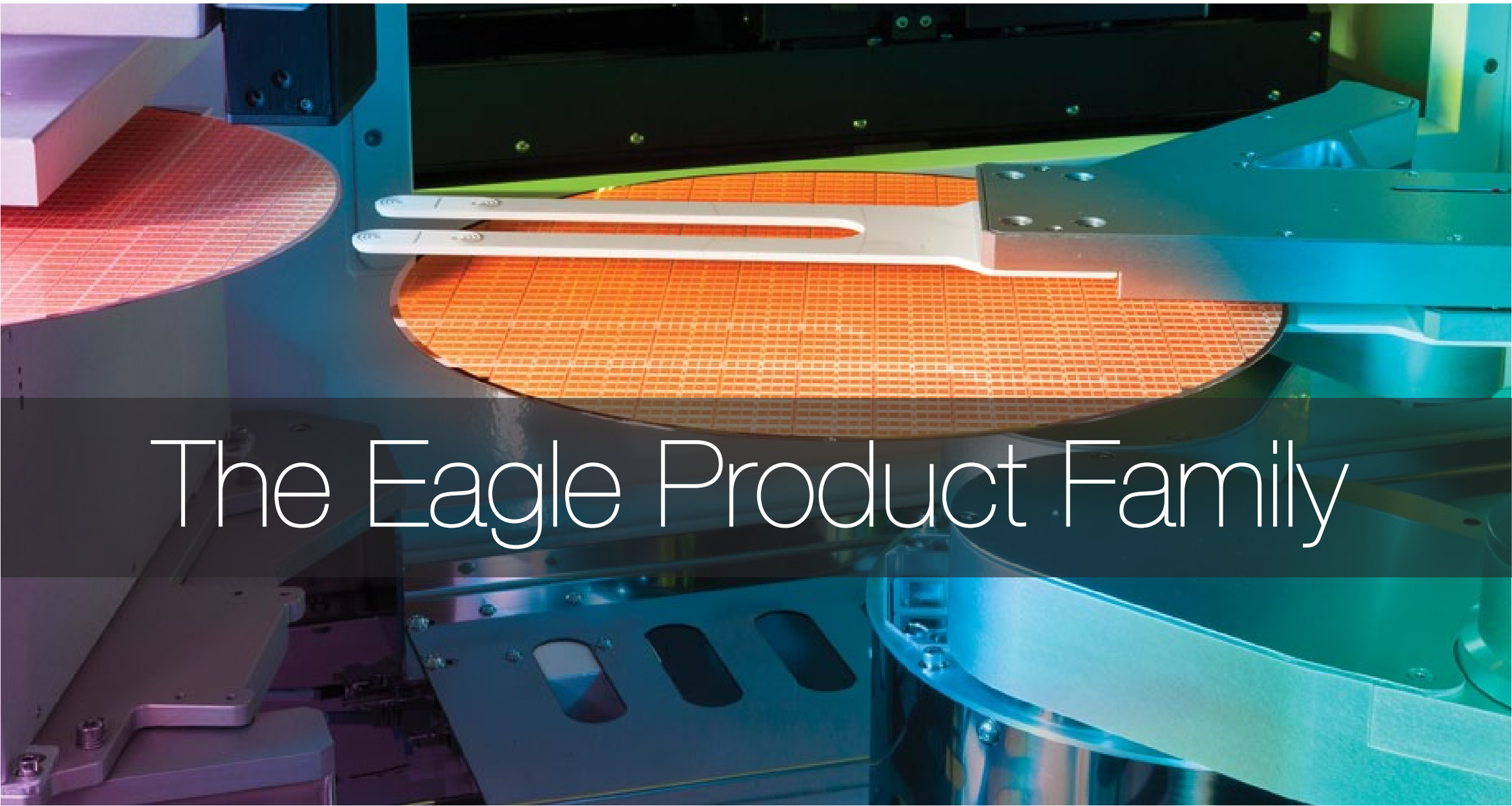
Camtek



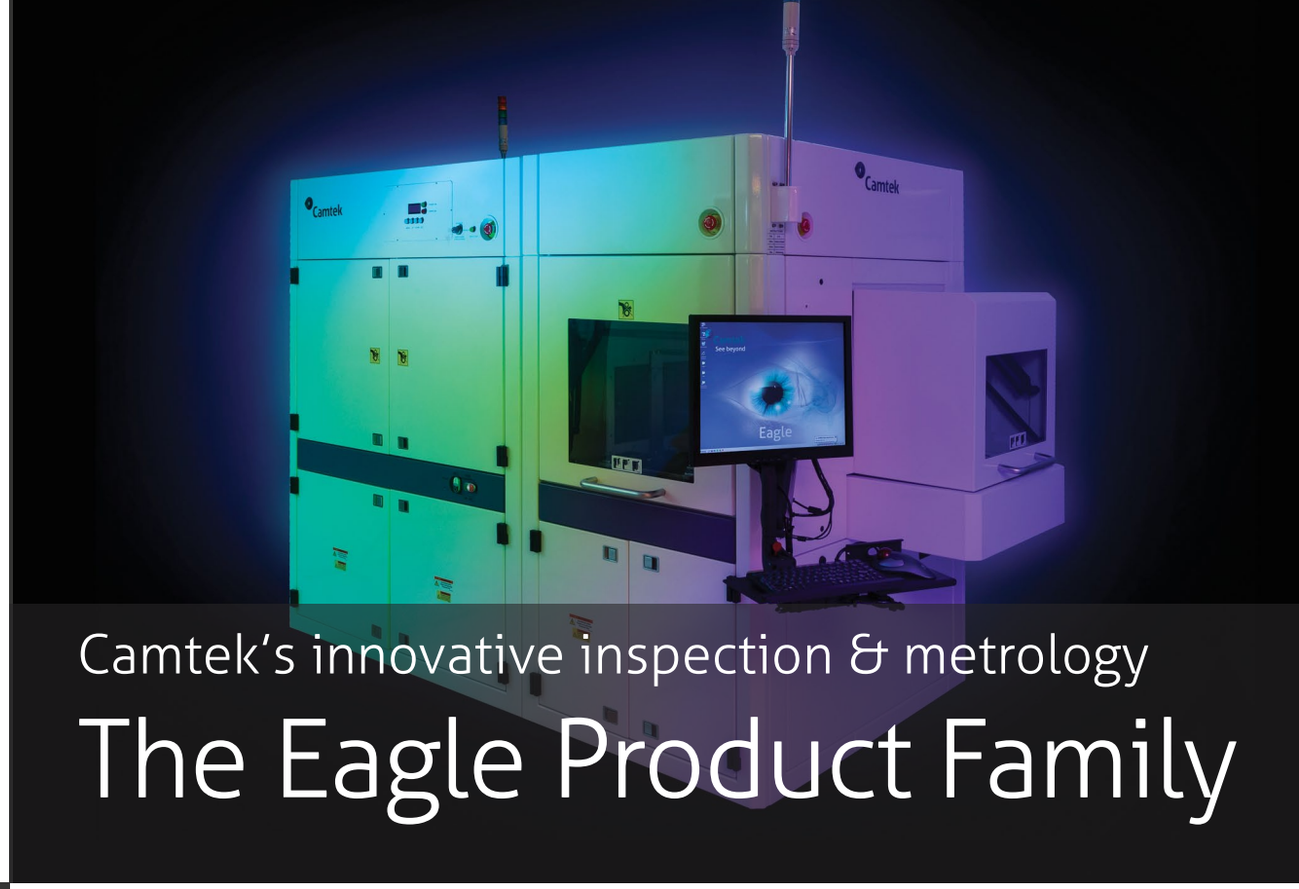
The Eagle Product Family

Camtek

Camtek provides automated solutions dedicated for enhancing production processes and yield in three industries: Semiconductors, Printed Circuit Board (PCB) and High Density Interconnect Substrates.
Camtek addresses the specific needs of these interconnected industries with dedicated solutions based on an advanced platform of technologies including intelligent imaging, image processing, sample preparation and 3D Functional Inkjet Technology. Camtek›s solutions range from micro-to-nano by applying its technologies to the industry-specific requirements.

