

**BMS-Measuring Microscope Series**

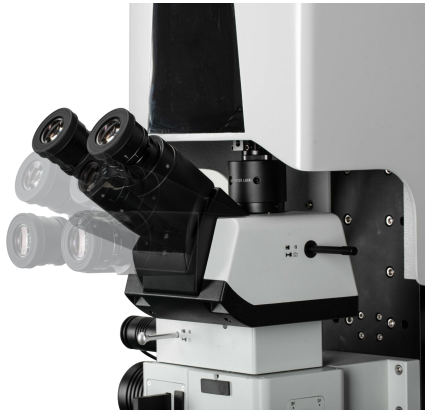
BMS

**Introduction**

Combining high magnification of metallurgical microscope with 3-axis 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.

## Features

### 1. 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.

### 2. Stage with big movement range.



Different sizes of the stage are available for selection:

200 (X) mm\*100 (Y) mm

300 (X) mm\*200 (Y) mm

200 (X) mm\*300 (Y) mm

400 (X) mm\*300 (Y) mm

Regardless of sample size, BMS can meet the measurement needs of users.

### 3. 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 easier to operate.

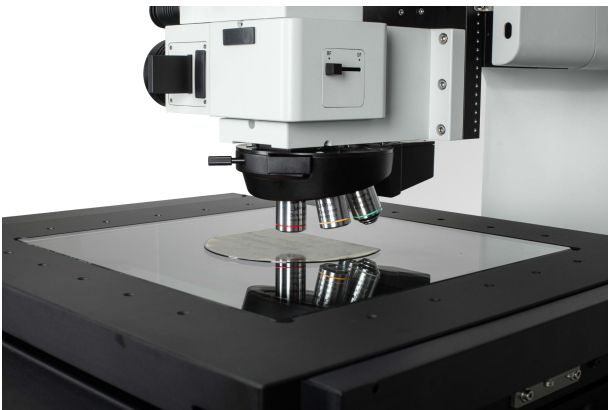
#### 4. Highly integrated design.



Users can choose whether to configure an integrated work desk according to their needs.

The integrated work desk not only reserves space for a computer host, but also comes with a foldable keyboard drawer. The overall appearance is clean and comfortable. Various operable parts are within reach, making operation easy and convenient. It is ergonomic. Users can easily perform operations without standing.

