



PREPARING YOUR ROOM

July 2016 | 3725-67253-002/A

# Polycom<sup>®</sup> RealPresence Immersive Studio<sup>™</sup> Installation



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# Before You Begin

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The *Preparing Your Room for the Polycom® RealPresence® Immersive Studio™ Installation* document defines the room characteristics (such as the room size, wall color, and power outlets), delivery requirements, and network requirements needed to successfully deploy the Polycom RealPresence Immersive Studio 9-seat and 21-seat telepresence solution.

Before you begin reviewing the installation requirements described in this document, you must first know if you are planning to install the optional RealPresence Immersive Studio Acoustic Ceiling Clouds.

If you do not know, speak to your Polycom sales representative, or speak to your Polycom Project Manager (if one has been assigned to you).

Refer to the Make Ready document prepared for your room. It contains specific layout details for your room that will be needed as you use this document.

## Audience and Purpose

This document is intended for Polycom customers who have purchased a RealPresence Immersive Studio and are in the process of preparing their room for the RealPresence Immersive Studio installation.

## Get Help

For more information about installing, configuring, and administering Polycom products, refer to Documents and Downloads at

# Will the RealPresence Immersive Studio Fit in My Room?

## Minimum Room Dimensions

The first step in preparing for a RealPresence Immersive Studio installation is to make sure that the RealPresence Immersive Studio will properly fit into the room you selected. The following table can help you make that determination.

Minimum Room Dimensions with Back Wall, Ceiling Clouds, and Lights					
9-Seat			21-Seat		
Width	Depth	Height	Width	Depth	Height
26 ft 8½ in (8.141 m)	18 ft 2¾ in (5.547 m)	8 ft 6 in (2.591 m)	29 ft 3 in (8.915 m)	23 ft (7.010 m)	9 ft (2.743 m)

Minimum Room Dimensions with Lights Only (Without Back Wall and Ceiling Clouds)					
9-Seat			21-Seat		
Width	Depth	Height	Width	Depth	Height
23 ft 3½ in (7.100 m)	17 ft 8 in (5.384 m)	8 ft 6 in (2.591 m)	28 ft 7 in (8.712 m)	22 ft 6 in (6.858 m)	8 ft 6 in ** (2.591 m)

\*\* The rear row of lights is visible in the far end camera sight line. The normal ceiling height for this studio is 9 ft (2.743 m) above the finished floor.

- If your room does fit the size requirements listed in the table, continue through the rest of this document to determine the other RealPresence Immersive Studio room requirements.
- If your room does not meet the size requirements, you can call your Polycom sales representative for assistance, or you can speak to your Polycom Project Manager (if one has been assigned to you).

## Minimum Room Dimensions for Seismic Regions

If your Immersive Studio room will be installed in a seismic region, refer to the following table for the minimum room dimensions. Note that Immersive Studio seismic room dimensions are subject to change based on customer building permit approval.



For rooms with back walls, access at the ceiling level is required for installation of the back wall bracing system.

Seismic Region Minimum Room Dimensions with Back Wall, Ceiling Clouds, and Lights					
9-Seat			21-Seat		
Width	Depth	Height	Width	Depth	Height
26 ft 8½ in (8.141 m)	18 ft 10 in (5.740 m)	8 ft 6 in (2.591 m)	31 ft (9.449 m)	23 ft 10 in (7.264 m)	9 ft (2.743 m)

Seismic Region Minimum Room Dimensions with Lights Only (Without Back Wall and Ceiling Clouds)					
9-Seat			21-Seat		
Width	Depth	Height	Width	Depth	Height
23 ft 8½ in (7.226 m)	18 ft 0 in (5.486 m)	8 ft 6 in (2.591 m)	28 ft 7 in (8.712 m)	22 ft 10 in (6.960 m)	8 ft 6 in ** (2.591 m)

\*\* The rear row of lights is visible in the far end camera sight line. The normal ceiling height for this studio is 9 ft (2.743 m) above the finished floor.

- If your room does fit the size requirements listed in the table, continue through the rest of this document to determine the other RealPresence Immersive Studio room requirements.
- If your room does not meet the size requirements, you can call your Polycom sales representative for assistance, or you can speak to your Polycom Project Manager (if one has been assigned to you).

# Physical Room Requirements

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This section provides information about the:

- Ceiling requirements
- Front wall requirements
- Side wall requirements
- Rear wall requirements
- Floor requirements
- General room requirements

## Ceiling Requirements

### Height

- Recommended ceiling height: 9 ft (2.74 m)
- Maximum ceiling height: 14 ft (4.26 m)
- Minimum ceiling height:
  - 9-seat: 8 ft 6 in (2.591 m)
  - 21-seat: 9 ft (2.74 m)

For more information about room size requirements, see [Minimum Room Dimensions](#) and [Minimum Room Dimensions for Seismic Regions](#).