The Eagle Product Family

This platform is a result of many years of dedicated research and development efforts, as well as intensive collaboration with leading research institutes worldwide.
Designed to support the increased requirements for inspection and metrology, this new state-of-the-art platform will provide higher throughput, unparalleled accuracy and other innovative capabilities.



Camtek’s innovative inspection & metrology

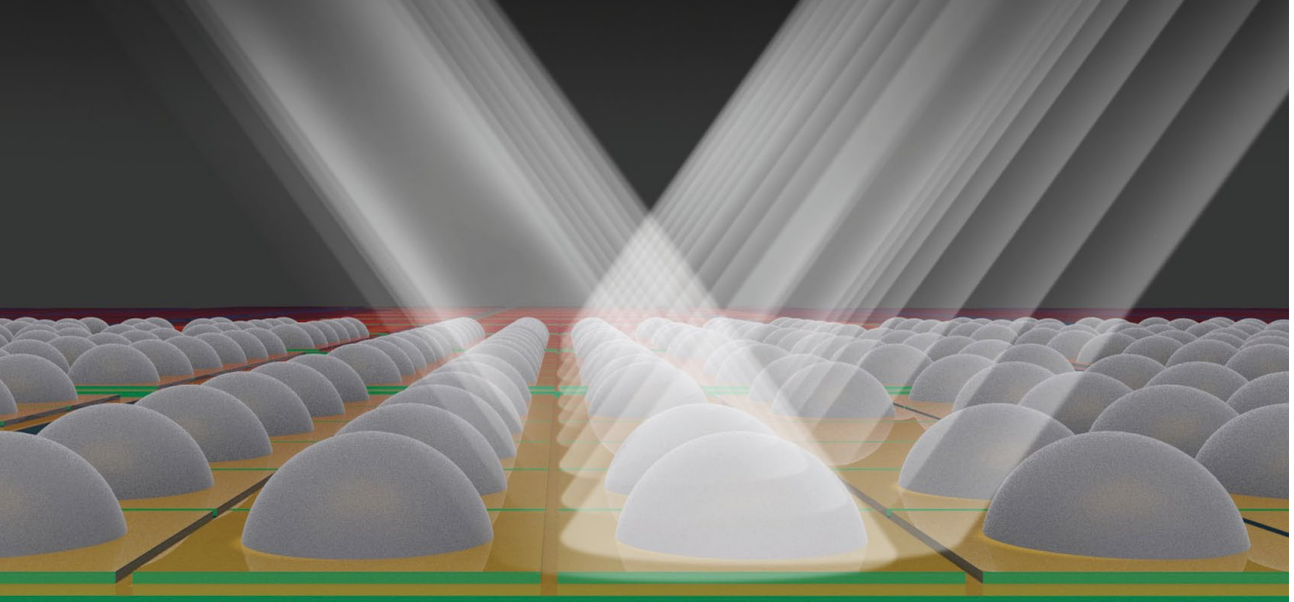
The Eagle Product Family

Designed to support the semiconductor industry from R&D to the high production volume environment, the Eagle product family is the ideal choice for inspection and metrology addressing the most demanding market applications and the emerging advanced packaging segment.

With hundreds of systems installed worldwide, Camtek continues its long standing position as one of the leaders in the semiconductor AOI industry.

New platform Highlights:

- Combined 2D&3D capabilities
- A new robust platform that enables high TPT & accuracy
- High resolution optics
- Advanced image processing & algorithms
- Flexible Software
- Multiple handling options for bare and framed wafers



Designed for the Advanced Packaging market

Eagle-AP

The Eagle-AP provides both 2D and 3D inspection and metrology on the same platform, while keeping extremely high performance and throughput levels.

