

What is SXRD technology?

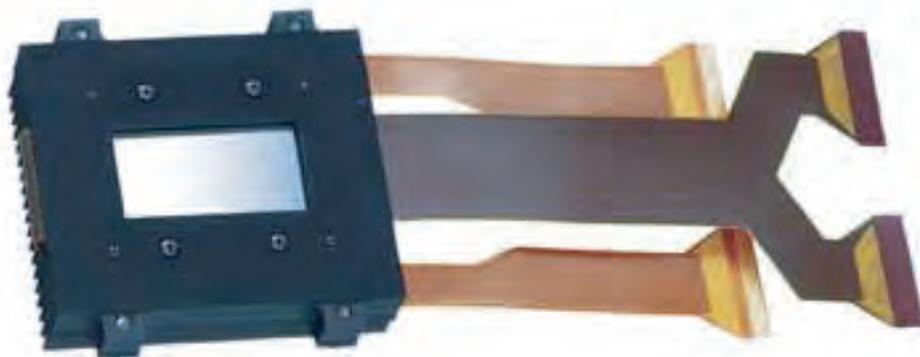
SXRD Technology

4K SXRD™ technology from Sony is the new way of projection, offering far more resolution than the old way: the 2K DLP™ chip. The SXRD acronym stands for Silicon X-tal Reflective Display, where X-tal is a common abbreviation for Crystal. This is an all-new approach to reflective liquid crystal microdisplays.

Sony's design maintains a uniform, ultra-thin liquid crystal cell gap without any spacers in the image area. With such a small gap, SXRD technology produces superb contrast. Sony also uses a Vertically Aligned Nematic (VAN) liquid crystal that changes state with amazing speed. This enables Sony's SXRD microdisplay to run as fast as 200 frames per second while minimizing image smear. The thin gap and VAN liquid crystal enable Sony's SXRD technology to project images of a quality surpassing DLP projectors. For extended service life, Sony also incorporates an ultra-stable inorganic alignment layer. And unlike conventional LCoS panels, which are notoriously difficult to manufacture, the SXRD panel uses a production process that was perfected in Sony's own, dedicated manufacturing facilities.

SXRD technology is already proven in acclaimed Sony consumer products, including a custom installation front projector and 70, 60 and 50-inch rear projection televisions (viewable area, measured diagonally). All of these products deliver full resolution HD. And these SXRD home products have earned the highest superlatives from even the most skeptical home theater enthusiast magazines. The SRX-R110 and SRX-R105 incorporate scaled-up professional SXRD microdisplays, roughly four times the area of Sony's consumer SXRD panels.

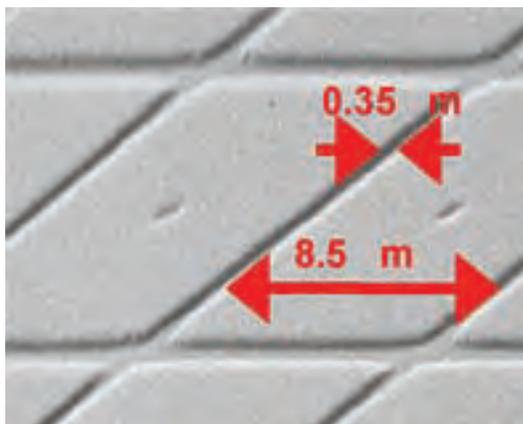
In all these applications, SXRD technology delivers a dramatic difference in image performance.



The SXRD panel of the SRX-R110 and SRX-R105 projector incorporates more than eight and a half million pixels on an inch and a half of silicon. Each projector uses three of these panels, one each for Red, Green and Blue.

Detail

Before SXRD technology, no commercially-available microdisplay projector reproduced images in full 4K resolution: 4096 x 2160 pixels. That's nearly nine million pixels for each of three colors! Stated another way, if you held a credit card up to a screen 27 feet wide, the card would be covered by over 1,000 pixels! SXRD panels accomplish what others don't because the pixels are phenomenally small. In the SRX-R110 and SRX-R105 microdisplays, each pixel measures just 8.5 micrometers, center to center. That's roughly 1/8 the thickness of a human hair—so small you can't even see it without a microscope. The result is a pixel density beyond anything seen before.



