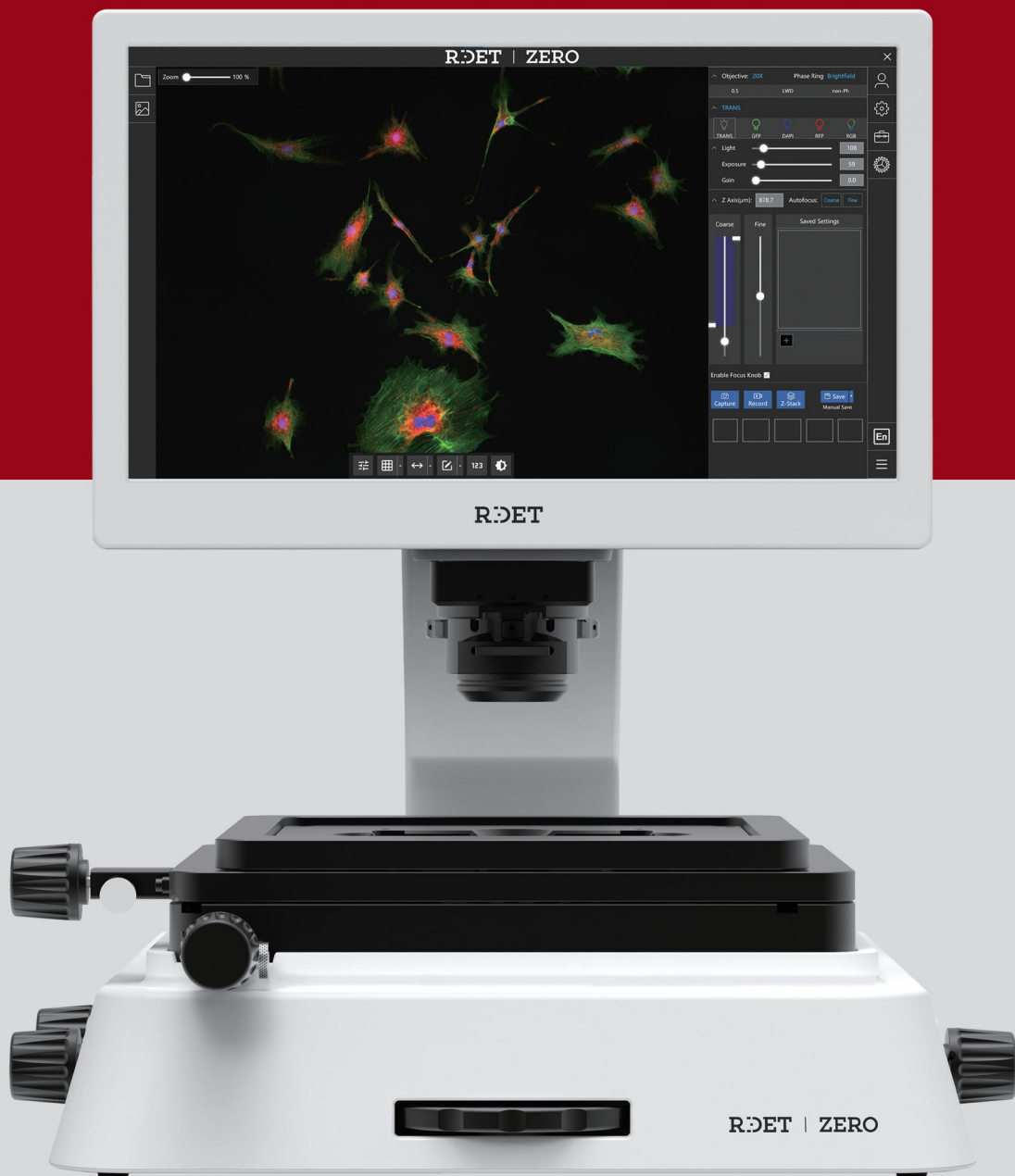


# ZERO Series

## Fluorescence Cell Imaging System

Auto Focus | Z-Stack Imaging | Confluence Analysis | Triple Fluorescence



# RDEET

# RIDET | ZERO

## Fluorescence Cell Imaging System

### Product Introduction

The ZERO Series features three all-in-one, high-performance microscopes with an eyepiece-free design, dual optical paths, and dual-camera configuration. Supporting brightfield, fluorescence, and phase contrast imaging, the system offers flexible configuration of cameras, objectives, and modules to meet diverse research needs. Its intuitive operation ensures efficient, high-quality imaging with ease.



### System Introduction

Hardware	
<b>Illumination</b>	Adjustable-intensity LED fluorescent modules (>50,000-hour lifetime)
<b>Imaging modes</b>	Fluorescence, brightfield, color brightfield and phase contrast
<b>Objective capacity</b>	6-position objective turret
<b>Light cube capacity</b>	4-position module chamber supporting up to four fluorescence channels
<b>Working distance of condenser lens</b>	60mm
<b>Stage</b>	Precision XY sliding stage with automatic Z-axis software control; compatible adapters can be flexibly replaced
<b>LCD display</b>	15.6-inch 4K high-resolution LCD display with 0-45° tilt adjustment
<b>Camera</b>	Dual-camera system with high-sensitivity color and monochrome CMOS sensors (3.45 μm pixel size)
<b>Output ports</b>	4 USB ports, 1 HDMI port, 1 LAN port; Wi-Fi supported
<b>Power supply</b>	AC power supply adapter
<b>Dimensions</b>	53.6 x 44.5 x 51.8 cm (D x W x H)
<b>Weight</b>	21.7kg

### Product Features



Simple observation,  
LCD Screen 0-45° tilt adjustment.



