ViTrox
...innovating vision

V310i API

Advanced 3D Solder Paste Inspection (API)

ViTrox Technologies Sdn. Bhd. [507043-P]
746, Persiaran Cassia Selatan 3, Batu Kawan Industrial Park, 14110 Bandar Cassia, Penang, Malaysia. Tel: [+60] 4 545 9988 Fax: [+60] 4 545 9987 Email: enquiry@vitrox.com

ViTrox Worldwide Sales & Service
North America South America Europe Asia Pacific

China Division
Tel: [+86] 512 6251 9891

ViTrox USA (San Jose)
Tel: [+1] 970 481 3663

ViTrox Technologies GmbH
Tel: [+49] 1525 3666666

www.vitrox.com

[V310i 3D Series] REV00/ 03-2021

V310i Series

Advanced 3D Solder Paste Inspection (API)

Designed for paste inspection to increase high throughput productivity in SMT production line.

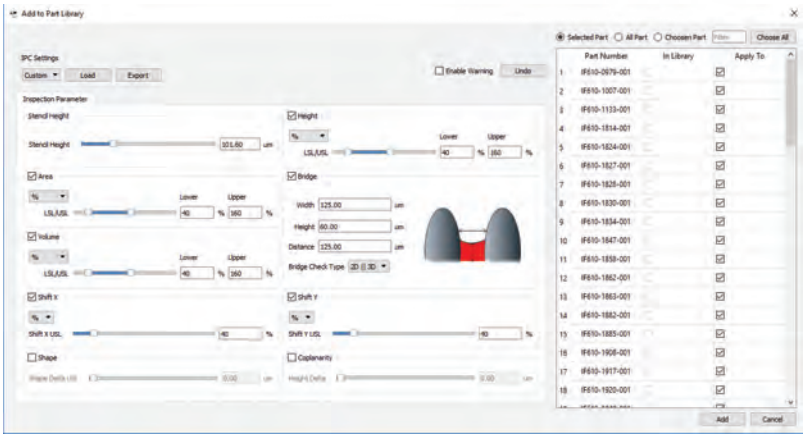
Key Benefits

- High Speed performance API system in market
- Powerful reporting for data analysis and performance monitoring
- 4.0 Smart Manufacturing Ready
- Preferred choice by consumer, automotive, and telecommunication sectors
- 95% Shareable wear & tear spare parts between 3D AOI and 3D API under one similar machine
- Competitive Cost of Ownership

Breakthrough Technologies

1 Ultra Smart AI Programming

Access the Gerber file of the stencil and start inspection immediately without the need for parameter setting and learning.



2 Advanced Process Optimization

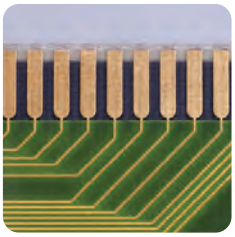
Collaborate with market known printer and pick & place partners. ViTrox AI profiles out the best printer settings for each production model. This is achieved through continuous data collection on printer optimization activities.

Interconnection between Printer, API & SMT

3 Unique Inspection Coverage

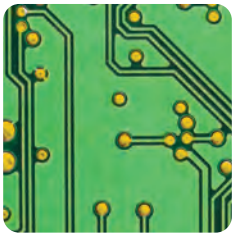
Cater to various inspection coverages within a modified machine platform including gold finger, distance measurement, gold pads, red glue by using ViTrox generic programming platform.

