

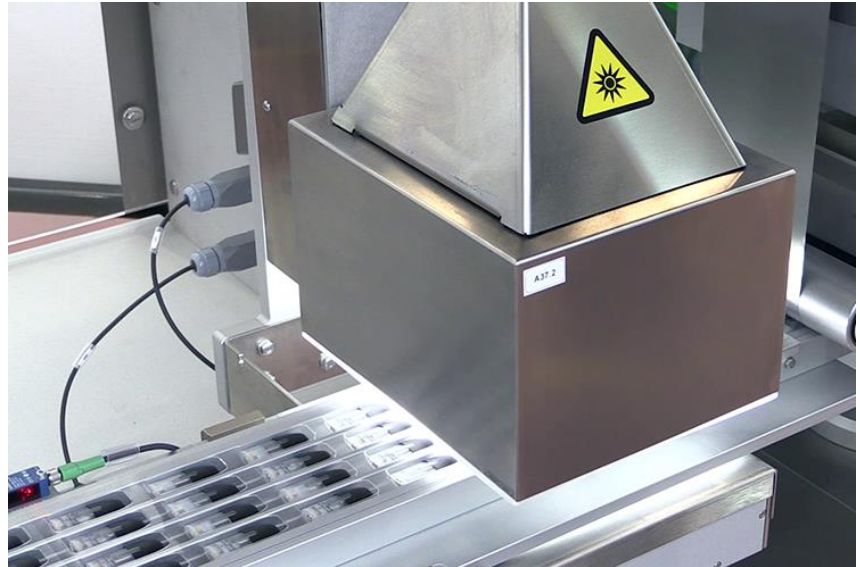


harletray_

Harletray is the **colour vision inspection system** designed to check products in trays during the packaging process **on thermoformers and formers**. It can be installed on all kind of equipment existing on the market.



Harletray camera for product and tray control



Harletray camera for product and tray control

The system is composed by **cameras and a software** performing different controls on the products, with the goal to determine the quality of each tray produced on the machine.

Harletray controls **every unit passing under cameras**: depending on the results of the reading, the system **indicates if the tray is good or must be rejected**.

To pass the inspection, **each tray must match a complete set of acceptance criteria**. This provides a **high level of quality, assuring** that no bad product can enter the good product pathway. The inspection criteria are fully **configurable**.



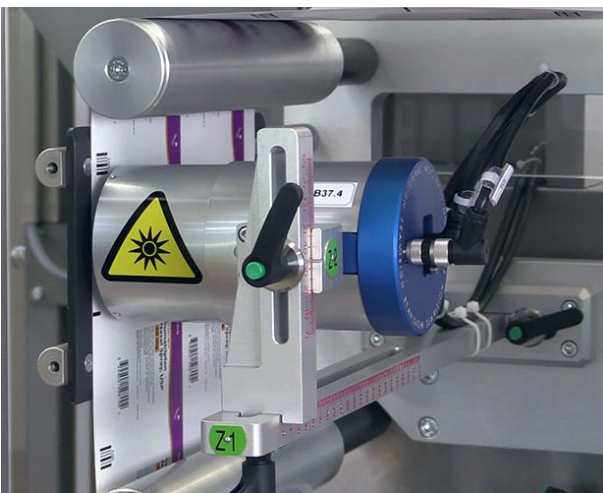
Harletray HMI control on ampoules on white PVC

Harletray can perform **controls both on the product and on the tray package, like:**

1. Presence and number of products in trays
2. Tray forming
3. Combined controls (presence of all components, device orientation, tray orientation)
4. Controls on ampoules: colour rings, integrity, label presence and position
5. Control on syringes: correct assembly, plunger rod presence and correct colour, tip-cap presence, needle cap presence and orientation, control of lumicode, stopper presence and position, safety device assembly and activation, flange check, label presence and position, UV label on syringe, data matrix and variable data reading.