### Using the Polycom Ceiling Microphone Arrays:

- To obtain the best acoustics, the ceiling should be a suspended ceiling with acoustic tiles (also known as a drop ceiling) or the optional Polycom ceiling clouds; however, structural ceilings are also supported.
- If your ceiling is 9' (2.74 m) to 14' (4.26 m), and you do not have the optional Ceiling Clouds, you will need an optional 6' (1.82 m) drop cable for each Ceiling Microphone Array.

For more information about the Ceiling Microphones, refer to the Make Ready document for your room.

### Color

- Using either paint or ceiling tiles, create a monochromatic ceiling in white, black, or any shade of gray.
- If your ceiling is suspended (also known as a dropped ceiling) and the ceiling tiles and grid are damaged, grayed, or yellowed, you should replace the old suspended ceiling with a new one.

## Lighting

This section describes how to ensure proper lighting in the RealPresence Immersive Studio room. Polycom does not supply spare bulbs, so you may want to purchase replacements.

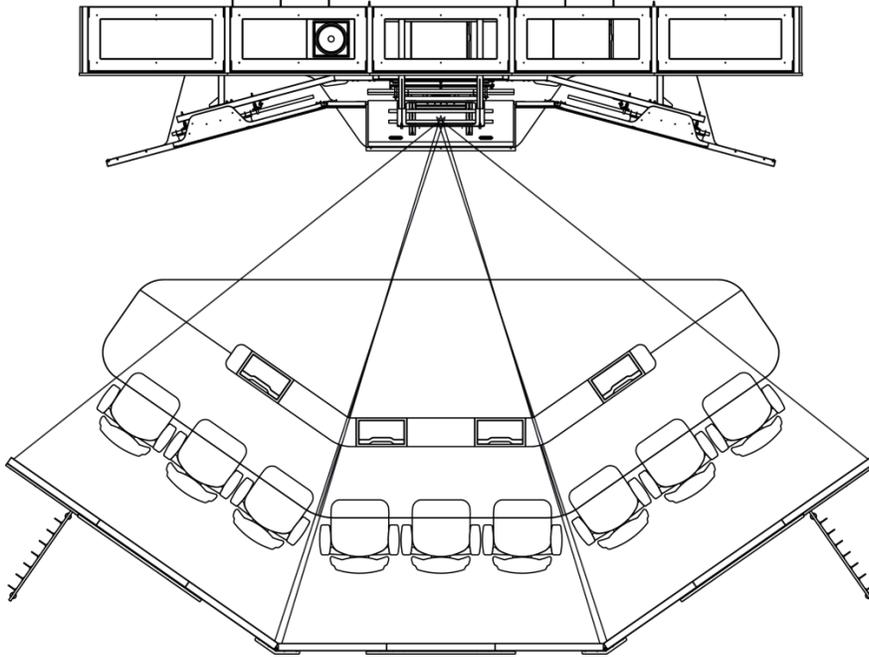
The following table lists product information about the light fixtures and lamps. Refer to the Make Ready document for your room or contact your Project Manager to confirm which type of light you'll receive.

RealPresence Immersive Studio Room	Manufacturer	Polycom Part Number	Lamp
9-Seat	Philips	2200-64790-001	54W T5 HO 4100K
9-Seat	Zumtobel	2200-64790-122	54W T5 HO 4100K
9-Seat	Zumtobel	2200-64790-012	54W T5 HO 4100K
9-Seat	Zumtobel	2200-64790-014	54W T5 HO 4100K
21-Seat	Philips	2200-64800-001	54W T5 HO 4100K
21-Seat	Zumtobel	2200-64800-122	54W T5 HO 4100K
21-Seat	Zumtobel	2200-64800-012	54W T5 HO 4100K
21-Seat	Zumtobel	2200-64800-014	54W T5 HO 4100K

