

Pimax Crystal Light

Pimax Crystal Light Prime PCVR Headset User Manual

Model: Crystal Light | Brand: Pimax

PRODUCT OVERVIEW

The Pimax Crystal Light Prime PCVR Headset is designed for an immersive virtual reality experience, particularly optimized for flight and racing simulators. It features an 8K resolution QLED display, a lightweight design, and multiple refresh rate options to provide high clarity and comfort during extended use.



Image: The Pimax Crystal Light PCVR Headset shown with its accompanying controllers, highlighting its sleek black design.

What's Included

The Pimax Crystal Light Prime PCVR Headset package includes the following components:

- Pimax Crystal Light Headset
- Controllers (2)
- DP Cable
- Multi Power Adapters
- USB Cable
- Lens Cloth



WHAT'S INCLUDED:



Controllers



Lens Cloth



DP Cable



Multi Power Adapters



USB Cable

Image: A visual representation of all items included in the Pimax Crystal Light package, such as the headset, controllers, cables, and adapters.

SETUP GUIDE

System Requirements

Ensure your PC meets the following specifications for optimal performance:

PC Requirements for Pimax Crystal Light

Category	Minimum Requirements (Basic Experience)	Recommended Requirements (Full Performance)
OS	Win 10 (x64)/Win 11	Win 10 (x64)/Win 11
GPU	NVIDIA GeForce RTX 2070 and above	NVIDIA GeForce RTX 3080 and above
CPU	Intel i5 - 12x00 Series or AMD processor with the same performance	Intel i5 - 13x00 Series or above
RAM	16GB	16GB and above

Category	Minimum Requirements (Basic Experience)	Recommended Requirements (Full Performance)
Video Out	Display Port 1.4a	Display Port 1.4a
USB Ports	USB 3.0 or Above	USB 3.0 or Above
Tracking	Standing/Seated (No min space requirements)	Roomscale (Up to 10m x 10m)

Note: The Crystal Light is compatible with laptops featuring a direct GPU output to MiniDP or USB-C ports, requiring a DP 1.4a-compliant adapter (8K@60Hz). If unsure, submit a screenshot of Nvidia Control Panel's PhysX settings to Pimax support.

Initial Setup

1. **Connect to PC:** Connect the Pimax Crystal Light headset to your PC using the provided DP Cable and USB Cable. Ensure all connections are secure.
2. **Power On:** Connect the multi power adapter to the headset and a power outlet.
3. **Install Pimax Play Software:** Download and install the Pimax Play software from the official Pimax website. This software is essential for headset operation and configuration.
4. **Follow On-Screen Instructions:** Launch Pimax Play and follow the intuitive on-screen instructions to complete the initial room setup. This process typically takes about 10 minutes.
5. **Tracking Options:** The headset supports inside-out (camera) tracking. For expanded tracking capabilities, you can integrate Lighthouse (base station) tracking (sold separately).

Examples of different resolutions



*resolution for per eye

Image: An infographic detailing the PC requirements and key features of the Pimax Crystal Light, including 6DOF tracking, local dimming, and included controllers.

OPERATING THE HEADSET

Display and Visuals

The Pimax Crystal Light features a QLED display with 2880x2880 pixels per eye, offering a native 4K resolution experience. This high pixel density ensures sharp, vibrant visuals and minimizes the screen door effect.

- **Field of View (FOV):** Experience an immersive 130° diagonal FOV, closely matching natural human vision, enhancing presence in VR.
- **Local Dimming:** Advanced local dimming technology provides deeper blacks and higher contrast, significantly improving details in dark scenes, crucial for flight simulators and other demanding applications.
- **Refresh Rate Options:** Choose between 72Hz, 90Hz, and 120Hz refresh rates to match your GPU performance and preference for smoother motion.
- **Upscale Mode:** An innovative feature that employs advanced upscaling algorithms to improve frame rates in VR games. This mode intelligently increases detail and sharpness, offering a significant performance boost without requiring a GPU upgrade.

6DOF

inside-out tracking

LOCAL DIMMING

With



includes two controllers

Massive FOV
Big Sweetspot
No Ghosting
No Glare

Corrosion Resistant
Native OpenXR Runtime
Native Quad Views
Upscaling Mode

Pimax
Customized
PCVR
processor



Glass lenses

35 PPD

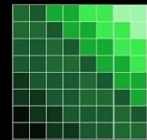
15PPD



Integrated
audio



Optional
Upscaling
technology



MR & Lighthouse
compatible

2880 X 2880
pixel per eye
up to 120 HZ



LIGHT WEIGHT

PC VR ONLY



Microphone 2X

Image: A visual comparison demonstrating the clarity and detail provided by the Pimax Crystal Light's 2880x2880 resolution compared to lower resolutions.

