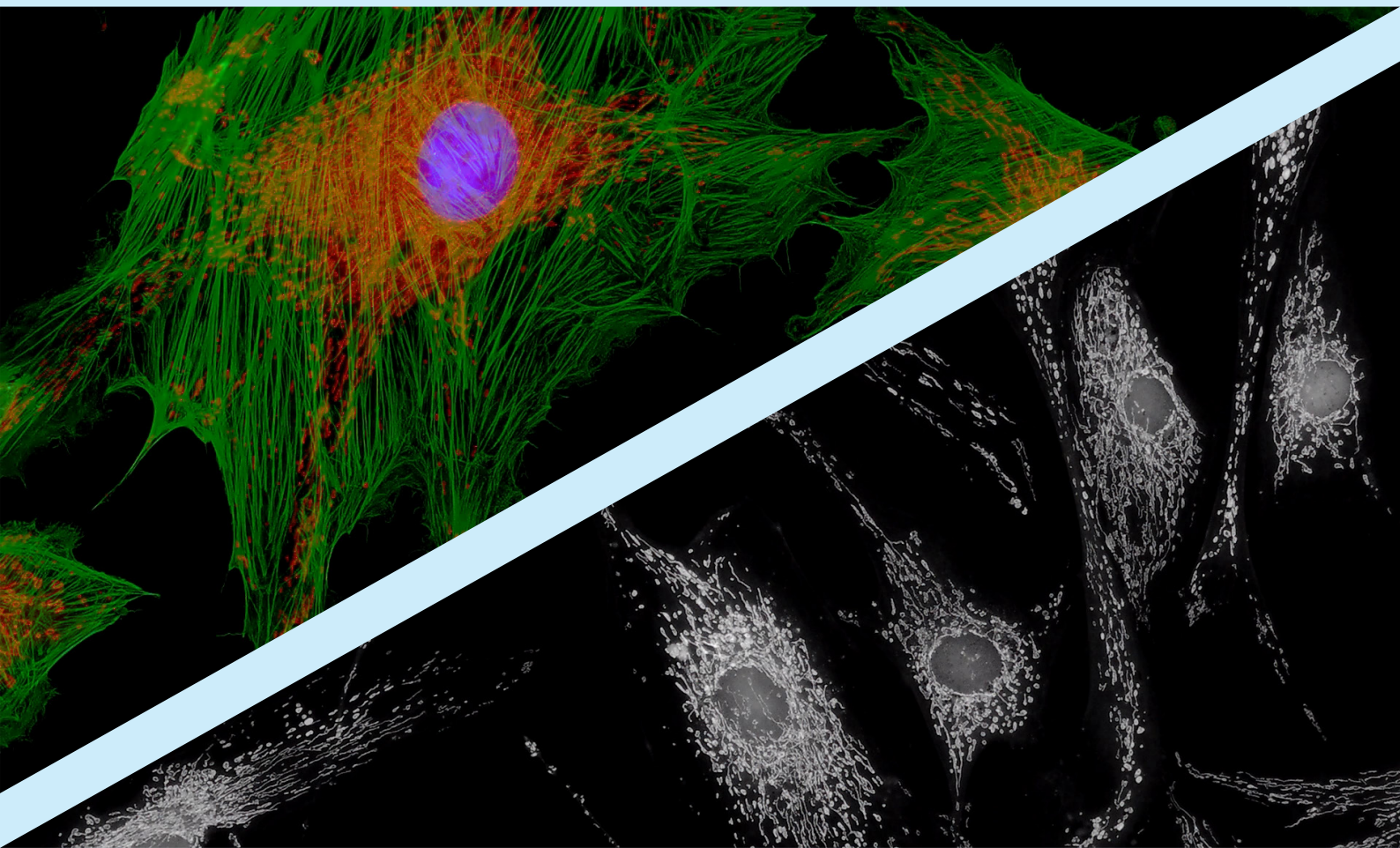


Trinocular Microscope Camera Solution ⑤
Dual-sensor Camera for Fluorescence



Product advantages

» Dual-sensor camera that meet high sensitivity fluorescence and high resolution bright field observation to help research.



