FP11

The FP11 is a portable, 1-input, 1-output microphone-to-line level amplifier designed for field production applications including electronic news gathering (ENG), electronic field production (EFP), and on-location film production. It is ideal for use where long lines must be driven at higher than microphone or aux levels. It can also be used to interface between equipment requiring different signal levels.

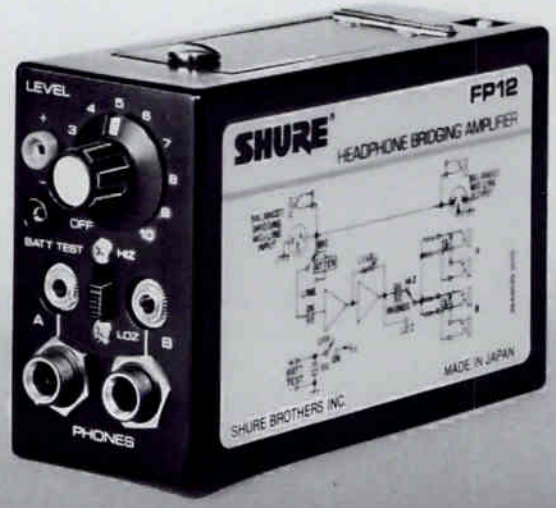
The FP11 provides up to 84 dB of gain so that microphone and auxiliary level devices can be boosted to line level. The gain is controlled by a 15-position, precision stepped rotary switch providing accurate gain indication and ease of resetting. Each step provides a 6 dB gain change.

The balanced, locking XLR input and output provide for excellent rejection of hum and RF interference. A switchable peak limiter prevents output overload distortion. Additional features include a peak/limiter LED indicator, aux level mini-phone jack input, balanced line-level binding post output, and a removable belt clip. The FP11 is powered by one standard 9V battery.

FP12

The FP12 is a 1-input, 2-output headphone bridging amplifier designed to provide headphone feeds from any type of audio input. Unlike other headphone amplifiers that unbalance and "terminate" the input signal, the FP12 may be operated in-line. The signal is greatly amplified to drive headphones while leaving the "looped through" input signal undisturbed. The FP12 can be used for a wide variety of applications such as multiple headphone feeds, audio line troubleshooting, extra power for existing headphone circuits, a two-station intercom system, or a means of practicing electronic instruments through headphones.

The FP12 features two XLR in/out connectors and two ¼-inch in/out jacks. In addition, two pairs of headphone outputs are provided, each consisting of one stereo ¼-inch phone jack and one stereo 3.5 mm mini-phone jack. Other features include a Mic/Line input switch, Hi Z/Lo Z headphones switch, headphone level control, and removable belt clip. The FP12 is powered by one standard 9V battery.



specifications

FP11	
Model:	**FP11**
Frequency Response:	20 to 20,000 Hz, +1, -3 dB
Voltage Gain at 1,000 Hz:	Low-impedance microphone input: +84 dB High-level input: +63 dB
Equivalent Input Noise:	−129 dBV
Distortion:	Under 0.5% THD from 40 to 20,000 Hz at +15 dBm
Input Clipping Level:	−20 dBV
Output Clipping Level:	+18 dBm
Limiter:	Threshold: +12 dBm
Power:	9V alkaline battery; provides approximately 25 hours of continuous operation
Overall Dimensions:	80.9 mm x 150 mm x 55.5 mm (3 3/16 x 5 29/32 x 2 3/16 in.)
Net Weight:	521 grams (1 lb 2 oz)

FP12	
Model:	**FP12**
Frequency Reponse:	40 to 15,000 Hz, +1, −3 dB
Voltage Gain at 1,000 Hz:	Lo-Z: 70 dB (Mic), 20 dB (Line) Hi-Z: 96 dB (Mic), 46 dB (Line)
Equivalent Input Noise:	−118 dBV
Distortion:	Under 1% THD from 40 to 15,000 Hz
Input Clipping Level:	Microphone: −14 dBV Line: +35 dBV
Output Clipping Level:	Low-impedance: −2.5 dBV High-impedance: +23 dBV
Power:	9V alkaline battery; provides approximately 25 hours of continuous operation
Overall Dimensions:	80.9 mm x 150 mm x 55.5 mm (3 3/16 x 5 11/16 x 2 3/16 in.)
Net Weight:	501 grams (1 lb 2½ oz)

SM83

The SM83 has been specifically designed to provide superior quality sound reproduction in professional broadcasting, film, and related sound reinforcement applications. It features a wide-range frequency response, specially tailored to provide more natural sound. This response is achieved by an electronically created dip at 730 Hz to overcome the chest resonance phenomenon, and by an acoustically generated high-frequency boost above 3 kHz resulting in a cleaner, more pleasing sound than other lavalier mics. In addition, a 12 dB per octave rolloff below 100 Hz helps reduce room noise and other undesirable low-frequency signals.

