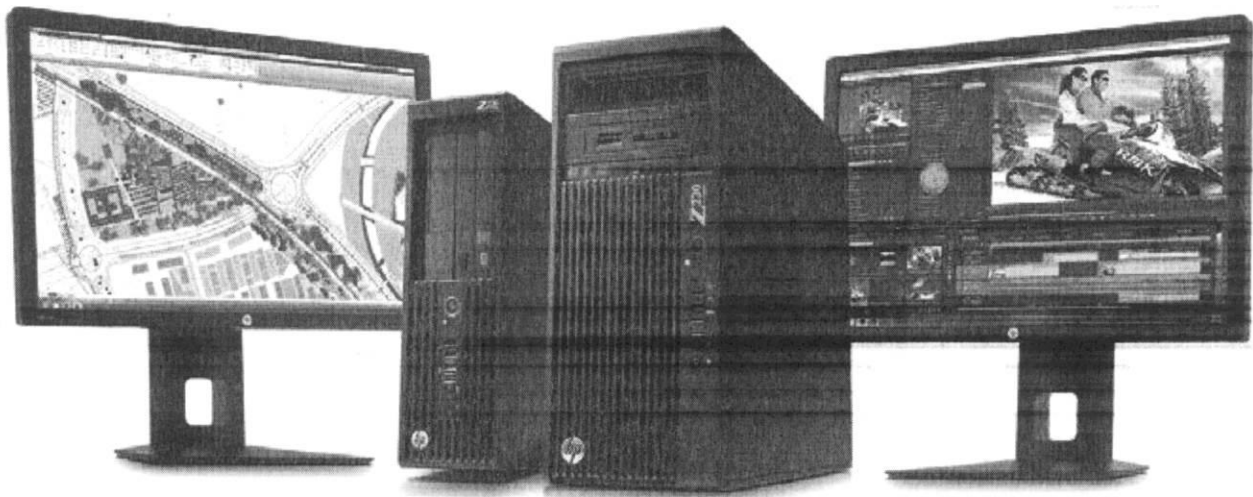


Data sheet

HP recommends Windows.

HP Z230 Tower and SFF Workstations

Affordable performance and flexibility, re-defined.



