
**Assembly and Installation Instructions
for the
AudioScience Microphone**

**TANDBERG
D 50053, Rev 5.0**

AudioScience Microphone Parts Listing

Before proceeding, please ensure that the following list of parts was received with your new AudioScience Microphone package. If any part is missing or damaged, contact your TANDBERG Representative to arrange for a replacement.

Qty	Part Description	Present?
1	Acrylic Top Deflector Fitted With Microphone Assembly	
1	Rear Deflector	
4	Cable Suspension Assemblies	
2	Safety Cable Assemblies	
4	9/16" Ceiling Track Clips	
4	15/16" Ceiling Track Clips	
4	1/2" x 1" Eye Bolts	
2	1/4 Universal Snap Hooks	
1	47' Plenum Rated Microphone Cable Assembly	
6	Nylon Washers	
6	Shoulder Screws	
10	White Cable Ties	
1	20 Foot Length of "Bailing" Wire	
1	Bottle of Brilliance Plastics Cleaner	
1	Sofkloth Towel	
1	Assembly and Installation Instructions	

Tools Required for Assembly and Installation

- Step ladder (To suit ceiling height)
- Wire cutter
- Knife or other tool to notch the ceiling tiles
- Any tools required to snake cable through the wall (if desired)

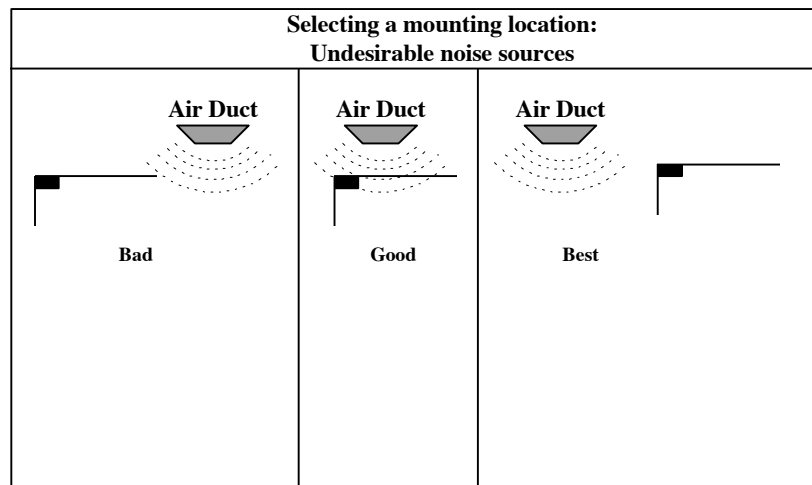
Installation Considerations

1. The standard hardware included with the microphone is intended to be clipped to ceiling tracks with the standard inverted “T” shaped cross-section, and with the horizontal part of that “T” to be either 9/16” (14 mm) or 15/16” (24 mm) in width. Also, the Ceiling should be located at a distance between 8 feet (2.4m) and 10.5 feet (3.2m) from the floor. For ceiling arrangements other than those listed above, four eyebolts are included to allow the microphone assembly to be fastened to the ceiling with chains, rope, or other hanging implements. TANDBERG also offers the *AudioScience Comprehensive Mounting Kit*. This kit includes anchors and hangings for ceilings ranging in height from 7.5 feet (2.3m) to 16 feet (4.9m) and should be suitable for nearly all-ceiling types. Consult with your TANDBERG Dealer to order one of these kits if necessary.
2. The standard cable included with the microphone is 47 feet (14.4 meters) long and plenum rated to comply with fire code regulations. This allows the microphone to be mounted up to about 30 “ceiling feet” (9.2 meters) away from the system. If the microphone is mounted further away, additional cable needs to be ordered. This cable is available in several standard lengths and can be ordered from your local TANDBERG Representative.
3. When mounted at the recommended height, the microphone assembly has a horizontal pickup range of about 14 feet (4.3 meters). This means that all seating positions should be within this range of the microphone capsule. If there are substantial numbers of desired seating positions outside this area, then additional microphones may need to be installed.
4. The microphone cable should be routed from the microphone on the ceiling to the system on the floor in an aesthetic manner, such as within a conduit or wall “punch-out”.
5. The AudioScience microphone is currently limited for use on the TANDBERG Educator, TANDBERG HCSIII, TANDBERG Vision 800, TANDBERG Vision 2500, TANDBERG Vision 5000, TANDBERG vision 6000, TANDBERG vision 7000, and other approved systems. Other applications will be documented, as they become available.

