

SpotWatcher

Automated Vision System for the Inspection of Plastic Containers for Contamination

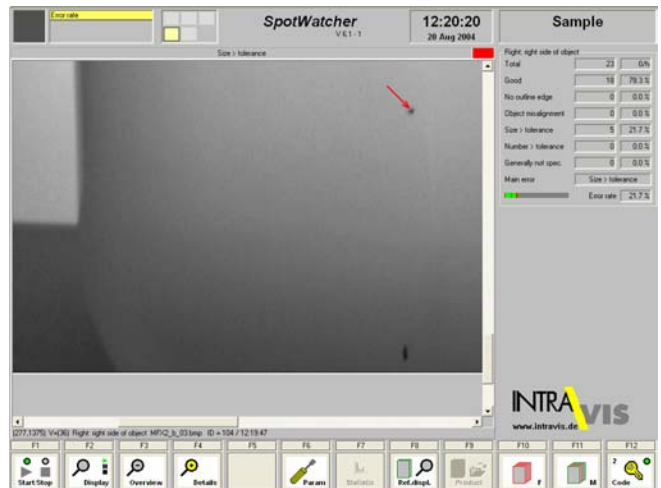
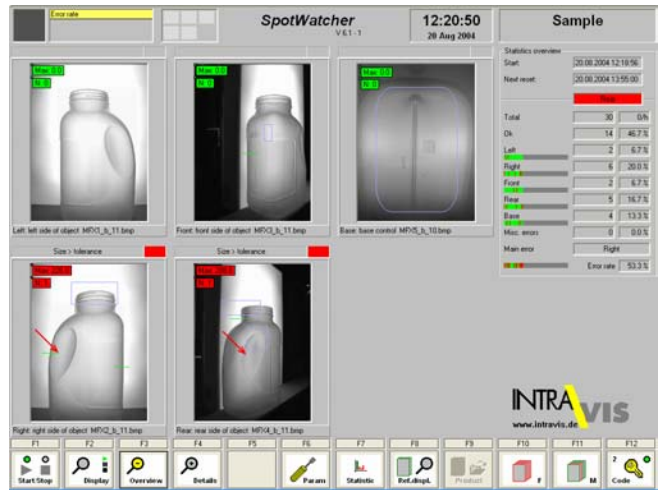
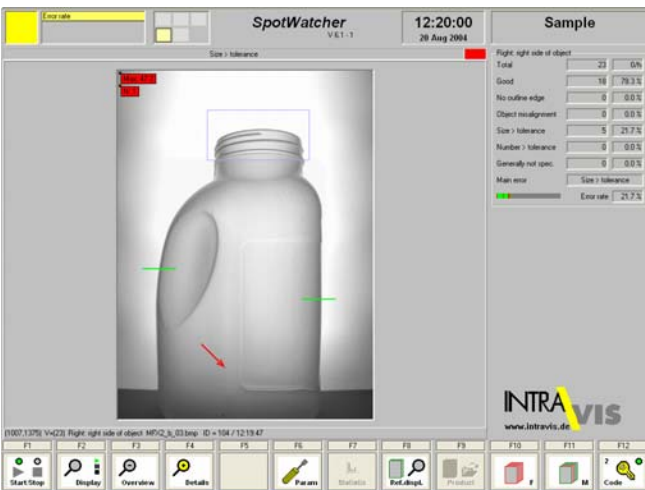
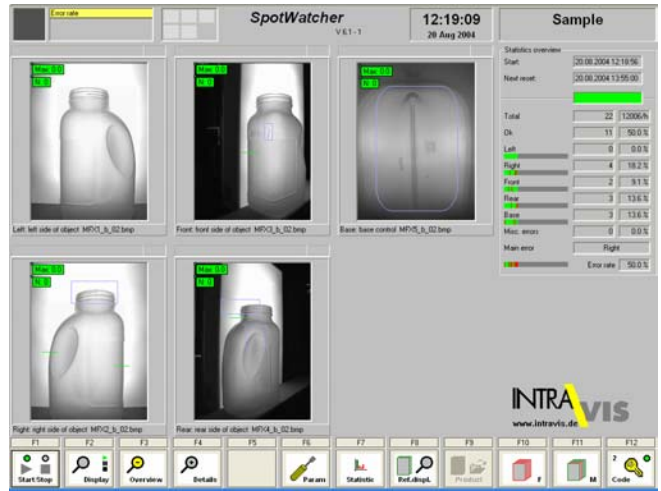


