Famerspectar

GTz/GTAz/GDAz



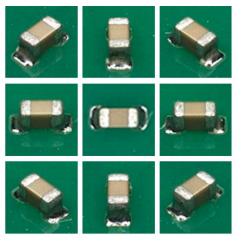
Desktop 3D Automatic Optical Inspection Systems

\checkmark	Revolutionary 3D imaging technology	True 3D imaging, side cameras integrated in 3D processing.	
\checkmark	High Speed 90Fps USB 3 Vision Cameras	The latest generation of high speed, high quality cameras No capture card requirements.	
\checkmark	2X FOV over previous Generation	Up to 50% reduction of cycle time.	
\checkmark	Multi-color 4 angle lighting with Line Source Coaxial Lighting and Meniscus Profiler	reliable solder joint meniscus and pad surface analysis (to find meniscus and paste printing defects)	
V	 Inspects:	use inspection in all stages of the production process	
\checkmark	Flexible classification and reporting scenarios	integrate AOI efficiently in your existing operations and factory lay-out	
\checkmark	Line Sourced DOAL (Direct On Axis Lighting) coaxial lighting system with high resolution Telecentric Optics	inspect solder joints without shadow effects from tall components nearby and accurate inspection model building	
\checkmark	Low Noise Large CCD High Speed 24 bit Color Camera	find defects easier including printing defects on Gold or Cu plated PCB's	
\checkmark	Synthetic Imaging and Spectral Analysis	powerful algorithms to achieve an optimal balance between defect detection and false reject levels in shortest time	
\checkmark	Triple use of side camera's	Use for automatic inspection, classification and repair	
\checkmark	Prototype mode for 1st off inspection	program in minutes to verify your production line is set-up correctly before starting full production	
\checkmark	In height adjustable optical head	Compensate for PCB warp and adapt to tall component and sandwich assemblies	



Pauerspectar GIZ/GIAZ/GDAZ

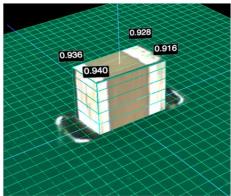
Hardware and Software Features

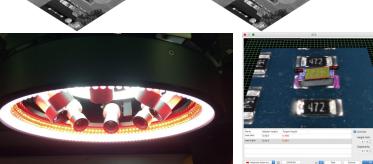


Revolutionary 3D imaging

True Stereoscopic imaging using 9 cameras. Full colour 3D allows the ability to actually see the side of components rather than extruded 2D images. Using the addition of a 4th LED white light







The perfect combination of 3D and 2D inspection

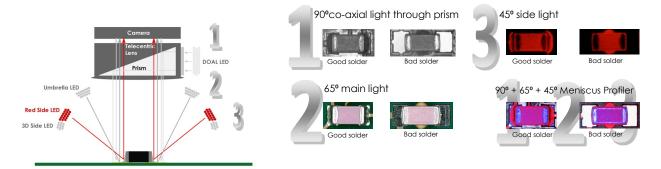
Height, tilt and coplanarity measurement. Pin Height measurement Component Presence Absence, Polarity, Value, Angle, Offset, Colour, Extra part detection, Solder ball detection, Solder profile analysis and short detection. The thickness of chip capacitors in combination with colour makes a more reliable inspection when checking chip capacitors value.

Unique 3D Stereoscopic Vision

Utilizing the full 9 cameras of the MEK camera head. The image differential are merged and a vectorised map of the component is created. Then analyzed based on the programmers applied tolerances. The vectorised map of the components removes the minor imperfection of the component surface giving more accurate measurement of height and surface angle of the component with reduced chance of false readings.

Omnidirectional multi angle, multi color LED lighting

Optimal light no matter component direction — 3D color profile of solder meniscus — Reliable defect decision by the software — Decide Good Solder, No Solder, Lack of Solder and Too much solder for SMT and THT solder joints



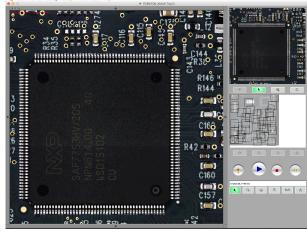
8x Angular Side Sensors (Only available for FDA and FDAz models)

Simultaneously operating, multiplexed side view sensors with CameraLink interface — 45/45 arrangement — Triple use: Active automatic inspection, classification and repair — clear 9 angles defect review — high magnification 50x (10µm/pixel) — Full Color — Auto highlight — Large sensor pixels — 9 view images also in backup database



Pamer Spectar GIZ/GIAZ/GDAZ

Hardware and Software Features — Continued

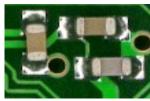


Double size FOV (Field of view)

Up to 2x faster inspection over previous generations of machines. Square FOV combined with circular lighting allows for program rotation without time consuming debugging.