LED



Gold Finger

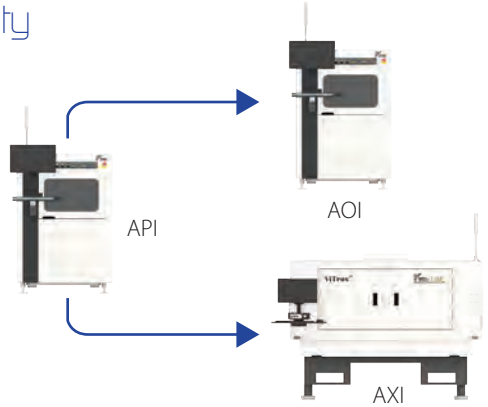
Red Glue



Gold Pads

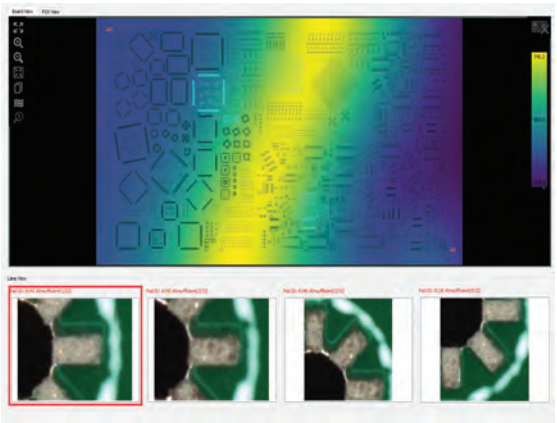
4 Real-Time Closed Loop System Connectivity

Integrate with all ViTrox family inspection systems to create a closed-loop communicated ecosystem to maintain and improve production process efficiency, yield, and quality. Achieved through model parameter sharing and single-learning -multiple-machine linkages to minimize programming time.



5 Powerful PCB Analysis

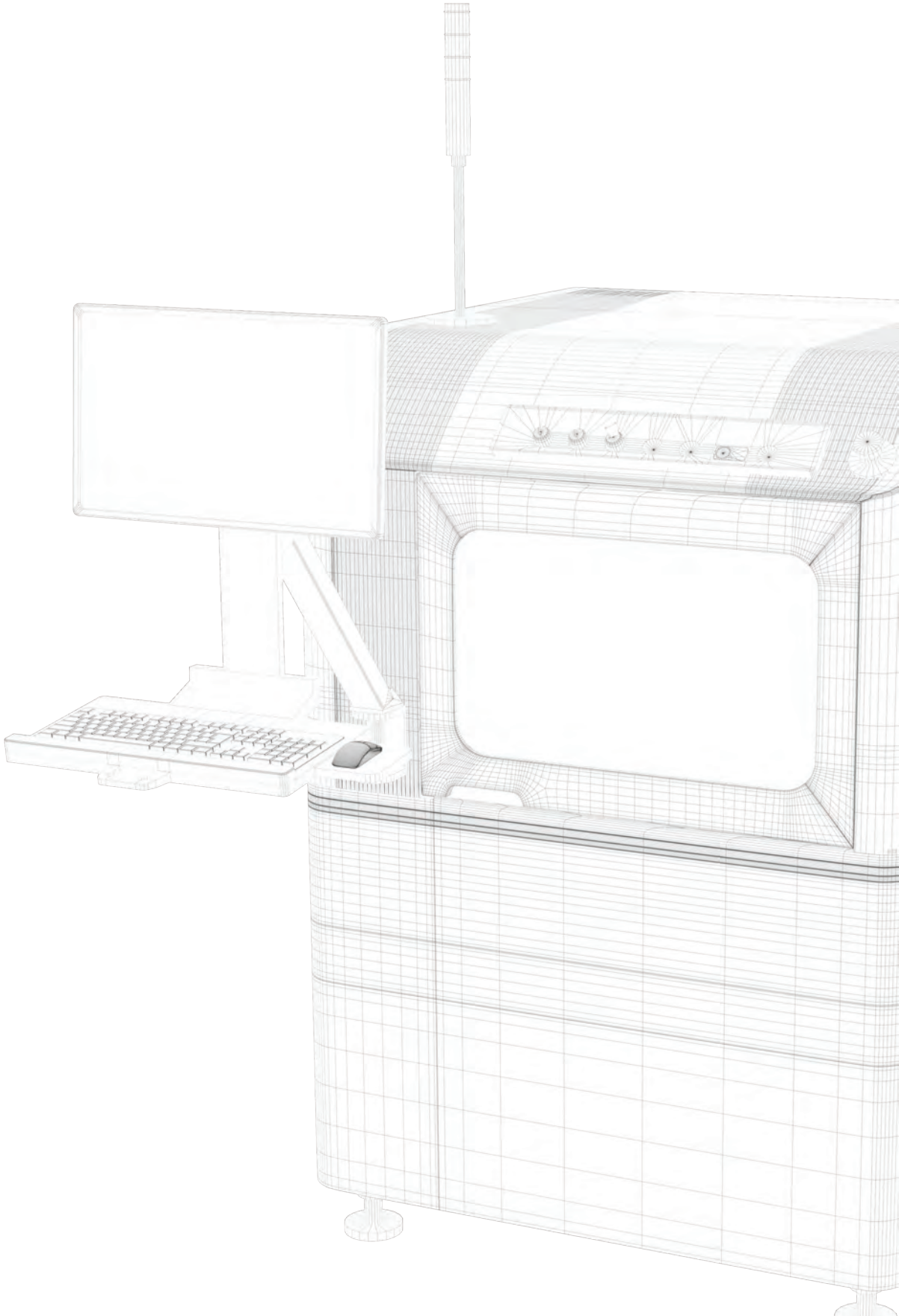
Analyze board warpages and prevent it from flowing through to the next process to achieve optimum quality with no rework cost.



