

LUXBEAM® RAPID SYSTEM – LRS 8KA LASER 405

THE STATIC SUPERPOWER FOR PRODUCTION-SCALE ADDITIVE MANUFACTURING

Grow your output, keep your resolution

A single static light engine puts over 35 million addressable pixels at your command across the full build area, so the part in the corner matches the part in the center. More than 30 W of in-image power, the highest in the industry, cures that area at production speed: the static superpower you need to scale production without added complexity.

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Power, resolution, and ultimate pixel control in additive manufacturing

WHEN PERFORMANCE MATTERS

The LRS 8KA is Visitech's latest projection system for additive manufacturing. Built around a native 4096 × 2176 DMD, advanced UV optics, and a proprietary optical actuator, it delivers more than 35 million pixel positions while maintaining the precision and stability of a true native 4K architecture.

Designed for demanding additive manufacturing systems, the LRS 8KA Laser supports a wide range of projection lenses, allowing machine builders to optimize build size, resolution, and throughput for their specific application.

Visitech's proprietary laser diode light source arrives fully integrated, pre-aligned, and factory-calibrated, reducing integration effort and ensuring consistent performance over time.

WHY A SINGLE LASER MODULE?

At the heart of the LRS 8KA Laser 405 is a laser module that generates more than 30 W of optical power in a single integrated unit.

Visitech ships every module pre-aligned, factory-calibrated, and ready for integration. When service is required, operators can replace the field-serviceable module and return the system to production without rebuilding or recalibrating the optical system.

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Recommended implementation • Single-engine or dual-engine stacked configuration
Resolution • 4096 x 2176 (native pixel mode) • 8192 x 4352 (XPR mode)
Laser Module Wavelengths • 405 nm
Optical Power Output • More than 30 W
Projection Lens Options • Standard PLs with MAG 9.3x, 13.9x and 37.0x • More options under development • Options for customized lenses available
Platform • NEOS • Laser Module 405 nm
Electronics • LUXBEAM® LB9800

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Powering higher productivity

Higher UV power reduces layer exposure time and helps increase print speed. At the same time, the high effective resolution allows larger build fields, finer detail, and smoother part surfaces. For even larger systems, two LRS 8KA Laser engines can be stacked while maintaining high precision across the build area. A simpler architecture translates into multiple production benefits:

Large Build Areas from a Single Engine

Covering a large build area at full resolution usually means stacking and stitching multiple projectors. The LRS 8KA Laser 405 delivers the equivalent of four actuated 4K projectors. A single full-frame image eliminates complex image slicing, edge blending, and compensation. A single Ethernet connection replaces four graphics cards, four HDMI, and four USB connections. The result is lower hardware complexity and improved system robustness. That single difference removes a chain of downstream challenges.

Uniform Quality across the Entire Area

Over 35 million effective pixel positions deliver 99% power uniformity; every pixel is exposed at the same resolution and with highly consistent intensity across the large build platform.

Less to Cool, Less to Plumb

A single engine instead of four means far less to cool: lower chiller capacity, simpler hose routing, less thermal load to design into your system.

Field Service without the Rebuild

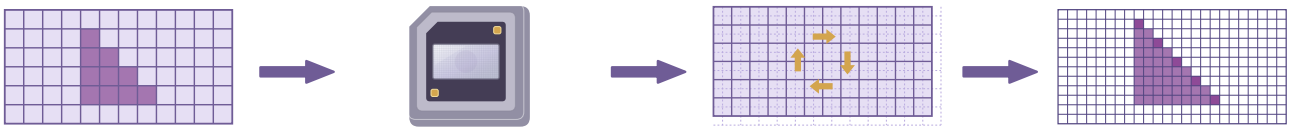
When the laser needs replacing, technicians can replace the field-serviceable laser module without dismantling a projector stack or recalibrating the optical system. Service is simpler, and the machine returns to production sooner.

AM-optimized Software

The LRS 8KA includes LAMA™, built specifically for additive manufacturing. Virtual projectors allow engineers to develop and validate software before hardware is available, reducing integration effort and shortening time-to-market.

XPR MODE – FROM NATIVE 4K TO 8K SUPERRESOLUTION

The LRS 8KA Laser 405 starts with a genuine native 4K DMD and uses XPR mode to address over 35 million pixel positions – 8K superresolution from a single light engine.



Native 4K: LAMA software loads the original 4096 x 2176 pixel image	**DMD:** A 0.98-inch DMD and its controller process the 4K frame for 8K superresolution	**XPR:** Shifts the processed image to four half-pixel diagonally offset positions	**8K:** The four offset pixel positions generate 8192 x 4352 pixel superresolution

RESULT: Over 35 million addressable positions.

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Properties	LRS 8KA Laser 405
DMD Type	0.98" TRUE 4K
Resolution	8192 x 4352 pixels (4096 x 2176 native)
Operation Mode	TI XPR mode
Projector Output Power	More than 30 W of Laser Power at 405 nm
Laser Options	405 nm
Laser Driver	LRS Laser Module 405 nm
	Constant Flux with Optical Feedback
Power Uniformity	> 99% after Software Correction
Contrast Ratio	Up to 1000:1
Dimensions w/o Lens	132 mm (H) x 260 mm (W) x 324 mm (L, 342 mm w/ mounting tabs)
Total Weight	11,4 kg (w/o lens and PSU)
Power Consumption	600 W
Cooling System	Liquid Cooling
Software	LAMA (included)

Electrical Connections	Signal
Power Supply	48 V DC
Image Data	Single Image Pattern Upload with LAMA
Communication	Ethernet (platform independent web interface)
UV / IR Safety	Laser Safety Switch (enable/disable)
Frame Sync	External Frame Synchronization

Lens Options	LRS 8KA Laser 405				
	Native Pixel Pitch in Image [µm]	Actuated Pixel Pitch in Image [µm]	Native Image Size W x H [mm²]	Mounting Distance [mm]	Working Distance [mm]
PL LRS 8KA L 9.3	50.0	25.0	204.8 x 108.8	494	319
PL LRS 8KA L 13.9	75.0	37.5	307.2 x 163.2	634	470
PL LRS 8KA L 37.0	200.0	100.0	819.2 x 435.2	861	697

All specifications and features subject to change.



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