) ±3dB 50KΩ: −58dB (1.26mV) ±3dB
Cables:	10m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	50Ø×188
Weight:	220 g (without cable) 540 g (with cable)



DM-410

Frequency Response



Unidirectional Microphones

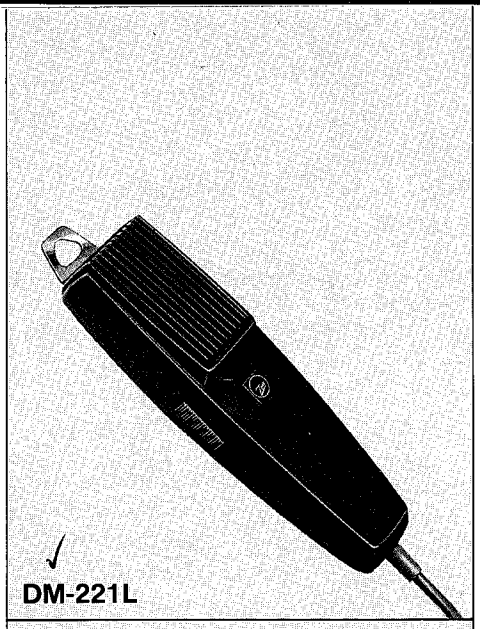
Hand-Held Mike with Coiled Cable

Features

Hand-held type close-talking mike • Background noise and feedback suppressed • Built-in on/off talk-switch • Weighs only 166 grams • 600 ohms output impedance at 1KHz.

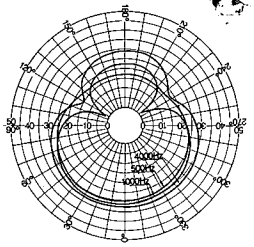
Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	150—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−73dB (0.22mV) ±3dB
Cables:	2m single-core shielded and coiled cable with phone plug
Switch:	Short OFF type
Mounting:	Optional mike-hanger model 2203 is available
Dimensions in mm:	40×145×30
Weight:	166 g

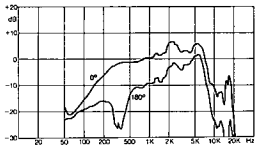


DM-221L

Polar Pattern



Frequency Response



Stand-Mount Mike with Switch

Features

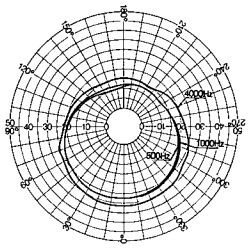
Swivel stand-mount type mike with adaptor • Background noise and feedback suppressed • Output 50K ohms • Built-in on/off talk-switch • Can be hand-held.

Specifications

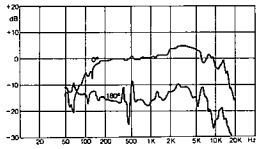
Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	50KΩ Unbalanced
Frequency Range: (See frequency response corve)	100—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−60dB (1mV) ±3dB
Cables:	5m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread/ W5/8" 27-thread swivel adaptor for stand mounting
Dimensions in mm:	29.5Ø×139
Weight:	260 g

DM-531H

Polar Pattern



Frequency Response



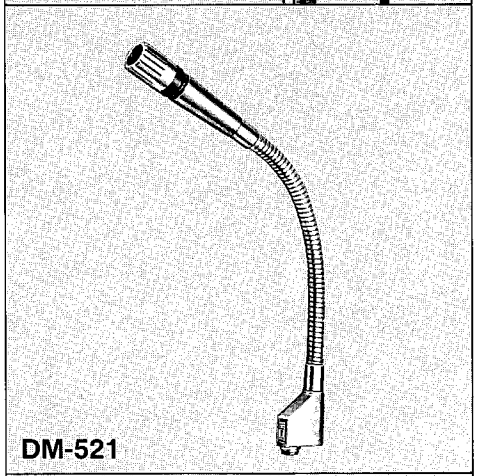
Dual Impedance Stand-Mount Mike

Features

Stand-mount type mike with flexible gooseneck • Dual impedance, 600 ohms or 50 Kohms, selected with cable connection • Background noise and feedback suppressed • Desk or floor stand mounting.

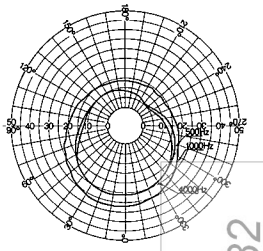
Specifications

Type:	Stand-mount type dynamic microphone with flexible gooseneck
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω/50KΩ Unbalanced (Selectable with connector)
Frequency Range: (See frequency response corve)	600Ω: 100—9,000Hz 50KΩ: 100—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	600Ω: −77dB (0.14mV) ±3dB 50KΩ: −60dB (1mV) ±3dB
Cables:	5m for 50KΩ or 10m for 600Ω single-core shielded cable with phone plug
Mounting	W5/16" 18-thread for stand mounting
Dimension in mm:	27Ø×387
Weight:	600Ω: 700 g 50KΩ: 550 g
Remarks:	Specify pre-set impedance (600Ω or 50KΩ) when ordering.

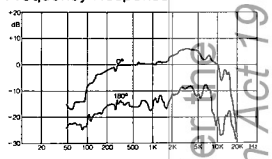


DM-521

Polar Pattern



Frequency Response



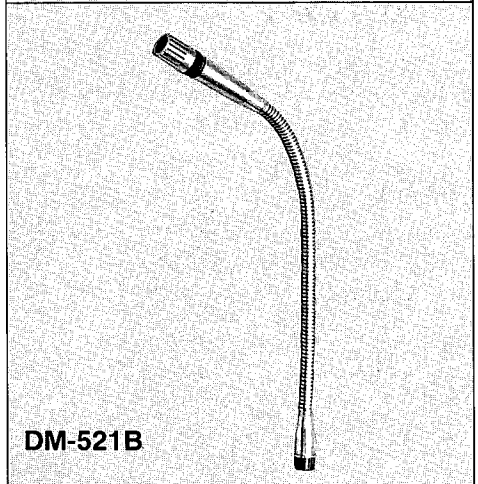
Dual Impedance Fixed Mike

Features

Fixed installation type mike with flexible gooseneck • Dual impedance, 600 ohms or 50 Kohms, selected with cable connection • Background noise and feedback suppressed.

