

PROFESSIONAL MICROPHONES SWEDEN



Imported by:

Cara International, Ltd.

FEATURES and APPLICATIONS

P.O. Box 9339 Marina Del Rey, CA 90291 (213) 821-7898

While Milab manufactures some 30 models of microphones, including several special items for the military, the company during its more than 40 years experience in the development and design of acoustic/electronic products, has recently become more specialized in producing some of the highest quality microphones that the state of the art will permit.

Milabs design philosophy on all of its products is to render the most "transparent" natural live sound that can be achieved within the limitations which the product application dictates. We do not believe in falsely "coloring" the sound...no artificial "enhancement" in the microphone is allowed, leaving that to the mixing console in the final mix.

Because of this puristic philosophy, all Milab microphones exhibit a remarkable clarity and purity of sound which is as free of distortion, free of proximity effect, free of off-axis coloring as the laws of physics allow.

To fully appreciate the fine qualities of MILAB microphones, they must be listened to, preferrably in a studio environment with good quality live instruments. Comparison listening tests, even with the standard voice vowel, plosive and sibilant sounds give an excellent indication of their superior performance. But, a live acoustic instrument will usually be startling to the first time listener. For some it is the first time they will have heard the instrument as it really is. Try it! Then, and only then will you realize what a true value the Milab Professional microphones are.

Naturally, placement of the microphone is vital, and careful "one-eared" listening to the sound source will give important clues as to where to place the microphone, for it usually hears more and better than the adult human ear.

Listed below are some brief application and comparison notes on the most popular of our Milab professional microphones.

F-69 CARDIOID DYNAMIC. This is a rugged high output microphone which has very little proximity effect and is excellent for all around use, and particularly for hand held vocals. It compares to the Sennheiser 441, but is much lighter in weight, cleaner in sound, but has slightly more hand noise which is not a problem with professional vocalists.

CL-4AD/BD ELECTRET LAVALIER. This is just about the best lavalier microphone available. Rugged, smooth tailored response for chest placement, high output level, quiet. Try placing it in an acoustic guitar and you will be amazed at the natural pure sound.

MILAB PROFESSIONAL MICROPHONES FEATURES

DC-63 VARIABLE CONDENSER. This is our largest selling of all Milab models. It has 11 combinations of pattern control plus 2 positions of pad and 2 positions of low frequency roll-off (44-combinations of pattern, pad and lo-cut in all). Pattern and Pad selection is by means of highly reliable ring switches and a 6-position potentiometer placed conveniently on the body of the microphone. The large rectangular dual membrane condenser capsule is unique and is approximately one-inch in surface area which provides a purity of sound that must be experienced. Compared to the AKG 414, the DC-63 is smoother in response without the "edginess" of the 414. The DC-63 is usually compared to the Neuman U-87 where the transparency of sound is most noticeable. It has found uses in all applications from very close vocal or drum pick-up, to distant placement where the ambiance of the environment is desired.

DC-73 CARDIOID CONDENSER. Here is a superb high level, close working all around microphone. Great for hand held vocals because of the capsule isolation and the built-in electronic pop-filter. It has a large diameter circular condenser element, and the shock resistant steel mesh grill may be removed easily for cleaning. We have the DC-73 in use over drums, on the "hot" brass, for screaming vocals in both the studio and live PA. It has superior front to back ratio with smooth on-off axis response, usually providing 2 to 3 dB additional gain before feedback over most other cardioid condenser brands.

DC-96 CARDIOID CONDENSER. One of the smallest and finest sounding studio condenser microphones money can buy. This one has to be heard to be believed. It has no frills, no pad, no roll-off switch, and it does not get in the way of the performer. It unobtrusively gives a sound so rich, full and pure that you will wonder why you ever thought of using a U-47. The DC-96 employs the same type of rectangular capsule as the DC-63. The DC-96 is used overhead the drums (about 1" above the drum head. We do not recommend that placement), for vocals (with windscreen) and for medium distance pickup...anywhere natural sound is wanted, and a cardioid is needed.

