



Explanatory Material on Potential for Growth

October 2021

Copyright © 2021 QD Laser, Inc., All Rights Reserved.

Mission

With the power of the semiconductor laser,
“I can’t” becomes “I can”.

What was once thought to be impossible is now a reality; we have become the only company in the world to successfully mass produce Quantum Dot LASERs.

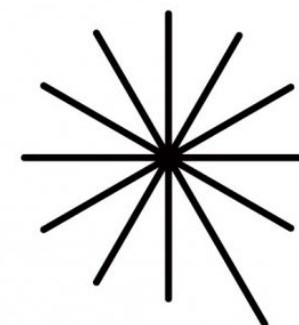
Our laser technology will enable dramatic improvements in our ability to process information. support visually impaired people, prevent eye diseases, and enhance vision, continually pushing the boundaries of human possibility.

Company Profile

Spin-off Venture from Fujitsu

Tier 1 Medical Companies such as Nikon/Santen joined as Shareholders

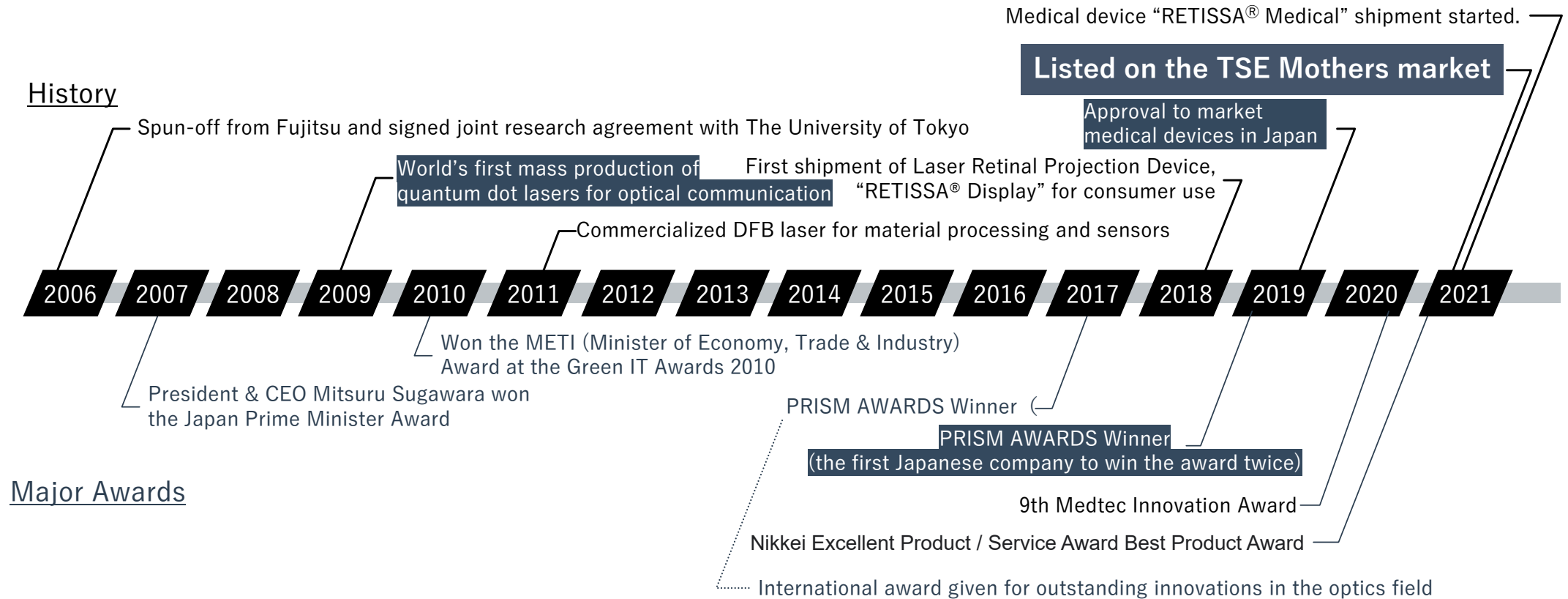
Company Name	QD Laser, Inc.
Foundation	April 24, 2006
Fiscal year-ended	March 31
Representative	Mitsuru Sugawara, President and CEO
Location	Headquarter: 1-1 Minamiwatarida-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa
Number of Persons	60 (Laser Devices Division: 31, Laser Eyewear Division 18, Corporate and others: 11)
Business	Planning, design, development, production and sales of semiconductor laser and its application products
Licenses	<ul style="list-style-type: none">• Class II Marketing License for Medical Devices• Registration of medical equipment manufacturer• ISO 9001• EN ISO 13485



QD LASER

Company History

Listed on the TSE Mothers market in February 2021 (Securities code: 6613) Medical device shipment started in March 2021



Investment Highlights

1 Cutting-Edge Semiconductor Laser Technology with Several Unique Features

2 Semiconductor Laser Devices

Solid earnings base and high growth potential due to expansion of global laser market

⇒ Record high sales forecast for this term. Steady and further growth expected in every product.

⇒ The silicon photonics market is emerging, with mass production shipment of quantum-dot lasers scheduled to start by the end of this fiscal year.

Laser Retinal Projection Technology

3 Commercialization of eyewear utilizing the world's first retinal projection technology

⇒ Sales of “medical model” started. Confirmed long-term safety by completing the home-loan follow-up phase of the clinical trials in Europe.

⇒ Planning the "optometry" business based on retinal projection technology.

ESG initiatives

4 Working on business areas directly linked to solving social issues

⇒ “With my eyes” project

01



QD LASER

**Cutting Edge Semiconductor Laser
Technology with Several Unique Features**

Semiconductor Laser History and Our Position in the 3rd Phase

1st phase

Proposals of Scientific Principles and Invention of Laser (1960s)

Laser

A technology used in recording, communication, processing and sensing.

Applied in various industries such as medicine, home appliances, automobiles, manufacturing and entertainment.

2nd phase

Invention of Semiconductor Lasers, Building out Optical Communication and the Internet (1995~)

Semiconductor lasers and packaging

The diagram illustrates the integration of semiconductor lasers into various network layers: Enterprise, Access, Metro, and Long Haul. It also shows connections to Cloud Computing and Data Centers. A detailed view of a semiconductor laser structure is provided, showing the active layer and other components. Labels include FTTH, LAN, PC, Internet, METRO, and Semiconductor Laser.

Semiconductor laser:
A small element with a length of about 1 mm that causes a laser to oscillate by passing a current through a semiconductor. Compared with other lasers, possesses excellent properties such as ultra-small size, high-speed modulation characteristics reaching several 10s of GHz, high power-to-light conversion efficiency (in several 10s of %), and wavelength controllability, etc.

3rd phase

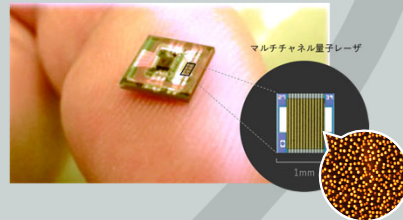
Accelerating the Integration of Humans and Information (2020s~)

Fields where our lasers are applied (being Developed or Commercialized)

- 5G base station
- Supercomputer
- Visual Aid
- Smart Glass
- Optical Interconnect
- Facial recognition
- Fundus photography
- Micromachining
- In-Vehicle communication
- LiDAR for autonomous cars
- Biophotonics

Nanotechnology of QD laser to generate and control laser light

Image of quantum dots taken by an atomic force microscope and a quantum dot laser equipped on fingertip-sized silicon chip as 100Gbps optical transceiver



Quantum Dot Laser:
A semiconductor laser adopting a quantum dot structure which has a semiconductor nano-sized microcrystal in its active layer. Compared with existing semiconductor lasers, these lasers are superior in temperature stability, temperature resistance, and low noise.

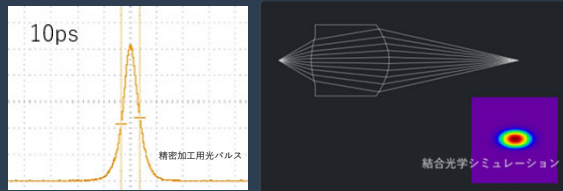
Our Core Technologies and Competitive Advantages

Material Creation, Design, and Control

Cutting Edge Semiconductor Laser Technology with Several Unique Features

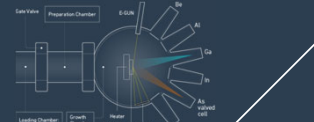
Laser Design

A technology to design lasers suitable for each use.
World's fastest (10ps)^{*3} semiconductor laser for precision material processing utilizing optical communication technology,



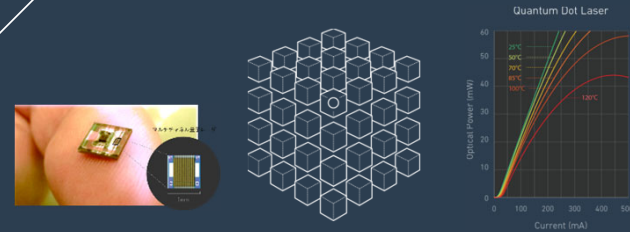
Semiconductor Crystal Growth

Technology to grow each atomic layer of semiconductor crystals on a semiconductor substrate



Quantum Dot

Succeeded in the mass production of quantum dot lasers with **world's highest operating temperature**^{*1} and developed **world's smallest silicon-based optical transceiver**^{*2}



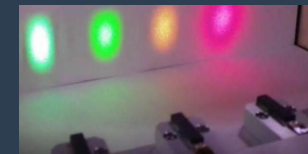
Small Module

A technology to make DFB lasers ultra compact.
 Our yellow/orange laser modules led us to become one of the finalists at the Prism Awards 2014.



Diffraction Grating

Technology to form periodic refractive index change inside the laser enabling arbitrary wavelength control.
World's first^{*5} commercialization of yellow/orange semiconductor laser



VISIRIUM Technology

A technology to project images directly on the retina through ultra small laser projectors.
World's First Commercialization^{*4}



*1: "Extremely high temperature (220° C) continuous-wave operation of 1300-nm-range quantum-dot lasers", Published in 2011 Conference on Lasers and Electro-Optics Europe and 12th European

*2: Developed the world's smallest 5mm square ultra-high-speed, low-power-consumption optical transceiver – Achieved the world's best, 25Gbps / ch transmission

*3: 2017 PRISM Award in Industrial Lasers - QD Laser (2nd Feb 2017)

*4: Prism Awards honour photonic innovations at Photonics West 2019

*5: Japan/U.S. PATENT JP5362301/US8896911

02



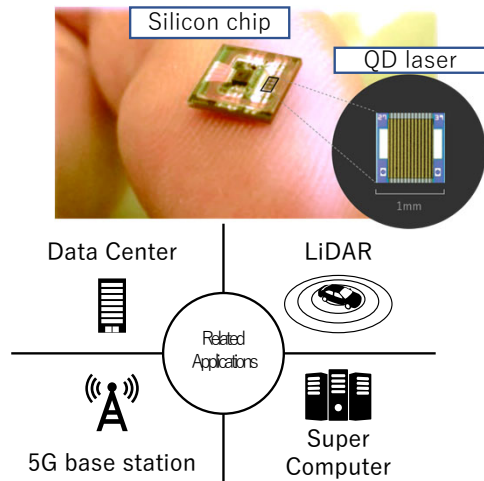
QD LASER

Semiconductor Laser Devices

Laser Devices based on Our Core Technology

Evolution of Silicon Circuit

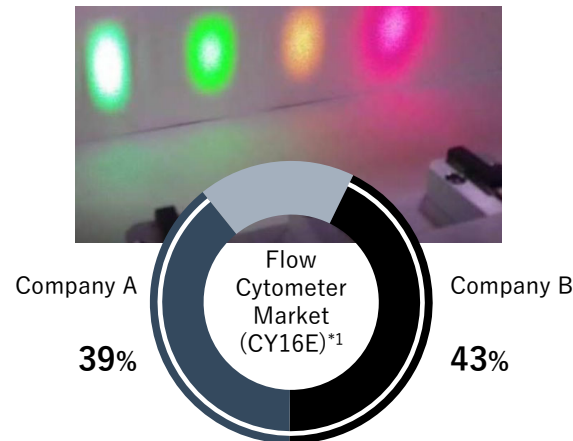
- Silicon electronic and optical Integrated circuit is now a reality owing to quantum dot lasers with stable performance even in high temperatures over 100 °C.
- See a photo of a commercialized fingertip-sized silicon chip as 100Gbps optical transceiver with quantum dot lasers as light sources.



