



Windows collaboration display

PNCD701: 70" Class (69.5" diagonal) 4K Ultra HD interactive display

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Be Original.

Always smarter meetings.

Productivity doesn't just depend on the time that we put in, but also on the quality of work we do – using the best possible tools.

For teamwork to be truly effective, people need to easily connect and share ideas and information in a comfortable environment – whether they are working in a meeting space, conference room or anywhere in the world.



The Windows collaboration display from Sharp is a next generation 4K Ultra HD 70" Class (69.5" diagonal) interactive display that enables better space utilization and more productive collaboration in meetings, boardrooms, training rooms, technical reviews and almost anywhere else.

As well as using Sharp's award-winning technology, together with a built-in microphone, high-quality camera and IoT sensor hub, it works seamlessly with the best Microsoft 365 collaboration tools. Furthermore, it's all backed by the cloud to deliver outstanding ease of use and enable the continual analysis of meeting room conditions and usage.



Our Windows collaboration display has won awards for **Best New Collaboration Board** in the 2019 Best of InfoComm Awards and 2019 Best of ISE Awards (rAVE publications), as well as a **2019 Top New Technology (TNT)** award for displays (CE Pro and Commercial Integrator magazines).

Walk in, plug in and work together

Setting up the technology needed for a meeting can be very time consuming and frustrating. But you simply 'plug and play' with the Windows collaboration display.

It is so simple to walk into a room, plug in your device and start working together straightaway. Just connect with its specially engineered, 8m long USB-C cable and it automatically switches to the right input for whatever information you want to display. You're instantly ready to start your meeting – saving up to 10 minutes* time trying to set up connections.

This single USB-C** connector, which is also used with the latest Windows® and Apple® Mac notebooks, provides high-speed, high-bandwidth data transfer for multiple functions, including 4K Video, internet network and application data. And it can also provide power for attached mobile devices.

However, for added flexibility, a wireless connection is included for lower bandwidth data transfer. And, any hardware without a USB-C connection can still use the full functionality of the Windows collaboration display using a HDMI™ and USB Type B cable combination.



In addition, the Windows collaboration display has received a **Crestron Connected® certification** which shows that employees can stay focused on more important tasks instead of spending time setting up in-room meetings.

* Total Economic Impact™ Study, Forrester Consulting, February 2016.

** USB-C port must support DP Alt Mode (DisplayPort Alt Mode) to provide 4K Ultra HD resolution video signal.



Better places to meet

Creating a comfortable environment in your meeting rooms pays real dividends in terms of helping people concentrate and improving productivity. The Windows collaboration display from Sharp has built-in sensors that can connect to the Microsoft Azure Digital Twins IoT platform, and other commercially available cloud and subscription services such as Sharp **Synappx WorkSpaces** as part of a smart building environment.

IoT sensors

- **Occupancy** – a motion sensor detects the presence of any people in the room. An additional artificial intelligence (AI) service can analyze this data and count the numbers of people. Further AI services could automatically switch on displays and other equipment to enable a faster setup and help improve the scheduling of room bookings. During a meeting, the sensor can also be used by another AI service to detect the location of whoever is speaking and control a three-dimensional microphone array to focus on the relevant person.

- **Temperature** – its intelligent climate measurement can be used by an AI service to automatically regulate the room temperature and relative humidity to make the room feel more comfortable. By intelligently optimizing the operation of the air-conditioning it also helps reduce costs.
- **Light** – an ambient light sensor helps with intelligent lighting control, as it automatically measures the level of light. An AI service could then adjust the in-room lighting system with changing day and night conditions, which can reduce eye strain and may save money on wasted energy.
- **Air quality** – the Windows collaboration display continually measures and analyzes the ambient air quality* in the meeting room and can assist another AI service in automatically adjusting the air-conditioning to provide the best possible working environment.

* Measure the levels of eCO₂ (Equivalent Carbon Dioxide) and TVOC (Total Volatile Organic Compounds).



Actively using the data collected by the Windows collaboration display and making physical changes to how rooms are used and controlled is best achieved with a Facility Manager using the latest industry smart tools and technologies. Sharp is working with a number of leading businesses to build a comprehensive eco-system for the creation of smart meeting spaces that enable truly effective collaboration.

A more natural approach.

When ideas are flowing you need to be able to work quickly and intuitively, without having to struggle with the technology.

Even in the most highly interactive meeting, the Windows collaboration display from Sharp ensures that information can be shared and captured quickly and precisely.

