VD5000 Series

Mini LED AOI

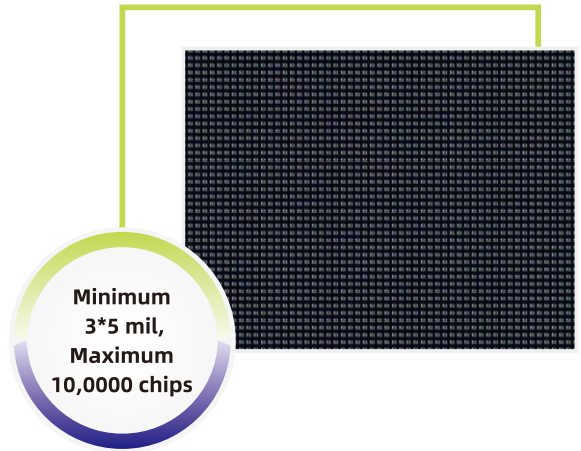**MAGICray**

Trusted in Detail

High Confident in Mini LED Defect Detection

MagicRay Mini LED AOI——VD5000 series，Able to provide chip appearance inspection, lighting inspection and Lens glue appearance inspection solution in the field of Mini LED.
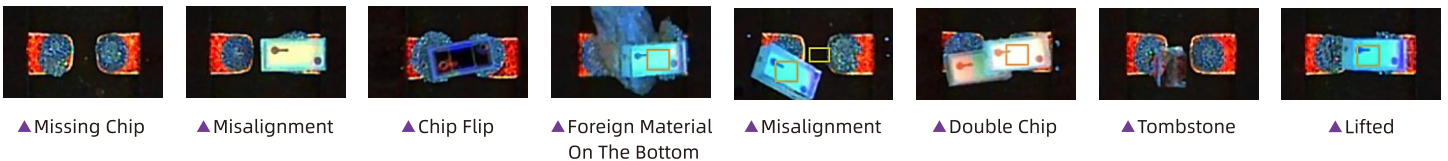
「Product Features」

- ■ Suitable for the Pre-and-Post reflow appearance inspection of Mini LED direct-display products, as well as the after-lighting detection of direct-display products.
- ■ Suitable for the Pre-and-Post reflow appearance inspection of backlight products, as well as the appearance inspection of Lens glue.
- ■ Granite platform+casting gantry to realize high reliability and stability.
- ■ Industrial camera+high resolution telecentric lens to ensure high accuracy.
- ■ Accurate positioning and detection based on image-featured algorithm with low false call rate.
- ■ Applicable to the appearance detection of chips at minimum of 3*5mil.
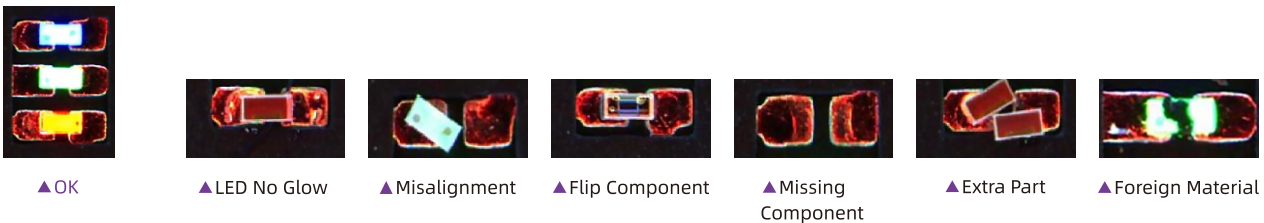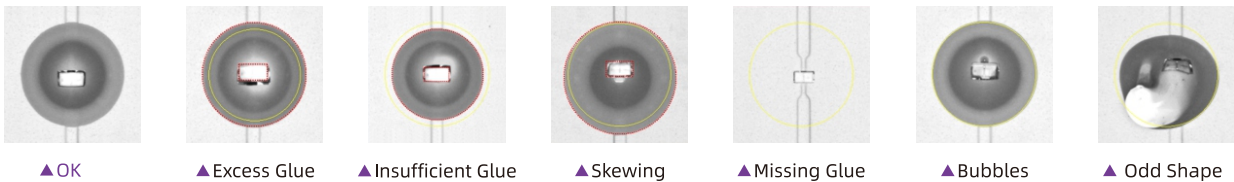- ■ Applicable to test up to 100,000 chips.

