

SONY



A BLANK **CANVAS**
COMES TO LIFE

CRYSTAL LED MODULAR DISPLAY

Beyond Definition

SONY

UNPRECEDENTED QUALITY ON A GRAND SCALE

What constitutes the ultimate picture quality? Amazing contrast. Saturated color. Brilliant white. Deep black. Sony's Crystal LED modular display delivers it all – and so much more. It's the ideal choice for life-size displays in architectural and automotive design. And it's the ultimate display for boardrooms, theme parks, museums, broadcast studios, corporate lobbies, real estate showrooms and medical education. Thanks to Sony's unique ultra-fine RGB LEDs, the Crystal LED display establishes a breathtaking benchmark in picture quality. For modular displays, it's a whole new world.



Industrial Design

Digital Show Room

Board Room

Museum

Medical

Theme Park

SONY AND DISPLAYS

Sony's leadership in display technology is no accident. It dates from the Emmy® Award winning Trinitron® color television system, through the Trimaster EL™ OLED monitors that won a 2015 Scientific and Technical Academy Award®, the 4K Digital Cinema projectors that movie theaters depend on, acclaimed BRAVIA® 4K displays and the OLED monitors that today's cinematographers and colorists use for critical evaluation.

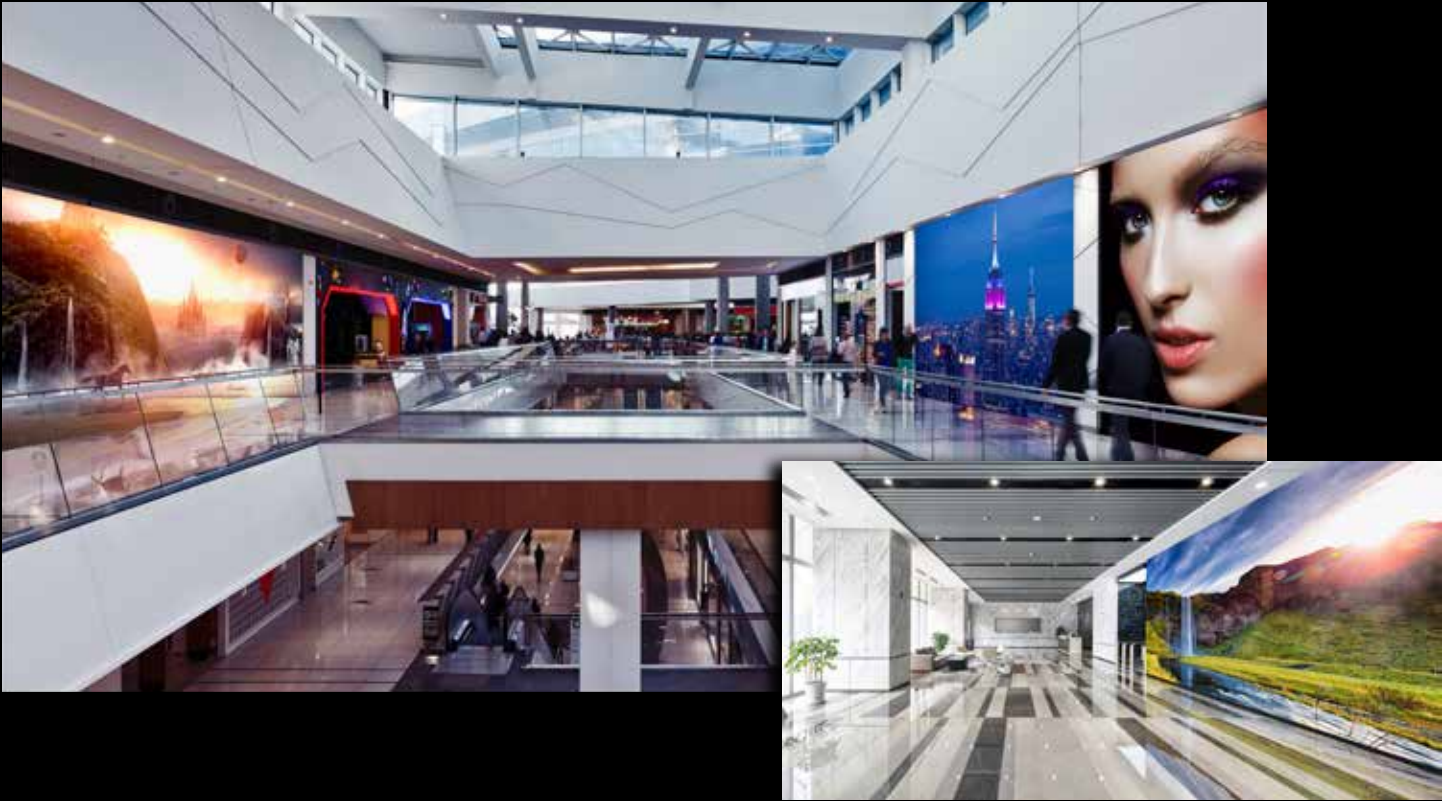


BRAVIA® 4K Display



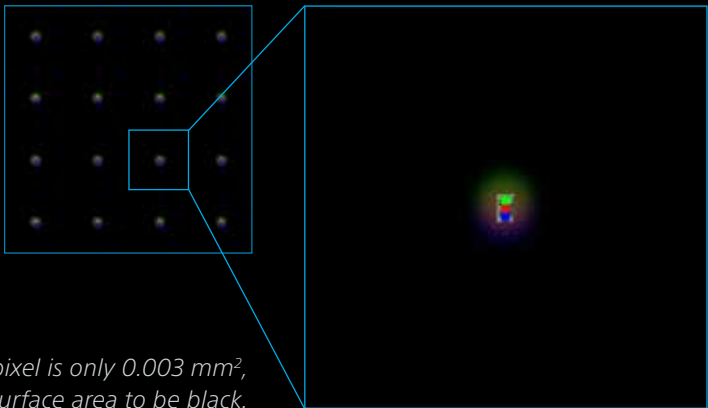
OLED Evaluation Monitor

Sony's expertise in display encompasses the award-winning OLED monitors in addition to exceptional BRAVIA displays.



CRYSTAL LED TECHNOLOGY

Conventional LED video walls use surface mounted devices (SMDs) that occupy the vast majority of the pixel area. This makes for relatively high reflection of incident light and relatively limited contrast. Sony's Crystal LED display takes advantage of unique, Ultra-fine RGB LEDs. They're microscopically small, measuring 0.003 mm^2 – corresponding to half the thickness of a human hair. So more than 99% of the surface area is black. And that makes all the difference.

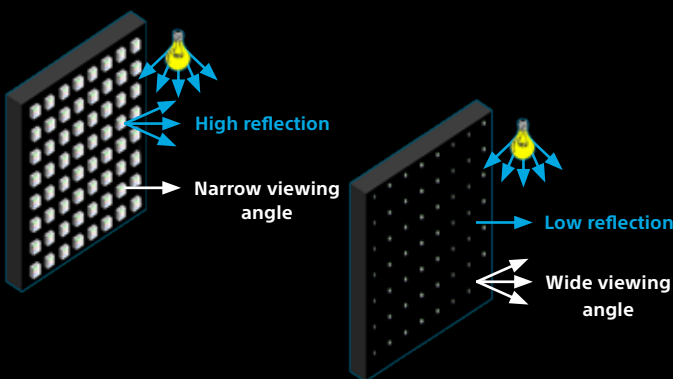


The image is so powerful because each pixel is only 0.003 mm^2 , enabling more than 99% of the surface area to be black.

