

Digital Fiber Sensor

FX-500 SERIES ver.2 FX-550 SERIES FX-100 SERIES

Sensing Range



SENSING RANGE

Fibers are listed in alphabetic order.
Refer to our website for details of each fiber.

Thru-beam type (one pair set)



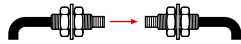
Model No.	Sensing range (mm in) (Note 1) / Description								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPER	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FT-140	19,600	19,600	19,600	19,600	16,000	6,300			P.63
	771.654 (Note 2)	771.654 (Note 2)	771.654 (Note 2)	771.654 (Note 2)	629.921	248.031	14,000	19,600	
	19,600	19,600	19,600	19,600	19,600	—	551.181	771.654 (Note 2)	
FT-30	1,350	810	650	400	210	75			P.63
	53.150	31.890	25.591	15.748	8.268	2.953	135	400	
	1,860	1,240	830	570	340	—	5.315	15.748	
FT-31	1,350	770	550	315	210	70			P.63
	53.150	30.315	21.654	12.402	8.268	2.756	130	340	
	1,580	1,000	700	480	290	—	5.118	13.386	
FT-31S	1,220	740	550	315	195	63			P.63
	48.031	29.134	21.654	12.402	7.677	2.480	130	340	
	1,580	1,000	700	480	290	—	5.118	13.386	
FT-31W	990	590	440	260	150	53			P.63
	38.976	23.228	17.323	10.236	5.906	2.087	80	240	
	1,300	890	580	420	250	—	3.150	9.449	
FT-32	3,600	3,600	3,600	3,000	1,600	580			P.63
	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	118.110	62.992	22.835	1,300	3,600	
	3,600	3,600	3,600	3,600	2,900	—	51.181	141.732 (Note 2)	
FT-40	3,600	2,200	1,700	1,200	530	190			P.63
	141.732 (Note 2)	86.614	66.929	47.244	20.866	7.480	320	870	
	3,600	3,100	2,200	1,570	960	—	12.598	34.252	
FT-42	3,600	2,050	1,600	1,130	530	190			P.63
	141.732 (Note 2)	80.709	62.992	44.488	20.866	7.480	300	800	
	3,600	2,900	2,100	1,470	890	—	11.811	31.496	
FT-42S	3,600	2,050	1,600	1,130	530	190			P.63
	141.732 (Note 2)	80.709	62.992	44.488	20.866	7.480	300	800	
	3,600	2,900	2,100	1,470	890	—	11.811	31.496	
FT-42W	3,300	1,900	1,400	800	490	160			P.63
	129.921	74.803	55.118	31.496	19.291	6.299	260	720	
	3,600	2,600	1,780	1,200	710	—	10.236	28.346	
FT-43	3,600	2,800	2,100	1,400	770	240			P.64
	141.732 (Note 2)	110.236	82.677	55.118	30.315	9.449	350	970	
	3,600	3,600	3,100	2,200	1,400	—	13.780	38.189	
FT-45X	1,600	1,600	1,600	1,200	630	200			P.64
	62.992 (Note 2)	62.992 (Note 2)	62.992 (Note 2)	47.244	24.803	7.874	340	920	
	1,600	1,600	1,600	1,600	1,070	—	13.386	36.220	
FT-A11	3,600	3,600	3,600	3,600	3,600	1,100			P.64
	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	43.307	1,900	3,600	
	3,600	3,600	3,600	3,600	3,600	—	74.803	141.732 (Note 2)	
FT-A11W	3,600	3,600	3,600	3,600	3,600	1,300			P.64
	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	51.181	1,700	3,400	
	3,600	3,600	3,600	3,600	3,600	—	66.929	133.858	
FT-A32	3,600	3,600	3,600	3,600	3,600	2,100			P.64
	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	82.677	3,600	3,600	
	3,600	3,600	3,600	3,600	3,600	—	141.732 (Note 2)	141.732 (Note 2)	
FT-A32W	3,600	3,600	3,600	3,600	3,600	3,000			P.64
	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	141.732 (Note 2)	118.110	3,600	3,600	
	3,600	3,600	3,600	3,600	3,600	—	141.732 (Note 2)	141.732 (Note 2)	
FT-AL05	2,300	1,550	1,500	860	500	170			P.64
	90.551	61.024	59.055	33.858	19.685	6.693	250	660	
	3,600	2,350	1,600	1,150	660	—	9.843	25.984	
FT-E13	52	30	24	15	8	2			P.64
	2.047	1.181	0.945	0.591	0.315	0.079	6	19	
	68	45	30	21	12	—	0.236	0.748	
FT-E23	270	160	125	75	42	13			P.64
	10.630	6.299	4.921	2.953	1.654	0.512	22	80	
	355	250	165	120	70	—	0.866	3.150	
FT-F93	Applicable pipe diameter: Outer dia. ø3 to ø10 mm ø0.118 to ø0.394 in transparent pipe [PFA (fluorine resin) or equivalently transparent pipe, wall thickness 0.3 to 1 mm 0.012 to 0.039 in] Liquid absent: Beam not received, Liquid present: Beam received Compatible amplifier: FX-500 / FX-550 series only								P.64

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
2) The fiber cable length practically limits the sensing range.

