HD-1

High Definition Audio Monitor

Operating Instructions

The HD-1 High Definition Audio Monitor* is a self-contained, precision loudspeaker for near-field sound reproduction.

Aligned to closely approximate a true point source radiator, the HD-1 features exceptionally broad directivity characteristics. Its time delay response is tightly controlled, with minimal deviation from linear phase across the full frequency range of its operation. Each unit is individually factory-calibrated to ensure unprecedented consistency of performance. The HD-1 is suitable for critical applications ranging from professional recording to psychoacoustical research.

The HD-1 is a two-way system comprising an 8-inch cone low-frequency driver and dome tweeter housed in a vented cabinet. The low-frequency driver features an exceptionally large magnet structure and a 2-inch voice coil for greatest efficiency and heat dissipation. The tweeter employs a specially-developed impregnated silk dome to minimize breakup and colorization.

Both drivers are of a proprietary design, and are individually selected for maximum linearity. Their magnet structures employ sophisticated field-cancelling design techniques to minimize magnetic field leakage, and the cabinets may safely be placed

within 2 feet of sensitive color video monitors. For applications requiring closer proximity to monitors, an optional steel-shielded model is available.

The HD-1 incorporates line-level control electronics mounted within a rear-panel chassis, including:

- an active balanced input circuit with switchable sensitivity (+4 dBu or -10 dBV);
- an active crossover utilizing optimized pole-zero filter combinations to achieve acoustical transparency and linear phase;
- independent protection circuits for each loudspeaker driver;
- dual power amplifiers for biamplification.

The driver protection circuits employ thermo-predictive limiters and soft peak clamps to guard against damage from excessive amplifier power and ensure graceful overload characteristics.

Independent power biamplifiers maximize system headroom, efficiency and damping while minimizing distortion. The low frequency amplifier delivers 150 watts output power, while the high frequency amplifier provides 75 watts. Both employ complementary power MOSFET output stages operating class A at low-to-moderate listening levels (<90 dB SPL), and class AB at high levels.

The HD-1's free-field frequency response is flat within ±1 dB from 40 Hz to 20 kHz (-3 dB at 32 Hz and 22 kHz). It delivers high peak SPL with >100 dB dynamic range and extremely low distortion. Covers are included for use during transport.

*** patents pending**

Meyer Sound

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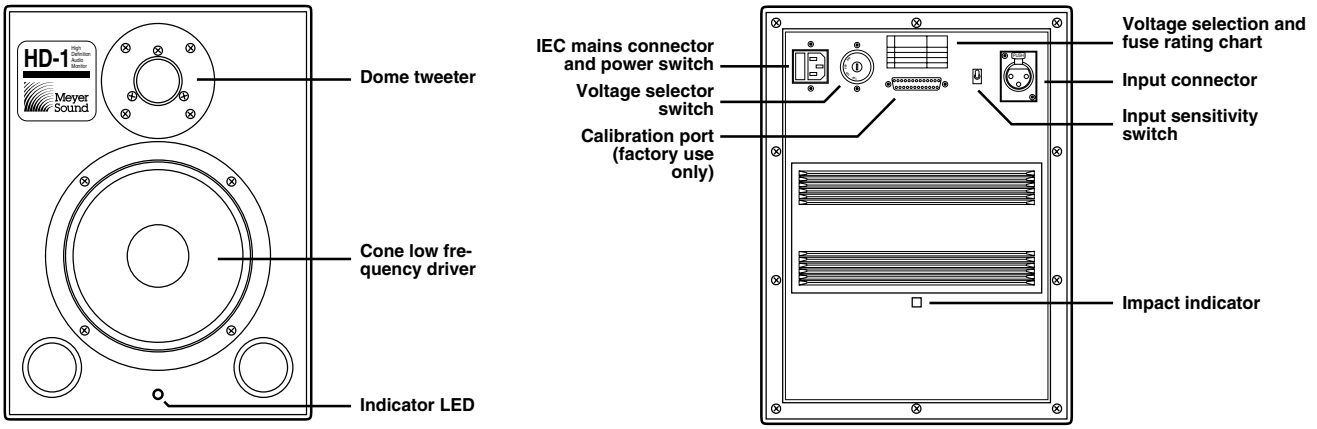
Setup & Operation



Locations of HD-1 Loudspeaker Components, Connectors and Controls

Power

- Set the voltage selector switch before you connect and operate the unit.

The HD-1 accepts AC voltages from 90 to 260 VAC, at 50 or 60 Hz, in four ranges. Select the range that is closest to the local mains AC voltage.

