



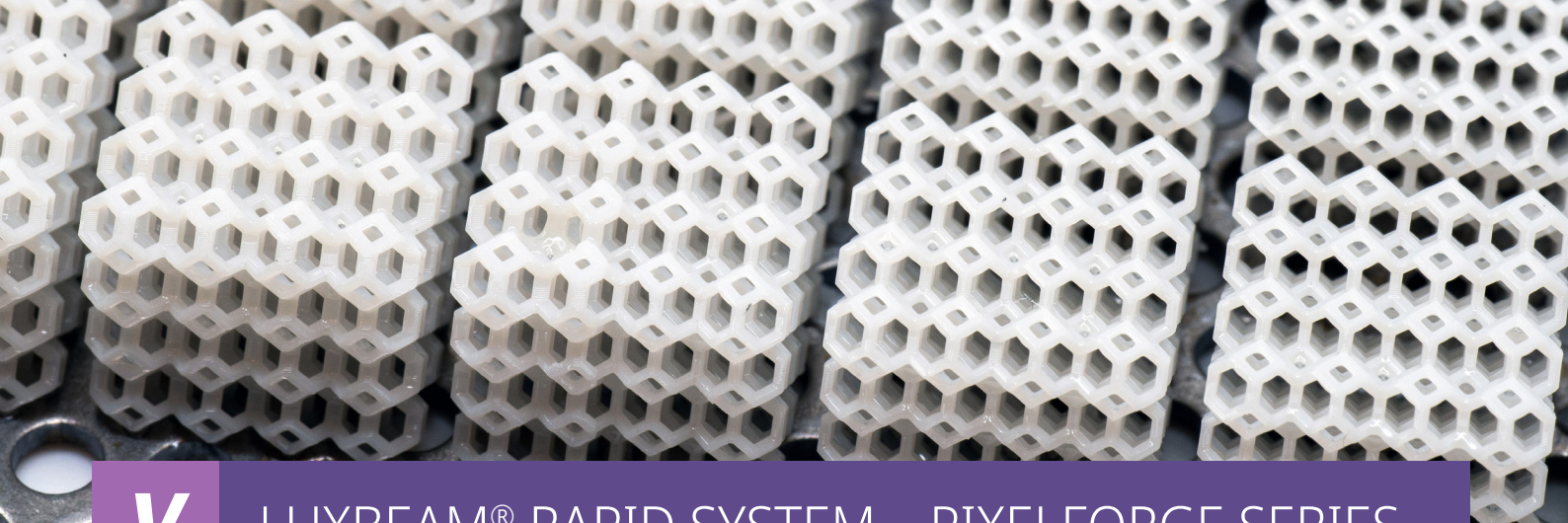
LUXBEAM® RAPID SYSTEM – PIXELFORGE SERIES

UNLOCKING POSSIBILITIES FOR DEMANDING APPLICATIONS — WITH ACTUATED 5K

Build today. Scale tomorrow.

The PixelForge gives innovators and developers a professional starting point for developing and refining their additive manufacturing processes. With an industrial-grade interface, liquid cooling, and precision light control, it's built for those ready to move from concept to implementation — building today what will scale tomorrow.

VISITECH
creating images – together



LUXBEAM® RAPID SYSTEM – PIXELFORGE SERIES

HIGH RESOLUTION

With more than 16 million addressable pixel positions, the DLP®-based stereolithography subsystem is explicitly designed for static implementations in 3D printing and additive manufacturing systems producing the highest resolution parts.

LAMA PLATFORM BENEFITS

Transfer your work to the next tier-level systems, thanks to LAMA. Being the world's smallest WQXGA DLP light engine for AM is not the only benefit of the LRS-PixelForge Series. Advantages of the LAMA software platform, on which it is built, include copying your scripts and settings to other LAMA-compatible systems. The LRS-PixelForge Series comes with an encapsulated optical core and meets the demands of the additive manufacturing world.