- Cumulative sales of silicon photonics chips: **15,039 units***2

Evolution of Sensing

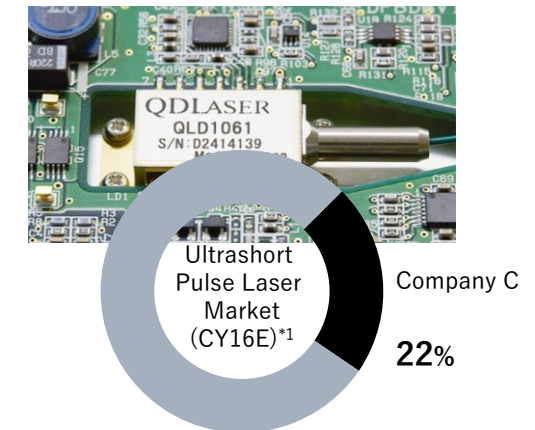
- Unique lasers with various wavelengths are applied to a variety of technologies such as biosensing equipment (flow cytometers, etc.) machine vision, and facial recognition, etc.



- A certified supplier for Top 2 companies that occupy **82.7%** of Flow Cytometer **Global Market (JPY 77 bn***1/ approx. **USD 73mn)**
- Cumulative sales of laser devices for bioinstrumentation such as flow cytometers: **4,045 units***3

Evolution of Laser Processing

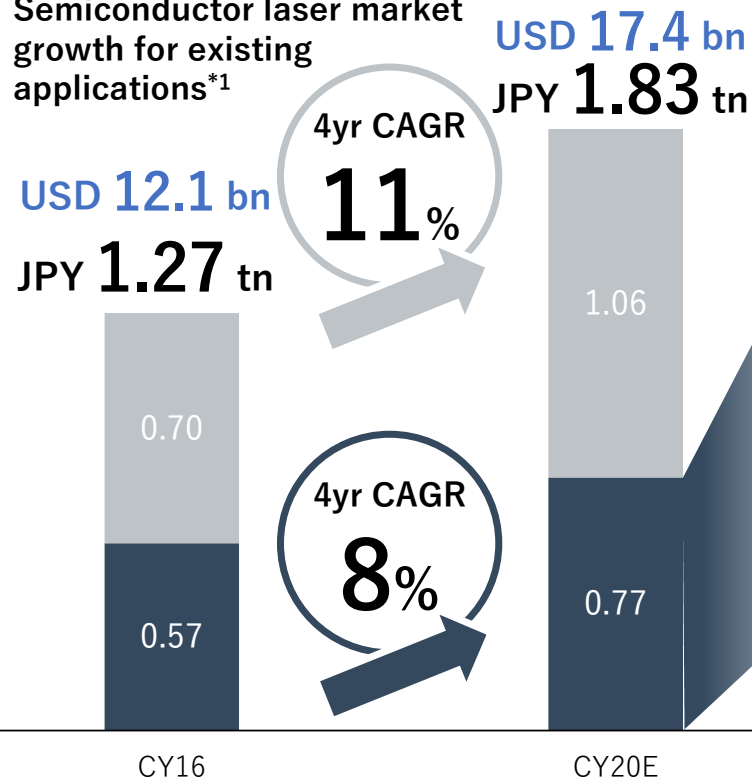
- Ultrashort pulse (10 ps) lasers enable unheated high-precision processing
- Currently used to process smartphone electronic circuit boards



- A certified supplier for the second largest company that occupies **22.4%** of Ultrashort Pulse Laser **Global Market (JPY 46.6 bn***1 / approx. **USD 424mn)**
- Expanding into Airplane LiDAR
- Cumulative sales of ultrashort pulse laser devices: **6,916 units***4

The Semiconductor Laser Market Continues to Expand, Even for Existing Applications Alone Achieved 20% Increase of the Certification Number (Customer X Product) in FY2020 from 39 to 47

Semiconductor laser market growth for existing applications*1



New target market of QDLaser via new product development

Quantum-Dot Laser in Silicon Circuit :

- Interconnect(368M\$) : Data centers, 5 G base stations, HPC, Automobiles
- LiDAR(28M\$) : Robotics, Drone, Security, and Self-driving cars

Laser Processing & Measurements

- Fiber lasers for micromachining(11M\$) : Composite electronic circuit boards, glass, ceramics, semiconductors, etc.
- LiDAR(3M\$) : Aircrafts, meteorological and terrain observation

Sensing

- Biosensing(64M\$): Flow cytometer, cell sorter, and various microscopes
- Ubiquitous sensor(399M\$): train, automatic transport device, level sensor, particle counter

* Numbers are our accessible market forecast in FY2025

Measures to achieve 20% increase of Certification Number

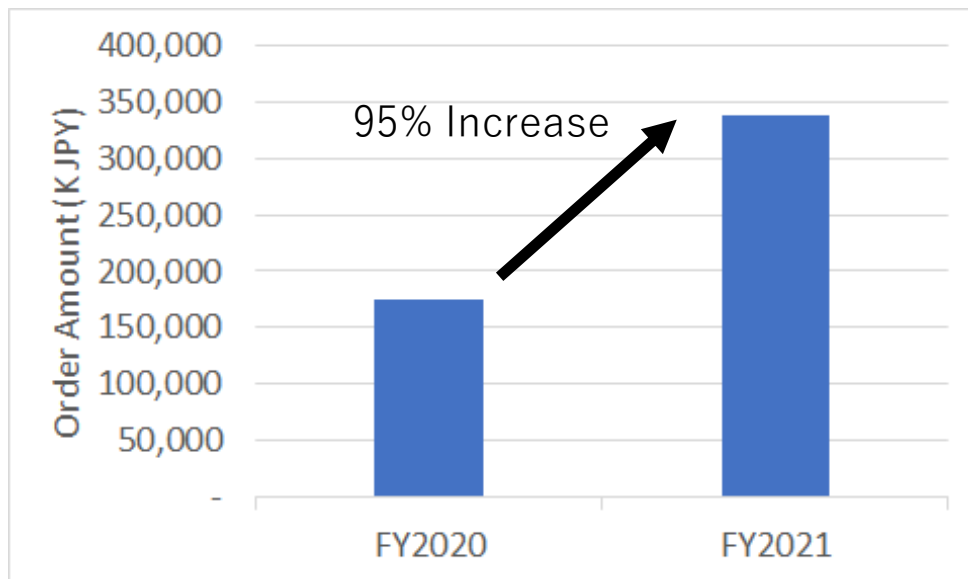
- New product development based on industry trends and market analysis
- Device customization for adding value to customer products
- Proposal activities to customers by market trends and needs
- Issuance of White Paper on new product/technology developmen

Orders in Laser Device Division for this term

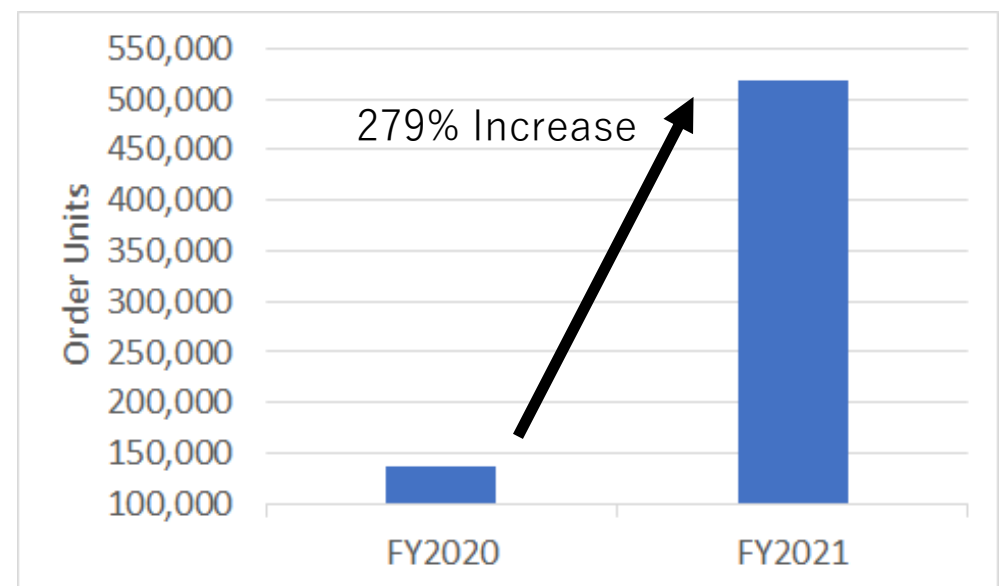
Order amount increased by 95%, and order units increased by 279% compared to the same period of the previous year.

Solid orders for DFB lasers, small visible lasers, and high-power lasers due to increased customer capital investment

Order Amount (Until June)



Order Units (Until June)



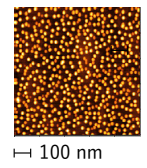
Tangible Silicon Photonics Market as Electronic / Optical Integrated Circuit Technology Platform

Customizing quantum dot lasers for Japan/US silicon photonics vendors. Starting mass production in 2021.

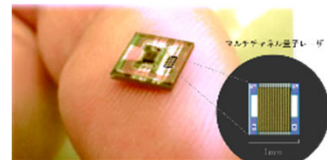
Development and production

- 2010**
World's first mass production of quantum dot laser for optical communication
- 2012**
Started development of quantum dot laser for silicon photonics
- 2017**
Established mass production system of quantum dot lasers for silicon photonic: (supplied to AIO core)
- 2019**
Our products installed in the "Ultra-thin connector integrated active optical module (I-PEX EOM)" developed by I-PEX
- 2021**
Working on joint development with silicon photonics vendors around the world. Starting mass production for chip-to-chip optical interconnect and Lidar during FY2021 to FY2023.

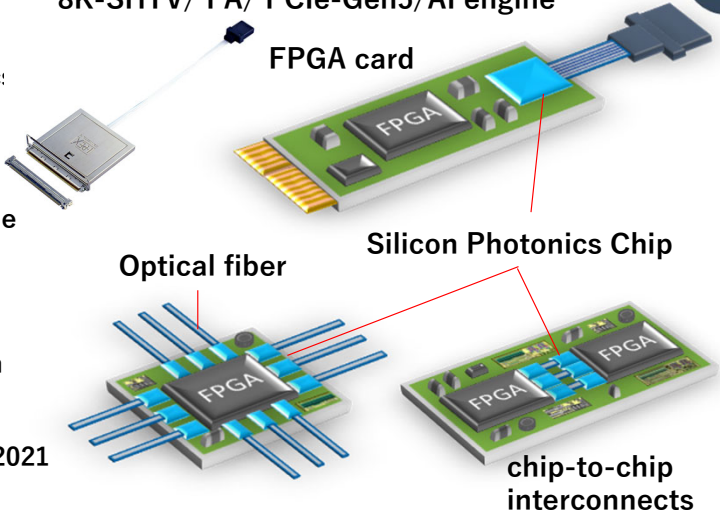
Quantum Dots



100Gbps optical transceiver with quantum dot lasers as light sources



Optical Connector (EOM^{*1}, CPO^{*2}) : 8K-SHTV/ FA/ PCIe-Gen5/AI engine



Increased data and power consumption to be solved by Silicon Photonics

Problem

Increasing demand for global data in turn creates a global issue of increasing power consumption

World total amount of data is estimated to multiply 5 times ⁴ within 7 years	World IT-related power consumption is estimated to multiply almost 35 times ⁵ within 15 years
33ZB (CY18)	175ZB (CY25E)
1.170TWh (CY16)	42,300TWh (CY30E)

Solution

Silicon photonics with quantum dot lasers mounted on silicon chips enable dramatic improvement in semiconductor performance^{*6}

Power consumption reduction	Footprint	Processing speed
90%	1/100	100x

Huge information processing application that requires high-temperature operation

Date Centers	5G base stations	Automatic Driving/LiDAR
80°C	105°C	105°C

*1 EOM:Electro-Optical Module
*2 CPO:Co-Packaged Optics

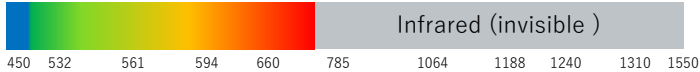
Semiconductor Laser Devices

Our Competitive Advantages / Barriers to Entry

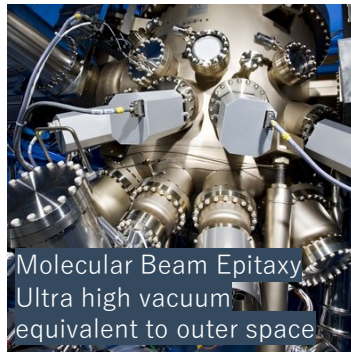
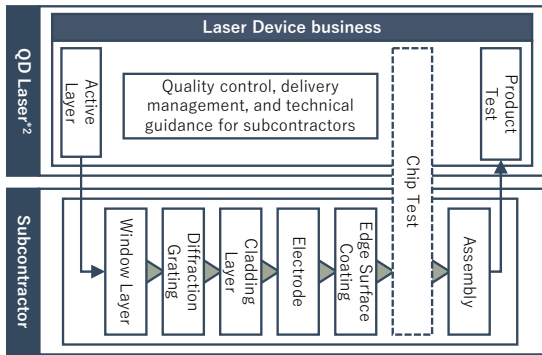
Business Model

