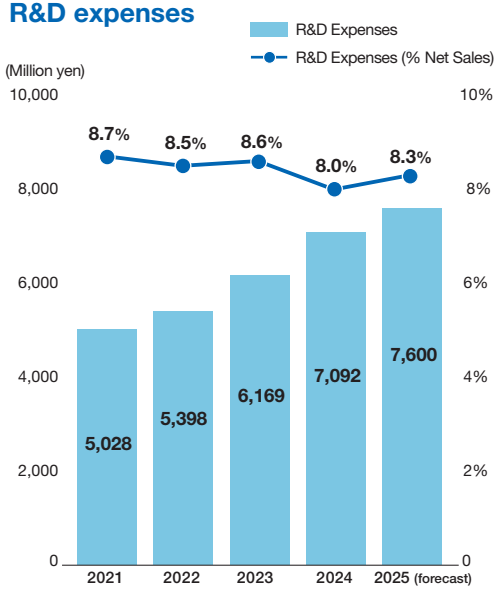
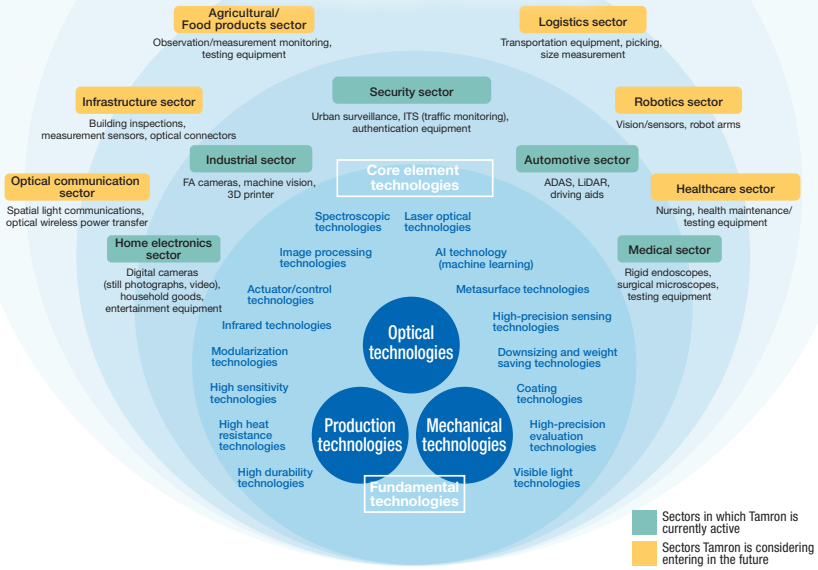
Technology Strategy

Since its founding, Tamron has continually refined its optical technologies, as symbolized by its photographic lenses. These technologies have opened doors to other fields such as security, industry, and healthcare.
Going forward, Tamron will leverage the optical technologies it has developed to date with the aim of creating new businesses that will help solve social issues in a diverse range of fields, based on a policy of shifting from imaging to measuring. We will expand the possibilities of optical technologies by addressing many of society's issues for the future, providing value around the world.

R&D expenses



Making technologies that are next-generation solutions
Tamron's technologies are evolving from imaging to measuring



Intellectual Property Strategy

Tamron has developed an intellectual property (IP) strategy that leverages its IP portfolio to support management and business strategies from an IP perspective. Based on this strategy, our business, R&D, and IP divisions work together to create intellectual properties that protect our products from various perspectives and in a multifaceted manner, while also engaging in risk management. In addition, they support the exploration of new business areas and the discovery of inventions by utilizing IP landscapes and other tools to realize one of our presidential management policies: developing new businesses.

Creation and utilization of intellectual property

Based on its IP strategy, Tamron develops its patent portfolio to protect the competitiveness of its products and technologies, and to support its sustainable development and growth as a company.

Patents

We work to establish our own patent portfolio by promptly filing patent applications for technologies, which are the source of our competitiveness. In our patent creation activities, our business, R&D, and IP divisions work together to decide on themes and build our patent portfolio.

