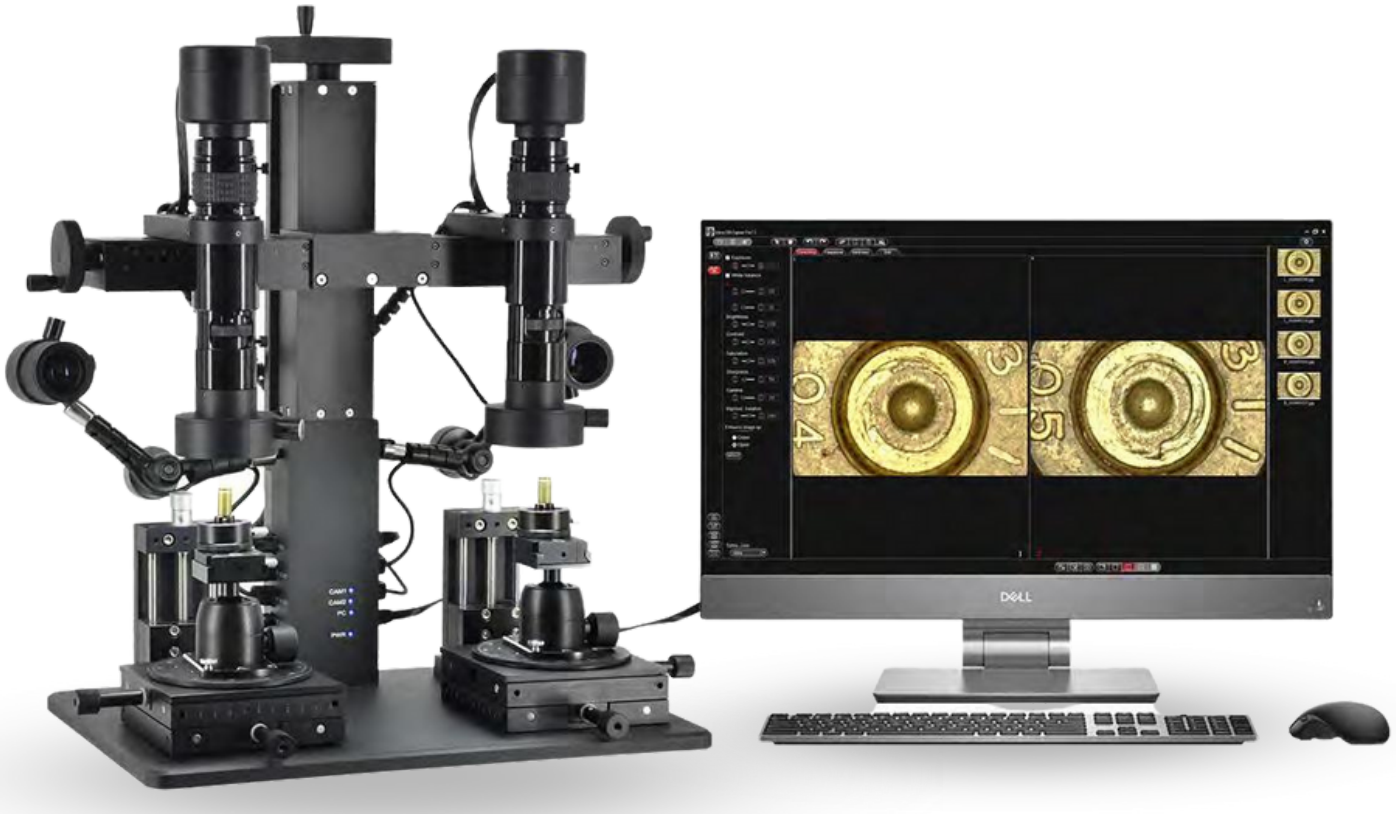
LANOPTIK
Technologies

Digital Comparison Microscope

BD1601



Dual 12 Megapixel Camera

Enhance Workflow in Digital Image Comparison

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Highlights

The comparison microscope BD1601 is built by the police college trace identification experts and technical experts with more than 20 years of experience in optical industrial. It incorporates the practical experience of many years of trace identification and breaks through the old-fashioned use of traditional comparison microscopes.