The Shure-developed amplifier supplied with the SM83 is compact, lightweight and can easily clip onto a belt or fit into a pocket. It is powered by a standard, readily available nine-volt battery or by simplex power from an external source (such as Shure M267 and M268 Mixers or PS1 and PS1E2 Power Supplies) or virtually any microphone power supply providing 5 to 52 Vdc simplex voltage. And, the amplifier has extensive RF and hum shielding to reduce the effects of electromagnetic and electrostatic interference. The microphone and cable are easily detached from the amplifier for easy storage.

To minimize cable visibility, the SM83's cord exits from the side and can be easily hidden behind a tie, blouse or shirt. This unique design feature combined with the microphone's innovative mounting hardware, small size and non-reflective black finish provide for an inconspicious on-camera appearance.

The SM83 is supplied with a versatile system of hardware that permits a wide variety of unobtrusive mounting techniques. Three mounting means are provided: a single-mount tie bar; a dual-mount tie bar (for mounting two microphones simultaneously); and two multi-purpose mounting blocks which may be connected to a lanyard, or sewn, pinned or taped onto clothing. Also supplied is an acoustic windscreen for outdoor use.

The SM83 is extremely rugged and offers outstanding reliability. In addition, it is field-serviceable. The cartridge assembly is accessible by simply unscrewing the microphone cap. Cable replacement requires only a screwdriver, no soldering is necessary.

specifications

	SM83
Model:	
Frequency Response:	80 to 20,000 Hz
Polar Pattern:	Omnidirectional
Impedance Rating:	150 ohms
Output Level	
Open Circuit Voltage:	0.35 mV (– 69.0 dB, 0 dB = 1V/μbar)
Output Noise:	(equivalent sound pressure levels: measured with true rms voltmeter) 22 dB typical, A-weighted 28 dB typical, weighted per DIN 45 405
Hum Pickup:	– 10.0 dB equivalent SPL in a 1 millioersted field (60 Hz)
Cables:	Microphone: 3m (10 ft), two-conductor, shielded with miniature 3-pin connector Amplifier: 3m (10 ft), two-conductor, shielded, TRIPLE-FLEX® with 3-pin professional audio connector
Dimensions:	Microphone: 19.6 mm L x 11.2 mm Dia. (3/4 x 7/16 in.) Amplifier: 23.1 mm H x 49.0 mm W x 94.8 mm D (29/32 x 1 15/16 x 3 3/4 in.)
Net Weight:	Microphone: 45 grams (1.58 oz) Amplifier: 270 grams (9.45 oz) incl. battery
Power:	Battery: 9 Vdc (transistor radio type, alkaline recommended) approximately 1600 hours continuous use with fresh battery Simplex Voltage: 5 to 52 Vdc; 0.33 mA current drain
Supplied Accessories:	Single-mount tie bar, dual-mount tie bar, two multi-purpose mounting blocks, windscreen, storage/carrying bag

FP31

A compact, portable microphone mixer specially designed for electronic news gathering (ENG) and electronic field production (EFP) use, including film, video, and remote broadcast applications. Measuring just 6 5/16" x 5 5/16" x 1 7/8", the FP31 incorporates the features most requested by audio engineers, electronic news professionals, sportscasters, and film and video sound engineers.

The FP31 provides a wide, flat frequency response, low distortion, and up to +18 dBm output (up to +22 dBm with 18Vdc supply). The unit features extremely low internal noise and switchable low-cut filters for each input that effectively reject low-frequency handling and wind noise.

Three XLR connector inputs and two outputs are provided, each switchable for either microphone- or line-level operation. A master level control sets the output level. Incorporated in the FP31 is a built-in slate microphone for voice announcements and emergency field use. The microphone is controlled by a pushbutton that also activates a timed (one second) low-frequency slate tone.

Additional features include a flashing LED to remind you the mixer is on, professional quality VU meter, timed meter lamp, peak LED overload/limiter indicator, adjustable limiter, tone oscillator, and stereo headphone mini- and 1/4" jacks. The headphone outputs can be used as additional unbalanced line feeds for connection to tape recorders, power amplifiers, or to the Shure 50AC Acoustic Coupler.

The FP31's versatility is enhanced by switchable simplex (phantom) or A-B power at each input for use with condenser microphones, a tape out mini-jack for connection to a cassette recorder, a coaxial battery jack permitting optional connection to external battery or power supplies, and a battery compartment that accommodates three standard 9V batteries. Batteries can be tested without program interruption.

Supplied with the FP31 is a removable shoulder strap and a rugged, carrying case which allows easy access to every mixer function and lets you piggyback the mixer on your VCR or other equipment.

specifications

Model: FP31

Frequency Response: ±2 dB from 30 to 20,000 Hz

Voltage Gain: Outputs terminated: line 600 ohms, microphone 150 ohms, headphone 200 ohms

Input	Output		
	Line	Microphone	Tape
Microphone	90 dB	40 dB	68 dB
Line	40 dB	−10 dB	18 dB

Noise: Equivalent input noise: less than −129 dBV

Distortion: Under 0.25% THD from 50 to 20,000 Hz at +4 dBm output

Input Clipping Level: Microphone: −47 dBV to −17 dBV
Line: +3 to +33

Output Clipping Level: Microphone: −34 dBV
Line: +18 dBm
Tape: −6 dBV
Phone: +4 dBV