Large pixel image capturing sensor

18.8µm² pixel size — less noise — smooth and detailed image— great dynamic range



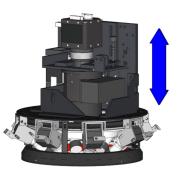
High dynamics sensor

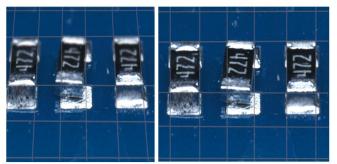


Conventional sensor

In Height Adjustable Optical Head

In Z-Axis moving Top Camera, Light and Side View cameras — Adaption to any PCB Thickness — PCB Warp Compensation — Inspection of PCB's with very tall components — Reliable text and/or polarity inspection on tall components Inspection of "Sandwich" assemblies without need of jigs and multiple inspections



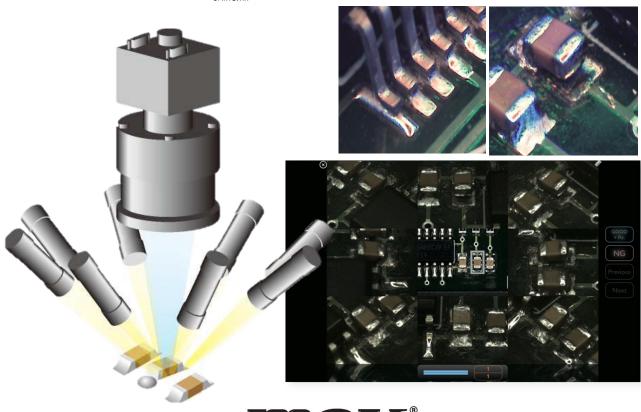


Without Shift&Tilt

Shift&Tilt

Shift & Tilt Side View lenses

Distortion free side images across whole FoV. Every point on the PCB within the FoV has same distance to the capturing sensor despite the angle of the optics