Patent creation activity process

Theme determination
Confirm the direction of themes based on social needs, understand and analyze technological trends at other companies, and decide on themes.

Invention and discovery
The development and intellectual property teams collaborate to identify differentiation points from an intellectual property perspective, based on technological trends in society and among competitors. They clarify the essential technologies for new functions and innovations.

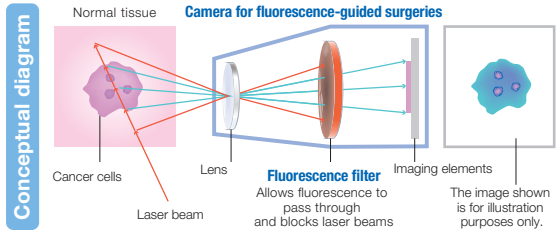
Application
Build a patent portfolio through strategic patent applications.

Technology Development Case Studies

Tamron maximizes the potential of optical technologies by combining them with its own creativity and originality, providing new value to society. Light, whether visible or invisible to the human eye, has the power to drive innovation in a wide range of fields, including imaging, optical communications, healthcare, food and agriculture, and automobiles. We will continue using the power of light to create technologies for the future.

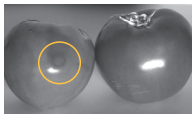
01 Measuring cancer cells with fluorescence filters

We are developing and producing fluorescence filters, which will play an important role in fluorescence-guided surgeries, in which hardly identifiable cancer cells are clearly visualized to ensure high-precision surgical operations.



02 Measuring moisture content using shortwave infrared (SWIR) lenses

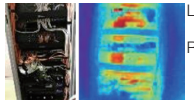
SWIR lenses measure moisture content without destroying the objects being inspected. They help reduce labor and the burden on workers.
A large amount of moisture oozes within bruised fruit. This makes it possible to exclude any fruit displayed in a dark color on the monitor screen. This opens the way for automation and the simplification of the shipping process.


Bruise locations


SWIR lenses

03 Measuring heat using far infrared camera modules

Far infrared camera modules detect and visualize the far infrared radiation from objects and perform a temperature conversion process. This paves the way for monitoring data about the overheating of equipment and facilities. At biomass power plants, the modules are used to monitor the temperature of biomass fuel storage warehouses that are likely to experience abnormal temperature increases, in addition to being used to monitor boilers, power generation turbines, and other equipment when biomass fuels are being injected into the systems. They operate every day to ensure the safety of power generation.


Left: Facility and equipment
Right: Thermal monitoring


Far infrared camera modules

04 Measuring distances using sensing camera lenses and LiDAR

The safety of autonomous vehicles is supported by automotive sensing camera lenses. Vehicles, pedestrians, traffic signs, and other objects in the digital image data captured by cameras are identified to properly control vehicles, and Light Detection and Ranging (LiDAR) light sensor technology is used to measure the distance to an object by capturing the scattering and reflection of laser light.


Automotive camera lenses

Creating new businesses and future technologies

Through poster sessions and various conferences, we share the latest technologies globally with Tamron Group companies in Japan and overseas, with the goal of creating new businesses.

Our technology page

Our technology page showcases our latest technologies and core technologies. These technologies contribute to the creation and development of our products and support innovation in a diverse range of industries, such as medical devices and communications. Take a moment to explore the possibilities offered by our next-generation technologies.