SENSING RANGE

Fibers are listed in alphabetic order.
Refer to our website for details of each fiber.

Thru-beam type (one pair set)



Model No.	Sensing range (mm in) (Note 1) / Description								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPER	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FT-H13-FM2	3,300 129.921 3,600 141.732 (Note 2)	1,900 74.803 2,700 106.299	1,300 51.181 1,690 66.535	700 27.559 1,150 45.276	410 16.142 750 29.528	140 5.512 —	250 9.843	700 27.559	P.65
FT-H20-J20-S (Note 3)	1,600 62.992 2,600 102.362	1,000 39.370 1,800 70.866	790 31.102 1,200 47.244	470 18.504 860 33.858	300 11.811 530 20.866	90 3.543 —	135 5.315	420 16.535	P.65
FT-H20-J30-S (Note 3)	1,600 62.992 2,600 102.362	1,000 39.370 1,800 70.866	790 31.102 1,200 47.244	470 18.504 860 33.858	300 11.811 530 20.866	90 3.543 —	135 5.315	420 16.535	P.65
FT-H20-J50-S (Note 3)	1,600 62.992 2,600 102.362	1,000 39.370 1,800 70.866	790 31.102 1,200 47.244	470 18.504 860 33.858	300 11.811 530 20.866	90 3.543 —	135 5.315	420 16.535	P.65
FT-H20-M1	1,600 62.992 (Note 2) 1,600 62.992 (Note 2)	1,300 51.181 1,600 62.992 (Note 2)	960 37.795 1,600 62.992 (Note 2)	540 21.260 1,000 39.370	330 12.992 600 23.622	110 4.331 —	210 8.268	540 21.260	P.65
FT-H20-VJ50-S (Note 3)	2,100 82.677 3,600 141.732 (Note 2)	1,300 51.181 2,200 86.614	980 38.583 1,400 55.118	600 23.622 1,000 39.370	390 15.354 620 24.409	120 4.724 —	150 5.906	500 19.685	P.65
FT-H20-VJ80-S (Note 3)	2,100 82.677 3,600 141.732 (Note 2)	1,300 51.181 2,200 86.614	980 38.583 1,400 55.118	600 23.622 1,000 39.370	390 15.354 620 24.409	120 4.724 —	150 5.906	500 19.685	P.65
FT-H20W-M1	1,600 62.992 (Note 2) 1,600 62.992 (Note 2)	1,000 39.370 1,600 62.992 (Note 2)	840 33.071 1,050 41.339	470 18.504 730 28.740	300 11.811 440 17.323	90 3.543 —	100 3.937	300 11.811	P.65
FT-H30-M1V-S (Note 4)	1,000 39.370 1,400 55.118	590 23.228 950 37.402	470 18.504 620 24.409	270 10.630 400 15.748	160 6.299 250 9.843	55 2.165 —	110 4.331	280 11.024	P.65
FT-H35-M2	1,200 47.244 3,600 141.732 (Note 2)	880 34.646 2,300 90.551	670 26.378 1,500 59.055	430 16.929 1,050 41.339	250 9.843 650 25.591	80 3.150 —	170 6.693	490 19.291	P.65
FT-H35-M2S6	1,200 47.244 3,600 141.732 (Note 2)	880 34.646 2,300 90.551	670 26.378 1,500 59.055	430 16.929 1,050 41.339	250 9.843 650 25.591	80 3.150 —	170 6.693	490 19.291	P.65
FT-HL80Y	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	2,300 90.551 3,600 141.732 (Note 2)	740 29.134 —	990 38.976	2,340 92.126	P.66
FT-KS40	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	1,200 47.244 —	2,200 86.614	3,600 141.732 (Note 2)	P.66
FT-KV26	2,500 98.425 3,600 141.732 (Note 2)	1,600 62.992 2,300 90.551	1,200 47.244 1,600 62.992	710 27.953 1,100 43.307	440 17.323 650 25.591	160 6.299 —	135 5.315	560 22.047	P.66
FT-KV26H1	2,200 86.614 3,600 141.732 (Note 2)	1,430 56.299 1,900 74.803	1,070 42.126 1,400 55.118	630 24.803 1,000 39.370	390 15.354 650 25.591	135 5.315 —	160 6.299	500 19.685	P.66
FT-KV40	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,100 122.047 (Note 2) 3,600 141.732 (Note 2)	940 37.008 —	2,200 86.614	3,600 141.732 (Note 2)	P.66
FT-KV40W	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,100 122.047 3,600 141.732 (Note 2)	940 37.008 —	2,200 86.614	3,600 141.732 (Note 2)	P.66
FT-L80Y	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	2,800 110.236 3,600 141.732 (Note 2)	920 36.220 —	1,100 43.307	2,600 102.362	P.66
FT-R31	1,000 39.370 1,670 65.748	580 22.835 1,120 44.094	440 17.323 700 27.559	270 10.630 510 20.079	160 6.299 310 12.205	55 2.165 —	100 3.937	340 13.386	P.66
FT-R40	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	1,750 68.898 2,900 114.173	1,500 59.055 1,950 76.772	930 36.614 1,400 55.118	500 19.685 860 33.858	160 6.299 —	270 10.630	740 29.134	P.66

