

AUDIO, signal processing

Master Room™

XL-210

Reverberation System



- Advanced design technology
- Clean, natural reverberation
- Studio performance quality
- Rugged roadability
- Full two channel stereo

A recent technological breakthrough pioneered and developed by Master-Room now provides high quality reverberation at an affordable price. This new technology was first applied in the Master-Room XL-305 which has gained wide acceptance by professional users throughout the world in recording, broadcast, and sound reinforcement applications. The XL-210 is based on the same technology and offers the most natural sounding reverberation in its class.

Percussive signals have always been the most difficult sounds for a reverberation unit to reproduce naturally. Internal limiting and other signal manipulation tricks are often employed in many compact systems in an attempt to overcome or conceal chamber deficiencies. The usual result is a severe loss of the natural reverberation quality without eliminating the typical boing, twang, and flutter generally associated with such systems. The unique chamber design of the XL-210, however, provides smooth, natural sounding reverberation without employing internal limiting or any other signal processing to compensate for chamber deficiencies.

The XL-210 is a self-contained, 3½ inch rack-mount unit featuring two completely independent channels for true stereo operation. A front panel switch permits monaural operation, further increasing its already high echo density. Input and output connectors are typically used for permanent installation, while the front panel jacks allow convenient patching and automatically defeat the rear panel connectors. The active balanced input circuits automatically adapt to either balanced or unbalanced operation, and the unbalanced outputs will readily drive a 600 ohm load.

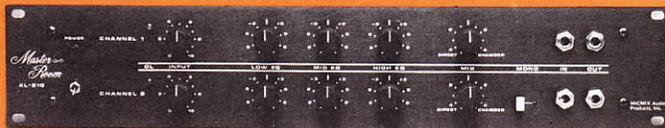
Each channel of the XL-210 features an equalization section that provides flexibility and creative freedom. The EQ allows the user to effectively simulate the reverberant sound characteristics of a live chamber, plate or concert hall. Included in this section is a LOW shelf, a HIGH shelf, and a MID peak/dip control, each with 12 dB of boost or cut.

The XL-210 can be used with the echo or effects send/return function of most mixers. The front panel MIX controls permit this unit to also be used in the main signal path by internally mixing the desired amount of dry and reverberated signals. The XL-210 can be located near loudspeakers operating at high levels without acoustic feedback, and front panel LED's indicate any overload condition in the chamber.

The Master-Room XL-210 is a high quality reverberation system designed for professional use in the recording studio or sound reinforcement system. Its advanced technical design, rugged construction, and overall versatility make it the ideal system for professional applications.

The XL-210 provides smooth, natural sounding reverberation that is unmatched in its price range. While others have made this claim, the XL-210 will back it up with an obvious and demonstrable performance difference. Visit your Master-Room dealer soon for a revealing demonstration of reverberation at its finest. Listen and compare....You'll hear the difference.

available from:



Front view

A WORD ABOUT REVERBERATION DEMONSTRATIONS

It is important when auditioning a reverberation system to listen to just the reverberant sound, as only this will reveal its true performance characteristics. A professional quality system should produce smooth, natural sounding reverberation completely free of unwanted side effects.

Reverberation systems are often demonstrated by adding a small amount of reverb to smooth dry signals or by using it on a mixdown. Such methods mask the reverb's true performance and may provide an initially acceptable evaluation, but may result in later unhappiness when the unit is put to a real test after purchase.

One good evaluation technique is the use of a drum track or any other sharp percussive signal. This will reveal a great deal about the true performance capability of a system. Master-Room dealers can provide an even more stringent and practical demonstration utilizing electronic pulse testing. With this test, pure reverberant sound is heard and unwanted sounds or undesirable colorations become readily apparent.



Rear view

XL-210 Specifications

INPUT (Ref. 0 dBv=0.775 volts)		OUTPUT NOISE (At unity gain)	
Minimum Level	-15 dBv	Direct Channel (20-20k Hz bandwidth)	-78 dBm
Maximum Level	+18 dBv	Reverberant Channel (A weighted)	-70 dBm
Impedance (Active balanced)	20k Ohms	DECAY TIME (At 1 kHz, Octave noise, T60) 3 seconds	
(Unbalanced)	10k Ohms	EQUALIZATION	
OUTPUT		Low Frequency (Shelving type)	±12 dB at 100 Hz
Source Impedance (Unbalanced)	15 Ohms	Mid Frequency (Peak/dip type)	±12 dB at 1 kHz
Nominal Level (Internally adjustable)	0 dBm	High Frequency (Shelving type)	±12 dB at 10 kHz
Range (Ref. 0 dBv input level)	-14 to +6 dBm	OVERLOAD INDICATOR	
Maximum Level (Into 600 Ohm load)	+18 dBm	Type: Peak holding	
FREQUENCY RESPONSE (Ref. 1 kHz)		Circuit location: At chamber drive	
Direct Channel 20-20k Hz	+0, -2 dB	Threshold: +4 above nominal level at 1 kHz	
REVERBERANT CHANNEL		POWER REQUIREMENTS	
CROSSTALK	Better than -45 dBm	Voltage (50/60 Hz)	100/120/240 +15, -10%
HARMONIC DISTORTION (Direct channel)		Power Consumption	20VA
At 0 dBm (20-20k Hz)	Less than 0.1%	DIMENSIONS 3.5H x 19W x 12.5D inches	
At +18 dBm (20-1k Hz)	Less than 0.4%	SHIPPING WEIGHT 13 lbs.	
At +18 dBm (1k-20k Hz)	Less than .05%		

