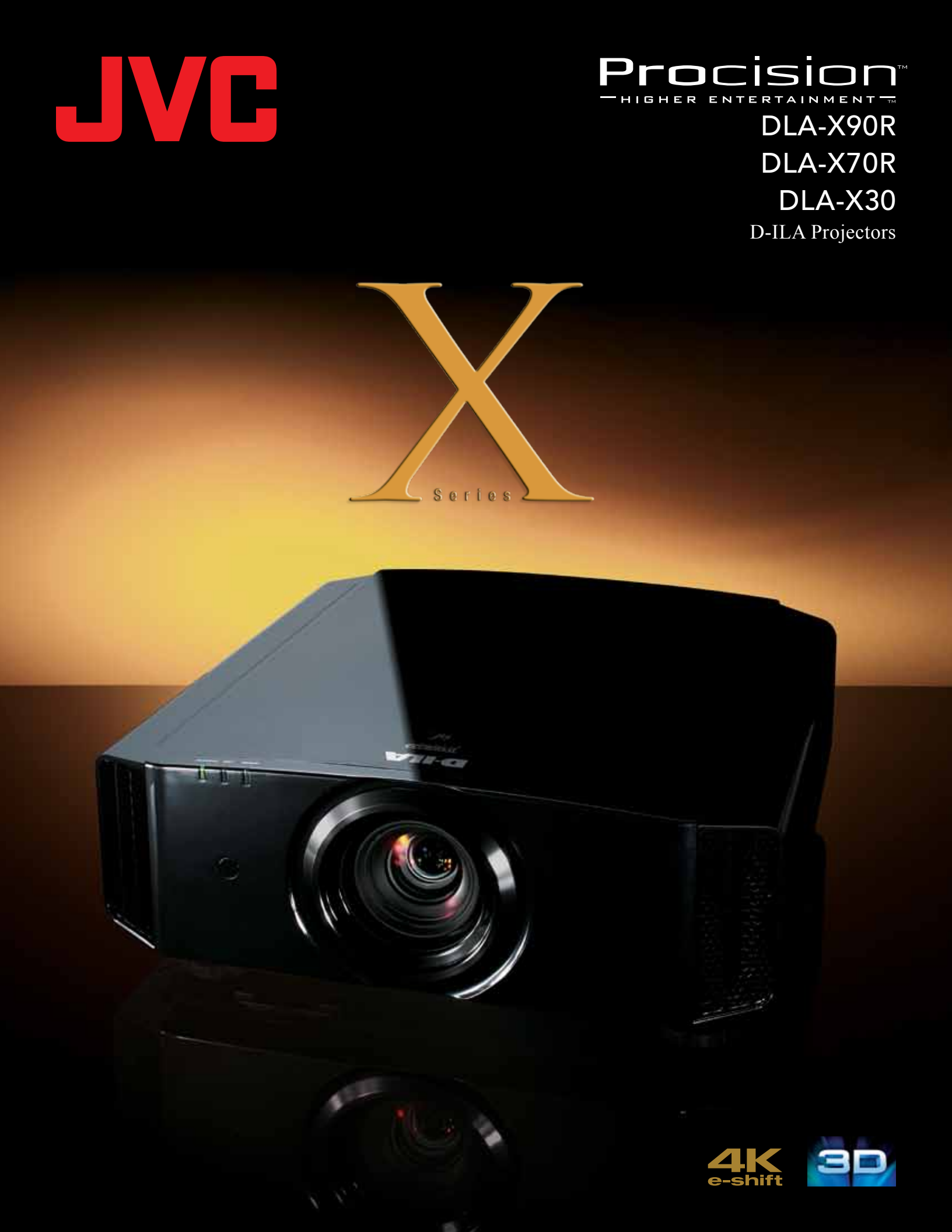
JVC

Procision™
HIGHER ENTERTAINMENT™

DLA-X90R
DLA-X70R
DLA-X30

D-ILA Projectors

X Series



4K e-shift

3D

The Power of 4K Image Displays — Super High-Definition Pictures that Surpass Full HD.

