



LUXBEAM® RAPID SYSTEM – LRS-WQ SERIES

A FAMILY OF THREE POWERFUL SUBSYSTEMS

Maximum power for static 3D print systems

The LUXBEAM® Rapid System LRS-WQ is a DLP®-based stereo lithography subsystem specifically designed for professional 3D printing and additive prototyping/manufacturing systems.

VISITECH
creating images – together



LUXBEAM® RAPID SYSTEM – LRS-WQ SERIES

EMPOWERING PROFESSIONAL 3D PRINTING SYSTEMS

Based on the robust and reliable high-resolution DLP9000 WQXGA chip, the LRS-WQ series ensures lifetime durability with low maintenance costs. While the entry-level version is air cooled, the top performing versions come with liquid cooling – particularly beneficial in certain applications requiring maximum stability. Liquid cooling further stabilizes the LED light source, allowing it to perform at even higher power, making the LUXBEAM® LRS-WQ DL LC the most powerful UV LED projection module available.

LONG LASTING PERFORMANCE

The LRS-WQ light engine series is a robust, proven, and reliable plug-and-play module system. With integrated CPU and industry-standard ethernet communication interface, the light engines provide advanced internal communication, status monitoring communication, status tracking and other logging features.

COMPACT DESIGN

As the most compact projector in its class, the LRS-WQ light engine enables machine builders to achieve space-saving machine footprints.

Specifically designed for professional 3D printing and static additive manufacturing & prototyping systems, the LRS-WQ series consists of three product versions. Each version offers unique beneficial features in terms of power, ranging from 4W to a massive 12.5W for the Dual LED Liquid Cooled version. All share the same compact cabinet size, allowing easy swapping.

A DLP®-based stereolithography subsystem, ideal for high-power static configurations

LUXBEAM® RAPID SYSTEM – LRS-WQ

Recommended implementation

- High power static configuration

Resolution

- 2560 x 1600 WQXGA

LED Wavelengths

- 460 nm / 405 nm / 385 nm / 365 nm

Optical Power Output (depending on configuration)

- DL: Up to 12.5 W with Dual LED power boost
- LC: Up to 9 W (405 nm), 7 W (385 nm), 5 W (365 nm)
- AC: Up to 8 W (405 nm), 6 W (385 nm), 4 W (365 nm)

Projection Lens Options

- 0.25x / 0.5x / 1.0x / 2.0x
- 3.7x / 4.6x / 5.6x / 8.3x
- 9.9x / 11.7x / 17.3x
- 5.3x (VIS only)

Electronics

- Luxbeam™ LB9000 Controller Board
- Integrated CPU with Web Interface
- Visitech LED driver



LRS-WQ SL AC SINGLE LED AIR COOLED

The air-cooled single-LED LRS-WQ version allows up to 8 W of LED power output, depending on LED selection.

Configurable with numerous imaging lenses at different magnifications, the system provides from 1,9 micron native pixel pitch – up to 130 micron in image, corresponding to an A4-sized build area.

Configurations are compatible with the other versions in optics, mechanics, and electronics software implementations through a robust network ethernet interface for system control and monitoring.

LRS-WQ SL LC SINGLE LED LIQUID COOLED

Liquid cooling unleashes the true power of the LRS-WQ. With up to 9 W of UV light power in image, it has more power than any other single LED UV projector in the market. This makes it perfectly suited for static 3D printers with large build sizes.

The main advantage of liquid cooling is improved temperature control of the LED light source, enabling higher efficiency – thereby achieving higher UV power. In addition, it gives you vibration-free operation, which improves image stability and print quality.

When configured with small magnification lenses, this stable system is particularly well-suited for micro 3D printing.

LRS-WQ DL LC DUAL LED LIQUID COOLED

The Dual LED Liquid Cooled version further raises the bar for UV projectors, with unparalleled performance of up to 12,5 W of UV light power in image.

It provides the best image performance and power throughput in near-UV wavelengths. The Dual LED system has two configuration options:

- **POWER BOOST OPTION:** Combined LED operation for maximum power output with two LEDs with narrow offset in peak wavelengths
- **DUAL LED OPTION:** Independent LED operation using two distinct wavelengths, like for specific photochemical processes

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Properties						
Projector Output Power	WQ SL AC		WQ SL LC		WQ DL LC	
					Power boost	Dual LED
	4 W (365 nm)	5 W (365 nm)	Up to 12.5 W for LED combinations at 385/395 nm or 395/405 nm	365 + 405 nm 385 + 405 nm 405 + 460 nm Other configurations upon request		
	6 W (385 nm)	7 W (385 nm)				
8 W (405 nm)	9 W (405 nm)					
Cooling system	Air cooling (internal fan)		Liquid Cooling (external)		Liquid Cooling (external)	
Power consumption	250 W (varies with exposure scheme)			500 W (varies with exposure scheme)		
Features	Video signal (VPM) or single picture mode (POFT) with external frame synchronization					
	Light intensity regulation (optical feedback)					
DMD Type	DLP9000 0,9" WQXGA					
Resolution	WQXGA 2560 x 1600 px					
Operation mode	Video Pattern Mode (VPM), Picture On The Fly (POTF)					
Contrast ratio	ON / OFF: Up to 1500:1					
	ANSI: Up to 500:1					
Dimensions w/o lens	245 mm (L) x 282 mm (W) x 128 mm (H)					
Total weight w/o PSU	5 kg (w/o lens and PSU)					
Software	Complete API (Windows, Linux), platform-independent web interface					

Electrical connections	Signal
Power supply	12 V DC power supply
Video Data	HDMI or Ethernet (depending on operating mode)
Communication	Ethernet (platform independent web interface)
LED Safety Switch	LED enable/disable
Electrical Sync In and Out	Interface for external frame synchronization, BNC

Lens Options	Magnification	Working Distance [mm]	Pixel Pitch in Image [μm]	Native Image Size [mm ²]
LRS-03	0.25 : 1	16	1.9	4.8 x 3.0
LRS-05	0.5 : 1	50	3.9	9.7 x 6.0
LRS-10	1.0 : 1	71	7.6	19.4 x 12.1
LRS-20	2.0 : 1	90	15.1	38.7 x 24.2
LRS-40	3.7 : 1	125	28.0	71.7 x 44.8
LRS-50	4.6 : 1	178	35.0	89.6 x 56.0
LRS-90n	8.3 : 1	375	63.0	161.3 x 100.8
LRS-107	9.9 : 1	493	75.0	192.0 x 120.0
LRS-126n	11.7 : 1	575	90.0	230.4 x 144.0
LRS-187	17.2 : 1	884	130.0	332.8 x 208.0
LRS-57 VIS	5.3 : 1	161	40.0	102.4 x 64.0

All specifications and features subject to change.