Simply much easier

With its 10-point Projected Capacitive (PCAP) touch technology and direct optical bonding, it provides a more accurate and natural Sharp Pen-on-Paper® experience. Writing on-screen is just as quick and effortless as writing on a flipchart or whiteboard. By using either a finger or pen, notes and comments can be quickly added as simple text or by drawing freehand to highlight changes and annotate the information on-screen. This means that, in boardroom presentations, you can quickly give the big picture overview, but also focus on key details to keep everyone engaged and “eyes up.”



Fast, precise control

The Windows collaboration display comes with a Passive pen as standard. Designed with a precise 2mm tip, this powerful and ergonomic stylus sits comfortably in the hand and enhances the Pen-on-Paper experience. It is ideal for discussing complex technical information or graphics, such as architectural plans or engineering designs, where you need to review even the smallest details.



Passive pen

Thanks to the Windows collaboration display's exceptional responsiveness and ease of use, it also:

- **Speeds-up collaboration** – users can work together immediately, with no training, which encourages more engagement and interactivity.
- **Builds confidence** – users feel more confident and willing to participate and present and share information.
- **Increases concentration** – users can focus on the delivery of content with no technical distractions.



All you need to do more

Business teams come in all shapes and sizes—from tactical workgroups to large-scale, established project teams—and often span both local and global locations. But to be truly effective, they need to share ideas openly and inclusively.

The Windows collaboration display from Sharp is Skype for Business certified. It offers the highest quality audio and video and provides the best ways to connect and collaborate using the power and productivity of Microsoft 365 at room scale.*

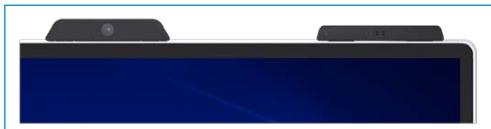
- **Microsoft 365** provides familiar Microsoft Office applications that enable people to be more creative, work together more effectively and have a more productive experience. It also includes advanced security and device management capabilities to help safeguard your business.
- **Microsoft Teams** is a complete chat, notes, attachments and online meetings solution. It includes annotation, overlay and presentation tools, along with seamless video conferencing and collaboration tools. So whether everyone is in a meeting room or spread around the world, it still feels like you're all together.
- **Microsoft Azure Digital Twins** is an IoT platform that creates a comprehensive model of physical environments. Data from multiple IoT sensors is stored in a reliable and secure private cloud database and can be analyzed, for example, by a third-party smart building dashboard solution, to help optimize the management of office space.

* The mentioned software and services are available as an additional purchase and are not included in shipping with the Windows collaboration display.

Look and work smarter.

Technology should not only enhance your productivity, but also your workplace.

Imagine a collaborative space where the technology is designed to ensure effortless control and collaboration, but also adds an extra touch of style. That's exactly what you get with the Windows collaboration display from Sharp.



Stylish design

The display has an attractive and elegant edge to edge design that looks good in even the most prestigious corporate boardroom:

- The On Screen Display (OSD) buttons are discretely located on the front for quick and easy control.
- The high quality videoconferencing camera and IoT sensor hub have been integrated neatly on the top of the display.
- An integrated directional microphone picks up sound from anywhere in your collaboration space.



Effortless device sharing

The Windows collaboration display has built-in wireless casting that works with Windows and Android™ devices. As a result, you can simply connect your own device to the display and easily share and display any information.

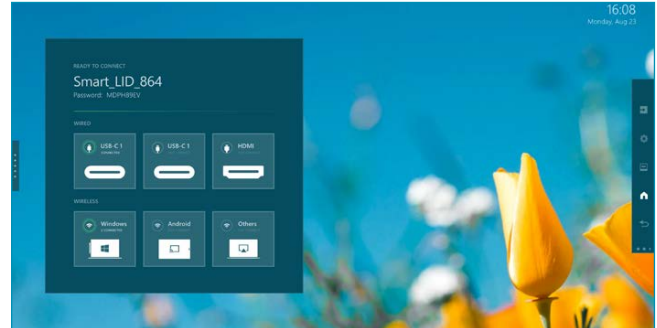


Image for illustration purposes only.

Up to five* devices can be connected simultaneously and the Touch Back control enables you to control screen content from either the display or the source device. So it is ideal for dynamic workgroups discussions or interactive training sessions as it allows you to work more efficiently, encourages active involvement and provides a more effective way of learning.

