

Tamron Co., Ltd.

# **COMPANY GUIDE 2024**



## Management Philosophy

Tamron creates emotion and reassurance through its mastery of light, contributing to the realization of a fulfilling society.

### **Carving out the future with light**

We pursue optical technologies, aiming for a fulfilling society that offers joy, emotion and reassurance.

We expand the possibilities of light by addressing many of society's issues for the future providing value around the world.

### Sincerity

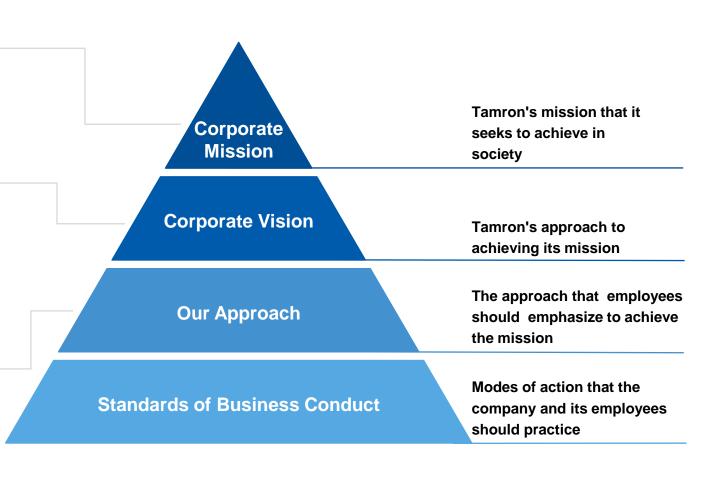
We genuinely approach all situations fairly and equitably through careful examination of the actual location, subject and circumstances.

#### Challenge

We are open-minded, unconstrained by conventional wisdom, and embrace infinite possibilities.

#### Creativity

We create value, addressing many of society's issues through teamwork.





## Message from the President & CEO



# Focus on the Future

### Contribute to achieving a fulfilling society through advanced optical technologies

TAMRON is one of only few leading manufacturers of optics for diverse applications in the world with an integrated business system that includes everything from R&D to planning, design, production, sales, and support with a global reach. For more than 70 years since our founding in 1950, we have continued to tirelessly pursue advanced optical technologies and technological innovations to continue to offer groundbreaking, cutting-edge optical products.

As we also seek sustainable growth in today's society, characterized by drastically changing conditions, it is essential that we maximize our existing businesses and cultivate new businesses based on the optical technologies we have accumulated. Every one of our employees has to achieve this, and our employees' well-being is also important. TAMRON's social mission is to bring well-being, excitement and reassurance to all stakeholders and contribute to achieving a fulfilling society through our products that are created by our energetic employees and are capable to help solve social issues.

We will continue to develop and provide high-quality products that justify the trust our customers place in us, as we strive to become a company that is respected and truly needed and to achieve Value Creation 26, the new Medium-term Management Plan which has been adopted.

Shogo Sakuraba
President & CEO. Tamron Co., Ltd



## Tamron's history

### Tamron's history of growing with society and continuing to create emotion and reassurance

### 1950

Taisei Optical Equipment Manufacturing is founded



1952

Taisei Optical Equipment Manufacturing Inc. is established

## 1958

The Tamron brand is registered as a trademark

### 1969

The Hirosaki Factory is constructed



Tamron now has two sites in Aomori (Hirosaki and Namioka)

1970

Company name is changed to Tamron Co., Ltd.

### 1979

Sales subsidiary is established in the United States

### 1982

Sales subsidiary is established in West Germany (at that time)

1984

Registered with the Japan Securities Dealers Association for over-the-counter trading

### 1997

Production subsidiary in China is established

### 2005

Sales subsidiary in China is established \* Expanding to seven Group companies through the subsequent establishment of overseas sales subsidiaries

### 2006

Listed on the 1st section of the Tokyo Stock Exchange

### 2012

Production subsidiary in Vietnam is established

### 2022

Tamron Co., Ltd. moves to the Prime Market of Tokyo Stock Exchange

#### 1950

Manufacture of cameras and binocular lenses is started



#### 1957

The T mount interchangeable lens mount for SLR cameras is



#### 1966

Production of master test plates, ultraprecision lenses and prisms is started



The Tamron Adapt-A-Matic range of lenses is developed



#### Master test plates

Ultra-precision lenses that serve as the standard for all optical lenses. For more than half a century, skillful techniques have been handed down by successive craftspeople, making Tamron one of the few optical manufacturers able to craft master test plates even today.

