MITSUBISHI ELECTRIC

Changes for the Better

HOME THEATER PROJECTOR

NEW HC8000D

**Bringing
New Dimensions of
Beauty to 3D Imagery**

PICTURE BY
DLP
TEXAS INSTRUMENTS

True Cinema Pleasure Delivered in the Privacy of Your Home

Minimal Crosstalk

Brightness Maintained

Mitsubishi Electric Fine 3D

Minimal flicker

Minimal Judder

FOCUS

DLP
TEXAS INSTRUMENTS

There is nothing more pleasing and relaxing than being in the comfort of your own home, sitting in your favorite seat and watching movies and other programs reproduced in cinema-level imagery. For people seeking such times of blissful enjoyment, Mitsubishi Electric introduces the new HC8000D. Incorporating our latest original image-processing technologies, the high picture quality of images projected has never been more beautiful. Especially notable are advancements in resolving annoying 3D phenomena such as crosstalk, judder, flicker and loss of brightness, and achieving brighter, sharper, clearer 3D performance. If not satisfied simply by dynamics, now is your time and this is the projector!

NEW HC8000D 3D HDMI HIGH DEFINITION MULTIMEDIA INTERFACE FULL HD 1080 isf®

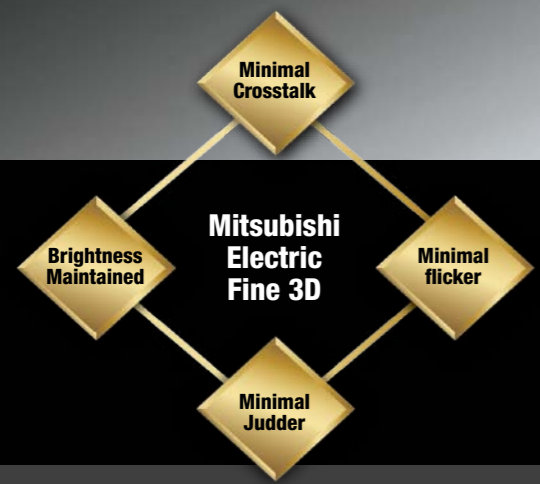# Black Liquid-crystal 3D Glasses with High-speed Shutter Realizing Overwhelming 3D Performance and Comfort

A high-speed black liquid-crystal shutter is the latest innovation added to our 3D glasses. Through overlap of the TN liquid-crystal "normally black" and "normally white" modes, a high-speed response comparable to that of ferroelectric liquid-crystal and close to ten times faster than that of conventional liquid-crystal has been achieved. Contrast has also been dramatically improved, allowing viewers to sit back and enjoy amazing 3D-playback performance and stunning high-definition images. To top off the enhanced viewing experience, the weight of the glasses has been reduced for greater comfort.

General-use 3D glasses can also be used

The 3D experience can also be enjoyed using commercially available 3D glasses for general-use.

* Some types of glasses may not work with this unit. Please confirm compatibility at the retail store before purchase. Wireless glasses cannot be used.

When power is off

When power is on

Black liquid-crystal glasses with high-speed shutter (optional)

Minimal Crosstalk

Brightness Maintained

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The Thrilling Experience Unique to Large-screen 3D Images Taken to an Even Higher Level of Quality

The newly developed black liquid-crystal glasses with high-speed shutter are designed to fully concord with the high-speed response of the digital light processing (DLP™) element itself. In addition, Mitsubishi Electric's long-cultivated image technologies, such as the 3D-compatible frame rate convertor (FRC), have been brought together to realize an awe-inspiring level of 3D image beauty. The amazingly sharp (minimal crosstalk), bright (brightness maintained), clear (minimal judder) and smooth (minimal flicker) images allow unbridled enjoyment of 3D content.

Minimal Crosstalk

Quick-response DLP™ pixel elements prevent the mixing of left and right eye images, realizing sharp picture reproduction.

Image with crosstalk

Brightness Maintained

The high-speed opening/closing operation of the shutters in the newly developed 3D glasses results in remarkable brightness by suppressing the loss of luminance.
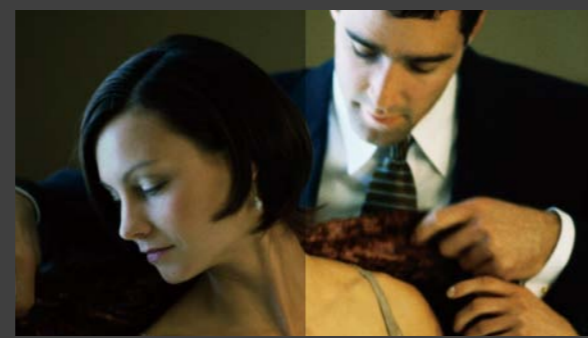
Image with reduced luminance (left half of screen)

Minimal Judder

Combined with a 3D-compatible frame rate converter (FRC), high-definition images with nominal image lag are achieved.

