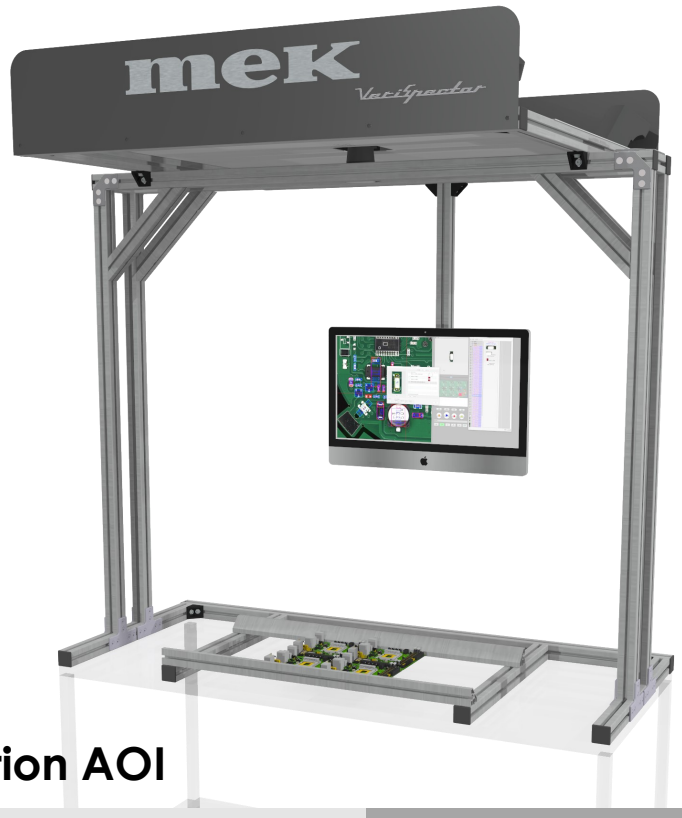
VeriSpector



Assembly Station AOI

√ Assembly inspection for manual or automated assembly tasks	*Prevent assembly defects before they move into the next process. Perform Instant-defect-curing by operator. Yield improvement by instant feedback to operators on defects.*
√ Inspect features such as presence, orientation, shape, offset, text, color, after completing the assembly by a keypad or BarCode reading capture trigger.	*Optimized for PCB Assembly tasks, but not limited to. Similar assembly features are useful for other disciplines.*
√ Max PCB (workpiece) Size 750x500mm (max), 375x250mm (min) Adjustable by optical zoom.	*Large PCB sizes supported. Via Optical Zoom, resolution can be increased for smaller PCB's (Workpieces).*
√ Powered by Mek 22X AOI Software on Apple Mac ™	*Full compatibility with Mek's 22X AOI products such as SpectorBOX including Library, Fiducialling, Search, Text, Polarity, Bar Coding etc..*
√ Powered by Mek Catch Software for MES gateways, Repair, SPC on Windows 10 ™ (optional)	*Full compatibility with Mek's Catch system with MES interfacing such as CFX, XML. Integral Storage of inspection data including images.*
√ Overhead orthogonal camera and LED lighting system	*On-Bench no-handling Inspection. Color and glare optimized LED lighting system supports operators performing their assembly tasks by an ideal lighting environment.*
√ Camera resolution: 24Mp (basic) Optional: 42Mp or 60Mp with High-definition Lens	*Optimize resolution for your inspection task and minimal defect size. Tune resolution to minimal required 1D/2D BarCode Size. High definition lenses to capture smaller details.*
√ BarCode Grabbing by Camera or External BCR	*(Multi) BarCode Grabbing using 22X BarCode decoding engine. External BarCode reader can be used for versatility.*
√ Flexible OK/NG display	*Display defects by red circles on PCB Map or by classifying NG pictures. Display on remote repair station possible via Catch database (optional).*
√ Industrial Operator Custom Keypad	*Use Keypad to trigger Capturing + inspection, Possibility for manual entry of BarCodes and classification.*
√ Kit-Based overhead frame for installation on own assembly desk	*Combine your preferred assembly bench with VeriSpector overhead frame. This frame holds camera, lighting system, Apple Mac, monitor etc.*