- **The only fabless company in the semiconductor laser industry**
 - Flexible manufacturing scale of several units to tens of millions units
 - High marginal profit ratio of over 45% on average*1 (made fixed costs into variable costs)
 - Mass production and diverse product offering lead to beyond breakeven point

- **Any wavelengths of lasers**
Wavelengths of lasers we offer (nm)

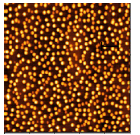


- **High level of freedom in creating new business, fields and products**



Core Competence : Quantum Dot Lasers

- **Atomic-level precision epitaxy technology (proprietary)**
 - Growth control by 0.1 second
 - Extracted the best recipes from over 100,000 recipes
 - The only one to succeed in mass production of quantum dot lasers, thanks to over 20 years of accumulated technology

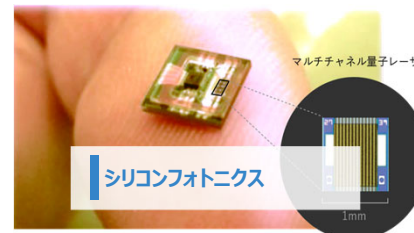


100 nm

image of quantum dot by atomic force microscope

- **Capable of operating in harsh environments of over 100°C and under high density packaging**
 - Optoelectronic integrated circuit
 - In-vehicle devices

- **New potential market created by quantum dot lasers**
 - Chip-to-chip optical interconnect
 - LiDAR
 - Quantum cryptography



03



QD LASER

Laser Retinal Projection



Vision and Technology

Humans perceive **83%**^{*1} of information through vision.

Since the invention of glasses in the 13th century, sight correction^{*2} technology has not evolved.

*1: Educational Equipment Editorial Committee, JUSE Press, Ltd. "Industrial Education Equipment System Handbook" (1972), "Taste 1.0%, Tactile 1.5%, Olfaction 3.5%, Hearing 11.0%, Visual 83.0%"
*2: Including eye glasses and contact lens

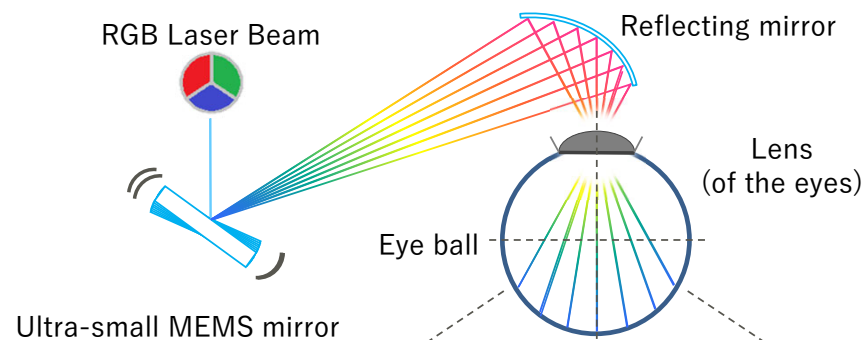


VISIRIUM TECHNOLOGY®

Unique Laser Technology bringing Innovation to Vision

Laser Device

Laser Eyewear

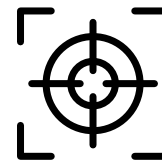


Direct Image Projection onto Retina



Visual experience independent of the condition of your cornea or lens

You can recognize an image clearly even with myopia, hyperopia, astigmatism, or ametropia.



Free focus

The focus of both the landscape you see with the naked eye and the image projected by our glasses can be superimposed on the retina. This is a unique feature not found in other AR glasses.



Enables vision even in the periphery of the retina*1

Since the image is in focus even over a wide area of the retina, we expect that it can also be effective for patients with retinopathy.

*1: At major airline company and National University Corporation Tsukuba University of Technology, a systematic demonstration study is currently underway.

Three Areas based on Retinal Projection Technology

Laser Device

Laser Eyewear

Transforms
“hard to see”
to “visible”

Low Vision Aid

Sales started

Extend the healthy
lifespan of your vision

Vision Health Care

Business Development

The power of
“vision” broadens
your world

augmented vision

Strengthening Alliance

Three Areas based on Retinal Projection Technology

Laser Device

Laser Eyewear

Transforms
“hard to see”
to “visible”

Low Vision Aid

Sales started

Extend the healthy
lifespan of your vision

Vision Health Care

Business Development

The power of
“vision” broadens
your world

augmented vision

Strengthening Alliance

Laser Eyewear

World's First Laser Retinal Projection Eyewear "RETISSA® Series"



 QD LASER

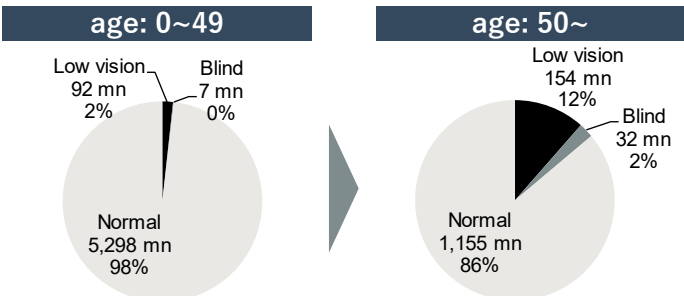
World's First Laser Retinal Projection Eyewear In the Low Vision Aid Space where Innovation has been Minimal, Laser Technology makes a Breakthrough

250mn people

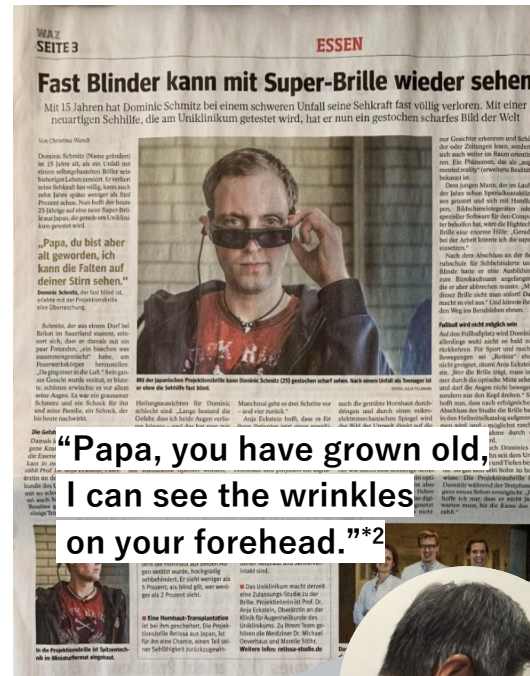
with Low Vision Globally*1

Currently they use magnifying glasses, video magnifiers, and telescopes daily. These tools are limited in use, have operational, issues and are not suitable for all users.

Here, we will make a breakthrough with our laser retinal projection technology.



GLOBAL DATA ON VISUAL IMPAIRMENTS 2010, WHO



“Papa, you have grown old, I can see the wrinkles on your forehead.”*2



*1:
*2:

WHO Definition: Low vision is defined as the best-corrected visual acuity of less than 0.3 in the better-seeing eye. Blindness is defined as the best-corrected visual acuity of less than 0.05 in the better-seeing eye. Translated from German

RETISSA® series product development status

Medical device model sales started.

Sales increase in both consumer and medical models



Corrected vision: 0.8

- Refractive power: 0.8 corrected vision without eyeglasses in the power range of -11D*¹ (high myopia) to +6D (medium high hyperopia) *²

Sales strategy of this term

- New frame to improve wearing alignment and stability
- Accessory camera connected to the frame for enhanced functionality
- Proposals of use cases for companies
- Overseas sales, including US, China, and South Korea.



Controlled medical device (Controlled medical devices requiring special maintenance)*³

- Used to correct vision in patients whose vision is impaired by unjustified astigmatism (patients who are unable to achieve adequate vision using existing eyeglasses or contact lenses)
- Expected to (1) correct visual acuity, (2) improve reading speed, and (3) improve reading acuity

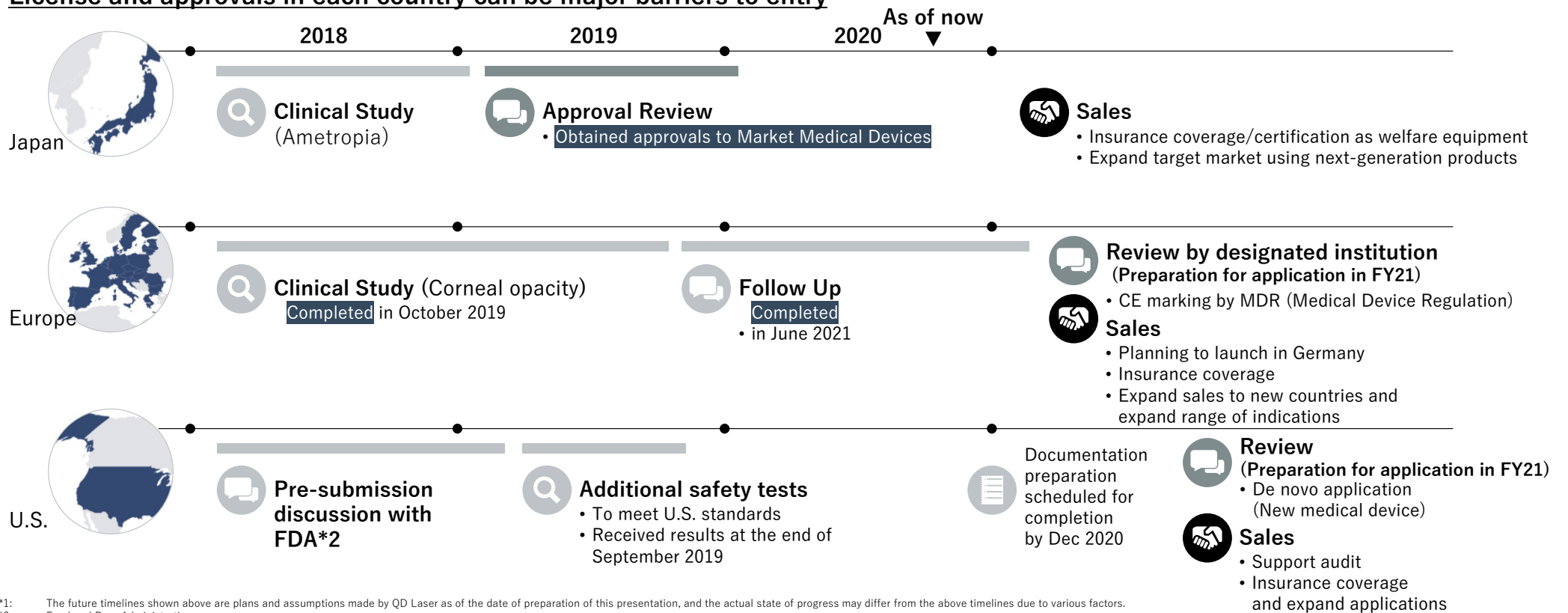
Sales strategy of this term

- Sales collaboration with Santen Pharmaceutical and Seed. • Efforts to reduce the burden on purchasers: Healthcare subsidy, medical insurance, tax deduction, etc.

Marketing License Status for Medical Devices

Japan: Medical device manufacturing and sales approval acquired. Sales started.
Europe: Clinical trial follow-up completed in June ⇒ Confirmed long-term safety.

