



Optiohm V8055 — Automatic Optical Inspection (shown: inline)

Built for through-hole boards. The V8055 inspects automated-insertion and manually soldered components on THT PCBAs using Optiohm Vision OS — a teach-based inspection engine with built-in SPC, role-based access and full traceability.

■ **Auto program switching**

Recognizes the board from a taught board mark and loads the right job automatically — no manual changeover.

■ **Smart placement recognition**

Correct identification even when components sit with placement offset.

■ **Zero false-call parameters**

Tuning controls that remove false calls without hiding real defects.

■ **Intelligent defect judging**

AI-assisted component classification, MI and SMD detection.

■ **Barcode / QR reading**

Reads board codes and ties every result to a serial number.

■ **Closed-loop line control**

Board-present sensor trigger, hold gate and reject pusher driven by the inspection verdict.

■ **Two variants, one software**

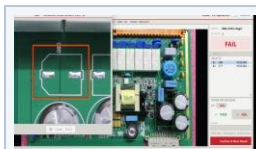
V8055-IL (5 MP) for inline conveyor lines, V8055-TT (48 MP) for bench-top stations.

PRODUCT SPECIFICATION — V8055

CATEGORY	PARAMETER	V8055-IL • INLINE	V8055-TT • TABLE TOP
Imaging System	Camera	5 MP intelligent high-definition industrial camera	48 MP industrial-grade camera
	Camera resolution	5 MP; 15 µm/pixel, FOV 38 × 30 mm	48 MP, FOV 50 mm manual adjustable
	Camera interfaces	Basler GigE (native), USB camera, IP / Wi-Fi camera source	
	Capture mode	Smooth live preview with on-demand full-resolution capture for each inspection; selectable preview / capture resolution, exposure mode and image sharpening	
	Light source	External	
Inspection Items	Target boards	Through-hole (THT) assemblies: automated-insertion and manually soldered components. Optional SMD presence check.	
	Programming mode	Teach mode: load a golden image and annotate ROIs with Fiducial, Template, Colour, Hole, Polarity, Smart, Jumper, Barcode, OCR, MI, SMD and Panel tools; auto-detect assist; live preview before saving	
	Component inspection	Missing component, wrong component, polarity, placement offset, jumper / metal-link presence, hole check, colour check, body-mark OCR check, barcode / QR read	
	Smart placement recognition	Recognises each component correctly even when placement is offset, with no extra programming per board	
	Zero false-call control	Dedicated tuning parameters (alignment threshold, fiducial search area, hole threshold, polarity tolerance) drive false calls to zero while keeping real defects flagged	
	Intelligent judging	One-class machine-learning classifier trained per job on taught templates (histogram, edge and keypoint features)	
	Solder / link check	Solder-bridge and metal-link continuity check at taught locations, with 3D jumper surface view. Full solder-joint profiling:	
	Minimum part size	Standard & customised	

CATEGORY	PARAMETER	V8055-IL • INLINE	V8055-TT • TABLE TOP
Test PCB Specification	PCB size range	50 mm × 450 mm to 500 mm	50 mm × 450 mm to 500 mm
	PCB thickness range	0.5 – 5.0 mm	0.5 – 5.0 mm
	Maximum PCB weight	3kg	N/A
	PCB curvature	< 5mm or 2% of diagonal length	< 5mm or 2% of diagonal length
	PCB clearance	Top: 30 Bottom: 60	Top: N/A; Bottom: N/A
	Panel / multi-up	Panel layout up to 100 boards (rows × columns with pitch and per-board offset correction)	
Transmission Mechanism	Check result output	22-inch screen; PASS / FAIL result window with failed-item images and operator decision; board-hold / reject output	22-inch screen; PASS / FAIL result window with failed-item images and operator decision
	Board loading	Automatic conveyor transfer with board-present sensor	(manual / fixture loading / smart recognition)
	Flow direction / speed	LIRO / RILO	N/A
	Height above ground	On conveyor	(bench height)
		Auto / Manual	
	Line interface	I/O controller: board sensor, normally-closed hold gate, reject pusher, buzzer. SMEMA:	N/A
Hardware & Environment	Operating system	Windows 10 / 11	Windows 10 / 11
	Operator panel	Start / Stop buttons, emergency stop, front USB ports, tower light	
	Power supply	AC 220V, 50/60Hz, less than 1.5 KVA	AC 220V, 50/60Hz, less than 1.5 KVA
	Air pressure	Not required	Not required
	Equipment weight	TBD	TBD
	Equipment dimensions	500mm (L) × 640mm (W) × 750mm (H)	N/A
Extended Functions	Temperature / humidity	10 – 35°C; 35 – 80% (no condensation)	
	Safety regulation	Complies with CE safety standard	
	Barcode system	Automatic QR / barcode reading from a taught ROI; result tied to board serial number	
	OCR	Offline body-mark OCR (PP-OCR on ONNX Runtime, PaddleOCR fallback) compared against taught text	
	Auto program switching	Multi-job automatic switching using taught board mark; job groups of 2 or more products	
	Remote control	Remote operation through TCP/IP	
	PLC interface	Board detection link to external controller over USB-serial (port and baud configurable); industrial PLC protocol: <i>TBD</i>	
	SPC & reports	Built-in SPC dashboard, defect images, printable PDF report and CSV export	
	User management	Role-based users (operator / engineer / admin), password login, operator-override logging	
	Software licensing	Licence check at start-up; teach models stored encrypted	

