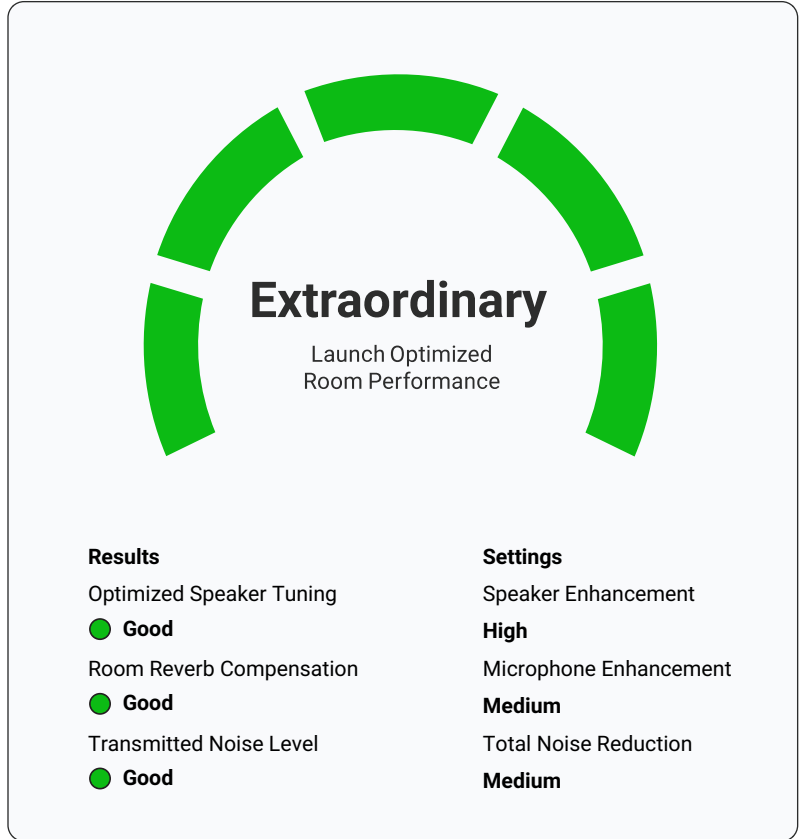
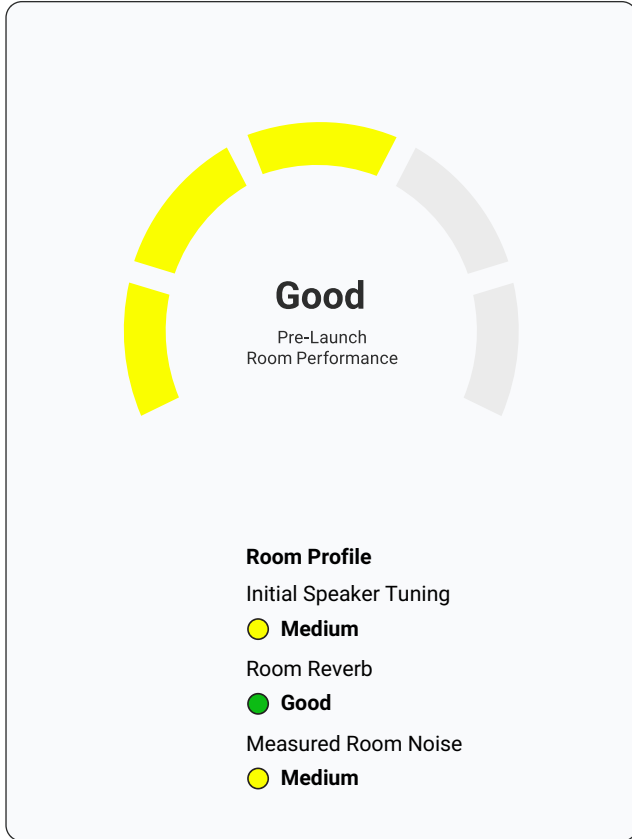


ROOM PERFORMANCE RATING

Biamp Launch determines a Room Performance Rating based on a combination of measurements taken in the space. A Launch optimized system is tuned to deliver peak performance within the deployed acoustic environment.

For additional room configuration details, follow the link [TesiraFORTÉ X 1600](#).