Image with judder

Minimal Flicker

Flicker when the screen is white has been reduced through use of a 120Hz conversion process in addition to that of the conventional horizontal 96Hz display. (minimal judder and minimal flicker cannot be applied simultaneously).

Reduction of "white flicker" that tends to appear in bright, white parts

Image showing "white flicker" effect

Enjoy Favorite Movies of the Past in 3D - Built-in high-precision conversion feature

Thanks to motion-vector analysis technology, the position of a person can be distinguished from the background and a moderate parallax added to produce the sensation of depth used in 3D images. Unlike simple 2D-to-3D conversion where the entire screen is shifted, 3D images with a natural sensation of depth are reproduced, making it possible to bring even classic films back to life in vivid 3D.

Common conversion format

Entire image is shifted

3D effect is poor

HC8000D conversion format

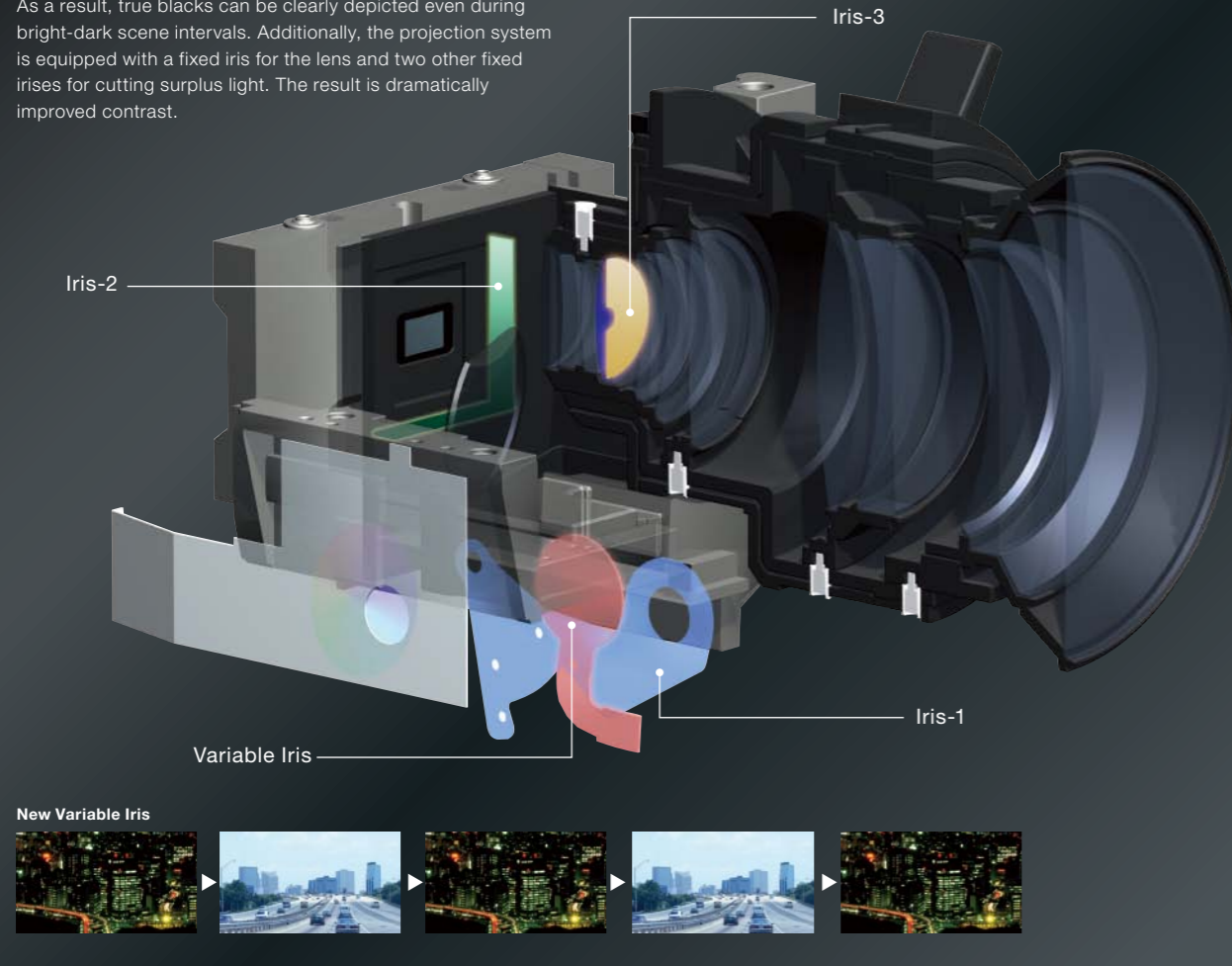Positions of person and background are detected, and a moderate parallax is added

