

HTC VIVE Pro vs Valve Index: Scalability or Customizability-focused?

Both extremely powerful devices and contenders in the premium/enterprise segment

Virtual reality (VR) is a rapidly growing industry, which ([as per PWC](#)) currently holds a large share of all content produced worldwide. Further, VR headset shipments have also increased over the last two years, as both consumers and businesses have gravitated towards technologies that will power closer connections without in-person meetings. VR headsets can enable a wide range of uses, from collaboration to gaming, and helping users enter VR metaverse environments. Two of the leading VR headsets to consider in 2022 are the HTC VIVE Pro and the Valve Index – both extremely powerful devices and contenders in the premium/enterprise segment.

Understanding HTC VIVE Pro

In 2019, the HTC VIVE (no longer available) was one of the most powerful virtual reality (VR) headsets on the market. However, it was quite cumbersome and its audio and visual performance required improvement. With the 2021 release of the [VIVE Pro](#), HTC aimed to enhance the immersive experience. The wired headset (with an additional wireless adapter) has headphones, twin outward-facing cameras, a more ergonomic design, and other features. The whole system is considerably more costly than its predecessor, at \$1,199.00 with a Viveport Infinity subscription included. Its major features include:

- True-to-life precision room-scale tracking
- Brilliant onscreen colors with high contrast
- Natural sound design with Hi-res certificate headphones
- Suitable for commercial-grade VR

Understanding the Valve Index Headset

Launched in 2019, [Valve Index](#) has bespoke displays that guarantee accurate colors regardless of what the user is viewing. The twin element design and unique lenses enhance the field of vision without sacrificing clarity, and there are speakers located away from the ear. The completely adjustable ergonomics of the Valve Index make it a more attractive headset than many other heavier options. This headset is wired and costs \$999. Key features include the following:

- Custom double element optics
- Adjustable ergonomics with a replaceable face gasket
- Modifiable expansion slot with code example
- Cradle adapter for smaller heads

Now let's consider how the HTC VIVE Pro stands up against the Valve Index as per these major features attributes.

HTC VIVE Pro vs Valve Index: Design

As head-mounted, wired VR devices, there are a few similarities between these two headsets, but they pursue distinct approaches. Both the HTC VIVE Pro and the Valve Index include headbands with a tightening band that wraps over the sides of the head and a top strap. This technique may result in increased stress on the front of a user's face. However, both contain a dial to adjust the tightness, making them incredibly simple to put on and take off and adaptable to a variety of head sizes. Valve Index is also equipped with a cradle adapter and ergonomic adjustments.

HTC VIVE Pro vs Valve Index: Powering the Device

Both headsets need cords connecting the headset to a PC. The Valve Index contains a cable with USB 3.0, DisplayPort 1.2, and 12V power plugs at its end. The HTC VIVE Pro cable is used to connect to a breakout box that has power, DisplayPort, and USB 3.0 ports.

The HTC VIVE contains two forward-facing cameras that allow native hand and finger tracking in some applications. Two cameras on the front of the Valve Index point slightly downward. The headsets also require their external base station cameras to monitor the headsets' and controllers' movements.

In terms of displays, there are considerable differences between HTC VIVE Pro and Valve Index. The HTC VIVE Pro employs two independent AMOLED panels with a combined resolution of 2880 x 1600 and a refresh rate of 90 Hz for more fluid action. In addition, it has a field of vision of 110 degrees and hardware IPD adjustment.

In comparison, the Valve Index has two 5-degree slanted screens. It has a 130-degree field of vision with hardware InterPupilar Distance (IPD) adjustment and a total resolution of 2880x1600. While its resolution is the same as that of the VIVE Pro, Valve employs LCD panels with more subpixels than standard pentile OLED displays. It also has a higher refresh rate of 120Hz which can go up to an impressive 144Hz for better immersion.

HTC VIVE Pro vs Valve Index: Tracking and Controllers

Valve Index and HTC VIVE Pro both use outside-in tracking. This needs the placement of external cameras across the playing area in order to track the motions of the headgear and controllers. Two cameras can successfully generate a huge play space and monitor controller movement even when the player is behind them. Both headsets are compatible with the same SteamVR 1.0 and 2.0 base stations.

The VIVE Pro employs identical wand controllers to the VIVE. There are buttons on the side grips, triggers, two thumb buttons, and a touch wheel on the top. The Valve Index controllers are more sophisticated since they are secured to the user's hands via straps. In addition, they have two thumb buttons, triggers, a system button, a vertical touchpad for the thumbs, an analog stick, and grip sensors.

HTC VIVE Pro vs Valve Index: Pricing

The HTC VIVE Pro and Valve Index are significantly more expensive than other VR headsets aimed at consumers, such as the Oculus. The HTC VIVE Pro headset itself costs \$599, plus a free controller is included with the SteamVR 1.0 base station and two controllers. The wireless adaptor is additionally available as an accessory. Users must pay \$499 for the Valve Index headset only. The whole package, consisting of the Index controllers and SteamVR 2.0 base stations with improved range and field of vision, is priced at \$999.

Verdict

While the Valve Index is more advanced in terms of specifications, there is a case to be made for the VIVE pro as well. It offers a unique wireless adapter and HTC is constantly growing its VR solutions portfolio. Users can choose from a number of accessories, such as facial trackers, and the company provides dedicated business support. [In May 2021](#), HTC also announced the VIVE Pro 2 which brings 5K resolution, among other enhancements. Valve Index also remains a compelling solution for those looking for customizability and comfort.