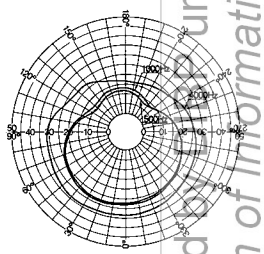
Specifications

Type:	Fixed installation type dynamic micro-phone with flexible gooseneck
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω/50KΩ Unbalanced (Selectable by cabling on mate connector)
Frequency Range: (See frequency response corve)	600Ω: 100—10,000Hz 50KΩ: 100—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	600Ω: −77dB (0.14mV) ±3dB 50KΩ: −58dB (1.26mV) ±3dB
Mounting:	Fixed with mate connector
Dimensions in mm:	27Ø×501.5
Weight:	380 g
Built-in Connector:	21Ø 3-pin connector (BTS 21P3B)
Required Mating Connector:	21Ø 3-pin receptacle (BTS 21R3A)

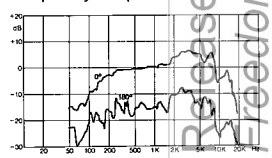


DM-521B

Polar Pattern



Frequency Response



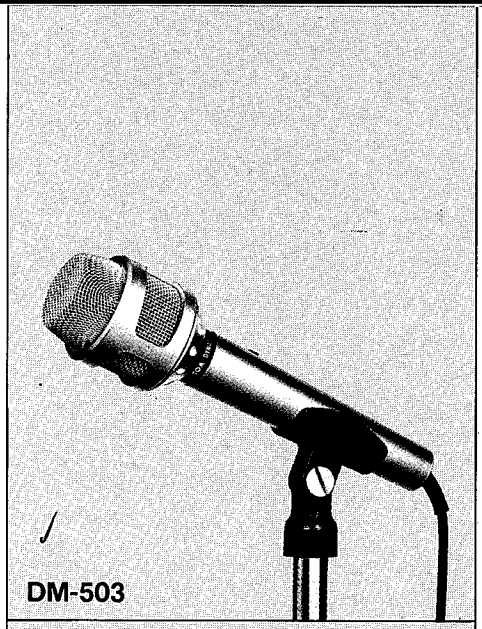
Hand-Held Mike

Features

Hand-held type with stand mounting available • Built-in on/off talk-switch • Background noise and feedback suppressed • 600 ohms output impedance at 1KHz • Low handling noise • Unidirectional directivity • Built-in wind/POP screen.

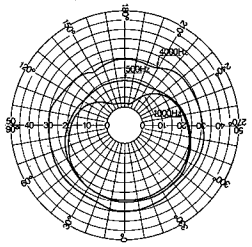
Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	100—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−72dB (0.25mV) ±3dB
Cables:	5m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	44Ø×175
Weight:	260 g

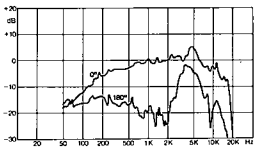


DM-503

Polar Pattern



Frequency Response



Hand-Held Unidirectional Mike

Features

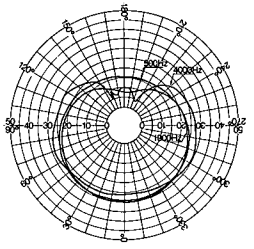
Hand-held type with swivel mount adaptor • Built-in on/off talk-switch • Smooth frequency response • 600 ohms output impedance at 1KHz • Low handling noise • Unidirectional directivity • Built-in wind/POP screen.

Specifications

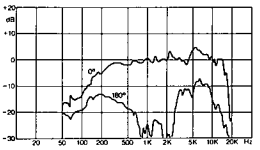
Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	100—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−72dB (0.25mV) ±3dB
Cables:	10m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	32Ø×170
Weight:	395 g

DM-603

Polar Pattern



Frequency Response



Hand-Held Mike with Wind/POP Screen

Features

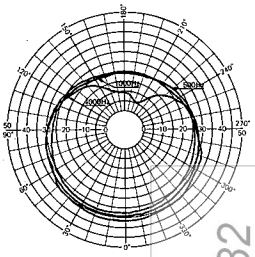
Hand-held mike fitted with built-in wind/POP screen • Swivel mount adaptor • Wide frequency response • Compact dimensions • Unidirectional directivity.

Specifications

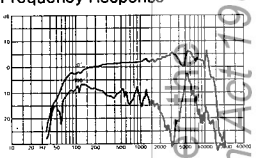
Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	250Ω Balanced
Frequency Range: (See frequency response corve)	100—14,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−79dB (0.11mV) ±3dB
Cables:	Shilded cable with single pole plug, 6m long
Switch:	Short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimension in mm:	54Ø×165
Weight:	540 g

DM-604

Polar Pattern



Frequency Response



Hand-Held Mike with Wind/POP Screen

Features

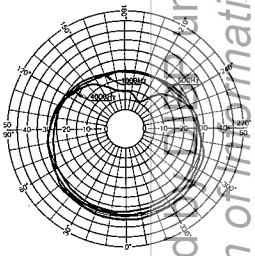
Hand-hld mike fitted with built-in wind/POP screen • Swivel mount adaptor • Wide frequency response • Compact dimensions • Unidirectional directivity