TC-4V and TC-4V-S VARIABLE REMOTE CONTROLLLED CONDENSER. The TC-4V microphones provide the facility to remotely control pattern. They use the same unique rectangular condenser capsule as the DC-63, but are smaller in physical size. They may be used in the same applications as the DC-63 or DC-96.

VM-40/41 CONDENSER. (VM-40 OMNI-DIRECTIONAL & VM-41 CARDIOID): These two microphones share the same quality features of being very rugged and very small in size (11/16" x 4-3/8" long). Both have a built-in four position ring switch on the body to select 10 dB pad in either flat or high pass response. They provide superb performance overhead the drums, on brass, strings and on the acoustic guitar. The VM Series compare most favorably to the AKG 451, but have smoother response without the peaky sound of the 451. The inherent noise is very low, and off axis response smooth.

MILAB PROFESSIONAL MICROPHONES FEATURES

MILAB STEREO MICROPHONES - MSXY-8, XY-8. To serve the needs of the esoteric recording market, Milab offers a variety of very high quality stereo condenser microphones and microphone systems. The MSXY and XY-8 stereo microphones utilize the widely acclaimed rectuangular dual membrane condenser capsules and offer either remote variable pattern control or coincident cardioid operation. Self noise is extremely low being less than 22 dBA in the MSXY-8 and less than 18dBA for the XY-8. One capsule may be rotated through 180 degrees.

The XY-82 is a coincident cardioid and is the latest addition to the Milab stereo microphone line. It has very low self noise (16 dBA), has high signal output and employs a single membrane condenser element. One capsule may be rotated through 180 degrees.

POWER SUPPLIES - MIPOW is Milabs tradename for 48 volt phantom* type powering. There is, however, one important advantage of MIPOW and that is that the 48 volt power is blocked from the microphone output signal lines. This is imperative if one is using a mixing console whose microphone input is not transformer isolated. Note that electronically balanced microphone inputs simply cannot handle any DC voltage without going berserk. MIPOW eliminates this problem so that any Milab power supply will operate optimally with any type of balanced input.

Further, AKG and NEUMAN 48 volt power supplies do not provide enough current which is usually less than $0.5 \, \text{mA}$. Milab microphones require $0.8 \, \text{mA}$ current. So, if you use an external 48 volt power supply, you should use either the Milab 8320-S AC powered unit which has connections for two microphones, or the 7325-C battery unit for one microphone.

We have had no problems with 48 volt power supplies which are part of the mixing console as these types usually provide sufficient current to drive many dozens of microphones.

ACCESSORIES. All Milab microphones include the standard 5/8" x 27 TPI stand adaptor if applicable, however, no XLR signal cables are provided as these are readily available from many sources.

Shock mounts and windscreens are also included in the price of DC-63, DC-96 and with all microphone SYSTEMS. See product brochure for details of available accessories.

WARRANTY - All Milab products are warranted against defects in materials and workmanship for a period of one year from date of original purchase.

For further information, please contact your nearest Milab dealer or factory representative, or, write to Cara International Ltd., PO Box 9339, Marina del Rey, CA. 90291.

AUTHORIZED DEALER:

* TM - Gotham Audio Corp.