Desktop

Famerspectar

GTAz/GDAz 350, 650, 800

Maximum PC8 Size 350/250mm (13.8" x 9.8") 550/250mm (23.6" x 21.6") 900x550mm (23.5" x 12.6") Mote: CDAz Max, PC8 Size is slightly smaller due to larger diameter optical unit forduct type Automatic Optical Inspector In-line/Off-line Off-Line X Direction X + Y Direction Common movement X Direction X + Y Direction X + Y Direction PC8 movement Moving in Y Stationary Stationary PC8 inspection Direct Loading Manual Drawer Options: Motarized Drawer, Transverse Loading PC8 inspection Offset, Smearing, Bridges, Unitorized Drawer, Transverse Loading Direct Loading Drawer, Transverse Loading PC8 inspection Offset, Smearing, Bridges, Unitornaly, Spectron Options: Motarized Drawer, Transverse Loading Direct Loading Drawer, Transverse Loading Image Processing Synthetic Integring, Sceler Units Transverse Loading Direct Loading Drawer, Transverse Loading Image Processing Synthetic Integring, Sceler Units Transverse Loading Drawer, Transverse Loading Image Processing Synthetic Integring, Sceler While, Side Red, Main, Line Sourced DOAL Diffused On Auis Lighting, Corearding, Heighthore Direct Loading		UTAL UDI				
Note:: CDAz. Max. PCB Size is signify smaller due to larger diameter optical unit Characteristics Product type Automatic Optical Inspector in-line/Off-line Off-Line X + Y Direction Y + Y + Y + Y + Y + Y + Y + Y + Y + Y +	Desktop Series Specifications	PowerSpector GTAz 350	PowerSpector GTAz 650	PowerSpector GTAz 800		
Characteristics Product type Automatic Optical Inspector Inine/Off-line Off-Line Camera movement X Direction X + Y Direction X + Y Direction PCB movement Moving in Y Stationary Manual Drawer Options: Motoized PCB fixation Presence, Polarity, Offset, Smearing, Bridges, Uniformity Manual Drawer Options: Motoized Presence, Polarity, Offset, Smearing, Bridges, Uniformity Offset, Smearing, Bridges, Uniformity Manual Drawer Options: Motoized Camera type Objetic color Thunderboth Interface 90 Fps Sectional Analysis, Greyscale limits Image Processing Synthetic Imaging, Spectral Analysis, Greyscale limits Image Processing Image Processing Synthetic Imaging, Spectral Analysis, Greyscale limits Image Processing Camera type Objetic color Thunderboth Interface 90 Fps Camera type Camera type Objetic Color Thunderboth Interface 90 Fps Camera type Options: Motoixed Dol Alphing Omnidirectional Quod LD fings: Side Walk, Side Red, Moin, Line Sourced DOAL Diffued On Avis Lighting (Coaxid) Upsterion and Size Camera Field Of View/Resolution Sizecifications Size	Maximum PCB Size	350x250mm (13.8" x 9.8")	650x550mm (25.6" x 21.6")	800x550mm (31.5"x21.6")		
Product type Automatic Optical Inspector In-Ine/OFI-line Off-Line Off-Line Camara movement X Direction X + Y Direction X + Y Direction PC8 movement Moving in Y Stationary Stationary Manual Drawer PC8 fixation Direct Loading Direct Loading Manual Drawer Options: Motorized Direct Loading Manual Drawer Options: Motorized Direct Canara Stations: Motorized Direct Canara Station: Mo		Note: GDAz Max. PCB Siz	e is slightly smaller due to l	arger diameter optical unit		
In-line/Off-line Off-Line Off-Line Camera movement X Direction X + Y Direction X + Y Direction X + Y Direction PCB movement Moving in Y Stationary Stationary Monuel Drawer Options: Motorized Drawer Insurverse Loader Direct Loading Direct Loading Direct Loader Contact Station Offset Smearing, Bridges, Uniformity Category (C6 fixation Offset Smearing, Bridges, Uniformity Options: Motorized Drawer, Transverse Loader Options: Motorized Drawer, Transverse Drawer, Transverse, Drawer, Transverse Drawer, Tran	Characteristic	cs				
Camera movement X Direction X + Y Direction X + Y Direction PCB movement Moving in Y Stationary Stationary PCB movement Direct Loading Morual Drawer Options: Motorized PCB fixation Presence, Polarity, Offset, Correctness, Soldering, Height Manual Drawer Profit inspection Presence, Polarity, Offset, Correctness, Soldering, Height Manual Drawer Profit inspection Offset, Smearing, Bridges, Uniformity Electronic Brightness, Hue, Staturation via Tiles Camera Pield Of View/Resolution 38.538.5mm(1.52*)1.22*/18.75/jmm of 19.5x19.5mm(0.27*x0.27*/1/10,um Lens Telecentric lens with built in prism for DOAL Lighting Comord Field Of View/Resolution 38.538.5mm(1.52*/1.23*/18.75*/mm(0.27*x0.27*/17.00.2**/10.00m) Lens Telecentric lens with built in prism for DOAL Lighting Comera Field Of View/Resolution Sectifications Specifications Offset Colonal Quart LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial) Component clearance (top) GTatz 30mm (1.27) Commodition view (Coaxial) Side Cameras 8x Digital color US8 3.0 Vision in 45/45 orientation Laxis movement range	Product type		Automatic Optical Inspector			
PCB movement Moving in Y Stationary Manual Drawer Options: Motorized Direct Loading Stationary Manual Drawer Options: Motorized Drawer, Transverse Monual Drawer Options: Motorized Drawer, Transverse loade Parts inspection Orfset, Smearing, Bridges, Smearchan, Bridges, Uniformity Telescentric Unified Color Thunderboth Interface 90 Fps Camera Hype Digital color Thunderboth Interface 90 Fps Camera 19,257,957,9777/779,7779,7777777777777777777	In-line/Off-line		Off-Line			
PCB fixation Manual Drawer Options: Motivized Drawer, Transverse loader Manual Drawer Options: Motivized Drawer, Transverse loader Prot inspection Presence, Polarity, CMEst, Correctness, Soldering, Height Manual Drawer Options: Motivized Drawer, Transverse loader Printing/paste inspection Offset, Smearing, Bridges, Uniformity Manual Drawer Options: Motivized Drawer, Transverse loader Printing/paste inspection Offset, Smearing, Bridges, Uniformity Manual Drawer Options: Motivized Drawer, Transverse loader Comera field Of View/Resolution Sistians, Status, Status	Camera movement	X Direction	X + Y Direction	X + Y Direction		
Direct Loading Options: Motional Drawer Drawer, Transverse Loader Manual Drawer Drawer, Transverse Loader Parls inspection Presence, Polarithy, Offset, Carrectness, Soldering, Height Drawer, Transverse Loader Parls inspection Offset, Smearing, Bidges, Unitorized Drawer, Transverse Loader Drawer, Transverse Loader Parls inspection Offset, Smearing, Bidges, Unitorized Drawer, Transverse Loader Diffset, Carrectness, Soldering, Height Image Processing Synthetic Imaging, Spectral Analysis, Greyscale limits Image Processing Digital color Thunderbot Interface 90 Fps Camera field Of View/Resolution 38.5x38.5mm(1.52"xl .52"/18.75", Str.9.5mm (0.72"x0.72"/10µm Lens Digital color Thunderbot Interface 90 Fps Camera field Of View/Resolution 38.5x38.5mm(1.52"xl .52"/18.75", Str.9.5mm (0.72"x0.72"/10µm Lens Offset, Str.9.5mm (1.52"/18.75", Str.9.5mm (0.72"x0.72"/10µm Lens Offset Str.34.05"/19.5mm (1.52"/18.75", Str.9.5mm (0.72"x0.72"/10µm Lens Specifications Specifications Specifications Specifications Specifications Specifications Specifications Specifications Specifications Specificatis <t< th=""><th>PCB movement</th><th>Moving in Y</th><th>Stationary</th><th>Stationary</th></t<>	PCB movement	Moving in Y	Stationary	Stationary		
Printing/paste inspection Offset. Smearing, Bridges, Uniformity Image Processing Synthetic Imaging, Spectral. Analysis, Greyscale limits Image Processing Brightness, Hue, Schurdtion via Fillers Camera type Digital color Thunderbolt Interface 90 Fps Camera Type Digital color Thunderbolt Interface 90 Fps Camera Field Of View/Resolution 38.5x38.5mm(1.52"x1.52")(18.75µm or 19.5x19.5mm(0.77"x0.77")/10µm Lens Telecentric Iens with built in pism for DOAL Lighting Upting system Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial)) Positioning accuracy Pixel related Feedback Loop Component size 01005" (0.4x0.2mm)(10µm resolution) Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTz 30mm (1.2") Component range 30m (silon in 45/45 orientation Z-Axis movement range 30m (2.8") Component speed 720mm (2.8") Inspection capacity typical 2750ppm Electrical Requirement Interfacing Interface CSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-interface Mek	PCB fixation	Direct Loading	Options: Motorized Drawer, Transverse			
Image Processing Synthetic Imaging, Spectral Analysis, Greyscale limits Image Parameters Brightness, Hue, Saturation via Filters Camera type Digital color Thunderbolt interfaces 90 Fps Camera field Of View/Resolution 38.5x38.5mm(1.52"x1.52")/18.75mm(0.77"x0.77")/10µm Lens Telecentric lens with built in prism for DOAL Lighting Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL DOAL ON Avis Lighting (Coaxial) Sourced DOAL Common (1.27) Component clearance (top) GTAz 30mm (1.27) Component clearance (top) Stele Cameras 30.01005" (0.4x0.2mm)(10µm resolution) Z-Axis movement range 30mm (1.27) Zomm (2.4") Stele Cameras 8x Digital color USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.27) 70mm (2.8") Component clearance (bothom) 70mm (2.8") 70mm (2.8") Movement speed 2750ppm Interfacing Control PC type	Parts inspection	Presence, Pol	arity, Offset, Correctness, S	oldering, Height		