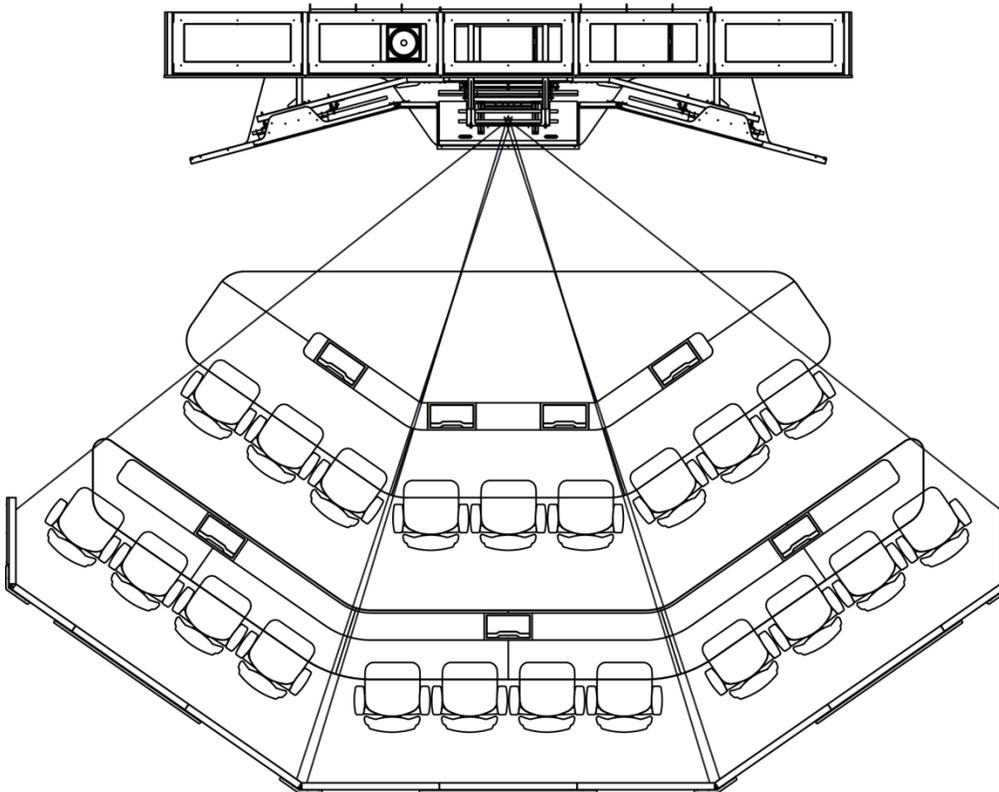
If you are providing your own lighting, Polycom recommends using a lighting designer and having the lighting professionally installed. The room should have evenly dispersed ambient light driven from electronic ballast florescent lights (not magnetic ballast).

To ensure proper lighting in the 9-seat or 21-seat room, you must measure the lighting at the seats in the rooms as shown below.

### Measure 9-Seat Room Lighting

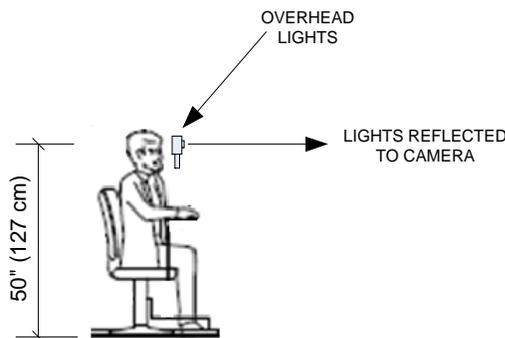


### Measure 21-Seat Room Lighting



To measure the lighting:

- Place a light meter (such as a Sekonic® L-758C) 50 in (127 cm) above the floor.



- Place the light meter perpendicular to the floor (since this is what the camera sees).
- Check that the light meter dome is fully retracted.
- Use a tripod to maintain height consistency.

The lighting should meet the following requirements:

- The light levels for the participants seated at seats 1 through 6 should be between 30 and 70 foot candles, with an ideal measurement of 45 foot candles. The difference in light levels between any two participants must be less than 10 foot candles.
- The lighting temperature should be 4100K.

Ideally, all the lights in the room should be RealPresence Immersive Studio lights. However, if your room has other lights, they must have the same temperature as the RealPresence Immersive Studio lighting. Additionally, to minimize stray light, Polycom recommends that these lights be downward-facing, such as recessed can lights.

## Front Wall Requirements

Note that the front wall referred to in this section is the front wall of the room, which is located behind the RealPresence Immersive Studio media wall.

### Color

- Recommended Option: Paint the front wall, including the baseboards, Behr Pewter Mug interior low luster eggshell enamel 770E-3.



- Second Option: Paint the front wall, including the baseboards, with an equivalent or lighter color to Pewter Mug from another manufacturer.

## LAN Jacks

- One Gigabit LAN jack must be located on the front wall.
- The customer must allocate and supply 20 IP addresses. Ideally, the IP addresses are sequential starting at any xxx.xxx.xxx.xx1 value.
- If using a switch in the media wall (customer or Polycom-provided), one Gigabit LAN jack must be located on the front wall. If using a remotely located switch, the customer must supply 19 Fast Ethernet (100BASE-T) or Gigabit Ethernet (1000BASE-T) connections.

Refer to the RealPresence Immersive Studio Technical Specifications and the Make Ready drawings for your room for more information.

## Microphones

To prepare for the installation of the Ceiling Microphone Arrays, an electrician must do the following:

- Install a single gang junction box in the front wall of the 9-seat room or two single gang junction boxes in the front wall of the 21-seat room. The two junction boxes will be positioned one over the other and will use the same conduit to get above the ceiling.
- Install a 1.0" (2.54 cm) diameter conduit in the front wall of the room. The conduit should extend in a straight run from the microphone junction box(es) to the space above the ceiling.
- Stub up the conduit into the space above the ceiling.

