

Luxo Microscope Product Line

THE MARKET LEADER IN MAGNIFICATION FOR OVER 70 YEARS



TRINOCULAR SYSTEMS

Luxo's microscope product line is designed with today's high-tech manufacturing environment in mind. The breadth of the product line meets numerous application requirements from inspection to assembly to rework. Inspection operators will appreciate the magnification range and ergonomic features of the microscope systems, while assembly and rework technicians will enjoy the greater working distances and versatility of the digital imaging systems.

All Luxo microscope models feature high quality achromatic lenses with anti-reflective coatings for superior visual clarity. Optional eyepieces and accessory objective lenses can be added to microscopes to provide a wider range of magnification powers. A choice of lighting sources and mounting options enable the product set-up best suited for each individual application. Digital imaging systems are configurable to allow capturing of images to catalog or share inspection results and observations, for archiving or communicating electronically. The end result is increased productivity with an easy-to-use product line.



23719RB-LCD



23719RB-USBSR

23718RB-LCD, System 373RB-FLXLCD: Includes Trinocular S-Z Microscope, Dual Boom Ball-Bearing Stand, FL-Ring Light, 1/2" CCD Camera, Video Adapter with 0.5X Lens and 15" Flat Panel LCD Color Monitor.

23718-LCD, System 373-FLXLCD: Same as 23718RB-LCD except with a single boom stand.

23719RB-LCD, System 373RB-RLIXLCD: Includes a Trinocular S-Z Microscope, Dual Boom Ball-Bearing Stand, Fiber Optic Illuminator with Ring Light, 1/2" CCD Camera, Video Adapter with 0.5X Lens and a 15" Flat Panel LCD Color Monitor.

23719-LCD, System 373-RLIXLCD: Same as 23719RB-LCD except with a single boom stand.

23719RB-USBSR, System 373RB-RLIXUSBSR: Includes a Trinocular S-Z Microscope, Dual Boom Ball-Bearing Stand, Fiber Optic Illuminator with Ring Light, Video Adapter with 0.5X Lens and USB 2.0 STD Camera.

23719-USBSR, System 373-RLIXUSBSR: Same as 23719RB-USBSR except with a single boom stand.



23712



23712RB

23711RB, System 273RB-RLI: Includes a Binocular S-Z Microscope, Dual Boom Ball-Bearing Stand and Fiber Optic Illuminator with Ring Light.

23711, System 273-RLI: Same as 23711RB except with a single boom stand.

23712RB, System 273RB-FL: Includes a Binocular S-Z Microscope, Dual Boom Ball-Bearing Stand and Fluorescent Ring Light.

23712, System 273FL: Same as 23712RB except with a single boom stand.

23713RB, System 273RB-DGI: Includes a Binocular S-Z Microscope, Dual Boom Ball-Bearing Stand with Fiber Optic illuminator and Dual Gooseneck.

23713, System 273-DGI: Same as 23713RB except with a single boom stand.

23714RB, System 273RB: Includes a Binocular S-Z Microscope, Dual Boom Ball-Bearing Stand. Lighting sold separately.

23714, System 273: Same as 23714RB except with a single boom stand.

23726RB, System 273RB-LED: Includes a Binocular S-Z Microscope, Dual Boom Ball-Bearing Stand and LED Ring Light.

23726, System 273-LED: Same as 23726RB except with a single boom stand.

23727RB, System 273RB-DMLED: Includes a Binocular S-Z Microscope, Dual Boom Ball-Bearing Stand and Dimmable LED Ring Light.

23727, System 273-DMLED: Same as 23727RB except with a single boom stand.



23711RB



23714RB

MICROSCOPE BODIES, EYEPIECES AND ACCESSORY LENSES

Optional Eyepieces and Objective Lenses

Choose from an assortment of super widefield eyepieces to meet specific magnification needs. In addition to 10X eyepieces, standard with any microscope body or microscope system – System 273 or 373 models – optional widefield eyepieces are also available in pairs of 15X, 20X and 30X. For a complete listing of all eyepiece and objective lens combinations, including total magnification power, field of view and working distances, refer to the Microscope Optics table on the back page.