SYSTEM OVERVIEW

Device Name	Description	Serial #	Version	
TesiraFORTÉ X 1600		04303050	4.1.100.249	
Microphones Detected	Speaker Channels in Use	Target SPL	Health	UC Vendor
2	2	70 dB	● Good	Generic

CONNECTED DEVICES

Model	Device	Serial #
Parlé TCM-XA	Parlé Ceiling Microphone with Speaker Amplifier Noise Reduction Applied: Medium Echo Reduction Applied: Medium Number of Available Channels: 2 Number of Used Channels: 2	03807407
Parlé TCM-XEX	Parlé Ceiling Microphone Noise Reduction Applied: Medium Echo Reduction Applied: Medium	03803497
Tesira EX-UBT	USB / Bluetooth Device USB Enabled: Yes Bluetooth® Enabled: Yes	03935173

ADVANCED ROOM MEASUREMENTS

Room Reverberation (RT₆₀)

Room reverb characterizes how long sound remains audible in a room. A high reverb time can result in decreased intelligibility in a conference system. Biamp Launch uses reverb measurements to tune the Parlé microphones to deliver the optimum audio quality to the far end participants.

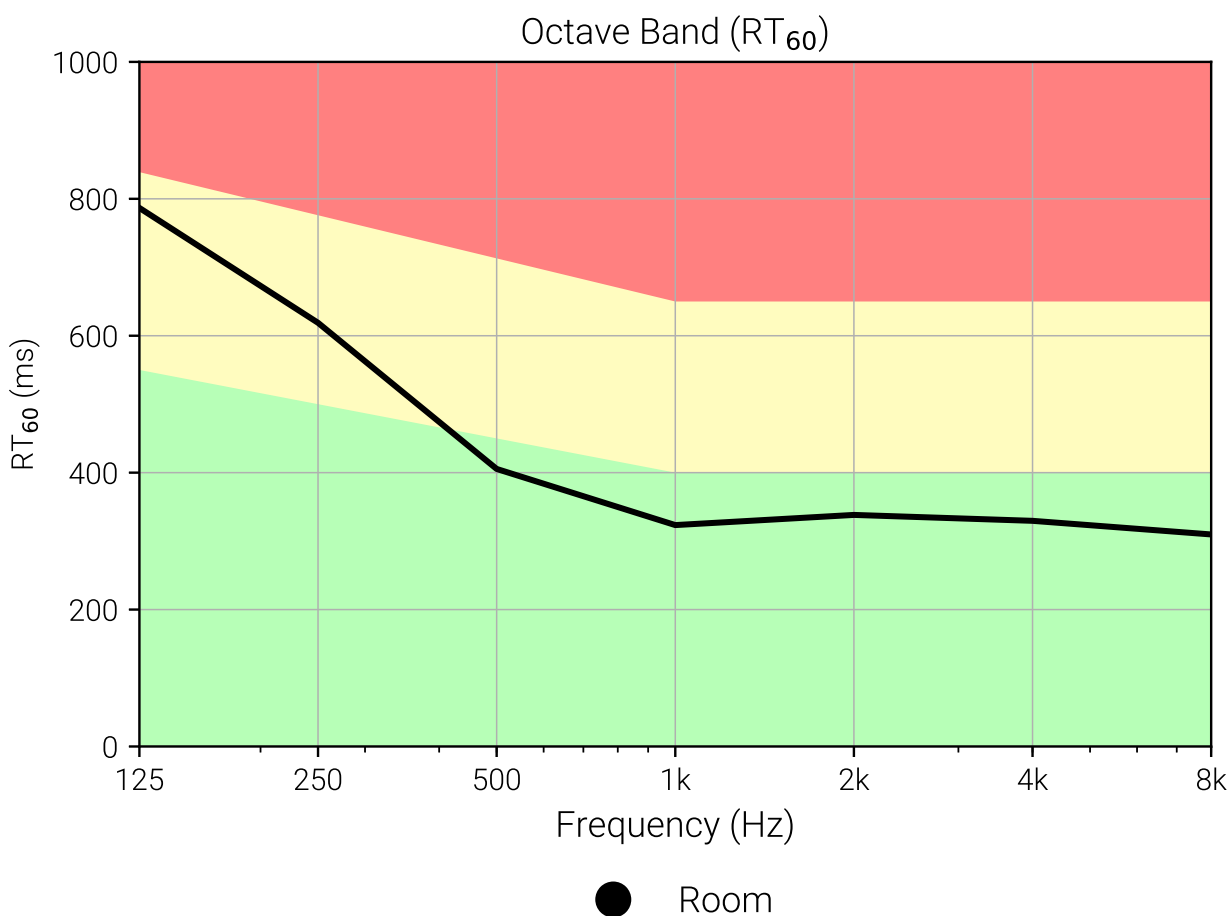
The following table indicates how average reverberation time relates to conference room performance.