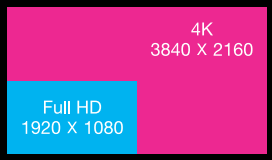
4K e-shift

The feeling of actually being immersed into a picture, an unprecedented visual sensation, is now being realized with 4K-resolution. JVC's professional projector business, nurtured by its high-definition expertise, has integrated with e-Shift technology to enhance the potential of realism in home theater projectors. The incredible picture resolution of 4K projection surpasses that of full high-definition to ensure a masterful reproduction of details as well as clear, realistic representations of texture. Now everyone can enjoy a remarkable viewing experience unlike anything before seen in a home theater environment.

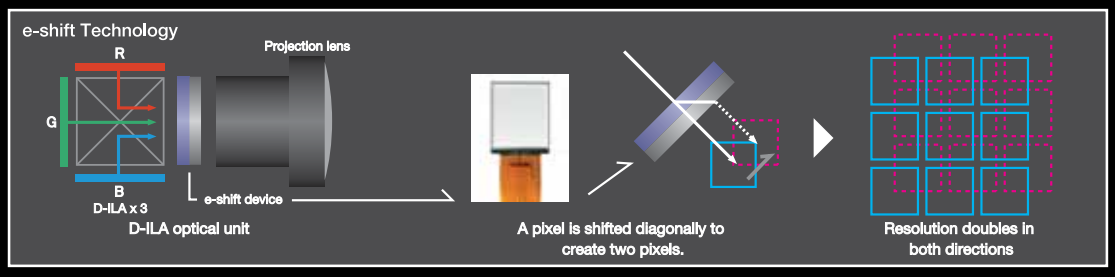
Super High-definition 4K Projection (3,840 x 2,160 pixels)

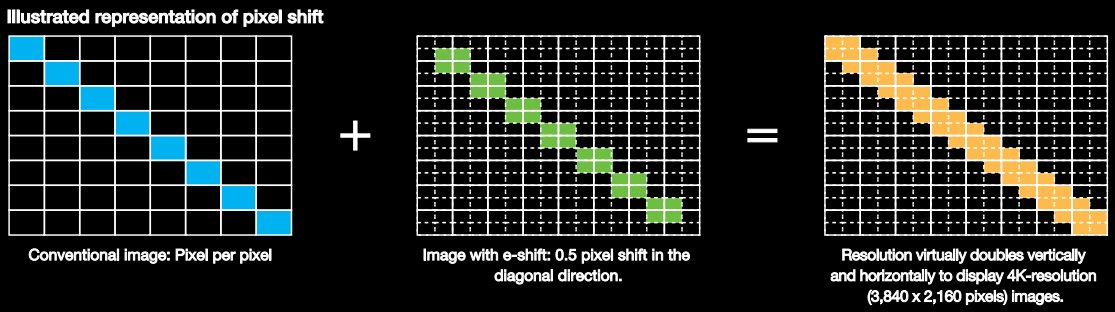
In addition to a Full HD D-ILA device, the DLA-X90R and X70R feature a newly developed optical engine incorporating new e-Shift technology to realize super high-definition projection of 4K-resolution (3,840 x 2,160 pixels).

These projectors take any compatible 2D 1920 x 1080 signal and scale that signal to 3840 x 2160 resolution. Once this 3840 x 2160 image is created, the JVC projector divides it into two 1920 x 1080 sub frames which are displayed at high speed using our exclusive e-Shift device. The e-Shift device shifts the second frame by ½ a pixel in each direction. The viewer's eye combines these two subframes to see the full 3840 x 2160 image, effectively doubling the resolution of traditional Full HD.



Unlike simple resolution-upscaling technology, the use of a device that is capable of displaying 4K-resolution (3,840 x 2,160 pixels) drastically improves picture quality to ensure exceptional precision and full presence.



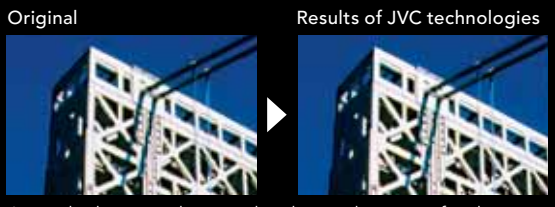


JVC's Original Advanced Image-processing Technologies

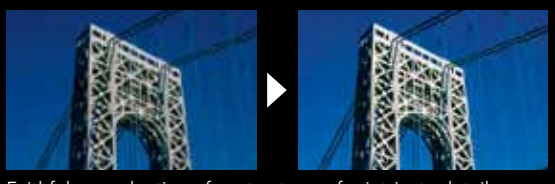
JVC's advanced image-processing technologies ensure high definition through the use of precise detection and restoration algorithms. The former analyzes pixel information within different areas of the frame; the latter restores the high-frequency components that are missing in low-resolution images. Further quality enhancement is achieved via contrast correction and jagged edge reduction. The overall result is a picture that looks real down to the smallest detail.

