



Digital Cameras for Microscopes

Shedding New Light On **MICROSCOPY**

Digital Sight Series

Digital Cameras for Microscopes



The best choice for your application ...

The Nikon Digital Sight series enhances the quality of the observation, recording, and analysis.

Monochrome Digital Camera for Microscopes

Digital Sight 50M



► P.4

Quickly and efficiently search using large fields of view to capture and analyze high-definition images

This is a monochrome model with an electronic cooler that features 9K high resolution, a large field of view (field number 25), and a maximum frame rate of 225.9 fps.

Nikon FX-format
F-Mount
Monochrome

► 60.0 megapixel

Max recordable pixels	9552×6336
Frame rate	6 fps (9552×6336) 225.9 fps (640×480)

Imaging software
NIS-Elements
Advanced Solutions for your Imaging World
Supported by the NIS-Elements series.

Color / Monochrome Digital Camera for Microscopes

Digital Sight 10



► P.8

Wider field of view, greater possibilities. The high resolution captures both color and monochrome shades

This model features 6K high resolution, a large field of view (field number 25), and the ability to switch between color and monochrome modes while acquiring with a single camera. This high-performance model also provides a high frame rate for quick focusing on high-definition images.

Nikon FX-format
F-Mount
Color / Monochrome

► 23.9 megapixel

Max recordable pixels	6000×3984
Frame rate	9 fps (6000×3984) 55 fps (2000×1328)

Imaging software
NIS-Elements
Advanced Solutions for your Imaging World
Supported by the NIS-Elements series.

NEW

Color Digital Camera for Microscopes

Digital Sight 100



► P.12

High versatility for a wide range of applications. A large field color digital camera

The large field color camera (field number 25) with a 17.7 megapixel CMOS sensor means that this model is capable of 4K image capture, high-speed live viewing and PC-free observation via HDMI monitor connection.

1 inch
C-Mount
Color

► 17.7 megapixel

Max recordable pixels	4864×3648
Frame rate	17 fps (4864×3648) 19 fps (5376×3024) 60 fps (2688×1512)

Imaging software
NIS-Elements
Advanced Solutions for your Imaging World
Supported by the NIS-Elements series.

Color Digital Camera for Microscopes

Digital Sight 1000



► P.14

Simple operation for instantaneous high quality. Compact, lightweight entry-level model

Equipped with a 2 megapixel CMOS image sensor, this model is capable of capturing color images and video at up to 1920 x 1080 pixels. Easy, PC-free acquiring simply by connecting a monitor and mouse.

*An HDMI cable is used to connect to the monitor.

1 / 2.8 inch
C-Mount
Color

► 2.0 megapixel

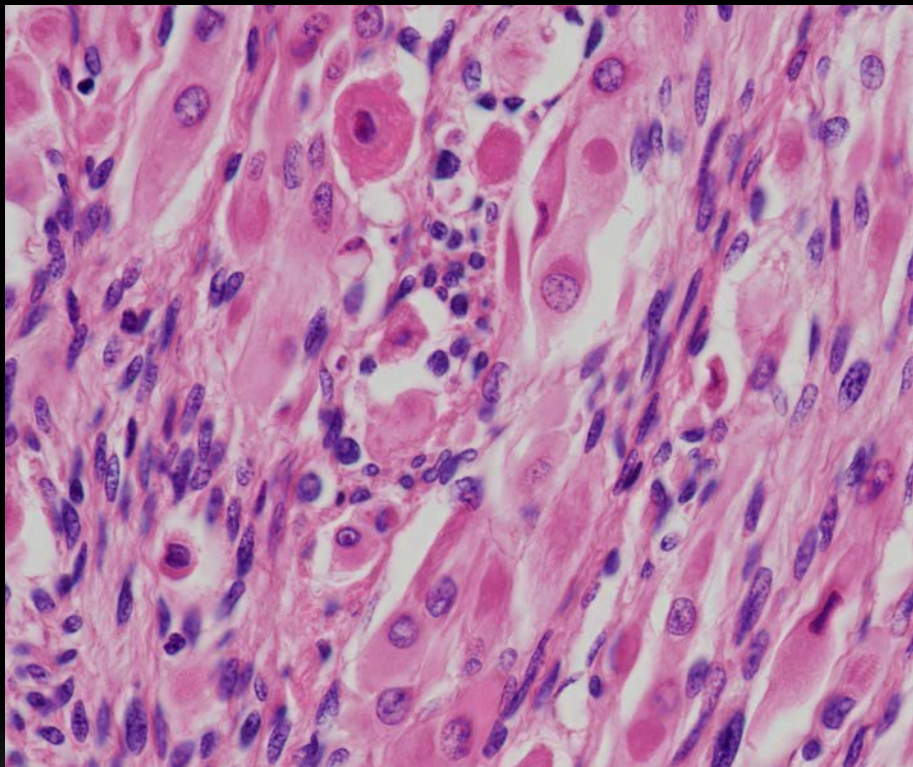
Max recordable pixels	1920×1080
Frame rate	30 fps (1920×1080)