Specifications

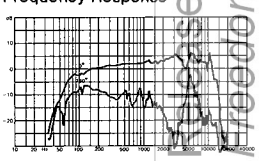
Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	250Ω Balanced
Frequency Range: (Sec frequency response corve)	100—14,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−79dB (0.11mV) ±3dB
Cables:	Required optional cable
Switch:	Short OFF type
Mounting:	W5/16" 18-thead swivel adaptor for stand mounting
Dimensions in mm:	54Ø×162
Weight:	260 g
Built-in Connector:	3-pin Cannon type (Equivalent: XLR-3-50S)
Required Mating Connector:	3-pin Cannon type (Equivalent: XLR-3-11C)

DM-605

Polar Pattern



Frequency Response



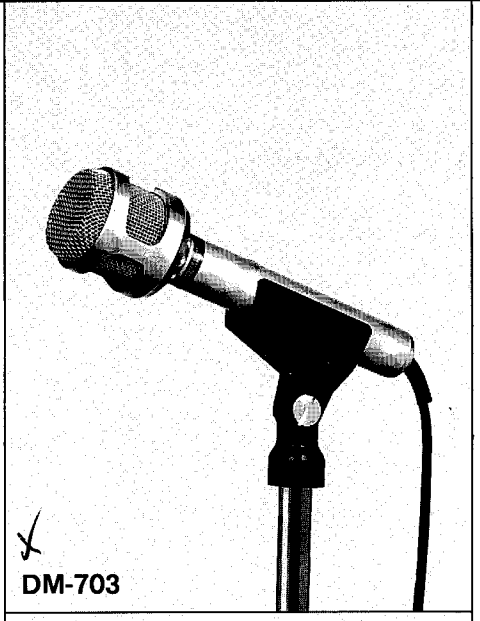
Hand-Held Unidirectional Mike

Features

Hand-Held type with swivel mount adaptor • Built-in on/off talk-switch • Smooth frequency response • 600 ohms output impedance at 1KHz • Low handling noise • Unidirectional directivity • Built-in wind/POP screen.

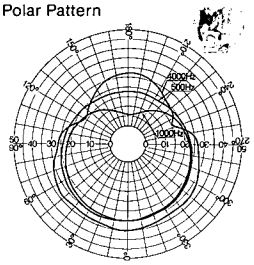
Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	100—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−72dB (0.25mV) ±3dB
Cables:	10m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	42Ø×156.5
Weight:	410 g

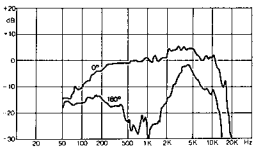


DM-703

Polar Pattern



Frequency Response



Hand-Held Mike with Extra Switch Contact

Features

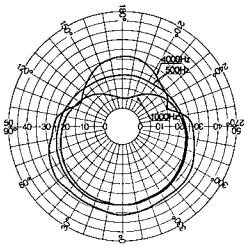
Hand-held mike with extra switch contact included for priority function or remote control • Swivel mount adaptor • Built-in on/off talk-switch • Smooth frequency response • Low handling noise • Built-in wind/POP screen.

Specifications

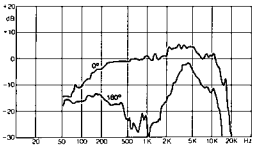
Type:	Hand-held type dynamic microphone with extra switch contact
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Balanced
Frequency Range: (See frequency response corve)	100—8,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−72dB (0.25mV) ±3dB
Cables:	5m long, 4-conductor (Twin-core shielded and extra two-conductor) cable with 5-pin DIN plug
Switch:	Short OFF type talk-switch with open OFF type extra switch contact
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	42Ø×156.5
Weight:	280 g

DM-703D

Polar Pattern



Frequency Response



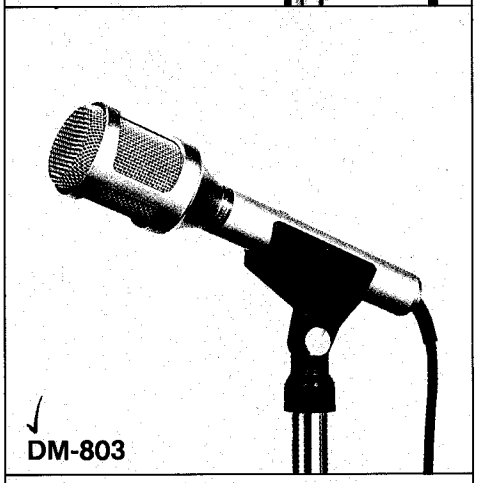
Hand-Held Mike with Wind Screen

Features

Hand-held mike fitted with wind screen • Swivel mount adaptor • Built-in on/off talk-switch • Smooth frequency response • Low handling noise • Background noise and feedback suppressed.

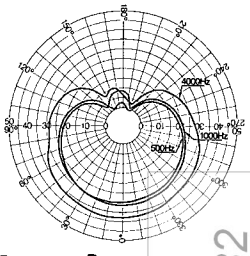
Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	100—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−76dB (0.16mV) ±3dB
Cables:	10m single-core shielded cable with phone plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	40Ø×178
Weight:	470 g