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
2) The fiber cable length practically limits the sensing range.
3) Heat-resistant joint fibers and ordinary-temperature fibers (FT-42) are sold as a set.
4) Sold as a set comprising vacuum type fiber + photo-terminal (FV-BR1) + fiber at atmospheric side (FT-J8).

FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

SAFETY LIGHT CURTAINS / SAFETY COMPONENTS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASURE-MENT SENSORS

STATIC CONTROL DEVICES

LASER MARKERS

PLC

HUMAN MACHINE INTERFACES

ENERGY MANAGEMENT SOLUTIONS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide

Fibers

Fiber Amplifiers

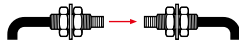
Other Products

FT/FD/FR

SENSING RANGE

Fibers are listed in alphabetic order.
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Thru-beam type (one pair set)



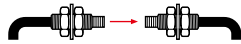
Model No.	Sensing range (mm in) (Note 1) / Description								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPER	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FT-R41W	3,200 125.984 3,600 141.732 (Note 2)	1,800 70.866 2,900 114.173	1,400 55.118 1,850 72.835	800 31.496 1,300 51.181	460 18.110 800 31.496	150 5.906 —	250 9.843	710 27.953	P.66
FT-R42W	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,500 137.795 3,600 141.732 (Note 2)	2,200 86.614 3,600 141.732 (Note 2)	1,300 51.181 2,800 110.236	460 18.110 —	510 20.079	2,000 78.740	P.66
FT-R43	3,000 118.110 3,600 141.732 (Note 2)	1,600 62.992 2,650 104.331	1,100 43.307 1,750 68.898	720 28.346 1,250 49.213	430 16.929 750 29.528	130 5.118 —	210 8.268	640 25.197	P.67
FT-R44Y	3,000 118.110 3,600 141.732 (Note 2)	1,600 62.992 2,900 114.173	1,100 43.307 1,800 70.866	720 28.346 1,300 51.181	430 16.929 800 31.496	130 5.118 —	210 8.268	640 25.197	P.67
FT-R60Y	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	2,100 82.677 3,600 141.732 (Note 2)	1,260 49.606 1,900 74.803	400 15.748 —	690 27.165	1,890 74.409	P.67
FT-S11	350 13.780 400 15.748	210 8.268 280 11.024	160 6.299 180 7.087	90 3.543 130 5.118	60 2.362 80 3.150	19 0.748 —	40 1.575	90 3.543	P.67
FT-S20	1,350 53.150 1,760 69.291	810 31.890 1,200 47.244	650 25.591 800 31.496	400 15.748 550 21.654	210 8.268 340 13.386	75 2.953 —	135 5.315	400 15.748	P.67
FT-S21	1,350 53.150 1,600 62.992	770 30.315 1,000 39.370	550 21.654 670 26.378	315 12.402 450 17.717	210 8.268 280 11.024	70 2.756 —	130 5.118	340 13.386	P.67
FT-S21W	990 38.976 1,650 64.961	590 23.228 850 33.465	440 17.323 580 22.835	260 10.236 400 15.748	150 5.906 240 9.449	53 2.087 —	80 3.150	240 9.449	P.67
FT-S22	1,500 59.055 2,900 114.173	920 36.220 1,900 74.803	730 28.740 1,200 47.244	450 17.717 870 34.252	250 9.843 530 20.866	90 3.543 —	230 9.055	560 22.047	P.67
FT-S30	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	2,200 86.614 3,100 122.047	1,700 66.929 2,250 88.583	1,200 47.244 1,650 64.961	530 20.866 1,000 39.370	190 7.480 —	320 12.598	870 34.252	P.67
FT-S31W	3,300 129.921 3,600 141.732 (Note 2)	1,900 74.803 2,450 96.457	1,400 55.118 1,600 62.992	800 31.496 1,100 43.307	490 19.291 650 25.591	160 6.299 —	260 10.236	720 28.346	P.68
FT-S32	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,100 122.047 3,600 141.732 (Note 2)	1,800 70.866 3,000 118.110	600 23.622 —	1,100 43.307	3,000 118.110	P.68
FT-V23	1,800 70.866 2,400 94.488	1,000 39.370 1,600 62.992	880 34.646 1,050 41.339	450 17.717 750 29.528	280 11.024 450 17.717	90 3.543 —	160 6.299	400 15.748	P.68
