



**VIRLI**  
Virtual Reality Learning Initiative

## Virtual Reality Learning Initiative VR Equipment Bundle

The document outlines the equipment needed for a virtual reality (VR) bundle that a member of the Virtual Reality Learning Initiative (VIRLI) can purchase to run VR content created by Great Lakes Reality Labs (GLRL) and other developers.

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### VR-Compatible Desktop Computer

The core component of the VR bundle is the desktop computer. This machine is what brings together all the VR hardware and runs VR software.

Due to the resource-intensive nature of VR, the component specifications of this desktop is what GLRL recommends to meet the needs of the current VIRLI library. The following specifications are what GLRL uses to develop VR content and have been used to test the current VIRLI library.

Component	Specification	Example Link
<b>Case</b>	Any case that supports all the components in this list. It should specifically support an ATX motherboard and 360mm CPU liquid cooler.	<a href="https://www.nzxt.com/products/h700-matte-white">https://www.nzxt.com/products/h700-matte-white</a>
<b>CPU</b>	Intel desktop CPU with 8 cores and 3.6 GHz or above (must be Intel).	<a href="https://ark.intel.com/content/www/us/en/ark/products/186604/intel-core-i7-9700k-processor-12m-cache-up-to-4-90-ghz.html">https://ark.intel.com/content/www/us/en/ark/products/186604/intel-core-i7-9700k-processor-12m-cache-up-to-4-90-ghz.html</a>
<b>CPU Cooler</b>	360mm AIO Liquid Cooler.	<a href="https://www.nzxt.com/products/kraken-x72">https://www.nzxt.com/products/kraken-x72</a>
<b>GPU</b>	Nvidia RTX 2080. Any RTX 2080 will work from manufacturers like EVGA, MSI, and ASUS.	<a href="https://www.nvidia.com/en-us/geforce/graphics-cards/rtx-2080/">https://www.nvidia.com/en-us/geforce/graphics-cards/rtx-2080/</a>
<b>Memory</b>	DDR4-3200MHz CL16-18-18-38 1.35V (2x8GB).	<a href="https://www.gskill.com/product/165/166/1536654268/F4-3200C16D-16GTZR-Overview">https://www.gskill.com/product/165/166/1536654268/F4-3200C16D-16GTZR-Overview</a>
<b>Motherboard</b>	ATX motherboard with Intel Z390 Chipset, 1151 Socket, DDR4 memory slots (at least two), m.2 slots (at least one). Must ensure compatibility with all other components and can fit inside of the desktop case.	<a href="https://www.msi.com/Motherboard/MPG-Z390-GAMING-EDGE-AC/Overview">https://www.msi.com/Motherboard/MPG-Z390-GAMING-EDGE-AC/Overview</a>
<b>Power Supply</b>	EVGA SuperNOVA 750 G3, 80 Plus Gold 750W or similar.	<a href="https://www.evga.com/products/product.aspx?pn=220-G3-0750-X1">https://www.evga.com/products/product.aspx?pn=220-G3-0750-X1</a>
<b>Storage</b>	1TB NVMe m.2 SSD.	<a href="https://www.samsung.com/semiconductor/minisite/ssd/product/consumer/970evoplus">https://www.samsung.com/semiconductor/minisite/ssd/product/consumer/970evoplus</a>

### Software Specifications

Each desktop should have Windows 10 Home or Pro.



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### VR Headset and Controllers

VR is experienced by utilizing a VR headset to see the digital environment and controllers to interact with the digital assets.

#### HTC VIVE Pro

VIRLI recommends the use of the VIVE Pro for the highest level user experience and availability of first-party accessories. GLRL develops and tests all VR content using the VIVE Pro.

In order to utilize the VIVE Pro, the following components are needed:

- VIVE Pro Headset
- VIVE controllers
- SteamVR base stations (2)

The VIVE Pro Full Kit includes all the necessary components for utilizing a VIVE Pro. More information about the full kit can be found at <https://www.vive.com/us/product/vive-pro-full-kit/>.

