R QDLASER

Quarterly Financial Results Briefing 2nd Quarter of FY2021

QD Laser, Inc. November 2021

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Mission

With the power of the semiconductor laser, "I can't" becomes "I can".

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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.

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Financial Results for FY2021-Q2

Financial Results Highlights for FY2021-Q2 vs FY2020-Q2



61% Sales Growth

Orders increased for the laser device business in DFB lasers for high-precision processing, compact visible lasers for biosensors, high-power lasers for sensors, and NRE (Non-Recurring Engineering). The laser eyewear (LEW) business also increased due to sales to financial institutions.



Operating loss improved due to an increase in sales and a reduction in depreciation and development costs. Laser device (LD) business achieved the operating profit in the 1st half of the year for the first time since the establishment.

320 Million JPY Quarterly Net Loss Improved

The same period of the previous year recorded an impairment loss on fixed assets of 161 million yen in the laser eyewear business, and net loss improved in the current year.







Financial Result Highlights for FY2021-Q2 vs FY2020-Q2

Sales Growth and Operating Loss Improved

Performance Summary

61% sales growth driven by both businesses. LD business achieved the first operating profit in the 1st half of the year since the establishment, and operating loss improved by 115 million JPY.

(Million JPY)	FY2021 Q1-Q2	FY2020 Q1-Q2	YOY	
Salaa	F 4 7	220	+61%	
Sales	547	228	(+207)	
(LD)	513	325	+58%	
(LEW)	33	14	+131%	
Operating Profit or Loss ($ riangle$)	△276	△392	+115	
(LD)	6	△54	+60	
(LEW)	△138	△226	+88	
Ordinary Loss ($ riangle$)	△276	△419	+143	
Quarterly Net Loss ($ riangle$)	△260	△581	+320	

Sales by Product Group

(Million JPY)	FY2021 Q1-Q2	FY2020 Q1-Q2	YOY	
DFB Laser	161	125	+29%	
Compact Visible Laser	71	37	+92%	
High-Power Laser	146	91	+60%	
Quantum Dot Laser	54	63	-14%	
NRE	79	4	+1875%	
Others	0	2	-100%	
LD Total	513	325	+58%	
LEW Total	33	14	+136%	
Grand Total	547	339	+61%	
LEW Total Grand Total	33 547	14 339	+1369 +619	

DFB Lasers^{*1} for Precision Machining and Measurement : Sales in FY2021-Q2

161 million JPY sales, increased by 29% YOY.

• North America: Orders increased by 290% YOY with the mass production of new equipment for precision machining started.

• Europe: The number of light sources for inspection equipment in the semiconductor wafer process increased by 27% YOY.

• Asia: Increased orders of light sources for LiDAR by 10 million JPY YOY.



DFB lasers Left : for 15 ps pulsed operation Right : for 50 ps pulsed, ns pulsed, and CW operations



Cumulative sales of Q1 and Q2 in FY2019, 2020 and 2021

Compact Visible Lasers : Sales in FY2021-Q2

71 million JPY sales, increased by 92% YOY.

• China : Orders increased by 142% YOY with the mass production of a new application (cell sorter*1) started in the biomedical equipment manufacturer.

• Europe : Orders increased from 10pcs to 20pcs YOY for trial production in the biomedical microscope manufacturer.



Compact visible lasers Left: green, middle: yellow-green, and right: orange.



Cumulative sales of Q1 and Q2 in FY2019, 2020 and 2021

High-Power Lasers : Sales in FY2021-Q2

146 million JPY sales, increased by 60% YOY.

 \cdot China: Increased orders of light sources for sensors and projectors by 49% YOY.

• Europe: Increased orders of light sources for baggage management sensors and factory communications by 128% YOY.

• North America: Increased orders of light sources for machine visions by 57% YOY.

• Japan: Increased orders of light sources at semiconductor factories such as sensors of wafer transfer machine and particle counter by 47% YOY.

• Products certified by six new certified customers: three in Europe and three in Japan. Applications are sensors of wafer transfer machines in semiconductor factories, particle counters, factory communications, and distance measurement.



High-power lasers TO package



Cumulative sales of Q1 and Q2 in FY2019, 2020 and 2021

Quantum Dot Lasers : Sales in FY2021-Q2

54 million JPY sales, decreased by 14% YOY.