The Windows collaboration display can split into two separate screens, putting it into Picture by Picture (PbP) mode. The Windows collaboration display will show up to two different connected devices out of the five possible options. The two screens can be any combination of inputs, for example, 1 USB-C + wireless 1, or HDMI + wireless 2.

Touch Back is also a feature that works in PbP mode, with whichever attached device is active. Touch Back control automatically switches between the two PbP displays, depending on which side is touched.

* USB-C x2, Wireless x2, HDMI x1



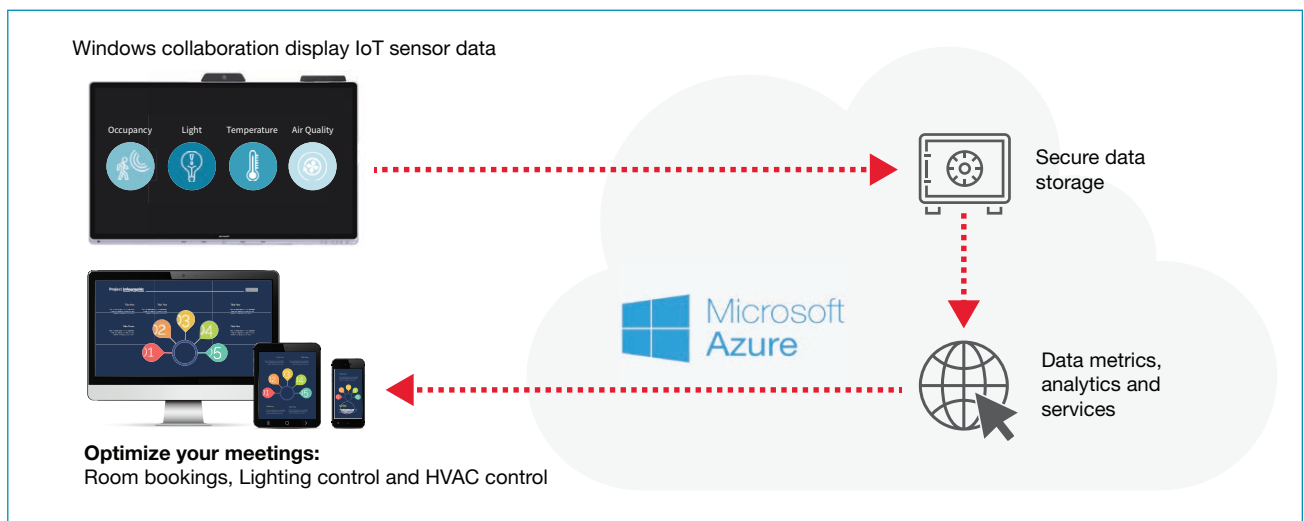
Sharp Synappx WorkSpaces - Get an intelligent edge.

Enjoy a smarter way to monitor and improve meeting room usage and conditions.

Sharp **Synappx WorkSpaces*** is a software as a service solution (SaaS) that helps you make the best use of data from the IoT Sensor hub on the Windows collaboration display. It provides clear, visual information to enable more efficient room booking and utilization and create comfortable meeting and training room environments for more productive collaboration and learning, while also improving overall facilities management.

By collecting and analyzing real-time data from across the digital and physical worlds, it automatically detects meeting room usage, monitors ambient conditions and helps optimize the use of space once connected to the analytics of a smart building management system.

This all happens through the Microsoft Azure Digital Twins IoT platform, which is a powerful, managed cloud service that acts as a central data store and can provide additional data processing intelligence.



* Available later in 2019.

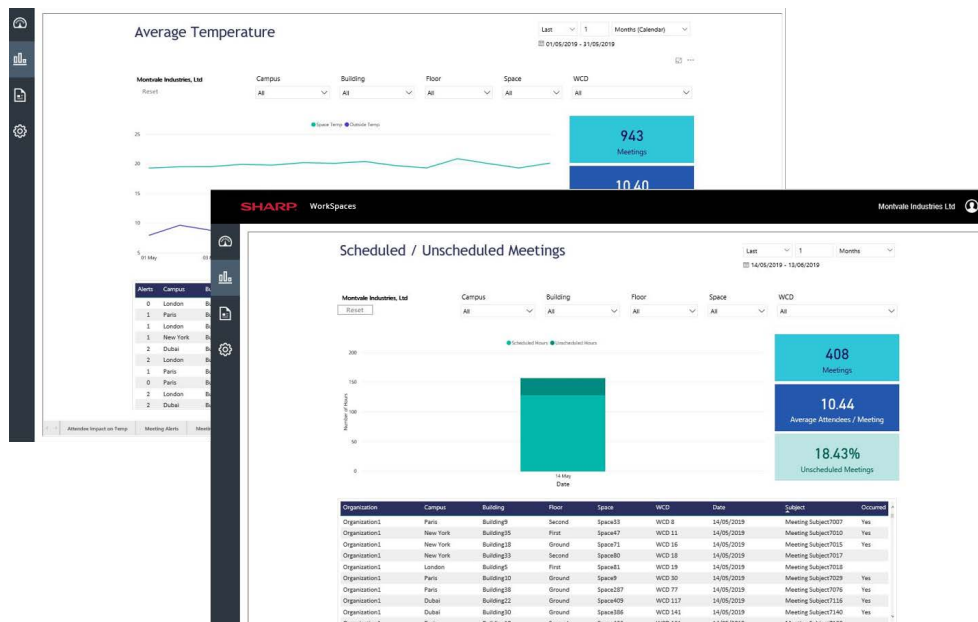


Image for illustration purposes only.

A better place to work

Sharp Synappx WorkSpaces service delivers real-time analysis of the environmental conditions in your boardrooms and meeting spaces as part of a temperature monitoring system. It continually measures the ambient temperature and relative humidity levels as well as the light and air quality and it can help you ensure maximum comfort in each room.

For example, the temperature in a room occupied by 3 people is likely to differ if the number increases to 10 people. So, based on the information gathered by Sharp Synappx WorkSpaces, the air-conditioning in every room can be adjusted manually or automatically*, to suit the number of people. As well as improving the comfort of everyone in the meeting, it also reduces costs by avoiding any unnecessary heating or cooling.

And, even better, the service can handle all the data from a fleet of multiple screens installed in different buildings. You can then see all activity and data from any mobile device.

Always room for improvement

Using data intelligence captured by room occupancy sensors, Sharp Synappx WorkSpaces can actively monitor when meeting rooms are being used. Once connected to in-house systems, such as a meeting room booking system, you can also see which rooms are booked, as well as seeing when a meeting room becomes free after a period of time.

In addition, you can allocate the most suitable rooms to use depending on the number of attendees. Sharp Synappx WorkSpaces can also help you detect and prevent repeat “phantom” meetings—where somebody has booked a room but not turned up!

To help understand and improve the long-term occupancy rates, Sharp Synappx WorkSpaces service’s reporting tools can show what type of meetings are taking place, for example:

- **Scheduled (booked and used)**
- **Unscheduled (not booked but used)**
- **Phantom (booked and not used)**

It also highlights the trends of how often each room is used, including the peak and low occupancy times and most regular usage periods, and can generate a variety of alerts for the Facilities Manager.

* This can happen if the Windows collaboration display sensor data is connected to a smart building system, so custom integration may be required.

Extra comfort, better collaboration.

Creating a meeting environment in which everyone is relaxed can pay real dividends by improving the productivity of group work.

Sharp Synappx WorkSpaces gives businesses of all sizes the information intelligence to adapt the ambient conditions in each meeting room, to suit the number of people and the type of activities taking place. These conditions include the temperature, humidity, air quality and lighting, all conducive to creating the perfect environment.

So, every time a new meeting or training sessions starts, organizers and participants don't have to worry about adapting the conditions of the room as it is automatically optimized for their needs. This can happen if the Windows collaboration display sensor data is connected to a smart building system, so custom integration may be required. By ensuring that people are physically more comfortable, everyone can simply pay attention to what's on the agenda and focus on working more collaboratively.