Area of Application

MFX-Module

This inspection package analyses the surface of plastic containers for pinholes, burn marks, streaks and other flaws. Detectability of small burns depends on the size of the inspection area but is as small as 62 millionths of a square inch, for an eight inch tall bottle. In rough structured areas, e. g. the thread area, the algorithm is likely to fail. Thus, these areas probably must be excluded from inspection.

By using four cameras for the side panel examination, it is possible to visualise the bottle from all four sides at the same time. There is no extra handling necessary.



Advantages

The SpotWatcher image processing system offers an intuitive user interface that is easy to learn, even for non-software professionals. It always shows the image of the current test object, overlaid with the inspection results and a statistical overview of all defect categories.

With SpotWatcher it is easy to switch among various products. It stores the individual product settings in a database, from which they can be recalled by the push of a button. Finding the optimal settings for a new product is enhanced by a guided setup process, where the user is prompted step-by-step to mark surface areas or adjust critical values. A typical setup for a new product is just the matter of a few minutes, or even seconds.

In the measurement mode, the user can modify product and quality parameters to adapt to modified production parameters. The access to such settings can be limited to authorised personnel only. A flexible system of user access rights is structured to your specific operational situation.

Critical alert signals are not only displayed on the system screen, but can also be connected to external display devices to be easily recognised in a production floor environment. For instance signals like “fault sequence” or “system stopped” are often connected to external lights or control units.

The system speaks your language; language resources for English, French, Dutch and German are available, others are possible. All user manuals will be delivered in your language, as well.

System highlights:

- all inspections on one screen – one information system, universal operation
- up to seven objects per second
- turn-key system – including lighting, mounting, software, ejector, etc.
- network integration possible
- product settings can be recalled from a database
- installation within a few hours with just a few brief production interruptions
- quick set-up of product-specific settings (within a few minutes)
- easy to use and to learn
- training course included
- multi-lingual, user interface and manual in local language
- extensible and modular; can be configured to your specific demands by many options
- detailed statistics information (QA)

System Components



Rack made of aluminum profiles including:

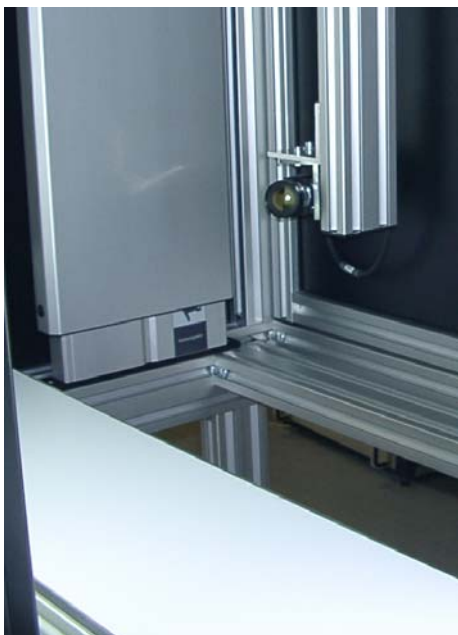
- cameras with lenses,
- industrial quality lighting,
- ejector cylinder and valve,
- conveyor belt,
- lift function to adapt to different conveyor heights.

19" industrial housing including:

- image processing PC,
- control unit,
- UPS (uninterruptable power supply),
- ventilation,
- dust protected cable inlet with strain relief clamps, IP 42.