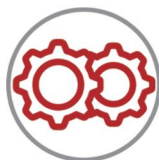
Provide a better visual  
experience



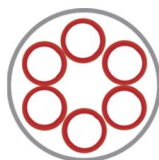
Dual imaging system



LED fluorescent module,  
ready to use and long-lasting



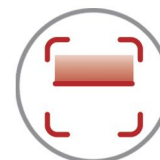
Automated, motorized Z-axis  
software control



6-position manual turret,  
customizable objective  
information



Automatic saving Z-axis position  
of each channel



Z-Stack  
Scanning & Reconstruction

## Ergonomic Design

### No Eyepiece

The screen can be **rotated upwards by 45°** making observation and operation more convenient



**4K** high-resolution LCD display  
Provide a better visual experience

# High Quality Images

## Dual camera

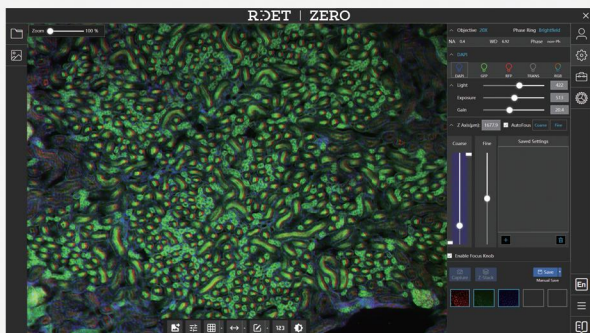
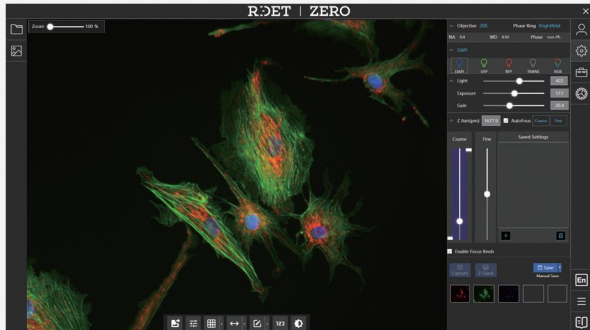
Mono camera and Color camera

Mono camera is mainly used for ordinary bright field and wide field fluorescence imaging functions;  
 Color camera can be used for biological staining experiments or IHC imaging.

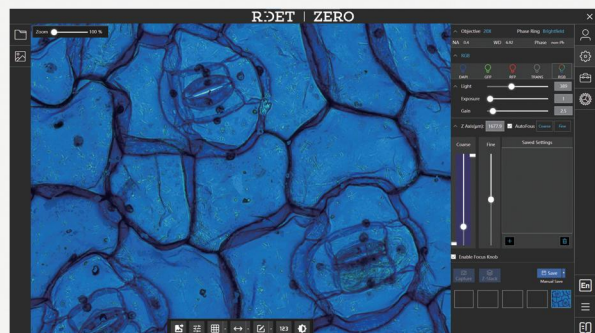
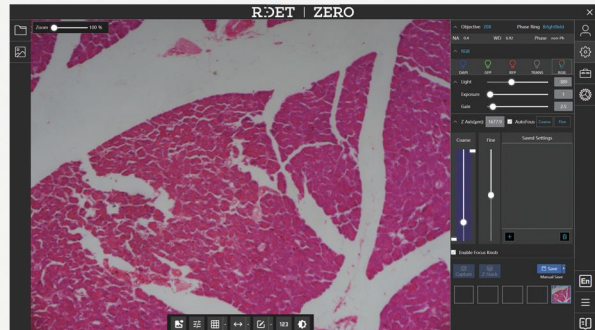


	3.2MP Mono CMOS	3.2MP Color CMOS
Pixel size	3.45μm	3.45μm
Dark noise	2.1e-	2.1e-
Dynamic range	71.78dB	71.68dB
QE	68.90%@530nm	64.98%@530nm

### Mono camera Performance



### Color camera Performance



# High Quality Images

## New fluorescent module Four fluorescent channels



NO preheating  
More convenient



Multiple fluorescent module  
can be replaced



Over 50,000-hour  
lifetime



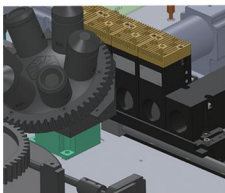
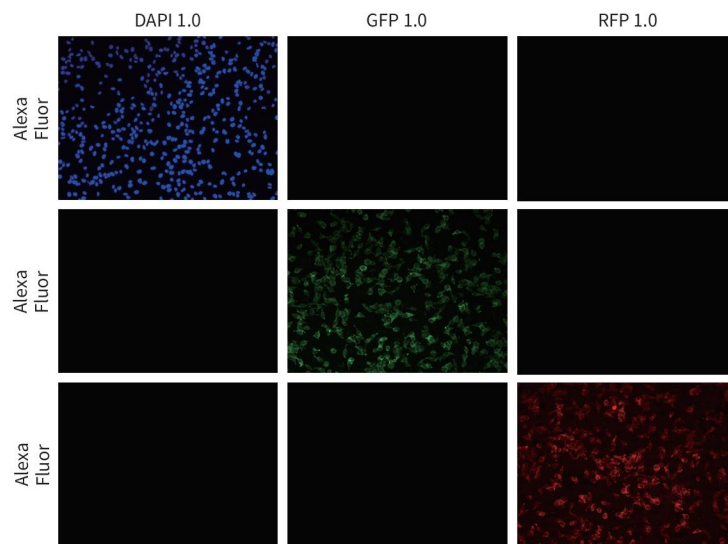
### New Fluorescent Module

Illumination	Excitation/Bandwidth	Emission/Bandwidth	Dye
DAPI	365/40	450/50	DAPI, Hoechst stain, BFP
GFP	470/30	525/20	GFP, Alexa Fluor 488, SYBR Green, FITC
RFP	525/20	595/45	RFP, Alexa Fluor 546, Alexa Fluor 555, Alexa Fluor 568, Cy3, MitoTracker Orange, Rhodamine Red, DsRed
CFP	450/40	515/30	ECFP, Lucifer Yellow, Evans Blue
YFP	490/30	540/25	EYFP, Acridine Orange+DNA
Texas Red	585/25	630/40	Texas Red, Alexa Fluor 568, Alexa Fluor 594, MitoTracker Red, mCherry, Cy3.5
Cy5	625/30	692/45	Cy5, Alexa Fluor 647, Alexa Fluor 660, DRAQ5

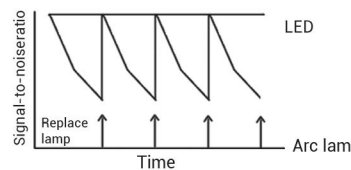
# High Quality Images

## Equipped with ZERO's fluorescent module Easy disassembly & Perform well

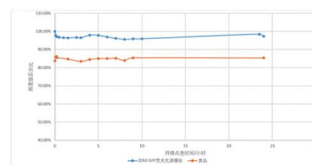
- Excellent Optics & Mechanics & Electrics design
- Excellent illumination uniformity
- Spectrally optimised optics to reduce inter-channel interference
- Minimize the phenomenon of "Dark Corners"



By placing the fluorescent module as close as possible to the objective lens turret, minimizes the number of optical components is minimized, brightness is enhanced and excitation efficiency is improved.