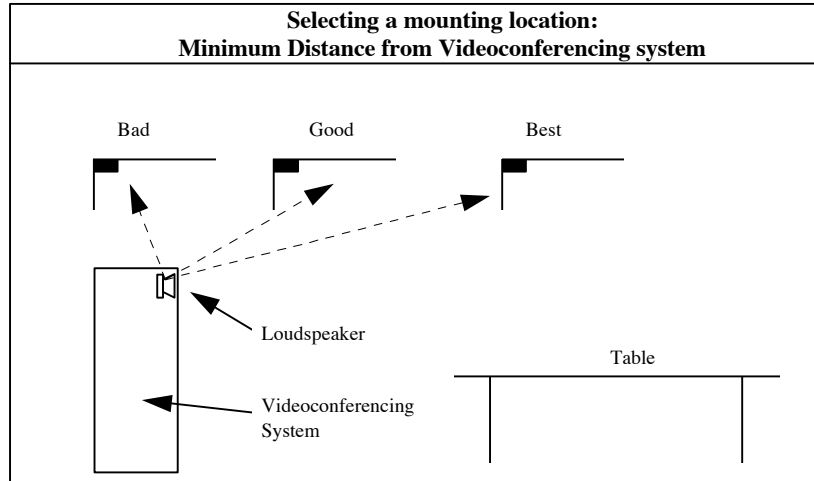
Selecting a Mounting Location

The mounting location of the AudioScience microphone can be determined through the application of five principles. These principles are to be used as a general guide as to locating the microphone. Adherence to these principles will allow the AudioScience microphone to function at its highest potential. If, due to other concerns, the microphone has to be mounted in a less than ideal position or manner, it will still function, and may function quite well, but not as well as it is capable of.

1. All desirable seating positions should be within 14 horizontal feet (4.3 meters) of the microphone capsule, with an unobstructed line of sight to the microphone capsule.
2. The supplied hardware is for mounting the microphone to ceilings that are between 8 feet (2.4m), and 10.5 feet (3.2m) high. With those ceiling heights, the bottom of the rear deflector will be between 6.5 feet (2m) and 9 feet (2.7m) above the floor. If the microphone needs to be hung in rooms with ceiling heights greater or less than this recommended range, either order the *AudioScience Comprehensive Mounting Kit*, or arrange some sort of alternative mounting system.
3. All undesirable noise sources should be blocked from reaching the microphone capsule by one or both boundaries of the microphone.

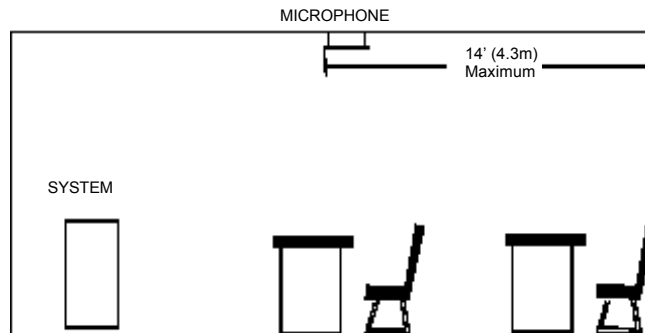
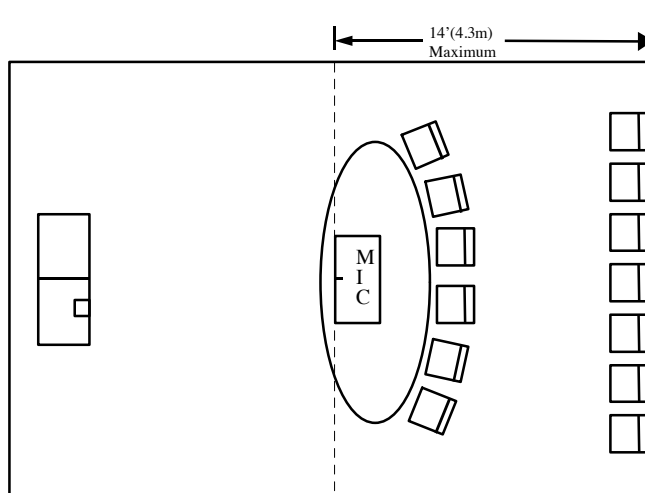


- The microphone should be mounted far enough away from the videoconferencing system such that one or both boundaries of the microphone are between the microphone element and the loudspeakers of the videoconferencing system to prevent coupling of the direct sound from the speakers into the microphone element.