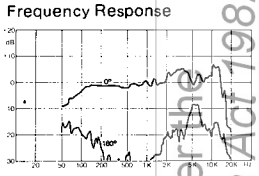


DM-803

Polar Pattern



Frequency Response



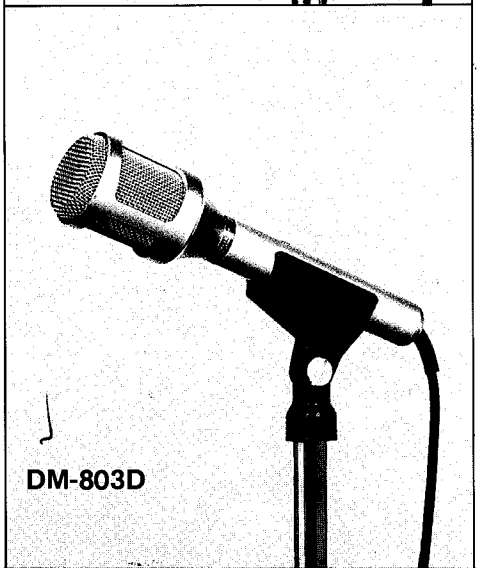
Hand-Held Mike with Balanced Output

Features

Hand-Held mike with balanced output and DIN plug • Swivel mount adaptor • Built-in on/off talk-switch • Smooth frequency response • Low handling noise • Unidirectional directivity • Built-in wind/POP screen.

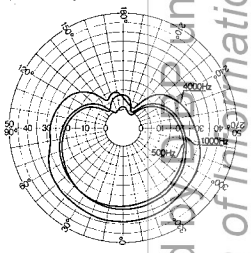
Specifications

Type:	Hand-held type dynamic microphone with balanced output
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Balanced
Frequency Range: (See frequency response corve)	100—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−76dB (0.16mV) ±3dB
Cables:	10m twin-core shielded cable with 5-pin DIN plug
Switch:	Short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	40Ø×178
Weight:	480 g

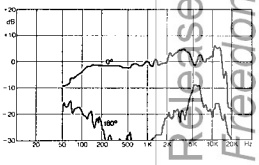


DM-803D

Polar Pattern



Frequency Response



Hand-Held Mike with Wind/POP Screen

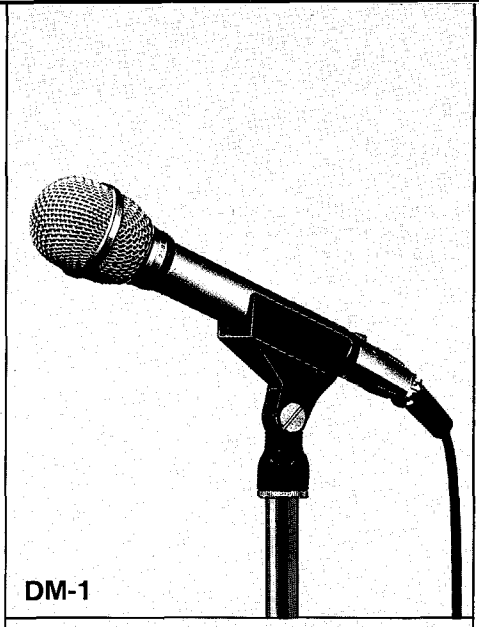
Features

Hand-Held mike fitted with built-in wind/POP screen and hum-cancelling coil • Swivel mount adaptor • Wide frequency response • Compact dimensions • Unidirectional directivity.

Specifications

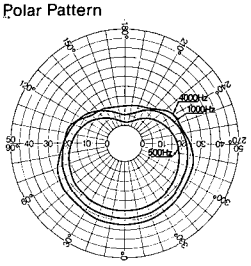
Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	250Ω Balanced
Frequency Range: (See frequency response corve)	100—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−82dB (0.08mV) ±3dB
Cables:	Required optional cable

Mounting:	W5/16" 18-thread/ W5/8" 27-thread swivel adaptor for stand mounting
Dimensions in mm:	40Ø×159
Weight:	210 g
Built-in Connector:	3-pin Cannon type (Equivalent: XLR-3-50S)
Required Mating Connector:	3-pin Cannon type (Equivalent: XLR-3-11C)

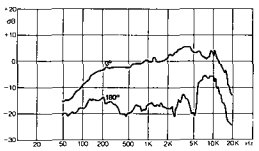


DM-1

Polar Pattern



Frequency Response



Hand-Held Mike with Wind/POP Screen

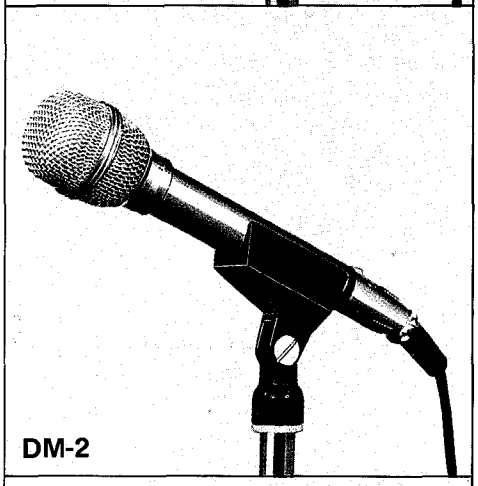
Features

Hand-held mike fitted with built-in wind/POP screen • Swivel mount adaptor • Wide frequency response • Compact dimensions • Unidirectional directivity.

Specifications

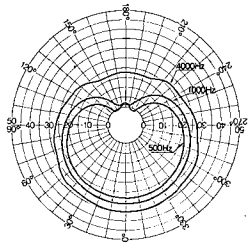
Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	250Ω Balanced
Frequency Range: (See frequency response corve)	100—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−81dB (0.09mV) ±3dB
Cables:	Required optional cable

Mounting:	W5/16" 18-thread / W5/8" 27-thread swivel adaptor for stand mounting
Dimensions in mm:	40Ø×159
Weight:	210 g
Built-in Connector:	3-pin Cannon type (equivalent: XLR-3-50S)
Required Mating Connector:	3-pin Cannon type (Equivalent: XLR-3-11C)

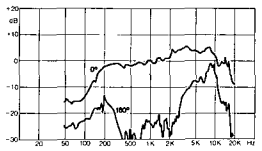


DM-2

Polar Pattern



Frequency Response



Hand-Held Mike with Wind/POP Screen

Features

Hand-held mike fitted with built-in wind/POP screen • Swivel mount adaptor • Wind frequency response • Compact dimensions • Unidirectional directivity.