Specifications are subject to change or product improvement without notice.

MICMIX Audio Products, Inc.

2995 Ladybird Lane Dallas, Texas 75220

(214) 352-3811

Master-Room™

AUDIO, signal processing

Master Room™

XL-305

The Acoustic Chamber Synthesizer™



- Totally new design approach
- The sound of a live acoustic chamber
- Natural sound, even on percussion
- Self-contained rack mount unit
- Full two-channel stereo

The Master-Room XL-305 is a unique design approach in self-contained reverberation systems. This "Acoustic Chamber Synthesizer" incorporates new technology that stems from years of research and analysis of "live" chambers currently in use in the recording industry. Properties such as room volume, echo density, and reverberation time versus frequency were studied. The most desirable characteristics of these live chambers are incorporated into the XL-305. The result: The sound of a live acoustic chamber in a rack-mount package.

A live chamber does not have the boing, twang, and flutter that are normally found in compact reverberation units. The XL-305 produces none of these unwanted sounds. A percussive attack, or any transient signal, is difficult for most compact reverbs to reproduce naturally. Under these conditions, a reverb is most likely to produce undesirable side-effects. The performance of the XL-305 under transient conditions is outstanding.

The XL-305 offers two-channel stereo capability, and is easily switched to stereo imaging of a monaural signal or full mono operation. Each channel features an INPUT LEVEL control, LED CHAMBER DRIVE indicators, and an OUTPUT MIX control to blend the direct and reverberated signals. Front panel OUTPUT LEVEL adjustments are provided for easy adaptation to various operating levels of other equipment. AUXILIARY INPUTS and OUTPUTS located on the front panel automatically defeat the rear panel connections, allowing

convenient patching. An input/output transformer option (model XL-305T) is available for those systems that require it.

A four-band equalizer allows each channel of the XL-305 to simulate the sound of reverberation plates, live chambers and large concert halls. This peak/dip EQ has a control range of plus or minus 12 dB with center frequencies at 150, 600, 2k and 6k Hz, thus providing the user with extreme flexibility and creative freedom.

Low acoustic susceptibility permits the unit to be

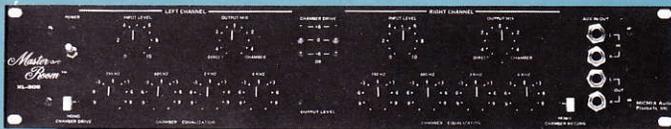
located in the same room with loudspeakers operating at high levels without acoustic feedback or mechanical interference. This, combined with the XL-305's rugged construction, lends itself to the rigors of road use without special handling. All of these features are packaged in a 3½ inch rack-mount unit that is easily installed and incorporated into any system.

Ruggedness, dependability, and ease of operation are part of every Master-Room.™

The XL-305 is the most significant advancement in

quality for self-contained reverb systems. The "Acoustic Chamber Synthesizer" is the result of a commitment by Master-Room to provide the finest in reverberation for a wide range of professional audio applications. This unit is a must for those who demand superior performance in their studio, broadcast, or sound reinforcement systems.

See your professional audio dealer for a demonstration of the totally unique "Acoustic Chamber Synthesizer". Listen and compare . . . You'll **hear** the difference.



