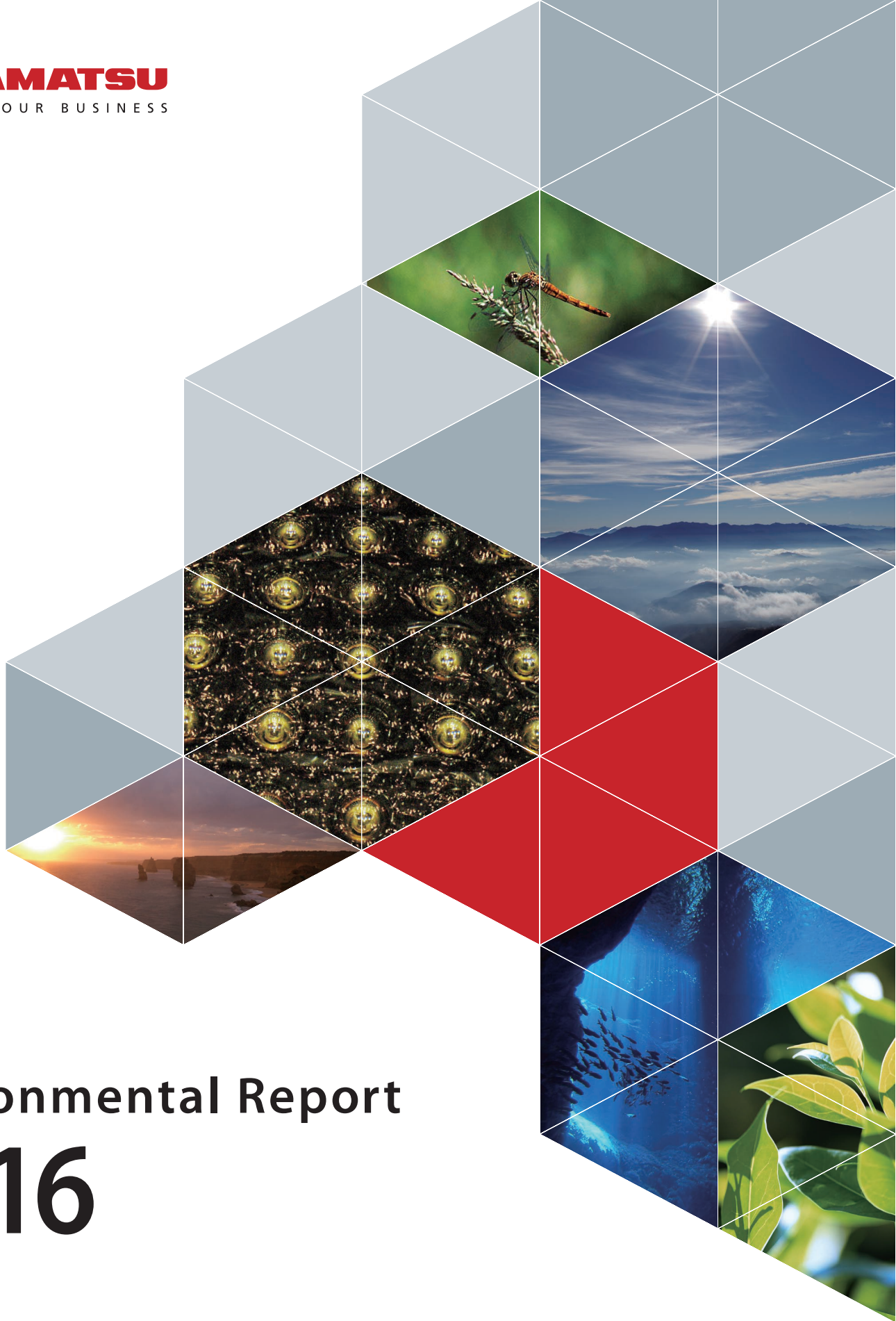


HAMAMATSU

PHOTON IS OUR BUSINESS



Environmental Report 2016

Message from the President

Working toward the Achievement of a Sustainable Society, We Use Photonics Technology to Help Solve Environmental Problems

Introduction

Today, the world is frequently seeing unprecedented natural disasters and economic losses due to climate change, including torrential rains, floods, droughts, forest fires, and hurricanes. To respond to such climate change, the 21st session of the United Nations Framework Convention on Climate Change (COP21) adopted the Paris Agreement calling on all countries, including developing countries, to work in a coordinated manner toward reducing greenhouse gas emissions. This agreement makes the signatory countries submit voluntary greenhouse gas reduction targets, as well as set more ambitious targets every 5 years. This new international framework can be evaluated as a new turning point in global warming countermeasures for the world. In addition, there is a tendency to require environmentally friendly and sustainable ways in business activities and product manufacturing operations across the entire supply chain. This trend came from several product environmental regulations, including EU RoHS Directive, REACH Regulation, and the Minamata Convention on mercury to prevent mercury pollution on a global scale.

Environmental management is beneficial for addressing environmental risks. ISO 14001, which was revised last year, now includes a new concept of "addressing risks and opportunities." This new inclusion further proves that an environmental aspect can be used as a management strategy.

HPK recognizes that it is necessary to place more importance on the realization of a sustainable society. We continue to promote such initiatives, through making business activities and products environmentally friendly and by establishing a better environmental management system.

Working toward the Achievement of a Sustainable Society,

Given the current circumstances, HPK believes that businesses have a social responsibility to perform their activities in an environmentally responsible way. We have organized a company-wide environmental organization, promoting environmental management under our Fundamental Environmental Policy as well as our Fundamental CSR Policy.

In fiscal year 2015, we have been working toward further improvements of our activities, while continuing to address challenges which we encountered before. In our business activities, we have built and managed a company-wide system to observe our CFC emission. In terms of product-related activities, we have placed more importance on that we cooperate with our suppliers in ensuring our products conform to environmental requirements. Regarding biodiversity conservation activities, we have enhanced the contents of our green activities including cleaning activities around the company, the planting of trees, and the distribution of Happy Memorial Trees to employees. Further, in order to introduce our environmental information to society, we reported our activities to the Carbon Disclosure Project (CDP).

Using Photonics Technology to Help Solve Environmental Problems

It is HPK's mission to use photonics technology to serve society by making the world a healthier and more peaceful place. "Photonics" now forms that fundamental technology supporting various industries which has developed into the key element deciding final products' performance. We recognize that the unending evolution of photonics technology will be sought on a global scale for today's technological innovations and the creation of new industries.

Focusing on the theme of "Life Photonics", we continue to engage in basic research into the unknown and unexplored properties of photons. We have developed products that contribute to society through full use of the unique photonics technology cultivated over many years. Currently, in our basic research fields, we are engaged in research for the practical application of a photon bioassay system. This is expected to find uses in water quality management such as industrial wastewater, and contribute to the development of agrochemicals, detergents, and other products with a smaller negative environmental impact. Further, in the area of development, we are working to develop lead-free infrared light detection elements that operate at room temperature. This type is expected to contribute to a wide range of fields including the environment, medical care, and agriculture.

