



Designed for Precision measurement

Reliable quality and technology



BestScope BMS series

Combining high magnification of metallurgical microscope with 3 axes measurement of image measuring instrument, BMS measuring microscope is available for bright&dark field, DIC, polarizing observation, and is widely applied for industrial inspection, such as semiconductor, PCB, LCD, hand phone, optical communication, basic electronics, mold hardware, automobile and so on.

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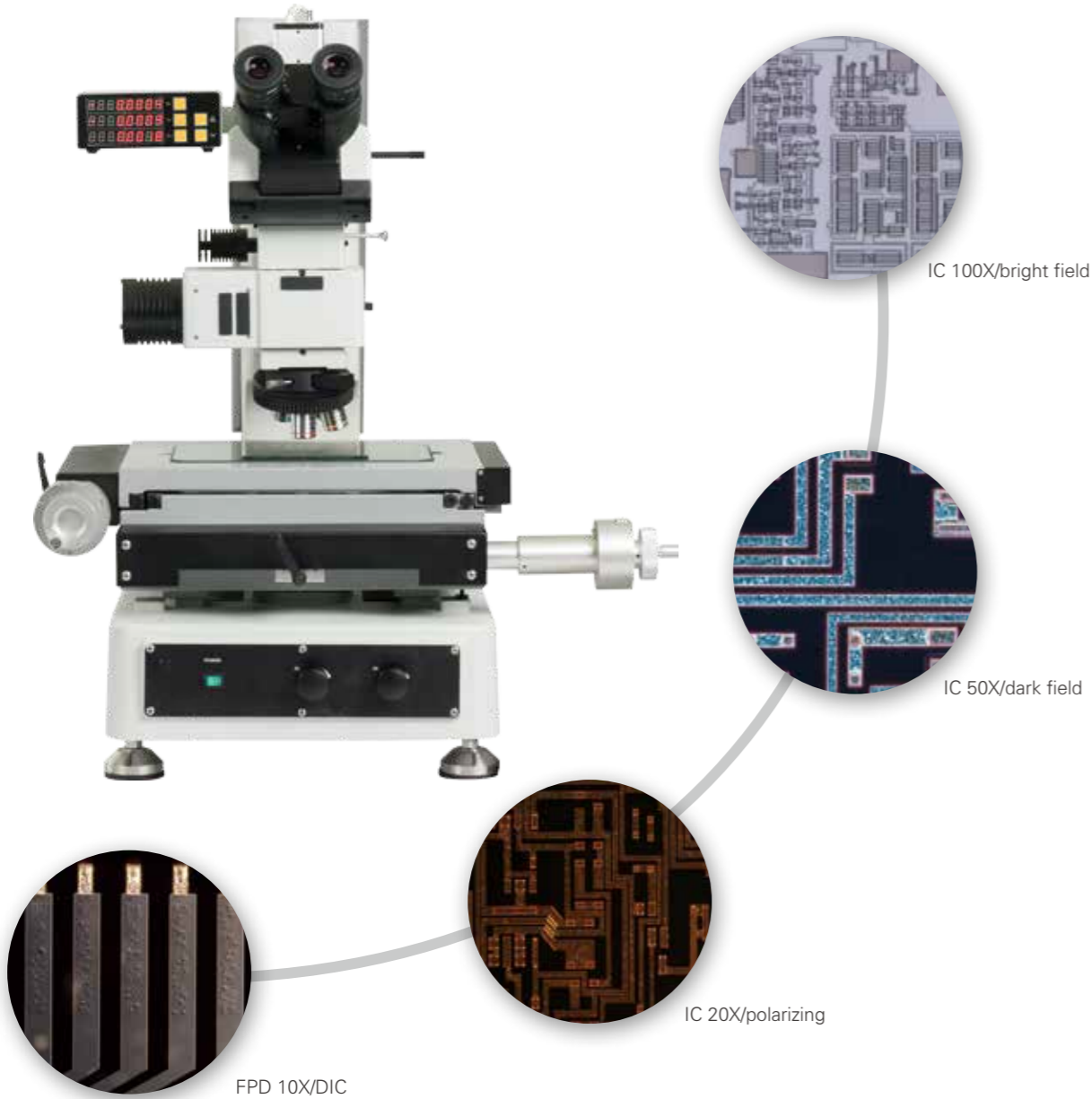
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Outstanding optical technology for excellent imaging

Professional and advanced technology is essential to research and development.