V310i Series

Advanced 3D Solder Paste Inspection (API)

Designed for solder paste inspection to increase high throughput productivity in SMT production line.



V310i Optimus 3D

System Performances	
Inspection Functions	Missing, XY Offset, solder height, solder area, solder volume and bridge.
Board & Component Level Tracebility	Camera-Read Barcodes; External Barcode Reader Configured; OCR Capability with Batch Code Logging

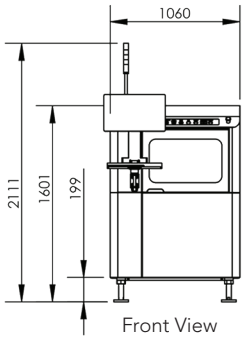
System Hardware	
Operating System	Windows 10 Pro (64 bit)
Camera & FOV Size	12MP Coaxpress Camera 60x45 mm @ 15µm resolution
Optical Resolution	Default: 15µm telecentric lens* Option: 13µm telecentric lens* Option: 8µm telecentric lens*
Inspection Speed	4MP @ 20um resolution: 22-37cm²/sec, 12MP @ 15um resolution: 45-60cm²/sec
3D Technologies	Phase Shift Profilometry's (PSP) Methodology with 4-way projectors
Lighting Module	Concurrent Lighting Module
X-Y Gantry System	Gantry Robot Systems with Linear Motor and Optical Linear Encoders
Conveyor Width Adjustment	Auto Width Adjustment; Bottom-Up Clamping; In-line SMEMA

PCB Dimension	Standard	FDL
Maximum PCB Size (L x W)	510mm x 510mm (20"x20") *(2 projectors or 4 projectors with extended casing)* 450mm x 510mm (17.7''x20'') *(4 projectors without extended casing)*	DL Equal: 510mmx235.0mm (20"x9.2") Single Lane: 510mmx420.0mm (20"x16.5") *(2 projectors or 4 projectors with extended casing)* DL Equal: 450.0mmx235.0mm (17.7''x9.2'') Single Lane: 450.0mmx420.0mm (17.7''x16.5'') *(4 projectors without extended casing)*
Minimum PCB Size (L x W)	50x50mm (2"x2")	50x50mm (2"x2")
Maximum PCB Inspectable Area (L x W)	510mmx503mm (20"x19.8") *(2 projectors or 4 projectors with extended casing)* 450mmx503mm (17.7''x19.8'') *(4 projectors without extended casing)*	DL Equal: 510mmx228mm (20"x8.9") Single Lane: 510mmx413mm (20"x16.2") *(2 projectors or 4 projectors with extended casing)* DL Equal: 450mmx228mm (17.7''x8.9'') Single Lane: 450mmx413mm (17.7''x16.2'') *(4 projectors without extended casing)*
Maximum PCB Thickness	4mm (0.15")	
Minimum PCB Thickness	0.5mm - 4mm (0.02" - 0.16")	
Maximum PCB Weight	3kg	
Top clearance of PCB	50mm	
Bottom clearance of PCB	70mm	
Panel Edge Clearance	3.5mm	
PCB Transport Height	875mm - 965mm	
PCB Temperature	Ambient operating temperature is ~5°C to 40°C, maximum PCB temperature 80°C.	

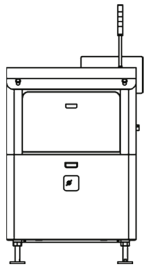
Specifications are subject to change.

