MultiSync®
HiVid® Series

DLP
A TEXAS INSTRUMENTS TECHNO

Cinema quality,
large-venue drama

Outstanding
image brightness

Unsurpassed NEC Technologies
quality and reliability

NEC Technologies

The **accuracy** of digital projection technology. The high **brightness** of an efficient optic system. The **clarity** of seamless picture reproduction. The professional **performance** of exclusive **image**

enhancements and controls. The **simplicity** of "plug and play" operation. The **reliability** you expect from the **leader in display technology.**

For large-venue applications demanding the ultimate in image quality, the MultiSync® HiVid® Series High Light Output projectors offer a completely digital solution.

The MultiSync HiVid Series HLO™ projectors deliver a superior digital display solution designed to meet the demands of large-venue applications in corporate and entertainment environments. These HLO projection systems have been thoughtfully designed to achieve the ultimate in image quality, image control and ease of use. The outstanding performance of these projectors enables you to:

- Display superior images with high brightness.

- Create more sophisticated displays with NEC Technologies exclusive image enhancement and control features.

- Enjoy excellent reliability and lower maintenance costs due to the specially designed features.

MultiSync HiVid Series Quick Reference

MultiSync HiVid 3500	MultiSync HiVid 6500
Native Resolution: 848 x 600	Native Resolution: 1024 x 768
Light Output: 3500 ANSI lumens	Light Output: 6500 ANSI lumens
Signal Compatibility: VGA, SVGA, XGA, Mac	Signal Compatibility: VGA, SVGA, XGA, SXGA, Mac

Picture Size: 80–500" diagonal

Lamp: NEC Technologies exclusive 1.6 KW xenon arc

Video Compatibility: NTSC, PAL, SECAM, NTSC 4.43, HDTV, Component

The MultiSync HiVid Series digital advantage

With completely digital projection technology, the MultiSync HiVid Series projectors offer unique image quality advantages not available with other projection systems.

Seamless images

The MultiSync HiVid Series projectors produce images that are virtually seamless. Because 90% of the pixel or mirror area can actively reflect light to create the projected image, the human eye sees more visual information than with conventional projection systems. In addition, the uniform pixel size and spacing enables the MultiSync HiVid Series projectors to achieve a higher perceived resolution than other projection technologies.

Digital gray scale and color reproduction

The digital nature of the MultiSync HiVid Series projectors makes possible digital gray scale and color reproduction, producing lifelike color images with exceptional accuracy. In fact, DLP comes closer than any other technology to producing an exact mirror image of an input video or graphic signal, making it the ideal medium to display computer graphics, television signals and other digital images.

Display more accurate, life-like images with an entirely digital projection system.

Projection lens   Light source   Digital Micromirror Device™ (DMD)™
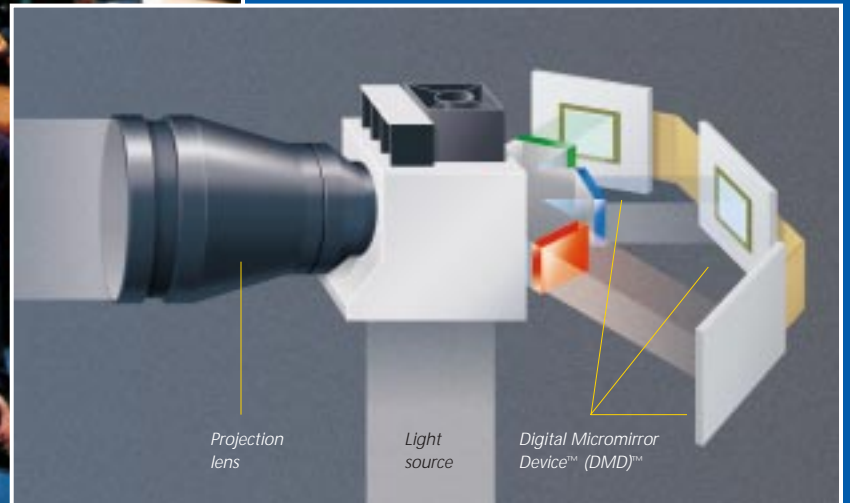
High brightness

Because the MultiSync HiVid Series projectors utilize a reflective technology, they are far more efficient than competing systems. More light gets from the lamp to the screen—an important factor in high-brightness applications. The MultiSync HiVid 3500 produces more than 3500 ANSI lumens of light output, while the MultiSync HiVid 6500 produces more than 6500 ANSI lumens.