Room Performance Setting	Reverb Time (RT ₆₀)
Extraordinary	less than 300 ms
Great	300-400 ms
Good	400-500 ms
Fair	500-1000 ms
Poor	more than 1000 ms

Room Reverb (RT₆₀) Average: Good 445 (ms)

Room Reverberation (RT₆₀) Per Octave

Reverb times are dependent on the frequency of the audio signal. The following chart plots measured RT₆₀ across octave bands and overlays the information on a recommended performance chart.



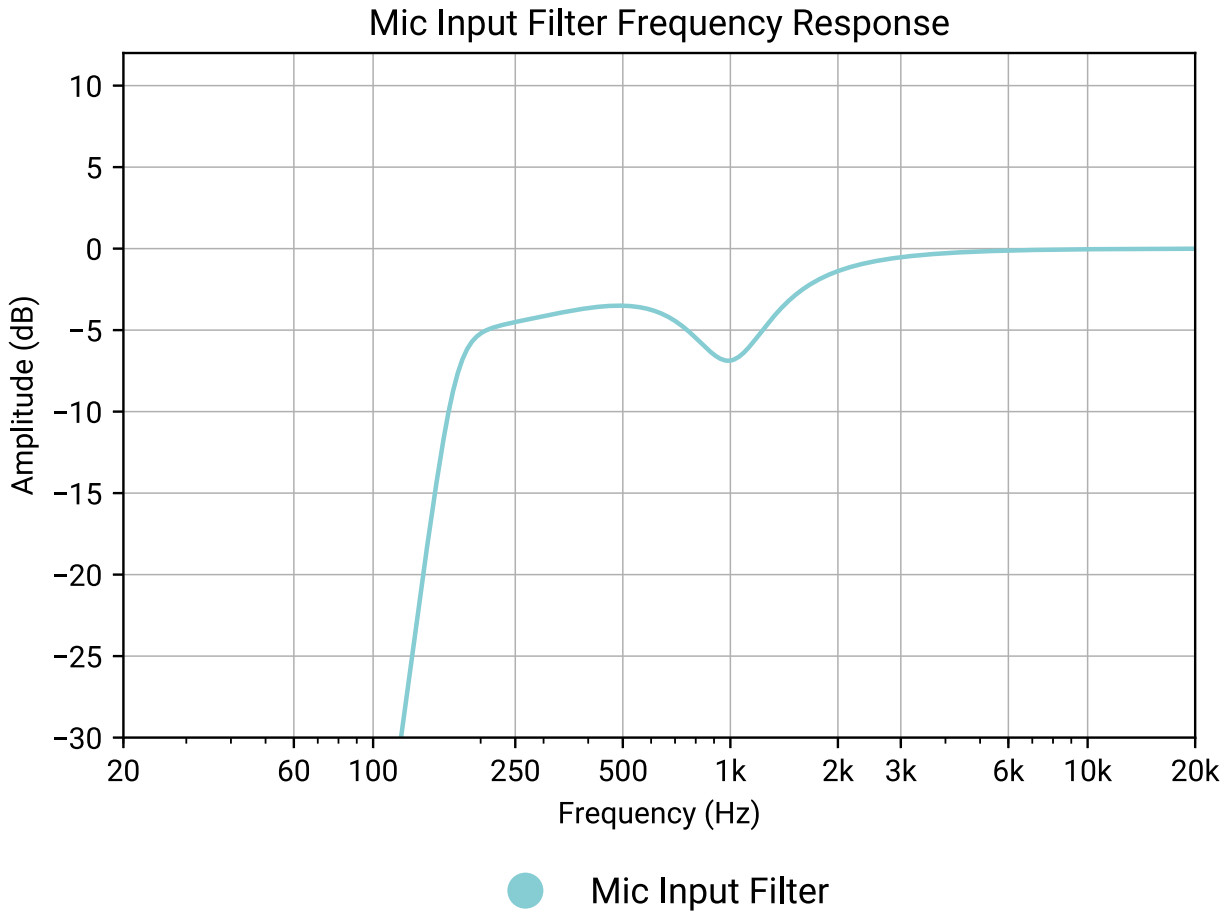
To learn more about room reverb and for recommendations on improving measured performance, [click here](#).

