

NEW

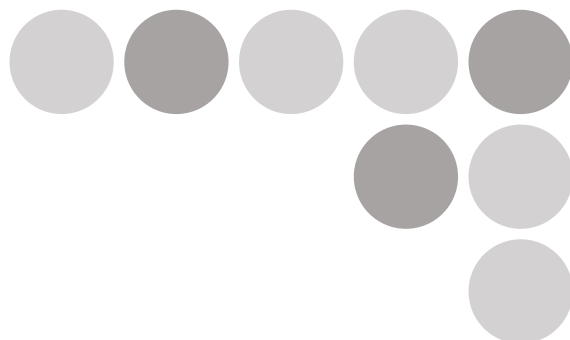
Inline PCB inspection system

VT-S500-02

OMRON

Best quality @min.Q-cost

VT-S500series



realizing



Market environment

Various needs surrounding the surface mount industry

Globalized issues in the surface mounting industry

Demands from the market

Intensified cost competition

Super mass-production

Diversification of mount components

OMRON presents the quality you require at the minimum cost.
The inspection system meeting the market demands.



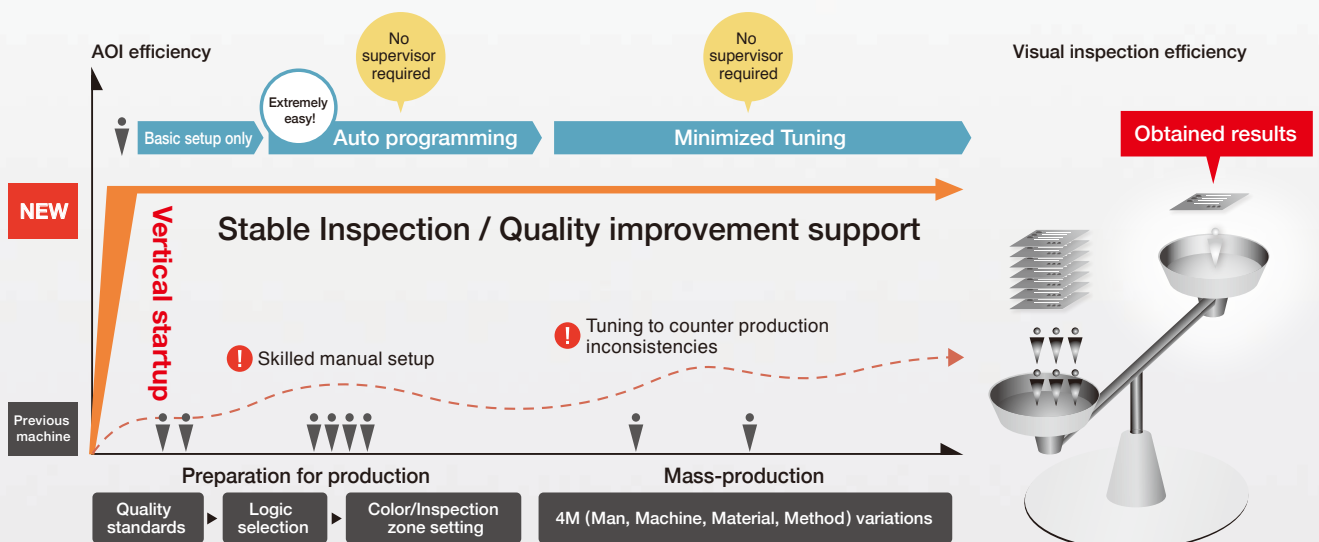
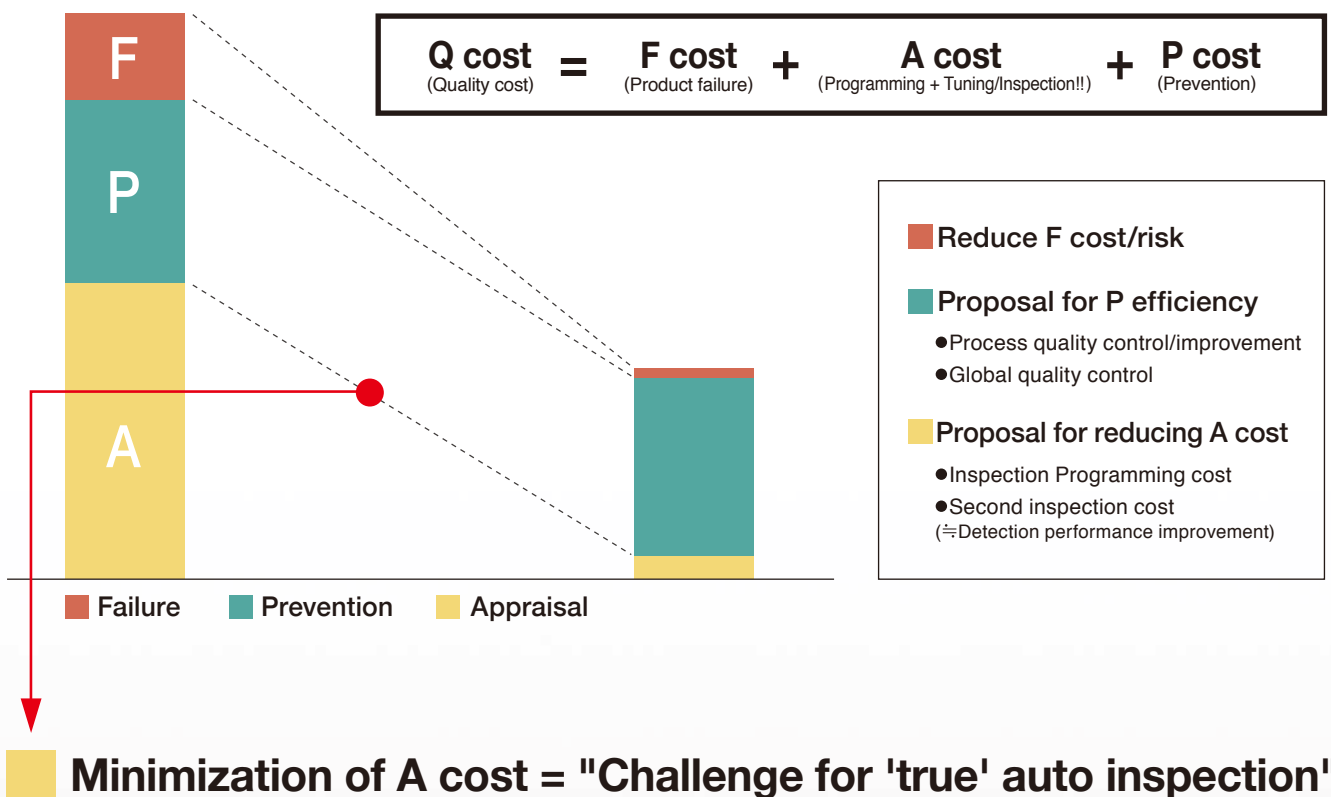
**Vertical
startup of
inspection**