Superior infinity optical system, working with semi apochromatic objectives, presents a sharp image with high contrast and clarity. With simple accessories, different performance such as dark field, polarizing, DIC is available.



5X/10X/20X/50X/100X objectives working with dovetail-type nosepiece, is able for micro-measurement of large parts and small components with wide field, long working distance and high precision.



Long working distance metallurgical objectives

With high transmittance and sharpness lenses, the professional objectives is able to present the real color of samples, support for dark field, polarizing and DIC application.



Name	Magnification	N.A.	W.D. (mm)	Cover glass (mm)	Parfocal distance (mm)	Conjugate distance (mm)
Infinity long working distance plan achromatic metallurgical objectives	5X	0.15	10.8	0	45	∞
	10X	0.3	12.2			
	50X	0.55	7.9			
	100X	0.8	2.1			

Name	Magnification	N.A.	W.D. (mm)	Cover glass (mm)	Parfocal distance (mm)	Conjugate distance (mm)
Infinity long working distance BD plan achromatic metallurgical objectives	5X	0.15	9.0	0	45	∞
	10X	0.3	9.0			
	50X	0.55	7.5			
	100X	0.8	2.1			

Name	Magnification	N.A.	W.D. (mm)	Cover glass (mm)	Parfocal distance (mm)	Conjugate distance (mm)
Infinity super long working distance semi apochromatic metallurgical objectives	20X Bright field	0.4	8.8	0	45	∞
	20X Bright&dark field	0.4	8.5			

Ergonomics design realizes the comfortable operation

Practice is the basis for research.

Working efficiency and speed are mainly effected by the tool operability. All design based on ergonomics, reduces the fatigue caused by hard work.

Welcome to experience BMS measuring system.



Tilting viewing head, relieves fatigue from long-time working

With tilting viewing head from 5 to 35 degree, it is available to be comfortably operated by different users with different posture.



Coarse and fine adjustment for X/Y movement, two speed regulation for option

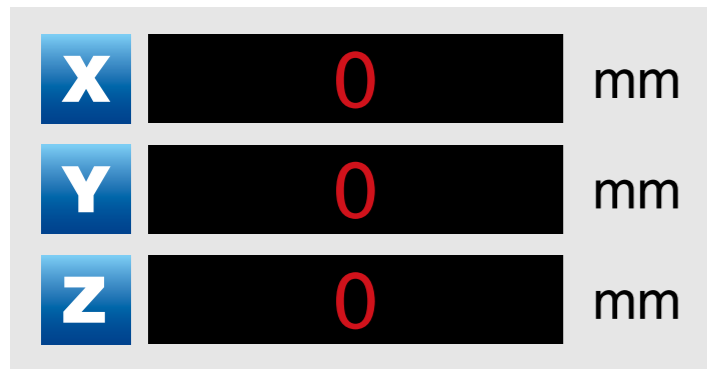
With stage reducer, the stage lead of BMS system can be controlled to 2mm or 4mm, more accurate and easy to operate.



Ductile cast iron frame and base, firm and stable
With the characteristics of high strength and high stability, the frame made by cast iron is uneasy to deform because of temperature change. What's more, the anti-vibration of ductile cast iron furthest reduces the measurement error.

