



# MTD108a

**PASSIVE  
COAXIAL  
LOUDSPEAKER**

## APPLICATIONS

L-ACOUSTICS® MTD108a is a passive 2-way coaxial loudspeaker with extremely compact dimensions and highly flexible packaging. Utilizing a 1" compression driver that is directly loaded by the 8" loudspeaker in a true coaxial alignment, the MTD108a produces a coherent, single point source wavefront at all frequencies with stable imaging due to its 100° axi-symmetric directivity. Sonic quality and the ratio of performance-to-size were the chief design criteria for the MTD108a and its frequency response is exceptionally flat, providing excellent fidelity and optimum speech intelligibility.

The MTD108a is ideal for distributed sound reinforcement in theatre, corporate, restaurant, retail, nightclub, or television (AV) applications and is an excellent candidate for either delay ring, front fill or underbalcony use. The ultra-compact format of the MTD108a allows for visually-discrete installation in all of these applications.

The MTD108a is equally useful as a compact, high-efficiency floor monitor for concert, theatre, dance, corporate or television applications. Due to its dual trapezoidal construction, the MTD108a can be used for either short- or long-throw floor monitoring.

Given its superb fidelity and dynamic response, the MTD108a is also effective in situations that are typically unaccustomed to sound reinforcement, in particular, for classical music and opera where high quality sound reinforcement is essential.

Enclosure tuning for the MTD108a has been optimized to provide maximum mid/high efficiency along with sufficient low frequency extension for limited bandwidth music. For applications that require additional low end impact, the use of a complementary L-ACOUSTICS subwoofer is recommended.

The L-ACOUSTICS MTD108LLCa is a stereo analog controller that provides optimum equalization and band limiting for the MTD108a along with system protection and processing for use with subwoofers. Active sense return monitoring guarantees safe operation and the controller provides both thermal protection and cone excursion limiting.

Given its compact size, exceptional sound quality and flexible installation accessories, the MTD108a provides a unique degree of versatility in its class.

## L-ACOUSTICS PROFESSIONAL SOUND SYSTEM



- ▶ **Small format for distributed systems and floor monitoring**
- ▶ **Excellent for short and medium throw**
- ▶ **Ideal for front fill and underbalcony use**
- ▶ **Studio monitor quality for live applications**
- ▶ **Dual concentric (coaxial) driver assembly**
- ▶ **100° conical directivity**
- ▶ **Suitable for touring or fixed installation**
- ▶ **Passive two-way system (8" and 1" compression driver)**

## SPECIFICATIONS

L-ACOUSTICS specifications are based on measurement procedures which produce unbiased results and allow for realistic performance prediction and simulation. Some of these specifications will appear very conservative when compared with other manufacturer's specifications. All measurements are conducted under free field conditions and scaled to a 1 m reference distance unless otherwise indicated.

### Frequency Response

Frequency Response	85 - 20k Hz (± 3 dB)
Usable Bandwidth	65 - 20k Hz (- 10 dB)

### Sensitivity<sup>1</sup>

(2.83 Vrms @ 1m)	94 dB SPL	85 - 20k Hz
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### Power Rating<sup>2</sup>

		Amplification		Impedance
(Long term)		(Recommended)		(Nominal)
45 Vrms	250 Wrms	1000 Wpeak	500 W	8 ohms

### Nominal Directivity (-6 dB)<sup>3</sup>

Axi-symmetric	100° (± 15°)
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### System Output<sup>4</sup>

	SPL	
One enclosure	117 dB (rms)	123 db (peak)

### Components

LF	1 x 8" weather resistant loudspeaker (2" voice coil)
HF	1 x 1" neodymium compression driver (coaxial assembly)

<sup>1</sup> Sensitivity is the average SPL measured over the component's rated bandwidth

<sup>2</sup> Power rating displays the long term RMS voltage handling using pink noise with a 6 dB crest factor over the component's rated bandwidth

<sup>3</sup> Directivity is averaged over the 1-10 kHz range

<sup>4</sup> System output gives the unweighted SPL output of the system referenced to 1 m

### Enclosure

- Height 421 mm 16.6 in
- Width 250 mm 9.8 in
- Depth 242 mm 9.5 in
- Trap Angle: 22.5° or 45° with respect to vertical
- Weight (net) 10.5 kg 23.1 lbs
- Shipping Weight 11.5 kg 25.3 lbs
- Shipping Dims 490 x 330 x 310 mm 19.3 x 13.0 x 12.2 in
- Connectors: 2x 4-pin Neutrik Speakon
- Material: 15 and 18 mm Baltic birch plywood (sealed, screwed and rabbeted)
- Finish : Maroon-gray™
- Grill : Black epoxy perforated steel with acoustically transparent foam
- Rigging : Integral flying hardware and pole mount support

### Additional Equipment

- L-ACOUSTICS LA15 or LA17 power amplifier
- L-ACOUSTICS SB115, MTD118, SB218 subwoofers

## ARCHITECT SPECIFICATIONS



The enclosure shall be a passive, two-way, full range coaxial loudspeaker.