Original

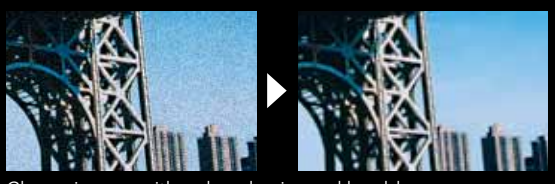
Close-up view



Jagged edges are eliminated in diagonal sections for sharper images.



Faithful reproduction of contrast even for intricate details.



Clearer images with reduced noise and less blur.

D-ILA 3D Projection Leaps Forward in Quality.

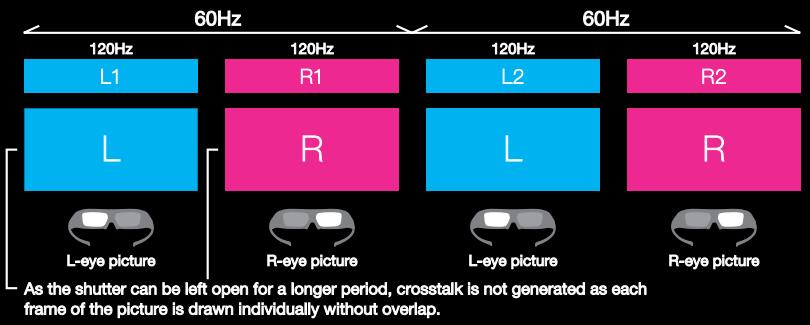
Fully equipped with an array of beneficial 3D functions such as 2D-3D conversion and 3D picture adjustment, JVC's D-ILA projectors take a significant leap forward in picture quality by delivering a more realistic 3D video experience that is simply packed with presence.

Frame Addressing — the D-ILA Method

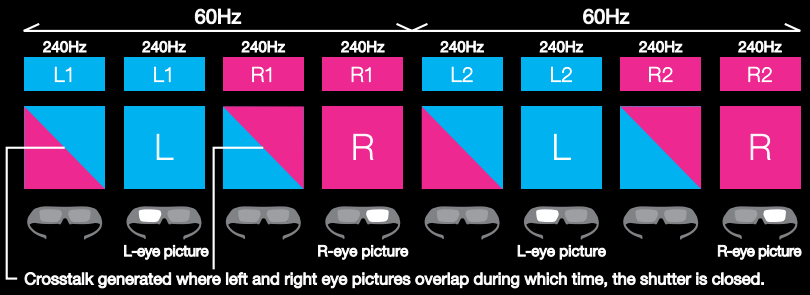
Thanks to JVC's original D-ILA driving method, Frame Addressing reproduces more colorful and vivid 3D video content with reduced crosstalk (image overlapping). What's more, this technology incorporates newly developed driving circuitry that helps to drastically improve image brightness. This means that with JVC's D-ILA projectors, anyone can enjoy breathtaking and impressive 3D video content just like that seen at cinemas, right in the comfort of their living rooms.

An alternative driving method known as "line addressing" utilizes a fast-shutter approach, but when the shutters are switched between the left and right eyes, crosstalk can be generated where the left and right images overlap. This crosstalk occurs because the shutter on 3D glasses is opened for a shorter amount of time compared to the D-ILA method which causes the picture to darken and lose brightness. However, JVC's Frame Addressing driving method draws images in a single frame at one time, enabling the shutter on the 3D glasses for one eye to remain open for an extended period, which ultimately realizes a brighter 3D picture with less crosstalk.

Frame Addressing
Image overlapping (crosstalk) is reduced because the shutter on 3D glasses can be left open longer as the method draws each frame of the picture individually.



Line Addressing
Crosstalk can be generated when shutters are switched between the left and right eyes, and opened only for a short amount time. This can cause the picture to darken and lose brightness.



Crosstalk Canceling

The innovative Crosstalk Canceling function drastically reduces crosstalk from intensity levels that are likely to generate this phenomenon by first analyzing the video signal for the left and right eyes and then correcting the levels via an original algorithm. This ensures the reproduction of more natural and clear pictures that are easier on the eyes to heighten the viewing enjoyment of more realistic 3D video content.