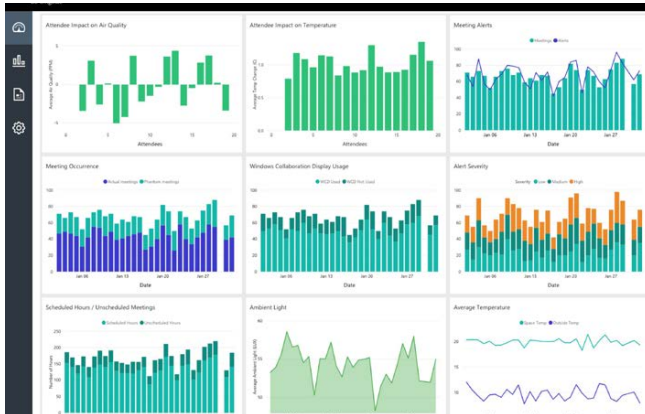


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Keep control of your data

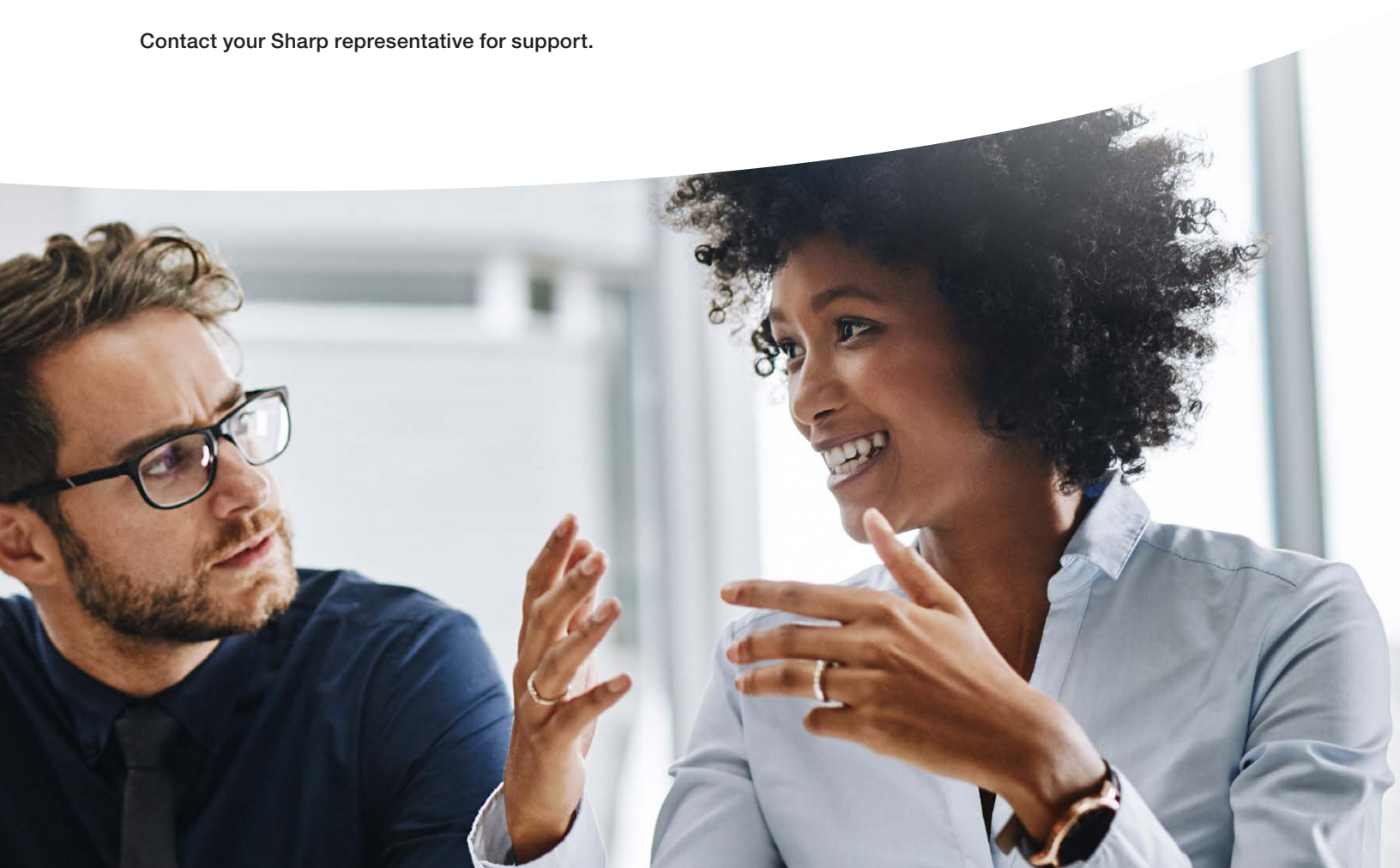
Sharp Synappx WorkSpaces offers the best performance when running on Microsoft's Azure cloud services, which includes highly secure data encryption. However, if you prefer, you can also use other cloud platforms or even create a premise-based solution using custom-built software, which would be based in your physical location and running on your own computers and local servers.