License and approvals in each country can be major barriers to entry



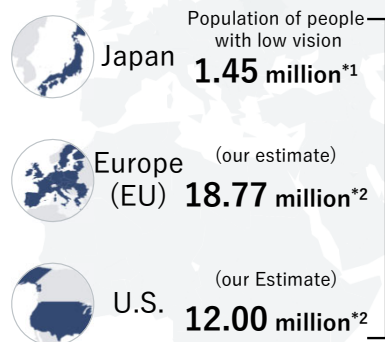
*1: The future timelines shown above are plans and assumptions made by QD Laser as of the date of preparation of this presentation, and the actual state of progress may differ from the above timelines due to various factors.
 *2: Food and Drug Administration

Low Vision Aids: Total Addressable Market (※Anterior eye disease patients only :
 Ametropia and corneal opacity)

JPY 900 bn (USD 8.6 bn) Market in Japan, U.S. and Europe

Plan to Expand into Other Countries like China further behind in Ophthalmic Technologies

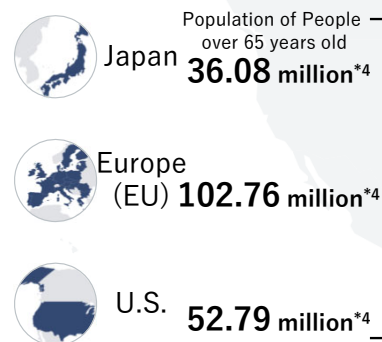
Low Vision Market



Estimated percentage of applicability (our estimate)*3 \times **11%** \times Product Price per Unit (our assumption)*6 **JPY 200k (USD 1.9k)**

Total market size of advanced countries (Our estimate)
JPY 708.7 bn (USD 6.7 bn)

Senior Citizens Market



Estimated percentage of applicability (our estimate)*5 \times **1%** \times Product Price per Unit (our assumption)*6 **JPY 100k (USD 950)**

Total market size of advanced countries (our estimate)
JPY 191.7 bn (USD 1.8 bn)

JPY 900 bn (USD 8.6 bn)

*1: Japan Ophthalmologists Association "Social costs of visual impairment in Japan"
 *2: Calculated by multiplying the ratio of persons with low vision sourced from WHO "Visual Impairment and Blindness 2010" by the current population in each region (Europe: Eurostat "Population on 1 January", U.S.: United States Census Bureau "Annual Estimates of the Resident Population for the United States")
 *3: According to the survey by Santen Pharmaceuticals, the number of keratoconus patients in Japan is estimated to be 60,000 to 120,000; also, as the data on p.39 shows that the prevalence per 100,000 people of keratoconus is almost the same as that of corneal opacity, it is assumed that the number of corneal opacity patients in Japan is similar to that of keratoconus patients. Assuming the number of patients suffering from each of these diseases to be an intermediate value of 80,000, the total is calculated to be 160,000; then, we apply the estimated percentage of applicability of 11%, calculated by dividing 160,000 by the population of persons with low vision (1,450,000), to each country's population of low vision persons. This percentage only takes into account anterior eye diseases; therefore, if our product is also effective for patients with retinal disease, the estimated percentage of applicability is expected to increase.
 *4: Assuming that all the elderly aged 65 and over use near-sighted, presbyopic or bifocal glasses, we can estimate that each country's population aged 65 and over can be the potential population of persons with gap vision (Japan: Statistics Bureau of Japan "Population Estimates May 2020", EU: Eurostat "Population on 1 January by broad age group and sex", U.S.: United States Census Bureau "Population by Age and Sex: 2019").
 *5: Due to the products' similarity in characteristics to hearing aids (used by the elderly on a daily basis, wearable equipment, sold at glasses stores, etc.), the hearing aid market is used as a reference to estimate the percentage of applicability. Given that the number of hearing aids shipped in Japan in 2017 numbered 562,747 (Japan Hearing Instruments Manufacturers Association "2018 Shipment Volume of Hearing Aids"), this number divided by the number of elderly people in Japan will give us an estimate that 1.7% of the elderly purchased a hearing aid, which we then adjust conservatively to assume an estimated percentage of applicability of 1.0% which can then be applied to each country's population of gap vision persons.
 *6: Expected price per unit after the mass production is realized.

Sales and Manufacturing Strategies

01

Through partnership with major manufacturers such as MinebeaMitsumi and Audio Technica, achieved fables manufacturing .
New high-performance and low-cost product under development.

02

Through media exposure / participating in large-scale exhibitions / donations to schools for blind children / trial sessions and interviews, raise awareness

03

Develop close cooperation with major players in each field

Zoff

 **KAGA FEI**

Santen

Co-development of products

- Make efforts to revamp the eyeglass prescription process
- Co-develop and commercialize eyeglass-type vision assistive gear and next-generation eyeglasses (smart eyeglasses)

Distribution of RETISSA® Series

- Develop RETISSA® Series business globally to visual assistance device market and xR (VR, MR, AR) related device market
- With cumulative sales target of 100K units, recognize as a powerful supporter

Support Sales of Medical Device (RETISSA® Medical)

- First support sales domestically of RETISSA® Medical

04

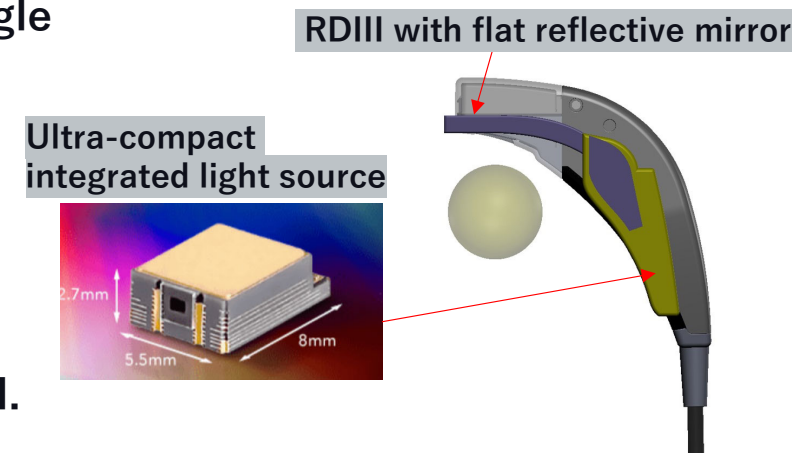
Form Partnerships with Several Other Sales Partners

- RETISSA® Display (Consumer Use) : Glasses store, Distributor, E-Commerce, Partner
- RETISSA® Medical (medical Use) : Distributor, Partner

Cumulative sales record as of November 2020
Over 660 units

New Products Development for Lowering Cost and Improving Usability

- Measures for cost reduction: Low-cost design, batch procurement of parts, and mass production line under the collaboration with a domestic electrical equipment manufacturer.
- Three ongoing projects for new product development:
 1. RD II@FY2021 with the accessory camera and new frame
 2. RDIII@FY2022-2023 with a flat reflective mirror with a wide-angle view, built-in camera, ultra-compact integrated light source, and controller with low power consumption.
 3. RDVI@2024-2025: smart glass with eye tracking system
- The funds raised in the IPO are for the mass production of RDIII.



Laser Retinal Projection Competitive Advantages/Barriers to Entry



First to commercialize laser retinal projection technology globally

- Owing to cultivated and commercialized laser and optical technology
- At present, we recognize there are no other companies in the world which have succeeded in commercializing the same level of retinal projection



Patent strategy

- By applying for various essential patents like basic / improvement patents, employing essential patent portfolio and top niche strategy*¹
- Compared to competitors, maintain advantage in terms of intellectual property
 - Applied for basic patents related to core optics and improvement patents for improved imaging quality and mounting operability
 - Completed competitive patent landscape analysis
 - Applied for 44 in-house patents (applied by 9th Mar 2020)
 - 17 patents registered including 6 essential patents***² (in-house evaluation, registered by 17th Feb 2020)
 - About 2,300*³ related patents held by other companies registered by end of March 2020, among which none have been identified as barriers within the markets our products launch (in-house evaluation)



Obtained a variety of licenses such as approval to market medical devices

- In order to sell medical devices, necessary to obtain licenses or approvals from authorities of each country
- We have already obtained approval to market medical devices in Japan and are currently in the process of applying for approvals in the EU and the US. We estimate it will take at least several years for new entrants to complete these processes.

*1: "Essential Patent" Portfolio Strategy: Strategy whereby a company holds several "essential patents" which will limit competitors entering the market. This will make it possible for the company to continue its business through cross-licensing even if a competitor files for patent infringement against the company

"Essential patent" is a technology that has been adopted as an official standard in a certain product / technical field (here, laser retinal projection technology) , a technology that has become a so-called de facto standard or an already patented one that has been actually implemented by a competitor

"Top of Niche" Strategy: Strategy which excludes competitors from entering market by holding core patents and any improvement patents relating to a particular product

*2: Obtained patents which we regard as highly demanded and difficult to avoid for other companies

*3: Number of cases in Japan

Low Vision Aids: New Approach

Ultra-Wide-Angle Viewfinders give “Vision” to Patients with Retinopathy

Under development as the best means of supporting visual function for 200 million people with retinopathy worldwide

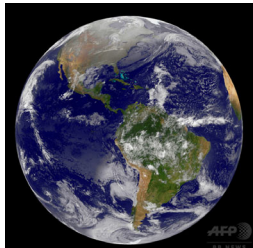
Adopted in 2020 by the Ministry of Health, Labor and Welfare as a business which promotes the development of assistive equipment to help people with disabilities be independent
 Ongoing verification of prototypes in cooperation with a major airline and an educational organization

“Expanded viewing angle” x “optical zoom”

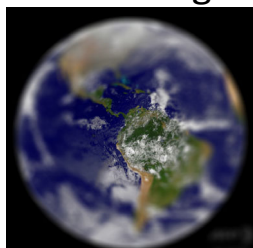
⇒ A focused image is projected over a wide area of the retina by expanding the viewing angle from 25 degrees to 60 degrees.

⇒ The high-magnification zoom function of the digital camera dramatically improves the visibility in the peripheral region of retina, which does not have enough photoreceptor cells.

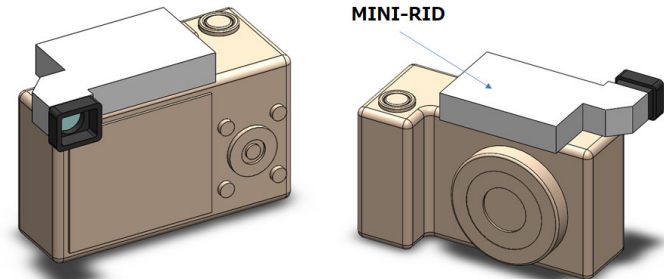
Retinal Projection



Usual Image



MINI-RID



Mr. Akiba from AXA S.A. (Stargardt disease): “I have a central scotoma with the vision loss in the center, but by image projection to the peripheral region, I could see easily a person`s face and landscape, etc.

Three Areas based on Retinal Projection Technology

Laser Device

Laser Eyewear

Transforms
“hard to see”
to “visible”