Launch Optimization

Launch made the following adjustments to the audio system based on the measured RT_{60} performance of the room.

Echo Cancellation Non-Linear Processing (NLP): Low

Microphone Equalization



Room Noise

Any sound in a conference room that interferes with speech is considered room noise. In general, the more noise in a room, the more difficult it is to understand someone talking. Noise sources typically include HVAC vents, projectors, light fixtures, and sounds from adjacent rooms. Biamp Launch takes measurements of noise levels in a room, then applies appropriate levels of noise reduction to the Parlé microphones. The result is a voiced-focused audio signal delivered to the distant end of a conference call.

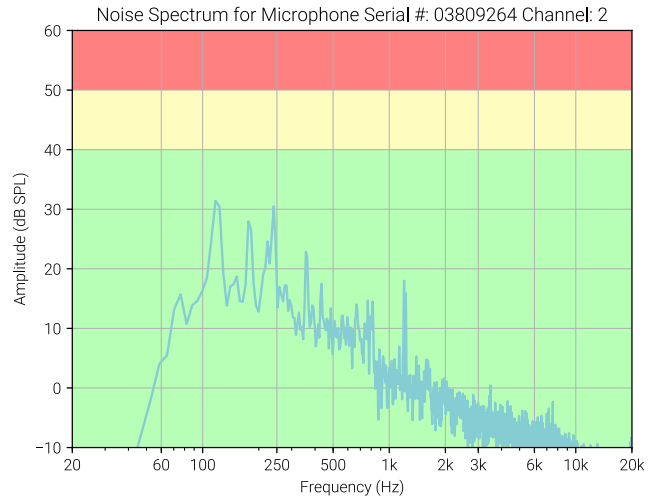
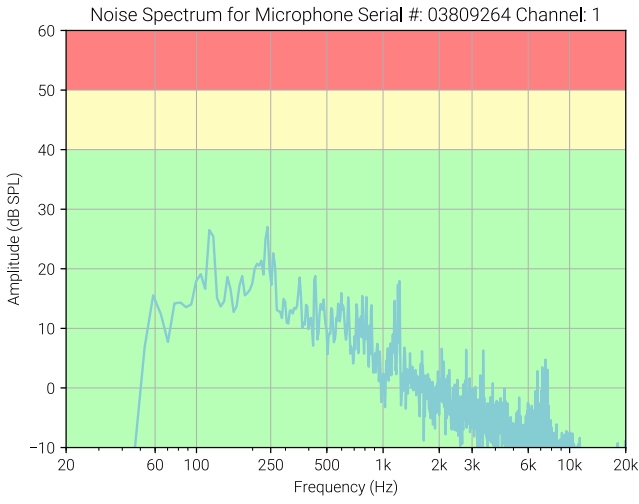
The following table indicates how average reverberation time relates to conference room performance.

Room Noise Performance	Noise Floor
Extraordinary	less than 30 dBA
Great	30-35 dBA
Good	35-43 dBA
Fair	43-50 dBA
Poor	more than 50 dBA

Average Room Noise Level: Good 40 (dBA)