Front view



Rear view

XL-305 Specifications

INPUT (Ref. 0 dBv = 0.775 volts)		DECAY TIME (at 1 kHz, octave noise, T ₆₀)	3.5 seconds
Minimum Level	-12 dBv	EQUALIZATION	
Maximum Level	+18 dBv	Type: Reciprocal Peak/Dip	
Impedance (bal.)	20k Ohms	Center Frequencies	150, 600, 2K and 6K Hz
OUTPUT		Control Range	±12dB
Source Impedance	15 Ohms	LEVEL INDICATORS	
Nominal Level	+4 dBm	Type: Peak Responding	
Gain Adjustment Range	20 dB	Circuit Location: At Chamber Drive	
Maximum Level (Into 600 Ohm Load)	+18 dBm rms	Display and Levels Indicated	Green, -6, Yellow, 0; Red, +6 dB
FREQUENCY RESPONSE (Ref. 1 kHz)		POWER REQUIREMENTS	
Direct Channel 20-20k Hz	+0, -2 dB	Voltage (50/60 Hz)	100/120, 240v, +15, -10%
OUTPUT NOISE (at unity gain)		Power Consumption	20 VA
Direct Channel (20-20k Hz bandwidth)	-80 dBm	DIMENSIONS	3.5H x 19W x 12.5D inches
Reverberant Channel (A weighted)	-70 dBm	SHIPPING WEIGHT	
HARMONIC DISTORTION (direct channel)		Standard Model (XL-305)	13 lbs.
At 0 dBm (20-20k Hz)	Less than 0.1%	With Transformer Option (XL-305T)	15 lbs.
At +18 dBm (20-1k Hz)	Less than 0.4%		
At +18 dBm (1k-20 k Hz)	Less than .05%		
REVERBERANT CHANNEL CROSSTALK	Better than -45 dB		

Specifications apply to the standard XL-305 and are subject to change or product improvement without notice.

MICMIX Audio Products, Inc.

2995 Ladybird Lane Dallas, TX 75220 (214) 352-3811



New Product **BULLETIN**

AUDIO/SIGNAL
PROCESSING

XL-305 MASTER-ROOM Reverberation Chamber

XL-305 is the very first reverb to offer the natural sound performance of a live studio chamber or the qualities of a plate in a compact rack mount package. XL-305 is a product of MICMIX, designer of the original Master-Room and developer of Natural Sound Ambience in artificial reverberation chambers.

In addition to unprecedented smoothness and the complete absence of any undesirable effects or coloration (even on the sharpest of transient material), XL-305 features exceptional stereo enhancement of the reverberant field, including full stereo imaging of a monaural signal. It includes reverberation/dry signal mixing controls, l.e.d. peak signal indicators and a four-band peak/dip EQ on each channel. Both input level and output gain are front panel adjustable, with auxiliary front panel input/output connections and monaural mix switching of reverberation inputs or outputs.

A new Sound Chamber design has been incorporated into the XL-305 which is self-contained within the 3½ inch rack enclosure. Retaining the inherent qualities of Master-Room's superb performance characteristics, this design will readily withstand the rigors of heavy road usage without special handling or lockdown. Isolated from acoustic feedback and mechanical shock or vibration, the XL-305 can be mounted in virtually any location or position without affecting performance.

XL-305 is truly the ultimate in compact reverberation chambers.

Dimensions: 3½ x 19 x 11

Price: \$1195

Weight: 9.8 lb

Availability: July 1979

XL-305 MASTER-ROOM Description and Technical Data

The XL-305 Master-Room from MICMIX Audio Products continues the precedent setting performance established by its counterparts, the larger Master-Room designs. Packaged entirely within a 3½ inch rack mount envelope and available at a most affordable price, XL-305 is the first and only unit of its size to offer true Natural Sound Ambience, a feature that has made Master-Room the choice of professionals, including those who have become Masters of the Recording Art.

Totally self-contained and free of annoying resonances or flutter on even the most demanding of transients, XL-305 features exceptional stereo imaging and high density diffusion. Designed using the Torsible Volute Principles developed for the larger, more expensive Master-Room chambers, an electro-mechanical spring matrix which is individually hand crafted and precision tuned eliminates the need for internal or external limiting, corrective equalization or other remedial measures. Try an XL-305 on the most demanding percussion track and you will immediately recognize the overwhelming difference and totality of improvement over any reverb at any price, except another Master-Room.

Price-performance is valueless unless true performance has been built in. MICMIX has designed real performance into the XL-305, with equalization circuits being but one example. Because Master-Room design does not require use of EQ to overcome flaws or deficiencies in its Sound Chamber, parametrics can be avoided, along with the shelving types that bleed direct signal through under the guise of higher frequency response. Instead, XL-305 incorporates a superior type of reciprocal peak/dip EQ at the most useful frequencies of 150, 600, 2.5K and 6K Hz with a ± 12 dB of control range to allow its response to be your response, and not merely a required corrective action.

