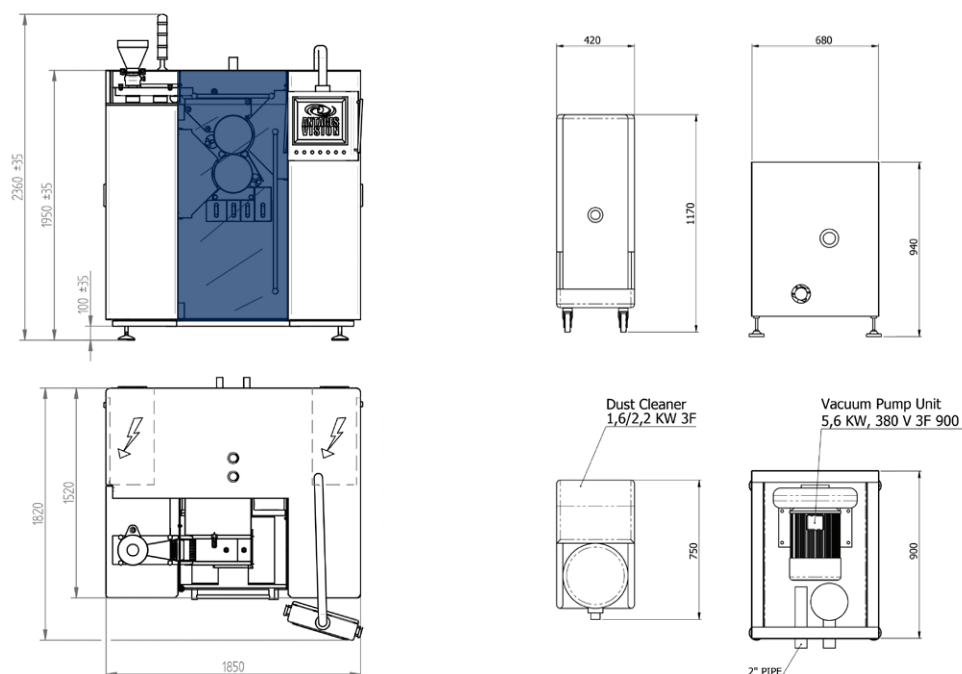


TECHNICAL SPECIFICATIONS

<b>INSPECTED PRODUCTS</b>	Capsules: hard / soft gelatines, plain / printed surface. Tablets: coated / uncoated, plain, embossed.
<b>APPLICABLE DIMENSIONS</b>	Round tablets: $\Phi < 15$ mm, H < 10 mm. Oblong tablets: L < 25 mm, H < 10 mm, T < 13mm. Capsules: sizes #5, 4, 3, 2, 1, 0
<b>OUTPUT</b>	Up to 300.000 products/hr
<b>CONTROLS PERFORMED</b>	Size, shape, damaged edges, color deviation, dots, dirt, uneven surfaces, cracks, dents, chips, holes, joints, coating defects, imprint quality, embossed quality
<b>ACCURACY</b>	Minimum detectable area: 100 $\mu$ m (0,001 mm <sup>2</sup> )
<b>DIMENSIONS (MM)</b>	1850 X 1820 X 2360 mm
<b>WEIGHT</b>	1800 kg
<b>CONSTRUCTION</b>	Materials compliant with CE, GMP, and FDA regulations
<b>MACHINE TYPE</b>	8 channels rotary double-drum handling
<b>PRODUCTS OUTLET</b>	1 outlet channel for good products 1 outlet channel for rejected products 1 outlet channel for products to be rechecked 1 outlet recovery channel for vagrant products Compressed air system and active verification sensors
<b>VISION HARDWARE</b>	6 color RGB CCD GiGE line scan cameras 2048 pixels Industrial PC based on I7 Intel processor White LED high power illuminators with optimized strobed light
<b>OTHER HARDWARE</b>	17" touch-screen, industrial PC (Windows OS) PDF printer for reports and audit trails
<b>FUNCTIONS</b>	Customised user access with password Setting of control parameters and tolerances Display of images of the last 20 rejected products USB and Ethernet ports to export receipts, reports and acquired images Compatible with 21 CFR part 11
<b>QUALITY AND VALIDATION</b>	User Requirements Specifications review, Quality Plan, Risk Analysis, Traceability Matrix, Functional Specification, Software Design Specification, Hardware Design Specification, FAT Protocol, SAT Protocol, IQ/OQ Protocol, Support to Customer SOPs upgrade, Validation Report
<b>SAFETY AND ALARMS</b>	Alarms for safety guard opening, minimum load, air system troubles, failed rejection E-mail management for alarms notification Colored warning lights and buzzers
<b>CLEANING SYSTEM</b>	Suction system to eliminate powder on various positions
<b>COMPRESSED AIR CONSUMPTION</b>	6 bar, 500l / min
<b>PLC/ MOTOR DRIVERS</b>	Siemens
<b>POWER SUPPLY</b>	380 Vac + 3F + G, 50 HZ, options depending on local standards, 12KW, UPS backup
<b>NETWORK CONNECTIVITY</b>	Giga Ethernet