**High-speed/
stable
inspection**

**Quality
improvement
support**

New concept in AOI for "optimization of customer's quality cost".

The system uses innovative technologies to greatly reduce "inspection costs," which has been a major issue in conventional AOI technologies. Moreover, while harnessing quality improvement systems, it facilitates efficient "defect prevention" to contribute to the reduction of "the end customer failure costs."



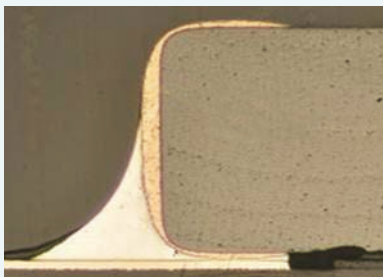
VT-S500 for realizing vertical s

Vertical startup of inspection

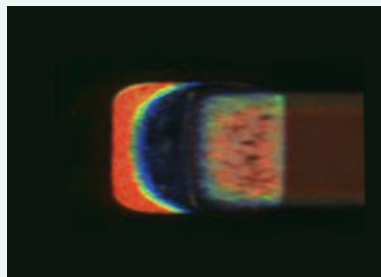
High-speed/stable inspection

Equipped with Color Highlight™ 3D

Core
Technology



Actual image



Captured Image

Automatic extraction of "fillet features"

"The VT-S500 uses new image processing technology to automatically extract fillet features, which are quantified in numerical values and used for inspection."