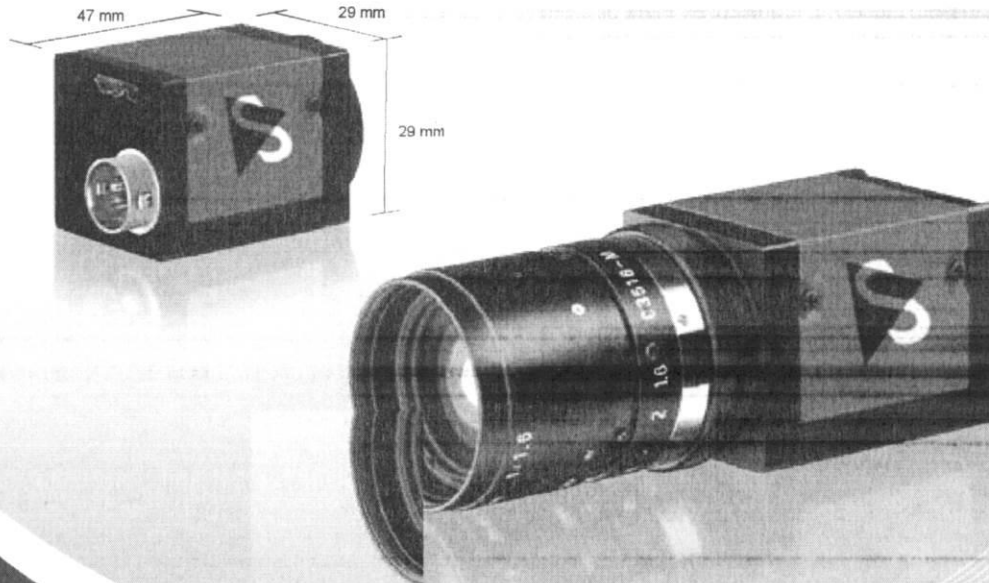
April 2014

HP Z230 Workstations

HP Z230 Tower ¹⁰		HP Z230 SFF ¹⁰							
Form Factor	Tower	Small Form Factor							
Available Operating Systems	Windows 8.1 Pro 64-bit. Other editions available** Windows 8 Pro 64-bit and other editions available** Windows 7 Professional 32-bit. Other editions available*** HP Linux Installer Kit SUSE Linux Enterprise Desktop 11 (90 day support)								
Available Processors^{5,11}	Processor	GHz	Max Turbo GHz	Cache	Memory	Cores	Hyper-Threading	Intel® vPro™ Technology	Intel® HD Graphics
	Intel® Core™ i7-4771 processor	3.5	3.9	8 MB	1600 MHz	4	Y	Y	4600
	Intel Core i7-4770 processor	3.4	3.9	8 MB	1600 MHz	4	Y	Y	4600
	Intel Core i5-4670 processor	3.4	3.8	6 MB	1600 MHz	4	N	Y	4600
	Intel Core i5-4570 processor	3.2	3.6	6 MB	1600 MHz	4	N	Y	4600
	Intel Core i3-4330 processor	3.5	-	4 MB	1600 MHz	2	Y	N	4600
	Intel Core i3-4130 processor	3.4	-	3 MB	1600 MHz	2	Y	N	4400
	Intel Pentium® G3220 processor	3.0	-	3 MB	1333 MHz	2	N	N	Yes
	Intel Xeon® processor E3-1280 v3	3.6	4.0	8 MB	1600 MHz	4	Y	Y	No
	Intel Xeon processor E3-1270 v3	3.5	3.9	8 MB	1600 MHz	4	Y	Y	No
	Intel Xeon processor E3-1245 v3	3.4	3.8	8 MB	1600 MHz	4	Y	Y	P4600
	Intel Xeon processor E3-1240 v3	3.4	3.8	8 MB	1600 MHz	4	Y	Y	No
	Intel Xeon processor E3-1230 v3	3.3	3.7	8 MB	1600 MHz	4	Y	Y	No
	Intel Xeon processor E3-1225 v3	3.2	3.6	8 MB	1600 MHz	4	N	Y	P4600
Chipset	Intel® C226 chipset								
Memory^{12,13}	4 DIMM slots. up to 32 GB ECC/non-ECC, DDR3 1600 MHz (ECC/non-ECC choice and actual memory speed dependent on processor capability)								
Drive Controllers¹⁴	Integrated SATA Controller. RAID 0, 1 supported. 5 ports, 6 Gb/s								
Storage¹⁵	Up to (3) 3.5-inch 7200 rpm SATA drives: 500 GB, 1, 2 or 3 TB (9 TB max) Up to (3) 2.5-inch 10k rpm SATA drives: 250, 500 GB, 1 TB (3 TB max) Up to (3) 2.5-inch SATA SSD drives: 128, 240, 256 or 480 GB (1.44 TB max) Up to (1) 2.5-inch SATA self-encrypting SSD (SED SSD): 256 GB Up to (1) 2.5-inch SATA self-encrypting 7200 rpm HDD (SED HDD): 500 GB Up to (2) HP Z Turbo PCIe SSD drives: 256, 512 GB (1 TB max)**** Optional (1) 64 GB SSD Disk Cache Module can be used in conjunction with up to (2) SATA HDDs in RAID 0/RAID 1 using Intel® Smart Response Technology.				Up to (2) 3.5-inch 7200 rpm SATA drives: 500 GB, 1, 2 or 3 TB (6 TB max) Up to (2) 2.5-inch 10k rpm SATA drives: 250, 500 GB, 1 TB (2 TB max) Up to (2) 2.5-inch SATA SSD drives: 120, 128, 240, 256 or 480 GB (960 GB max) Up to (1) 2.5-inch SATA self-encrypting SSD (SED SSD): 256 GB Up to (1) 2.5-inch SATA self-encrypting 7200 rpm HDD (SED HDD): 500 GB Up to (1) Z Turbo PCIe SSD drive: 256, 512 GB (512 GB max)**** Optional (1) 64 GB SSD Disk Cache Module can be used in conjunction with up to (2) SATA HDDs in RAID 0/RAID 1 using Intel® Smart Response Technology.				
Optical Storage^{16,17}	DVD-ROM, DVD+/-RW DL Super Multi, HP Blu-ray Writer, HP 15-in-1 Media Card Reader								
Drive Bays	2 internal 3.5-inch bays, 1 internal 2.5-inch bay (for SSD only), 1 external slim ODD bay, 2 external Half-Height 5.25-inch bays				1 internal 3.5-inch bay, 1 internal 2.5-inch bay (for SSD only), 1 internal/external 3.5-inch bay, 1 external Half-Height 5.25-inch bay				
Expansion Slots	1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot/x4 connector, 1 PCIe Gen2 x1 slot, 1 PCI 32-bit				1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot/x4 connector, 1 PCIe Gen2 x1 slot. All slots are Low Profile.				
Available Graphics	Integrated Graphics: Intel® HD Graphics available on select processors as above Professional 2D: NVIDIA NVS 310, NVIDIA NVS 315, NVIDIA NVS 510 Entry 3D: AMD FirePro™ V3900, NVIDIA Quadro 410, NVIDIA Quadro K600 Mid-range 3D: NVIDIA Quadro K2000 High-end 3D: AMD FirePro™ W7000 (AMD® only), NVIDIA Quadro K4000				Integrated Graphics: Intel® HD Graphics available on select processors as above Professional 2D: NVIDIA NVS 310, NVIDIA NVS 315, NVIDIA NVS 510 Entry 3D: AMD FirePro™ V3900, NVIDIA Quadro 410, NVIDIA Quadro K600				
Audio	High Definition Integrated Realtek ALC221 Audio and integrated speaker; optional HP Thin USB Powered Speakers								
Network	Integrated Intel I217LM PCIe GbE Controller; Optional Intel Ethernet I210-T1 PCIe as 2nd NIC								
Remote Management	Intel® vPro™ with Intel® AMT 9.0								
Ports	Front: 2 USB 3.0; 1 USB 2.0; 1 USB 2.0 Charging Data Port; 1 microphone in; 1 headphone out Rear: 2 USB 3.0; 4 USB 2.0; 1 DVI-I single link and 2 DisplayPort 1.2 (for use with Intel HD Graphics); 1 audio in; 1 audio out; 1 microphone; 1 serial (optional); 2 PS/2; RJ-45 (LoM), optional 2 IEEE 1394b ports Internal: 1 USB 3.0, 3 USB 2.0 1 Thunderbolt™ 2 ^{8,19} via optional add-in PCIe card				Front: 2 USB 3.0; 2 USB 2.0; 1 microphone in; 1 headphone out Rear: 2 USB 3.0; 4 USB 2.0; 3 DisplayPort 1.2 (for use with Intel HD Graphics); 1 audio in; 1 audio out; 1 standard/1 serial (optional); 2 PS/2; RJ-45 (LoM), optional 2 IEEE 1394b ports (PCIe card) Internal: 1 USB 3.0, 3 USB 2.0 1 Thunderbolt™ 2 ^{8,19} via optional add-in PCIe card				
Input Devices	HP PS/2 keyboard, HP USB keyboard, HP USB CCID smart card keyboard, HP PS/2 mouse, HP USB optical mouse, HP USB 1000 dpi laser mouse, HP Optical 3-button optical mouse, USB SpaceMouse Pro, USB SpacePilot Pro								
Dimensions (H x W x D)	15.7 x 6.7 x 17.4 in (39.93 x 17.04 x 44.25 cm)				Standard desktop orientation: 3.95 x 13.3 x 15.0 in (10.5 x 33.83 x 38.15 cm)				
Power Supply	400-watt 92% efficient power supply, 320 W, Standard Efficiency Power Supply available in some countries				240-watt, 92% Efficiency power supply; 240-watt Standard Efficiency Power Supply available in some countries				
Compatible Displays (screen size diagonally measured)	HP DreamColor LP2480zx Professional Display; HP ZR30w 30-inch 5-IPS LCD Monitor; HP ZR2740w 27-inch LED Backlit IPS Monitor; HP ZR2440w 24-inch LED Backlit IPS Monitor; HP Z Display 730i 30-inch IPS LED Backlit Monitor; HP Z Display 727i 27-inch IPS LED Backlit Monitor; HP Z Display Z24i 24-inch IPS LED Backlit Monitor; HP Z Display Z23i 23-inch IPS LED Backlit Monitor; HP Z Display Z22i 21.5-inch IPS LED Backlit Monitor								
Warranty¹⁸	Limited three-year Mon-Fri 8-5 next business day, parts, labor and 24x7 phone support, terms and conditions may vary. One-year warranty option available in selected countries.								

The Imaging Source "USB 3.0" Series Cameras

DMK 23U274 / DFK 23U274



The Imaging Source DMK 23U274 (monochrome) and DFK 23U274 (color) USB 3.0 cameras are the perfect solution for many industrial automation, quality assurance, security, surveillance, and medical applications. Utilizing the very sensitive SONY Ex View HAD ICX 274ALA/AQA monochrome and color CCD sensors, these cameras feature a variety of input, output, strobe, and trigger options via a 6-pin external Hirose port. With up to 20 fps and a trigger delay of less than 5 micro seconds, the DMK 23U274 and DFK 23U274 USB 3.0 cameras from The Imaging Source are a low cost, yet highly versatile imaging solution.

Included :

- Camera, CS to C mount adapter and tripod mount
- Drivers compatible to WDM, DirectShow, DirectX®, TWAIN, ActivVisionTools, HALCON, Vfw and LabVIEW® for Windows 7/8, Windows Vista, and Windows XP
- IC Capture camera control and acquisition software for Windows 7/8, Windows Vista, and Windows XP (32 and 64 bit versions)
- IC Imaging Control Software Development Kit (SDK) including a .NET component, an ActiveX component, and a C++ class library for Windows

Features :

- Variable trigger (4 μ s to 1 s)
- Digital I/O strobe
- CS with C mount adapter
- Optional external DC driven auto iris controller

Accessories :

- CS to M12 adapters
- C, CS, and M12 lenses
- 6-pin Hirose trigger cable

Specification : DFK 23U274 (Color)

GENERAL BEHAVIOR

Video formats @ Frame rate	1600x1200 RGB32 @ 20, 15, 7.5, 3.75 fps 1600x1200 Y800 @ 20, 15, 7.5, 3.75 fps 1600x1200 Y16 @ 20, 15, 7.5, 3.75 fps
Sensitivity	0.05 lx
Dynamic range	8 / 12 bit

INTERFACE (OPTICAL)

IR cut filter	yes
Sensor specification	ICX274AQ
Type	progressive scan
Format	1/1.8 "
Resolution	H: 1600, V: 1200
Pixel size	H: 4.4 μ m, V: 4.4 μ m
Lens mount	C/CS

INTERFACE (ELECTRICAL)

Supply voltage	4.5 to 5.5 VDC
Current consumption	approx. 500 mA at 5 VDC

INTERFACE (MECHANICAL)

Dimensions	H: 29 mm, W: 29 mm, L: 47 mm
Mass	65 g

ADJUSTMENTS (MANUAL)

Shutter	1/100,000 to 30 s
Gain	0 to 36 dB
White balance	-2 dB to +6 dB

ADJUSTMENTS (AUTOMATIC)

Shutter	1/100,000 to 30 s
Gain	0 to 36 dB
White balance	-2 dB to +6 dB

ENVIRONMENTAL

Max. temperature (operation)	-5 °C to 45 °C
Max. temperature (storage)	-20 °C to 60 °C
Max. humidity (operation)	20 % to 80 % non-condensing
Max. humidity (storage)	20 % to 95 % non-condensing

CoolLED pE-100-WHT

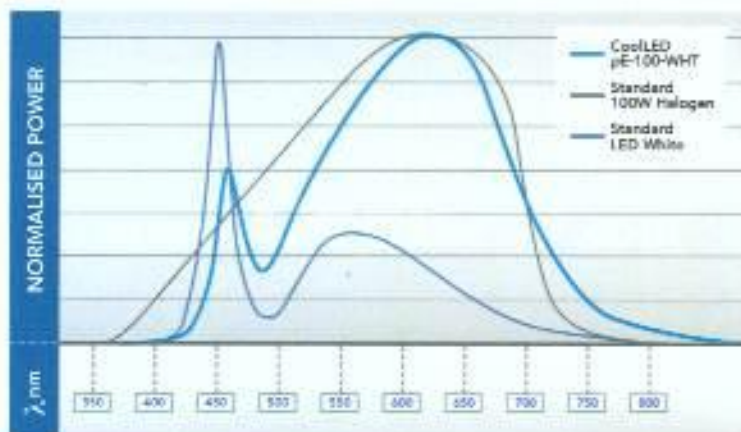
100W Halogen Replacement

The pE-100-WHT LED light-source has been designed as a direct replacement to the 100W Halogen lamp. It offers greater power and consistent white colour balance across all intensities. The product offers all the benefits of LED illumination – instant On/Off, control, stability, and repeatability – with a spectral performance matched to 100W Halogen. Lifetime will exceed 50,000 hours of on-time without the need to replace or align bulbs.