Imported and Distributed by: CARA INTERNATIONAL LTD., INC

P.O. BOX 9339, MARINA DEL REY, CA. 90291 Tel: (213) 821-7898

PRICE LIST - Effective 15 January 1981

MODEL	DESCRIPTION	SUGGESTED USER PRICE
		OSER PRICE
DYNAMIC M	CROPHONES	
D-44LS	Supercardioid	55.00
F-69	Studio Cardioid	260.00
HM-47	Lavalier, Omni	155.00
HM-49	Studio, Omni	235.00
ELECTRET I	MICROPHONES	
CL-4AD	Lavalier, Mipow 48v	286,00
CL-4BD	Lavalier, 15 v Batt.	295.00
PB-31	Desk, Omni, 15v Batt.	
PB-35	Desk, Omni, 15v Batt.	149.00
33	Dobn, omne, 15, 2000	
CONDENSER	MICROPHONES	
DC-20	Desk, Omni	288.00
DC-21	Desk, Cardioid	288.00
DC-63	Variable, 44-Comb.	* 995.00
DC-73	Cardioid, Vocal	355.00
DC-96	Cardioid	# 625.00
TC-4V	Rem. Variable, 120v	740.00
TC-4V-S	System w/PS/Remote	* 1295.00
VM-40	Omni w/Pad/Lo-cut	425.00
VM-41	Cardioid w/Pad/Lo-cut	425.00
MODEL	DESCRIPTION	SUGGESTED
		USER PRICE
		\$
STEREO MI	CROPHONES	
MSXY-8	Variable/Rem/120vDC	1845.00
MSXY-8-S	Complete System	* 2495.00
XY-8	Variable/Rem/48vDC	1845.00
XY-8-S	Complete System	* 2295.00
XY-82	Coincident Cardioid	1495.00
XY-82-S	Complete System	* 1895.00

MILAB PROFESSIONAL MICROPHONES PRICE LIST

MODEL	22201121221	GGESTED ER PRICE
POWER SU	PPLIES	
5815	For MSXY & TC-4V	450.00
7325-C	Battery/For all 48v	165.00
8320-S	120 vAC, For all 48v	295.00
ACCESSOR	TIES	
1910/x	Shock Mounts-Specify	52.50
1930/x	Stand Adaptors-Specify	13.00
4426	Mic Clip for CL-4	14.95
4436	Belt Clip for CL-4	14.00
4710	Lavalier Adaptor/HM-47	12.00

Windscreen for CL-4

Windscreen for XY82

Windscreen for MSXY/XY

Windscreen for DC73/F69

Windscreen for DC63/96

Windscreen for VM-40/41 15.00

12.00

41.00

19.00

25.00

19.00

NOTES:

V-4

V-8

V-21

V-73

V-82 V-96

- Windscreens and Shock Mounts are supplied at no extra charge with all DC63, DC96 and Complete Mic systems.
- Please place orders with your nearest Authorized Milab Dealer, or directly with Cara International Ltd., Inc.
- 3. All Milab products are guaranteed to be free of defects in materials and workmanship for a period of one-year from date of original purchase from Authorized Dealer.

AUDIO

mics + accessories



MILAB PROFESSIONAL MICROPHONES

Since 1941, Pearl Microphone
Laboratories of Sweden has been one of
the world's leading manufacturers of
professional quality microphones.
Because the years during World War II
greatly reduced the availability of
materials, Pearl from inception became a
vertically integrated company producing
every component part of their products;
even to growing their own crystals,
hence the name—Pearl. With this total
control of the manufacturing process,
Pearl was able to establish and maintain

uniform high quality standards throughout their broad product line.

Today the tradename is MILAB PRO-FESSIONAL MICHROPHONES, with the trademark MILAB. And long tradition of total control is immediately apparent in the quality of sound and in the design of each microphone. The essence of superb Swedish craftsmanship is exemplified in the DC-63 Variable pattern condenser microphone which employes a unique rectangular dual menbrane capsule together with a dual FET preamplifier of advanced design.



F-69 DYNAMIC CARDIOID MICROPHONE Description:

A studio quality dynamic microphone which is very rugged, has high output level and is light in weight. Frequency response is very smooth both on and off axis with virtually no proximity effect making the F-69 unusually immune to feedback. A steel mesh impact resistant grille and XLR connector are incorporated. A 5/8" x 27 TPI stand adaptor is supplied.

Applications:

Hand held vocals, brass, percussion, solo acoustic and amplified instruments. For close to medium distance pickups in studio, live performance and broadcast.

CL-4 ELECTRET LAVALIER MICROPHONE Description:

The CL-4 is a pre-polarized omnidirectional miniature electret condenser microphone system. The CL-4 BD is selfpowered with a standard 15 volt battery which provides up to 1,000 hours of life. (The CL-4 AD is available for the Symsi 24/48 volt powering system.) Because of its very small size (11 x 19mm) the CL-4 is primarily used as a lapel or tie tack microphone. The battery is automatically turned off when the signal cable is removed from the XLR connector. A FET preamplifier is used in both models. The complete system includes the mike head and cable assembly, battery and battery pack (CL-4 BD only), tie clip and belt clip. Battery type: 1 x15V. Berec B 154, Burgess Y-10, Eveready 504, Mallory M 504, Tudor 15 T1.

