

Our Business Strategies

Creating New Markets with “Light” (Ushio’s Business Strategies)

Under Revive Vision 2030, tapping into a globally niche leadership approach that has shaped Ushio’s corporate culture and strengthening our position since its founding, we will shift to areas where we can leverage Ushio’s unique strengths—the power to control light, the power to provide light-based solutions, and the power to retain light—to put forward solutions based on social value with even greater speed.



Industrial Processes

Strategic Policy for Industrial Processes Business

Helping to create convenient and comfortable social infrastructure through optical processing technologies

Manufacturing processes

for semiconductors, electronic devices, EVs, building materials, printing, etc.



Business Strategy

This is our primary business, where we will concentrate development, investment, and resources to enhance growth.

In particular, we will focus on areas such as advanced packaging and semiconductor processes, where increased growth is expected, and will revise our strategies for the EUV business.

Review of Fiscal 2023

In the flat panel display market, while demand caused by people staying at home receded and operations slowed down at liquid crystal panel manufacturers, operations were solid in the semiconductor and electronic device markets. On the other hand, major changes that occurred in our business environment were the rise of other companies' light sources for EUV mask inspections in the semiconductor market and a sharp slowdown the cutting-edge IC package market, which resulted in us drastically changing our strategies.

There are signs that demand in the semiconductor market will recover in fiscal 2024. As needs grow with advances in AI, we will increase the presence of the Ushio Group's lithography equipment (stepper, direct imaging lithography equipment, digital lithography system), particularly in the advanced packaging market. At the same time, we will revise our initiatives within the Group, selecting and concentrating on priority areas to achieve high profits in the Industrial Processes area.

Related products



UV lamps for lithography



Projection lithography equipment



Direct Imaging Lithography Equipment

Strategic policies (vision)

Expand presence in growing advanced packaging market and achieve high profitability by strategically selecting and focusing on priority areas

Focus investments on priority areas

- Concentrate resources and investments in semiconductor fields* offering growth potential

* Advanced packaging area and thermal processes that offer market growth potential

Strengthen product lineup

- Strengthen product lineup through strategic partnership with Advanced Materials to expand presence in evolving advanced packaging area
- Introducing new LED light sources for thermal processes, cultivating semiconductor thermal solutions area with three light sources
- Strengthen product lineup of UV lamps to expand into new business fields

Improve profitability

- Strategically enhance product mix in line with business climate changes
- Create business structure covering sales through aftersales service, primarily for lithography equipment
- Look to assess areas with little business potential

Human resources strategy

- Expand human resources in Industrial Processes business by reskilling from other businesses

Business climate

Semiconductor market

Signs of demand recovery emerging, anticipating market expansion across medium through long term, primarily for AI development demand

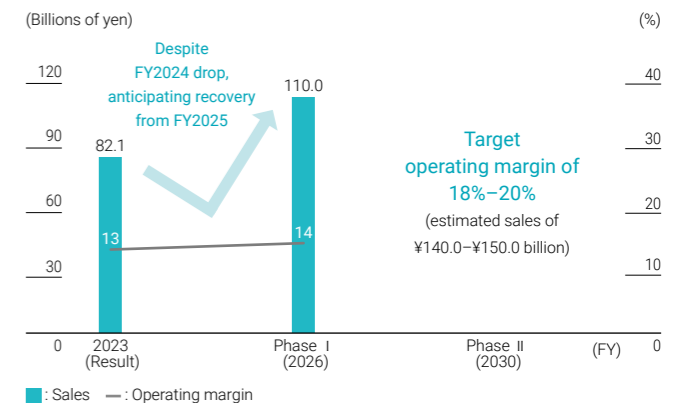
Advanced packaging market

Server and PC markets deteriorating, lowering related capital investments, but AI related investments expanding on broad adoption of generative AI, which should drive transition to larger package substrates and chiplets, thus increasing demand for advanced packaging substrates

Flat panel display market

While the rebound from stay-at-home demand that spiked during the COVID-19 pandemic has bottomed out, market needs should remain stagnant for the foreseeable future