Do not switch among AC voltage ranges with the power cable connected to an outlet.

Fuse

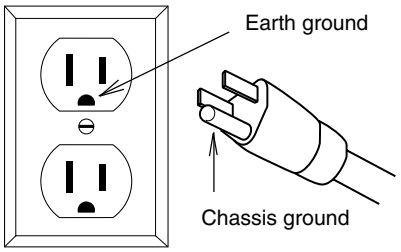
The HD-1 is protected by a fast-acting fuse in the voltage selector switch.

- If the fuse blows, *check the line voltage and the voltage selector setting.*
- Always replace the fuse with a component of the same type and rating.

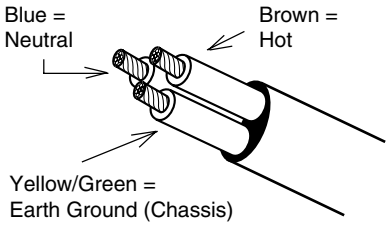
Power Cable

- Connect the HD-1 to a three-prong outlet.

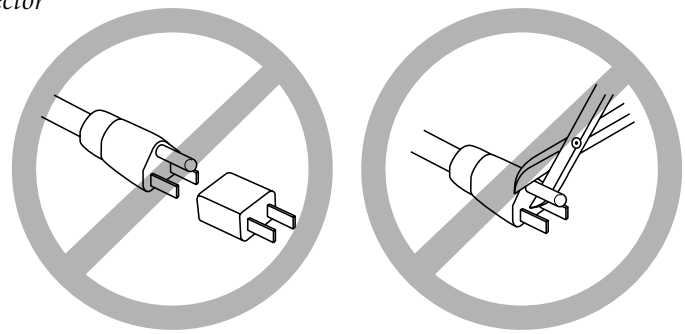
If the power cable appears frayed or broken, replace it immediately before operating the unit.



The HD-1 requires a grounded outlet. Use a grounding adapter when connecting to ungrounded outlets.



AC cable color code for wiring international or special-purpose power connectors



Never use ground-lifting adapters. Do not cut the AC cable ground pin.

Placement

The HD-1 is designed for "near field" operation. The best listening distance is between 3 and 9 feet from the speaker face.

The HD-1 is aligned for flat frequency response in free field (no adjacent boundary surfaces). Placing it next to a wall or on the floor will cause the low frequencies to be exaggerated.

Nearby surfaces (such as a mixing console control surface) should be angled to minimize reflections toward the listener.

For stereo playback systems, speaker stands are highly recommended. Place them at least 3 feet from any wall. In recording studios the speakers may be placed on the meter bridge.

When handling the HD-1, avoid touching or pressing on the dome tweeter. If the dome becomes dented, the unit should be returned for testing and calibration *even if the dome pops back into position.*

- Always allow at least 6 inches clearance behind the speaker for cooling airflow.

Input Connection

The HD-1 presents a 10 kohm input impedance at a three-pin XLR-type receptacle wired as follows:

Pin 1 Audio common
Pin 2 Signal low (-)
Pin 3 Signal high (+)
Case Earth (AC) ground

Shorting any input connector pin to the case may form a ground loop and cause hum.

Standard audio cables with XLR-type connectors may be used for balanced signal sources. Unbalanced sources will require an in-line adapter.

Sensitivity Switch

- For professional balanced equipment, use the +4 dBu setting.
- For semiprofessional and consumer unbalanced equipment, use the -10 dBV setting.

Note that the -10 dBV setting is *more sensitive* (designed for *lower* signal levels) than the +4 dBu setting:

- **+4 dBu position:**
  1.23 VRMS = 114 dB SPL RMS
- **-10 dBV position:**
  0.316 VRMS = 114 dB SPL RMS

Driving the HD-1 from a +4 dBu source with the switch set to -10 dBV will result in increased noise.

Operation

In normal operation, the front-panel LED will glow green.

At high listening levels, the LED may flash red on program peaks. This indicates the onset of overload, where the loudspeaker protection limiters are activated.

If the LED is continuously red for an extended period (8 hrs.), thermal damage may result.

Calibration Port

The calibration port is for factory use only. Do not apply external voltages to any of the connector pins.