Each unit comprises an LED head with specified fitting to your microscope, a control pod which accepts a BNC input for TTL trigger, and a universal power supply. The pE-100 can replace the 100W Halogen lamp housing on most current and older microscopes.



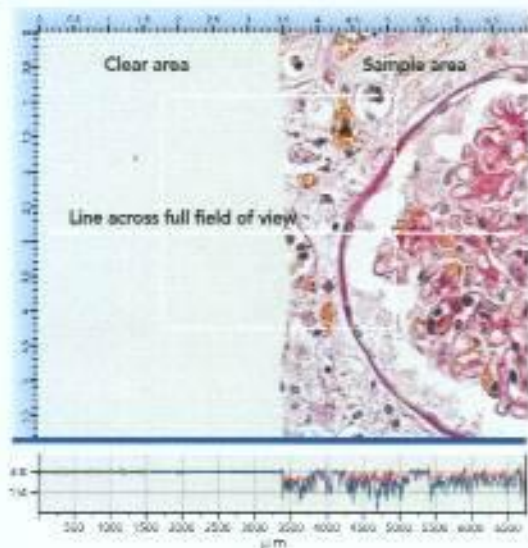
▶ SPECTRAL COMPARISON



CoolLED uses a new LED technology which has a spectrum closely matched to that of a 100W Halogen lamp resulting in samples looking identical between the pE-100-WHT and 100W Halogen. This is a major improvement over standard white LEDs which, due to their significant differences in spectrum, cause samples containing reds and pinks to lose their colour clarity.

A particular benefit is that there is no need to colour balance when varying intensity as the colour spectrum remains constant over the full intensity range. In addition, the pE-100-WHT does not produce unwanted illumination in the UV region which makes it a safer product for the user as risk of damage to eyes is significantly lower.

▶ INTENSITY PROFILE

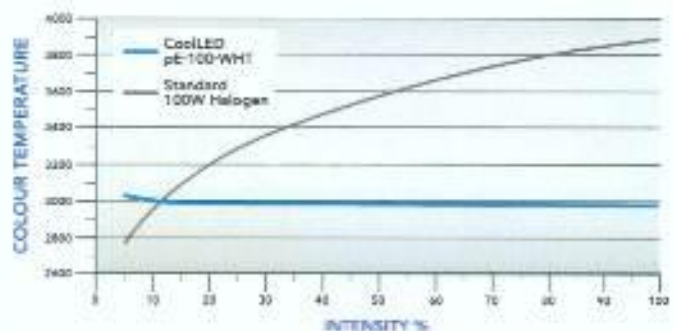


Excellent homogeneity is achieved across the full Field of View

▶ COLOUR VALUES

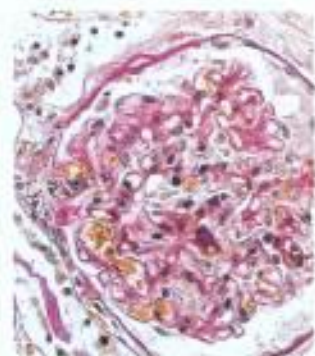
Correlated colour temperature (CCT) and colour rendering index (CRI) values are shown opposite. The pE-100-WHT has been designed to match the standard settings of the 100W Halogen lamp.

pE-100-WHT Values	
CRI-Ra	>90
CCT	≈3000K

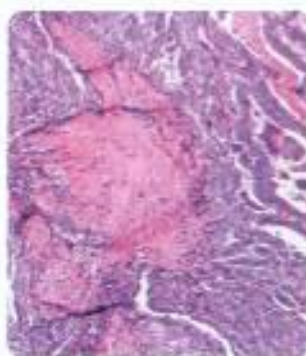


Colour balance remains stable with pE-100-WHT

▶ IMAGES TAKEN USING pE-100-WHT



Kidney with Candida Infections. 40x OBJ



Thyroid Gland. 10x OBJ



Rosskastanie Knospe. 20x OBJ



Podocarpus Elatus Leaf. 20x OBJ

▶ TO SPECIFY

pE-100-WHT-YYY-ZZ

YYY = Microscope fitting

ZZ = Power cable

Specify microscope adaptor "YYY" from CoolLED's extensive list.

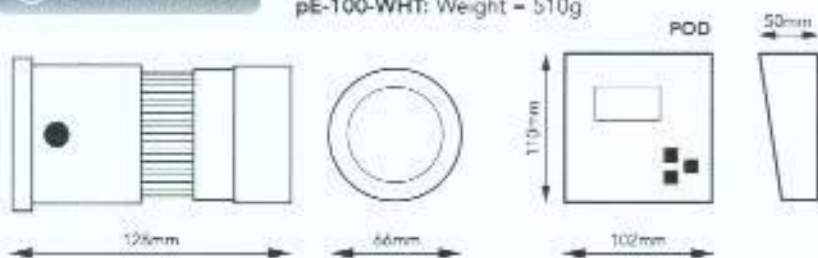
See website:

www.coolled.com/Life-Sciences-Analytical/Clinical/Microscope-Adaptors/

10 – Australia
20 – Europe
30 – UK
40 – USA

▶ DIMENSIONS

pE-100-WHT: Weight = 510g



▶ PRODUCT DETAILS

Control: Instant On/Off
0-100% Intensity in 1% steps
TTL trigger via BNC

Power Consumption:
1W (idle) 20W (full intensity)

Input:
100-240V AC, 50/60 Hz

Operation: 22 dBA spl

▶ ENVIRONMENT & SAFETY

LED products are more sustainable and energy efficient than conventional light sources. CoolLED's products have the following benefits:

- No Mercury
- Long lifetime
- Reduced risk of eye damage
- Energy Efficient: 80% less power
- No bulb replacements
- No special disposal regulations



▶ CONTACT



Online: www.coolled.com

Phone: +44 (0) 1264 323040 (Worldwide)
1-800-877-0128 (USA + Canada)