Models: YF22
Category: A1A



Models: YF22
Category: A1B

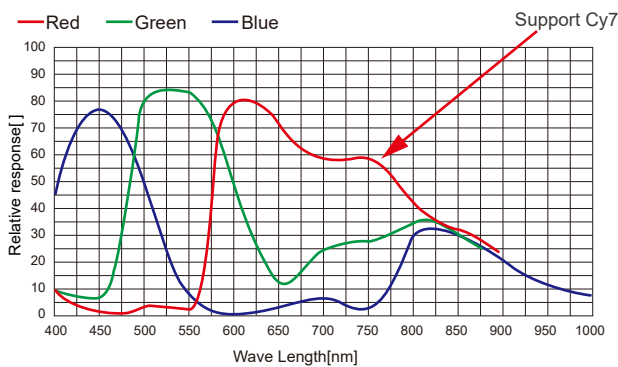


Bright field: SONY IMX147 20.0MP;
Fluorescence: SONY IMX482 2.0MP, 5.8μm×5.8μm.

Bright field: SONY IMX147 20.0MP;
Fluorescence: SONY IMX174 2.3MP, 5.86μm×5.86μm.

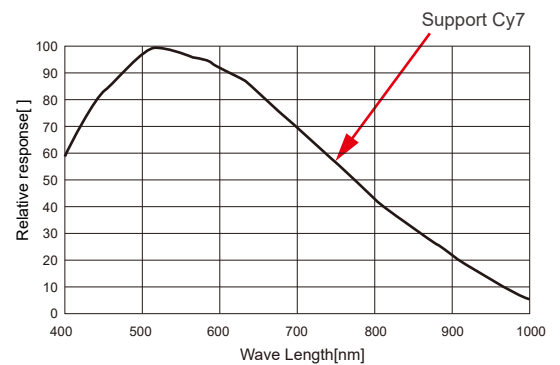
» Excellent spectral response curve

Fluorescent color camera IMX482



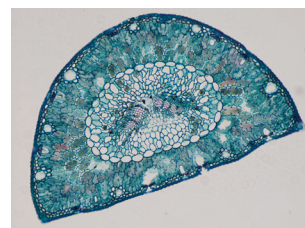
| | |
|-------|-------------|
| Cy3 | 555nm-570nm |
| Cy3.5 | 591nm-604nm |
| Cy5 | 620nm-646nm |
| Cy5.5 | 673nm-707nm |
| Cy7 | 750nm-773nm |
| Cy7.5 | 788nm-808nm |

Fluorescent monochrome camera IMX174

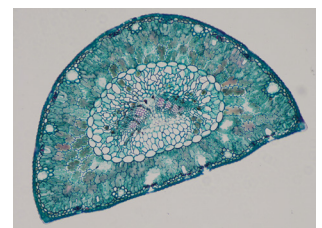


» High frame rate at full resolution, true color restoration

- H264 image algorithm, dual stream real time output. Accurate color reproduction, under the mirror is the screen, a camera with multiple work modes.



H264

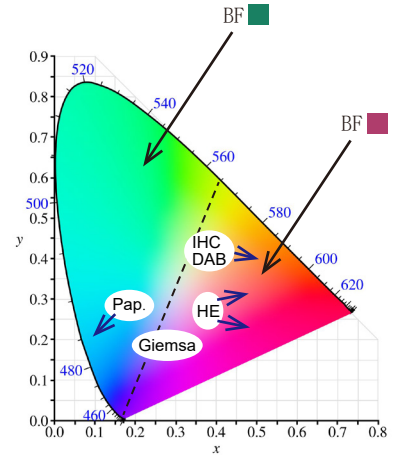
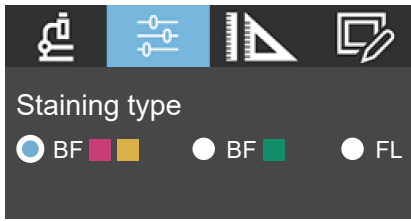