LED illumination system supports life-time over 50000 hours.

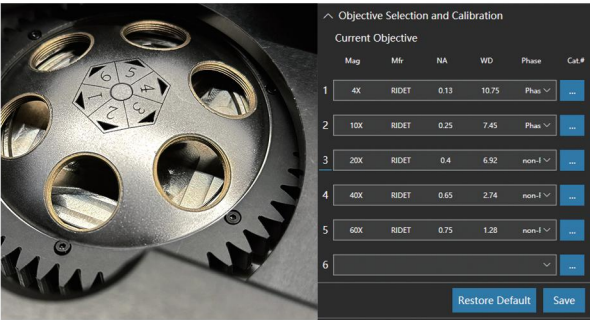


LED illumination system is stable.



Integrated hard-coated filters with sharper edge of spectrum and higher S/N.

# High Quality Images



## 6-position manual turret

- Quickly switch between objectives
- Objectives: magnification from 2X to 100X, including high NA & Oil
- User can customize the objective position



Plan Achromat Objective									
Material Code	Magnification	NA	WD(mm)	Brightfield	Phase	Long WD	Coverslip-corrected	Optimal vessel thickness(mm)	Oil
0500014	4X	0.13	10.75	•	•	•		1	
0500015	10X	0.25	7.45	•	•	•		1	
0500078	20X	0.4	6.92	•	•	•		1	
0500016	20X	0.4	6.92	•	•	•		1	
0500017	40X	0.65	2.74	•	•	•		1	

Plan Apochromat Objective									
Material Code	Magnification	NA	WD(mm)	Brightfield	Phase	Long WD	Coverslip-corrected	Optimal vessel thickness(mm)	Oil
0500070	2X	0.08	6.10	•				1	
0500076	60X	1.25	0.14	•				0.17	•

Plan fluorite Objective									
Material Code	Magnification	NA	WD(mm)	Brightfield	Phase	Long WD	Coverslip-corrected	Optimal vessel thickness(mm)	Oil
0500127	40X	0.65	1.79	•				1	
0500057	60X	0.75	1.28	•				1	
0500056	100X	1.28	0.14	•				0.17	•

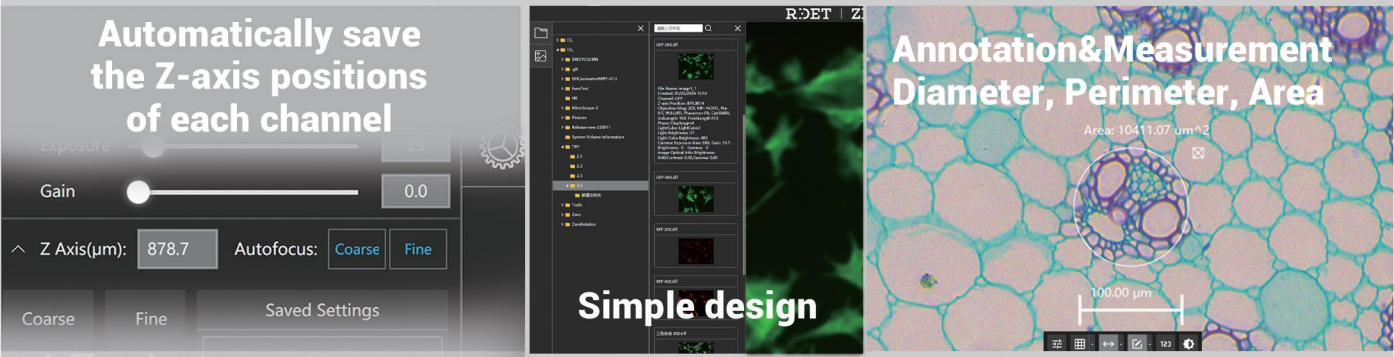
## Intelligent Operation

### Automated Z-axis

Automated, motorized Z-axis software control, delivering three major advantages of intelligence, precision, and memorization.

### Convenient operating system

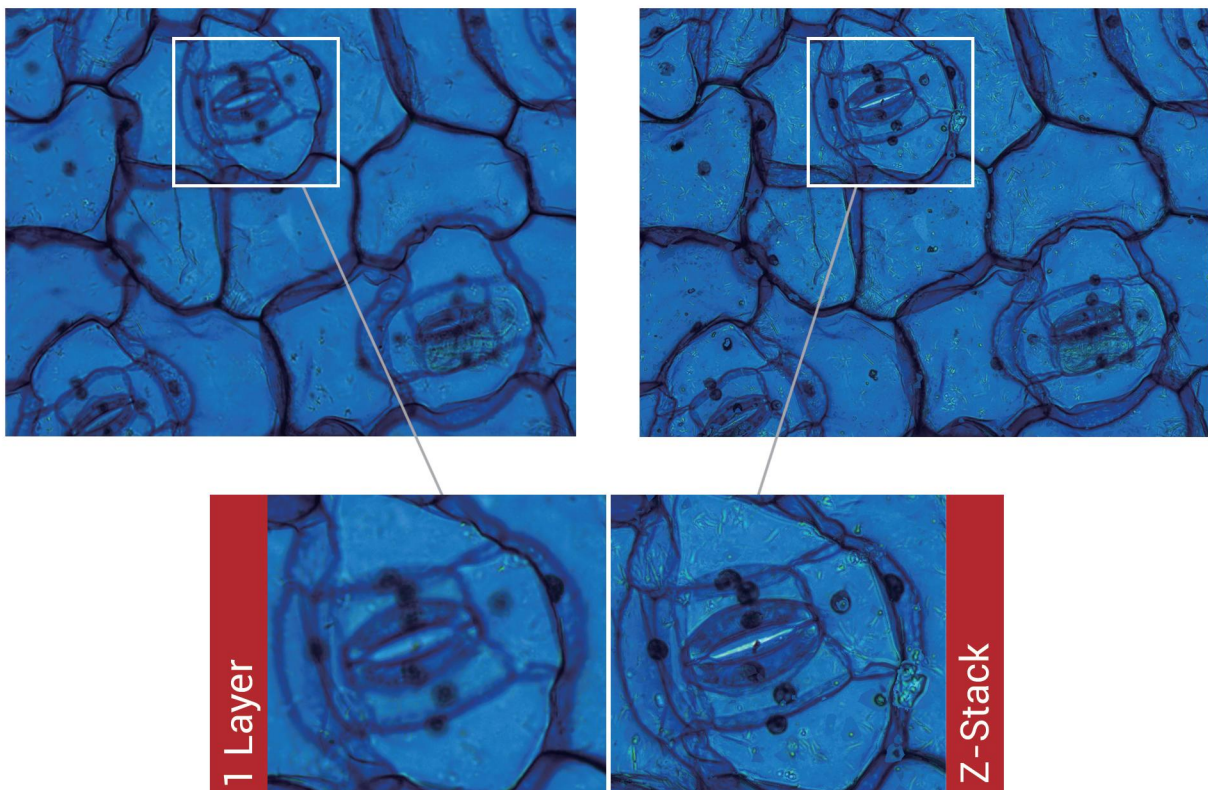
Windows 10 system: easily preview and efficiently manage files ; delivering smooth and convenient digital experience.



