Create unique solutions.
Create new Value.

Company Profile

Lasertec
Be the first point of contact for worldwide customers searching for solutions.

“Create unique solutions. Create new value.”
Corporate philosophy of Lasertec

Lasertec has been creating a number of unique inspection and measurement systems that feature leading-edge technologies for many years. We capture market needs at an early stage and bring high-value solutions quickly to help customers’ efforts at their R&D and production sites based on our proprietary technologies in applied optics. Thanks to our unique technologies, high quality, and good customer support, we have earned a good reputation and customer trust in such fields as semiconductor, energy and environment, laser microscope, and flat panel display.

Lasertec will keep creating new value and contribute to the progress of society.

The core expertise of Lasertec that enables the successive launches of epoch-making products is its technologies in applied optics.

Lasertec has accumulated its technologies through the pursuit of ultimate possibility in the use of light. The pursuit began when we started using laser as a light source to give high resolution to microscopes. Since then, we have mastered a “confocal optics” technology that enables the construction of a three-dimensional image that is in focus at all points. We have also succeeded in developing a “DUV/EUV optics” technology that is applicable to semiconductor lithography applications. The application of our expertise to ultrahigh resolution lithography has led to an “interferometry” technology that accurately measures the phase of light.

Lasertec uses the three core technologies and other neighboring technologies in various combinations to develop products that address customer needs ahead of anyone else.
Lasertec uses its proprietary optical technologies to help customers overcome new challenges.

“Let’s launch a product that is totally new to the world every year.” Spirit of the founders

In October 1976, we successfully developed the world’s first automated LSI photomask inspection system. The system contributed to quality improvement and cost reduction in the semiconductor industry, achieving a higher defect detection rate (from 60% to near 100%) and a significantly reduced inspection time (to 1/10 of what it used to be). It gave us a foundation for growth. Drawing on this success, we have launched more innovative products featuring unique optical technologies. “A product that is totally new to the world” - by upholding the spirit of the founders and redefining it, we will keep enhancing our product development capability and strive for higher growth.

Advanced and unique products are developed in the shortest time possible

At Lasertec, engineers are responsible not only for product development but also for all stages of product life cycle, i.e., planning, technology research, designing, prototyping, fabrication, delivery, installation and after-sale support. Armed with diverse experiences from these activities and highly motivated by the professional spirit, our engineers take on tough challenges. This leads to the accumulation of unique knowhow and drives our rapid product development.

Technical support infrastructure for leading-edge customers worldwide

Our customers’ leading-edge production facilities require uninterrupted full capacity operations. Lasertec’s standard is to keep a 99% or higher uptime for all of its systems in use. We put in place a technical support infrastructure to provide full on-site support and prompt backup in case of emergency. Our global operations are assisting our customers’ production and R&D efforts.
Lasertec is actively engaged in the development of inspection systems that address the needs of the next-generation lithography technology known as extreme ultraviolet lithography (EUVL).

Lasertec provides highly accurate inspection and measurement systems essential for semiconductor manufacturing process.

Our inspection and measurement systems play a crucial role in the semiconductor manufacturing process, which is becoming more complex and sophisticated by the introduction of new materials and new architectures as well as by the continuing miniaturization of IC designs. Our mask blank inspection systems have a track record of being regarded as the de facto standard tools of mask blank inspection. We are also launching various other inspection systems to address new challenges in IC device production. We are offering products that fit customer needs and strategies.
Lasertec is providing systems that contribute to higher energy efficiency and better environment.

We offer a highly sensitive inspection system for SiC devices, which are expected to become power semiconductors of the next generation. For lithium ion batteries, which are being developed as an automotive power source, we provide a unique measurement system that can reveal coating thickness non-uniformities as well as one that helps analyze the characteristics of component materials.

**High sensitivity detection of defects on SiC and GaN wafers**

**SiC Wafer Inspection and Review System**

**SICA88**

- High sensitivity detection of surface and crystalllographic defects at the same time
- Highly accurate and detailed automatic defect classification (ADC)

**GaN Wafer Inspection and Review System**

**GALOIS Series**

- Incoming/outgoing inspection of bulk GaN, GaN epitaxial wafers, and GaN-on-Si wafers
- GaN epitaxy and CMP process improvement

**For electrode coating process control and for analyzing charge/discharge characteristics of lithium ion batteries**

**Electro-Chemical Reaction Visualizing Confocal System**

**ECCS B320**

- In-situ observation of electrochemical reactions inside a charging/discharging battery

**Coating Thickness Scanning System**

**TSS20**

- For higher performance of lithium ion batteries

Graphite anode inside a lithium ion battery being charged

0% charged ➤ 33% charged ➤ 50% charged ➤ 75% charged ➤ 100% charged

Distribution of slurry coating

Distribution measured with capacitance sensor

Horizontal lines - coating errors
Black spots - peeled coating
White spots - coating clusters
HYBRID is a multifunctional high-performance confocal microscope that features 2 different light sources - white light and laser light - in one body to provide both wide field-of-view and high resolution.

Microscopes are expected to be more multifunctional and better performing because of their widening applications and nanometer-scale measurement needs. Lasertec’s confocal microscope, HYBRID, features 2 different optics in one body to provide high accuracy in wide field-of-view (at low magnification) while offering high resolution at high magnification. Using white light, HYBRID can perform interferometry measurement and spectroscopic reflectometry measurement. HYBRID also uses laser light to provide high resolution images in non-contact observation of extremely small structures at high magnification. HYBRID is widely used for R&D and quality control in various industrial fields, including semiconductors, metals, resins, new materials and high performance films.
Lasertec provides state-of-the-art inspection systems to support innovations in FPD technology.

Lasertec’s inspection systems support innovations in liquid crystal and other flat panel display (FPD) technologies and facilitate the adoption of higher resolution FPDs. Our FPD photomask inspection systems have a track record of being regarded as de facto standard tools. We also offer a full lineup of solutions to cover inspection needs of the processes before and after photomask inspection. We upgrade the defect detection performance of our inspection systems in response to the introduction of finer patterns. We pride ourselves on making significant contributions to the quality improvement of FPD photomasks.

Lasertec systems used in FPD manufacturing process

Lasertec products are used to inspect photomasks necessary for the production of organic LED panels.
Company Outline

<table>
<thead>
<tr>
<th>Name</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lasertec Corporation</td>
<td>Lasertec Corporation (Global Headquarters)</td>
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<tr>
<td></td>
<td>Phone: +81-45-478-7111, Fax: +81-45-478-1061</td>
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<tr>
<td>Corporate office</td>
<td>Lasertec USA, Inc. (America)</td>
</tr>
<tr>
<td>2-10-1 Shin-yokohama, Kohoku-ku, Yokohama, 222-8552, Japan</td>
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</tr>
<tr>
<td>Capital</td>
<td>Phone: +1-408-437-1444, Fax: +1-408-437-1430</td>
</tr>
<tr>
<td>931 million yen</td>
<td>Offices: Texas / Idaho / Vermont / New York / Oregon</td>
</tr>
<tr>
<td>Founded</td>
<td>Lasertec USA, Inc. Zweigniederlassung Deutschland (Europe)</td>
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<tr>
<td>July 1960</td>
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<tr>
<td>Development, manufacturing, sale and service of the following products</td>
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<tr>
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<td>2. Energy and Environment-related products</td>
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<td>3. Laser Microscopes</td>
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<tr>
<td>4. FPD related systems</td>
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<tr>
<td>MUFG Bank, Ltd.</td>
<td>Inquiry by e-mail: <a href="mailto:sales@lasertec.co.jp">sales@lasertec.co.jp</a></td>
</tr>
<tr>
<td>The Sumitomo Mitsui Banking Corp.</td>
<td></td>
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</tbody>
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Milestones

1960  
- Yasushi Uchiyama founds Tokyo ITV Laboratory, a firm engaged in X-ray television in X-ray television development.

1962  
- NJS Corporation is established and starts exploring a wide range of technology development besides X-ray television.

1978  
- LSI photomask inspection system receives "Ten Best New Products Award" from Nikkan Kogyo Shimbun (Business & Technology Daily News).
- The world's first LSI photomask inspection system is developed and launched.

1982  
- Reticle inspection system receives "Ten Best New Products Award" from Nikkan Kogyo Shimbun (Business & Technology Daily News).
- The world's first color laser scanning microscope is developed and launched.

1985  
- Lasertec is listed on the OTC stock market (Code 6920).

1986  
- Large FPD photomask defect inspection system, 20MD Series, is developed and launched.

1987  
- Lasertec U.S.A., Inc. is established in San Jose, CA.
- Automated LCD color filter inspection system and automated repair system are developed and launched.
- The world's first phase shift measurement system is developed and launched.

1990  
- NJS Corporation is renamed as Lasertec Corporation.
- Lasertec is listed on the OTC stock market (code 6920).

1993  
- Automated LCD color filter inspection system and automated repair system are developed and launched.

2000  
- Lasertec Korea Corporation is established in Seoul, Korea.

2001  
- Lasertec is listed on JASDAQ.

2002  

2006  
- Lasertec is listed on JASDAQ.

2008  
- New corporate head office and R&D center is inaugurated in Shin-yokohama.

2009  
- SIC wafer inspection and review system, SICA, is developed and launched.

2010  
- Lasertec Taiwan, Inc. is established in Hsinchu, Taiwan.

2012  
- Lasertec is listed on the second section of the Tokyo Stock Exchange.
- Lithography process inspection system, LX330, is developed and launched.

2013  
- Lasertec is listed on the first section of the Tokyo Stock Exchange.
- Lasertec receives "Commissioner of the Japan Patent Office Award" as a company making good use of the industrial property rights system.

2014  
- ECCS B310 receives "Ten Best New Products Award" from Nikkan Kogyo Shimbun (Business & Technology Daily News).
- The world's first EUV mask blank inspection & review system using EUV light (13.5nm wavelength) is developed and launched.

2017  
- Lasertec China Co., Ltd. is established in Shanghai, China.

2018  
- ABICS E120 receives "Ten Best New Products Award" from Nikkan Kogyo Shimbun (Business & Technology Daily News).

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