#### 1981

6x zoom video camera lens is developed



#### 1986

Varifocal lenses for CCTVs are developed. \* Industry-first



#### Widespread adoption of video cameras begins

VTR-equipped cameras and video camera lenses developed to coincide with the widespread uptake of compact video cameras enjoy brisk sales. These products accounted for 50% of sales at the time.

#### 1992

The AF28-200mm (71D) all-in-one zoom lenses for SLR cameras is released



The beginning of all-in-one zoom lenses

Starting with this first product, Tamron has

focal distances, more compact and lighter

designs and new mounting mechanisms.

manufacturer of all-in-one zoom lenses.

establishing Tamron's position as the go-to

made successful advancements with greater

#### 2006

The original model for the all-in-one zoom lens was a

rounded piece of graph paper the size of a cigarette packet

(The world's smallest and lightest in the world at the time).

Sale of lenses for mobile phones is started



#### 2008

Sales of lenses for automotive applications is started



#### 2017

2016

is started

Sale of drone lenses is started

Sale of compact

camera modules



#### 2018

Sale of Medical Devices is started







## Facts and Figures



### **Company Profile**



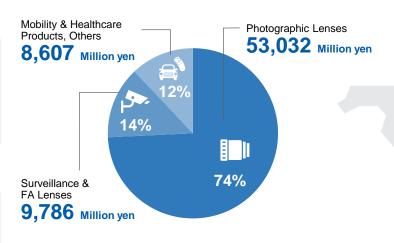
November, 1 1950



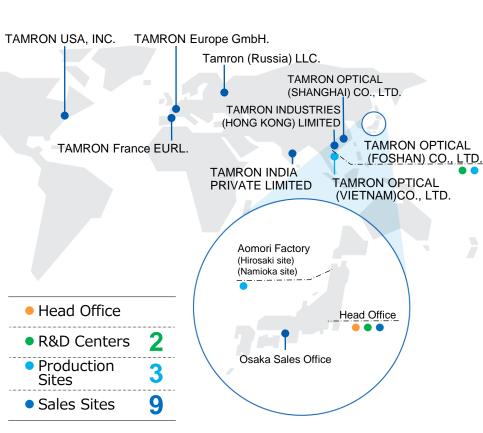


 $<sup>^{\</sup>star}$  As of December 31, 2023

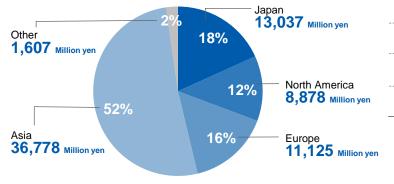
### Net sales by business (2023)



### **Group Network**



## Net sales by region (2023)



## The value chain realizing a fulfilling society

Carrying out everything from research and development to sales in-house to ensure the provision of high-quality products

# Solving social issues with optical design technologies

Solving social issues in the present and future with new technologies across various sectors including health care, agriculture, mobility and security, we pursue research and development through cocreation.

# Production system catering to diverse needs

We have built a structure of three regions around the world to meet every need of customers. With the Fourth Industrial Revolution in mind, we are focused on the introduction of smart factories (automation, labor saving and manpower saving) and the cultivation of human resources with outstanding technology.

# Sales locations expanding globally

We aim to expand our business by expanding market share through the provision of exciting products from the user perspective and sales strategies suitable to each market.