Precision measurement ensures data accuracy

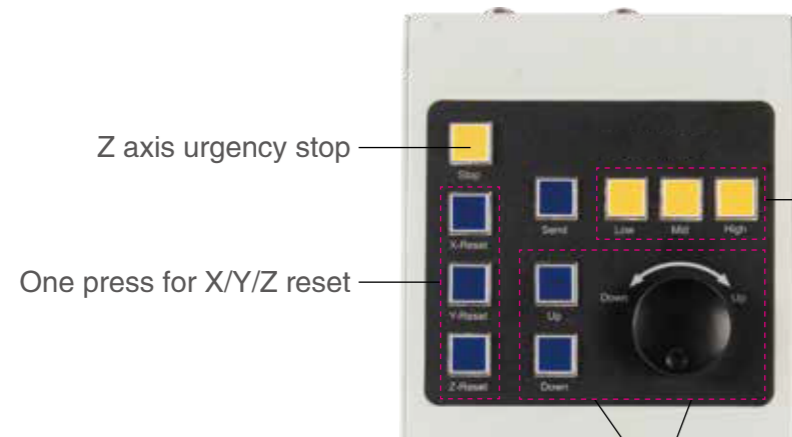
Measurement is aimed at restore the real data of samples. Good measuring tool represents a brand value. With the development of manufacturing technology for miniaturization and precision, high accurate measurement is more and more important. BMS series adopts 3 axes measuring system with 0.1um precision. X/Y axes manual operation and Z axis electric focusing with high accurate grating scales, is easy for operate without fatigue.



High precision grating scale



Z axis electric focusing



Z axis urgency stop

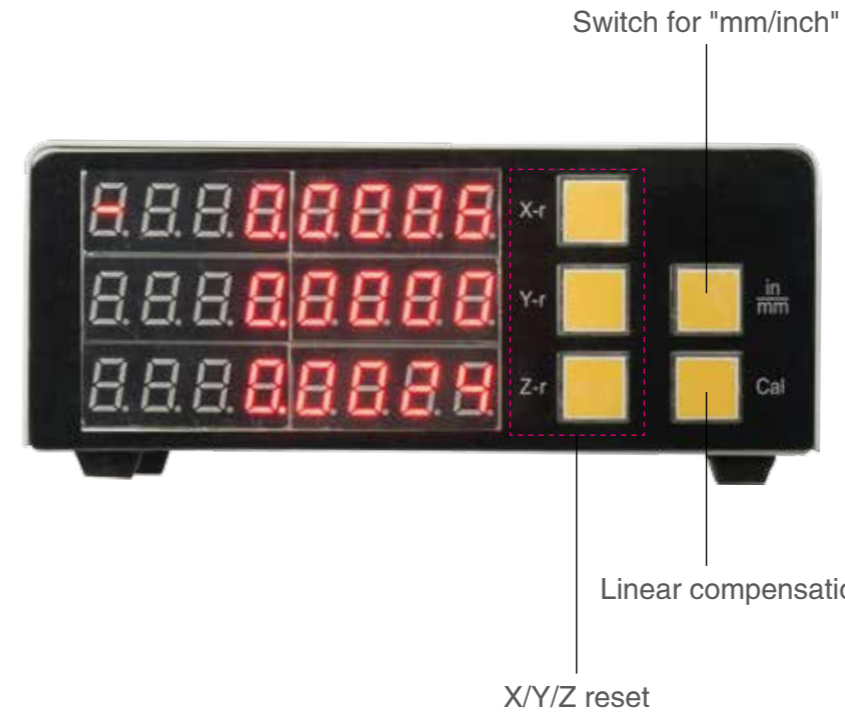
One press for X/Y/Z reset

Two ways to adjust Z axis

Running speed: high/mid/low

Electric focusing controller

The separated controller for X/Y/Z focusing and grating scale reset in BMS measuring system, avoids the deviation by manual operation, realizes the accurate focus and measurement.



