

Fukagawa Plant (about 1948)

Third president
Goro Ishibashi

FUJIKURA HISTORY

Way to modern company: In 1948, when the first CEO from outside the Fujikura family was appointed, Fujikura was transformed from a family-owned business into a modern company. Amid increasing demand for post-war reconstruction, the company coped with difficulties such as increases in raw material prices, credit squeeze, delayed payment by the government, and cash flow problems.

Shaping the future with "Tsunagu" Technology.

FUJIKURA NEWS

2018 No.447 **10**



Released high flame retardant Wrapping Tube Cable(WTC)

Fujikura has released high flame retardant Wrapping Tube Cable™(WTC™) with Fujikura's innovative 12 cores optical fiber ribbon, Spider Web Ribbon™(SWR™) technology.

In recent years, the use of social network and streaming video services has contributed to exponential increases of datacenters build.

One of the most important aspects of data center operations is risk management or mitigation.

As a fire in the data center could threaten not only the building and equipment but also human safety, the cable properties of high flame retardant, low smoke and halogen free are required.

Fujikura has successfully developed high flame retardant WTC

for indoor and indoor/outdoor use to meet the UL(Underwriters Laboratories) fire test standard and CPR(Construction Products Regulations), European Union regulation.

WTC consists of full dry structure, ring marking and SZ bunching technologies for not only easy access to fibers but also simple identification of each fiber units. Moreover, WTC reduces installation time compares to conventional single fibers cable construction because SWR can be spliced by mass fusion splicer all at once.

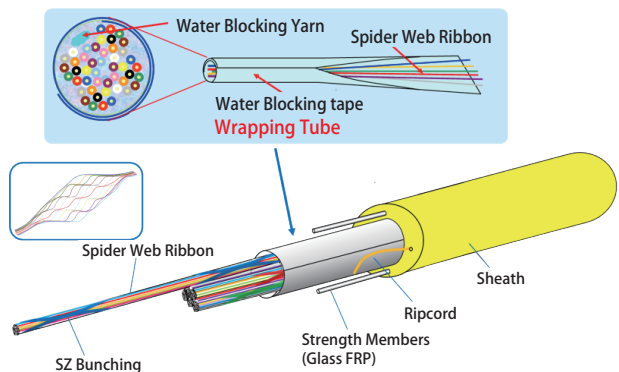
● Flame Retardant WTC Specification

Application	Indoor				Indoor / Outdoor				
	Fiber Count	288	432	864	1728	288	432	864	1728
Outside Diameter mm	12.5	14.5	18.0	23.5	13.0	14.5	18.0	24.0	
Weight kg/km	160	220	310	490	160	190	275	465	
Fiber Diameter μm	250				250				
Seath Color	Yellow				Black				
Flame Retardant	OFNR*1				OFNR				
	Cca*2								

* 1 . OFNR・・・Optical Fiber Nonconductive Riser (UL)

* 2 . Cca・・・CPR test standard grade

● Indoor WTC Structure

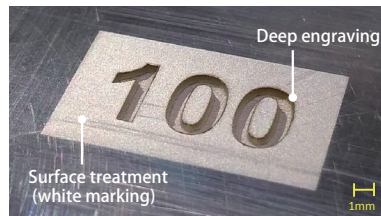




Development of High-power Pulse Fiber Laser, FLP-G11-100

Fujikura has developed a high-power pulse fiber laser (FLP-F11-100) rated at 100 W. This product produces 1.3 times higher power than a previous model and also allows high-speed working and different surface treatments (color marking, cleaning). The product is especially effective at deep engraving, which needs longer time than ordinary engraving, and largely

contributes to improving productivity. In addition, although the issue of laser light reflections from a workpiece is concerned in increasing the power of a fiber laser, the product has excellent resistance to them and thus can process high-reflection materials such as silver and copper.