3D image with natural depth sensation

The Latest Image Technologies Brought Together for Cinema-like Quality in 2D or 3D

New optical engine with comprehensively improved contrast and light leakage realizing high contrast of 330,000:1

An optimized Variable Iris is equipped within the DLP™ element. As a result, true blacks can be clearly depicted even during bright-dark scene intervals. Additionally, the projection system is equipped with a fixed iris for the lens and two other fixed irises for cutting surplus light. The result is dramatically improved contrast.

Iris-3

Iris-2

Iris-1

Variable Iris

New Variable Iris

HC8000D

External Dimensions (unit: mm)

396

328

142

12.8

80

64.5

*Not including protrusion. *The Lens focus point is the default set at the time of shipment from the factory.

Possible to set high-speed (6x) drive

As well as the conventional drive speed, a high-speed (6x) drive can be set exclusively for the 24P signal in 2D. This feature minimizes the color breaking noise that is produced due to color-wheel-based color separation methods.
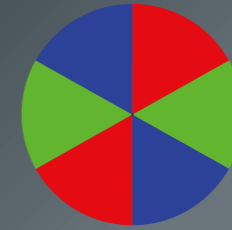
FRC installed – Reproduce content supplemented with optimal frame number

Applying motion-vector analysis technology, data from the previous and succeeding images are used to produce highly accurate image frames. The optimal number of frames is supplemented to match the contents and the final image is reproduced. As a result, motion blur in the vertical, horizontal and diagonal directions is suppressed.

True Video Mode

Blur is suppressed using video image motion interpolation.

New frames are created from previous and succeeding images.

True Film Mode

While retaining the clicking sensation unique to film, sharp clear images are projected.

Interpolation while maintaining the 24-frame film-like texture.

3D FRC

Minimal Judder: Even for 24-frame 3D images, sharp clear images are reproduced.

Terminals

Y/Cₐ
COMPUTER/COMPONENT VIDEO IN
HDMI ❶ HDMI ❷
SERIAL
3D SYNC
TRIGGER
Pₑ/Cₑ
Pₑ/Cₑ COMPONENT VIDEO IN

Screen Size and Projection Distances

Screen size			Distance from Screen		Hd (cm)	Movable V position from default position					
Diagonal size (inch)	Width (cm)	Height (cm)	Shortest (Wide) (m)	Longest (Tele) (m)		Down (-Hd)(cm)	0 (Hd)	Up (+Hd)(cm)	Down (cm)	0	Up (cm)
50	111	62	1.5	2.3	21	12 ← 21 → 29			−9 ← 0 → 8		
60	133	75	1.8	2.7	25	14 ← 25 → 34			−11 ← 0 → 9		
70	155	87	2.1	3.2	29	17 ← 29 → 40			−12 ← 0 → 11		
80	177	100	2.4	3.6	34	19 ← 34 → 46			−14 ← 0 → 12		
90	199	112	2.7	4.1	38	22 ← 38 → 52			−16 ← 0 → 14		
100	221	125	3.1	4.6	42	24 ← 42 → 57			−18 ← 0 → 16		
110	244	137	3.4	5.0	46	26 ← 46 → 63			−20 ← 0 → 17		
120	266	149	3.7	5.5	50	29 ← 50 → 69			-21 ← 0 → 19		
150	332	187	4.6	6.9	63	36 ← 63 → 86			-27 ← 0 → 23		
200	443	249	6.2	9.2	84	48 ← 84 → 115			-36 ← 0 → 31		
250	553	311	7.7	–	105	60 ← 105 → 144			-45 ← 0 → 39		
300	664	374	9.3	–	126	72 ← 126 → 172			-54 ← 0 → 47		

Options *3D Glasses (Optional parts) are necessary for viewing 3D pictures.