Regarding a center of photonics innovation where research is proceeded as a collaborative project between industry and academia, we aim for creating innovative technologies and then contribute to the development of photonics technology and the expansion of its applications.

As we work to reduce the environmental impact of our business activities, we will help to solve environmental problems by using photonics technology to produce products that are environmentally friendly and benefit the environment.

I would like to ask our stakeholders for their continued support and guidance in these efforts.

Hamamatsu Photonics K.K.
President

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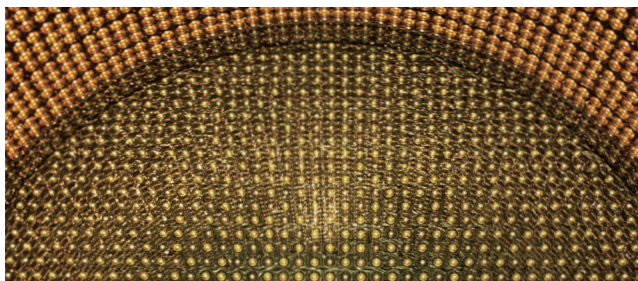
Photonics That Are Helping the Environment

The products of Hamamatsu Photonics are being used in a variety of environmental impact reduction activities. These activities include the measurement of environmental air and water quality, the analysis of concentrations of regulated chemicals, and the enhancement of energy efficiency of the common electrical equipment.



Topic

Professor Takaaki Kajita Awarded Nobel Prize in Physics



Super-Kamiokande

Professor Kajita from the Institute for Cosmic Ray Research of the University of Tokyo was awarded the Nobel Prize in Physics. The award recognizes his discovery of neutrino oscillation indicating that neutrinos have mass. This historic discovery was made through the observation of the atmospheric neutrino at Super-Kamiokande.



20-inch photomultiplier tube

HPK developed the 20-inch photomultiplier tube that served as the eye of the Super-Kamiokande facility, and supplied 11,200 pieces of this photomultiplier tube.

Press releases

Quantum cascade lasers Gas analysis	Photomultiplier tubes Environmental analysis and measurement	Delayed luminescence measuring device Ecological impact assessment	Deuterium lamps Atmospheric and water quality analysis	Infrared detectors Environmental analysis and measurement	Stealth dicing engine Next-generation laser dicing technology	Mini-spectrometers Soil analysis and aquametry	X-ray line sensor cameras Internal inspection/screening
Xenon lamps and hollow cathode lamps Atmospheric and water quality analysis	Solar cell evaluation systems Light source evaluation	CO₂ gas sensor modules Light source evaluation	Photonic multichannel analyzer Light source evaluation	Radiation detection modules Shows areas of concentrated radioactive material	Gamma-ray imaging Shows areas of concentrated radioactive material	Visible light/illuminance sensors Ambient light level detection	Distance sensors Weather measurement

Promoting Environmental Management

HPK Fundamental Environmental Policy

Principle In our conduct of business activities, we, Hamamatsu Photonics K.K., recognize that maintaining harmony with the global environment is one of essential issues facing mankind. We are determined to always act with this in mind as we endeavor to create new science, new industries, and to establish true health for mankind by studying, applying and expanding photonics technologies.

- Policy**
1. Initiate an internal organization for environmental protection and establish environmental management system in each plant in order to carry out activities related to environmental protection.
 2. Assess the impact on the environment by our activities, products and services, and constantly improve our environmental protection activities and environmental management.
 3. Comply with our internal procedures and policy as well as all governmental laws and regulations related to environmental protection, and impose our own voluntary standards if necessary, to reduce the stress on the environment.
 4. Take preventative measure to curb pollution, save energy and resource, reduce waste and control chemical substances.
 5. Strive to raise the awareness of all our employees regarding environmental issues through environmental education, and to understand and apply this Fundamental Environmental Policy through in-house publication of the Policy.

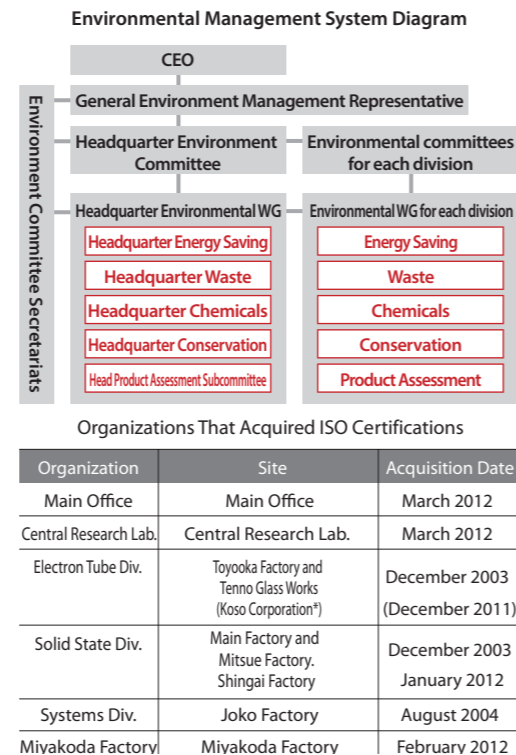
Environmental Management System

Framework for Promoting Environmental Management

Under the HPK Fundamental Environmental Policy, we set environmental goals and targets for our environmental management system (EMS) for each business year. We evaluate results from our activity, and work to constantly improve our EMS on the basis of management review.

To implement the above cycle smoothly, we have established a Headquarter Environmental Committee that is directed by a General Environment Management Representative (Senior Managing Director) and serves as a decision-making body for matters pertaining to our EMS. The Headquarter Environmental Committee is composed of five specialized environmental working groups, each division's environmental committee, and the Environment Committee Secretariats. By establishing a similar organizational structure in each division, integrated environmental activities are made possible.

Incidentally, each division has received ISO14001 certification, an international standard for environmental management systems. At present, we prepare the ground to comply with ISO14001-2015, the latest revision version of that standard.