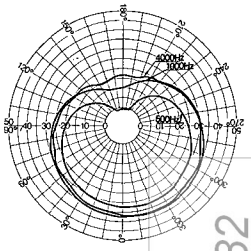
Specifications

Type:	Hand-held type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	250Ω Balanced
Frequency Range: (See frequency response corve)	100—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−76dB (0.16mV) ±3dB
Cables:	Required optional cable

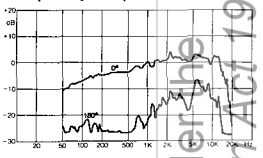
Mounting:	W5/16" 18-thread/ W5/8" 27-thread swivel adaptor for stand mounting
Dimensions in mm:	49Ø×148
Weight:	230 g
Built-in Connector:	3-pin Cannon type (Equivalent: XLR-3-50S)
Required Mating Connector:	3-pin Cannon type (Equivalent: XLR-3-11C)

DM-3

Polar Pattern



Frequency Response



Hand-Held Electret Condenser Mike

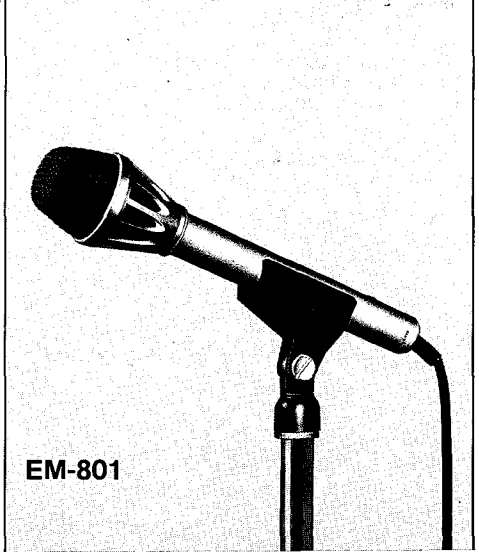
Features

Hand-held electret condenser mike fitted with built-in wind/POP screen • Swivel mount adaptor • Built-in two-step on/off talk-switch • Wide frequency response • Compact dimensions • Long life battery operation.

Specifications

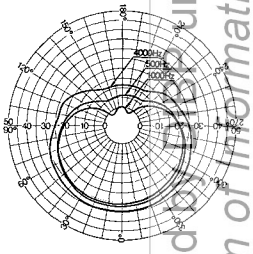
Type:	Hand-held type electret condenser microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	100—13,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−71dB (0.28mV) ±3dB
Cables:	5m single-core shielded cable with phone plug

Switch:	Two steps ON/OFF switch Battery—open OFF type Output—short OFF type
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	44Ø×207
Weight:	290 g (Without battery)
Battery:	1pc. of size "AA" (R6 or UM-3) flashlight battery (1.5V)
Battery Life:	More than 4,000 hours

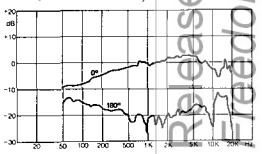


EM-801

Polar Pattern



Frequency Response



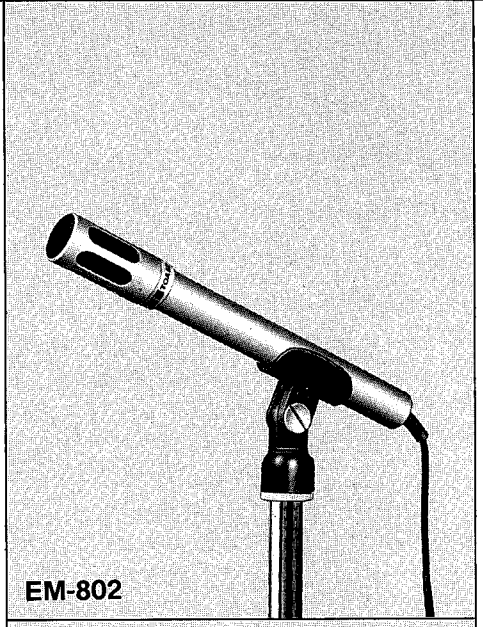
Hand-Held Electret Condenser Mike

Features

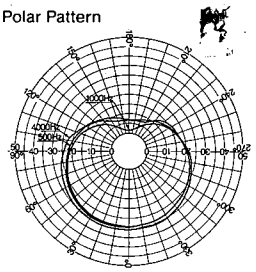
Hand-held electret condenser mike fitted with built-in wind/POP screen • Swivel mount adaptor • Wide fequency response • Compact dimensions • Long life battery operation.

Specifications

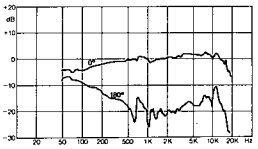
Type:	Hand-held type electret condenser microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Rang: (See frequency response corve)	100—13,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−73dB (0.22mV) ±3dB
Cables:	5m single-core shielded cable wth phone plug
Mounting:	W5/16" 18-thread swivel adaptor for stand mounting
Dimensions in mm:	20Ø×175
Weight:	180 g (without battery)
Battery:	1pc. of size "AA" (R6 or UM-3) flashlight battery (1.5V)
Battery Life:	More than 5,000 hours



Polar Pattern



Frequency Response



Paging Microphones

Desk-Top Mike

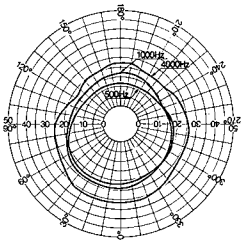
Features

Desk-top mike with press-to-talk switch fitted with locking lever • Low handling noise • 600 ohms output impedance at 1KHz • Unidirectional directivity.