Please note that the full kit includes the VIVE 2018 controllers and the SteamVR Base Station 2.0.

The VIVE Pro headset can be used with the standard VIVE controllers, however those require the SteamVR Base Stations 1.0. Standard VIVE controllers are not compatible with the 2.0 base stations and the 2018 controllers are not compatible with the 1.0 base stations.

Through GLRL's relationship with HTC VIVE Enterprise, HTC is providing special pricing for the VIVE Pro Full Kit.

GLRL's contact with HTC VIVE Enterprise is Jonathan Green ([Jonathan\\_Green@htc.com](mailto:Jonathan_Green@htc.com)).

#### HTC VIVE Pro Wireless Adapter

For the convenience of users to not have to worry about the standard connection cable preinstalled on the VIVE Pro headset, VIRLI recommends the use of the VIVE Pro Wireless Adapter. More information about the adapter can be found at <https://www.vive.com/us/wireless-adapter/>.

Please note that the Wireless Adapter and Adapter Kit for VIVE Pro is required for the VIVE Pro headset.



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### Accessories

#### Lighthouse Stands for SteamVR Base Stations

While the SteamVR Base Stations comes with equipment to mount the stations on a wall or ceiling, VIRLI recommends lighthouse stands (two stands) to allow for more secure operation of the stations when not mounted. These stands have standard tripod mounts for connecting to the stations and adjustable ball heads for positioning the stations.

VIRLI has recommended the Fovitec 2x 7'6" Light Stand VR Compatible Kit with Ball Head Mount and Carry Bag that can be found on Amazon at [https://www.amazon.com/Fovitec-Lighthouse-Compatible-Adjustable-Carrying/dp/B01MFG14ZT/ref=sr\\_1\\_9?keywords=vive+base+station+stand&qid=1581007198&sr=8-9](https://www.amazon.com/Fovitec-Lighthouse-Compatible-Adjustable-Carrying/dp/B01MFG14ZT/ref=sr_1_9?keywords=vive+base+station+stand&qid=1581007198&sr=8-9). Similar stands can be found from other distributors, however customer reviews should be considered to ensure the quality so that the base stations are not risked being damaged.

#### Hygienic Accessories

In order to keep users clean and safe while sharing a VR headset, VIRLI recommends several accessories to be part of the VR bundle.

#### Silicone Covers

Silicone covers are a great accessory to both protect the VR headset/controllers from minor bumps and allow for easy cleaning.

VIRLI recommends the Hyperkin GelShell Headset Silicone Skin for HTC Vive Pro for the VR Headset. This can be found on Amazon at [https://www.amazon.com/Hyperkin-GelShell-Headset-Silicone-Skin-pc/dp/B07JVQ9G4T/ref=sr\\_1\\_1?keywords=vive+pro+silicone&qid=1581021089&sr=8-1](https://www.amazon.com/Hyperkin-GelShell-Headset-Silicone-Skin-pc/dp/B07JVQ9G4T/ref=sr_1_1?keywords=vive+pro+silicone&qid=1581021089&sr=8-1).

VIRLI recommends the Hyperkin GelShell Controller Silicone Skin for HTC Vive Pro for the VR controllers. This can be found on Amazon at [https://www.amazon.com/Hyperkin-GelShell-Controller-Silicone-2-Pack-pc/dp/B01LEZO0OQ/ref=pd\\_bxgy\\_img\\_2/144-7357858-3188955?encoding=UTF8&pd\\_rd\\_i=B01LEZO0OQ&pd\\_rd\\_r=fd9b1cb-f34b-4afa-a7c6-304d22188fe0&pd\\_rd\\_w=bfNWN&pd\\_rd\\_wg=WZNMZ&pf\\_rd\\_p=fd08095f-55ff-4a15-9b49-4a1a719225a9&pf\\_rd\\_r=1XS6D5REAKZF45ASSB1B&psc=1&refRID=1XS6D5REAKZF45ASSB1B](https://www.amazon.com/Hyperkin-GelShell-Controller-Silicone-2-Pack-pc/dp/B01LEZO0OQ/ref=pd_bxgy_img_2/144-7357858-3188955?encoding=UTF8&pd_rd_i=B01LEZO0OQ&pd_rd_r=fd9b1cb-f34b-4afa-a7c6-304d22188fe0&pd_rd_w=bfNWN&pd_rd_wg=WZNMZ&pf_rd_p=fd08095f-55ff-4a15-9b49-4a1a719225a9&pf_rd_r=1XS6D5REAKZF45ASSB1B&psc=1&refRID=1XS6D5REAKZF45ASSB1B).