Email: info@coolled.com

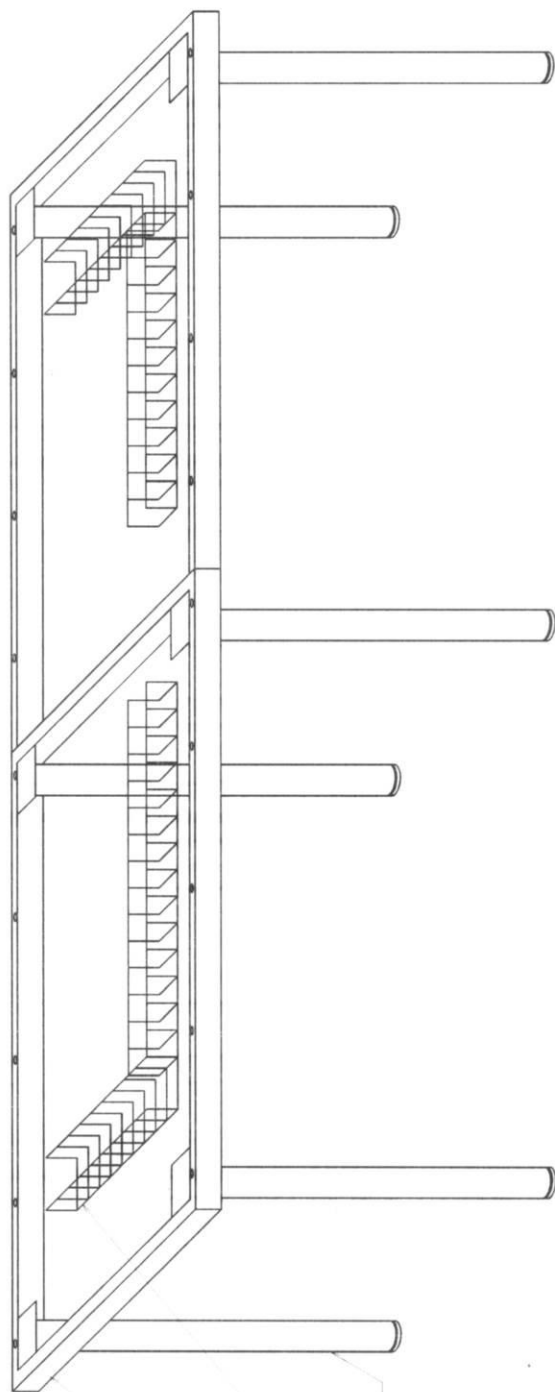
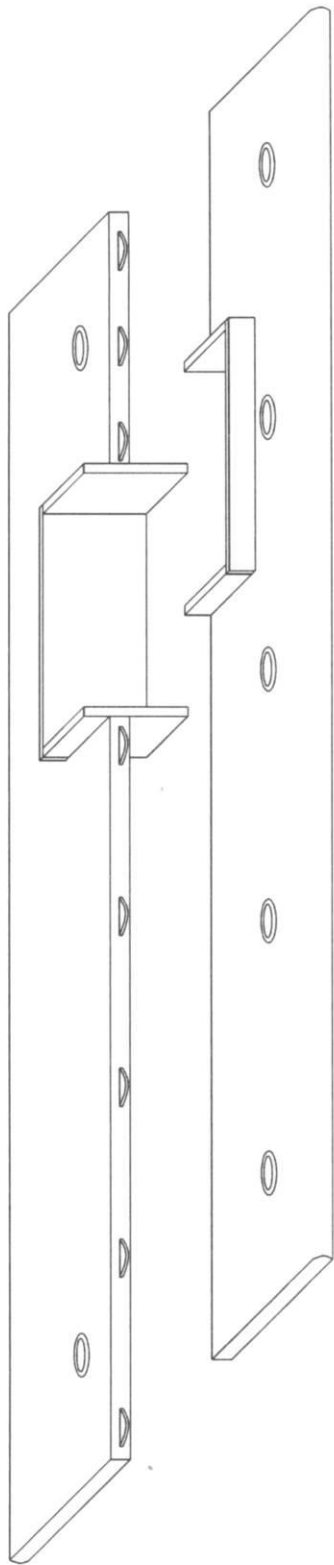
CoolLED

Westmarch Business Centre, River Way, Andover, SP10 1NS, UK



NO MORE MERCURY!