OPTIMAL PERFORMANCE

Visitech's proprietary Bifrost S LED light source features advanced power output control to maintain optimal performance. The LRS-PixelForge Series comes with the AM-optimized and fully integrated LAMA Standard software base.

CONSISTENCY

Achieving unit-to-unit consistency between light engines can be challenging, especially in cost-conscious market segments. To ensure consistency, the LRS-PixelForge Series features extensive and detailed product characterization and calibration.

Further cross-platform features include standardization on industrial-grade Ethernet for communication and data transfer, and liquid cooling as the preferred thermal control for maximum power and performance.

The most scalable WQXGA additive manufacturing light engine

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Recommended implementation

- Static stacked configuration

Resolution

- 5433 x 3057 FPSC mode (PixelForge 5K)
- 2716 x 1528 native pixel mode

LED wavelengths

- 460 nm / 405 nm (385 nm upon request)

Optical power output

- Up to 4W (405 nm)

Projection lens options (Native Pixel Pitch in image)

- High contrast: 5.4 µm, 10.8 µm, 20.0 µm, 25.0 µm, 50.0 µm, 70.0 µm
- High throughput: 75.0 µm, 90.0 µm, 130.0 µm
- More options under development
- Options for customized lenses

Platform

- NEOS
- Bifrost S

Electronics

- LUXBEAM® LB6600
- LUXBEAM® LB6700



LRS-PIXELFORGE

When pixel size and dimensional accuracy of your smaller printed parts matter, the LRS-PixelForge's high native pixel resolution of 4 million pixels truly shines.

Depending on your wavelength and cost targets, options with 2716 x 1528 or 5433 x 3057 resolutions are available. When you need larger build area sizes, the LRS-PixelForge offers stackability from 70 micron pixel pitch upwards. Providing easy and seamless integration with machine control software, the LAMA SW eliminates downturns and compromises from USB and video interfacing, such as HDMI or DisplayPort.

OPTION: ACTUATED 5K

The LRS-PixelForge 5K gives you even more addressable pixels and more productivity. With over 16 million addressable pixels (5433 x 3057), you can create larger and finer prints, faster.

Cost-concerned? The LRS-PixelForge is remarkably cost efficient, with a proprietary LED module and free LAMA software that lets you use Visitech's proprietary FPSC mode to customize power and exposure settings for the four subframes. The LRS-PixelForge is the ultimate development subsystem, paving the way for production systems.

STACKING: COMBINE THE OUTPUTS FOR LARGER BUILDS

The LRS-PixelForge Series, and particularly the base model light engine, is well-suited for stacking in a static configuration. The 70 micron (and up) native build field pixel pitch ensures that the combined light engines achieve a smooth surface finish, and is a cost-efficient solution to increase your print productivity for large build field areas.

FULL PIXEL SEQUENCE CONTROL (FPSC MODE) EXPLAINED (SIMPLIFIED VIEW)

The advanced LB6600 controller of the LRS-PixelForge projector provides full control of the data content in the projected subframes, yielding valuable advantages:

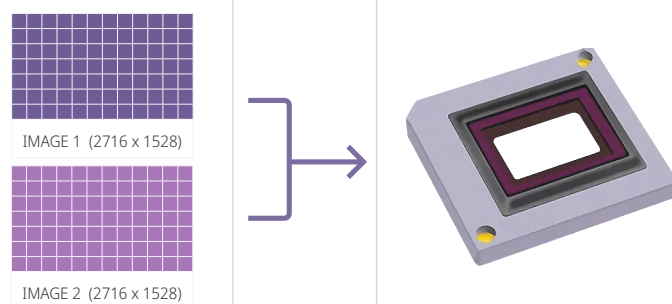
NO RE-SAMPLING ERRORS: The controller uses the exact native resolution of the DMD, which allows pixel-pure exposures. This differs from systems using the original DMD reference controller, designed for UHD video inputs, but requiring data re-sampling.

Re-sampling causes unwanted pixel errors due to input resolution mismatch between the controller and the DMD.