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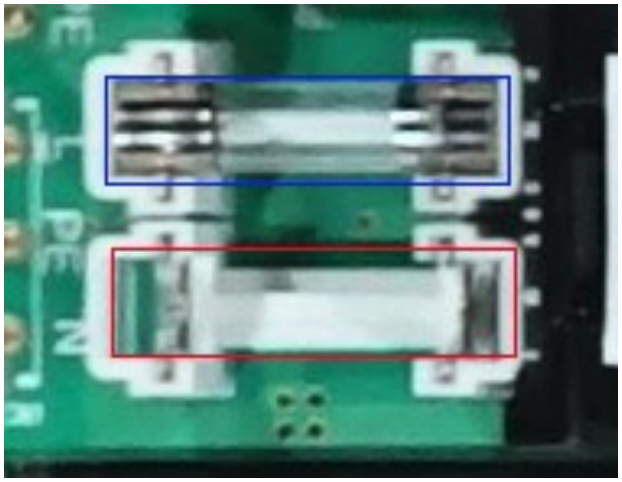
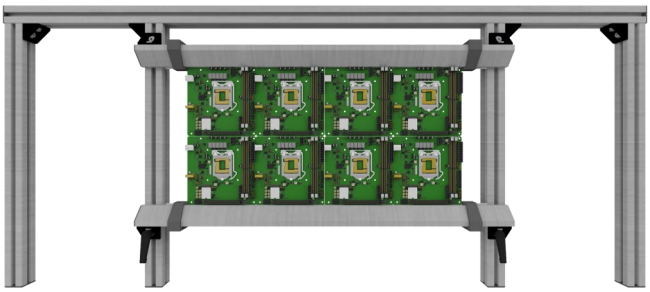
Hardware and Software Features

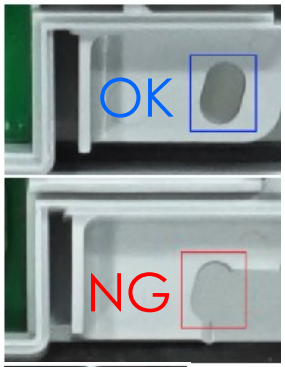
Versatile Inspection System
Mek VeriSpector is an inspection system using the **22X Software.** It is easy to program while maintaining the power and speed of the inspection algorithms used for many years within the PCB (Printed Circuit Board) assembly industry.

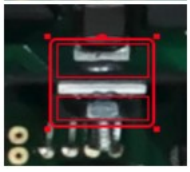


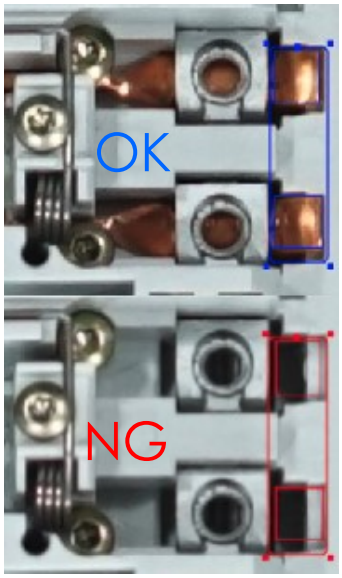


Repair On The Fly
The short inspection time (**< 5 sec**) enables the possibility to repair the product on the fly before proceeding the production process. After each inspection the operator will be presented with an extensive view of the product with all the defects highlighted.

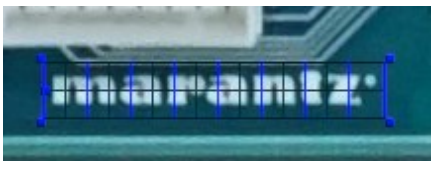
Flexible Inspection Possibilities
The VeriSpector is designed for a **wide verity** of inspection needs like presence/absence, polarity, text verification, fiducial reading, colour check, 1D and 2D barcode reading, assembly materials fittings, damaged objects, and many more.