Image Parameters Brightness, Hue, Saturation via Filters Camera type Digital color Thunderbolt interface 90 Fps Camera Field Of View/Resolution 38.5x38.5mm(1.52"x1.52")/18.75µm or 19.5x19.5mm(0.77"x0.77")/10µm Lens Telecentric lens with built in prism for DOAL Lighting Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Avis Lighting (Coaxial) Sourced Specifications 01005" (0.4x0.2mm){10µm resolution} Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAz 30mm (1.2") Side Cameras 8x Digital color US 8.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (top) 70mm (2.8") Side Cameras 30mm (1.2") Component clearance (bottom) 70mm (2.8") Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement 100-240 VAC / 150W Interface USB and Thunderbolt Programming Interface CSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-Interface Mek Catch System (Windows 7/8/10) (option) Star party Interfacing (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) Generat 15-30 deg. C(60-90 deg. F) Operating temperature </th <th>Printing/paste inspection</th> <th>Offs</th> <th>set, Smearing, Bridges, Unif</th> <th>ormity</th>	Printing/paste inspection	Offs	set, Smearing, Bridges, Unif	ormity		
Camera type Digital color Thunderboilt interface 90 Fps Camera Field Of View/Resolution 38.5x38.5mm(1.52"x1.52")/18.75µm or 19.5x19.5mm(0.77"x0.77")/10µm Lens Telecentric lens with built in prism for DOAL Lighting Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (coaxiall) Minimum inspection component size 01005" (0.4x0.2mm)(10µm resolution) Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAZ 30mm (1.2") (DAZ 60mm (2.4") Side Cameras 8x Digital color USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (top) 70mm (2.8") 70mm (2.8") Movement speed 7270mm/s 70mm (2.8") 70mm (2.8") Movement speed 2750ppm 2750ppm 2750ppm Electrical Requirement 100-240 VAC / 150W 200 200 Control PC type Apple Mac Mini or iMac 200 200 Control PC type CSV Centroid File (Placement Data) 200 200 200 200 200 200 200 200 200 200 200 <th>Image Processing</th> <th>Synthetic Im</th> <th colspan="2">Synthetic Imaging, Spectral Analysis, Greyscale limits</th>	Image Processing	Synthetic Im	Synthetic Imaging, Spectral Analysis, Greyscale limits			
Camera Field Of View/Resolution 38.5x38.5mm(1.52"x1.52")/18.75µm or 19.5x19.5mm(0.77"x0.77")/10µm Lens Telecentric lens with built in prism for DOAL Lighting Ughting system Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial)) Specifications Specifications Minimum inspection component size 01005" (0.4x0.2mm)(10µm resolution) Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAz 30mm (1.2") GDAz 60mm (2.4") Side Cameras 8x Digital color VSB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") 70mm (2.8") Component clearance (bothom) 70mm (2.8") 70mm (2.8") Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement Interfacing Obta interface QSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-interface Mek Catch System (Windows 7/8/10) (option) Star and party Interfacing (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) General UTS x DI015 x H500 W1157 x DI015 x H500 Coperating humidity 15-80 % RH	Image Parameters	Brightness, Hue, Saturation via Filters				
Lens Telecentric lens with built in prism for DOAL Lighting Ughting system Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial)) Specifications Onordirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial)) Specifications Onordirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial)) Specifications Onordirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial)) Component clearance (top) Otors (0.4x0.2mm)(10µm resolution) Side Cameras 8x Digital cloor USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") 70mm (2.8") Component clearance (bothom) 70mm (2.8") 70mm (2.8") 70mm (2.8") Movement speed 2750ppm 2750ppm Electrical Requirement 100-240 VAC / 150W 70mm (2.8") Inspection capacity typical 2750ppm 200-240 VAC / 150W Control PC type Apple Mac Mini or iMac Programming Interface Programming Interface CSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-interface Mek Catch System (Windows 7/8/10) (option)	Camera type	Digita	Digital color Thunderbolt interface 90 Fps			
Commidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxid)) Specifications Winimum inspection component size 01005" (0.4x0.2mm)[10µm resolution) Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAz 30mm (1.2") Side Cameras 8x Digital color USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") Movement speed 2750ppm Inspection capacity typical 2750ppm Electrical Requirement 100-240 VAC / 150W Interfacing USB and Thunderboit Programming Interface CSV Centroid File (Placement Data) 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/Sustem Option) General 15-30 deg. C(60-90 deg. F) Operating humidity 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH	Camera Field Of View/Resolution	38.5x38.5mm(1.52"x1	38.5x38.5mm(1.52"x1.52")/18.75µm or 19.5x19.5mm(0.77"x0.77")/10µm			