This photomicrograph of the SXRD panel surface shows the 0.35 micrometer inter-pixel gap and the pixel pitch of 8.5 micrometers.



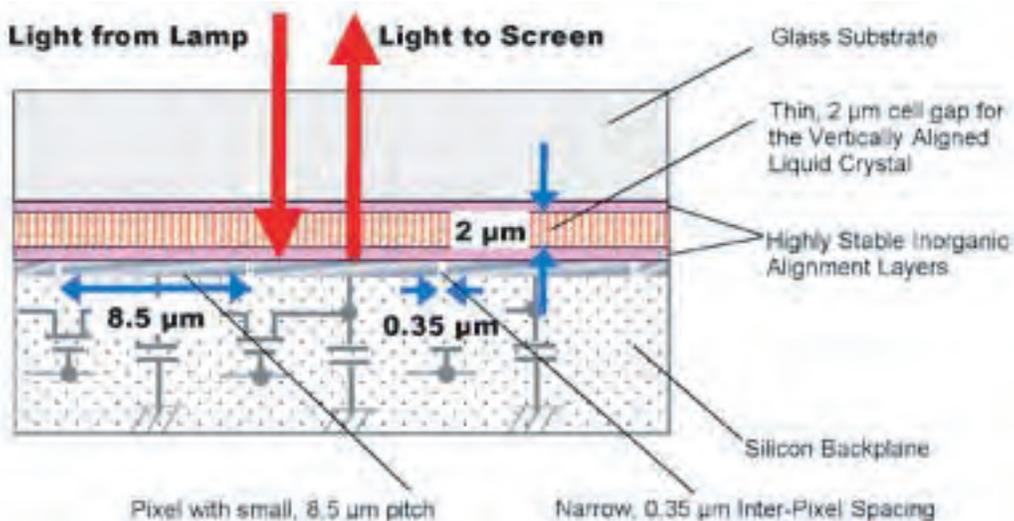
The SXR panels of the SRX-R110 deliver four times the pixels of 2K projection—and more than 25 times the pixels of standard definition.

Clarity

With some microdisplay panels, watching video is like looking through a fine mesh net. This so-called "screen door" effect is caused by gaps or inactive areas between pixels, which are sometimes used to hide transistors. However, SXR technology places all of these transistors behind the reflective surface. So inter-pixel gaps are reduced to only 0.35 μ m. The gap between pixels is almost invisible when projected on the screen.

Contrast

Some micro displays are forced to compromise between high contrast (which requires a thick liquid crystal layer) and fast motion (which benefits from a thin liquid crystal layer). The SXR panel achieves both goals. Unlike conventional LCoS panels, SXR technology incorporates Sony's unique Vertically Aligned Nematic liquid crystal material for high contrast. Moreover, with the SXR reflective design, light passes through the liquid crystal layer twice. So the layer only needs to be half the thickness. As a result, contrast ratio of the microdisplay panel alone, when measured with a conoscope* exceeds 4000:1. You get outstanding black level reproduction and images that come alive, with minimum motion smear.



Cross section of the SXR panel. Light enters at the top, reflects off the mirrored surface of the Silicon backplane, and passes out through the Liquid Crystal, toward the screen.

With SXRD panels, Sony's goal wasn't merely to provide incremental improvements, but to totally redefine the digital projection landscape. The result is a whole new way of projection.

* A conoscope is a tool for measuring the optical properties of birefringent materials.