Control panel:

- high quality 14 inch TFT-Display with a resolution of 1024 x 768 pixels,
- membrane keyboard with 14 PC keys,
- aluminum housing,
- sturdy industrial design with flat elegant form.
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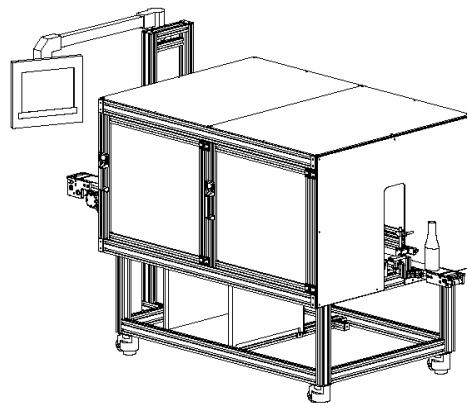
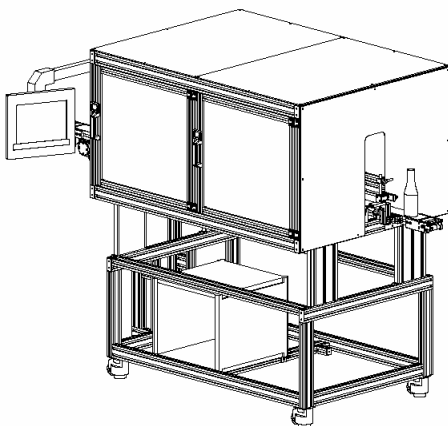
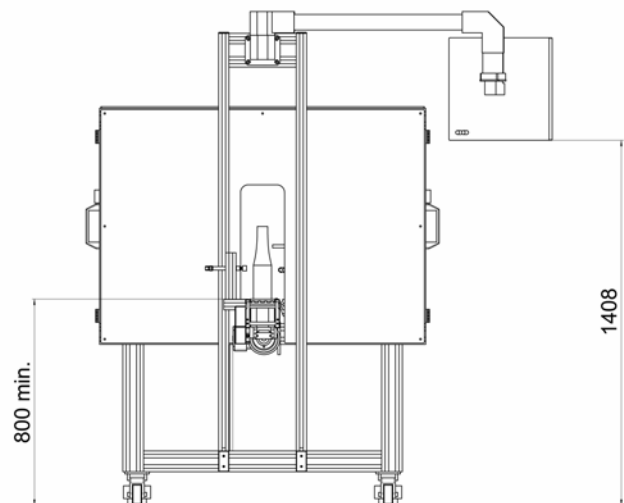
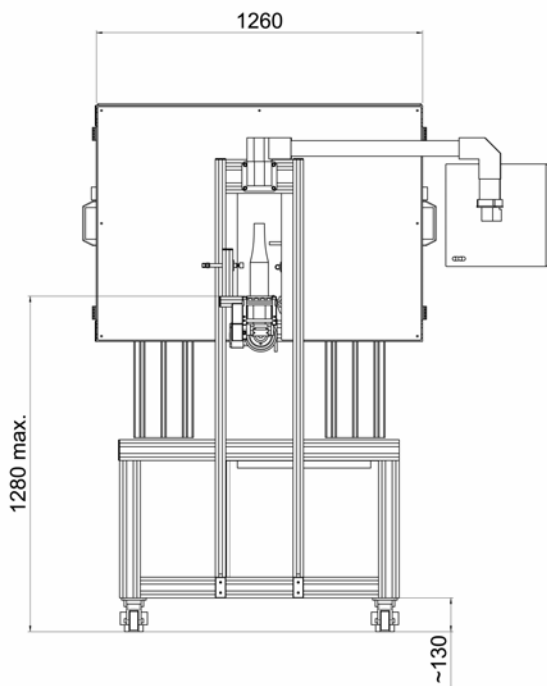
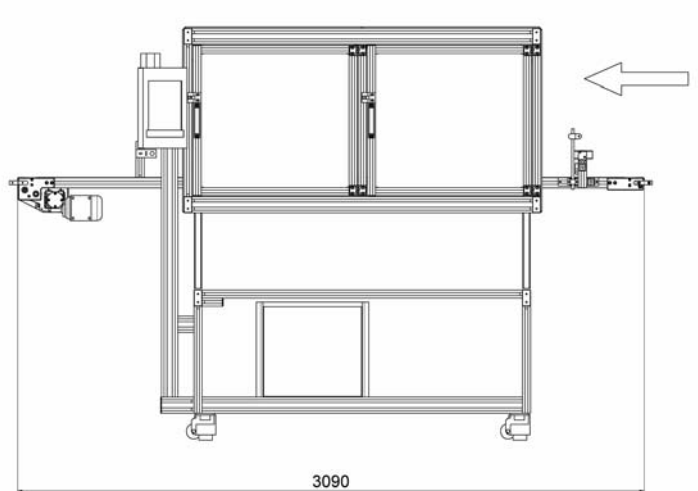
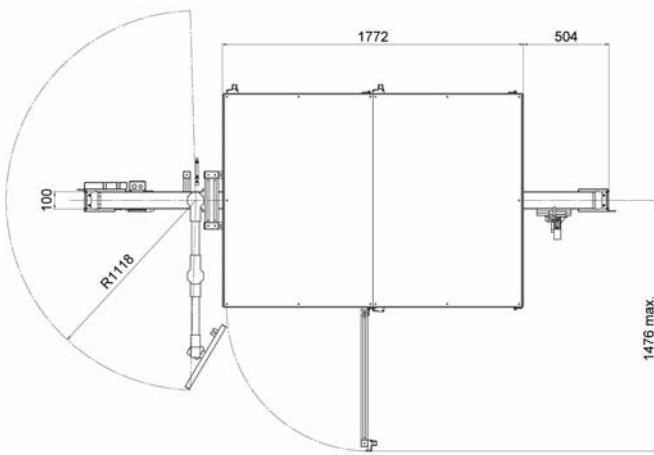