As a full range system, the usable frequency range shall be 85 Hz - 20 kHz with less than +/- 3 dB variation in frequency response. Over this bandwidth, the maximum continuous unweighted SPL under freefield conditions shall be at least 117 dB at 1 meter with 6 dB of headroom remaining. The usable frequency response shall be 65 - 20kHz.

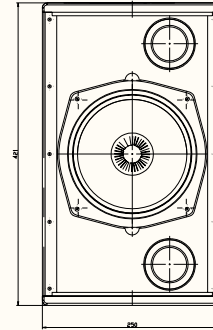
The loudspeaker shall be bass-reflex loaded and contain a coaxial transducer assembly consisting of one 8-inch, direct radiating low frequency component and one 1-inch titanium diaphragm, neodymium magnet, compression driver. The cone body of the low frequency component shall provide pattern control loading of the compression driver and yield 100° conical directivity that is vertically and horizontally symmetrical. The crossover frequency between low and high sections shall be 2 kHz. Long term power handling capacity for a pink noise test signal with 6 dB crest factor shall be 250 Wrms at a nominal 8 ohm impedance.

For floor monitoring, the loudspeaker shall offer 22.5° or 45° listening angles with respect to vertical. Loudspeaker dimensions shall be 42.1 cm (16.6 in) high, 25.0 cm (9.8 in) wide by 24.2 cm (9.5 in) deep. Loudspeaker weight shall be 10.5 kg (23.1 lbs). Connection to the loudspeaker shall be via two 4-pin Neutrik Speakon connectors which are in parallel and accessible on one side of the enclosure.

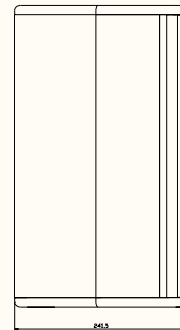
Cabinet construction shall consist of 15 mm (0.6 in) and 18 mm (0.7 in) Baltic birch plywood with joints that are sealed, screwed and rabbeted. The finish shall be maroon gray, high resiliency paint. The front of the loudspeaker shall be protected by a black powder-coated 1.5 mm (0.06 in) thick steel grill that is covered with an acoustically transparent open cell foam that is 5 mm (0.2 in) thick.

The loudspeaker shall include 4 integral rear attachment points for wall mounting using an optional Omnimount rigging accessory along with an integral 35 mm (1.38 in) diameter pole mount socket for tripod mounting. An integral top plate and the bottom pole mount socket shall allow for rigging the enclosure using an optional, adjustable U bracket.

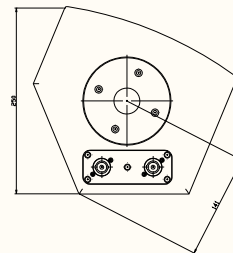
The loudspeaker system shall be the L-ACOUSTICS MTD108a.



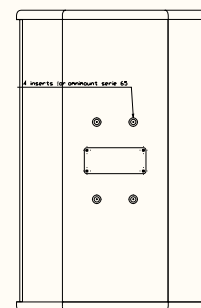
FRONT



SIDE



BOTTOM



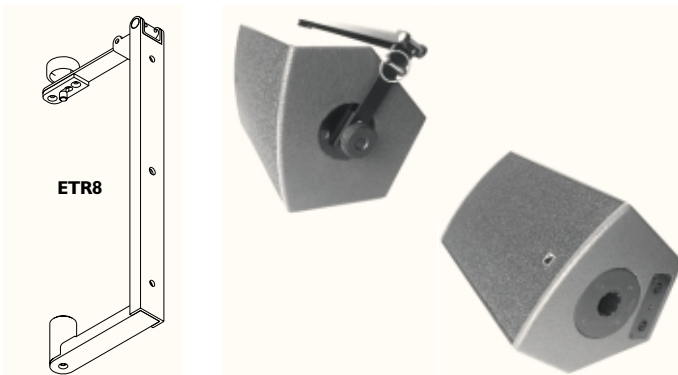
REAR

SCALE 1:10

## ACCESSORIES



ETR8 : Adjustable U bracket for wall or scaffold mounting of the MTD108a. One end of the ETR8 mates with the integral pole mount socket of the MTD108a then the pivoting swing arm is attached to the enclosure via the tilt adjustment knob, allowing for continuous rotation of the loudspeaker within the U bracket.