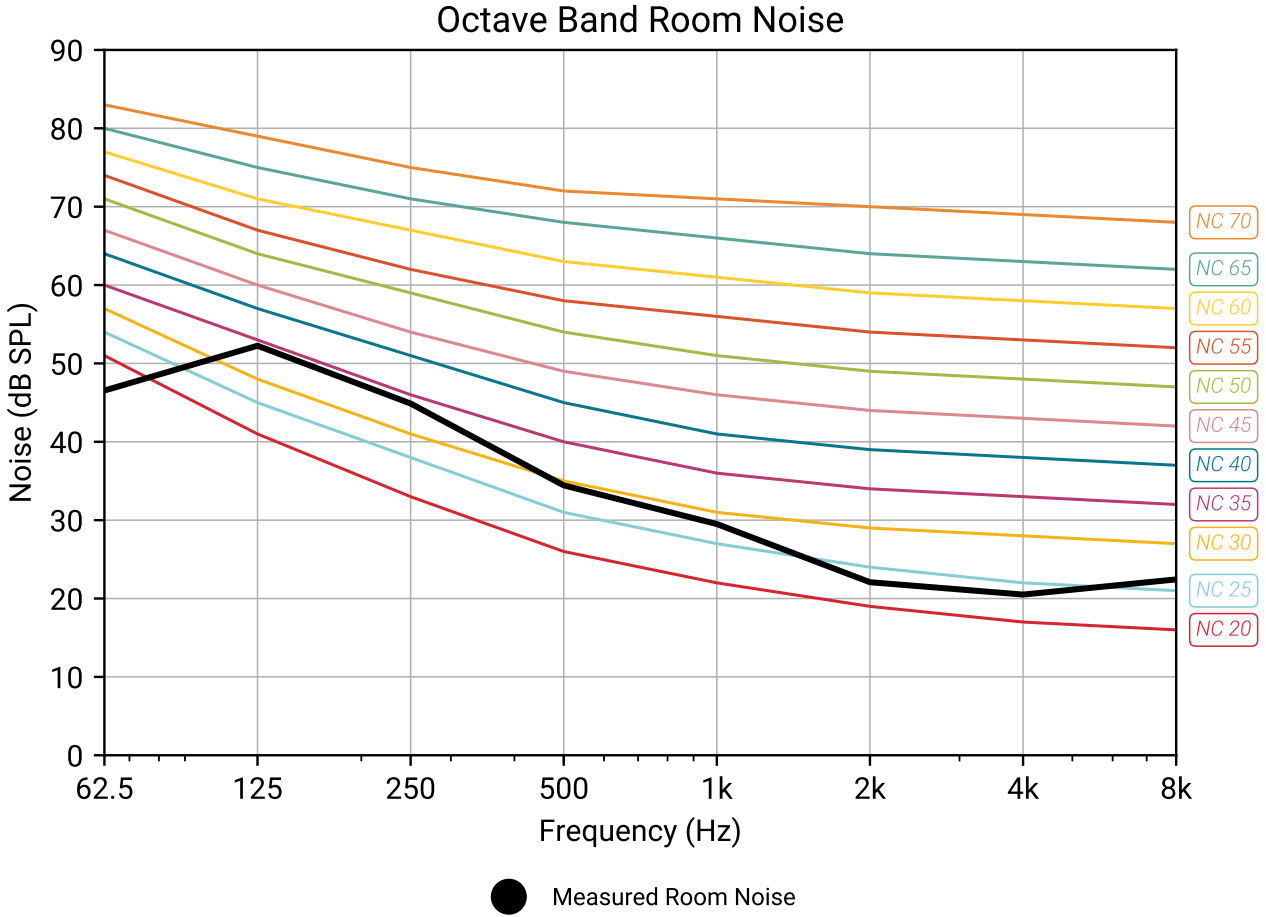
Room Noise vs Frequency

The level of room noise may vary based on frequency. The chart below plots noise levels across the audible frequency spectrum and overlays the information on a recommended performance chart.



Noise Criterion

A Noise Criterion Curve represents the full spectrum of room noise as a single value. The NC value is found by identifying the lowest NC curve not touched by the measured value. The recommended NC rating for a Conference Room is between NC-25 and NC-35.



To learn more about Noise Criterion Ratings and for recommendations on improving measured performance, [click here](#).

Launch Optimization

Launch made the following adjustments to the audio system based on the measured room noise of the room.