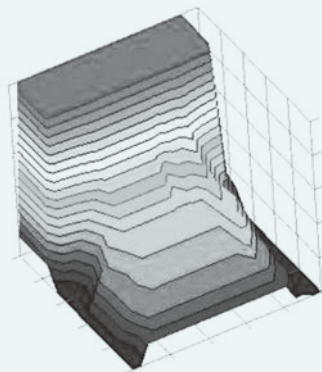
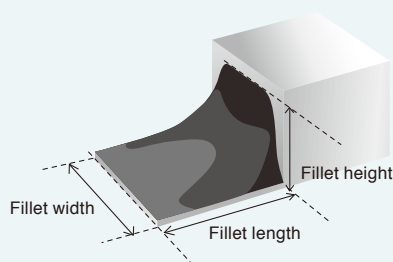


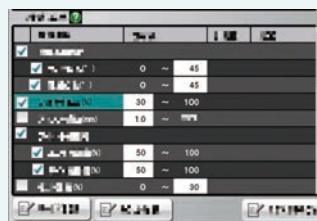
Image after internal processing

**Direct input of quality standards.
High-speed startup
with automatic programming.**

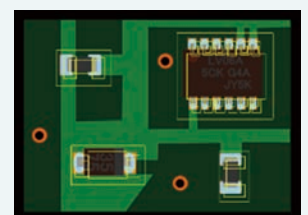
Patent
Pending



Automatic inspection programming is possible simply by setting inspection criteria for fillet features (length, height and width).



PCB position adjustment
Automatically detects the
land position according to



Before screen adjustment

Inspection accuracy has been improved
at the correct position using the new p
entire screen instead of the conventio

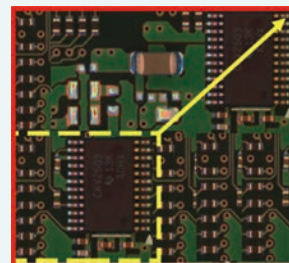
Startup and stable inspection

High-speed/stable inspection

Inspection time improves of 60%* compared with conventional models

Higher-speed inspection has become possible to respond to a significant increase in productivity.

* Compared with the evaluation result of VT-RNS2 series. (Omron's PCB)



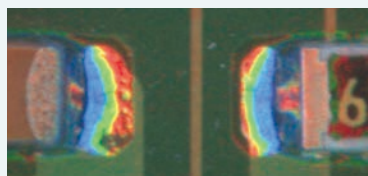
Available in dual lane

Dual lanes for reduced cycle time. Position of lanes can be selected according to the customer's production facility.

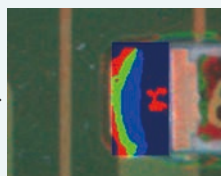


Minimize the effect of secondary reflection and shadow

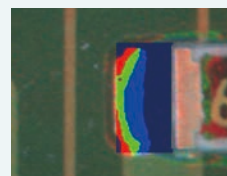
Parameters have been optimally set to pick up gradations unperceived by Human Eye and automatically separate good from bad components.



Example image of secondary reflection



Without Correction

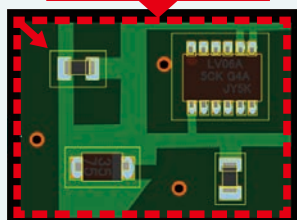


VT-S500 eliminates reflection

Adjustment algorithm

to offset position of
to PCB variation and warpage.

Correctable even by
the unit of the screen



After screen adjustment

ed and it has become possible to inspect
position adjustment method based on the
nal land-based adjustment.