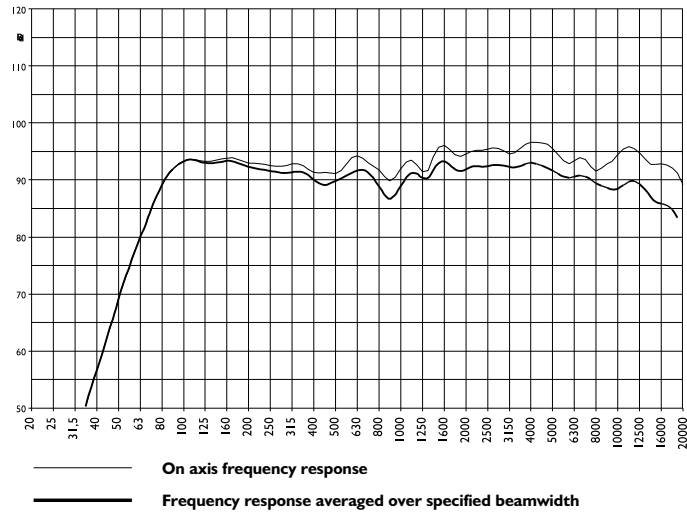




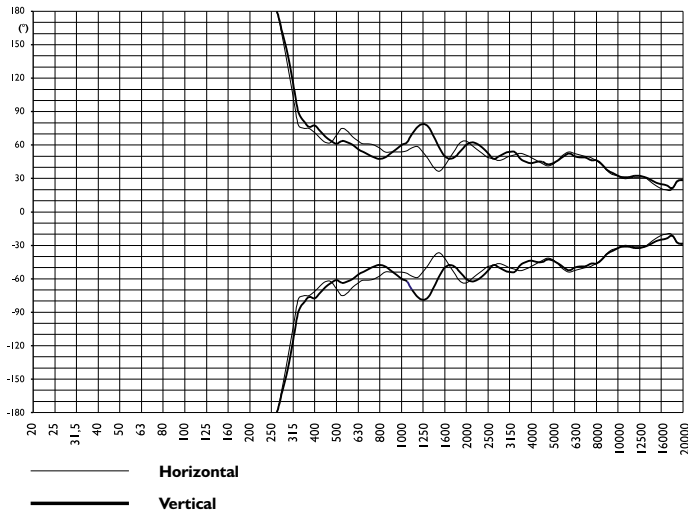
# MTD108a

PERFORMANCE  
DATA

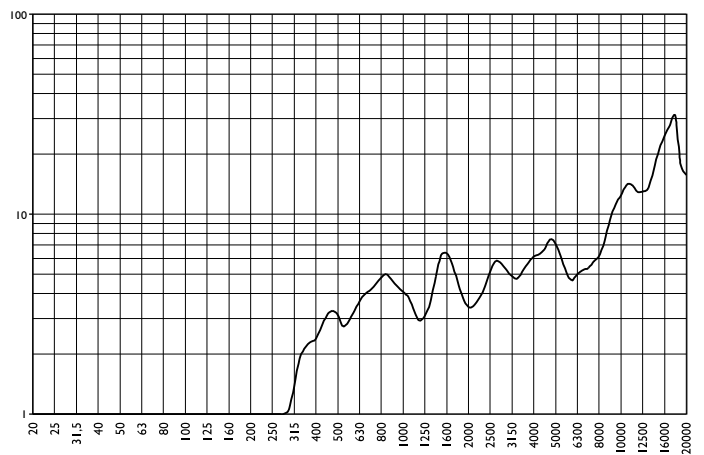
## FREQUENCY RESPONSE



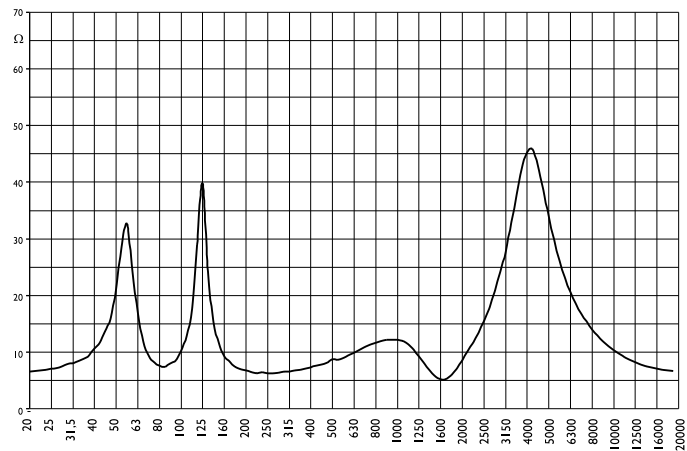
## BEAMWIDTH



## DIRECTIVITY FACTOR Q



## IMPEDANCE





# MTD108 LLCa

ANALOG  
CONTROLLER

## DESCRIPTION

The MTD108LLCa line level controller is an analog signal processing unit that optimizes the performance of the MTD108a. The stereo controller accepts two signal inputs and provides two processed outputs for the respective input channels. The main functions of the MTD108LLCa controller are as follows:

- Bandpass filtering and equalization (3 modes, selectable)
- Sense Return processing for thermal protection of speaker components and cone excursion limiting (voltage and frequency dependent)
- Mono input summation for subwoofer or center fill drive
- Crossover filtering, equalization for subwoofer drive

Three different equalization/bandpass filtering modes tailor the frequency response of the MTD108a for different applications. In MONITOR mode, high pass filtering is set at 80 Hz with a 12 dB/octave slope in order to provide an equalization contour suitable for speech reinforcement or floor monitor applications. In FRONT mode, a 50 Hz high pass filter is employed and low frequency shelving equalization provides a contour more suitable for full bandwidth music applications. In X-OVER mode, a 125 Hz high pass filter is applied and there is no low frequency shelf since the MTD108a is intended to be used with subwoofers.

When the second front panel switch is set to SUB mode, the mono output on the rear of the controller provides a summed output of the two signal inputs with low pass filtering set at 125 Hz and equalization optimized for the SB 115 subwoofer (equalization for the MTD118 or SB 218 are selectable via internal jumpers). Alternatively, the summed MONO signal output can be used to feed a power amplifier allotted to a central fullrange fill loudspeaker (SUM mode).