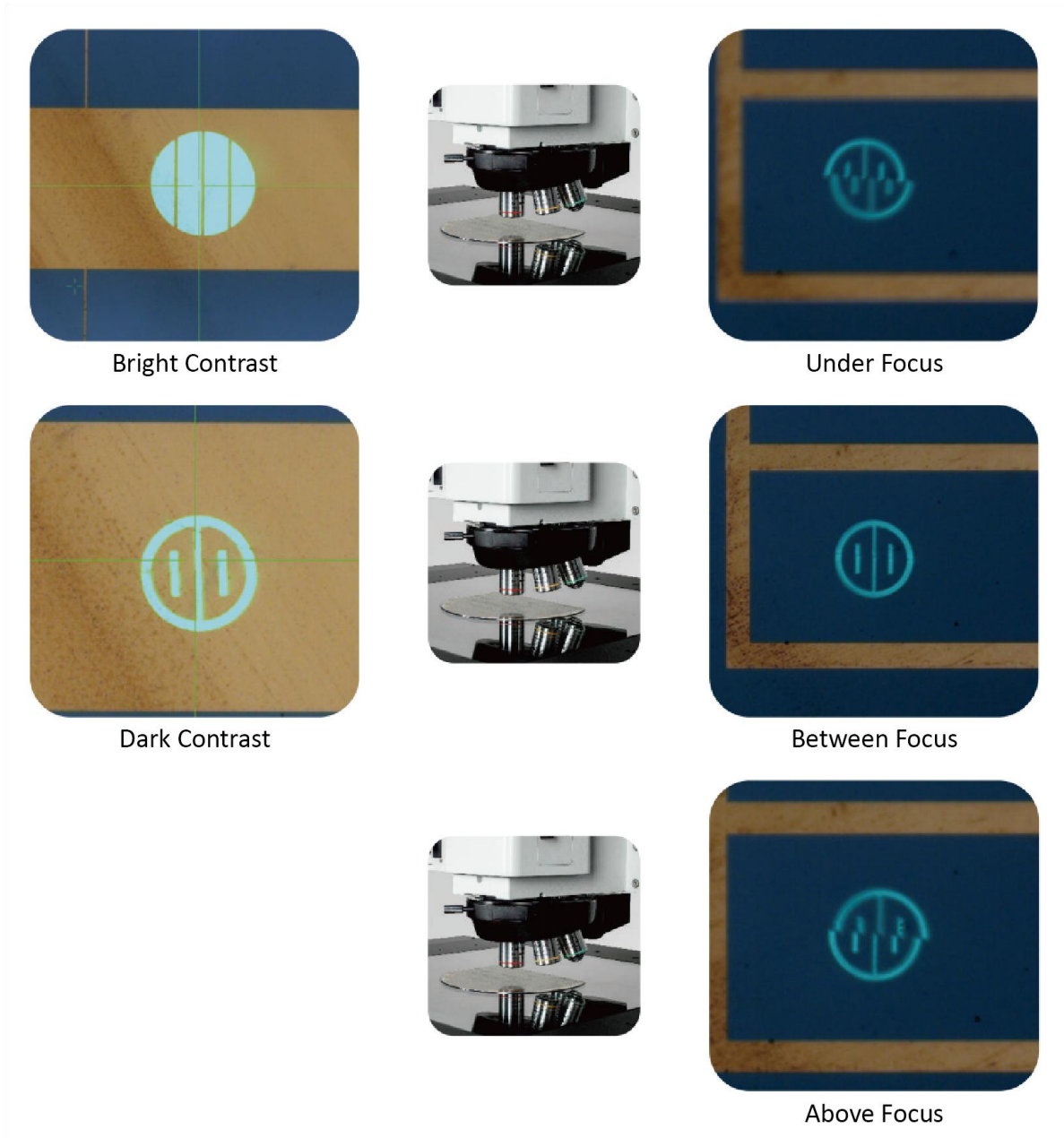
#### 5. Long working distance metallurgical objectives.



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

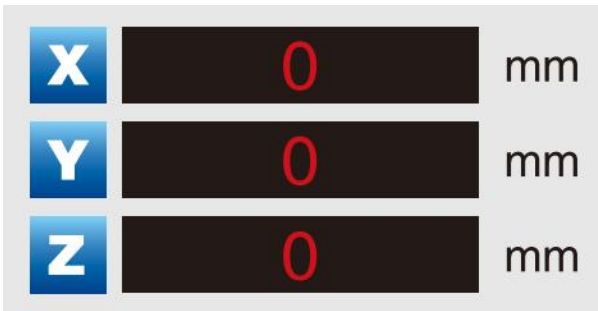
## 6. Independent focus assist of split image.

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.



## 7. 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.



### High precision grating scale

Precision measurement BMS series adopts 3-axis measuring system with 0.1um precision. X/Y axis manual operation and Z axis electric focusing with high accurate grating scales, is easy for operate without fatigue.