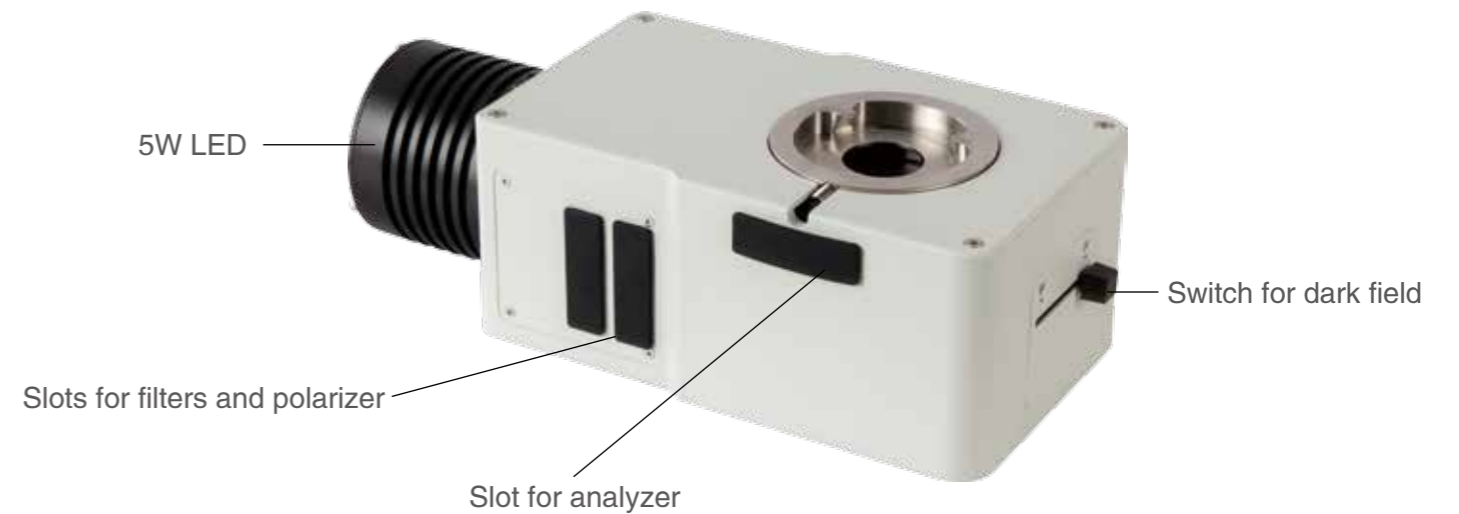
Switch for "mm/inch"

Linear compensation

X/Y/Z reset

Counter with real-time display

Counter with real-time display can be disassembled accordingly, precision 0.1um, with buttons for reset, linear compensation and count unit switch.



5W LED

Slots for filters and polarizer

Slot for analyzer

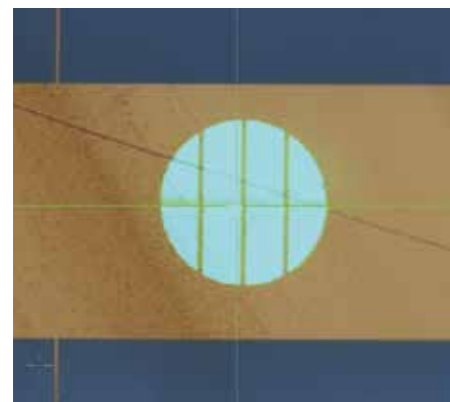
Switch for dark field

Multi-functional reflected illuminator

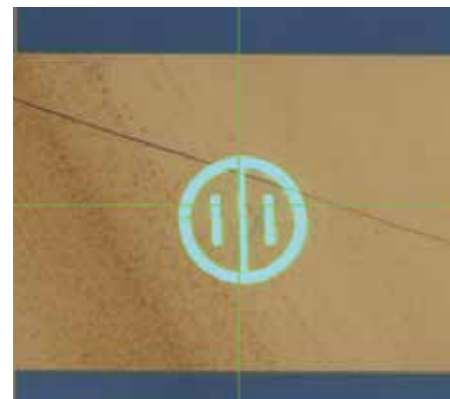
With 5W LED, the reflected illuminator is effective and durable. Different color temperature for option, meet all demands. Polarizing kit, filters are attachable.