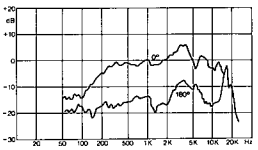
Specifications

Type:	Desk-top type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	600Ω Unbalanced
Frequency Range: (See frequency response corve)	200—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−76dB (0.16mV) ±3dB
Cables:	2m single-core shielded cable with phone plug
Switch:	Short OFF type switch with locking lever
Mounting:	(Desk-top type)
Dimensions in mm:	210×80×140
Weight:	530 g.

Polar Pattern



Frequency Response



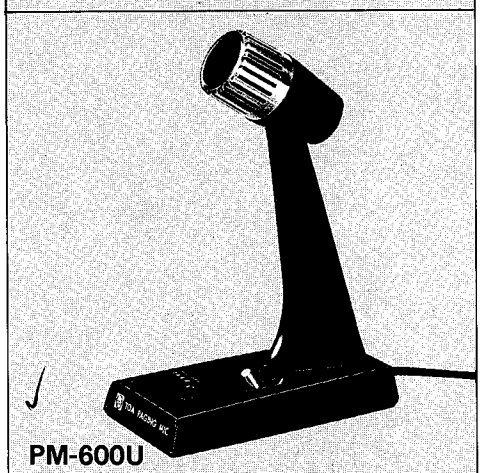
Desk-Top Mike

Features

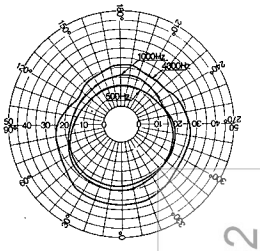
Desk-top mike with press-to-talk switch fitted with locking lever • Low handling noise • 200 ohms output impedance at 1KHz • Unidirectional directivity • Extra switch contact provided.

Specifications

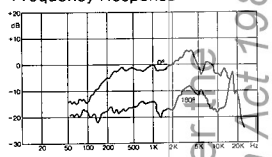
Type:	Desk-top type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	200Ω Balanced
Frequency Range: (See frequency response corve)	200—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−83dB (0.07mV) ±3dB
Cables:	4-conductor cable (Including twin-core shielded) without plug 2m long
Switch:	Short OFF type press-to-talk switch with open OFF type extra switch contact, locking lever included
Mounting:	(Desk-top type)
Dimensions in mm:	210×80×140
Weight:	550 g
Extra Contact Capacity:	Max. 150mA at 24V DC



Polar Pattern



Frequency Response



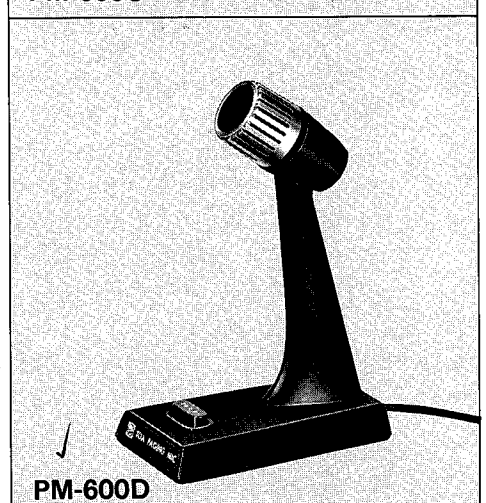
Desk-Top Mike

Features

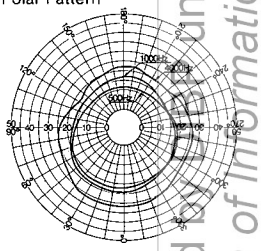
Desk-top mike with built-in press-to-talk switch • Extra switch contact provided • Low handling noise • 200 ohms output impedance at 1KHz • Unidirectional directivity.

Specifications

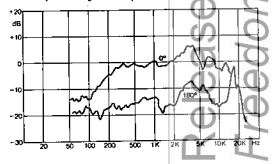
Type:	Desk-top type dynamic microphone
Polar Pattern:	Cardioid (Unidirectional)
Output Impedance at 1KHz:	200Ω Balanced
Frequency Range: (See frequency response corve)	200—10,000Hz
Output Level at 1KHz: (0dB=1V/μ bar)	−83dB (0.07mV) ±3dB
Cables:	4-conductor (including twin-core shield) cable with 5-pin DIN plug, 2m long
Switch:	Short OFF type press-to-talk switch with open OFF type extra switch contact
Mounting:	(Desk-top type)
Dimensions in mm:	210×80×140
Weight:	550 g
Extra Contact Capacity:	Max. 150mA at 24V DC



Polar Pattern



Frequency Response



Remote Microphones

Remote Mike with Pre-Amplifier

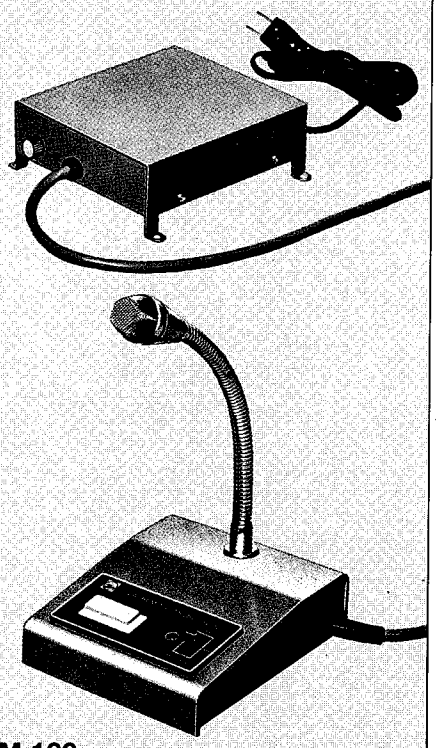
Features

Remote electret condenser mike with pre-amplifier • Mike section separate from amplifier section • Wind screen provided • 600 ohms balanced output impedance at 1KHz • Unidirectional directivity.