Microphone Serial #: **03809264 Channel: 1**

Pre-Launch Noise Level Average: **38dB SPL A-weighted**

Applied Noise Reduction: **Medium**

Launch Optimized Transmitted Noise Average: **21dB SPL A-weighted**

Microphone Serial #: **03809264 Channel: 2**

Pre-Launch Noise Level Average: **40dB SPL A-weighted**

Applied Noise Reduction: **Medium**

Launch Optimized Transmitted Noise Average: **23dB SPL A-weighted**

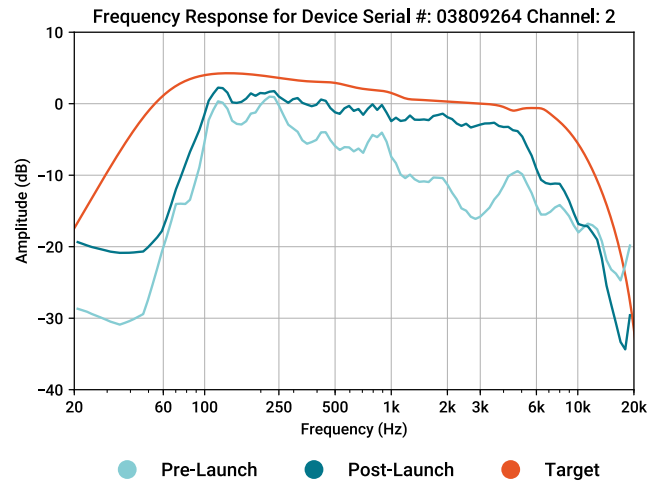
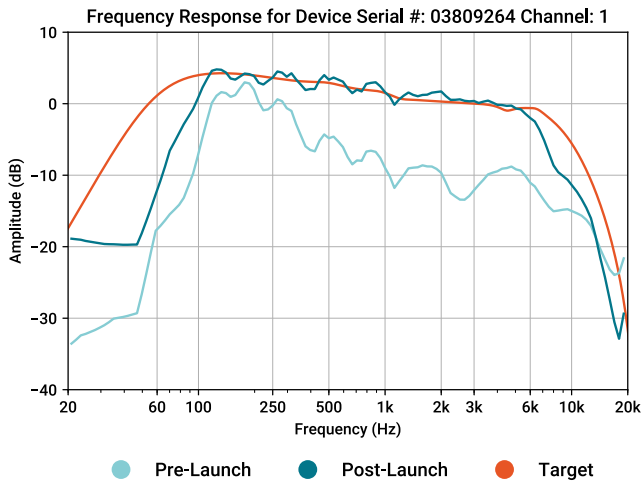
Loudspeaker Tuning

Every room has an acoustic signature that will directly affect speaker performance. Speakers must be tuned to the specific room to ensure that the far-end audio is intelligible and that room users do not experience listening fatigue.

Biamp Launch measures a speaker's frequency response and compares that measurement to a known performance standard. Launch then automatically compensates for variances from the target response to ensure peak performance within the specific room.

Launch Optimization

The graphs below detail how Biamp Launch has tailored speaker performance to achieve the target frequency response.



Speech Intelligibility Score

Speech intelligibility is a determination of how well users can comprehend speech. Defining speech intelligibility is a complicated process that derives input from:

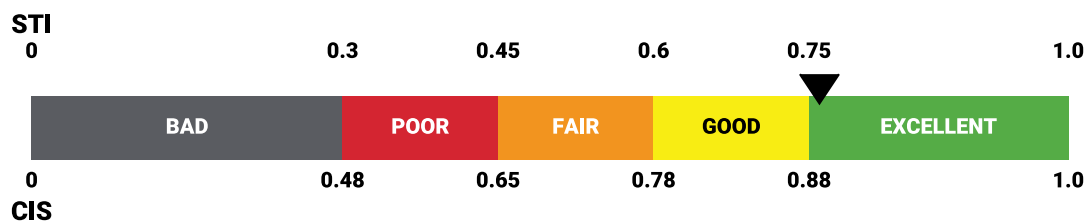
- RT60 values
- Signal to noise level
- Frequency response
- Distortions
- Overall equipment quality

To simplify the reporting of speech intelligibility, most standards organizations utilize a measurement technique that reports a single value. The most common scales for this value are the Speech Transmission Index (STI) and the Common Intelligibility Scale (CIS).

Biamp Launch dramatically affects the intelligibility of the audio presented to the far-end participants by compensating for deficiencies in the local room acoustics.

Biamp Launch also enhances the local rooms speech intelligibility of the far-end audio by ensuring that room speakers are tuned to target values

The following chart plots the speech intelligibility performance of the room



The speech intelligibility in this room after optimization by Biamp Launch is **Excellent 0.76**

To learn more about Speech Intelligibility Ratings and for recommendations on improving measured performance, [click here](#).