Using Digital Light Processing™ (DLP™) by Texas Instruments, the MultiSync HiVid Series projectors make possible a completely digital information structure. Until now, displaying digital information on a large screen required converting the signal to analog just before display, introducing signal noise to the data path. As a digital display technology, DLP completes the digital video infrastructure and preserves the digital integrity of your information. Bringing the same kind of revolutionary advantages to video projection as the digital compact disc brought to audio reproduction, DLP enables noise-free, precise image quality with digital gray scale and color reproduction.

The MultiSync HiVid Series projectors use a three-chip DLP system, which means they add color by splitting white light into the three primary colors using a prism system. This approach uses a Digital Micromirror Device™ (DMD™) by Texas Instruments, one for each of the primary colors. As a result, the total reflective area is increased, producing a much brighter image. In addition, higher bit color is possible with the three-chip system. Because light is directed to each DMD for the entire TV field, 10-bit gray scale per color is possible, allowing the three-chip system to reproduce 1,024 shades of gray compared to 256 in a one-chip system. This highly efficient, three-chip projection system is ideal for large-screen and high-brightness applications.

With exclusive image enhancement features, the MultiSync HiVid Series projectors let you take your high light output displays to new heights.

The MultiSync HiVid Series projectors are packed with features that make them stand out among high light output projection systems. A comprehensive array of image enhancement features, available only from NEC Technologies, lets you maximize the quality and sophistication of your projected image.

White and brightness uniformity correction

White uniformity and brightness uniformity are critical to overall image quality in applications requiring high light output. Using NEC Technologies exclusive AccuZone technology, the MultiSync HiVid Series projectors enable you to achieve over 90% edge-to-edge white and brightness uniformity. This correction can be made automatically utilizing NEC Technologies optional PC control software.

Linear color temperature scale

Lets you adjust the tint in a linear fashion, without steps, for optimal display of white in video and computer signals.

Sync mode select

Permits you to select the appropriate sync mode to best match the video input signal, so that the output image achieves the same quality as the input image.

Proprietary high-performance video image processing

Exclusive to NEC Technologies, 3D image processing greatly improves video to far exceed any other LCD or DLP high light output projection system.

Selectable color matrix

Allows the MultiSync HiVid Series projectors to be matched to the incoming signal, resulting in perfect color reproduction. Signal compatibility includes DVD (YUV, Y. Cr. Cb.), HDTV (Y. Pb. Pr. tri-level sync) and Y. R-Y B-Y.

Color transient improvement

Further improves video quality by increasing picture and color resolution, making the image sharper and more detailed.

Noise reduction

Eliminates unwanted artifacts that can be present in video signals.

Selectable gamma correction

Through selectable gamma correction, the MultiSync HiVid Series projectors allow the user to achieve satisfying picture quality. Gamma correction from 1.0 to 2.9 can be selected with continuation.

Without gamma correction, correct luminance and chrominance levels for each gray scale component cannot be maintained.

The MultiSync HiVid Series projectors feature gamma correction for the most accurate gray scale and color representation.

Edge Blending *The MultiSync HiVid Series projectors feature NEC Technologies exclusive edge-blending technology, allowing two projectors to be stacked side-by-side with the edges of their on-screen images perfectly matched. For example, two 3:4 images can be blended side-by-side to achieve one image that has a 3:8 aspect ratio, resulting in a cinema-like, superwide image. (An optional image splitter is required to achieve this effect.)*

Typical 3:4 aspect ratio

Extended 3:8 aspect ratio with NEC's edge-blending technology

Exclusive xenon arc lamp system provides longer life, truer color and easy maintenance.