Crystal Light

Native 4K Resolution

- ✓ Ultra-clear visuals
- ✓ Highly immersive experience
- ✓ Finer details
- ✓ No screen door effect



Image: A chart illustrating the Pimax Crystal Light's native 4K resolution (2880x2880) in comparison to other common VR headset resolutions, emphasizing its superior clarity.

Comfort and Design

The Crystal Light is designed to be 30% lighter than previous Crystal models, with balanced weight distribution for comfortable long sessions.

- **Glass Aspheric Lenses:** These lenses minimize distortion and enhance edge-to-edge clarity, delivering sharper and more detailed images. Glass allows more light to pass through compared to resin, resulting in brighter visuals and better clarity.

Compatibility

The Pimax Crystal Light is optimized for PCVR and is compatible with popular VR games and simulators:

- **Steam VR:** Play popular VR games such as Half-Life: Alyx, Beat Saber, VR Chat, and more.
- **Flight and Racing Simulators:** Especially suited for Microsoft Flight Simulator and iRacing, where high-detail graphics are crucial.

Multiple experiences



VR GAMES



FITNESS



ENTERTAINMENT



SOCIAL

Image: Examples of various VR experiences possible with the Pimax Crystal Light, including VR games, fitness applications, entertainment, and social VR.

MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your Pimax Crystal Light headset.

- **Lens Cleaning:** Use the provided lens cloth to gently clean the headset lenses. Do not use abrasive materials or chemical cleaners, as they can damage the lens coating.
- **Headset Cleaning:** Wipe the exterior of the headset with a soft, dry cloth. For stubborn marks, a slightly damp cloth can be used, but ensure no moisture enters the internal components.
- **Storage:** Store the headset in a cool, dry place away from direct sunlight. Protect the lenses from dust and scratches by using a lens cover or storing it in its original packaging.
- **Cable Management:** Avoid sharp bends or kinks in the cables. Store cables neatly to prevent damage.

TROUBLESHOOTING

This section addresses common issues you might encounter with your Pimax Crystal Light headset.

Common Issues and Solutions

- **No Power/Headset Not Turning On:**
 - Ensure the power adapter is securely connected to the headset and a working power outlet.
 - Verify that the power outlet is functional.
 - Check the power cable for any visible damage.
- **Display Flickering or Tearing:**
 - Ensure your GPU drivers are up to date.
 - Check the DisplayPort cable connection at both the headset and the PC.
 - Lower the refresh rate in Pimax Play software settings to see if the issue persists.
 - Verify your PC meets the recommended system requirements, especially for GPU.
- **Tracking Issues:**
 - Ensure your play area is well-lit for optimal inside-out tracking.
 - Recalibrate the room setup in the Pimax Play software.
 - Remove any reflective surfaces or objects that might interfere with tracking.
- **Software Not Launching or Crashing:**
 - Restart your PC and the headset.
 - Ensure Pimax Play software is updated to the latest version.
 - Temporarily disable any antivirus or firewall software that might be blocking the application.
 - Reinstall Pimax Play software if the issue persists.

For further assistance, please visit the official Pimax support site to submit a ticket. They offer technical support and RMA service within 24 hours.

SPECIFICATIONS

Pimax Crystal Light Prime PCVR Headset Specifications

Feature	Detail
Model	Crystal Light
Display Type	QLED Display with Mini-LED Back Panel
Resolution	2880 x 2880 pixels per eye (Native 4K)
Field of View (FOV)	130 Degrees (Diagonal)
Refresh Rate	72Hz, 90Hz, 120Hz options
Lenses	Glass Aspheric Lenses
Tracking	6DOF Inside-out tracking (Camera), compatible with Lighthouse tracking
Connectivity Technology	USB, DisplayPort 1.4a
Operating System	Windows
Item Weight	1.8 pounds
Color	Black
Included Components	Headset, Controllers, DP Cable, Multi Power Adapters, USB Cable, Lens Cloth

WARRANTY AND SUPPORT

Pimax offers comprehensive support for the Crystal Light Prime PCVR Headset.

- **Technical Support:** Pimax provides 1:1 technical support. For any issues, visit the official Pimax support site to submit a ticket.
- **Returns:** The product is eligible for 30-day free returns.
- **Prime Subscription Plan:** Note that the Pimax Crystal Light headset operates on a subscription-based model. An upfront payment is made via Amazon purchase, and a second Prime Membership Fee payment is payable after headset delivery through the Pimax Play PC client. This subscription fee is separate from the initial purchase price.

Important Information Regarding Prime Subscription

The Pimax Crystal Light headset is offered with a Prime Subscription Plan. This plan allows users to try the headset for 14 days after an upfront payment on Amazon. Following this trial period, a one-time payment of \$259 for Prime Membership is required to unlock the device and continue use without further fees. If the headset meets return requirements, a return money with Pimax support for the paid subscription fee may be requested.