Applications:

Television and interview recording, or wherever a miniature omni-directional microphone is required.

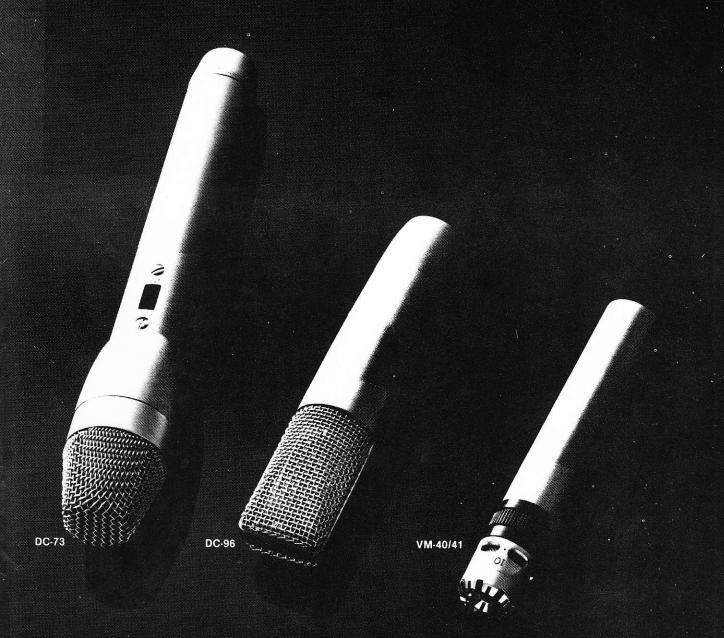
DC-63 VARIABLE PATTERN CONDENSER MICROPHONE

Description:

Variable pattern condenser microphone for the Symsi 24/48 volt powering system. Pick-up pattern is selected by a combination of two ring switches and a potentiometer on the microphone body which provide 44 distinct combinations from cardioid, omni, bi-directional and in-between settings, and with selection of 12 dB pad in flat or highpass response. The DC-63 features a unique rectangular dual membrane condenser capsule and dual FET pre amplifier within the microphone body. It is fitted with XLR 3-pin male connector and a 5/8" x 27 TPI stand adaptor is supplied.

Applications:

All high quality recording and live performance of instrumental, vocal and choir pickup. Ideal for close to distant pickup wherever a full natural sound is desired.



DC-73 CARDIOID CONDENSER MICROPHONE Description:

Cardioid condenser microphone for the Symsi 24/48 volt powering system. Features an integral electrical "pop" filter which has no effect on high frequency response, and a built-in shock resistant elastic suspension to reduce hand noise to a minimum. A large diameter circular condenser element provides full natural sound in highly rugged package with a steel mesh protective grille. A two position slide switch on the case permits selection of either flat response or 100 Hz high-pass for vocal work. The DC-73 is fitted with a 3-pin male XLR connector at the base, and is supplied with a 5/8" x 27 TPI stand adaptor.

Applications:

Excellent hand-held vocal microphone. Also for brass or percussion where cardioid pattern is demanded. Studio, broadcast and especially recommended for live performance.

DC-96 CARDIOID CONDENSER MICROPHONE Description:

The DC-96 is a cardioid condenser microphone for the Symsi 24/48 volt powering system. The DC-96 employs the unique rectangular dual membrane capsule similar to the DC-63 and MSXY-8 Stereo microphones with FET preamplifier. Features: very low noise, high output level and extremely smooth frequency response both on and off-axis. The small size of the DC-96 further enhances its use where larger mikes become obtrusive. It is fitted with a 3-pin male XLR connector, and is supplied with 5/8" x 27 TPI stand adaptor.

Applications:

For all live performances and studio work where a high quality cardioid microphone pickup is required; for both close and distant pickup.