### Electric focusing controller

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



### 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.

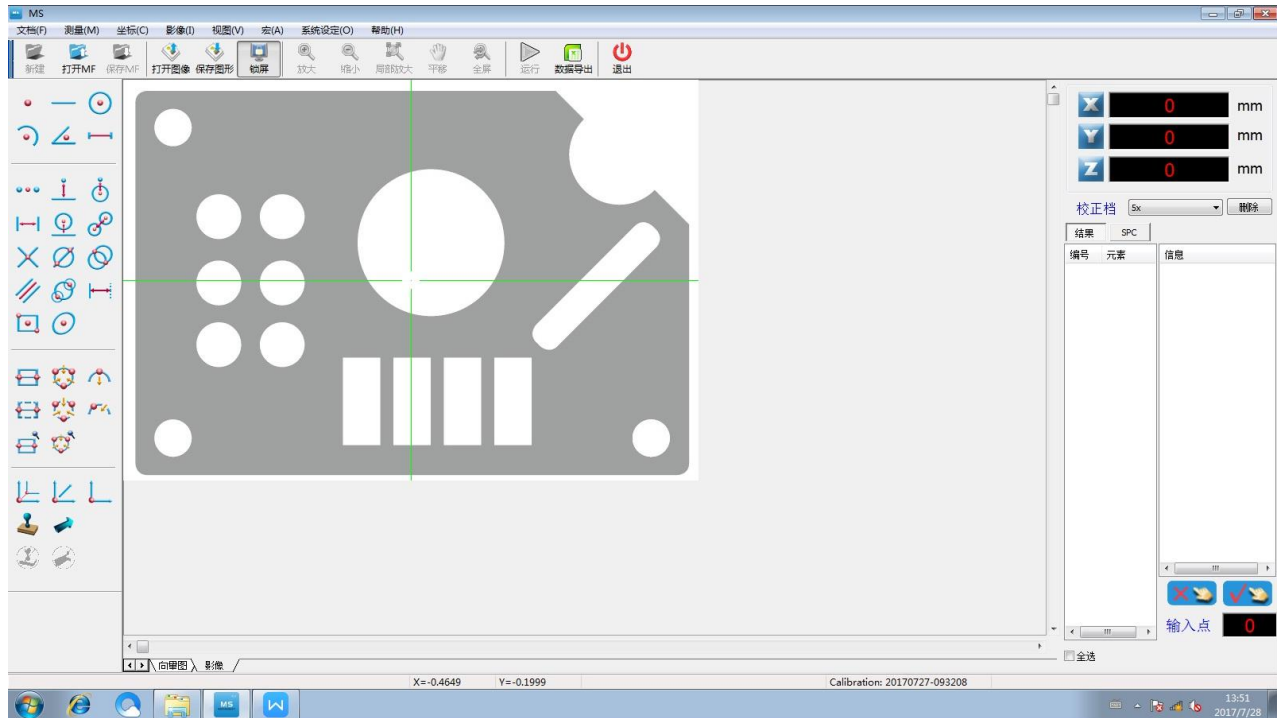


### Multi-functional reflected illuminator

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

## 8. Self-designed measuring software

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



**One button for test report, high efficiency and reliability.**  
Support for report output, to avoid the artificial mistakes during data record.

### Personalization

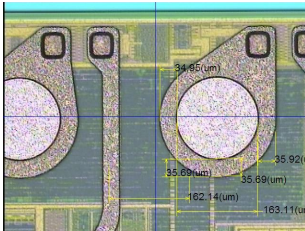
Freely select the measuring position, delete the output data accordingly.

	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	Parellel	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							



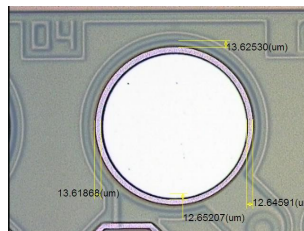
## Application



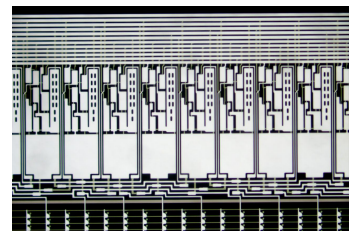
Bumping size measuring in IC advanced package