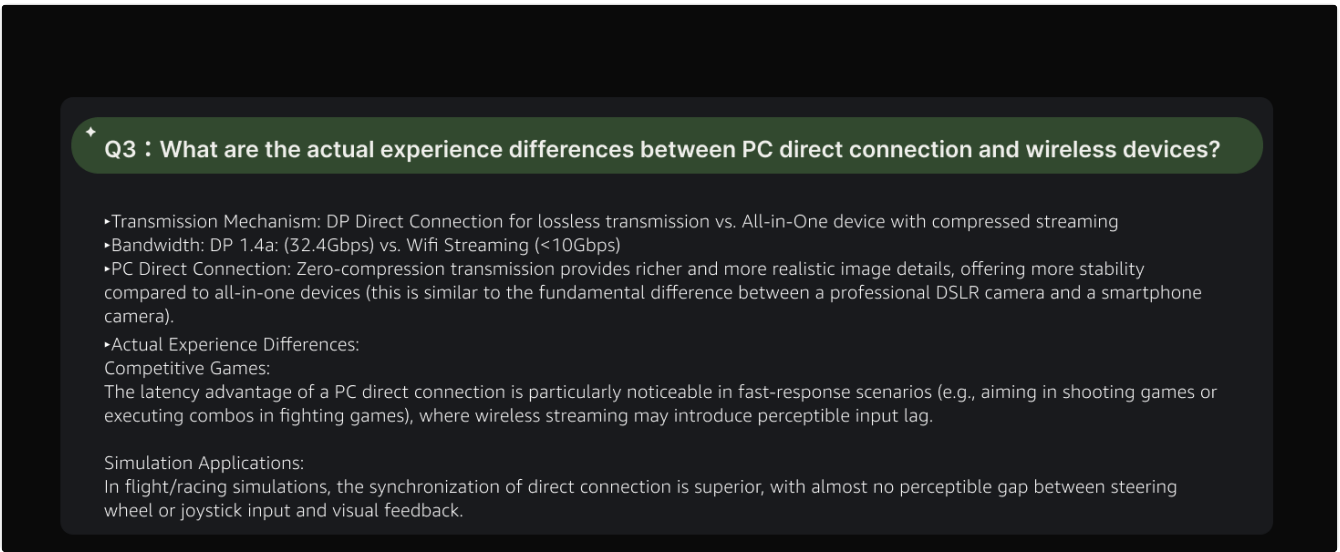


Image: A diagram explaining the Pimax Prime Agreement, detailing the upfront payment, 14-day trial, and subsequent one-time membership fee.

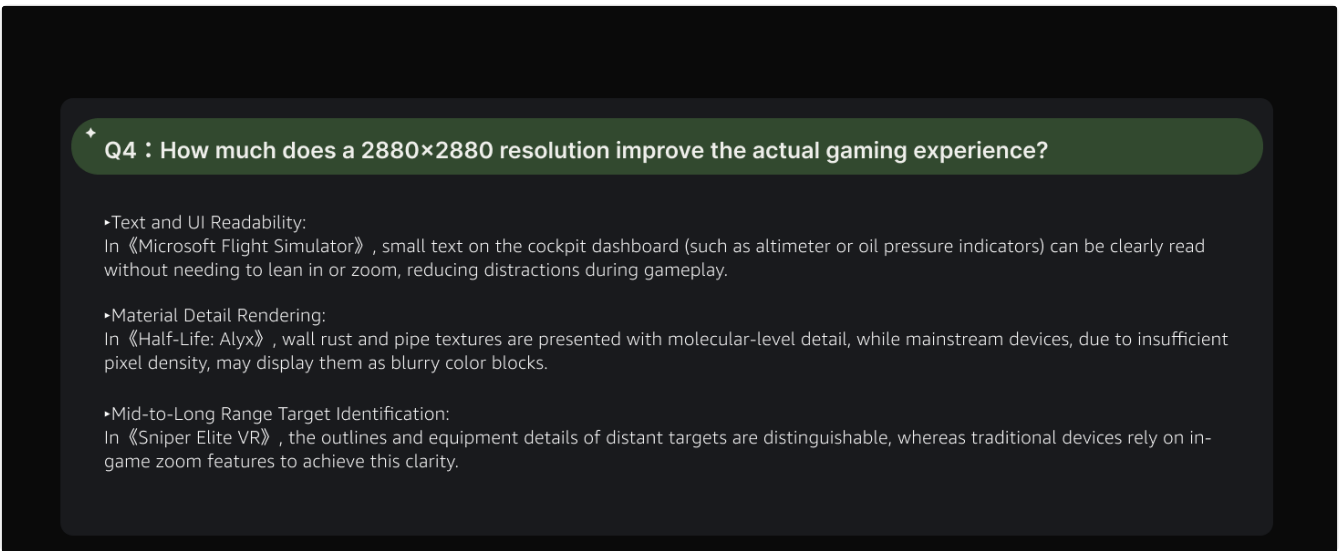


Image: A flowchart illustrating the process of Pimax Prime, from paying on Amazon to activating the headset and the one-time payment to unlock the device.