MFX-Camera / Module:

- high resolution full frame cameras
- suitable matched lenses
- special lighting

Layout

[in mm]



Technical Data and Interfaces

Bottle Dimension Limits

| | |
|-----------------------------|--------------|
| Mini-/maximum object height | 55 mm/420 mm |
| Maximum object width | 294 mm |
| Maximum object depth | 150 mm |
| Minimum gap between objects | 25 mm |

Inspection Accuracy

| | |
|-----------------------|--------|
| Inspection module MFX | 0,1 mm |
|-----------------------|--------|

Throughput Rate

| | |
|-------------------------|----------------------|
| Maximum throughput rate | 6 objects per second |
| Maximum conveyor speed | 35m/min |

Connections

| | |
|---|------------------------------------|
| Rated voltage PC rack, frequency inverter | 230 V AC, 50 Hz |
| Rated current PC rack | 2 A |
| Rated current frequency inverter | 3 A |
| External fuse PC rack, frequency inverter | 16 A |
| Compressed air supply | 6 bar to 8 bar, oil-free, filtered |
| Compressed air connection | plug-in connection, 6 mm |

External Dimensions

| | |
|----------------------|---------|
| Length with conveyor | 3090 mm |
| Depth, total | 1200 mm |
| Conveyor height max. | 1280 mm |
| Conveyor height min. | 800 mm |

Weight

| | |
|------------------------|--------|
| Weight, fully-equipped | 240 kg |
|------------------------|--------|

Service Conditions

| | |
|----------------------------|--------------------------------|
| Temperature | +10 °C to +40 °C |
| Humidity | 50 % to 95 % RH, non condensed |
| Maximum operating altitude | 1800 m |
| Noise emission | 70 db(A) for all types |