Coefficient targets



Specific measures

	Priority areas (sub-segment)	Measures
Grow by increasing and sustaining investments	Digital Lithography System* + Next-generation lithography equipment (Lithography Equipment)	Concentrate development investments and resources on projects related to strategic partnership with Applied Materials to create full product lineup to become leading company in advanced packaging area
	Other IP businesses, including optical processes (Optical Equipment Lamps and Other Optical Equipment)	Focus on promising semiconductor-related field to pursue business expansion while investing to bolster product competitiveness
	EUV (Other Optical Equipment)	Continue product development with view to entering the market with High-NA lithography, etc. while looking to downsize or withdraw from market if business is no longer feasible
Stabilize	UV and OA lamps (UV and OA Lamps)	Maintain as stable cash-generating business through ongoing investments to boost competitiveness based on stable market trends

* Direct Imaging lithography equipment using digital lithography technology through partnership with Applied Materials

Leading Prospective Growth Driver Businesses

Pursuing new potential in market for inspection and analysis equipment, particularly in increasingly sophisticated semiconductor area, by leveraging our unique light source technologies

Expand Presence in Advanced Packaging Market Strategic partnership with Applied Materials

Become leading company in advanced packaging market by building full product lineup and expanding customer coverage

Strategic policies (Vision)

Become leading company in advanced packaging market

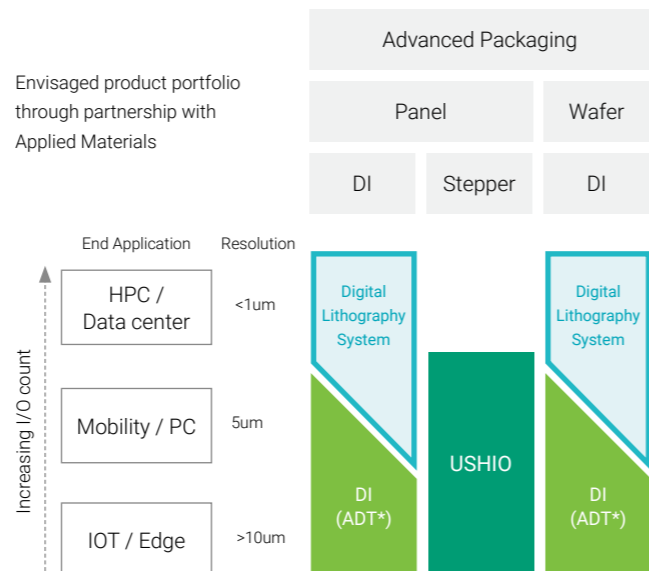
1 Building full lineup

Partnership with Applied Materials adds Digital Lithography System and builds full product lineup, including existing steppers and direct imaging lithography equipment, to cater to diverse applications and customer needs in ever-evolving packaging substrate market

2 Strengthen sales by growing customer base

Incorporating newly added Digital Lithography System should reduce dependence on current key customers, diversifying customer base and ensuring sales stability

* ADT= ADTEC Engineering, our group company



Advanced packaging market to cater to with Digital Lithography System

SAM to expand from \$250 million in FY2025 to \$800 million in FY2030

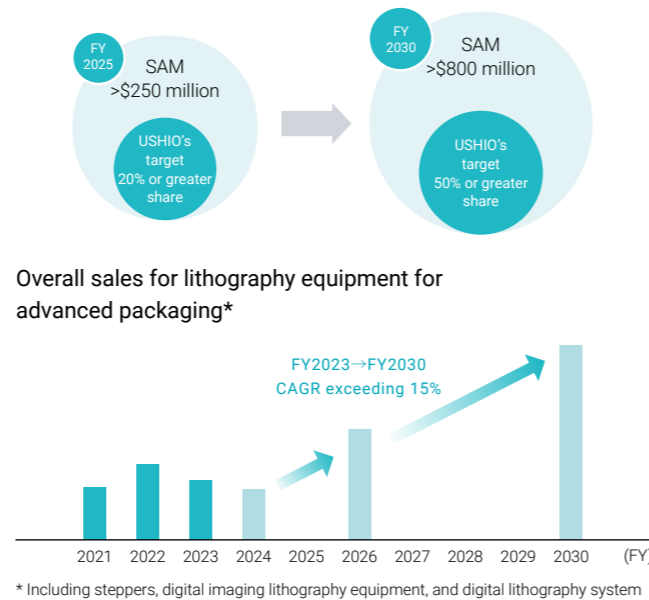
Cutting-edge IC package substrates should evolve significantly with AI advances, which drives:

- Rising demand for chiplets and larger package substrates
- More sophisticated package substrates to cater to semiconductor performance and power efficiency improvements (greater requirements for sub-2 μm to sub-micron)

Why we foresee adoption of our Digital Lithography System adoption in the market

Incorporating the digital lithography technology (DLT) into conventional DI lithography equipment enables:

- For larger package substrates
 - Handling larger substrates without compromising productivity or conventional tact times
- For more sophisticated package substrates
 - Accurate response to distortion and die placement errors arising from chipletization
 - Adaptability to changes in interposer substrates, including panelization, bridge structures (silicon + resin), and redistribution layers



▶ Cooperation with Applied Materials

Ushio and Applied Materials, Inc. have formed a strategic partnership and are bringing to market the first digital lithography system specifically designed for patterning the advanced substrates needed in the Artificial Intelligence (AI) era of computing. This new digital lithography system is the lithography equipment that can achieve the resolution necessary for advanced substrate applications (less than 2-micron line widths) while delivering throughput levels required for high-volume production.

Message

It has been six months since Ushio and Applied Materials, Inc. entered into a strategic partnership. To recap, Applied Materials is the leader in materials engineering solutions used to produce virtually every new chip and advanced display in the world. Founded in 1967 and headquartered in Santa Clara, California, Applied is renowned for its leadership in process equipment that enables innovations in the semiconductor industry. Applied developed a new type of Digital Lithography equipment (DLT™ - Digital Lithography Technology) designed for next-generation advanced packaging. Ushio is a global leader in semiconductor back-end processing with steppers and direct imaging lithography equipment. By combining Ushio Group's expertise in sales, marketing, engineering, and manufacturing with groundbreaking hardware and software technology from Applied, we can accelerate innovation in advanced packaging. It is an ideal partnership.

Since the announcement of the strategic partnership, significant progress has been made under the "One Team AUCC*" initiative, led by me as the executive owner and the extensive experience of Ushio's strong sales, marketing, manufacturing, and R&D teams. We have completed installation of a DLT tool at Ushio's facility for training purposes and customer demonstrations. We are also preparing for lithography tool production to meet strong interest from customers.

The three main features of particular interest to customers are:

1. Maskless printing which enables large AI/HPC packages without stitching boundaries.
2. Package density scaling with improved overlay performance and built-in digital compensation of substrate warpage and deformation, which enhances yield.
3. Digital Dynamic Connection™ (DDC) that compensates for die shift and rotation, enabling high power-performance scaling and yield for multi-chiplet packages.

The need for continued innovation in advanced packaging and the rapid growth of generative artificial intelligence represent a unique opportunity for Digital Lithography Technology, which combines Ushio's strengths with Applied's leadership in semiconductor equipment.

Supported by a strong sales force, engineering expertise, deep customer relationships, and strong partnership between Ushio and Applied, we are well-positioned for success. We are excited to capitalize on this "perfect partnership."

* AUCC: AMAT Ushio Collaboration & Cooperation

Profile

William F. Mackenzie
Ushio Inc.
Executive Owner of AUCC Project



Specific Measures for Selection and Concentration of Priority Areas

Shift Resources to Growth Businesses

► Thermal Solution Area

Focus on semiconductor thermal processes, a growth market, and help the semiconductor sector develop.

Strategic policies (Vision)

Leverage flash Lamps (FLP), halogen lamps (HL), and newly added LEDs to contribute to semiconductor sector development through optical thermal solutions

Be trusted partner of semiconductor equipment manufacturers

Business climate

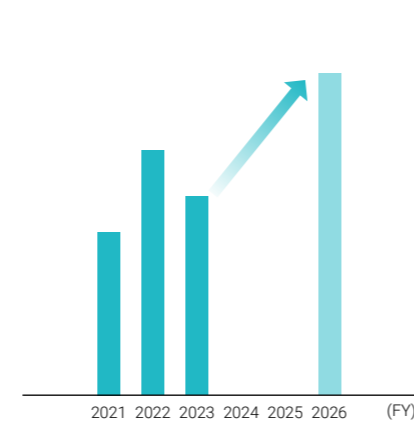
- Increasing need for thermal processing technology with high temperature and thickness control due to advances in semiconductor miniaturization, leading to thinner films and three-dimensional structures
- Growth in epitaxial deposition processes for advanced logic and DRAM devices, driving demand for epitaxial growth equipment
- Expansion of the semiconductor market is expected to significantly advance the semiconductor front-end manufacturing equipment and silicon wafer markets