MJPG

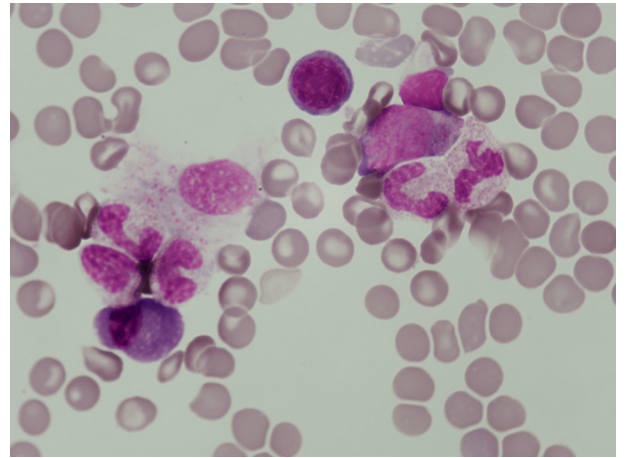
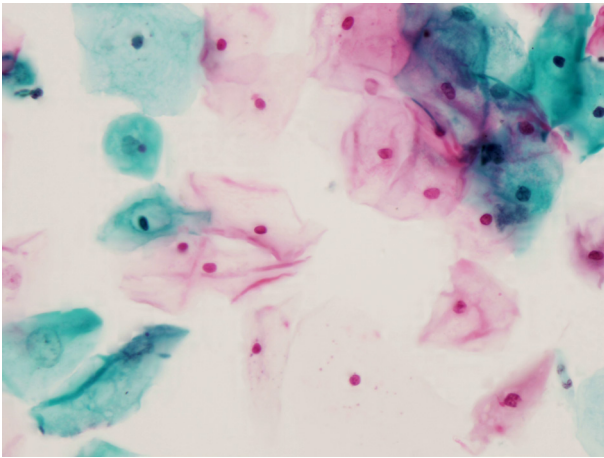
- Different brands of microscopes correspond to exclusive modes.

| Microscope type | |
|-----------------|--|
| ○ 9 | Leica DM series(N PLAN) |
| ● 11 | Leica DM series(HI PLAN) |
| ● 12 | Leica DMr(HI PLAN)(BF-RD/GD) |
| ● 13 | Leica DM1(HI PLAN)(BF-GN) |
| ● 2 | Nikon E series- Embedded camera |
| ● 5 | Nikon E series-C-mount/dovetail groove camera |
| ● 10 | Nikon TS2 |
| ● 1 | OLYMPUS CX series- Embedded camera |
| ● 4 | OLYMPUS CX series-C-mount/dovetail groove camera |
| ● 6 | OLYMPUS BX series-C-mount/ dovetail groove camera (BF-RD/GD) |
| ● 7 | OLYMPUS BX series-C-mount / dovetail groove camera (BF-GN) |
| ● 8 | OLYMPUS BX series-C-mount / dovetail groove camera (FL) |
| ● 0 | Stereo Microscope-Embedded camera |
| ● 3 | Stereo Microscope-C-mount/ dovetail groove camera |
| ***** | |

- Different stained pathology slides correspond to exclusive modes.
The theory and practice of color reproduction are truly organic.



- Bright field



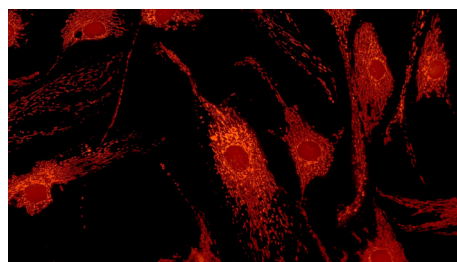
(Camera : 20.0MP, 1/2.3", 1.2um X 1.2um, staining type: BF (Yellow) default parameters, objective:40X,100X)

- Fluorescence



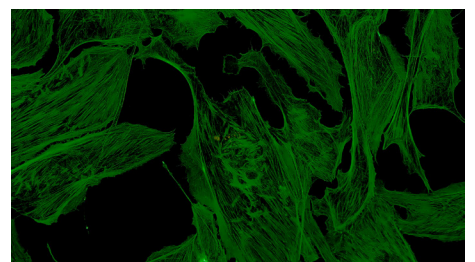
Actin filaments

Red channel



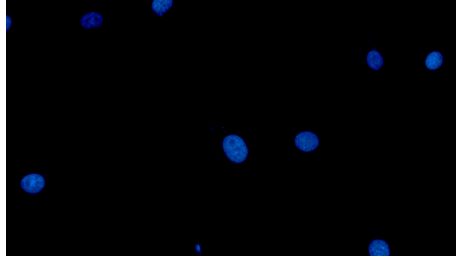
Exposure time: 900ms
Gain: 6 (ISO 1200 equivalent)

Green channel



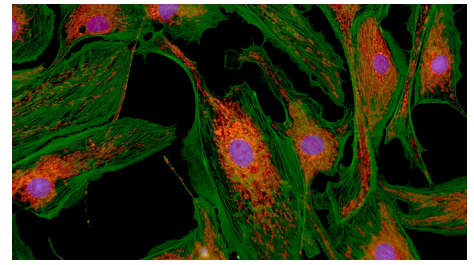
Exposure time: 1500ms
Gain: 7 (ISO 1600 equivalent)

