

LIGHTNING 3D Pro Series II

LIGHTNING 38 sx+ 3D • LIGHTNING 45 sx+ 3D



PERFORMANCE SPECIFICATIONS

Brightness (±10%)

38 sx+ 3D: 20,000 ANSI Lumens
45 sx+ 3D: 30,000 ANSI Lumens

Contrast Ratio (±10%)

1800:1

Display Type

3 x .95" Dark Chip DMD™ with Fast Transit Pixels for smooth greyscale and improved contrast

DMD Specification

1400 x 1050 pixels native, 12° tilt angle

Fill Factor

90%

Sealed Optics at DMD™ Interface

Protects DMD's™ from optical contamination

Source Compatibility

- Composite, s-video, and color difference video standards
- RGB graphics standards up to 1920 x 1080
- DVI standards with HDCP compliance
- High definition RGB and color difference standards
- High definition / standard definition serial digital formats (SD/HD-SDI)

Video Processing

- Enhanced 7 point color correction
- Dual Flash Processing™ increases 60 Hz inputs to 120 Hz displayed output
- FastFrame™ Motion Blur Reduction
- Class leading Video de-interlacing/processing of SD and HD sources using auto 3:2 and 2:2 extraction, ruggedized for editing discontinuities
- Pixel-based motion adaptive interpolation
- User selectable preset, parametric de-gamma and user downloadable de-gamma
- Frame Delay: as low as 1 frame, source dependant
- Auto mode selection - plug and play setup

High Bandwidth Input

- 3D capable
- Pixel Mapped - with low latency
- FastFrame™ Motion Blur Reduction
- 120 Hz with no frame doubling

3D Sync

Sync In - External lock
Sync Out - Shutter glass control

Network Connection

LAN via RJ 45, Wireless 802.11b, full protocol feature set

Lamp Type

Proprietary xenon arc, bubble. Hyper-cooled lamp module with directional-flow reflector mask and radial heat exchanger. Digital Hour meter.

Lamp Life (typical)¹

38 sx+: 750
45 sx+: 500

Lens Mount

Zoom Lenses: Motorized horizontal and vertical lens shift, zoom and focus
Fixed Lenses: Manual focus

Lens Shift (maximum)

Fixed 1.2:1 and Zoom Lenses:
• Vert: +0.5, -0.4 frame; Hor: ±0.2 frame
0.73 Fixed lens:
• Vert: ±0.11 frame; Hor: ±0.07 frame

Lens Options

0.73	:1 fixed	2.02-2.77	:1 zoom
1.2	:1 fixed	2.77-4.51	:1 zoom
1.26-1.61	:1 zoom	4.51-7.53	:1 zoom
1.5-2.02	:1 zoom	7.5-11.2	:1 zoom

- 1.2:1 Lenses include manual aperture
- High-contrast lenses available for 0.73:1 and all zoom lenses

Mechanical Mounting

- Front or rear table; Front or rear ceiling (ceiling mount optional)
- Rugged, staging tolerant chassis with integrated handles
- Optional RapidRig™ frame with integrated pitch, roll and yaw adjustments

Orientation

360° front to back
±15° left to right

Weight (chassis only)

249 lbs (113 kg)

Overview

Digital Projection International (DPI), Texas Instruments' first DLP™ partner and the original innovator of the 3-chip DLP™ projector, proudly introduces the LIGHTNING sx+ 3D family.

Each new LIGHTNING 3D model employs the latest in dark chip, 3-chip DLP™ technology, and include DPI's exceptional RapidRig™ staging and stacking hardware with integrated pitch, roll and yaw adjustments. When considered along with their 20,000 - 30,000 ANSI lumen brightness and contrast performance up to 1800:1, the LIGHTNING 3D models are the perfect imaging solutions for the most demanding large screen immersive applications, including: military simulation, scientific visualization, medical, chemical and geological research, product engineering, commercial cinema and theme park attractions.

In addition to the active 3D capability, the LIGHTNING 3D models also include DP's new FastFrame™ technology, a revolutionary combination of hardware and firmware that vastly reduces the artifacts and image blur typically associated with rapidly moving displayed content. The benefits of FastFrame™ are especially important for simulation environments such as commercial and military flight training, and other applications where maintaining the visual integrity of high-speed imagery is vital.

The LIGHTNING sx+ 3D projectors also incorporate DPI's Hyper-Cooled lamp module, one of our CoolTek™ innovations. Engineered with a proprietary, directional-flow reflector mask and radial heat exchanger, the Hyper-Cooled module dramatically improves projector thermal characteristics and extends reflector life and lumen maintenance. In turn, these operating benefits provide a significant reduction to the long-term cost of ownership, while also enhancing component reliability.

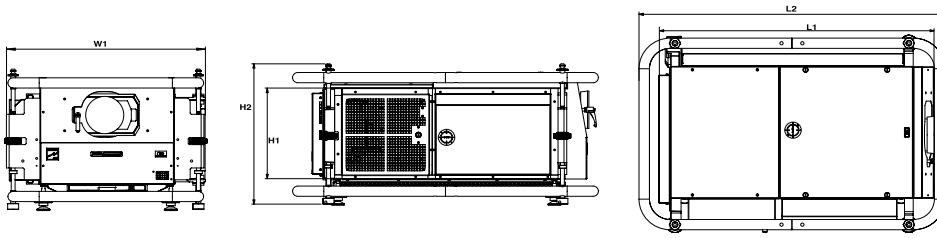
Other key benefits of the LIGHTNING sx+ 3D products include:

- High Bandwidth input > 120Hz active stereoscopic DVI with no need for frame doubling. This capability extends the dynamic range up to 16 bit for improved contrast and color gamut.
- Dual Flash Processing™ (DFP) – Supports users wishing to distribute 3D content via more traditional, 60 Hz formats with the option to frame-double their sources within the projector, via DFP. When this option is selected, the input signal, having been processed and if necessary re-sized to map to the native resolution of the projector, will also be frame-doubled to 120 Hz, and the doubled frames interleaved. This produces imagery with the low flicker characteristics of a native 120 Hz source, but without the infrastructure costs associated with distributing and switching ultra-high bandwidth signals.
- Projector electronics which provide an interface to drive an infrared transmitter to synchronize switching glasses with active displayed frames. The user can elect either to pass through an external synch pulse, or to use the reference generated internally by the projector. Adjustments are provided to accommodate the phase and dead time characteristics of different switching glasses.
- FastFrame™ technology, a revolutionary combination of hardware and firmware that provides user adjustments to vastly reduce the artifacts and image blur typically associated with rapidly moving display content.
- DP's NextGen electronics with class leading video de-interlacing. SD and HD sources are processed using auto 3:2 and 2:2 extraction.
- Minimal video delay from input to screen - as low as 1 frame, depending on source.
- Eight user-selectable inputs including HDCP compliant DVI, plus SD/HD-SDI as standard.
- High bandwidth DVI inputs offer Single, Twin, Dual & Dual Twin DVI connectivity.
- ColorMax calibration capabilities, including enhanced seven-point color correction for broader color space and accurate color alignment.
- DP's CoolTek™ engineering, which delivers the highest lumen performance with the lowest thermal (BTU) and noise level (dB) output.
- Intelligent Lens Mount (ILM) - provides the ability for the user to program up to 10 distinct presets for lens zoom, focus and shift. The ILM presets can be assigned and automatically recalled, by source and input.

LIGHTNING sx+ 3D Pro Series II projectors - ultra-powerful display systems for major 3D events and Immersive large screen applications - bringing the precision of Digital Projection to every venue.

INPUT CAPABILITIES

Type	Connector	Quantity
Composite	BNC	1
S-Video	4-pin mini DIN	1
Component Interlaced/Std def Y, Cr/Pr, Cb/Pb, S	BNCx4	1
Graphics Progressive RGB/Progressive Interlaced Hi def Y, Cr/Pr, Cb/PB	BNCx5	1
RGBHV (Progressive)	D sub (15-pin)	1
Digital RGB	DVI	1
Serial Digital SD/HD-SDI (SMPTE 259M/292M)	BNC	1
DVI - High bandwidth		
Dual - main	DVI	1
Dual - sub	DVI	1



Projector Dimensions

Without Frame			With Frame				
Projector dimensions (in)			Projector dimensions (in)				
L1	40.5	W1 28.5	H1	19.5	L2 43.4	W2 28.1	H2 20.5
Projector dimensions (mm)			Projector dimensions (mm)				
L1	1028	W1 728	H1	495	L2 1116	W2 714	H2 522



ADVANCED TECHNICAL SPECIFICATIONS

PARAMETERS		
Native Color Temperature	6000°K ±500°K; white balance-adjustment: 3000°K to 10000°K	
HDTV Formats Supported	1080i (50Hz, 60Hz), 1080p (24Hz, 25Hz, 30Hz, 50Hz, 60Hz), 1080 24sf, 720p (50, 60Hz), 480i, 480p	
Scan Rates Supported	Inputs 1-7: Horizontal: 15kHz to 100kHz / Vertical: 24Hz to 85Hz - Input 8: 3D progressive 576p up to 1080p @ 120Hz	
Remote Control	Addressable IR remote control, wireless and wired with loop-through / On board invertable keypad	
Automation Control	LAN connection via RJ45 / RS232 9-pin D type	
Operating/Storage Temperature	Operating: 0 to 35°C / Storage: -10 to 50°C /	
Operating Humidity	20 to 80% non-condensing	
Thermal Dissipation	13,640 BTU/hour maximum	15,695 BTU/hour maximum
Fan Noise	Less than 59dBA	
Power Requirements	208-240 VAC, 50/60Hz single phase	
Power Consumption	4000 watts maximum	4600 watts maximum

Projectors

LIGHTNING 38 sx+ 3D
LIGHTNING 45 sx+ 3D

Part

110-659
109-668

Accessories

LIGHTNING Lamp & Housing - Hypercooled
LIGHTNING Refurb Lamp & Housing - Hypercooled
Lamp Exchange
LIGHTNING Lamp & Housing - Hypercooled
LIGHTNING Refurb Lamp & Housing - Hypercooled
Lamp Exchange

Part

103-238
103-238R
103-238E
104-578
104-578R
104-578E

Lenses

0.73:1
1.2:1
1.2:1 (short)
1.26 - 1.61:1
1.5 - 2.02:1
2.02 - 2.77:1
2.77 - 4.51:1
4.51 - 7.53:1
7.5 - 11.2:1

HB Part

105-607
105-608
105-609
109-236
105-610
105-611
105-612
105-613
109-235

Infrared Remote (Replacement)

105-023

1 Based on 4-6 hour/day operational profile. Venue and application conditions may impact actual lamp life. See Digital Projection's Product Warranty Statement for details on lamp warranty.