Limiter: Threshold : +14 dBm (adjustable to other levels)
Recovery Time: 500 msec typical

Peak Indicator: Lights 6 dB below clipping or at onset of limiter action

VU Meter: Calibrated for +4 dBm into 600 ohms at O VU; adjustable to other standards

Slate Microphone: Omnidirectional electret condenser with AGC (8 hour life, typical)

Power:

Mixer and Simplex Power: Supplied by two internal 9V alkaline batteries or external 11 to 18 Vdc supply

Simplex Power: 11 to 18 Vdc nominal through 620Ω

A-B Power: Supplied by additional 9V alkaline battery

Dimensions: 48.3 mm H x 160 mm W x 135 mm D (1 7/8 x 6 5/16 x 5 5/16 in.)

Net Weight: 1 kg (2 lb., 3 oz.)

Supplied Accessories: Removable shoulder strap, carrying case

SHURE® Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204

FP42

Field production technicians suffering from audio headaches can rejoice. Shure has a cure in the FP42—an extraordinarily reliable, compact, feature-packed stereo audio mixer. The FP42 follows in the illustrious footsteps of Shure's classic, industry-standard M267, combining Shure ruggedness with all the convenient features that make the M267 so popular—plus full stereo capability!

The FP42 handles remote mixing jobs with its two outputs (one for each stereo channel) and four balanced inputs, each switchable for line or mic level operation. Each input channel also has a low-frequency rolloff switch and a center-detented stereo pan pot for convenient stereo mixing. There's also a concentric clutched stereo master level control and a pull-pot cueing feature that permits cueing or checking each input via headphones.

Like the M267, the FP42 can be battery or AC-operated. Mini- and 1/4-inch stereo headphone jacks with level control are included, and the dual VU meters may be calibrated for +4 and +8 dBm with a range switch. And there's much more: built-in stereo peak limiters with LED indicators, battery check function (with no program interruption), phantom power for condenser microphone operation, a tone oscillator for line tests and level checks, a direct mix bus for stacking units—everything a remote broadcast professional needs in a portable mixer.

The FP42 is a true professional unit, designed to provide extremely low noise, distortion, and RF susceptibility. Its wide, flat frequency response and extreme ruggedness make it ideal for the most demanding applications. And it's compact enough to be used anywhere.

Put Shure quality together with functional features, and you've got a mixer designed with professionals in mind. Simply stated, the FP42 is the finest portable stereo mixer available.

specifications

Model: FP42

Frequency Response: ..... ±2dB from 30 to 20,000 Hz

Voltage Gain:

Input	Output			
	Line	Microphone	Mix Bus	Phones	Phones (Cue)
Low-impedance microphone	90 dB	40 dB	25 dB	100 dB	100 dB
Line	40 dB	−10 dB	−25 dB	50 dB	50 dB
Mix Bus	55 dB	5 dB	–	62 dB	65 dB

Noise: ..... Equivalent input noise: less than −129 dBV

Distortion: ..... Under 0.4% THD from 30 to 20,000 Hz at +15 dBm output; under 0.5% IM distortion up to +15 dBm output level

Input Clipping Level: ..... Microphone: −35 dBV to −5 dBV
Line: +15 dBV to +45 dBV
Mix Bus: 0 dBV

Output Clipping Level: ..... Microphone: −33 dBV
Line: +17 dBV

Limiter: ..... Threshold: +8 to +14 dBm, adjustable
Attack Time: 3 msec typical
Recovery Time: 500 msec typical

Peak Indicator: ..... Lights 7 dB below 5% THD clipping point or at limiter threshold. Separate indicator for each output

Phantom Power: ..... 30 Vdc nominal

Operating Voltage: ..... AC operation: 120/240 Vac ± 10%, 50/60 Hz, internally selectable
DC operation: 27 Vdc @ 30 mA idle current

Battery Operation: ..... Built-in battery compartment uses three readily available 9V alkaline batteries; provides approximately 8 hours of continuous operation

Certification: ..... UL listed and CSA listed as Certified

Dimensions: ..... 69 mm H x 309 mm W x 229 mm D

Net Weight: ..... 2.95 kg (6 lb, 8 oz)

FP32

Professional users asked for it, and Shure delivered! Shure's FP32 Stereo Mixer definitively answers the demand for a reliable, rugged, compact stereo audio mixer. Electronic news gatherers and field production specialists agree: the FP32 handles their stringent demands with the utmost aplomb.

The FP32 shares many design characteristics with Shure's spectacularly successful mono FP31 Mixer. Like the FP31, the FP32 is packed with features. These include two transformer-coupled outputs (one for each stereo channel) and three inputs, each switchable for low impedance microphone or line level operation. In addition to an individual level control, each input channel has a center-detented stereo pan pot for true stereo mixing capability. The FP32's stereo capability is further enhanced by a concentric clutched stereo master gain control.

Field users will appreciate the FP32's built-in slate microphone and slate tone—exceedingly popular features that help identify take locations. There's also a built-in tone oscillator for level checks or line tests, and built-in phantom (simplex) and A-B(T) power for condenser microphones. You'll also find a "phantom" jack on the FP32, permitting use of an external microphone power supply (up to 48 Vdc).