Low Vision Aid

Sales started

Extend the healthy
lifespan of your vision

Vision Health Care

Business Development

The power of
“vision” broadens
your world

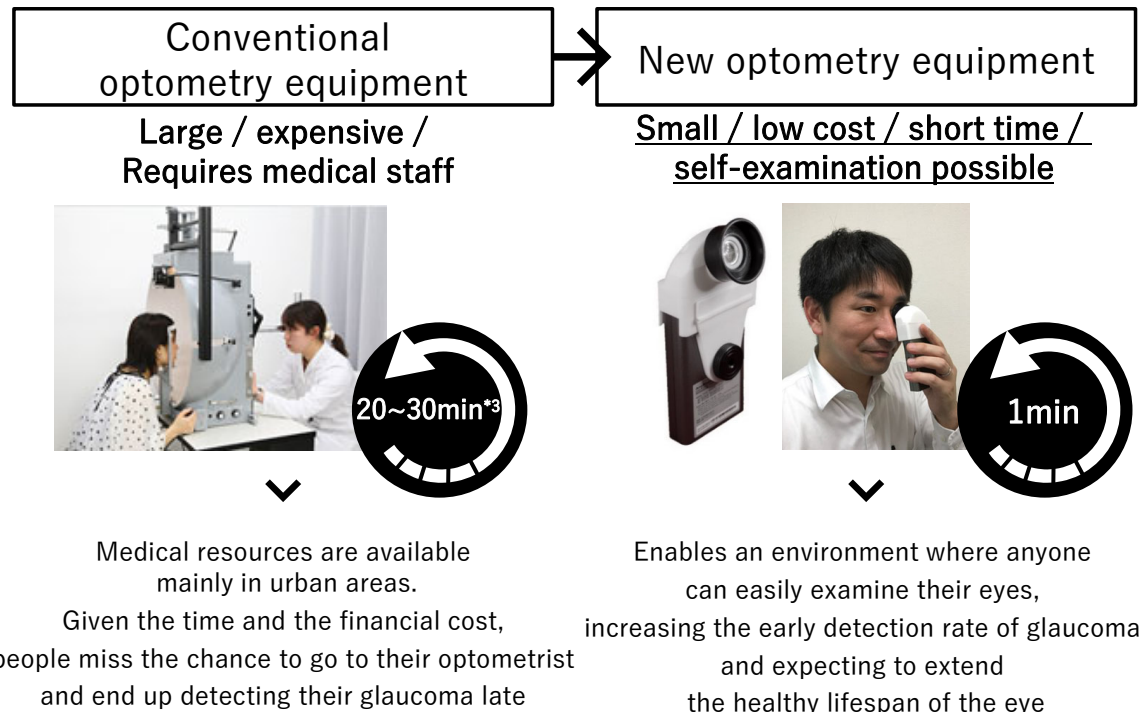
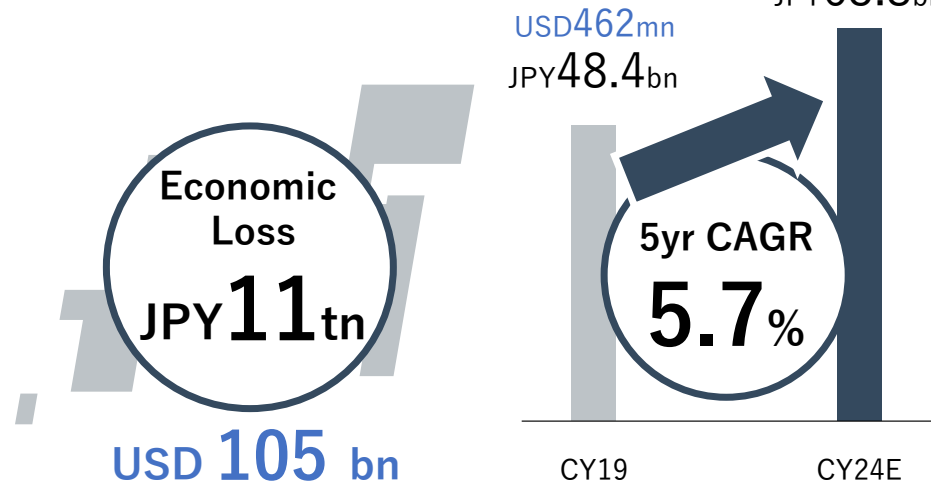
augmented vision

Strengthening Alliance

Large Growth Potential in Optometry Market Utilizing Laser Retinal Projection Technology, Developed New Optometry Prototypes and Working with Partners to Launch in FY2022-2023

Estimated economic loss in Japan due to visual impairment*1

Fundus photography equipment market size*2



*1: Japan Ophthalmologists Association (2009) "Economic Cost of Visual Impairment in Japan" and "Prevalence of Visual Impairment in the Adult Japanese Population by Cause and Severity and Future Projections"
Economic cost = Direct health costs + Other financial costs + monetary converted number of loss of well-being from visual impairment (measured in disability-adjusted life years (DALYs))
*2: TechNavio (2020) "Global Ophthalmic Diagnostic Devices MARKET 2020-2024" Converted at an exchange rate of JPY/USD = 110 yen
*3: The approximate measurement time of the Goldmann perimeter and Humphrey perimeter, which are typical perimeters in conventional perimeter measurement.

High Feasibility Utilizing Technology and Know-how Acquired through R&D, Co-Develop and Commercialize New Products Conducting Principle Verification and Prototype Building with Partners



Product	Overview	Co-development Partner(s)
Fundus Photography Equipment 	<ul style="list-style-type: none"> A device to examine the optic nerve, retina, blood vessels, etc. in the fundus of the eye to detect various eye diseases such as diabetic retinopathy and glaucoma. 	<ul style="list-style-type: none"> Medical device manufacturers around the world Major eyeglasses chain in Japan
Perimeter 	<ul style="list-style-type: none"> Portable and handy perimetry device for self-checking visual field and acuity. 	<ul style="list-style-type: none"> Medical device manufacturers around the world Major ophthalmic pharmaceutical company in Japan
Ophthalmic Refractometer 	<ul style="list-style-type: none"> Next-generation measuring equipment that allow customers to perform subjective and objective refraction tests 	<ul style="list-style-type: none"> Major eye glasses chain in Japan
Fundus Trainer 	<ul style="list-style-type: none"> Vision healthcare equipment aimed at allowing one to self-examine their own visual field, acquiring sports vision and improving vision. 	<ul style="list-style-type: none"> Healthcare equipment manufacturer
Visibility Simulation System 	<ul style="list-style-type: none"> A system allowing you; <ul style="list-style-type: none"> to see your self wearing an eyeglass frame through AR when considering which one to buy to see, through a simulation, how a pair of glasses would look on you depending on the prescription strength and lens grade 	<ul style="list-style-type: none"> Major eye glasses chain in Japan

Estimated Markets Size of Conventional Optometry Equipment

- JPY **52.0** bn^{*1}
(USD **496** mn^{*1})
- JPY **12.1** bn^{*2}
(USD **115** mn^{*2})
- JPY **17.4** bn^{*3}
(USD **165** mn^{*3})

↑ Estimated market size of current competitors' products belonging to each category

- Similar equipment does not exist
- Expect widespread adoption like Weight scale or blood pressure monitor
- Similar equipment does not exist
- Will be promoted through partnership with eyeglass stores

*1: AnalystView Market Insights (2020) "Fundus Camera Market, By Product, By End-use and By Geography - Analysis, Share, Trends, Size, & Forecast From 2020 – 2026"
 *2: Perimeter: Our analysis and estimates based on Perimeter Instrument" portion in Japan Ophthalmic Instruments Association 2020 Annual Report
 *3: Perimeter: Our analysis and estimates based on numbers from "Refraction adjustment visual function test instrument" portion of Japan Ophthalmic Instruments Association's "2020 Annual Report"

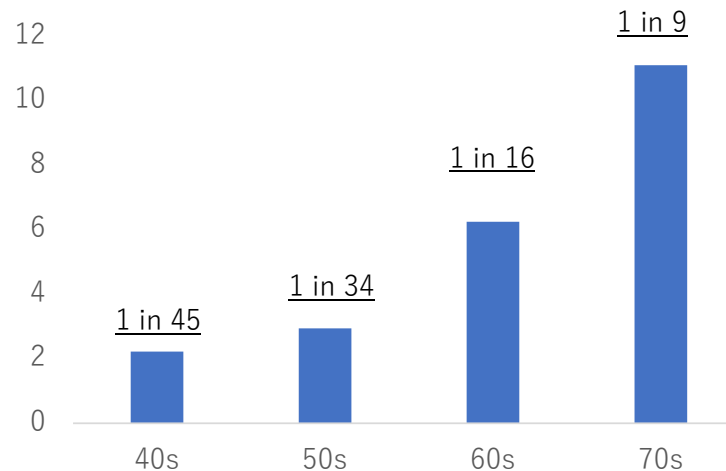
Problem: Unrecognized symptoms

While the risk of blindness is expected to increase in the aging society, Glaucoma, the number one cause of blindness in JAPAN, can hardly be self-recognized.

People who are not aware of their glaucoma

90%

Glaucoma prevalence



World blindness and severe myopia risk population in 2050 *1

1 billion people

2030 visual impairment costs in Japan

1.1 trillion yen

*1 : OECD: Health at a Glance 2007

Solution

World's only laser retinal projection technology and optimized algorithm enables you to scan retinal conditions in a short time by yourself without opening your pupils with mydriatics

1: Promote awareness

2: Less burden on the subject

3. Inspection anywhere



**No medicine,
Self-check**



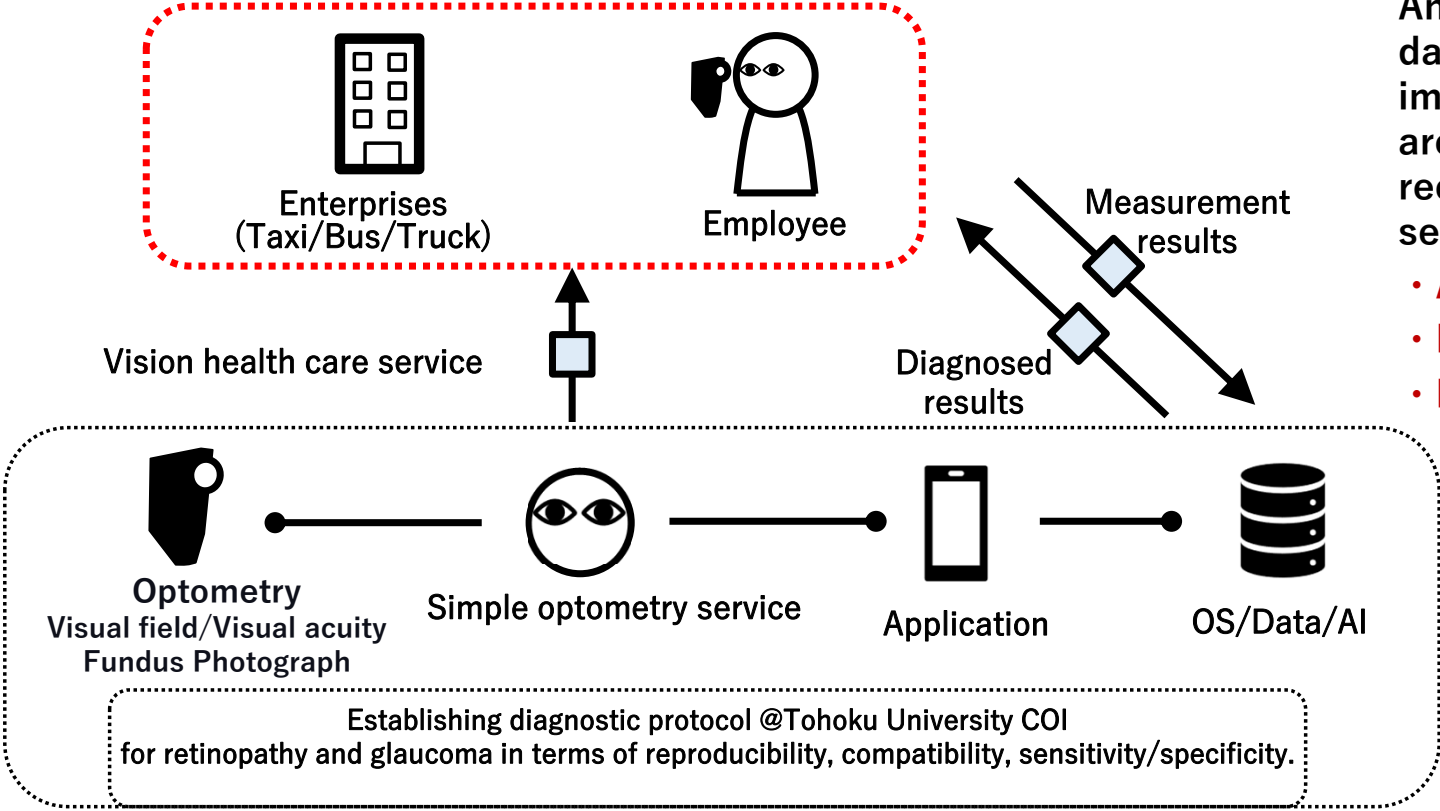
Less time



Portable size

Date platform for vision health care in the concept stage

QDLaser is developing a service to provide simple optometry diagnostics for companies in industries where eyes are critical, like taxi. The optometry equipment was prototyped under the contract development on page 30. In partnership with a data management company, QDLaser is to offer trial operation in FY2022 and full-scale operation in FY2023.



An algorithm judges optometry data acquired by our retinal imaging equipment. If symptoms are observed, the system recommends stopping driving and seeing an ophthalmologist.