## High Quality Images

### Z-Stack Imaging

ZERO is a high-performance inverted system for multi-channel fluorescence and transmitted light imaging, building to support various high-end research needs.

















Z-Stack scanning enables precise focusing and image stacking across multiple sample layers, allowing users to quickly obtain high-resolution 3D structural information. With autofocus technology and flexible Z-axis control, this function effectively addresses imaging issues caused by uneven sample thickness, providing clear and comprehensive visualization of cells, tissue sections, and 3D cultured samples—greatly enhancing experimental accuracy and reproducibility.

# Alternative Usage Scenarios

## Inserts

Interchangeable inserts accommodate most vessel types and sizes, including slides/ multi-well plates/ culture flasks/ and petri dishes.

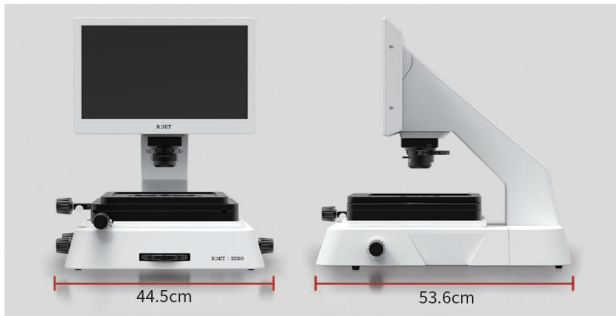


Slides		Flasks		Petri dishes		General adapter	
0300184	 Adapter, Holds two standard microscope slides	0300217	 Adapter, Holds one Nunc T-25 Flask	0300212	 Adapter, Holds four 35mm Petri Dishes	0300205	 Adapter, Universal
0300214	 Adapter, Hemocytometer	0300204	 Adapter, Holds one Greiner/BD T-25 Flask	0300211	 Adapter, Holds four 38.7mm Petri Dishes		
0300208	 Adapter, Holds two standard microscope slides (with Clamps)	0300213	 Adapter, Holds two 25cm T-flasks	0300210	 Adapter, Holds two 60mm Petri Dishes		
		0300216	 Adapter, Holds one T-75 Flask	0300209	 Adapter, Holds one 100mm Petri Dish		
		0300215	 Adapter, Holds one T-175 Flask	0300206	 Adapter, Holds one 60mm Petri Dish		

# Leading the New Era of Biosafety Laboratories

## ZERO Fluorescence Cell Imaging System

With its innovative 4K high-resolution LCD display design, it has brought unprecedented convenience and safety to biosafety laboratories.



### Miniature size & Delicacy:

ZERO adopts a compact design, with only a total size of 0.24 m<sup>2</sup>, making it easy to place on a desktop or in a biosafety cabinet. The compact size not only saves space, but also facilitates movement and transportation, allowing you to observe and analyze anytime & anywhere.



### Safe & Convenient:

ZERO can be placed in a biosafety cabinet for sterile observation and operation, reducing the risk of sample contamination while protecting the safety of operators. ZERO greatly reduces the risk of cross contamination and improves overall biosafety protection.



### Efficient & Shareable:

The 4K screen can convert angles, making it convenient for multiple people to observe at the same time and more convenient for teaching. In addition, the system also supports remote access and file transfer, making it convenient for users to view experimental data anytime & anywhere.