VM-40 (Omni) and VM-41 (Cardioid) CONDENSER MICROPHONES Description:

The VM-40 (Omni-directional) and VM-41 (Cardioid) condenser microphones both feature a 1.5 cm diameter circular condenser element. Small in physical size and very rugged, they operate on the Symsi 24/48 volt powering system. A four position ring switch is incorporated to permit selection of either full range frequency response or roll off from 1,000 Hz with 12 dB down at 50 Hz. For each position there is a 10 dB pad. The VM Series are fitted with a male XLR connector at the base, and a 5/8" x 27 TPI stand adaptor is supplied.

Applications:

All high quality studio and broadcast work, but particularly impressive for close range brass, strings, percussion, and close to medium distance orchestral pickup.



MSXY-8 STEREO CONDENSER MICROPHONE Description:

The MSXY-8 is essentially two variable pattern condenser microphones built into one body. Two independent dual FET preamplifiers are encased. Control of the pickup pattern is individually accomplished for each capsule by a remote control located on the AC power supply and is variable from cardioid to omni and bi-directional patterns, and in-between settings. One capsule may be turned 180° permitting greater flexibility for both mono and stereo pickups. The MSXY-8 employs the famous dual membrane rectangular condenser capsules as used in the DC-63.

XY-82

This model is smaller in size with both capsules fixed cardioids and the microphone needs only a working voltage of 48 volts. Each channel is separately powered with the MIPOW 24/48 volt powering system.

Connector in the microphone: CANNON XLR 5-12.

World Wide Marketing: CREATIVE TRADE, CTAB AB

Knutsgatan 6, S-265 00, Astorp, Sweden, Tel: 4642/515 21

U.S.A.: CARA INTERNATIONAL, LTD.

P.O. Box 9339, Marina del Rey, CA 90291, Tel: (213) 821-7898

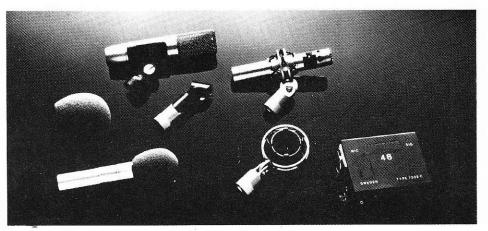
Australia:

WERNER ELECTRONIC IND. PTY. LTD. P.O. Box 98

Kilkenny, S.A. 5009 Tel: (08) 268-2766

United Kingdom: FUTURE FILM DEV.

36/33 Lexington Street London WIR 3HR Tel: (01) 437-1892



MILAB ACCESSORIES FOR MICROPHONES

WINDSCREENS

Made of special acoustiloy foam for maximum reduction of wind noise and plosive sounds with virtually no attentuation of high frequencies. Available in medium grey color, blue, red, green and yellow.

SHOCKPROOF STAND AND BOOM MOUNTS

Rugged elastic suspension holds each microphone securely while eliminating shock noise and rumble transmitted through the mike stand. Fitted with 5/8" x 27 TPI thread.

POWER SUPPLIES FOR MIPOW SYSTEM

Sturdy and attractive design, yet light weight and compact, MILAB power supplies,

are solid state and do not place DC on the signal lines thus avoiding potential damage to your mixer. The battery powered 7325-C provides balanced output through coupling capacitors and has an LED for battery condition indicator. Connectors are 3-pin XLR. Battery life: 50-100 hours intermittent operation. A filtering circuit is employed to eliminate battery flutter.

Model 7325-C (for one microphone) may use any 22-1/2 volt battery listed. Two are required: Berec B-122, Burgess U-15, Eveready 412, Mallory M-215, Tudor 22.5 A3, IEC 15F20. Size: 40X60X80 mm. Weight: 170 gr. Finish: Dark Grey, anodized.

Model 5815 for MSXY8 Stereo microphone (Included in MSXY8 System) AC power 110/220, with LEMO and XLR connectors. Size: 130X80X40 mm. Weight: 650 gr.

