

# The Next Revolution in Microscopy

## A Giant Step Forward in Stereo Microscopy

Nikon offers a broad range of stereo microscopes and accessories, including a research stereo microscope system with the world's highest zoom ratio, superb resolution and bright fluorescence imaging. Also features other versatile parallel-optics type models suitable for various applications and Greenough-type models that are user-friendly and affordable.

	SMZ25	SMZ18	SMZ1270/ 1270i	SMZ800N
Optical system	Parallel-optics type			
				
Zoom ratio	25:1	18:1	12.7:1	8:1
Zooming range	0.63-15.75x	0.75-13.5x	0.63-8x	1-8x
Total magnification*1 (with standard set*2)	3.15-945x (6.3-157.5X)	3.75-810x (7.5-135X)	3.15-480x (6.3-80X)	5-480x (10-80X)
Working distance*3	60mm	60mm	70mm	78mm
Image capture	○	○	○	○
System expandability	○	○	○	○
Embedded use	—	—	○	○

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### SMZ745/SMZ745T

### SMZ445/ SMZ460

### SMZ-2

## Greenough type

## Optical system



7.5:1

4.4:1 / 4.3:1

5:1

Zoom ratio

0.67-5x

0.8-3.5x / 0.7-3x

0.8-4x

Zooming range

3.35-300x  
(6.7-50X)

4-70x (8-35X)/  
3.5-60x (7-30X)

4-120x  
(8-40X)

Total magnification\*1  
(with standard set\*2)

115mm

100mm

77.5mm

Working distance\*3

○ (SMZ745T)

—

—

Image capture

—

—

—

System expandability

○

○

○

Embedded use

\*1 Depends on the combination of eyepiece and objective lens

\*2 With a 10x eyepiece and a 1x objective

\*3 With a 1x magnification without auxiliary objective

# Specifications

Parallel-optics type		
Model	SMZ25	SMZ18
Optical system	Parallel-optics type (zooming type)	
Zoom ratio	25:1	18:1
Zoom range	0.63-15.75x	0.75-13.5x
Total magnification* (When coaxial episcopic illuminator is attached)	3.15-945x (12.5-472x)	3.75-810x (19-405x)
Tubes	P2-TERG 100 Trinocular Tilting Tube, P2-TERG 50 Trinocular Tilting Tube, P2-TL100 Trinocular Tube L	
Eyepiece inclination	P2-TERG 100/50: 0°-30°, P2-TL100: 15°	
Interpupillary distance adjustment	P2-TERG 100/50: 50 mm or wider P2-TL100: 50-75mm	
Eyepieces	C-W10xB (F.N. 22), C-W15x (F.N. 16), C-W20x (F.N. 12.5), C-W30x (F.N. 7) (with diopter adjustment)	
Objectives	P2-SHR Plan Apo 0.5x, P2-SHR Plan Apo 1x, P2-SHR Plan Apo 1.6x, P2-SHR Plan Apo 2x	
Working distance (with standard configuration or 1x objective)	60 mm	
Weight (approx.)	32 kg (motorized Epi Fluorescence Attachment configuration)	10 kg (with Plain Stand and Ring LED set)

\* Depending on eyepiece and objective used

Greenough type		
Model	SMZ745/745T	SMZ445
Optical system	Greenough type (zooming type) Trinocular Tube (SMZ745T)	Greenough type (zooming type)
Zoom ratio	7.5 : 1	4.4 : 1
Zoom range	0.67-5x	0.8-3.5x
Total magnification*	3.35-300x	4-70x
Tubes	Fixed (binocular tube: SMZ745, trinocular tube: SMZ745T)	Fixed
Eyepiece inclination	45°	45°
Interpupillary distance adjustment	52-75mm	54-75mm
Eyepieces	C-W10xB (F.N. 22), C-W15x (F.N. 16), C-W20x (F.N. 12.5), C-W30x (F.N. 7) (with diopter adjustment)	SM 10xB (F.N. 21), SM 15xB (F.N. 14), SM 20xB (F.N. 12)
Objectives	—	—
Auxiliary objectives	G-AL 0.5x (W.D. 211mm), 0.7x (W.D. 150mm), 1.5x (W.D. 61mm), 2x (W.D. 43.5mm)	SM-AL 0.5x, 0.7x
Working distance (with standard configuration or 1x objective)	115mm	100mm
Weight (approx.)	1.6kg (SMZ745 body) 1.8kg (SMZ745T body)	1.0kg (body)

\* Depending on eyepiece and objective used

SMZ1270	SMZ1270i	SMZ800N
Parallel-optics type (zooming type)		
12.7:1		8:1
0.63 – 8x		1 – 8x
3.15 – 480x (depending on eyepiece and objectives) (with coaxial episcopic illuminator: 15 – 540x)		5 – 480x (depending on eyepiece and objectives) (coaxial episcopic illuminator: 22.5 – 540x)
P-B Binocular Tube, P-T100 Trinocular Tube, P-TERG 100 Trinocular Tilting Tube, P-TERG 50 Trinocular Tilting Tube		
P-B: 20° P-T100: 10° P-TERG100/50: 0°-30°		
P-B: 48–75mm P-TERG100/50: 50 mm or wider		
C-W10xB (F.N. 22), C-W15x (F.N. 16), C-W20x (F.N. 12.5), C-W30x (F.N. 7) (with diopter adjustment)		
Plan Apo 0.5x/WF, Plan Apo 0.75x/WF, Plan Apo 1x/WF, ED Plan 1.5x/WF, ED Plan 2x/WF		Plan Apo 0.5x/WF, Plan Apo 0.75x/WF, Plan Apo 1x/WF, ED Plan 1.5x/WF, ED Plan 2x/WF, Plan 1x, ED Plan 0.75x, Achrom 0.5x
70 mm		78 mm
9.8 kg (with Binocular Tube + LED Diascopic Illumination Stand)	11.9 kg (with Trinocular Tilting Tube + LED Diascopic Illumination Stand)	6.8 kg (with Binocular Tube + Plain Stand)

SMZ460	SMZ-2
Greenough type (zooming type)	
4.3 : 1	5 : 1
0.7–3x	0.8–4x
3.5–60x	4–120x
Fixed	
60°	45°
54–75mm	56–75mm
SM 10xB (F.N. 21), SM 15xB (F.N. 14), SM 20xB (F.N. 12)	SM E10xA (F.N. 23, standard), SM E15xA (F.N. 14), SM 20xB (F.N. 12), C-W30x (F.N. 7)
—	0.8-4x
SM-AL 0.5x (W.D. 181mm), 0.7x (W.D. 127.5mm)	AL5 (0.5x, W.D. 103mm), AL7 (0.7x, W.D. 95mm)
100mm	77.5mm
1.1kg (body)	1.6kg (body), 1.9kg (Stand)

# Related Products

## Digital Cameras for Microscopes

### Camera Head

Microscope Camera

# DS-Ri2

16.25-megapixel Color High-resolution



Monochrome Microscope Camera

# DS-Qi2

16.25-megapixel Monochrome Cooled



Microscope Camera

# DS-Fi3

5.9-megapixel Color High-resolution



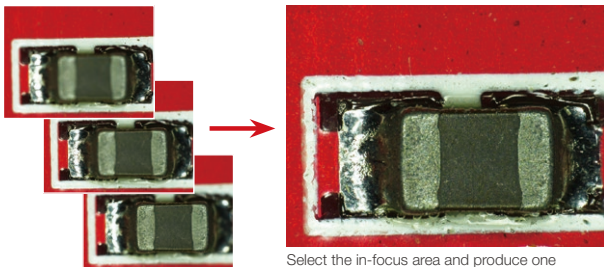
## NIS-Elements Imaging Software

Enables a wide range of advanced digital imaging capabilities using a PC

### EDF (Extended Depth of Focus)

option: **Ar** **Br** **D**

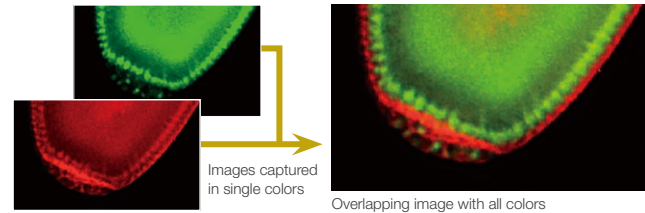
Captures multiple high-resolution images at different focal depths to create a single extended depth of focus image or quasi-3D image.



Select the in-focus area and produce one all-in-focus image

### Multichannel (multicolor)

Multiple fluorescent channels can be captured in conjunction with other imaging methods, such as OCC or brightfield.



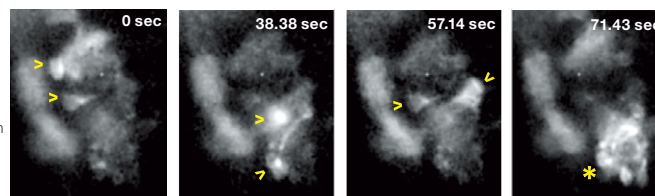
Individual cells resolved in a live drosophila embryo expressing GFP and mCherry

(Using SHR Plan Apo 2x at zoom magnification of 8x with SMZ25)  
Image courtesy of Max V. Staller, Ph.D., Clarissa Scholes, and Angela DePace, Ph.D., Harvard Medical School

### Time lapse

NIS-Elements makes it easy to set up a time-lapse imaging experiment.

(Using SHR Plan Apo 2x at zoom magnification of 9x with SMZ25 and camera head DS-Qi1)  
Image courtesy of Joe Fetcho, Ph.D., Cornell University



Calcium-imaging: Time-lapse imaging of GCaMP expressing neurons inside a live zebrafish shows individual neurons firing at different times (arrowheads). The last time-frame shows a whole cluster of neurons firing (asterisk).

Standalone Control Unit

# DS-L4



### Scene mode

Optimal imaging parameters for each sample type and observation method can easily be set using the icons.

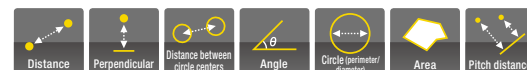
Scene mode (bioscience)	Scene mode (industrial)
Darkfield/fluorescence	Wafer/IC-chip
Differential interference/phase contrast	Metal/ceramic
Brightfield	Board
HE staining	FPD
Enzyme labeled antibody method	

Offers an easy-to-use high-definition, large-touch-panel monitor that can be used to quickly capture images without the use of a PC or monitor.

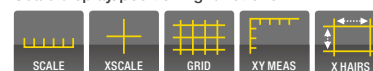
### Various tools

Simple measurements of acquired image are possible, allowing lines and comments to be added to image data. In addition, data storage and output functions for a wide range of applications are available.

#### Measurement function



#### Scale display/positioning functions



#### Drawing functions