Additionally, Polycom recommends at least a 4-foot (1.2 m) separation between any HVAC equipment (particularly air conditioning equipment) and the Ceiling Microphone Arrays.

For more information about installing the Ceiling Microphone Arrays, refer to the Make Ready document for your room. For more information about HVAC equipment, see the "Noise" section.

## Occupancy Sensor

Polycom recommends at least a 5.9-foot (1.8 m) separation between any HVAC equipment (particularly air conditioning equipment) and the occupancy sensor.

For more information about the occupancy sensor, refer to the Make Ready document for your room.

## Power Outlet

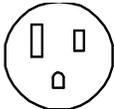
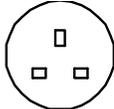
### **If you are in a 120V region (such as North America):**

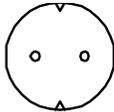
Three dedicated 15 amp (minimum) circuits must power three quad AC boxes. These are located on the front wall as specified in the Make Ready document for your room.

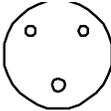
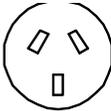
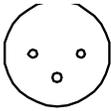
Three dedicated 10 amp (minimum) circuits must power four quad AC boxes. These are located on the front wall as specified in the Make Ready document for your room.

**For all regions:**

You must refer to the following table and determine which voltage, socket image, and socket type correspond to your country.

<i>Country</i>	<i>Country Voltage Socket Current</i>	<i>Socket Image</i>	<i>Socket Type (If Applicable)</i>
U.S.A.	120 VAC		NEMA 5-15
Canada	15 Amps		C22.2 No 21-95
Japan	100 VAC 15 Amps		JIS C8303
Taiwan	110 VAC 15 Amps		CNS 6797
Mexico	127 VAC 15 Amps		---
United Kingdom Ireland Hong Kong Singapore Cyprus UAE Malaysia Malta	230 VAC 13 Amps		BS 1363
Saudi Arabia			SSA 440 SASO 2203

Germany	230 VAC 16 Amps		CEE 7/7
Austria			
The Netherlands			
Sweden			
Norway			
Finland			
Russia			
Afghanistan			
Italy			
Spain			
Estonia			
Greece			
Hungary			
Latvia			
Lithuania			
Luxembourg			
Portugal			
Slovenia			
Belarus			
Iceland			
Kazakhstan			
Ukraine			
South Korea	110/220 VAC 10 Amps		KSC 8305

France Belgium Poland Czech Republic Slovak Republic	230 VAC 16 Amps		CEE 7/7 or NF C 61-303
Switzerland Liechtenstein	230 VAC 10 Amps		SEV 1011
Brazil	127 VAC 10 Amps		NBR 14136
India	220 VAC 15 Amps		BS 546
South Africa			SABS 164-1
Australia New Zealand	230 VAC 10 Amps		AS/NZS 3112
China	220 VAC 10 Amps		GB 1002-96
Argentina			IRAM 2073
Israel	220 VAC 16 Amps		SI 32 Part 1.01
Denmark	230 VAC 13 Amps		Afsnit 107-2-D1

## Obstructions

If the RealPresence Immersive Studio media wall is installed close to the front wall of the room, you may find it difficult to reach or see any thermostats, fire strobes, fire alarms, light switches, or other devices located on that wall. Therefore, if any of these devices are present on the front wall of the room, you should move them to a side wall. Fire strobes and alarms should never be blocked from view by the RealPresence Immersive Studio.

## Side Wall Requirements

### Color

- Recommended Option: Paint the side walls, including the baseboards, Behr Pewter Mug interior low luster eggshell enamel 770E-3.



- Second Option: Paint the side walls, including the baseboards, with an equivalent or lighter color to Pewter Mug from another manufacturer.

## Floor Requirements

### Material and Color

- To obtain the best acoustics, use a room in which the floor is carpeted or have carpeting installed in the room.
- Polycom recommends that you install ¼ in thick (without backing pad) carpet tiles similar to the following:

	<i>Manufacturer</i>	<i>Product Description</i>	<i>Color</i>	
Preferred	Shaw Contract Group®	Exaggerated Weave Tile	Coal 59511-11505	
Optional	InterfaceFLOR™	Lacebark	Espresso	

- Install the floor with the lines aligned and as closely matched as possible; do not quarter-turn the tiles. For more information, see

<http://www.shawcontractgroup.com/ProductSpec/Show/59511>

<http://www.shawcontractgroup.com>.

<http://www.flor.com/lacebark-espresso.html>

## Floor Support

Ensure that your room can accommodate the weight of the components listed in the following table plus the weight of the chairs and other furniture and equipment you expect to have installed in the room. You must also factor in the weight of the people who might enter the room.