• Japan : Continuous orders on LiDAR development project for autonomous driving.

• Japan: Completed the development of highly efficient chips for the optical connector and chip-to-chip communication customer. With the excellent test results from the customer, the chip is to move on to mass production.

• North America: Received orders from three existing customers working on LiDAR and optical connector/chip-to-chip communication for the year's first half. Two other customers are to provide orders in the second half.

• North America and Europe: Responding to development requests from two new customers for optical connector/ chip-to-chip communication, and scheduled to receive orders in the second half.





Quantum dot Quantum dot wafer

Quantum dot laser chip



NRE : Sales in FY2021-Q2

79 million JPY sales, increased by 1875% YOY.

 Received the development consignment from medical, eyeglass, and university hospital-related customers with NRE (Non-Recurring Engineering) fee to realize the prototypes for ✓ Laser scanning fundus photography ※1 ✓ Refractive power measurement ※2 ✓ Handy-type visual field testing ※3 based on the laser retinal projection technology.

Fundus photography



Refractive power measurement







* QD LASER * 1 A prototype for laser scanning fundus photography enables fundus image acquisition at low cost and easy operability.

3 A handheld device that directly projects a point image onto the retina according to an algorithm and measures the field of view and sensitivity.

Laser Eyewear (LEW) : Sales in FY2021-Q2

33 million JPY sales, increased by 136% YOY.

- RETISSA Medical
- Eleven domestic medical institutions now introducing to patients
- Promotion by Santen Pharmaceutical and Seed.
- RETISSA Display II
- $\cdot\,$ Accessory camera launched on the EC site on August 31st.
- Distributors:22 domestic companies, 33 eyeglass stores, three overseas companies.
- Working on application to government subsidy
- Open a booth at the exhibition for the low vision and welfare-related companies recovering from the COVID-19 pandemic.
- -International Welfare Equipment Exhibition (November)
- -Japan Society for Vision Correction (November)
- -US Exhibition CSUN (March)



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Quarterly Comparison and Progress against Full-Year Forecast

Sales increased and losses decreased compared to the forecast for FY2021-Q2. LD business achieved the first operating profit in the 1st half of the year since the establishment.

(Million JPY)	FY2021 Forecast	FY2020 Result	YOY	
Salas	1 260	90F	+41%	
Sales	1,200	090	(+365)	
(LD)	1,076	841	+28%	
(LEW)	183	54	+239%	
Operating Profit	∧ E 2 2		. 101	
or Loss ($ riangle$)	△333	△054	+121	
(LD)	32	7	+24	
(LEW)	△320	△434	+113	
Ordinary		^ 707		
Loss ($ riangle$)	△505	$\triangle 101$	+202	
(Quarterly)		∧ 070		
Net Loss ($ riangle$)	∆508	△019	+571	

Financial Forecast

Quarterly Comparison and Progress against Forecast

(Million JPY)	FY2021 Q1-Q2 Result	FY2021 Q1-Q2 Forecast	Disparity vs Forecast	Progress Rate
Sales	547	514	+ 6% (+ 32)	43%
(LD)	513	485	+6%	48%
(LEW)	33	29	+16%	18%
Operating Profit or Loss ($ riangle$)	△276	△347	+70	-
(LD)	6	△25	+31	-
(LEW)	△138	△191	+52	-
Ordinary Loss ($ riangle$)	△276	∆348	+72	-
(Quarterly) Net Loss (△)	△260	△350	+89	-

Order Progress Status

As of the end of the second quarter, sales + order balance (planned to sell for the current fiscal year) was 60% of the annual forecast sales, a significant increase from the previous year's 46%.