There's much more in this extremely compact package: mini- and ¼-inch stereo headphone jacks with level control, monitor input for monitoring from VTR, built-in limiter with adjustable threshold, high-quality dual VU meters with lamp and battery check function, 12 Vdc external power jack, stereo aux level tape outputs, and a carrying case that has earned plaudits for its well-thought-out design.

Shure engineers put all these features, professional performance, and outstanding reliability into a package smaller than a cigar box. No wonder the FP32 is *the* compact stereo mixer of choice in the burgeoning field production industry.

specifications

Model: FP32

Frequency Response: +1, −3 dB from 50 to 15,000 Hz

Voltage Gain:

Input	Line	Output Microphone	Tape	Phone
Microphone	90 dB	40 dB	68 dB	95 dB
Line	40 dB	−10 dB	18 dB	45 dB
Monitor	—	—	—	12 dB

Noise: Equivalent input noise: less than −125 dBV

Distortion: Under 0.25% THD from 50 to 15,000 Hz at +4 dBm output

Input Clipping Level: Microphone: −45 dBV to −15 dBV
Line: +5 to +35
Monitor: +35 dBV

Output Clipping Level: Microphone: −32 dBV
Line: +18 dBm
Tape: −6 dBV
Phone: +5 dBV

Limiter: Threshold: +14 dBm (adjustable to other levels)
Recovery Time: 500 msec typical

Peak Indicator: Lights 6 dB below clipping or at onset of limiter action

VU Meters: Calibrated for +4 dBm into 600 ohms at 0 VU; adjustable to other standards

Slate Microphone: Omnidirectional electret condenser with AGC

Power

Mixer and Phantom Power: Supplied by two internal 9V alkaline batteries (6 hour life, typical) or external 11 to 18 Vdc supply

External Phantom Power: 12 Vdc*; overrides internal phantom supply when external voltage source is connected

A-B Power Supply: Supplied by additional internal 9V standard alkaline battery

Dimensions: 59 mm H x 184 mm W x 153 mm D (2⅜ x 7¼ x 6 in.)

Net Weight: 1.13 kg (2.5 lb)

Supplied Accessories: Removable shoulder strap; carrying case

*Can be modified for 48 Vdc if desired

PROFESSIONAL STUDIO/unidirectional and omnidirectional surface-mount microphones

SM90 and SM91

The SM91 is a surface-mounted, permanently biased condenser microphone with a half-cardioid directional pattern (cardioid in the hemisphere above the mounting surface). It is designed for broadcast and recording as well as installations in meeting rooms, courtrooms, legislative chambers, churches, and stages...anywhere high performance surface-mounted microphones are employed.

Because of its half-cardioid pattern, the SM91 discriminates against sounds originating from the rear, suiting the SM91 for conditions where an omnidirectional "pressure zone" type surface-mounted microphone would be unsuitable. In addition, the unidirectional pattern permits the microphone to operate with much less reverberant pickup and muddiness than omnidirectional models.

The unidirectionality of the SM91 can be a great benefit when it is desirable to isolate a particular vocalist, instrument or group from the rest of an ensemble being recorded. It can also be used for individual instrument pickup such as mounted inside the lid of a grand piano or on the floor next to a bass drum. And because of the cardioid pickup pattern, no physically isolating barriers are required and directionality is maintained to low frequencies.

The SM91 includes a totally new microphone element developed at Shure. The result is high output, notably accurate sound reproduction over the entire audio frequency range, and off-axis performance comparable to the finest unidirectional microphones.

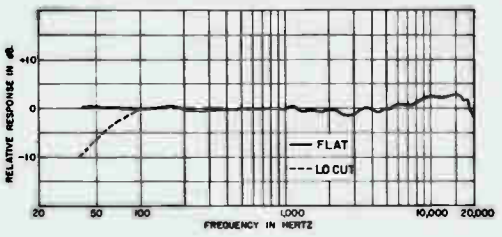
For those cases where an omnidirectional microphone is preferred or necessary, the SM90 omnidirectional surface-mounted microphone is also available. Mounted in the same housing as the SM91, and using the same electronics pack, the SM90 offers all the esthetic values of the SM91, and all the operational characteristics of an omnidirectional microphone, such as smooth pickup in a 360° pattern allowing a single microphone to be used for a group pickup or where feedback is not a concern.

Both the SM90 and the SM91 are supplied with a low distortion preamplifier which powers the microphones either by batteries or phantom power. A low frequency cut-off switch allows tailoring the response of the SM90 or SM91 to suit the need.

