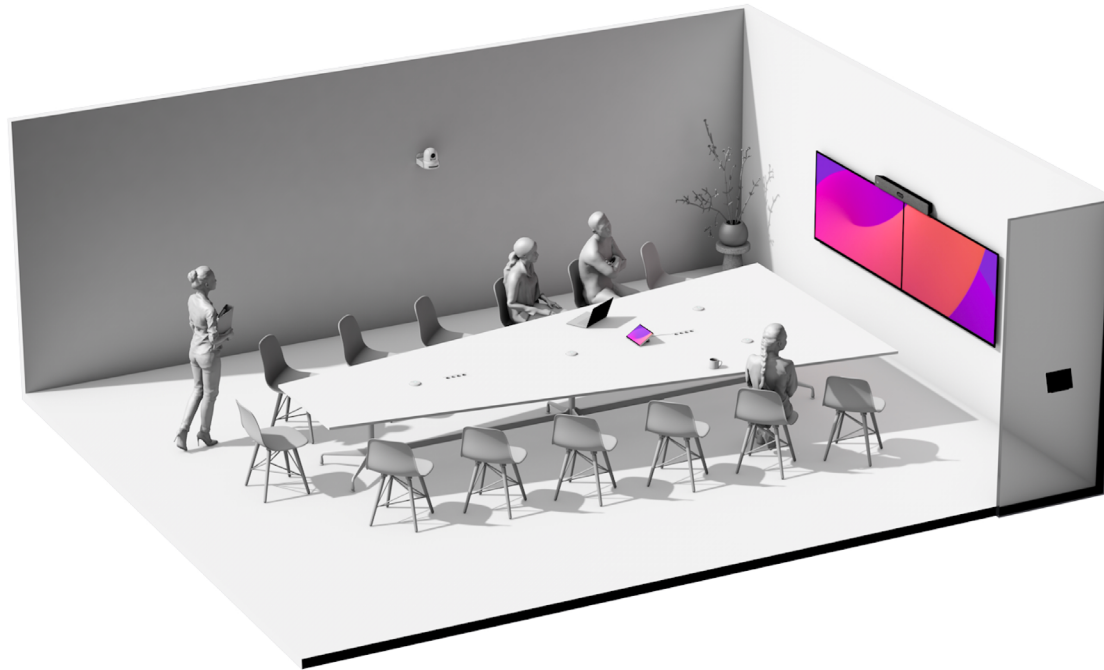# Cross-view

Room Preparation Guidelines

This document outlines the guidelines for a successful installation and use of Cross-view, using two Cisco PTZ 4K, one Cisco Quad Camera, the Cisco Codec EQ, and the Cisco Table microphones Pro.

These guidelines cover aspects related to room dimensions, camera positionings, and other factors such as table size, seating arrangements, microphones, acoustic considerations, and lighting.

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Introduction

Cross-view

Cross-view is an AI-driven feature that brings a cinematic view to your meetings, using two PTZ 4K cameras, one Quad camera, one Codec EQ, and Table microphones Pro. By analyzing room activity, recognizing speakers, and tracking where people are facing, the system automatically picks the best camera angle to get the best view.

Having additional cameras allows for a more comprehensive capture of discussions, even when conversations are taking place across the table, ensuring an inclusive hybrid meeting.

All intelligence related to camera switching and control is run locally on the RoomOS device meaning that crossview also works with other meeting plaforms than Webex.

To ensure an optimal experience, it is crucial to follow the recommendations outlined in this document. The successful implementation of these guidelines is key to guaranteeing a positive and effective outcome.

Required materials

1 Codec EQ

1 Quad camera (main camera)

2 PTZ 4K cameras (side cameras)

1 PoE switch. See Configuration of switches for Cisco devices.

Minimum 3 Table microphones Pro for voice pick up and audio triangulation. The final number of microphones is subject to change.

AV Integrator License key for AES67 support for more than 3 microphones.[1]

Additional materials

2 4K HDMI cables to connect the PTZ 4K cameras to the codec EQ.

