

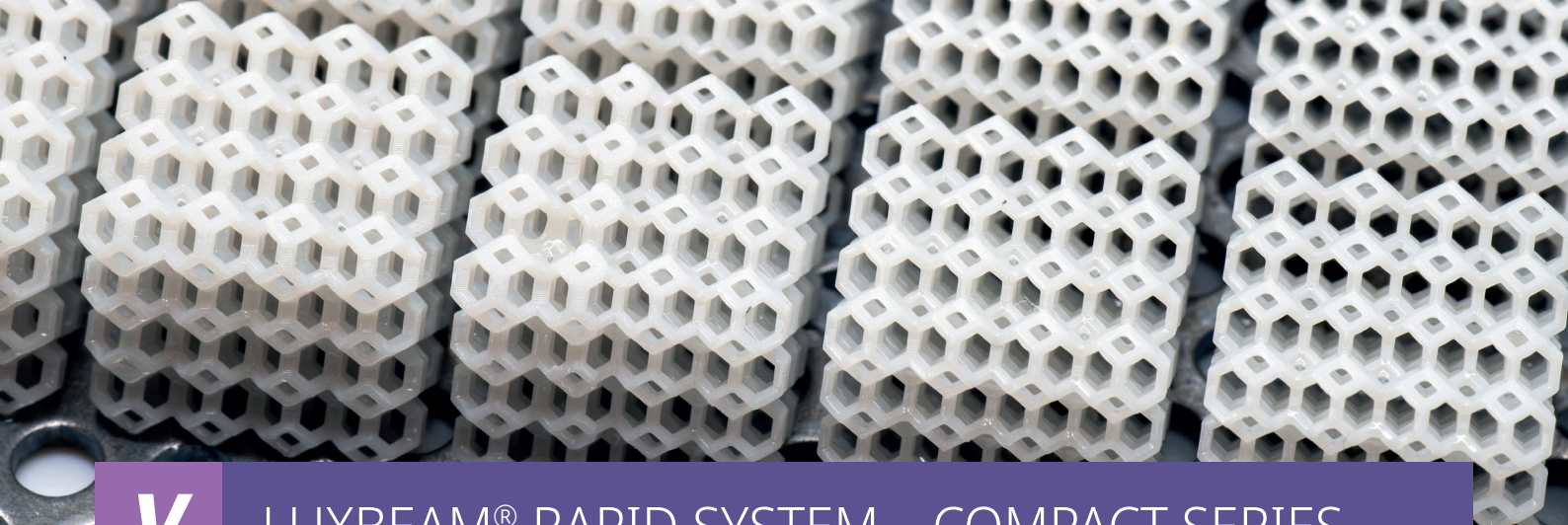


LUXBEAM® RAPID SYSTEM – COMPACT SERIES

MORE THAN 8 MILLION ADDRESSABLE PIXEL POSITIONS

Cost-effective 3D printing performance

For the cost-sensitive desktop 3D print industries, the LRS-Compact Series is essential to achieving superior quality and performance at a competitive cost. The DLP®-based stereolithography subsystem delivers high resolution with 4 million native pixels and implements productivity in its target market segments: Compact professional desktop- and stand-alone additive manufacturing systems.



LUXBEAM® RAPID SYSTEM – COMPACT SERIES

HIGH RESOLUTION

With more than 8 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.

NEOS PLATFORM BENEFITS

Being the world's smallest WQXGA DLP light engine for AM is not the only benefit of the LRS-Compact Series. Advantages of the NEOS platform, on which it is built, include advanced and functional mechanical design – fully aligned with the NEOS design language. The LRS-Compact Series comes with an encapsulated optical core and meets the robustness demands of the 24/7 additive manufacturing world, where more demanding operation schemes may leave bygone rapid prototyping tech struggling.

OPTIMAL PERFORMANCE

Visitech's proprietary Bifrost S LED light source (5th and 6th generation) features advanced power output and optimal performance. The LRS-Compact 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-Compact 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 compact WQXGA additive manufacturing light engine

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Recommended implementation

- High power static stacked configuration

Resolution

- 3840 x 2160 (2260) FPSC mode (Compact Plus)
- 2716 x 1528 (1600) native pixel mode

LED Wavelengths

- 460 nm / 405 nm / 385 nm

Optical Power Output

- Up to 7W (405nm), 6W (385nm)

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-COMPACT

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

Depending on your wavelength and cost targets, DMD options with 2716 x 1528 or 2716 x 1600 resolutions are available. When you need larger build area sizes, the LRS-Compact offers stackability from 60 micron pixel pitch upwards.

Providing easy and seamless integration with machine control software, the LAMA SW eliminates downtimes and compromises from USB and video interfacing, such as HDMI or DisplayPort.