Crosstalk Canceling OFF

Crosstalk Canceling ON

Disparity Adjustment

To adjust for the parallax difference between each eye, this function finely controls image disparity between the left eye and right eye to ensure more natural stereoscopic reproduction with less distortion.

Disparity adjustment LOW

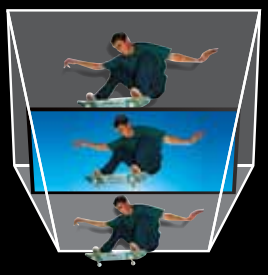
Disparity adjustment HIGH

2D-3D Conversion

The real-time 2D-3D converter featured on JVC's IF-2D3D1 Professional 3D Image Processor, which has earned an excellent reputation in film and 3D video production/editing studios, has been modified for home projector use and is now featured on the DLA-X90R/X70R/X30 projectors. This means that 2D video recorded on camcorders and from TV broadcasts can be converted into 3D video instantaneously for home stereoscopic viewing enjoyment.

Depth Adjustment:

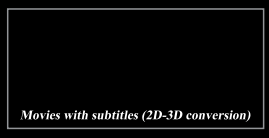
3D effects, especially depth characteristics, can be adjusted to match the content source or viewer preferences.



Subtitle Adjustment :

Subtitle distortion generated during 2D-3D conversion can be rectified.

Subtitle Adjustment OFF



Subtitle Adjustment ON

Options to Enjoy 3D Viewing

PK-AG1
3D Glasses

PK-AG2
3D Glasses

- Rechargeable
- Lightweight only 40g
- Continuous operation approx.40H

PK-EM1
3D Synchro Emitter

Notes about viewing 3D video content

- The optional 3D Synchro Emitter and 3D glasses are required to view 3D images from the D-ILA projectors. 3D video software (3D media or output of 3D broadcasts) and a 3D-compatible video player are also required.
- Perception of 3D images will vary with individual viewers.
- Stop viewing 3D images immediately if any discomforts such as headaches, dizziness, eye fatigue, etc. occur.
- Viewing of 3D images by children under the age of five is not recommended.
- Read the Safety Precautions in the User Manual carefully before viewing any 3D source.

Cinema-like Quality Realized by D-ILA

Native Contrast Ratio

A high native contrast ratio is achieved by an enhanced optical engine featuring JVC's original D-ILA device and a wire grid. The D-ILA method features a wide video dynamic range to display peak whites and deep blacks on the same field of a picture, helping to realize remarkable presence with smoother grayscale and increased depth.

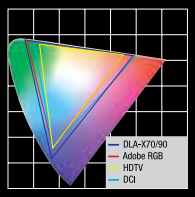
JVC's Unique Real Color Imaging Technology (DLA-X90R/X70R)

Real Color Imaging Technology accurately detects film color specifications to optimize color replication and heighten picture quality to reproduce colors that are as faithful to the original source as possible.

Exclusive Color Profile

JVC has succeeded in creating an exclusive color profile from video content by accurately analyzing color information to reproduce images faithful to the original source. By combining this color profile with the array of picture modes, users can enjoy up to twelve different levels of picture quality.

Wide Color Space



Real Color Imaging Technology features a color space wider than that of Adobe RGB to vividly reproduce a fuller spectrum of colors such as the green of trees, the blue of oceans, etc., which was difficult to recreate accurately up until now.

Xenon-lamp Color Temperature Setting

Real Color Imaging Technology also incorporates a Xenon-mode color temperature setting equivalent to that of a Xenon lamp, a popular light source used in cinemas. This setting allows for the authentic reproduction of colors similar to those of film in cinemas, while using highly efficient and economical ultra-high pressure mercury lamps.

Conventional color temperature setting

Xenon-mode color temperature setting

Color Management System with 7-axis Matrix (DLA-X90R/X70R)

A 7-axis matrix of red, green, blue, cyan, magenta, yellow, and orange ensures the precise adjustment of hue, saturation, and intensity. The last axis of orange helps in enhancing the selection of the color spectrum for skin tones. And for improved operability, only the color being adjusted will be shown on the screen while the others are displayed in black and white.

The color being adjusted is shown in color.