● Deep engraving (0.5 mm depth) in silver plate (1 mm thickness)

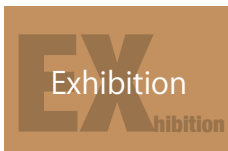
Product specifications

Model number	FLP-G11-100
Oscillation mode	Q switch pulse
Average power	100 W
Wave length	1080 - 1095 nm
Repetition frequency	100 - 200 kHz
Pulse width	50 - 200 ns
Outer dimensions	142×224×319 mm

● High-power pulse fiber laser (FLP-F11-100)

Fiber Laser Division

fiber_laser@jp.fujikura.com



The 29th Japan International Machine Tool Fair, JIMTOF 2018

Dates November 1 (Thu)-6 (Tue), 2018
9:00 a.m. - 5:00 p.m.

Venue E-2018, East Hall E,
Tokyo Big Sight

Japan International Machine Tool Fair (JIMTOF) is one of the world's four largest machine tool shows including International Manufacturing Show (IMTS), Machine Tool World Exposition (EMO), China International Machine Tool Show (CIMT). The last 6-day show (in 2016) had as many as 180 thousand visitors, which is one of the highest in the industry. The visitors of the show include those who are considering installing fiber lasers. Along with makers of machine tools incorporating a fiber laser, Fujikura will put products on display there, aiming to identify customer needs for fiber lasers from different angles and do business with potential customers. At our booth, we introduce mainly CW high-power fiber lasers suitable for sheet-metal working and welding of high-reflection materials such as copper and aluminum, and recommend a product best suited to each machine tool. We sincerely look forward to seeing you at the booth.



Sales and Marketing Department,
Fiber Laser Department,

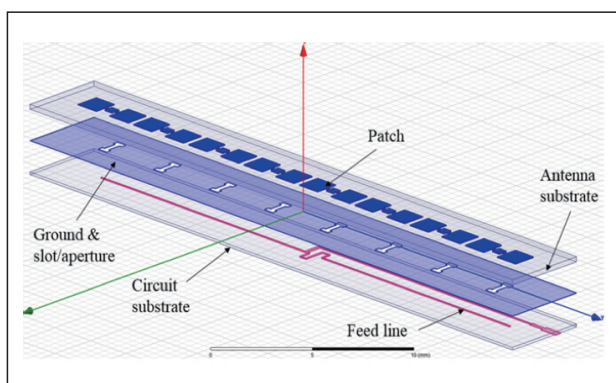
fiber_laser@jp.fujikura.com

R&D

60 GHz Beam-Forming Millimeter-Wave Device

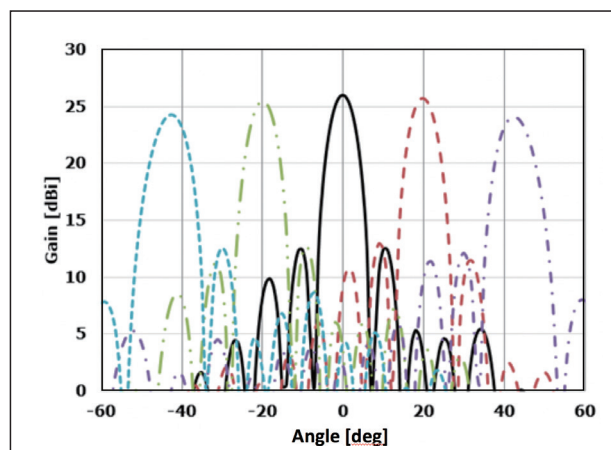
Fujikura has been developing millimeter-wave devices. Figure 1 shows an array antenna, which has been developed for use at 60 GHz and consists of laminated low-loss liquid crystal polymer (LCP) layers. This antenna has an easy-to-produce structure, which does not need through holes since the feeder and radiation elements are electromagnetically coupled through small openings in the ground. The antenna can be used in the

● Fig. 1: Structure of array antenna



frequency range between 58 and 64 GHz and change radiation directions by combining multiple antennas and adjusting the phase of the current feed to each antenna.