Auto parameter calculation to counteract the variation of components

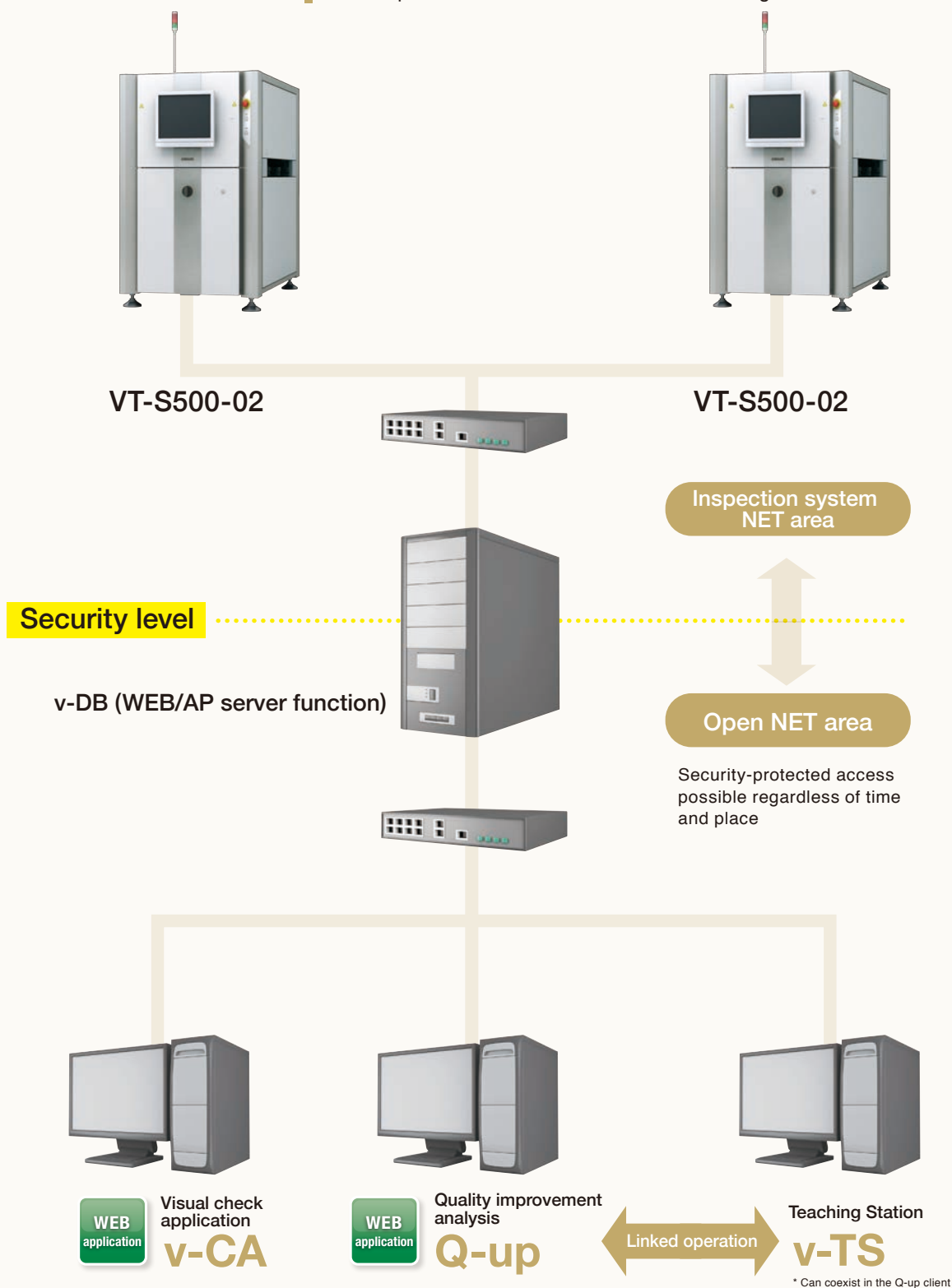


In order to cope with component inconsistencies, parameters can be automatically calculated - simply by registering required components.

System

Quality improvement support

Different security levels can be assigned to the inspection system and its peripheral devices. The peripheral devices are connectable via an open network for location-free networking.



Flexible access to the tools by Web application.

solution

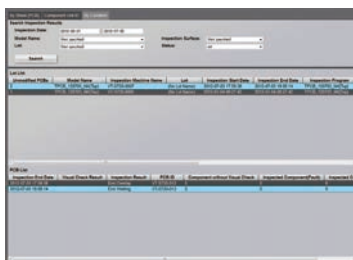
WEB application

v-CA



Visual check application

Inspection result can be obtained using such as PCB-ID and lot number, facilitating visual check of defective locations.



Listing by PCB-ID and lot number



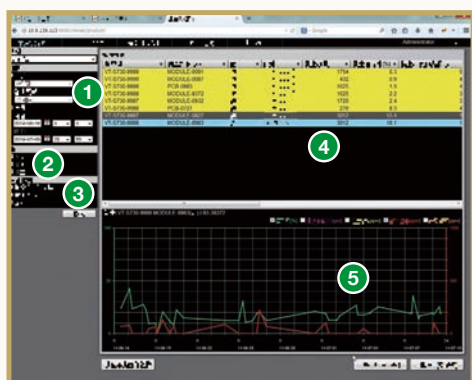
Inspection result check screen

WEB application

Q-up Navi



Monitoring of production status and quantification of defect causes/tendencies enable the acceleration of process improvement and process control cost reduction, while enhancing quality improvement support.