Moreover, harletray supports **multi-functional cameras** to perform additional combined controls on the tray, like:

- Check of printed data OCV/OCR,
- Check of codes (barcodes, 2D codes and alpha-numeric codes),
- Print quality verification (PQV),
- Alucode (checks the correctness of the closing material reel reading a code printed on it),
- Additional **specific controls** by means of programmable measures tool.



*Harletray multifunctional camera
for alucode control*



*Harletray multifunctional camera
for OCV/OCR control*

The system is provided with a variable set of hardware components (Computer, Cameras, Cables, Lighting Units, HMI, PCI-Express I/O Card) and Software module (Operating System, Executable Program, Work Files, Libraries). The setup is depending from the number of control to be performed. Harletray is compliant with the requirements of **FDA 21 CFR Part 11** concerning the user access, electronic signatures and electronic records.

Products&Materials

Harletray is designed to check the presence and the completeness of many products in tray, among them the main are:

- Syringe
- Vials
- Ampoules
- Cartridges
- Medical devices
- Squeezable tubes



Syringe



Vials



Ampoules



Cartridges



Medical devices



Squeezable tubes

Harletray can operate on:

- paperboard trays
- plastic trays



Paperboard tray



Plastic tray

Performed Controls

The control range is wide.

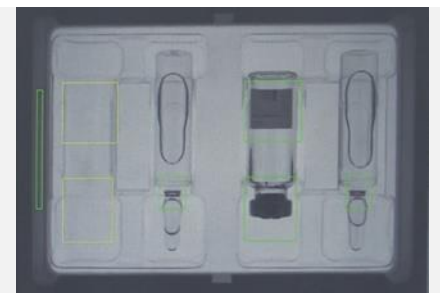


Controls of the tray

Tray completeness

The Software controls the **presence** and the number of the products inside the tray.

If detects a missing product, the tray is rejected.



Missing product

Correct tray forming



Tray forming

Controls of product quality

The Software can calculate through a set of geometrical and pictorial parameters on products every kind of defects, allowing to determine the perfect quality of each product to be packaged. It is designed to detect the product correct **shape, dimension** and **integrity**. Harletray is so

powerful to be able to detect even the minimum difference and deviation, allowing the customer to be sure that the tray produced responds to the *maximum quality possible*.



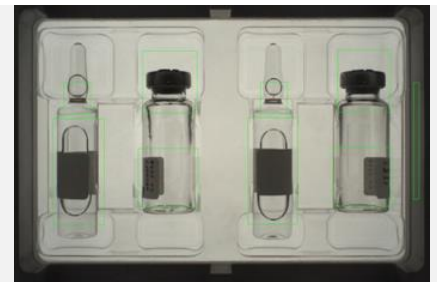
Product controls



The controls can be combined according to the requirement.

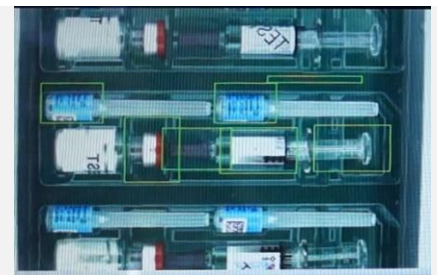
Product presence

Harletray controls the presence of the product and of every part of the product (for example vial body or head) in the tray.



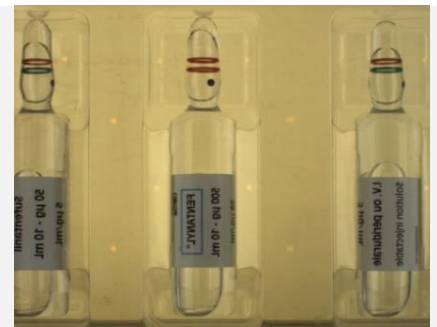
Product correct colour

Harletray controls the product correct colour.