Beyond Definition

SUPERIORITY YOU CAN'T MISS

- **Incredible contrast.** Contrast ratio is more than 1,000,000:1 – far beyond the reach of conventional surface mounted LEDs. By minimizing the reflection of ambient light, the Crystal LED display holds up well in brightly lit real estate showrooms, corporate lobbies and television studios. And when ambient light is low, the picture looks even more amazing.



Conventional, surface-mounted LEDs tend to wash out under ambient light. Sony's unique LED mounting technology maximizes contrast and viewing angle.

- **HDR with high brightness: 1000 nits.** If you want to dazzle your audiences, Crystal LED is a brilliant choice, delivering peak whites up to 1000 cd/m² (1000 nits). It's perfect for High Dynamic Range (HDR) reproduction.
- **10-bit grayscale.** The display accepts inputs at up to 10 bits of precision for highly nuanced tonal reproduction.
- **Extraordinary color gamut: 140% of sRGB.** To support the latest acquisition, digital animation and visualization, the display achieves uncommonly wide color gamut.
- **High frame rates up to 120p.** The Crystal LED display supports razor-sharp motion rendition far beyond the reach of conventional video.
- **Spectacular 3D.** The combination of high resolution and high frame rates is perfect for active glasses 3D presentation. 3D glasses and signaling system are available from third-party suppliers and are sold separately.

- **Seamless imagery.** The Crystal LED modules fit together without bezels or telltale gaps. In fact, the gap between modules is the same as between pixels. And module-to-module color uniformity is outstanding. So even the most critical viewers see one continuous image.
- **Nearly 180° viewing angle.** On a personal display like a smartphone, viewing angle is no big deal. But on a giant display, it's a major concern. Sony delivers a viewing angle close to a perfect 180° with no brightness drop-off or color shift.



The bigger your giant display, the more important viewing angle becomes. This illustration shows the 8K x 4K (7680 x 4320) configuration we've demonstrated at NAB and InfoComm shows.

- **Manageable array size.** With some LED displays, a Full HD installation is just too large and 4K is out of the question. But with Sony's display, a Full HD array is 110 inches diagonal, while a 4K Ultra HD array is 220 inches diagonal and about nine feet high, yet has a viewing distance much closer than other wall systems.
- **Modest footprint.** The modular display units are just four inches (100 mm) deep; while the completed system requires only modest back clearance compared to rear-screen projection systems.
- **Non-standard aspect ratios.** While the system supports HD and 4K Ultra HD, you can also assemble the display modules into any configuration, including portrait or landscape arrays. A single controller can control 3840 x 2160 (4K x 2K). A configuration of 7680 x 2160 (8K x 2K) requires two controllers. You can even build non-rectangular configurations that take advantage of unique spaces and opportunities.
- **Flexible image interfaces.** The system accepts DVI-D or DisplayPort inputs on the ZRCT-100 display controller, and HDMI or DisplayPort inputs on the ZRCT-200 display controller.



You're free to go beyond the traditional aspect ratios and screen shapes, seamlessly.

MORE THAN A **DISPLAY,** A COMPREHENSIVE SYSTEM

- **ZRD-1/ZRD-2 display unit.** Measuring 15-7/8 x 17-7/8 inches (403.2 x 453.6 mm), each display unit includes an RJ45 signal input, a daisy-chain RJ45 signal output, and a pixel array of 320 W x 360 H.

*The ZRD-1 will be discontinued as soon as the present stock has run out.

- **ZRCT-100/ZRCT-200 display controller.** A single controller can operate up to 72 ZRD-1 display units, representing a 4K Ultra HD array (3840 x 2160).