TABLE OF SPECIFICATIONS:

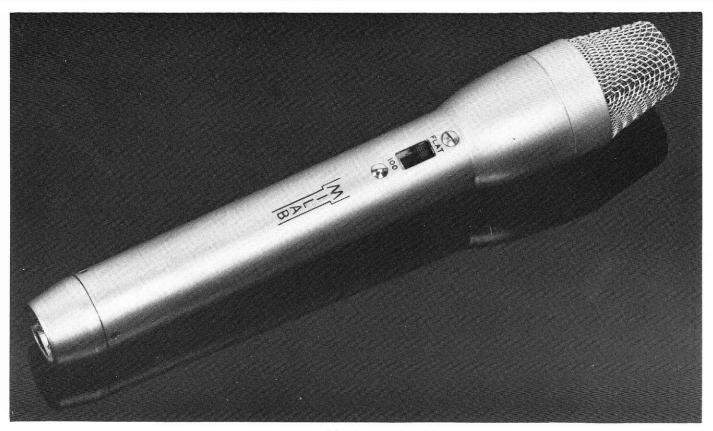
	CL-4AD & CL-4BD	DC-63	DC-73	DC-96	F-69	MSXY-8 & XY-82	VM-40 & VM-41
TYPE	ELECTRET LAVALIER	CONDENSER	CONDENSER	CONDENSER	DYNAMIC	CONDENSER (stereo)	CONDENSER
Directional Pattern	Omni-directional	Variable	Cardioid	Cardioid	Cardioid	MSXY-8 Variable XY-82 Cardioid Variable	VM-40 Omni- directional VM-41 Cardioid
Directivity Index	N/A	Cardioid A&B: 18-20 dB Bi-directional: 22-25 dB	14-18 dB	18-20 dB	10-15 dB	18-20 dB	12-15 dB (VM-41
Frequency Response	40-20,000 Hz	20-20,000 Hz	30-20,000 Hz	20-20,000 Hz	60-18.000 Hz	20-20.000 Hz	30-20,000 Hz
Sensitivity (over 200 ohms re. IV	- 44 dB/Pa)	Cardioid A: – 44 dB/Pa Card B/Bi/Omni: – 48 dB/Pa	– 46 dB/Pa	– 44 dB/Pa	– 54 dB/Pa	- 44 dB/Pa MSXY-8 - 34 dB/Pa XY-82	– 48 dB/Pa
Output (over 200 ohms re. IV	6.3 mV/Pa)	Cardioid A: 6.3 mV/Pa Card B/Bi/Omni: 4.0 mV/Pa	5.0 mV/Pa	6.3 mV/Pa	2.0 mV/Pa	6.3 mV/Pa MSXY-8 20 mV/Pa XY-82	4 0 mV/Pa
Self noise (re. 2 x 10° Pa, A-weighted)	< 30 dB	Cardioid A: 21 dB Card B/Bi/Omni: 24 dB	26 dB	19 dB	N/A	23 dB MSXY-8 17 dB XY-82	25 dB
Dynamic Range	100 dB	Cardioid A: 126 dB Card B/Bi/Omni: 130 dB	124 dB	122 dB	N/A	124 dB MSXY-8 133 dB XY-82	124 dB
Output Impedance (balanced)	200 ohms	200 ohms	200 ohms	200 ohms	200 ohms	200 ohms	200 ohms
Operating Temperature	- 10 to + 50 °C	- 20 to +50 °C	- 20 to +50°C	- 20 to + 50 °C	N/A	- 20 to + 50 °C	- 20 to + 50 °C
Operating Voltage	AD 24 /48V BD-15 volt battery (1)	+6 +48 -24	+6 +48 -24	+ 6 + 48 - 24	N/A	120 V MSXY-8 24 to 52 V XY-82	+6 +48 -8
Current	350 µA	0.8 mA	0.8 mA	0.8 mA	N/A	1.2 mA	0.8 mA
Dimensions in millimeters	Mike-head: 11 x 19 Battery pack: 205 x 19	158 x 31	198 x 32 (front) 24 (handle)	125 x 27	195 x 32 (front) 24 (handle)	285 long, 33/24 dia- MSXY-8 165 long, 28 diam. XY-82	110 x 19
Weight in grams	Mike head: 35 Battery pack: 230	325	255	200	175	485/MSXY-8 270/XY-82	95
Finish	Satin Chrome	Satin Chrome	Satin Chrome	Satin Chrome	Satin Chrome	Satin Chrome	Satin Chrome
ACCESSORIES							
5/8" x 27" stand adaptor	N/A	Included	Included	Included	Included	Included	Included
Shock proof mount (optional)	N/A	1910/31	1910/24	1910/27	1910/24	Included	1910/18
Wind Screen (optional)	V-4	V-96	V-73	V-96	V-73	N/A MSXY-8 V-82 XY-82	V 21
Carrying Case (hard body, foam padded) (optional)	10CL4	1063	1073	1096	1073	1008 MSXY-8 1082 XY-82	1040/41