Independent focus assist of split image

The light controller of split image is independent. Light intensity is able to be adjusted according to different samples. Two patterns of split image for option, support for free switch.



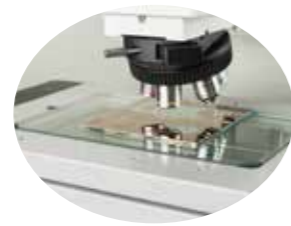
Bright contrast



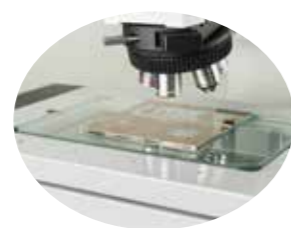
Dark contrast



Under focus



Between focus

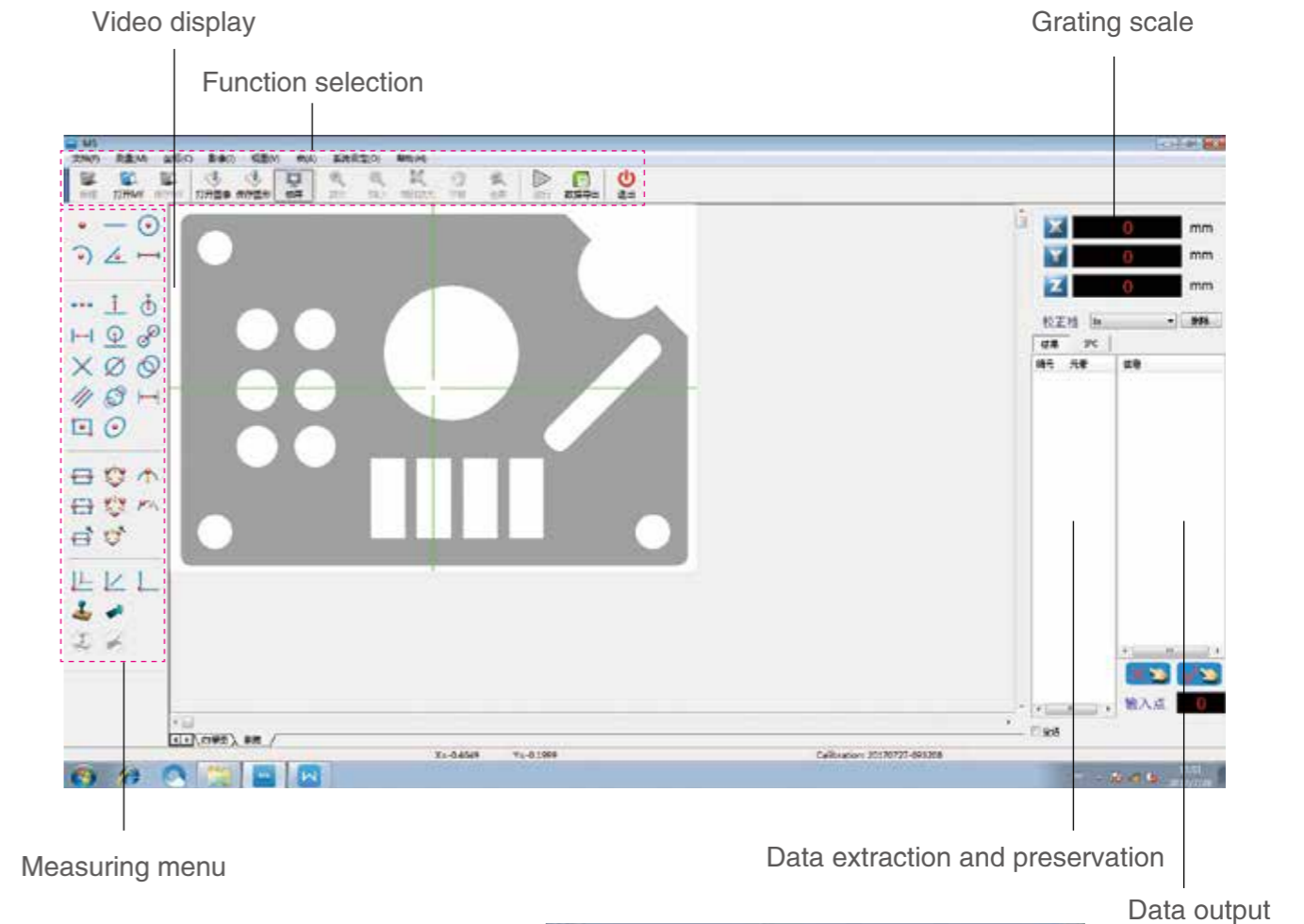


Above focus



Self-designed measuring software, multi-functional and easy to operate

It is available to set up the customer preference by the powerful software. High-precision measurement is achievable for the complicated shapes.



