

# 833

## Studio Reference Monitor System



Designed for control room monitoring applications, the 833 Studio Reference Monitor reproduces an extremely wide dynamic range with exceptionally low distortion. The system is optimized in all respects to deliver an accurate reflection of its input signal, providing a reliable reference standard for professional recording and reproduction.

The 833 Loudspeaker comprises a proprietary 15-inch low-frequency driver in a vented enclosure with a 40 by 80 degree high-frequency horn and driver. An internal passive network provides the cross-over between the low- and high-frequency components. The solid, resonance-free cabinet is available in either a black satin or a natural walnut finish.

The 833 System specifications meet the most demanding professional requirements. Displaying exceptionally well-con-

trolled directivity characteristics with excellent frequency and phase response, the system facilitates accurate microphone placements and equalization while ensuring maximum consistency of recorded product over the broadest range of playback systems. It is fully protected against damage from excessive power or amplifier failure, and maintains its specifications through years of continuous use.

The 833 Studio Reference Monitor requires a professional stereo power amplifier capable of delivering 250 to 400 watts per channel continuously into 8 ohms with a signal voltage gain of 20 dB (minimum) to 30 dB (maximum).

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### Features

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High continuous and peak output

Ultra-low distortion

SpeakerSense™ protection

User-settable peak limiter

19-segment power display

Black satin or walnut finish

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### Applications

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Music recording

Compact Disc™ mastering

Postproduction

Project studios

Broadcast monitoring

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STUDIO SERIES

# 833 System Specifications

## Acoustical — 833/C833 System

Frequency Response <sup>1</sup>	35 Hz – 18 kHz $\pm$ 3 dB	
Time Response	$\pm$ 350 $\mu$ sec from 100 Hz to 20 kHz	
	$\pm$ 25 $\mu$ sec from 2 kHz to 20 kHz	
Maximum SPL <sup>2</sup> with amplifier rated at:	250W/8 ohms/ch 60W/8 ohms/ch	
Continuous	120 dB	114 dB
Peak	130 dB	124 dB
Acoustical Crossover Frequency	700 Hz	
HF Coverage, -6 dB points	80 degrees horizontal x 40 degrees vertical	

## 833 Loudspeaker

Transducers		
Low Frequency	MS-15 15" cone driver (gold grade), 8 ohms	
High Frequency	MS-1401A horn driver (gold grade), 16 ohms	
Cabinet Impedance	8 ohms	
High Frequency Horn	Modified radial with foam lens	
HF Network	XM-2	
Function	Passive crossover and DC blocking	
Maximum Safe Amplifier Swing	75 Vpk	
Enclosure	4 cu. ft. vented, heavily braced, veneered MDF	
Finish	Black satin or natural walnut	
Grill	Acoustically transparent cloth on removeable frame	
Connectors	Five-way deep binding posts	
Mounting Hardware	Four 3/8-16 nut plates on cabinet back face, capable of supporting entire cabinet weight	
Physical		
Dimensions	20" W x 32" H x 14 3/4" D	
Weight	93 lbs (42 kg)	

## C833 Control Electronics Unit

Inputs		
Type	Balanced active	
Impedance	10k ohms balanced	
Nominal Input Level	+4 dBu	
Maximum Input Level <sup>3</sup>	+26 dBu	
Outputs		
Type	Balanced active push-pull	
Impedance	300 ohms, 150 ohms per branch unbalanced	
Nominal Output Level	+4 dBu	
Maximum Output Level	+26 dBu	
Hum and Noise	< -90 dBV "A" weighted, unbalanced	
Dynamic Range <sup>4</sup>	120 dB	
Sense Inputs	10k ohms true differential, opto-isolated	
SpeakerSense™ Driver Protection Circuitry	RMS limiters, factory-calibrated	
	Peak limiters, front-panel adjustable	
Indicators		
Power, Ready, Sub	Green LEDs	
Amplifier Power	19-segment LED display, in watts continuous	
Limiters (RMS and Peak)	Red LEDs	
Clip	Red LEDs	
Controls		
Front Panel	Power switch, Channel A & B Input Levels, Peak Limiter (screwdriver adjust)	
Rear Panel	Ground Lift switch, Sub switch, AC Voltage switch	
Connectors		
Balanced Inputs/Outputs	3-pin XLR male (outputs) and female (inputs)	
SpeakerSense™ and Speakers	Barrier terminal strip	
Power	120/240V AC, 50/60 Hz, rear-panel switchable	
Physical		
Dimensions	19" W x 3 1/2" H x 7 1/2" D standard rack mount	
Weight	9 lbs (4 kg)	

### Notes:

1. Measured 1 meter on axis, half-space conditions, pink noise input, in third-octave bands.
2. "A" weighted noise input. Acoustical decibels are referenced to 20  $\mu$ pa.
3. Within the operating band of each channel, maximum input level is the minimum worst-case level achieved before clipping.
4. "A" weighted noise floor to maximum RMS sine wave output.

## C833 Control Electronics Unit

The 833 Loudspeaker operates as a system with the C833 Control Electronics Unit. Optimized for the 833 System and prealigned at the factory, the C833 is a two channel unit comprising frequency and phase response alignment circuitry, Meyer Sound's exclusive SpeakerSense™ driver protection circuitry, a user-adjustable tracking peak limiter, and two 19-segment LED bar displays. The C833 operates at line level, and is designed to be the final component in the signal chain before the power amplifier.