Link

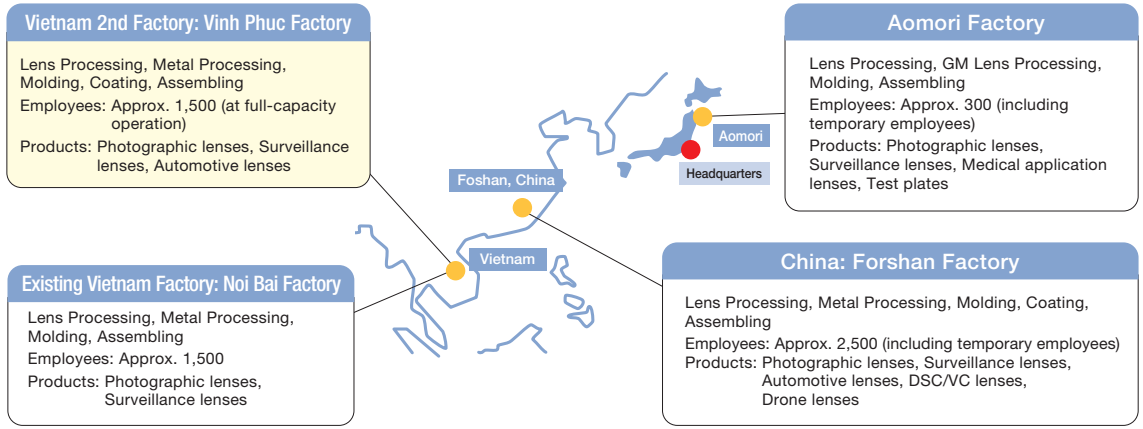
Made by TAMRON: The Global Three-Pillar Production System That Supports Our Business

Tamron began expanding its production bases overseas to China in 1997, and now has a global production network with three production bases situated in Japan, China, and Vietnam.
We have also made progress in the internalization of parts and component production. By managing the quality of most key parts in-house, we can uphold our quality standards while maintaining a cost advantage over suppliers. Our factories have advanced considerably in terms of automation and multi-skilled labor, and flexible production systems have been established through stronger cooperation among factories.

The second Vietnam factory, Tamron Vietnam Vinh Phuc Factory, has commenced operations

Tamron has completed the construction of its second Vietnam factory, Tamron Vietnam Vinh Phuc Factory, and has commenced operations. Approximately 4 billion yen was invested in building this facility.
The new factory is a mass production facility capable of handling the entire manufacturing process, including lens processing, metal processing, molding, coating, and assembly. The Company plans to begin full-scale mass production by 2026 and achieve full operation by 2028. Upon reaching full capacity, Tamron's total production volume is expected to increase to approximately 1.2 times the level in 2024.

Address	Thang Long 3 Industrial Park, Vinh Phuc Province, Vietnam
Operations commenced	January 2025
Main production items	Interchangeable lenses for cameras, Network surveillance camera lenses, Automotive camera lenses
Employees	Approx. 1,500 (at full operation in 2028)
Investment amount	Approx. 4 billion yen
Land area	Approx. 25,000 ㎡
Building area	Approx. 8,000 ㎡
Total floor area	Approx. 28,500 ㎡ (Factory: 17,000 ㎡, Parking: 11,500 ㎡)
Building structure	Factory: 3 stories, Parking: 3 stories

