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Sincerely,

Ralph Abate

Business Manager, Warner Instruments

Cell Biology Research Catalog



NEW CL-200 Dual Channel Bipolar Temperature Controller, p. 111



WEW RC-49FS Perfusion Chamber with Field Stimulation, p. 54

NEW PFC-1 Proflow Chamber, p. 57



NEW BioStat Multi-channel Potentiostat, p. 372





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Imaging and Recording Chambers

Chambers for live cell microscopy, Series 20, 30, 40 and 50. Culture Dish Inserts, Heated Platforms, Stage Adapters and Chamber Accessories

Perfusion/Microfluidics

Syringe & Peristaltic Pumps, Valve Control Systems, Pressurized Perfusion, Fast-Step Perfusion Systems, Gas Controllers, Spill Detection Systems & Accessories

Temperature Control

Low Noise Temperature Controllers, In-Line Solution Heaters and Coolers, Objective and Syringe Warmers, Thermistors, Cables, and Accessories

Micro-Incubation

Heated Culture Dish Platforms for 35 and 50 mm Dishes, Heated Platform for Chambered Slides, CO₂ Microscope Cage and Stage Incubators, Glass Bottom Cell Culture Dishes, Brain Slice Chamber System

Electrophysiology Equipment

Patch Clamp Equipment, Bilayer Workstation, Oocyte Clamps, Amplifiers, Low Pass Filters, Neurolog™ System, Ussing/Diffusion, Stimulators

Cell Biology Tools

Microinjection, Micropositioning, Tissue Sampling, Microelectrode Holders, Capillary Glass, Pipette Pullers

Microscopy

Stereo Zoom Microscopes, Microscope Cameras, Cold Light Sources, LED and Halogen, Fiber Optic Ring Lights and Light Guides, Laser Systems, Coverslips

Biosensing

Nitric Oxide Systems, Dissolved O2, Respirometry, Electrodes

Electroporation

BTX Electroporation, Electrofusion, Transfection, Transformation Solutions, Pulse Generators for In Vivo Electroporation Systems, High Throughput Electroporation, Monitoring Systems and Specialty Electrodes

Indexes

Warner Model Number Index Ordering Number Index Product Index Cham

renusion, Microfluidics

Temperature Control

> Micro-Incubation

Electrophysiology

Sell Biology

Microscopy

Biosensing

Electroporation

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Technical Support, Ordering, Payment, **Delivery, Terms and Conditions**

Technical Support & Domestic Orders*

Warner Instruments

1125 Dixwell Avenue Hamden, CT 06514 USA

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fax	203.776.1278
e-mail	support@warneronline.com
website	www.warneronline.com

Domestic Orders*

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fax	508.429.5732
e-mail	bioscience@harvardapparatus.com
website	www.harvardapparatus.com

^{*} See inside back cover for distributors outside of the United States.

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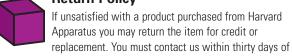
Shipping



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Terms and Conditions

Return Policy



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- 1. Items not supplied in accordance with your order.
- 2. Items that are defective at the time of receipt.

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- 1. Items that have been customized
- 2. Items that are outdated, shelf-worn, damaged, or used and therefore unsuitable for return to stock for resale
- 3. Chemicals or sterile items that have been opened
- 4. Product(s) that have been exposed to harmful, toxic or hazardous substances

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- 1. Repair orders charged on a time and materials basis
- 2. \$150 per hour for labor with a \$150 minimum labor charge
- 3. All repairs are performed on a first in/first out basis, only after receipt of a valid purchase order
- 4. Estimates available upon request
- 5. Some older products may not be repairable due to component obsolescence

Minimum Orders

We appreciate all orders and therefore have no minimum order requirement, however, a small handling fee of \$10 will be added to orders below \$75.

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microscopy

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NEW Model Z850 Stereo Zoom Microscope Series

- · High performance optics at an affordable price
- Excellent zoom range 0.8x-5.0x
- 115 mm working distance for easy access to specimens
- Binocular or trinocular viewing heads are inclined 45° and can rotate 360°

The Z850 Series is a versatile, high performance, ergonomically designed zoom stereo microscope ruggedly built to withstand years of heavy use. With a zoom ratio of 6.3:1 the Z850 provides superior optical performance at an affordable price.

These Microscopes are supplied in several complete systems with either Trinocular or Binocular zoom bodies and six different stand options.

Select from the plain focusing stand or the LED illuminator stand. The booms stands do not have illumination, but permit working with large objects.



Plain Focusing Stand

The Plain Focusing Stand's thin design helps keep sample positions low resulting in increased user comfort. The focus mount is easily removable and can be positioned at two different points on the dovetail to offer maximum flexibility when working with small or large size samples.



LED Illuminator Stand

Simultaneous variable reflected and transmitted LED illumination can be utilized on this stand. The compact, thin design of the base allows users to keep sample positions low and maintains easy accessibility to the variable light controls. The reflected LED illuminator is powered by a 12 volt, 2 watt LED system and the transmitted LED illuminator by a 12 volt, 4 watt LED system. Both light sources are variable and controlled by a universal power supply (110–240V).

NEW Model Z850 Stereo Zoom Microscope Series (continued)



Boom Stand

The boom stand features safety tracks on the horizontal arm and Delrin® inserts in the focus block to ensure smooth, precise movements.



Articulating Swing Arm Stand

Designed for maximum freedom and flexibility this stand will deliver the adjustability you need. Ideal for the inspection of specimens that require a lot of movement or to scan a large sample area, the articulating arm can be easily adjusted into hard to reach positions and moved easily out of the way.



Ball Bearing Boom Stand

For users seeking precise, stable movements the ball bearing boomstand is the recommended choice. Sturdy and ruggedly built, the ball bearing boom stand is ideal for observation applications where magnification adjustment and the ability to move across a sample are important considerations.



Diascopic/Embroyo Transfer Stand

This cost-effective transmitted illumination stand provides bright, even illumination across the entire magnification range. A tiltable mirror provides direct and oblique illumination for low contrast specimens. This unit can be configured with either a 6V, 20W halogen illuminator or 150W fiber optic illuminator.

NEW Model Z850 Stereo Zoom Microscope Series (continued)

Specifications

opoomounono	
Viewing Body	
Optical System	Twin zooming objective
Viewing Bodies	Binocular or Trinocular with 50/50 light split
ESD Protection	Viewing body is made from anti-electrostatic materials
Anti-Mold	Anti-mold and airtight design
Magnification	0.8x to 5.0x with click stops at 1x, 2x, 3x, 4x and 5x
Zoom Ratio	6.3:1
Working Distance	115 mm (4.5 in)
Viewing Angle	45 degrees
Interpupillary Distance Adjustment	52-75 mm
Camera Adaptability	0.4x or 0.5x C-mount adapters, photo tube
Eyepieces (with diopter adjustment)	WF 10x/22 mm with reticle holder (Reticle size: 27 mm), WF 15X/16 mm with reticle holder (reticle size: 20 mm), WF 20x/12.5 mm
Auxiliary Objectives	0.5x (211 mm working distance) and 2.0x (43.5 mm working distance)
Stands	
Plain Focusing Stand	76 mm focus mount diameter, 100 mm focusing stroke, 240 x 290 x 318 mm (9.4 x 11.4 x 12.5 in) (LxDxH), 125 mm black & white plate
LED Reflected/Transmitted Illuminated Stand	76 mm focus mount diameter, 100 mm focusing stroke, 240 x 292 x 318 mm (9.4 x 11.5 x 12.5 in) (LxDxH), 100 mm clear glass and black & white plate. Variable Transmitted & Reflected LED illumination. Average LED life expectancy - 7,000 hours, Color temperature: 6200-7000° Kelvin
Diascopic Stand with Transmitted Illumination Attachment	76 mm focus mount diameter, 100 mm focusing stroke, 255 x 310 x 382 mm (10 x 12.2 x 15 in) (LxDxH), 280 mm clear glass plate. Tiltable mirror provides direct and oblique illumination. Choice of 6V, 20 W halogen or 150 W fiber optic illuminators
Pole Stand	76 mm focus mount diameter, 305 mm pole height, 193 mm focusing stroke, 240 x 290 x 318 mm (9.4 x 11.4 x 12.5 in) (LxDxH), 125 mm black & white plate
Boom Stand	Base dimensions: 254 x 254 mm (10 x 10 in), Vertical Post - 365 mm, Horizontal Post - 518 mm. Physical weight 37 lbs. (16.8 kg)
Ball Bearing Boom Stand	Base dimensions: 254 x 254 mm (10 x 10 in), Vertical Post - 394 mm, Horizontal Post - 585 mm. Physical weight 42 lbs. (19 kg)
FlexArm/Swing Arm Stand	The Swinging Arm has a 3 ft scanable range and a lockable 14.5 in vertical motion range with an adjustable counterbalanced support. Horizontal or vertical clamp mount

Eyepiece Spec	Eyepiece Specifications						
Auxiliary	Working	WF 10x/22		WF 15x/16		WF 20x/12.5	
Objective	Distance (mm)	Total Magnification	Visual Field Total (mm)	Total Magnification	Visual Field Total (mm)	Total Magnification	Visual Field Total (mm)
-	115x	8-50x	27.5-4.4x	12-75x	20.0-3.2x	6-100x	15.6-2.5x
0.5x	211x	4-25x	55.0-8.8x	6-37.5x	40.0-6.4x	8-50x	31.2-5.0x
2x	43.5x	16-100x	13.8-2.2x	24-150x	10.0-1.6x	32-200x	7.8-1.3x

NEW Model Z850 Stereo Zoom Microscope Series (continued)