Lighting system DOAL Diffused On Axis Lighting (Coaxial)) Specifications Winimum inspection component size 01005" (0.4x0.2mm)(10µm resolution) Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAz 30mm (1.2") (DAX 60mm (2.4") Side Cameras 8x Digital color US8 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") 70mm (2.8") Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement USB and Thunderbolt Data Interface USB and Thunderbolt Programming Interface Mek Catch System (Windows 7/8/10) (option) Start Generating function (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) Generating temperature 15-30 deg. C(60-90 deg. F Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7")	Lens	Telecentric	Telecentric lens with built in prism for DOAL Lighting			
Lighting system DOAL Diffused On Axis Lighting (Coaxial)) Specifications Winimum inspection component size 01005" (0.4x0.2mm)(10µm resolution) Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAz 30mm (1.2") (DAX 60mm (2.4") Side Cameras 8x Digital color US8 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") 70mm (2.8") Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement USB and Thunderbolt Data Interface USB and Thunderbolt Programming Interface Mek Catch System (Windows 7/8/10) (option) Start Generating function (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) Generating temperature 15-30 deg. C(60-90 deg. F Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7")		Omnidirectional Quad	LED rinas: Side White, Side	Red. Main. Line Sourced		
Winimum inspection component size 01005" (0.4x0.2mm) (10µm resolution) Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAZ 30mm (1.2")/ GDAZ 60mm (2.4") Side Cameras 8x Digital color USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") 70mm (2.8") Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement 100-240 VAC / 150W Control PC type	Lighting system	•				
Positioning accuracy Pixel related Feedback Loop Component clearance (top) GTAz 30mm (1.2") / GDAz 60mm (2.4") Side Cameras 8x Digital color USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") 70mm (2.8") Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement 100-240 VAC / 150W Control PC type Apple Mac Mini or iMac Data interface USB and Thunderbolt Programming Interface CSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-interface Mek Catch System (Windows 7/8/10) (option) 3dr party Interfacing (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) General 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Specification	ns				
Component clearance (top) GTAz 30mm (1.2")/ GDAz 60mm (2.4") Side Cameras 8x Digital color USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") 70mm (2.8") Movement speed 720mm/s 70mm (2.8") Inspection capacity typical 2750ppm 2750ppm Electrical Requirement 100-240 VAC / 150W 70mm (2.8") Control PC type Apple Mac Mini or iMac 70mm (2.8") Data interface USB and Thunderbolt 70mm Programming Interface CSV Centroid File (Placement Data) 78 Repair/Monitor/SPC System/MES-interface Mek Catch System (Windows 7/8/10) (option) 73 3rd party Interfacing (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) 75 Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Minimum inspection component size	010	01005" (0.4x0.2mm)(10µm resolution)			
Side Cameras 8x Digital color USB 3.0 Vision in 45/45 orientation Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") 70mm (2.8") Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement 100-240 VAC / 150W Interfacing Control PC type Apple Mac Mini or iMac Data interface USB and Thunderbolt Programming Interface CSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-interface Mek Catch System (Windows 7/8/10) (option) 3dr party Interfacing (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) General Operating temperature Operating humidity 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Positioning accuracy		Pixel related Feedback Loop			
Z-Axis movement range 30mm (1.2") Component clearance (bottom) 70mm (2.8") 70mm (2.8") 70mm (2.8") Movement speed 720mm/s 100-240 VAC / 150W Inspection capacity typical 2750ppm 2750ppm Electrical Requirement 100-240 VAC / 150W 100-240 VAC / 150W Control PC type Apple Mac Mini or iMac 2000000000000000000000000000000000000	Component clearance (top)	GTA	GTAz 30mm (1.2")/ GDAz 60mm (2.4")			
Component clearance (bottom)70mm (2.8")70mm (2.8")70mm (2.8")Movement speed720mm/sInspection capacity typical2750ppmElectrical Requirement100-240 VAC / 150WInterfacingControl PC typeApple Mac Mini or iMacData interfaceUSB and ThunderboltProgramming InterfaceCSV Centroid File (Placement Data)Repair/Monitor/SPC System/MES-interfaceMek Catch System (Windows 7/8/10) (option)3rd party Interfacing (MES) & Data StorageEnterprise SQL DB/XML Files/Socket (Catch System Option)General15-30 deg. C(60-90 deg. F)Operating humidity15-80 % RHExternal sizeW736 x D874 x H450 (29.0" x 34.4" x 7.7")W940 x D1015 x H500 (37.0" x 34.0" x 19.7")	Side Cameras	8x Digital	8x Digital color USB 3.0 Vision in 45/45 orientation			