Bumping registration accuracy measuring in IC advanced package



Welding leg measuring in PCB



TFT measuring in LCD

## Specification

Item	Specification	BMS-310	BS-320	BMS-330	BMS-340	
Optical System	Infinite Optical System	●	●	●	●	
Viewing Head	5~35 degree tilting trinocular head (erect image); unilateral visual acuity adjustment: $\pm 5$ diopter; interpupillary distance: 50-76mm; splitting ratio: 100:0 or 0:100	●	●	●	●	
Eyepiece	High eye point wide field plan eyepiece PL10X/22mm	●	●	●	●	
	High eye point wide field plan eyepiece PL10X/22mm, with micrometer	○	○	○	○	
	High eye point wide field plan eyepiece PL10X/22mm, with adjustable diopter	○	○	○	○	
	High eye point wide field plan eyepiece PL10X/22mm, with adjustable diopter and micrometer	○	○	○	○	
Nosepiece	Motorized Sextuple Nosepiece (with DIC slot)	●	●	●	●	
	Motorized BD Sextuple Nosepiece (with DIC slot)	○	○	○	○	
Objective	Infinity Long Working Distance Plan Achromatic Metallurgical Objectives	5X/NA=0.15, WD=10.8mm	●	●	●	●
		10X/NA=0.30, WD=12.2mm	●	●	●	●
		20X/NA=0.40, WD=8.8mm	●	●	●	●
		50X/NA=0.55, WD=7.9mm	●	●	●	●
		100X/NA=0.8, WD=2.1mm	○	○	○	○
	Infinity Super Long Working Distance BD Plan Achromatic Metallurgical Objectives	5X/NA=0.15, WD=9.0mm	○	○	○	○
		10X/NA=0.3, WD=9.0mm	○	○	○	○
		20X/NA=0.45, WD=3.4mm	○	○	○	○
		50X/NA=0.55, WD=7.5mm	○	○	○	○

	Distance Semi Achromatic Metallurgical Objectives	100X/NA=0.8, WD=2.1mm	○	○	○	○
Microscope Body	Marble base with Z-axis electric focusing, electric controller, Z-axis travel 150mm, Z-axis repeated positioning accuracy $\pm 2\mu\text{m}$ ; equipped with 5W LED projection lighting, intensity adjustable. Size: 500mm*700mm*960mm, weight 155 kg.		●	●		
	Marble base with Z-axis electric focusing, electric controller, Z-axis travel 150mm, Z-axis repeated positioning accuracy $\pm 2\mu\text{m}$ ; equipped with 5W LED projection lighting, intensity adjustable. Size: 670mm*940mm*960mm, weight 200 kg.				●	●
Stage	Manual stage, moving range: 200mm(X) x 100mm(Y), measuring precision: X/Y (2+L/100) $\mu\text{m}$ ; including a quick moving device and a fine-tuning device, with a maximum load-bearing weight of 10kg. The size of the stage is 258mm * 358mm, and the weight is 25kg.		●			
	Manual stage, moving range: 300mm(X) x 200mm(Y), measuring precision: X/Y (3+L/100) $\mu\text{m}$ ; including a quick moving device and a fine-tuning device, with a maximum load-bearing weight of 15kg. The size of the stage is 350mm * 500mm, and the weight is 45kg.			●		
	Manual stage, moving range: 300mm(X) x 300mm(Y), measuring precision: X/Y (3+L/100) $\mu\text{m}$ ; including a quick moving device and a fine-tuning device, with a maximum load-bearing weight of 20kg. The size of the stage is 500mm * 500mm, and the weight is 60kg.				●	
	Manual stage, moving range: 400mm(X) x 300mm(Y), measuring precision: X/Y (3+L/100) $\mu\text{m}$ ; including a quick moving device and a fine-tuning device, with a maximum load-bearing weight of 20kg. The size of the stage is 458mm * 620mm, and the weight is 70kg.					●
Illumination	Reflected illuminator with shifter for bright and dark field; with slots for filters and polarizing kit; 5W LED, intensity adjustable		●	●	●	●
	Focus assist, with double reticle; 5W LED (green), 100V-240V, intensity adjustable		●	●	●	●
Focusing	Electric controller with automatic/manual Z-axis focusing; independent control of up/down/auxiliary focusing three types of light sources, supporting adjustable brightness; including XYZ individual zeroing and one key zeroing; electric control converter, equipped with Z-axis movement emergency stop button		●	●	●	●