The MTD108LLCa is connected in series with two amplifier channels for sense return processing, i.e., amplifier outputs are connected to the "Sense Return" input of the MTD108LLCa. Protection circuitry monitors the signal applied to the loudspeakers to provide thermal protection of speaker components plus voltage and frequency dependent cone excursion limiting.

## SPECIFICATIONS

### Technical

Inputs	Electronically balanced 10 kΩ input (pin 2 hot)
Outputs	Electronically balanced 50 Ω output (pin 2 hot)
Input Headroom	+20 dBV
Nominal Gain at 200 Hz	0 dB (unity gain)
Signal to Noise	> 84 dB
Dynamic Range	> 104 dB
THD	<0.1% (20 to 20k Hz @ 0 dBV)
Bandpass/Equalization Filters	3 modes: MONITOR = 80 Hz (BW12 HP) FRONT = 50 Hz (LR24 HP+EQ) XOVER = 125 Hz (HP) Low-pass: 20 kHz SB115 Subwoofer: 40-125 Hz (LR24HP/LP+EQ)
Speaker Protection	RMS limiter & peak limiter

### Front & Rear Panel

Indicators	Signal: green LED for each section Control: yellow LED for each section
Front Panel Controls	AC power, MODE select, SUB/SUM select
Rear Panel Control	IN PHASE/OUT PHASE (MONO output polarity)
Front Panel Connectors	Channel 1, 2 XLR inputs, parallel loopthrough Loudspeaker: 2x 4-pin Neutrik speakon
Rear Panel Connectors	Sense Return: 4-pin Neutrik speakon MONO, Channel 1, 2 XLR line outputs
Power Requirement	100 V - 240 V 50/60 Hz
Power Consumption	15 W

### Physical

Finish	Black anodized front panel, white serigraphy
Net Dimensions	483 x 44 x 305 mm 19 x 1.75 x 12.0 in
Shipping Dimensions	505 x 80 x 415 mm 19.9 x 3.1 x 16.3 in
Net Weight	3.75 kg    8.3 lbs
Shipping Weight	4.8 kg    10.6 lbs



FRONT



BACK

Specifications subject to change without notice

## L-ACOUSTICS

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Specs MTD108a 0801