Blue channel



Exposure time: 800ms
Gain: 5 (ISO 800 equivalent)

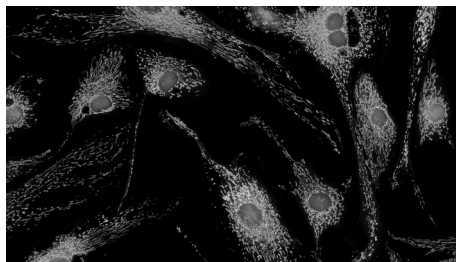
Combined channel images overlay



The above four comparison photos are all taken by the same tester under the same research level microscope and the same slide position.
(Camera : 2.0MP, 1/1.2", 5.8umx 5.8um, staining type: FL default parameters, objective:40X)

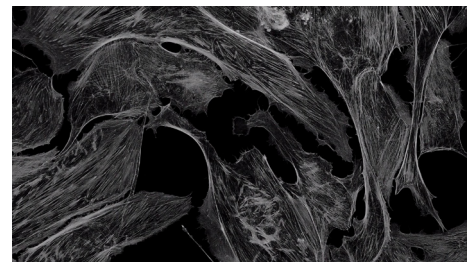
● Fluorescent monochrome

Red channel



Exposure time: 1600ms
Gain: 3 (ISO 400 equivalent)

Green channel

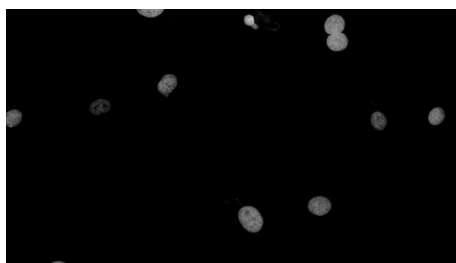


Exposure time: 1300ms
Gain: 4 (ISO 600 equivalent)



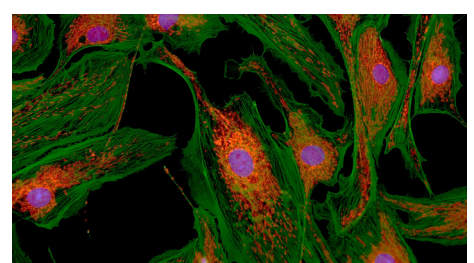
Actin filaments

Blue channel



Exposure time: 773ms
Gain: 4 (ISO 600 equivalent)

Combined color images overlay



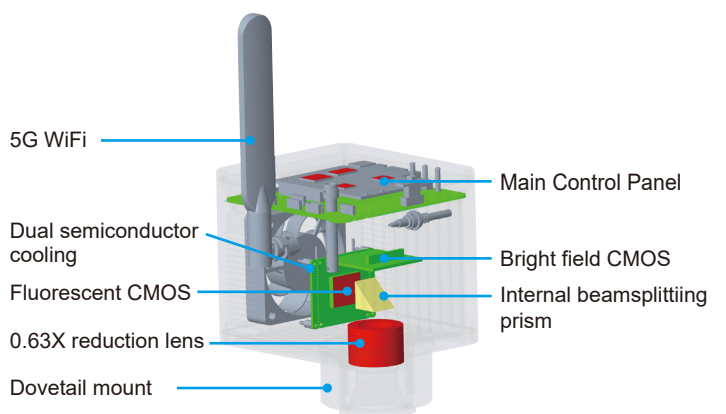
The above four comparison photos are all taken by the same tester under the same research level microscope and the same slide position.
(Camera : 2.3MP, 1/1.2", 5.86umx 5.86um, staining type: FL default parameters, objective:40X)

» Non-destructive coupling of the original optical path of the microscope

Precise and complex optical and mechanical design, 1346 parts are delicately laid out. Each of them has its own function, after a year of repeated evaluation, and finally finalized.



Different dovetail adapters for Olympus, Nikon, Leica, Zeiss, no loss of original optical path.



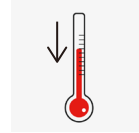
» High power dual semiconductor cooling, smart and constant working at low temperature .

