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THE KAITEKI COMPANY
Mitsubishi Chemical Holdings Group

Jun.2018-01CI

LIS-250D

UV LASER PRINTER

PRINTING

Qualicaps Engineered to perform

THE KAITEKI COMPANY
Mitsubishi Chemical Holdings Group

Engineering Excellence
Man and Machine in Harmony

At Qualicaps®, we do our part to contribute to health and wellness on a worldwide scale through the manufacture and supply of two-piece capsules and pharmaceutical processing equipment. To support the needs of solid oral dosage from production, we offer a proprietary product line of capsule filling and sealing machines, weight and visual inspection machinery, as well as imprinting machines. Our equipment is suitable for manufacturing on integrated production lines and the company provides comprehensive solutions. All machines are specially designed to meet your unique production or research needs. Our research and development team is always innovating, developing faster, more reliable machinery to meet emerging needs in the pharmaceutical and nutritional markets. Qualicaps® equipment incorporates the best technology to help you successfully and easily manufacture your product.

THE LIS-250D IS
A UV LASER
PRINTING MACHINE

Provides highly-efficient marking with UV Laser. Eliminates quality issues like smudges and rub off that are caused by ink

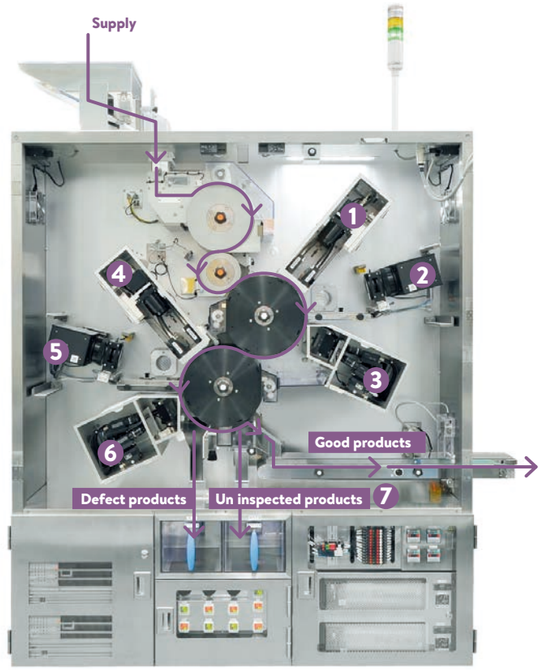
UV Laser Printer LIS-250D

Names of parts

1 Appearance inspection camera (Front face)
2 Laser scanner (Front face)
3 Marking letter inspection camera (Front face)
4 Appearance inspection camera (Back face)
5 Laser scanner (Back face)
6 Marking letter inspection camera (Back face)
7 Good product discharge conveyor

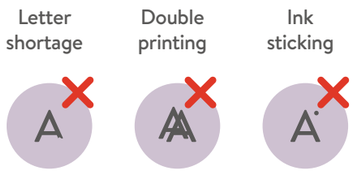
Marking with UV laser irradiation on a solid preparation (tablets, soft capsules) surface is conducted to change the color of the contained titanium dioxide to grey. Non-thermal effects of UV laser allow identification marking without resulting in thermal denaturation on the solid preparation.

*Transfer mechanism of soft capsule is different from others.



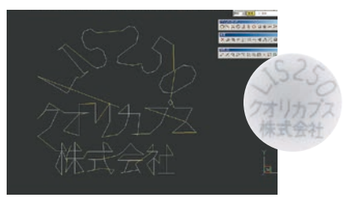
No defects caused by ink

No letter shortage, double printing, ink sticking (stain), etc. will occur due to color change of titanium oxide with non-contact UV laser.



Flexible design

Printing letters, mark or logo can be made by CAD which allows flexible design.
Test printing and printing result check are not needed before production.



Manufacturing cost reduction

Because no print design roll or ink is needed, those costs are eliminated, as well as the need for extra storage.

Operating efficiency improvement

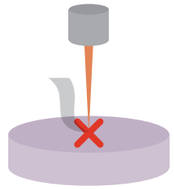
Cleaning time is significantly reduced because there is no ink used in the process.

Larger printable area

Not only alphanumeric characters, but also katakana and kanji (Chinese characters) are available for printing, resulting in excellent repeatability of details.

No thermal denaturation

Non-thermal effects of the UV Lasers allow for marking without resulting in thermal denaturation on the tablets.



Unmanned operation available

Unmanned operation is available by using the printing letter inspection system, auto loading system and auto-collecting system as an option.

Halal compliance

Because no ink is used in the process, there are no ingredients added that would interfere with the products Halal compliance.

*Halal is Islamic philosophy and means what Islamic people can eat.