Screen Adjustment Modes*

Reflective characteristics that differ from screen to screen are precisely analyzed and the projector automatically selects the best mode to match the screen being used. With the appropriate mode* selected, the picture displayed will always be precisely adjusted to ensure excellent image reproduction with natural color balance.

*The DLA-X30 has three selectable modes; the DLA-X70R offers 101 modes but with a firmware update it provides a maximum of 255 modes. Please refer to the JVC website for a comparison table of primary screens and adjustment modes.

Screen adjustment mode Off

Screen adjustment mode On

JVC's Original Picture Tone Function (DLA-X90R/X70R)

The Picture Tone function works to balance gamma, contrast, and brightness settings without affecting the gray scaling of the original source to enable brightness adjustment that better matches the surrounding environment.

-16 ±0 +16

An Array of Convenient Functions

Lens Memory Function

This function records up to three separate lens adjustments for zoom, shift and focus that can be easily recalled when needed. Focus, zoom (size) and shift (display position) characteristics can be recorded for video content in different aspect ratios such as when using a CinemaScope screen size (2.35:1) or standard 16:9 screen and readily switched between each setup via the remote control.

Lens memory examples
(when using CinemaScope screen)

Memory 1: Standard 16:9

Memory 2: CinemaScope size

Memory 3: CinemaScope size with subtitles outside of the screen

Pixel Adjust Function

The Pixel Adjust function allows users to precisely correct color deviation in 1/16-pixel increments*, and it is also capable of segmenting the entire screen into 121 points and adjusting them individually to realize clearer video without color deviation.

Pixel Adjust OFF Pixel Adjust ON

*DLA-X30 enables adjustment in 1-pixel increments.

A Wide Range of Inputs and Outputs

In addition to 3D compatible HDMI inputs, the projector features an array of other connections, such as an RJ45 socket for projector control, firmware and configuration updates, and a trigger socket for an anamorphic lens or motorized screen.

Unique Automatic Lens Cover (DLA-X90R/X70R)

A unique automatic lens cover opens and closes upon power On/Off to protect against dust or damage to ensure users of easy, trouble-free operation via the remote control, even if the projector is installed on the ceiling.

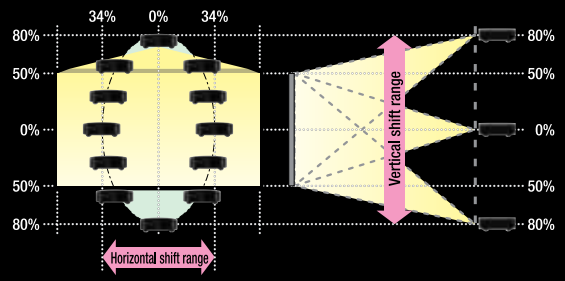
Lens cover closed (power off)

Lens cover open (power on)

Flexible Installation Guaranteed

Flexible installation is made possible thanks to the ±80% vertical and ±34% horizontal powered lens-shift function. The projector also features a high-performance 2X zoom lens with motorized focus that can project images upon a large 100-inch screen at distances of between 9.8 and 20 feet. With the high-performance motor, the once tedious tasks of setting zoom ratios and focus adjustments are now made simple and effortless.

±80% vertical and ±34% horizontal electric lens shift function



The vertical and horizontal lens shift function cannot be set to the maximum values simultaneously.

Industry Certified Projectors (DLA-X90R/X70R)

THX 3D Display Certification*1

The DLA-X90R and X70R are accredited with THX 3D Certification, which is established to ensure the precise reproduction of picture quality in home environments for both 2D and 3D content just as the original filmmaker envisioned. Encompassing more than 400 laboratory tests to evaluate a projector's color accuracy, cross-talk, viewing angles and video processing, this certification helps to guarantee high-definition quality.

**1 Ideal 3D screen-size performance is 90 inches diagonal (16:9).*

Certified by ISF (Imaging Science Foundation)

The DLA-X90R and X70R are licensed with the ISF C3 (Certified Calibration Controls) mode, enabling trained dealers to professionally calibrate them to desired screen surfaces, lighting environments and video sources, and then securely store these precise settings into the projector. This not only helps to ensure the reproduction of film or video content accurate to the source but also excellent picture quality optimized for specific environments.

The Top-Of-The-Line PREMIUM D-ILA Projector

The name D-ILA itself speaks of high-quality home cinema projectors, but the DLA-X90R represents a step above the rest in terms of exquisite image reproduction. Incorporating a select choice of premier components and technologies, the DLA-X90R offers remarkable levels of picture quality with its 4K-resolution and a native contrast ratio of 120,000:1.