Imaging software
NIS-Elements
Advanced Solutions for your Imaging World
Supported by the NIS-Elements series.

Attention: All the examples in this page are images for research. We do not guarantee clinical use.

Color Digital Camera for Microscopes

Digital Sight 100



Soft tissue tumor.(Hematoxylin and Eosin stain) Courtesy of Dr. Akinobu Araki, Director of the Department of Clinical Pathology, Chiba Cancer Center, Japan.

A wide field of view and high image quality support high-precision imaging.

This is a color digital camera for microscopes that enables capturing a large field of view (field number 25) with exceptional clarity in a single shot. Digital Sight 100 is equipped with the same EXPEED 7 image-processing engine for Nikon's mirrorless cameras such as Z 9, enabling high-speed processing of high-resolution data generated by the camera. This boosts frame rates beyond previous model and enables simultaneous image output to both an external monitor and a control device.

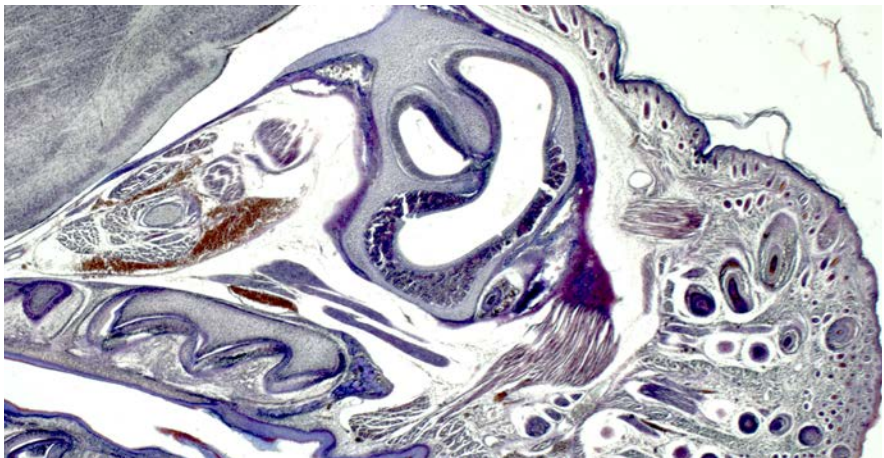
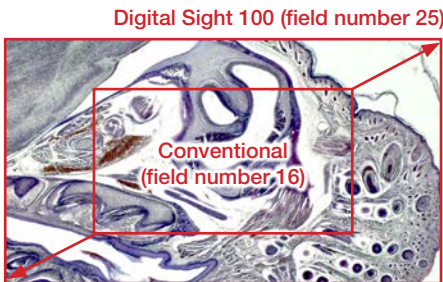
Remote acquiring via Wi-Fi and seamless data sharing are also supported to meet the diverse needs from specimen observation to education and research.