CRYSTAL LED SPECIFICATIONS

ZRD-1/ZRD-2 DISPLAY UNIT



ZRD-1 DISPLAY UNIT

Pixel Pitch	1.26mm
Unit resolution (W x H)	320 x 360 (115,200 pixels)
Unit Size (W x H x D)	403.2 x 453.6 x 100 mm (15 7/8 x 17 7/8 x 4 in)
Unit Mass	10.0kg (22lb 0.74oz)
Brightness (nit =cd/m2)	Max 1,000, Color Temp D93
Contrast ratio	more than 1,000,000 : 1
Viewing angle	Almost 180°(H/V)
Display native color space	140% of sRGB
Power requirements	AC 200-240V, 50/60Hz, single phase
Power consumption	Max. 200W / Average 100W (per unit)
Acoustic Noise (per Unit)	27 dB – 48 dB
LED Lifespan (Half Brightness)	87,600 H
Operating temperature (Operating humidity)	0° to 35° / 20% to 80% (no condensation)
Storage temperature (Storage humidity)	-20° to 60° / 20% to 80% (no condensation)
Application	Indoor

ZRCT-100/ZRCT-200 DISPLAY CONTROLLER



FRONT



ZRCT-100 BACK



ZRCT-200 BACK

ZRCT-100/ZRCT-200 DISPLAY CONTROLLER

Maximum Control Number of Display Unit	72 (6 unit / 1 port x 12 port)
Maximum Input Resolution (per controller)	W3840 x H2160
Video Input	ZRCT-100 DVI-D (Single link) x 4* ZRCT-200 HDMI (HDMI2.0) x 2* Display port (DP1.2) x 2 Display port (DP1.2) x 2
Maximum linkage number of controller	20
Power consumption	90W
Acoustic Noise	27 dB – 32 dB
Dimensions	W 440 x H 65 x D 349 mm (W 17 3/8 x H 2 5/8 x D 13 3/4 in) (without protrusions) * 1.5 U 19 inch rack
Mass	6.3 kg (13 lb 14.2 oz)
Operating temperature (Operating humidity)	0° to 35° / 20% to 80% (no condensation)
Storage temperature (Storage humidity)	-20° to 60° / 20% to 80% (no condensation)

* HDCP Compliant

INPUT SIGNAL* 1

DISPLAY PORT (SINGLE INPUT)

RESOLUTION	INPUT FRAME RATE*2	COLOR BIT DEPTH	INPUT COLOR SAMPLING
3840 x 2160*3	60P/50P/30P/25P/24P	8/10bit	RGB 4:4:4
1920 x 2160	120P*3/100P*3/60P/30P/25P/24P		
1920 x 1080	120P/100P/60P/50P/30P		

DISPLAY PORT (DUAL INPUT)

RESOLUTION	INPUT FRAME RATE*2	COLOR BIT DEPTH	INPUT COLOR SAMPLING
3840 x 2160*4	120P/100P	8/10bit	RGB 4:4:4

DVI (1 INPUT) – ZRCT-100 ONLY

RESOLUTION	INPUT FRAME RATE*2	COLOR BIT DEPTH	INPUT COLOR SAMPLING
1920 x 1080	60P/50P/30P/25P/24P	8bit	RGB 4:4:4

DVI (4 INPUT) – ZRCT-100 ONLY

RESOLUTION	INPUT FRAME RATE*2	COLOR BIT DEPTH	INPUT COLOR SAMPLING
3840 x 2160*5	60P/50P/30P/25P/24P	8bit	RGB 4:4:4

HDMI – ZRCT-200 ONLY

RESOLUTION	INPUT FRAME RATE*2	COLOR BIT DEPTH	INPUT COLOR SAMPLING
3840 x 2160	60P/50P	8bit	RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:0
3840 x 2160	60P/50P	12bit	YCbCr 4:2:2
3840 x 2160	30P/25P/24P	8/10/12bit	RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2*6
1920 x 1080	60P/50P/30P/25P/24P	8/10/12bit	RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2*6

*1: Input signals with over 1920 x 1080 resolution are written.
*2: 1,000/1,001 frame rate is also supported.
*3: Only multi-stream is supported.
*4: Supported by two input signals of 1920 x 2160, 120P.
*5: Supported by four input signals of 1920 x 1080.
*6: Supported when input bit depth is 12 bit only.

Register for a demonstration at sony.com/CrystalLED

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