Quality/production control screen

Monitor

Pass rates and real fault rates can be checked in real time to swiftly manage quality issues.

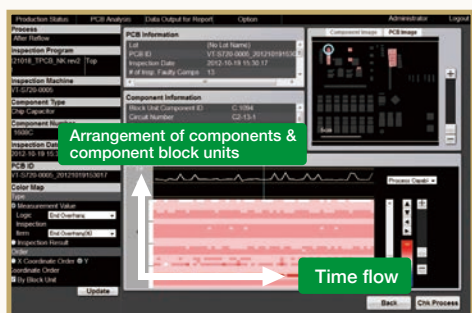
- 1 Production shift
- 2 Can select calculation units of inspection programmes from single and multiple production lines
- 3 Can check abnormal production conditions using preset warnings parameters
- 4 Can check for production anomaly using preset warning value
- 5 Can check in real time the production conditions such as first pass yield and real defect rate

Process stability check

Color map

Check

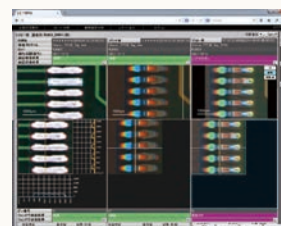
A Unique Fast and Easy visual method, identifying trends in process control, without the need for special skill and analysis time.