Minimum 3*5 mil, Maximum 10,0000 chips

「Inspection Examples」

■ Chip Appearance Inspection

▲Missing Chip ▲Misalignment ▲Chip Flip ▲Foreign Material On The Bottom ▲Misalignment ▲Double Chip ▲Tombstone ▲Lifted

■ Lighting Inspection

▲OK ▲LED No Glow ▲Misalignment ▲Flip Component ▲Missing Component ▲Extra Part ▲Foreign Material

■ Lens Glue Appearance Inspection

▲OK ▲Excess Glue ▲Insufficient Glue ▲Skewing ▲Missing Glue ▲Bubbles ▲ Odd Shape
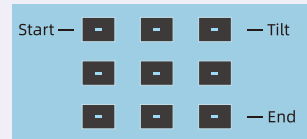
「Core Technology and Advantages」

■ Simple and Convenient Programming

Multi-component three-point array automatic generation
function, ignoring the inclination of the sample board,
realizes the rapid generation of huge component test windows.

Start — ▪ ▪ ▪ — Tilt
▪ ▪ ▪
▪ ▪ ▪ — End

■ High Precision Positioning and Faster Calculation Speed

High-precision positioning and measurement can be realized by high-
resolution lens+component-level pad positioning+specific component
positioning algorithm, and at the same time, it has faster calculation speed.
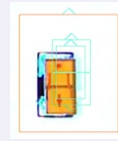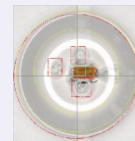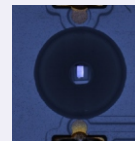
▲ Before positioning   ▲ After positioning

■ Specialized Lighting and Algorithm for Lens Glue Detection

Specialized lighting to ensure a clearer view of glue contour under inspection.
Combined with contour comparison and AI deep learning algorithm, our
machine can effectively measure the diameter and detect defects like
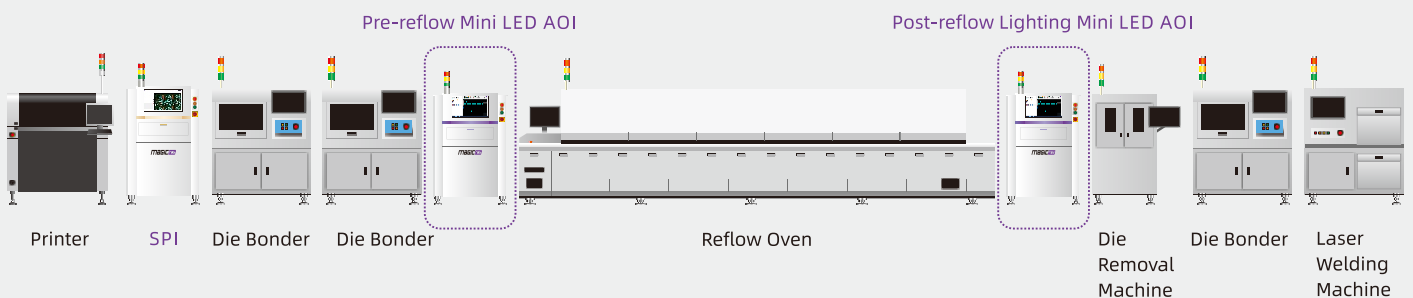unshaped glue, bubble, folds etc.

▲ Bubbles   ▲ Specialized lighting

「Production Line Solution」

「Direct-display Products Whole Line Solution」

Pre-reflow Mini LED AOI   Post-reflow Lighting Mini LED AOI

Printer   SPI   Die Bonder   Die Bonder   Reflow Oven   Die Removal Machine   Die Bonder   Laser Welding Machine

「Backlight Products Whole Line Solution」

Pre-reflow Mini LED AOI   Post-reflow Mini LED AOI   Lens AOI

Printer   SPI   Die Bonder   Die Bonder   Reflow Oven   Dispensing Machine
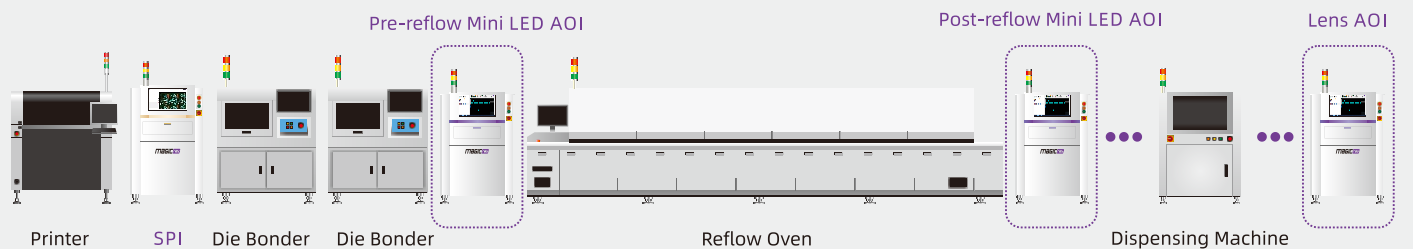
「Product Specification 」