Product Highlights

Because they support new resolutions, new applications and new business models, the Sony SRX-R110 and SRX-R105 represent a whole new way of projection. No previous commercially-available projector has even come close to this resolution, an awe-inspiring 4096 pixels horizontal x 2160 pixels vertical. These are the world's first commercially-available projectors to achieve the pinnacle of digital cinema projection: 4K resolution. There's more. No previous professional projector has ever offered Sony's SXRD™ Silicon X-tal Reflective Display technology. Contrast is stunning. Brightness is an impressive 10,000 ANSI lumens* for the SRX-R110 and 5,000 ANSI lumens* for the SRX-R105. Color reproduction is stable, reliable, and uniform corner-to-corner. And the versatility is beyond any projector you've ever used. Both models can display one, two or four simultaneous high definition images at 2048 x 1080 resolution!

Whether you're in Digital Cinema, Command & Control, Simulations, Museums, Casino Sports Book or Rental & Staging, if you currently use digital projection, you owe it to yourself to experience Sony 4K SXRD projection.

* ANSI lumens is a standard measuring method of the American National Standards Institute IT7.228. Since there is no uniform method of measuring brightness, specifications will vary among manufacturers.

SRX-R110 Product Information

DESCRIPTION:

This state-of-the-art projector is equipped with three Silicon X-tal Reflective Display (SXRD) imaging devices, delivering an amazing resolution of 4096 x 2160 pixels (H x V) - more than four times the resolution of full HDTV (1920 x 1080). Both the SRX-R110 and the SRX-R105 offers a high contrast ratio of >1800:1 for precision imagery. Each projector has four input slots for the optional digital and analog cards. Each projector can be equipped with a choice of optional lens from a series of newly designed zoom lenses ranging from 1.5X to 4.0X.

HIGHLIGHTS:

High >1800:1 contrast ratio

"4K" Resolution (4096 H x 2160 V pixels at 1.85:1 aspect ratio)

Twin Xenon lamps

The SXRD device used by the SRX-R110 and SRX-R105 is a 1.55-inch (measured diagonally) Liquid Crystal on Silicon based imager.

FEATURES:

FEATURE	BENEFIT
"4K" Resolution (4096 H x 2160 V pixels at 1.85:1 aspect ratio)	Provides the resolution needed for either one 4096 x 2160 image or dual 1920 x 1080 images or quad 1920 x 1080 images to be displayed.
>1800:1 Contrast Ratio	High contrast ratio for stunning picture quality and wide dynamic range.

ACCESSORIES (optional)

Model Name	Description	U.S. List Price
LKRI001	Analog Input Card	\$1,540.00
LKRI002	HD-SDI Input Card	\$2,975.00
LKRLZ115	1.5x Zoom Lens	\$19,100.00
LKRLZ120	2.0x Zoom Lens	\$19,600.00
LKRLZ125	2.5x Zoom Lens	\$17,000.00
LKRLZ140	4.0x Zoom Lens	\$17,000.00
LKRX110	Xenon Lamp, 2kW	\$2,100.00
LKRXB110	Xenon Lamp House For 2kw	\$5,825.00

SRX-R105 Product Information

DESCRIPTION:

This state-of-the-art projector is equipped with three Silicon X-tal Reflective Display (SXRD) imaging devices, delivering an amazing resolution of 4096 x 2160 pixels (H x V) - more than four times the resolution of full HDTV (1920 x 1080). Both the SRX-R110 and the SRX-R105 offers a high contrast ratio of >1800:1 for precision imagery. Each projector has four input slots for the optional digital and analog cards. Each projector can be equipped with a choice of optional lens from a series of newly designed zoom lenses ranging from 1.5X to 4.0X.

HIGHLIGHTS:

High >1800:1 contrast ratio

"4K" Resolution (4096 H x 2160 V pixels at 1.85:1 aspect ratio)

Twin Xenon lamps

The SXRD device used by the SRX-R110 and SRX-R105 is a 1.55-inch (measured diagonally) Liquid Crystal on Silicon based imager

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LKRLZ120	2.0x Zoom Lens	\$19,600.00
LKRLZ125	2.5x Zoom Lens	\$17,000.00
LKRLZ140	4.0x Zoom Lens	\$17,000.00
LKRX105	Xenon Lamp, 1kW	\$1,675.00
LKRXB105	Xenon Lamp House For 1kw	\$3,925.00