Troubleshooting

Problem	Symptom	Possible Cause	Action
No sound	Power switch on but switch not lit	Bad AC connection	Check AC outlet and power cord.
	Power switch on and lit, LED out	Blown fuse	Replace fuse. Check voltage selector and AC line.
	Power switch on and lit, LED lit	Signal source disconnected	Check input cables, connectots and signal source.
Distorted sound with hum		AC voltage selector incorrectly set	Turn off HD-1. Check AC outlet voltage and selector switch setting.
	Selector switch setting correct	Power brownout	Turn off HD-1. Check AC outlet voltage; if low, contact power company.
Low sound levels		Insufficient drive from signal source	Increase source equipment output level.
		Input sensitivity incorrectly set	Set input sensitivity switch to -10 dBV
Hiss		Input sensitivity incorrectly set	Check sensitivity switch and source equipment output.
	Sensitivity setting correct	Program material	Stop playback. If hiss disappears, check program.
	Program material OK	Source equipment malfunction	Unplug input connector. If hiss disappears, check source equipment.
Distorted or intermittent sound		Bad input connection	Check input cables
	Input cables OK	Defect in signal source equipment	Substitute known good signal source. If problem stops, replace signal source equipment.

Obtaining Service

The HD-1 Monitor is protected by Meyer Sound's Limited One-Year Warranty. For complete information regarding terms and conditions, refer to the printed warranty statement that is packed with the system.

To extend coverage to two full years, and assure notification of product improvements or literature updates, complete and mail the enclosed Warranty Registration Card.

To obtain service:

1) Contact your dealer or call Meyer Sound.
2) If you are calling Meyer Sound, have the serial number(s) of the unit(s) at hand for reference. Ask for Customer Service, and be prepared to describe the problem clearly and completely.
3) If the problem cannot be resolved over the phone, you must return the unit for service.
4) You will be given an RA (Return Authorization) number for job tracking. Refer to this number on shipping materials and in all correspondence concerning the repair. Shipping charges are the responsibility of the purchaser.

Any attempt to modify or replace components of the HD-1 will invalidate your warranty. Service *must* be performed by a Meyer Sound service center.

Specifications

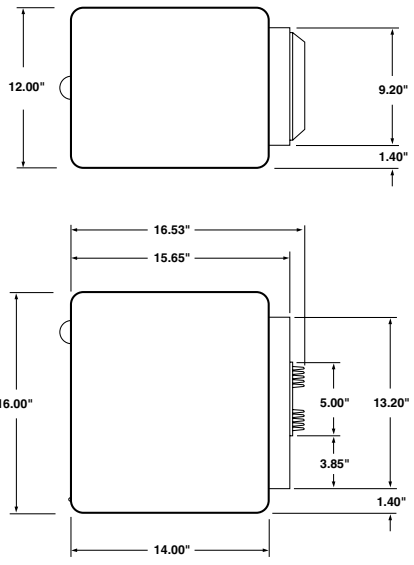
Acoustical - HD-1 System	
Frequency Response[1]	32 Hz to 22 kHz
Free Field	-3 dB at 32 Hz and 22 kHz
	±1 dB from 40 Hz to 20 kHz[2]
Maximum SPL	125 dB SPL peak capability (120 dB @ 1 meter)
Signal-to-Noise Ratio	> 100 dB (noise floor 20 dBA @ 1 meter)
Coverage Angle (-6 dB)	60 degrees horizontal and vertical
Audio Input	
Type	Electronically balanced, 10k ohms impedance
Connector	XLR (A-3) female
Nominal Input Level	Accepts either +4 dBu or -10 dBV, switchable
Amplifiers	
Type	Complementary power MOSFET output stages
Power Output	
Low Frequency	150 watts burst capability
High Frequency	75 watts burst capability
THD, IM, TIM	< .02 %
Crossover	Optimized pole-zero filter combinations to complement transducer response and to achieve acoustical transparency and flat phase
Transducers	
Low Frequency	8" diameter cone (2" voice coil)
High Frequency	1" dome tweeter (1" voice coil)
AC Power	3-pin IEC male receptacle. Voltage selector switch for 100/120/220/240 VAC, 50 or 60 Hz (accepts voltages from 90 to 260 VAC)
Physical	
Dimensions	16" H x 12" W x 14" D (+ 2" additional depth for amplifier chassis and HF dome clearance)
Weight	51 lbs. (23 kg.)
Stray magnetic field	<1 Gauss in all directions from cabinet

Notes:

1. **Subject to room loading. Specified for 8 feet actual distance between HD-1 cabinet and a single boundary surface.**
2. **One-third octave resolution.**

Unless otherwise specified, all acoustic and magnetic measurements are performed at one-half meter from front baffle on tweeter axis.

Physical Dimensions



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