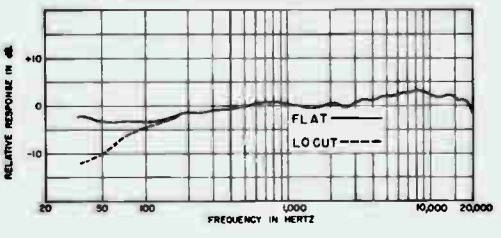
specifications

	SM90 and SM91
Models:	
Frequency Response:	20 to 20,000 Hz at 30° incidence to infinite surface
Polar Pattern:	SM90: Omnidirectional in hemisphere above mounting surface SM91: Half-cardioid (cardioid in hemisphere above mounting surface)
Impedance Rating:	150 ohms (minimum recommended load: 800 ohms)
Output Level **Open Circuit Voltage:**	SM90: 0.5 mV (−66.0 dB, 0 dB = 1 V/μbar) SM91: 0.35 mV (−69.0 dB, 0 dB = 1 V/μbar)
Output Noise:	SM90: 20 db SPL, A-weighted 23 dB SPL, weighted per DIN 45 405 SM91: 23 dB SPL, A-weighted 26 dB SPL, weighted per DIN 45 405
Maximum SPL:	SM90: 141 dB at 800 ohm load SM91: 144 dB at 800 ohm load
Power:	Battery: Two, 9 Vdc alkaline (approximately 300 hours continuous with fresh batteries) Simplex voltage: 11 to 52 Vdc. 1.8 mA current drain
Cable:	7.6m (25 ft) two-conductor shielded, small diameter, interconnecting cable with 3-socket miniature Switchcraft connector on each end to mate with microphone output connector and preamplifier input connector
Dimensions:	Microphone: 15.2 mm H x 95.3 mm W x 129 mm D ($\frac{5}{8}$ x $3\frac{3}{4}$ x $5\frac{3}{32}$ in.) Preamplifier: 27 mm H x 60.8 mm W x 112 mm D ($1\frac{1}{16}$ x $2\frac{25}{64}$ x $4\frac{25}{64}$ in.)

TYPICAL FREQUENCY RESPONSE, SM90



TYPICAL FREQUENCY RESPONSE, SM91



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SHURE® Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60202

AL767B

M267

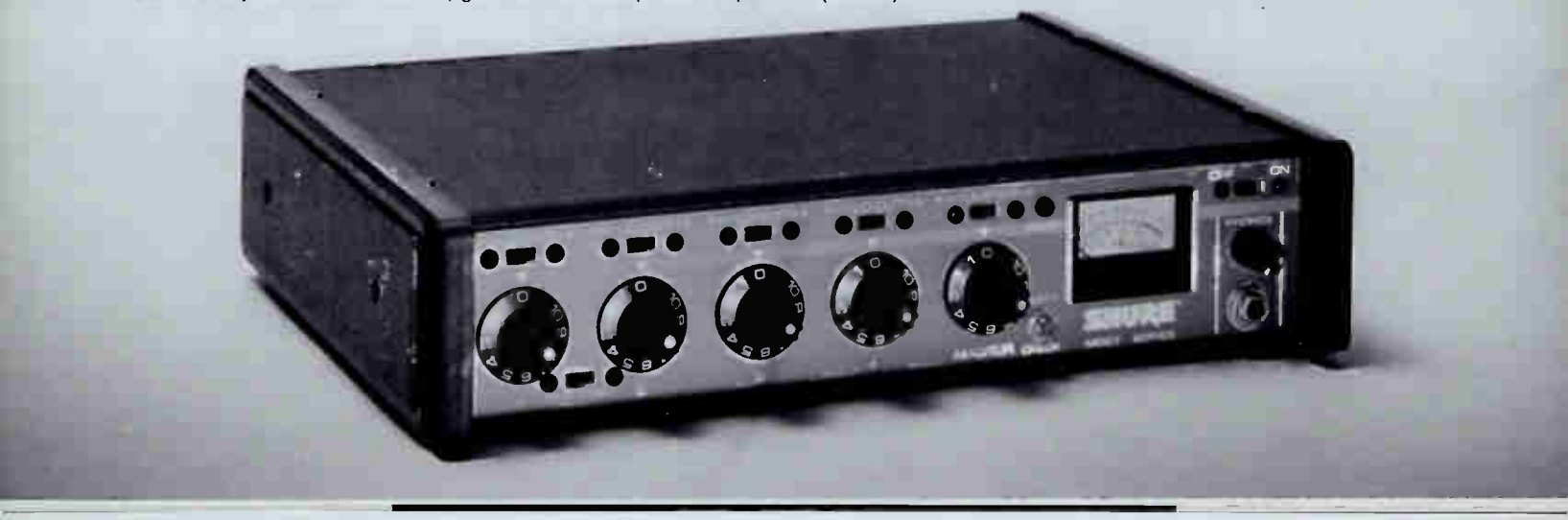
The Shure M267 compact, lightweight professional microphone mixer offers performance and capabilities never before available in a modestly priced professional mixer. It was designed to fill more of the specific needs of broadcasters in both studio and remote applications, recording studios and sound reinforcement. Its outstanding performance and versatility also make it an exceptional choice for use in public address systems and as a studio quality "add-on" mixer for expanding existing facilities.

