Design and Fabrication Services

Scientific programs, institutions, and researchers around the world rely on the engineering, fabrication, and logistics services provided by EOL’s Design and Fabrication Services (DFS). Our mechanical engineering design group is known for its ability to model and prototype initial concepts and convert them into mission-ready aircraft wing pods, instrument inlets, optical pointing systems, avionic racks, and ground-based tower systems, to name a few. Our machine shop has an unmatched set of skills and capabilities when it comes to fabrication and scientific instrument manufacturing. It doesn’t matter how complex and challenging the requirements for an instrument are, our staff can provide innovative and elegant solutions in support of atmospheric research.
**MECHANICAL ENGINEERING SERVICES**

» Designs, analyzes, manufactures, and integrates a wide variety of instruments for a broad range of atmospheric science platforms, including those that are airborne, ship-borne, balloon-borne, mobile, and ground-based.

» Designs a comprehensive range of equipment and instruments touching almost every aspect of the current technologies and instrumentation development for the user community.

» Utilizes the latest software tools, including computer-aided-design (CAD) software, SolidWorks, and its integrated finite-element-analysis (FEA) simulation software.

» Develops optical, laser, and radar-based instruments for atmospheric remote sensing.

**LOGISTICS SUPPORT**

» Provides support for field campaigns and site surveys around the world.

» Operates NCAR’s crane, provides packing and shipping support, and has expertise in setting up equipment and components required by the project.

» Offers repair and maintenance skills to provide in-house support of EOL’s trucks, trailers, forklifts, and crane.

**FABRICATION SERVICES**

» Makes use of the latest computer-aided-manufacturing (CAM) software to control in-house computer numerical control (CNC) machining centers.

» Works efficiently to minimize the manufacturing costs and allow the shop to produce complex shapes and contours when needed.

» Skilled in fabricating components made from aircraft-grade aluminum, titanium, stainless steel, and engineered polymers.

**DFS CAPABILITIES**

» Instrument development
» Mechanical design and analysis
» Opto-mechanical design
» Precision machining
» Sheet metal fabrication
» Campaign logistics support
» Aerospace certified welding, brazing, and soldering
» Fusion Deposition Modeling (3D Printing)
» Instrument repair

**Contact**

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**On the Web**

www.eol.ucar.edu/dfs  
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