Equipment Model		VD5000	VD5000XL
Image System	Camera	12MP/20MP industrial camera	
	Resolution	6.3μm, 3.4μm, 2.3μm	
	FOV	14*10mm (12MP, 3.4μm); 28*28mm (20MP, 6.3μm)	
	Lens	Telecentric lens	
	Lighting	4 color ring shape LED (RGBW)	
Movement Structure	X/Y Movement	AC Servo	AC Servo (Dual Drive)
	Platform	Granite	
	Width Adjustment	Automatic	
	Transport Type	Belt	
	Board Loading Direction	Left to Right or Right to Left (Select at point of order)	
	Fixed Lane	Front Lane	
Hardware Configuration	Operating System	Win 10	
	Communication	Ethernet，SMEMA	
	Power Requirement	Single phase 220V，50/60Hz，5A	
	Air Requirement	0.4-0.6Mpa	
	Conveyor Height	900±20mm	
	Equipment Dimensions	L935*D1360*H1570mm (Without tower light)	L1125*D1360*H1570mm (Without tower light)
	Equipment Weight	900kg	1100kg
PCB Size	Size	50*60-510*610mm	50*80-675*610mm
	Thickness	0.6-6.0mm	
	PCB Weight	≤3kg	
	Component Clearance	Top clearance 25-60mm adjustment, Bottom clearance 45mm	
	Clamping Edge	3.0mm	
Inspection Categories	Component	Wrong chip, Missing chip, Chip reverse, Chip deviation, Rotation, Chip flip, Solder bridge, Foreign material, Solder ball	
	Lighting Detection	Too bright, Too dark, Not bright	
	Lens Glue Detection	Excess glue, Insufficient glue, Missing glue, Glue overflow, Eccentric distance, Foreign material, Bubbles	
	Inspection Component	Chip: 3*5mil and above	
	Inspection Speed	180-200ms/FOV	

「Equipment Dimensions 」

345, 1570, 935, 1360, 900±20 (Unit: mm)
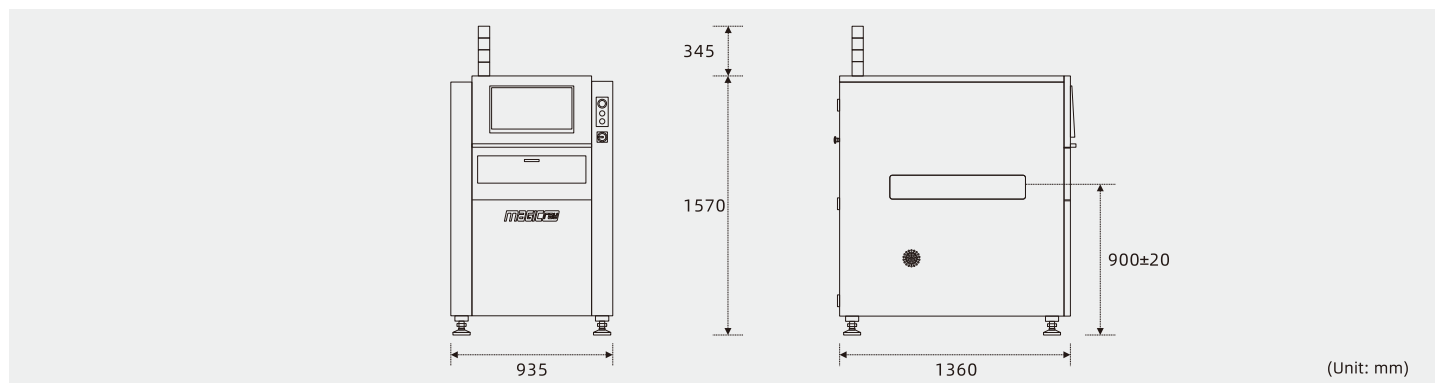
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