

Neat Center Integration Design Guide

Technical reference for system designers and integration partners

Document Version: 1.0

Reference documentation

Before implementing Neat Center, review these essential resources:

- **Network and Firewall Requirements:** network prerequisites for Neat Center deployment
  https://support.neat.no/article/network-and-firewall-requirements-for-neat
- **How to Set Up Neat Center(s):** mounting, powering, pairing, and configuration procedures
  https://support.neat.no/article/how-to-set-up-neat-center
- **Camera Framing Options for Neat Center**: Dynamic Framing and Neat Focus modes, configuration walkthroughs
  https://support.neat.no/article/camera-framing-options-for-neat-center/
- **Using USB Audio with Neat Pro and Neat Board Pro**
  https://support.neat.no/article/neat-board-pro-and-neat-bar-pro-audio-over-usb/

Executive summary

This document provides positioning and placement guidelines for integrating Neat Center devices into conferencing environments. Neat Center extends the capabilities of front-of-room (FoR) Neat devices, enabling enhanced audio and video coverage for medium to large meeting spaces through dynamic framing technology and multi-camera configurations.

1. System architecture overview

1.1 Core components

The Neat Center ecosystem consists of:

- **Front-of-room (FoR) Devices:** Neat Bar Gen 2, Neat Bar Pro, Neat Board 50, Neat Board Pro
- **Neat Center:** companion device with 360° camera array and omnidirectionalmicrophone array
- **Neat Pad:** Control interface and system management device

2. Device specifications

2.1 Neat Center coverage specifications

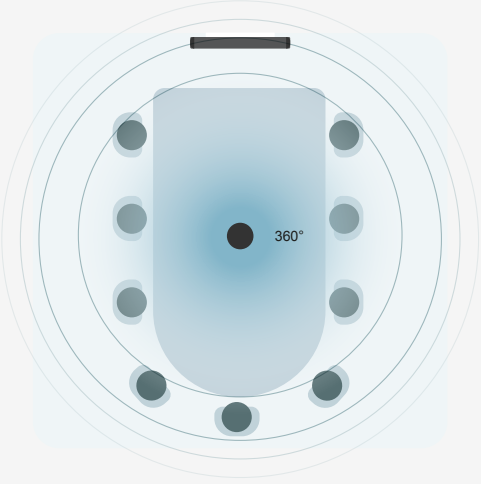
Video coverage

- **Field of view:** three cameras × 162° horizontal, 91° vertical (at camera center)
- **Maximum pickup range:** 16.4 ft (5 m)

Audio coverage

- **Pickup range:** 16.4 ft (5 m)

Neat Center is designed to capture audio from 360°horizontally



2.2 Front-of-room device specifications

Neat Bar Pro / Neat Board Pro

- **Camera pickup range:** 33 ft (10 m) maximum
- **Horizontal field of view:** 113° (wide angle lens), 70° (telephoto lens)
- **Microphone pickup range:** 33 ft (10 m) maximum

Neat Bar Gen 2 / Neat Board 50

- **Camera pickup range:** 15 ft (5 m) maximum
- **Horizontal field of view:** 113°
- **Microphone pickup range:** 15 ft (5 m) maximum

2.3 FoR device compatibility matrix

Device	Max Neat Centers	Dynamic Framing	Neat Focus	3rd-party audio
Neat Bar*	1	Switching only	Yes	No
Neat Bar Gen 2	2	Yes	Yes	No
Neat Bar Pro	2	Yes	Yes	Yes
Neat Board 50	2	Yes	Yes	No
Neat Board Pro	2	Yes	Yes	Yes

*Neat Bar BYOD only will require Neat Pad to pair with Neat Center.

