

**MSE Systems and Optical Systems**  
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### **Business Description:**

MSE develops complete product development. Mechanical, electronic, optical, embedded and computer-based instruments have been developed for the medical, electronics, and instrumentation industries

### **Product Development**

MSE's business consists of Product Development of systems using optics, image sensors, industrial sensors, mechanics, electronics, and computer controls. Much of MSE's recent work involves Product Development. Usually I utilize my mechanical engineering skills to add design not possible with off the shelf components and software. Standard engineering practices are applied to the complete design. We use AutoCAD and LabVIEW as our principal design tools.

MSE's industry experience includes these technologies:

- Product Development

- Machine and Research Vision Systems, Industrial sensors

- Imaging Systems including cameras, motion control and software.

- Laser Diode Test Systems

- Optical instrumentation:

  - Interferometers, spectrometers, ellipsometry, telescopes, microscopes, LIDAR scanners, collimators, imaging, detectors and more...

- NASA Space Shuttle

- Biomedical instrument design

- Computer disk drives

- Consumer products

- Manufacturing technology,

- Thermal analysis, Catalytic converters

- Chemical sampling instrument design

MSE's associates with many local designers, machine shops, engineers, and scientist. MSE can bring a skilled group to focus quickly on a wide range of problems.

MSE will be happy to work with your company to establish a product specification, equipment requirements and assist in project planning to get your product ready for manufacturing. In addition MSE can provide Product Development services in part or in whole.

**Steps:**

- 1) Write a complete specification with the customer.
- 2) Develop the product prototype. The customer will often work with the prototype for changes to the final design. Product performance limits are usually determined during this stage.
- 3) Refine the design and finalize prototype modifications.
- 4) Complete manufacturing drawings, software, and complete testing.

**Cost & Terms****System Design:**

In most cases MSE can provide a rough estimate of system cost when you know your requirements and specifications. In some cases a retainer fee is required for new customers or to cover the specification expenses. The customer sometimes elects to do the project in house or is shopping for the vendor that is the best fit for their needs.

**On-Site** (Your office)

Other expenses are daily flat fee per day for on site work. One billable day is added for all travel for each trip that includes an overnight stay. Travel, car rental, meals, and lodging, and all other customary expenses are charged to the project plus 25% if not prepaid or by agreement.

**Tooling and Equipment**

Expenses on tooling and equipment will be billed to your project in advance or per contract. A 25% surcharge is added to all items directly purchased by MSE unless an advance payment or is included in the PO or contract.

**General**

Customer and must be insured by the customer for all losses. MSE has standard business insurance, but may not be wholly covered for the loss of the property of others. (MSE has not suffered a loss to date.)

A purchase order and statement of work ( or contract) is required for all projects.

It is important to communicate all relevant technical data to insure a successful project. If the customer is unsure please communicate it to be sure.

Unless otherwise agreed upon a letter of credit is required in the amount designated. In some cases MSE's attorney will write a binding contract. All prospective customers must read and sign this document prior to placing an order with MSE. By your signature you acknowledge that you agree to the terms as stated in this document.

I have read and understood this document and will abide by its terms unless exempted from any specific term by an attached signed written agreement.