Order #	Product
N4 64-1802	Trinocular Zoom Stereo Microscope on LED stand Incident & Transmitted ESD Trinocular viewing head, 50/50 light split, 0.8x to 5.0x zoom range, inclined at 45°, 115 mm W.D., interpupillary distance adj. 52-75 mm, glass lens shield Widefield 10x eyepieces with built-in diopter adjustment (paired), 22 mm field of view Variable LED incident (12v/2w) and transmitted (12v/4w) focusing stand with stageclips, universal power supply Frosted, clear glass, black & white stage plates, dust cover and manual C-mount adapters and cameras sold separately
N4 64-1803	Binocular Zoom Stereo Microscope on Boom Stand Binocular viewing head, 0.8x to 5.0x zoom range, inclined at 45°, 115 mm working distance, interpupillary distance adj. 52-75 mm, glass lens shield Widefield 10x eyepieces with built-in diopter adjustment (paired), 22 mm field of view, Bonder arm focusing mount, boom stand, dust cover and manual
N4 64-1804	Trinocular Zoom Stereo Microscope on Boom Stand Trinocular viewing head, 50/50 light split, 0.8x to 5.0x zoom range, inclined at 45°, 115mm W.D., interpupillary distance adj. 52-75 mm, glass lens shieldWidefield 10x eyepieces with built-in diopter adjustment (paired), 22 mm field of view, Bonder arm focusing mount, boom stand, dust cover and manual C-mount adapters and cameras sold separately
V4 64-1805	Trinocular Zoom Stereo Microscope on Ball Bearing Boom Stand Trinocular viewing head, 50/50 light split, 0.8x to 5.0x zoom range, inclined at 45°, 115 mm W.D., interpupillary distance adj. 52-75 mm, glass lens shield Widefield 10x eyepieces with built-in diopter adjustment (paired), 22 mm field of view, Bonder arm focusing mount, ball bearing boom stand, dust cover and manual C-mount adapters and cameras sold separately
V4 64-1806	Trinocular Zoom Stereo Microscope on Flex Arm Stand Trinocular viewing head, 50/50 light split, 0.8x to 5.0x zoom range, inclined at 45°, 115 mm working distance, interpupillary distance adj. 52-75 mm, glass lens shield Widefield 10x eyepieces with built-in diopter adjustment (paired), 22 mm field of view, Bonder arm focusing mount, flexible articulating arm stand with c-clamp mount Dust cover and instruction manual, C-mount adapters and cameras sold separately
N4 64-1807	Viewing Heads ESD safe Binocular viewing head, 0.8x to 5.0x zoom range, inclined at 45°, 115 mm working distance, interpupillary distance adj. 52-75 mm, glass lens shield
N4 64-1808	Viewing Heads ESD safe Trinocular viewing head, 50/50 light split, 0.8x to 5.0x zoom range, inclinedat 45°, 115 mm W.D., interpupillary distance adj. 52-75 mm, glass lens shield
V4 64-1809	Camera and Video Adapters 0.5x c-mount adapter
/4 64-1810	Camera and Video Adapters 1.0x video adapter with c-mount (no lens)
/4 64-1811	Eyepieces WF10x eyepiece with built-in diopter adjustment, 22mm field of view. Eyepiece accepts a 26.5 mm reticle
4 64-1812	Eyepieces WF15x eyepiece with built-in diopter adjustment, 16mm field of view. Eyepiece accepts a 20 mm reticle
/4 64-1813	Eyepieces WF20x eyepiece with built-in diopter adjustment and eyeguard, 12.5 mm field of view, does not accept a reticle.
/4 64-1814	Eyepieces Roll down rubber eyeguards (pair) - small
/4 64-1815	Eyepieces Roll down rubber eyeguards (pair) - large
/4 64-1816	Reticle 26.5 mm eyepiece reticle, 10 mm/100 divisions with crossline
V4 64-1817	Reticle 26.5 mm eyepiece reticle, 10 mm/100 divisions without crossline
V4 64-1818	Reticle 20 mm eyepiece reticle, 10 mm/100 divisions with crossline
V4 64-1819	Reticle 20 mm eyepiece reticle, 10 mm/100 divisions
/4 64-1820	Stage Micrometer, 1 mm/1 - division (each division 0.010 mm)
V4 64-1821	Calibration slide
V4 64-1822	0.5x Auxilliary objective, working distance 211 mm
/4 64-1823	2.0x Auxiliary objective, working distance 43.5 mm
V4 64-1824	Plain focusing stand with ø76 mm pod holder, black and white contrast plate
V4 64-1825	Variable LED incident (12v/2w) and transmitted (12v4w) focusing stand with ø76mm pod holder, stage clips, universal power supply,
V4 64-1826	Diascopic stand for embroyo transfer with tiltable mirror reflector and ø76mm pod holder (fiber optic or halogen illuminator sold seperately)
V4 64-1827	Pole stand with focus mount, black and white plate - no illumination
V4 64-1828	Variable Halogen incident (12v15w) and variable transmitted (12v15w) focusing stand with ø76 mm pod holder, stage clips, glass and black & white plate Stages and Stage Plate
V4 64-1829	Universal boom stand, horizontal arm with bonder port, base dimensions 10 x 10 in, 14 3/8 in vertical post, 20 3/8 in horiztonal post, order with W4 64-1834 Bonder arm
V4 64-1830	Ball bearing boom stand, horizontal arm with bonder port, base dimensions 10 x 10 in, Vertical post 15.5 in, Horizontal arm 23 order with W4 64-1834 Bonder arm
V4 64-1831	Ball bearing boom stand extension post
V4 64-1832	Flexible arm stand, lockable 14.5 in vertical motion range, 3 foot scanable range, adjustable counterbalanced support use with W4 64-1833
V4 64-1833	Horizontal or vertical c-clamp mount for use with W4 64-1832
V4 64-1834	Bonder arm (E-Arm) with ø76 mm pod holder, 5/8 in mounting pin

NEW 3025 Series Compound Microscope



- · Advanced clinical microscope
- AIS Plan 4x, 10x, 40x, 100xR oil objectives
- Ceramic coated stage with tension adjustment
- 6 volt 30 watt illumination

Designed for research and other clinical applications, the 3025 features AIS infinity optical system renowned for resolution, contrast, and clarity that is among the very best in this class of microscope.

As configured the 3025 is supplied complete with the following components: ergo binocular microscope, EWF 10 x 22 mm focusing eyepieces, AIS Plan 4x, 10x, 40xR, 100xR oil objectives, ceramic coated stage with tension adjustment, 6 volt 30 watt illumination. Popular addons are listed in the order information section.

Specifications

•	
Optical System	AIS Infinity Corrected
Viewing Body	Ergonomic binocular head angled 0-35°
Eyepieces	EWF 10x focusing eyepieces with eyeguards, 22 mm field of view
Nosepiece	Reversed quintuple nosepiece
Stage	Tension adjustable ceramic stage with low position coaxial controls, right hand control
Condenser	N.A. 1.25 Abbe condenser with built-in aperture iris diaphragm
Focusing Mechanism	Coaxial coarse and fine focusing mechanism with marking on fine focus knobs. Fine focus sensitivity to 0.002 mm
Objectives	Plan Achromat, 4x, 10x, 40xR, 100xR oil
Illumination	Variable Koehler 6 volt 30 watt halogen illumination
Filter	Clear blue standard, optional frosted blue, green and yellow filters are available
Stand	Cast alloy aluminum
Shipping weight	27 lbs (12.25 kg)
Shipping Dimensions	18 x 16 x 24 in (46 x 41 x 61 cm) (H x W x D)

Order # Product

W4 64-1840	3025-BE-CS Ergo binocular microscope,
	EWF 10x/22mm focusing eyepieces, AIS Plan 4x,
	10x, 40xR, 100xR oil objectives, ceramic coated
	stage with tension adjustment, 6v30w illumination

Popular Add-ons

Popular Ad	Popular Add-ons		
W4 64-1841	25-2000-E Photo/video intermediate attachment for use with ergonomic binocular viewing head		
W4 64-1842	25-3179-PL AIS 50xR oil plan achromat objective, N.A. 0.90		
W4 64-1843	25-3177-PL AIS Planachromat 20x objective, N.A. 0.40, W.D. 5.1 mm		
W4 64-1844	25-3178-PL AIS Plan achromat 60xR objective		
W4 64-1845	5048 C-Mount adapter sleeve		
W4 64-1846	5041 0.67 c-mount adapter for 1/1.8 chip sensors - high resolution		
W4 64-1782	(C3) ProgRes® C3 '- 1/1.8" 3.3 mega pixel CCD camera, 2080 x 1542 pixel Includes software		
W4 64-1784	(C3 USB) ProgRes® C3 USB (without cooling) '- 1/1.8" 3.3 mega pixel CCD camera, 2080 x 1542 pixel Includes software		
W4 64-1785	(C5) ProgRes® C5 '- 2/3" 5.02 mega pixel CCD camera, 2580 x 1944 pixel Includes software		
W4 64-1786	(C5-C) ProgRes® C5 - version with cooling '- 2/3" 5.02 mega pixel CCD camera, 2580 x 1944 pixel		

NEW 3032PH Inverted Phase Contrast Microscope



- Trinocular inverted phase contrast microscope
- Ideal for tissue culture and cell biology
- · Hard coated stage with glass insert
- 6 volt 30 watt illumination

Sharp, high contrast images driven by the AIS infinity optical system make the 3032 inverted microscope an outstanding performer for routine applications in embryology, tissue culture, pharmacology and immunology.

The 3032's ergonomic, modular design allows users to add a fluorescence illuminator with a 2 position filter cube slider. A third position on the filter slider is left open to quickly switch to brightfield or phase contrast. A wide variety of accessories allow the 3032 to be used for examining cell viability in petri dishes, culture flasks and well plates.

As configured the 3032PH is supplied complete with the following components: EW10x22 eyepieces, infinity PL 4x, PLPH 10x, PLPH 20x, plain stage - glass insert, 6 volt 30 watt halogen illumination, dust cover, and power cord.

Specifications

Optical System	AIS Infinity Corrected
Eyepieces	EWF10x focusable eyepieces with eyeguards, 22 mm field of view, 48-75 mm interpupillary distance settings, ±5 diopter adjustment
Viewing Head	Siedentopf trinocular viewing head with photo tube, inclined 30°, rotatable 360° (c-mount adapter sold seperately)
Light Distribution	Binocular 100% or binocular/trinocular 20%/80%
Nosepiece	Side facing quintuple nosepiece
Objectives	Infinity PL 4x, PLPH 10x, PLPH 20x
Stage	Fixed plain stage 160 mm x 250 mm with glass insert
Condenser	ELWD condenser, N.A. 0.3, working distance 72 mm
Illumination	Variable Koehler 6 volt 30 watt halogen illumination
Filters	Clear blue, green and ground glass filters, Pre- centered phase slider with 10x and 20x annuli and brightfield position
Shipping Dimensions	19 x 16 x 26 in (48 x 41 x 66 cm)
Shipping weight	30 lbs (13.6 kg)

Optional AIS Infinity Phase 40xR objective, Plan Achromat 10x, 20x, and 40xR objectives, attachable mechanical stage, Ø35 mm petri dish holder, teraski holder and Ø54 mm glass slide holder.

Order #	Product
W4 64-1847	3032PH Trinocular inverted microscope, EW10x/22 eyepieces, infinity PL 4x, PLPH10x, PLPH 20x, plain stage - glass insert, 6v30w halogen illumination
W4 64-1848	AIS LWD Plan Phase 40x objective, N.A. 0.60, W.D. 2.6 mm
W4 64-1849	Universal attachable mechanical stage, right hand coaxial controls, movement range 120 x 78 mm
W4 64-1850	32-35PD Ø35 mm petri dish holder
W4 64-1851	32-54SGH Ø54 mm Slide Glass Holder
W4 64-1852	32-TH Teraski holder
W4 64-1845	5048 C-mount adapter sleeve
W4 64-1846	5041 0.67 c-mount adapter for 1/1.8 chip sensors - high resolution
W4 64-1782	(C3) ProgRes® C3 '- 1/1.8" 3.3 mega pixel CCD camera, 2080 x 1542 pixel Includes software
W4 64-1784	(C3 USB) ProgRes® C3 USB (without cooling) '- 1/1.8" 3.3 mega pixel CCD camera, 2080 x 1542 pixel. Includes software.
W4 64-1785	(C5) ProgRes® C5 '- 2/3" 5.02 mega pixel CCD camera, 2580 x 1944 pixel Includes software
W4 64-1786	(C5-C) ProgRes® C5 - version with cooling '- 2/3" 5.02 mega pixel CCD camera, 2580 x 1944 pixel

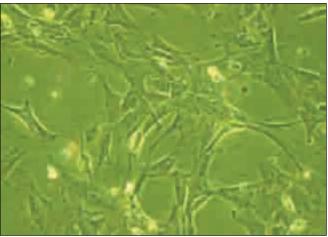
NEW ProgRes® Digital Microscope Cameras



- Large selection of CMOS and CCD cameras
- Powerful ProgRes® CapturePro software included with all camers
- Works with Microsoft Windows® or Mac® OSX Systems
- · Superior image quality at an affordable price

ProgRes® Digital Microscope Cameras

Microscope cameras of the ProgRes® family are based on more than two decades experience in the development and production of high-end solutions for digital imaging. ProgRes® cameras are suitable for all contrast methods in light microscopy and can be easily integrated into each laboratory via C-Mount and USB 2.0/ FireWire interfaces.