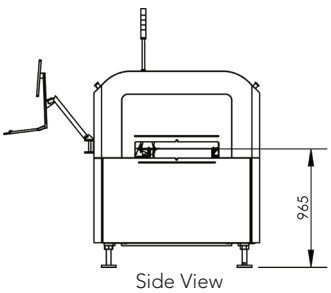
Installation Specification

System footprint (Width X Depth X Height)	1060mm x 1353mm x 2111mm
Weight	~830 kgs
Electrical Supplies	100-120 V, 16A/200-240V, 8A Single Phase
Air Requirement	NA

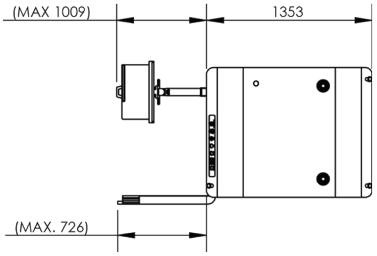


Front View


Back View



Side View



Top View

V310i XL

System Performances	
Inspection Functions	Missing, XY Offset, solder height, solder area, solder volume and bridge.
Board & Component Level Tracebility	Camera-Read Barcodes; External Barcode Reader Configured; OCR Capability with Batch Code Logging

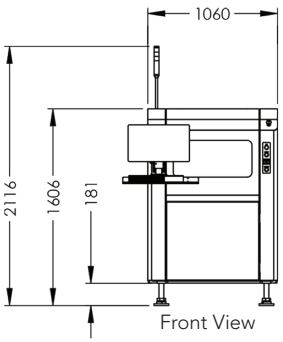
System Hardware	
Operating System	Windows 10 Pro (64 bit)
Camera & FOV Size	12MP Coaxpress Camera 60x45 mm @ 15µm resolution
Optical Resolution	Default: 15µm telecentric lens* Option: 13µm telecentric lens* Option: 8µm telecentric lens*
Inspection Speed	4MP @ 20um resolution: 22-37cm²/sec, 12MP @ 15um resolution: 45-60cm²/sec
3D Technologies	Phase Shift Profilometry's (PSP) Methodology with 4-way projectors
Lighting Module	Concurrent Lighting Module
X-Y Gantry System	Gantry Robot System with Linear Motor and Optical Linear Encoder
Conveyor Width Adjustment	Auto Width Adjustment; Bottom-Up Clamping; In-line SMEMA

PCB Dimension	Standard	FDL
Maximum PCB Size (L x W)	460mm x 690mm (18.1''x27.2'')	DL Equal: 460mm x 325mm (18.1''x12.8'') Single Lane: 460mmx600mm (18.1''x23.6'')
Minimum PCB Size (L x W)	50x50mm (2"x2")	50x50mm (2"x2")
Maximum PCB Inspectable Area (L x W)	460mmx683mm (18.1''x26.8'')	DL Equal: 460mmx318mm (18.1''x12.5'') Single Lane: 460mmx593mm (18.1''x23.3'')
Maximum PCB Thickness	7mm (0.27")	
Minimum PCB Thickness	0.5mm - 4mm (0.02" - 0.16")	
Maximum PCB Weight	3kg	
Top clearance of PCB	50mm	
Bottom clearance of PCB	100mm	
Panel Edge Clearance	3.5mm	
PCB Transport Height	875mm - 965mm	
PCB Temperature	Ambient operating temperature is ~5°C to 40°C, maximum PCB temperature 80°C.	

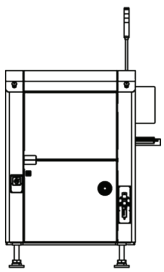
* *Based on system configuration.*

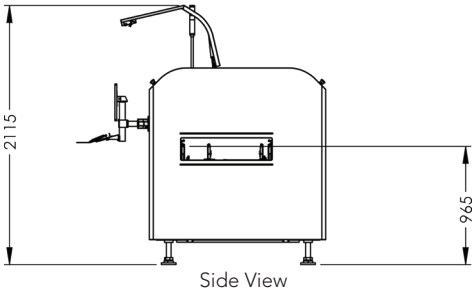
Specifications are subject to change.