3. Room design guidelines

3.1 Coverage calculations

Single Neat Center configuration

Neat Bar Gen 2 + 1 Neat Center:

- **Recommended room depth:** 10–15 ft (3–5 m) from FoR device
- **Total coverage area:** up to 15 ft (5 m) depth
- **Acoustic considerations:** add Neat Center at 10 ft (3 m) for rooms with poor acoustics

Neat Bar Pro + 1 Neat Center:

- **Recommended room depth:** 15–25 ft (5–7.5 m)
- **Total coverage area:** up to 33 ft (10 m) depth

Visual example of the remote participant view in a large meeting room using Neat Bar Pro and one Neat Center with Dynamic Framing:



Dual Dual Center configuration

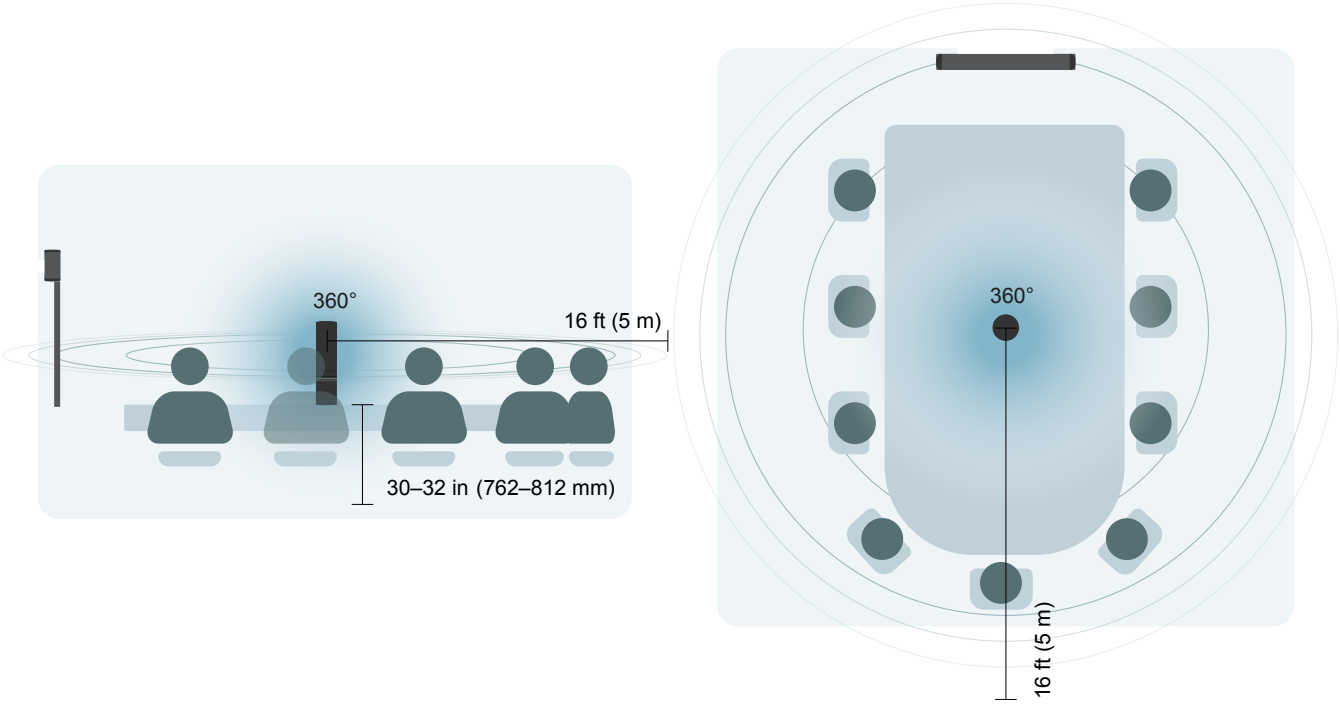
Neat Bar Pro + 2 Neat Centers:

- **Recommended room depth:** 25–42 ft (7.5–13 m)
- **Total coverage area:** up to 42 ft (13 m) depth
- **Neat Center placement:** staggered for optimal coverage