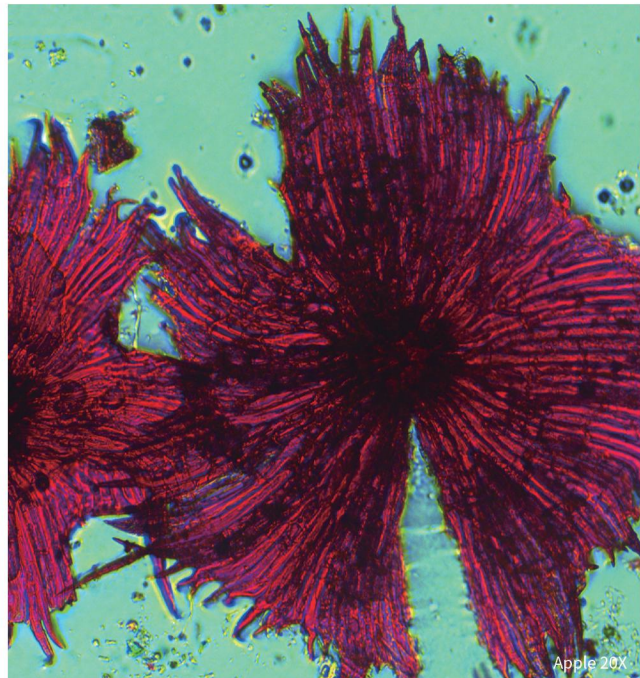
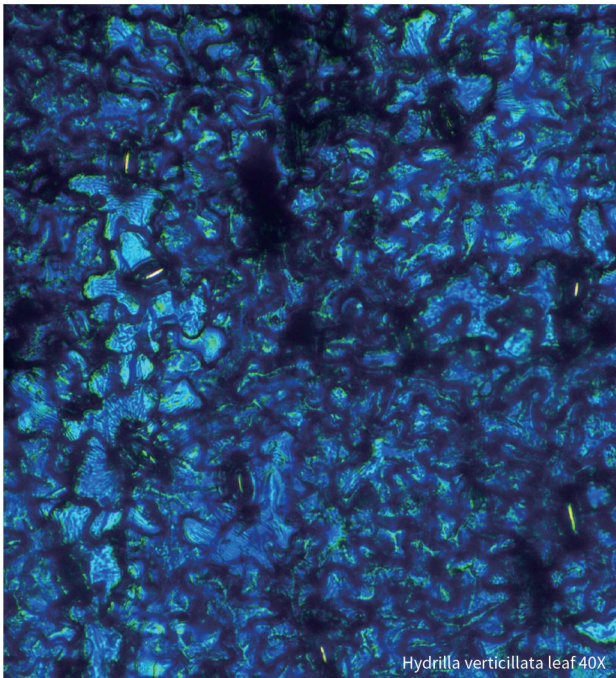
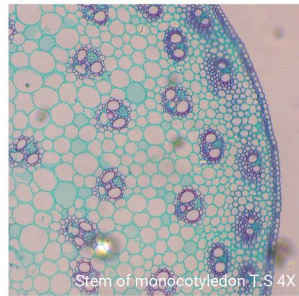
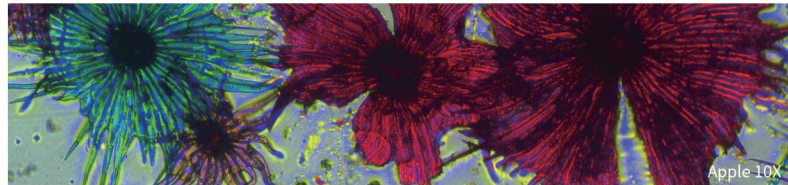
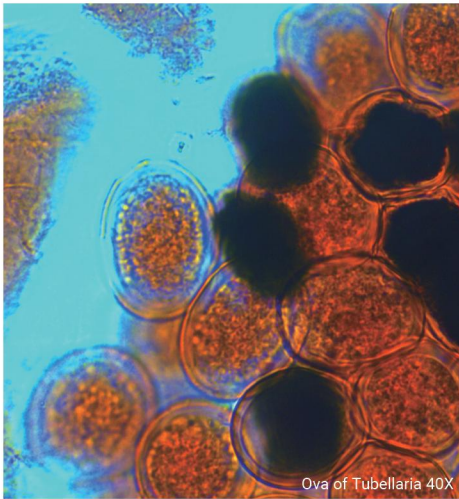
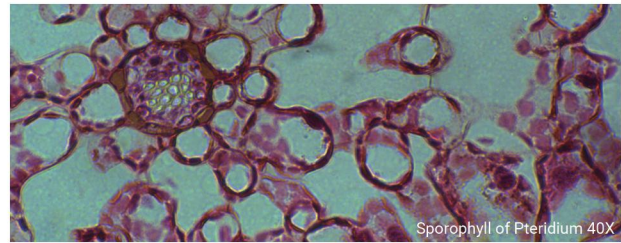
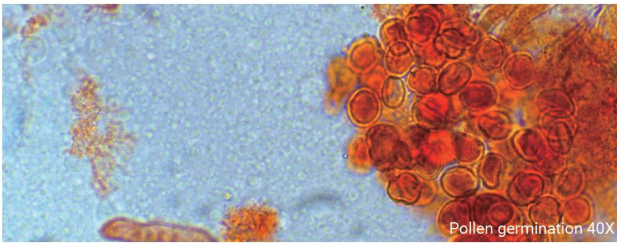
### Opportunity & Challenge:

Faced with the challenges of public health safety emergencies, ZERO's unique design provides strong guarantees for laboratory safety.

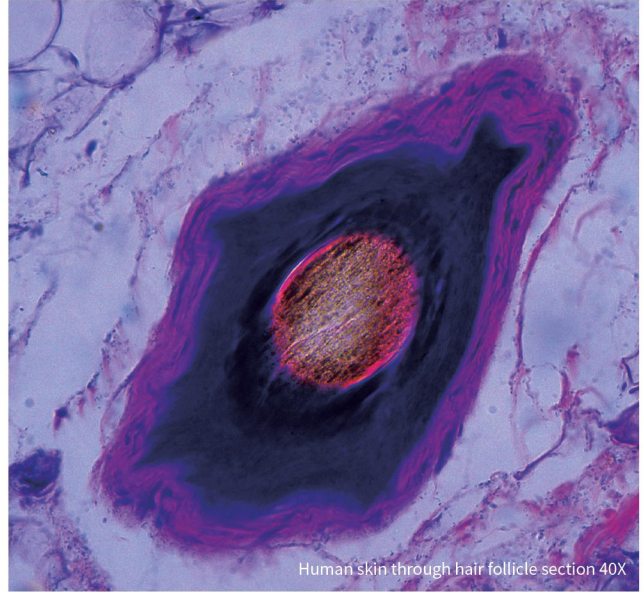
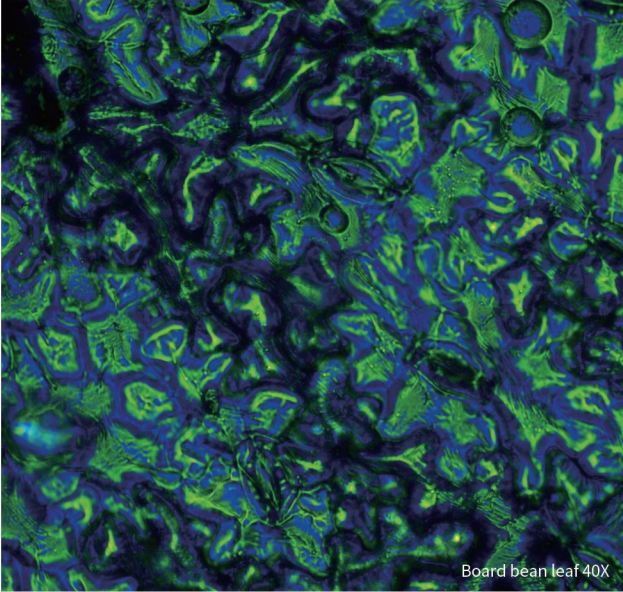
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# R:OET | ZERO