P/N	Description
23750	0.5X Reducing Lens 23mm
23736	0.7X Reducing Lens 23mm
23766	1.0X Cover Shield 23mm
23754	2.0 Amplifying Lens 23mm
23758	Eyepiece/ 10X Pair 23mm
23760	Eyepiece/ 15X Pair 23mm
23762	Eyepiece/ 20X Pair 23mm
23763	Eyepiece/ 30X Pair 23mm

Note: Optics Data on Microscopes and Lenses shown on Back Page.



Widefield Eyepieces



Accessory Lens

Microscope Bodies

All Luxo microscope bodies have heavy-duty aluminum housings and come with 10X, 23mm super wide-field eyepieces and eyeshields. The microscopes rotate 360° in the focus mount. Stereo-Zoom (S-Z) models are available in Binocular and Trinocular versions with the zoom range being .7 – 4.5 giving magnification of 7X – 45X. The zoom ratio is 7:1 and the zoom is adjusted via dual graduated control knobs. 23mm models offer 25% greater magnification and 20% greater working distance.



23700

MOUNTING OPTIONS



23730RB, this Dual Boom Ball-Bearing Stand features a 26" stainless steel horizontal boom extension (limited to 24" when used with a System 373 model) and a 17 $\frac{1}{2}$ " vertical boom mounted to a 10" x 10" die-cast base. Ball-bearing design allows fluid horizontal extension of the boomstand. The focus mount angles to 45° to permit additional viewing and inspection perspectives.



23730, this Boom Stand features a 10" x 10" base weighing 22 $\frac{1}{2}$ pounds with built-in contoured grips to make moving it easier. Its vertical column is 17 $\frac{1}{2}$ " and the horizontal arm extends a total of 26". The final 2 $\frac{1}{2}$ " inches of horizontal extension is accomplished via control knobs at the end nearest the focus mount. The knobs move a metal bar on a rack-and-pinion track connected to the drop post/focus mount to provide this extension. A setscrew extends through the bottom of the block into a groove on the horizontal arm to keep the microscope from accidentally rolling over, even when the retaining knob remains loose. The focus mount angles to 45° to permit additional viewing and inspection perspectives.



23731RB, this model has the same features as the 23730RB Dual Boom Ball-Bearing Stand except it comes with a heavy-duty clamp mount instead of a base. 26" stainless steel horizontal and 17 $\frac{1}{2}$ " vertical boom extensions. Clamp opens to 4" wide to attach to workstations or bench edges.



23731, this model has all the same features as the 23730 Boom Stand except it comes with a heavy-duty clamp mount instead of a base. Clamp opens up to 4" wide to attach to workstations or bench edges.



23732, the Articulating Arm Stand has a heavy-duty mount that opens up to 4" wide to mount to workstations or bench edges. The horizontal reach is over 36" when fully extended (measured from vertical post to the middle of microscope body) and its maximum clearance is 14" above the worksurface. This is one stand that truly frees valuable bench space and still gets the microscope out where it's needed for assembly and rework.



23733, an illuminated stand used for viewing small objects. Two independently controlled light sources. A dimmable 10-watt halogen light is focused on the subject and a 5-watt compact fluorescent lamp provides back lighting from underneath through a translucent medium. Base of stand is 11 $\frac{1}{2}$ " wide by 11 $\frac{1}{2}$ " deep, the vertical post is 11" high (measured from surface to top of vertical post).



23734, a stand for viewing small objects when an independent light source (not included) is used. Base of stand is 6 $\frac{1}{2}$ " wide by 9 $\frac{1}{2}$ " deep. Overall height is 11" measured to the top of the vertical post. Base of stand is 11 $\frac{1}{4}$ " wide by 11 $\frac{1}{2}$ " deep. Overall height is 11" high measured to the top of the vertical post.