3.2 Mounting specifications

Orientation: table mounted — fixed or free standing (recommended)

- **Height:** Table surface level (30–32 in / 762–812 mm)
- **Position:** center of conference table
- **Orientation:** LED ring facing up

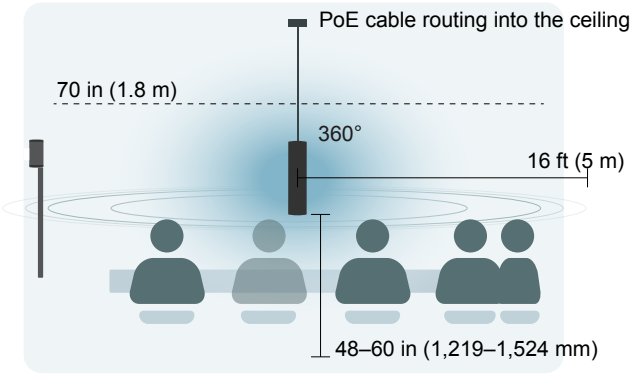


Camera mode: Dynamic Framing

- **Recommended height:** Above seated eye level (48–60 in / 1,219–1,524 mm)
- **Cable management:** Plenum-rated Cat6 required
- **Performance note:** Video and audio quality degrade above 70 in (1,778 mm). Ensure that Neat Center does not obstruct room displays for participants at the back of the room. When using ceiling-mounted Neat Centers, installing Neat Bar Gen 2 or Neat Bar Pro above the display provides a more natural experience.

Orientation: ceiling-mounted (suspended)

- **Maximum height:** 84 in (2.1 m)
- **Recommended height:** close to standing eye level (60–72 in / 1.5–1.8 m)
- **Cable management:** plenum-rated Cat6 required
- **Performance note:** video and audio quality can degrade above 84 in (2.1 m)



Camera mode: Dynamic Framing

- **Maximum height:** 84 in (2.1 m)
- **Recommended height:** above standing eye level (60–72 in / 1.5–1.8 m)
- **Cable management:** plenum-rated Cat6 required
- **Performance note:** video and audio quality can degrade above 84 in (2.1 m).
  Wide tables are recommended. Narrow tables may provide an non-optimal experience. If there is a narrow table present, table placement is recommended.

Neat Bar Pro — under display

- **Minimum height:** 42 in (1,067 mm) – optimized for eye level; 46 in (1,168 mm) – optimized to avoid capturing Neat Centers in individual frames
- **Maximum height:** 48 in (1,219 mm) due to display viewing degradation

Neat Bar Pro — above display

- **Maximum recommended height:** 84 in (2.1 m)
- **Performance note:** video and audio quality degrade above 84 in (2.1 m)

3.3 Positioning requirements

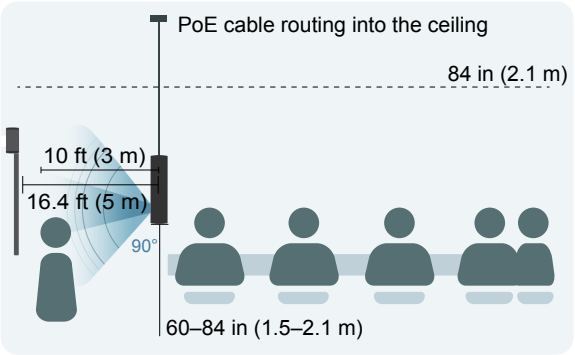
Distance requirements from main front-of-room device

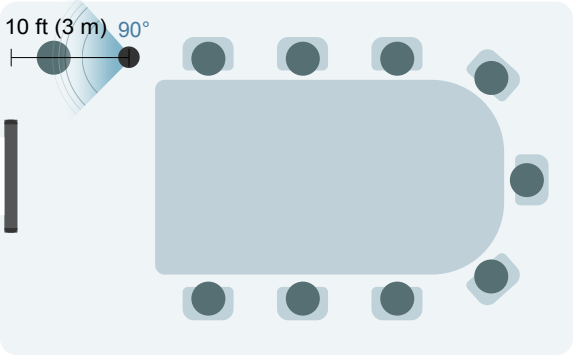
Dynamic Framing mode:

- **Minimum distance:** no minimum distance requirements
- **Maximum distance:** 16.4 ft (5 m) from FoR device or another Neat Center
- **Ideal position:** centered in the coverage gap between the FoR device and the farthest participants

Neat Focus mode:

- **Minimum distance:** 5 ft (1.5 m) from FoR device
- **Maximum distance from FoR:** not applicable. Positioning is based on presenter location
- **Critical requirement:** Neat Center must be within 16.4 ft (5 m) of participants to be framed
- **Ideal position:** aimed directly at presenter area or podium with a clear line of sight





Multiple Neat Center positioning

When deploying two Neat Centers:

- Maintain minimum 3 ft (.9 m) separation between Neat Centers
- Neat Centers should be deployed to ensure no coverage gap between Neat Centers
- Maintain maximum 16.4 in (5 m) distance between devices

3.4 Acoustic considerations

Room characteristics requiring a Neat Center addition:

- Glass walls or large windows
- High ceilings (>12 ft/ 3.6 m)
- Hard surface ratio: >60%
- Reverberation time (RT60): >0.6 s
- Background noise level: >45 dB SPL

4. Integration with third-party systems

4.1 Third-party audio system integration

Supported devices: Neat Bar Pro, Neat Board Pro

Connection method:

- Interface: USB-C port
- Protocol: USB Audio Class 2.0
- Requirement: must offload both microphones and speakers

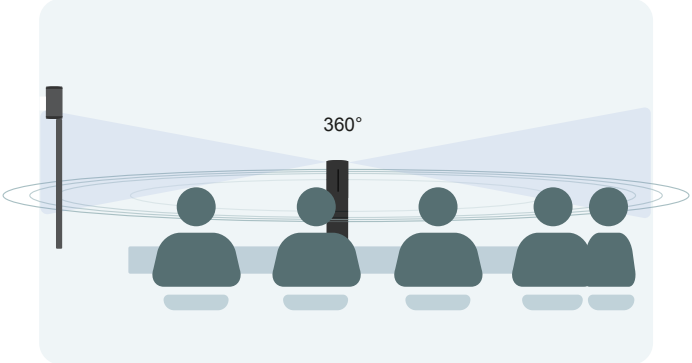
I**mportant note:** camera functionality, including Dynamic Framing and Neat Focus modes, is not impacted when utilizing a third-party audio system for microphones and speakers. The video system operates independently of the audio configuration.

5. Performance optimization

5.1 Video quality optimization

Factors affecting performance:

- Mounting height (lower yields better results)
- Lighting conditions (500–1000 lux optimal)
- Background contrast
- Participant positioning



Optimization checklist:

- Mount Neat Centers at or below 70 in (1,778 mm) for Dynamic Framing, or 84 in (2,133 mm) for Neat Focus
- Ensure uniform lighting (avoid backlight)
- Position participants within 30° of camera center
- Adjust framing boundaries to exclude traffic areas
- Test all camera modes before deployment

5.2 Audio quality optimization

Microphone coverage pattern:

- **Optimal:** 0–10 ft (0–3 m) from Neat Center
- **Acceptable:** 10–16.4 ft (3–5 m) from Neat Center
- **Degraded:** beyond 16.4 ft (5 m)

Echo cancellation tuning:

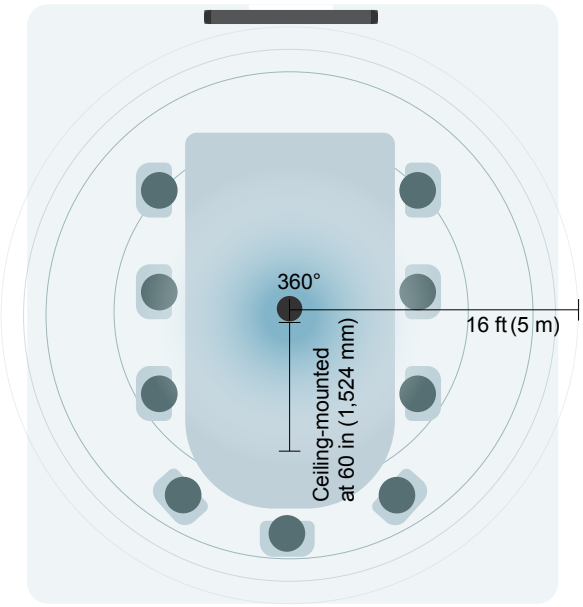
- Room size calibration required
- AEC reference loop verification
- Speaker zone configuration

6. Deployment scenarios

6.1 Small conference room (up to 16 ft / 5 m)

Configuration:

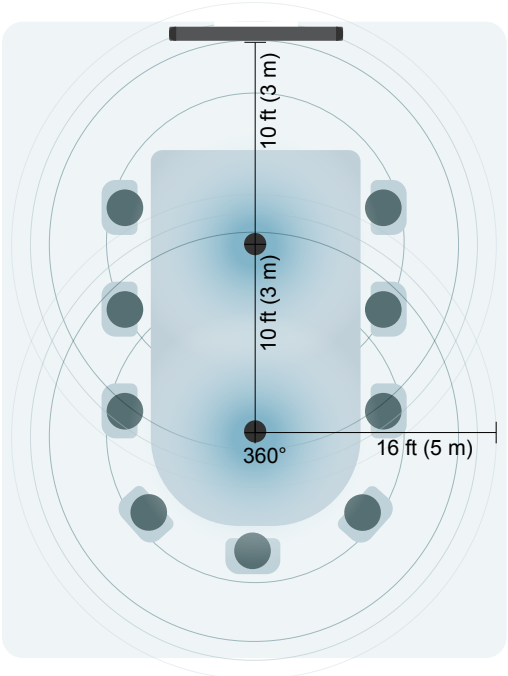
- Neat Bar Gen 2 + 1 Neat Center
- Neat Center on table, centered
- Dynamic Framing
- Standard framing boundary



6.2 Large conference room (up to 42 ft / 12.8 m)

Configuration:

- Neat Bar Pro + 2 Neat Centers
- Neat Centers staggered placement
- Mixed mode (Dynamic Framing + Neat Focus)
- Custom framing boundaries per zone

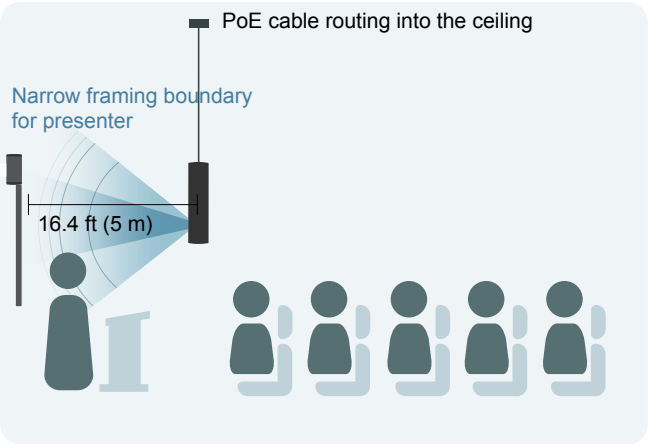


6.3 Training room with podium

Configuration:

- Any Neat Bar Gen 2 FoR + 1 Neat Center
- Neat Center aimed at podium (camera A)
- Neat Focus mode with adaptive composition
- Narrow framing boundary for presenter

Mode: Neat Focus with adaptive composition



Mode: Neat Focus with adaptive composition