FT-V24W	380 14.961 500 19.685	230 9.055 350 13.780	200 7.874 220 8.661	110 4.331 160 6.299	60 2.362 95 3.740	20 0.787 —	35 1.378	90 3.543	P.68
FT-V25	900 35.433 1,400 55.118	550 21.654 950 37.402	480 18.898 630 24.803	240 9.449 450 17.717	140 5.512 280 11.024	45 1.772 —	95 3.740	260 10.236	P.68
FT-V30	2,200 86.614 3,600 141.732 (Note 2)	1,200 47.244 1,950 76.772	1,000 39.370 1,300 51.181	680 26.772 950 37.402	340 13.386 550 21.654	100 3.937 —	180 7.087	480 18.898	P.68
FT-V40	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,500 137.795 3,600 141.732 (Note 2)	2,400 94.488 3,600 141.732 (Note 2)	850 33.465 —	1,000 39.370	3,100 122.047	P.68
FT-V80Y	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	2,800 110.236 3,600 141.732 (Note 2)	2,200 86.614 3,600 141.732 (Note 2)	1,300 51.181 2,200 86.614	800 31.496 1,400 55.118	240 9.449 —	340 13.386	800 31.496	P.68
FT-Z20HBW	1,100 43.307 1,600 62.992 (Note 2)	670 26.378 1,000 39.370	570 22.441 650 25.591	260 10.236 450 17.717	180 7.087 280 11.024	55 2.165 —	100 3.937	320 12.598	P.68

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
2) The fiber cable length practically limits the sensing range.

SENSING RANGE

Fibers are listed in alphabetic order.
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Thru-beam type (one pair set)



Model No.	Sensing range (mm in) (Note 1) / Description								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPER	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FT-Z20W	1,600 62.992 (Note 2) 1,600 62.992 (Note 2)	1,500 59.055 1,600 62.992 (Note 2)	1,100 43.307 1,600 62.992 (Note 2)	620 24.409 1,100 43.307	420 16.535 650 25.591	130 5.118 —	280 11.024	730 28.740	P.68
FT-Z30	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	2,100 82.677 3,600 141.732 (Note 2)	1,200 47.244 2,200 86.614	410 16.142 —	710 27.953	2,300 90.551	P.68
FT-Z30E	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,500 137.795 3,600 141.732 (Note 2)	2,400 94.488 3,600 141.732 (Note 2)	740 29.134 —	1,200 47.244	3,200 125.984	P.69
FT-Z30EW	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,400 133.858 3,600 141.732 (Note 2)	2,000 78.740 3,600 141.732 (Note 2)	630 24.803 —	1,400 55.118	2,600 102.362	P.69
FT-Z30H	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,500 137.795 3,600 141.732 (Note 2)	2,600 102.362 3,600 141.732 (Note 2)	810 31.890 —	1,400 55.118	3,200 125.984	P.69
FT-Z30HW	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,500 137.795 3,600 141.732 (Note 2)	2,600 102.362 3,600 141.732 (Note 2)	810 31.890 —	1,400 55.118	3,200 125.984	P.69
FT-Z30W	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,300 129.921 3,600 141.732 (Note 2)	3,200 125.984 3,600 141.732 (Note 2)	1,500 59.055 2,800 110.236	1,000 39.370 1,700 66.929	280 11.024 —	540 21.260	1,800 70.866	P.69
FT-Z40HBW	3,300 129.921 3,600 141.732 (Note 2)	1,900 74.803 2,700 106.299	1,400 55.118 1,850 72.835	800 31.496 1,300 51.181	490 19.291 750 29.528	160 6.299 —	260 10.236	720 28.346	P.69
FT-Z40W	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,300 129.921 3,600 141.732 (Note 2)	2,300 90.551 2,800 110.236	1,500 59.055 2,000 78.740	900 35.433 1,200 47.244	290 11.417 —	410 16.142	1,200 47.244	P.69
FT-Z802Y	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,600 141.732 (Note 2) 3,600 141.732 (Note 2)	3,100 122.047 3,600 141.732 (Note 2)	1,900 74.803 3,600 141.732 (Note 2)	470 18.504 —	520 20.472	3,100 122.047	P.69