- Accident prevention
- Employment maintenance
- Prevention of blindness

04



QD LASER

ESG initiatives

Business Development from an ESG Perspective

Laser Device
Laser Eyewear

Social

Estimated economic cost in Japan due to visual impairment in 2030*1
USD105bn
JPY 11tn

Global prevalence of people with low vision*2
250mn

Estimated number of glaucoma patients in Japan*3
4mn

- World's first laser retinal projection technology for low vision aids
- Through the spread of laser eyewear, provide visual support for the elderly
- Through the spread of more affordable optometers, contribute to the early detection of various eye diseases including glaucoma, etc.
- Employment support for people with low vision

Environmental

Energy savings from semiconductors with silicon photonics*4
90%

- Silicon photonics with quantum dot lasers improve semiconductor performance dramatically

Governance

*1: Japan Ophthalmologists Association "Economic Cost of Visual Impairment in Japan" and "Prevalence of Visual Impairment in the Adult Japanese Population by Cause and Severity and Future Projections"
Economic cost = Direct health costs + Other financial costs + monetary converted number of loss of well-being from visual impairment (measured in disability-adjusted life years (DALYs))
*2: WHO "GLOBAL DATA ON VISUAL IMPAIRMENTS 2010"
*3: Santen Pharmaceutical "Annual Report 2017"
*4: Target numbers in "Development of Technologies for Super Energy-Efficient Optical Electronics Implementation Systems" Promoted by METI, The Institute of Electronics, Information and Communication Engineers "Opt-Electronics Packaging Technology for Silicon Photonics"

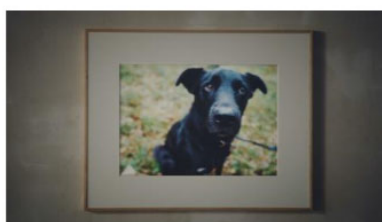
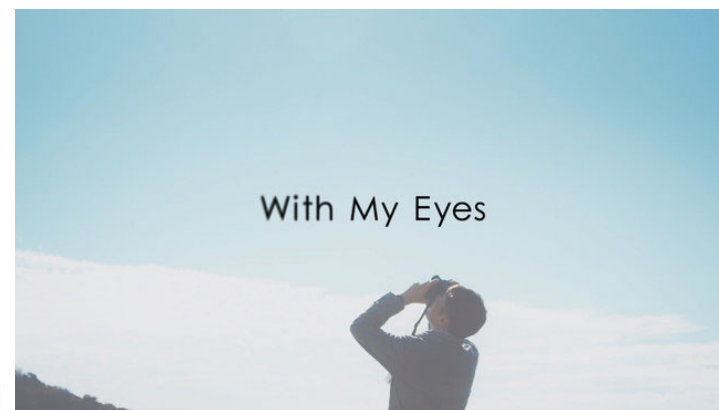
With My Eyes project

#1 Photographs by low vision people.

<https://www.youtube.com/watch?v=p5blfs94Oys>

#2 Let's go and see the invisible world.

https://www.youtube.com/watch?v=ZM52dax_5yc



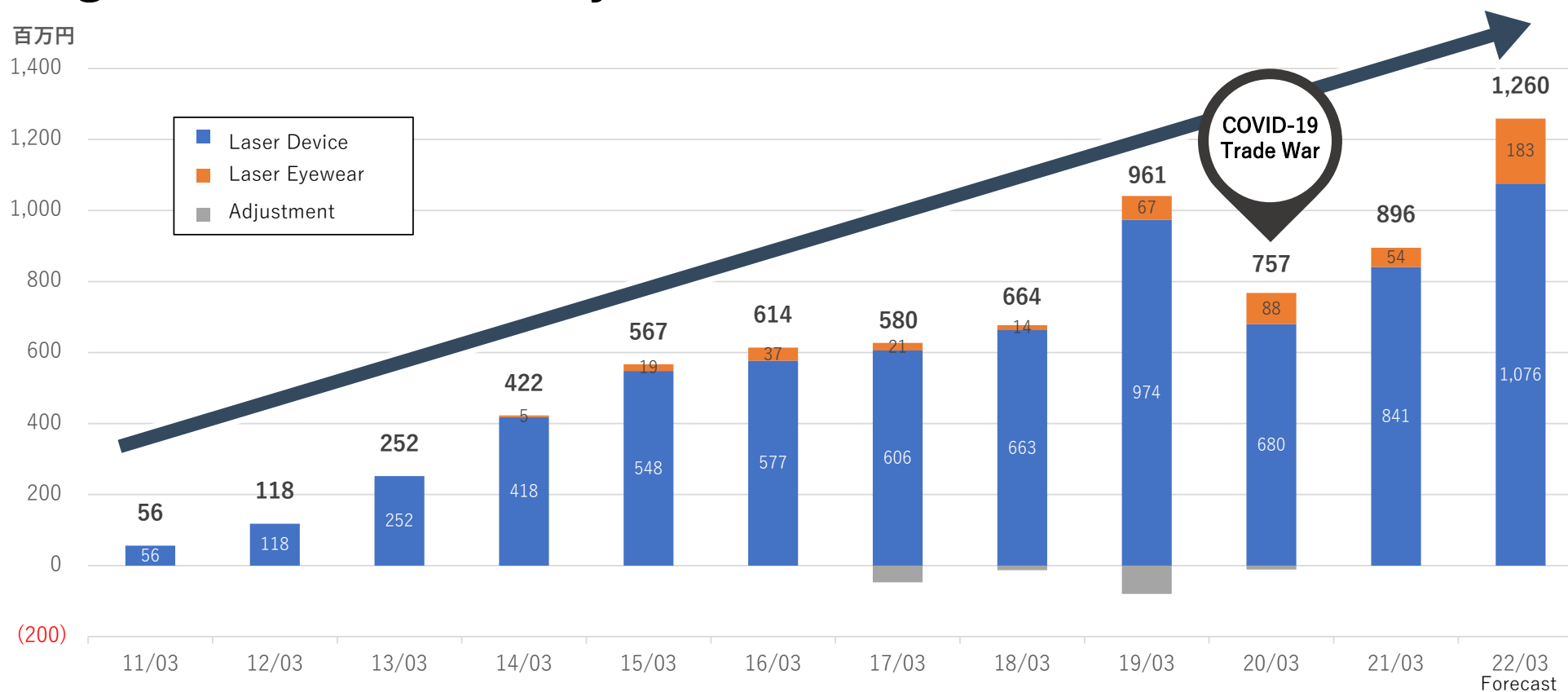


Financial Highlights

Sales Trend

Continuous growth for over ten years

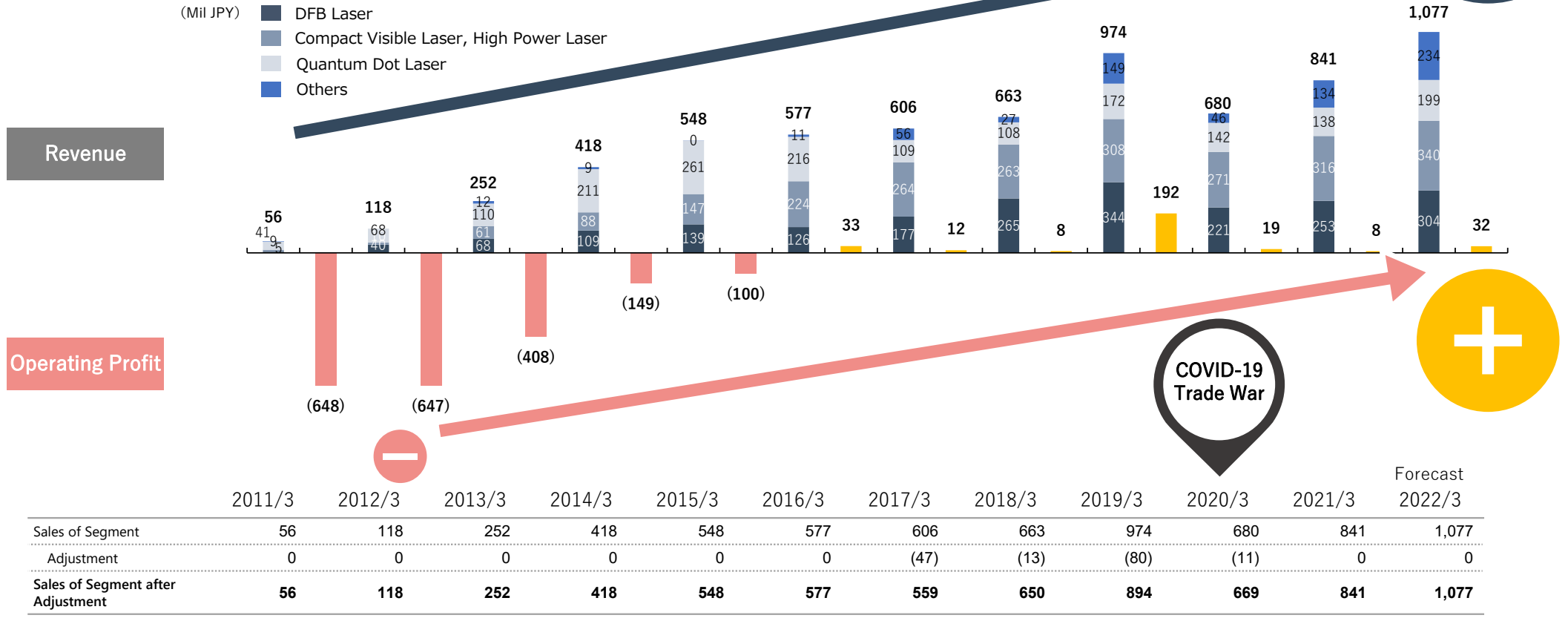
Aiming to exceed one billion yen for the first time in 2022/3



Laser Device Division Sales Trend

Under the expansion of the global laser market, record-high sales forecast for this term.

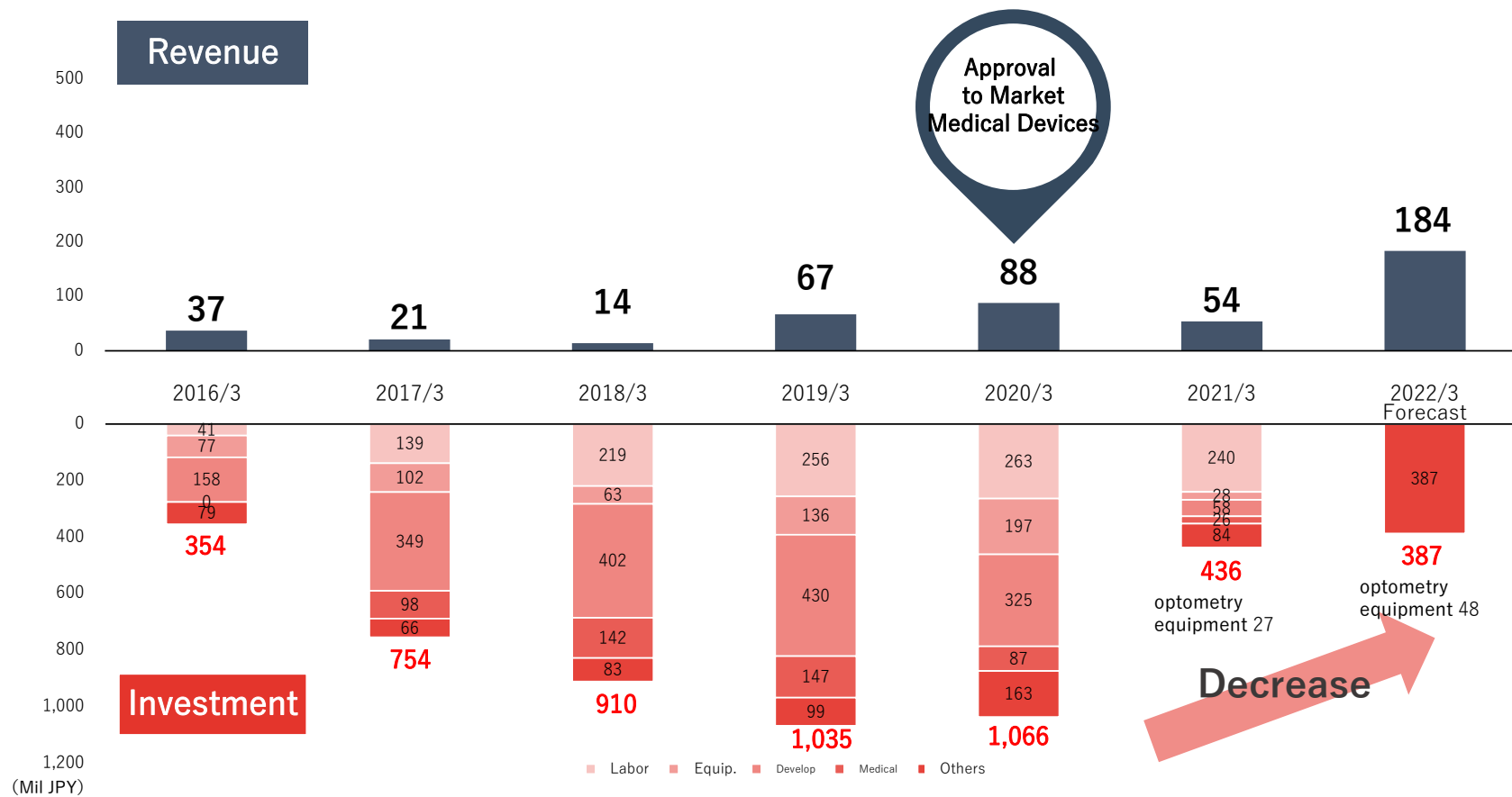
11年CAGR*1
39%



*1: 内部消去等調整後セグメント売上高における年平均成長率

Laser Retinal Projection: Profit Structure

Shifting from R & D to the recovery phase. Aim to establish an "Optometry" business under minimized additional investment.