<i>Component</i>	<i>Weight</i>	<i>Area</i>	<i>Lb/Ft<sup>2</sup> (kg/m<sup>2</sup>)</i>
Media Wall (9-seat and 21-seat, includes Equipment Rack, Displays, Camera Cluster, and Speakers)	3675 lbs (1666.9 kg)	49.19 ft <sup>2</sup> (4.57 m <sup>2</sup> )	74.7 lb/ft <sup>2</sup> (364.7 kg/m <sup>2</sup> )
Main Table (9-seat and 21-seat)	781 lbs (354.3 kg)	96.3 ft <sup>2</sup> (8.95 m <sup>2</sup> )	8.1 lb/ft <sup>2</sup> (39.5 kg/m <sup>2</sup> )
Back Table (21-seat only)	834 lbs (382.4 kg)	54.29 ft <sup>2</sup> (5.04 m <sup>2</sup> )	15.5 lb/ft <sup>2</sup> (75.7 kg/m <sup>2</sup> )
Back Acoustic Wall (9-seat)	831 lbs (377 kg)	9.9 ft <sup>2</sup> (0.92 m <sup>2</sup> )	83.9 lb/ft <sup>2</sup> (409.8 kg/m <sup>2</sup> )
Back Acoustic Wall (21-seat)	895 lbs (406 kg)	9.4 ft <sup>2</sup> (0.87 m <sup>2</sup> )	95.24 lb/ft <sup>2</sup> (465 kg/m <sup>2</sup> )

## Floor Levelness

The maximum deflection for floor levelness is approximately 1 in (2.54 cm) across 20 ft (6.1 m) inclusive. You can use this variance whether you measure front-to-back, side-to-side, from a corner of the suite, or from the center of the suite. The RealPresence Immersive Studio provides leveling feet to allow for approximately +/- ½ in (1.27 cm) of adjustment.

## Obstructions

The floor area in which the RealPresence Immersive Studio will be installed must be clear of any architectural elements that would restrict access, lessen usable space, or prevent people from easily and safely walking around the room. Examples include room columns and soffits on the walls.

## General Room Requirements

### Windows

Because natural light from windows varies, it can affect the quality of the video as well as the conferencing experience. In addition, windows on the side or back wall may be visible from the cameras.

- If there are windows on any of the walls, you should have them removed. If you cannot remove them, you must cover them with blackout curtains or blinds that block out all natural light. Choose coverings that are the same color as the wall.
- If the windows cover more than 20% of the wall, choose acoustical window treatments to avoid audio reverberation.

## Doors

- The door to the room should be located on one of the side walls and aligned to the center of the table as specified in the Make Ready drawing for your room.
- Polycom highly recommends that you do not locate the door on the front wall or the rear wall of the room because the width of the room would have to be greatly expanded to accommodate access around the RealPresence Immersive Studio video wall or the rear wall of the RealPresence Immersive Studio. In addition, a door located on the rear wall of the room may be visible from the cameras.

## Chairs

Chairs to accompany the RealPresence Immersive Studio are not supplied by Polycom, however, they are offered as an option. If you do not purchase these chairs, Polycom highly recommends that you purchase chairs that are the same size, color, and shape to maintain the design integrity of the room. Refer to the Polycom RealPresence Immersive Studio Technical Specifications for more information.

## Noise

- The NC rating for the room should be under 30 NC. An SPL meter reading of 43 dBA or better is acceptable.
- Sounds from adjacent rooms (such as meeting rooms, offices, kitchens, reception areas, restrooms, or data centers) may interfere with the audio during conferences. If the room does not meet the NC rating listed in the previous bullet, you should consider another room or consult with an architect to help you determine ways to reduce noise within the room.
- Keep in mind that Heating, Ventilation, and Air Conditioning (HVAC) equipment can introduce noise that can be picked up by the Ceiling Microphone Arrays. Polycom recommends at least a 4-foot (1.2 m) separation between any HVAC equipment (particularly the air conditioning equipment) and the Ceiling Microphone Arrays. Your room may require a greater distance depending on the noise level of your HVAC.

## Thermostat

- Polycom recommends installing an independently controlled thermostat on a side wall in the room. Be sure that you do not block access to the thermostat.
- The operating temperature for the RealPresence Immersive Studio equipment should be within 41° to 86° F (5° to 30° C), with a typical setting of 73° F (23° C). HVAC should be provided to cool the room. For more information, see the “Power and Cooling” section on the following page.

## Vibration

- Excessive room or wall vibration can negatively affect the RealPresence Immersive Studio video performance, resulting in camera movement or jitter that may be noticeable by the far-end participants. Room or wall vibration may be caused by many factors, such as HVAC equipment mounted nearby, heavy machinery in use nearby, high-rise structural vibrations, building sway or movement, and even trains or subways passing nearby or underneath the building.

- Consult the building manager, an architect, and/or the contractor to determine the optimal placement for the RealPresence Immersive Studio.
- If there are known vibration issues, please contact your Polycom sales representative or speak to your Polycom Project Manager prior to the RealPresence Immersive Studio installation.