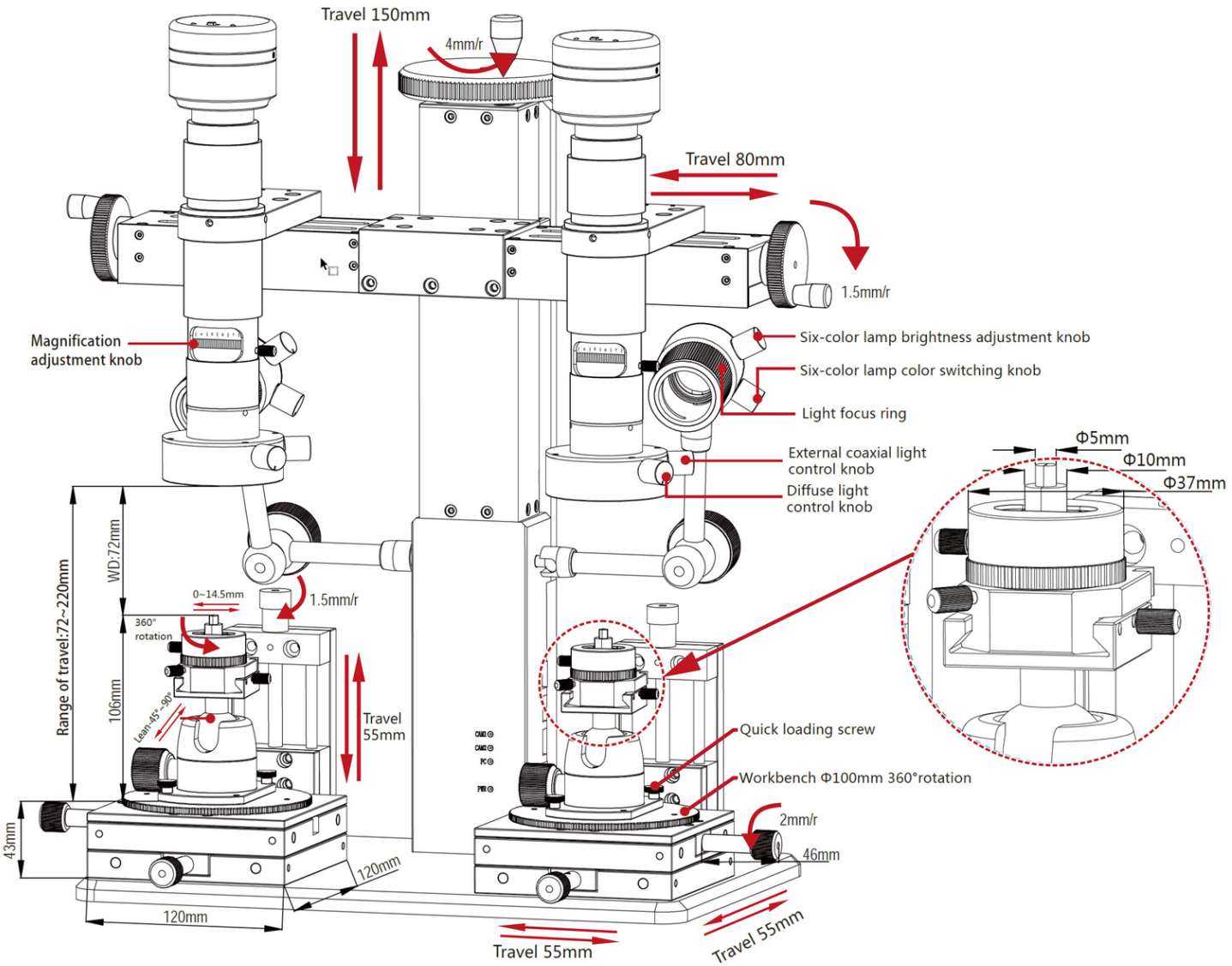
It adopts high-magnification dual-lens, dual-channel ultra-high-definition cameras and ultra-high-definition image display on computer (4K×3K), and relies on the latest AI intelligent image algorithm to fully process the image in time and cooperate with the newly optimized mechanical support platform and multiple color light source, objects observation are easy and convenient. Through the use of powerful soft-ware, users can quickly obtain high-definition real contrast images, gain higher work efficiency and accuracy.