## ZERO's Imaging Display

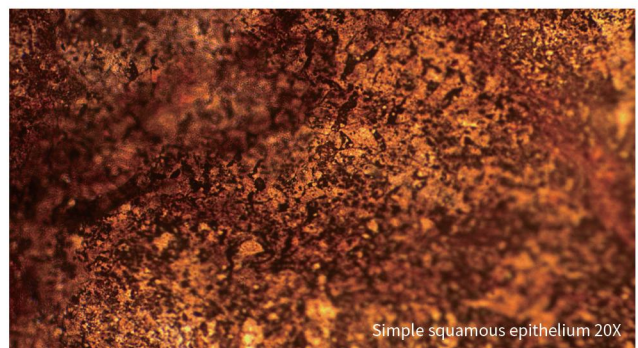
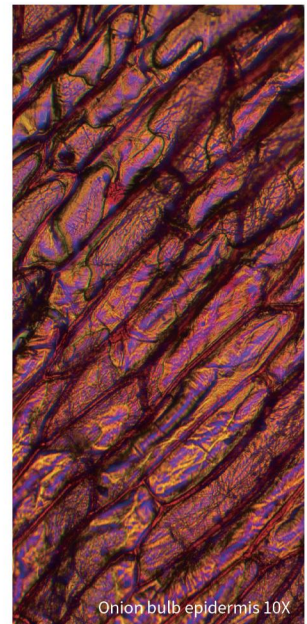
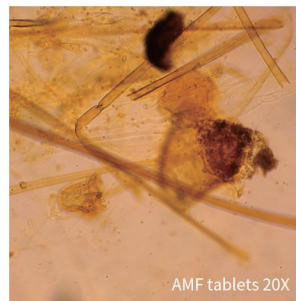
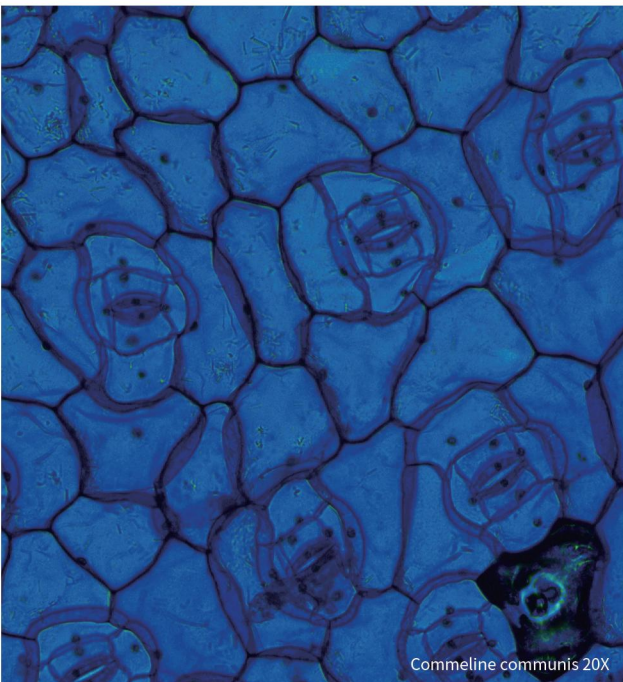


**ROET | ZERO**  
ZERO's Imaging Display