**Follow seismic building code requirements when installing Immersive Studio in a seismic region.**

When an Immersive Studio system is installed in any seismic region, the local building codes require the Immersive Studio components be braced to the walls. Local building code requirements may not allow installation in the building, location, or on a floor of the building. Work with Polycom Sales to understand the Immersive Studio seismic building code requirements.

## Power and Cooling

The following table lists the power and cooling requirements. Note that this table includes only the RealPresence Immersive Studio components and not the participants, laptops, and customer-supplied lighting.

Power & Cooling						
	9-Seat			21-Seat		
	Total Power (Watts)	BTUs/Hour	Cooling in Tons	Total Power (Watts)	BTUs/Hour	Cooling in Tons
<b>Standby</b> (Components turned off except rack components, lights and cameras)	320	4506	.09	420	9406	0.78
<b>In Use</b> (Max call rate with Content and doc sharing)	2056	12233	1.02	2896	17828	1.49
<b>Maximum</b> (system will not exceed)	4515	18771	1.56	5689	27322	2.28
<b>Lighting</b>	877	2410	.20	1249	3597	0.30



Heating and cooling is required 24 hours a day, seven days a week, when an Immersive Studio system is in Standby mode.

# Delivery Requirements

You must ensure that the following delivery requirements are met:

- Access is available to a loading bay or designated area that is protected from inclement weather and from excessive heat and cold.
- The loading bay can accommodate a full-size 53 ft (16.1 m) trailer truck.
- The delivery is coordinated with the shipping carrier and may require labor union or security office.
- Access is required to an equipment lift or other equipment needed to move the Polycom pallets from the delivery truck to the desired installation room or storage area. For information on the size and weight of the crates, refer to the tables below.
- Access to a locked storage area that is 50% of the Immersive Studio room size or 242 sq ft (22 sq m).
- The path from the delivery truck to the desired installation room or storage area is planned and cleared of potential obstacles, such as small doorways, thresholds, stairs, ramps, and so forth. If desired, floor protection should also be used.
- A safe exit per local fire and safety regulations to be maintained.
- The delivery location can accommodate the following RealPresence Immersive Studio 9-Seat or 21-Seat crates:

## 9-Seat Delivery Requirements

<i>Component</i>	<i>Crate</i>	<i>Size</i>	<i>Shipping Weight</i>
Electronics	Crate 1	66" L x 43" W x 35" H (168 cm x 109 cm x 89 cm)	405 lbs (184 kg)
Main Display 1	Skid 2	84" L x 22" W x 58" H (213 cm x 56 cm x 147 cm)	255 lbs (116 kg)
Main Display 2	Skid 3	84" L x 22" W x 58" H (213 cm x 56 cm x 147 cm)	255 lbs (116 kg)
Main Display 3	Skid 4	84" L x 22" W x 58" H (213 cm x 56 cm x 147 cm)	255 lbs (116 kg)
Content Display	Skid 5	57" L x 16" W x 41" H (145 cm x 41 cm x 104 cm)	110 lbs (50 kg)
Media Wall Crate 1	Crate 6	124" L x 64" W x 44" H (315 cm x 163 cm x 112 cm)	1075 lbs (488 kg)
Media Wall Crate 2	Crate 7	105" L x 30" W x 35" H (267 cm x 76 cm x 89 cm)	815 lbs (370 kg)
Media Wall Crate 3	Crate 8	114" L x 56" W x 24" H (290 cm x 142 cm x 61 cm)	1110 lbs (503 kg)
Media Wall Crate 4	Crate 9	99" L x 37" W x 41" H (251 cm x 94 cm x 104 cm)	650 lbs (295 kg)

Main Table Crate 1	Crate 10	102" L x 31" W x 67" H (259 cm x 79 cm x 170 cm)	1525 lbs (692 kg)
Main Table Crate 2	Crate 11	81" L x 34" W x 37" H (206 cm x 86 cm x 94 cm)	550 lbs (249 kg)
Lights	Crate 12	120" L x 24" W x 33" H (305 cm x 61 cm x 84 cm)	315 lbs (143 kg)
Ceiling Clouds and hardware (optional)	Crate 13	60" L x 60" W x 40" H (152 cm x 152 cm x 102 cm)	400 lbs (181 kg)
Armstrong Ceiling Beams	Crate 15	146" L x 10" W x 10" H (371 cm x 25 cm x 25 cm)	100 lbs (45 kg)
Rear Wall Crate 1	Crate 16	113" L x 23" W x 38" H (287 cm x 58 cm x 97 cm)	515 lbs (281 kg)
Rear Wall Crate 2	Crate 17	104" L x 55" W x 51" H (264 cm x 140 cm x 130 cm)	965 lbs (438 kg)
Chairs (9) (optional)		28" L x 28" W x 24" H EA (71 cm x 71 cm x 61 cm EA)	55 lbs (25 kg) EA