At an operating temperature of 0~40°C, fluorescent CMOS operating temperature constant in the 0±2°C range;

Superior circuit design + "freezing technology" ensures extremely low readout noise and no dark current for long exposure times;

Heat dissipation duct is completely isolated from the optical path: no dust, long life and low noise.

(Noise ≤ 40dB (A), fan noise audible to the human ear when observing the microscope with the naked eye).



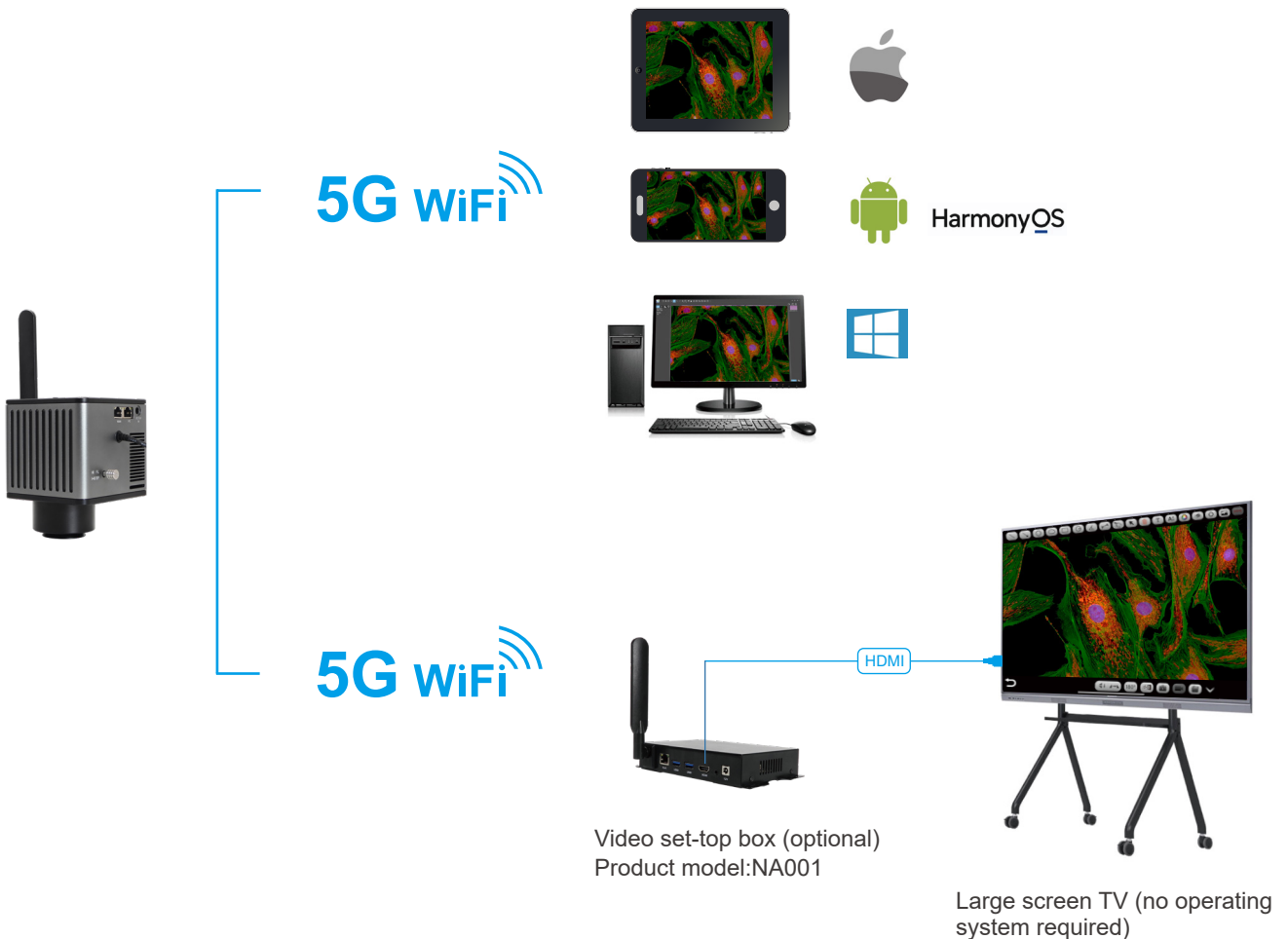
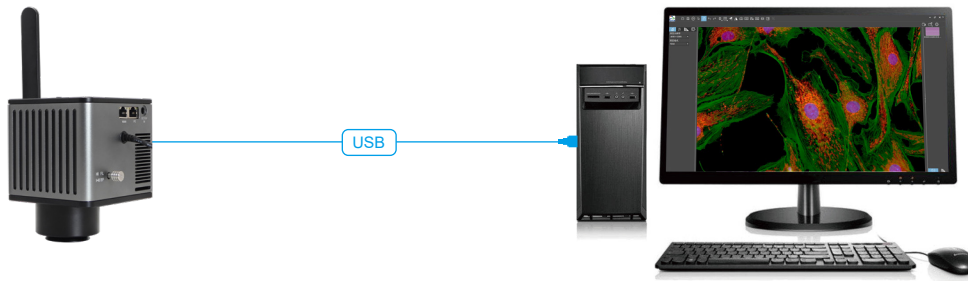
Up to 42°C lower

