

At Kasalis, we design cutting-edge systems for the alignment and assembly of optics; our outstanding active alignment algorithms produce the best quality optics for both compact camera modules and projection systems for gesture recognition and augmented/virtual reality.

CAMERA SYSTEMS



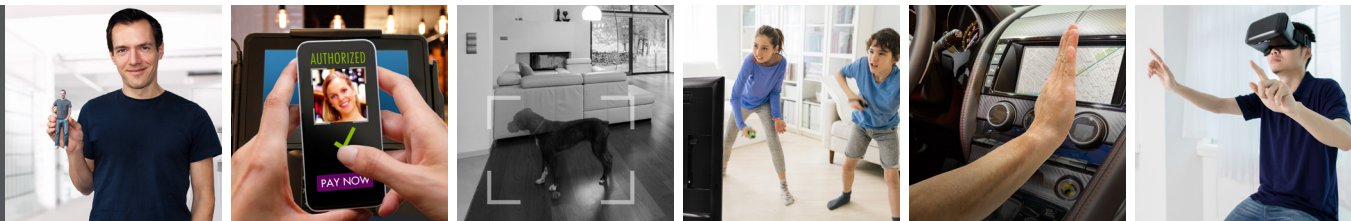
We want customers to realize both the highest possible image quality and the most cost-effective solution for producing a higher yield of modules. Our system's excellent range of capabilities includes: assembling and testing array cameras, wafer level cameras, automotive cameras, smartphone cameras, 360 degree cameras, dual cams, and wide-angle cameras.

Given our rich history and a team whose expertise in the field is unparalleled, we know our work will move customers closer to business goals and advance their products' technical standing. We aim to lead the industry in value and camera module optical performance.

USE CASES INCLUDE:

- Mobile Phone
- PC/Laptop
- Automotive
- Infrared
- Security & Surveillance
- Medical

PROJECTION SYSTEMS



AUGMENTED & VIRTUAL REALITY PROJECTION SYSTEMS

Compact projectors for augmented and virtual reality (AR and VR), including in-eye projectors, require accuracy and clarity to enhance the visual experience. Our powerful and fast active alignment system will be a key in differentiating AR and VR companies in the competitive world of consumer and gaming electronics.

GESTURE RECOGNITION SYSTEMS

Kasalis works closely with developers of gesture recognition technology to create cutting edge optics for devices that will be effective in detecting and analyzing the physical cues of its end users. Our active alignment technology is used to align the optics to the laser source, producing, with high precision, the structured light patterns required to enable this technology. These solutions enable technologies such as depth sensing and facial recognition for security applications.

USE CASES INCLUDE:

- Gesture Control
- Security
- 3D Sensing
- 3D Imaging
- Gaming
- Virtual Reality
- Augmented Reality

## KEY TECHNOLOGIES

### ACTIVE ALIGNMENT



In 5 or 6 DOF  
Automated Alignment  
Maximum Precision

### ADAPTIVE INTELLIGENCE



Real Time Data  
Statistical Process Control  
Continuous Improvement

### AUTOMATED ADHESIVE & UV

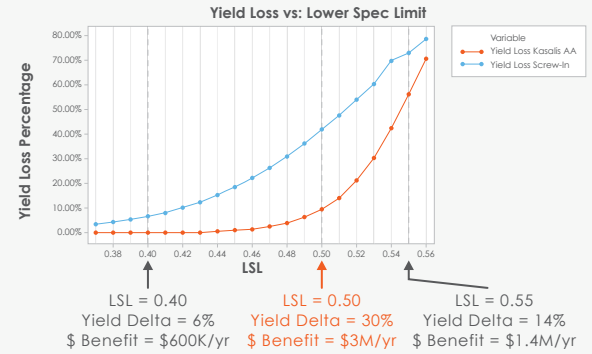


Consistent Dispense  
Automated UV Cure  
Higher Yields

## PROVEN RESULTS

In a capability analysis using statistically significant real alignment data, a competitor's screw-in alignment was compared to Kasalis' active alignment. Here are the results.

	SCREW-IN ALIGNMENT	KASALIS ACTIVE ALIGNMENT
YIELD LOSS	36.2% loss	6.1% loss
PPM DEFECTS	362,405 ppm	61,114 ppm



## PIXID OVERVIEW



Pixid alignment systems stack up well to competition and work with the best in the business. Here are the basic specifications of typical Pixid 300 and 500D models.

	PIXID 300	PIXID 500D (DUAL HEAD)
UNITS PER HOUR	240	360 - 450
FIELD OF VIEW	Wide, Narrow	Narrow
RESOLUTION (LINEAR)	<0.1µm	<0.2µm
RESOLUTION (ANGULAR)	<0.01deg	<0.01deg
FOOTPRINT OF SYSTEM	1100 x 850 mm	1400 x 1050 mm
COMMUNICATION	I2C, SPI, M1PI, HiSpi, Sub-VLDS, SLVS Parallel	I2C, SPI, M1PI, HiSpi, Sub-VLDS, SLVS Parallel
OPERATING SYSTEM	VxWorks (RT), Embedded Windows 7	VxWorks (RT), Embedded Windows 7
DISPENSE TECHNOLOGY	Positive Displacement, Micro-Jetting	Positive Displacement, Micro-Jetting

## BENEFITS

### Realize Cost Savings

- Lower operator costs due to simpler user interface
- Low cost per unit from high speed alignment

### Realize Greater Efficiency

- Streamlined modular design
- Reduced lead times

### Improve Optical Focus Quality

- Active alignment in five or six degrees of freedom
- Advanced optics for high resolution images and projection capabilities

### Benefit from Continuous Feedback

- Improved process control from adaptive intelligence technology
- Identify trends in products
- Improved algorithms for alignment speed

### Hold Advantage Over Competitors

- Best-in-class assembly equipment
- Access to Jabil design and manufacturing capabilities