The Automatic Inspection Machine C2D is a reliable and efficient system to inspect a wide range of ampoules and vials for foreign matter and cosmetic defects up to 400 pcs/min.

**Advanced Features**

- **Inspection**
  Three stations for particles inspection equipped with both backlight and bottom light (Tyndall effect) configurable for reflecting and not reflecting particles; optional stations for vials sealing, ampoules tip, presence of black spot, code rings.

- **Special features**
  Illumination by high power long life LED.
  Software for automatic execution of Knapp test with graphic visualization of results.
  Trays for separate rejects are possible.

- **Inspection techniques**
  Digital camera via Fire Wire IEEE1394 standard.
  Image processing is performed directly by PC with powerful and fast algorithm based on ConveU vision system “Fast Vision”

- **CFR21/Part11 Compliance**
  User friendly HMI based on 19” touchscreen PC running on Windows, with password protected different access levels and ‘Audit trail’ function.

**Technical Specifications**

- **Dimensions (LxWxH)**
  about 282.6 x 240.8 x 229.4 cm

- **Weight**
  1100 Kg

- **Electrical / Power**
  400V ± 10%  50/60 Hz
  3Ph+N+GND  5 Kw

- **Air consumption**
  9 m³/hr - 5 bar

- **Machine Speed**
  Up to 400 pcs/min (small sizes)

- **Spinning Speed**
  300 ÷ 3000 rpm

- **Loading Height**
  950 ± 50 mm

- **Containers types**
  Ampoules, vials, carpoules

- **Container sizes**
  Ø9 ÷ Ø39 mm

- **Maximum height of containers**
  130 mm

- **Products**
  Transparent liquids

- **Acoustic noise**
  75dB
+ Description

The infeed/outfeed is by trays or in line. Containers are collected by an intermittent turret where they are pressed over a beaker by an upper spindle. The containers are spun at high speed and then suddenly stopped so that particles can twirl inside the liquid and be detected by the cameras. The inspection is repeated in three stations each one equipped with both back and bottom light for maximum flexibility. It is possible to add stations for inspection of vials sealing, for tip defects (with rejection before the turret) and for detection of black spot on ampoules tip. Rejection is made with suction technique.

+ Features

The frame is in stainless steel with integrated electric cabinet in vertical position for comfortable access. A Siemens PLC manages the machine while a powerful 19" touchscreen PC performs both the image processing and the HMI with real time images from cameras. The image processing is based on the acquisition of a fast sequence of frames that are compared each to the other; moving particles can be distinguished from static objects like printings or defects of glass sidewalls by means of "image subtraction" algorithm. Hundreds of receipts and years of production data (batches, alarms, modification of parameters, ...) can be stored in hard disk of PC and checked with the function "Audit trail"; they can be printed or exported to USB key or sent to supervisor local network. Different levels of password (operator, supervisor, administrator, quality, maintenance) allow access to partial or complete functions. A UPS, to prevent loss of data, and a modem for remote service can be added. The Knapp test can be automatically executed in the turret with a dedicated program visualizing graphics and results.