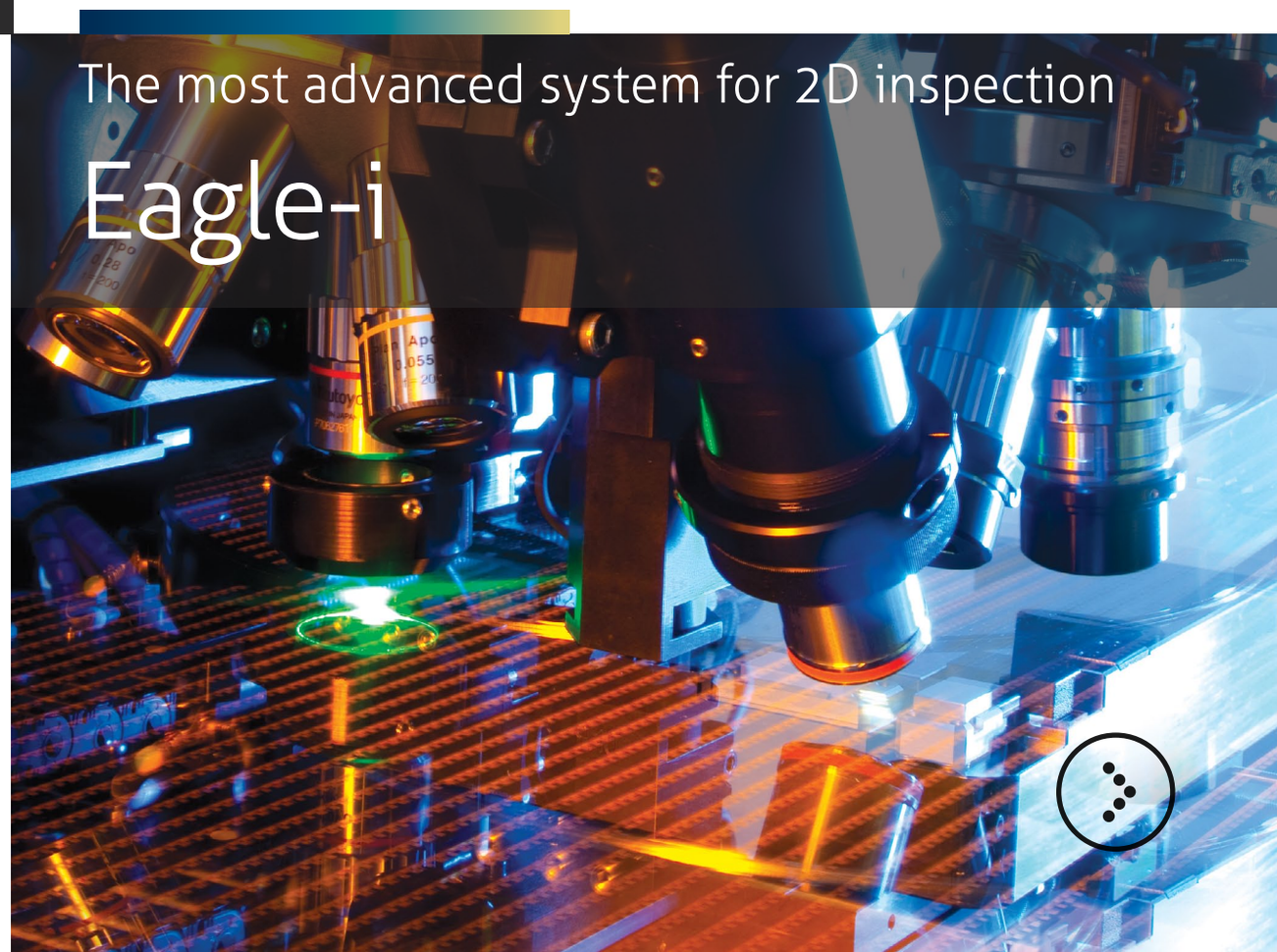
> Next generation bumps down to 2um
> Ultra high number of bumps measurement per wafer (50 million)
> Bump CD and surface detection
> RDL CD and height measurement
> TSV post-via-fill protrusions (nails)