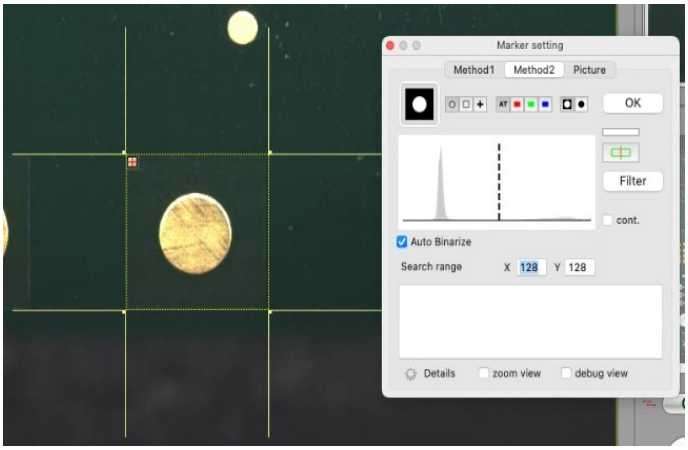




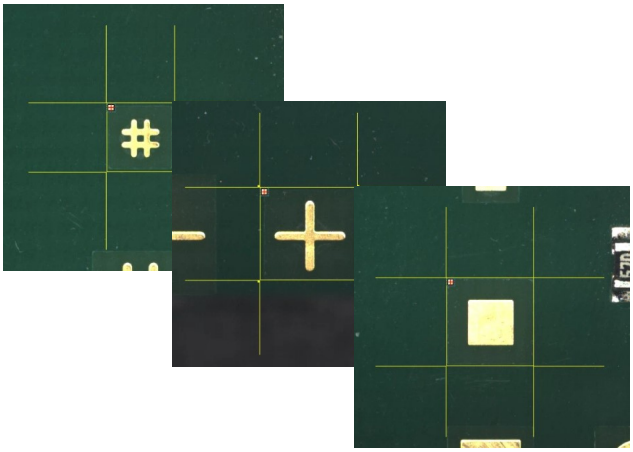


Accurate text inspection
Making use of the **22x Software** ability to recognize text enables the **VeriSpector** to verify if text has been applied correctly.





Fiducial recognition
With the high variation capabilities of the VeriSpector the recognition of fiducials is a important aspect. Ensuring high **repeatability** of inspection programs. The VeriSpector uses the fiducial recognition algorithm provided by the **22x Software.** Ensuring that the VeriSpector can recognize a wide variety of fiducials, and when there is no fiducial available using a photo as fiducial reference.

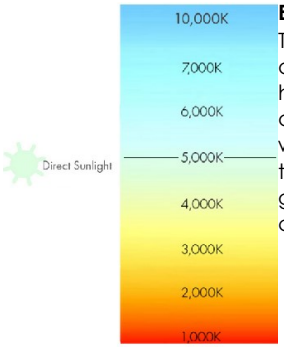


Resolution adaptability to Specification needs

The VeriSpector can easily be integrated onto a production floor using existing work tables. The frame is **adaptable** to different table sizes. With a selection of three different cameras the VeriSpector can be fine-tuned to the inspection requirements.

For example compare a 10 mm ø electrolytic capacitor between different **VeriSpector** models as shown in the image below.

VeriSpector 60 **VeriSpector 40** **VeriSpector 20**



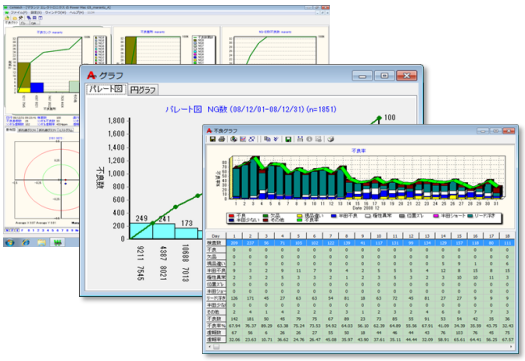
Ergonomic colour-accurate Lighting System

The Quad Low Reflection LED light sources are selected with the operator in mind. The highly **colour-accurate** Led beams produce a low shadow, low glare daylight-accurate work and inspection environment. This helps the operators performing their task with good visibility enhancing the yield and increasing throughout.