Less hassle, less cost

As a Software as a Service (SaaS) solution, Sharp Synappx WorkSpaces is really easy to set-up, provision and use—all you need is a simple pairing code that's entered from the Windows collaboration display.

There's also a no-charge 90-day trial licence with the purchase of each Windows collaboration display unit. Sharp Synappx WorkSpaces then offers you the flexibility to choose from various options through its SaaS subscription model.

Contact your Sharp representative for support.



Specifications

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General

Installation	
PNCD701	Landscape

LCD Panel

70" Class (69.5" diagonal) UV ² A ¹ LCD	
Max. resolution	3,840 x 2,160 pixels
Max. display colours (approx.)	1.06 billion colours
Pixel pitch (H x V)	0.401 x 0.401 mm
Max. brightness (average) ^{*2}	350 cd/m ²
Contrast ratio	4,000 : 1
Viewing angle (H/V)	176°/176° (CR >10)
Active screen area (W x H)	1,538.9 x 865.6 mm
Response time	6 ms (grey to grey, avg.)
Backlight	W-LED, edge lit

Touchscreen

Touch technology	Projected Capacitive (PCAP) touch
Direct optically bonded	Yes
Palm reject	Yes
PC connection port	USB (2.0) Type B x1, USB Type C x2
Power supply	Supplied from main unit
Multi touch	10 points
Protection glass	Thickness: approx. 1.9 mm ^{*3} Shock resistance: 130 cm ^{*4}

Pen

Passive touch pen	Standard with the Windows collaboration display
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Wireless Casting

Wireless communication method	2.4 GHz, IEEE802.11 b/g/n; 5 GHz, IEEE802.11 a/n/ac
Supported devices	Windows and Android

Computer Input

Video	HDMI™ x 1, USB Type C (DP Alt Mode) x2
Plug & play	Yes
Power management	Yes
Input/Output terminals^{*5}	
Top	USB (3.0) Type A x2 (1 for camera) SPDIF-In x1 (for camera)

Side	USB (3.0 compliant) Type A x2 LAN port (External Gb Ethernet) x1 AUDIO LINE-OUT (3.5mm-diameter mini stereo jack) x1 LAN port (Internal Gb Ethernet) x1 USB (2.0 compliant, Internal storage expansion) Type A x1 USB Type C (DP Alt Mode) Output x1
Service Port	USB (2.0 compliant) Type A x1 UART TX/RX port (3.5mm-diameter mini jack) x1
Speaker output	
Built-in	12 W + 12 W
Power supply	100V - 240V / AC 50/60Hz
Power consumption	370W max
Environmental conditions	
Operating temperature	41°F to 95°F / 5°C to 35°C
Operating humidity	20% to 80% RH (no condensation)
Dimensions (W x D x H) (display only)	63-29/32" x 3-17/32" x 38-7/16"
Weight (display only)	143.3lbs / 65kg
Main accessories	AC power cord, battery, set-up manual, USB Type C (DP Alt Mode) compliant cable (8.0 m), HDMI cable, USB touchback cable, passive touch pen

Unified Communications

Output connector	USB (3.0) Type A
Camera resolution	4K UHD (up to 3840 x 2160 pixels) sensor supporting high quality, low noise video at 30fps
Camera field of view	120°
Microphone	Array microphone x 4
Sound collecting distance	13 - 20 ft

IoT Sensor Hub

Output connector	USB (2.0) Type A
AI camera	
Resolution	1,920 x 1,080 @30 fps
Colour space	YUY2, MJPG
Field of view	74.8°
Motion sensor	
Sensor type	Microwave
Detection area	140° (Horizontal) / 70° (Vertical) OdB level
Light sensor	
Selectable LUX ranges	128/256/512/1024/2048
Processing	50/60Hz flicker noise and IR rejection
Air quality sensor	
Gas types	eCO2, TVOC
Temperature humidity sensor	
Temperature range	-40°F to 212°F / -40°C to +100°C
RH range	0% - 100%

*1 UV²A stands for Ultraviolet-induced Multi-domain Vertical Alignment, a photo-alignment technology that ensures uniform alignment of liquid crystal molecules. *2 Brightness depends on input mode and other picture settings. Brightness level will decrease slightly over the lifetime of the product. Due to the physical limitations of the equipment, it is not possible to maintain a precisely constant level of brightness. *3 Including AG film on the front and AR film on the back. *4 Approximate distance at which the glass panel can withstand the impact of a 500-gram iron ball dropped on its centre. *5 Use a commercially available connection cable for PC and other video connections.



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