4K Projection

In addition to an HD D-ILA device, the newly developed optical engine features new e-Shift technology to realize a super high-definition 4K (3,840 x 2,160 pixels) display. This means that unlike conventional resolution-upscaling technology for Full HD projectors, 4K display performance drastically improves picture quality to ensure exceptional precision and full presence.

Exceptionally High Native Contrast Ratio of 120,000:1

As a top-of-the-line D-ILA projector, the DLA-X90R delivers ultimate performance in all aspects of image reproduction, including the industry's highest native contrast ratio of 120,000:1*. This extraordinary figure is realized by reducing unnecessary light leakage from the optical engine, which is comprised of an original D-ILA device, wire grid, and other innovatively assembled components/devices.

Conventional projector

DLA-X90R

*As of November 2011.

Distinguished PREMIUM D-ILA Projector

Equipped with precision engineering and special features only available on this Premium model, the DLA-X90R is simply the finest home cinema projector the market has to offer.

Industry leading 120,000:1 Native Contrast Ratio.

4K-resolution D-ILA Projector with 3D Viewing

DLA-X90R

- 3D compatibility
- Variety of 3D functions: 2D-3D conversion, crosstalk canceling, depth adjustment, etc.
- Adobe RGB color space
- Xenon-lamp color temperature
- Clear Motion Drive*
- 7-axis Color Management
- Screen Adjustment modes (Max. 255 modes)
- Picture Adjustment functions: Picture Tone, Black Level, Darkness and Lightness Correction
- Lens Memory function (3 modes)
- Pixel Adjust function (1/16-pixel increments)
- Motorized lens cover
- Digital keystone*
- THX 3D Certification
- ISF Certification

*Operates only in 2D mode.

4K e-shift | D-ILA | 3D | THX 3D DISPLAY | isf ccc

4K-resolution	Native contrast ratio **120000:1**	**Brightness 1200lm**	**3D-compatible**	**2D-3D conversion**	Clear Motion Drive	7-axis Color Management	Xenon-lamp Color Temperature
Screen Adjustment (max 255 modes)	**THX Certified**	**ISF**	Pixel Shift (1/16-pixel increment)	Lens Memory	Motorized Lens Cover	Picture Data In / Out	

High-definition Projector that Perfectly Replicates Movie Quality.

4K Projection*, Native Contrast Ratio of 80,000:1,
and Premium Features Realize an Exquisite Picture.

4K-resolution D-ILA Projector with 3D Viewing

DLA-X70R

- **4K** (3,840 x 2,160 pixels) D-ILA projector*
- High native contrast ratio of **80,000:1**
- Minimized crosstalk for brighter, more realistic 3D picture
- 2D-3D conversion creates dynamic 3D video content from 2D video sources
- JVC original Real Color Imaging Technology
- Clear Motion Drive**
- Various picture adjustment functions ensure a high-quality picture
- Lens Memory function automatically adjusts aspect ratio to match content
- Pixel Adjust function corrects color distortion in 1/16-pixel increments
- Motorized lens cover automatically opens or closes the lens

*3,840 x 2,160 pixels.
**Operates only in 2D mode.

4K e-shift D-ILA 3D THX 3D DISPLAY isf ccc

4K-resolution	Native contrast ratio **80000:1**	**Brightness 1200lm**	**3D-compatible**	**2D-3D conversion**	Clear Motion Drive	7-axis Color Management	Xenon-lamp Color Temperature
Screen Adjustment (max 255 modes)	**THX Certified**	**ISF**	Pixel Shift (1/16-pixel increment)	Lens Memory	Motorized Lens Cover		

Remarkable Picture Quality Even in a Well-lit Room.

1,300-lumen Brightness Level and a Native Contrast Ratio of 50,000:1.

D-ILA Projector with 3D Viewing

DLA-X30

- **1,300-lumen** brightness level and **50,000:1** native contrast ratio
- Bright, high-definition 3D picture without crosstalk made possible by D-ILA
- 2D-3D conversion creates dynamic 3D video content from 2D video sources
- Convenient lens memory function (3 stages)
- 16-step aperture function adjusts brightness
- Pixel Adjust function corrects color distortion in 1-pixel increments
- 2X motorized zoom lens for flexible installation
- Screen Adjustment modes (3 modes)
- Clear Motion Drive ensures smoother picture reproduction*

*Operates only in 2D mode.