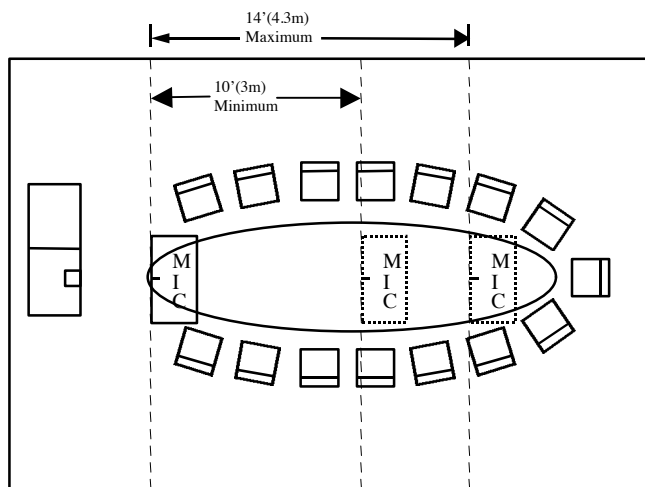


- The mounting holes of the microphone boundary must be directly under a ceiling track to allow for mounting hardware. Additionally, to allow for easier changing of lighting tubes or bulbs, the microphone should not be mounted where the microphone blocks these items. If, due to acoustic concerns, a light fixture has to be “blocked” then string the microphone cable in such a way as to allow for removal of the microphone when light bulbs or tubes need to be changed.
- If more than one microphone is to be used, consult your TANDBERG Dealer for recommendations on mounting locations of the AudioScience microphone. TANDBERG has available a document *The TANDBERG AudioScience Microphone: Theory and Operation*, which can be helpful in understanding the issues involved with operating in a multiple microphone environment.