**TCI**  
**TABLETS**  
**AND CAPSULES**  
**INSPECTOR**





# TCI TABLETS AND CAPSULES INSPECTOR

Antares Tablets and Capsules Inspector is an automatic standalone machine designed to inspect a wide range of pharmaceutical products at a high throughput with accuracy up to 100µm.

An eight channels rotary double-drum system handles products holding them in position by means of a vacuum system enabling the images to be acquired on the entire surface. The two drums are specially designed to handle products with no risk of damage, aligning capsules and tablets in front of the two inspection windows where the vision systems are placed.

The detection of even the smallest defect or imperfection is guaranteed by six color high resolutions cameras that acquire up to 8 images per product with an image resolution of 0,001 square millimeter. Capsules and tablets are illuminated by customized white LED illuminators using different lighting techniques (front and side light).

Defects identified on tablets and capsules include damaged edges, colour deviation, dots, dirt, uneven surfaces, cracks, dents, chips, holes, joints, coating defects, low imprint or embossed quality.

Products found to be defective following the analysis are automatically rejected by an air blow into a specific reject stainless steel container.

The active optical detector for products output verification ensures fail-safe and reliable operation on the rejected products and on the good products.

The machine is controlled via a user-friendly graphical interface on a 17" touch-screen monitor, providing simple operation for new formats creation by wizard setup, receipts recall and all the functions for the inspection.

Ergonomic design with a small number of parts allows very fast changeover as well as easy cleaning and maintenance operations.

## FEATURES AND BENEFITS

### A VERSATILE SYSTEM

- Wide range of inspected products.
- Wizard menu for new formats, modification of current format and recipes recall. Easy and quick format changeover with minimal change of format parts.
- Mechanical handling is not sensitive to dimensional variations, providing continuous automatic inspection even in case of highly variable products.

### PERFORMED CONTROLS

- Size discrepancies
- Shape defects
- Dots
- Dirt
- Cracks
- Color differences
- Bad embossed/ print quality
- Coating imperfections
- Chipped products
- Not forming products
- Holes
- Dents
- Joints
- Star end

### SMART AND EFFICIENT

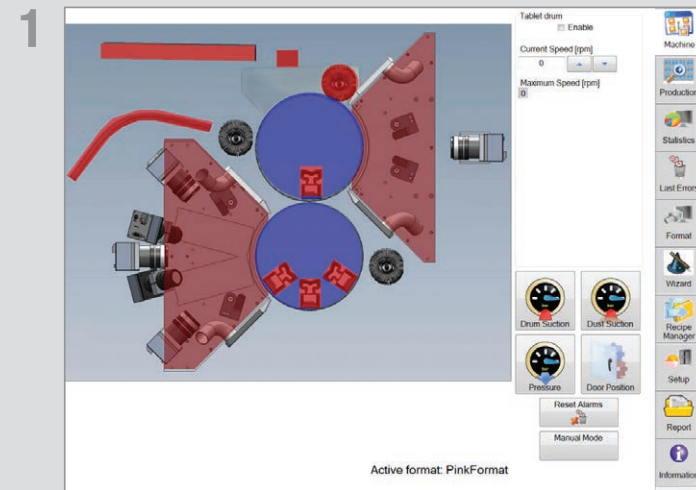
- High throughput (up to 300.000 products/hour).
- Identification of defects up to 100µm - on homogeneous surface.
- Simple training for inspection of new products.
- Eight channels rotary double-drum system for high quality color inspection of the entire surface with double lighting (front and side light).
- Very low false reject rate.
- Active optical detectors for products output verification.
- Advanced statistical analyses with visual defect-detection feedback, and detailed reject typology to help identifying the reject causes in the upstream production process.
- Easy cleaning and maintenance with accessible and tool-free format parts to facilitate manipulation.
- CFR 21 Audit Trail Reports can be stored as PDF files and printed by a printer in the network.