Environmental Initiatives of the Photonics Group

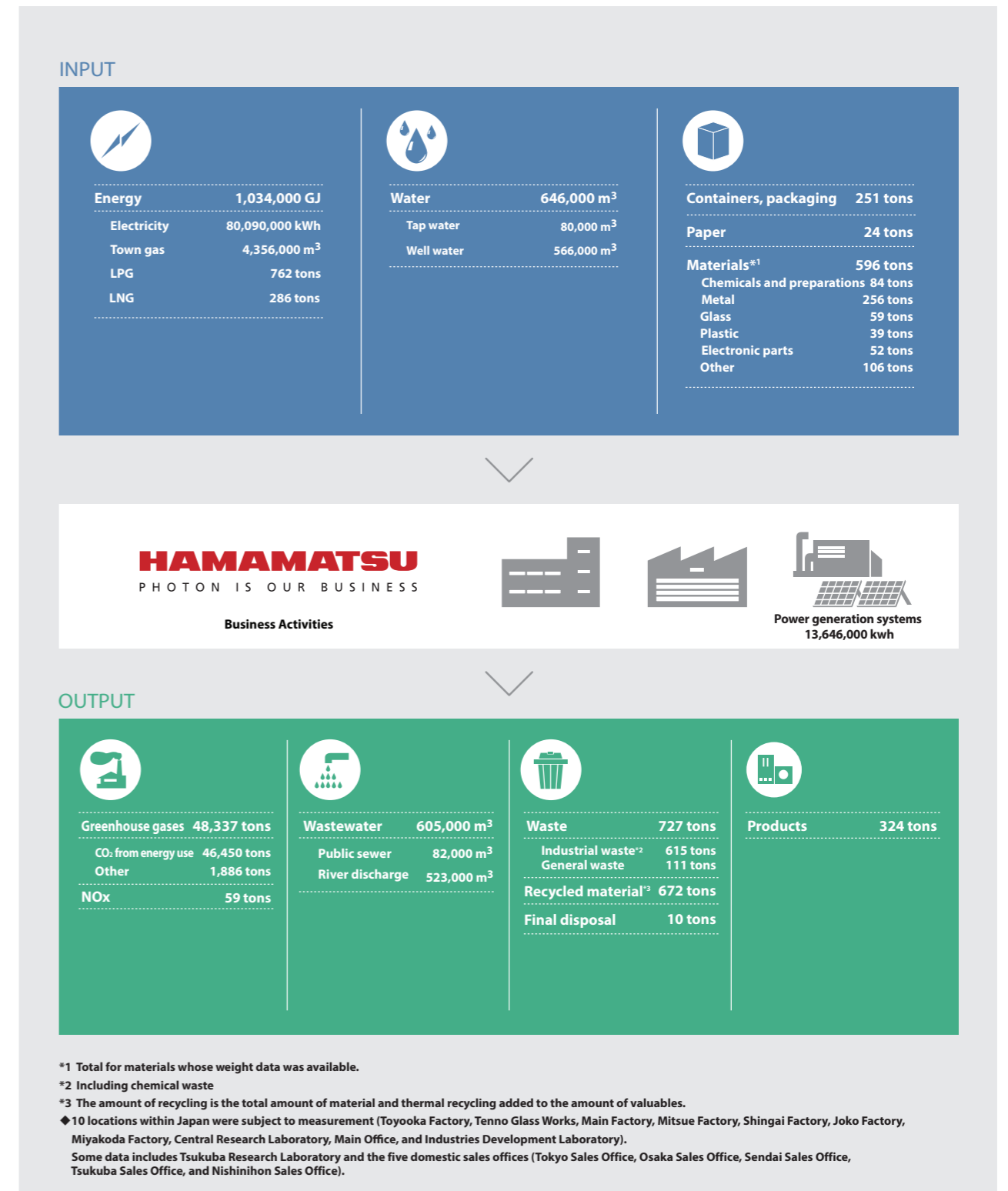
Under the HPK Fundamental Environmental Policy, we will go forward with our environmental initiatives with the cooperation of our affiliated companies. We monitor energy usage, greenhouse gas emissions, and waste generation, while considering more effective measures.

Environmental Accounting

We are internally promoting environmental accounting as a means of providing information necessary for environmental management.

Environmental Impact of Business Activities

We are quantifying the environmental impact of our business activities and working to reduce our impact on the environment. The following figures are a summary of our environmental impact for fiscal year 2015.



Dealing with Risks

Framework for Reducing Environmental Risks

We are working to reduce living-environment contamination and stress related to factors such as air, water, noise, soil quality and foul odors. To ensure legal compliance and to reduce the risk of groundwater pollution due to harmful substances, we have taken preventive measures by relocating our underground piping and tanks to above-ground.



Tank relocated aboveground

Emergency Response Training

We have prepared accident and disaster response manuals, and we regularly hold customized disaster response training for each type of business and division. In fiscal year 2015, training sessions have included evacuation training for gas leaks, respirator tank attachment training, and response training for chemical spills, and company-wide disaster preparedness training.



Emergency Response Training

Business Continuity Plan (BCP)

We have established a Business Continuity Plan (BCP) to ensure that we fulfill our responsibility as a supplier of products in the face of a large-scale natural disaster. This BCP includes miscellaneous measures that corresponded to those assumable situations, which will allow us to continue our core business and/or to recover primary operations as quickly as possible.

The basic policy of Hamamatsu Photonics' BCP is as follows.

Basic Policies of Business Continuity Plan	
Protection of human life	The continuation of business operations will proceed with first priority given to the protection of the lives of our employees and their families, our customers and related parties.
Continuation of business operations	With foremost consideration given to our employees' safety, we will initiate efforts to quickly put into place the organization necessary to provide a stable supply of products to our customers, thus sustaining the trust of our customers which forms the foundation of our business.
Contribution to society	In addition to resuming the stable supply of products, we will contribute to society by proactively engaging as much as possible with relief efforts in regions affected by the disaster.

[About Hamamatsu > CSR > Business Continuity Plan](#)

Targets and Results of Environmental Activities

Each year, from October 1st to September 30th, we set environmental objectives and targets, and then work to reduce negative impacts on the environment and to protect the environment. The following table is a summary of those targets and results for fiscal year 2015.

Item	Main Targets of 2015	Main Results of 2015	Evaluation
Environmental Management System	→ Improving EMS and renewing certification for divisions approved to ISO 14001.	→ Received audits from external certification bodies and renewed certification.	○
	→ Being in compliance with environment-related laws and regulations.	→ No violation of environment-related regulations and No environment-related accident.	○
Making Products Environmentally Friendly	→ Implementing and revising the "Management Standards for Chemical Substances."	→ Issued Management Standards (12th Edition). → Held a briefing for suppliers (139 companies).	○
	→ Conforming to each country's environmental regulations for products.	→ Made sure that our products were in compliance with RoHS directive and the conflict mineral rule.	○
Making Business Activities Environmentally Friendly	Fighting Global Warming		
	→ Saving energy programs and its promotional activities.	→ Renewed Hamamatsu City Top Runner S rank certification. → Promoted energy-saving and power-saving activities as a Fun to Share sponsor company.	○
	→ Reducing energy use per unit of sales by at least 2% compared to 2013.	→ Reduced energy use per unit of sales by 13.5 % compared to 2013.	○
	→ Promoting the introduction of sustainable energy.	→ Installed solar panels at Toyooka Factory and Nakase dorm., and hybrid outdoor lights using wind-solar energy at Central Research Laboratory.	○
	Appropriate Management of Chemicals		
	→ Checking chemical usages every six months.	→ Implemented checks as scheduled, and reported our usage to a competent authority under the PRTR Law.	○
	→ Promoting the collection of GHS compliant SDSs.	→ Increased the ratio of holding GHS compliant SDSs.	○
	→ Ensuring employees treat chemicals properly.	→ Held educational events at Toyooka, Ichino, Joko, Hamakita, and Miyakoda. In total, 500 people (including 124 newcomers) participated.	○
	3R Activities		
	→ Total recycling rate: 97% or more.	→ Total recycling rate: 87.6 %	×
→ Making sure that our entrusted wastes were treated in an appropriate manner.	→ Held inspections at our contracted waste-disposal facilities.	○	
Prevention of Pollution			
→ Complying with the self-regulation standards.	→ Confirmed and conformed to environmental regulations. Inspected our facilities that could affect the environment.	○	
→ Reducing VOC emission into the atmosphere by 30% compared to the year 2000.	→ Recorded 34.7 % reduction.	○	
Social and Environmental Communication	→ Promoting biodiversity conservation activities.	→ Distributed happy memorial trees. → A total of 585 people participated in local cleaning activities 15 times during the year. → Participated in Lake Hamana Cleanup Campaign	○
	→ Publishing our environmental information to the public and our employees.	→ Published environmental information including environmental reports (in English and Japanese). → Posted the latest information about HPK environmental initiatives on the Web.	○

In the Evaluation column, ○ means accomplished and × means not accomplished.