### 21-Seat Delivery Requirements

<i>Component</i>	<i>Crate</i>	<i>Size</i>	<i>Shipping Weight</i>
Electronics	Crate 1	66" L x 43" W x 35" H (168 cm x 109 cm x 89 cm)	405 lbs (184 kg)
Main Display 1	Skid 2	84" L x 22" W x 58" H (213 cm x 56 cm x 147 cm)	255 lbs (116 kg)
Main Display 2	Skid 3	84" L x 22" W x 58" H (213 cm x 56 cm x 147 cm)	255 lbs (116 kg)
Main Display 3	Skid 4	84" L x 22" W x 58" H (213 cm x 56 cm x 147 cm)	255 lbs (116 kg)
Content Display	Skid 5	57" L x 16" W x 41" H (145 cm x 41 cm x 104 cm)	110 lbs (50 kg)
Media Wall Crate 1	Crate 6	124" L x 64" W x 44" H (315 cm x 163 cm x 112 cm)	1075 lbs (488 kg)
Media Wall Crate 2	Crate 7	105" L x 30" W x 35" H (267 cm x 76 cm x 89 cm)	815 lbs (370 kg)
Media Wall Crate 3	Crate 8	114" L x 56" W x 24" H (290 cm x 142 cm x 61 cm)	1110 lbs (503 kg)
Media Wall Crate 4	Crate 9	99" L x 37" W x 41" H (251 cm x 94 cm x 104 cm)	650 lbs (295 kg)

Main Table Crate 1	Crate 10	102" L x 31" W x 67" H (259 cm x 79 cm x 170 cm)	1525 lbs (692 kg)
Main Table Crate 2	Crate 11	81" L x 34" W x 37" H (206 cm x 86 cm x 94 cm)	550 lbs (249 kg)
Back Table	Crate 12	133" L x 40" W x 40" H (338 cm x 102 cm x 102 cm)	1315 lbs (596 kg)
Lights	Crate 13	120" L x 24" W x 33" H (305 cm x 61 cm x 84 cm)	465 lbs (211 kg)
Ceiling Clouds and hardware (optional)	Crate 14	60" L x 60" W x 50" H (152 cm x 152 cm x 127 cm)	580 lbs (263 kg)
Armstrong Ceiling Beams	Crate 15	146" L x 12" W x 8" H (371 cm x 30 cm x 20 cm)	125 lbs (57 kg)
Rear Wall Crate 1	Crate 16	128" L x 36" W x 26" H (325 cm x 91 cm x 66 cm)	620 lbs (281 kg)
Rear Wall Crate 2	Crate 17	106" L x 66" W x 62" H (269 cm x 168 cm x 157 cm)	1440 lbs (653 kg)
Chairs (9) (optional)		28" L x 28" W x 24" H EA (71 cm x 71 cm x 61 cm EA)	55 lbs (25 kg) EA
Stools (12) (optional)		28" L x 28" W x 47" H EA (71 cm x 71 cm x 119 cm EA)	56 lbs (25 kg) EA

The crates must be unpacked by Polycom or under the supervision of Polycom. If the crates are unpacked by the customer without Polycom supervision, the customer will be responsible for the replacement of any equipment damaged during the unpacking procedure.

# Network Requirements

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The recommended bandwidth required depends on the customer's application, location, required resolution, and other factors. Refer to the RealPresence Group Series Administrator's Guide for a detailed matrix of call speeds and resolutions.

LAN Connection Requirements:

- 1 Gigabit LAN jack
- 1 unmanaged 24-port Ethernet switch (provided with system)
- The touch interface tablet requires an IP address from the network. The touch interface connects to the primary codec in the LAN side of the codec switch.
- Static IP address allocation is recommended in blocks of 20 sequential addresses (i.e. xxx.xxx.xxx.1 thru xxx.xxx.xxx.20)
- Home Runs (required if using an external switch): 19

In addition, you should:

- Review your Wide Area Network (WAN) connectivity. You must have sufficient bandwidth to support HD video as well as capacity for your existing data traffic.
- Review your Quality of Service (QoS) settings. If you are using Diffserv, you can use Polycom's Diffserv markings to fit into your current QoS schema.
- For additional guidance, contact Polycom Global Services Networking Consulting at <http://connect.polycom.com/content/polycom/ppn/home/products-and-services/services/professional-services/strategy-and-planning/network-consulting.html>

IT administrators, Polycom technicians and installers, and Video Network Operations Center (VNOC) conference producers should also review the Polycom RealPresence Immersive Studio Administrator's Guide, available at [support.polycom.com](http://support.polycom.com).

# Summary Checklist of Room Requirements

Review the following checklist prior to installation. In order to achieve the optimal RealPresence Immersive Studio telepresence experience, you should answer yes to most of the questions listed.

If t, speak to your Polycom sales representative, or speak to your Polycom Project Manager (if one has been assigned to you).