Contribution to ISO14000

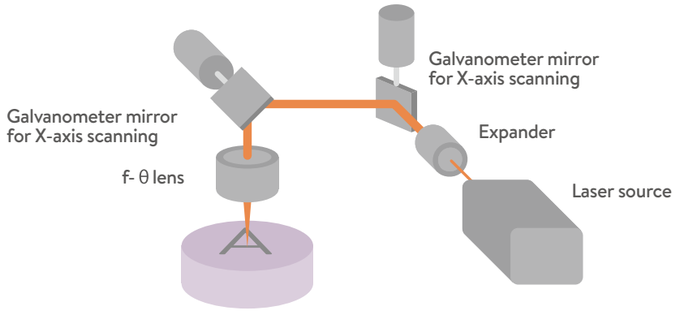
(Environmental Management System)
Non-organic solvent usage contributes to ecology.

Prevention against counterfeit product

The LIS-250 has the ability to mark on the side edge of a tablet, which is typically not possible. This ability could prevent counterfeiting

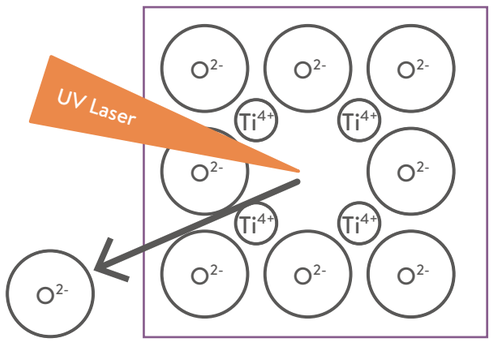
* To be applied with other system.

Mechanics of the laser

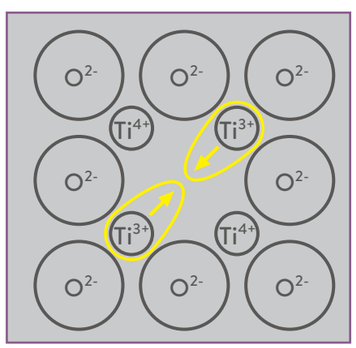


Laser printing mechanism

1 The ratio of titanium (Ti) to oxygen (O) in titanium dioxide is 1:2. The UV laser is irradiated on the titanium dioxide and the oxygen atom is removed.



2 The removal of the oxygen atom causes a change of ratio of titanium atoms to oxygen atoms. This change of ratio induces the color change of titanium dioxide from white to grey.



Other features

- Titanium dioxide is required on the surface film.
- Laser printing color is grey
- Auto CAD software is attached to this equipment. Operator training is available.

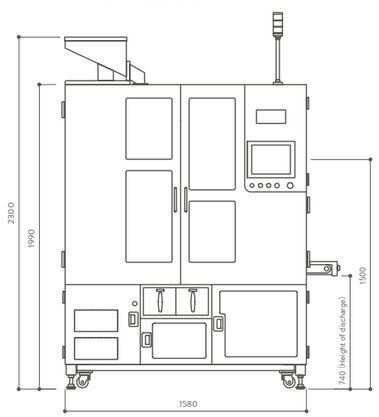
Specification

Name	UV Laser Printer
Model Number	LIS-250D
Production capacity	250,000 tablets/hour
Electricity	3 phase AC200V±10 50A (18.0KVA)50/60Hz
Compressed air	0.6MPa 1.0m³/min
Vacuum	-25KPa 15 m³/min
Installation environment	Temperature 18-28°C Humidity 45-65%RH, no condensation
Overall dimension	Main Unit Width 1,580 × Depth 1,570 × Height 2,300 (including hopper) mm Chiller Unit Width 900 × Depth 800 ×Height 878 mm
Weight	Main Unit About 2,400 kg Chiller Unit About 200 kg
Noise during operation	up to 80 db (A weighted sound pressure level)
Inspection method	Visual inspection :4 pcs of area sensor camera Printing inspection:4 pcs of area sensor camera
Inspection item	Visual inspection :Foreign object,Fiber, Dirt, Broken, Crack, Different size, etc. Printing inspection:Missing letter, Position sliding, No printing, etc.
Inspection accuracy	Visual inspection : Black spot(100 μm square or more) depends on condition Printing inspection: Depends on condition
Illumination	Visual inspection: Tricolor LED illumination Printing inspection:LED illumination* * It's possible to select tricolor or monochromatic illumination according to the color of tablets

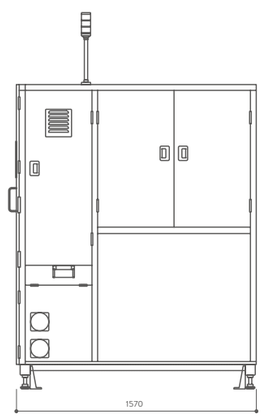
The above information specification is subject to change without prior notice for the technical development.

Overall size

Front face



Side face



Japan Patent No.5281238

Use this equipment correctly.
Safety
Before use, be sure to confirm the contents described in the Instruction Manual attached to this equipment. Disassembly, repair, or deformation of this equipment is strictly prohibited.
Classification of laser products
This equipment falls under 'Class 1 laser product' of JIS and IEC standard. (JIS C6802:2011, ICE 60825-1:2007)