Typical Room Mounting Arrangement

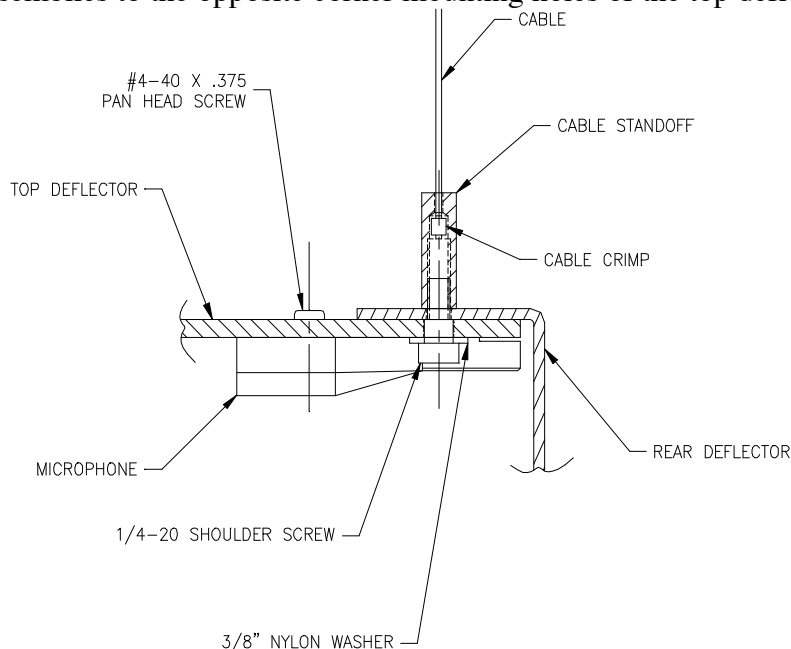


Typical "Boardroom" Mounting Arrangement

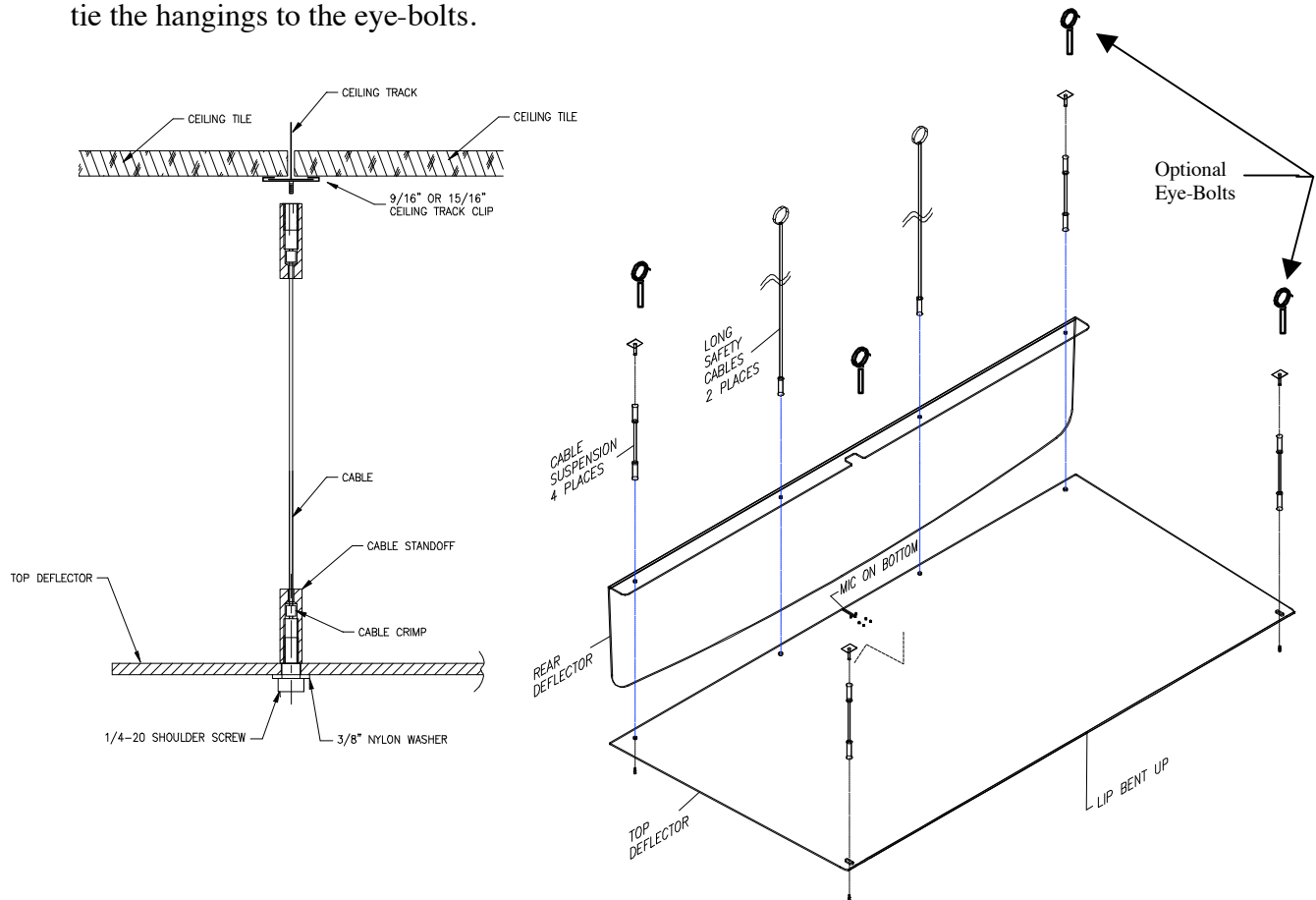


Assembly and Installation Instructions

1. Read the “Installation Considerations” on page 2 and proceed after all considerations have been understood and satisfied.
2. Read the guidelines for “Selecting a Mounting Location” on page 3 and select a mounting location.
3. If the microphone will not be mounted to ceiling tracks, and the *AudioScience Comprehensive Mounting Kit* has not been ordered, then the four eye-bolts can be used. Attach one eye-bolt to one end of each of the four cable suspension assemblies.
4. If the ceiling does have conventional “inverted – T” ceiling tracks, determine if the ceiling tracks are 9/16” (14 mm) wide or 15/16” (24 mm) wide. Eight ceiling track clips have been included. Four are for 9/16” ceiling tracks, and four are for 15/16” (24 mm) ceiling tracks. Discard the four that are not required.
5. Attach the ceiling clips to the ceiling grid. Attaching the ceiling clip requires a twisting motion while applying upward pressure on the clip. Adjoining ceiling tiles may need to be pushed up to fully attach the ceiling clip. Place the clips in positions to match the location of the AudioScience microphone's mounting holes at each corner of the top deflector.
6. Remove the protective paper from all surfaces of the top and rear deflectors.
7. Attach the rear deflector to the top deflector using the two cable suspension assemblies at the outer mounting holes, and two of both the shoulder screws and Nylon washers. Tighten the shoulder screws to be “finger-tight.” In the same manner, attach the two remaining cable suspension assemblies to the opposite corner mounting holes of the top deflector.



- With the assistance of another person, attach the AudioScience microphone assembly to the ceiling. This is done by supporting the plastic boundary structure while the cable suspension assemblies are threaded onto the ceiling clips. If the Eye-bolts were used instead, then simply tie the hangings to the eye-bolts.



