

NATSUME OPTICAL CORPORATION & QED TECHNOLOGIES®

## A Powerful Combination

**NATSUME:** Established in 1947 by Tetsuzo Natsume

**MANTRA:** A small company that shines brightly

**MRF IMPACT:** MRF integrated well with our existing technology and accelerated our transition from producing standard to high precision optics. MRF provided an innovative change from conventional polishing to deterministic polishing allowing us to produce high precision and specialty optics with great accuracy..

**MRF TECHNOLOGY:**  
1st Q22-Y in 2008; 2nd Q22-Y in 2010

**GREATEST ACHIEVEMENT:** Achieving a high level of customer satisfaction by offering consistently high quality products.

### QED TECHNOLOGIES' SOLUTIONS

Optics manufacturers and their customers count on SSI® Metrology and MRF® Polishing for superior product quality, manufacturing performance, and profitability. It's the difference between a good optics manufacturer and a great one.

Superior optics manufacturing starts with QED.

**NATSUME**

Made with  
**MRF®**



Learn more about Natsume Optical Corporation and other Elite100 Optics Manufacturers:  
[www.elite100.com](http://www.elite100.com)



Learn about QED Technologies' MRF® Polishing and SSI® Metrology:  
[www.qedmrf.com](http://www.qedmrf.com)

# NATSUME OPTICAL CORPORATION & QED TECHNOLOGIES:

## A Powerful Combination

Natsume Optical Corporation (NOC), located in Iida City, Japan, is an optical device manufacturer specializing in various kinds of high precision optical products. With more than 60 years' experience, NOC has developed sophisticated optical technology to meet any customer requirement.



MRF integrated well with our existing technology and accelerated our transition from producing standard to high precision optics. MRF provided an innovative change from conventional polishing to deterministic polishing allowing us to produce high precision and specialty optics with great accuracy.



The lenses Natsume produces are called "MfLens".

Using considerable expertise, NOC supplies the core optical components of manufacturing devices such as illumination systems for Semiconductor Lithography Systems, LCD Exposure Systems, and Laser Annealing Systems. In recent years, Natsume has advanced into the telecommunications, medical equipment, and laser industries.

Natsume processes glass and crystals into a variety of shapes for optics. To meet each customer's diverse requirements, NOC also has optical design, lens manufacturing and assembly capabilities. Lenses Natsume produces are called "MfLens". Professionals from semiconductor, measurement, medical and other industries request MfLens because of their high quality.

In 2005, NOC created a Technology Center in order to develop technologies and processes to address increasingly diverse optical shapes and tighter specifications: from simple plano to complete freeform surface shapes and from nm to Å level precision.

Several years later, in 2008, Natsume purchased their first Q22-Y MRF system and by 2010 they had two Q22-Y systems in their shop. NOC integrated MRF into its production facility to leverage the strengths of the technology and to consistently produce high precision optical components. Now NOC produces a wide range of sophisticated optical components including spheres, aspheres (aspherical, axicon), cylindrical, freeform (toroid, off-axis asphere, complete freeform), from 0.5mm in diameter.

### *About Mf-Lens*

The Mf-Lens stands for "Multi-Form, Multi-Function and Multi-Field" and embodies both the dreams and the confidence we harbor towards the field of optical applications. The letter "M" suggests our capacity for diversification while the letter "f" indicates the unique "forms" we create based on our extensive design philosophy, their "function", and the "fields" to which we contribute. We also take it to symbolize our strong commitment to the "future" and "fortune" of mankind.

*For more information about Natsume Optical Corporation, please visit their website: <http://www.mflens.com/>*

### CONTACT NATSUME

mailing address:

**3461 Kamichaya, Kanae, Iida  
Nagano, 395-0808**

Tel: **+81-265-22-2434**

Email: **[www.mflens.com/contact](http://www.mflens.com/contact)**

web: **[www.mflens.com](http://www.mflens.com)**