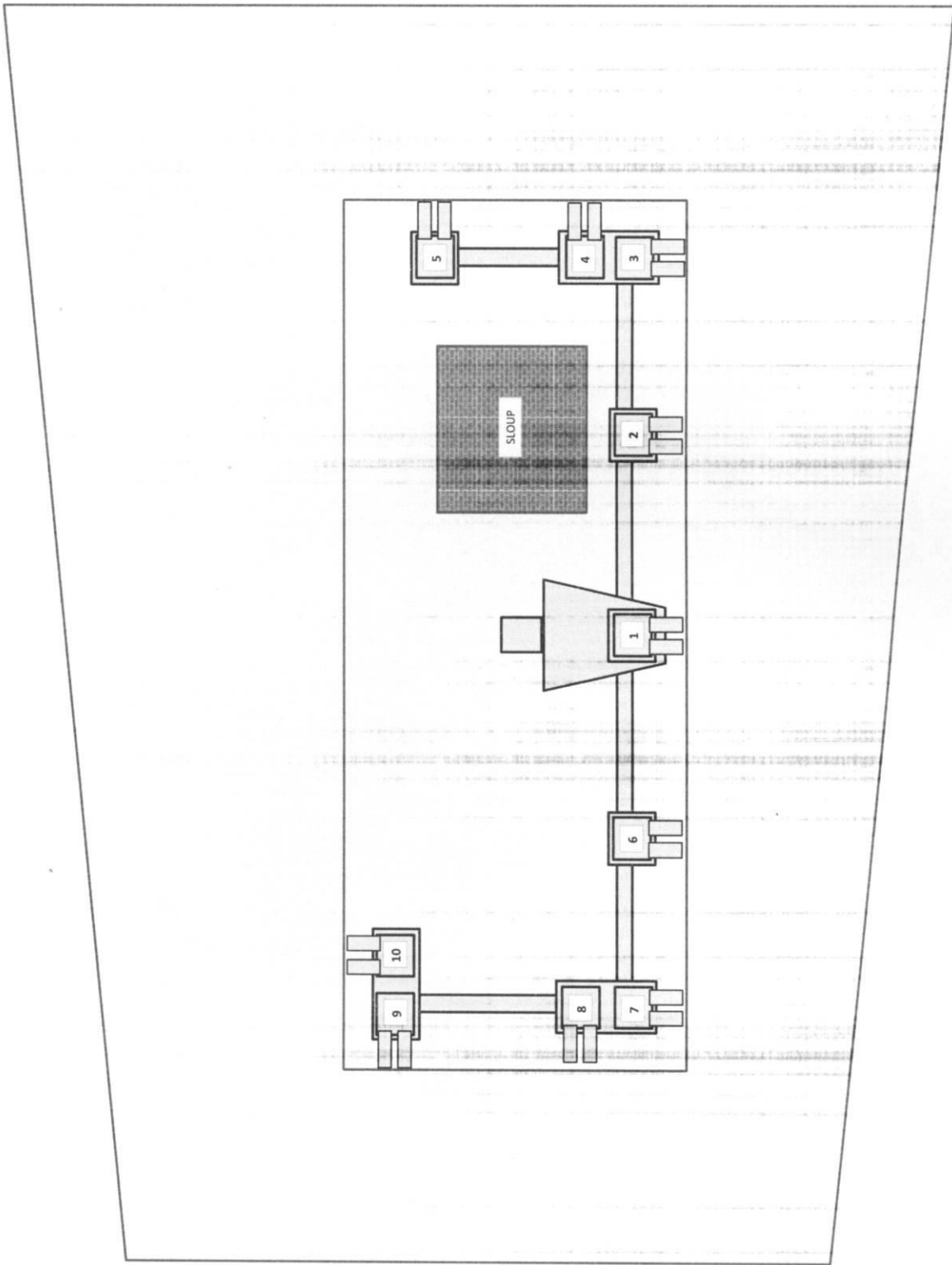
ocelový profil 50x30mm

labeľový štáb - drátený

noha 300mm - nerez

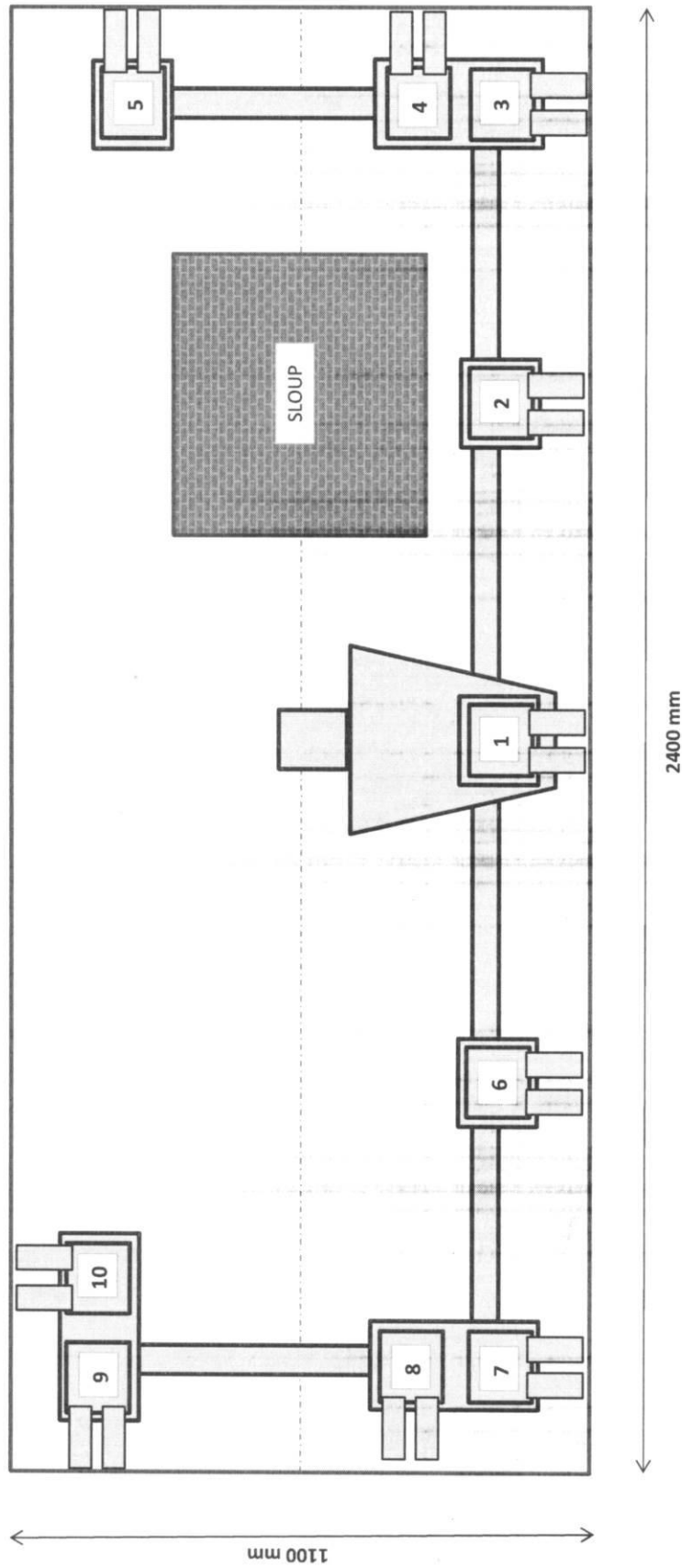
NIKON - Stůl pod mikroskop 2400 x 1100 / 750 mm
návrh - úpravy možné

Návrh řešení uspořádání mikroskopického výukového systému pro 10 spolupozorovatelů s orientačním vyznačením velikosti a tvaru místnosti



Návrh řešení uspořádání mikroskopického výukového systému pro 10 spolupozorovatelů

Umístění stolu vůči sloupu může být před instalací systému eventuelně změněno dle požadavků uživatele; výřez může být proveden excentricky, systém může být zrcadlově otočen apod.





Upright Microscope ECLIPSE Ni

Upright Microscope
ECLIPSE
Ni

See the evolution

The Ni series, the ultimate in upright biological microscope evolution, supports bioscience studies with enhanced basic performance and flexible system expandability.

The newly developed CH Plan ApoChromat A (flattened series) objectives are the key to the series' optical performance. Nano Crystal Coat, with its ultra low refractive index, is employed for the first time in microscope objectives, providing brighter, high-resolution and high-contrast microscopy images.

Nikon's proprietary stratum structure, used and highly acclaimed for inverted research microscopes, is now incorporated in an upright microscope, allowing a combination of components to be installed. Applications using laser and fluorescent proteins, such as Kaede and mCherry, are possible with the addition of a two-tiered fluorescent unit and a photoactivation unit.

The Ni series transcends the concept of conventional upright microscopes, and approaches the possibilities of advanced research in fields such as bioscience and medicine.

Ni

■ System expandability

- Nikon's proprietary stratum structure enables efficient system construction.
- The numerous accessories can be custom combined depending upon application.

■ Optical performance

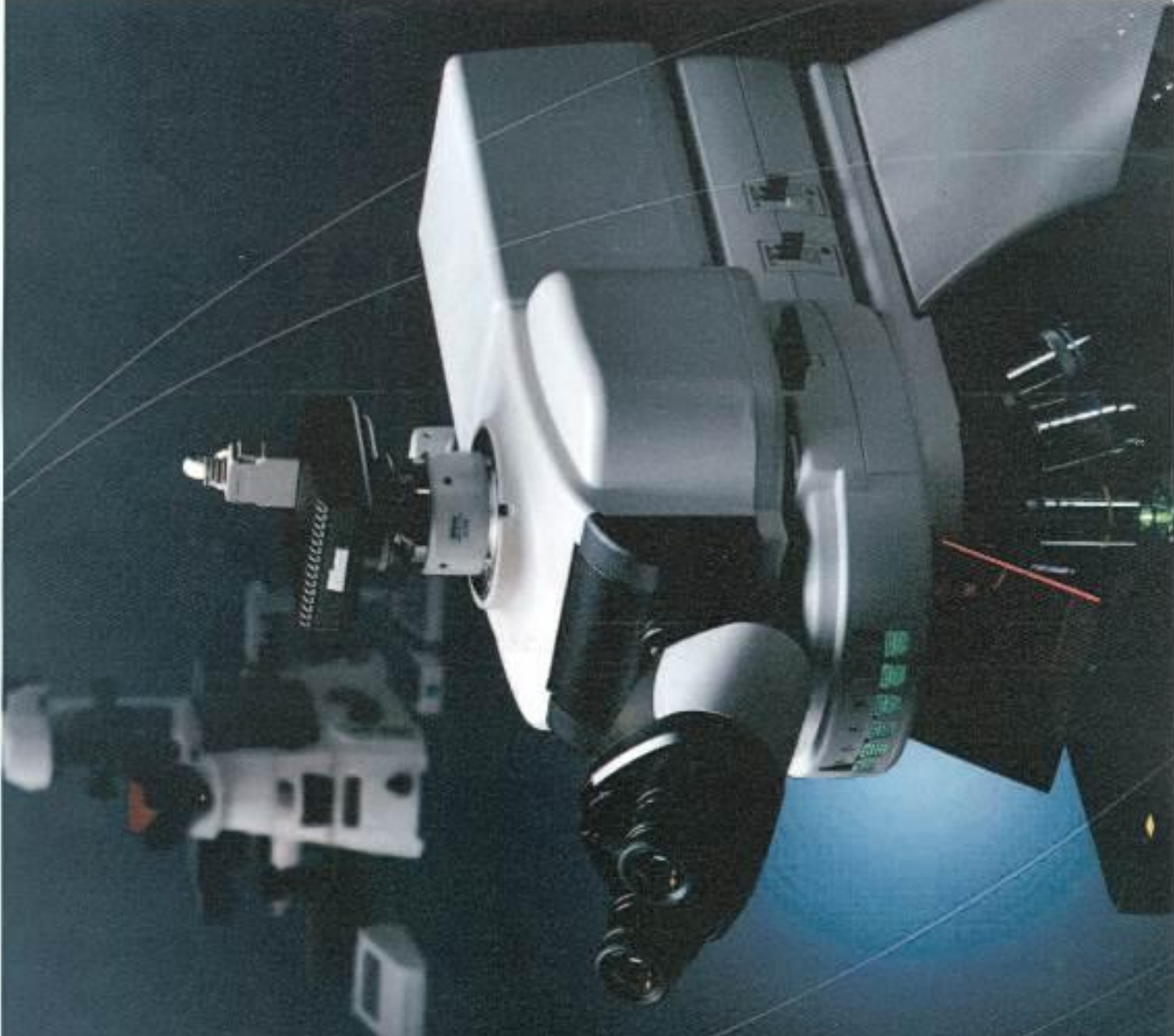
- CH Plan ApoChromat A objectives with chromatic aberration correction and high transmission throughout a broad range of wavelengths.
- Objectives with improved transmission in near IR wavelength range for multiphoton excitation imaging.

■ Design

- 3D ergo design combines functionality with sophistication.

■ Operability

- Ni-E: Motorized model with automatic change of observation conditions and adjustment of microscope accessories.
- Ni-U: Manual model with some motorized options.
- Most microscope controls can be operated with easy-to-reach buttons on the front of the Ni-E.



The Ni series microscopes meet all research demands

These microscopes have three features: expandability of the system due to the stratum structure that enables optical paths in two tiers; superior optical performance, as represented by the Plan Achromat; A series objectives; and high-speed minimized accessories. The Ni series is designed to meet the needs of all advanced bioscience and medical research.

