

V A R J O



XR-4 Series Product Book

Introducing the Varjo XR-4 Series, made for superlative immersion. Varjo's new generation of headsets connect the world's most advanced mixed reality technology with the pinnacle of graphical processing power, catering to industrial use cases where highest-level visual fidelity and immersion are critical.

Most immersive mixed reality headsets ever built

- Dual 4k per eye mini-LED displays
- Massive 120° x 105° field of view
- Dual 20-megapixel cameras powering up to 51 PPD passthrough
- 200 nits display brightness and 96% DCI-P3 color space coverage



Wearable for hours on end

- Improved comfort with new 'zero gravity' comfort system
- Ease of use with quick release headband
- Automatic IPD and new field-of-view adjustment to accommodate all facial structures
- Integrated DTS 3D spatial audio and dual noise-cancelling microphones designed for collaboration

Complete software compatibility

Unity™, Unreal Engine™, OpenXR 1.0 and a broad range of professional 3D software, including NVIDIA Omniverse™, Autodesk VRED™, Lockheed Martin Prepar3d™, VBS BlueIG™ and FlightSafety Vital™

”The Varjo XR-4 Series delivers a combination of ultra-wide field of view and visual fidelity that feels completely natural and fully immersive.”

DAVID WEINSTEIN, Sr. Director of VR & AR at NVIDIA

Varjo XR-4: Superlative Immersion.

Experience the highest-resolution headset display ever made. Custom full-dome aspheric lenses showcase 28 million pixels across a 120x105 degree field of view, with industrial-grade color accuracy, 200 nits of brightness, and local dimming.

Starting at

\$3,990

No subscription required



New ambient light sensors, 300 kpix extended range LiDAR, and 200hz eye tracking create the ultimate sensor fusion seamlessly blending real and virtual elements.

No more base stations needed. Inside out tracking and Varjo Controllers, powered by Razer™, come ready to go out of the box, as part of Varjo's most flexible deployment yet.

Varjo XR-4 Focal Edition: Human vision computerized.

By reaching an unprecedented 51 PPD in passthrough and introducing the world's first XR gaze-driven autofocus camera system, human vision is not just mimicked, it is replicated.

Starting at

\$9,990

No subscription required



Dual 20-megapixel front mounted cameras and autofocus system improve near and far field vision and create the industry's best mixed reality experience.

XR-4 Focal Edition's enhanced passthrough makes it the ultimate choice for training scenarios with real-world elements that are integral to the simulation experience.

Technical specifications

VARJO XR-4

VARJO XR-4 FOCAL EDITION

Display & Resolution	4k per eye (2x 3840x3744) mini LED-displays Full dome 51 PPD aspheric lenses Colors: 96% DCI-P3 coverage 1:10000 contrast with local dimming 200 nits display brightness	4k per eye (2x 3840x3744) mini LED-displays Full dome 51 PPD aspheric lenses Colors: 96% DCI-P3 coverage 1:10000 contrast with local dimming 200 nits display brightness
Field of View	120° x 105°	120° x 105°
Refresh Rate	90 Hz	90 Hz
Wearability	'Zero gravity' comfort system Quick release headband Automatic 56-72mm IPD adjustment	'Zero gravity' comfort system Quick release headband Automatic 56-72 mm IPD adjustment
Weight	665g headset + 356g headband	665g headset + 356g headband
Connectivity	1x DisplayPort + 1x USB-C	1x DisplayPort + 1x USB-C
Positional Tracking	Inside out (SteamVR™ optional) OptiTrack and ART tracking supported via API	Inside out (SteamVR™ optional) OptiTrack and ART tracking supported via API
Eye Tracking	Integrated 200 Hz gaze tracking cameras	Integrated 200 Hz gaze tracking cameras
Audio	Integrated DTS 3D spatial audio Dual noise-cancelling microphones 3.5 mm jack for external speakers	Integrated DTS 3D spatial audio Dual noise-cancelling microphones 3.5 mm jack for external speakers
Mixed Reality	Dual 20-megapixel cameras, 33 PPD	Dual 20-megapixel cameras with autofocus, 51 PPD
Mixed Reality Depth	300 kpix LiDAR 7-meter range at 30 FPS	300 kpix LiDAR 7-meter range at 30 FPS
Controllers	Controllers powered by Razer™ included	Controllers powered by Razer™ included
Service Level	Standard – see premium service packages	Standard – see premium service packages
Recommended Hardware	See: varjo.com/varjo-ready-computers	See: varjo.com/varjo-ready-computers

Varjo XR-4 Secure Edition: TAA compliant mixed reality for secure environments.