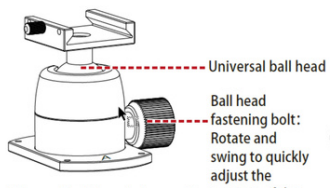
The camera uses SONY IMX412 12MP HD CMOS sensor， the frame rate output is 30fps in full output, easy to capture high dynamic range 4K images with more detail.

0.83X~10X continuous zoom, full-range HD optical lens. Special coating technology for excellent achromatic effects while ensuring a clear, bright and flat image.

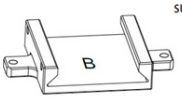
Lens optical magnification	0.83X ~ 10X
Lens optical resolution	5μm
Working distance	72mm
Observation range	0.65x0.36~8.2x4.6mm
Overall magnification	When full displayed on a 21 inch 16:9 screen: 57~715X
	When full displayed on a 17 inch 16:9 screen: 45~578X

Super-hard alloy design, independent adjustment mechanism, can adjust the XYZR axis for personal use habits, use scene and the characteristics of the detector, make the operation more comfortable and more humanized

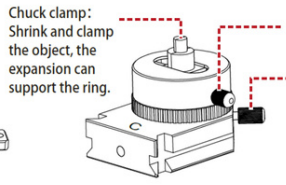




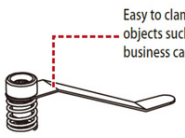
Universal ball head clamp×2



Quick mounting rail×2

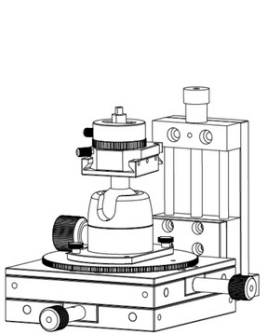


Clip holder×2

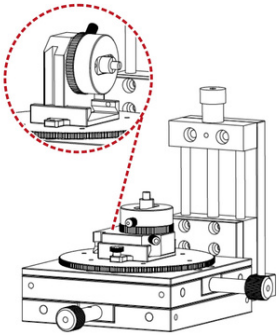


Tabletting fixture×4

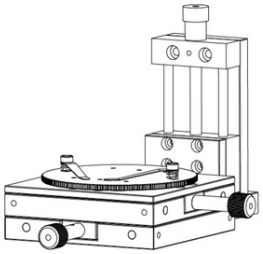
Object distance increase fixture×2



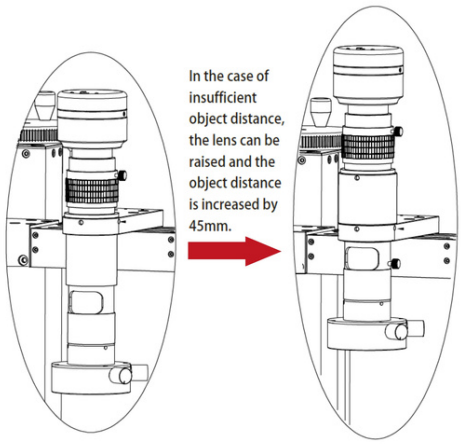
- Workbench
- Universal ball head clamp
- Clip holder