Making Products Environmentally Friendly

Developing Environmentally Friendly Products

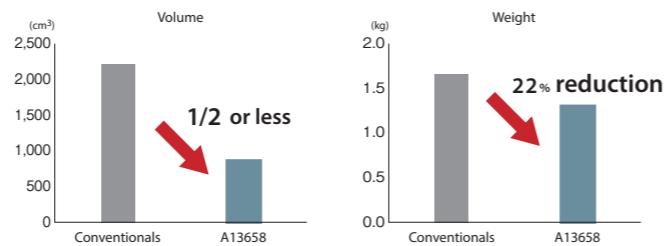
As a means of making our products more environmentally friendly, we are working to promote the sale of products that use less resources and power and with longer service life. Below are a few examples of products we have developed in fiscal year 2015.

Spectrometer



The A13658 is a polychromator designed for linear multi-anode photomultiplier tubes for high-sensitivity/high-speed multi-channel spectrum measurement.

By reworking its structure, its diffraction efficiency has been improved from 50% to 70% at peak wavelength, its volume reduced by more than half, and its weight diminished by 22% compared with our previous product, for a compact and lightweight design.



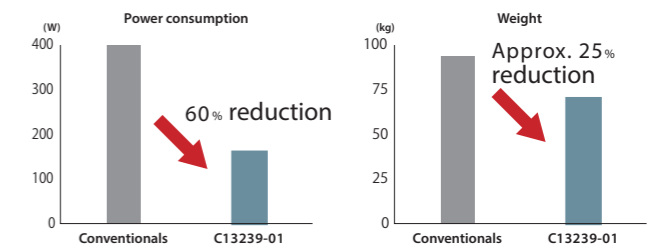
Related Products Information > Linear Multi-Anode Photomultiplier Tubes

NanoZoomer



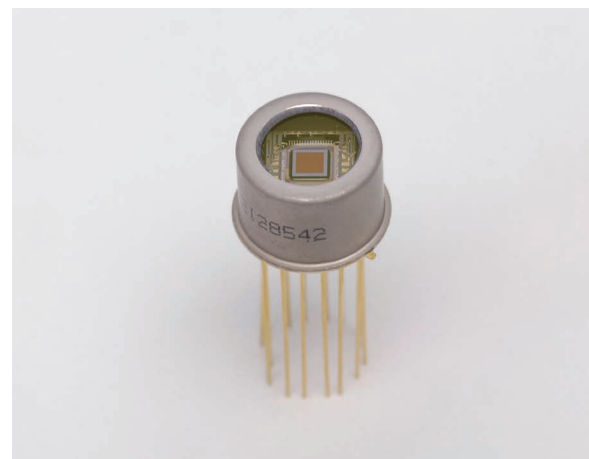
The S210/C13239-01 is a virtual slide scanner for pathology applications that can automatically scan up to 210 glass slides and convert them to high-resolution digital data.

Through the adoption of an LED light source and CMOS sensor, a smaller and lighter design was achieved along with a reduction in power consumption of more than 50% compared with our previous product.



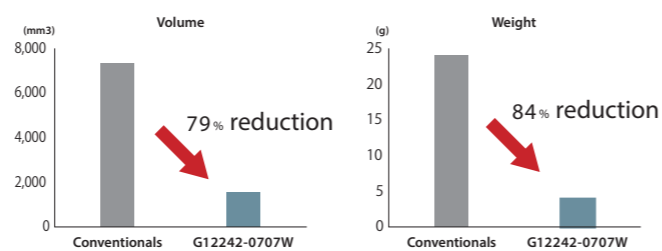
All products > NanoZoomer > C13239-01

InGaAs Area Image Sensor



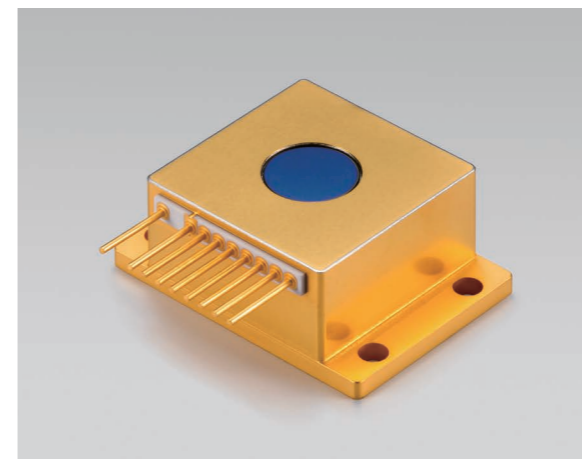
The G12242-0707W is an image sensor which can detect near infrared rays invisible to the human eye and convert the weak light into images. Infrared cameras equipped with this sensor are used for various application, such as plastic recycling screening, etc.

Improvement of the CMOS process has resulted in pixel size reduction from 50 μm to 20 μm pitch without compromising circuit functions, allowing the realization of a sensor that has the same number of pixel but is smaller and lighter than our previous product.



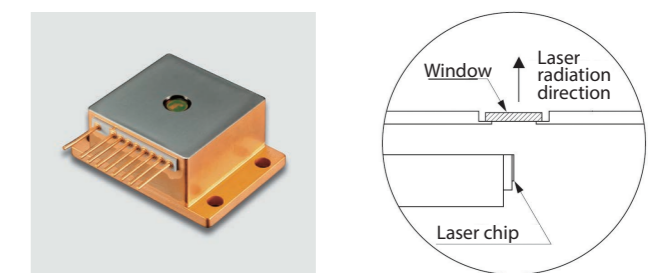
All products > InGaAs area image sensor > G12242-0707W

CW Quantum Cascade Laser



A window for quantum cascade laser, which is a mid-infrared laser, have to use material that lets infrared through.

Our previous product used a zinc selenide (ZnSe) window that included a selenium compound. This was replaced with a window made of germanium owing to environmental considerations.



CW quantum cascade laser (previous product)

All products > Quantum cascade lasers (QCL)

Making Business Activities Environmentally Friendly

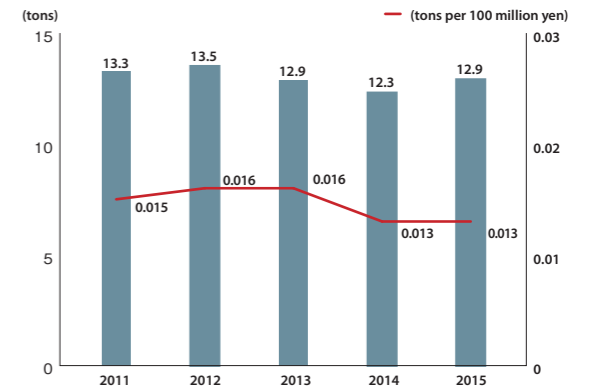
Appropriate Management of Chemicals

Handling of Chemicals Subject to the Pollutant Release and Transfer Register (PRTR) Law

In fiscal year 2015, we used 12.9 tons of substances designated as class 1 chemical substances under the PRTR Law¹ (yearly use of 1 kg of more by all divisions subject to tracking). In 2014, we reported the use of two substances at our Main Factory (2-amin-ethanol and hydrogen fluoride and its water-soluble salts).

1 PRTR Law: A law regarding the promotion of precise knowledge of emissions of designated substances into the environment and management improvements based on that knowledge

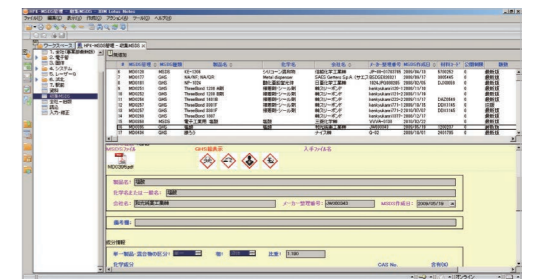
Chemicals subject to the PRTR Law and its ratio of sales



Promotion of SDS (Safety Data Sheet) Collection

As stipulated in the Industrial Safety and Health Law, SDSs are essential for assuring the safety of workers who handle chemical materials and for reducing the risks of these chemicals to the environment. We are reducing risks by promoting the collection of the latest SDSs, putting those SDSs in our internal company database, and disclosing and using them throughout the company.

Internal SDS database

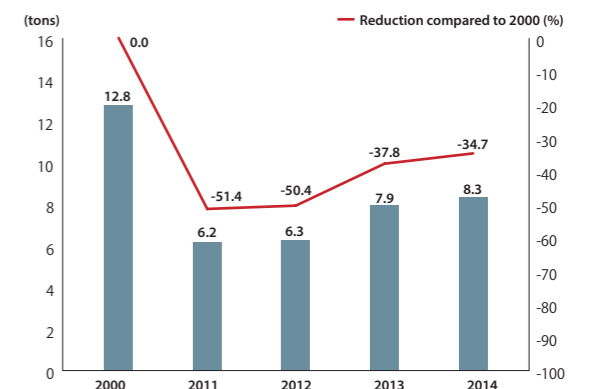


Reducing VOC (Volatile Organic Chemicals) Emissions

We are working to reduce emissions of VOCs into the atmosphere by reducing our use of VOCs.

In 2014, we set a goal of sustaining a 30 % reduction in VOC emissions compared to 2000. We managed to achieve this goal. We will continue to strive to achieve this goal.

VOC emissions and reductions by year



Risk Assessment of Chemical Substances

In 2014, there were amendments made to the Industrial Safety and Health Law to prevent health hazards to workers from chemicals.

As instructed by the Occupational Health and Safety Committee, users of chemical substances conduct risk management for 640 substances specified by law.



Risk assessment education

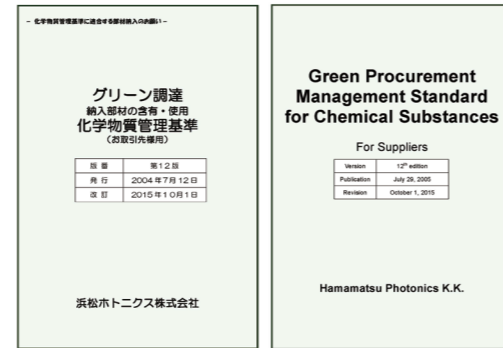
Conforming to Regulations Regarding the Chemicals Contained in Our Products

Green Procurement and Purchasing

To conform to regulations, such as RoHS Directive, regarding chemical substances contained in products and to provide products that meet the demands of our customers, we have established company-wide management standards for chemical substances. We issued the 12th edition of the standards in October 2015.

On the basis of these standards, we are conducting green procurement surveys with our business partners regarding the concentrations of regulated chemicals in parts and how the parts are used. The survey results are collected in a company-wide system that stores environmental information about our products, and the results are used for the centralization of environmental management of parts and the evaluation of compliance with regulations.

We also promote purchasing of environmentally friendly office supplies. Our green purchasing rate for fiscal year 2015 was 96.9%, exceeding our 90% target rate.



Green Procurement and Chemical Substance Management Guide



Green procurement briefing (business partners)

[About Hamamatsu > CSR > Procurement > Green procurement](#)

Compliance with Regulations

We have joined industrial associations related to each country's regulations regarding the chemicals contained in our products. We are committed to staying up to date with the latest information about these chemicals and responding swiftly and appropriately to new regulations.

We take appropriate measures with regard to RoHS Directive, closely following changes such as exemptions and the addition of covered material categories. We are also working together with our business partners for procurement that avoids conflict minerals, and we continue to provide our customers with appropriate information regarding these minerals.



"Our Measures against Conflict Minerals" website

[> Procurement > our approach to conflict minerals](#)

Fighting Global Warming

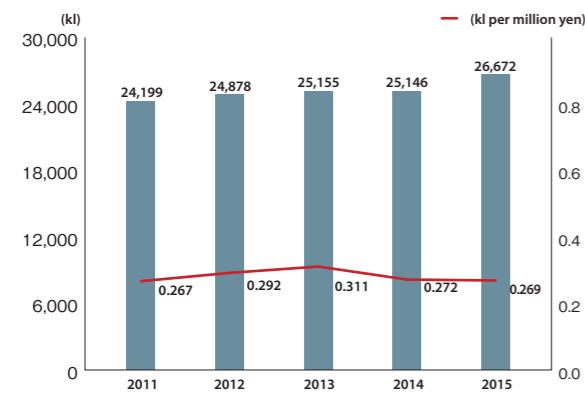
Changes in Energy Conservation and CO₂ Reduction

HPK has set a target for reducing our unit energy consumption by at least 4% by 2017 compared to 2013, and is currently promoting energy conservation activities. To achieve this target, we have been incorporating highly efficient equipments and renewable energy, while working on energy saving of buildings in fiscal year 2015. As a result, our energy use per unit of sales decreased by 13.5 % compared to the previous year. HPK renewed its S rank certification under the Hamamatsu City Top Runner Grand Prize for Alternative Energy and Energy Conservation.

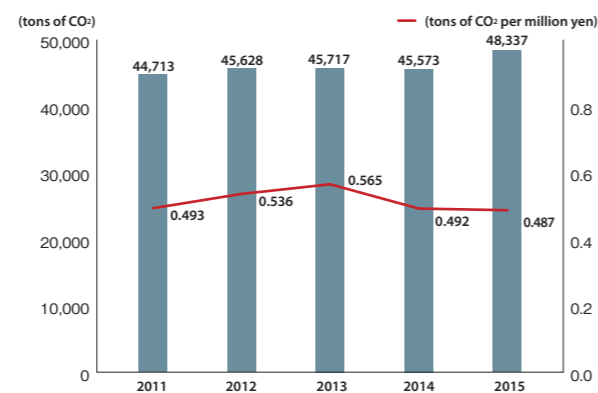
Our CO₂ emissions in fiscal year 2015 increased by 6.1% compared to the previous year, while CO₂ emissions per unit of sales declined by 1.0 %. We have introduced detoxifying equipments to suppress the emission of semiconductor fabrication gases such as PFCs and SF₆, which are greenhouse gases cause global warming. We have also been working for the appropriate management of equipment using fluorocarbons based on the Revised Fluorocarbons Recovery and Destruction Law that went into effect in April 2015.

Going forward, HPK will promote its energy saving and global warming prevention activities.

Energy use and its ratio of sales



CO₂ output and its ratio to sales



- 1 Some past data has been changed because of revisions to the scope of data collection and the data collected.
- 2 The factor we use to convert power to CO₂ and calculate the CO₂ from energy use is 0.417 (the emission factor provided by the Federation of Electric Power Companies).

Environmental Consideration In The New Building

To boost the production of and to enhance the development of photomultiplier tubes, a new building was created at the Toyooka Factory. This building was completed May 2015. It has received a B+ rating (Good Environmental Efficiency) under the Comprehensive Assessment System for Built Environment Efficiency (CASBEE): all-LED lighting, Liquefied Natural Gas systems, and solar power generation.

A generator with total capacity of 2,400 KVA was introduced to reduce consumption peaks as stipulated in the Energy Conservation Act.



Appearance of new building of Toyooka Factory



LED lighting



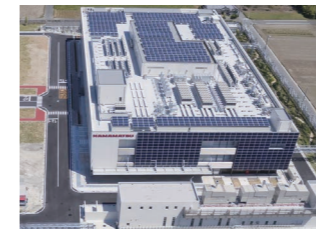
Switch to natural gas



Generator

Renewable Energy Initiatives

We are working to reduce CO₂ emissions by promoting the introduction of renewable energy such as solar power and wind power. In fiscal year 2015, the new building at the Toyooka Factory had a 250kW solar power generation equipment installed. Hybrid Outdoor lights that use a combination of solar power cells and micro wind turbines were also installed at the Central Research Laboratory.



Solar power generation equipment (Toyooka Factory)



Solar power generation equipment (Nakase company housing)



Wind and solar hybrid outdoor lights (Central Research Laboratory)

Energy Conservation Activities At Home

To promote energy conservation and reduce CO₂ emissions at home, HPK held the energy conservation campaigns for employees. 487 employees participated in these campaigns. Additional educational activities for employees and their families were also held at HPK's company summer festival.

Every year we sponsor the Fuji National Green Challenge and participate in a "power saving, energy-saving contest" which promotes energy and power saving over the summer.



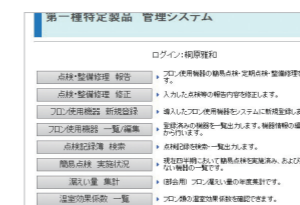
Energy Saving Contest at home



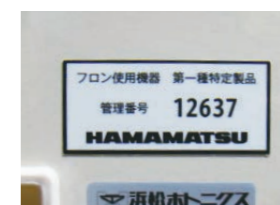
Educational activities at Hamamatsu Photonics Summer Festival

Law on Reduction of GHGs Emissions

The Revised Fluorocarbons Recovery and Destruction Law, which was drafted for the purpose of preventing global warming caused by leaks of GHGs substitutes, was enacted in April 2015. HPK is promoting compliance with this law by assigning a control number to each relevant equipment and building an internal database for managing that equipment information and inspection records. In each division and business site, we conduct education activities covering laws and regulations as well as internal management methods for the administrators.



Management database



Control number sticker

3R Activities

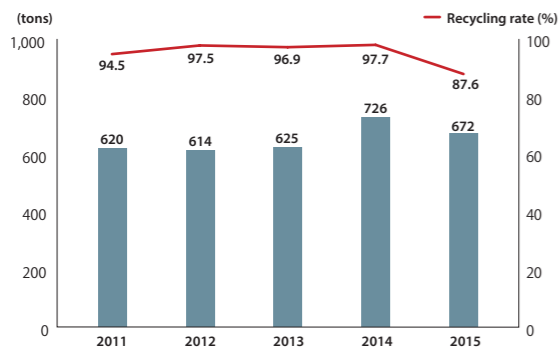
Reducing Waste Levels to Zero

The idea of zero emission¹ is defined as having a total recycling rate of 97 % or more. In promoting this idea, we improve ways to reduce the impact of waste on the environment by making use of efficient resources.

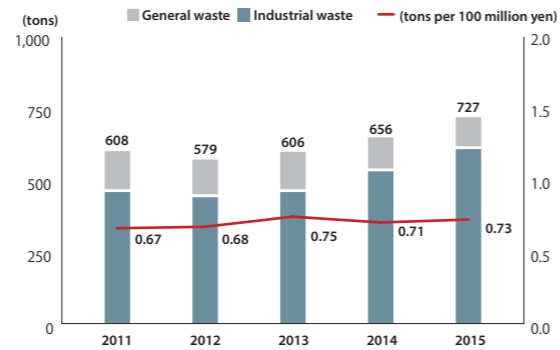
We continue to promote the 3Rs (Reduce, Reuse, and Recycle) policy and ensure our industrial wastes are treated in an appropriate manner. For fiscal year 2015 we recorded a total recycling rate of 87.6%. The amount of recycling² was 672 tons, and that amount per sales volume was 0.73 tons per 100 million yen which increased by 3.4 % compared to the previous year. The decline in a total recycling rate was caused by an increase in discharge of items with low recycling rate.

- 1 Zero emission: The idea that we should strive for a society with no waste through resource conservation and waste reduction in production activities, and by recycling the waste that is unavoidably generated.
- 2 The amount of recycling is the total amount of material and thermal recycling added to the amount of valuables.

Recycling levels and its ratio



Total waste output and its ratio of sales



Re-use Of Unnecessary Equipment

We have a database targeted for equipment usage. Instead of going unused, this database allows other departments to get the opportunity to use the equipment. This database covers a wide range of equipments, from production equipments such as vapor deposition systems and lathes, to office equipments such as lockers and chairs.

For fiscal year 2015, there were 42 items placed into this database, 25 of these items were reused. This program has produced beneficial results, not only for waste reduction, but also for reducing both disposal and expenditure costs.



Monitoring Waste

We promote separating waste according to its type. If used paper were classified as a combustible, our monitors would make sure it was classified appropriately. This activity helps our employees be aware of the importance of classifying waste. The appropriate classification could lead to a reduction of waste.

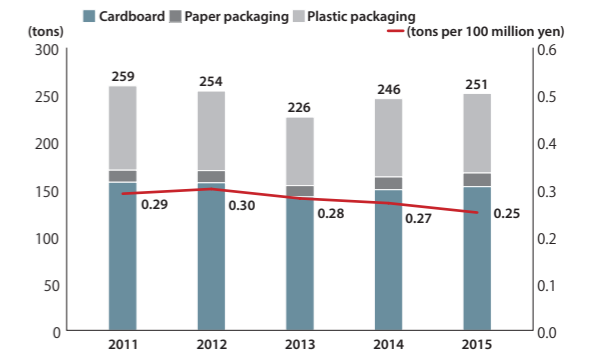


Shipping Measures

Reducing Containers and Packaging Materials

We are using packaging materials as efficiently as possible to improve product accommodation ratios. In fiscal year 2015, our use of containers and packaging materials was 251 tons. Our use of containers and packaging materials per unit of sales was 0.25 tons per 100 million yen.

Container and packaging use and its ratio of sales



Improved Packaging Boxes For Easier Sorting And Recycling

To reduce waste and aim for easy-disposal, we have improved the packaging method of our power supply for xenon flash lamps.

The change was made from the conventional packaging box integrated with cushion materials to the new way where packaging box and cushion materials separate out. As for a reliability test on impact, the new design bears comparison with the old one, and also makes sorting and recycling much easier for customers.



Before improvements

After improvements

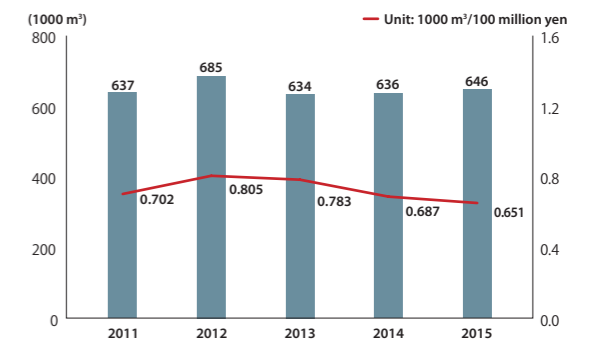
Protecting Our Water Resources

Using Water Resources Effectively

As the world is becoming more aware of the importance of water, we are maintaining an awareness by decreasing our water use, and working to recycle the water that we do use.

In fiscal year 2015, we used 646,000 m³ of water. our use of water per unit of sales of 651 m³ per 100 million yen.

Water use and its ratio of sales



Site Data

From Oct. 1, 2014 to Sep. 30, 2015

Environmental Impact (Unit)	Toyooka Factory	Tenno Glass Works	Joko Factory
Energy (thousand GJ)	273.2	3.9	22.2
Water (thousand m ³)	240	2	6.7
Chemicals subject for PRTR Law ^{*1} (tons)	0.3	0.002	0.004
Paper (tons)	6.8	0.2	3.4
Containers and Packaging Materials (tons)	122		20
GHG emission from the energy ^{*2} (tons)	12,050	173	946
Other GHGs ^{*3} (tons)	1.6	—	0
Wastewater (thousand m ³)	240	2	6.7
Waste (tons)	191	3.1	24
Final disposal (tons)	0.26	0.05	0.45
Recycling rate ^{*4} (%)	93.5	99.4	98.9

Environmental Impact (Unit)	Main Factory	Mitsue Factory	Shingai Factory
Energy (thousand GJ)	419	71	50.3
Water (thousand m ³)	289	45.7	14.8
Chemicals subject for PRTR Law ^{*1} (tons)	11	0.05	0.9
Paper (tons)	5.7	1.9	0.4
Containers and Packaging Materials (tons)	108		
GHG emission from the energy ^{*2} (tons)	19,192	3,362	2,214
Other GHGs ^{*3} (tons)		1,875	
Wastewater (thousand m ³)	289	24.4	14.8
Waste (tons)	397	40	20
Final disposal (tons)	6.6	0.16	0.07
Recycling rate ^{*4} (%)	72.7	98.7	98.3

Environmental Impact (Unit)	Miyakoda Factory	Central Research Laboratory	Main Office	Industries Development Laboratory
Energy (thousand GJ)	58.8	97	2.2	32.1
Water (thousand m ³)	12	30.4	1.3	2.8
Chemicals subject for PRTR Law ^{*1} (tons)	0.1	0.2	—	0.03
Paper (tons)	0.4	2	2.4	0.3
Containers and Packaging Materials (tons)	0.6	—	—	—
GHG emission from the energy ^{*2} (tons)	2,590	4,260	91	1,378
Other GHGs ^{*3} (tons)	0	10	—	—
Wastewater (thousand m ³)	8.3	14.6	1.3	2.8
Waste (tons)	16	27	6.7	0.7
Final disposal (tons)	1.1	0.77	0.04	0.04
Recycling rate ^{*4} (%)	94.1	96.1	99.2	97.5

*1 Quantities of 1kg or more and are designated as class 1 chemical substances under the PRTR Law.
 *2 The factor we use to convert power to CO₂ and calculate the CO₂ from energy use is 0.417.
 *3 The emitted GHGs other than CO₂ from energy use are converted to equivalent amounts of CO₂.
 *4 The recycling rate does not include acid or alkali waste.

Social and Environmental Communication

Promoting Community and Employee Communication through Ecological Activities

Social Contributions

For the purpose of local environmental protection, employees have volunteered to clean the area around the company. In fiscal year 2015, a total of 585 employees participated in 15 cleanings. We also participated in cleaning activities that takes place every year in early June at the Lake Hamana Cleanup Campaign. A total of 42 people consisting of employees and their families participated in this campaign.



Lake Hamana Cleanup Campaign

Toyodagawa cleaning activities

Happy Memorial Trees and Tree Planting on Company Grounds

As part of our biodiversity conservation activities, we donated "Happy Memorial Trees" to employees who have built a new home, recently married, or had their children enter primary school. As of September 30, 2015, a total of 451 people have applied to participate in this activity. Of all the applicants, 228 built new homes, 140 were married, and 83 had their children enter primary school. So far, a total of 333 applicants received their trees. The planting of the Happy Memorial Trees serves as a reminder to employees and their families the importance of being green. Many commemorative photos of themselves with the tree were offered by those employees.



Happy memorial trees

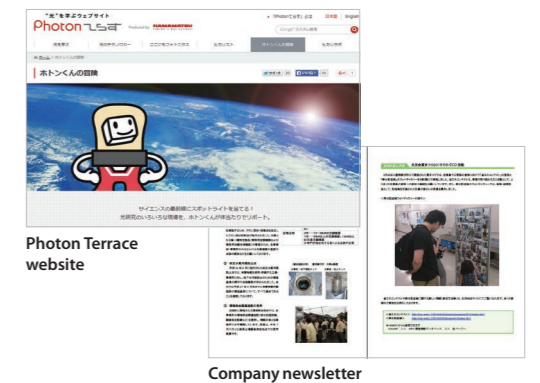
To beautify and maintain the environment, each division continues to make the company grounds greener and utilize Green Curtains in summer.



Green wall

Environmental Communication Using Various Media

By providing information through a variety of media, we are able to inform members of the community and our stakeholders the ways we are working to help the environment. They are able to view our environmental reports and environmental initiatives on our website. Our employees are also notified of HPK's environmental initiatives through the company newsletter.



Photon Terrace website

Company newsletter

☞ About Hamamatsu > CSR > Environmental Initiatives

Third Party Opinion

We asked for the opinion of Hidenori Mimura, the Director of the Research Institute of Electronics at the Shizuoka University, regarding the Hamamatsu Photonics 2016 Environmental Report.



The Director of the Research Institute of Electronics at the Shizuoka University

Professor Hidenori Mimura

Hamamatsu Photonics (HPK) is a company that manufactures world-class optical products. This is found from the fact that its products have contributed to several Nobel Prizes, including the award for Professor Kajita in Physics. I read through the 2016 Environmental Report to understand how HPK deal with the environmental issues and the reduction of environmental impact caused by its business activities. In addition, to view real cases of environmentally friendly initiatives in a factory, I visited the Electron Tube Division's new building where photomultiplier tubes(PMT) are produced.

Reading the 2016 Environmental Report

Hamamatsu Photonics plays a big part in a variety areas through its photonics technology, such as the measurement of environmental air and water quality, the analysis of concentrations of regulated chemicals, and the energy efficiency improvement of general electrical equipment. I would expect HPK to put more effort into its R & D, because its optical products are required throughout the world. Regarding the relationship between its business activities and its environmental impact, this report discloses environmental information adequately and shows its commitment to environmental conservation and reduction of its environmentally negative impact. For example, as for the environmental approach in products, HPK develops various environmentally more friendly products as compared with existing products in terms of resource saving (compact size and light weight), energy saving, and long service life, and also HPK makes sure that its products are in compliance with regulations concerning chemical substances contained in products. As for the environmental approach in business activities, HPK ensures all its environmental initiatives are implemented in an appropriate manner, such as proper management of chemical substances, fighting global warming, the 3Rs (Reduce, Reuse, and Recycle), proper disposal, reducing containers and packaging materials, and using water resources effectively. Further, HPK is also promoting community and employee communication through ecological activities. Energy Saving Contest at home and Happy Memorial Trees for employee households could be listed as unique approaches. These HPK's environmental initiatives are worthy of high praise from the viewpoints of effectiveness, adequacy, and originality.

Touring The New Manufacturing Plant for PMT

I visited the Electron Tube Division's new plant in mid-December. The HPK's environmental initiatives are numerous and diverse, including the latest aseismic design, the adoption of all-LED lighting, the switch to natural gas, which leads reduction of CO₂ emission, the installation of solar power generation equipment, the pipes and tanks relocated aboveground, and state-of-the-art waste fluid treatment systems. I come away from this report with the feeling that Hamamatsu Photonics's approach to the design and construction of its new plant fully reflects the company's full-out approach to solving environmental issues.

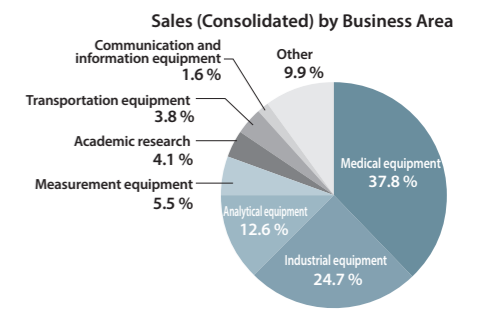
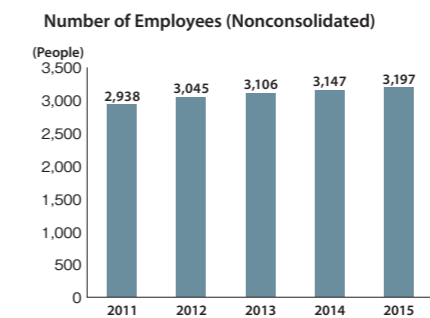
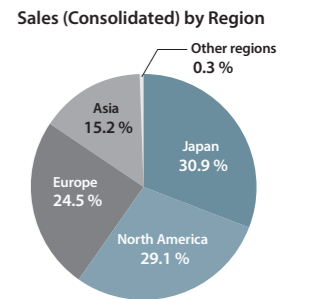
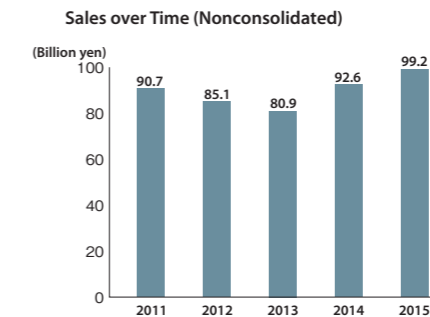
Response to the Third Party Opinion

Thank you very much for your valuable opinions regarding our environmental report. We try to ensure that photonics technology solves environmental problems by developing environmentally friendly products, as well as reducing environmentally negative impacts accompanied with our business activities.

Headquarter Environment Committee Secretariats

Company Overview

Company Name	Hamamatsu Photonics K.K.
Headquarter	325-6 Sunayama-cho, Naka-ku, Hamamatsu City, Shizuoka Pref., 430-8587, Japan
Established	September 29, 1953
Representative	Akira Hiruma, President
Capital	34,928 million yen
Sales (non-consolidated)	99,157 million yen
Employees (non-consolidated)	3,197
Products	Photonic Detectors, Light Sources, Cameras & Systems



Editorial Policy

Time Period Covered	Fiscal year 2015 : From Oct. 1, 2014, to Sep. 30, 2015
Organization	Hamamatsu Photonics K.K. (Nonconsolidated)
Environmental Performance Data	11 business facilities (Toyooka Factory, Tenno Glass Works, Main Factory, Mitsue Factory, Shingai Factory, Joko Factory, Miyakoda Factory, Central Research Laboratory, Headquarters, Industries Development Laboratory, and Tsukuba Research Laboratory) and 5 sales offices (Tokyo Sales Office, Osaka Sales Office, Sendai Sales Office, Tsukuba Sales Office, and Nishinon Sales Office)
Reference Guidelines	2012 Environmental Report Guidelines
Subject Matter	Environmental aspect
Publication	February 2016

Webpage



We provide the latest information about our environmental efforts on our Website.

About Hamamatsu > CSR > Environmental Initiatives

HAMAMATSU PHOTONICS K.K. www.hamamatsu.com



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