EXPEED 7



Large field capturing (field number 25)

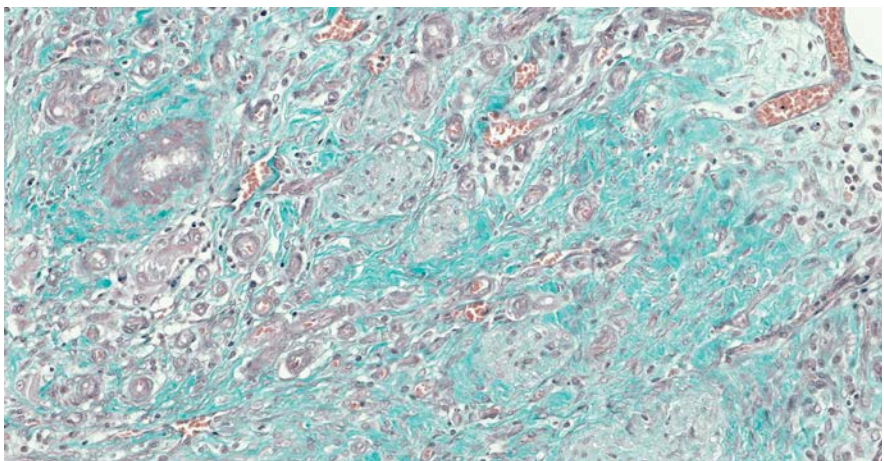
Large field photography with a field of view of 25 is available, which enables the observation and capture of a large area in a single shot. Live sharing during monitor observation and capturing images provide a field of view equivalent to binocular vision to enhance the work efficiency.



Mouse Head, using a 2X Plan Apo objective.

High-level color reproduction

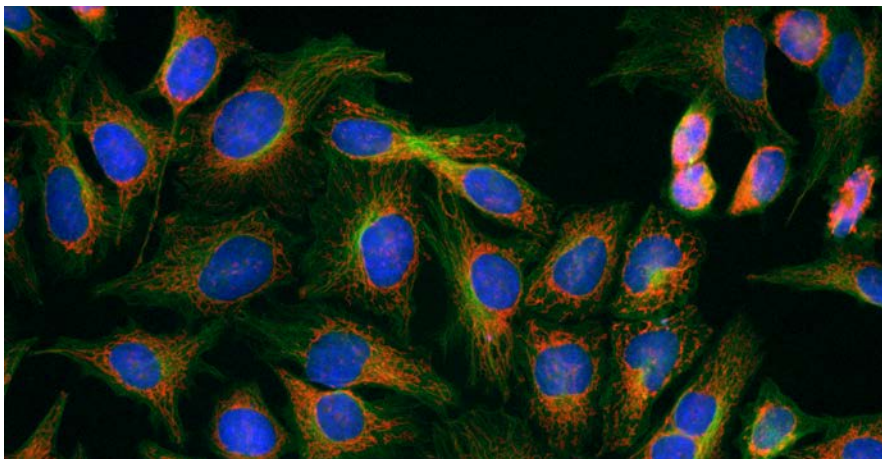
In addition to the conventional sRGB, the adoption of AdobeRGB with its wider color gamut has extended the color reproduction capabilities. The expanded color gamut effectively enhances color reproduction.



Fibrotic stroma, Trichrome stain

High-resolution fluorescence capturing

The adoption of a large 1-inch CMOS sensor allows for highly sensitive capturing of images, which enhances convenience during fluorescence observation.



HeLa cells Nucleus (DAPI) , Tubulin (FITC), Mitochondria(Mito Tracker RedFM), Acquired using a Nikon standard sample.

Remote capturing via Wi-Fi

A PC with free NIS-Elements LE software installed can be connected via Wi-Fi to capture microscope images.

HDMI output supported

An HDMI terminal is provided to allow users to connect directly to a display and view 4K image without a personal computer.



Allows intuitive control of microscope cameras from PCs

This free software package simplifies the setting and control of microscope cameras, live image display, and image acquisition. TIFF, JPEG, and ND2 are available formats for saving the acquired images.

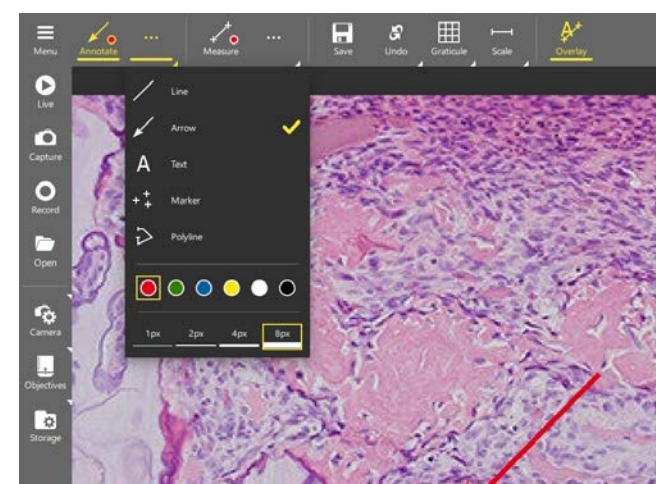
Supported cameras: Digital Sight 50M, Digital Sight 10, Digital Sight 100, Digital Sight 1000

(Compatible OS: Windows® 11 Pro 64bit) * For information about compatible tablet PCs, contact Nikon.