ProgRes® cameras provide rapid frame rate capability while keeping power consumption at low levels — all this in support of Green Microscopy and for the sake of our environment. High frame rates provide fast live images and provide easy workflow and convenient use .Furthermore, the high sensitivity of the ProgRes® research grade cameras meet the strict requirements of low-light applications. The exact reproduction of colors, and the display of fine details due to the high resolution capability of these cameras, make them particularly well suited for demanding analysis and reliable documentation.

ProgRes® Image Capture Software

All ProgRes® microscope cameras come with the powerful ProgRes® CapturePro image capture software. This is an intuitive software suite that directly guides the user to an optimal image. The software is suitable for both routine as well as advanced applications and is thoroughly designed for professional use. The ProgRes® software can be operated as a standalone application and as twain plug-in. Of course, the ProgRes® CapturePro software can be operated on Windows as well as the Apple operating system platforms.

ProgRes [®] Cameras - Softwar	e Benefits
Multi-Fluorescence Mode	Measureme

Multi-Fluorescence Mode	Measurements	User Preferences
Definition of up to 5 color filters Guided Workflow for multi- fluorescence images Auto-fluorescence reduction	 Calibration Options Various Measurement Tools Storage with the captured image Reproducible Data 	Storage of individual user settings Connection of up to 5 different cameras to one computer
Programmable Resolution	Live Image Functions	Time Lapse
Various Resolutions ROI and crop functionality Microscanning	Rotate/Mirror Focus tool Automatic exposure	Adjustment of delay and duration of capture sequences Storage as movie file

NEW ProgRes® CMOS Microscope Cameras

ProgRes® Digital Microscope Cameras (Continued)

The ProgRes® CMOS Camera Range:

- ProgRes® CT3
- ProgRes® CT5

Benefits:

- · Highest frame rates
- Good color reproduction
- Available in color (CT3, CT5) and monochrome (CT5)

Experience the High Performance

ProgRes® CMOS Cameras

Designed to provide the highest versatility and cost-effectiveness, the digital microscope cameras of the ProgRes® CMOS range allow for quick and precise setting of both specimen and microscope. The fast live images coupled with the outstanding CMOS technology and high resolutions make these cameras the first choice in education institutes and training labs.

Fields of Application

Image analysis, documentation and archiving in micro- and macroscopy in the fields of:

- Material Science, Geology & Mineralogy
- Life Science, Diagnostics
- Quality Control
- Education and Teaching

ProgRes® Camera Type CT3 CT5			
ProgRes® Camera Type			
Image Sensor	1/2" CMOS Color	1/2.5" CMOS Color / Monochrome	
Sensor Resolution [max]	2048 × 1536 pixel [3.15 Mpix]	2592 x 1944 pixel [5 Mpix]	
Sensor Size [H x V]	6.55 x 4.92 mm (.26 x .19 in)	5.70 x 4.28 mm (.22 x .17 in)	
Pixel Size	3.2 μm²	2.2 μm²	
A / D Conversion	10 bit	12 bit	
Pixel Clock	48 MHz 36 MHz	48 MHz	
Dynamic Range	58 dB	68 dB	
Exposure Times	50 μs - 3 s	75 μs - 3 s	
Analog Gain	1x - 8x	1x - 8x	
Max. Frame Rate [image size] typical via USB 2.0)	12 fps [2048 x 1536 pixel] 9 fps [2048 x 1536 pixel]	9 fps [2592 x 1944 pixel] 5 fps [2048 x 1536 pixel]	
Image Resolution Binning:	2x, 3x	2x, 4x	
Cooling	no	no	
Digital Interface	USB 2.0 / FireWire A	USB 2.0	
Optical Connection	C-Mount (0.5× TV Pref.)		
Trigger In / Out	Synchronization with external devices; configur	able via control software	
Voltage Supply	USB / FireWire A Powered	USB Powered	
Power Consumption	Approx. 1.9 W 2.5 W	Approx. 1.8 W	
Ambient Conditions	Temperature: +5°C - +55°C / Humidity: 5% - 80%	, not condensing	
Stock Conditions	Temperature: -20°C - +70°C	Temperature: -20°C - +70°C	
Dimensions (L × W × H)	89 × 84 × 93 mm (3.5 x 3.3 x 3.6 in)	89 × 84 × 93 mm (3.5 x 3.3 x 3.6 in)	
Weight	Approx. 700 g (1.5 lbs)	Approx. 700 g (1.5 lbs)	
Software	ProgRes® CapturePro PC / MAC (TWAIN for PC	only); ProgRes® SDK	
External Camera Driver	Available at: www.progres-camera.com	Available at: www.progres-camera.com	
Hardware Requirements	PC: MS WIN 2000 / XP / Vista Mac: OS X 10.4 or higher, 3 GHz CPU, 1 GB RAM, 64 MB graphics, FireWire a or USB 2.0		

NEW ProgRes® CCD Routine Microscope Cameras

ProgRes® Digital Microscope Cameras (Continued)

The ProgRes® CCD Routine Camera Range:

- ProgRes® C3
- ProgRes® C5
- ProgRes® C7

Benefits:

- · Perfect color reproduction
- · Excellent image quality
- · High resolution & fast live image

Visualize Exact Colors

ProgRes® CCD Routine Cameras

Excellent color reproduction and high resolution are the distinguishing features of the cameras of the ProgRes® CCD Routine range. With up to 7 megapixel resolution, these cameras are ideal tools for high quality image documentation and elementary imagine analysis. To facilitate precise focusing and positioning of specimens, a high resolution, fast, live image frame rate (up to 50 fps) is available.

Fields of Application

Image analysis, documentation and archiving in micro- and macroscopy in the fields of:

- · Material Science, Geology & Mineralogy
- Life science, Diagnostics
- Quality Control
- · Pathology and Cell Biology
- Forensics

Specifications ProgRes® Camera Type	C3	C5	C7
riognes Camera Type		1 22	
Image Sensor	1/2" CCD Color	2/3" CCD Color	1/2.5" CCD Color
Sensor Resolution [max]	2080 x 1542 pixel [3.3 Mpix]	2580 x 1944 pixel [5.0 Mpix]	3072 x 2304 pixel [7.1 Mpix]
Sensor Size [H x V]	8.10 x 6.64 mm	9.74 x 7.96 mm	5.71 x 4.29 mm
Pixel Size	3.45 μm²	3.4 μm²	1.86 µm²
A / D Conversion	12 bit	12 bit	12 bit
Pixel Clock	12 MHz	12 MHz 18 MHz	32 MHz
Dynamic Range	61 dB	61 dB 60 dB	60 dB 200 μs - 5 s 1x - 16x 11 fps [1228 x 920 pixel] 4x
Exposure Times	500 μs - 180 s	400 μs - 180 s	
Analog Gain	1x - 8x	1x - 8x	
Max. Frame Rate [image size]	18 fps [1040 x 770 pixel]	9 fps [1290 x 972 pixel]	
Image Resolution Binning:	2x - 5x	2x - 4x	
Program Scan:	346 × 256 692 × 512	644 × 490 1290 × 972	614 x 466 1228 x 932
Cooling	Optional	Optional	No
Digital Interface	FireWire A	FireWire A	FireWire A
Optical Connection	C-Mount (0.5× TV pref.)	C-Mount (0.63× TV pref.)	C-Mount (0.5× TV pref.)
Trigger In / Out	Synchronization with external devices	; configurable via control software	'
Voltage Supply	USB powered	FireWire Powered	FireWire Powered
Power Consumption	Approx. 4 W Approx. 6 W		Approx. 6 W
Ambient Conditions	Temperature: 0°C - +35 °C / Humidity: !	5% - 80%, not condensing	'
Stock Conditions	Temperature: -20°C - +70°C	Temperature: -20°C - +70°C	Temperature: -20°C - +70°C
Dimensions (L × W × H)	89 × 84 × 93 mm (3.5 x 3.3 x 3.6 in)	89 × 84 × 93 mm (3.5 x 3.3 x 3.6 in)	89 × 84 × 93 mm (3.5 x 3.3 x 3.6 in)
Weight	Approx. 700 g (1.5 lbs) Approx. 700 g (1.5 lbs) Approx. 700 g (1.5		Approx. 700 g (1.5 lbs)
Software	ProgRes® CapturePro PC / MAC (TWA	IN for PC only); ProgRes® SDK	
External Camera Driver	Available at: www.progres-camera.co	m	
Hardware Requirements	rements PC: MS WIN 2000 / XP / Vista Mac: OS X 10.4 or higher, 3 GHz CPU, 1 GB RAM, 64 MB graphics, FireWire a or USB 2.0		

ProgRes® CCD Research Microscope Cameras

ProgRes® Digital Microscope Cameras (Continued)

The ProgRes® CCD Research Camera Range:

- ProgRes® CF
- ProgRes® CFcool
- ProgRes® CFscan
- ProgRes® C14plus
- ProgRes® M
- ProgRes® MFcool
- ProgRes® MFscan

Benefits:

- Perfect, reproducible color reproduction
- · Outstanding image quality
- High sensitivity combined with a broad dynamic range
- Highest resolution & fast live image

Discover Highest Image Quality

ProgRes® CCD Research Cameras

All cameras of the ProgRes® CCD Research range have been optimized for applications requiring exacting capabilities. These cameras are particularly well suited for acquiring brilliant images when working with specimens under low-light conditions. Smooth operation is facilitated by sensitive CCD sensors, optionally available with cooling, that offer high frame rates and abroad dynamic range. Sophisticated Microscanning Technology provided in the scanning ProgRes® cameras allows for capturing images of up to 12.5 megapixels, even in true color.

Fields of Application

Image analysis, documentation and archiving in micro- and macroscopy in the fields of:

- Fluorescence Microscopy
- Phase Contrast Microscopy
- Macroscopy
- · Life Science, Diagnostics
- Quality Control
- · Pathology and Cell Biology
- Forensics

ProgRes® Camera Type	CF / MF	CFcool / MFcool	CFscan / MFscan / C14plus
nage Sensor	2/3" CCD progress. scan	2/3" CCD progress. scan	2/3" CCD progress. scan
Color / Monochrome	Color / Monochrome	Color / Monochrome	Color / Monochrome
Sensor Resolution [max]	1360 x 1024 pixel [1.4 Mpix]	1360 x 1024 pixel [1.4 Mpix]	1360 x 1024 pixel [1.4 - 12.5 Mpix]
Sensor Size [H x V]	8.8 x 6.6 mm	8.8 x 6.6 mm	36.07 x 24.05 mm "35 mm format"
Pixel Size	6.45 μm²	6.45 μm²	6.45 μm²
A / D Conversion	12 bit	14 bit	14 bit
Pixel Clock	12 MHz 24.5 MHz	12 MHz 24.5 MHz	12 MHz 24.5 MHz
Dynamic Range	65 - 67 dB	67 - 69 dB	67 - 69 dB
Exposure Times	200 μs - 180 s	200 μs - 300 s	200 μs - 600 s [C14plus]
Analog Gain	1x - 8x	1x - 8x	1x - 8x 13 fps [1360 x 1024 pixel] 2x - 5x
Max. Frame Rate [image size]	15 fps [1360 x 1024 pixel]	13 fps [1360 x 1024 pixel] 2x - 5x	
Image Resolution Binning:	2x - 8x		
Microscan	No	No	4080 x 3072, 2740 x 2048
True Color	No	No	Yes [C14plus]
Cooling	No	Yes	Yes
Digital Interface	USB 2.0 / FireWire A	FireWire A	FireWire A
Optical Connection	C-Mount (0.5× TV pref.) C-Mount (0.63× TV	pref.)	
Trigger In / Out	Synchronization with external devices; cor	nfigurable via control software	
Voltage Supply	USB / FireWire Powered	FireWire Powered	FireWire Powered
Power Consumption	2.5 W 5 W [FireWire]	8 W	8 W
Ambient Conditions	Temperature: 0°C - +35°C / Humidity: 5% - 8	80%, not condensing	
Stock Conditions	Temperature: -20°C - +70°C		
Dimensions [L x W x H]	89 x 84 x 93 mm (3.5 x 3.3 x 3.7 in) [USB], 14	5 x 93 x 123 mm (5.7 x 3.7 x 4.8 in) [FireWire]	
Weight	Approx. 700 / 800 g (1.5 /1.8 lbs)	Approx. 800 g (1.8 lbs)	Approx. 800 g (1.8 lbs)
Capture Software	ProgRes® CapturePro PC / MAC (TWAIN fo	or PC only); ProgRes® SDK	
External Camera Driver	Available at: www.progres-camera.com		
Hardware Requirements	PC: MS WIN 2000 / XP / Vista Mac: OS X 10.4 or higher, 3 GHz CPU, 1 GB RAM, 64 MB graphics, FireWire a or USB 2.0		

NEW ProgRes® Digital Microscope Cameras Class (Continued)

Order #	Model	Product
W4 64-1778	CT3 USB	ProgRes® CT3 - USB version - 1/2" 3.15 mega pixel CMOS camera, 2048 x 1536 pixel
W4 64-1779	CT3 FireWire	ProgRes® CT3 - IEEE1394 a version - 1/2" 3.15 mega pixel CMOS camera, 2048 x 1536 pixel FireWire version
W4 64-1780	CT5-C	ProgRes® CT5 - color version - 1/2.5" 5 mega pixel CMOS camera, 2592 x 1944 pixel USB2.0
W4 64-1781	CT5-M	ProgRes® CT5 - monochrome version - 1/2.5" 5 mega pixel CMOS camera, 2592 x 1944 pixel USB2.0
W4 64-1782	C3	ProgRes® C3 - 1/1.8" 3.3 mega pixel CCD camera, 2080 x 1542 pixel
W4 64-1783	C3 cool	ProgRes® C3 - version with cooling - 1/1.8" 3.3 mega pixel CCD camera, 2080 x 1542 pixel
W4 64-1784	C3 USB	ProgRes® C3 USB (without cooling) - 1/1.8" 3.3 mega pixel CCD camera, 2080 x 1542 pixel
W4 64-1785	C5	ProgRes® C5 - 2/3" 5.02 mega pixel CCD camera, 2580 x 1944 pixel
W4 64-1786	C5-C	ProgRes® C5 - version with cooling - 2/3" 5.02 mega pixel CCD camera, 2580 x 1944 pixel
W4 64-1787	C5 USB	ProgRes® C5 USB (without cooling) - 2/3" 5.02 mega pixel CCD camera, 2580 x 1944 pixel
W4 64-1788	C7	ProgRes® C7 - 1/2.5" 7.1 mega pixel CCD camera, 3082 x 2304 pixel
W4 64-1789	CF USB	ProgRes® CF - USB version - 2/3" 1.4 mega pixel color CCD camera, 1360 x 1024 pixel
W4 64-1790	CF FireWire	ProgRes® CF - FireWire version - 2/3" 1.4 mega pixel color CCD camera, 1360 x 1024 pixel
W4 64-1791	CF cool	ProgRes® CFcool - 2/3" 1.4 mega pixel color CCD camera, 1360 x 1024 pixel
W4 64-1792	CF scan	ProgRes® Cfscan - 2/3" 1.4 mega pixel color CCD camera, 1360 x 1024 pixel
W4 64-1793	C14 plus	ProgRes® C14plus - 2/3" 1.4 mega pixel color CCD camera, 1360 x 1024 pixel
W4 64-1795	MF USB	ProgRes® MF - USB version - 2/3" 1.4 mega pixel CCD camera - monochrome, 1360 x 1024 pixel
W4 64-1796	MF FireWire	ProgRes® MF - IEEE1394 a FireWire version - 2/3" 1.4 mega pixel CCD camera - monochrome, 1360 x 1024 pixel
W4 64-1797	MF cool	ProgRes® MFcool - 2/3" 1.4 mega pixel CCD camera - monochrome, 1360 x 1024 pixel
W4 64-1798	MF scan	ProgRes® MFscan - 2/3" 1.4 mega pixel CCD camera - monochrome, 1360 x 1024 pixel
W4 64-1800		OHCI PCI Host Adapter Fireboard blue for PC operation
W4 64-1801		Adapter-Set for Notebook operation (includes 4pin-6pin FireWire cable & power supply)

NEW XYClone Laser System*Ser SystemS



Applications

- · Blastocyst and 8-cell Injections
- Inner Cell Mass Isolation
- Somatic Cell Nuclear Transfer
- Embryo Biopsy
- Laser-Assisted IVF
- · Laser-Assisted Hatching
- Developmental Biology
- Cell Culture Maintenance

About the XYClone Laser System

The XYClone delivers a highly focused laser beam to the targeted area permiting non-contact ablation of targeted membranes or structures. The XYClone laser module consists of a high power, Class 1, 1450 nm infrared laser integrated with a specially designed 40x or 20x objective that functions in both visible and near infrared wavelengths. Compatible with most inverted microscopes, the XYClone laser attaches to the turret just like a typical objective and allows full use of all the microscope's standard features, such as fluorescence and Hoffman imaging. In addition, the laser is factory-aligned and locked in place to ensure safe ablation while minimizing service. The XYClone system may be configured for use on either a desktop or laptop computer. Dual systems with both 40x and 20x laser modules are also available.

Why use the XYClone:

- · Increase productivity and efficiency
- · Easy to learn and use
- · Mercury-free system
- Xenogenic-free process
- · Eliminates need for sharp micropipettes
- · No expensive needles or pipettes required
- Micromanipulators not needed for operation
- May be used with fluorescence
- Compatible with Oosight[™] imaging system from CRi
- · Portable between labs great for field work



XYClone Software Features:

- Laser Panel: Adjustable laser power (mW) and pulse time (µs). The size
 of the ablated area is controlled by varying the laser pulse time and the
 laser power.
- Target Options: Isotherm Rings, Circle or Arrow targets. The patented Isotherm Rings are used to preview heat generation based on the selected laser power and pulse times selected.
- Image Capture Controls: Images may be stored manually or automatically upon laser firing. You may also choose to save the graphic image overlays within the image.
- Video Recording: One touch video recording allows storage of .avi files. Record in real-time or time-lapse mode.
- Measurement Tool Box and Documentation: Allows measurements
 of various cell characteristics with automatic calculation of means and
 standard deviations.
- Image Toolbox: Add freehand text, drawings, and measures to any captured image.
- **Auto-labeling:** Captured images may be labeled automatically with user-defined input. Multiple labels may be stored and enabled.
- Scale Bar: Visible on the live image, the scale bar is saved on captured images and videos.
- Report Generation: Create comprehensive reports combining general information, measurements, and pre- and post-treatment images.

Options

XYClone RED-i Target Locator

Visible through the microscope eyepieces, the RED-i LED target locator speeds workflow by allowing you to position the cell under the laser beam without looking at the monitor.

XYClone Staccato

Staccato software allows rapid, multi-pulse firing for near-continuous application of laser to the sample.

Laser Control Panel

The XYClone laser control panel optimizes use of the laser with other imaging systems, such as the Oosight™ from CRi. A standalone laser control panel is configured to work side by side with the imaging software and installed camera.

Footswitch

An optional foot switch may be used to fire the laser, to allow hands-free laser control. A double footswitch is also available for working in dual laser mode.

Please Note: The XYClone™ is for use ONLY with ANIMAL and STEM CELL APPLICATIONS.

^{*} XYClone is for non-clinical research use only in USA. hESC research using the XYClone should be conducted in accordance with any applicable Federal, State or local laws and regulations.

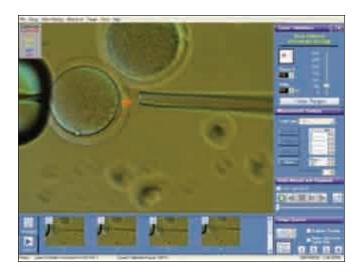
NEW XYClone Laser System (continued) STEMS

Specifications

opeomounions	
Laser:	
Туре	1480 nm, Infrared Solid State Diode
Power	300 mW @ focus (Class I)
Laser Pulse Length	Adjustable from 1 microsecond to 3000 microseconds, slider resolution - 1, 10, and 100 microsecond intervals
Laser Power	Adjustable from 1% to 100%
Laser Mode	Single mode standard, Double Mode
Firing	By mouse (Optional foot switch firing)
Target Marker	Circle or arrow, adjustable "Blink Time" after firing; Isotherm Rings, showing peak temps and hole size. Select which rings to display;
Optional	RED-i LED target locator
Crosshairs	Activation, size and color set by user (used for positioning embryo)
Laser Alignment	Aligned and locked at factory. No on-site physical laser alignment required
Target	Adjust target alignment on-screen
Safety	Class I Laser: Laser pulse and energy cannot exceed Class I limits.
Objective:	Oldo 1 Edoor Palot and onorgy cannot oxogod oldo 1 minto.
Standard	40v or 20v 0 CO N A LD (High transmission is both the visible and near infrared long working distance)
	40x or 20x, 0.60 N.A., I.R. (High transmission in both the visible and near-infrared, long working distance)
Scale Calibration	Performed interactively on-screen; Calibrate and save multiple objectives
Scale Bar	Scale bar graphic overlay automatically adjusts based on calibrated objective; May be saved with images/video.
Video:	
Camera	High resolution analog or digital color
Image Area	NTSC: 640 x 480 pixels: Digital: 1280 x 1024 pixels
Zoom	2x, 4x, and 8x with user defined image panning
Illumination	Microscope, image on screen
Double Validation Panel:	Set two separate power and pulse length combinations
mage Capture and Storage Utility:	Capture and store unlimited images. Images stored in user-selected JPG, BMP, or TIF format. Capture unlimited thumbnail images and select which to save. Automatic image capture on laser fire. Manual or automatic file naming. Images may be saved with graphic overlay.
mage Annotation Tools:	Unlimited automatic image labels may be stored and enabled. Freehand text, circles, rectangles, lines, and image measurements may be added to captured images.
Video Capture:	Capture and store real time and time lapse video in .avi format. Ability to set maximum recording length. Manual and automatic naming options. Open and play saved videos within program.
Measurement Toolbox:	Tools allow measurement of various embryo parameters on captured images. Each measure visible as graphic overlincluding length in micron. Zona: 5 zona thickness measurements; Mean & Standard Deviation Embryo: 2 diameter measurements; Mean & Standard Deviation; Blastomere count. Pronuclei: 2 diameter measurements for two separate pronuclei; Mean for each pronuclei Drill: 5 hole size measurements; Mean & Standard Deviation Ruler: 5 user-defined measurements Mean & Standard Deviation
Reports and Output:	Data Input: Data from keyboard, Data from measurements, ASCII Import critical fields Report: Ova/embryo information, procedure/protocol information, choice of 2 images plus evaluation data or 4 image
	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats
Dimensions H x W x D in. (mm) / lb (Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats
Dimensions H x W x D in. (mm) / lb (Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats
	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg)
XYClone Module	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22)
XYClone Module XYClone Controller	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45)
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12)
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7)
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7)
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz subject to change without notice) Desktop
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency (YClone Computer Specifications (s	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz subject to change without notice)
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency (YClone Computer Specifications (s	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz subject to change without notice) Desktop
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency XYClone Computer Specifications (s Type 0.S.	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz subject to change without notice) Desktop Windows XP Pro Windows XP Pro
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency XYClone Computer Specifications (s Type 0.S. CPU	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz subject to change without notice) Desktop Windows XP Pro Windows XP Pro Pentium Dual Core 2.7 GHz Pentium M or Dual Core 2 GHz 2 GB 512 RAMI GB 250 GB HD, 16x DVD-RW 250 GB HD, 16x DVD-RW
XYClone Module XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency XYClone Computer Specifications (s Type 0.S. CPU Memory Drives Display	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz subject to change without notice) Desktop Windows XP Pro Windows XP Pro Pentium Dual Core 2.7 GHz Pentium M or Dual Core 2 GHz 2 GB 512 RAMI GB 250 GB HD, 16x DVD-RW 250 GB HD, 16x DVD-RW 20" flat panel, UXGA 5.4" (typical), WXGA
XYClone Controller Desktop Computer Monitor Laptop Compute Electrical Input Voltage Power Line Frequency XYClone Computer Specifications (s Type 0.S. CPU Memory Drives	Output: Printout of report, Report stored in JPG format, ASCII output of all numerical and alphanumeric fields in TXT & MER formats (kg) 1.65 (42) x 1.1 (28) x 2.1 (54) / 0.5 (0.22) 3.8 (95) x 2.5 (63.5) x 1.8 (46) / 1.0 (0.45) 16.1 (408) x 7.4 (187) x 17 (433) / 26.5 (12) 16.8 (427) x 17.5 (445) x 7.9 (198) / 12.6 (5.7) 1.48 (37.5) x 13.99 (355) x 10.24 (27) / 6.36 (2.89) Desktop: 100/240 VAC, Monitor: 110-240 VAC, Laptop: 100-240 VAC Desktop: 300 W, Monitor: 30 W, Laptop: 90W Desktop: 50/60 Hz, Monitor: 50/60 Hz, Laptop: 50/60 Hz subject to change without notice) Desktop Windows XP Pro Windows XP Pro Pentium Dual Core 2.7 GHz Pentium M or Dual Core 2 GHz 2 GB 512 RAMI GB 250 GB HD, 16x DVD-RW 250 GB HD, 16x DVD-RW

NEW XYClone Laser System (continued) VStemS

XYClone Desktop System for laser ablation of oocyte membranes, embryo membranes and ICM excision



Includes 40x APO II Objective and analog camera

Order#

W4 64-1875

Product



W4 64-1871	Includes 40x APO I Objective and analog camera
W4 64-1872	Includes 40x APO II Objective and digital camera
W4 64-1873	Includes 40x APO I Objective and digital camera
XYClone La _l	ptop System for laser ablation of oocyte membranes, embryo membranes and ICM excision
W4 64-1874	Includes 40x APO II Objective and analog camera
W4 64-1875	Includes 40x APO I Objective and analog camera
W4 64-1876	Includes 40x APO II Objective and digital camera
W4 64-1877	Includes 40x APO I Objective and digital camera
XYClone RE	D-i Desktop System for laser ablation of oocyte membranes, embryo membranes and ICM excision
W4 64-1878	Includes 40x APO II Objective and analog camera, and RED-i target locator
W4 64-1879	Includes 40x APO I Objective, analog camera, and RED-i target locator
W4 64-1880	Includes 40x APO II Objective and digital camera, and RED-i target locator
W4 64-1881	Includes 40x APO I Objective and digital camera, and RED-i target locator
W4 64-1882	Includes 40x APO II Objective and analog camera, and RED-i target locator
XYClone La _l	ptop System for laser ablation of oocyte membranes, embryo membranes and ICM excision

XYClone RED-i Desktop System for laser ablation of oocyte membranes, embryo membranes and ICM excision

W4 64-1878	Includes 40x APO II Objective and analog camera, and RED-i target locatoR
W4 64-1879	Includes 40x APO I Objective, analog camera, and RED-i target locator
W4 64-1880	Includes 40x APO II Objective and digital camera, and RED-i target locator

W4 64-1874 Includes 40x APO II Objective and analog camerA

W4 64-1876 Includes 40x APO II Objective and digital camera

Includes 40x APO I Objective and analog camera

Includes 40x APO I Objective and digital camera

W4 64-1881 Includes 40x APO I Objective and digital camera, and RED-i target locator

XYClone RED-i Laptop System for laser ablation of oocyte membranes, embryo membranes and ICM excision

-	AT Clottle NED-1 Laptop System for faser ablation of oocyte membranes, embryo membranes and folia excision	
W4 64-1882 Includes 40x APO II Objective and analog camera, and RED-i target locator		Includes 40x APO II Objective and analog camera, and RED-i target locator
١	N4 64-1883	Includes 40x APO I Objective and analog camera, and RED-i target locator
١	N4 64-1884	Includes 40x APO II Objective and digital camera, and RED-i target locator
١	N4 64-1885	Includes 40x APO I Objective and digital camera, and RED-i target locator
-		

NEW XYClone Laser System (continued) VSTCM

Order #	Product				
XYClone De	XYClone Desktop System for laser ablation of oocyte membranes, embryo membranes and ICM excision				
W4 64-1886	1886 Includes 20x Leica Objective and analog camera				
W4 64-1887	Includes 20x Leica Objective and digital camera				
XYClone Laptop System for laser ablation of oocyte membranes, embryo membranes and ICM excision					
W4 64-1888	Includes 20x Leica Objective and analog camera				
W4 64-1889	Includes 20x Leica Objective and digital camera				
XYClone De	XYClone Desktop System for laser ablation of oocyte membranes, embryo membranes and ICM excision				
W4 64-1890	Includes 20x Leica Objective and analog camera, and RED-i target locator				
W4 64-1891	Includes 20x Leica Objective and digital camera, and RED-i target locator				
XYClone La	ptop System for laser ablation of oocyte membranes, embryo membranes and ICM excision				
W4 64-1892	Includes 20x Leica Objective and analog camera, and RED-i target locator				
W4 64-1893	Includes 20x Leica Objective and digital camera, and RED-i target locator				
Accessories	\$				
W4 64-1894	Staccato software enables rapid multi-pulse and standard single pulse laser firing. Requires XYClone version 5.2 or higher.				
W4 64-1895	20x Laser added onto a 40x XYClone System to create a dual laser system				
W4 64-1896	20x Laser added onto a 40x XYClone System to create a dual laser system - for previously installed laser systems				
W4 64-1897	40x Laser added onto a 20x XYClone System to create a dual laser system				
W4 64-1898	40x Laser added onto a 20x XYClone System to create a dual laser system - for previously installed laser systems				
W4 64-1899	20x Laser added onto a 40x XYClone System to create a dual laser system with RED-i target locator				
W4 64-1900	20x Laser added onto a 40x XYClone System to create a dual laser system with RED-i target locator -for previously installed laser systems				
W4 64-1901	40x Laser added onto a 20x XYClone System to create a dual laser system with RED-i target locator				
W4 64-1902	40x Laser added onto a 20x XYClone System to create a dual laser system with RED-i target locator - for previously installed laser systems"				
W4 64-1903	CIVA software with color anaolg camera. Stand alone imaging software based on imaging, video, measurement and reporting functions of the laser software. Includes analog color camera.				
W4 64-1904	CIVA software with color analog camera and computer. Stand alone imaging software based on imaging, video, measurement and reporting functions of the laser software. Includes analog color camera and computer.				
W4 64-1905	Remote Foot Switch for hands-free laser firing. Includes USB interface #W4 30-1205				
W4 64-1906	Remote Foot Switch for hands-free laser firing in Double Validation Mode. Includes USB Port #W4 30-1205				
W4 64-1907	Analog color camera includes video capture device and power supply				
W4 64-1908	Color digital camera - 1280 x 1024, High resolution, USB 2.0 Replaces standard color analog camera				
Upgrades					
W4 64-1909	40x RED-i target locator upgrade. Upgrade after purchase of a XYClone System. Requires return of original laser prior to upgrade.				
W4 64-1910	20x RED-i target locator upgrade. Upgrade after purchase of a XYClone System. Requires return of original laser prior to upgrade.				

Intralux® 5100

High Intensity Cold Halogen Light Source



- Compatible with all Volpi Fiber Optic Components
- · Ergonomic design with small footprint
- Quick bulb replacement, reducing downtime
- · Solid metal housing, designed for industrial use
- Certified for electronic and mechanical safety
- 150 watt cold light source with superior illumination intensity and long lamp life

Intralux® light sources have represented the best in Fiber Optic Cold Light Illumination the world for over 25 years. They provide reliable, dependable, high-intensity cold halogen light for use with all Volpi fiber optic components in microscopy applications.

The Intralux Series is equipped with the most advanced features and highest quality components available. It includes InfraRed Reflecting Filters to ensure the coldest light possible and the unique patented Crescent Shaped Diaphragm, which provides constant color temperature and light emitting angle, and continuous intensity adjustment.

Fiber optic components consist of:

- · Ringlights
- Goosenecks (sliding Sleeve: Volpi Patent)
- · Flexible Light Guides
- Backlights

illuminators

Specifications

Average Lamp Life (calcu 230V / 121V / 100V):	lated value, in continuous operation at line voltage
110% Intensity	100 hours
100% Intensity	200 hours
90% Intensity	520 hours
80% Intensity	1700 hours
75% Intensity	3600 hours
Color Temperature at 110% Intensity	3433K
Illumination Intensity at 110% Voltage at Lightguid Input (DIN 58141-10)	12.3 M Lux le
Maximum Illuminated Light Guide-Ø	13 mm
Mechanical Light Guide Connector Ø	15 mm
Light Adjustment	electrical, 8-step switch 75 to 110% Crescent shaped diaphragm (Volpi Patent) 16-steps
Halogen Reflector Lamp	EKE 21 V/150 W
Line Voltages ±10%	230 V, 50 Hz or 121 V, 60 Hz or 100 V, 60 Hz
Power Consumption	190 W
Protection Class	1
Weight	4.6 kg (10 lbs)
Housing	Metal, powder coated, color RAL 9002
Approvals	UL61010-1, CAN/CSA 61010-1,CE/Product Safety: IEC/EN 61010-1:2001 EMC: Emission: IEC/CISPR 11, Class B/Immunity: IEC 61000-4-2 to 6 and 11

Manufactured in U.S.A.

Order #	Product
W4 72-6195	Intralux® 5100 Light Source, USA, 121V, 60Hz
W4 72-6196	Intralux® 5100 Light Source, EURO, 230V, 50Hz
W4 72-6198	Intralux® 5100 Light Source, CH, 230V, 50Hz
W4 72-6197	Intralux® 5100 Light Source, JAP, 100V, 60Hz
Accessories	s and Spares
W4 72-0227	Halogen Spare Lamp EKE 21V/150W
W4 72-0219	Blank Filter Holder for Intralux 5100/NCL-150
W4 72-0220	Blue Filter for Intralux 5100/NCL-150
W4 72-0221	Red Filter for Intralux 5100/NCL-150
W4 72-0222	Green Filter for Intralux 5100/NCL-150
W4 72-0223	Yellow Filter for Intralux 5100/NCL-150
W4 72-0224	Daylight Filter for Intralux 5100/NCL-150
W4 72-0310	Set of Filters

V-Lux 1000 and NCL-150

Fiber Optic Cold Light Sources



V-Lux 1000 Cold **Light Source**

- For Microscope Illumination
- Constant color temperature and light emitting angle
- Continuous intensity adjustment
- Low-cost alternative to the Intralux series
- · Use with fiber optic ringlights, goosenecks, and flexible light guides

The V-Lux 1000 is a low-cost quality fiber optic cold light source featuring many high-end features such as compact design, constant color temperature, long lamp life and low noise/vibration. It is ideal for any microscopy applications. The V-Lux 1000 will provide reliable, dependable, high-intensity cold halogen light for use with all Volpi fiber optic components in microscopy applications. Although it is factory equipped with DDL Lamps, EKE bulbs may be easily substituted for slightly more light output. Has integrated resettable fuse transformer. This unit has a fixed power cord.

Specifications

Rated Lamp Life DDL 800 hrs*, EKE 350 hrs*
Constant Color Temperature DDL 3120°K, EKE 3190°K
Light Adjustment Crescent shaped diaphragm
Lamp DDL-20V/150W or EKE-21V/150W
Dimensions, H x W x D 9.5 x 17.1 x 21.0 cm (3.75 x 6.75 x 8.25 in)
Weight 4.5 kg (9.92 lb)

^{*} Average of continuous operation, Manufactured in U.S.A.

Order #	Product
W4 72-0215	V-Lux 1000, 120 V, USA/Canada
W4 72-0216	V-Lux 1000, 230 V*
W4 72-0217	V-Lux 1000, 230 V**
W4 72-0218	V-Lux 1000, 230 V***
W4 72-0231	V-Lux 1000, 230 V****
W4 72-0232	V-Lux 1000, 230 V*****
Accessorie	s and Spares
W4 72-0227	Halogen Spare Lamp EKE 21V/150W
W4 72-0219	Blank Filter Holder for Intralux 5100/NCL-150
W4 72-0220	Blue Filter for Intralux 5100/NCL-150
W4 72-0221	Red Filter for Intralux 5100/NCL-150
W4 72-0222	Green Filter for Intralux 5100/NCL-150
W4 72-0223	Yellow Filter for Intralux 5100/NCL-150
W4 72-0224	Daylight Filter for Intralux 5100/NCL-150
W4 72-0310	Set of Filters
* 4	4

- Argentina/Austria/Belgium/Brazil/China/Denmark/Finland/France/Germany/ Indonesia/Netherlands/Norway/Sweden/Switzerland/Thailand/Vietnam
- Australia/New Zealand/Fiji UK
- South Africa





NCL 150 Cold **Light Source**

- 20V/150W
- Constant color temperature
- High/Low setings
- Filter shot
- Use of DDL or EKE bulbs
- Continuous intensity adjustment brightness
- Long lamp life
- Low noise/vibration

Specifications

-		
Rated Lamp Life	DDL 400/1400 hrs*, EKE 100/900 hrs*	
Constant Color Temperature	DDL 3280°K/3140°K, EKE 3310°K/3120°K	
Light Adjustment Crescent shaped diaphragm		
High/Low Settings	25 dB noise level	
Filter Slot	98° F Housing temperature	
Lamp	DDL-20V/150W or EKE-21V/150W	
Dimensions, H x W x D	10.5 x 21.9 x 21.9 cm (4.125 x 8.625 x 8.625 in)	
Weight	4.5 kg (10 lb)	

^{*} Average of continuous operation, Manufactured in U.S.A.

Product
NCL 150, 120V USA/Canada
NCL 150, 230V Euro
and Spares
DDL Lamp, 20V/150W
Halogen Spare Lamp, EKE Lamp, 21V/150W
Blue Filter
Red Filter
Green Filter
Yellow Filter
Daylight Filter
Standard/Compact Ringlight
Ringpolarizer Set
Diffuser
Bifurcated Gooseneck, 4.7 mm Ø
Bifurcated Gooseneck, 5.4 mm Ø
Incident Gooseneck
Focusing Lens
Polarizing Cap for p/n W4 72-0270
Backlight, 2"x 2"
Single Light Guide 10 mm

All volpi light sources are compatible with all volpi fiber optics.

IntraLED 2020 and Filters

Fiber Optic Cold Light Sources



IntraLED 2020

This high power LED light source represents a viable alternative to halogen light sources. It achieves its high light yield of more than 6 MLux at a total power consumption of just 15W. With a color temperature of 6500K, the IntraLED 2020 emits a very white

light that is far superior to halogen lamps. The illumination intensity is controlled manually using keys on the front panel or digitally via an RS 232 interface.

The IntraLED 2020 is suitable for clean room applications and outperforms halogen light sources with respect to bulb life and efficiency.

Specifications

ptical Charac	cteristics:	
Light Source		High Power LED White CIE 1931
Illumination Intensity		>6,000,000 Lux
Efficiency		>440,000 Lux/W
Max. Optical	Efficiency	65lm/W
Aperture (Vie	ewing Angle a/2)	10°
Color Temper	rature Typical	6500K
Color Reprod	luction Index	80
Degradation	Period of LEDs	>50,000h1)
Optical Outpo	ut	<10mm (2/5 inch)
Regulation of on Vs area ill		Constant @ Vs =12V \pm 10% and T = 10°C to 40°C
LED Radiation	n Class	1M LED Product
lectrical Cha	racteristics:	
Supply Voltage Vs		12V DC
Current Cons	sumption	Approximately 1.250mA
Communication		RS 232
Connector		M8 Male; 4 Poles2)
lechanical C	haracteristics:	
Dimension		89mm x 84mm x 159mm (including connectors)
Enclosure		Aluminum body, anodized
Forced Coolin	ng, Fan Noise	39dB(A)
Enclosure Ra	nting	IP 20
Adapter		15mm standard Volpi ferrule
Weight		Approximately 1.1kg
mbient Condi	itions:	
Ambient Temperature		Operation: 0°C to 40°C Storage: 0°C to 50°C
Humidity		Maximum 95%, relative not condensing
rder #	Product	
V4 72-0322	IntraLED 2020	
V4 72-4667	IntraLED 2020	with Schott-Foster Receptacle



Light Source Filters

- Blue Filters enhance red and yellow objects and lighten blue and green objects
- Red Filters will darken blue and green objects and are useful for black and white applications
- Green Filters increase contrast for blue and red objects and brighten yellow and green objects
- Yellow Filters of specific band widths may be used as a safe light when working with photosensitive materials
- Daylight Conversion Filters increase the Kelvin Temperature of the halogen light to 5500°K, which is daylight. Daylight Filters reduce glare from highly reflective material such as muscle tissue and metals

Light Source Filters provide contrast enhancement. When the composition of an object is made of two or more colors, a filter may be used to darken the color that is most important and, therefore, be able to observe it better. When the composition of an object is pale, a filter of the opposite or complementary color may enhance the detail. Specifically, when the composition of the object is highly dense and color saturated, a filter of the same color will most likely enhance the detail on the object. Custom filters of a specific band width are also available upon request.

Order#	Product	
W4 72-0219	219 Blank Filter Holder for Intralux 5100/NCL-150	
W4 72-0220	Blue Filter for Intralux 5100/NCL-150	
W4 72-0221	Red Filter for Intralux 5100/NCL-150	
W4 72-0222	Green Filter for Intralux 5100/NCL-150	
W4 72-0223	Yellow Filter for Intralux 5100/NCL-150	
W4 72-0224	Daylight Filter for Intralux 5100/NCL-150	
W4 72-0310	Set of Filters	

Light Source Spare Parts and Accessories ators





Spare Lamps and Power Cords

Order #	Product
W4 72-0227	EKE Spare Lamp for Intralux 5100 /V-Lux 1000/Intralux DC 1100 (21 V/150 W)
W4 72-0226	DDL Spare Lamp for Intralux 5100 /V-Lux 1000 (20 V/150 W)
W4 72-0356	Spare Lamp Socket-Round for Intralux 5100 /V-Lux 1000/Intralux DC 1100/NCL-150
W4 72-0348	Power Cord, United Kingdom
W4 72-0349	Power Cord, France
W4 72-0350	Power Cord, Italy
W4 72-0351	Power Cord, Switzerland
W4 72-0352	Power Cord, Germany
W4 72-0353	Power Cord, The Netherlands
W4 72-0354	Power Cord, Spain/Portugal

Note: All Volpi Light Sources are compatible with all Volpi Fiber Optic Components.

Ringlight Adapters

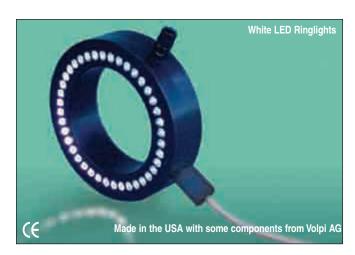
- Ringlight adapters available for all brand microscopes
- · Provide direct and indirect mounting
- Low-Cost

sed with Standard/Compact and 4-Point Standard Ringlights for attachment to all brand microscopes. If your microscope is not listed here, please contact customer service for assistance.