Easy to use keyboard

With the VeriSpector we also introduce the fully pre-programmed keyboard specifically designed for **controlling** the system.

Connectivity and Traceabilty

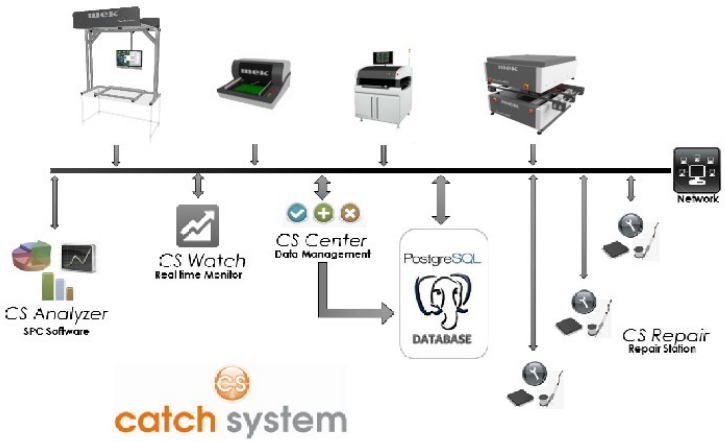


Inspections can be tracked and traced together with a barcode that is read from the tested objects.

Base formats including **Datamatrix**, **QRcode**, **Code 128** and **Code 39**. As well as allowing multiple barcodes per fixture or panel.

For example the VeriSpector 20 is capable to read a **Datamatrix** of 20 characters with a size of approx. 10 mm, the VeriSpector 40 approx. 7 mm, and the VeriSpector 60 approx. 5 mm.

The **Catch System** which comprises of **CSCenter** for data collection, **CSRepair** for offline defect review and repair, **CSWatch** for real time data monitoring and **CSAnalyser** for SPC and trend analysis. **PostgreSQL** enterprise grade database storage, is the total solution for quality control and improvement of the production process.



VeriSpector

Assembly Station AOI

Specifications	VeriSpector 20	VeriSpector 40	VeriSpector 60
PCB Size	Max Size: 750x500mm (29.5"x19.7") For smaller PCB sizes, optical zoom can be used to further increase the resolution:		
Characteristics			
Product type	1-Shot Stationary AOI		
Camera movement	Stationary		
PCB movement	Stationary		
Parts inspection	Presence, Orientation (polarity), Shape, Offset, Text, Color		
Image Processing	Synthetic Imaging, Spectral Histogram Analysis, Custom algorithms		
Camera/lens type	Digital Singe Lens CMOS camera with high resolution optical zoom lens		
Sensor/Lens Resolution	24Mp / 2100LP	42Mp / 3600LP	60Mp / 3600LP
Lighting system	Quad Low Reflection LED system		
System Specifications			
Resolution @ 750x550mm PCB	125µm	94µm	79µm
Resolution @ 525x350mm PCB	88µm	66µm	47µm
Resolution @ 375x250mm PCB	63µm	47µm	39µm
Top Clearance above carrier	~1250mm		
Bot Clearance below carrier	45mm		
Carrying rails clearance	3mm		
Inspection speed typical	<5s per assembly		
Electrical requirements	100-240 VAC / 300W		
Interfacing			
Control PC type	Apple Mac Mini M1 or i5 OS11		
Data interface	USB		
Programming Interface	CSV Centroid file (Placement file)		
Repair/Monitor/SPC System/MES-interface	Mek Catch System (Windows 7/8/10) (option)		
3rd party Interfacing (MES) & Data Storage	Enterprise SQL DB/XML Files/Socket (Catch System Option)		
General			
Operating temperature	15-30 deg. C(60-90 deg. F)		
Operating humidity	15-80 % RH		
External size	W1600 x D655 x H1500 mm (63" x 26" x 59")		
Weight	60kg (133lbs)		

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