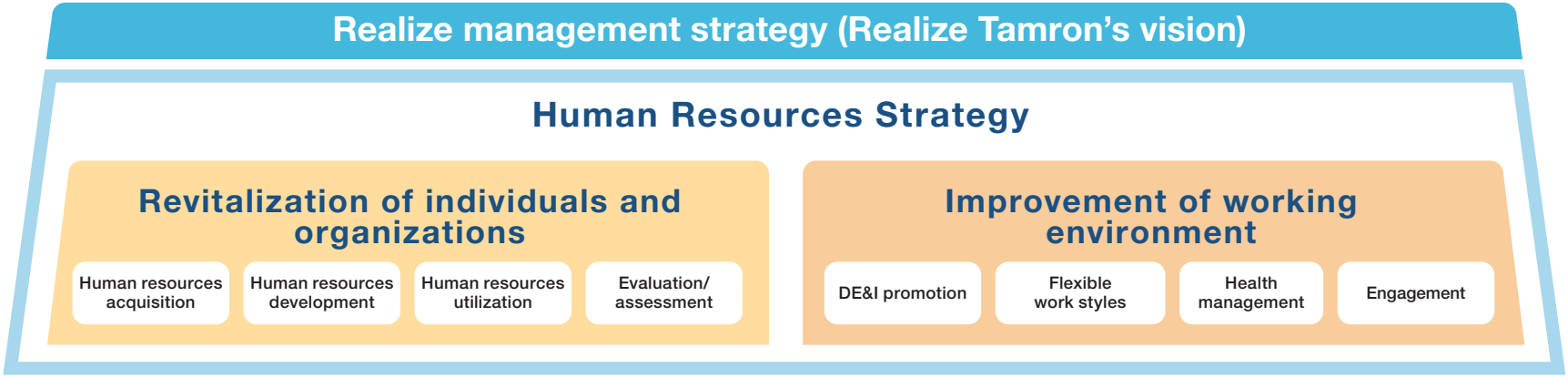


At the Cutting Edge of DX in Manufacturing: How Automotive Lens Production Is Evolving with Machine Learning

Tamron's automotive lenses are the most widely produced products in its product lineup and are positioned as one of its core products. The production process is highly automated, with multiple in-house assembly machines operating at our Chinese factory to ensure efficient and stable production.
However, because the factory is located in China and our production technology and development divisions are in Japan, when abnormalities occurred in China in the past, information was exchanged via e-mail, and the main focus was on post-incident response. This made it difficult to quickly identify causes and make improvements. To overcome this situation, the production engineering team proposed the development and introduction of the "Automotive Lenses Production Data Visualization Tool." After several years of efforts, the system finally entered operation.
Now, data collected from assembly and inspection machines at the Chinese factory can be accessed in real time from any location. In addition, machine learning now enables the automatic detection of abnormal values and the rapid identification of defect causes, resulting in more advanced quality control. This initiative has significantly improved product traceability, helping to ensure safety and security, which are essential for automotive products. As a result, customer reliability assessments have also improved, leading to greater customer satisfaction.
Moreover, by enabling development members to focus on their core responsibilities of product development, this initiative has contributed to improved productivity across the organization. This initiative was also selected as the recipient of both the President's Award and the Improvement Proposal Award, which symbolize Tamron's commitment to fostering a culture that encourages learning and taking on challenges.

Human Resources Strategy [Human Resources Strategy Basic Policy]

The key to realizing Tamron's vision and management strategies is the human resource strategy aligned with the management strategies. For this purpose, we will prioritize revitalizing individuals and organizations, while developing systems and environments that enable individuals and organizations to maximize their potential. To adapt to the changing business environments in line with the alternations in business structure and the progress of digitalization, we will upgrade the knowledge and skills of all employees, acquiring and strengthening key jobs and key skills in focused areas, and flexibly deploying personnel according to business environments.
Tamron's human resource strategy consists of two elements: "revitalization of individuals and organizations" and "improvement of working environment." For each element, we are steadily working to realize the strategy by incorporating the human resource strategy themes that we have positioned as important based on our management strategy, setting targets, planning, and implementing measures.



Indicators	Targets (2026)	Results (2024)
Percentage of female managerial staff	More than 12%	7.4%
Percentage of male employees taking childcare leave	More than 80%	95.2%
Ratio of mid-career hires	More than 60%	53.4%
Education and training expenses per employee	More than 30 thousand yen	22 thousand yen
Percentage of employees receiving detailed examinations	More than 90%	57.0%
Percentage of gender pay gap (all workers)	—	76.5%

Human Resources Strategy [Human Resources Development, DE&I Promotion]

To establish a personnel portfolio linked to our management strategies and to flexibly respond to changes in business structure and various business conditions following the progress of digitalization, Tamron will carry out personnel development including re-skilling and the proper appointment of human resources.
We will step up our actions to identify the skills and specialties that we lack as an organization to fulfill our management and business strategies, to encourage employees to re-skill and learn, and to incorporate knowledge and skills into the Company and pass down new knowledge and skills through off-the-job training and other methods.