Research

Development

**Production** 

Mass Production

Sales

# Product development in many different areas of business

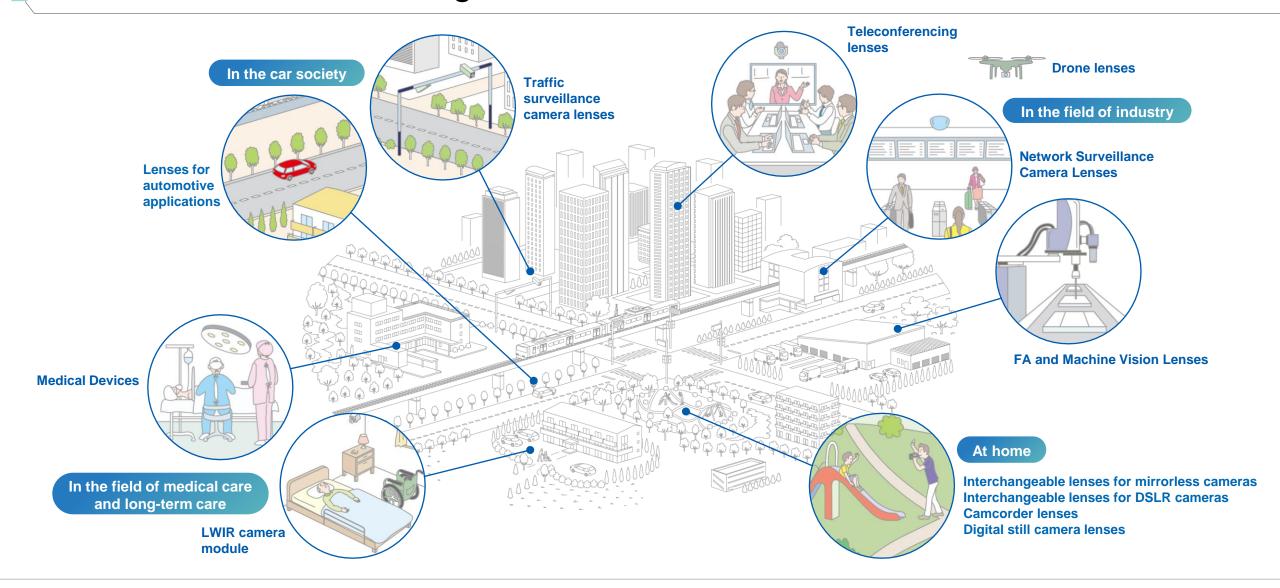
Our Optical Design & Engineering R&D Center and R&D Technology Center pursue research and development and the development of our core elemental technologies such as optical development technologies, lens processing technologies, coating and filter technologies, actuator technologies and resin forming and molding technologies, while technical departments of our business units develop products.

# **Speedy mass production of high-quality products**

Introducing unique equipment and adjustment devices to improve lens performance and stabilize quality. With outstanding manufacturing excellence, we can handle everything from highly difficult small lot production to mass production in flexible and agile style. In addition, through our stringent quality control system, we achieve products that boast consistent "TAMRON quality" and delivery them to customers around the world.



## Tamron Products Creating Emotion and Reassurance





## **Technical Information**

Compact, lightweight, highly precise and highly functional.

Expending great efforts to bring optical technological innovation, Tamron has released many valuable optical products over the years.

To build a fulfilling society, going forward we will continue to pursue expertise and technological developed base on the optics, mechanisms and production technologies we have cultivated to date to shape a new future with light.





## **Technical Information**

Technical Information
https://www.tamron.com/global/technology/

Solving social issues with optical design technologies

#### **Opto-Science R&D**

Solving current and future social issues with optical technology. Tamron set itself the goal to conduct research and development through wide-ranging collaborations in the medical, agriculture, mobility and security industries.

#### Lens movement control

#### **Actuator Technology**

Actuator technology is responsible for fast and highly accurate lens movements such as zoom, focus, iris and VC (Vibration Compensation).

Tamron independently develops its own optical design, control circuit and software to ensure the fastest and most accurate actuators possible.

## Delivering maximum lens performance Coating and Filter Technology

Optical coating technology has been effectively designed in order to improve optical performance and lens function which delivers superior wavelength control, lower-reflection, and higher surface protection depending upon usage and light source.