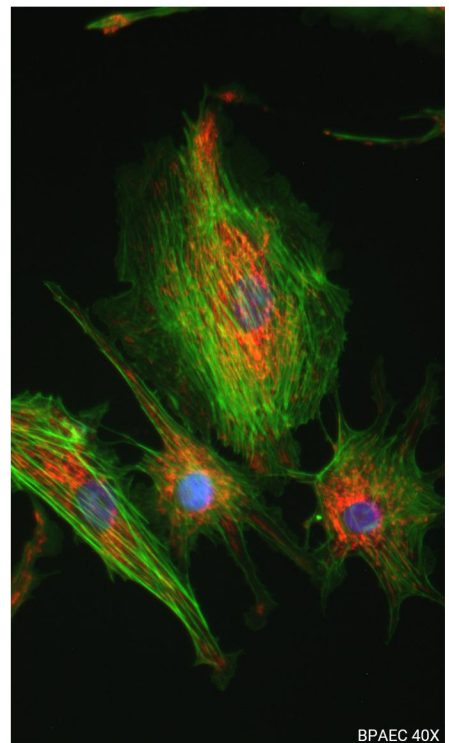
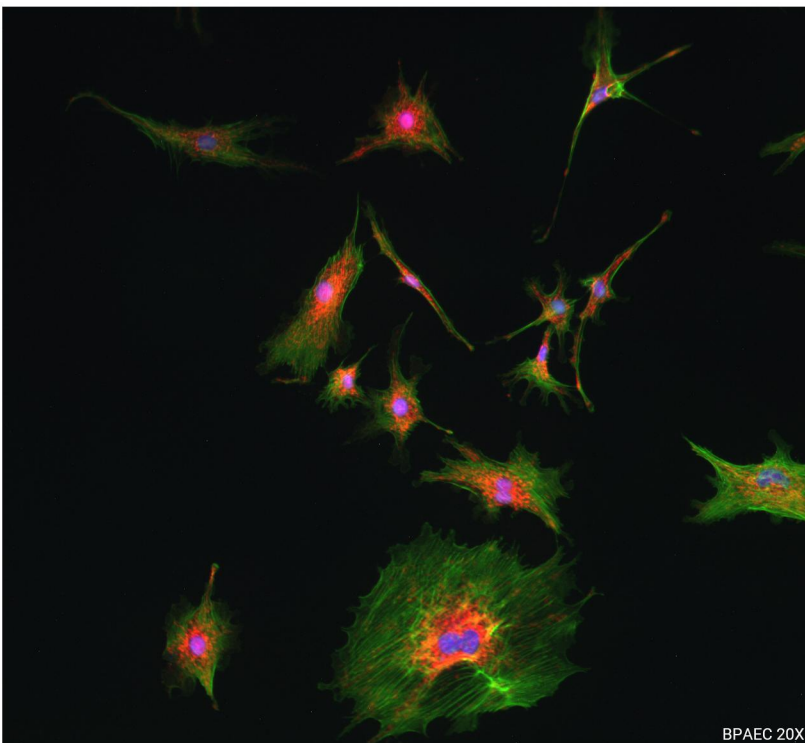
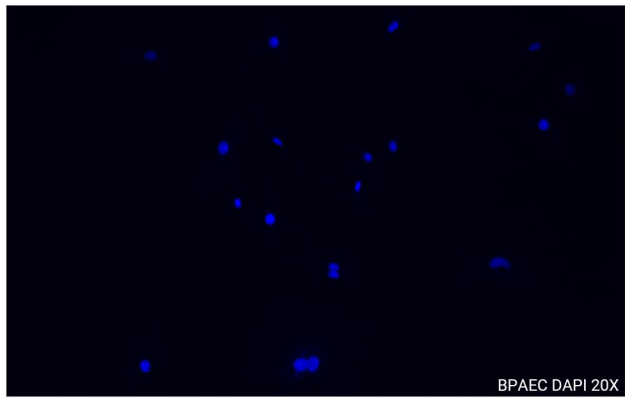
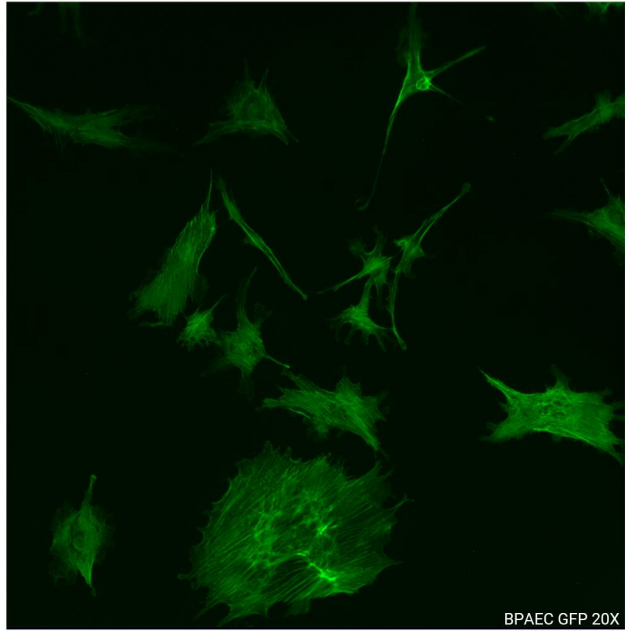
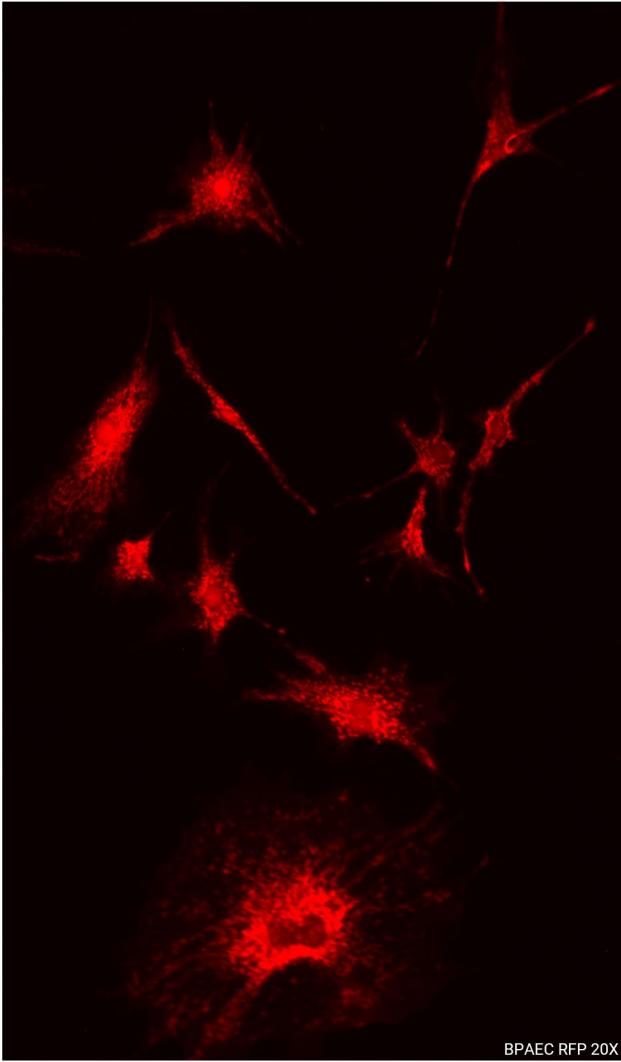
Innovation without fear