SOME TEST CONTENTS



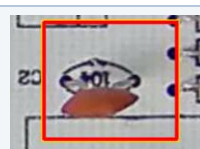
Missing component



Wrong component



Polarity reversed

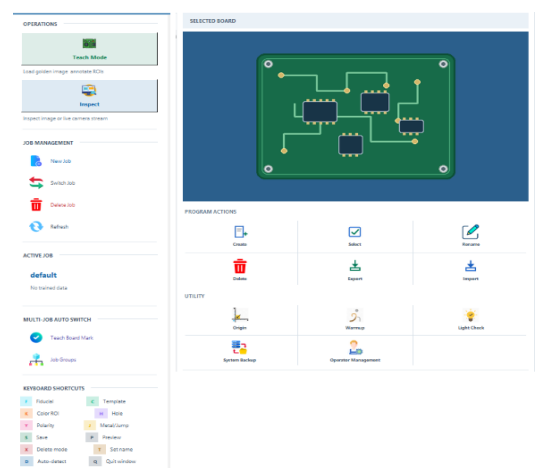
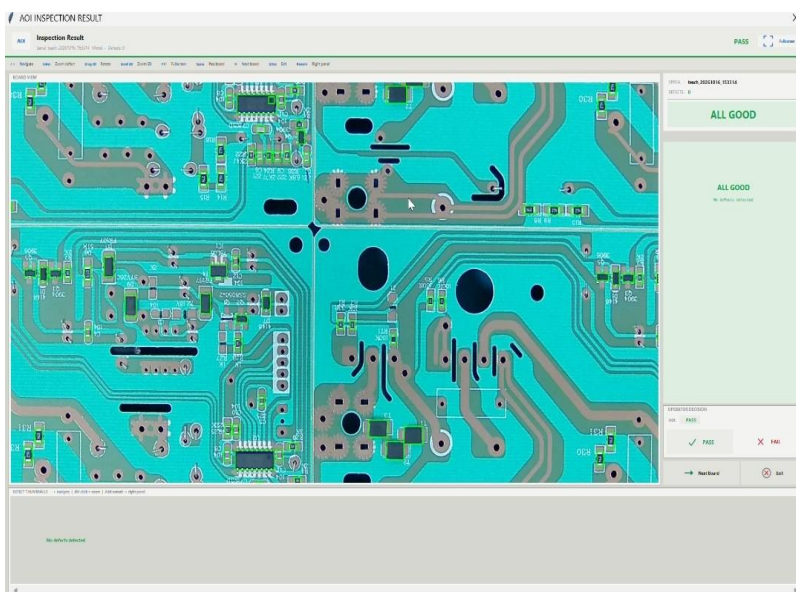