In most large-venue projection systems, the lamp is the least-efficient component. Over time, most lamps degrade in light output and exhibit a color shift. The decrease in light output can be as much as 30% in the first 200 hours of operation. NEC Technologies exclusive bubble-type lamp system greatly minimizes this effect.

To further extend lamp life, the MultiSync HiVid Series projectors feature a selectable light output mode:

Hi-Light Mode (220V) Maximum light output with an expected lamp life of about 1,000 hours.

Normal Mode (220V) Light output is rated at 3500 ANSI lumens (HiVid 3500) or 6500 ANSI lumens (HiVid 6500) and expected lamp life is extended to approximately 1,500 hours.

The MultiSync HiVid Series projectors also can be used with a 120V supply, but light output will decrease.

In addition, the lamp in the MultiSync HiVid Series projectors is safe and easy to change. The xenon arc lamp itself is mounted in a special housing and laser aligned for maximum efficiency. The housing can easily be removed from the top or side of the projector and is easy to remove even when the projector is ceiling-mounted.

To aid in managing maintenance, the MultiSync HiVid Series projectors also feature a built-in lamp and projector timer. The timer indicates how long the current lamp has been in use and how long the projector has been turned on, enabling you to better anticipate the need to change the lamp.
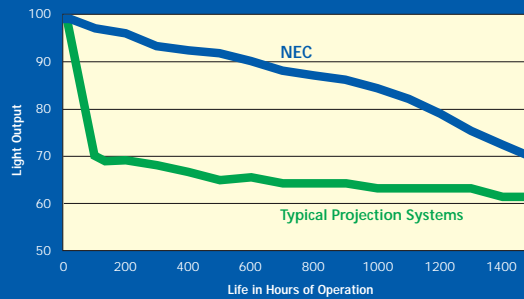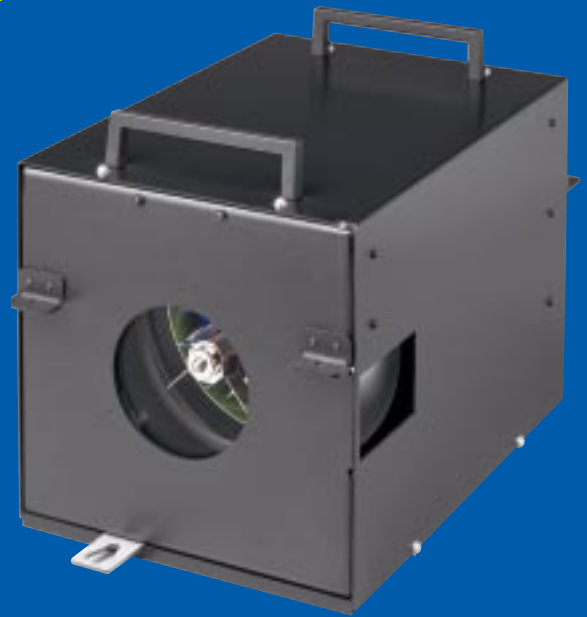
In the first 200 hours of operation, the light output of the NEC xenon arc lamp decreases only about 5% and, over time, light output remains relatively constant. Even after 1,000 hours of operation, more than 80% of the NEC light output is maintained.

The sleek design of the MultiSync HiVid Series includes integrated handles that simplify transportation and installation.

Comprehensive control features simplify setup, maintenance and operation.

NEC Technologies exclusive control features make the MultiSync HiVid Series projectors simple to set up, maintain and use. No other manufacturer offers this complete range of control options:

Local monitor output
This feature, exclusive to NEC Technologies, is ideal for making adjustments during live shows where on-screen menus could be distracting. By connecting an optional laptop computer, you can view the MultiSync HiVid Series projector's on-screen menus and make adjustments to the projector without any menus appearing on the main display screen. Adjustments can be made using the remote control or PC control software.

Picture zoom and pan
The MultiSync HiVid Series projectors feature the ability to zoom in on a portion of the picture and pan around it. This feature is useful for drawing attention to important parts of a presentation or magnifying areas so they can be seen more clearly.

100 memory locations
Enables you to store information pertinent to the incoming signal and immediately recall the assigned data for each source. Adjustments can be stored and recalled when needed.

On/Off and sleep timer
Allows you to specify times that the projector will turn on and off, or set a countdown time to turn the projector off.

Closed caption capability
Assists the hearing-impaired by allowing on-screen viewing of audio information in text format.

Addressable remote control
If more than one projector is installed, the addressable remote can be instructed to communicate with a particular projector without affecting the others.

Lens offset/focus
Allows the lens and image to be shifted both horizontally and vertically, facilitating easier positioning on the screen. HiVid 3500: manual adjustment; HiVid 6500: motorized (vertical), manual (horizontal)

The MultiSync HiVid 6500 projector also features the following:

Integrated light shutter
Remote controlled internal shutter system completely mutes all light output.

Motorized focus adjustment
Focus is motorized, making adjustment easier where access to the projector may be prohibitive.

A small sliding door on the top of the MultiSync HiVid Series projectors houses the full-featured remote control. The remote can be detached from the unit for wireless infrared operation or used with the supplied remote control cable.

Outstanding compatibility supports the latest video formats and computer resolutions for greater input flexibility.

The MultiSync HiVid Series projectors are based on the Texas Instruments DMD chip with native resolution of 848 x 600 for the MultiSync HiVid 3500, and 1024 x 768 for the MultiSync 6500. All other resolutions are scaled up or down to fit. The MultiSync HiVid Series projectors are compatible with video (NTSC, PAL, SECAM and NTSC 4.43), Y/C, HDTV and RGB computer signals up to 64 kHz on the MultiSync HiVid 3500, 80 kHz on the MultiSync 6500. Other outstanding features of the projectors' compatibility include:

Flexible input panel
The MultiSync HiVid Series projectors come standard with inputs for composite video (selectable between BNC and RCA), Y/C and RGBHV. Two card slots are also available for additional RGB or video input cards.

Video display modes
The MultiSync HiVid Series projectors feature the following video display modes:

MultiSync HiVid 3500:

- NTSC non-scaled image (640 x 480 display)

- NTSC scaled image (800 x 600 display)

- NTSC letterbox (640 x 180 display)

- NTSC letterbox scaled (800 x 450 display)

- NTSC full image (800 x 200 display)
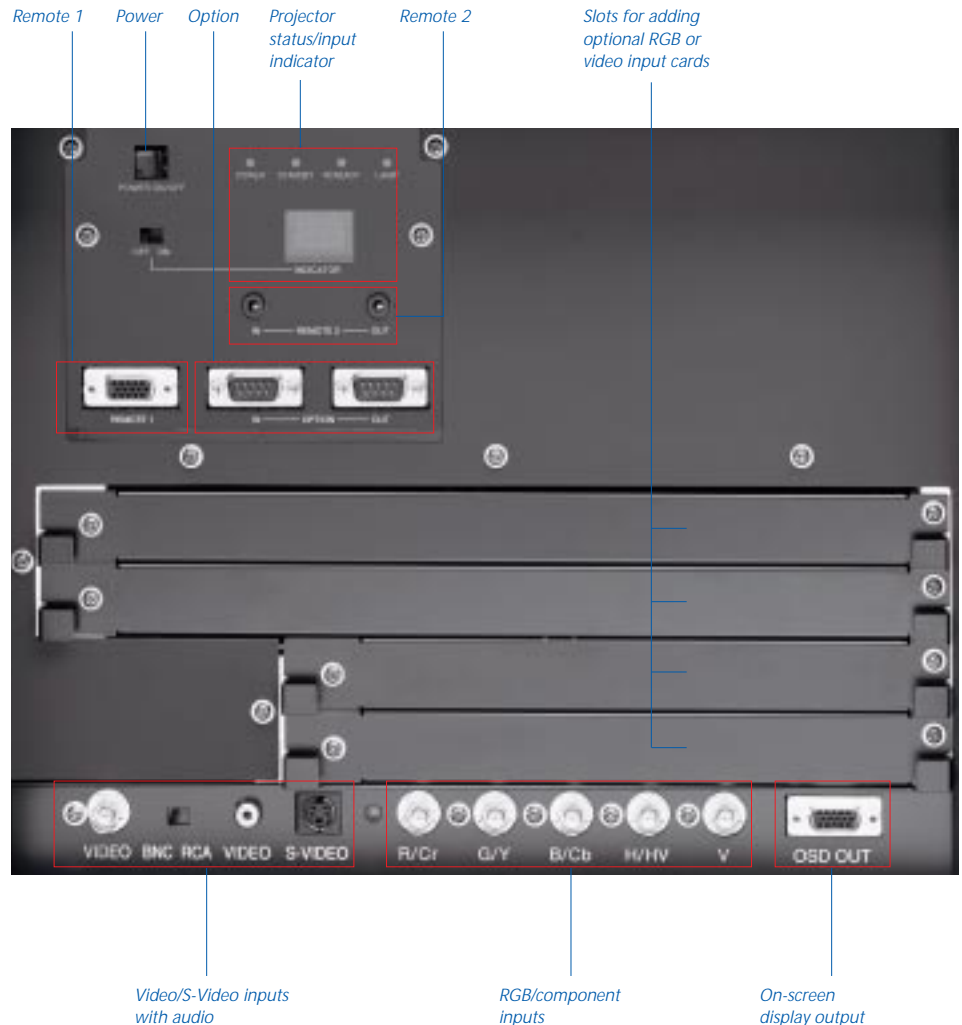
- PAL/SECAM (768 x 576 display)

MultiSync HiVid 6500:

- Video display modes are fully adjustable and can be customized for the most accurate on-screen representation.

HDTV compatibility
The MultiSync HiVid Series projectors are HDTV-ready and can accept HDTV signals (either RGB or Y. Pb. Pr.).

Component signal capability
The MultiSync HiVid Series projectors are compatible with the following component signals: YUV (DVD), Y. Pb. Pr. and Y. R-Y B-Y.

Remote 1 — Power — Option — Projector status/input indicator — Remote 2 — Slots for adding optional RGB or video input cards

Video/S-Video inputs with audio — RGB/component inputs — On-screen display output

Excellent reliability, plus NEC Technologies responsive service, provides unbeatable peace of mind.

When you purchase a MultiSync HiVid Series projector, you can count on the responsive service and support of NEC Technologies. The MultiSync HiVid Series projectors perform continual self-diagnosis and feature a status display that indicates whether any problems have been detected, reducing trouble-shooting time for service technicians. Finally, the MultiSync HiVid Series projectors are covered by a one-year limited warranty.

Optional lenses

Nine lenses (five zoom and four fixed) are available for the MultiSync HiVid Series projectors. This assortment of high-quality lenses delivers a broad range of throw distances, ensuring one is right for your installation.

Optimized for MultiSync 6500

Model No.	*HVL-X1Z*
Ratio	*1.5:1-2.5:1*
Type	*zoom*

Optimized for MultiSync 6500

Model No.	*HVL-X2Z*
Ratio	*2.5:1-4.0:1*
Type	*zoom*

Optimized for MultiSync 6500

Model No.	*HVL-X4Z*
Ratio	*4.0:1-7.0:1*
Type	*zoom*

Model No.	*HVL-1Z*
Ratio	*1.5:1-3.0:1*
Type	*zoom*

Model No.	*HVL-3Z*
Ratio	*3.0:1-7.0:1*
Type	*zoom*

Model No.	*HVL-1F*
Ratio	*1.27:1*
Type	*fixed*

Model No.	*HVL-3F*
Ratio	*3.0:1*
Type	*fixed*

Model No.	*HVL-5F*
Ratio	*5.0:1*
Type	*fixed*

Model No.	*HVL-7F*
Ratio	*7.0:1*
Type	*fixed*

Telephoto lens throw diagram

Screen
10'
14'

10'	70'	42'	18'	
7.0:1	5.0:1	3.0:1	1.27:1	Lens ratio
HVL-7F	HVL-5F	HVL-3F	HVL-1F	Model #
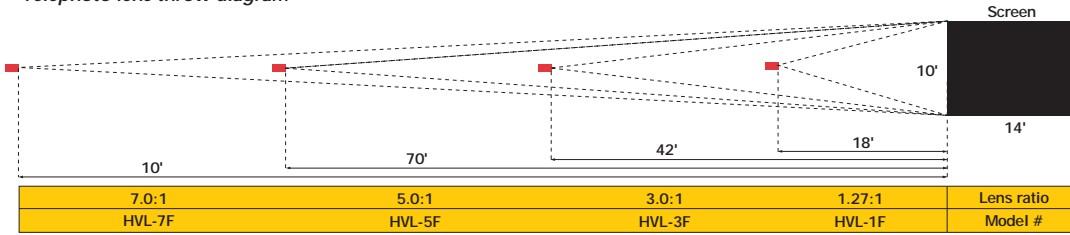
To determine the appropriate lens to use in your installation, multiply the width of your screen by the throw distance ratio of the lens. This will give you the throw distance of the projector to the screen. Your installation will need to allow at least that much distance between the projector and the screen to utilize that lens.

Zoom lens throw diagram

Screen
10'
14'

56'–98'	42'–98'	35'–56'	21'–42'	21'–35'	
4.0:1–7.0:1	3.0:1–7.0:1	2.5:1–4.0:1	1.5:1–3.0:1	1.5:1–2.5:1	Lens ratio
HVL-X4Z	HVL-3Z	HVL-X2Z	HVL-1Z	HVL-X1Z	Model #
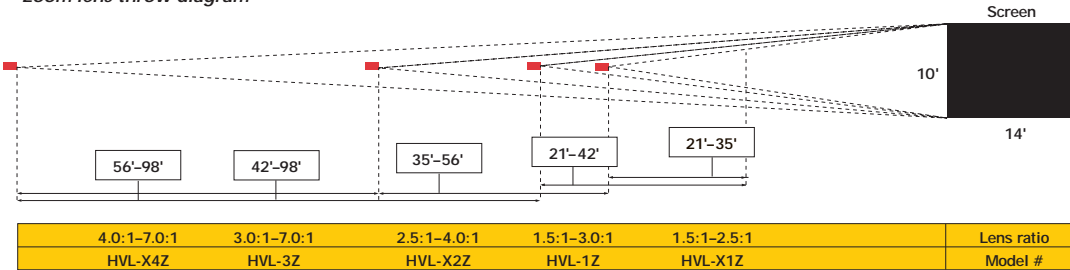
Optional accessories let you create a completely customized projection system.

The optional accessories available from NEC Technologies enable you to customize your MultiSync HiVid Series projector to precisely meet your needs.

MultiSync ISS-6020™ Video/RGB Switcher

The MultiSync ISS-6020 Switcher gives you the ability to configure a projection system to your exact requirements. It enables you to integrate input from multiple video and RGB inputs, greatly simplifying source control. The Switcher includes a total of eleven module slots for extensive input and output flexibility, accepting any combination of video, computer, RGB and high-definition input modules, and up to four RGB and video output modules.

IPS4000Q Image Processor/Scaler

This processor delivers video output that matches the native resolution of the projector's source, allowing the projector to perform at its optimum resolution. It features television and cinema mode correction and NEC Technologies exclusive motion adaptive 3D interpolation for the best-looking video ever seen on the big screen.

Input cards

Two optional RGB or video cards can be added for a total of five inputs. The RGB input card accepts RGB, Y. Pb. Pr. and Y.Cr.Cb. (YUV) input. The video input card accepts composite or S-Video.

HLO MultiStack System—Customize your MultiSync HiVid Series projector with the following components, sold separately:

A ceiling mount kit, which enables you to mount the projectors to the ceiling.

A MultiFrame, which offers additional protection and rigging points, as well as the capability to double-stack two projectors.

A mirror assembly, which enables the projector to be mounted on its end for use in areas with space constraints. A mirror is used to reflect the image.

MultiSync ISS-6020 Video/RGB Switcher

RGB Input Module
Easily handles a wide range of RGB analog sync and signal formats including composite sync, separate horizontal and vertical sync and sync on green.

RGB Output Module
Up to 4 RGB output modules may be installed in the Switcher. This dramatically expands the Switcher's capability to include the functionality of a distribution amplifier.

High Definition Module
Supports RGB or Y. Pb. Pr. analog inputs and HDTV tri-level sync. Note: installation of each High Definition Module requires the use of two slots.

VGA Input Module
Full VGA mode sensing through RGB H/V signal format is a unique feature. For faithful reproduction of VGA or XGA-2 sources this module is mandatory.

Video Input Module
Accepts standard composite video as well as higher-resolution S-Video formats. Like all modules, it accepts stereo audio inputs as well.

Video Output Module
Outputs a standard composite or S-Video signal when a composite or S-Video signal source is selected.

MultiSync HiVid Projector Series Specifications Model #XL3500 and #XL6500

Projection Type
Both models:	3 Chip DMD high light output projector

Projection System
Both models:	3 Chip DMD, 1 lens

Display Orientation
Both models:	Front Floor, Rear Floor, Front Ceiling, Rear Ceiling

Lamp Type
Both models:	Bubble type 1.6 KW Xenon Lamp

Lamp Life
Both models:	1500 hours half light output

Lens Offset
3500 (Manual):	± 150 pixels with zoom lens ± 300 pixels with fixed lens
6500 (Motorized):	± 150 pixels with fixed lens ± 0 pixels with SVGA zoom lenses ± 360 pixels with1.5-2.5/2.5-4.0 XGA zoom lenses ± 200 pixels with 4.0-7.0 XGA zoom lens

Scanning Line Rate/Frame Rate
3500:	H:15–64 kHz, V:30–150 Hz
6500:	H:15–80 kHz, V:30–120 Hz

Resolution
3500:	Native: 848 x 600 pixel; Max: 1024 x 768 scaling
6500:	Native: 1024 x 768 pixel; Max: 1280 x 1024 scaling

Pixel Clock
Both models:	Max: 80 MHz

Picture Size
Both models:	80 – 500 inch diagonal

Light Output
3500:	3500 ANSI lumens (AC 198-264V)
6500:	6500 ANSI lumens (AC 198-264V)

Brightness Uniformity
Both models:	>90%

Contrast Ratio
3500:	250:1 (Full On /Off), 180:1 (ANSI)
6500:	350:1 (Full On /Off)

Input Terminal
Both models:	Fixed terminal: Composite Video (BNC or RCA switchable), RGB, H V/Y, Cr. Cb. (BNC) Y. Pb. Pr., S-Video (S-terminal), YUV, VGA, SVGA, XGA and Mac

Input Signal (Level)
Both models:	RGB signal: 0.7Vp-p 75ohm Positive (BNC) HV sync: 0.7 - 4.0Vp-p (75ohm/1Kohm) Negative or Positive (BNC), Duty 3 - 30% (H-Sync Positive), 70 - 97% (H-Sync Negative) 0.1 - 10% (V-Sync Positive), 90 - 99.9% (V-Sync Negative) Mix sync: 0.7 - 4.0VP-p (75ohm/1Kohm), Negative or Positive (BNC) G sync: 3.0 - 0.6Vp-p 75ohm, Sync. Negative (BNC) Video: 1.0Vp-p 75ohm Sync. Negative S-Video: Y 1.0Vp-p 75ohm Sync. Negative C0, 28Vp-p 75ohm (burst level), (3 mode acceptable), Y Cr. Bg: Y 1.0Vp-p 75ohm Sync Negative, Cr. Cb. 0.7Vp-p 75ohm (Y. Pb. Pr. same)

