

Solutions for Healthcare Applications

Fralock is a valued partner of medical equipment manufacturers, providing high-reliability custom engineered flex and rigid-flex circuits, electronic assemblies, tapes, adhesives, precision ceramics, custom ceramic heaters, and flexible heaters. We offer engineer-driven value added solutions supporting medical device manufacturers.

- Flex and Rigid-Flex Circuits
- Electronic Assemblies
- Flexible Heaters
- Ceramic Heaters
- Precision Structural Ceramics
- Adhesive Solutions

Certifications:
 ISO 9001
 AS 9100
 ISO 13485
 NAICS: 334412

Applications



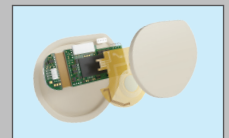
Ultrasound



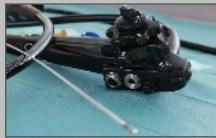
Catheters



Infusion Pumps



Implantable Devices



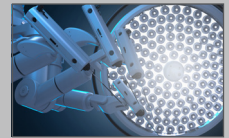
Endoscopes



Diagnostic Equipment



Specialty Engineered Materials Solutions



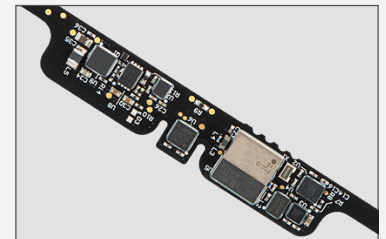
Surgical Robotics

Capabilities

Flex, Rigid-Flex, and Custom Bare Board Solutions

We deliver a wide variety of circuit solutions with extensive manufacturing capabilities:

- Trace / Space 37um (1.5 mil)
- Micro / Vias Min 50u (2 mil)
- Blind/Buried Vias (2mil)
- Laser- Precision Drilling / Excising<50um (2mil)
- Unsupported Traces / Cantilever Leads
- Controlled Impedance Routing Capabilities
- In-House Surface Finishing
- Liquid Soldermask Thickness 25um (1mil)
- Photo Imageable Coverlay Min 25um (1mil)
- RoHS & Non RoHS PCB/Flex Circuit Manufacturing
- Automated Optical Inspection (AOI)
- Electrical Testing (Flying Probe, and Hi-Pot continuity)
- Hi-temp capable, including autoclave sterilization



Electronic Assemblies

We provide the following assembly capabilities for your Flex, Rigid-Flex, and PCB requirements:

- Multiple SMT Lines
- Real Time X-ray
- Automated Solder Paste Printer
- In-Line Cleaning
- Wave Solder (Leaded & Lead Free)
- Inline Circuit Testing
- 3D AOI Automated Optical Inspection
- Laser Selective Soldering Machine With Preheat Oven

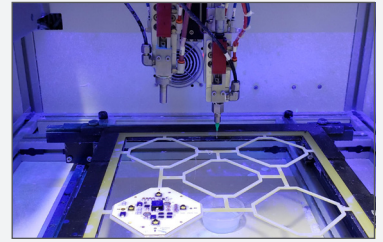


Conformal Coating, Underfill, and Potting Solutions

Conformal Coating – Applied to electronic circuit assemblies. Protects against moisture, dust, chemicals, and temperature extremes.

Underfilling Encapsulation – protects in flip-chip packaging, reduces stress on solder bumps of chips, and protects against moisture, ionic contaminants, thermal vibration and shock.

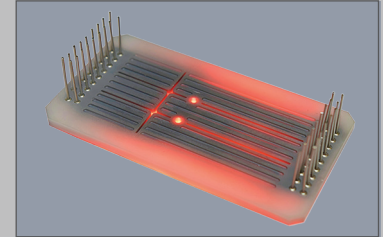
Potting Materials – Protects the electronic assembly against vibration/shock, corrosion, and chemicals. Also provides electrical insulation, enhanced mechanical strength and heat dissipation.



AlN Ceramic Heaters

Our Aluminum Nitride (AlN) ceramic heaters are among the highest performance heaters available in the market today with extremely rapid thermal cycling capabilities.

- Internal Tungsten heating traces
- Internal cooling channels
- Integrated temperature sensing with tight control
- Anti-fluorescing capabilities
- Wide range of sizes and shapes
- Uniform thermal control



Polyimide Heaters and Flat Flex Cables

Polyimide heaters are thin, flexible, and lightweight, and deliver reliable and precise heat when and where you need it.

- Unique adhesiveless constructions: eliminates cracking and operates in extreme environments
- Chemically inert, abrasion resistant
- Flexible heater traces in CuNi715, Constantan, Inconel, and Monel
- High reliability over a wide temperature range -269°C to +220°C
- Meets flammability requirements of UL94V-0
- Multiple heating zones



Precision Ceramics

We provide engineered solutions for complex designs and assemblies encompassing all forms of ceramics, zirconia, glass and sapphire. Our advanced in-house manufacturing technology enables us to press ceramic powders, machine and fire, then machine again to achieve final dimension and assembly requirements.

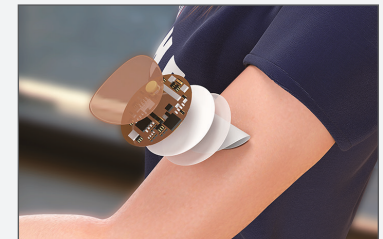
- We hold .002"/inch from green machining through firing
- Finish lapping and polishing tolerances to .00002" in diameters and .00001" in flatness
- Complete ceramic solutions from prototypes to production quantities



Specialty Engineered Materials Solutions

We engineer our advanced materials with die-cutting, UV And CO₂ laser cutting slitting, and laminating for many critical applications.

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|---|---|
| • Breathable films, non-wovens | • Microfluidics |
| • Medical device attachment | • Thermally and electrically insulative materials |
| • Medical grade silicone transfer adhesives | • Thermally conductive gap fillers |
| • Other specialty adhesives | • Electrodes |
| • Multi layer laminates | • EMI Shielding |



Engineering and Manufacturing Services

Fralock offers personalized engineering services designed to support your specialized needs, including:

- Design for Manufacturability
- Customized engineering design and layout services
- Production & manufacturing support
- Turnkey manufacturing
- Full production and assembly capability
- Electrical and electronics testing