Designed as a full two-channel stereo unit, XL-305 can operate its reverberant channels in mono send, mono receive or full mono to provide

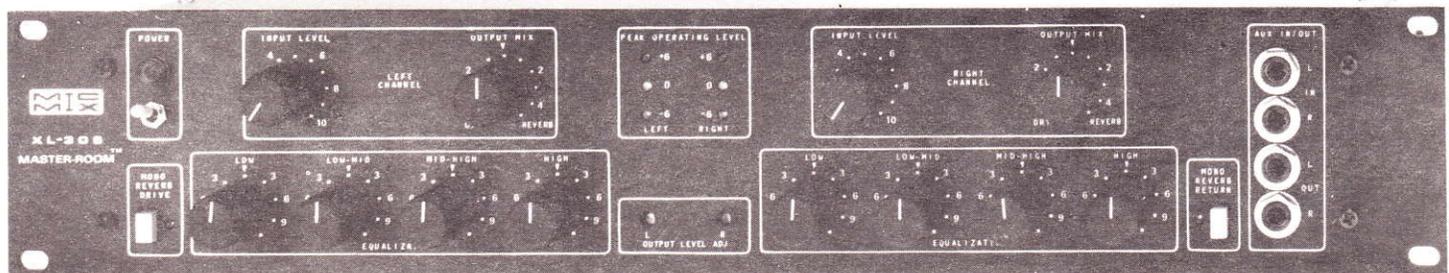
even higher echo density, or to develop spatial imaging of a mono source. Feed-through of direct channels remains stereo in the mono reverb modes.

In addition to the dual 4-band EQ and independent stereo/mono switching of reverberant channel input/output, other features which make the XL-305 a complete reverberation system include internal reverb/dry mixing controls, peak headroom indicators, auxiliary front panel input/output connections, adjustable input and output levels and switchable power voltages for exceptional versatility to match its outstanding performance.

Input/output connections to the XL-305 are utterly simple. Input circuitry is an active balanced type which may be strapped for unbalanced applications at the rear barrier strip, or which occurs automatically when a two-conductor plug is inserted into a front panel auxiliary input jack. Outputs are unbalanced and will drive even the most imposing load.

Each channel features an Input Level Control whose -15 dBv (Ref 0=.775v) sensitivity allows it to work with virtually any mating equipment, professional or semi-pro. Output levels are front-panel adjustable over a 20 dB range to permit matching of one reference level to another.

Weighing less than 10 pounds, XL-305 is ruggedly packaged to withstand the most rigorous of road handling without special attention, and its 120/240 or 100/200 volt switchable power makes it usable throughout the world...a world that has come to know the Natural Sound Ambience of Master-Room reverberation. Audition the XL-305 and learn why it is the most EXCEL-lent compact reverberation chamber available, spring or digital.



XL-305 PRELIMINARY SPECIFICATIONS

INPUT

Type: Active Balanced, Ground Sensing	
Impedance, Differential Connection	>6K Ohms
Impedance, Unbalanced Connection	>3K Ohms
Common Mode Rejection, 20-20K Hz	>45 dB
Minimum Input Level Ref 0 dBV \pm 0.775v	-15 dBv
Maximum Input Level Ref 0 dBV \pm 0.775v	+18 dBv

OUTPUT

Impedance	< 15 Ohms
Gain Adjustment Available Ref 0 dBm	\pm 10 dB
Maximum Output Level	+18 dBm rms

FREQUENCY RESPONSE (Ref 1 kHz)

Direct Signal, 20-20K Hz	+0, -2 dB
Reverberant Signal, 125-8K Hz, Octave Noise	\pm 5 dB

THD, DIRECT SIGNAL

At 0 dBm, 20-20K Hz	< .06 %
At +18 dBm, 20-1K Hz	< .40 %
At +18 dBm, 1K-20K Hz	< .06 %

RESIDUAL NOISE AT UNITY GAIN

Direct Signal Channel, 20 kHz Bandwidth	<-85 dBm
Reverberant Signal Channel, Unweighted, EQ "Flat"	<-70 dBm
Reverberant Signal Channel, Weighted, EQ "Flat"	<-73 dBmA

DECAY TIME AT 1 KHZ

3.25 sec

REVERBERANT CHANNEL CROSSTALK

<-45 dB

EQUALIZATION

Circuit Location: Reverberant Channel, Post Chamber	
Type: Reciprocal Peak/Dip	
Nominal Frequencies: 150, 600, 2,500 And 6,000 Hz	
Control Range At Each Frequency	\pm 12 dB

LEVEL INDICATORS

Circuit Location: Sound Chamber Drive Signal	
Display: Green, Yellow And Red Led's	
Levels Indicated:	-6, 0, +6 dB

POWER REQUIREMENTS

Voltage (50-60 Hz), +15/-10%	120/240 Volts
Power Consumption	<12 VA

MECHANICAL

Size	3 $\frac{1}{2}$ H x 19W x 11D inches
Weight	<10 lb

BALANCED TRANSFORMER OPTION

Input Impedance (Floating)	600/5K Ohms
Output Impedance (Floating)	<40 Ohms

NOTE: Transformer coupling causes some variations and minor degradation to some specification values and increases weight by approximately two pounds.

ORDERING INFORMATION AND PRICING

Model XL-305	(Standard Unit)	\$1195.00
Model XL-305 T	(Transformer Option)	\$1320.00