

SPEED WINS

Bringing a new product to market can be challenging, but the more you can reduce the time it takes the sooner you can see the profits. The Lightspeed ADL labs in Boston, Dayton, and Minneapolis are dedicated to accelerating the launch of your newest product.

We bring your designs to light.



You need a partner that is creative, but also responsive and able to provide a rapid turnaround to meet critical milestones. You may also be wondering if your design is manufacturable.

Our application development engineers will support your team and offer:

- Recommendations on material and laser wavelength selection based on decades of laser-material interaction.
- Iterative prototyping and testing of evaluation samples
- Optimization of processing parameters



When you're ready for first-in-human or other critical studies, you don't want to have to search out a different manufacturing partner. Resonetics can support you here with a ISO-13485 certification, clean-room manufacturing and robust process controls.

If you need a short production run to get a product into an evaluation phase the Lightspeed ADL offers:

- Experienced technical leads and project managers
- Cost-effective, low-volume production
- Established validation and production transfer procedures

RESONETICS

BOSTON | COSTA RICA | DAYTON | MINNEAPOLIS | SAN DIEGO

WWW.RESONETICS.COM

TO SEE HOW OUR TECHNOLOGY SAVES LIVES YOU WOULD NEED A MICROSCOPE

See how we can innovate for you



THE LEADER IN LASER MICRO MANUFACTURING

Mr. Tor Dr. Mr.

WE'RE SPECIALISTS

Resonetics is an industry pioneer that continuously innovates to solve the most challenging laser micro manufacturing applications.



Laser ablating is the process of selectively removing material from a solid material by irradiating it with a laser beam. Ablation can meet the following specifications: features as small as to 1-5 um along with multiple material types, including flat sheet, wires, tubes, and catheters. Flat sheet sizes can be up to 12"x12" with a thickness of 0.004" - 0.040" and wires, tubes, and catheters can be as small as 0.002" diameter with 0.040" - 80" length, and multi-lumen.



Laser cutting is a process where material is irradiated and removed via an assist gas. Cutting can produce features as small as 25 microns with +/-5 micron tolerances flat sheet stock, wires, tubes, and catheters. Flat sheet sizes can be up to 12"x12" with a thickness of 0.004" – 0.040", and wires. tubes, and catheters can be as small as 0.002" diameter with 0.040" - 80" length, and multi-lumen. For hypotube applications, the outside diameter can range from 0.010" to 0.375" and have variable OD and ID as long as the wall thickness is ~0.010" or less 2.50"- 4.00" longer than the part in order to cut an entire part.



Laser drilling is a variation on laser ablation that can be used to produce micro-holes. Drilling micro-sized holes for life science applications has long been a competency for Resonetics. Drilling can meet the following specifications: create holes as small as 1-5 um through multiple material types including flat sheet sizes up to 12"x12" with a thickness of 0.004" -0.040" and wires, tubes, and catheters as small as 0.002" diameter with 0.040" – 80" length, and multi-lumen. Example hole drilling applications include 3D geometries such as balloons and irrigation tips, polymer and metal hypotubes, and hole arrays in polyimide.



Laser welding in a non-contact manufacturing process that joins two materials together using low heat input and great precision. Laser welding is best applied to medical device applications that need to be welded with low heat input, have components that are small in size, down to 0.003" diameter, and have components that require a hermetic seal.

SERVING THE LIFE SCIENCE MARKETS

Resonetics is focused exclusively on the life sciences market. Below are some of the medical device and diagnostics applications we enable.



NEUROVASCULAR

- Neurovascular implant fabricating
- Delivery system component ablating cutting, and welding
- Multilumen wire ablating/stripping
- Nitinol stent cutting 3D neurovascular



DIABETES

- Sensor wire stripping Micro-needle sharpening
- Sensor singulating
- Cannula port drilling

DRUG DELIVERY

Nozzle hole drilling

Needle hole drilling

Catheter cutting

Nebulizer hole

drilling

implant ablating



CARDIOVASCULAR

- Bioresorbable and nitinol scaffold cutting
 - Balloon hole drilling
 - Delivery catheter cutting and welding
 - Wire ablating/ stripping
 - Pull ring welding 3D component ablating



- DIAGNOSTICS
- Via hole drilling
- Interposer singulating
- Biofilter hole drilling Optical sensor hole drilling
- Flow cell channel drilling



OPHTHALMIC

- Delivery system assembly, cutting and welding
- Implant cutting and drilling



PERIPHERAL VASCULAR

- Stent cutting
- Delivery system catheter skiving and welding
- Balloon hole drilling
- 3D micro component fabrication





MATERIALS

Resonetics started as a leader in laser micro manufacturing of polymers. We have expanded our expertise into processing metal and glass components

POLYMER

Resonetics is the largest independent polymer laser micro manufacturer in the world. The company started with a focus in polymer processing in 1987 and built a core competency in the development and manufacturing of polymer-based components for the life science industry.

GLASS

Resonetics can laser micro manufacture very thin glass by drilling very fine holes and singulating external and internal features of flat stock.

METAL

Resonetics is a leader in laser micro manufacturing small, tightly toleranced metal components. Capabilities include ablating, cutting and welding metal components such as stainless steel hypotubes and nitinol stents.