Quality backed by experience and achievements

#### **Lens Processing Technology**

Innovations in polishing, grinding, and pressing processes have enabled Tamron to offer highly precise lens processing technology allowing for new applications and complex shapes.

## Optical wavelength and limitless possibilities Optical Design & Engineering R&D

Solving social issues by continuing to develop core technologies such as design, simulation, manufacturing, and evaluation of lens products. Researching optical development technologies for a wide range of light applications from visible to far infrared ray, from consumer to industrial use.

Create new usages with manufacturing technology

#### **Resin Forming/Molding Technology**

High-precision molding and forming technologies are able to produce value-added products unlike machining operation and glass materials. Resin molded parts are used for not only plastic lens but also for the housing. Resin forming/molding technology contributes to a new application and improvements for lens products.



## **Our Business**

Tamron is a global manufacturer of optical equipment that offers premium-quality products for many different industries.

Tamron leverages its expertise in optics to make far-reaching environmental and social contributions.

Tamron's proprietary cutting-edge technologies



## Photographic Products





Focusing on all people who love photography and taking on the challenge of creating lenses that are advanced and excite customers

Leveraging advanced technological capabilities as our strength, we handle everything from lens design to manufacturing and sales under an integrated system.

We have expanded our lineup of lenses for mirrorless cameras which have become mainstream in recent years.

#### Features

- » Unique products that capitalize on superior optical performance, light weight and compact size
- Development of **cutting-edge technologies** such as lens coatings and vibration compensation mechanisms
- » Close-up photography capabilities to unleash new photography experiences
- » Winner of various awards in Japan and overseas, including winning EISA Awards 18 years in a row
- » Local sales subsidiaries in seven countries around the world, worldwide network of distributors

#### Main Products



17-50mm F4 (Model A068)



70-180mm F2.8 G2 (Model A065)



20-40mm F2.8 (Model A062)



50-400mm F4.5-6.3 (Model A067)



## Photographic Products





### Focus

## Vibration compensation mechanism supporting all kinds of shooting from still photography to video

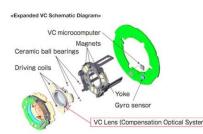
The Tri-coil magnet construction achieves smooth movement where three drive coils power corrective lenses electromagnetically through three ceramic ball bearings.

We also utilize artificial intelligence (AI) technologies to support video shooting.

## VC ON







### High-speed, high-precision AF mechanism to ensure you never miss a shot

Our own development, the VXD linear motor focus mechanism and stepping motor construction RXD provide fast, precise and guiet auto focusing.

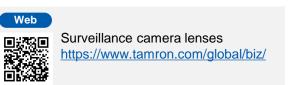






## Surveillance & FA Lenses





## We continually provide products that serve the market demands as a leading company in the security, FA and machine vision markets

We offer high-quality lenses worldwide, catering to various needs including lenses for CCTV cameras that contribute to crime prevention, security and safety, as well as industrial machine vision lenses, teleconferencing lenses and other lenses that support high resolution and high image quality. We also develop and sell drone lenses, 10x zoom camera modules for embedded use and multi-purpose applications, and far-infrared (thermo) camera modules that can capture images even in dark environments.

#### Features

- Leading the industry in the development of varifocal lenses
- Developing lenses equipped with performance and technologies at the forefront of the market
- Developing products from various perspectives that cater to customer needs Pursing convenience in addition to high resolution and performance
- Technological readiness
- Modularization technologies
- Making available an extensive range of surveillance and machine vision products
- Doing business with major camera manufacturers around the world

#### Main Products



Network Surveillance Camera Lenses



FA and Machine Vision Lenses



Camera modules



Teleconferencing lenses





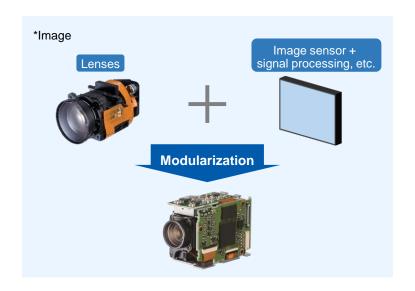
## Surveillance & FA Lenses



### Focus

### **Modularization technologies**

In addition to lenses, Tamron possesses the technologies to produce camera modules that combine image sensors with camera signal processing. These are ideal for embedded applications and other uses.