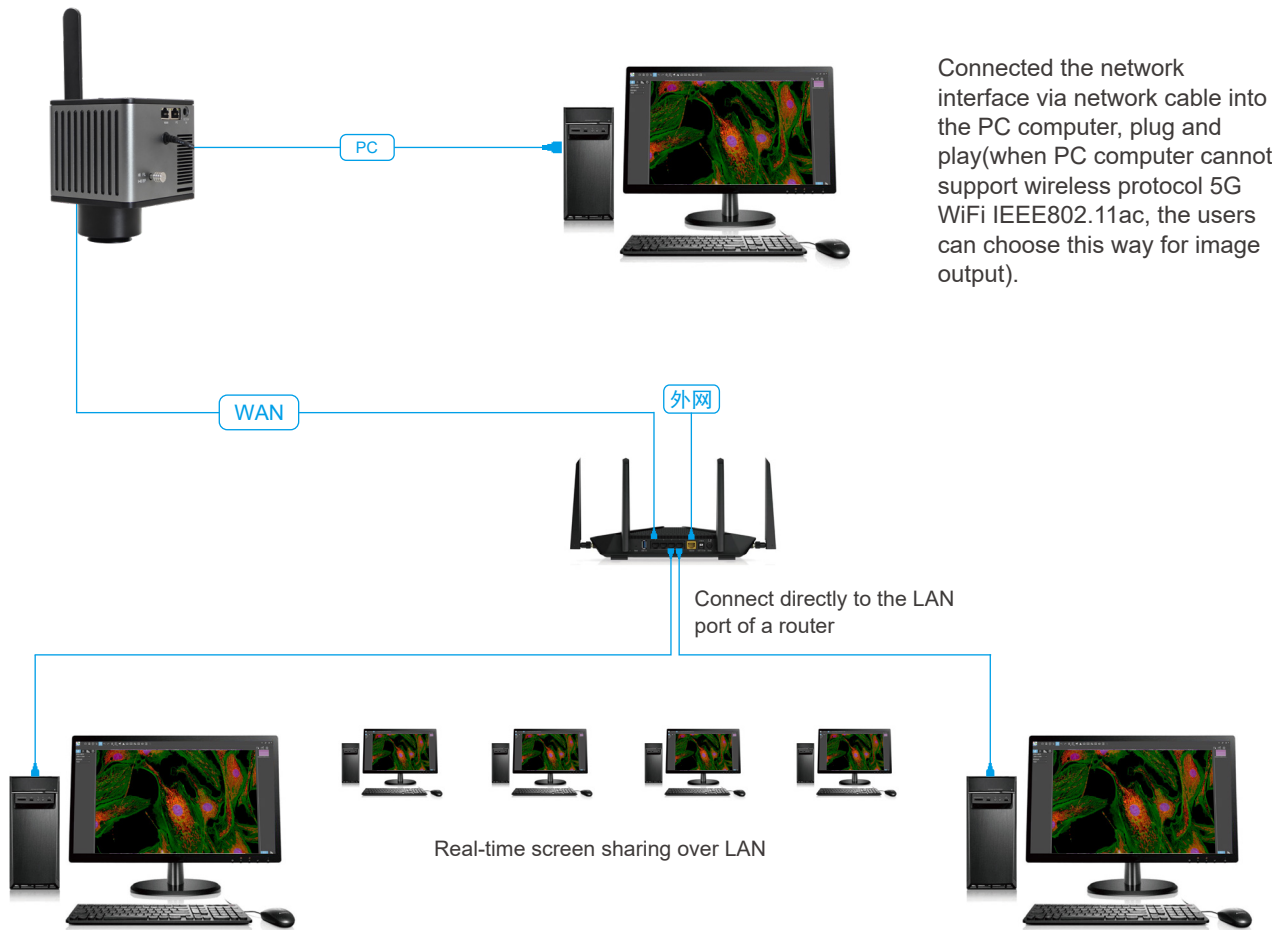


Double roller fan

» Multiple image output methods

The output combinations are: USB, 5G WiFi, network.