Sales and Order Balance against the Annual Sales Plan



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Semiconductor Laser Devices

Solid Earnings Base and High Growth Potential with Global Laser Market Expansion

New Era for Semiconductor Lasers

We are developing products for all applications shown below and have launched a part of them

- Optical interconnect (Processors are connected by laser light)
 - ⇒Increase signal processing speed (x100 to 1000)



■ Display ⇒AR/VR/XR

Smart Glasses









Motion



Fundus, Sight, Field of view LiDAR (Automotive, Robotics, Drone)







 Micromachining
 Highly functional/high precision device manufacturing



Our major laser device products, wavelengths, features, and uses

Compact visible lasers

High power laser

DFB laser

Produccts QI D1061 532, 561,594 nm 1030, 1053, 1064, 1080, 1120, 1180nm 1,200-1330nm 640-970nm Wavelength 1020-1120nm provided 1nm by 1nm Precise control of wavelength with • Ouantum dots are used for the • High power Fabry Perot laser Miniature size, low power stable operation under continuous, active layer (light-emitting consumption, stability, short nanosecond, and picosecond modes. Providing products and part) of semiconductor lasers. pulse generation, and highsolutions according to • High beam quality, small size, • Excellent temperature stability, Features speed modulation, etc. lightweight, high electricity-light applications. high-temperature resistance, conversion efficiency, and long life • World's first current injection • Supports various wavelengths, and low noise performance compared to existing solid-state lasers. yellow-green and orange lasers small quantities, and custom compared to existing • Extensive product lineup that meets production. semiconductor lasers. the various needs of customers. Measurement Bio. Use Communication Silicon photonics

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Quantum dot laser

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 fingertipsized silicon chip as 100Gbps optical transceiver with quantum dot lasers as light sources.



 \cdot Cumulative sales of silicon photonics chips: 15,039 units^{\ast_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.



 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





Market Review & Forecast 2020" Converted at an exchange rate of JPY/USD = 110 yen

17 Laser focus world "Annual Laser Market Review & Forecast 2020" and Markets and Markets "Laser Processing Market with COVID-19 Impact Analysis by Laser Type (Solid Lasers, Liquid Lasers, Gas Lasers), Configuration (Fixed Beam, Moving Beam, Revenue (System Revenue, Laser Revenue), Application, End-user Industry, and Region - Global Forecast to 2025 ", estimated by calculating the percentage of semiconductor laser products built into "Others" in the report

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.



Silicon Photonics Becoming Tangible

for optical communications between computer chips and Lidars Joint developments in progress with nine customers in Japan, North America, and Europe.

AIO Core Co., Ltd. has started sample shipment.



Applied modules (Sample shipment)

IPEX: LIGHTPASS [™]



Demonstration by AIO Core



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
- Made fixed costs into variable costs
- Mass production and diverse product offering lead to beyond breakeven point

Any wavelengths of lasers

*1:

Wavelengths of lasers we offer (nm)

						Infrared	d (invi	sible)			
450	532	561	594	660	785	1064	1188	1240	1310	1550	

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

Capable of operating in harsh environments of over 100°C and under high density packaging



Laser Device

• Optoelectronic integrated circuit

image of quantum dot by atomic force microscope

In-vehicle devices

New potential market created by quantum dot lasers

- Chip-to-chip optical interconnect
- Lidar
- Quantum cryptography





QDLaser's World Only-One Mass-Production Technology of Quantum Dot Lasers

Introduction of mass-production MBE (Molecular Beam Epitaxy) system

Control of temperature, indium source supply, and arsenic pressure at each second.

Material recipe and know-hows for optimum growth conditions with several-tens-of-years experience

(secret internal techniques which are intentionally not patented)

Mass production MBE system

Growth sequence of quantum dots (illustration of side view)



Launch of Palm-Sized Multi-color Compact Laser Light Source for Biomedical Equipment

High value-added solution for biomedical equipment *1

•This light source provides manufacturers with all laser wavelengths required for any biomedical equipment in one palm-sized compact module *2 with stable output power and plug-and-play operation.

•This product enables manufacturers to miniaturize their equipment and shorten the development and production period as a new solution.

·Under testing by equipment manufactures.

•QDLaser aims for an industry share of *3 20% in light sources for biomedical equipment in five years.

Compact Visible Lasers



Integrated into



Palm-Sized Multi-color Compact Laser Light Source (80 x 80 x t30mm)



488nm



561nm



660nm



785nm

*1: Biomedical equipment is flow cytometers, ophthalmic examination equipment, fluorescence microscopes, and the like.

*2: The total volume of the driver integrated light sources is less than 50% of other company's products.