Installation Specification	
System footprint (Width X Depth X Height)	1060mm x 1440mm x 2116mm
Weight	~1000kgs
Electrical Supplies	100-120 V, 16A/200-240V, 8A Single Phase
Air Requirement	0.6 Mpa/85 psi

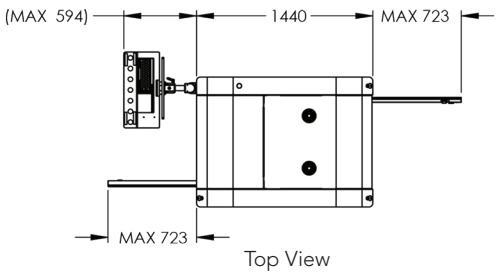


Front View


Back View



Side View



Top View

V310i XXL

System Performances	
Inspection Functions	Missing, XY Offset, solder height, solder area, solder volume and bridge.
Board & Component Level Tracebility	Camera-Read Barcodes; External Barcode Reader Configured; OCR Capability with Batch Code Logging

System Hardware	
Operating System	Windows 10 Pro (64 bit)
Camera & FOV Size	12MP Coaxpress Camera 60x45 mm @ 15µm resolution
Optical Resolution	Default: 15µm telecentric lens* Option: 13µm telecentric lens* Option: 8µm telecentric lens*
Inspection Speed	4MP @ 20um resolution: 22-37cm²/sec, 12MP @ 15um resolution: 45-60cm²/sec
3D Technologies	Phase Shift Profilometry's (PSP) Methodology with 4-way projectors
Lighting Module	Concurrent Lighting Module
X-Y Gantry System	Gantry Robot System with Linear Motor and Optical Linear Encoder
Conveyor Width Adjustment	Auto Width Adjustment; Bottom-Up Clamping; In-line SMEMA

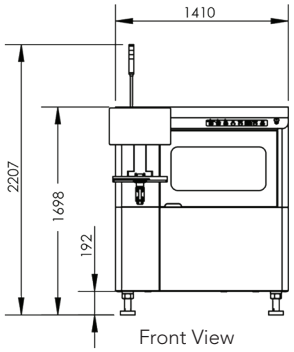
PCB Dimension	Standard	FDL
Maximum PCB Size (L x W)	620mm x 690mm (24.4"x27.2") Option: 960mm x 690mm (37.8''x27.2'')	DL Equal: 620x325mm (24.4"x12.8") Single Lane: 620x600mm(24.4"x23.6") Option: DL Equal: 960x325mm (37.8"x12.8") Single Lane: 960x600mm (37.8"x23.6")
Minimum PCB Size (L x W)	50x50mm (2"x2")	50x50mm (2"x2")
Maximum PCB Inspectable Area (L x W)	620mmx683mm (24.4"x27.1") Option: 1200x683mm (47.2"x27.2")	DL Equal: 620mmx318mm (24.4"x12.5") Single Lane: 620mmx593mm (24.4"x23.3") Option: DL Equal: 960mmx318mm (37.8"x12.5") Single Lane: 960mmx593mm (37.7"x23.3")
Maximum PCB Thickness	15mm (0.59")	8mm (0.31")
Minimum PCB Thickness	0.5mm (0.02")	
Maximum PCB Weight	7kg	
Top clearance of PCB	50mm	
Bottom clearance of PCB	70mm	
Panel Edge Clearance	3.5mm	
PCB Transport Height	890mm - 965mm	
PCB Temperature	Ambient operating temperature is ~5°C to 40°C, maximum PCB temperature 80°C.	

* *Based on system configuration.*

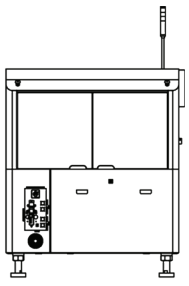
Specifications are subject to change.