Specifications

» Color+Color

| Applicable to | Olympus | Nikon | Leica | Zeiss |
|--------------------------|---|-------|---|-------|
| Dovetail models | | | | YF22 |
| Category | A1A | N1A | L1A | Z1A |
| Physical resolution | 20.0MP(Color) | | 2.0MP(Color) | |
| Image sensor | SONY IMX147 CMOS | | SONY IMX482 CMOS | |
| Exposure mode | Rolling Shutter | | Rolling Shutter | |
| Maximum resolution | 5184×3888 (20,155,392 Pixels) | | 1920×1080 (2,073,600 Pixels) | |
| ISO sensitivity | Equivalent to 100-12800 | | Equivalent to 100-12800 | |
| Sensor size | 1/2.3" | | 1/1.2" | |
| Pixel size | 1.2μm×1.2μm | | 5.8μm×5.8μm | |
| Spectral response | 380-650nm | | 400-800nm | |
| Exposure capability | Real-time auto and manual adjustment | | Real-time auto and manual adjustment | |
| Exposure time | 10μs-333ms | | 10μs-9500ms | |
| Read out the noise | N/A | | 1.5-12.9e | |
| QE peak | N/A | | 85% | |
| Full well charge | N/A | | 51.5ke | |
| White balance | Real-time auto and manual RB adjustment | | Real-time auto and manual RB adjustment | |
| Preview resolution | 5184×3888@10fps, 3840×2160@15fps | | 1920×1080@60fps | |
| Power supply | DC 12V 5A | | DC 12V 5A | |
| Wireless protocol | 5G WiFi IEEE802.11ac | | 5G WiFi IEEE802.11ac | |
| A/D conversion bit depth | 12bit | | 10bit | |
| Software and App | Windows Software: KoPa Capture Pro | | App for mobiles: KoPa WiFi Lab | |

Color+Monochrome

| Applicable to | Olympus | Nikon | Leica | Zeiss |
|--------------------------|--|-------|--|-------|
| Dovetail models | YF22 | | | |
| Category | A1B | N1B | L1B | Z1B |
| Physical resolution | 20.0MP(Color) | | 2.3MP(Monochrome) | |
| Image sensor | SONY IMX147 CMOS | | SONY IMX174 CMOS | |
| Exposure mode | Rolling Shutter | | Global Shutter | |
| Maximum resolution | 5184×3888 (20,155,392 Pixels) | | 1920×1200 (2,304,000Pixels) | |
| ISO sensitivity | Equivalent to 100-12800 | | Equivalent to 100-12800 | |
| Sensor size | 1/2.3" | | 1/1.2" | |
| Pixel size | 1.2μm×1.2μm | | 5.86μm×5.86μm | |
| Spectral response | 380-650nm | | 400-800nm | |
| Exposure capability | Real-time auto and manual adjustment | | Real-time auto and manual adjustment | |
| Exposure time | 10μs-333ms | | 10μs-333ms(60fps),10μs-7000ms(30fps) | |
| Read out the noise | N/A | | 3.5e-6e | |
| QE peak | N/A | | 100% | |
| Full well charge | N/A | | 32ke | |
| White balance | Real-time auto and manual RB adjustment | | N/A | |
| Preview resolution | 5184×3888@10fps, 3840×2160@15fps | | 1920×1200@60fps,1920×1080@30fps(default) | |
| Power supply | DC 12V 5A | | DC 12V 5A | |
| Wireless protocol | 5G WiFi IEEE802.11ac | | 5G WiFi IEEE802.11ac | |
| A/D conversion bit depth | 12bit | | 12bit | |
| Software and App | Windows Software: KoPa Capture Pro ,App for mobiles: KoPa WiFi Lab | | | |

Note:When ordering, the model and category (if any) need to be listed at the same time.For example,when ordering a camera,which needs to be installed on the Olympus trinocular microscope,the corresponding order list: model: YF22,category: A1A.