- Workbench
- Quick mounting rail
- Clip holder



- Workbench
- tabletting



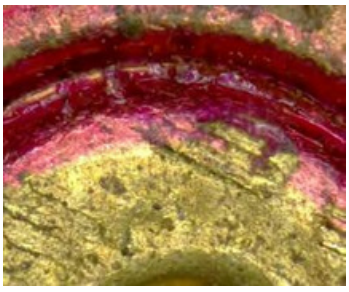
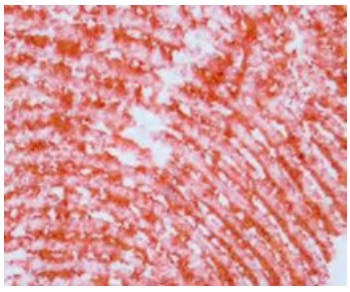
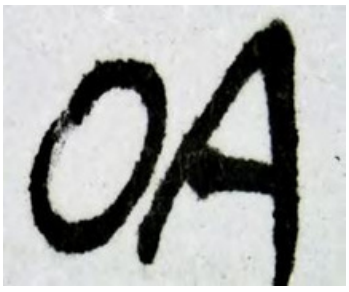
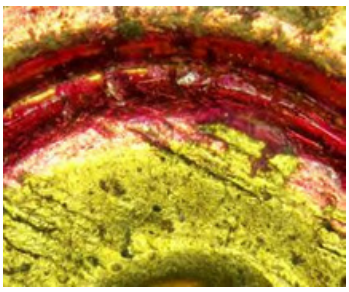
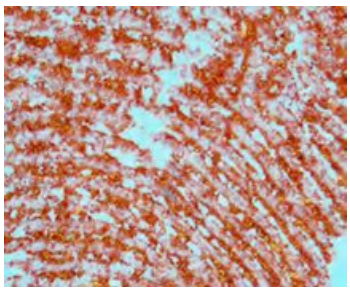
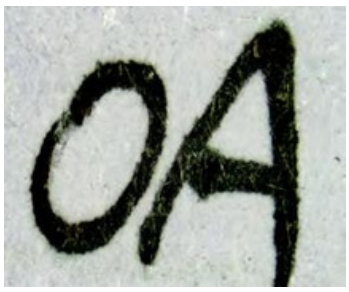
BD1601 is equipped with the external coaxial light, which can uniformly illuminate the surface of the plane and the shiny surface, and enhance the features of marking, recessing or embossing. It can highlight the uneven surface of the object, overcome the interference caused by the reflection of the surface, and highlight more details that cannot be displayed by traditional microscopes.

Power	<3W
Input voltage	DC 5V
Dimming method	0~100% Linear adjustment
Center brightness	External coaxial：≥12000LX（Height 100mm）
	Diffuse emission：≥4200LX（Height 100mm）
Number of LEDs	External coaxial light：13 small angle highlighting beads
	Diffuse light：27 bright white lights
Color temperature	5000K~5500K
Adjustment method	Separate control (one knob controls one light)

Diffuse emission LED ring lights to reduce glare. Contains 27 diffuse light beads.

The external coaxial LED ring light is more conducive to the observation of the smooth surface, high reflective and hard-to-reach areas. It contains 13 coaxial lamp beads.

The two ring lights are independently controlled, and the brightness can be freely combined and adjusted according to actual observation condi-tions.

	Bullet	Fingerprint	Handwriting
Diffuse light			
External coaxial light & diffuse light			

Unique multiple color light, users can choose different wavelengths of light to observe according to different observation charac-teristics or applications. With low voltage, ultra low energy consumption, safe, stable, long life, high brightness, low light decay and other characteristics. Whether it is trace comparison, text comparison or seal comparison, it is easy to use.

Focus Adjustment Ring

Rotate clockwise to make the light spreads make the light gathers; Rotate counterclockwise to

Brightness Adjustment Knob

Turn clockwise to turn on the light source and increase the brightness; Turn counterclockwise to reduce brightness or turn off.

Light Switch Knob

Each time a gear is rotated, the color of the light is switched once; cycle switching