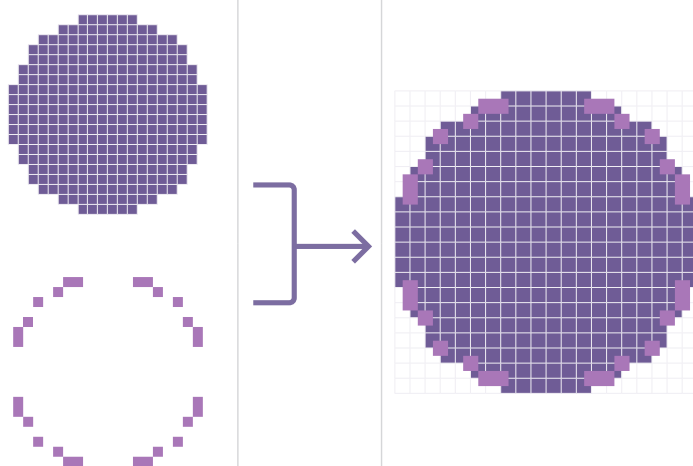
COMPLETE CONTROL OF THE OPTICAL ACTUATOR: You can control actuator positions timewise on every layer, and apply an image offset of 1/2 pixel to generate better resolution of outer contours in each layer, resulting in better surface finish of the printed objects.

FLEXIBLE ARCHITECTURE: Flexible architecture for simple and easy integration with your machine design.

NO RE-SAMPLING: Images feed into the DMD at native resolution



SMOOTH SURFACE: Control actuator positions for each layer



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Properties	
DMD Type	DLP660TE 0.66" WQXGA
Resolution	LRS PixelForge: 2716 x 1528 pixels
	LRS PixelForge 5K: 5433 x 3057 pixels
Operation Mode	LRS PixelForge: Native pixel mode
	LRS PixelForge 5K: FPSC mode with 4-way actuator
Projector Output Power	Up to 4W (405 nm)
LED Options	460 nm / 405 nm (385 nm upon request)
LED Driver	Bifrost S
	Constant Flux with Optical Feedback
Power Uniformity	> 99% after Software Correction
Dimensions w/o Lens	217 mm (H) x 105 mm (W) x 164 mm (L)
Total Weight w/o PSU	4 kg (w/o lens)
Power Consumption	Max 200W
Cooling System	Liquid Cooling
Software	LAMA Standard (included)

Electrical connections	Signal
Power Supply	48 V DC
Image Data	Single Image Pattern Upload with LAMA
Communication	Ethernet
UV / IR Safety	LED Safety Switch (enable/disable)
Frame Sync	External Frame Synchronization

Lens Options			LRS PixelForge		LRS PixelForge 5K	
	Working Distance [mm]	Mounting Distance [mm]	Pixel Pitch in Image [µm]	Native Image Size [mm²] W x H	Pixel Pitch in Image [µm]	Native Image Size [mm²] W x H
PL Compact 1.0 HC	71	162	5.4	14.7 x 8.3	2.7	14.7 x 8.3
PL Compact 2.0 HC	90	162	10.8	29.3 x 16.5	5.4	29.3 x 16.5
PL Compact 3.6 HC	143	149	20.0	54.3 x 30.6	10.0	54.3 x 30.6
PL Compact 4.6 HC	180	194	25.0	67.9 x 38.2	12.5	67.9 x 38.2
PL Compact 9.3 HC	216	281	50.0	135.8 x 76.4	25.0	135.8 x 76.4
PL Compact 13.0 HC	352	415	70.0	190.5 x 107.0	35.0	190.5 x 107.2
PL Compact 14.0 HT L	505	610	75.0	203.7 x 115.0	37.5	203.7 x 114.6
PL Compact 17.0 HT L	532	646	90.0	244.4 x 138.0	45.0	244.4 x 137.5
PL Compact 24.0 HT L	845	955	130.0	353.1 x 199.0	65.0	353.1 x 198.6

All specifications and features subject to change.