Plan to invest 300 to 400 mil yen annually, focusing on cost reduction and new product development for RETISSA Display. However, in the field of optometry machines, medical device certification costs will be temporarily added.

Expected Growth Potential in Mid-Long Term

Laser Device
Laser Eyewear

01 Through R&D of various laser technologies and stable profits from laser device business, strengthen business base for dramatic future growth.



02 Establish mass production and sales channels of consumer / medical eyewear. Make laser eyewear business the growth driver in the short to medium term



Target cumulative sales of 100,000 units and annual production of 50,000 units at FY2025.

Sales expansion in domestic and overseas markets

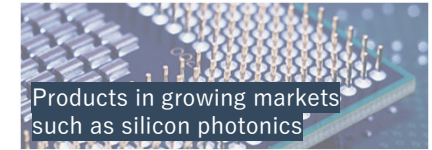
Starting low-cost mass production of RDIII later in FY 2022 or early in FY2023

IPO

Present

+ 03

In the mid to long term, in addition to the laser eyewear business, plan to expand sales of optometers and silicon photonics.



Quantum dot lasers for silicon photonics are being developed with seven companies in Japan and the United States. Mass production is to start late in FY 2021 in order(p12).



Trial operation of "optometry screening service" in FY2022 and full-scale delivery in FY2023 (p33). The optometry machine under the contract development is to be launched between FY2022 and FY2023 (p29).

Future

Appendix

 QD LASER

Management Profiles



**Science and Technology
Award from the Minister
of MEXT**

**Prime Minister's Honorary
Award for Achievement in
Industry-Academia-
Governmental Collaboration**

- Graduated from The University of Tokyo; Doctor of Engineering
- 1984: Graduated with a master's degree in Physical Engineering from the Department of Applied Physics, School of Engineering, University of Tokyo; joined Fujitsu Laboratory Ltd.
- 1995: Assumed the role of Senior Researcher at Optical Semiconductor Device Laboratory, Fujitsu Laboratory Ltd.; obtained degree in Eng. from The University of Tokyo
- 2004: Assumed the role of non-tenured professor at the Institute of Industrial Science, University of Tokyo
- 2005: Assumed the role of Deputy Head of Nanotechnology Research Center, Fujitsu Laboratory Ltd.
- 2006: Launched QD Laser Inc.; assumed the role of President and CEO



Director and CFO
Shinji Konoya

- 1991: Joined Fujitsu Ltd.
- 2015: Assumed the role of Senior Manager of the Business Strategy Department, Fujitsu, Ltd. and General Manager of Corporate Planning at QD Laser, Inc. (current role)
- 2016: Assumed the role of Director and CFO and concurrently serves as General Manager of Corporate Planning at QD Laser (current role)



Outside Director
Tsutomu Yoshida

- 1980: Joined Mitsui & Co., Ltd.
- 2013: Assumed the role of Director of QD Laser (current role)
- 2018: Assumed the role of Executive Officer and Director of M&A Office, Corporate Strategy Division, at Mitsubishi Chemical Holdings Corporation (current role)



Technical Advisor
Yasuhiko Arakawa

- Serves as Head of Institute for Nano Quantum Information Electronics, and Director of Center for Photonics Electronics Convergence, Institute of Industrial Science, University of Tokyo
- Notable awards:
 - Reona Esaki Award
 - Prime Minister's Honorary Award for Achievement in Industry-Academia- Governmental collaboration
 - Medal with Purple Ribbon

Laser Retinal Projection: Diseases and Applicable Rate

Parts of Eye	Major diseases	# of patients per 100k people*1	Total per eye part*1	Possible Efficacy*2	Estimated applicability %*3	Future Outlook	
Anterior eye	Cornea	Corneal angiogenesis	4,000	4,104	◎ Effective on astigmatism and moderate opacity	50%	<ul style="list-style-type: none"> • May not be applicable in cases of severe opacity • Focused on obtaining the approvals to marketing medical devices by targeting diseases for which high efficacy can be expected. • Plan to expand the scope of application with RDII and RDIII on page 25 and the wide-angle viewfinder on page 27.
		Keratoconus	54				
		Corneal opacity	50				
	Crystalline lens	Cataract	47,800	52,900	◎ Effective on near/far-sightedness, astigmatism, opacity, etc. and as the technology does not depend on the function of the crystalline lens		
		Aphakia	5,100				
		Phacocele	<50				
	Uvea	Uveitis	714	714	△ Effective on astigmatism developed as a complication		
Choroidal neovascularization		<50					
Vitreum	Vitreous opacity	NA	-	○ Effective on low to moderate opacity	20%		
Retina	Epiretinal membrane	28,900	55,614	○ Enlargement and black and white inversion features are effective on macular diseases Some efficacy is seen in cases where anterior eye disease is also present AE camera feature is exceptionally effective on photophobia, night blindness, etc.	30%		
	Lattice degeneration of retina	10,600					
	Hypertensive retinopathy	9,100					
	Age-related maculopathy	3,900					
	Diabetic retinopathy	3,114					
	Retinitis pigmentosa	<50					
Optic nerve	Glaucoma	3,550	3,865	△ Image downsizing feature is effective on tunnel vision	10%		
	Optic nerve head drusen	200					
	Optic neuritis	115					
Other	High myopia	3,000	3,000	◎ Exceptionally effective	50%		
	Color amblyopia, color blindness	2,500	2,500	○ -	20%	<ul style="list-style-type: none"> • Can improve by processing images taken by camera 	

*1: These numbers were calculated by research company Lampe & Company in a report we commissioned with reference to scholarly papers published by governments and research institutions from each country. Figures for "# of patients per 100k people" and "Total per eye part" reflect the general research conducted across several jurisdictions and are not necessarily indicative of the number of potential cases in the markets in which we currently operate.

*2: Based on our assumptions

*3: Evaluated the "expected efficacy" using a scale: ◎ = 40-50%, ○ = 20-30% and △ = 5-10%.

Customer Voice

User Experience No. 10

“For the first time I was able to distinguish the edge of objects.”

Name: Mr. Nomura (35 years old)

Occupation: ITAGAKI (Glasses and Hearing Aid Retailer) Products Division

Eye Condition: Congenital Lens Subluxation (Dislocation)

I finally found the image and yelled out “This is awesome. This is really so awesome!” several times over. When I looked at the images of a sea turtle swimming in the ocean and a sea anemone, I could see the outline of their images so clearly.

Up until now, if I looked at a PC, for example, I couldn’t distinguish the edge of the computer screen. When I put on the RETISSA®, for the first time I was able to distinguish the edge of objects.

Rather than a new world, I felt “re-born!” in a sense.

It might be better to describe it as my third eye. Having my vision stabilize and come clear truly moved me and I couldn’t hide my excitement.

For the first time, I saw my CEO’s face. It was the first time I’ve seen the outline of someone’s face. After that, in that same office I recognized the face of my boss. Up to this point, my own face I had only seen very vaguely in the mirror, but with the RETISSA® Display II, I could see it clearly. I thought to myself, “Is that so? I have also aged quite a bit” (laugh).

First of all I would like to say “Thank you for the light. I have seen a new world.”

*1: The interview was held on August 27, 2020.

*2: These are the impressions of the individual. There may be individual differences in vision.

*3: The RETISSA® Display II is not a medical device. It is not intended for use to improve, correct or treat a condition.



Customer Voice

User Experience No.8

The bronze medalist said, “Wow, I haven’t seen things like this for a long time.”

Name: Mr. Sugiuchi (40s)

Career:

- Fujitsu Limited Tokyo Olympic and Paralympic Promotion Headquarters
- Director of Japanese Para-Swimming Federation
- Director of Kanto Swimming Federation for the Disabled
- Athlete Committee of the Japan Swimming Federation

Eye Condition: Retinitis pigmentosa

When I was first passed the device, I was impatient, and put them on immediately, saying, “yes, yes.” The test video had not been prepped, and all I could see was the initial Windows PC screen which blew me away. What I had seen before, I could see so clearly, in a way I hadn’t seen in so long. I thought to myself, “Wow, I haven’t seen things like this for a long time.” It was like the haze cleared, and I felt a crisp feeling as if I had brushed my teeth for the first time in 2-3 days (laugh). Now I use the RETISSA® demo device every day and I’ve become quite used to it.

I mainly use it to read words on paper. When I read magazines, documents sent in the mail, for example, tax documents and insurance documents, it is very useful. It’s hands free and the camera can auto-focus, so it is very convenient to see what I want to see.

I don’t think there is a single person in this world who has truly overcome their disability, but the RETISSA® helps people who have been diagnosed and shocked by a disability to recover. For example, even if your eyes are poor, if you can understand that by using this device, you can return to a quality of life close to your former quality of life, even if it’s not 100%, and then if you can connect with a friend with the same disability, you can take your first step forward in improving your life. Retinitis pigmentosa is a progressive disease, so you must accept that it will only get worse. I was prepared to give up on making any progress, so I’ll never forget my amazement seeing the Windows screen the first time I used the RETISSA®.



Customer Voice

User Experience No.4 “With this I can read a book!”

Name: Mrs. Asano (70s)

Eye Condition: Late-stage cataracts (moderate symptoms) – both eyes, mydriasis – left eye

(Using a laser kaleidoscope (hereinafter "LKS") which is a prototype with a RETISSA® OptHead) With this, I can read a book. I'm glad that I can see the letters clearly. I don't think I'll get tired even if I read for a long time. It seems easier to read a book while holding it under the camera than reading it on a reading table. With this, I'm planning to read a lot of books that I own.

My right eye is my dominant eye, so I am used to looking at things with my right eye. This time, I realized that I have barely used my left eye so far. I am thinking about using the LKS to practice seeing things with my left eye.

I believe useful machines will change not only your lifestyle but also your body. (By using LKS,) I can try reading with my left eye and get better at looking at things with both of my eyes. While I'm not confident using machines and am a little bit unsure about some things, I want to first try reading, and then do a trial and error using it to do a variety of things.

I talked with my ophthalmologist about the LKS as well. Thankfully, my cataract surgery was postponed for the time being. My ophthalmologist is also very interested in the device and plans on contacting your company.

*1: The Interview was held on September 18, 2020.

*2: These are the impressions of the individual. There may be individual differences in vision.

*3: LKS is a small and handy wide-viewing angle retinal projection device.

*4: LKS is not a medical device and is not intended for use to improve, correct or treat a condition.



Low Vision Aid & Vision Healthcare: Industry-University Cooperation

Research and Development for Laser Retinal Projection Technology in Collaboration with Universities and Hospitals



- ▶ Gaining social recognition and sharing knowledge through sponsorship of conferences, etc.
- ▶ Ongoing clinical research with universities and hospitals:
Low vision aide for clouding and retinopathy at two institutions
Visual field testing and fundus photograph at seven institutions

Our Products Portfolio of Laser Device Business

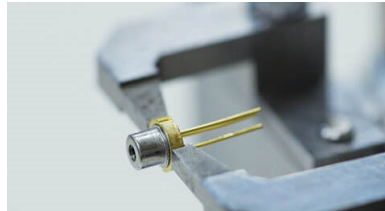
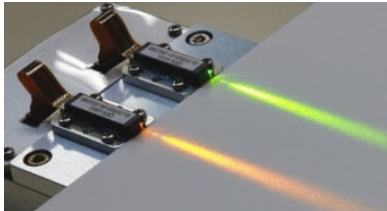
Compact Visible Laser

High Power Laser

DFB Laser

Quantum Dot Laser

Picture



Use

- Biosensor, fluorescence microscope, etc.
- Especially for flow cytometers

- Machine vision, sensors, Laser level, short range LiDAR, 3D measurement, particle counter

- Seed light of fiber laser for precision processing, gas sensing, etc.
- Expanded to aviation LiDAR, etc.