Placement offset



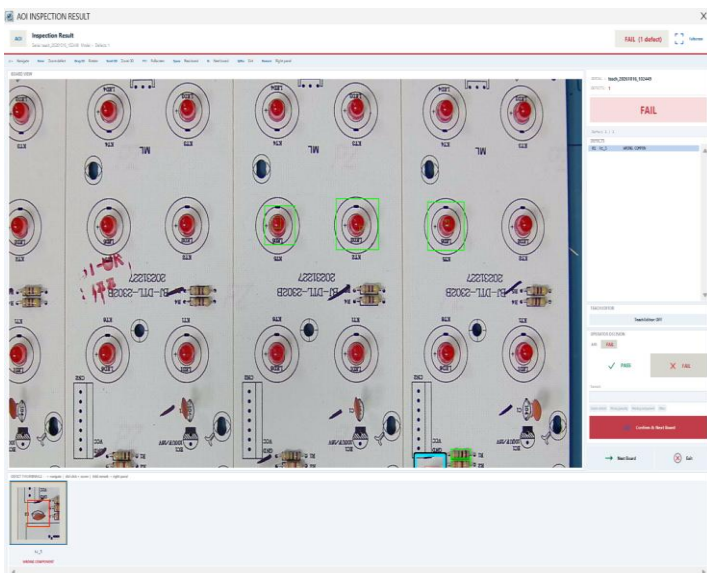
Jumper / link missing

Optiohm Vision OS — Teach & Program Management

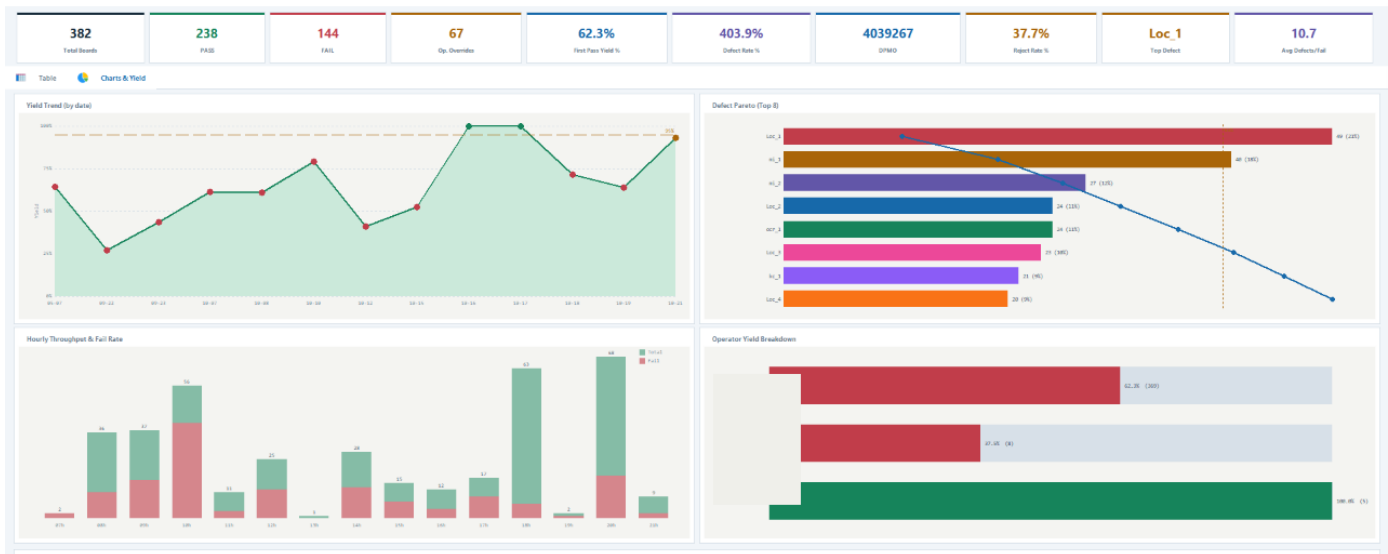


Job management, auto program switch and program actions

SMT & THT Samples



Statistical Process Control (SPC)



SPC dashboard — yield trend, defect Pareto, hourly throughput and operator yield. Screenshot shows sample test data.

- Live KPIs: total boards, pass / fail, first-pass yield, DPMO, reject rate, top defect and average defects per fail
- Charts: yield trend, defect Pareto (top 8 with cumulative line), hourly throughput and fail rate, operator yield breakdown
- Filter by date, serial, job, operator and verdict; one-click Print Report, PDF report and CSV export; auto-refresh
- Every inspected board logged with serial number, job, defects, operator, remark, location and defect images
- Operator overrides are recorded: the machine verdict is stored separately from the final operator decision
- Configurable log retention (days) with manual purge

PRODUCTION-LINE INTEGRATION

- Board-present sensor over PLC-class controller) triggers capture
- Configurable capture delay after sensor on, or software stable-frame trigger when no sensor is fitted
- Normally-closed hold gate: opens only when the board passes (AOI or operator PASS)
- Reject pusher: solenoid armed on FAIL and fired when the board reaches the pusher sensor
- PASS / FAIL operator decision panel with remark entry; buzzer and tower-light feedback
- Camera sources: Basler GigE

ACCESS, SECURITY & SUPPORT

- **Operator:** inspect only — no teaching or job changes
- **Engineer:** teach, job management, SPC dashboard, create / manage operators
- **Admin:** all engineer rights plus user management, system log and settings control
- Password login
- Teach models and AI classifiers
- Settings: General, Camera, Board Sensor, Calibration, Maintenance
- Built-in help, troubleshooting guide and support e-mail draft; high-DPI Windows UI