Monitors

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As of August 26th, 2020, these are the monitors we currently recommend:

27" Displays

Dell 27 USB-C HD Monitor - P2720DC

Available on UC Procurement Gateway

Price - ~$352.79-$479.99 depending on which supplier you use.

Resolutions - QHD 2560 x 1440 at 60 Hz

Connections

- DisplayPort (DisplayPort 1.2 mode)
- DisplayPort output (DisplayPort 1.2 mode)
- HDMI
- Audio line-out
- USB-C
- USB 2.0 downstream ports (x2 - rear)
- USB 3.0 downstream ports (x2 - side)
- Power connector
- Security-lock slot
- Stand lock feature

Comes with

- 1x Power cable
- 1x DisplayPort cable
- 1x USB Type-C cable

Ideal for Macs (Using USB-C or HDMI) or Windows (Using Displayport or HDMI)

⚠️ For HDMI Connection, must purchase HDMI cable.
Dell UltraSharp 27 4K USB-C Monitor - U2720Q
Available on UC Procurement Gateway
Price - ~$529.19.
Resolutions - 4K UHD (2160p) 3840 x 2160 (DisplayPort: 60 Hz, HDMI: 30 Hz)
Connections
- DisplayPort
- HDMI
- 2 x USB-C
- 2 x USB 3.0 downstream
- USB 3.0
- Audio line-out
- Power connector
- Security-lock slot
- Stand lock feature
Comes with
- 1x 1. Power cable
- 1x Type-C cable (C to C)
- 1x USB-C cable (C to A)
- 1x DisplayPort cable (DP to DP)
Ideal for Macs (Using USB-C or HDMI) or Windows (Using Displayport or HDMI)

⚠️ For HDMI Connection, must purchase HDMI cable.

24" Displays

Dell 24 Monitor - P2419H
Available on UC Procurement Gateway
Price - ~$183.74
Resolutions - Full HD (1080p) 1920 x 1080 at 60 Hz
Connections
- 1 x DisplayPort version 1.2
- 1 x HDMI port version 1.4
- 1 x VGA port
- 1 x USB 3.0 upstream port (bottom)
- 2 x USB 3.0 downstream ports (side)
- 2 x USB 2.0 downstream ports (bottom)
Comes with
- Power cable
- 1 x DP to DP Cable
- 1x VGA Cable (Japan only)
- 1x HDMI Cable (shipped with P2219H/P2319H/P2719H, for Brazil only)
- 1 x USB 3.0 upstream cable (enables the USB port on the monitor)

⚠️ No DVI cable support. You will need a DVI to HDMI Cable for connectivity

Dell UltraSharp 24 Monitor - U2419H
Price - ~$227.84
Resolutions - Full HD (1080p) 1920 x 1080 at 60 Hz

Connections

- 1 x DP 1.4 (HDCP 1.4)
- 1 x DP (out) with MST (HDCP 1.4)
- 1 x HDMI 1.4 (HDCP 1.4)
- 2 x USB 3.0 downstream port
- 2 x USB 3.0 with BC1.2 charging capability at 2A (max)
- 1 x USB 3.0 upstream port
- 1 x Analog 2.0 audio line out (3.5mm jack)

Comes with

- 1 x Power cable
- 1 x DP Cable (DP to DP)
- 1 x USB 3.0 upstream cable

Connection Substitutes

VGA to HDMI

For computers with only VGA, you will need a cable similar to this:
https://www.amazon.com/Monitor-FOINNEX-Connecting-Laptop-HDTV-Male/dp/B071SHJ1S3/ref=sr_1_4?ie=UTF8&qid=1527108464&sr=8-4&keywords=vga-to-hdmi+adapter

DVI to HDMI

Adapter

For computers with only DVI, you will need an adapter similar to this:
https://www.amazon.com/Rankie-Adapter-Gold-Plated-Converter-2-Pack/dp/B00ZMVGTA2/ref=sr_1_4?s=electronics&ie=UTF8&qid=1527108573&sr=1-4&keywords=DVI+to+HDMI

Cable

If you rather have a cable substitute:
https://www.amazon.com/Cable-Matters-CL3-Rated-Bi-Directional-HDMI/dp/B00BBF3LYA/ref=sr_1_6?s=electronics&ie=UTF8&qid=1527108573&sr=1-6&keywords=DVI+to+HDMI

Mini-Displayport to HDMI

Adapter

https://www.amazon.com/Cable-Matters-DisplayPort-Adapter-Black/dp/B00DRK2ZIK/ref=sr_1_5?ie=UTF8&qid=1527108930&sr=8-5&keywords=minidisplayport+to+hdmi&dpID=417FU1fag4L&preST=_SY300_QL70_&dpSrc=srch

Cable

https://www.amazon.com/AmazonBasics-Mini-DisplayPort-HDMI-Cable/dp/B0134V3KIA/ref=sr_1_3?ie=UTF8&qid=1527108930&sr=8-3&keywords=minidisplayport+to+hdmi&dpID=41v%252Blw7qyPrL&preST=_SX300_QL70_&dpSrc=srch

Mini-Displayport to Displayport

Cable
Why Dell monitors?

