

LASER SCORING AND PERFORATING EQUIPMENT FOR FLEXIBLE PACKAGING

LaserSharp value-add flexible packaging solutions deliver precise easy-open, breathable, and microwavable features on flexible films.



LasX laser experts have over 10 years' experience developing laser processing systems for the flexible packaging industry. We understand your needs for highly reliable, low maintenance systems that deliver quality scores and perforations at production speeds. LaserSharp systems consistently deliver superior laser processing to help maintain profitability while delivering the convenience features your customers demand:

- Easy-open or re-closeable scores.
- Etched security or product identification.
- Rapid-fill, microwave steam release or breathable venting.
- Pour spouts.

Flexible packaging films are ideally suited for laser perforation. Our no-contact laser process vaporizes flexible materials instead of punching or tearing through them as traditional mechanical perforating machines do. The resulting holes are smaller (approximately 50µm), cleaner, rounder, more uniform, free from fragments or other processing artifacts and typically exceed OTR (oxygen transmission rate) and MAP (modified atmospheric packaging) requirements. In addition, lasers seal the edges of holes as the beam burns through and can actually strengthen the remaining material. To increase productivity, you can integrate multiple laser modules to add crossweb patterns

to your downweb scores, create and finish easy-open pouches with tear strips, add vents or perforations and add product identification in one simple step.

Features

- Multiple laser modules (one laser module per beam):
 - Eliminate beam-splitting and focusing hassles.
 - Simplify setup and minimize downtime.
 - Easy integration with existing slitter/rewinder equipment – accommodates both narrow and wide rolls.
- Patented controller monitors and adjusts laser power to ensure a consistent score depth, even at low web speeds (e.g. during initial start-up).
- Yield superior process control.
- Sealed, low maintenance lasers.
- Precision score depths for accurate, consistent crossweb patterns.
- Exact spherical drill holes across all production speeds from full stop to 600m/min (2000FPM).
- Scalable – grow systems as your business grows and changes.

Laser Processes - Flexible Packaging

	Downweb Score	Perforations	Contour Score	Downweb Micro-drilling slow ○ ● fast	Pattern Drilling	Macro-drilling >250µm (0.01 in)	BRAND / Security	Etching	Crossweb Patterns	One Head Drill/Score
LDM	✓									
LPM	✓	✓	✓	○	✓	✓	✓	✓	✓	
LPM™	✓	✓	✓	○	✓	✓	✓	✓	✓	✓
LPM ^{3m}	✓	✓	✓	●	✓	✓	✓	✓	✓	✓
LPM ^{6d}				●	✓					

*Speed for micro drilling is dependent on the laser module's tuning. The LPM and LPM™ process micro drill holes at relatively slower speeds, the LPM^{3m} at fast production speeds, and the LPM^{6d} at the highest production speeds.

†The LPM's maximum field of view is 600mm x 600mm (23.6" x 23.6"), producing crossweb lines and features across full web widths.

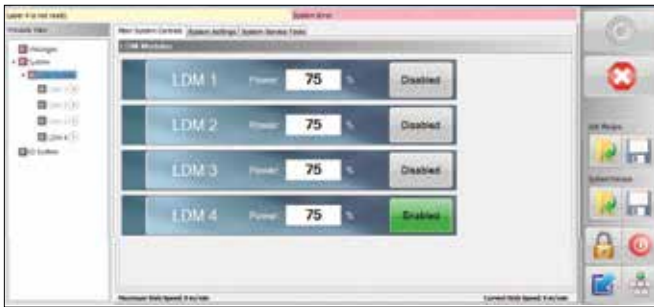
‡The LPM^{3m} can process micro drill holes at the 140mm (5.5") field of view and macro drill holes at the 500mm (20") field of view.

‡ Maximum width of crossweb features that can be processed by the LPM^{3m} is 70mm (2.75").

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Available Laser Modules:

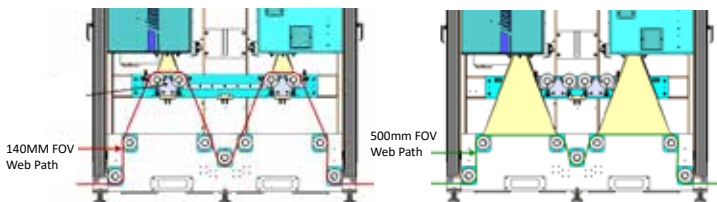
LDM: Laser Downweb Modules produce straight-line downweb scores at production speeds upwards of 600m/min (2000FPM). Processing controls monitor web speed and continuously adjust power output for the highest quality, consistent score depth.



Proprietary LightGuide® control software gives you the best of both worlds: quick control of all lasers on a single screen, with more in-depth tools available in the individual LDM modules.

LPM Series: The Laser Processing Module combines machine direction processing with crossweb patterns to increase processing options. Available LPM modules include:

- **LPM:** The base laser processing module uses a steered beam over a large field of view to create large crossweb patterns and unlimited downweb processing.
- **LPM^{dm}:** The dual mode LPM's tuned motors offer crossweb processing at smaller fields of view supplemented with superior drilling and perforating capabilities at higher speeds for greater throughput.
- **LPM^{flex}:** The flexible FOV LPM allows you to process at two or more fields of view to increase manufacturing flexibility. Integrated automatic focus ensures the laser beam is precisely focused on the material's surface. Processing areas from 140 × 140mm (5.5" x 5.5") to 500 × 500mm (20" x 20") are available. Ideal for R&D process development.
- **LPM^{xd}:** The enhanced extreme drilling features in this LPM are optimized for the most accurate drill holes with ideal sizes less than 100µm (0.004") at the highest production speeds.



Upper field process rollers shown in 140mm FOV. Position these rollers (slide towards center on bearing rail) when machine is set up to cut on lower field



Screw the Unicorn fixed beam focus assembly onto any LPM to add the highest quality downweb scores to your production line. The Unicorn focus assembly produces the smallest possible spot size for the thinnest scores and narrowest kerf widths.



TracSoft® Web Monitoring: Laser sensors monitor either a line printed on the processing material or the edge of the web itself. When the web travels laterally, the system automatically adjusts laser processing to compensate for that movement and maintain precise placement of the score relative to the line or edge.

Robust tools and features give you total control over all aspects of production.

- **Fully featured process modes** let you start processing based on a specific repeat distance, on a registration sensor trigger, or on an indexing operation. Additional offset distances and masks help delay processing or avoid unwanted triggers.
- **Tiling tools process patterns** that are longer than the laser module's processing area by splitting patterns—the laser processes the entities in the tiles in order as they pass into its field of view, perfectly aligning any entities on the tiles' borders.
- **Individual module settings** yield better process control and give consistent results, even after moving a module or switching between jobs.
- **Job recipe files** save all settings for future use, eliminating time-consuming balancing or the need for intensive training.