The M267 has all the features that made the Shure M67 the *industry standard* mixer, plus additional features and performmance improvements that promise to make *it* the new *industry standard.* Features new to the M267 include: peak program limiter—*eliminates overload distortion by monitoring program levels and power supply level;* simplex (phantom) power—*switchable 30 Vdc on all microphone inputs to power condenser microphones;* built-in battery pack—*switches silently to battery power if ac fails;* LED peak indicator—*indicates onset of limiting or when program levels approach overload;* headphone level control—*adjusts monitor volume;* gold contact headphone ampl/line switch—*Amplifier position for high level monitoring or Line position for talkback;* automatic muting circuit—*prevents annoying clicks and thumps when unit is turned on or off;* active gain controls—*provide lower noise, greater dynamic range and automatic input attenuation;* and electronic power supply regulation—*improved performance on low or high ac line voltage.*

Improvements over the M67 include: Gold contact Mic/Line switches—*on each XLR input and output,* battery check function—*does not interrupt program;* more headphone power; lower distortion and noise; and front panel headphone jack and gold contact tone oscillator switch.

The M267 has the same ruggedness and reliability that made the M67 the top-selling mixer in the industry. It also includes all of these M67 features: transformer balanced inputs and outputs; mix bus; VU meter; low cut filters; low RFI and line noise susceptibility.

With the addition of two brackets (RKC169), the M267 will fit into an M67 rack panel, or it may be mounted in the accessory panel (A268R).



specifications

Model: **M267**

Frequency Response: ..... ±2 dB from 30 to 20,000 Hz

Voltage Gain: ..... Outputs terminated: line 600 ohms, microphone 150 ohms, mix bus 3.3 kilohms, headphone 200 ohms, tip-sleeve, ring-sleeve

Input	Output		
	Line	Microphone	Mix bus
Low-impedance microphone	92 dB	42 dB	25 dB
Line	40 dB	−10 dB	−27 dB
Mix bus	46 dB	− 4 dB	—

Noise: ..... Equivalent input noise: −129.5 dBV
Equivalent input hum and noise: −127 dBV

Distortion: ..... Under 0.35% THD from 30 to 20,000 Hz at +15 dBm output; under 0.5% IM distortion up to +15 dBm output level

Input Clipping Level: ..... Microphone: −32 dBV to −5 dBV (depending on input control setting)
Line: +20 dBV
Mix bus: −38 dBV

Output Clipping Level: ..... Microphone: −32 dBV
Line: +18 dBm

Limiter: ..... Threshold: + 15 dBm (line output level; adjustable from −4 to +18 dBm)
Attack Time: 3 msec typical
Recovery Time: 500 msec typical

Peak Indicator: ..... Lights 6 dB below clipping or at onset of limiter action

Simplex Power: ..... 30 Vdc open-circuit 3.3 kilohms series resistance, input switches in MIC position only

Operating Voltage: ..... 120 or 240 volts, 50/60 Hz, internally switchable

Battery Operation: ..... Built-in battery compartment uses three readily available 9V alkaline batteries; provides approximately 20 hours of continuous operation

Certification: ..... UL Listed and CSA listed as Certified

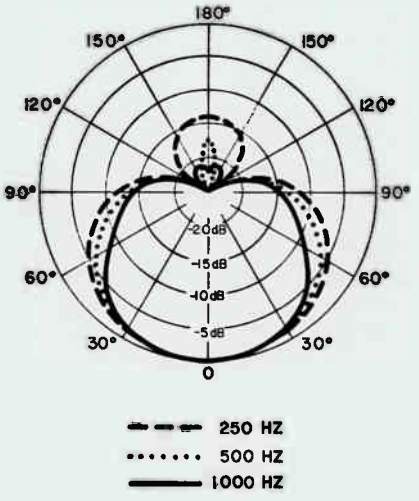
Dimensions: ..... 75.3 mm H x 309 mm W x 227 mm D ($2^{31}/_{32}$ x $12^{5}/_{32}$ x 9 in.)

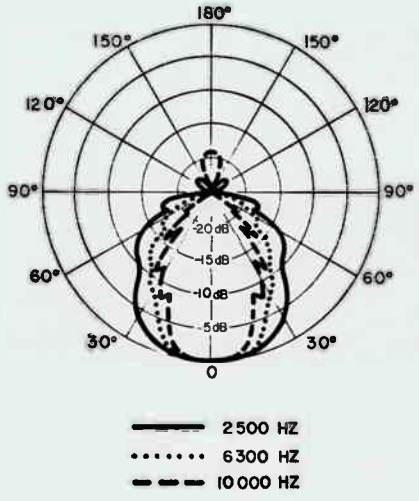
Net Weight: ..... 2.3 kg (5 lb, 2 oz)