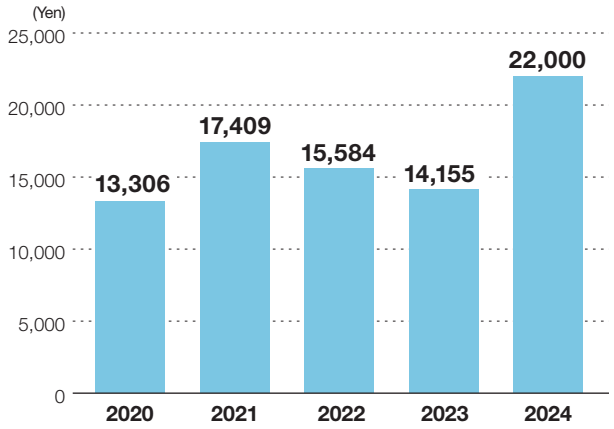
Human Resources Development

Through a Mission Leadership System where clear missions are defined for each leader and the entire team works to achieve them, Tamron strives to facilitate the growth of leaders and their employees while strengthening overall organizational capabilities. For managers and employees at similar career levels, we have also introduced the Post Qualification System, which determines grades and compensation according to the level of responsibility and difficulty of all roles to be fulfilled as required by management, irrespective of seniority or ability. Employees who have developed a certain level of occupational skills are offered two career tracks under the Post Qualification System, the manager course or the professional course. In this way, each employee can attain a work style that fits their aptitude and intentions.

Tiered and Occupation-specific Employee Training

Tamron offers a range of employee training customized by tier and occupation. For new graduate hires, Tamron provides a four-year training program starting from initial recruitment to improve basic job knowledge and formulate medium-term career plans. Mid-career employees are given practical training commensurate with their positions, including the training of junior employees. For managers, we provide training to enhance their organizational management capabilities, goal management training, harassment training, and other training to raise awareness of their roles. Technical employees are offered classroom instruction to acquire technical skills and undergo practical training in related departments as a way of creating opportunities for them to learn how their activities are directly related to actual operations. We also offer a range of employee training programs such as voluntary online English conversation classes in an effort to develop the capabilities of our human resources.

Trends in education and training expenses per employee



Human Resources Utilization

To enhance corporate value in the medium and long term, it is important for a diverse range of individuals to demonstrate their full potential, innovate, and create value. In addition to women, foreign nationals, and others bearing diverse attributes, we believe it is important to attract experienced talent on career path in other industries and diversity in specialist fields in order to coalesce the diverse knowledge, experience, and skills of all employees to enhance Tamron's competitiveness.

Women's Empowerment

Women currently account for around 20% of Tamron employees, but in keeping with the guidelines for action declared in the Act on Advancement of Measures to Support Raising Next-Generation Children, we aim for at least 25% of new graduate hires to be female.
We believe it is essential to empower female employees and raise the percentage of female managers in the face of a declining working population and industrial restructuring.

Ensuring the Success of Mid-career Hires

In addition to graduate recruitment, Tamron has established an internal system to hire mid-career employees with a wide range of knowledge and experience and developed environments in which they can demonstrate their capabilities. Mid-career hires account for around half of all employees, and integrating them with new graduate hires helps to boost the corporate value of Tamron.

Empowering Senior Employees

Starting in 2021, Tamron established the Meister Program, a new positional system for employees who are reemployed after reaching the mandatory retirement age, giving senior employees further opportunities to flourish. For employees who possess advanced expert insight, technical capabilities, know-how, exceptional knowledge, and skills, we have established Senior Meister and Meister positions. By giving these employees responsibilities and appropriate compensation, we encourage them to pass on their knowledge to successors and motivate them to be even more active.

DE&I Promotion

To increase corporate value in the medium to long term, it is vital that we continually innovate as this is a source of added value. We understand that a diverse workforce interacting with each other is a significant factor in accomplishing this. This means it is necessary to proactively ensure that our workforce is diverse in terms of knowledge, experience, gender, age, and nationality. We are monitoring the staff composition (by gender, age group, nationality, and career level at the time of recruitment) as an indicator of the results of efforts to hire and retain personnel.