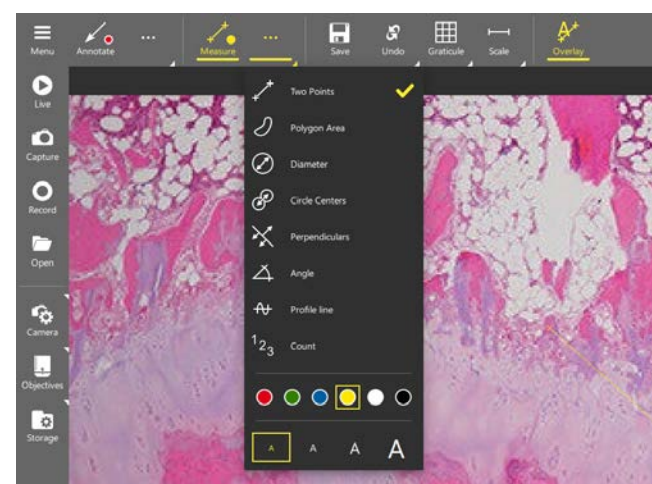
Annotation

Lines and comments can be added directly onto the captured images and can then be written onto and saved with the image.



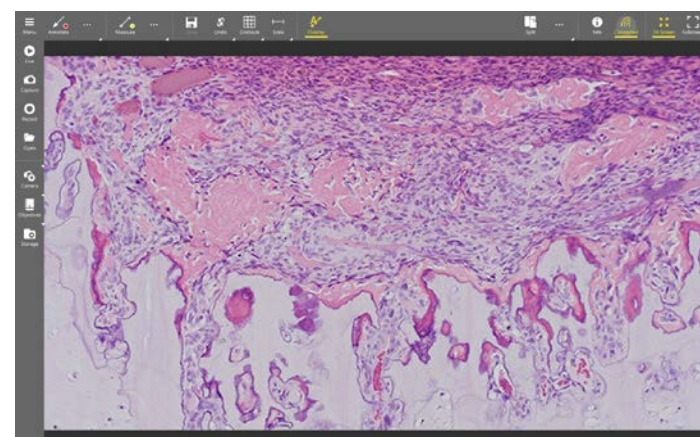
Measurements

A wide range of functions for simple measurements on images are available. Measured data can also be output.

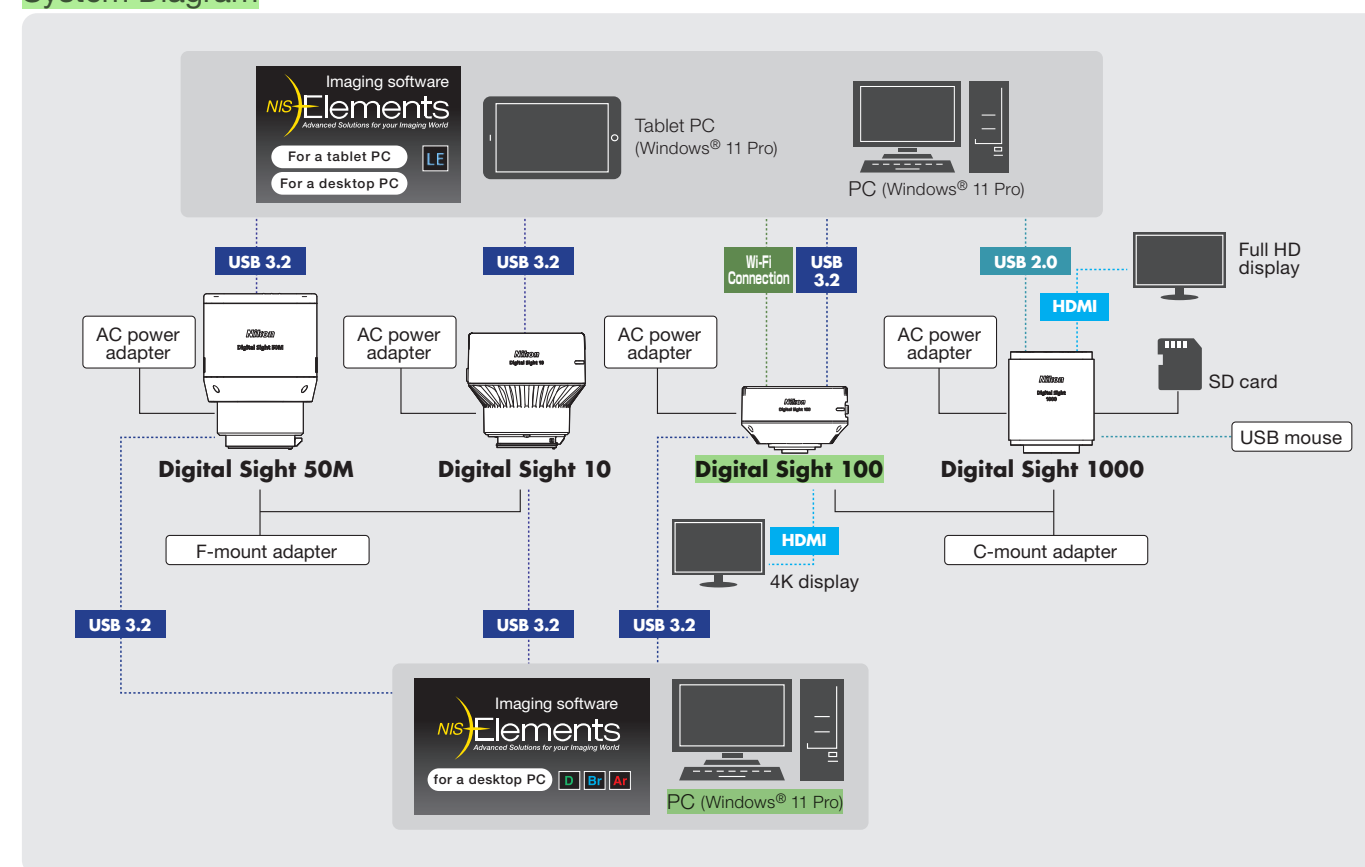


Wi-Fi Connection *Supported only by Digital Sight 100.

When used in combination with the Digital Sight 100 color digital camera for microscopes, a Wi-Fi connection is available. This allows for easy live viewing and data sharing via Wi-Fi.



System Diagram



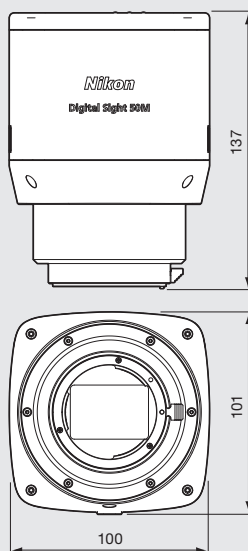
Specifications

Model name	Digital Sight 50M	Digital Sight 10	Digital Sight 100	Digital Sight 1000
Image sensor	Nikon FX-format Monochrome CMOS image sensor Size: 35.8 × 23.8 mm	Nikon FX-format Color CMOS image sensor Size: 35.8 × 23.8 mm	1 inch Color CMOS image sensor Size: 12.9 × 8.76 mm	1/2.8 inch Color CMOS image sensor Size: 5.57 × 3.13 mm
Recordable pixels	9552 × 6336	6000 × 3984 pixels	4864 × 3648 pixels	1920 × 1080 pixels
Lens mount	F-mount		C-mount	
Cooling method	Electronic cooling	—		
Quantum efficiency	85 %	—		
Full well Capacity	45000e ⁻ (typ.)	—		
Readout noise	6e ⁻	—		
Dark current	1.0e ⁻ /p/s (Ta=25°C)(typ.)	—		
Live display mode* (maximum fps)	All pixels (9552 × 6336): 6 fps@8 bit, 1.9 fps@16 bit 3 × 3 pixels average @ 8 bit (ROI 640 × 480): 225.9 fps***	All pixels (6000 × 3984): 9 fps FullHD 3 × 3 pixels average (2000 × 1328): 55 fps	All Pixels 4:3 (4864 × 3648 pixels): 17 fps, All Pixels 16:9 (5376 × 3024 pixels): 19 fps, 2 and 2 Pixels Average 16:9 (2688 × 1512 pixels): 60 fps *When using USB 3.2 GEN 2	All pixels (1920 × 1080): 30 fps
Exposure time	150 μsec–120 sec	100 μsec–120 sec	100 μsec–10 sec	1 m sec–10 sec
Photometry mode	Average photometry: Average intensity within the photometry area Peak photometry: Maximum intensity within the photometry area			Average photometry 1920 × 1080 pixels (all area)
Exposure control	One-time automatic exposure: Exposure time is adjusted automatically for one-time within the optimum range for the camera Continuous automatic exposure: Automatic exposure adjustment is performed continuously to keep the exposure within the camera Manual exposure: Exposure time and gain settings are made manually			Automatic exposure, Manual exposure
Exposure correction	Average metering: -1 EV ~ +1/2 EV Peak hold metering: -1 EV ~ ±0 EV	Average metering: ±1EV Step:1/6EV (some restrictions according to tone) Peak hold metering: -1 EV ~ ±0 EV		Available
Interface	USB 3.2 GEN 1 (connect with PC) × 1, External trigger × 1	USB 3.2 GEN 2 (connect with PC) × 1, External trigger × 1	USB Port 1: USB 3.2 GEN 2 (USB 2.0 not supported), USB Port 2: USB 3.2 GEN 1 HDMI 1.4b, For External Sync I/O (MSC communication) × 1	USB 2.0 (connect with PC or USB mouse)× 1, HDMI × 1, SD card slot × 1**
Power supply	AC 100-240 V 50 Hz/60 Hz			
Power consumption	27 W	18 W	7 W	3 W
Operating environment	0-40°C, 60% RH max. (without condensation)			

*Maximum frame rate depends on exposure time. **Both SD and SDHC memory cards are available.

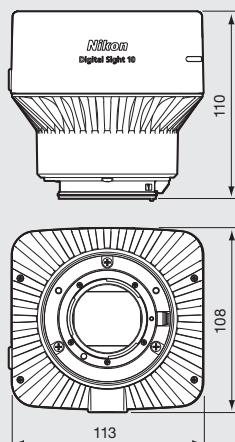
***When using NIS-Elements, 16-bit mode can be selected for 1x1 and 2x2 digital binning, and 12-bit mode can be selected for 2x2, 3x3, 4x4 and 6x6. 8bit mode can be selected in all image size modes.

Digital Sight 50M



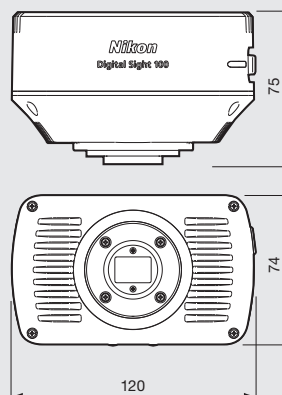
Weight: approx. 1,300 g

Digital Sight 10



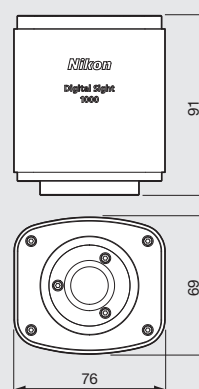
Weight: approx. 1,100 g

Digital Sight 100



Weight: approx. 600 g

Digital Sight 1000



Weight: approx. 450 g

Digital Sight 10
Maintenance movie



The digital sight series is not for clinical diagnostic use.

The Wi-Fi functionality of Digital Sight 100 is provided by external Wi-Fi dongles (sold separately) available in each country and region.

In principle, Wi-Fi dongles should be purchased from local distributors or in-country representative, ensuring compliance with local laws and regulations in your region. We do not bundle them with the product nor export/import them across borders.

Using dongles certified for other countries may violate local laws and regulations. Always use products that are legally sold in your local market.

Warranty and support for Wi-Fi dongles are subject to the terms and conditions of your local distributors or in-country representative.

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*Products: Hardware and its technical information (including software)



WARNING

TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING THE EQUIPMENT.



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