3D Glasses	3D Emitter	Replacement lamp
EY-3DGS-80U	EY-3D-EMT2H	VLT-HC7800LP

High-performance extra-low-dispersion lens for full high-definition resolution (with V-lens shift)

Compared to commonly used glass lenses, the projector is equipped with a high-performance extra-low-dispersion (ED) lens system comprised of a total of 13 lenses in four groups. Chromatic aberration is minimized to the fullest and image resolution is improved throughout, including the periphery.

ED glass lens
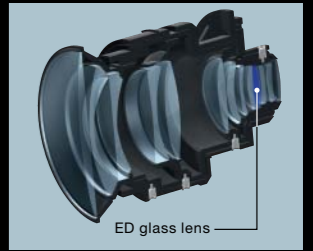
## High 1300lm (Max.) luminance with clear, high-definition images

In addition to Variable Iris, a high-power lamp is adopted, providing both enhanced image brightness and contrast. The high 1300-lumen (Max.) brightness ensures that, in both 2D and 3D, high-resolution images are clearer, sharper and more vivid than ever.

3D images reproduced in full high-definition with fine gradation

• Equipped with two full 10-bit panel drivers (DDP3021)
• PNX 5130 chip of FRC installed.

High-quality coloration faithful to image source reproduced

The HC8000D incorporates the color reproduction performance of the HC9000D, vastly expanding the color range. Colors such as the greens of trees and cyan shades of oceans that were previously hard to produce are now included, enabling the reproduction of images with deeper, more vivid hues.

* Images compared are for reference only
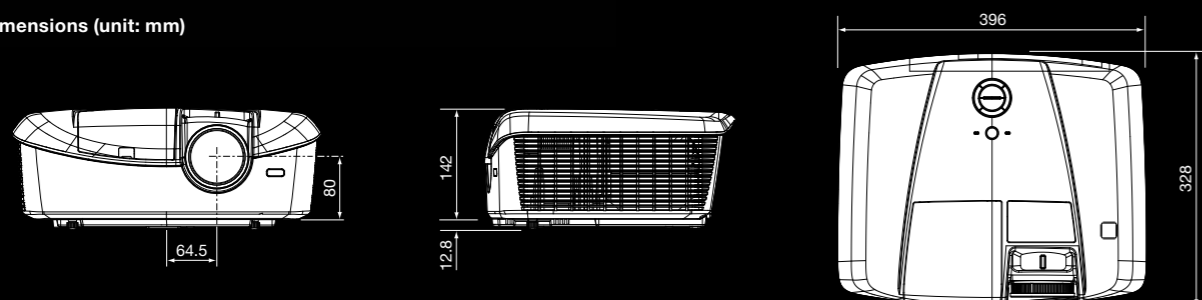
Chromaticity y

HC8000D
HDTV
HC4000

Chromaticity x
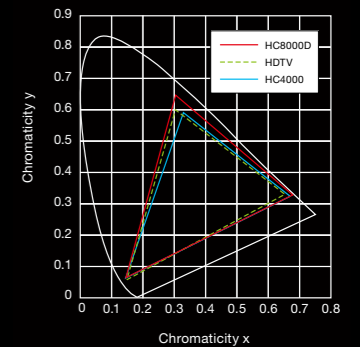
Color management function for easy fine-tuning of colors

The projector is equipped with a new color management function for independent color R (red), G (green), B (blue), C (cyan), M (magenta) and Y (yellow) adjustment of "Hue," "Saturation" and "Brightness." It is also possible to adjust a specific color; when a color is selected only the objects of that color are shown in color (others are in monotone), making it possible to tune colors to preference more easily.
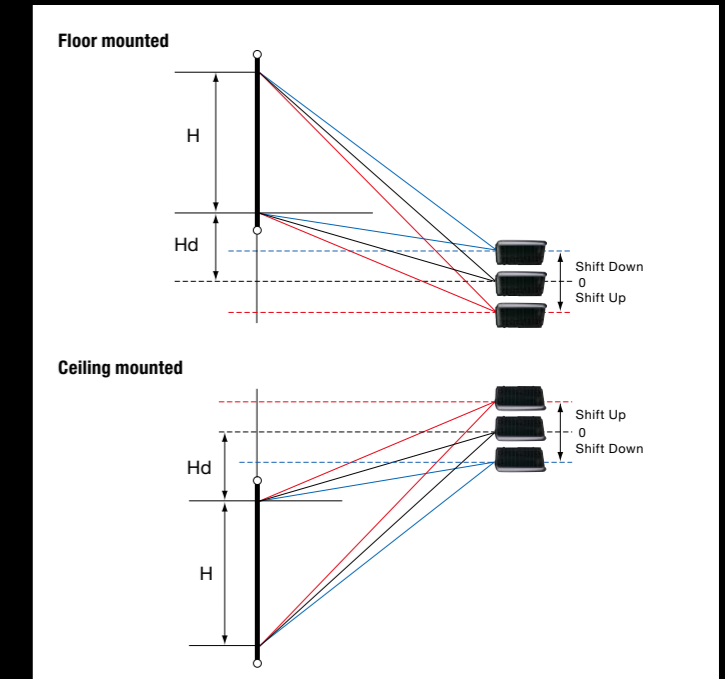
Floor mounted