LIGHTING OPTIONS FOR MICROSCOPES



18742, Fluorescent Ring Light provides full illumination with a powerful 17-watt, 5600° Kelvin lamp. A durable powder-coated, metal housing protects the fluorescent lamp, and has a rated lamp-life of 4,500 hours. Plug-in ballast (polarized plug) included.



18744, LED Ring Light maximizes light output and distribution while preventing harmful glare and reflections. Its modular construction and brilliant 40 LED display makes this ring light ideal for the inspection of surface cracks and defects. Pure-white LED lights have a 50,000 hour lumen maintenance (lamp life). 6000°K color temperature is perfect for lead free inspection and a removable/replaceable diffuser allows for easy cleaning.



LFOD150, Fiber Optic Illuminator features a dimmable 150-watt halogen light source and has a choice of light transmitters (see below). A dimmer switch enables an operator to select the exact amount of light desired. Even for sensitive jobs, such as wire bonding or soldering of fine-pitch components, it delivers plenty of light. The LFOD150 can be placed on the worksurface in its conventional position, facing the operator, or, since there are “rubber feet” on its back, placed in a vertical position to occupy an even smaller footprint.



LFORL-CR, Fiber Optic Ring Light, with its continuous ring, is the most popular light transmitter. The ring light housing encases high-quality glass fibers to provide 360° shadow-free uniform illumination that makes viewing of inspection and assembly applications a snap. Its 36” length cable, made with interlocking stainless steel sheathing, enables the illuminator to be positioned outside the immediate work area to provide more space for inspection and assembly operations.



LFODG, Dual Gooseneck transmitter, has two 18” wands enclosed in stainless steel obedient sheathing that “stays put”. The wands can be focused on a single point to provide intense, shadow-free illumination. A single 18” wand, **LFOSG**, Single Gooseneck, is ideal for inspecting small, crevice-like openings or the inside of a tube or cylinder. Both models feature an adjustable lens at the end of each wand enabling the operator to change the focus of the light from a narrow, intense beam to a wider, more diffused pattern.



18746, Dimmable LED Ring Light maximizes light output and distribution while preventing harmful glare and reflections. Its modular construction, paired with brilliant 40 LED display and 6000°K color temperature, make this ring light ideal for the inspection of surface cracks and defects as well as lead free inspection. Pure-white LED light eases the examination of welds, solder joints, flux residues and hairline stress cracks. Removable/replaceable diffuser allows for easy cleaning. Dimmable to 15% output. 50,000 hour lumen maintenance (lamp life).

DIGITAL OPTIONS FOR MICROSCOPES



18791, USB 2.0 Camera has high quality CMOS sensors with square 2048 x 1536 pixels (WVGA) and Rolling Shutter. Up to 10 frames/s in full frame mode, over 70 frames/s using Area of Interest (AOI). Ultra compact with Mini-B USB and screwable Micro D-SUB connector with trigger and digital output for industrial use. Available drivers and interfaces for machine vision software allow easy integration in applications. Digital output, high quality sensors and C-Mount. Ideally suited for use with PC, Notebook and Embedded systems in image processing and factory automation.



18792, XGA Camera is an ultra compact camera with USB 2.0 interface for industrial use. Equipped with high quality sensors, industrial design, C-Mount, high speed USB, 1/3" progressive scan and additional screwable USB interfaces which offer trigger and digital output. Up to 29 frames/s in full frame mode, over 70 frames/s in 1/2 partial scan mode and 120 frames/s in 1/4" partial scan mode. High quality 1/3" Interline CCD color image sensors with 1024 x 768 pixels at full size are standard. With its USB 2.0 architecture, this camera is ideally suited to use with PC, Notebook and Embedded Systems in image processing and factory automation.



18799 (kit), 1/2" Color CCD Camera. A low-profile camera featuring manual controls for color balance and gain (DSP). It comes as a kit or as part of complete system models (see order guide). The kit includes CCD camera, a 12-volt power supply and power cord with an integrated S-video cable/connector for attaching a monitor or frame grabber.