- Rising use of radiant heating in numerous heating processes

Business strategies

- Boost built-in adoption rate by major customers (HL)
- Strengthen relationships with partner companies (FLP)
- Enter new areas by introducing LED light sources (LEDs)
- Offer three distinct light sources enabling more controllable heat treatment technology

Estimated thermal solution area sales



► Excimer Area

Shift focus areas, such as development investments in semiconductors, printed circuit boards, and packaging, and maintain stable business operations, reducing dependence on flat panel display market.

Strategic policies (Vision)

Reduce dependence on flat panel displays and concentrate on new priority areas

- Curb additional investments in flat panel display market, where market implementations are deteriorating
- Conduct R&D in line with product roadmap for customers in semiconductor, printed circuit board, and packaging fields

Business climate

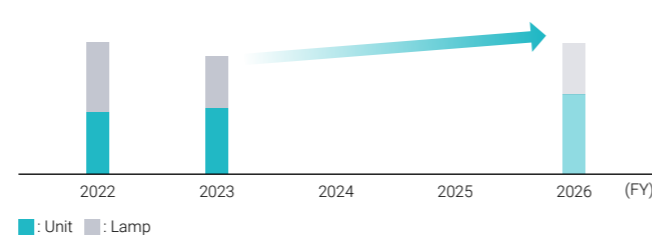
- Flat panel display market overstocked in reaction to pandemic demand hike, with postponements of new factory construction and capital investment
- Semiconductor market and other markets should grow

Business strategies

- Maintain 95%* global share in flat panel display market while shifting resources to semiconductors, printed circuit board, and packaging in view of slower market growth
- Expand business by targeting such new markets as construction materials and vehicles/batteries markets

* Market share in excimer irradiation units for cleaning panels (Ushio research, as of 31 March 2024)

Estimated excimer area sales



Excimer-related markets	Flat panel display market (including for OLED)	Semiconductor market (including printed circuit boards and packaging)	Other priority markets (Construction materials and vehicles/batteries)
Key applications	<ul style="list-style-type: none"> • Panel cleaning, etc. 	<ul style="list-style-type: none"> • Film removal from wafers etc. • Surface preparation before plating/SR application 	<ul style="list-style-type: none"> • Building materials matting • Improving battery performance

Ongoing Efforts to Enter the High-NA area and Assess Business Feasibility (EUV)

Review business strategy and intensify efforts with new customers to enter the High-NA area in view of the rise of other companies' light sources. However, may be possible to assess business direction based on future market and development trends.

Strategic policies (Vision)

Aim to enter the High-NA area

- Continue developing products meeting performance (high brightness and stability) and cost requirements in High-NA area
- Adapt strategy in response to changes in business and technological trends, potentially downsizing or exiting business

Business climate

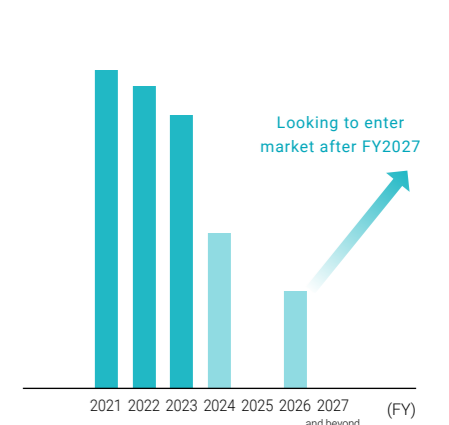
- The rise of other companies' light sources making it hard for some time to secure new offers
- Shift to High-NA progressing in APMI* market, with market requiring greater brightness and stability

* APMI: Actinic Patterned Mask Defect Inspection (mask defect inspection equipment using EUV light)

Business strategies

- Minimize decline in profitability through total cost of ownership reduction initiatives in response to revenue downturn from lower use
- Accelerate development with new customers, targeting further High-NA in development and commercialization for future adoption (evaluations underway for securing new offers after FY2027)
- Also consider downsizing or exiting business should operating and development environments differ from projections

EUV business sales forecasts



Stabilize Earnings and Build Robust Earnings Base (UV Lamps)

Further expand market share in semiconductor sector and break into new areas by strengthening relationships with semiconductor inspection equipment manufacturers, and maintain dominant position and continue generating stable and fundamental earnings.

Strategic policies (vision)

Keep contributing to Ushio's revenue base

- Further increase market share in semiconductor area
- Expand business by strengthening ties with semiconductor inspection equipment manufacturers

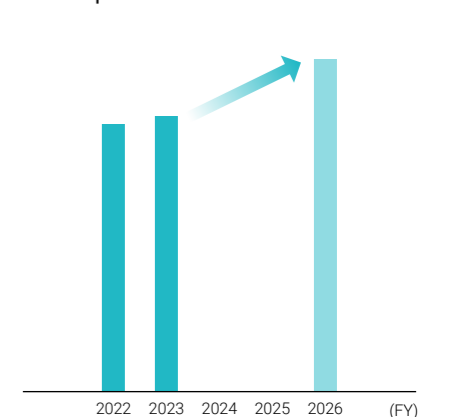
Business climate

- Semiconductor demand recovering, with expected increases in demand for i-line lithography equipment driven by growing needs for cutting-edge IC package substrates for logic and memory devices
- Demand for flat panel display should remain subdued due to reduced investments in new installations post-pandemic
- Demand for defect inspection systems likely to rise on semiconductor miniaturization

Business strategies

- Capture 80% or greater market share through strategic initiatives and alliances (currently at 70%–75%)
- Launch new models to penetrate new fields by meeting inspection needs from semiconductor miniaturization
- Develop new offerings providing higher illumination and longer lifespans, as well as products tailored for new fields
- Remain core earnings generator for Group by securing stable margins

UV lamps sales forecast



Visual Imaging

Strategic Policy for Visual Imaging Business

Delight people and deliver shared experiences to people through imaging and lighting technologies

Large-scale video production and operation of entertainment spaces (theme parks, movie theaters, events, etc.)

Public facilities, corporate control rooms, and video systems



Business Strategy

Positioning this business as a profit improvement business, we aim to make it a stable cash-generating business by improving profitability without pursuing business scale. We will carry out structural reform and selective judgement of sub-businesses to improve profitability, while also concentrating investments in areas that are highly profitable or have high potential for growth to enhance profitability.

Review of Fiscal 2023

In the cinema industry, demand for installation of new projectors and replacement of xenon lamps recovered in fiscal 2023 due to an uptick in cinema operations. On the other hand, the Hollywood strikes led to a shortage of content that saw cinema management change their approach as they braced for a decline in box office revenue, with many asking for greater operational efficiency and lower costs for their projectors. This created sales opportunities for Ushio's laser projectors, which can be used for long periods of time and are energy efficient.

Additionally, while fears of recession in the USA and China had a damping effect on sales, the entertainment market as a whole saw theme park operations and concert numbers return to their pre-COVID-19 levels, with thriving markets including in the rental and BtoB markets. These conditions sparked high hopes for high-luminance, high-precision projectors and direct viewing (LED), along with solutions for lighting and acoustic equipment.

Related products



Lamps for cinemas



Digital cinema projectors



Projectors for general imaging

Strategic policies (vision)

Intensify efforts to improve and enhance profitability

Control costs and optimize resources

- Lower management costs by optimally allocating resources and cutting SG&A expenses through business structure reviews and selective judgment
- For projector lamps where expect to see decreased demand, reallocate resources to areas with growing demand

Optimize product lineup

- Optimize product lineups and minimize fixed costs by leveraging original equipment and design manufacturing

Expand recurring businesses

- Maintain and optimize stable earnings from maintenance contract services
Recurring business sales ratio:
15% in FY2023 → Target 20% in FY2026

Expand customer transactions

- In high-value-added sectors, intensify localized engagement in Nationwide 360 Audio Visual Services and grow operations in theme parks

Selectively judge sub-businesses

- Undertake selective judgment for sub-businesses, markets, and product development based on comprehensive factors such as growth potential, market position, capability to increase market share, and profit structure

Business climate

Cinema market

Recovery from the impact of COVID-19 underway, with strong replacement demand for digital cinema projectors. We expect stable demand in the medium to long term, though new installations may be limited due to factors like China's economic downturn

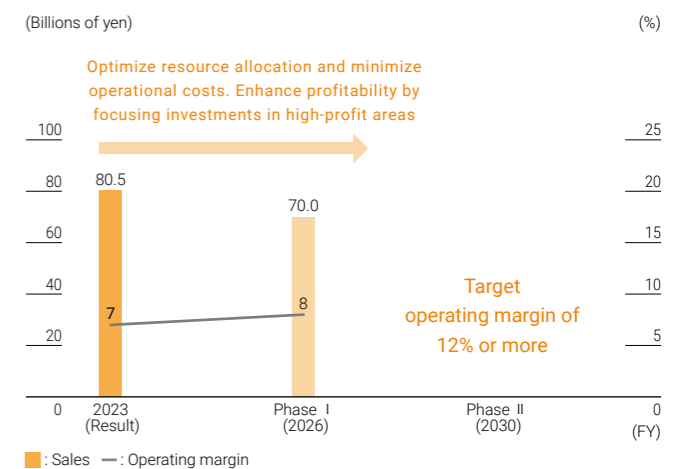
General imaging market

Capital investment in global events and theme parks should remain robust over medium to long term, although current economic downturn in China may reduce investment appetites

Common factors

Demand for projector lamps should gradually decline as the market shifts toward laser projector light sources

Coefficient targets



Specific measures

	Priority areas (sub-segment)	Measures
Grow by increasing investments	Nationwide 360 Audio Visual Services (General Imaging)	Prioritize in Nationwide 360 Audio Visual Services, a high value-added business • Consolidate resources to scale up operations and drive revenue growth
Control investments and generate stable earnings	Other areas (General Imaging) Imaging equipment (Cinema)	With market growth limited, focus on improving and enhancing profitability rather than pursuing business scale while considering for selectively judging sub-businesses • Improve profitability through selection and concentration while considering for selective judgment • Increase proportion of recurring businesses and product services earnings • Efficiently optimize product lineup to remain competitive by strengthening cooperation in production outsourcing and other areas
Shrink	Projector lamps (Projector Lamps)	Downsize business due to shifting to solid-state light sources • Maintain and expand market share, and optimize earnings by prioritizing cost reductions through consolidation of sites and improvement of commercial channels

Life Sciences

Strategic Policy for Life Sciences Business

Providing the world and its people with peace of mind and safety through the use of optical technologies

- Extending healthy life expectancy (environmental sanitation, healthcare, pharmaceuticals, and drug discovery)
- Helping to improve and maintain conditions for people
- Eliminating conditions that cause disease and helping to maintain health



Business Strategy

Positioning this business as a cultivating business, we will cultivate sub-businesses by selectively judging projects more than ever. Initiatives to create new businesses for the future will continue at a certain scale, but we will narrow down investments to promising businesses with a clearer path to growth.

Review of Fiscal 2023

In May 2023, COVID-19 was downgraded to Class 5 in Japan, which led to a downturn in disinfection needs in general markets. The same change in business environment happened overseas too, and this lull in general markets' antivirus-related needs has continued. On the other hand, hospital-acquired infections from causes such as drug-resistant bacteria are emerging as a major social issue both inside and outside Japan, and there are high hopes for the use of Care 222, which is likely to be effective against such resistant bacteria. With these changes in our market environment, we are implementing activities to actively gather evidence of this technology's effect in real hospital environments. Additionally, in the North American market, the relaxing of ACGIH guidelines in 2022 and revision of instrument certification standards have led to an environment where this technology's disinfecting effects can be clearly demonstrated. We will build a framework to strengthen collaborations within the Group so that we can identify the views and needs of the market in a timely manner and promptly incorporate the functions and characteristics the market is looking for in our product development.

Related products



Devices using "Care222," for UV-C disinfection technology



TheraBeam Series of UV Phototherapy Devices

Strategic policies (vision)

Reassess demand, focus on development and expenses commensurate with demand, and minimize expenses while cultivating sub-businesses

Address plunging demand

- Reduce expenses and inventory for Care222, which has underperformed, to appropriate levels

Cut development and other expenses

- Reevaluate path to commercialization and pare development investments
- Closely manage milestones
- Identify and decide swiftly on unprofitable areas

Cultivate sub-businesses

- Concentrate investments to sub-businesses with growth potential

Business climate

Care222

Demand weak since pandemic; potential to strengthen customer appeal through revisions to regulations, standards, and evidence acquisition

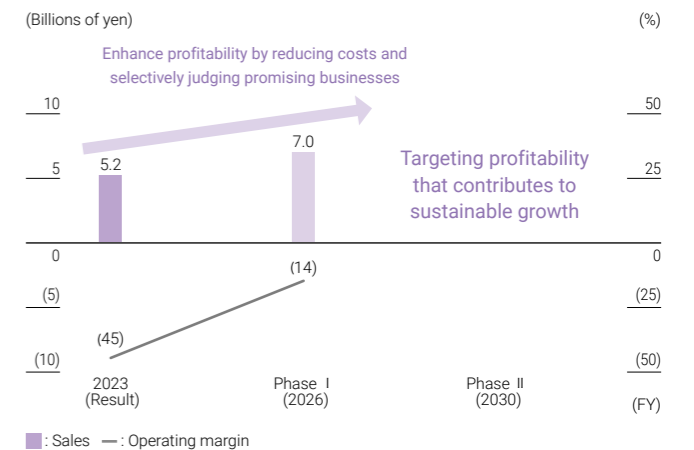
Medical devices

Steady demand for new installations and replacements in domestic market; differentiation through product downsizing and usability enhancements

Healthcare

Increase repeat and new customers by developing unique offerings in response to moderate market growth

Coefficient targets



Specific measures

	Priority areas	Measures
Cultivate new businesses	New areas (including Care222)	Develop promising product categories for tomorrow while managing investments by selectively judging focus areas
	Promising product groups	Expand business while controlling investments and monitoring business progress
Stabilize	Medical devices and Healthcare business	Keep refreshing product lineup and secure stable earnings in areas with consistent demand and proven revenue streams

Promising product groups

- Pioneer progress in bio-functional chips through surface modification technology employing specific wavelengths to address drug discovery challenges
- New pulsed light spectroscopy technology contributing to quality inspections

Phase I: Joint development with promising partners

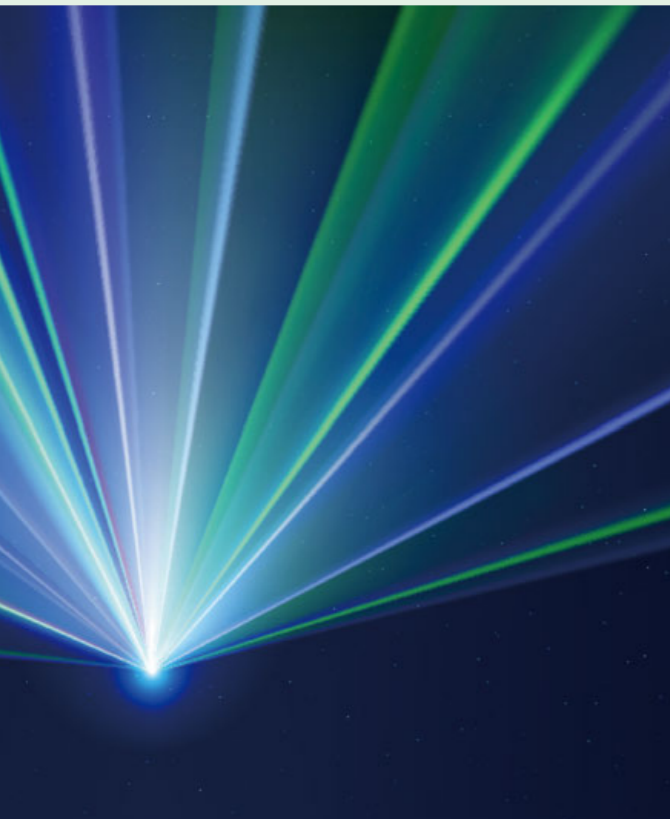
Phase II: Start production and sales

Photonics Solutions

Strategic Policy for Photonics Solutions Business

Creating and providing value with customers in order to contribute to society's advancement through photonics technology

For semiconductor manufacturing equipment
Integration with laser cinemas and AR/VR
Gene sequencing and medical examinations/
testing in ophthalmology and internal medicine



Business Strategy

Positioning this business as a growth and review business, we will make it a stable cash-generating business by selectively judging areas to invest in and to be reviewed. We will selectively judge sub-businesses that are uncompetitive and unlikely to grow, while actively investing in growth areas, including replacing lamps with solid-state light sources and growing the business through ongoing M&A and collaborations.

Review of Fiscal 2023

With the turmoil of COVID-19, the market over-ordered parts in expectation of an increase in demand. Afterwards, however, a slowdown in growth in China and Europe, along with geopolitical risks, has seen demand stagnate. As a result, sales and profits for LD and LED devices were below our targets. In our laser solutions business, which combines lasers and module systems, sales surpassed the target but operating profit fell short. One reason for this was our acquisition of a small company specializing in high-efficiency laser fiber couplings, strengthening our capabilities.

We are reallocating development resources from projectors and show lasers, our current key areas, to next-generation areas such as AR/VR, onboard technology for automobiles, and laser direct imaging. We are preparing for mass production in such areas with a view to future demand.

Ushio is continuing to collaborate with promising customers to develop innovative customized lasers and photonics-based solutions. Mass production of these solutions is expected to commence within the next few years.

Related products



Solid-state light sources (LD/LED)



Laser modules

Strategic policies (Vision)

Maintain business structure centered on highly profitable module businesses and grow business through M&A and partnerships

Selectively judge sub-businesses

- Undertake selective judgment for low-growth and underperforming sub-businesses

Enhance profitability

- Create synergies and rationalize operations
- Shift resources from mature and declining markets to growth markets
- Constantly build and strengthen relationships with key customers

Expand investments in growth areas

- Maintain and expand extensive investments in megatrends offering significant growth potential
- Collaborate with key players leading growth areas

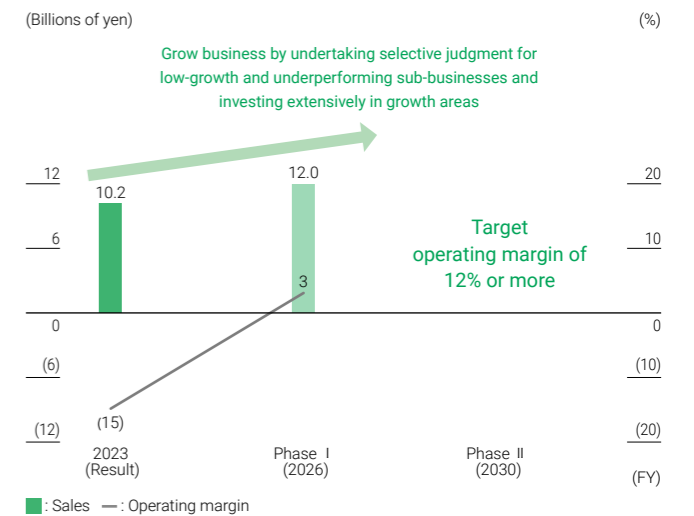
M&A and alliances

- Seek business growth through M&A and partnerships

Business climate

- Steady growth amid shift to solid-state light sources and improved energy efficiency
- Expansion and emergence of life sciences, AR/VR, and heterogenous integration markets

Coefficient targets



Specific measures

	Priority areas	Measures
Selectively judge	Selectively judge sub-businesses	Selectively judge sub-businesses that are uncompetitive and have few prospects for growth and earnings improvement
Stabilize	Highly profitable businesses	For businesses offering high profitability, develop them to generate stable cash flows through appropriate investments

Highly profitable businesses

- Expand businesses, focusing on module business in response to megatrends offering growth potential
- Collaborate (through M&A and alliances) with key growth area leaders

Priority megatrends

Including semiconductors, medical care, and AR/VR