Specifications

Type:	Remote microphone with pre-amplifier
Microphone Type:	Electret condenser microphone
Microphone Polar Pattern:	Cardioid (Unidirectional)
Microphone Sensitivity:	−74dB SPL (0dB= 0.0002μ bar) for 1V output
Preamp. Output Impedance:	Balanced 600Ω
Preamp. Output Level:	0dB (1V) at no load
Preamp. Distortion:	2%, 50—20,000Hz at a 0.2V output and 600Ω load (See Fig. 1)
Frequency Response: (See Fig. 1 & 2)	30—6,000Hz ±3dB without microphone 50—20,000Hz ±10dB with microphone at 5cm
Noise Level:	−70dB (0.32mV) at rated output
Switchs:	1 Output ON/OFF switch with extra remote control contact 1 Chime remote switch for external chime

Remote Control Capacity:	Extra remote control; 300mA at 30V DC Chime remote switch; 100mA at 12V DC
Power Supply:	100—120V/200—240V selectable, 50/60Hz
Power Concumption:	0.6W
Dimensions:	
Microphone Base;	120(W)×45(H)×140(D)mm
Gooseneck Length;	230mm
Amplifier Box;	140(W)×50(H)×150(D)mm
Weight:	1.9 Kg
Remarks:	The remote microphone is classified into three different types according to the pre-set AC voltage, power supply cord and it's plug as table-1. Please specify the type when ordering this microphone.



RM-100

Frequency Response

Fig-1 Preamplifier

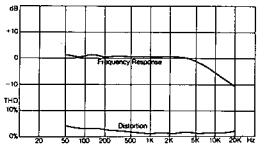


Fig-2 Microphone

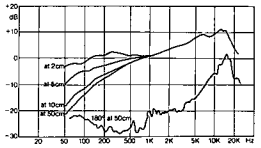


Table-1

Basic model	Classifications		
	ER type	US type	AW type
RM-100	RM-100 ER	RM-100 US	RM-100 AW
Specifications			
Pre-set voltage	220—240V	110—120V	220—240V
Switchable voltage	110—120V	220—240V	110—120V
Power supply cord	3P CEE type	3P SVT type	3P CEE type
Plug	Without plug	3P UL type	3P SAA type

Remote Mike with Pre-Amplifier and 2-Tone Chime

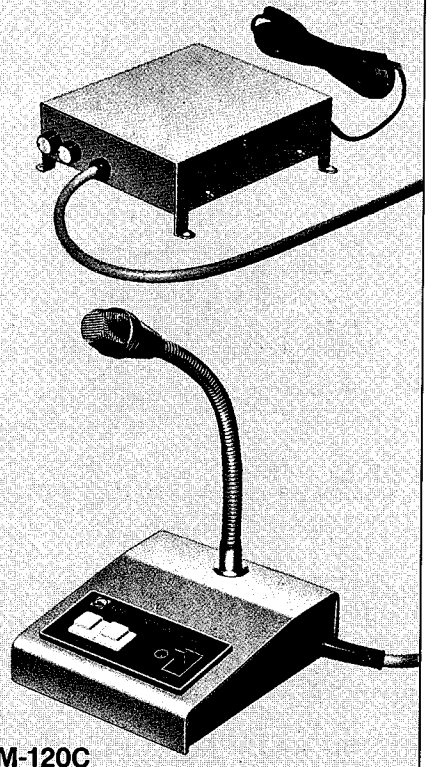
Features

Remote electret condenser mike with pre-amplifier • 2-tone chime built-in • Mike section separate form pre-amplifier section • Wind screen provided • 600 ohms balanced output impedance at 1KHz.

Specifications

Type:	Remote microphone with 2-tone chime and pre-amplifier
Microphone Type:	Electret Condenser microphone
Microphone Polar Pattern:	Cardioid (Unidirectional)
Microphone Sensitivity:	−74dB SPL (0dB= 0.0002μ bar) for 1V output
Preamp. Output Impedance:	Balanced 600Ω
Preamp. Output Level:	0dB= (1V) at no load
Preamp. Distortion:	2%, 50—20,000Hz at a 0.2V output and 600Ω load (See Fig. 1)
Frequency Response: (See Fig. 1 & 2)	30—6,000Hz ±3dB without microphone 50—20,000Hz ±10dB with microphone at 5cm
Noise Level:	−60dB (1mV) at rated output
Chime Tones:	2 indipendent tones (440Hz and 659Hz ±5%)

Switchs:	1 Output ON/OFF switch with extra remote control contact 2 Chime switch for internal chime
Remote Control Capacity:	300mA at 30V DC
Power Supply:	100—120V/200—240V selectable, 50/60Hz
Power Consumption:	0.8W
Dimensions:	
Microphone Base;	120(W)×45(W)×140(D)mm
Gooseneck Length;	230mm
Amplifier Box;	140(W)×50(H)×150(D)mm
Weight:	2.0 Kg
Remarks:	The remote microphone is classified into three different types according to the pre-set AC voltage, power supply cord and it's plug as table-2. Please specify the type when ordering this microphone.