Video Adapters

Components used to connect CCD or USB cameras to the photo tube in a Trinocular S-Z Microscope.

23769

23767

23768

23769, Video Adapter with 0.5X lens. Included with all complete System 373 models.

23767, Video Adapter with 1.0X lens. Used to dramatically increase high tech digital magnification.

23768, Video Adapter with 0.3X lens. Used when equal digital and optical magnification is needed.



18797, LCD Flat Panel Monitor – 15" (diagonal). Included with System 350 models having an LCD monitor. Wide range power source; 100-240 VAC (auto switching). NTSC/PAL Auto detection, S-video input, high resolution (1024 x 768) output, and magnification up to 470X.



18601, 3D Frame Grabber with 16MB SGRAM and 32-bit color and monochrome video with simultaneous VGA and S-Video output. Its 128-bit memory interface is capable of running at speeds up to 143 MHz, allowing for display resolutions up to 1600x1200 at 100 Hz. Video is displayed full-screen or in a resizable window, and can be adjusted (offset and gain) to the desired levels through software-controlled video amplifiers. Very low pixel jitter ensures accurate representation of horizontal detail. Both a composite and S-Video output are provided in NTSC and PAL formats. Flicker reduction is possible with a programmable flicker filter. Software includes FPG32 video capture application which allows you to capture a frame of video and save it in one of several popular formats such as JPEG, BMP, TIF and TGA. You can edit the images in any Windows™ compatible graphics application and share them in electronic or printed form.

Full specifications on frame grabbers are available at our website: www.luxous.com or in a pdf file by contacting Customer Service (see phone/fax/email information on the back page).

Microscope Optics Data

Eyepieces	Objective	Objective zoom setting 0.7X – 4.5X			
		1.0X (included)	0.5X	0.7X	2.0X
10X	Total Magnification (Range)	7X - 45X	3.5X - 22.5X	4.9X - 31.5X	14X - 90X
	Field of View Diameter (mm)	32.8 - 5.1	65.7 - 10.2	46.9 - 7.3	16.4 - 2.6
15X	Total Magnification (Range)	10.5X - 67.5X	5.3X - 33.8X	7.4X - 47.2X	21X - 135X
	Field of View Diameter (mm)	24.3 - 3.8	48.6 - 7.6	34.7 - 5.4	12.1 - 1.9
20X	Total Magnification (Range)	14X - 90X	7X - 45X	9.8X - 63X	28X - 180X
	Field of View Diameter (mm)	20 - 3.1	40 - 6.2	28.6 - 4.4	10 - 1.6
30X	Total Magnification (Range)	21X - 135X	10.5X - 67.5X	14.7X - 94.5X	42X - 270X
	Field of View Diameter (mm)	12.9 - 2	25.7 - 4	18.4 - 2.9	6.4 - 1
	Working Distance (mm)	118	195	145	35

Trinocular Microscope Optics Data

1/2" CCD Camera, 15" LCD Monitor

	Accessory Lens	Magnification with zoom setting @ 0.7 (mm)	FOV with zoom @ 0.7 (mm)	Magnification with zoom setting @ 4.5 (mm)	FOV with zoom @ 4.5 (mm)	Focal Length (mm)
0.3X Video Adapter	None	10X	38.1	64.3X	5.9	118
	0.5	5X	76.2	32.1X	11.9	195
	0.7	7X	54.4	45X	8.5	145
	2.0	20X	19.0	128.6X	3.0	35
0.5X Video Adapter	None	16.7X	22.9	107.2X	3.6	118
	0.5	8.3X	45.7	53.6X	7.1	195
	0.7	11.7X	32.7	75X	5.1	145
	2.0	33.3X	11.4	214.3X	1.8	35
1.0X Video Adapter	None	33.3X	11.4	214.3X	1.8	118
	0.5	16.7X	22.9	107.2X	3.6	195
	0.7	23.3X	16.3	150X	2.5	145
	2.0	66.7X	5.7	428.6X	0.9	35

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