We recommend the Dell monitors due to the UC Agreement with them as well as having the Warranty Coverage in case issues come up, the warranty coverage can be leveraged to get it replaced.

Alternative Monitor selection

There is no restrictions in getting other brand monitors at this time.

We just found Dell monitors to be a little bit easier to work with and reasonable quality.

Other brands you may want to consider:

- LG
- Viewsonic
- Samsung

Things to consider...

Resolution

When getting a monitor, you have to consider Display Resolution.

Most Windows/Linux/PC machines don't go beyond the resolution of 1920x1080 (The standard HD definition) unless the graphics chipset will support it or using a GPU that supports higher resolution.

Macs can use higher resolutions, sometimes up to 2560x1440.

Why is Resolution important?

Resolution is important on how you can work with a document.

For those who need big desktop space, higher resolutions means more space to work with.

The drawback to higher resolutions, depending on the screen size, can also mean smaller text, which can be harder on the eyes to read.

Do I need a 4K Monitor?

For most cases, not really.

Unless you are into image processing or using a Mac and need the Ultra High Definition (4K) resolution, a standard High Def (1920x1080) monitor will do just as well.

Can I use a TV or Projector as a Huge Monitor?

Not recommender outside of digital signage or conference rooms maintained by trained AV techs. Contacting support before purchase is highly recommended.

- Monitors have faster response times, TVs often have an annoying delay between hitting a key and seeing it on the screen
- Your computer may not recognize your TV as a monitor. Known issues include:
  - Not waking TV up when coming out of sleep mode resulting in having to unplug the TV
  - Displaying the incorrect color balance, resolution, area of display, or some combination thereof.
  - Refusing to display output despite having compatible cables
  - Monitors generally have more pixels per inch than televisions so monitors will give you less eye strain
  - TVs have longer focal lengths because they are made to be seen from further away
  - Some technologies used in certain types of TVs and projectors appear unfocused if seen from too close.
  - Some technologies used in certain types of TVs and projectors may damage your eyes if seen from too close due to excessive light or other EM radiation.
- “front-row-at-the-movie-theater” effect
- Earthquake, fall and other danger.
- Large TVs and projectors are heavy enough that they need to be secured to a wall, ceiling or strong mount point.
- If left unsecured they can cause injuries or even death if they tip over
- Many walls are made out of particleboard, plaster, or drywall. Special mountings and fasteners are needed to avoid being pulled out due to equipment weight.
- Please consult your lab manager and CAL OSHA regulations before buying a TV or projector for a lab.
- LCDs dissolve when many industrial cleaners are used on them.
• Magnetic fields distort some TV technologies and may result experimental interference
• Power draw may be too much for a given electrical circuit if combined with other lab equipment. Blown fuses have occurred.

Connections
Having the right connections is important when you are getting a monitor.

VGA
VGA is the old standard connection, which looks like this:

Most older computers or monitors have this connection.
If you have a newer computer, you will need an adapter to be able to connect to older monitors using this.

DVI
DVI is another old standard connection which looks like this:

A lot of computers still use this connection standard, as do some monitors.
Computers with DVI connections can be adapted to VGA, Displayport or HDMI if the monitor does not have a DVI connection, but usually you will have to purchase the adapter/cable seperately.

Displayport (Mini-Displayport)
Displayport in another connection type for video as shown here:

The normal Displayport shown on the Left, while Mini-displayport shown on the right (Thunderbolt is the Apple term for their version of Displayport)
Some computers will use Displayport in either fashion and just requires the appropriate cable to connect to it.

Displayport on computers can be adapted to connect to monitors with VGA, DVI or HDMI, however the adapter only works when it is connected to the computer, not the monitor.

Displayport can also allow for daisy-chaining, which is basically, if a monitor has displayport connection, you can connect another displayport monitor to that monitor instead of having to directly connect to the computer.

**HDMI**

HDMI is another connection standard, mostly used by TVs, but some computers have this connection as shown here:

![HDMI connection](image)

This connection often allows for Audio as well as Video.

Computers with HDMI can connect to DVI and VGA monitors using an adapter or cable made to connect HDMI to VGA/DVI.

HDMI also has version definitions, such as Version 2.1 is used to connect to 4K (Ultra High Definition) displays.

In most cases, unless you are using a Ultra High Definition screen, a normal HDMI cable is fine for most use.

**Thunderbolt 3 (USB-C)**

Thunderbolt 3 is the name Apple uses for USB-C connection as shown here:

![USB-C connection](image)

There are very few monitors that support this connection directly.

There are a few adapters that can convert the computer's USB-C connection to VGA, DVI, Displayport or HDMI.

USB-C theoretically can daisy chain, but has caveats.