RM-120C

Frequency Response

Fig-1 Preamplifier

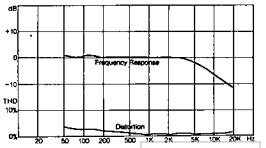


Fig-2 Microphone

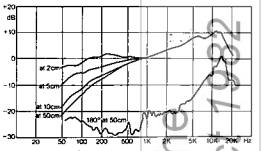


Table- 2

Basic model	Classifications		
	ER type	US type	AW type
RM-120C	RM-120C ER	RM-120C US	RM-120C AW
Specifications			
Pre-set voltage	220—240V	110—120V	220—240V
Switchable voltage	110—120V	220—240V	110—120V
Power supply cord	3P CEE type	3P SVT type	3P CEE type
Plug	Without plug	3P UL type	3P SAA type

Remote Mike with Pre-amplifier and 4-Tone Chime

Features

Remote electret condenser mike with pre-amplifier • 4-tone chime built-in • Mike section separate from pre-amplifier section • Wind screen provided • 600 ohms balanced output impedance at 1KHz.

Specifications

Type:	Remote microphone with 4-tone chime and pre-amplifier
Microphone Type:	Electret condenser microphone
Microphone Polar Pattern:	Cardioid (Unidirectional)
Microphone Sensitivity:	−74dB SPL (0dB=0.0002μ bar) for 1V output
Preamp. Output Impedance:	Balanced 600Ω
Preamp. Output Level:	0dB (1V) at no load
Preamp. Disortion:	2%, 50—20,000Hz at a 0.2V output and 600Ω load (See Fig. 1)
Frequency Response: (See Fig. 1 & 2)	30—6,000Hz ±3dB without microphone 50—20,000Hz ±10dB with microphone at 5cm
Noise Level:	−65dB (0.56mV) at rated output
Chime Tones:	4 continuous tones (440, 554, 659 and 880Hz ±5%)

Switchs:	1 output ON/OFF switch with extra remote control contact 1 chime switch for internal chime
Remote Control Capacity:	300mA at 30V DC
Power Supply:	100—120V/200—240V selectable, 50/60Hz
Power Consumption:	1.1W
Dimensions: Microphone Base; Gooseneck Length; Amplifier Box;	 120(W)×45(H)×140(D)mm 230mm 140(W)×50(H)×150(D)mm
Weight:	2.1 Kg
Remarks:	The remote microphone is classified into three different types according to the pre-set AC voltage, power supply cord and it's plug as table-3. Please specify the type when ordering this microphone.

RM-140C

Frequency Response

Fig-1 Preamplifier

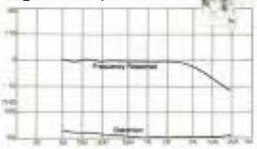


Fig-2 Microphone

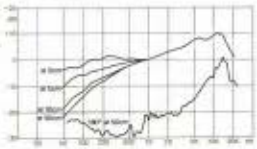


Table-3

Basic model	Classifications		
	ER type	US type	AW type
RM-140C	RM-140C ER	RM-140C US	RM-140C AW
Specifications			
Pre-set voltage	220—240V	110—120V	220—240V
Switchable voltage	110—120V	220—240V	110—120V
Power supply cord	3P CEE type	3P SVT type	3P CEE type
Plug	Without plug	3P UL type	3P SAA type

Accessories

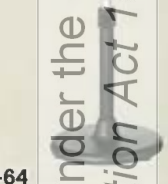
Desk Stands

ST-10
One section: Height: 13cm

ST-40
Two sections: Max. height: 40cm

ST-62
One section: Height: 10cm

ST-63
One section: Hieght: 14.5cm



ST-64
165mmØ round base
Height: 22.5~39cm

Extension Microphone Cables

MC-105
Unbalanced type: 5m long
Phone plug to Phone jack

YM-101
Balanced type: 10m long
Cannon plug to Cannon plug

YM-102
Unbalanced type: 10m long
Phone plug to Cannon plug

YM-103
Balanced type: 10m long
Phone plug to Cannon plug

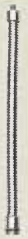
YM-104
Unbalanced type: 10m long
Phone plug to Phone jack

Microphone Shock Mount

YM-301
Length: 9.5cm

Flexible Goosenecks

ST-506
Length: 15cm



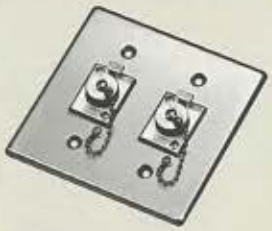
ST-507
Length: 30cm

Input Connectors

YA-11P
Balanced phone jack

YA-21P
Balanced phone jack

YA-31C
Cannon XLR-3-31 or Equivalent



YA-32C
Cannon XLR-3-31 or Equivalent

Wall Mounting Box

YS-11
For YA-11P, YA-21P, YA-31C

Floor Stands

ST-206
Two sections: Max. height: 160cm

BM-207
Boom Arm only
Length: 83.5cm

ST-207
Tripot base
Hiight: 94~152cm

ST-208
270mmØ round base
Height: 85~150cm

Microphone Holder

YM-106
W5/16" 18-thread/W3/8" 27-thread swivel adaptor

Matching Transformers

1101
Microphone Output (Unbal.) 600Ω
Amplifier Input (Unbal.) 50 KΩ

1107
Microphone Output (Bal.) 600Ω
Amplifier Input (Unbal.) 50 KΩ

Connector

XLR-3-13 (C3F)

Microphone Hanger

2203
For DM-221L

Stand Adaptors

YM-122

YM-123

YM-124

RC-11 2m long/**RC-12** 5m long
RC-13 10m long/**RC-14** 20m long
Balanced type:
Cannon plug to Cannon plug

RC-21 2m long/**RC-22** 5m long
RC-23 10m long/**RC-24** 20m long
Balanced type:
Phone plug to Cannon Connector

YM-120
Balanced type: 10m long
Cannon plug to DIN plug

TOA ELECTRIC CO., LTD.

KOBE, JAPAN

Printed in Japan