

## About K&L

### ◆ Company Profile

#### In Touch with your Filtering Solutions

From Surface Mount Components to Complex Tetrack Assemblies



K&L Microwave designs and manufactures a full line of RF and microwave filters, duplexers, and integrated assemblies, including ceramic, lumped element, cavity, waveguide, and tunable filters. K&L's products are used in a wide variety of defense electronics, homeland security, space, and commercial communication systems.

K&L Microwave is a subsidiary of Dover Corporation, a diversified global manufacturer with annual revenue exceeding \$7 billion. Dover is committed to operational excellence, innovation, and market leadership. K&L was founded in 1971 and acquired by Dover in 1983, and has been a leading supplier of filters and filter-based products throughout its history.

K&L has three facilities in Salisbury, Maryland, with a total of 170,000 square feet. K&L has been a pioneer in vertical integration in the filter industry, enabling faster response times. Capital investment includes over 100 network analyzers; an on-site calibration lab; advanced circuit design and electromagnetic analysis software packages; laser-welding and laser-labeling devices; a custom-designed plating and wastewater closed-loop operation; a fully equipped machine shop with computer-numerically controlled (CNC) vertical mills, horizontal mills, and lathes; power-testing equipment; and a test laboratory featuring thermal shock chambers and specialized measurement equipment for vibration, leak, humidity, salt-fog, and a variety of other environmental requirements. In addition, K&L streamlines production by teaming with customers to implement lean manufacturing and maintains a Dominican Republic facility for high-volume, commercial throughput.

K&L Microwave's Salisbury operation adheres to all federal, state, and local laws and regulations,

including, but not limited to, those of OSHA, the EPA, the Sarbanes-Oxley Act, and the EEOC, as well as United States government import and export regulations and a wastewater discharge permit with the City of Salisbury.

### ◆ Our Goal

K&L's mission is to produce high-quality, cost-effective solutions based on customers' specific needs. By controlling internal design and production processes, K&L ensures and guarantees high quality and exceptional product performance. The K&L team is committed to achieving excellence through aggressive investment in research and development, through capital investments in manufacturing technology, and through the use of proven and innovative designs.

### ◆ Product Development and Selection

K&L Microwave is a design-to-order RF and microwave filter manufacturer. As such, the technical sales force and engineers work closely with customers' engineering groups to provide design support and custom solutions. Partnering in this way allows K&L to provide enhanced value through integrated technologies. Senior engineers often travel to client facilities to conduct "lunch-and-learn" sessions and to participate in design reviews. For customers who visit our web site ([www.klmicrowave.com](http://www.klmicrowave.com)), K&L's Filter Wizard® software simplifies the selection of the right filter product.

### ◆ Quality, Sustainability, and Compliance

K&L maintains a comprehensive quality management system focused on areas directly impacting product safety and reliability, and is AS 9100 registered. AS 9100 certification is the worldwide mark of excellence for the aircraft/aerospace industry. K&L's Salisbury facilities are ISO 14001:2004 registered. K&L applies soldering and workmanship practices that conform to

customer and military standards, American National Standards Institute (ANSI) standards, and IPC standards, including IPC J-STD-001 and IPC-A-610, and has the capability to meet RoHS requirements upon request.



AS 9100



ISO 14001



### RoHS Compliance

The European Economic Community (EEC) Restriction of Hazardous Substances (RoHS 2011/65/EU) directive dictates that all products sold in Europe and certain other locations will be free of designated hazardous materials, with some exceptions. One significant exception is for any product used in a military application.

Specific materials that are banned based on the RoHS directive include:

- Lead
- Mercury
- Hexavalent Chromium
- Polybrominated Biphenyls (PBB)
- Polybrominated Diphenyl Ethers (PBDE)
- Cadmium

Since K&L Microwave serves both the military and commercial markets with custom designed filters and filter-related assemblies, the RoHS directive requires K&L's customers to identify the need for RoHS compliance in their specifications and/or orders. K&L has the capability to meet RoHS requirements and does so upon request.

### Conflict Minerals Policy

K&L Microwave periodically publishes updated summaries of its response to the Conflict Minerals disclosure requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act, Section 1502. K&L's parent company, Dover Corporation, is a NYSE listed company and, as such, provides disclosures under SEC reporting requirements.

K&L does not knowingly source any materials, parts, or products that contain Conflict Minerals from the Covered Countries, as defined in Dodd-Frank. Determining the source of the Conflict Minerals contained in the many parts, components, and materials used in K&L's products is a detailed, lengthy task. As part of Dover Corporation, K&L strives for full compliance with Dodd-Frank requirements. For K&L's latest published due diligence process update, please see "Statement on Conflict Minerals" at <http://www.klmicrowave.com/supply-chain.php>.

We appreciate the ongoing support and cooperation of suppliers and customers in our Conflict Minerals disclosure process to ensure the effective handling of disclosures and requirements.

### REACH Compliance

K&L supports the European REACH regulation objective of improving the protection of human health and the environment.

With respect to the REACH regulation, K&L's products are considered articles (components) and shall not release any substance when used as intended and according to recommended specifications and parameters.

The European Chemical Agency (ECHA) has identified a list of substances that are considered as Substances of Very High Concern (SVHC). K&L has determined that delivered products do not contain any of these SVHCs above the threshold of 0.1% by weight as required by the REACH legislation.