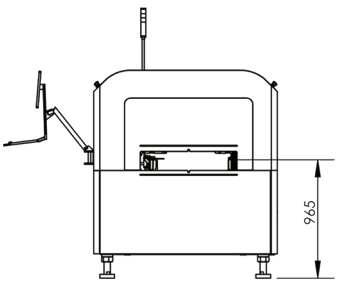
Installation Specification

System footprint (Width X Depth X Height)	1410mm x 1500mm x 2207mm
Weight	~1350kgs
Electrical Supplies	100-120 V, 16A/200-240V, 8A Single Phase
Air Requirement	0.6 Mpa/85 psi

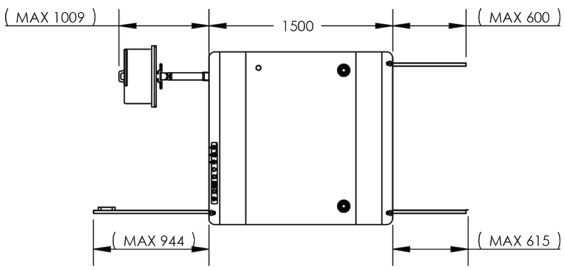


Front View


Back View



Side View



Top View

V310i SE

System Performances	
Inspection Functions	Missing, XY Offset, solder height, solder area, solder volume and bridge.
Board & Component Level Tracebility	Camera-Read Barcodes; External Barcode Reader Configured; OCR Capability with Batch Code Logging

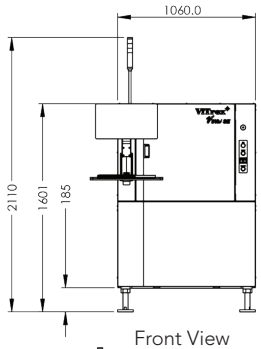
System Hardware	
Operating System	Windows 10 Pro (64 bit)
Camera & FOV Size	12MP Coaxpress Camera 60x45 mm @ 15µm resolution
Optical Resolution	Default: 15µm telecentric lens* Option: 13µm telecentric lens* Option: 8µm telecentric lens*
Inspection Speed	4MP @ 20um resolution: 22-37cm²/sec, 12MP @ 15um resolution: 45-60cm²/sec
3D Technologies	Phase Shift Profilometry's (PSP) Methodology with 4-way projectors
Lighting Module	Concurrent Lighting Module
X-Y Gantry System	Gantry Robot Systems with Linear Motor and Linear Magnetic Encoders
Conveyor Width Adjustment	Auto Width Adjustment; Bottom-Up Clamping; In-line SMEMA

PCB Dimension		
Maximum PCB Size (L x W)	510mmx540mm (20"x21.2")	Single Lane: 510mmx450mm (20''x17.7'') DL Equal: 510mmx250mm (20"x9.8")
Minimum PCB Size (L x W)	50x50mm (2"x2")	50x50mm (2"x2")
Maximum PCB Inspectable Area (L x W)	510mmx533mm (20"x20.9")	Single Lane: 510mmx443mm (20''x17.4'') DL Equal: 510mmx243mm (20"x9.5")
Maximum PCB Thickness	4mm (0.16")	
Minimum PCB Thickness	0.5mm - 4mm (0.02" - 0.16")	
Maximum PCB Weight	3kg	
Top clearance of PCB	50mm	
Bottom clearance of PCB	100mm	
Panel Edge Clearance	3.5mm	
PCB Transport Height	875mm - 965mm	
PCB Temperature	Ambient operating temperature is ~5°C to 40°C, maximum PCB temperature 80°C.	

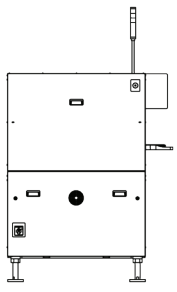
** Based on system configuration.*

Specifications are subject to change.

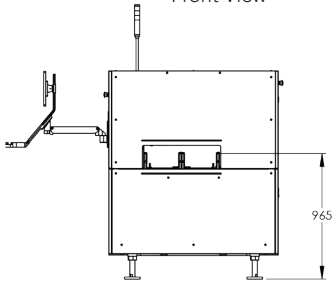
Installation Specification	
System footprint (Width X Depth X Height)	1060mm x 1303mm x2000mm
Weight	~850kgs
Electrical Supplies	100-120 V, 16A/200-240V, 8A Single Phase
Air Requirement	0.6 Mpa/85 psi



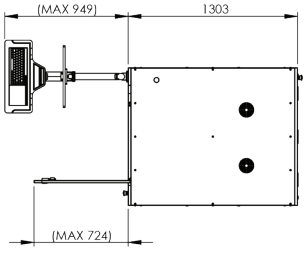
Front View



Back View



Side View



Top View