Human Resources Strategy [Flexible Work Styles, Engagement, Evaluation/Assessment, Health Management]

Without the development of a workplace environment that enables it, including a system enabling the workforce to maintain their mental and physical health, it is not possible for a diverse workforce to display its potential or for the employees of that workforce to stay in the Company. Tamron supports flexible work styles to ensure that employees are able to have a healthy work-life balance by providing childcare and caregiving leave, a flextime system, teleworking, and other programs.

Promoting Flexible Work Styles

Flextime Scheme, Telework/Working from Home

At Tamron's head office, the flextime program allows employees to flexibly set their working hours according to their preferred work and personal hours, on the condition that they work during the four core hours and work the prescribed number of working hours each month. We have introduced systems so that they pose advantages to both individuals and the Company, such as allowing employees who were previously working under a shortened working hours scheme to raise children to switch to the flextime system, enabling them to work full-time. In addition, we introduced a one-month temporary teleworking program in September 2023. This allows employees to choose to telework temporarily for childcare reasons, such as the need to look after their children due to a temporary school closure or it being difficult to commute due to an injury.

Initiatives to Reduce Overtime

Tamron strives to improve productivity and works to reduce overtime hours based on the basic policy of achieving year-on-year reductions. In the future, we will continue working to improve the work efficiency of each employee, and strive to reduce overtime hours through initiatives such as the visualization of work attendance data and through the management of targets.

Various Systems to Achieve Work-life Balance

- Childcare leave
- Caregiving leave
- Telework/working from home
- Shorter hours for childcare (for employees until their child graduates from elementary school)
- Nursing care leave
- Paid leave in hourly increments
- Flextime scheme (four hours core time, calculated over a monthly period)

For more information on our efforts to support a healthy balance between work and childcare, please visit our website.

Link

Engagement

Tamron introduced an engagement survey in 2024 and plans to conduct it annually. We measure work engagement (job satisfaction and enthusiasm for work) and employee engagement (understanding of organizational strategies and goals, and willingness to contribute voluntarily to the organization), and apply the insights gained to implement initiatives across eight key themes of our human resources strategy.
In the 2024 survey, the percentage of employees with high or near-high engagement* was 27.2%, and we aim to increase this to 30% or more by the end of FY2026.

* Employees with a particularly strong psychological connection with their work and the company/organization

Evaluation and Compensation

Post Qualification System

Tamron has introduced the Post Qualification System for employees in management roles. The Post Qualification System determines grades and compensation based on positional classifications (positions) according to the level of responsibility and difficulty to be fulfilled as required by management, irrespective of seniority or ability. The system establishes management and professional career paths, with employees assigned to each path based on their aptitude to fulfill the roles required by management. Rather than relying on seniority or job skills, the system assigns roles (positions) based on the level of responsibility and difficulty of the job. Compensation is determined based on the assigned roles, driving sustained improvements in productivity.

Health Management

Tamron believes that employees being able to work in good physical and mental health and with job satisfaction are among the most important factors directly linked to improved corporate value. This is not limited to considerations for employee safety as required by law. Proactively working to maintain and advance employee health creates passion and vigor on the part of employees and leads to a more energetic organization.
We continue to conduct annual mental checks, relay results including stress levels by age group and organizational level to department managers, and reflect those activities in improvements to the workplace environment. In consideration of privacy, we have also launched a program that allows employees to privately consult with a specialist organization without notifying the Company.

Renovated employee cafeteria now open all day for employee use

The employee cafeteria has been transformed into a multipurpose space called TAMRON Square. Instead of using it only for lunch and breaks, employees can now use it as a space to work, communicate with each other, and enjoy a change of scenery to reset between work tasks. This renovation is based on "improving the workplace environment," one of the elements of our human resources strategy, and is an initiative to provide a more comfortable working environment for our employees.

TAMRON Square