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[1] The AV integrator license is part of the Cisco Room License Upgrade Options. Look for L-ROOM-PAK on Cisco Commerce and choose L-KITEQ-AV for Codec EQ and Room Kit EQ. After ordering, you will receive an option key. You can use Control Hub or the local device web interface to install the option key on the device.
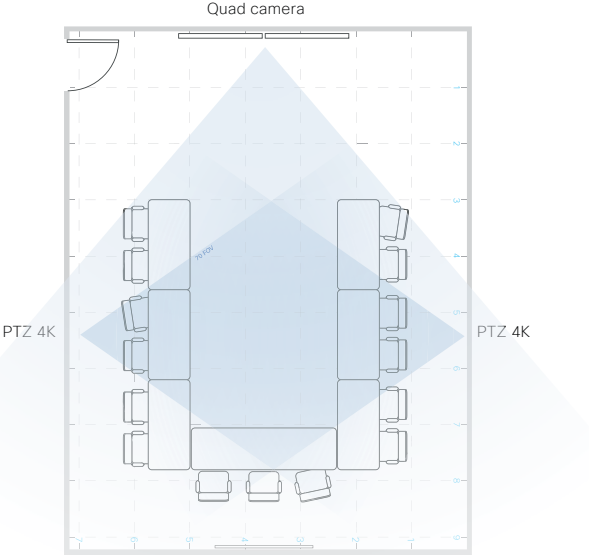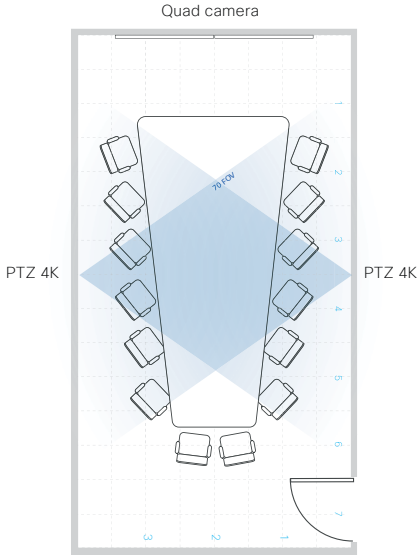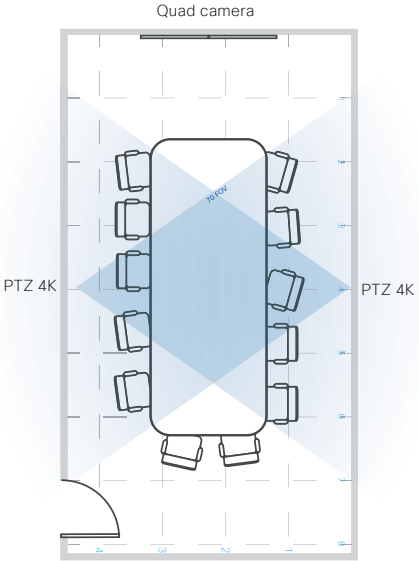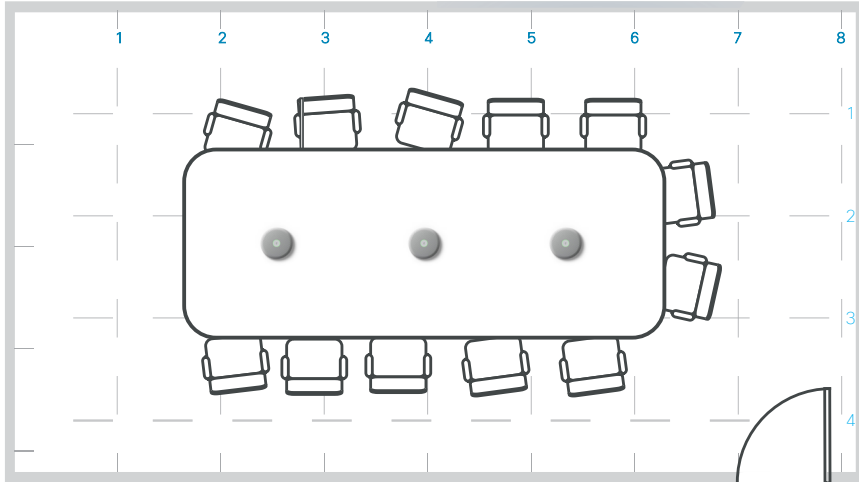
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Room layout