Accessories,product dimensions and weight

Power adapter and power cord(Optional Chinese,American, European,Australian,Korean, British standard etc.)



Gigabit Ethernet cable (2m)



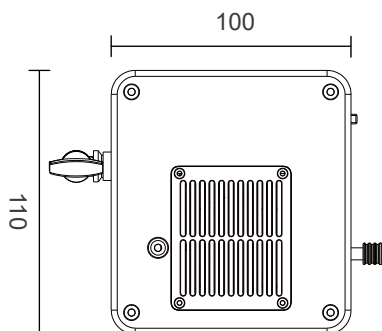
Allen key(3mm)
(For dovetail mount)



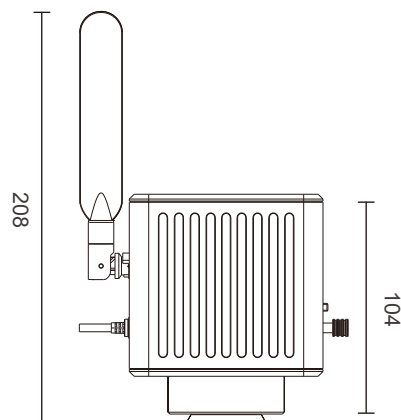
Video set-top box (optional) Product model:NA001



Dimensions(Unit: mm)



Dovetail mount models,net weight≈1.6kg



Certifications

1. Comply with FCC certification of The US Federal Communication Commission.
2. Comply with European (standard) safety CE certification.
3. Comply with the MIC certification issued by the Ministry of Internal Affairs and Communications of Japan (Electric Wave Method and Electro-Optical Communication Business Law).
4. Comply with JATE certification of Japanese telecommunications law directive.
5. Comply with the "Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment" (RoHS) Directives in accordance with EU legislation.

| Evaluation object | Certification | Certificate File Name & Report | Certificate number & corresponding report number |
|---|--|---|--|
| WF01A (5G WiFi 11ac) module Certification | US FCC Report | SZEM180100024801-5G wifi RPT-WF01A FCC Report | SZEM180100024801 |
| | | SZEM180100024802-RT-WF01A FCC Report | SZEM180100024802 |
| | | Appendix A-Photographs of EUT Constructional Details for SZEM1801000248CR-FCC | SZEM1801000248CR |
| | US FCC ID Certification | 2AFO3WF01A_NII-WF01A FCC ID | 2AFO3WF01A |
| | EU CE report | SZEM180100024901 EN301489 RPT-WF01A CE Report | SZEM180100024901 |
| | | SZEM180100024902 WIFI5G RPT-WF01A CE Report | SZEM180100024902 |
| | Japanese MIC Certification | CSRT180084-WF01A Japanese MIC Certification | CSRT180084 |
| Japanese JATE Certification | CSTT180018-WF01A Japanese JATE Certification | CSTT180018 | |

Patented

| Patent category | Patent name | Patent number |
|-----------------------|---|---------------------|
| Design patent | Electronic eyepiece | ZL 2015 3 0193227.8 |
| | Wireless electronic eyepiece | ZL 2015 3 0193223.X |
| | Electronic eyepiece with spectroscopic system | ZL 2019 3 0331144.9 |
| | Microscope (with splitting prism camera) | ZL 2019 3 0717439.X |
| Utility model patents | Microscope with camera | ZL 2019 3 0717442.1 |
| | WiFi microscope eyepiece | ZL 2015 2 0296469.4 |
| | Electronic eyepiece | ZL 2015 2 0426409.X |
| | Wireless electronic eyepiece | ZL 2015 2 0426313.3 |
| | Microscope with displayer | ZL 2019 2 0928962.1 |
| | Electronic eyepiece with splitting prism system | ZL 2019 2 1022863.3 |

Software copyright

| Category | Name of software | Platform | License number |
|--|------------------|----------|----------------|
| Computer software copyright registration certificate | KoPa WiFi Lab | Android | 2021SR1304520 |
| | | iOS | 2019SR0028558 |
| | KoPa Capture Pro | Windows | 2021SR1287730 |

KoPa[®] GuangZhou Ostec Electronic Technology Co., Limited

Manufacturer: No.8 West Lane, Jiangcheng Road, Bangjiang East Village, Dalong street, Panyu District, Guangzhou, China. | <https://www.ostec.com.cn/>



High-Tech Enterprise certificate number:
GR202044010599



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