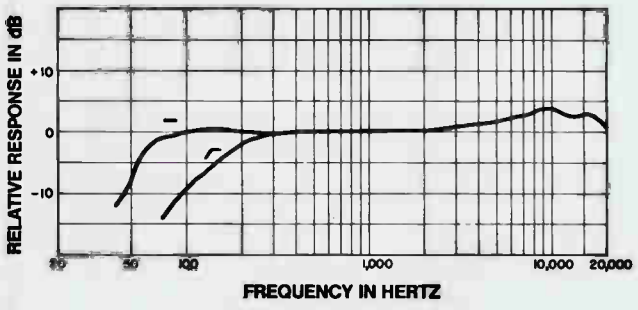
specifications

Model:	**SM89**
Frequency Response:	60 to 20,000 Hz
Polar Pattern:	Hypercardioid at low frequencies, lobar at frequencies above 1 kHz
Impedance Rating:	150 ohms rated (100 ohms actual). Minimum recommended load: 800 ohms
Output Level	
Open Circuit Voltage:	−52dB(2.5mV)
Clipping Level:	(at 1,000 Hz, less than 0.5% THD) 800-ohm load: −1 dBV (0.89 V) 150-ohm load: −12 dBV (0.25 V)
Signal-to-Noise Ratio:	79 dB re 94 dB SPL
Maximum SPL:	800-ohm load: 126 dB SPL 150-ohm load: 118 dB SPL
Output Noise:	15 dB SPL typical, A-weighted 19 dB SPL typical, C-weighted
Hum Pickup/m0e:	Less than 2 dB equivalent SPL
Power Requirement:	Phantom voltage: 11 to 52 Vdc; 2 mA current drain
Connector:	Professional three-pin audio
Dimensions:	524 mm L x 20 mm Dia. (20⅝ x 25/32 in.)
Net Weight:	195 grams (6.9 ounces)
Supplied Accessories:	Carrying Case and Foam Windscreen
Optional Accessories:	A89SM Shock Mount

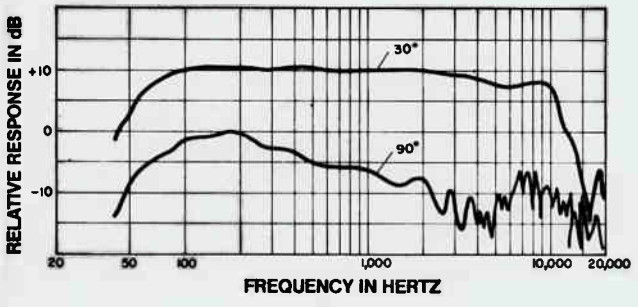
TYPICAL POLAR PATTERNS



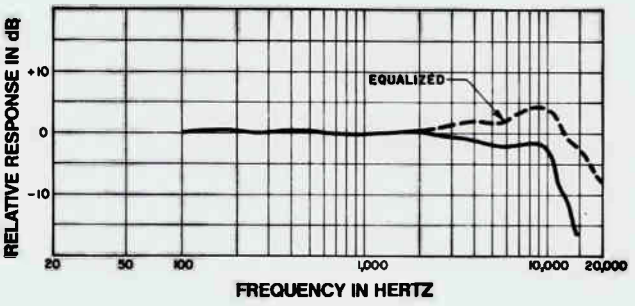




TYPICAL ON-AXIS FREQUENCY RESPONSE



COMPARISON OF 30° and 90° OFF-AXIS RESPONSE OF SM89 (shown at 1.8m [6ft])



TYPICAL SM89 RESPONSE, 30° OFF-AXIS

SM89

Incorporating a truly innovative design, the SM89 was built to fulfill the rigid requirements set down by professional production crews around the world. Designed especially for location film and TV production, theatre sound reinforcement, and spot news coverage, the SM89 features a unique capsule design as well as Shure's exclusive Accu-Port™ interference tube system. The SM89's highly directional polar pattern and fine-tuned frequency response will discriminate at a distance in favor of desired dialogue or effects and against ambient noise, and will accurately pickup sound without excessive on- or off-axis coloration.

The SM89 is the first professional shotgun microphone to overcome the problem of off-axis coloration. Early shotgun microphone designs showed an overall lack of off-axis frequency response control. This meant that as you got farther off-axis from these microphones, the level not only dropped (as it should have) but the frequency response varied considerably, producing an unnatural sound. Shure engineers devoted themselves to finding a means of controlling the pickup pattern and its off-axis characteristics. Through the development of Shure's Accu-Port™ design, a microphone whose level drops smoothly and without colorations as you get off axis was created—the SM89.

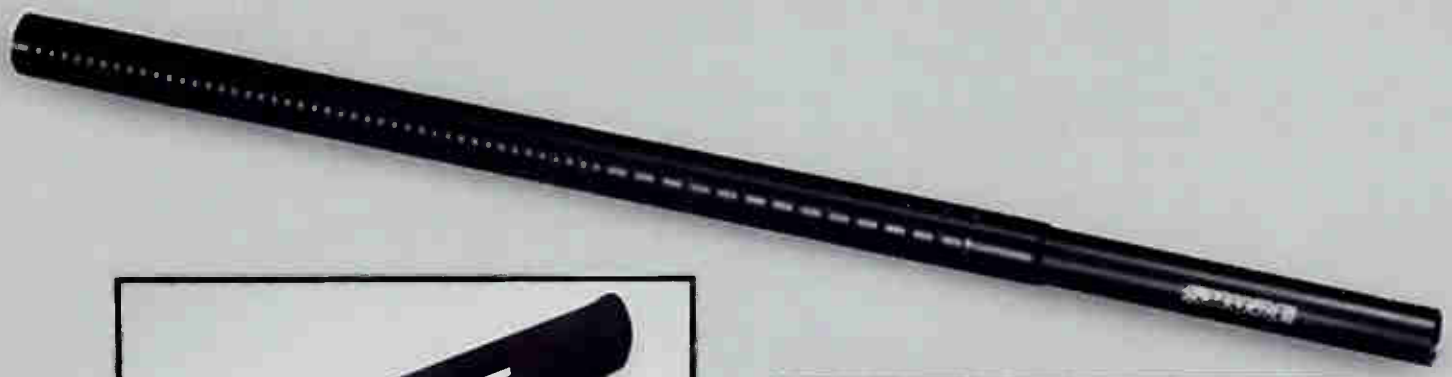
The SM89's fine off-axis response means that production crews no longer need to make inconvenient compensations (such as special microphone positioning) for offensive off-axis coloration. Additionally, the SM89 is more forgiving of aiming inconsistencies; even at 30 degrees off axis, dialogue is reproduced clearly.