Label presence, colour and position

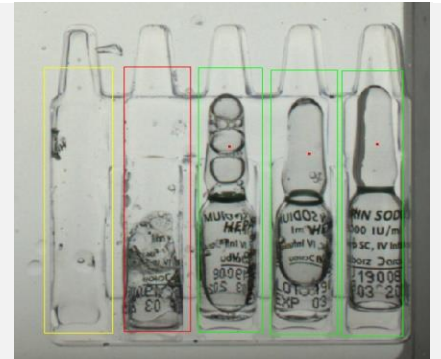
Harletray detects the presence and the colour of the label. *The label must be wrapped around the product for more than 80% and if the label colour must differs by at least 20% on at least one of the three colour bands from the colour of the background.*





Product integrity

Harletray controls the product integrity in the tray.

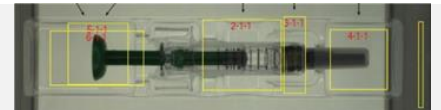


Syringes

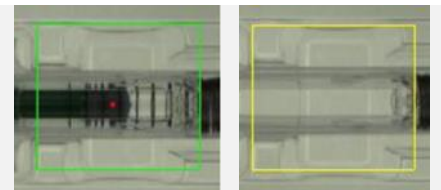


Harletray can control the correct syringe assembly and the correct syringe components presence.

Syringe correct assembly



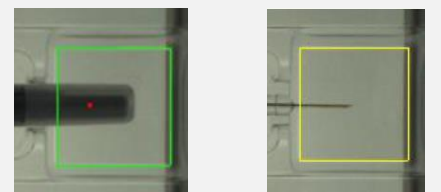
Syringe presence with safety device



GOOD

MISSING

Needle cap presence



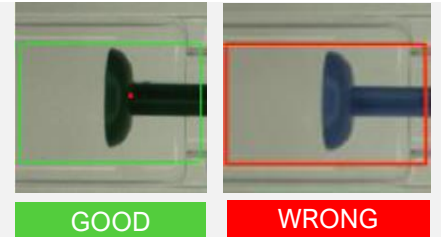
GOOD

MISSING

Plunger rod presence



Plunger rod colour



Other controls: Safety device presence and activation. Tip-cap presence; Stopper presence and position; Flange check

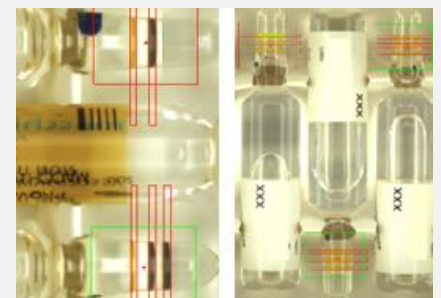
Ampoules



Control of presence and number of colour ring*

This control is helpful to verify the presence and the number of the rings and if their colour is correct.

* Harletray detects the presence, the colour and the number of the vial rings if the rings are at least 1 mm thick, if the distance between them is at least 2 mm and if the colour differs by at least 20% on at least one of the three colour bands from the background.



Advanced controls



Machine step

Harletray can control machine step if OEM machine is not provided with this function.

Foil splice

Harletray can detect the foil splice.

Articles cross check

This check increases the safety of the controls.

It analyzes the archive of articles to identify critical similarities between the products that could lead to a mix-up. It measures the probability that different item will be considered good by the same control and helps avoiding errors.

Controls on tray closing material



Check of printed data – OCV/OCR

Check of correctness of printed variable data as expiry date and batch number.

(01) 0 3400123 45678 9
(10) SEAVISION
(17) 210513
(21) 14725835678

Check of codes

Check of correctness of printed codes.



Print quality verification (PQV)

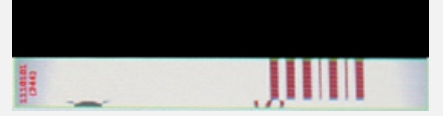
Check of correctness of the artwork





Alucode

Check of the code printed on the border of the tray closing material reel.



Presence of label

Check the presence of label on tray (for example heat marker label).





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