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### **HTC VIVE Pro Leather Face Cushion**

VIRLI recommends the use of the Leather Face Cushion for VIVE Pro instead of the standard foam face cushion that comes preinstalled on the headset. The leather face cushion collects less bodily fluids and is more easily cleaned.

More information about the leather face cushion can be found at <https://www.vive.com/us/accessory/leather-face-cushion-2-vive-pro/>.

### **Disposable VR Face Masks**

Another measure to prevent spreading germs on the headset is for students to individually use disposable VR face masks. A single mask can be used for multiple sessions if the VR headset is transferred between multiple students during a single class.

VIRLI recommends the Kaizen Spirit VR Disposable VR Covers that can be found on Amazon at [https://www.amazon.com/Kaizen-Spirit-VR-Disposable-Sanitary/dp/B07THCRC1L/ref=sxin\\_2\\_sxwds-bia-wc1\\_0?cv\\_ct\\_cx=vr+face+mask&keywords=vr+face+mask&pd\\_rd\\_i=B07THCRC1L&pd\\_rd\\_r=b9763216-27e6-425e-b0b2-bc8fe09fd034&pd\\_rd\\_w=OoSSx&pd\\_rd\\_wg=s8gRZ&pf\\_rd\\_p=e308a38c-3620-4845-b486-18a551828bb6&pf\\_rd\\_r=BZJVA6YDR4G8VVEBV4D8&psc=1&qid=1581018984&sr=1-1-e1d37225-97ae-4506-b802-4ca5ff43ebe6](https://www.amazon.com/Kaizen-Spirit-VR-Disposable-Sanitary/dp/B07THCRC1L/ref=sxin_2_sxwds-bia-wc1_0?cv_ct_cx=vr+face+mask&keywords=vr+face+mask&pd_rd_i=B07THCRC1L&pd_rd_r=b9763216-27e6-425e-b0b2-bc8fe09fd034&pd_rd_w=OoSSx&pd_rd_wg=s8gRZ&pf_rd_p=e308a38c-3620-4845-b486-18a551828bb6&pf_rd_r=BZJVA6YDR4G8VVEBV4D8&psc=1&qid=1581018984&sr=1-1-e1d37225-97ae-4506-b802-4ca5ff43ebe6).

### **Sanitary Wipes**

Between uses, the VR headset/controllers can be cleaned with sanitary wipes to remove any germs and bodily fluids that have collected. These wipes should be gentle on sensitive skin and do not emit any fumes that would irritate eyes.

VIRLI recommends the PURELL Hand Sanitizing Wipes that can be found on Amazon at [https://www.amazon.com/gp/product/B013QEGCDA/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o09\\_s01?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B013QEGCDA/ref=ppx_yo_dt_b_asin_title_o09_s01?ie=UTF8&psc=1).





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### Desktop Peripherals

In order to utilize the desktop specified in this VR bundle, the following peripherals are required:

- HDMI monitor display
- HDMI cable
- Keyboard
- Mouse
- WiFi adapter

These peripherals are needed to navigate the operating system and launch VIRLI library content.

### Learn More

To learn more about VIRLI or MAISA, please reach out to Karen Hairston at [khairston@gomaisa.org](mailto:khairston@gomaisa.org).

To learn more about Great Lakes Reality Labs, please reach out to Jim Curran at (517) 896-4190 or [j.curran@glrealitylabs.com](mailto:j.curran@glrealitylabs.com).