The on-axis frequency response of the SM89 is very smooth and extended (60-20,000 Hz). A slight presence rise adds clarity and intelligibility to speech reproduction. A low frequency rolloff switch selects either 60 Hz or 160 Hz for optimum response, depending on the environment in which the microphone is being used. Low frequency rolloff allows the minimum pickup of wind, mechanical vibration, ambient noise and rumble without affecting voice frequencies.

The SM89 is made of machined, aircraft-grade aluminum for maximum resiliency and durability. It is also extremely lightweight: only 195 grams at the optimum length of 20.6 inches. Weight becomes a significant consideration in applications when a fishpole boom must be held for long periods of time.

The SM89 features a built-in windscreen for "pop" reduction in close-up interview use, and it incorporates a two-piece design for ease of storage and field servicing. And for convenience, the SM89 operates over a wide phantom voltage range (11-52V).

The SM89 comes complete with foam windscreen and rugged, hardshell nylon carrying case. As an optional accessory item for the SM89, Shure has made available the A89SM Shock Mount for use when exceptional freedom from mechanically transmitted noise is required. Three different thread sizes allow the A89SM/SM89 combination to be attached to a boom, fishpole, microphone stand, or almost any fitting likely to be found in professional use.



SM89 with Windscreen and Carrying Case

A89SM Shock Mount Accessory

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MICROPHONES AND ELECTRONIC COMPONENTS

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Sincerely yours,

L. Habich
Manager, Marketing Communications

LH:IR
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SM1 and SM2

Shure Models SM1 and SM2 are professional quality headsets that provide maximum comfort, durability and sound reproduction—designed for broadcasting applications. The SM1 (one ear cue) and SM2 (two ear cue) are loaded with deluxe features that make them an ideal choice for professional TV and Radio broadcasters, film and video production crews and other A/V professionals.

Headset features include: a patent boom mount for total flexibility in microphone positioning—the boom adjusts for left or right side use; an all metal boom that is less subject to damage; a rugged, double-braced all metal headband with leather-like covering; and large "pillow-soft" ear pads for maximum comfort as well as superior external noise isolation.

Microphone features include a precision cardioid polar pattern; and a specially tailored frequency response to insure accurate voice reproduction—with minimal or no equalization. The microphone's unidirectional pickup pattern, coupled with the boom mount's consistent mouth-to-microphone positioning, provide maximum voice isolation.

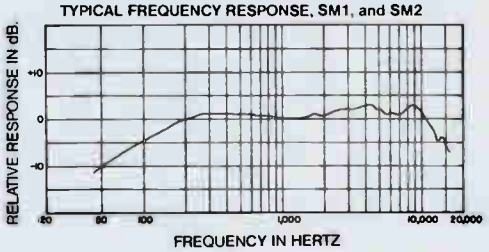
In addition to comfort, durability and performance, the SM1 and SM2 offer versatility—the cable is detachable allowing quick and easy cable changes for mono, stereo or split feed headphone functions.

The SM1 and SM2 are handsome in appearance with a matte chrome and black finish and are supplied with cable and windscreen.

specifications

	SM1 and SM2
Models:	
Frequency Response:	Microphone: 50 to 15,000 Hz Receiver: 100 to 8,000 Hz
Polar Pattern:	Microphone: Cardioid (unidirectional)
Impedance:	Microphone: 150 ohms Receiver: 2,000 ohms at 1 kHz
Output Level:	Microphone: Open Circuit Voltage: −47.0 dB (4.5 mV) (0 dB = 1V/100 μbar) Power Level: −66.0 dB (0 dB = 1mW/10 μbar) Receiver: 104.0 dB SPL with 1.4V at 1 kHz
Cable:	2m (6.5 ft) detachable, five conductor (two conductor shielded), with 6-pin threaded connector to mate with connector on headset
Net Weight:	SM1: 209 grams (7.4 oz) SM2: 290 grams (10.2 oz)

TYPICAL FREQUENCY RESPONSE, SM1, and SM2



FREQUENCY IN HERTZ

TYPICAL POLAR PATTERN