H

Hd

Shift Down
0
Shift Up

Ceiling mounted

Shift Up
0
Shift Down

Hd

H

Specifications

Model			HC8000D
Projection system			DLP™ system
Panel specs	Panel size		0.65 DMD, Aspect ratio 16:9
	Number of pixels		1920x1080
	Drive system		DMD reflection system
	Array		Stripe pattern
Optical specs	Lens	Zoom / focus operation*1	1.5x manual zoom / manual operation
		f (mm)*1	20.6-30.1
	Light source lamp		240W (at standard mode), 190W (at low mode)
	Optical system		Time-division color separation / composition system
Color wheel			6 segment (RGB RGB), 4x / 6x*2
Projection screen size (inches)			50-300
Images	Brightness*1		1300lm (Max)
	Contrast ratio*1		330000:1 (when the Iris is closed)
	Resolution	PC input	VGA 640x480 - UXGA1600x1200,1920x1080
	Scan frequency	Horizontal (kHz)	15-85
		Vertical (Hz)	24-85
Input signal system	Video		Video input: 480i/p, 576i/p, 1080i 60/50, 1080p 60/50/24, 720p 60/50
	PC		PC/AT compatibles, Mac, PC98
Input	Image	Analog RGB Mini D-sub 15pin	1 terminal
		Digital RGB HDMI terminal	2 terminals (3D/Deep Color compatible)
		Components RCA terminal	1 terminal (component can be also input to Mini D-Sub 15 pin)
	Serial	Serial terminal	1 terminal (Mini D-sub 9pin)
Functions	Picture mode		4 patterns + 3 AV memories
	Digital keystone (Vertical)		±15 steps*3
	Power source voltage		AC100-240V 50/60Hz
	Power consumption (W)		380 (at waiting 0.5 W)
	Weight (kg / lbs)		5.7 / 12.6
	Main unit dimensions (WxDxH)		396x328x142mm / 15.6"x12.9"x5.6" (Not including protrusion)
Other	Supplied accessories		Power source cord (1.8m), Remote control, AA batteries (x2), Emitter cable (3m), RGB signal cable, Lens cap, Lamp replacement attachment

*1: Varies depending on conditions. *2: Can be set to dedicated 24P signal when displaying 2D images. *3: Trapezoidal correction not possible when displaying 3D images. ▪All the brand names and product names are trademarks, registered trademarks or trade names of their respective holders. ▪Lamp life specification is an estimate based on verification under proper conditions and is not the duration of the warranty. Lamp will shut-off automatically when usage reaches the specified estimated maximum lamp hours. Service life may vary widely depending on usage and operating environment and conditions, as well as users' adherence to the maintenance and cleaning procedures provided in the user manual. ▪"HDMI, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries."

3D Viewing Precautions
▪Each person perceives 3D images differently. There may be times when viewing causes a person to feel uneasy.
▪If a person begins to feel tired or uncomfortable when viewing 3D images, they should stop watching immediately.
▪When watching 3D programs, be sure to take occasional breaks and do not watch continuously for long periods of time.
▪The viewing of 3D images is not recommended for children under the age of 5~6.
▪The proper viewing form for 3D images is to wear 3D Glasses and have both eyes horizontal to the screen as much as possible.
▪3D Glasses are fragile and may break if the frames are twisted or if handled recklessly. Do not watch 3D programs if the 3D Glasses are defective or there is a problem with them.
▪When viewing 3D images, it is recommended to sit at a viewing distance equal to at least three times the effective screen size.

eco Changes **for a greener tomorrow**

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

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To find out more about the HC8000D and other projectors, visit us at

http://www.MitsubishiElectric.com/projectors/