<i>Ceiling Requirements</i>		<i>Response</i>
	What is the ceiling height?	_____
Height	Is the ceiling suspended?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	If the ceiling is higher than 9 ft (2.74 m), have the optional 6-foot (1.8 m) mic drop cables been ordered?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Color	Is the ceiling white or a light color that is close to white?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Will an electrician be scheduled to install the lights?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lighting	Does the electrician have any certification or experience with wiring Lutron control systems and digitally dimmable ballasts?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Are light levels in the current room between 30 and 70 candles (preferably 45 foot candles)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Is the lighting temperature 4100K?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	If the room is larger than the recommended size, are the other lights in the room outside of the RealPresence Immersive Studio footprint and the camera field of view?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>Front Wall Requirements</i>		<i>Response</i>
Color	Is the front wall painted white? Refer to <a href="#">Front Wall Requirements</a> for recommendations on front wall paint color.	<input type="checkbox"/> Yes <input type="checkbox"/> No
LAN Jacks	Are the LAN jacks installed according to the specification and have the IP addresses been provisioned?	<input type="checkbox"/> Yes <input type="checkbox"/> No

	Is the RealPresence Immersive Studio located in 120V region or a 220V region?	<input type="checkbox"/> 120V <input type="checkbox"/> 220V
	Have power outlets been installed in the correct locations as shown in the Make Ready drawing?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Refer to the Power Outlets table, and check the box next to the socket image that corresponds to your country:	
Power Outlets	U.S.A., Canada, Japan, Taiwan, Mexico	<input type="checkbox"/>
	United Kingdom, Ireland, Hong Kong, Singapore, Cyprus, UAE, Malaysia, Malta, Saudi Arabia	<input type="checkbox"/>
	Germany, Austria, The Netherlands, Sweden, Norway, Finland, Russia, Afghanistan, Italy, Spain, Estonia, Greece, Hungary, Latvia, Lithuania, Luxembourg, Portugal, Slovenia, Belarus, Iceland, Kazakhstan, Ukraine, South Korea	<input type="checkbox"/>
	France, Belgium, Poland, Czech Republic, Slovak Republic	<input type="checkbox"/>
	Switzerland, Liechtenstein, Brazil	<input type="checkbox"/>
	India	<input type="checkbox"/>
	Australia, New Zealand, China, Argentina	<input type="checkbox"/>
	Israel	<input type="checkbox"/>
	Denmark	<input type="checkbox"/>
	Obstructions	Are all devices, such as thermostats, removed from the front wall?
<i>Side Wall Requirements</i>		<i>Response</i>
Color	What color are the side walls painted?	_____
<i>Back Wall Requirements</i>		<i>Response</i>
Color	Is the back wall of the room painted white?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What color is the back wall painted?	_____
Obstructions	Are all devices, such as thermostats, removed from the back wall?	<input type="checkbox"/> Yes <input type="checkbox"/> No

<i>Floor Requirements</i>		<i>Response</i>
Material and Color	Is the floor carpeted?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	What color is the carpeting?	_____
Floor Support	Can the floor accommodate the weight of the Immersive Studio components?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Floor Levelness	Is the maximum deflection for floor levelness approximately 1 in (2.54 cm) across 20 ft (6.1 m)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Obstructions	Is the floor clear of any obstructing architectural elements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>General Room Requirements</i>		<i>Response</i>
Windows	Are the windows removed and/or covered?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Doors	If the door was located on the front wall or rear wall of the room, has it been moved to a side wall?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Chairs	Are Polycom (or comparable) chairs being ordered?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Noise	Is the NC rating less than 30 NC/43 dBA?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Is the HVAC at least 4 ft (1.2 m) away from Ceiling Microphone Arrays?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Is the HVAC at least 5.9 ft (1.8 m) away from Occupancy Sensor?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Thermostat	Is an independently controlled thermostat installed and accessible?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Vibration	Is the room free from excessive room or wall vibrations?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Seismic	Is the room in a seismic region?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Power and Cooling	Are power and cooling below the maximum of 2500 watts, 8530 BTUs/hour, and .71 cooling tons?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Will the room have 24/7 heating and cooling to meet the Standby power requirements of the Immersive Studio system?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Obstructions	Is the room clear of any obstructing architectural elements?	<input type="checkbox"/> Yes <input type="checkbox"/> No

<i>Delivery Requirements</i>		<i>Response</i>
Delivery	Is access to the loading bay available and protected from inclement weather?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Can the loading bay accommodate a 53 ft (16.1 m) trailer truck?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Has delivery been coordinated with the shipping carrier, union, and /or security?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Is equipment to move the pallets available?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Is access to a 242 sq ft (22 sq m) locked storage area available?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Is the pathway to the installation destination cleared and safe?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Can the delivery location accommodate the pallets?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>Network Requirements</i>		<i>Response</i>
Network	Is the recommended bandwidth available?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Have the LAN connection requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No