#### LWIR camera module

In recent years, there is growing demand for appropriate temperature control solutions in various fields including industry, agriculture, livestock, disaster prevention, and healthcare. In response to these market needs, we provided a far-infrared camera module.

A feature of this product is its ability to detect and record images of temperatures in a shutterless format.

We contribute to people's safety and peace of mind with infrastructure surveillance, late night surveillance, and more.

#### **SWIR Lenses**

We provided an industrial lens that enables wideband photography ranging from visible light to shortwave infrared (SWIR) wavelengths in various industrial fields, in addition to food inspection and sorting.

There are hopes that the shortwave infrared (SWIR) wavelengths will be used in inspections of foods and other products to check for defects and foreign substance contamination, as well as to identify test substances, areas where it is difficult to make determinations using visible light.



# Mobility & Healthcare Products, Others



## Contributing to people's peace of mind, safety and health by utilizing Tamron's proprietary technologies cultivated in each business

We will expand our business operations in the lenses for automotive applications, drone lenses and health care fields, which are all expected to display a high rate of growth, contribute to people's safety, security, and health, and aim for real growth in this segment as a key next-generation pillar of earnings.

#### Features

#### Lenses for automotive applications

- Actively adopted new materials and technologies to respond to highly demanding designs
- » Flexible development capabilities able to respond to various requests from customers
  - (Coatings, high heat resistance, high reliability, advanced lenses and lens barrels, mold processing technologies)
- Enhancing production systems incorporating total quality control (TQC) approaches

(CR environment, automation)

Stable supply capabilities including BCP

#### Medical Devices

- » Ultra-small diameter lenses and thin film technologies using optical technologies refined over many years
- » Various spectroscopic technologies responding to the needs for advanced health care solutions

#### Main Products



Lenses for compact digital cameras Lenses for video cameras



Medical Devices

Drone lenses

Lenses for

automotive

applications





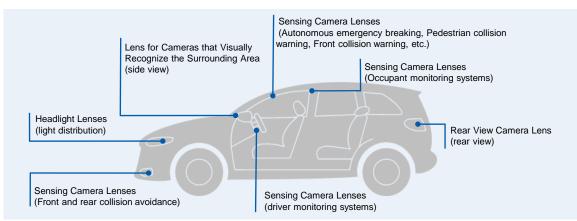
## Mobility & Healthcare Products, Others



### Focus

### Lenses for automotive applications

Tamron is working on the development of a range of lenses for automotive applications in anticipation of the coming age of an autonomous driving-based society. The fields of ADAS and automated driving require various sensors exhibiting advanced detection capabilities. We continue to take on the challenge of developing high-spec lenses serving as the "eyes" of these sensors. We aim to create a fulfilling society in which people can live their lives with reassurance, and will contribute to society by supplying high-quality products.