High volume production 2D inspection solutions for:

> Pre & post bumped wafers
> Probe Mark Inspection
> OQC
> Post dicing
> Reconstructed wafers

Unique solutions for:

> CMOS Image Sensor -Advanced solutions for the smallest pixels
> MEMS - Meeting your special application requirements
> LED -Yield improvement solutions



The most advanced system for 2D inspection

Eagle-i

2D Inspection

Inspection Capabilities	Detection of down to 0.5µm surface defects at high throughput
Resolution	Multiple magnifications for optimum sensitivity
Zone Editing	Enables detection algorithm per zone for optimize sensitivity
Multi Recipe	Enables running successive scans in one cycle with different focus, magnification, illumination, sensitivity and detection engines

2D Metrology

Object types	Bump, RDL, Pad, UBM, Via
Capabilities	Analysis of diameter ,width, length, placement deviations
Accuracy	0.2µm
Repeatability	0.5 µm at 3σ

3D Metrology

Bump types	Solder, gold, lead-free, pillar, copper, micro bumps and nails
Capabilities	Analysis of bump height ,co planarity PR/PI thickness and via opening depth
CCS - Camtek Confocal Sensor : 3D high resolution profile area mapping	
Height Accuracy[1]	0.05µm
Height Repeatability[2]	0.1µm at 3σ
Measurement Range	2-100µm
CTS – Camtek triangulation Sensor : High speed 3D scan	
Height Accuracy[1]	0.1µm
Height Repeatability[2]	0.2µm at 3σ
Measurement Range	2 - 350µm

Setup

Setup Online and Offline	User-defined detection parameters per defect type and zone. Interactive automated routines for easy zone definition.
Job Portability & Tool Matching	Allows transfer of jobs between compatible models running on same SW version

1 – Accuracy: the deviation of the mean reading from the actual calibration target value

2 – Repeatability: the dispersion of repeated readings, expressed as 3 standard deviations

Review and Classification

Modes	Fully automated, semi-automated and manual - incorporating live color and monochrome images
Smart Grab	Customized preset for defect type, count and location, minimizing grabbing and verification time, optimizing image quality to defect type
Offline Station	PC-based station for viewing and reclassification of defect images captured during scanning (monochrome) or post-scanning (color and/or mono-chrome)

Output - Camtek Statistical Process Control

Histograms	Distribution charts of all defect and metrology data
Reports	SPC analysis at lot, wafer and die level, KLARF
Wafer Maps	Generate, import, edit and export wafer maps in over 50 standard and custom formats

System configuration

Material Handling-Auto Loader	**Bare Dual Arm EFEM** Two 12" FOUP/FOSB and/or Two 8" open cassettes	**Bare & Framed** Unframed wafers: 12" FOUP /FOSB Two 4"-8" un-framed Open cassette Framed Wafers: 8", 12"	**Post dicing** Two post dicing framed cas-sette for 6"-8" frames.
Particle Removal System	Removes loose particles, eliminating nuisance calls		
OCR	Automatic top or bottom wafer ID reading		
Barcode Reader	Reads data matrix or barcode formats		
Ink Marker	Automatic marking of rejected die		
Factory Automation	SECS/GEM or customized host communication; OHT/AGV ready		
Cleanliness	Semi class 2 according to ISO-150-14644-1		

www.camtek.com

Israel Headquarter

Tel: +972-4-6048100

Fax: +972-4-6440523

Camtek USA

Tel: (1)-800-986-9540

Fax: (1)-408 986 9871

Camtek Hong Kong

Tel: (852) 2632-7645

Fax: (852) 2632-7340