Full HD 1920×1080 D-ILA 3D

Native contrast ratio **50000:1**	**Brightness 1300lm**	**3D-compatible**	**2D-3D conversion**	Clear Motion Drive	Screen Adjustment (3 modes)	Pixel Shift (1-pixel increment)	Lens Memory

Projection Distance Chart

Display size (16:9) Inches and (mm)			Throw distance	
Width	Height	Diagonal	Minimum Feet – Inch | Meters	Maximum Feet – Inch | Meters
52 1/4	29 3/8 (747)	60 (1523)	5 – 10 | 1.78	12 – 0 | 3.66
60	33 3/4 (857)	68 5/8 (1749)	6 – 8 1/4 | 2.05	13 – 9 1/2 | 4.20
70	39 3/8 (1000)	80 3/8 (2040)	7 – 10 | 2.39	16 – 1 1/4 | 4.91
80	45 (1143)	91 1/4 (2332)	8 – 11 3/4 | 2.74	18 – 5 | 5.61
90	50 3/8 (1286)	103 1/4 (2623)	10 – 1 1/2 | 3.08	20 – 8 3/4 | 6.32
100	56 1/4 (1429)	114 3/4 (2915)	11 – 3 1/4 | 3.43	23 – 1/2 | 7.02
110	61 3/8 (1572)	126 1/4 (3206)	12 – 5 | 3.78	25 – 4 1/4 | 7.73
120	67 1/2 (1715)	137 3/4 (3498)	13 – 6 3/4 | 4.13	27 – 8 1/4 | 8.44
130	73 1/8 (1857)	149 1/8 (3789)	14 – 8 1/2 | 4.49	30 – 1/4 | 9.15
140	78 3/4 (2000)	160 3/8 (4081)	15 – 10 1/2 | 4.84	32 – 4 | 9.86
150	84 3/8 (2143)	172 1/8 (4372)	17 – 1/2 | 5.19	34 – 8 | 10.57
160	90 (2286)	183 3/4 (4663)	18 – 2 1/2 | 5.55	37 – 1/4 | 11.28
170	95 1/8 (2429)	195 1/8 (4955)	19 – 4 1/2 | 5.91	39 – 4 1/4 | 11.99
174 1/4	98 (2490)	200 (5079)	19 – 10 1/2 | 6.06	40 – 4 1/4 | 12.30

*Projection distances are design specifications, so there is ±5% variation.

Main Features

	DLA-X30	DLA-X70R	DLA-X90R
4K Projection	–	●	
3D Capability	●		
2D-3D Converter	●		
Aperture	16 steps		
Clear Motion Drive*1	●		
Color Management	–	● (7-axis)	
Color Temperature (Xenon-lamp Mode)	–	●	
Picture Tone	–	●	
Darkness and Lightness Correction	–	●	
Pixel Adjust	● (by 1-pixel increment)	1 (by 1/16-pixel increment)	
Screen Adjustment Modes	3 modes	Max: 255 modes	
THX Certification	–	● THX 3D	
ISF	–	●	
Anamorphic Mode	●		
Initial Calibration*2	–	–	●
Picture Data In/Out	–	–	●
Lens Memory	● (3 memory)		
Digital Keystone*1	●		
Motorized Lens Cover	–	●	

*1 Operates only in 2D mode. *2 Requires a commercially available optical sensor.