Recommended room layout

Room layout

Cross view supports long and narrow type conference rooms. The experience is designed for inclusive hybrid meetings, even as the discussion is happening across the table. For horseshoe tables, it is crucial that everyone is captured by the Quad camera.

The rooms presented below can host up to 6 people on each side depending on the size of the room. Refer to the next chapter for more details on camera placement.

Each customer is unique. It is important to involve the local workplace resources team and a Cisco certified integrator to refine details of the set-up. Some customers may have special universal design and accessibility requirements. It is important to take into account the holistic integration and avoid combining our room elements in a way that compromise accessibility.

We recommend 3 to 6 table microphones depending on the table width. For tables wider than 1.8 m / 70.8 in., consider adding two lanes of microphones.

If your Room Kit EQX has analog microphones, we recommend you to remove them.

See the Cisco Table Microphone Pro installation guide for more information.

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Camera placements

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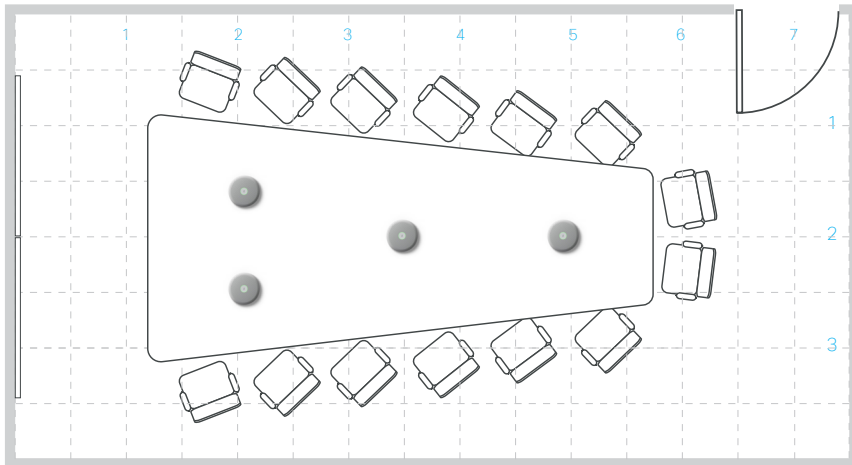
Recommended camera positions

Camera positions

The PTZ 4K cameras need to be **mounted level**. Place the camera centered on the length of the table. If the room doesn't allow to center the camera, you can move the cameras slightly closer to the main video system side of the room. In-room meeting participants must be positioned within the field of view of the Quad Camera in addition to one of the two PTZ 4K cameras for the feature to work optimally. The participant sitting at the table end only needs to be framed by the Quad Camera.

The PTZ 4K cameras willl initially use digital pan, tilt, and zoom to frame speakers. There will be no physical movement of the cameras.

Mount the PTZ 4K cameras with the ceiling mount if you have a glass wall or a room narrower than 4 m. / 157 in. The PTZ 4K has limited tilt downwards when mounted with the wall bracket underneath.