Video System
Both models:	NTSC , PAL , SECAM , NTSC 4.43, HDTV

Y/C Separate
Both models:	NTSC 3.58: 3 dimension motion adaptive comb filter; PAL: 3 line digital comb filter; SECAM: Trap; NTSC 4.43: Band pass filter

Gray Scale
Both models:	256 level per color (8 bit per color)

Set-up Signal
Both models:	Gray scale signal, Cross hatch signal, All white, All black, Ramp signal, Checkerboard signal

Power supply
Both models:	Typical requirement: AC 200V - 240V; Acceptable: AC 100 - 132V 50/60Hz, AC 198 - 264V 50/60Hz

Power Consumption
Both models:	2.4KW (Max) AC 198 - 264V, 1.2KW AC 100 - 132V

Input Current
Both models:	15A (AC 100 - 132V 50/60Hz) 13A (Max) (AC 198 - 264V 50/60Hz)

Remote Control
Both models:	Wired / Wireless

Remote Control Function
Both models:	Power on/off, Input select, Source/test signal select, Pixel clock adjustment, Divide, Phase, Raster adjustment, H-position, V-position, H-blanking, V-blanking, Display mode select, Video adjustments, Brightness, Contrast, Tint, Color, Sharpness, White Balance (Color temp/black, white), Video mode, Auto, Fix (PAL, SECAM, NTSC 3.58, 4.43), Uniformity adjustments (Edge blending adjustment, White uniformity adjustment), Gamma correction select, Dynamic graphics scaling, Picture zoom and pan, Timer setting, OSD on/off select, Closed caption function, Memory, Lamp running timer, Display orientation

External Control
Both models:	Input select, Power on /off, Mute

PC Control
Both models:	RS-232C/RS-422 switchable

Integrated Light Shutter
3500:	Not applicable
6500:	Standard

Optics Adjustment
3500:	Focus: manual; Lens offset: manual; Zoom: manual
6500:	Focus: motorized; Lens offset: motorized (vertical), manual (horizontal); Zoom: manual

Safety and Regulation
Both models:	UL: Meet UL 1950, CSA: Meet CSA 950, FCC: Meet FCC class A, DHHS, DOC, Meet EMSC Directive, EN55022: Meet (Radiation), EN55082-1: Meet (immunity), EN6055-2: Meet (Disturbance), Meet LCP Directive, EN60950: Meet (Safety)

Environment
Both models:	Temperature: 10° to 40°C, Humidity: 20 to 90% non-condensing, Storage: -10 to 50°C

Cabinet Dimensions (W×H×D)
Both models:	29.55 x 13.79 x 39.40 inches w/o lens, 750 x 350 x 1000 cm w/o lens

Weight
3500:	220 lbs. / 100kg
6500:	238 lbs./ 108kg

Noise
Both models:	59 dB

Optional Accessories
Both models:	Lenses: HVL-1F: fixed, 1.27:1; HVL-3F: fixed, 3.0:1 HVL-5F: fixed, 5.0:1; HVL-7F: fixed, 7.0:1 HVL-1Z: zoom, 1.5:1-3.0:1; HVL-3Z: zoom, 3.0:1-7.0:1 HVL-X1Z: zoom, 1.5:1-2.5:1 HVL-X2Z: zoom, 2.5:1-4.0:1 HVL-X4Z: zoom, 4.0:1-7.0:1 ISS-6020, Video input card, RGB input card IPS4000Q Image Processor

Warranty
All models:	Projector: 1 year parts and labor Lamp: 90 days or 1000 hours

Specifications are the same for both models unless otherwise noted.

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