Personalization

Freely select the measuring position, delete the output data accordingly.

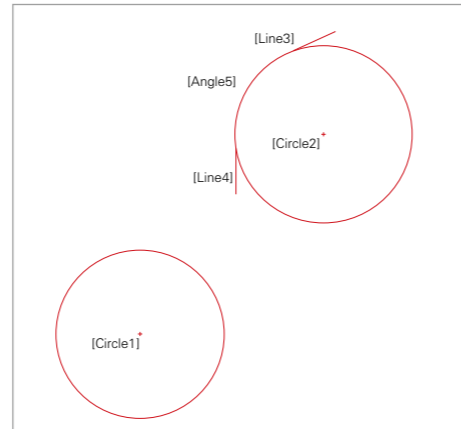


One button for test report, high efficiency and reliability

Support for report output, to avoid the artificial mistakes during data record.

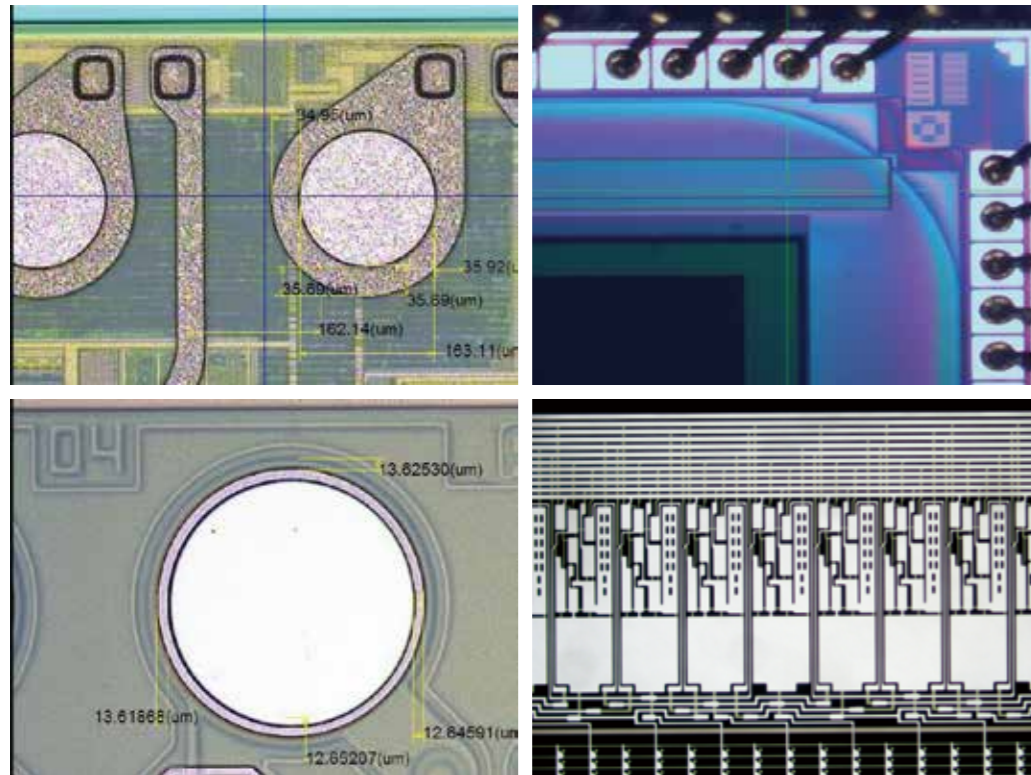
	X	Y	Z	R	A	Angle	Length(2DDistance)	TPlus
Circle 1	-4.3479	9.6989	0					1.0751
Circle 2	-6.6732	7.158	0					1.1288
Line 3	0.3982	0.1814	0			24.4916	0.4376	0
Line 4	0.0096	0.5355	0			-88.973	0.5356	0
Angle 5	-5.5487	6.4339	0			113.4646		

TMinus	Straightness	Radius	Diameter	Roundness	Area	Parallel	Perpendicular	3DDistance
1.069		1.0714	2.1427	0.006	3.6061			
1.1228		1.1253	2.2507	0.006	3.9785			
0	0							
0	0							



Application case

- ★ Bumping size measuring in IC advanced package
- ★ Bumping registration accuracy measuring in IC advanced package
- ★ Welding leg measuring in PCB
- ★ TFT measuring in LCD



Accessory



- ① Fixed trinocular viewing head
- ② High eye point wide field plan eyepieces
- ③ 1.3 mega pixels digital camera
- ④ Light controller for split image
- ⑤ Reflected illuminator
- ⑥ Reflected interference filters

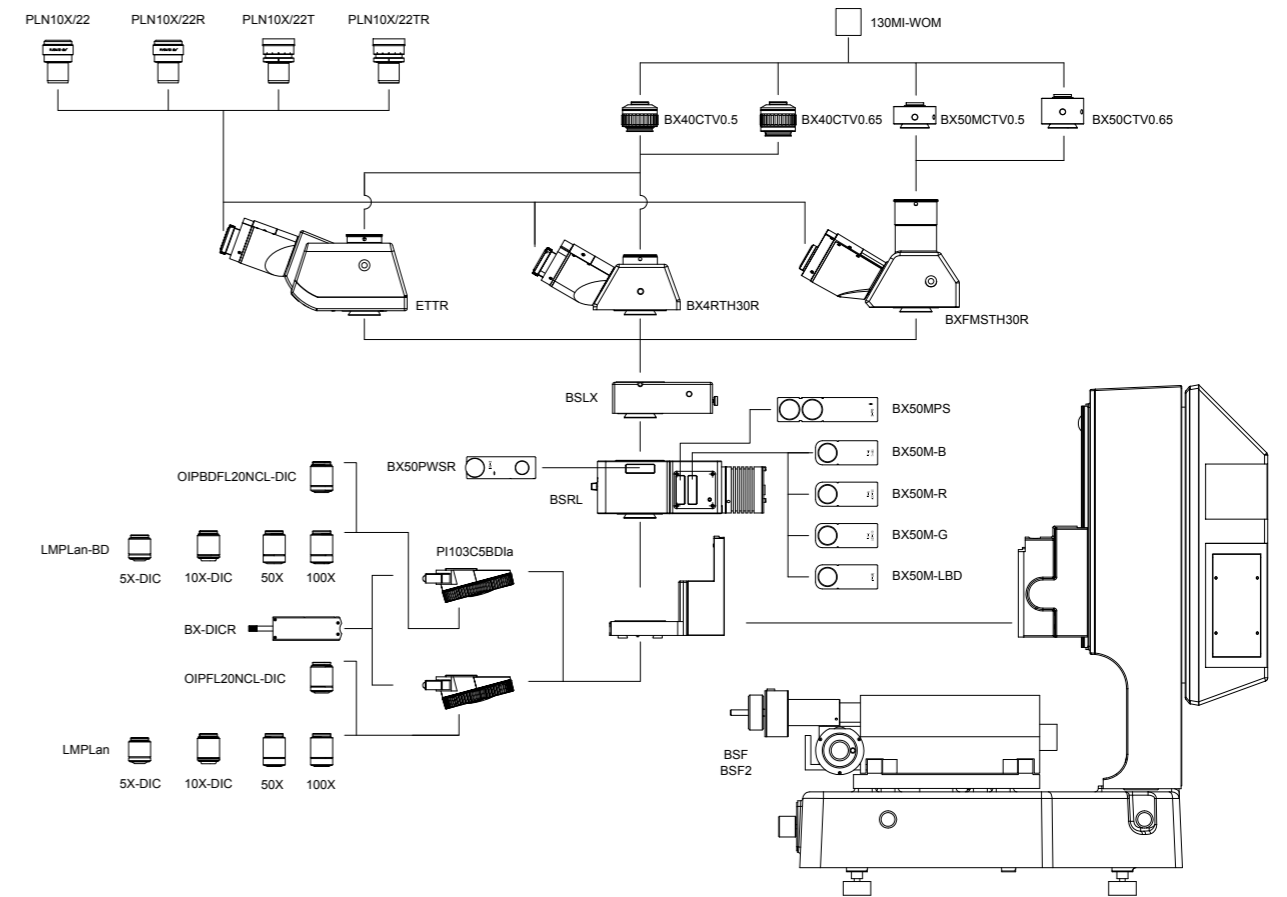
Working stage

Two working stage with different moving range for option, 200mm X 100mm and 300mm X 200mm, to be applied for different samples.

BMS-300 Specification

Optical system	Infinity optical system
Viewing head	30 degree inclined trinocular head (erect image); interpupillary distance: 50~76mm; splitting ratio: 100:0 or 0:100.
	5~35 degree tilting trinocular head (erect image); interpupillary distance: 50~76mm; splitting ratio: 100:0 or 0:100.
Eyepiece	30 degree trinocular head (inverted image); interpupillary distance: 50~76mm; splitting ratio: 100:0 or 50:50.
	High eye point wide field plan eyepiece PL10X/22mm, reticle attachable.
Nosepiece	High eye point wide field plan eyepiece PL10X/22mm, with adjustable diopter, reticle attachable.
	Quintuple nosepiece
Objective	BD quintuple nosepiece
	Long working distance plan achromatic metallurgical DIC objective 5X/10X.