- Attach the two safety cables to the AudioScience microphone, and connect them to solid anchoring points in the ceiling. *Do Not* attach the safety cables to electrical or other wiring. (The 1/4" universal snap hooks and the bailing wire may be used to achieve this.) Allow enough slack to let the ceiling tiles slide into place, but not enough to allow the microphone unit to hit anyone in the case of ceiling track failure.
- Push back the ceiling tiles located directly above the microphone unit. Route the microphone cable up from the hole in the top deflector, along one of the safety cables, to the ceiling. Use the supplied cable ties to attach the microphone cable to the safety cable.
- Plug the 47' microphone cable assembly into the XLR connector connected to the microphone capsule. Route the cable across the ceiling and down a wall located near the Videoconferencing system. If the cable is to be installed in a wall, a "fish tape" or conduit may be necessary to get the cable from the ceiling to the floor.
- Within the black XLR connector attached to the microphone capsule is a switch which is accessible from the side of the XLR connector. Switch it to the "■" position.

13. Replace the ceiling tiles. Small notches may need to be cut in the ceiling tiles to allow for the microphone cable and safety cables.
14. Using the Brillianize plastic cleaner, and the Sofkloth towel, wipe clean the plastic surfaces of the AudioScience microphone. The microphone is now ready for use.

Specifications:

Physical:

Maximum dimensions: 52 inches (132cm) x 27.5 inches (70cm) x 13 inches (33cm)

Weight: 14 pounds (6.3kg)

Shipping Weight: 24 pounds (10.9kg)

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Electrical:

Transducer: Electret Condenser

Impedance: 240 Ohms

Open-Circuit Sensitivity: 7mV/Pa (-43dB re 1V/Pa)

Power Sensitivity: -43dB re 1mW/Pa

Equivalent Noise Level: 20dB SPL typical (0dB=.0002 dyne/cm²), A weighted

S/N ratio: 74dB minimum at 94dB SPL

Maximum SPL at 3% THD: 150 dB SPL

Operating Voltage: 12 to 48 VDC Phantom power with positive voltage on pins 2 and 3 with respect to pin 1 of output connector

Current Drain: 1.1mA

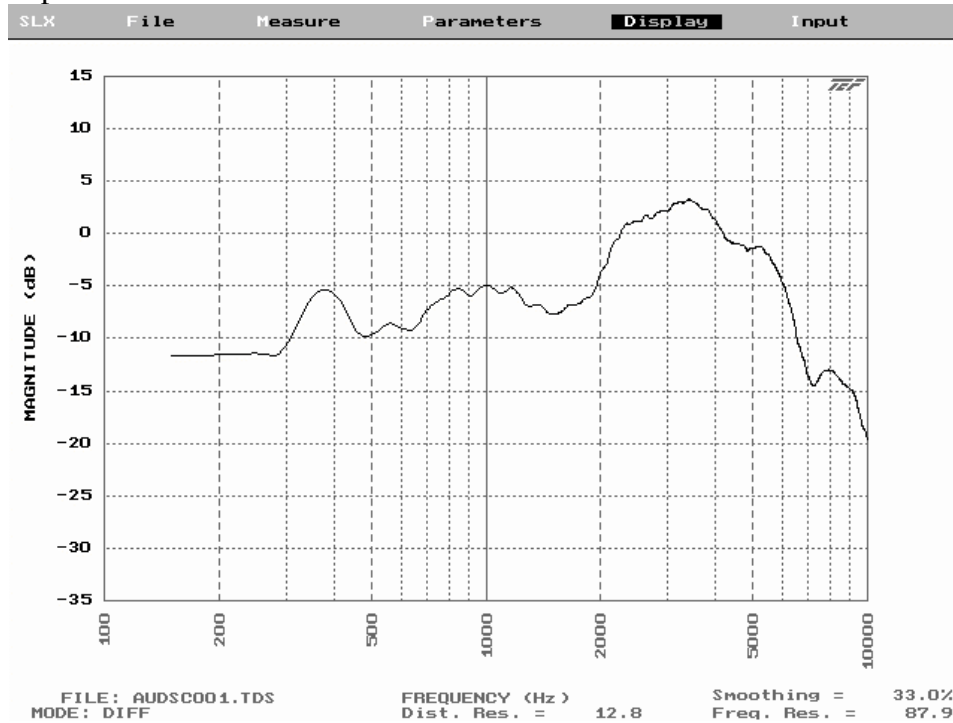
Switch: Frequency select switch for flat or rising response

Output Connector: Standard Male 3-pin XLR

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Acoustical:

Frequency response:



Horizontal Polar response:

