VeriSpector

mek VeriSpector

because inspection matters

Assembly Station AOI

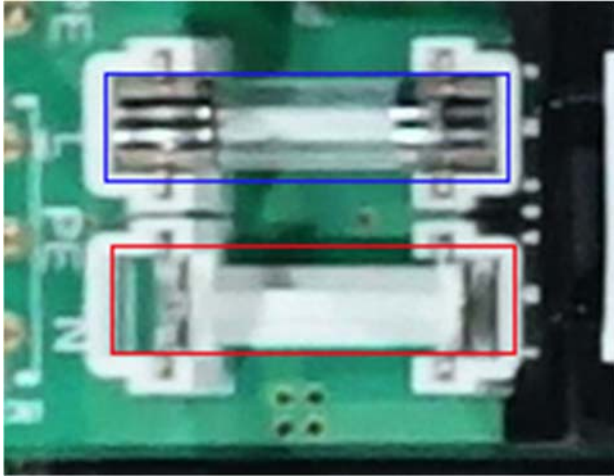|	
√ Assembly inspection for manual or automated assembly tasks	*Prevent assembly defects before they move into the next process. Perform Instant-defect-curing by operator. Yield improvement by instant feedback to operators on defects.*
√ Inspect features such as presence, orientation, shape, offset, 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) ~450x300mm (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 Resolving Power 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 AOI 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.
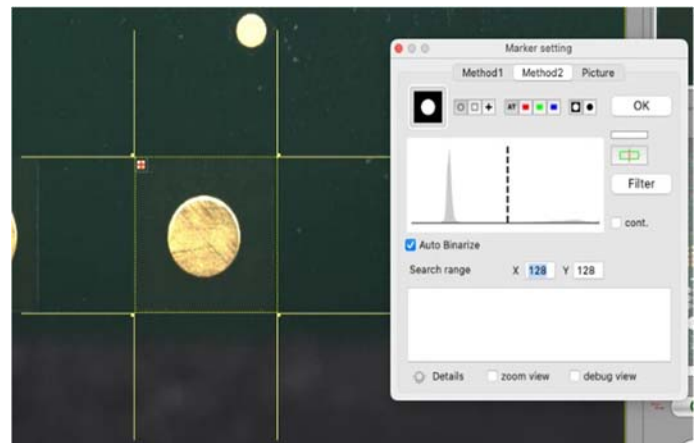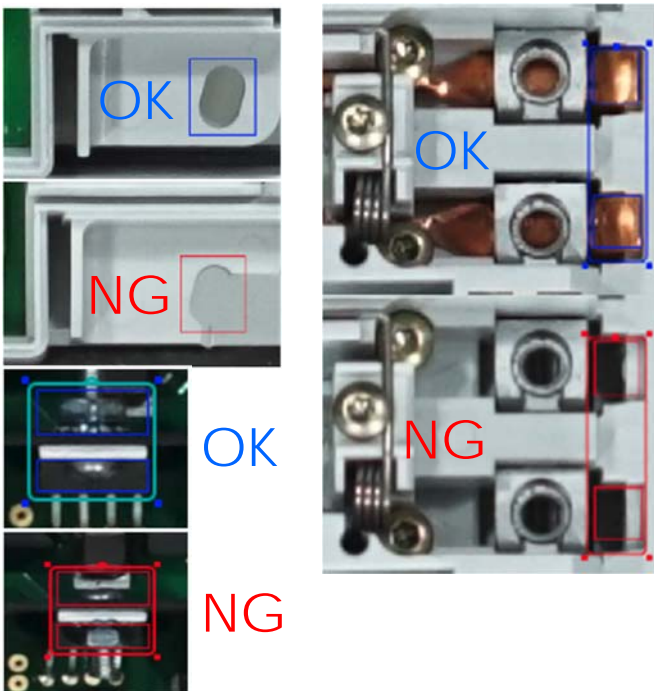

Repair On The Fly

The short inspection time (**5sec, typical**) enables the possibility to "repair" the product on the fly before proceeding further into the production process. After each inspection the operator will be presented with an extensive view of the product with all the defects highlighted.
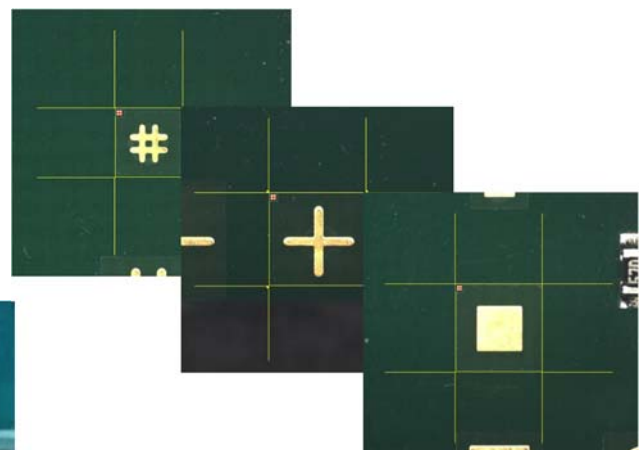
Flexible Inspection Possibilities

The VeriSpector is designed for a **wide variety** 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.

Fiducial recognition

With the versatile inspection capabilities of the VeriSpector, recognition of position reference markers (fiducials) is a crucial aspect for finding defects, with a lowing false calls rate in a repeatable manner. The VeriSpector uses the fiducial recognition algorithm set provided by the **22x Software**. Ensuring that the VeriSpector can recognize a wide variety of fiducials, including the use of photos as reference.
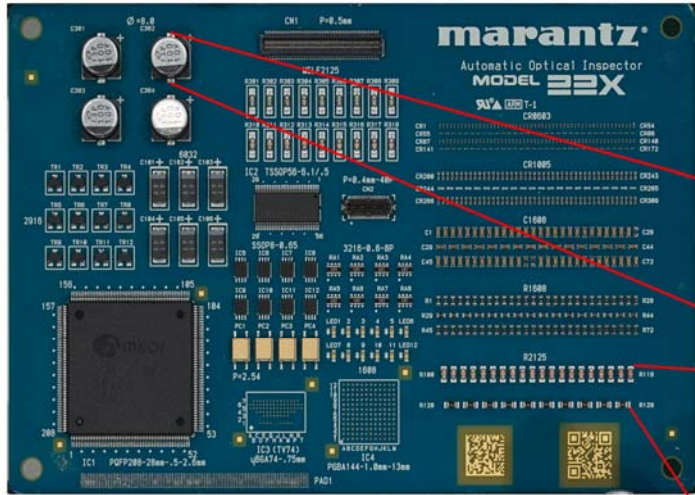

Accurate text inspection

Making use of the **22x Software** ability to recognize text through OCV enables the VeriSpector to verify if text has been applied correctly. Optionally an OCR plug-in is available.
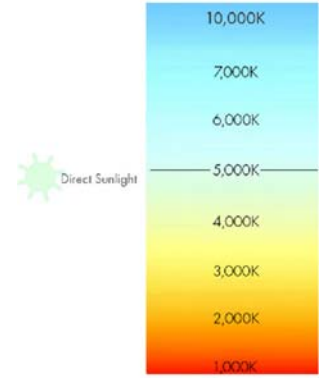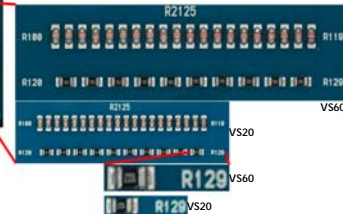
VeriSpector VS20/40/60 Optics

Equipped with the highest-grade photographic optics and sensors (24/42/61Mpix) sets the base for outstanding image quality (dynamic range, sharpness and distortion) and resolution (magnification) in it's segment of 1-shot AOI's. Compared to leading AOI technology, the VS20 uses a more than 3x larger sensor (with accompanying lens) while the VS40/60 sports an even more than 9x larger sensor. To match this high resolution, it's lens specification has twice the resolving power of the VS20 lens. The optics allow to capture fine details such as SMD's or DataMatrix Bar Codes smaller than 4mm, for which typically normal AOI's with moving cameras are required.

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.

Dynamic range and lens resolving power

VS20   VS60 (same crop)

Easy to use keyboard

With the VeriSpector we also introduce the fully pre-programmed keyboard specifically designed for **controlling** the system.
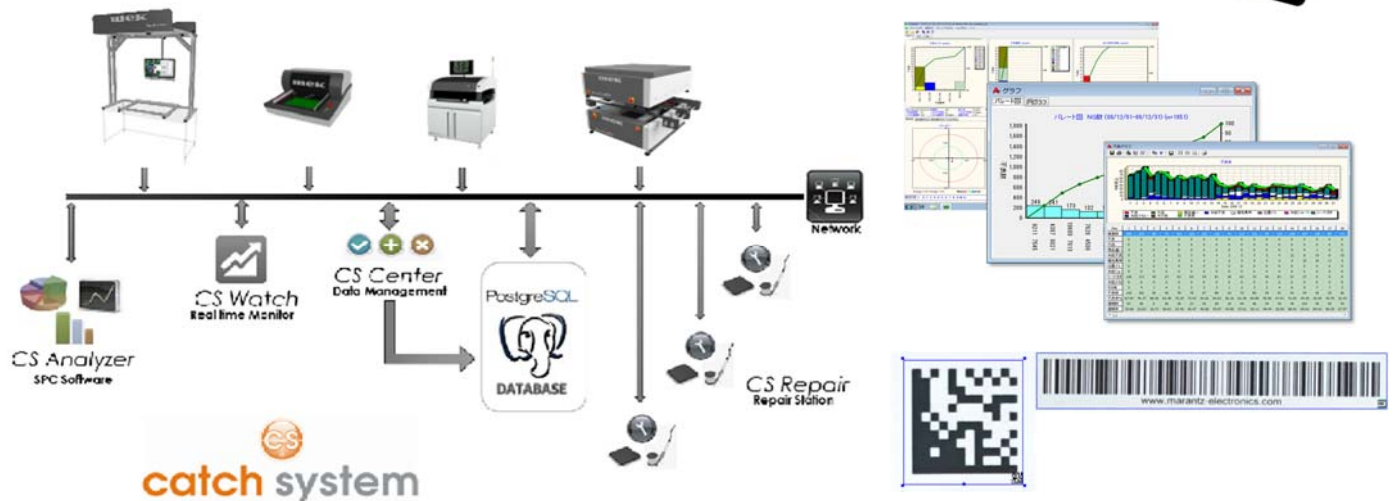
Magnification
VS40: +130%
VS60: +158%

Zoom lens: Adapt your resolution to specification needs

With the availability of VS20/40/60 models, three different cameras equipped with a zoom lens, the VeriSpector can be fine-tuned to your inspection requirements or standard Solder Frame dimensions.

The VeriSpector can easily be integrated onto a production environment using existing work benches. The frame is **adjustable** for different bench sizes.

Connectivity and Traceabilty

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

Base formats including **DataMatrix**, **QRcode**, **Code 128** and **Code 39** can be captured by the camera itself, including multiple barcodes per fixture or panel. The optional Smart-BarCode plug-in enhances the decoding power and accommodates additional BC-Standards such as micro-QR. External USB/ RS232 BarCode or RFID Readers can be connected to the system as well.

Indicative Bar Code Reading capabilities: VS20 decodes a **DataMatrix** code of 20char/4mm, the VS60 of 15char/3mm.

The Catch System which comprises of CS-Center for data collection, CS-Repair for offline defect review and repair, CS-Watch for real time data monitoring and CS-Analyzer for SPC and trend analysis. Together with its PostgreSQL enterprise grade database and various export facilities, it forms the total solution for QA with i4.0 connectivity and MES interfacing.

Assembly Station AOI

Specifications	VeriSpector 20	VeriSpector 40	VeriSpector 60
PCB Size	Max: 750x500mm (29.5"x19.7") | Min: 450x300mm (17.7"x11.8") 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	75µm
Resolution @ 450x300mm PCB	75µm	57µm	47µm
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 onwards		
Data interface	USB3		
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 (529lbs)		

Represented/Distributed by:

Rev 12

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