Camera	Target Surface Size: 1/1.8 inch; Resolution Ratio: 16000 × 1200 (1.9MP); Frame Rate: 20FPS, 3 mega-pixel	●	●	●	●
Adapter	0.5X C-mount adapter	○	○	○	○
	0.65X C-mount adapter	●	●	●	●
PC	LENOVO T4900k I5-10400/8G/1T/21.5 inch	●	●	●	●
Software	Measuring software MSU3D-PRO	●	●	●	●
Other Accessories	Counter with real-time display	●	●	●	●
	Spanner	●	●	●	●
	Interference Filters (Blue, Green, Red)	○	○	○	○
	High precision micrometer	○	○	○	○
	DIC kit	○	○	○	○
	Calibration slide	●	●	●	●
	Desk (1075mm*995mm*685mm,120kg)	○	○	○	○

Note: ● Standard Outfit, ○ Optional

## Accessories

### 1. Fixed trinocular viewing head



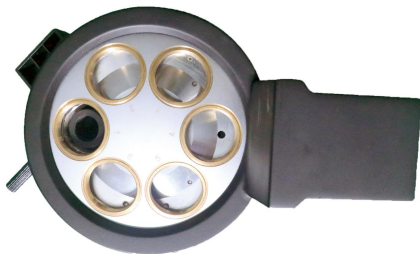
### 2. High eye point wide field plan eyepieces