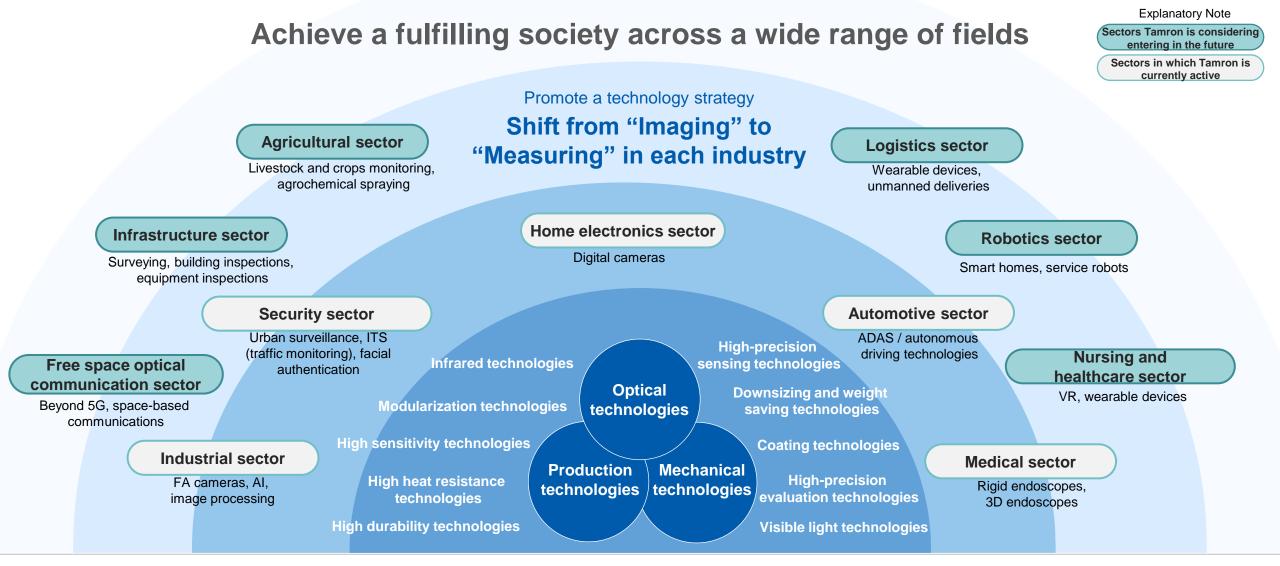
#### **Medical Devices**

We develop a variety of products to meet advanced health care solutions needs. In the field of optical technology, for example, we are engaged in technical development efforts to achieve higher resolution and miniaturization with minimal invasion. In the fields of spectroscopy and fluorescence observation technology, we are advancing technology developments to more clearly visualize diseased areas and cells that were not visible to the human eye. Through these innovations, we will create one-of-a-kind products and contribute to the development of advanced medical technologies and the improvement of patient

Quality of Life (QoL).



## Expand the scope of business by utilizing technological capabilities





## **Quality Control and Production Systems**

## Production structure spread across three regions around the world enabling Tamron to handle various manufacturing tasks from small lot production to mass production

With the factory in Aomori Prefecture continuing to play a role as Tamron's "mother factory," we are also building mass production systems for all lenses. At our overseas factors, coordination takes place with the mother factory and engineers are dispatched to Japan for training in order to pass on Japanese quality.

Tamron also ensures thorough quality control based on the policy of impressing and reassuring customers by combining creativity, technological prowess and consideration for safety and the environment to provide high quality products which customers can trust. Through consistent quality control that extends from R&D to design and manufacturing, we achieve "TAMRON Quality."

Sites		Product Structure	Key Feature / Production items etc.
Aomori Factory (Hirosaki Site)		<ul> <li>Interchangeable lenses for DSLR cameras</li> <li>Lens units for surveillance cameras</li> <li>Lens units for medical devices</li> <li>Repair department for TAMRON-branded SLR lenses and CCTV lenses</li> <li>Lens units for automotive applications</li> </ul>	<ul> <li>Automated assembly lines for photographic SLR lenses</li> <li>Metal processing and alumite treatment</li> <li>Autonomous driving unit LIDAR</li> </ul>
Aomori Factory (Namioka Site)		<ul> <li>Spherical Lens Elements/Aspherical Lens elements</li> <li>Test Plates</li> <li>High-precision reference lenses</li> </ul>	<ul> <li>Automated polishing lines, automated inspection equipment</li> <li>GM lens processing technology</li> <li>Cutting-edge technologies including multi-layered film processing for medical use</li> </ul>
TAMRON OPTICAL (FOSHAN) CO., LTD.	TAMRON	<ul> <li>Interchangeable lenses for DSLR cameras</li> <li>Lens units for DC/VC cameras</li> <li>Network Surveillance Camera Lenses</li> <li>Lens units for automotive applications</li> <li>Lens units for Drone</li> </ul>	<ul> <li>Automated equipment in each process, automated lens assembly</li> <li>Spherical lens surface processing, composite lens processing</li> <li>Metal processing</li> <li>Plastic lens and mold processing</li> </ul>
TAMRON OPTICAL (VIETNAM) CO., LTD.	TAMRON	<ul> <li>Interchangeable lenses for SLR cameras</li> <li>Network Surveillance Camera Lenses</li> </ul>	<ul> <li>Spherical lens surface processing</li> <li>Metal processing</li> <li>Plastic molding and processing</li> </ul>