*3: Estimated annual accessible market size is 12,500 units. (8,000 out of 16,000 units for flow cytometer based on the "Global Flow Cytometer Market 2020-2024", and 4,500 units for an ophthalmic medical device)





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Laser Retinal Projection

World's First Commercialization of Laser Retinal Projection Eyewear

VISIRIUM TECHNOLOGY® Unique Laser Technology bringing Innovation to Vision



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

QD LASER

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.



Laser Device Laser Eyewear

Three Areas based on Retinal Projection Technology

Laser Eyewear



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

$250_{\text{mn people}}$

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.





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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

Completed Clinical Study in Japan and EU



JAPAN

Irregular astigmatism

- Improved distance vision and reading speed of 15 subjects verified.
- Domestic medical device manufacturing and marketing approval @ January 28, 2020

Europe



Corneal clouding

- Improved distance vision and reading speed of 20 subjects verified.
- Long-term safety confirmed after one year of home use.
- Clinical trial completed @ June 2021.

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.

- D (Diopter) is a unit of measurement of a lens and is a reciprocal of the focal length in meters. A minus value indicates a concave lens for nearsightedness, and a plus value indicates a convex lens for farsightedness Based on the white paper "Evaluation of resolution and free-focus characteristics in retinal scanning laser eyewear - RETISSA® Display II excellent for displaying text in e-books and AR" by QD Laser The refractive power is a theoretical value and may vary from person to person
- 3: Approved as a new medical device by the Pharmaceuticals and Medical Devices Agency (PMDA) on January 28, 2020 (Approval number: 30200BZX00025000)

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



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 talco, 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 patients suffering from each of these diseases to be an intermediate value of 80,000, the total to be 160,000 (bet, now eaply) 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 retinate 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 of persons with gap vision (Japan: Statistics Bureau of Japan "Population Estimates May 2020", EU: Eurostat "Population
- *4: Assuming that all the elderly aged bb and over use near-sighted, presbyopic or blocal glasses, we can estimate that each country's population aged bb 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
- 50. Dec of the policies animates in calculates to be and a state to be achieved as the meaning and a state to be an estimated as a strengence to estimate the policies and a state to a strengence to estimate the policies and the animates of the animates are strengence to estimate the policies are strengence to estimate the strengence to estimate the policies are strengence to estimate the policies are strengence to estimate the strengence to estimate the policies are strengence to estimate the strengence to estimate the policies are strengence to estimate the strengence to estimate the strengence to estimate the strengence to estimate the policies are strengence to estimate the policies are strengence to estimate the str

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Laser Evewear

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.





Low Vision Aids: Retissa Super Capture

Laser Device

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



RETISSA Super Capture

"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.



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.



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Further Growth Upside Expected

New Optometry Prototypes. Date platform for vision health care in the concept stage.

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



*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

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.



*1: OECD: Health at a Glance 2007

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



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 algorism 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

Results of the visual field test of 97 drivers of a taxi company

- We found a significant decrease in visual sensing ability with aging.
- A definitive diagnosis was made by an ophthalmologist as cataract for low contrast and glaucoma for visual field defect.
- The screening for eye diseases and the health check, including cognitive function, has become possible.
- We started studying with the taxi company about applying this device and system to health management of employees for accident prevention and employment maintenance.



Low contrast with concern of cataract and aging deterioration



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ESG Initiatives

Working on business areas directly linked to solving social issues ⇒ "With my eyes" project

Business Development from an ESG Perspective



- detection of various eye diseases including glaucoma, etc.
- Employment support for people with low vision

· Silicon photonics with guantum dot lasers improve semiconductor performance

Laser Device

Laser Eyewear

*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"

Governance



Low vision aid

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



時時は正直ありま

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	Constant of the second s
Representative	Mitsuru Sugawara, President and CEO	195
Location	Headquarter: 1-1 Minamiwatarida-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa	
Number of Persons*1	62	
Business	Planning, design, development, production and sales of semiconductor laser and its application products	President and CLC
Licenses	 Class II Marketing License for Medical Devices Registration of medical equipment manufacturer ISO 9001 EN ISO 13485 	Mitsuru Sugawara



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

*1: As of September 30, 2021. Including 1 employee and officer, 13 dispatched employees.

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.

Caution When Handling This Document

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