

LASERSHARP[®]

FLEXIBLE PACKAGING SOLUTIONS

by



High Performance Laser Processing for Industry

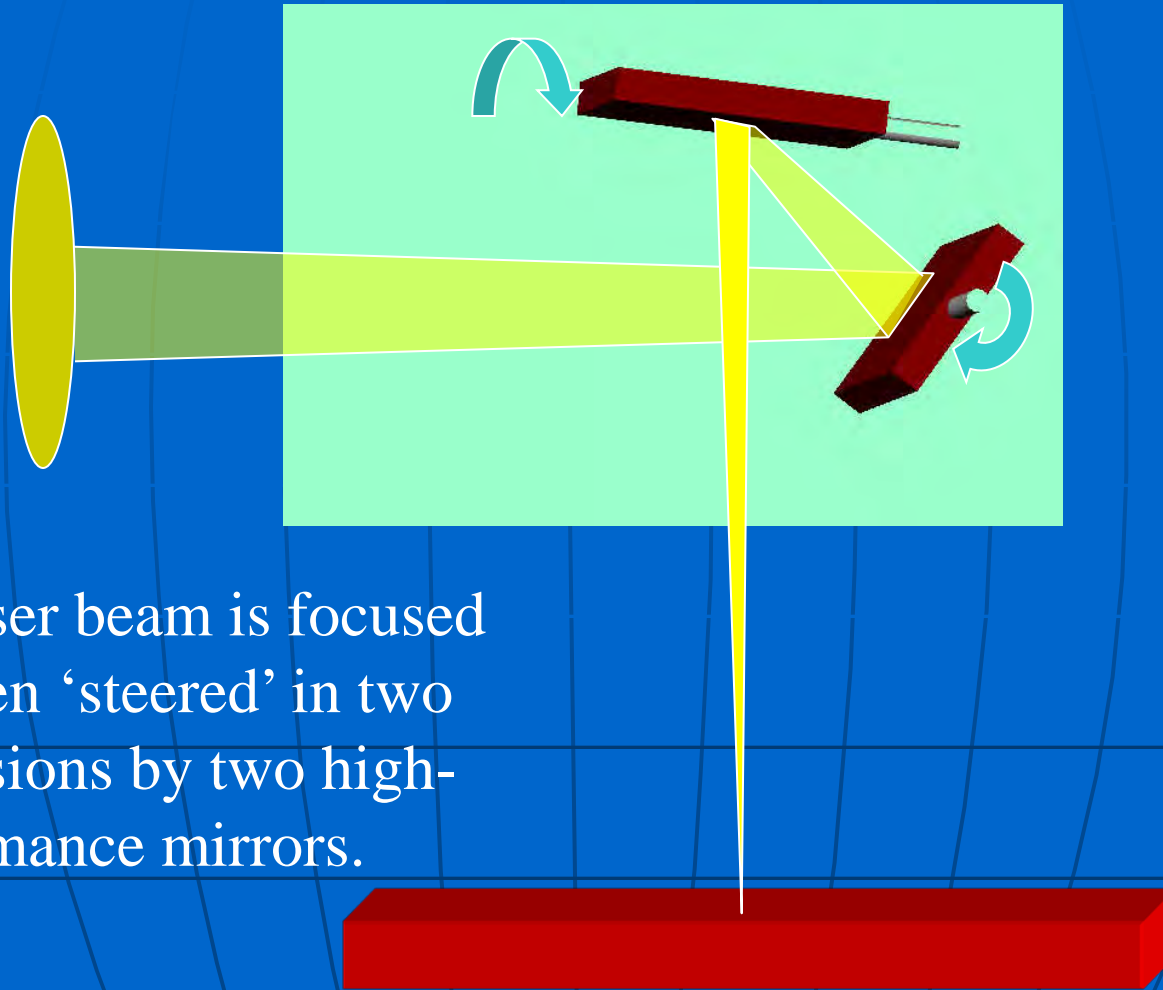
&



LaserSharp® Flexible Packaging

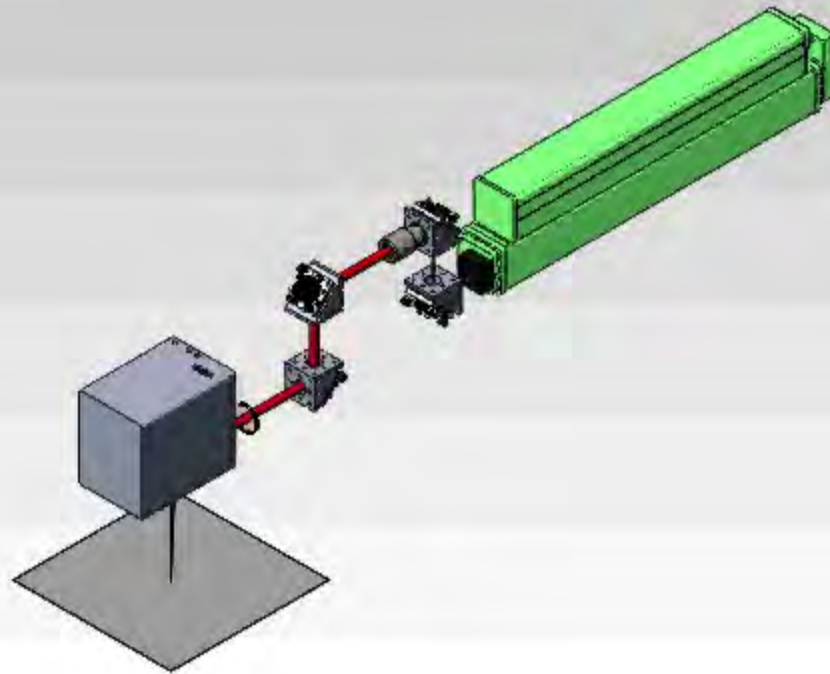
- CO₂ Lasers 40W through 1000W.
 - 10.25 & 10.6 micron wavelengths
- Laser beam can be focused to a 100µm (0.004") diameter spot.
- Process area options
70mm x 70mm (2.7"x2.7") to 500mm x 500mm (19.7"x19.7").

Why *is* LaserSharp® so Fast?



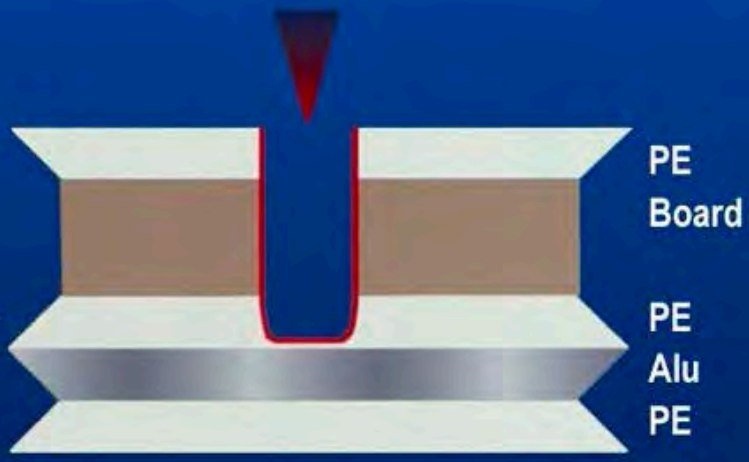
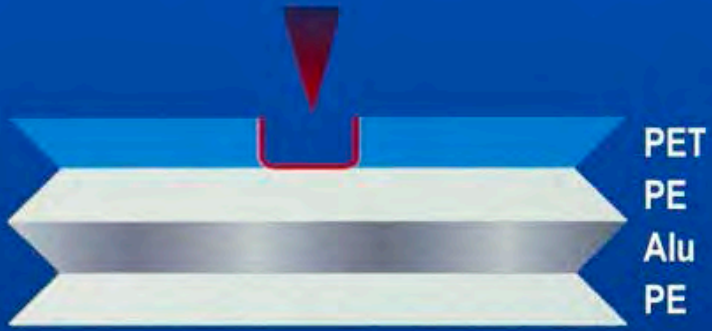
The laser beam is focused and then ‘steered’ in two dimensions by two high-performance mirrors.

Scan Head Motion



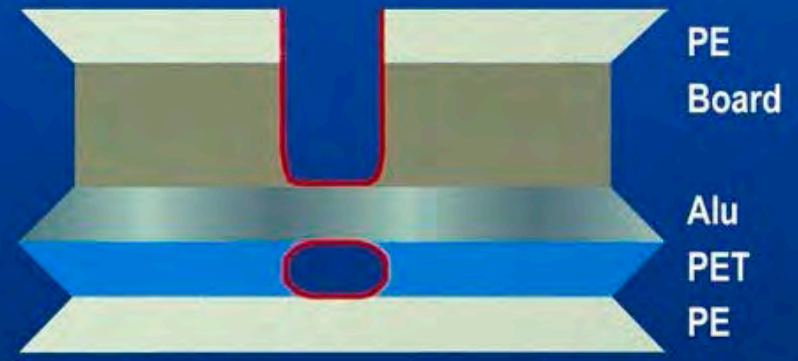
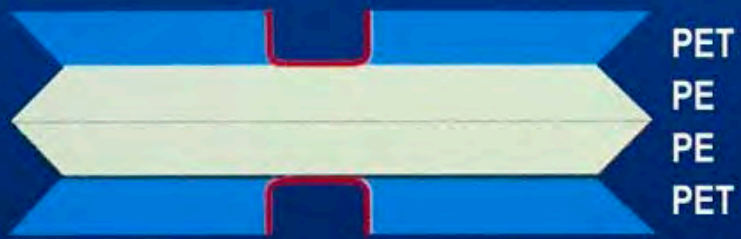
APPLICATIONS

standard

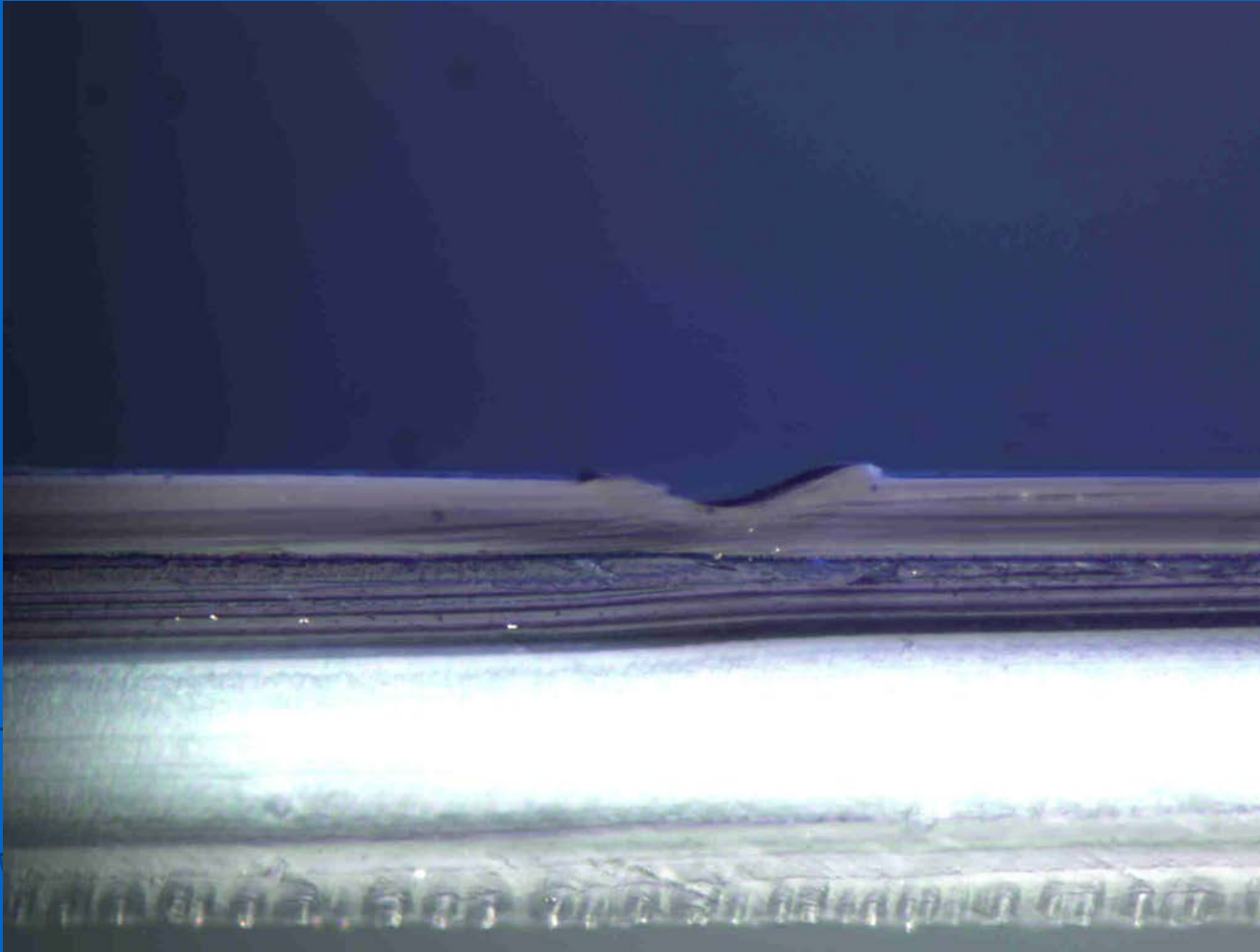


APPLICATIONS

special



Cross Section of Scored Film



Micro-perforation Mechanical vs. Laser



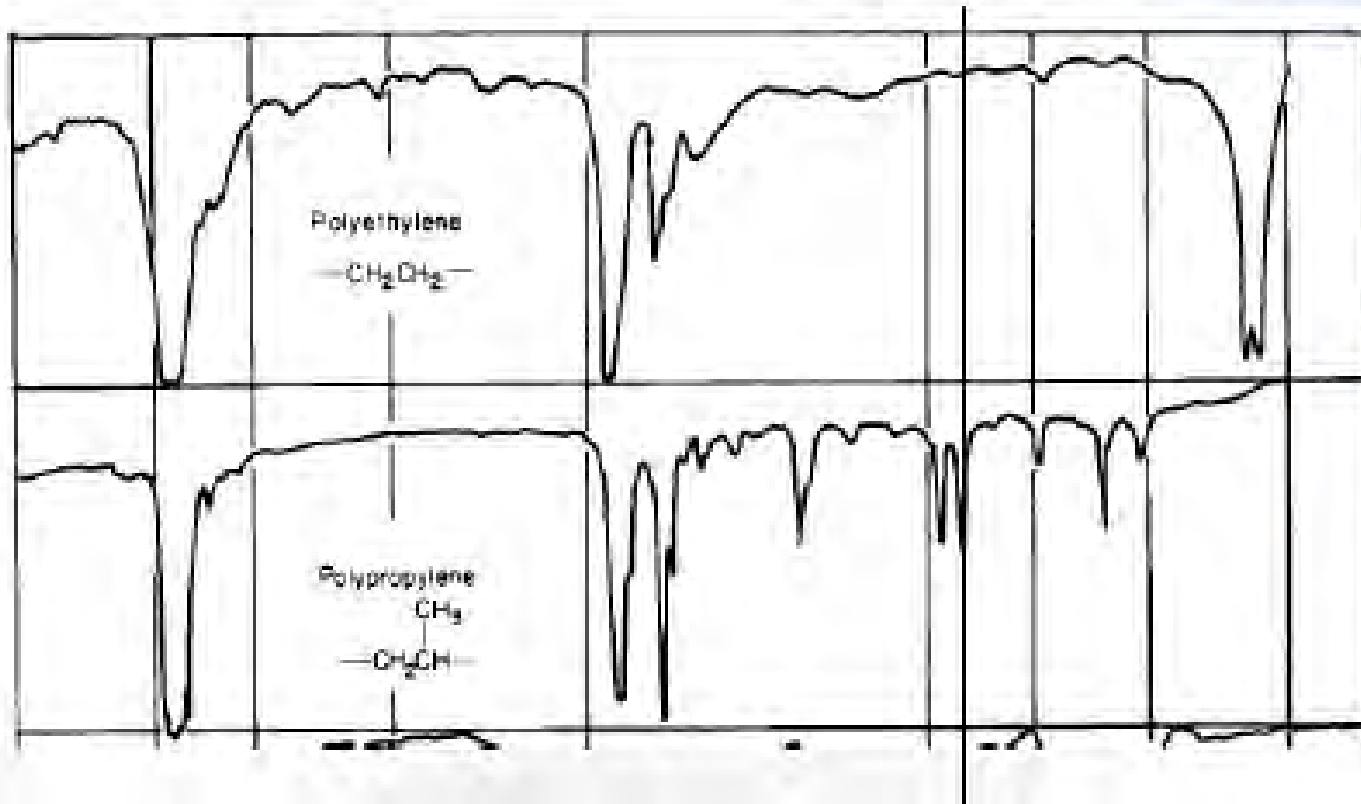
228 μm



202 μm

Flexible Packaging Material Absorption

Fingerprint region



Laser wavelength
corresponds to
C-C stretching &
twisting vibration
of pendant CH_3

973 cm^{-1} / 10.28 micron wavelength

Flexible Packaging Equipment Solutions



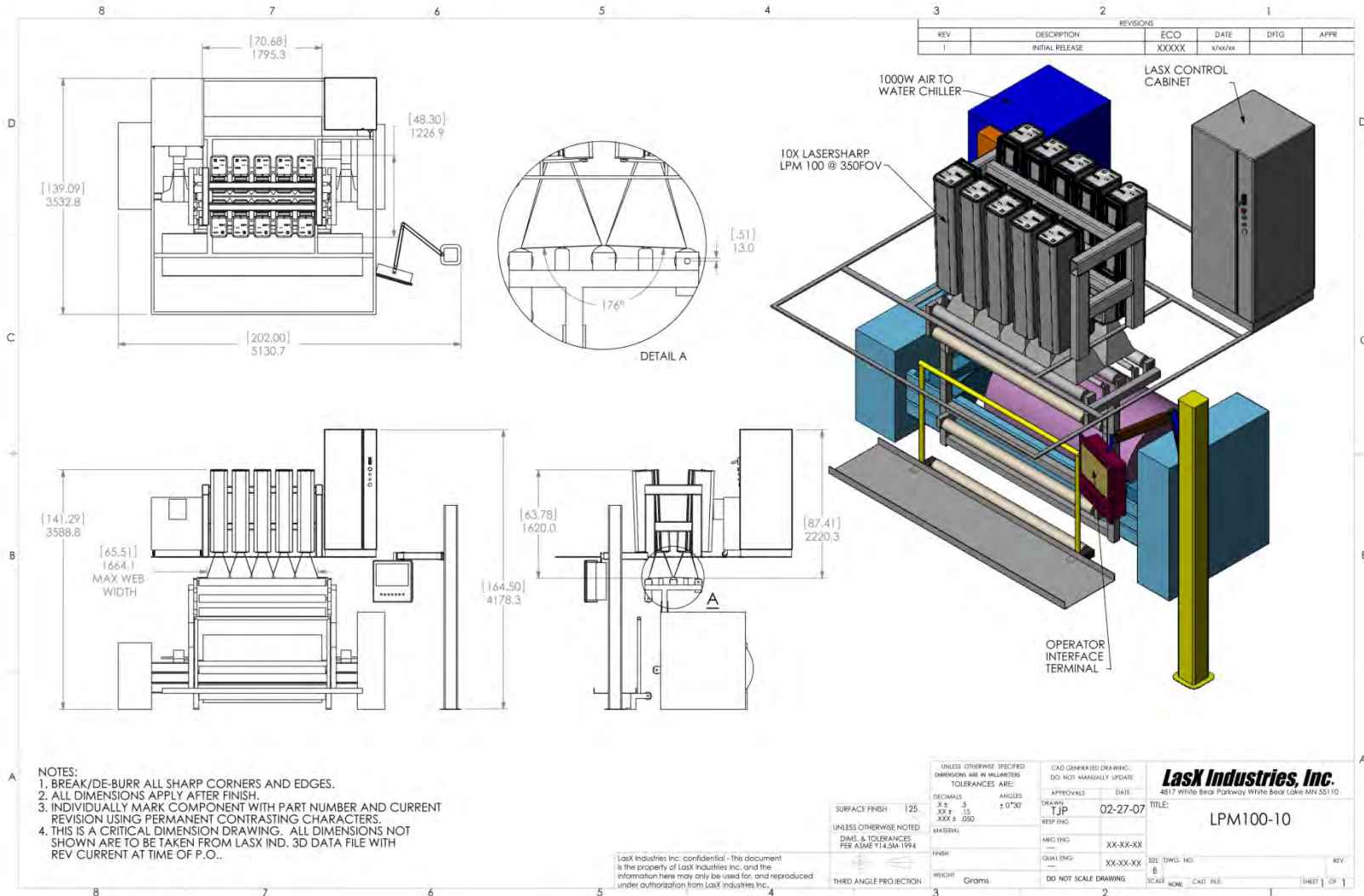
Pouch Line Retrofit



LPM 100



Multiple LPM Configuration



LPM^{dm} 300 GT



LDM 100



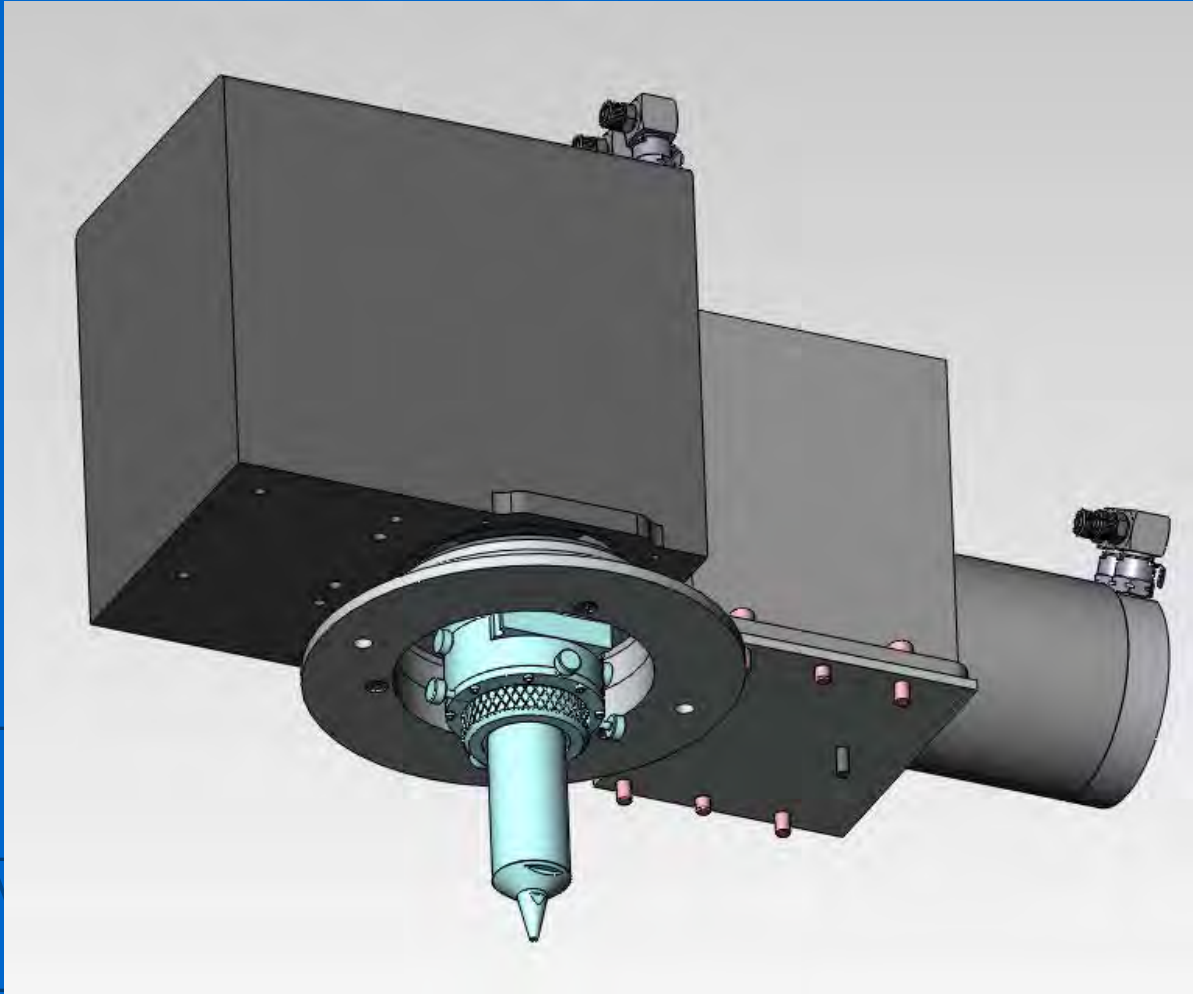
LPM 100 Flex Series



Flex Series R&D



Unicorn



LaserSharp[®] Equipment Advantages



- *LaserSharp*[®] is a standard product designed for high speed perforating, and scoring of roll-fed materials.
- *LaserSharp*[®] modules are designed to be integrated to any roll handling equipment.
 - Multiple modules can be added to maximize productivity & multiple processing lanes
- *LaserSharp*[®] technology allows for quick pattern modifications.
 - Customization or personalization of any pattern
 - No pattern or direction limitations
 - Score, etch & perforate at one location
- Each *LaserSharp*[®] Module is controlled independently
 - Run different processes simultaneously
 - Ability to run intermittent patterns by registration or distance

LaserSharp[®] Summary



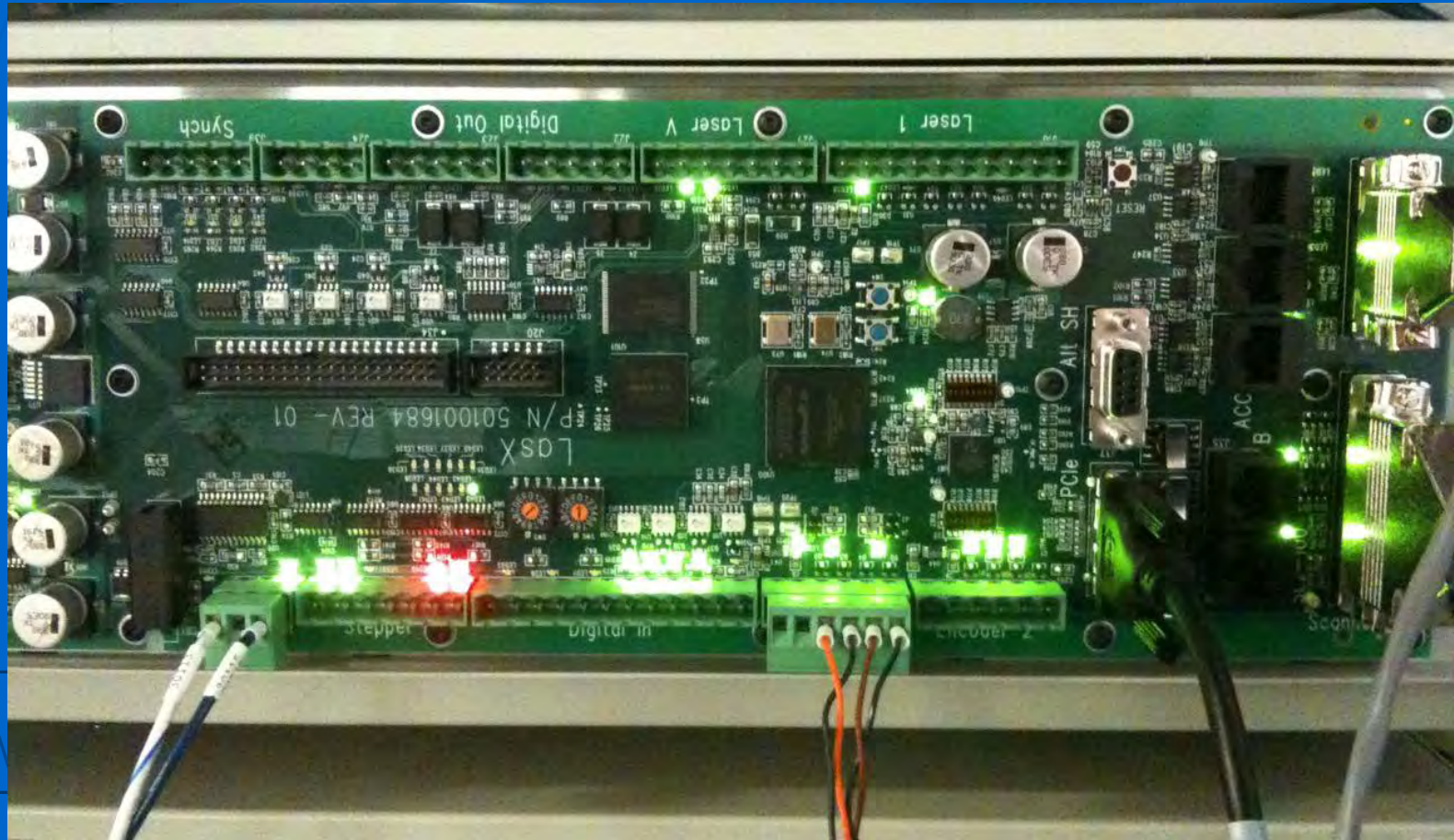
- Precise digital control for processing thin materials at high speeds.
- Non-contact, fast, high quality processing method
- Low maintenance
- High flexibility; digital process enables any pattern
- Machine direction and cross-web processing in registration to print
- Offline software for preproduction job set up
- Class I work enclosure around laser process area
- Standard equipment designed to worldwide standards

LasX Markets Served

- **Flexible Packaging** – LaserSharp FlexPak Services provides, Easy Open Packaging, Breathable Packaging, Microwavable, Security Features
- **Print Industry** – Labels, Greeting Cards, Decorative Folding Cartons, etc.
- **Medical** – In-vitro Diagnostics & Micro-Fluidic Components
- **Electronics** – Membrane Switches, Graphic Overlays & Flexible Circuits
- **Industrial** – Solar, Abrasives, Adhesives, Gaskets, Security Features
- **Craft** – Stencils, Stickers, & Die-cuts



Why is LaserSharp® so Fast?



LightGuide Software

- Control Each Module Independently
- Import DXF and PDF
- Windows 7 Compatible
- Sort and Edit Features
- Tiling
- Primitive Entity Insert
- Access Control
- Ability To Save and Recall Each Job
- Production Metrics

Controls

- Track Soft
 - Follow an edge or printed line
- Vision on the Fly
 - Adjust X, Y and Θ
- Registration
 - Missed Trigger
 - Alternating Trigger
 - Trigger Mask
- Process Control During Ramping
- Contouring

Controls

- High Speed Round Hole Drilling
 - Straight line and Pattern
 - At 1000 fpm need to track the web 0.020 in



Future

- High Speed In-Line Inspection
- Improve Web Monitoring
 - Web Speed
- Precision Lamination

- What would you like to see??