Monitoring of the impact from product inconsistencies



Analysis function
Shows real faults and false alarms in Pareto chart



Process comparison
Patent No.3994925

Prevention of defects

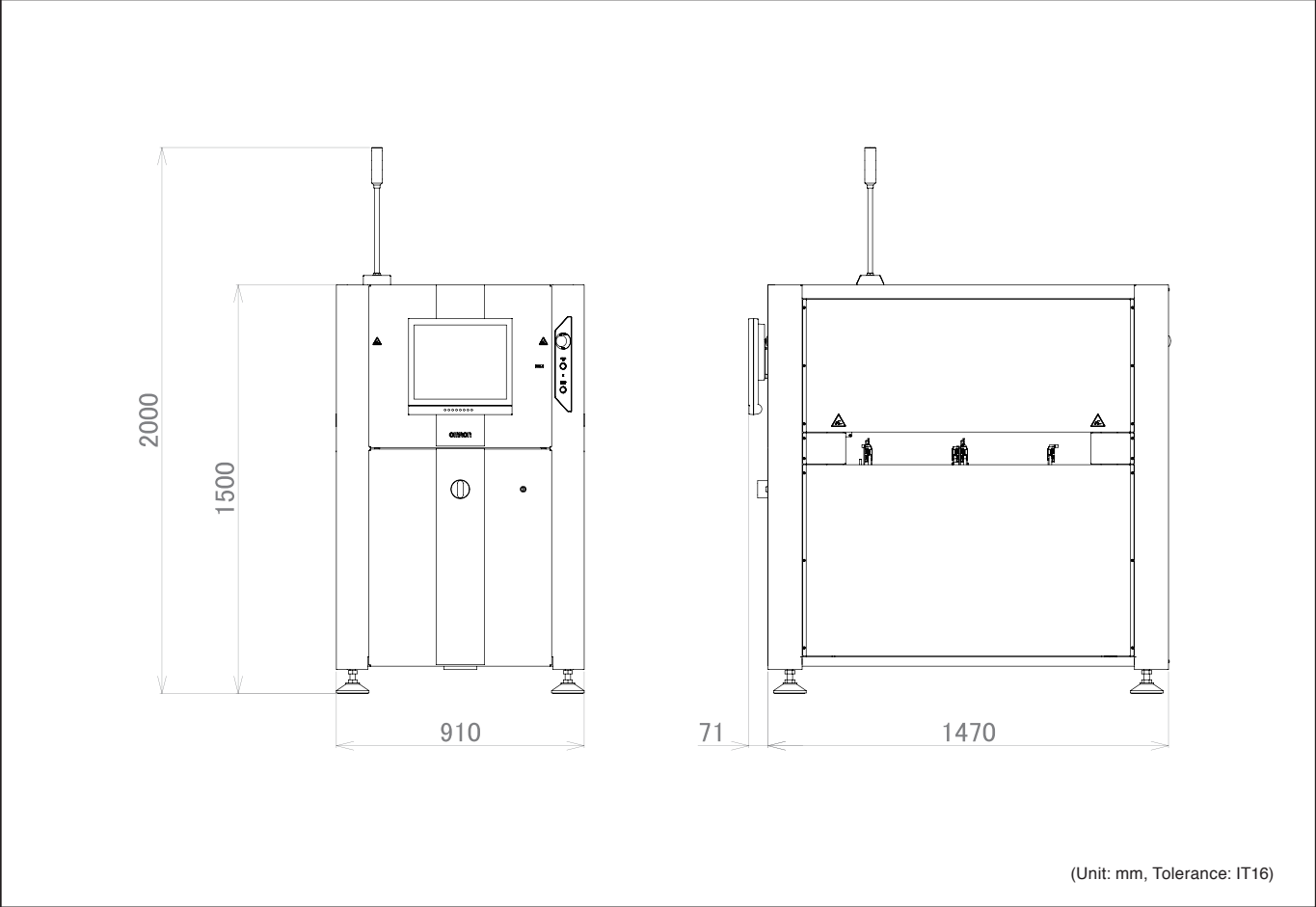
Specifications

Image signal input unit	Imaging System	5Mpixel camera / Telecentric Lens
	Imaging Method	Color Highlight, 3D solder shape reconstruction
	Resolution	10μm, 15μm
Main unit	Feed method	Edge Belt Conveyor, Automatic Raid width Adjust
	Line height	900 ±20 mm Adjustment from adjustable feet
	PCB carrier width adjustment	Automatic
Power supply		200 to 240 VAC (single phase)
Ambient operating temperature		+10 to +35°C
Ambient operating humidity		35 to 80% RH (with no condensation)
Weight		Approx. 500kg
Dimensions		910 (W) × 1470 (D) × 1500 (H) mm

Functional Specifications

Inspectable PCBs	Type	Post-reflow/Flow/Post-placement
	Dimensions	Single lane: 50(W) × 50(D) to 510(W) × 610(D) mm Dual lane: 50 (W) × 50(D) to 510 (W) × 300(D) mm
	Thickness	0.4 to 4.0 mm
Clearance		Above PCB: 50 mm, Below PCB: 50 mm
Inspection items		Missing components, Wrong components, Component shifting (X/Y/skewing), Fillets (wettability length, height,width of the tip, wettability angle, length of the side), Land exposure, Polarity shifting, Polarity lifting Solder balls, Bridging, Objects,Through hole, Polarity, Inversion
Number of inspection points		10,000 components/PCB max.

VT-S500-02 Dimensions



- This document provides information mainly for selecting suitable models. Please read the Instruction Sheet carefully for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.
- This product may cause interference if used in residential areas.

OMRON Corporation

INDUSTRIAL AUTOMATION COMPANY
INSPECTION SYSTEMS BUSINESS DIVISION
SALES DEPARTMENT

Shinagawa Front Bldg. Conference 7F
2-3-13 Kounan Minato-ku Tokyo
108-0075 JAPAN
TEL +81-3-6718-3550 FAX:+81-3-6718-3553

OMRON INDUSTRIAL AUTOMATION
(CHINA) CO., LTD.

F20,TowerA,NEO Building,6011ShennanAvenue,
Futian District, Shenzhen, Guangdong
518048, China
TEL: +86-755-8359-9028 FAX: +86-755-8359-9628

Omron AOI Business Europe, Omron Europe B.V.

Zilverenberg 2, 5234 GM 's-Hertogenbosch, The Netherlands
TEL:+31 (0)736-481811 FAX: +31 (0)736-481879

OMRON ELECTRONICS LLC

2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A
TEL:+1-847-843-7900 FAX:+1-847-843-7787

OMRON ELECTRONICS KOREA CO.,LTD.

21F, KyoboTower B Wing, 465, Gangnam-daero,
Seocho-gu, Seoul, Korea 137-920
TEL: +82-2-3483-7789 FAX: +82-2-3483-7788

OMRON ASIA PACIFIC PTE LTD

438A Alexandra Road #05-05/08 (Lobby 2)
Alexandra Technopark Singapore 119967
TEL:+65-6835-3011 FAX:+65-6835-2711

Authorized Distributor: