General Product Catalog

Product Guide

1804-OL-400

Head Office / Mitsuke Plant
10-1, Shinkocho, Mitsuke-shi, Niigata 954-0076 Japan   Telephone: +81-258-61-5050   FAX: +81-258-61-5980

Hiratsuka Plant

Kawasaki Office

http://www.canon-tokki.co.jp/eng/

This brochure is using Rice ink to minimize the impact on the environment.
Fully automated and unified processing has been achieved for everything from thin-film formation to the encapsulation process!

Canon Tokki’s fully custom-made manufacturing systems

Canon Tokki’s products are centered on the OLED display and thin-film photovoltaic cell markets, and Canon Tokki manufactures and sells equipment that applies vacuum technology, enabling continuous processes that fully automate the formation of thin films on substrates in a vacuum, up to and including encapsulation. Because every customer’s needs are different, we listen carefully to the voice of the customer when determining the specifications of each specific system we produce. We invite you to take advantage of our long years of experience in developing and designing specialized machinery, and to give us the opportunity to meet your every equipment manufacturing need, from R&D systems to mass production systems.

It is possible to automate multiple processes in a continuous system, from thin-film formation to encapsulation.

The fusion of mass production system development with mass production field support backs up the commercial production of next-generation products.

Manufacturing systems give impetus to the development of organic electronic devices that are gentle on the environment.

OLED Display Manufacturing Equipment

OLED Display panel production systems unify processing from the deposition process to the encapsulation process

When OLED displays are manufactured, this equipment deposits films of organic emitters and other such materials in a vacuum, when it is necessary to bond and encapsulate the films without any contact with the air. The unified management of key parameters for a variety of processes and the fully automated systems offer a high degree of productivity.

System-ELVESS OLED Mass Production System

This system was developed for mass production. Our organic material and cathode metal material deposition technology and expertise, fully automatic encapsulation technology based on precision robotics, highly accurate alignment technology that is indispensable for full-color pixel fabrication, and other technologies that have been incorporated since the founding of Canon Tokki have resulted in a fully automated mass production system with the top share worldwide.

Application: The mass production of OLED display panels

Small-ELVESS Small to Medium Volume Production System

This system is ideal for everything from basic research and development to small volume production of OLED displays. All processes, from O2 plasma cleaning to deposition and encapsulation, are performed in a single system. Since the deposited film surface never comes into contact with the atmosphere, it is possible to create high-performance OLED devices. Highly reproducible research and prototyping makes efficient panel development possible, all the way up to the transition to mass production.

Application: The small or medium volume production of OLED display panels

Try-ELVESS Research & Development System

This system is ideal for the research and development of OLEDs and the development of materials. This compact system integrates the O2 plasma cleaning chamber, organic emitting layer deposition chamber, metal electrode deposition chamber, and encapsulation chamber. Since contact with the atmosphere never occurs from deposition to encapsulation, it is possible to create high-quality OLED device prototypes. This system makes basic development of OLED devices efficient.

Application: The prototyping and testing of OLED display panels

A vacuum robot in the middle of the clusters is part of the fully automated ELVESS OLED Mass Production System, which completes full-color OLED panels while transporting glass substrates one after the other to the deposition and encapsulation chambers.
Canon Tokki’s thin-film photovoltaic cell manufacturing equipment leads the next generation of photovoltaic cells

This equipment carries out a variety of thin-film coating in photovoltaic cell manufacturing processes. After many years of experience, Canon Tokki has cultivated sputter technology, vacuum deposition technology, large glass substrate transfer technology, and other technologies that work together in systems designed to meet your needs, whether in an inline or cluster mass production system, or in a small research and development system.

■ Compound Thin-Film Photovoltaic Cell Manufacturing Equipment

This continuous inline-type system includes every process from large glass substrate cathode deposition to light-absorbing layer deposition. A proprietary carrier delivery method makes stable mass production operations possible. In addition, Canon Tokki offers a lineup with a wide range of other systems, including other cluster-type mass production systems and research & development systems.

Application: The fabrication of thin-film photovoltaic cell panels

Overview

<table>
<thead>
<tr>
<th>Spattering target</th>
<th>DC (Metal: Cu, Al, etc.)</th>
<th>RF (Non-metal materials: SiO2, Al2O3, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass substrate size</td>
<td>150 x 1,300 mm</td>
<td>&lt;</td>
</tr>
<tr>
<td>Tact time</td>
<td>60sec/s</td>
<td></td>
</tr>
<tr>
<td>Film thickness uniformity</td>
<td>DC ± 2% RF ± 8%</td>
<td></td>
</tr>
<tr>
<td>Material utilization</td>
<td>About 40~45%</td>
<td></td>
</tr>
</tbody>
</table>

■ Organic Thin-Film Photovoltaic Cell Manufacturing Equipment

This photovoltaic cell manufacturing equipment applies the substrate delivery technology based on vacuum robots and vacuum deposition technology cultivated during our development and manufacturing of OLED display manufacturing equipment. Canon Tokki supports a variety of different needs, from cell development to pilot production.

Application: The fabrication of thin-film photovoltaic cell panels

■ Vacuum Evaporation Equipment

Canon Tokki’s vacuum evaporation equipment pursues ease-of-use, including easy regular maintenance and substrate swapping at the production site, and easily modified deposition parameters in the research lab.

■ CM series for optical parts

This optical multilayer film vacuum evaporation system is for optical parts. The cylindrical shape and front access door of this system make it extremely user-friendly, and it produces high-quality, highly reliable thin films. The CM series is available in a range of chamber sizes from φ400 to 1800 mm, depending on the application.

Applications: Antireflective coats (AR coats), reflective surface films, dielectric filters, and others

■ CME series for crystal devices and other electronic parts

This vacuum evaporation system is used in fields such as crystal devices, thin-film sensors, and new material development. A wide range of options is available for any application, such as substrate rotation and reversal fixtures, electron beam gun deposition sources, and others.

Applications: Crystal devices, electronic parts, thin-film sensors, and others

■ CVD Equipment

This CVD equipment was developed to deposit protection layer like silicon nitride film over large glass substrates at a low temperature. This equipment supports various applications, including LCD TFTs, semiconductors, photovoltaic cell manufacturing, and others.

■ ELVESS-PE-CVD

This plasma CVD is developed for OLED displays application. By installing to OLED manufacturing systems in module units, continuous deposition is made possible at a low temperature after organic layer deposition, with the protective film in a vacuum. CCD alignment or mechanical alignment mechanism can be selected for mask deposition.

Applications: OLED displays, organic semiconductors, thin-film photovoltaic cells, and others
Vacuum Process Equipment

Sputtering Equipment

This sputtering system is ideal for the mass production of compact electronic parts, such as crystal devices and chip resistors.

**Batch-Type Sputtering Equipment**

SPK Series
This sputtering equipment is designed for everything from testing to small volume production. Up to three target types can be affixed, and multilayer deposition can be batch processed without breaking the vacuum. Both automatic and semiautomatic operation is made possible with a simple touch panel interface.

Applications: Thin-film sensors, crystal devices, chip resistors, electronic parts, and others

**Compact Carousel Sputtering Equipment**

SPS Series
This series makes efficient production possible while saving space. The carousel-type batch processing method achieves both low cost and high productivity at the same time. Two targets can be affixed, and the continuous and uniform deposition of film stacks is possible.

Applications: Thin-film sensors, crystal devices, chip resistors, electronic parts, and others

**Vertical Return Style Sputtering Equipment**

SPL-V Series
This series offers inline-type sputtering equipment for mass production, with support for everything from compact substrates for electronic parts to OLED displays, thin-film photovoltaic cells, and other large glass substrates. Full automation is supported, and the long continuous operation and other features offer a system design with a high degree of freedom that will increase the productivity of your manufacturing lines.

Applications: This series supports a wide range of applications, from small substrates to large glass substrates

Thermal Processing Equipment

This thermal processing equipment, which is used in the production of crystal devices and various electronic devices, offers a clean vacuum exhaust system, stable temperatures, and excellent temperature distribution.

**High-Vacuum Annealing Furnace**

This annealing furnace enables high-precision thermal processing in a high vacuum. This furnace has a long track record in frequency-stabilized thermal processing for crystal oscillators. In addition to the batch-type annealing furnace, automated lines that unify processes from vacuum annealing to high-vacuum encapsulation are also offered.

Applications: Crystal devices, a variety of electronic devices, and others

Product Development

Canon Tokki provides equipment that faithfully reflects the voice of the customer

We are a group of vacuum technology professionals who are passionate about new technologies. Every member of the company confidently offers total support, from specification determination and design, to delivery, maintenance, and beyond.

Working to build trusted products
As vacuum process technology professionals, we provide our customers with high-quality equipment.

Flexible support for customer needs
Our company name is taken from the Japanese word “tokki”, an abbreviation for the Japanese word “tokushu kika”, which means specialized equipment. We are able to meet and accommodate all kinds of new requirements that our customers may have.

Rapid support in case of problems

Canon Tokki is responsible for the stable operation of equipment after delivery, and for ensuring that customer needs are met, providing high-quality services including equipment maintenance and technical support.

Support system close to customers
In order to maintain a high level of quality after equipment is delivered, Canon Tokki has opened sales offices and support centers in each region of the nation, building an excellent support system. In addition to rapid responses to problems by professional staff members, Canon Tokki provides thorough support when regular inspections or repairs are required.

Corporate Social Responsibility (CSR) and environmental efforts

Canon Tokki emphasizes corporate social responsibility (CSR), and is involved in a variety of different efforts, both inside and outside the company. Canon Tokki also aggressively implements environmental foresight.

Environmental Management System (ISO 14001)

Canon Tokki's head office / Mitsuke plant was certified with the international standard ISO 14001 for its environmental management system. As a company that manufactures eco-friendly products, Canon Tokki will contribute to the development of sustainable global environment.

Support Systems

Rapid support in case of problems

Sample Flow Chart of Procedures Leading up to the Installation of a Large-Scale Production Line

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preliminary Consultation</td>
<td>Customer and Canon Tokki</td>
<td>3 months</td>
</tr>
<tr>
<td>2. Meeting</td>
<td></td>
<td>1 month</td>
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<tr>
<td>3. Consulting</td>
<td></td>
<td>1 month</td>
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<tr>
<td>4. Project Organization</td>
<td></td>
<td>2 months</td>
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<tr>
<td>5. Equipment Presentation</td>
<td></td>
<td>1 month</td>
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<tr>
<td>6. Equipment Specification Discussion</td>
<td></td>
<td>2 months</td>
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<tr>
<td>7. Equipment Model Determination</td>
<td></td>
<td>1 month</td>
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<tr>
<td>8. Submission of Quotation</td>
<td></td>
<td>2 months</td>
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<tr>
<td>9. Conclusion of Contract</td>
<td></td>
<td>1 month</td>
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<tr>
<td>10. Manufacturing</td>
<td></td>
<td>6 to 8 months</td>
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<tr>
<td>11. On-Site Inspection and Function Check</td>
<td></td>
<td>2 months</td>
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<tr>
<td>12. Quality Inspection and Final Acceptance Test</td>
<td></td>
<td>1 month</td>
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<tr>
<td>13. Sign-Off</td>
<td></td>
<td>1 month</td>
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<tr>
<td>14. Warranty Period</td>
<td></td>
<td>1 year</td>
</tr>
<tr>
<td>15. Standard Customer Support</td>
<td></td>
<td>3 years</td>
</tr>
</tbody>
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