## **Quality Control and Production Systems**

### Focus

### **Aomori Factory's strengths and features**

## Continuing to play a role as Tamron's "mother factory" while building mass production systems for all lenses

Tamron cultivates human resources possessing outstanding skills and techniques and promotes ingenuity at its production sites while also working to create smart factories through automation and efforts to save on labor and manpower.

- » Mass production technologies capable of processing  $\phi$ 140mm large aperture lenses to a surface accuracy of approximately  $\lambda$ /8
- » Processing technology for small diameter lenses in the φ1mm range to a surface accuracy of less than one unit
- » Processing technology for spherical surface rod lenses with a diameter of around φ2mm (ratio of outer diameter to center wall thickness of around 20x)
- » Vapor deposition technology to deposit a consistent anti-reflection film on a convex surface from the center to the edges
- » Processing technology for ultra-multilayer filters achieving high shielding performance (optical density of 6 or higher)
- » Manufacturing technology for transmissive spherical lenses for interferometry (reference surface accuracy of at least  $\lambda/20$ )

#### Initiatives for automation

#### Automated polishing equipment for lens processing

When a lens is polished, it undergoes processing of precision grinding followed by polishing. Conventionally, moving between these processes has required a worker to set and remove the lens from machinery, but now the lenses are automatically conveyed to the next process.

#### Automatic lens assembling machine

The process for assembling an SLR interchangeable lens consists of parts assembly, screw tightening, adjustment and testing, among other steps. The automatic assembling machine performs operations using tweezers and drivers, which were manually performed in the conventional assembly work.

### **China-Foshan Factory's strengths and features**

This is a core mass production factory performing integrated production from the lens polishing process to plastic molding and coating, the processing of metallic components, and assembly of DSLR camera interchangeable lenses, CCTV Network Surveillance Camera Lenses and lenses for automotive applications, the packaging of finished products and their shipping. In recent years, the factory has independently performed processes from optical design to product development.

### **Vietnam Factory's strengths and features**

This is a mass production factory that is able to take advantage of geographical benefits regarding tariffs due to the conclusion of an FTA with Vietnam. The factory makes spherical lenses, molded pieces and metallic components in-house, and also maintains finished product assembly processes. The second factory in Vietnam will start operating in 2025 and a mass production system will be established by 2026.



## Sales Sites



## Tamron has overseas sales companies in seven regions worldwide. Our products are sold in about 70 countries and regions globally.