**3. 3 mega-pixels digital camera**



**4. Electric nosepiece**



**5. Reflected illuminator**



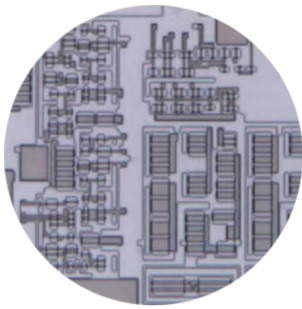
## 6. Reflected interference filters



## 7. Focus Assist



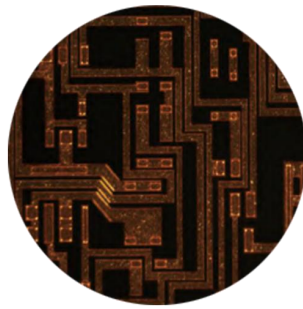
## Sample Image



IC 100X / Bright Field



IC 50X / Dark Field

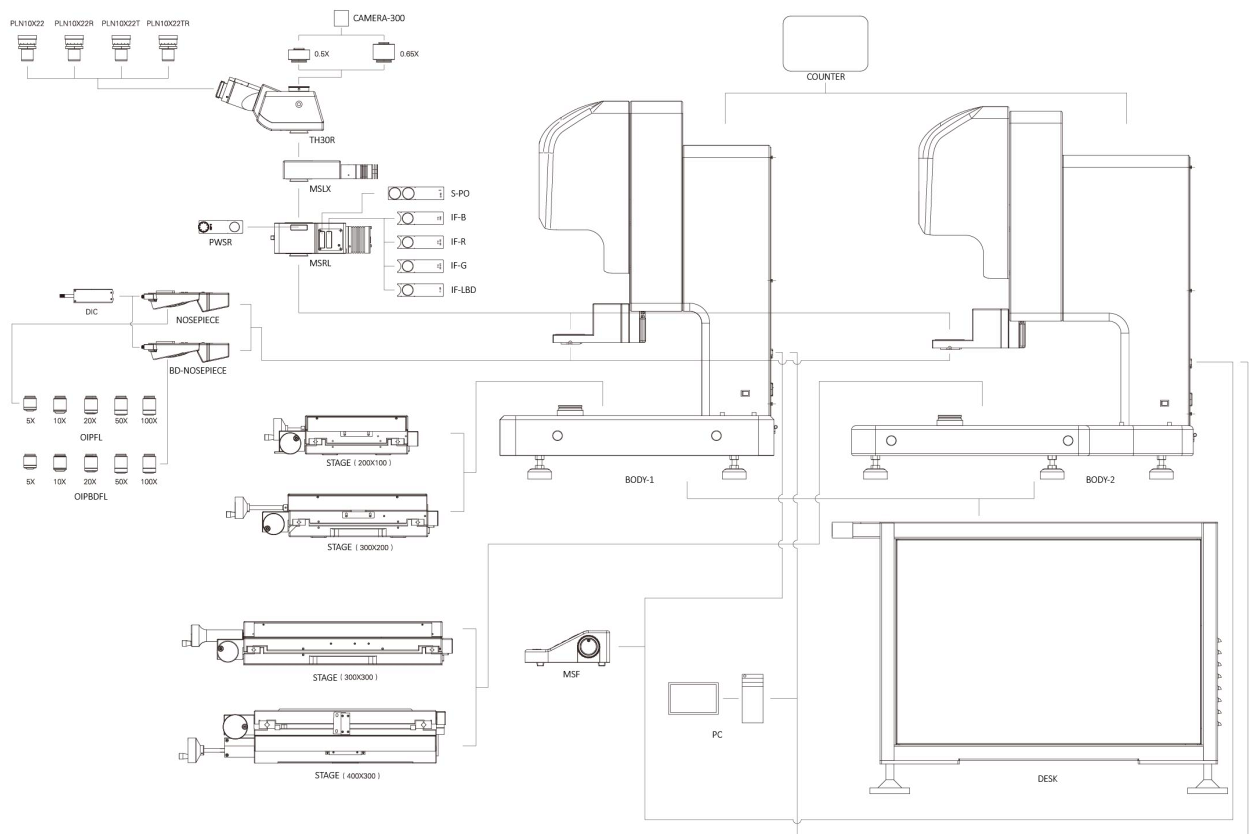


IC 20X / Polarizing

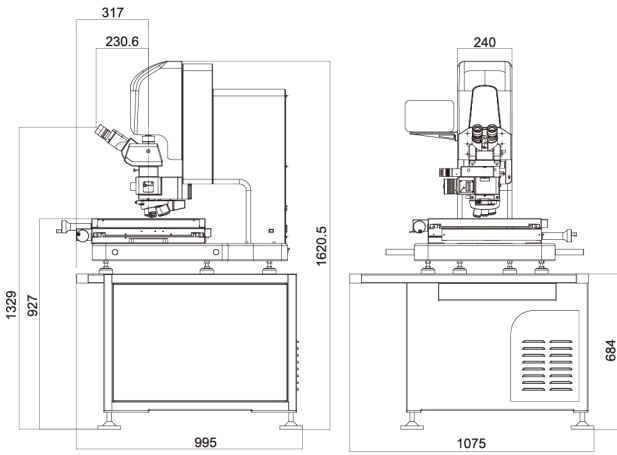


FPD 10X / DIC

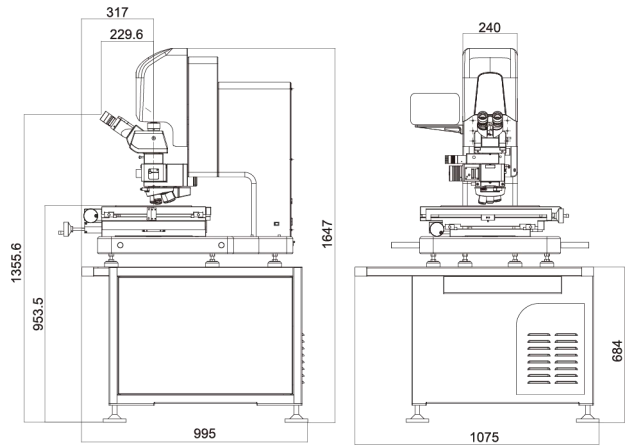
## System Diagram



## Dimension



BMS-310/BMS-320



BMS-330/BMS-340

Unit: mm