Through a connection to the power amplifier outputs, the C833 SpeakerSense circuits continuously monitor the power applied to the loudspeaker drivers, and limit the audio signal when the safe operating limits of the drives are exceeded. Both RMS and peak-acting limiters are provided, and the set point of the peak limiters may be adjusted to match the clipping point of the power amplifier. (The RMS limiters function as protection

for the system. They are calibrated at the factory, and are not user adjustable.) Until the onset of overload, the SpeakerSense circuitry has no effect on the audio signal.

Also provided is response alignment circuitry tailored for the 834 Subwoofer (see below). Engaged or disengaged by a rear-panel switch, this circuit adjusts the system for flat frequency response when operated with subwoofers. A front-panel LED lights when the Sub switch is engaged.

The 19-segment LED bar display is calibrated to indicate amplifier output power in watts. Driven from the SpeakerSense connection, the driver circuitry for this display performs an averaging calculation to provide an accurate indication of the long-term continuous power applied to the 833 Loudspeakers. The amplifier power display is a valuable tool for maintaining the system within its safe operating limits, and can be of particular value in the mixdown process.

## 834 Studio Subwoofer

In large control rooms and in applications requiring high continuous power levels, the 834 Studio Subwoofer is recommended. The 834 extends the power bandwidth of the 833 System while maintaining flat frequency response, enhancing the system's ability to reproduce low-frequency information accurately at high SPLs.

The 834 Subwoofer System comprises a matched pair of vented cabinets each containing a single MS-18 cone loudspeaker and network. The highly damped enclosure is designed to complement the appearance of the 833 Loudspeakers, and is available in black or walnut finish.

The 834 Subwoofer connects in parallel with the 833 Loudspeaker. An integral passive network provides crossover between the 833 and the 834, allowing the subwoofer to take over at frequencies below 100 Hz. A rear-panel Sub switch on the 833 Control Electronics Unit adjusts the system for flat response.

When connected in parallel with the 833 Loudspeaker, the 834 Subwoofer reduces the total system load impedance to 4 ohms per channel. If the system power



amplifier is unable to drive this impedance, a separate amplifier of identical gain may be employed. No additional control electronics are required in this configuration, as the 833 Control Electronics Unit provides the necessary drive signal for both amplifiers.

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### Features

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High output

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Ultra-low distortion

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Long-excursion 18-driver

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Black satin or walnut finish

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**833/834 Specifications**

**Acoustical - 833/834 Studio Reference Monitor System**

Frequency Response <sup>1</sup>	30 Hz to 18 kHz ±4 dB
Time Response	±350 µsec. from 100 Hz to 20 kHz ±25 µsec from 2 kHz to 20 kHz
Maximum SPL <sup>2</sup>	
Continuous	120 dB
Peak	130 dB
<b>834 Loudspeaker</b>	
Driver Complement	MS-18 (Gold grade)
Acoustical Crossover Frequency	100 Hz
Networks	Low-pass filter, DC protection
Enclosure	8 cu. ft vented, heavily braced MDF
Finish	Black satin or natural walnut
Grill	Acoustically transparent cloth on removable frame
Connectors	Five-way deep binding posts
Physical	
Dimensions	24" W x 36" H x 20" D
Weight	117 lbs. (53 kg.)

**Note 1:**  
Measured 1 meter on axis, half space conditions, pink noise input in third-octave bands.

**Note 2:**  
"A" weighted noise input, loudspeaker driven by 250 watt/channel (8 ohm rating) power amplifier.

**Related Products**

The following Meyer Sound products are ideal complements to the 833/834 Studio Reference Monitor System in professional applications:

**HD-1 High Definition Recording Monitor**

The HD-1 is a compact, high-definition loudspeaker system for "near field" monitoring applications. It comprises a proprietary 8-inch cone low-frequency driver and dome high-frequency driver in a vented cabinet. An active crossover frequency and phase response alignment circuitry, driver protection circuitry and dual power amplifiers are built into the enclosure. Frequency response is 32Hz to 22 kHz. The HD-1 produces maximum SPL of 120 dB peak, with a signal-to-noise ratio in excess of 100 dB.

**CP-10 Parametric Equalizer**

The CP-10 is a ten-band stereo equalizer featuring five bands of fully parametric equalization per channel, with additional high and low shelving cut filters for each channel. Employing Meyer Sound's exclusive Complementary Phase equalization networks, the CP-10 is de-

signed specifically to correct the types of acoustical problems found in typical control rooms. The CP-10 also serves as a very effective, high-quality outboard equalizer for music recording. Its graceful, symmetrical parametric filters and natural phase characteristics ensure maximum flexibility with minimum sonic perturbation.

**VX-1 Stereo Program Equalizer**

The VX-1 is a two-channel signal processor that is optimized for composite frequency response shaping of stereo program material. Featuring a unique Virtual Crossover™ implementation, the VX-1 provides five controls for each input channel: two frequency breakpoint settings, and separate gain controls for the Low, Mid and High frequency bands. The crossover metaphor makes the VX-1 a simple but powerful tool for generating a wide variety of response shapes. Minimum-phase, first-order networks impart an unusually graceful and natural equalization characteristic.

*Meyer Sound Laboratories has devoted itself to designing, manufacturing, and refining components that deliver superb sonic reproduction. Every part of every component is designed and built to exacting specifications and undergoes rigorous, comprehensive testing in the laboratories. Research remains an integral, driving force behind all production. Meyer strives for sound quality that is predictable and neutral over an extended lifetime and across an extended range.*

**Sound engineering for the art and science of sound.**