The Varjo XR-4 Secure Edition is the world's most advanced headset for XR training and simulation. Assembled in state-of-the-art facilities in Finland, it is fully TAA compliant, works completely offline, and can be ordered with no radio components.

Fixed Focus

\$7,990

No subscription required

Autofocus

\$13,990

No subscription required



Incorporating the world's first gaze-driven camera system, the Varjo XR-4 boasts 4k per eye displays and dual 20-megapixel passthrough cameras to deliver a mixed reality experience that exceeds even the most stringent requirements for pilot training and other high-precision XR scenarios.

Technical specifications

XR-4 SECURE EDITION: FIXED FOCUS

XR-4 SECURE EDITION: AUTOFOCUS

Secure Features	<p>Manufactured in Finland TAA Compliant Offline No usage data is sent to Varjo</p>	<p>Manufactured in Finland TAA Compliant Option for non-RF variant Offline No usage data is sent to Varjo</p>
Display & Resolution	<p>4k per eye (2x 3840x3744) mini LED-displays Full dome 51 PPD aspheric lenses Colors: 96% DCI-P3 coverage 1:10000 contrast with local dimming 200 nits display brightness</p>	<p>4k per eye (2x 3840x3744) mini LED-displays Full dome 51 PPD aspheric lenses Colors: 96% DCI-P3 coverage 1:10000 contrast with local dimming 200 nits display brightness</p>
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Mixed Reality	Dual 20-megapixel cameras, 33 PPD	Dual 20-megapixel cameras with autofocus, 51 PPD
Mixed Reality Depth	<p>300 kpix LiDAR 7-meter range at 30 FPS</p>	<p>300 kpix LiDAR 7-meter range at 30 FPS</p>
Service Level	<p>Secure: Priority shipping 1 business day support SLA Online support calls available Onboarding services No online connectivity</p>	<p>Secure: Priority shipping 1 business day support SLA Online support calls available Onboarding services No online connectivity</p>
Recommended Hardware	See: varjo.com/varjo-ready-computers	See: varjo.com/varjo-ready-computers

Varjo Aero: Raise your virtual reality experiences to new heights.

Headset

\$990

+tax



With edge-to-edge clarity and a resolution of 35 pixels per degree, Varjo Aero offers industry-leading fidelity for demanding professionals and VR users alike.

Crystal clear variable resolution aspheric lenses eliminate ghost rays and reflections. The virtual world comes alive with true-to-life colors, brightness and contrast levels.

Advanced ergonomics with reduced weight and active cooling allow the user to stay immersed for longer periods in total comfort.

No annual subscription fee.

Technical specifications

VARJO AERO

Display & Resolution	Dual Mini LED LCD; 2880 x 2720 px per eye Brightness: Calibrated to 150 NIT Colors: Calibrated with coverage of 99% sRGB, 95% DCI-P3 Refresh rate: 90 Hz
Field of View	Horizontal 115° Diagonal: 134° at 12 mm eye relief
Refresh rate	90 Hz
Hand tracking	–
Comfort & Wearability	3-point precision fit headband Replaceable, easy-to-clean polyurethane face cushions Automatic IPD 57-73mm
Weight	487 g + headband 230 g (including counterweight)
Connectivity	Headset adapter and USB-C cable (5-metre) in-box PC Connections: DisplayPort and USB-A 3.0
Positional Tracking	SteamVR™ 2.0 (recommended) or 1.0 tracking
Eye tracking	200 Hz with sub-degree accuracy; 1-dot calibration for foveated rendering
Audio	3.5mm audio jack with microphone support Metal chassis in-ear headphones with mic in-box
Mixed reality	–
XR Depth	–
Recommended Hardware	See: varjo.com/varjo-ready-computers

Support for industry-leading 3D platforms and software



Ready to get started?

TALK TO SALES

BUY ONLINE

sales@varjo.com

Varjo HQ
Vuorikatu 20
00100 Helsinki, Finland

Varjo USA HQ
Washington D.C. Area
Suite 700, office: 723
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Arlington, VA 22201

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