KONICA MINOLTA

MEASUREMENT SYSTEMS FOR DISPLAY TECHNOLOGIES

USED IN AUGMENTED REALITY AND VIRTUAL REALITY HEADSETS

The reality is...

Virtual, augmented, and mixed reality experiences have firmly established their place in the mainstream. With immersive technology becoming more and more a part of the consumer experience and applications continually growing in the industrial sector, there has been an escalating demand for virtual and augmented reality headsets that deliver impeccable image quality and improved operator engagement.

Konica Minolta answers the call:

Rapid and continual advancements in display technology have demanded a parallel trajectory in the development of equally sophisticated testing solutions.

MEASUREMENT REQUIREMENTS

The eyes have it

Consumer expectation for the quality of display technology is ever advancing in line with parallel technologies such as TVs and tablets. To that end, augmented, virtual, and mixed reality displays must have the ability to measure as the human eye sees, using purpose-built optical technology and software that assesses the technology by replicating the vision system from the intended pupil position.

Augmented and mixed reality displays function like a modern Automotive HUD, projecting a virtual image onto the near eye glass.

Virtual reality displays may utilize a small display and stereoscopic lenses or a projection system which can be assessed like any other modern display technology, providing that the pupil position is replicated for the measurement.

In every case, a quality display should deliver **contrast, color,** and **uniformity** across the surface.

Measurement of AR/VR technology

Konica Minolta, along with Konica Minolta's family of companies Instrument Systems, Radiant Vision Systems, answers the call for Advanced AR/VR Analysis in both development and production environments. With a range of solutions for measuring display technology from the intended pupil position, the purpose-built AR/VR lens ensures that near-eye-display technology delivers the high-quality user experience that aligns with consumer expectations.

The latest instrumentation delivers the ability to control the most relevant aspects of today's displays:

- Brightness
- Contrast
- Focus
- Ghosting
- Uniformity
- Image distortion
- Color

Imaging Photometers and Imaging Colorimeters with Pupil Position AR/VR Lenses meet the changing demands of testing today's displays with improved functionality:

Faster

More Precise

Repeatable

Ultra Low Luminance

KONICA MINOLTA AR/VR SENSING PRODUCTS		
	CS-3000 Spectroradiometer	High precision spectroradiometer for standard value measurement of displays and other light sources. Super-Fast mode enables faster calculations than Fast mode in other conventional equipment. https://sensing.konicaminolta.us/us/products/cs-3000-spectroradiometer/
	CA-410 Display Color Analyzer	Offers the ability to accurately measure and adjust the chromaticity and gamma characteristics of High Dynamic Range (HDR) displays. https://sensing.konicaminolta.us/us/products/ca-410-display-color-analyzer/
	CA-527 Display Color Analyzer	Measures lower-luminance areas at a higher sampling rate than conventional Display Color models. https://sensing.konicaminolta.us/us/products/ca-527-color-analyzer/

INSTRUMENT SYSTEMS PRODUCTS		
	DMS Display Measurement	A globally recognized reference system for the goniometric measurement of electro-optical displays and components. https://www.instrumentsystems.com/en/systems/dms-display-measurement

RADIANT VISION SYSTEMS PRODUCTS		
	Radiant ProMetric® I-Series	Highly accurate high-speed color and luminance measurement colorimeters used for lab testing and production-level inspection. https://sensing.konicaminolta.us/us/products/prometric-i-imaging-colorimeters/
	Radiant ProMetric® Y-Series	Performance imaging photometers for high-volume production testing of displays, keyboards, lighting products, device components, and surfaces. https://sensing.konicaminolta.us/us/products/prometric-y-imaging-colorimeters/
	AR/VR Lens	Lens with the highest spatial resolution in light and color measurement with an innovative aperture that replicates the position of the human eye in a headset. https://sensing.konicaminolta.us/us/products/arvr-lens/
	XRE Lens	Lens with two configuration options, folded (“periscope”) and non-folded, for use in the inspection of a wide range of near-eye devices and integration requirements. https://sensing.konicaminolta.us/us/products/xre-lens/
	TrueTest-ARVR Display Test Module	Test Module used with Radiant’s AR/VR Lens or XRE Lens solutions to capture a complete set of NED measurement parameters including distortion, MTF, contrast, focus uniformity, and more. https://sensing.konicaminolta.us/us/products/truetest-arvr-display-test-module/

THE IMPORTANCE OF DATA IN AR/VR HEADSET PRODUCTION

Accurate measurement instruments deliver valuable results

Accurate measurement instruments enable producers to benchmark, specify and produce traceable data. Traceable measurement solutions facilitate faster development, production, and QC testing that result in timely delivery of quality displays for the right price. Experience shows that a data driven approach allows supply chains to build all-important relationships based on quality and consistency, reducing subjectivity, and simplifying specification and approval.

The KONICA MINOLTA GROUP difference

The Konica Minolta Group works in partnership with your development team to:

- Make it easy to accurately characterize products from suppliers and benchmark competitors
- Help implement a system that allows all parties, from component manufacturer through to final QC, to work in a more streamlined and consistent way
- Facilitate automated production integration that will help producers to optimize takt times by implementing a measurement system that can keep pace with throughput

Automated inspection solutions and purpose-built software helps your production team(s) set criteria based on accurate and traceable measurement data—reducing production time, costs and rejection.

A global network

Konica Minolta is able to deliver tested solutions to customers in the display industry through a global network of sales, support, and expertise. Our support includes a network of authorized service facilities to provide ongoing maintenance and calibration of devices. This far-reaching structure of support minimizes downtime and ensures that systems remain traceable throughout their working life.

Improve perceived quality and deliver quality of user interface beyond consumer expectations by developing and testing the latest technologies with the latest measurement technology to keep pace with the cutting edge of consumer electronics.

KONICA MINOLTA

Take a closer look at how Konica Minolta's family of companies can sharpen your AR/VR testing capabilities.

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