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Model DLP-3

Direct Laser Patterning



EXCELLENT FOR FAST PROTOTYPING

- High accuracy and resolution down to microns
- Fine feature sizes down to 5um
- Large patterns optionally up to 1.2m x 1.2m
- Patterning speeds up to 2m/sec
- Handles glass or plastic substrates

Model DLP-3 for Semi-Fast Laser Patterning

DLP-3 is a high accuracy laser machine excellent for fast prototyping. It patterns thin films on glass or plastic. Although slower than a galvo based machine, it enjoys higher accuracy, smaller laser spot sizes, and usually a lower cost laser. Beam motion is by fast, high accuracy linear motors in an overhead gantry design. Laser focal length is short so laser drawn lines are narrow, thus enabling small feature sizes.

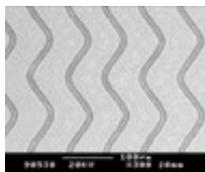
The choice of laser wavelength depends primarily on the feature size required. There are two choices: IR fiber laser or UV diode laser. Both are solid state and have no periodic maintenance. The IR laser is faster than the UV, lower priced and longer life. UV is usually chosen for its small feature size capability. In the DLP-3 design there is no sacrifice of accuracy or resolution for pattern size. Therefore, this gantry design is more versatile than galvo.

Versatile, high accuracy fine line laser patterning

SPECIFICATIONS*:

- **Patterning Time:** Depends on pattern complexity, basically the sum of the individual laser line segments divided by the writing rate
- **Safety:** CDRH Class I. Laser patterning is a dry process, environmentally safe, no consumables
- **Laser Safety:** CDRH Class I rated for eye safe operation without goggles. Interlocked
- **Viewing:** Magnified 60X through-the-lens. Facilitates prototyping. Superior to galvos.
- **Laser:** Choice of frequency multiplied UV diode laser or IR fiber laser
- **Min Feature:** 10um UV or with IR ... 30um (both are in production)
- **Wavelengths:** 355nm UV laser, 1064nm IR
- **Design:** Overhead X gantry to position beam with lower Y stage for parts, linear motors and granite base
- **Pattern Size:** Choices of 0.2m x 0.2m up to 1.2m x 1.2m
- **Writing Speed:** 1.0m/sec typically, pattern dependent (straight laser lines are faster)
- **Resolution:** 1um standard
- **Accuracy:** +/- 20um
- **Programming:** CAD/CAM software to convert dxf to laser machine code. Draws or edits features directly from the operating screen — (highly useful when testing new designs.)
- **Fixture:** Vacuum platen to hold the part accurately in place. Vacuum switch
- **Laser Coolant:** No external water required
- **Power:** 220VAC, 50/60Hz, single phase, 20a service
- **Weight:** 1,300 lbs in shipping crate
- **Warranty:** 1 year on the system
- **Lifetime:** 20,000 hours (UV diode), >100,000 (IR fiber), estimated
- **Options:** IR or UV laser, pattern size, machine vision registration, computer controlled laser spot sizes to 100um and fume/particulate removal

*Specifications subject to modification and improvement.



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