

LUXBEAM® RAPID SYSTEM – LRS-MC_x HD

SCALABLE SUBSYSTEM FOR LARGE BUILD AREAS

Highest productivity through scrolling

The LUXBEAM® Rapid System LRS-MC_x HD is specifically designed for high throughput implementations in 3D printing and additive manufacturing systems, with static or scrolling configurations using two or more projectors.

VISITECH
creating images – together



LUXBEAM® RAPID SYSTEM – LRS-MC_x HD

The LUXBEAM® Rapid System LRS-MC_x HD is designed to drive performance of UV-SLA light engines to the peak. A narrow footprint enables stackability of modules with stitched images down to 50 micron pixel pitch. In a scrolling dynamic configuration, this allows for highest manufacturing throughput with a single pass linear motion system. Special alignment features grant pixel precise alignment of the modules and features the same robust and reliable high resolution DLP9500/DLP9500 UV chipset. The liquid-cooled modules offer long lifetime and ultimate performance.

STACKED HEADS FOR BEST PRODUCTIVITY

The LRS-MC_x UV module is a stackable and configurable system, specifically designed for static and scrolling multihead implementations in Additive Manufacturing systems. A typical implementation comprises at least two projection modules on a linear stage system. Standard configurations include LEDBEAM™ UV LED light source, Multi-LED light sources are considerable. The UV-optimized optical system provides optimized power output for N-UV light sources. Multiple lens options support a wide scalability.

SUPERB PRODUCTIVITY ILLUSTRATED

A simple calculation illustrates the system's productivity:

- Four stacked light engines, using LRS-50 projection lenses, deliver a stitched image that is 380 mm wide, with 7.620 pixels horizontal.
- A 700 mm scroll range allows for an image length of 650 mm, corresponding to 13.000 pixels vertical.
- Print time per layer will depend on material sensitivity. Still, estimates show that the productivity of a single setup with a 4-head subsystem corresponds with that of 128 static desktop machines at the same pixel pitch.

Achieve the highest productivity from a single subsystem by stacking and scrolling

LUXBEAM® RAPID SYSTEM – LRS-MC _x HD
Recommended implementation <ul style="list-style-type: none">• Multihead scrolling systems
Resolution <ul style="list-style-type: none">• 1920 x 1080, (UV/VIS)• 1920 x 1200 WUXGA (VIS)
LED Wavelengths <ul style="list-style-type: none">• R, G, B• 405 nm / 380 nm / 365 nm
Optical Power Output <ul style="list-style-type: none">• Up to 9 W (with 405 nm), 7 W (with 385 nm), 5 W (with 365 nm)
Projection Lens Options <ul style="list-style-type: none">• 3.7x, 4.6x, 5.6x, 8.3x• 9.9x, 11.7x, 17.3x• 5.3x (VIS only)• Upon request: 0.25x, 0.5x, 1.0x, 2.0x
Electronics <ul style="list-style-type: none">• LUXBEAM® LB4600 Controller Board (LRS-MC_x V1)• LUXBEAM® LB4800 Controller Board (LRS-MC_x V2)• Visitech LED driver





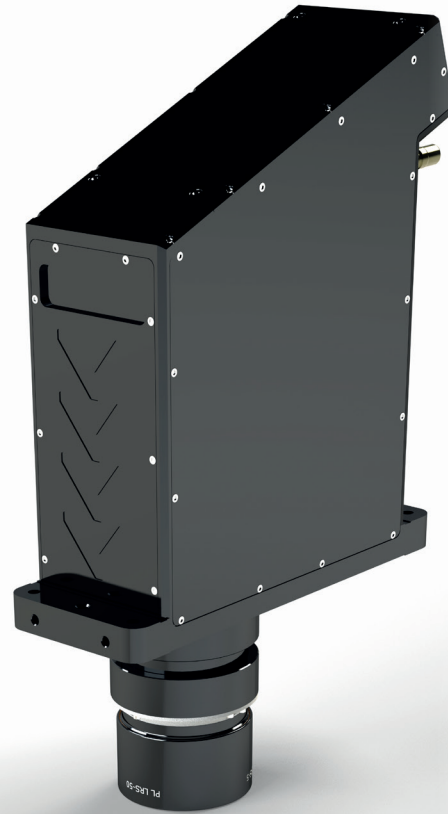
LRS-MC_x HD V1

The initial product version comprises Visitech's proprietary LUXBEAM® LB4600 controller. With its versatile API, it offers the largest flexibility to integrate the light engines with any motion controller of choice.

LRS-MC_x HD V2

The new V2 version of LRS-MC_x HD is equipped with the advanced LUXBEAM® LB4800 controller. In its basic configuration, the LAMA STANDARD software package and API demands for configuration with dedicated motion controller to enable maximum performance and full functionality. The 10G bandwidth even allows for streaming.

The LAMA PRO software version provides access to advanced operation modes, including sub-pixelation (improved surface finish) and edge blending for perfect stitching.