Specifications

		DLA-X30	DLA-X70R	DLA-X90R
Device		0.7 inch Full HD D-ILA (1920 x 1080) x3		
e-Shift Technology		–	Yes	
Resolution		1920 x 1080	3840 x 2160*1	
Lens		x2 Zoom & Focus: Motorized f=21.4-42.8mm / F3.2-4		
Lens Shift		±80% Vertical and ±34% Horizontal (motorized)		
Light source lamp		220W Ultra-High Pressure Mercury Lamp (lamp life: approx. 3000 hours when the lamp is in Normal mode)		
Brightness*2		1,300lm	1,200lm	
Contrast Ratio		Native: 50,000:1	Native: 80,000:1	Native: 120,000:1
Connectors	Component	1 (RCA; Y, PB/CB, PR/CR)		
	HDMI	2 (3D/Deep Color/CEC compatible)		
	Analog RGB (PC)	–	1 (D-sub15pin)	
	RS-232C	1 (D-sub 9pin)		
	LAN	1 (RJ-45)		
	Trigger	1 (Mini jack , DC12V/100mA)		
	Remote	1 (Mini jack)		
	3D	1 (Mini Din 3pin)		
Video Input Signal Format	Digital	480i/p, 576i/p, 720p 60/50, 1080i 60/50, 1080p 60/50/24		
	Analog	480i/p, 576i/p, 720p 60/50, 1080i 60/50		
PC Input Signal Format	HDMI	VGA/SVGA/XGA/WXGA/WXGA+/SXGA/WSXGA+/WUXGA		
	Analog RGB (D-sub 15 pin)	–	VGA/SVGA/XGA/WXGA/WXGA+/SXGA/SXGA+ /WSXGA+/1920x1080/Mac 13",16"19"	
3D Format	Frame Packing	720p 60/50,1080p 24,1080i 60/50		
	Side-by-Side (half)	720p 60/50, 1080p 60/50, 1080i 60/50		
	Top & Bottom	720p 60/50, 1080p/24		
Noise		20dB (Lamp normal mode)		
Power Requirement		AC 110-240V,50/60Hz		
Power Consumption		330W (Stand-by: 0.8W)	360W (Stand-by: 0.8W)	
Dimensions (in. | mm)		17 7/8 x 7 x 18 1/2 | 455x179x472 mm		
Weight (lbs. | kg.)		32.85 | 14.9kg	33.95 | 15.4kg	33.95 | 15.4kg

*1 Resolution is 1920x1080 at 3D mode. *2 Measurement, measuring conditions, and method of notation all comply with ISO 21118.

Optional Equipment

User-replaceable Lamp
PK-L2210U

3D Glasses
PK-AG2
Rechargeable Type

3D Glasses
PK-AG1
Battery-operated Type

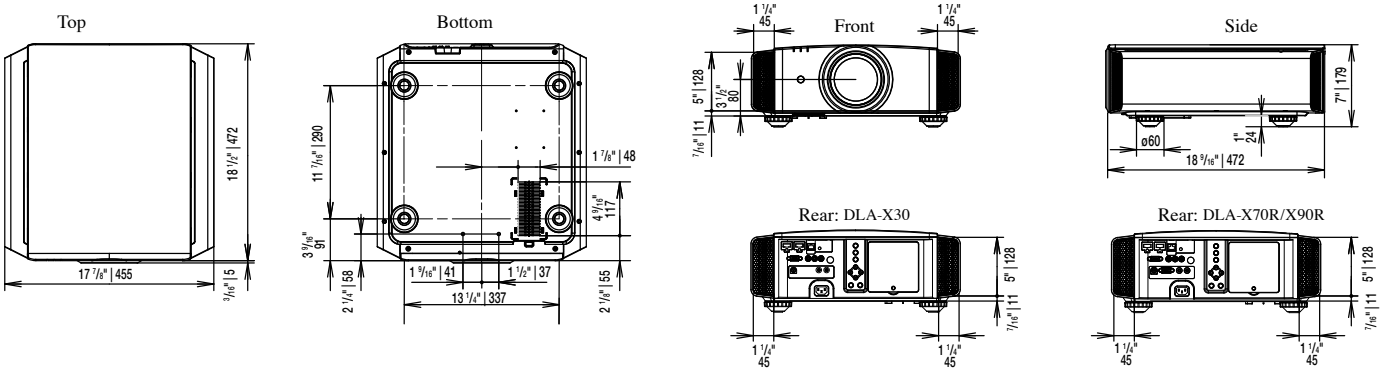
3D Synchro Emitter
PK-EM1

Connectors

DLA-X30

DLA-X70R/X90R

External Dimensions (unit: in. | mm)



• The projector is equipped with an ultra-high pressure mercury lamp, which may break, emitting a loud noise, when it is subjected to shock or after it has been used for some length of time. • Please note that, depending on how the projector is used, there can be considerable difference between individual lamps regarding how many hours they will operate before requiring replacement. • An additional payment is required for installation of a new lamp, if necessary. • The projector lamp requires periodic replacement and is not covered by warranty. • Please be aware that, because the D-ILA device is manufactured using highly advanced technologies, 0.01% or fewer of the pixels may be non-performing (always on or off).

JVC

www.jvc.com

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