The side cameras can capture 5 people in a 4.5 m. / 177 in. wide room, and 6 people in a wider room (5.5 m. / 216,5 in. or wider).
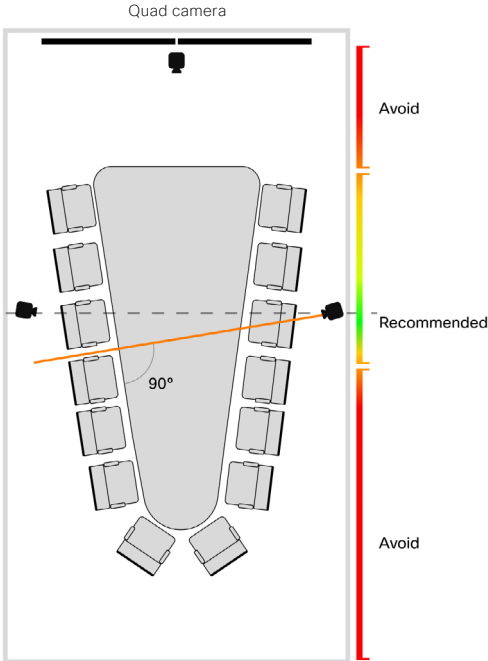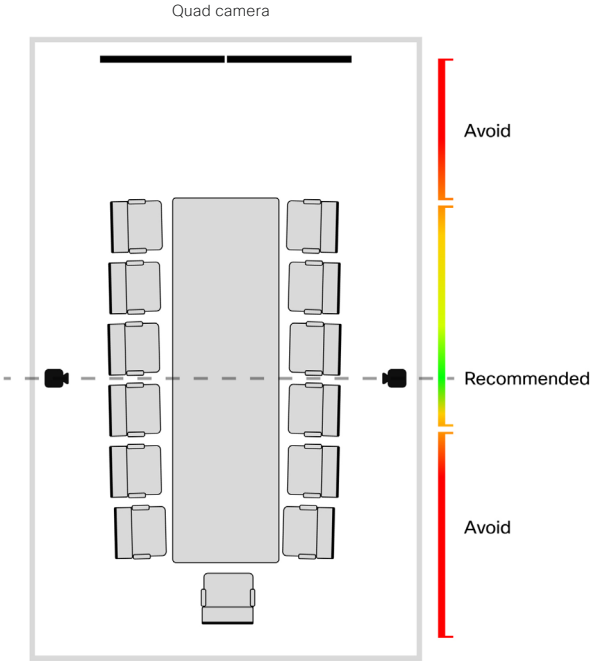
Camera positions

In accordance with ADA (Americans with Disabilities Act) guidelines, it is crucial to follow specific requirements when installing the PTZ 4K cameras. In addition to maintaining a minimum height of 203 cm / 80 in. for camera placement, consider factors such as clear pathways and unobstructed views to enhance accessibility for all users, regardless of mobility or visual impairments.

Note: If the cameras need to be positioned at a lower height, ensure the presence of physical barriers to prevent contact with the camera, such as placing a drawer beneath it.

Tip: The PTZ 4K can be mounted upside down with the Cisco PTZ 4K ceiling mount.

Paramaters to consider

- Field of view of the cameras
  - PTZ 4K has a 70° horizontal field of view and a 43° vertical field of view.
  - Quad Camera has a 83° horizontal field of view and 51.5° vertical field of view.
- Width of the meeting room (W_R)
- Width of the table (W_T).
- Mounting height of the side cameras
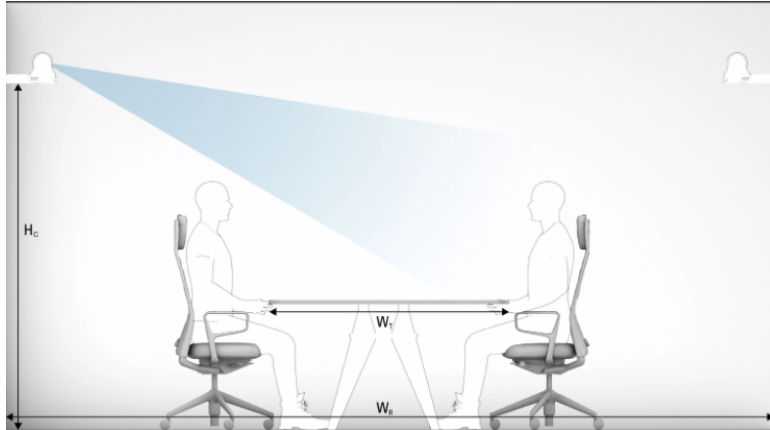
Ideal camera height for common meeting room sizes

The camera height is measured from lowest point of the camera unit. The recommendations below are given based on a symmetrical room layout with a rectangular table.

It's important to consider that these are approximate values.

Tip: wider tables give a more natural viewing angle to the subject.

Ideal camera height in cm

		Table width			
		120	**140**	**160**	**180**
Room width	**400**	195*	179*	168*	N/A**
	450	208	190*	178*	169*
	500	221	202	188*	178*
	550	235	213	198*	187*
	600	248	225	207	196*
	650	262	236	217	205

Ideal camera height in in.

		Table width			
		47	**55**	**63**	**71**
Room width	**157**	77*	70*	66*	N/A**
	177	82	75*	70*	67*
	197	87	80	74*	70*
	217	93	84	78*	74*
	237	98	89	82	77*
	257	101	93	85	81

* Recommended height when physical barriers are in place to prevent accidental contact with the camera.
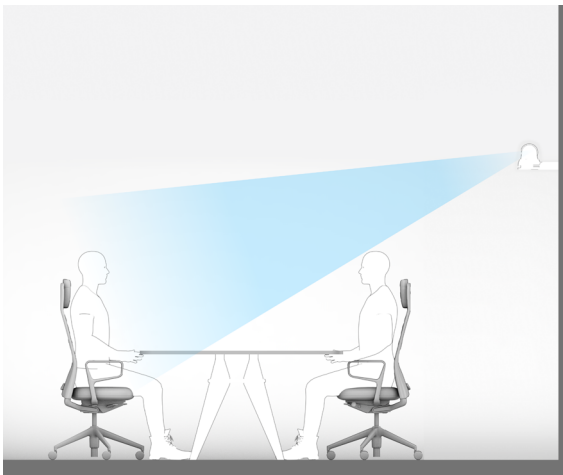
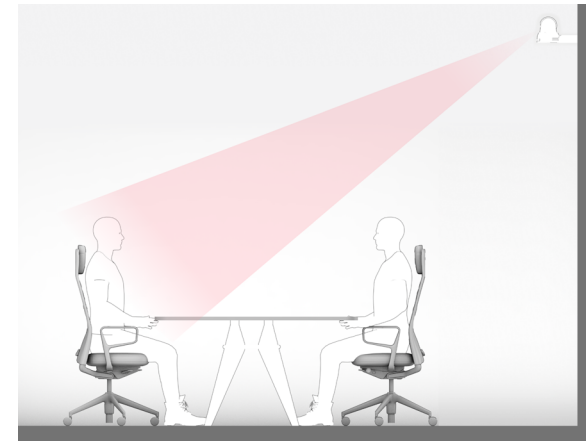** Too narrow room for this table size.
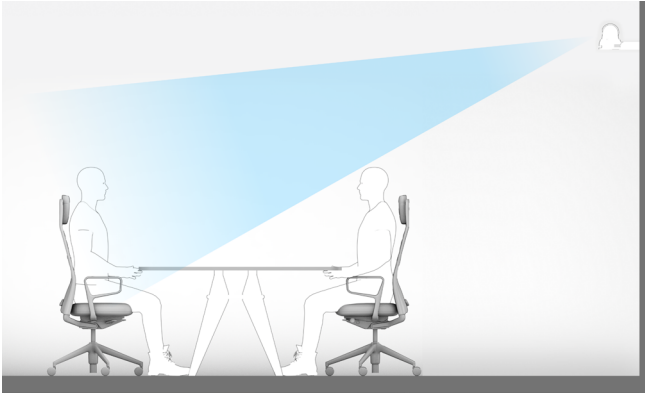
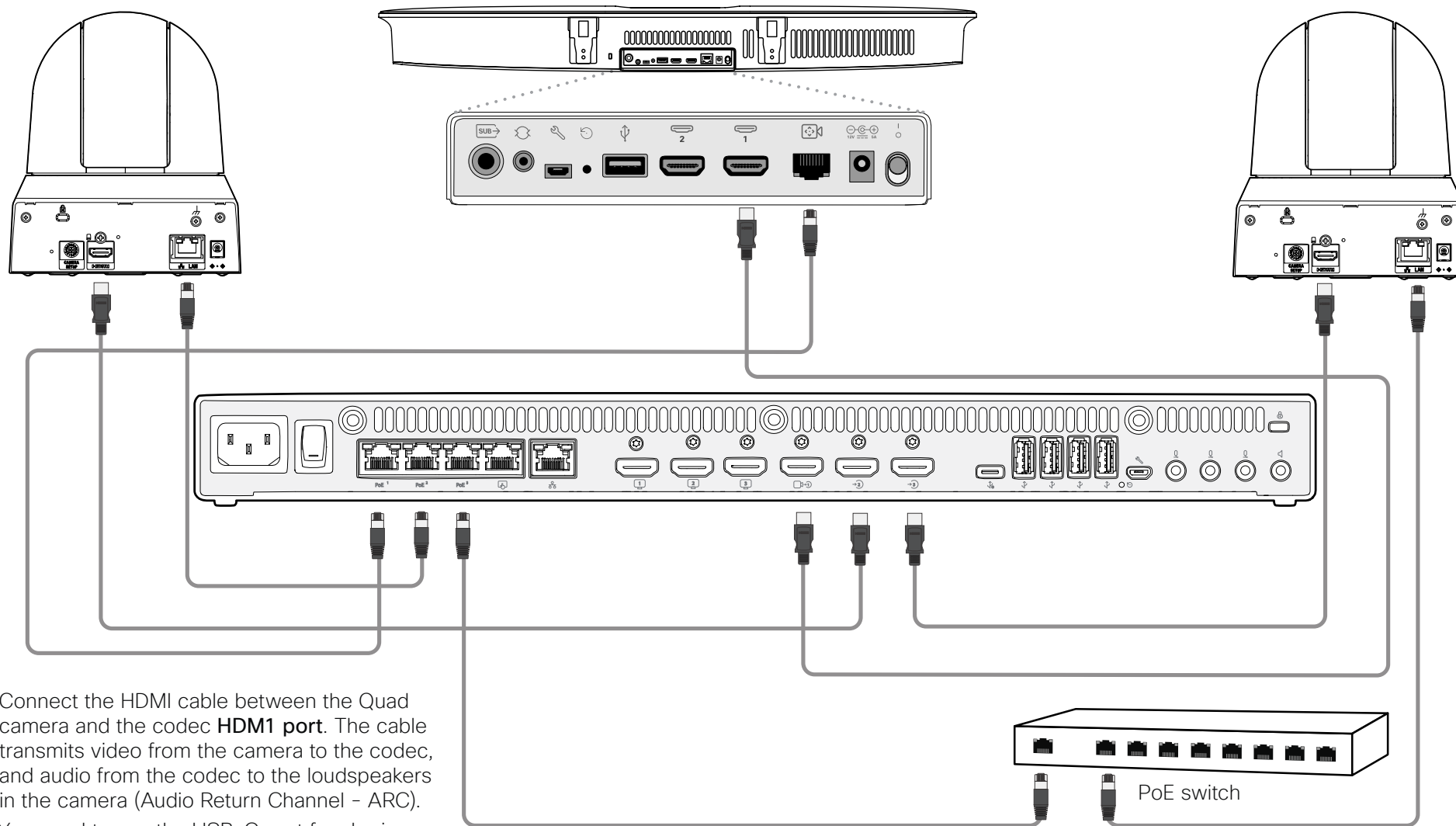Wide room
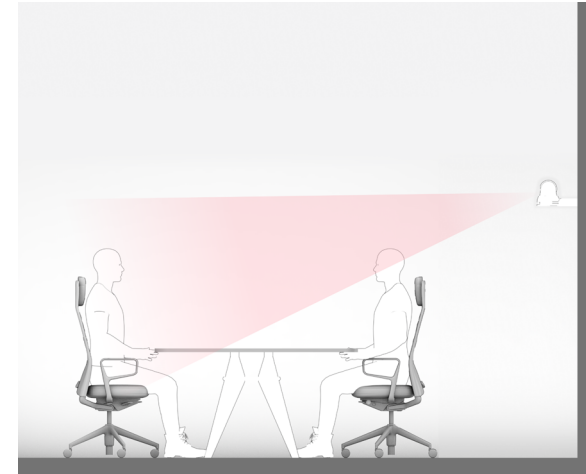
The camera is too low

Narrow room

The camera is too high

Connecting to Room Kit EQ and EQX

- Connect the HDMI cable between the Quad camera and the codec **HDMI port**. The cable transmits video from the camera to the codec, and audio from the codec to the loudspeakers in the camera (Audio Return Channel – ARC).

- You need to use the USB-C port for sharing content.

- See the Configuration of switches for Cisco devices.

PoE switch

Software setup

Software setup

Before starting the setup wizard, make sure each camera is fully zoomed out and points towards the table by using the manual camera control. Leave the device in manual camera control.

In the software setup you will be asked to input the height of the cameras, measuring from the floor to the center of the camera lens.

Once the hardware is installed, you can start the software setup in the **Device settings** on the Room Navigator. There, you can follow the wizard to finalize your setup.

Recommended tools

· Measuring tape or laser measure.

Start the cross-view experience

When the software setup is completed you can enable this feature from the camera settings in the control panel.

Select **Speaker mode** to get the cross-view experience.

Configurations

To get the cross-view experience as default set **xConfiguration Cameras SpeakerTrack DefaultBehavior** to **Closeup** from Control Hub or the device web interface.

When the software setup is complete, make sure these configurations are set for **all** camera inputs:

xConfiguration Video Input Connector [N] PresentationSelection: Manual

xConfiguration Video Input Connector [N] InputSourceType: Camera

xConfiguration Video Input Connector [N] CameraControl Mode: On

xConfiguration Video Input Connector [N] Quality: Motion

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Other considerations

Other considerations

Acoustics

The acoustic conditions of your room play an important role for both video calls and local meetings.

Refer to the "Best Practices for Creating Effective Video-enabled Rooms" to find more information about Acoustic Room Guidelines.

Temperature

When planning your room layout, make sure the Cisco cameras and codecs aren't subjected to direct sunlight. Recommended operating temperature and humidity is between 0°C (32°F) to 35°C (32°C to 95°F) ambient temperature and 10% to 90% Relative Humidity (RH).

Lighting

Lighting is essential when building great meeting rooms, supporting both local and remote telepresence meetings. Following are some general recommendations for how to create the best light conditions. To make meeting participants have the best appearance, they should be lit with key light, fill light and back light. The Key light is the main light source illuminating the subject. Fill light is added to avoid dark shadows over participants eyes, and a lack of it may cause the whites of the eyes to be lost along with any possibility of eye contact. And the back light makes the subjects stand out from the background and gives depth to the scene.

Refer to the "Best Practices for Creating Effective Video-enabled Rooms" to find more information about lighting.

Meeting Zone

Refer to the "Meeting zone" article to find more information about setting up a meeting zone on Board, Desk, and Room devices. For spaces like open offices, glass-walled meeting rooms, or rooms with reflective surfaces such as windows and whiteboards, this feature is particularly useful as it minimizes distractions caused by including people in the background during meetings. When someone stands outside the defined meeting zone, they won't be included in the automatic framing of the video. Only individuals within the meeting zone will be counted.

Installation guides

Connect other cables as described in the following guides:

Cisco Room Kit EQ installation guide

Cisco Room Kit EQ PTZ 4K installation guide

Cisco Room Kit EQX installation guide

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