Make research more efficient



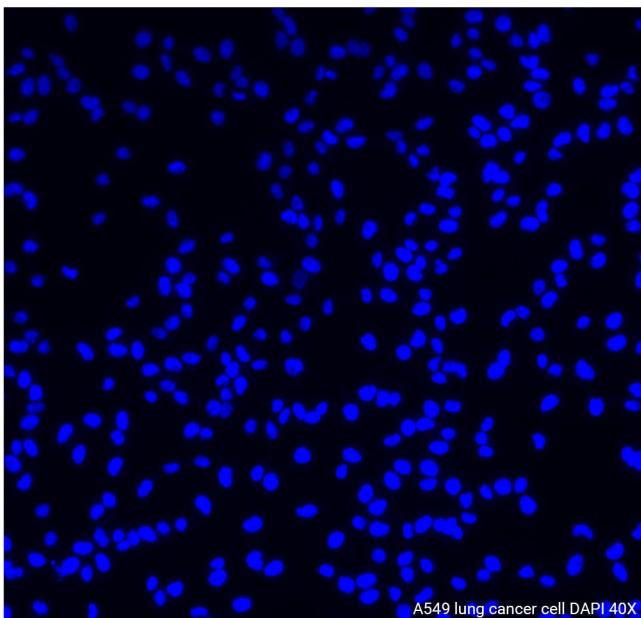
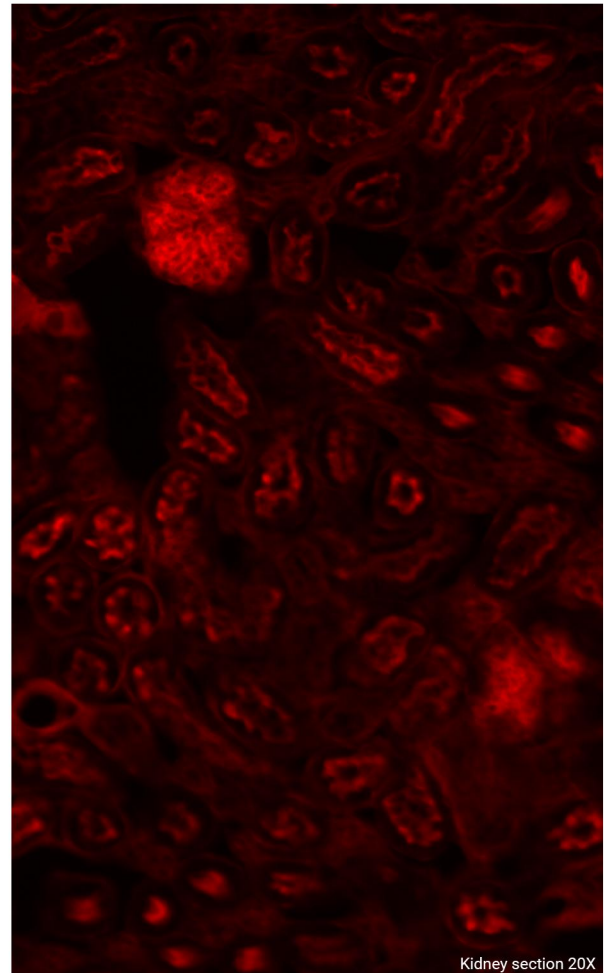
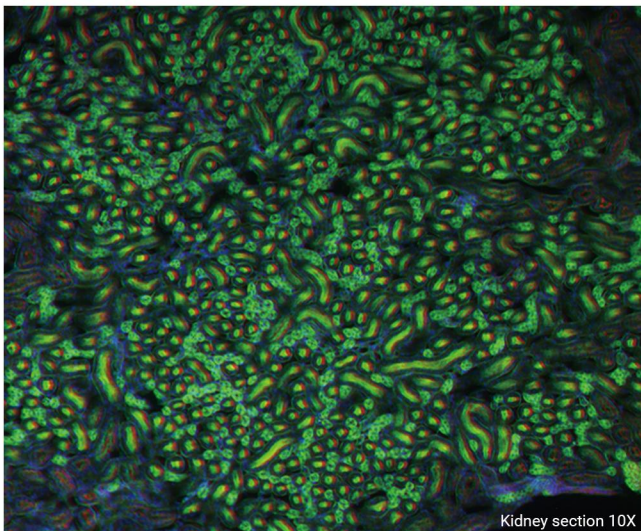
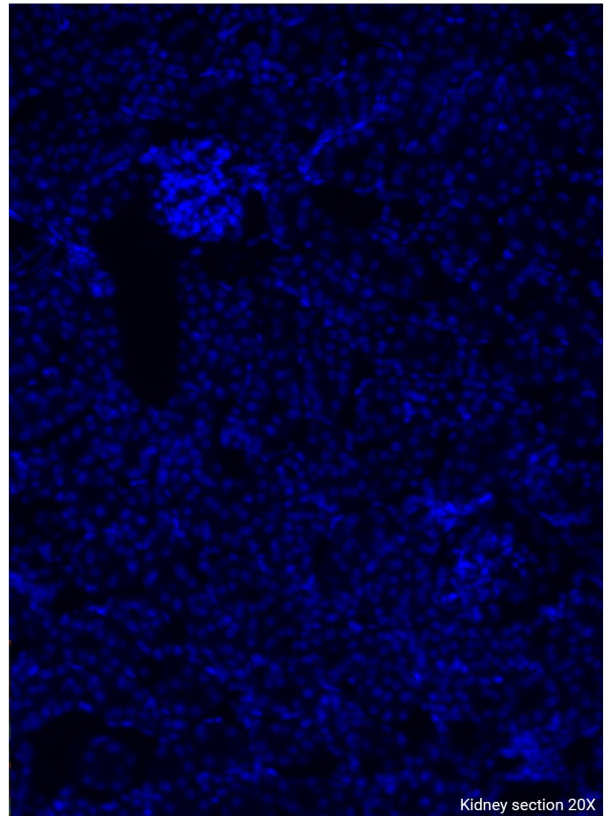
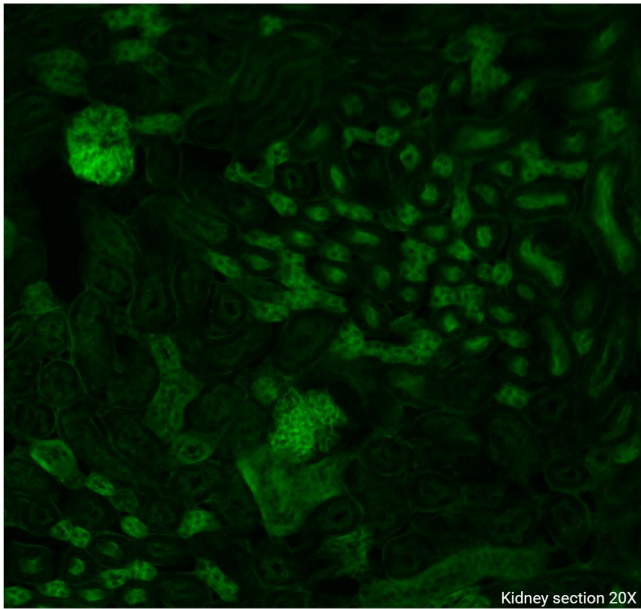
# R:DET | ZERO

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# R:DET | ZERO

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# TECHNICAL SPECIFICATIONS

Feature	ZERO-Lite	ZERO	ZERO-Pro
Imaging modes	Brightfield, color brightfield, fluorescence, phase contrast	Brightfield, color brightfield, fluorescence, phase contrast	Brightfield, color brightfield, fluorescence, phase contrast
Camera	Single camera (monochrome CMOS)	Dual camera (color and monochrome CMOS)	Dual camera (color and monochrome CMOS)
Fluorescent modules	DAPI, GFP, RFP	DAPI, GFP, RFP	DAPI, GFP, RFP, Cy5
Fluorescent channels	3	4	4
Fluorescent switching	Manual	Manual	Motorized
Objectives	10X, 20X	4X, 10X, 20X, 40X	4X, 10X, 20X, 40X
	Up to 6 objectives simultaneously	Up to 6 objectives simultaneously	Up to 6 objectives simultaneously

Hardware	Description
Optical system	Infinity optical system, 45 mm parfocal distance, RMS thread objectives
Fluorescent modules (optional)	Integrated LED illumination module, lifetime > 50,000 hours, multiple fluorescent modules available
	• DAPI (365/450 nm)
	• GFP (470/525 nm)
	• RFP (525/595 nm)
	• Texas Red (585/630 nm)
	• Cy5 (625/692 nm)
	• CFP(450/515 nm)
• YFP(490/540 nm)	
Fluorescent channels	Up to 4 fluorescent channels
Objective turret	6-position objective turret
Objectives (optional)	High-quality achromatic objectives ranging from 2X to 100X available, with automatic recognition
Camera	3.2 MP CMOS, 3.45 $\mu$ m / pixel , available in monochrome or color versions
Image formats	BMP, TIFF, PNG, JPEG
Power supply	AC 220 V, 50 Hz
Observation method	15.6-inch 4K LCD display, 0–45° tiltable
Manual stage	Travel range (X×Y) : 132 mm × 103 mm (5.2"×4")
Z-axis control	Motorized Z-axis with manual fine adjustment knob
Output ports	4 × USB ports, 1 × HDMI port, 1 × LAN port, Wi-Fi connectivity

Software	Description
Image processing	Grid, scale bar, image annotation, image adjustment, confluence analysis
Sample capture	Overposure alert; repeated sample capture time < 2 s

