

## Dual 12 Megapixel Camera

Enhance Workflow in Digital Image Comparison for Forensic Investigation

## Features

Combining high-performance and efficiency, the BD12 digital stereo comparison microscope is designed for high-precision observation and measurement in applications of forensic investigation, offering a range of powerful functions such as trace stitching, similarity comparison, Image editing etc.

The BD12 comes with dual stereo zoom microscopes with 7~45X optical magnifications. It features a trinocular design with a 45° eyepiece tube, and a 12-megapixel digital camera with a built-in 0.63X relay lens for maximum field of view. The unique and ingenious lighting system makes it adaptable to observe specimens with different surfaces while achieving the highest possible resolution with virtually no aberrations.

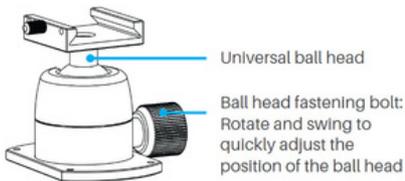
Thanks to the high performance camera and dedicated comparison software with advanced algorithms, the BD12 brings users remarkable experience in such aspects as trace evidence, firearms and toolmarks, fingerprints, questioned documents and handwriting.



## Fixtures

Coming with a full set of fixtures to adapt to specimens of different shapes, whether it is moving, rotating, tilting or positioning, to meet various observation and measurement needs.

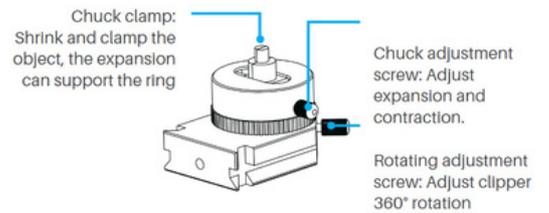
**A Universal ball head clamp: 2 pcs**



**B Quick mounting rail: 2 pcs**



**C Clip holder: 2 pcs**

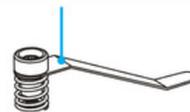


**D Bullet shell holder gripper: 2 pcs**



**E Bullet shell holder gripper: 2 pcs**

Easy to clamp thinner objects such as business card, paper, cloth.



### Flexible fixture combination:

**A + B**



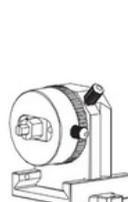
**A + C**



**A + D**



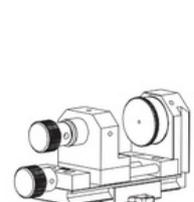
**B + C**



**B + C**



**B + D**



## Unique and Ingenious Illumination System

The illumination system of BD12 digital comparison microscope innovatively integrates near-coaxial LED lights, four-section lights and six-color oblique LED lights, which can evenly illuminate shiny surfaces, strengthen the features of scratches, depressions and embossing, and highlight the uneven surface, overcome the interference caused by surface reflection. It can highlight more details that cannot be displayed by conventional optical microscope.



### Near Coaxial LED light

Power	< 3W
Input voltage	DC 12V
Brightness adjustment	0~100% linear dimming adjustment
Center brightness	≥ 12000LX (height: 100mm)
LED beads	24 pcs small angle bright LED beads
Color temperature	5500K~7000K
Adjustment method	Knob control



Switch and brightness control knob

### Four-section LED light

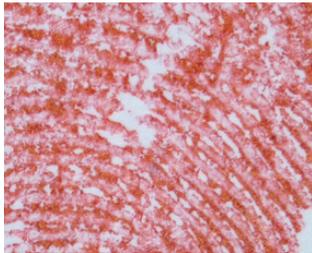
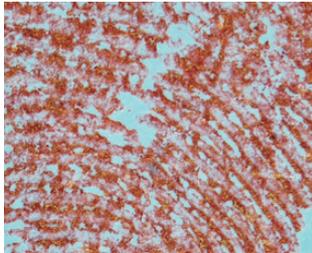
Power	< 5W
Input voltage	DC 12V
Brightness adjustment	0~100% linear dimming adjustment
Center brightness	≥ 12000LX (height: 100mm)
LED beads	72 pcs small angle bright LED beads
Color temperature	5500K~7000K
Adjustment method	Button and knob control



Section control button

Brightness control knob



	Bullet Shell	Fingerprint	Handwriting
Four-section LED light			
Four-section LED light + Near-coaxial LED light			

### Six-color oblique LED light with articulating arm.

Power	< 3W
Input voltage	DC 5V
Brightness adjustment	0~100% linear dimming adjustment
Center brightness	≥ 12000LX (height: 100mm)
Wavelength of each color LED	Red: 620~625 nm
	Yellow: 590~595 nm
	Green: 520~525 nm
	Blue: 460~465 nm
	Violet: 390~400 nm
	White: 6000K (color temp.)



#### 1 Focus Adjustment Ring

Rotate clockwise to make the light spreads make the light gathers.

#### 3 Light Switch Knob

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

#### 5 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.

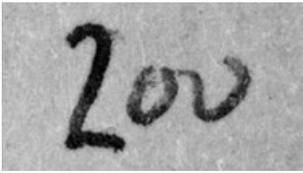
#### 2 Brightness Adjustment Knob

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

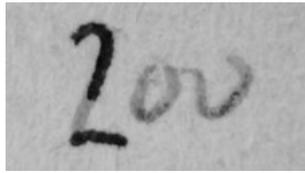
#### 4 Adjusting Knob

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).

Handwriting identification: Original number 100



Near-coaxial light + 4 section light

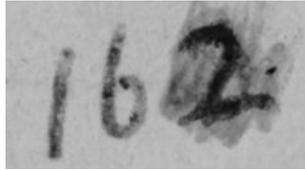


Six-color light: Blue light

Handwriting identification: Original number 162



Near-coaxial light + 4 section light



Six-color light: Violet light



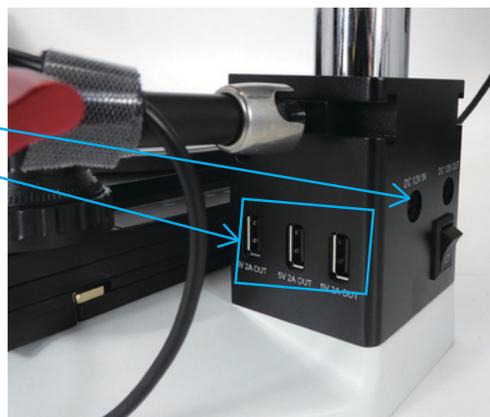
The six-color oblique light can be installed on the left or right side of the microscope according to the observation needs, and can be easily fixed with only one screw.



### Embedded centralized power supply

Embedded centralized power supply socket design, designed to keep the desktop neat and clean. Only one power cord is needed to power all illuminators and the cameras.

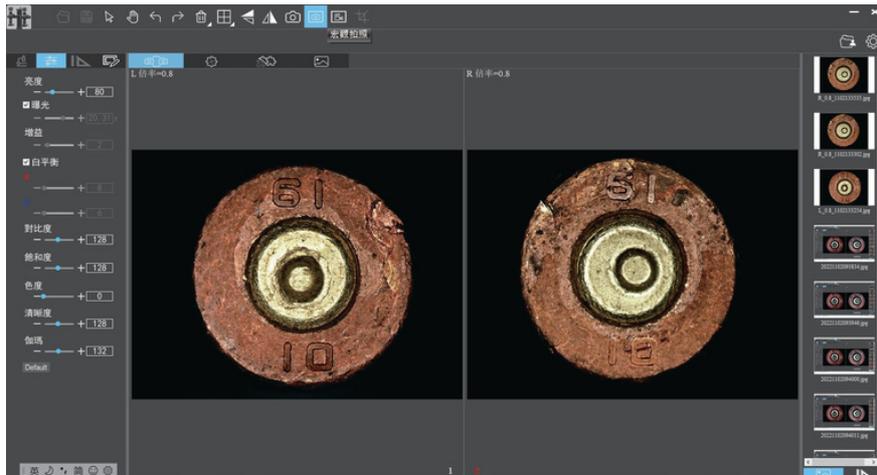
Power Input: DC 12V 5A  
5V 2A USB Power output: 3x  
12V 1A USB Power output: 2x



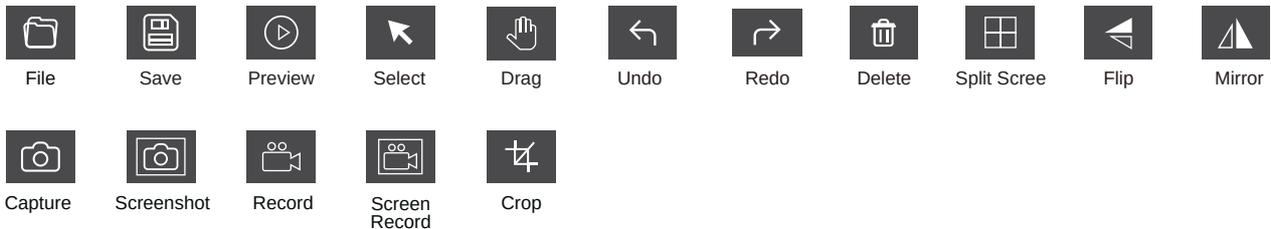
## Dedicated digitao comparison software

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

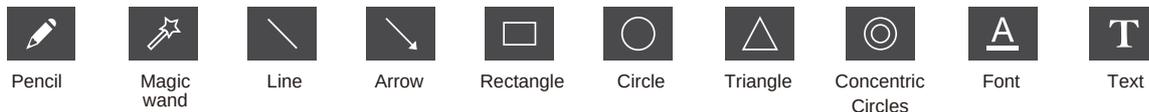
- Horizontal comparison of each pair of pixels, the results are qualitative and quantitative to avoid human interference.
- Full field of view displayed on double-screen can be arbitrarily overlapped, cut, and arbitrarily setting transparency, which is intuitive for everyone.
- Support dynamic and static 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).



### Common Functions

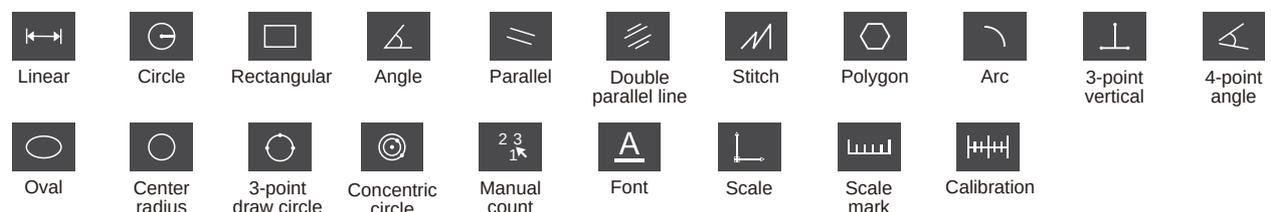


### Annotation Functions



### Measurement Functions

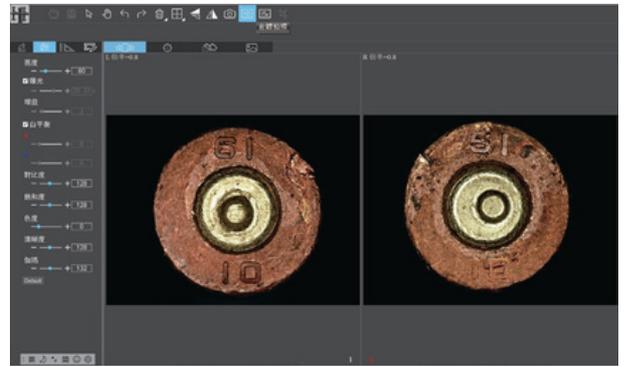
Pixit Com software provides common measurement tools and scales. It allows to generate reports in PDF, Word or Excel format of documents including data of measurement results and pictures.





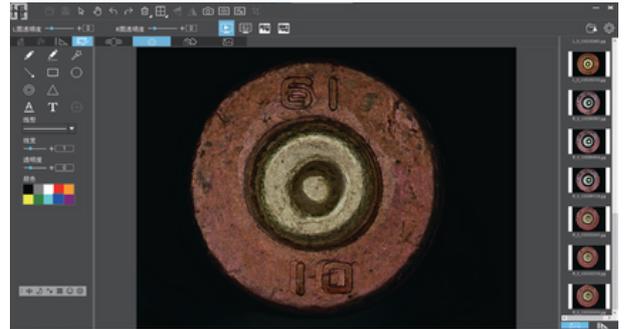
### Image positioning and calibration

Use the XYR moving stages and fixtures of the BD12 digital comparison microscope to place two objects that need to be compared or trace stitched at an appropriate position, and can independently operate image attribute control, take pictures, etc.

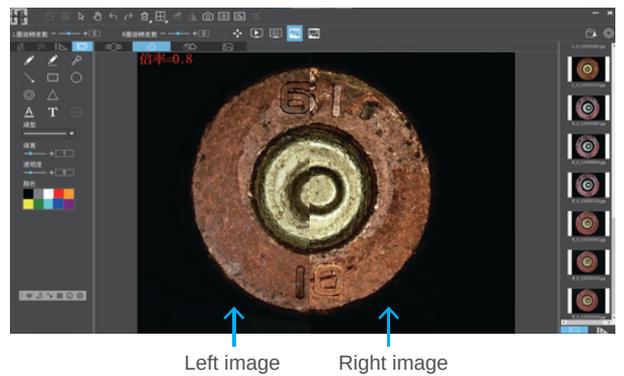
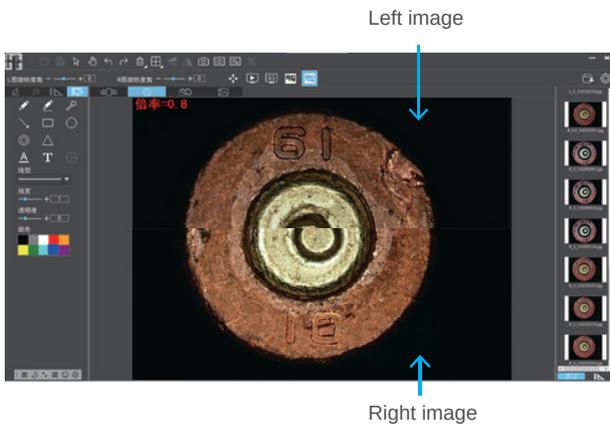


### Similarity comparison

The software supports overlapping two real-time images for "dynamic similarity comparison", and also supports comparing two captured images. Transparency can be set independently, and precise feature comparison can be performed by superimposing images.

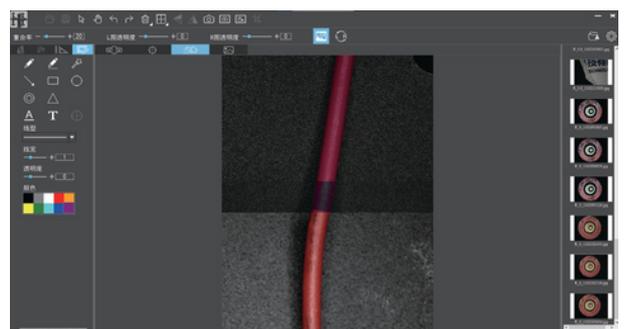


The software supports "vertical cutting" or "horizontal cutting" to cut the layers of the two images, and drag the dividing line with the mouse to display the similarities of the features at the same position.



### Trace stitching

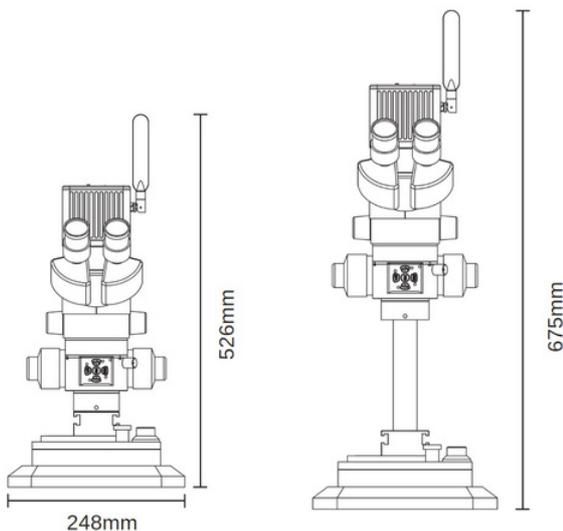
For two specimens that possibly separated due to fracture, the trace stitching function allows to view the fracture characteristics and determine whether the two specimens belong to the same original object. The software provides settings such as coincidence rate, transparency, stitching direction, image rotating, and left-right window switching, etc.



## Specifications

Model	BD12
Structure type	Separate body type, dual stereo zoom microscopes
Working distance	65-75mm
Total magnification	7X-45X, can be extended to 7X-125X by using optional eyepiece auxiliary objective
Field of view (Eyepiece)	26mm at 7X magnification; 4.3mm at 45X magnification
Field of view (Camera)	13.3x10mm at 0.7X magnification; 2.14x1.6mm at 4.5X magnification
Observation head	Hinged trinocular head, 360° rotatable, splitting ratio 50%:50%
Eyepieces	Wide angle and high eyepoint eyepiece with large field of view: 10X (FN. 20)
Eyepiece inclination	45°
Interpupillary distance adjustment	54-76mm
Zooming ratio	6.4:1 (approx.)
Zooming range	0.7X-4.5X
Focusing bracket	Coarse and fine focusing adjustment, vertical moving range: 45mm
Illumination 1	Four-section epi LED light
Illumination 2	Near-coaxial epi LED light
Illumination 3	Six-color fluorescence light with articulating arm
Stage	XYR moving stage with 360° turntable; XY moving range: 25mm (X), 5mm (Y)
Base	Fan-shaped base with vertical post, Base size: 285x238x25mm
Camera	Dual 12MP cameras (Ethernet output to PC); or Dual 20MP cameras (optional)
Max. resolution	4000 x 3000 pixels
Frame rate	30fps @ 4000 x 3000
Software	Pixit Com software for digital comparison microscope (Windows OS)
Power supply	Embedded power socket, DC 12V, 5A

## Dimensions



## Software Environment

Software	Pixit Com for Windows OS
Operating System Requirements	Microsoft® Windows® 7, 8, 10, 11 (64bit)
	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

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

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