Movement speed 720mm/s Inspection capacity typical 2750ppm Electrical Requirement 100-240 VAC / 150W Interfacing Apple Mac Mini or iMac Control PC type Apple Mac Mini or iMac Data interface USB and Thunderbolt Programming Interface CSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-interface Mek Catch System (Windows 7/8/10) (option) Srd party Interfacing (MES) & Data Storage Enterprise SQL DB/XML Files/Socket (Catch System Option) Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Z-Axis movement range		30mm (1.2")			
Inspection capacity typical 2750ppm Electrical Requirement 100-240 VAC / 150W Interfacing Control PC type Data interface USB and Thunderbolt Data interface USB and Thunderbolt Programming Interface CSV Centroid File (Placement Data) 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 15-30 deg. C(60-90 deg. F) Operating temperature 15-30 deg. C(60-90 deg. F) Operating temperature W736 x D874 x H450 (29.0° x 34.4° x 7.7") W940 x D1015 x H500 (37.0° x 34.0° x 19.7") External size W736 x D874 x H450 (29.0° x 34.4° x 7.7") W1157 x D1015 x H500 (37.0° x 34.0° x 19.7")	Component clearance (bottom)	70mm (2.8'')	70mm (2.8'')	70mm (2.8")		
Electrical Requirement 100-240 VAC / 150W Interfacing Control PC type Data interface USB and Thunderbolt Data interface CSV Centroid File (Placement Data) 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) Operating temperature Operating temperature W736 x D874 x H450 (29.0" x 34.4" x 7.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Movement speed		720mm/s			
Interfacing Control PC type Apple Mac Mini or iMac Data interface USB and Thunderbolt Programming Interface CSV Centroid File (Placement Data) 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 15-30 deg. C(60-90 deg. F) Operating temperature 15-80 % RH Operating size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Inspection capacity typical		2750ppm			
Control PC type Apple Mac Mini or iMac Data interface USB and Thunderbolt Programming Interface CSV Centroid File (Placement Data) 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 General Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Electrical Requirement		100-240 VAC / 150W			
Data interface USB_ and Thunderbolt Programming Interface CSV Centroid File (Placement Data) Repair/Monitor/SPC System/MES-interface Mek Catch System (Windows 7/8/10) (option) Brogramming 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 W1157 x D1015 x H500 (29.0" x 34.4" x 7.7") W1157 x D1015 x H500 (37.0" x 34.0" x 19.7")	Interfacir	g				
Programming Interface CSV Centroid File (Placement Data) 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) Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0° x 34.4″ x 7.7″) W940 x D1015 x H500 (37.0° x 34.0° x 19.7″) W1157 x D1015 x H500 (45.55° x 34.0° x 19.7″)	Control PC type	Apple Mac Mini or iMac		0		
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 General Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Data interface		USB and Thunderbolt			
State Enterprise SQL DB/XML Files/Socket (Catch System Option) General General Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH External size W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Programming Interface	CSV Centroid File (Placement Data)				
General General Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	Repair/Monitor/SPC System/MES-interface	Mek Catch System (Windows 7/8/10) (option)				
Operating temperature 15-30 deg. C(60-90 deg. F) Operating humidity 15-80 % RH W736 x D874 x H450 (29.0" x 34.4" x 7.7") W940 x D1015 x H500 (37.0" x 34.0" x 19.7") W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")	3rd party Interfacing (MES) & Data Storage	Enterprise SQL DB/XML Files/Socket (Catch System Option)				
Operating humidity 15-80 % RH W736 x D874 x H450 W940 x D1015 x H500 W1157 x D1015 x H500 External size (29.0° x 34.4" x 7.7") (37.0° x 34.0" x 19.7") (45.55" x 34.0" x 19.7")	General					
W736 x D874 x H450 W940 x D1015 x H500 W1157 x D1015 x H500 External size (29.0" x 34.4" x 7.7") (37.0" x 34.0" x 19.7") (45.55" x 34.0" x 19.7")	Operating temperature		15-30 deg. C(60-90 deg. F)			
External size (29.0" x 34.4" x 7.7") (37.0" x 34.0" x 19.7") (45.55" x 34.0" x 19.7")	Operating humidity	15-80 % RH				
	External size					
Weight 65kg (143lbs) 110kg (243lbs) 120kg (265lbs)	Weight					