- Autonomous driving for automobiles, security cameras, sensors for industrial drones, etc.
- Silicon photonics applications

Features

- Ultra-compact, low power consumption, stability, short pulse generation, high-speed modulation, monochromaticity, etc.
- World's first current injection type green / yellow green / orange semiconductor laser

- High power Fabry Perot laser
- Providing products and solutions according to applications
- Supports various wavelengths. Supports small quantity and custom production

- Precise control of wavelength, stable operation of continuous operation, nanoseconds, picoseconds
- Compared to existing solid-state lasers, it has characteristics such as high beam quality, small size and light weight, high electricity-light conversion efficiency, and long life.
- Extensive product lineup that meets the various needs of customers

- Quantum dot structure is used for the active layer (light emitting part) of the semiconductor laser
- Excellent in comparison with existing semiconductor lasers, temperature stability, high temperature resistance, and low noise

Three Areas based on Retinal Projection Technology

Laser Device

Laser Eyewear

Transforms
“hard to see”
to “visible”

Low Vision Aid

Sales started

Extend the healthy
lifespan of your vision

Vision Health Care

Business Development

The power of
“vision” broadens
your world

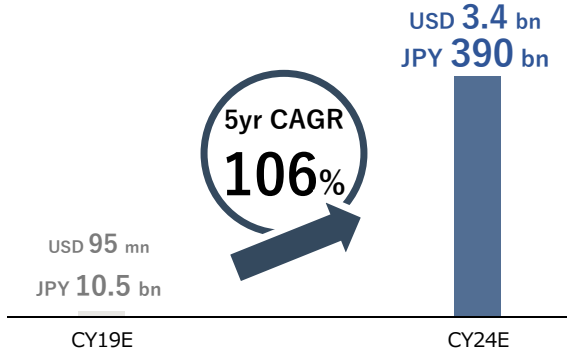
augmented vision

Strengthening Alliance

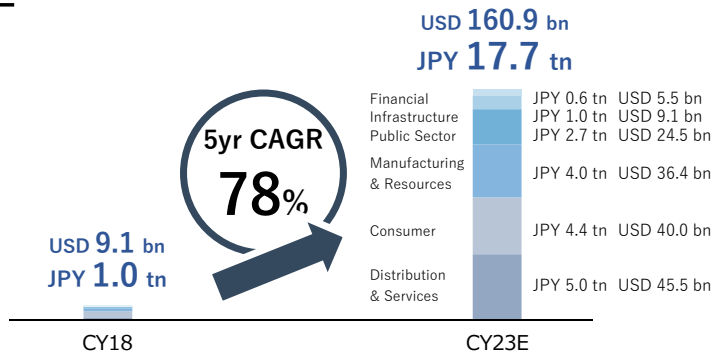
AR Market Potential

Making the Best Use of Unique Technical Features, Began Demonstration Experiments with Partner Companies in Each Field

Forecast of global smart glasses market*1



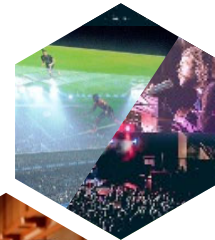
Forecast of global AR/VR market*2



Possible laser eyewear applications

Sports watching and live entertainment

- Close-up of players / artists
- Display bird's-eye view of the field or the scores



Smartphone link

- Display GPS navigation, advertisements
- Multilingual translation with subtitles

Arts appreciation

- Subtitles display when watching entertainment, at multi-view theater
- Display of commentary in the museum



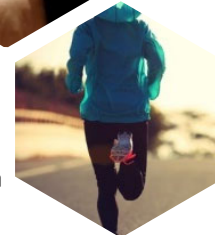
Business support

Business support

- Work support in the manufacturing industry
- Support for drivers of heavy machinery and vehicles

Sports

- AR display of leading runners in long-distance running
- Display the trajectory of balls / arrows, and quantify qualitative adjustments to improve practice efficiency



Video Watching

Video watching

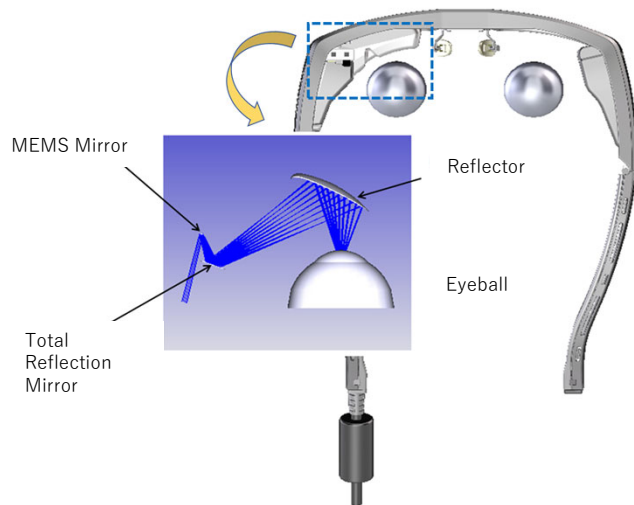
- Video streaming for people with visual impairment
- Watching movies and videos

*1: Fuji Chimera Research Institute, Inc. "Wearable/Healthcare Business Research 2020"
 *2: IDC "Worldwide Semiannual Augmented and Virtual Reality Spending Guide, 2018H2"

Laser Retinal Projection Technology

Details of the Core Technology

Asymmetric Optics for HMD



01

Optical Design

- Resolution control based on beam diameter / NA control
- Reflection / transmission optics selected and designed for each application
- Optimized shape and size through the selection and design of optical materials for each application

02

MEMS

- MEMS design and prototype products provided with the size and frequency required for optical design

03

RGB Laser Modules & Drivers

- Precisely combined and collimated small RGB laser module for images
- Driver chip suitable for displaying image information

04

Solution

- An operating projection optical system integrating the technologies above
- Retinal projection / fundus photography system

Possible Risks

The main business risks we are aware of and their countermeasures are as follows.

< Business Risks*1 >

< Possibility/
Time >

< counter-measure >

Economic trends

- The laser-related market in which we are entering is expected to continue its growth trend, mainly for industrial and medical equipment such as precision processing equipment and bio-medical equipment. If market growth slow down due to economic trends and the accompanying decline in capital investment motivation, our business performance and financial position may be affected.

»

Middle/
Medium to
long term

»

- Promote the construction of a business model that is resistant to economic fluctuations by entering a wide range of markets

Management deterioration of manufacturing contractors and quality accidents

- We have a fables manufacturing policy, so we outsource manufacturing to an external partner company. Considering the characteristics of each company, we decide the manufacturing items to each company according to the manufacturing capacity of our products.
- For each company, we carry out quality inspections and confirmation of business conditions. If the management of the contractor deteriorates or a quality accident occurs, it is possible to easily change the contractor, but it will affect our business performance and financial position until the new production system is rebuilt.

»

Low/
Medium to
long term

»

- Disperse risks by securing multiple outsourcers

Cash flow and financing

- With the progress of our R&D activities, a large amount of R&D expenses have been recorded in advance. It is expected that the demand for working capital, R&D investment, capital investment, etc. will continue to increase as the business progresses. We will continue to strengthen our financial position in the future. But depending on the status of profits or raising funds, it may affect our business performance and financial position.
- In addition, regarding the use of funds raised through the public offering, we plan to allocate it to the manufacturing cost of Laser Eyewear, but due to sudden changes in the business environment, etc., it may be used for purposes other than the originally planned use of funds and the return on investment may not be as expected.

»

Middle/
Medium to
long term

»

- Secure financing means by promoting the establishment of bank credit lines such as commitment lines and overdrafts

Partnership with other companies in laser eyewear business

- Consumer equipment in the Laser Eyewear business will be sold to end users via distributors with eyeglass stores, etc., other than direct sales, or modules will be provided by us, and each company will commercialize and sell them. Specifically, with Seed Co., Ltd., Tokyo Optical Co., Ltd., Casio Computer Co., Ltd., and overseas distributors for China, we will do promotion activities that tie up the products and services of each company with our products. In addition, we will endeavor to popularize medical devices by concluding a sales support contract with Santen Pharmaceutical Co., Ltd. We planned product manufacturing and sales based on the sales targets handled by each company, but if we cannot sell more than the initial target number, or if there is a change in the business policy of each company, our business performance may be affected.

»

Middle/
Medium to
long term

»

- Disperse risks by diversifying alliances

*1: For risks other than the above that we recognize, please refer to "Business Risks" in the securities report.

Terminology

Semiconductor laser	A compact device with an approximate length of 1mm that causes laser oscillation by passing an electric current to a semiconductor. In comparison with a solid-state laser or gas laser, more micro-miniature in size; higher speed modulation characteristics up to 10GHz; higher photoelectric conversion efficiency achieving several tens of percent and better controllability of wavelength, among other things. Became widely used in the 1980s as a light source for communication systems and optical recording media, such as CDs and DVDs, etc.
Quantum dot laser (QDL)	A semiconductor laser using a quantum-dot structure comprising nanocrystalline semiconductors in its active layer. QD Laser is the only firm in the world to mass-produce QDLs for optical communications and silicon photonics. In comparison to existing semiconductor lasers, it is superior in temperature stability, high-temperature endurance and low-noise properties.
DFB laser	Distributed Feedback Laser: QD Laser's DFB laser is equipped with a diffraction grating which enables laser oscillation at a single wavelength. It is suitable for applications where the light output needs to be concentrated into a narrow wavelength range, such as the seed light of a fiber laser.
Silicon photonics	A technology which integrates an optical circuit with a silicon electronic circuit that has signal processing and memory functions, thus enabling a breakthrough in the processing capacity limitation of the conventional electronic circuit system (achieving 100 times faster processing speed and lower power consumption) and high-capacity data transmission between LSI chips (10Tb/s).
VISIRIUM technology	A technology that projects images onto the retina using precise optical systems, creating different colors flexibly from the three primary laser light colors - red, green and blue.
Diffraction grating technology	A technology that freely and precisely controls the wavelength of semiconductor lasers to fit into various applications by forming periodic irregularities inside the laser.
Ultrashort pulse	A laser with a very short pulse width (duration). It is used for microfabrication and other processes as it can prevent shape distortion due to thermal effects.
Retinal projection	To project images onto the retina
Simple perimeter	A device to assess the visual field of human eyes
CE marking	A certification mark that indicates conformity with standards required to be met by products exported to the EU. The CE mark is granted when a product meets standards in all EU member states.
Flow cytometer	A device capable of measuring certain properties of cells. By irradiating a cell suspension in a tube with a laser beam, it can measure the number and size of a large volume of cells over a short period of time using fluorescence and scattered light parameters. It is used in various fields including molecular biology, pathology, immunology, plant biology and marine biology.
LiDAR	LiDAR (Light Detection and Ranging) is a technology which irradiates an object and uses a light sensor to detect the reflection to measure the distance. It is expected to be used in autonomous driving systems in the future.
Heads-up Display	A technology that projects information and images onto various surfaces, such as glass, within the field of view. It is expected one day to project necessary information for drivers onto the windshield and the like.

Disclaimer

This document has been prepared by the Company solely for information purpose only. This document does not constitute or form part of and should not be construed as, an offer to sell or issue or the solicitation of an offer to buy or acquire securities of the Company in Japan, the United States or any other jurisdictions. The information contained herein is based on current economic, regulatory, market trends and other conditions. The Company makes no representation or guarantee with respect to the credibility, accuracy or completeness of the information herein. The information contained herein may change without prior notice. You may not publish or use this document and the contents thereof for any other purpose without a prior written consent of the Company. Furthermore, the information on future business results are forward-looking statements. Forward-looking statements include but are not limited to expressions such as "believe", "expect", "plan", "strategic", "expect", "anticipate", "predict" and "possibility", as well as other similar expressions to explain future business activities, achievements, events and future conditions. Forward-looking statements are predictions about the future that reflect management's judgment based on currently available information. As such, these forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from those expressed in or suggested by the forward-looking statements. Therefore, you may not rely entirely on forward-looking statements. The Company does not assume any obligation to change or correct any forward-looking statements in light of new information, future events or other findings.

This document and its contents are confidential and are being provided to you solely for your information and may not be retransmitted. This presentation is being furnished to you solely for your information and may not be reproduced or redistributed to any other person. In giving this presentation, the Company does not undertake any obligation to provide the recipient with access to any additional information or to update this presentation or any additional information or to correct any inaccuracies in any such information which may become apparent.

Information on companies other than the Company and information provided from third parties are based on public information or sources. The Company has not independently verified the accuracy and appropriateness of such data and indicators used herein, nor assume any responsibility for the accuracy and appropriateness of such data and indicators presented in this document.

This document does not contain all relevant information relating to the Company and the securities and is qualified in its entirety by reference to the detailed information appearing in the Japanese language prospectus (the "Japanese Prospectus"). Any investment decision with respect to the securities should be made solely upon the basis of the information contained in the Japanese Prospectus.