AUTHORIZED DEALER

Milab

Condenser microphone DC-73

Handheld cardioid condenser mike



Features:

The DC-73 is a versatile cardioid condenser microphone for operation on 48 volt MIPOW™ system. The circular condenser element is mechanically insolated from the case by a built in elastic shock resistant suspension, and an electronic "pop filter" is designed into the microphone. This is to reduce unwanted noise as well as mechanical noise — when hand held — and still maintaining full frequency range response. Very smooth on-off axis response with minimal proximity effect.

Description:

- Circular single membrane full condenser capsule.
- Dual FET pre-amplifier.
- Built-in shock resistant suspension reducing handling noise to a minimum.
- Two position slide switch for flat or 100 Hz high-pass response.
- Electronic "pop-filter" built in.
- Steel mesh protective grill.
- Light weight and balanced for hand use.
- 3-pin XLR male connector at the base.

Applications:

For all hand-held vocal use and pick-up in high sound pressure levels of close to medium distance. The wide frequency range with the inherent shock resistant characteristics make the DC-73 ideal for live sound reinforcement systems where strict cardioid pattern is required whether in studio or outdoor applications. Excellent on close

IECIIII
Cardioid
One single membrane full condenser capsule
14-16 dB
30–20.000 Hz
–42 dB/Pa
8.0 mV/Pa
300 mV
146 dB
24 dB

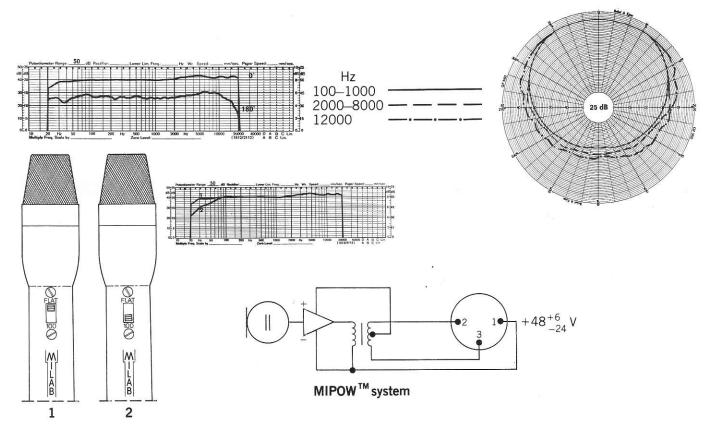
122 dB
70 dB/Pa
200 ohms
MIPOW™ system
24 to 54 volt (nominal +48 volt)
0.8 mA
Silicone rubber
XLR 3 pin
200 long 24/32 diam.
255
Satin Chrome

Accessories:

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A Windscreen B Stand adaptor C Shockmount

Accessories and description	Туре	Included	Optional
Microphone cable	3003 C	•	
Stand adaptor (5/8"x27 TPI)	1930/24	•	
Shockmount (5/8"x27 TPI)	1910/24	=	•
Windscreen (grey)	V-73	•	
Windscreen Colored (red, yellow, blue, green)	VR-73, VY-73 VB-73, VG-73		•
Mains power supply (110/220 VAC)	8320/S		•
Battery power supply	7325 C		•
Carrying case (mike only)	Case	000	•
Carrying case (complete)	CC-73		•
Cardboard box		•	



We reserve the right to alter specifications without notice.