ADDITIONAL INFORMATION

PC Direct Connection vs. Wireless Devices

The Pimax Crystal Light utilizes a DisplayPort Direct Connection for lossless transmission, offering superior image details and stability compared to all-in-one devices with compressed streaming. This direct connection minimizes input lag, which is crucial for

competitive games and simulation applications where precise synchronization of input and visual feedback is essential.

Impact of 2880x2880 Resolution on Gaming Experience

The high resolution significantly enhances the gaming experience:






- **Text and UI Readability:** Small text on cockpit dashboards (e.g., altimeter or oil pressure indicators) in games like Microsoft Flight Simulator can be clearly read without needing to lean in or zoom, reducing distractions.
- **Material Detail Rendering:** In games like Half-Life: Alyx, wall rust and pipe textures are presented with molecular-level detail, unlike mainstream devices where they may appear as blurry color blocks.
- **Mid-to-Long Range Target Identification:** In titles like Sniper Elite VR, outlines and equipment details of distant targets are distinguishable, whereas traditional devices rely on in-game zoom features for clarity.


GPU Load Management

The Pimax Crystal Light uses dual-technology optimization to significantly reduce GPU load while maintaining 2880x2880 ultra-clear resolution:

- **Fixed Render Point 2.0 Technology:** Integrates binocular central fixed-point rendering technology, which greatly reduces the load on the GPU.
- **Upscale Mode:** Unlike basic resolution adjustments, the optimized algorithm provides better performance while maintaining excellent image quality.

Related Documents - Crystal Light

	VR / VR8K200°
	Pimax Crystal VR Headset Quick Guide A quick guide to setting up and using the Pimax Crystal VR headset, including PC connection, battery installation and replacement, mode switching, and lens management.
	Pimax Portal Handheld VR Computer User Manual and Specifications Comprehensive guide to the Pimax Portal handheld VR computer, covering product introduction, package contents, setup, specifications, usage, safety warnings, and warranty information.
	Pimax LBE Solution: Ultra-HD Large-Space VR for Entertainment and Training Discover the Pimax LBE Solution, an ultra-high-definition, large-space VR system designed for immersive entertainment, simulation training, and enterprise applications. Featuring advanced hardware like the Pimax Crystal SUPER and powerful PC VR capabilities, it overcomes industry pain points for superior visual quality and development efficiency.
	Pimax PiTool User Manual and Leap Motion Guide A comprehensive guide to installing and using Pimax PiTool software, including setup, software functions, and the Leap Motion controller integration. Covers PC requirements, installation steps, troubleshooting, and software settings for an optimal VR experience.

 <div>Pimax Crystal</div>	Pimax Crystal VR Headset Quick Guide <p>A quick guide to setting up and using the Pimax Crystal VR headset, including PC connection, battery installation and replacement, mode switching, and lens management.</p>
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Documents - Pimax – Crystal Light

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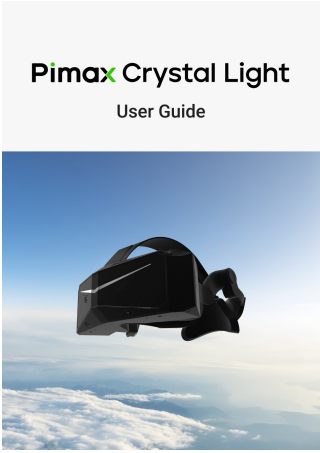


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使用说明手册



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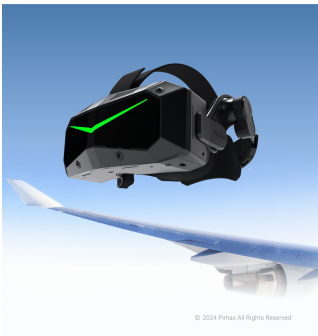
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Multi-Monitor Setup with Pimax Headsets

GPUs have limits on how many displays they can support at the same time and the total data they can handle. When using multiple high-spec display devices, like the Pimax Crystal, you might encounter issues where the second device doesn't work properly if both are started simultaneously.

To solve this issue, there are several solutions:

- Use another graphics card to output additional video signals (this card does not do any 3D rendering work so does not require high specifications).
- Close or disconnect the dp cable of the monitor before using Crystal headset.
- Recommended——Use a DP 1.4 (or higher) specification switcher and connect it as shown in the diagram to easily switch between VR and desktop displays with one click.

Recommended DP Switcher and Cable:



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Specifications Diagram

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Specifications Diagram

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