Order#	Product
W4 72-0249	Ringlight Adapter for Leica Classic Stereo Zoom 1-5 without Attachment Lens
W4 72-0250	Ringlight Adapter for Leica New Family SZ4/SZ6/Photo/Plus without Attachment Lens
W4 72-0305	Ringlight Adapter for Leica New Family SZ4/SZ6/Photo/Plus with Attachment Lens
W4 72-0251	Ringlight Adapter for Leica Stereo Zoom 7/GZ7 without Attachment Lens
W4 72-0252	Ringlight Adapter for Leica M3B/C/Z; Leica MZ6 Achromatic 0.32x/0.5x/0.63x/0.8x/1.0x
W4 72-0257	Ringlight Adapter for Olympus SZ/ without Attachment Lens
W4 72-0258	Ringlight Adapter for Olympus SZH9/SZH12 and Nikon SMZ Series without Attachment Lens
W4 72-4666	Ringlight Adapter for SZM 180 Stereo Zoom Microscopes

LED Ringlights







White LED Ringlights

- · Compact, Metal Design
- Flicker-Free Light
- 7,000 to 10,000 LED life
- 7800°K Temp
- Working Distance Range of 30 to 150 mm
- · Adaptable to all microscopes

White Light Emitting Diodes (LEDs) are now available in a ringlight to produce uniform, shadow-free illumination comparable to that of fiber optic ringlights. This exciting new technology is available in 5500°K Temperature (Daylight) and 7800°K Temperature for working distances of 30-150 mm. Metal housing design produces minimal heat for cool light illumination. Powered with an 8W/24V DC power supply (included), these ringlights offer flicker-free illumination. The most unique feature of these White LEDs is by far their rated life of 7,000-10,000 hours. White LED ringlights have the standard 66 mm inside diameter and are adaptable to all microscopes and lenses through a series of available ringlight adapters. This ringlight is supplied with slim line power supply

Order#	Product
W4 72-4656	Standard White LED Ringlight, 30-70 mm Working Distance
W4 72-4657	Diffuse Standard White LED Ringlight, 30-90 mm Working Distance
W4 72-4658	Spot/Focused White LED Ringlight, 70-160 mm Working Distance
W4 72-4659	Daylight LED Ringlight-5500°K Temp - Short Working Distance, 30-70 mm Working Distance
W4 72-4660	Daylight LED Ringlight-5500°K Temp - Long Working Distance, 70-160 mm Working Distance
W4 72-4661	Rheostat Accessory for use with all LED Ringlights
W4 72-4662	Ring Polarizer Set with Glass Analyzer for all LED Ringlights
W4 72-0321	Slim Line Power Supply, works with all LED Ringlights

Twin Row Spot Focused LED Ringlight

- · Twice as bright
- · Available with white or yellow LEDs
- Applications:
 - Scratch & Flaw
 - General purpose illumination
 - Inspection (yellow LED)

Uniform shadow-free illumination. LED light source with extremely stable and homogeneous light output. Optimal working distance 3-6 inches. Includes on/off switch and power supply.

Specifications

Illumination Type High Intensity LED	White 7800K Yellow 6400K
Expected Life	> 10,000 Hours *
Slim Line Power Supply	110V (included)
Maximum Voltage	24 Volt DC
Cable	1.5M
Wiring	Black = GND White = +

Black Anodized Aluminum Body

^{*} Average of continuous operation

Order #	W4 72-0319	W4 72-0320	W4 72-0321
Product	Twin Row Spot Focused LED Ringlight White	Twin Row Spot Focused LED Ringlight Yellow	Slim Line Power Supply (included)
Number of LEDs	84	84	
Power Consumption	7.2W	7.2W	
Mounting Diameter	66 mm	66 mm	
Working Distance	75-150 mm (3-6 inches)	75-150 mm (3-6 inches)	

Fiber Optic Ringlights

illuminators

Standard Ringlight

- 25 to 90 mm working distance
- · Uniform and shadow-free illumination
- Full-circular
- Adaptable to all microscope brands

Full circular glass fiber ringlight provides homogeneous, shadow-free illumination for working distances of 25 to 90 mm. Inside diameter is 66 mm for mounting on all microscopes through a series of ringlight adapters listed on 360.

Order #	Product
W4 72-0238	Standard Ringlight with 750 mm (30 in) flexible length
W4 72-0239	Standard Ringlight with 1200 mm (48 in) flexible length
W4 72-0240	Standard Ringlight with 2400 mm (96 in) flexible length



Compact Ringlight

- · Compact design
- 15 to 70 mm working distances
- · Uniform and shadow-free illumination
- Adaptable to all microscope brands

Full circular glass fiber ringlight provides homogenous, shadow-free illumination for working distances of 15 to 70 mm. Inside diameter is 66 mm for mounting on all microscopes through a series of ringlight adapters listed on 360. Standard Flexible length is 750 mm (30 in). Longer lengths available.

Order #	Product
W4 72-0233	M10 Compact Ringlight

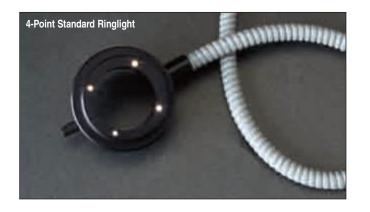


4-Point Standard Ringlight

- Depth perception
- 70 to 100 mm working distance
- · Adaptable to all microscope brands

Standard ringlight with four fiber points provides illumination with depth perception for working distances of 70 to 100 mm. Inside diameter is 66 mm for mounting on all microscopes through a series of ringlight adapters listed on page 360. Standard Flexible length is 750 mm (30 in). Longer lengths available.

Order #	Product
W4 72-0248	4-Point Standard Ringlight



Fiber Optic Ringlights (continued) Uminators

Mini Ringlight

- Small diameter
- Full circular
- 5 to 175 mm working distances
- · Shadow-free
- Direct mounting for 20 to 32 mm objectives

Small full circular glass fiber ringlight provides homogeneous, shadowfree illumination for working distances of 5 to 25 mm. Long Working

W4 72-0246	Short Working Distance Mini Ringlight
Order#	Product
	ut the need for adapters. Standard Flexible length is 900 mm r lengths available.
diameter rang	ges from 20 to 32 mm with the presence of 3 mounting
for fiber option	illumination on Compound Microscope objectives. Mounting
Distance vers	ion is available for distances of 25 to 175 mm. Can be used
	ion for working distances of 6 to 20 min. Long working



SMD/MAXI Ringlight

- · Large diameter
- Full circular
- 50 to 120 mm working distance

W4 72-0247 Long Working Distance Mini Ringlight

- · Diffuse light
- · High intensity

Large full circular diameter glass fiber ringlight that provides homogenous, shadow-free illumination for working distances of 50 to 120 mm. Large diameter and shallow fiber angle produces wonderful darkfield effect on large surface areas. Inside diameter is 150 mm and can be adapted to SMD stations and stereomicroscope columns. Standard Flexible length is 480 mm (19 in) with longer lengths available on request.





Ringlights and Accessories Iluminators

Ergo/Olympus SZ/SD Ringlight

- Ergonomic
- · Long working distance starting at 100 mm
- Direct mounting to Olympus

Tapered ringlight for direct mounting on Olympus SZ/SD Microscopes with minimum loss of working distance. Flexible length exits at 45° angle allowing maximum work space. Long Working distance starting at 100 mm with long flexible lengths available. Adapter included.

Order #	Product
W4 72-0242	Ergo/Olympus SZ/SD Ringli



Accessories for Standard/Compact and 4-Point Ringlights

- Reduces or eliminates unwanted reflections
- Extends standard ringlight working distance range
- · Used with standard, compact and 4-point standard ringlights

Ring Polarizer Set

Eliminates unwanted reflections of highly reflecting materials such as tissue and metallic objects. Glass analyzer is used with plastic polarizer for the best possible cross-polarization effect. Can be used with Standard, Compact, and 4-Point Standard Ringlights.

Toric Lens

Extends the working distance of Standard and Compact Ringlights from 90 to 150 mm. Longer distance ringlights are also available as an alternative.

Diffuser

Reduces unwanted reflections of highly reflecting materials such as tissue and metallic objects. Can be used with Standard, Compact, and 4-Point Standard Ringlights.

Order#	Product
W4 72-0262	Ring Polarizer Set for Standard/Compact Ringlights
W4 72-0265	Toric Lens for Standard/Compact Ringlights
W4 72-0264	Diffuser for Standard/Compact Ringlights

Note: All Volpi Light Sources are compatible with all Volpi Fiber Optic Components.



Gooseneck Light Guides

illuminators

Gooseneck Light Guides

Gooseneck light guides provide fiber optic incident illumination using semi-obedient, self-supporting arms with no spring-back action. You can position each arm independently and with the key system in place, there is no rotation. Single Arm and bifurcated Goosenecks are available with 4.7 mm and 5.4 mm diameter.

Special Volpi Patent: Sliding Sleeve allows fiber bundles to move independently of the outer tubing for minimal fiber breakage over time. Gooseneck Arms are repairable. Light sources are sold separately.

Order #	Product
W4 72-0268*	Single Arm Gooseneck Light Guide, 4.7 mm x 500 mm fiber diameter
W4 72-0309	Single Arm Gooseneck Light Guide, 5.4 mm x 500 mm
W4 72-0267	Bifurcated Gooseneck Light Guide, 4.7 mm x 500 mm fiber diameter (each arm)
W4 72-0266*	Bifurcated Gooseneck Light Guide, 5.4 mm x 500 mm fiber diameter (each arm)

^{* 20&}quot; long, Ferrule diameter = 10mm





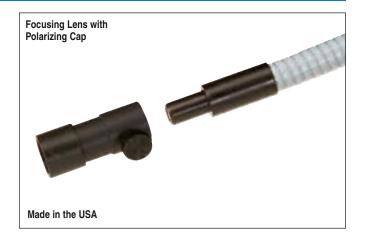
Gooseneck Accessories

Standard Focusing Lens: A spherical lens used to focus light to a concentrated spot.

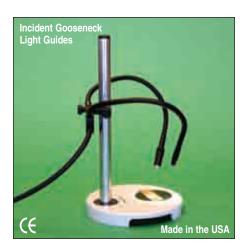
Polarizing Cap: Fits onto focusing lens.

Order#	Product
W4 72-0269*	Standard Focusing Lens
W4 72-0304	Polarizing Cap for Standard Focusing Lens For Modular Accessory System, see page 363

^{*} Fits on 10mm Ferrule



Gooseneck Light Guides (continued) I nators



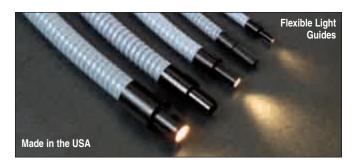
Incident Gooseneck Light Guides

- Bifurcated Gooseneck and flexible light guide combination
- Attachable to columns of all brand microscopes through available adapters
- · Great flexibility in the placement of light source
- · Available in different lengths
- Uses standard Gooseneck accessories

This combination of a Semi-Obedient Bifurcated Gooseneck and a Flexible Light Guide provides incident illumination. Fiber Optic Incident Goosenecks attach to the columns of microscopes or other work station columns with specialized adapters. Each arm can be positioned and adjusted independently. The flexible length size can vary to allow the placement of the light source away from the microscope and work station.

Utilizes standard Gooseneck accessories such as Focusing Lens W4 72-0269, Polarizing Caps W4 72-0304 and Modular Accessory System found on pages 361 and 363. Light sources are sold separately.