### ADVANCED HMI

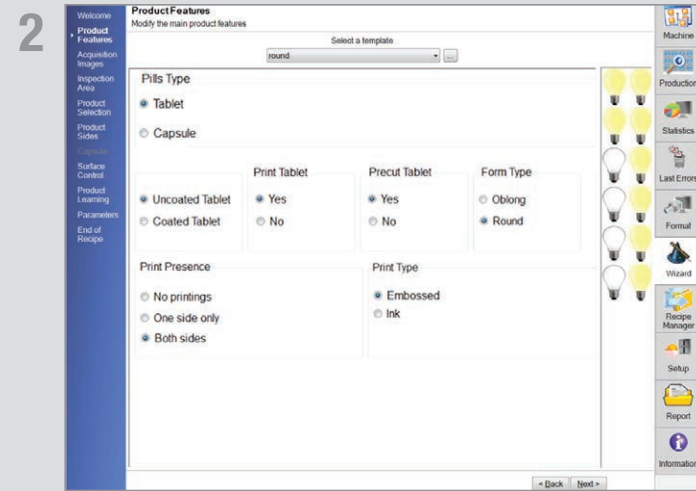
- Single touch-screen display to control all machine functions:
  - all cameras check
  - machine status
  - formats programming
  - run diagnostics
- Industrial PC Windows OS based.
- Easy and user-friendly graphic user interface.

### QUALITY AND VALIDATION

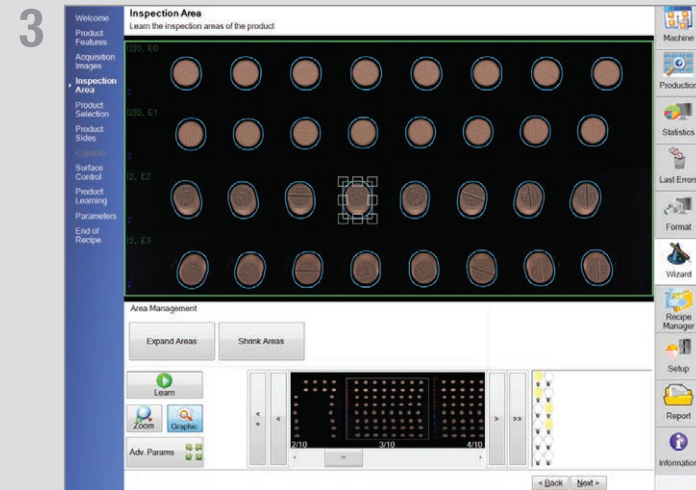
- Manages up to 5 user login levels.
- FDA 21 CFR part 11 and GMP Annex 11 compliant.
- Developed following GAMP 5 approach.



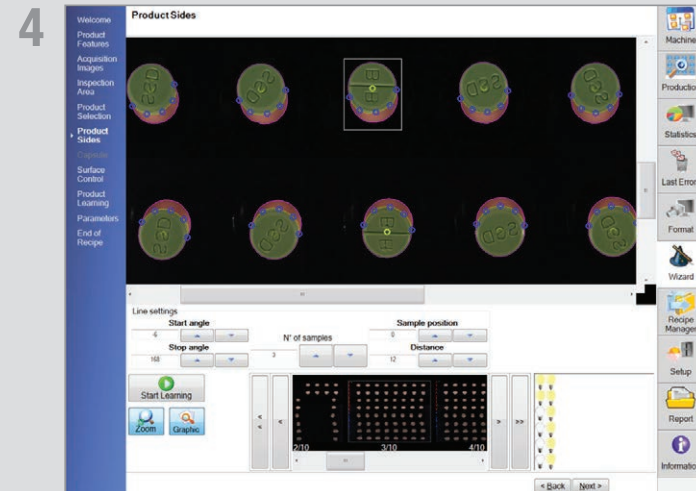
1 ADVANCED SYNOPTIC HMI FOR COMPLETE MACHINE MANAGEMENT



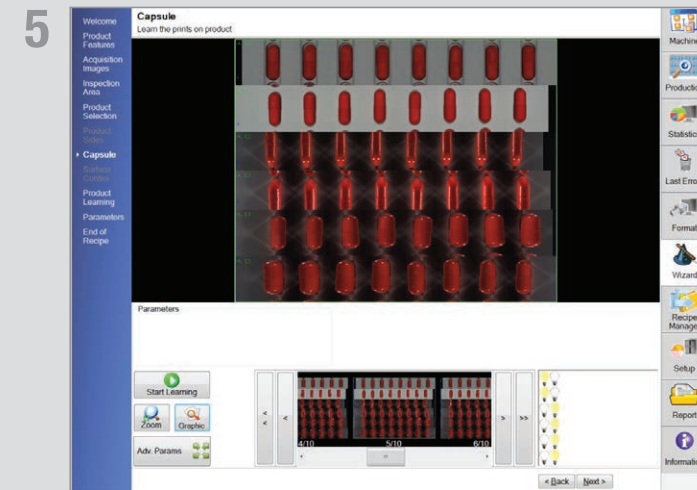
2 WIZARD WITH TYPICAL PRODUCTS FEATURES TEMPLATES