	Super long working distance plan semi apochromatic metallurgical DIC objective 20X.
	Long working distance plan achromatic metallurgical objective 50X/100X.
	Long working distance BD plan achromatic metallurgical DIC objective 5X/10X.
	Super long working distance BD plan semi apochromatic metallurgical DIC objective 20X.
Magnification	Long working distance BD plan achromatic metallurgical objective 50X/100X.
	Optical magnification: 50X~1000X System magnification: 135X~2700X
Stage	Manual stage, moving range: 200mm(X) x 100mm(Y), measuring precision: X/Y (2+L/200)um, Z (3+L/200)um; with digital indicator and control box for electric focusing; support for 175mm as the highest.
	Manual stage, moving range: 300mm(X) x 200mm(Y), measuring precision: X/Y (2+L/200)um, Z (3+L/200)um; with digital indicator and control box for electric focusing; support for 175mm as the highest.
Illumination	Reflected illuminator with shifter for bright and dark field; with slots for filters and polarizing kit; 5W LED (green), intensity adjustable.
	Focus assist, with double reticle; 5W LED (green), 100V~240V
Focus	Electric hand wheel, focusing distance: 175mm
Camera	Color CMOS camera, 1.3 mega pixels, 1280 (H) x 1024 (V); 30fps; USB2.0
Adapter	0.65X C-mount adapter
	0.5X C-mount adapter
PC	LENOVO Think Centre
Software	Measuring software
Accessory	Polarizer, 360 degree rotatable analyzer, interference filters, high precision micrometer, DIC, calibrator

BMS-300 System Diagram



BMS-300 Dimension: mm

