

neat.

# Neat Center Integration Design Guide

Technical reference for system designers and integration partners



**Document Version:** 1.0

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## 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 omnidirectional microphone array
- **Neat Pad:** Control interface and system management device

## 2. Device specifications

### 2.1 Neat Center coverage specifications

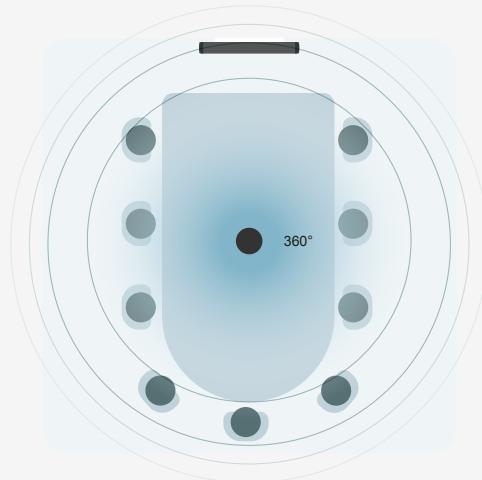
#### Video coverage

- **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

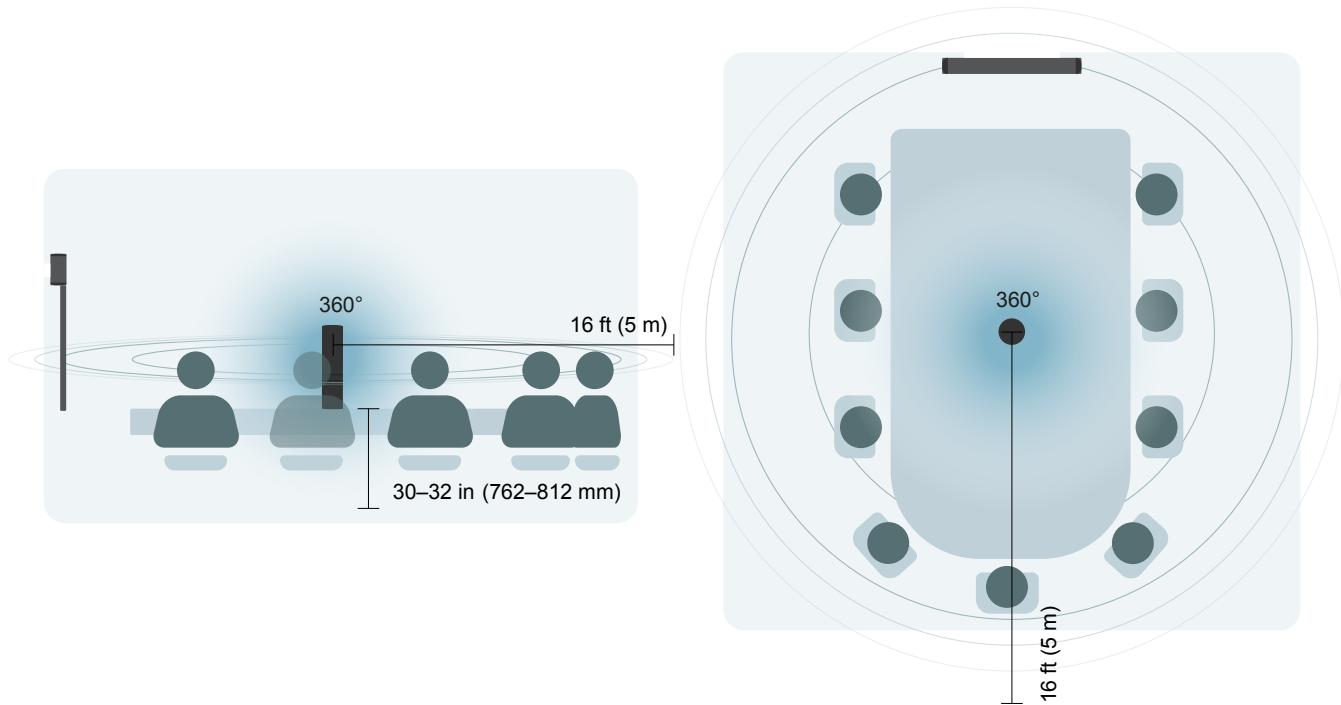
### Neat Bar Pro + 2 Neat Centers:

- **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

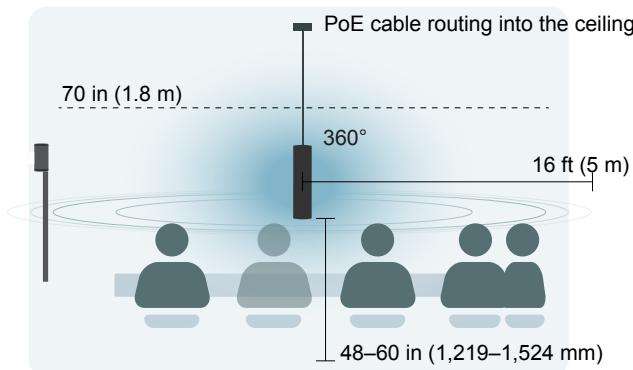


## Camera mode: Dynamic Framing

- **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

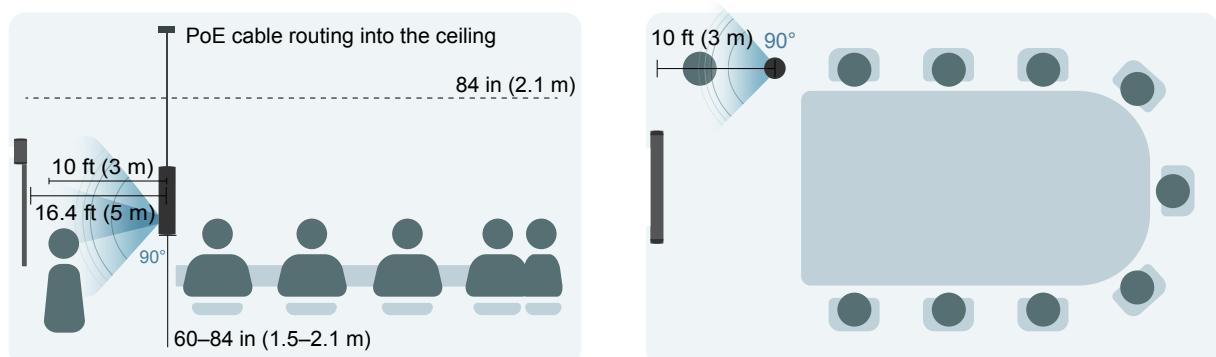
#### Distance requirements from main front-of-room device

##### 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 pzzzositioning

### 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

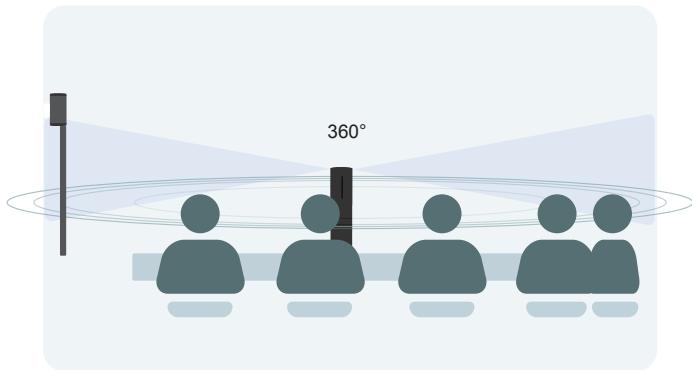
**Important note:** camera functionality, including Dynamic Framing and Neat Focus modes, is not impacted when utilizing a third-party audio system for microphones and speakers. The video system operates independently of the audio configuration.

# 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:

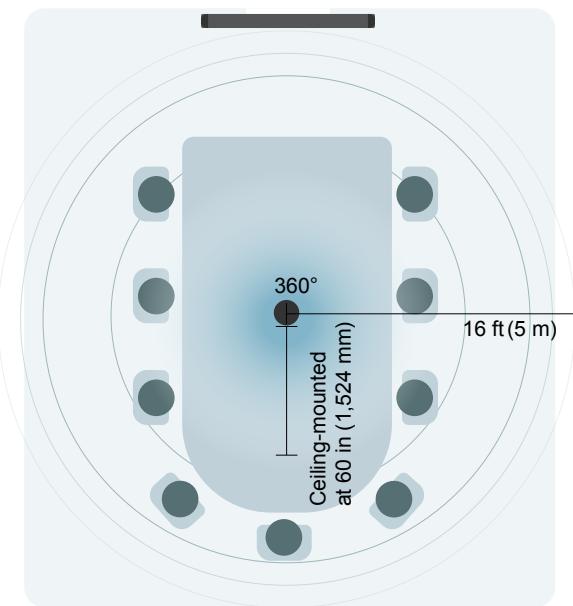
- Room size calibration required
- AEC reference loop verification
- Speaker zone configuration

# 6. Deployment scenarios

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

### Configuration:

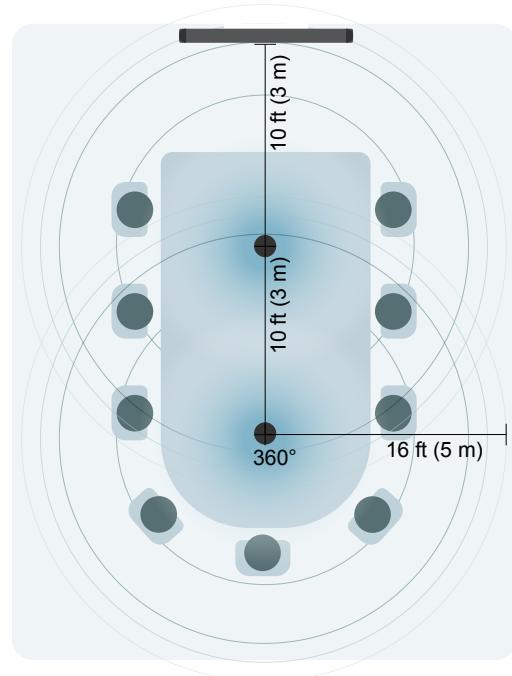
- Neat Bar Gen 2 + 1 Neat Center
- Neat Center on table, centered
- Dynamic Framing
- Standard framing boundary



## 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