K&L Microwave continues to take all necessary steps to produce products in accordance with the requirements of the REACH regulation. We will inform our customers, upon request, of any exceptions to the REACH requirements.

SVHC candidate list web resource:  
<https://echa.europa.eu/candidate-list-table>

For K&L's current REACH Compliance statement, including a summary of SVHC candidate list revision dates, please visit <http://www.klmicrowave.com/environmental.php>.

## About K&L

### ◆ Ordering Information

Always order by model or part number. For modifications or special testing to meet specific requirements, contact our sales department. Your order may be placed directly to the factory or through your local representative.

**K&L Microwave, Inc.**  
**2250 Northwood Drive**  
**Salisbury, Maryland 21801**  
**Phone: 410-749-2424**  
**Fax: 443-260-2268**  
**sales@klmicrowave.com**

Unless shipping instructions accompany the order, K&L will exercise judgment as to the best method of shipment. The prices of our products include packing, but do not include shipping costs.

### ◆ Delivery

Delivery times may vary based on product complexity and factory loading. To obtain current delivery schedule, contact our sales department or your local representative. Expedited delivery of as little as 72 hours may be available for certain products at an additional charge.

### ◆ Prices

Determination of price, terms and conditions of sale, and final acceptance of orders are made only at our plant in Salisbury, MD. Prices quoted are FCA Salisbury, MD. Terms are Net 30 Days for established accounts.

### ◆ Specifications

We reserve the right to discontinue any item or product without notice and to change specifications at any time without incurring any obligation to incorporate new features in products previously sold.

### ◆ Warranty

Products manufactured by K&L Microwave are warranted against defective material and workmanship for one year from date of shipment. K&L's obligation for any defect(s) shall be limited to repair (or replacement) of defective part(s). K&L assumes no liability if defects result from improper use, operation above rated capacities, repairs not made by K&L, or misapplication of equipment. No other warranty is expressed or implied, and K&L neither makes nor authorizes any other person to make any other warranty concerning its products. K&L is not liable for consequential damages. Warranty returns must be first authorized by the sales department and are to be returned prepaid. Customers requiring product service should contact K&L directly, at which time a Return Material Authorization (RMA) number will be assigned to authorized return. The RMA number should be attached to documentation included with the unit(s) being returned.

### ◆ On the Web

In parallel with this catalog, K&L Microwave provides information on existing products and new product releases at the company's main web site, [www.klmicrowave.com](http://www.klmicrowave.com), and offers the Filter Wizard® web application at [www.klfilterwizard.com](http://www.klfilterwizard.com).

Filter Wizard® is a filter synthesis and selection tool that streamlines identification of filter products meeting customer specifications across a large portion of K&L's standard product offerings. Filter Wizard® includes bandpass, lowpass, highpass, and bandreject response types, with all-pole and elliptic solutions. The selection tool's bandpass search capabilities include Chip & Wire filters, Ceramic filters, Cavity filters (combine and interdigital), Thin Film Lumped Element filters, and Waveguide filters, as well as KeL-fil®, KeL-com®, Mini-Max®, Mini-Pack®, and high-Q ceramic puck options. Filter Wizard® accelerates user progress from specification to RFQ for RF and microwave filters spanning an ever-increasing range of response types, bandwidths, and unloaded Q values.

Much of the time, Filter Wizard® can speed selection of the right filter product for your communications

network, RF subassembly, or military system application from a vast number of available designs. Provide the Filter Wizard® web application with your desired specifications, and the software will return a list of products that match, placing response graphs, outline drawings, and downloadable s-parameters at your fingertips.

## ◆ Strength and Synergy

K&L Microwave is one of four companies belonging to Microwave Products Group (MPG). The MPG companies design, manufacture, and sell special electronic components and systems, including high-performance microwave and RF filters, switched filter banks, switches, switch matrices, integrated assemblies, and co-site signal interference solutions.



MPG products are used in military, space, telecom infrastructure, and industrial applications where function and reliability are crucial. K&L's three MPG (www.dovermpg.com) sister companies are BSC (www.bscfilters.com), Dow-Key Microwave (www.dowkey.com), and Pole/Zero (www.polezero.com). K&L and sister company Dow-Key Microwave partner to provide tailored test system architectures and innovative rack assemblies.

## ◆ About Dover Corporation

Dover is a diversified global manufacturer with annual revenue exceeding \$7 billion. We deliver innovative equipment and components, specialty systems, consumable supplies, software and digital solutions, and support services through four operating segments: Energy, Engineered Systems, Fluids, and Refrigeration & Food Equipment. Dover combines global scale with operational agility to lead the markets we serve. Recognized for our entrepreneurial approach for over 60 years, our team of 29,000 employees takes an ownership mindset, collaborating with customers to redefine what's possible. Headquartered in Downers Grove, Illinois, Dover trades on the New York Stock Exchange under "DOV." Additional information is available at [dovercorporation.com](http://dovercorporation.com).



[www.klmicrowave.com](http://www.klmicrowave.com)  
Phone: 410-749-2424 • FAX: 443-260-2268  
Email: [sales@klmicrowave.com](mailto:sales@klmicrowave.com)



[www.klfilterwizard.com](http://www.klfilterwizard.com)  
2250 Northwood Drive  
Salisbury, MD 21801