LUXBEAM® LRS-MC_x MOTION STAGE: PLUG-AND-PLAY SOLUTION FOR MULTIHEAD SCROLLING

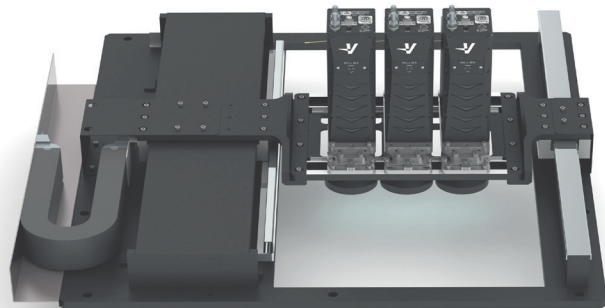
ENLARGING THE BUILD AREA

While introducing multi-head scrolling as the most advanced solution for scaling up 3D print stereolithography systems productivity, Visitech adds a plug-and-play reference stage to its portfolio. It is designated for expert static 3D print machine developers and manufacturers, who will find that the LRS-MC_x motion stage opens for new business opportunity exploration. Implementing scalable motion systems allows for enlarged build areas.

FLEXIBLE MOTION STAGE PLATFORM

Designed for installation in bottom-up and top-down configurations, the motion stage rooms up to four LRS-MC_x photoheads.

A wide projection lens selection enables various configuration options, allowing for seamless stitching of native images – with pixel pitch as small as 50 microns. The flexible platform of the motion stage is suitable for UV stereolithography and works equally well in polymer-based Powder Bed Fusion installations.



Scroll Range • 700 mm	Clearance • 500 mm			
Scroll Speed • 300 mm/sec	Software • Luxbeam® Additive Manufacturing Application (LAMA)			
Configuration with lens	Number of Photoheads	Pixel Pitch in Image (µm)	Total Pixel count	Total Build size (mm ²)
LRS-MC _x -HD-UV/HY with LRS-50	4	50	12.920 x 7.620	646 x 381
LRS-MC _x -HD-UV/HY with LRS-90n	3	90	6.700 x 5.077	603 x 457
LRS-MC _x -HD-UV/HY with LRS-107	2	107	5.457 x 3.831	584 x 410
LRS-MC _x -HD-UV/HY with LRS-126n	2	126	4.476 x 4.182	564 x 527
LRS-MC _x -HD-UV/HY with LRS-187	2	187	2.663 x 3.443	498 x 644

LUXBEAM® RAPID SYSTEM – LRS-MCx HD

Properties	
DMD Type	DLP9500 0,95" 1080p HD
Resolution	1920 x 1080 px
Projector Output Power	Up to 9 W (with 405 nm) / 7 W (with 385 nm) / 5 W (with 365 nm)
LED Options	R, G, B, 405 nm / 380 nm / 365 nm
LED Driver	Constant flux with Optical Feedback or Fixed Current
Power Uniformity	> 90% native
Dimensions w/o lens	270 mm (H) x 94 mm (W) x 230 mm (L)
Total weight w/o PSU	4 kg
Power consumption	150 W (typical)
Cooling system	Liquid cooling (water)
Software	Complete API (Windows, Linux), platform independent web interface

Electrical connections	Signal
Power supply	12 V DC
Gigabit Ethernet	1000BASE-T (IEEE 802.3)
Communication	Ethernet (platform independent web interface)
LED Safety Switch	LED enable/disable
Electrical Sync I/O	RS 485
Optical sync I/O	820 nm multimode fiber

Lens Options	Magnification	Working Distance [mm]	Pixel Pitch in Image [µm]	Native Image Size [mm ²]					
				W x H [HD]		W x H [WU]			
LRS-03 UV	0.25 : 1	16.0	2.7	5.2	x	2.9	5.2	x	3.2
LRS-05 UV	0.5 : 1	50.0	5.4	10.4	x	5.8	10.4	x	6.5
LRS-10 UV	1.0 : 1	71.0	10.8	20.7	x	11.7	20.7	x	13.0
LRS-20 UV	2.0 : 1	90.0	21.6	41.5	x	23.3	41.5	x	25.9
LRS-40 UV	3.7 : 1	147.5	40.0	76.8	x	43.2	76.8	x	43.2
LRS-50 UV	4.6 : 1	177.8	50.0	96.0	x	54.0	96.0	x	60.0
LRS-90n UV	8.3 : 1	375.0	90.0	172.8	x	97.2	172.0	x	108.0
LRS-107 UV	9.9 : 1	493.0	107.0	205.4	x	115.6	205.4	x	128.4
LRS-126n UV	11.7 : 1	575.0	126.0	242.9	x	136.1	241.9	x	115.2
LRS-187 UV	17.3 : 1	884.0	187.0	359.0	x	202.0	359.0	x	224.4
LRS-57 VIS	5.3 : 1	161.0	57.0	109.4	x	61.6	109.4	x	68.4

All specifications and features subject to change.