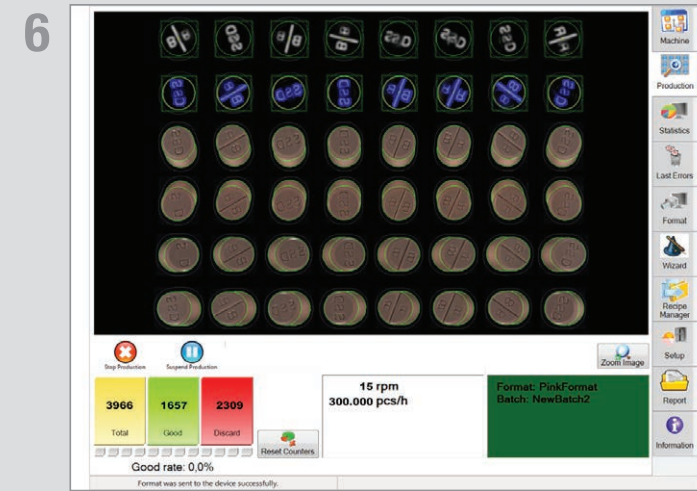
3 MANUAL SELECTION OF THE INSPECTION AREA, FOR SINGLE ALVEOLUS



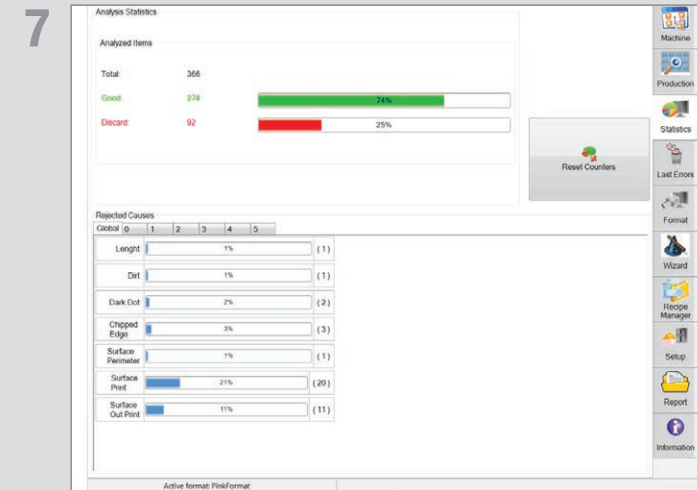
4 SIDE SELECTION MAIN PAGE



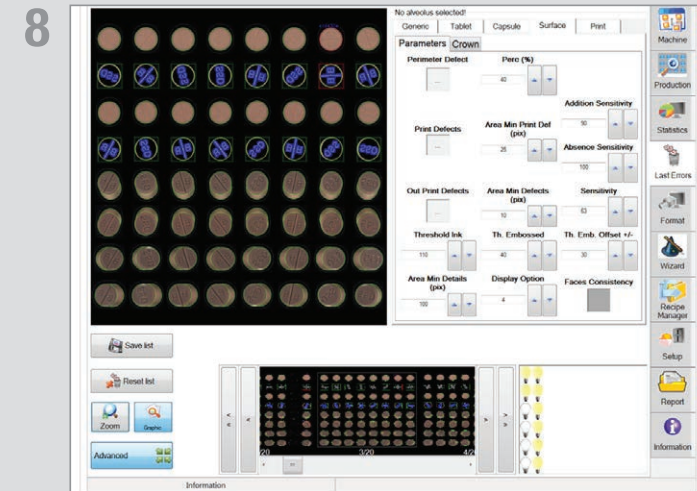
5 LEARNING OF PRODUCTS PRINTS



6 PRODUCTION MAIN PAGE



7 STATISTICS WITH REJECT CAUSES

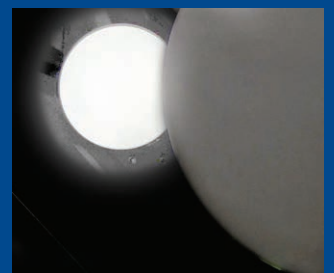


8 LAST ERRORS ANALYSIS

## TCI: TABLETS AND CAPSULES INSPECTOR



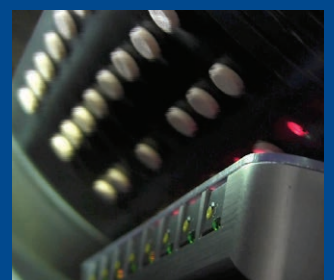
INSPECTION WINDOW



AUTOMATIC CLEANING SYSTEM



4 DIFFERENT PRODUCT OUTLETS



OPTICAL DETECTOR FOR OUTPUT