
Cisco TelePresence IX5000 Room Requirements for Optimal Experience



This document provides you with the required room conditions to deploy Cisco’s flagship immersive TelePresence system, the IX5000. The following guidelines, including room specifications and design techniques, allow the system to perform to its full potential, offering the best overall experience.

When installing a fully immersive, multi-screen TelePresence system, it is recommended that the room is designed to get the best performance from the system’s technology. Although many remediation tasks are not required, conference participants will have a better experience if the room aligns to these specifications.

While immersive TelePresence orders are processed in the same way as other Cisco collaboration endpoints, the Cisco Advanced Technology Partner (ATP) will be responsible for performing additional network and room readiness before the system is installed into the customer’s TelePresence room. It is the responsibility of the Cisco ATP to ensure that all network and room readiness is verified, prior to the system being powered on and connected to the customer’s network, by following the guidelines in this document.

Table 1. Room Requirements Overview

Room Size	One row system: 15' x 19' x 8' (4572mm x 5791mm x 2438mm) Depth x Length x Height Two row system: 21' 5.1" x 31' x 8' (6530mm x 9450mm x 2438mm) Depth x Length x Height
Ethernet	One 100Mbps or 1Gbps Ethernet Port. Two if you want Ethernet to the table legs.
HVAC	3250 BTU for rooms under the recommended room size. <i>(This calculation is per 'ASHRAE Standard 62-1999 – Office conference rooms'. The recommendation is based on the IX5000 power contributions only. External and 3rd party electrical components are not assumed in the 'no room remediation' statement).</i> See the HVAC section for more information.
Lighting	400 lux of indirect, even facial lighting
Acoustics	Ambient Noise <ul style="list-style-type: none">• 45dBA SPL maximum• NC30 Reverberation 150-700ms
Whiteboard Lighting	400 lux evenly dispersed on whiteboard surface
Floor Trenching (IX5200 only)	Adequate provisioning of cable trenches prior to IX5200 deployment
Power	0.95kW of power for system. 1.0kW provisioned for all table participant devices. The IX5000 utilizes NEMA-5-15P electrical outlets for standard US installations.

Room Size

The minimum room size of the IX5000 is a recommendation. A TelePresence room smaller than the minimum recommended size might have a less than desired experience for the user. Not only will a room smaller than the recommended size affect the comfort and usability of the room, it also can become an issue with ingress/egress and ADA wheel-chair requirements. Building code regulations must be adhered to as per the local requirements.

- 15' x 19' x 8' (4572mm x 5791mm x 2438mm) – Recommended Room Dimensions, One Row System (Depth x Width x Height)
- 21' 5.1" x 31' x 8' (6530mm x 9450mm x 2438mm) – Recommended Room Dimensions, Two Row System (Depth x Width x Height)
 - *The IX5000 one-row systems can be supported in a room depth of 13' 10" (4206mm), however HVAC supply may be needed to provide adequate cooling in this smaller space.*
 - *The overall height of the IX5000 is 6' (1820mm). It is strongly recommendation that the room ceiling height is 8' (2438mm). A room with a lower ceiling height can support the IX5000 system, however HVAC supply may be needed to provide adequate cooling in this smaller space.*

HVAC

The IX5000 LED displays and single codec components disperse less heat in comparison to the CTS TX9000. The IX5000 does not require a HVAC system, if the recommended room sizes (noted in Table 1) are being fulfilled. The IX5000 will physically fit into a room depth between 13' 10" (4206mm) and 15' (4572mm), however a HVAC system may be needed for room cooling. As a best practice, HVAC return vents should be placed directly above the endpoint structure and supply vents placed directly above or slightly behind the room participants.

HVAC systems without diffusers may generate ambient noise loud enough to interfere with the audio in the room. Installing diffusers can mitigate the noise issues.

- 3250 BTU for rooms under the recommended room size. HVAC not required for rooms meeting the recommended room size or greater. *(This calculation is per 'ASHRAE Standard 62-1999 – Office conference rooms'. The recommendation is based on the IX5000 power contributions only. External and 3rd party electrical components are not assumed in the 'no room remediation' statement.*

Lighting

Although the IX5000 will work with indirect conference room lighting, follow these recommendations for the best TelePresence experience:

- 400 lux, indirect, even facial lighting
- 4,000 Kelvin color temperature
- Rooms should not have dimmer switches installed.
If a dimmer switch or panel is installed, there should be a preset light level to bring the room back to "meeting conditions".
- Electronic lighting ballasts that supply 20,000Hz or higher power to the lamp (instead of the mains frequency of 50-60Hz) are recommended. This prevents stroboscopic flicker associated with fluorescent lighting.
- Note: LED room lighting has been known to cause stroboscopic flicker.

Acoustics

Adding acoustic panels, carpet, and drywall to a TelePresence room will enhance the TelePresence experience for the end user. Acoustic panels should be installed on side walls

Reverberation

The reverberation test measures how long it takes for sound waves in the room to decrease by 60 decibels.

When sound waves are generated in an enclosed environment, they continue to reflect from surface to surface until the energy is completely absorbed. This reflection of sound is called reverberation. Reverberation is measured as the rate of time in milliseconds (ms) for sound to decay by 60 decibels (RT60). Ideal conditions for human speech intelligibility are an RT60 value of 300 to 500 milliseconds for all frequencies between 125 Hz and 4 kHz. An extreme in either direction - too much reverberation or too little - can be detrimental to speech intelligibility, and since Cisco TelePresence is generally located in a meeting room in which the human voice is the main source of audio, an ideal sound-quality design preserves the human range of frequencies and isolates this range from interruptions.

The reverberation test is performed as part of First-Time Setup. See the [Cisco Telepresence IX5000 and IX5200 First-Time Setup](#) document.

Noise Level

The noise level test measures the background noise present in the room. The noise level test measures background noise in decibels with A-weighting (dBA). The Cisco TelePresence system is designed to work in rooms with background noise levels of 45 dBA or lower. Background noise levels above 45 dBA begin to compete with the intelligibility of human speech, and these noises become distracting for participants and can cause gating or sound suppression effects in the Cisco TelePresence audio.

The noise level test is performed as part of First-Time Setup. See the [Cisco Telepresence IX5000 and IX5200 First-Time Setup](#) document.

Whiteboard Lighting

Ensure 400 lux across the entire whiteboard surface. For whiteboard setup, see the [Cisco Telepresence IX5000 and IX5200 First-Time Setup](#) document.

Floor Trenching

If you use non-standard trenching between the endpoint structure and the second row table, ensure that all cables can reach their intended electronic components from one side of the table. The 2 x TDM 15-meter audio cables (DisplayPort – DisplayPort) are critical for this requirement. The furthest placed TDM from the codec must be less than 15 meters in distance through table and floor trenching. If the distance cannot be achieved with one trench, then two trenches are required. Two cable downspouts are provided for this purpose.

Cable length cannot be extended past 15 meters.

Power

Sufficient power is a requirement. Without the correct supply of power, the system will not function correctly. How the power is provided and distributed depends on the country and/or local building codes.

- Requires 0.95kW of total power for the system
- An additional 1.0kW provisioned for all table participant devices
- The IX5000 utilizes NEMA-5-15P electrical outlets for standard US installations

Note: While only one circuit is required, three power receptacles are required to be installed in the room: two receptacles for the PDUs in the endpoint, and one receptacle for the PDU in the front row.

Note: Variable power quality in your area can affect your Cisco TelePresence equipment adversely. Examples include power spikes or sags in your power grid, frequent outages, or changing frequencies. Installation of your equipment in an area where power quality is an issue may require additional power remediation. Power remediation includes an uninterruptible power supply (UPS), a power conditioner, and/or a surge protector. When you select the UPS, choose the correct amperage based on the power requirements of each electric circuit. For example, APC Smart-UPS 1500VA UPS.

The following tables provide you with system power requirements.

Summary of Power Requirements	
Startup Peak Power Requirements per Room for Base Product Offering	
Total power requirements for the IX5000 and 18 Seat systems, excluding power in table legs for conference participants	1.13 kW
Power in table legs for six conference participants and one Touch 10 device (IX5000)	1.06 kW ¹
Power in table legs for 18 conference participants and one Touch 10 device (IX5200)	3.30 kW ²
POWER TOTAL including power in table legs and one Touch 10 device for IX5000	2.19 kW
POWER TOTAL including power in table legs and one Touch 10 device for IX5200	4.43 kW
Total watts required per PDU: See the “Components and Peak Total Power Usage in Watts per Power Distribution Unit (PDU)” Table	
Number of Power Receptacles Per Room	
Power receptacles required, including power in table legs—IX5000	3
Power receptacles required, including power in table legs—IX5200	5

¹ For systems that use South Africa laptop connections, change this number to 0.96 kW. For more information, see the “Power Requirements for Power in Table Legs for Conference Participants and other Optional Components” table.

² For systems that use South Africa laptop connections, change this number to 2.64 kW. For more information, see the “Power Requirements for Power in Table Legs for Conference Participants and other Optional Components” table.

Note: Peripherals such as document cameras or alternate displays require extra power. Placement depends on the type and location of the peripheral device.

Power Requirements for System Components				
Component	Number of Units	Startup Peak Per Unit in Watts	Typical Per Unit in Watts	Standby/Idle Per Unit in Watts
Codec (HC+ED)	1	507.9	362	362
Subwoofer Amplifier	1	1.6	1.2	1.2
Light Panel Set	1	100	75	0
Camera	1	7.2	5.5	5.5
70-inch LCD display	3	155.2	141.1	23.9
Touch 10 Switch	1	37.3	28.7	28.7
Touch 10	1	12.95	7.2	2.2
POWER TOTAL for IX5000 and IX5200, excluding power in table legs for conference participants		1133	903	472

Power Requirements for Power in Table Legs for Conference Participants and other Optional Components

Note: This does not include additional presentation displays added to the room, such as CTS-MON-55-WW.

Component	Number of Units	Peak Per Unit in Watts	Typical Per Unit in Watts	Standby/Idle Per Unit in Watts
Participant Convenience Ports, front row (6 participants)	6 [†]	176	28.3	0
Participant Convenience Ports, second row (12 participants)	12 [†]	176	28.3	0
POWER TOTAL for 6 participants for IX5000	1	1056	170	0
POWER TOTAL for 18 participants for IX5200	1	3168	510	0
Optional 42" Lower Data Display	1	110	100	100
Optional Convenience Port Switch	1 (Single Row)	37.3	28.7	28.7
	2 (Dual Row)	37.3	28.7	28.7
Optional Touch 10	9 (total)	12.95	7.2	2.2

[†] For systems that use South African power outlets (part number CTS-LAPCONN-SA, 74-1195-01), only one outlet per table leg is allowed due to the size of the outlet. For these systems, change the convenience port number from 6 to 4 for the front row, and from 12 to 7 for the second row. The power total changes from 1056 to 960 watts for six participants, and from 3.18 to 2.6 kW watts for 18 participants. The number of PDUs required is the same.




The TelePresence IX5000 and IX5200 systems use Power Distribution Units (PDUs) to connect the components to the power circuits. See the following tables for the wattage that is required for each PDU.

Components and Peak Total Power Usage in Watts per Power Distribution Unit (PDU)

PDU	Components
PDU 1	Subwoofer Amplifier 70" LCD Display (Left) 70" LCD (Display (Center) Total watts: 312
PDU 2	Codec (HC+EC) Light Panels (connected to Codec) Camera (connected to Codec) 70" LCD Display (Right) Total watts: 770

Components and Total Peak Power Usage in Watts per Power Distribution Unit (PDU) for First and Second Row Conference Table (Optional)

PDU	Components
PDU 3	Power supply for front row/first row conference participants (IX5000 and IX5200 systems) Touch 10 Switch Touch 10

	Total watts: 1106
PDU 4 	Power supply for second row conference participants (1 of 2) (IX5200 systems only) Touch 10 Switch Total watts: 1093
PDU 5 	Power supply for second row conference participants (2 of 2) (IX5200 systems only) Touch 10 Switch Total watts: 1093

Aesthetics Recommendations

For best video quality and a truly comfortable immersive experience, follow these recommendations:

- Avoid high-contrast elements such as very dark or very light colors
- Avoid glossy finishes
- Earth tone colors work well
- Add plants, decorations and other adornments to the room
- Stagger acoustic tiles for improved sound quality

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