Mek Europe reserves the right to change the design and specifications without notice. © Mek Europe BV, October 2019

Represented/Distributed by:

Marantz Electronics, Ltd. 4th floor, Hi-Tech Center, YBP, Hodogaya-ku Yokohama-city, Kanagawa, 240-0005 Japan



Desktop

Famerspectar

GTz 350, 650, 800

		U .1				
Desktop Series Specifications	PowerSpector GTz 350	PowerSpector GTz 650	PowerSpector GTz 800			
Maximum PCB Size	350x250mm (13.8" x 9.8")	650x550mm (25.6" x 21.6")	800x550mm (31.5"x21.6")			
Characteris	tics					
Product type		Automatic Optical Inspector				
In-line/Off-line		Off-Line				
Camera movement	X Direction	X + Y Direction	X + Y Direction			
PCB movement	Moving in Y	Stationary	Stationary			
PCB fixation	Direct Loading	Manual Drawer Options: Motorized Drawer, Transverse loader	Manual Drawer Options: Motorized Drawer, Transverse loader			
Parts inspection	Presence, Po	Presence, Polarity, Offset, Correctness, Soldering, Height				
Printing/paste inspection		Offset, Smearing, Bridges, Uniformity				
Image Processing	Synthetic II	Synthetic Imaging, Spectral Analysis, Greyscale limits				
Image Parameters	Bri	Brightness, Hue, Saturation via Filters				
Camera type		Digital color Thunderbolt interface 90 Fps				
Camera Field Of View/Resolution	38.5x38.5mm(1.52"	38.5x38.5mm(1.52"x1.52")/18.75µm or 19.5x19.5mm(0.77"x0.77")/10µm				
Lens	Telecentri	Telecentric lens with built in prism for DOAL Lighting				
Lighting system	D	Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting (Coaxial))				
Specificati						
Minimum inspection component size	01	01005" (0.4x0.2mm)(10µm resolution)				
Positioning accuracy		Pixel related Feedback Loop				
Component clearance (top)	ance (top) 50mm (2.0")					
Side Cameras		No Side Cameras				
Z-Axis movement range		30mm (1.2")				
Component clearance (bottom)	70mm (2.8'')	70mm (2.8")	70mm (2.8")			
Movement speed		720mm/s				
Inspection capacity typical		2750ppm				
Electrical Requirement		100-240 VAC / 150W				
Interfac	ing					
Control PC type		Apple Mac Mini or iMac				
Data interface		USB and Thunderbolt				
Programming Interface	CS'	CSV Centroid File (Placement Data)				
Repair/Monitor/SPC System/MES-interfac	Mek Ca	Mek Catch System (Windows 7/8/10) (option)				
3rd party Interfacing (MES) & Data Storag	· · · · ·	Enterprise SQL DB/XML Files/Socket (Catch System Option)				
Gene On evaluation term evaluation	erai	15 20 deg C//0 00 de _ 5				
Operating temperature		15-30 deg. C(60-90 deg. F)				
Operating humidity		15-80 % RH				
External size	W736 x D874 x H450 (29.0" x 34.4" x 7.7")	W940 x D1015 x H500 (37.0" x 34.0" x 19.7")	W1157 x D1015 x H500 (45.55" x 34.0" x 19.7")			
Weight	65kg (143lbs)	110kg (243lbs)	120kg (265lbs)			

Mek Europe reserves the right to change the design and specifications without notice. © Mek Europe BV, October 2021. Rev6

Represented/Distributed by:

Marantz Electronics, Ltd. 4th floor, Hi-Tech Center, YBP, Hodogaya-ku Yokohama-city, Kanagawa, 240-0005 Japan matter