LRS-COMPACT PLUS

The LRS-Compact Plus gives you more addressable pixels and more productivity. With 8 million addressable pixels (3480 x 2160), you can create larger and finer prints faster.

The high power output and increased power density reduces layer exposure time, even on large-build platforms.

Cost-concerned? The LRS-Compact Plus is remarkably cost efficient, with long-lasting LED and free LAMA software that lets you choose between two actuator schemes (Texas Instruments' original XPR or Visitech's proprietary FPSC) to customize your power and exposure settings for the four subframes. The LRS-Compact Plus is the ultimate subsystem for highly productive additive manufacturing.

STACKING: COMBINE THE OUTPUTS FOR LARGER BUILDS

The LRS-Compact 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

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

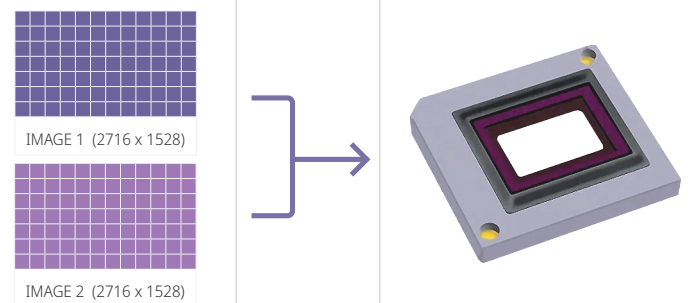
NO RE-SAMPLING ERRORS: The controller uses the exact native resolution of the DMD, which allows pixel-pure exposures. This differs from systems using the original DMD reference controller, designed for UHD video inputs, but requiring data re-sampling.

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

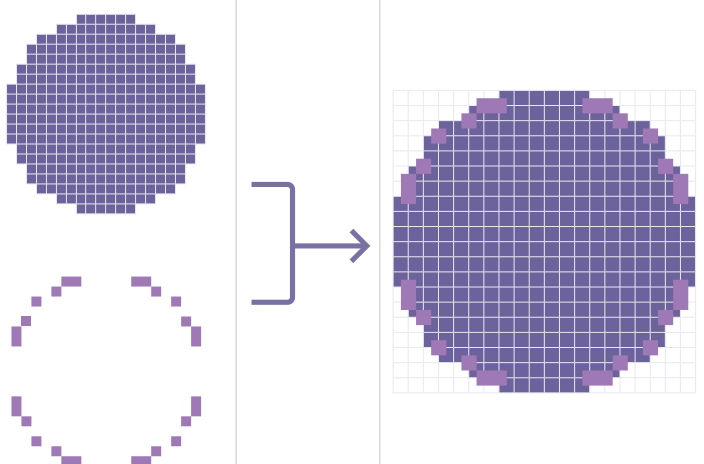
COMPLETE CONTROL OF THE OPTICAL ACTUATOR: You can control actuator positions timewise on every layer, and apply an image offset of 1/2 pixel to generate better resolution of outer contours in each layer, resulting in better surface finish of the printed objects.

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



LUXBEAM® RAPID SYSTEM – COMPACT SERIES

Properties	
DMD Type	DLP660TE 0.66" WQXGA (460/405 nm), DLP670S 0.67" WQXGA (385 nm)
Resolution	Compact: 2716 x 1528 (1600) pixels
	Compact Plus: 3840 x 2160 (2260) pixels
Operation Mode	LRS Compact Plus: FPSC mode / TI XPR mode with 4-way actuator
	LRS Compact: Native pixel mode
Projector Output Power	Up to 7 W (405 nm), 6 W (385 nm) (depending on lens selection)
LED Options	460 nm / 405 nm / 385 nm
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	Pixel Pitch in Image [µm]	Native Image Size [mm²]		Working Distance [mm]	Mounting Distance [mm]
		W x H			
PL Compact 1.0 HC	5.4	14.7	x 8.3	71.0	162
PL Compact 2.0 HC	10.8	29.3	x 16.5	90.0	162
PL Compact 3.6 HC	20.0	54.3	x 30.6	148.0	154
PL Compact 4.6 HC	25.0	67.9	x 38.2	180.0	195
PL Compact 9.3 HC	50.0	135.8	x 76.4	224.0	288
PL Compact 13.0 HC	70.0	190.1	x 107.0	350.0	411
PL Compact 14.0 HT	75.0	203.7	x 114.6	500.0	611
PL Compact 17.0 HT	90.0	244.4	x 137.5	524.0	646
PL Compact 24.0 HT	130.0	353.1	x 198.6	832.0	952

All specifications and features subject to change.