Cell biology

Neuroscience

Pathology

Immunology

Genetics

Microbiology

Drug discovery

Cancer research

Developmental
biology

Microscopy, imaging and analysis
LEICA
LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN
LEICA MICROSYSTEMS GMBH
Friedrich-Straße 107, D-90804 München, Germany
Tel: +49 (0) 89 30 92 40 00
Fax: +49 (0) 89 30 92 40 01
E-mail: info@leica-microsystems.com

Expandable system broadens application possibilities

Multi-color fluorescent imaging (Ni-E)

Demand for multi-color fluorescent imaging that uses newly developed fluorescent proteins and fluorescent reagents is constantly increasing. Nikon meets such needs with diverse functions and optical technologies.



High-speed motorized components

The higher speeds of the precision actuators and Z-axis filter wheel are 4 times faster in high speed wavelength change. 250/1,520/3,040 images of the spectrum can be captured via body control. 200/1,000 images can be captured via stage.

CFI Plan ApoChromat A series objectives

Fluorescence and chromatic aberrations (CA) have been improved to approach the wide range of visible to near IR wavelengths, allowing use of visible fluorescent reagents. The products feature high-contrast, high S/N, digital-correction wide-field-of-view, high resolution images with almost 50 times the resolution of any microscope.

Microscope (Photoactivation Imaging)

Ni-E

Multi-color
fluorescent
observation

FISH

Signal
conversion

Photoactivation imaging (Ni-E/Ni-U)

Research into the properties and characteristics of stimulated cells has become popular in recent years. Nikon has developed a new photoactivator, an "off" for upright microscopes, a first in microscopy.



Flexible stratum structure

This system allows two-light excitation of a photoactivator with an eye-positioning adjustment.

Objectives for long-wavelength laser

With CFI Plan ApoChromat A objectives, separate detection has been connected with 480 nm and transmission improved with long wavelength laser, increasing diameter and efficiency of laser irradiation at target site.

Photo-
activation

FRAP



Versatile microscopes meet all demands

Manual and motorized models

To meet diverse user demands for operability, system expandability and motorized control, Nikon provides two MI series models. The MI-U, which has compatibility with some motorized accessories, is the manual model suitable for high-quality image observation and digital imaging. The MI-E is a fully motorized model that is efficient for experiments requiring comprehensive control of various devices, such as photostimulation units and confocal systems.

MI-U (manual model)

- Ergonomic base and stage handle height adjustment mechanism allow comfortable viewing position.
- Stream structure and sturdy design ensure expandability.
- Motorized microscope, motorized pre-illuminator tube turret, motorized shutter can be selected.



MI-U (manual model) is an example. Illustration by Nikon.



MI-E (motorized model) is an example. Illustration by Nikon.

MI-E (motorized model)

- High-precision motorized focusing.
- Broad range of motorized accessories that can be used in combination.
- Observation conditions can be changed in a simple push of a button.
- Stream structure and sturdy design improve expandability.
- 3D step design buttons with improved operability are located close together for steady operations.
- Microscope settings in use can be verified on the display.
- Optimized for multichannel excitation imaging.
- Two focusing mechanisms (optional): focusing stage and focusing rods are

MI-E provides fully motorized operations

Automatic adjustment with objective changeover

Condenser aperture and field diaphragms, and AOI filter are automatically set to the optimal position during objective that preset in addition, stage XYZ travel amount per search, reticulae and parfocal distance deviations correction are automatically adjusted. Microscope settings can also be manually repaired.

Change of observation conditions

Selected observation conditions can be designated from individual buttons, enabling change in the mode at the push of a button. This is particularly convenient when reproducing specific observation conditions.

High-precision motorized focusing

High-precision Z-focus incorporated by the MI-E provides accurate Z-position information regardless of use with motorized lower magnification. Individual focus and autofocus mode provide enhanced ease of operation.



Technologies supporting the Ni series

Supreme optical performance

As a light microscope manufacturer, Nikon has cultivated high-precision capabilities and confidence. With its advanced technology extending from optical glass production to lens design, fabrication, coating and processing, Nikon provides unsurpassed optical performance.

High-performance objective lens

● CFI Plan ApoChromat A series

With unrivaled high NA, greatly improved transparency in the long wavelength range thanks to Nikon proprietary Nano Crystal Coat, and chromatic aberration correction over 425 to 850 nm, these objectives are black as a cat's paw for biological and DIC observations but also fit for semiconductor inspection. These lenses offer resolutions of light and color images at any wavelength for useful imaging of multi-color fluorescence images. Because light rays can be corrected even with a scale one-tenth light, damage to a specimen is minimized.



Mano Crystal Coat

The anti-reflection coating that consists of nanometer-size particles is based on spin-coating technology and is also used for ultra-thin camera lenses. The color structure with particles arranged in a single direction with a thickness thinner than visible light creates low-reflective colors.



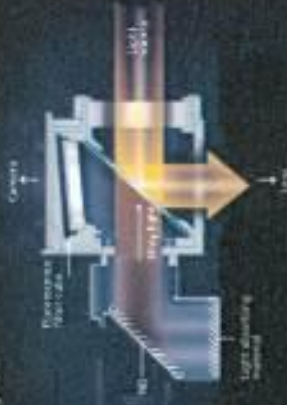
Uniformly bright illumination

The "Super" lens technology in the CFI series illuminates each cell uniformly. Uniform and bright illumination across the wide field of view is provided at any magnification.



Fluorescence noise elimination

Since synchronous wave-levelling technology is employed in the optical surfaces (both front and rear sides), the SFR ratio has been dramatically improved by effectively absorbing stray light in the inner surface, allowing images of weak fluorescent signals to be captured with high contrast and brightness.



Excellent image acquisition with all observation methods



Fluorescence observation



Phase-contrast observation



DIC observation



Fluorescence observation

● Water dipping objective lenses

With a long working distance and high NA, these objectives provide excellent transparency in the 0.1 wavelength range. The anti-reflective treatment of 450 and 850 nm objectives has been extended to up to 850 nm, allowing high-resolution images of minute structures in thick specimens during DIC observation.

The 25x, 40x and 100x objectives feature high NA (0.7) and a long working distance (2.0 mm). With chromatic aberration correction in the IR region, these objectives are ideal for red-infrared fluorescence observation. In addition, by employing a special design to compensate for the changes in optical aberration that occur at different temperatures and depths of illumination planes, clear images of areas that will be a thick specimen can be captured.



Ultimate ease, speed and clarity in imaging

Digital imaging

The Hi series can be controlled in conjunction with a Digital Sight series digital camera, facilitating effortless digital imaging. Images can be captured with a dedicated button on the microscope body, the touch panel on the camera's control unit, or the software GUI on a PC, depending on your preference.

- **Image capture button**

Images can be captured by simply pressing the image capture button located on the microscope body.



- **Stand-alone control unit DS-L3**

Stand-alone control unit DS-L3 allows the Digital Sight series digital camera to be set up and operated through a PC connection. It also enables image acquisition through a PC through a network. The DS-L3 is forward biased, and has a built-in connection for your facility's network.

- Optimal imaging parameters for each observation method can be selected using zoom and focus measurements can be taken.
- Camera, microscope microscope functions and peripheral devices can be comprehensively controlled.
- Microscope status data, such as objective lens, fluorescence (the tube and condenser) information, is automatically transferred along with the captured image when a triggered or Inteligent unit is attached.
- Operations can be controlled with a mouse or a touch panel operated by touch or stylus pen.
- Filtered images can be selected and laid out as desired.



Control unit DS-L3 (left) and Hi series microscope (right)

- **Combination of Hi-E and microized stage enables large-image acquisition.**



Hi-E microscope (left) and Hi series microscope (right)

Digital Sight series digital cameras

Advanced digital cameras with high sensitivity, high resolution, high speeds and faithful color-reproduction are available to meet all research needs and purposes.

- **High-sensitivity cooled monochrome camera head DS-Q11**

The new CCD on the DS-Q11 reduces thermal noise. The cooling mechanism suppresses heat-induced noise, allowing the capture of more fluorescent signals. Furthermore, it provides a high frame rate of up to 40 FPS and a high temporal stability with 0.2%.



- **Ultra-high-resolution cooled color camera head DS-R11**

From the 12.2 megapixel equivalent, 2250 TV lines high resolution, 23-inch large image display, 40 FPS, 10 FPS makes focusing easy. Superior color reproduction capabilities allow the taking of accurate specimen colors. The cooling mechanism reduces heat-induced noise in fluorescent images.



- **High-definition cooled color camera head DS-F11C**

Equipped with a 3-megapixel CCD, this cooling mechanism reduces heat-induced noise, making it ideal for fluorescent image acquisition.



- **High-definition color camera head DS-F12**

Equipped with a 3-megapixel CCD, this cooling mechanism reduces heat-induced noise, making it ideal for fluorescent image acquisition.



Imaging Software NIS-Elements

NIS-Elements seamlessly integrates cameras, peripheral devices, and the PC, serving as a powerful yet easy-to-use interface for complex imaging experiments. Powerful tools for quick processing, measurement and acquired data management provide a one-stop solution for acquisition and analysis.

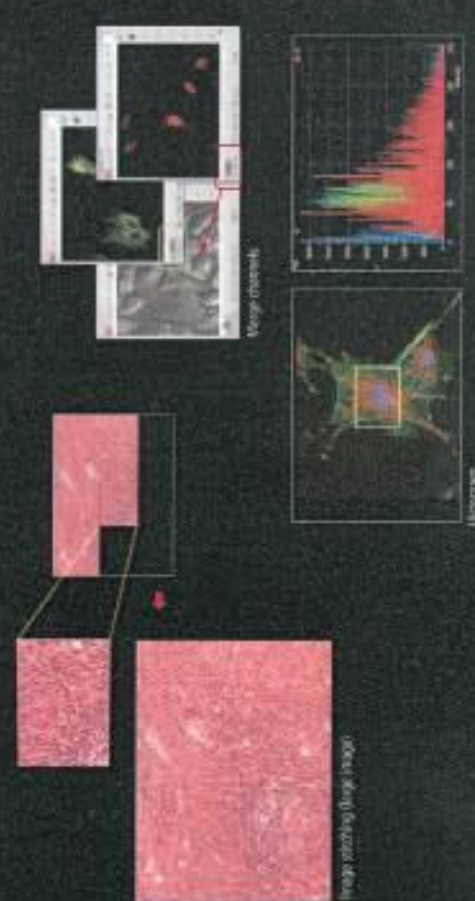


Image channels



Fluorescence

Image stitching (large image)

High-resolution confocal imaging systems

Combining the MPE's high-resolution Z-focus mechanism with a confocal scanner allows high-resolution, high SNR ratio imaging of 3D structures of organs and cells. The M-E can be configured with either a scanning stage or a focusing transducer, catering to specific imaging requirements. Moreover, a wide range of confocal systems that can accommodate various fields.

● Multiphoton confocal microscope A1 MP/A1R MIP*

A1 MP* provides high-resolution multiphoton imaging up to 4226 x 4226 x 4226 pixels resolution in addition, A1R MIP* is capable of high-speed multiphoton imaging up to 420 frames per second. The high-performance detector enables deep imaging of living specimens with high sensitivity. The M20 also enables high-speed, accurate analysis of 2D F and MIP.

● Confocal microscope C2*

C2* features a compact design and high brightness. The C2* allows users to image with various 3-channel and 4-channel DIC images and provides powerful imaging capabilities, such as large-image stitching.

● Confocal microscope A1*/A1R*

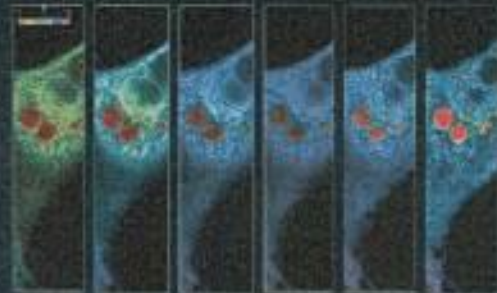
A1*/A1R* provides a high SNR ratio up to 4226 x 4226 x 4226 pixels resolution in addition, A1R* also incorporates a high-speed up to 420 frames per second, in addition to the non-invasive scanning, resulting from non-invasive photoacoustic and biopsy.

● Spectral imaging confocal microscope A1S1*/A1R1*/C2S1*

By incorporating a spectral detector, a wide wavelength spectrum of 100 nm can be acquired with a single shot. Disturbance signals spectra can be analyzed directly with relevant contrast.



MPE Series MPE C2*



MPE Series MPE C2* provides high-resolution, high SNR ratio imaging of 3D structures of organs and cells. The M-E can be configured with either a scanning stage or a focusing transducer, catering to specific imaging requirements. Moreover, a wide range of confocal systems that can accommodate various fields.



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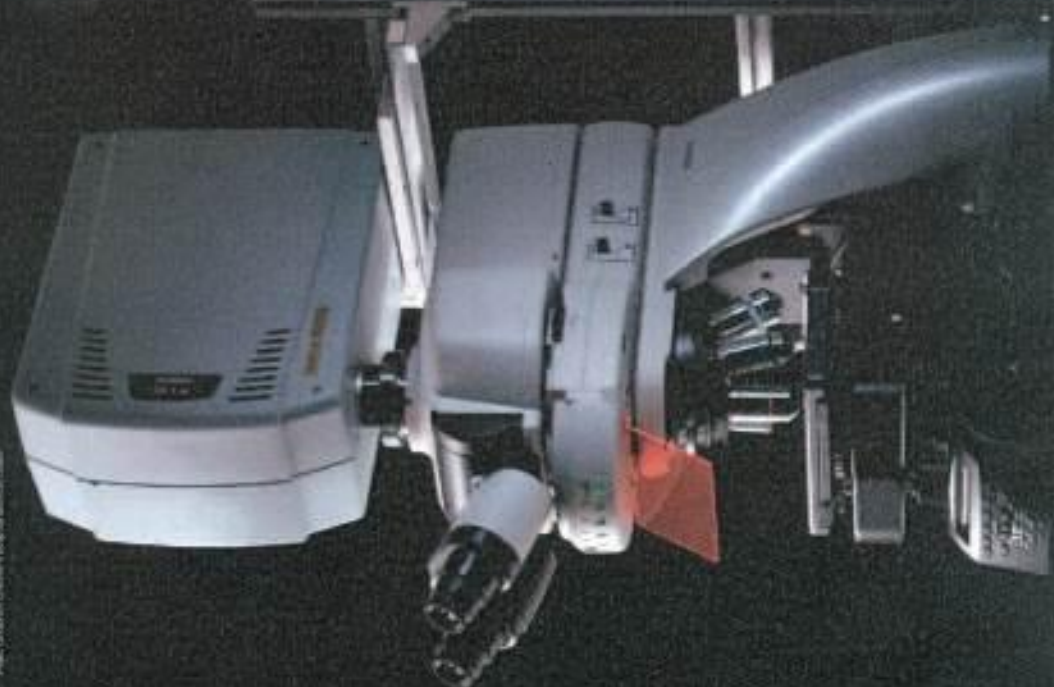
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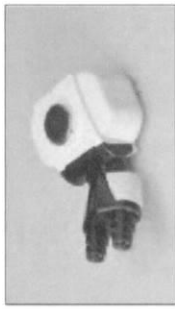
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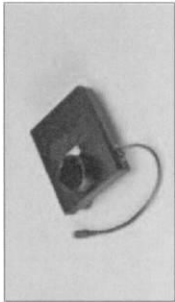
Wide array of accessories finely segmented by function



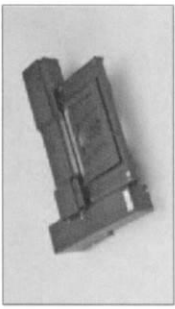
Motorized quadrocular tilting tube (Ni-E)
Motorized changer of optical paths is possible. Epi-illumination can be adjusted from 15° to 35°.



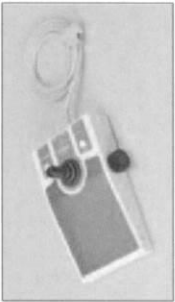
Motorized DSC zooming port (Ni-E)
A digital camera can be mounted on the camera port. A motorized 0.6x - 2.0x zoom optical system is incorporated.



Motorized ND filter (Ni-E)
Brightness is automatically optimized with the changeover of the motorized nosepiece. Motorized adjustment of desired brightness is also possible.



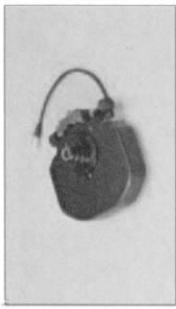
Motorized XY stage (Ni-E)
Effective for applications that require highly accurate positioning, such as photoactivation mapping and FISH.



Joystick for motorized stage (Ni-E)
Makes control of motorized XY stage possible.



Ergo controller (Ni-E)
In addition to motorized microscope operation, XYZ control of stage is possible with similar operational ease as that of an actual microscope.



Motorized universal condenser Dry (Ni-E)
High-speed motorized changer of condenser modules for brightfield, phase contrast, DIC and similar darkfield observations is possible.



Motorized barrier filter wheel (Ni-E)
Barrier filter positions (7 positions—using 2.5mm filter) can be changed at a high speed of 0.2 sec. between adjacent positions.



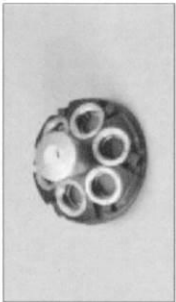
Motorized excitation filter wheel (Ni-E)
Excitation filter positions (6 positions—using 2.5mm filter) can be changed at a high speed of 0.15 sec. between adjacent positions.



Photoactivation unit (Ni-E, Ni-U)
Laser light, photoactivation and episcopic illumination are possible. Both the photoactivation unit and the confocal system can be used with a single laser source.



Back port unit (Ni-E, Ni-U)
Enables simultaneous acquisition of images with two different wavelengths using two cameras. Dedicated cubes are optional.



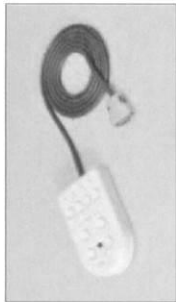
Motorized sextuple DIC nosepiece (Ni-E, Ni-U)
Objective magnification is automatically saved along with the captures image. Built-in prism/analyzer plate slot.



Motorized epi-fluorescence cube turret (Ni-E, Ni-U)
Wide binocular provides high S/N ratio. Six filter cubes can be installed. Either an epi-fluorescence attachment or a photoactivation unit can be attached.

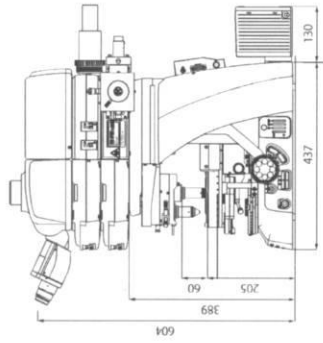


Motorized shutter (Ni-E, Ni-U)
High-speed shutter control is possible. The system can be attached to diascopic and episcopic illumination systems.

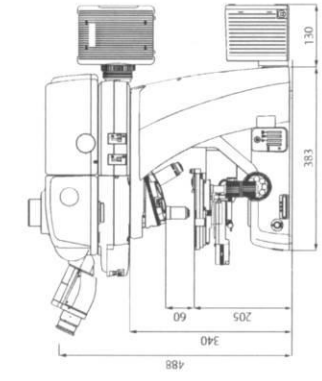
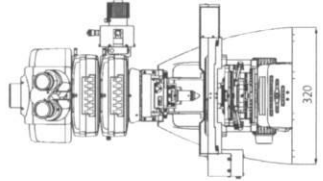


Simple remote control pad (Ni-U)
Motorized operation of nosepiece, epi-fluorescence cube turret and shutter is possible.

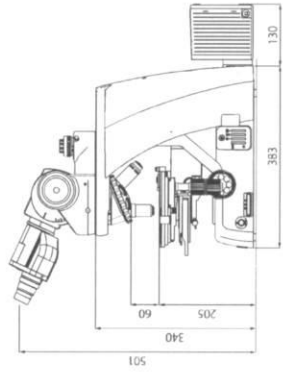
Dimensional diagram



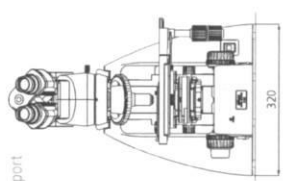
Ni-E (for use with focusing nosepiece)
Configured with an Ni photoactivation unit, two-tiered motorized epi-fluorescence cube turret and motorized quadrocular tilting tube



Ni-U
Configured with a motorized epi-fluorescence cube turret and quadrocular tilting tube

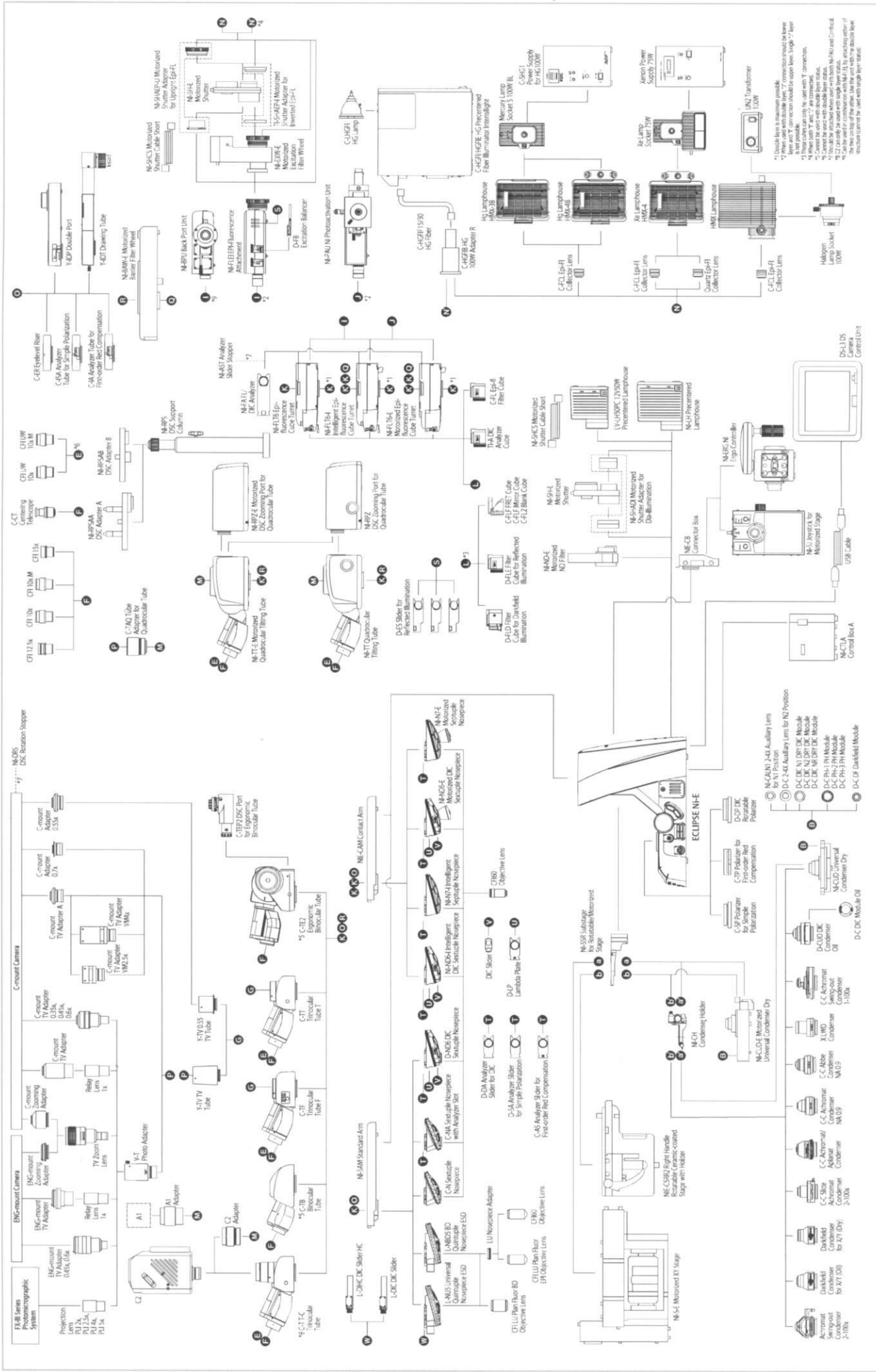


Ni-U
Configured with an ergonomic binocular tube and DSC port



Unit: mm

System diagram: Ni-E focusing stage type



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*Availability: May be used on its hardware information (including software).
Monitor images are simulated.

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