● Fig. 2: Results of beam forming using multiple antennas



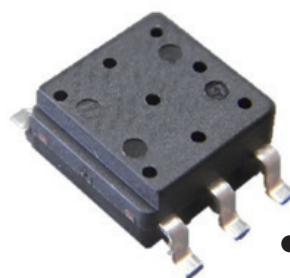
Advanced Technology Laboratory fjk.efdept@jp.fujikura.com

Electronics

Temperature-compensated Absolute Pressure Sensor, AGF3F Series

Fujikura has developed a new pressure sensor for measuring absolute pressure, the AG3F series, and will start mass production in October 2018. This pressure sensor employs a Fujikura-designed ultra-small absolute pressure sensor chip containing a pressure reference chamber inside its silicon substrate and a signal processing IC in one package. This enables the product to determine a compensated sensor output in relation to an absolute pressure. Moreover, keeping operating power and output noise of the product to a minimum not only improves its system accuracy, but makes it greener with about a 30% reduced current consumption compared to our previous model. In addition, the shape and arrangement of pins of the new product has compatibility with those of the previous products, and so our clients can continually use their existing substrate without design modifications. The product also

inherited the trait of smooth analog output from previous products, which makes our clients to replace them easily by themselves. We will continue to contribute to society by developing new eco-friendly high-accuracy sensors one after another.



● New product (AG3F series)

Sensor Business Unit sensor@jp.fujikura.com

Information
formation

Health and Productivity Management: Contribution to Employees' Health Promotion Also at Canteen

Fujikura launched Health and Productivity Management activities in earnest in January 2013 and have been expanding them in its group companies one after another. The three-year regular health check-up data analysis of our four major branches after the start of the activities indicated an increase in employees' average abdominal circumference only at one branch. This branch actively joins physical activities such as a step count event using a pedometer exactly as other branches do. Assuming there is a cause of this problem that is unique to the branch, we started to find it out. Consequently, the cause was the way of serving rice at the canteen. By dealing with this issue, the employees' average abdominal circumference that had been increasing every year started to shrink.

Placing new emphasis on food, we have decided to invest further in the improvement of the environment to provide better meals. As the first step in this effort, we begun by visualizing food and nutrients at the canteen, which many employees use, in cooperation with the subcontractor that provides meals. In June this year, an automated payment system using employee cards and the calorie display of each meal using signage were introduced into the canteen. Since August, nutrients in the food employees eat there have been visualized



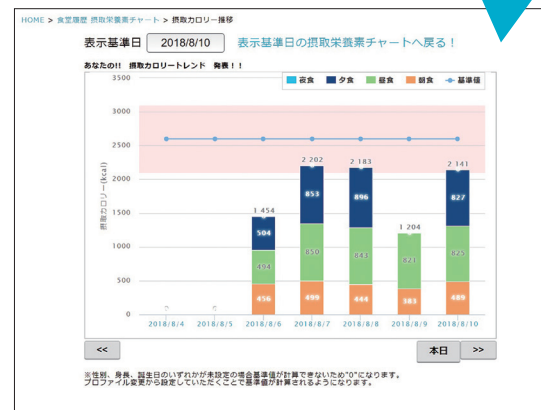
● Automated register (payment at returning the trays)

in a chart on the health portal site operated by Healthcare Strategy Group. Employees can always check the amount of calorie, carbohydrate, protein, fat, and salt in their meals as well as their objective calorie intake. In addition, they can also access to their vital data including active mass, body composition, and blood pressure. We will aim to be a company, where employees work lively through Health and Productivity Management activities, which actively support employees' health activities, and further contribute to society.

● Visualized information on health portal site



● Balance of nutrient per meal



● Calorie trend

Healthcare Strategy Group ask-hsg@jp.fujikura.com