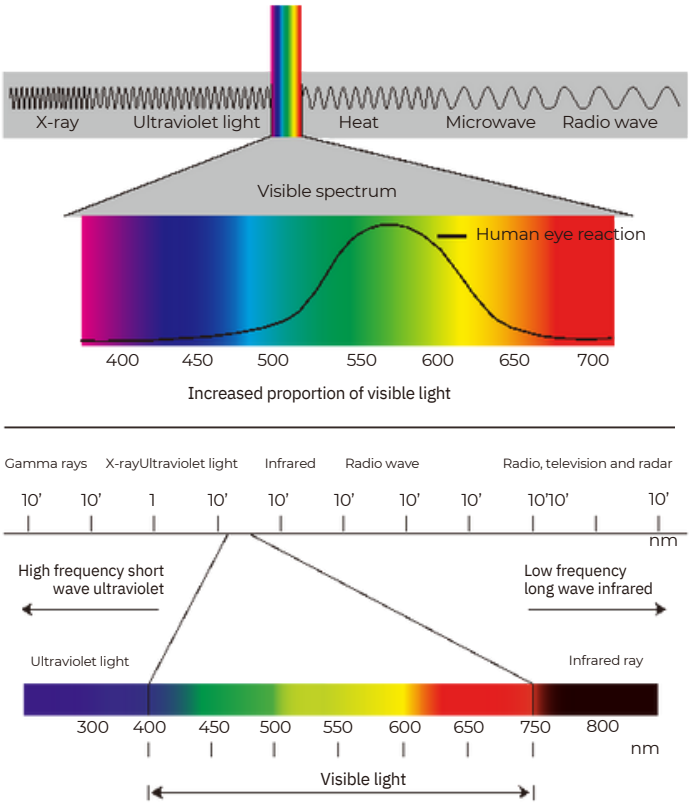
Adjusting Knob

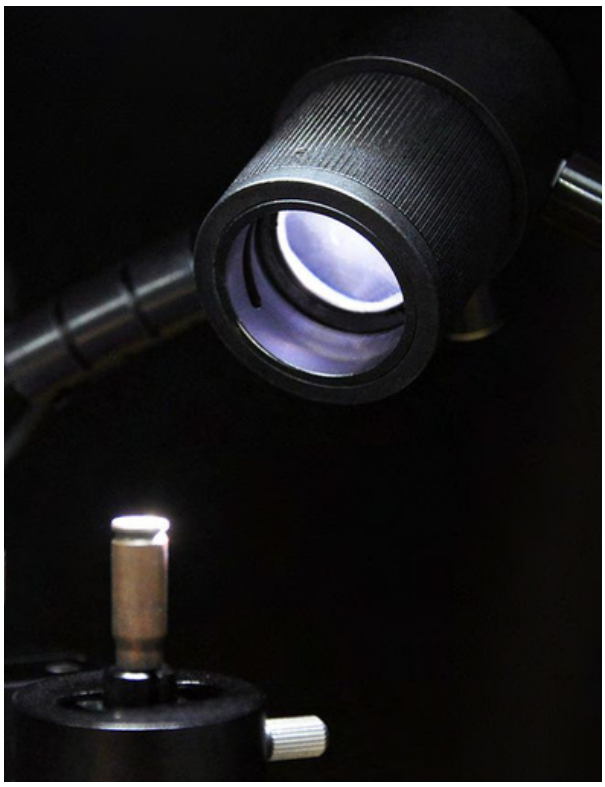
Loosen, can swing the position of the support in a certain range; Tighten to secure the current position of the holder (Note: When you need to swing the position of the lamp, you must first loosen the knob, otherwise it will damage the articulated arm).

Articulating Arm

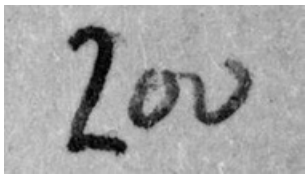
It consists of multiple sets of movable joints; after loosening the adjustment knob, the position of the light source can be arbitrarily oscillated.

Power	<3W
Input voltage	DC 5V
Dimming method	0~100% Linear adjustment
LED wavelength	Red：620~625um
	Yellow：590~595um
	Green：520~525um
	Blue：460~465um
	Purple：390~400um
	White：6000K

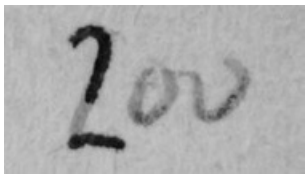




Handwriting identification: Original number 100

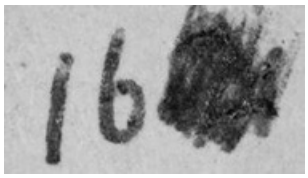


External coaxial light & diffuse light

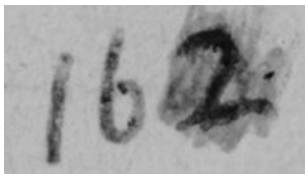


Six-color lamp: Blue light

Handwriting identification: Original number 162



External coaxial light & diffuse light

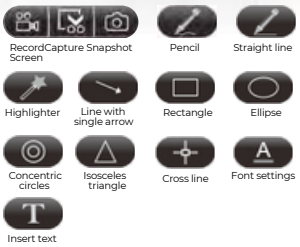


Six-color lamp: Purple light

Exclusively comparison software, bringing unprecedented efficiency and precision to users by many years of practical experience and software developers' hard work.

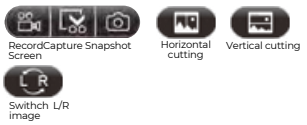
- Horizontal comparison of each pair of pixels, the results are qualitative and quantitative to avoid human interference.
- Full field of view displayed on double-screen can be arbitrarily overlapped, cut, and arbitrarily setting transparency, which is intuitive for everyone.
- Support dynamic and static image contrast.
- Dual screen can be freely and independently adjust parameter settings, including white balance, exposure, brightness,
- contrast, saturation and more.
- Software menu supports English and Chinese (simplified).

Correcting Images
preview window functions

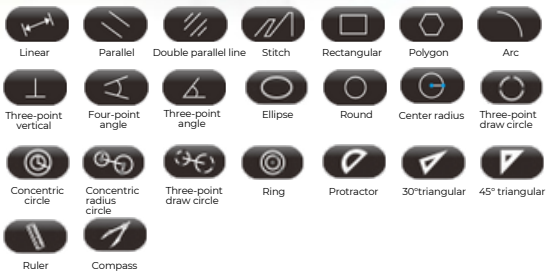


Similarity Comparison
preview window functions

Trace Stitching Composite Image
preview window functions



Rich Measuring Functions



Correcting Images - preview window

Similarity Comparison - preview window

Trace Stitching Composite Image - preview window

Image Edit

Front

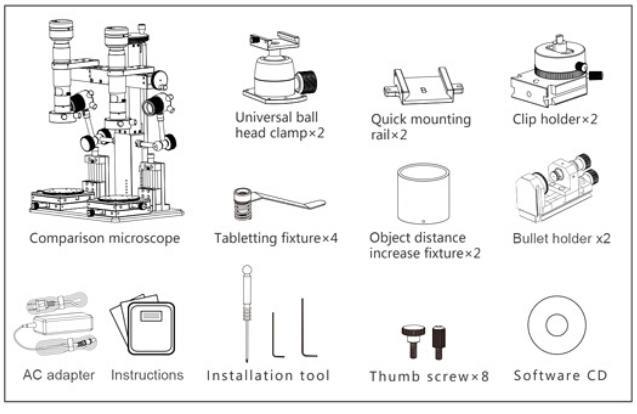
Back

Specifications

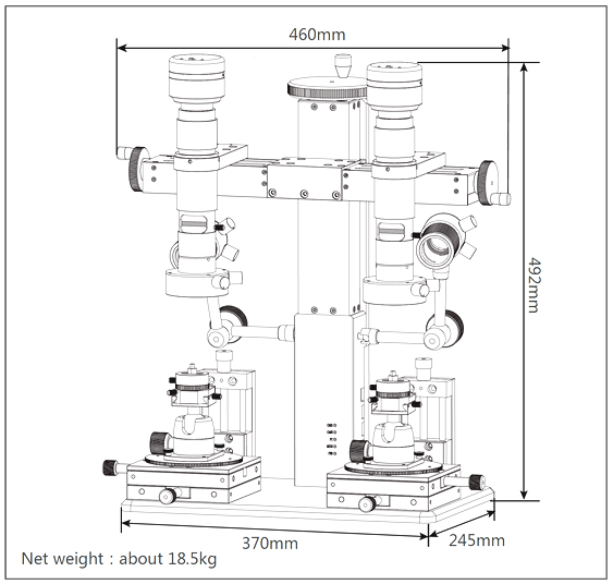
BD1601 Hardware Configuration	
Image Sensor	SONY IMX412 CMOS Sensor
Shutter	Rolling shutter
Max. Resolution	4000x 3000 (12,000,000 pixels)
Sensor Size	1/2.3'
Pixel Size	1.55μm x 1.55μm
Exposure	Real-time auto, Manual adjustment
White Balance	Real-time auto, Manual adjustment
Record Format	Snapshot Picture Format：JPG Resolution: 4000x3000,3840x2160,2592x1944,1920x1080 Record Video Format：MOV Resolution：1920x1080

BD1601 Software Environment	
Operating System Requirements	Microsoft® Windows® 7 / 8 /8.1/10(64 bit)
	CPU: i7 8th-generation or later version
	Memory: 8G or more
	At least 200 GB available hard disk space
	Network: 10/100/1000Mbps compatible interface

Packing List



Dimensions



Specifications are subject to change without any obligation on the part of the manufacturer.

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