Country	Company Name	Address
Japan	Imaging Products Business Unit (Tokyo Sales Office)(Head Office)	1385 Hasunuma, Minuma-ku, Saitama-shi,Saitama 337-8556, JAPAN Tel: +81-48-681-1511 Fax: +81-48-681-1512
	Imaging Products Business Unit (Osaka Sales Office)	6th Floor, 4-1 Minamisenba 2-chome, Chuo-ku, Osaka-shi, Osaka 542-0081, JAPAN Tel: +81-6-6271-4281 Fax: +81-6-6271-4283
	Imaging Products Business Unit (Overseas Sales Dept.) (Head Office)	1385 Hasunuma, Minuma-ku, Saitama-shi, Saitama 337-8556, JAPAN Tel: +81-48-684-9339 Fax: +81-48-684-9349
	OEM Component Business Unit (Head Office) (Sales Dept. #1 / Sales Dept. #2)	1385 Hasunuma, Minuma-ku, Saitama-shi, Saitama 337-8556, JAPAN Tel: +81-48-684-9116 Fax: +81-48-684-9465
	Industrial Optics Business Unit (Sales Dept. #1 / Sales Dept. #2)	1385 Hasunuma, Minuma-ku, Saitama-shi, Saitama 337-8556, JAPAN Tel: +81-48-684-9129 Fax: +81-48-683-8594
United States of America	Tamron USA, Inc. dba Tamron Americas	10 Austin Boulevard, Commack, NY 11725, USA Tel: +1-631-858-8400 Fax: +1-631-543-3963 <a href="http://www.tamron-americas.com/">http://www.tamron-americas.com/</a>
Germany	TAMRON Europe GmbH.	Robert Bosch-Str. 9, 50769 Cologne, GERMANY Tel: +49-221-669544-0 Fax: +49-221-669544-404 <a href="https://www.tamron.eu/">https://www.tamron.eu/</a>
France	TAMRON France EURL.	5 avenue Georges Bataille, F-60330 Le Plessis-Belleville, FRANCE Tel: +33-3-44-60-73-00 Fax: +33-3-44-60-23-34 <a href="https://www.tamron.eu/fr-FR">https://www.tamron.eu/fr-FR</a>
Hong Kong	TAMRON INDUSTRIES (HONG KONG) LIMITED	Unit 908, 9/F, Elite Centre, 22 Hung To Road, Kwun Tong, Kowloon, Hong Kong Tel: +852-2721-7797 Fax: +852-2620-1631 <a href="https://www.tamron.com.hk/">https://www.tamron.com.hk/</a>
China	TAMRON OPTICAL (SHANGHAI) CO., LTD.	Room 1707, Ruijin Building, No.205, Maoming South Road, Shanghai, 200020, CHINA Tel: +86-21-5102-8880 Fax: +86-21-5466-0229 <a href="https://www.tamron.com.cn/">https://www.tamron.com.cn/</a>
Russia	Tamron (Russia) LLC.	Unikon Business Center 2F No.4, Plekhanova Street 4a, Moscow, 111123, Russian Federation Tel: +7-495-970-0112 Fax: +7-495-970-0112 <a href="https://www.tamron.ru/">https://www.tamron.ru/</a>
India	TAMRON INDIA PRIVATE LIMITED	805, 806&807, 8th floor, Vatika City Point, MG Road, Gurgaon-122001, Haryana, India Tel: +91-124-41-168-12 <a href="https://www.tamron.in/">https://www.tamron.in/</a>



**Head Office** 



United States of America



Germany



## ESG/Sustainability

## Environment

Reduce environmental burden through carbon neutral, In-house products designing and services

## Promote and drive the evolution of the 2050 environmental vision

- Reduce greenhouse gas emission
  - Scope1,2

**18**% reduction (vs Yr.2015)

※in 2030: 30% reduction
※ in 2050: Zero emission

- Scope3
   Set Measurement method and reduction targets reduction
- Improve contribution to resourcerecycling-society
  - · Evolve towards a circular economy
- Encourage initiatives for a society in harmony with nature
  - Strengthen conservation of biodiversity and sustainable utilization
- Refine CDP evaluation

## Social

Promote human capital management, DE&I, and job satisfaction

### Promote human capital management

- Advance DE&I
- Enrich human capital investments
  - Double education and training expenses
  - Refresh HR system and expand functions
  - Reinforce the education of engineers (Increase R&G expenses)
- Refine human rights DD system
  - Implement SAQ, refine risk analysis, and make improvement
- Promote health management
- Expand engagement activities

# Governance

Reform the Corporate Governance Structure

# Strengthen supervision, speed up decision-making

- Transition to a Company with an Audit & Supervisory Committee
  - Strengthen supervisory functions, expedite decision-making
- Increase the ratio of outside directors
  - Secure the ratio of outside directors to a majority
- Refine the assessment of the effectiveness of the Board of Directors
  - Implementation with third-party involved
  - Strengthen supervision for each committee
- Improve Board Advisory Committee
  - Enhance the transparency
- Enhance executive functions
  - Promote authority delegation
- Expand the internal control system
- Foster a better company culture



# Focus on the Future

Tamron is focused on the future.

We are committed as an optical specialist to create new value and direction in optics with our longaccumulated optical technologies and address many social issues in the future.

Tamron delivers emotion and reassurance around the world toward a more fulfilling society.

We will never stop rising to new challenges.