Order #	Product
W4 72-0329	Incident Gooseneck Light Guide, 4.7 mm fiber diameter (each arm), 75 cm (30 in)
W4 72-0330	Incident Gooseneck Light Guide, 4.7 mm fiber diameter (each arm), 100 cm (40 in)
W4 72-0331	Incident Gooseneck Light Guide, 4.7 mm fiber diameter (each arm), 150 cm (60 in)
W4 72-0333	Incident Gooseneck Light Guide Adapter for 20 to 25 mm Round Columns
W4 72-0334	Incident Gooseneck Light Guide Adapter for 32 mm Round Columns
W4 72-0335	Incident Gooseneck Light Guide Adapter for Nikon SM5/6 and SMZ 6/10
W4 72-0336	Incident Gooseneck Light Guide Adapter for Olympus SZX9/12
W4 72-0308	Incident Gooseneck Articulated Arm Support Adapter for Leica G26, MS5, M26, M28, M212



Flexible Light Guides

- Point illumination
- · Highly flexible
- PVC metal tubing provides durability.
- 3 to 13 mm fiber diameters
- Standard and custom lengths available

Highly flexible and durable light guides available in 3 to 13 mm of fiber diameters and various standard and custom lengths. Outer tubing is composed of PVC metal tubing to provide both flexibility and protection. Standard single arm and twin arm versions available. Customized versions are available upon request.

Flexible Light Guides

Fiber Dia	meter (m	m)			
	3	5	8	10	13
Bushing	Diameter				
	5	10	10*	13*	16*

Single Arm Lengths

50 cm **W4 72-0283 W4 72-0287 W4 72-0291 W4 72-0295 W4 72-0299** (20 in)

100 cm **W4 72-0284 W4 72-0288 W4 72-0292 W4 72-0296 W4 72-0300** (40 in)

150 cm **W4 72-0285 W4 72-0289 W4 72-0293 W4 72-0297 W4 72-0301** (60 in)

200 cm **W4 72-0286 W4 72-0290 W4 72-0294 W4 72-0298 W4 72-0302** (80 in)

* Does not fit standard focusing	lense
----------------------------------	-------

Twin Arm Lengths

100 cm (40 in)	-	W4 72-0313	W4 72-0316	-	-
150 cm (60 in)	-	W4 72-0314	W4 72-0317	-	_
200 cm (80 in)	-	W4 72-0315	W4 72-0318	_	-

Light Guide Accessories







Articulating Arm with Heavy Steel Base

- Fixed point illumination
- Accurate adjustment for quick, simple and precise positioning
- Unrestricted movement 220 mm radius of action
- Very durable

Articulating Support Arm provides unrestricted movement and accurate fine adjustment for fixed point illumination. Adjustment is simple and precise with 220 mm radius of action. Articulating Arms are available with M6/M6 and M6/M8 thread ends. Flexible Light Guides can be attached with small (9 to 12 mm OD) and large (11 to 16 mm OD) holders depending on flexible light guide outer ferrule diameters.

3 Components W4 72-0324 W4 72-0322

W4 72-0325 or W4 72-0326 depending on light grid brushing ø

Order#	Product
W4 72-0323	Articulated Support Arm, M6/M6 Thread
W4 72-0324	Heavy Steel Base for Articulated Support Arm
W4 72-0325	Holder for Articulated Support Arm, ferrule diameter 9 to 12 mm (0.35 to 0.47 in)
W4 72-0326	Holder for Articulated Support Arm, ferrule diameter 11 to 16 mm (0.43 to 0.63 in)

Modular Accessory System

- Use with Goosenecks and up to 8 mm OD Flexible Light Guides
- Allows combination of filters and other accessories
- Very versatile

Modular Holder has a 10 mm mounting diameter and attaches onto ends of goosenecks and up to 8 mm OD flexible light guides. Modular Accessory Holder and each of the Modular Accessories are threaded to accept one another. Modular accessories include the Modular color filters, Modular focusing lens, Modular diffuser, Modular polarizing filter, and Modular iris diaphragm. One or all can be attached at any one time. Custom filters are also available upon request.

Order#	Product
W4 72-0270	Modular Accessory Holder
W4 72-0271	Modular Focusing Lens
W4 72-0272	Modular Iris Diaphragm
W4 72-0273	Modular Polarizing Filter
W4 72-0274	Modular Daylight Filter, plastic
W4 72-0275	Modular Blue Filter, plastic
W4 72-0276	Modular Red Filter, plastic
W4 72-0277	Modular Green Filter, plastic
W4 72-0278	Modular Yellow Filter, plastic
W4 72-0280	Modular Blank Filter, plastic
W4 72-0279	Modular Diffuser, plastic

Note: All Volpi Light Sources are compatible with all Volpi Fiber Optic Components.

Backlights and Base











Glass Light Fiber Backlights

- Homogeneous, diffuse backlight illumination
- Used in the image processing, brightfield illumination on stereo microscopes, pattern recognition of different transparencies, area recognition of different colors, side illumination, dimensional gauging, shape verification, etc.

Glass Fiber Backlights provide homogeneous, diffuse illumination. Glass fiber used is extremely durable and heat tolerant. Can be adapted to most brand microscope bases.

Available in three sizes: $5 \times 5 \text{ cm}$ ($2 \times 2 \text{ in}$), $7.6 \times 7.6 \text{ cm}$ ($3 \times 3 \text{ in}$), and $12.7 \times 12.7 \text{ cm}$ ($5 \times 5 \text{ in}$). Additional specifications listed below.

Specifications

W4 72-0342	W4 72-0343	W4 72-0344
2 inch Backlight	3 inch Backlight	5 inch Backlight
5 x 5 cm (2 x 2 in)	7.6 x 7.6 cm (3 x 3 in)	12.7 x 12.7 cm (5 x 5 in)
±10%	±10%	±10%
6.3 mm (0.25 in)	6.3 mm (0.25 in)	6.3 mm (0.25 in)
91.4 cm (36 in)	91.4 cm (36 in)	91.4 cm (36 in)
Intralux Series	Intralux Series	Intralux Series
	2 inch Backlight 5 x 5 cm (2 x 2 in) 1.3 x 10.2 x 6.4 cm (0.5 x 4.0 x 2.5 in) ±10% 6.3 mm (0.25 in) 91.4 cm (36 in)	2 inch Backlight 3 inch Backlight 5 x 5 cm (2 x 2 in) 7.6 x 7.6 cm (3 x 3 in) 1.3 x 10.2 x 6.4 cm 2.3 x 17.2 x 12.1 cm (0.5 x 4.0 x 2.5 in) (0.9 x 6.75 x 4.75 in) ±10% ±10% 6.3 mm (0.25 in) 6.3 mm (0.25 in) 91.4 cm (36 in) 91.4 cm (36 in)

Order #	Product
W4 72-0342	Glass Fiber Backlight, 5 x 5 cm (2 x 2 in)
W4 72-0343	Glass Fiber Backlight, 7.6 x 7.6 cm (3 x 3 in)
W4 72-0344	Glass Fiber Backlight, 12.7 x 12.7 cm (5 x 5 in)



Brightfield/Darkfield Base

- Transmitted bright/darkfield illumination
- Uses standard/compact ringlight illumination
- Low cost alternative
- · Compact design
- · Adapts to all brand name microscopes

This is a low-cost, intense, contrast-rich, transmitted, light Bright/Darkfield Base used with Standard or Compact Fiber Optic Ringlights. It provides transmitted bright/darkfield illumination. Easily accessible knob allows quick and easy change between brightfield and darkfield. Adapts to all brand name microscopes.

Order #	Product
W4 72-0337	Bright/Darkfield Base
W4 72-0339	Polarizer to Base
W4 72-0340	Diaphragm to Objective, 0.5/0.63X
W4 72-0341	Diaphragm to Objective, 1.5/2.0X

Note: All Volpi Light Sources are compatible with all Volpi Fiber Optic Components.

Coverslips

accessories

Large selection of high quality coverslips stocked for immediate delivery



Now Available in #1.5 Thickness!

High quality Coverslips are essential for microscopy imaging. At high resolutions (40X, 60X or 100X), choosing the correct coverslip is critical for good performance. Warner has recently expanded its line of coverslips to include German borosilicate glass at #1.5 thickness. Except CS-40R, CS-30R and CS-24/60.

Stocked in depth in the sizes used with RC Series, Series 20 and the new Series 40 chambers. Consult the chart to select the correct cover glass for your chamber.

Order#	Model	Quantity	Dimension	Chamber Used With
Coverslip Thi	ckness #1: 0.15	mm (0.006 in.)	
W4 64-0700	CS-5R	100	5 mm D	Fits inside 96-well culture plate
W4 64-0701	CS-8R	100	8 mm D	Fits inside 24-well culture plate
W4 64-0702	CS-12R	100	12 mm D	RC-25, RC-48LP
W4 64-0703	CS-15R	100	15 mm D	RC-20, RC-20H, RC-25F, RC-37WC, RC-37FC
W4 64-0384	CS-18R	100	18 mm D	RC-37WC, RC-41LP, RC-43C
W4 64-0704	CS-22S	100	22 x 22 mm	RC-21B
W4 64-0705	CS-25R	100	25 mm D	RC-21BR, RC-21BRFS, RC-21BRW, RC-21BDW, RC-40LP, RC-40HP, RC-43C, RC-46SNLP, RC-46SLP, RC-47FSLP, RC-50
W4 64-1500	CS-40R	60	40 mm D	RC-30WA
W4 64-0706	CS-22/30	50	22 x 30 mm	RC-30, RC-30HV
W4 64-0707	CS-22/40	50	22 x 40 mm	RC-22, RC-22C, RC-24, RC-24E, RC-24N, RC-26, RC-26G, RC-26GLP, RC-26GS, RC-30, RC-50
W4 64-0708	CS-22/50	50	22 x 50 mm	RC-26Z, JG-23N/HP, JG-23W/HP, JG-23W/LP
W4 64-0709	CS-24/50	50	24 x 50 mm	RC-27, RC-27L, RC-27N, RC-27NE, RC-28, RC-29
Coverslip Thi	ckness #1.5: 0.1	17 mm (0.0067	in.)	
W4 64-0712	CS-12R15	100	12 mm D	RC-25, RC-48LP
W4 64-0713	CS-15R15	100	15 mm D	RC-20, RC-20H, RC-25F, RC-42LP, RC-37WC
W4 64-0714	CS-18R15	100	18 mm D	RC-37FC, RC-41LP, RC-43C
W4 64-0715	CS-25R15	100	25 mm D	RC-21BR, RC-21BRFS, RC-21BRW, RC-21BDW, RC-40LP, RC-40HP, RC-43C, RC-46SNLP, RC-46SLP, RC-47FSLP, RC-50
W4 64-1499	CS-30R	90	30 mm D	RC-30WA
W4 64-0716	CS-22/3015	50	22 x 30 mm	
W4 64-0717	CS-22/4015	50	22 x 40 mm	RC-22, RC-22C, RC-24, RC-24E, RC-24N, RC-26, RC-26G, RC-26GLP
Coverslip Thi	ckness #2: 0.22	mm (0.0086 ir	1.)	
W4 64-0710	CS-24/60	40	24 x 60 mm	RC-10, RC-11, RC-13, RC-16, RC-27D, RC-27LD

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