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
2) The fiber cable length practically limits the sensing range.

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SENSING RANGE

Fibers are listed in alphabetic order.
Refer to our website for details of each fiber.

Retroreflective type



Model No.	Sensing range (mm in) (Note 1, 2)								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPER	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FR-KZ22E	15 to 570	15 to 460	15 to 410	15 to 310	15 to 220	15 to 100	15 to 200 0.591 to 7.874	15 to 360 0.591 to 14.173	P.70
	0.591 to 22.441	0.591 to 18.110	0.591 to 16.142	0.591 to 12.205	0.591 to 8.661	0.591 to 3.937			
	15 to 800	15 to 700	15 to 600	15 to 540	15 to 400	—			
	0.591 to 31.496	0.591 to 27.559	0.591 to 23.622	0.591 to 21.260	0.591 to 15.748				
FR-KZ50E	20 to 1,000	20 to 800	20 to 400	20 to 300	20 to 200	20 to 200	20 to 200 0.787 to 7.874	20 to 350 0.787 to 13.780	P.70
	0.787 to 39.370	0.787 to 31.496	0.787 to 15.748	0.787 to 11.811	0.787 to 7.874	0.787 to 7.874			
	20 to 1,600	20 to 1,300	20 to 500	20 to 400	20 to 350	—			
	0.787 to 62.992	0.787 to 51.181	0.787 to 19.685	0.787 to 15.748	0.787 to 13.780				
FR-KZ50H	20 to 1,000	20 to 800	20 to 400	20 to 300	20 to 200	20 to 200	20 to 200 0.787 to 7.874	20 to 350 0.787 to 13.780	P.70
	0.787 to 39.370	0.787 to 31.496	0.787 to 15.748	0.787 to 11.811	0.787 to 7.874	0.787 to 7.874			
	20 to 1,600	20 to 1,300	20 to 500	20 to 400	20 to 350	—			
	0.787 to 62.992	0.787 to 51.181	0.787 to 19.685	0.787 to 15.748	0.787 to 13.780				
FR-Z50HW	100 to 1,900	100 to 1,400	100 to 1,200	100 to 990	100 to 780	100 to 490	100 to 550 3.937 to 21.654	100 to 830 3.937 to 32.677	P.70
	3.937 to 74.803	3.937 to 55.118	3.937 to 47.244	3.937 to 38.976	3.937 to 30.709	3.937 to 19.291			
	100 to 2,250	100 to 1,800	100 to 1,400	100 to 1,150	100 to 950	—			
	3.937 to 88.583	3.937 to 70.866	3.937 to 55.118	3.937 to 45.276	3.937 to 37.402				

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.

The sensing range of **FR-KZ22E** is specified for the attached reflector. The sensing range of **FR-KZ50E** and **FR-KZ50H** is specified for the attached reflector **RF-003**. The sensing range of **FR-Z50HW** is specified for the attached reflective tape **RF-13**.

2) The sensing range of retroreflective type is the possible setting range for the attached reflector. The fiber can detect an object less than setting range for the reflector. However, note that if there are any white or highly-reflective surfaces near the fiber head, reflected incident light may affect the fiber head. If this occurs, adjust the threshold value of the amplifier unit before use.

Sensing range when FR-Z50HW is used in combination with a reflector (optional)

Reflector Model No.	Sensing range (mm in)							
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series	
	HYPR	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102
RF-230	100 to 19,000 3.937 to 748.03 100 to 20,000 3.937 to 787.402	100 to 8,000 3.937 to 314.960 100 to 11,000 3.937 to 433.071	100 to 5,000 3.937 to 196.850 100 to 7,000 3.937 to 275.591	100 to 3,600 3.937 to 141.732 100 to 5,000 3.937 to 196.850	100 to 2,900 3.937 to 114.173 100 to 3,500 3.937 to 137.795	100 to 1,400 3.937 to 55.118 —	100 to 2,400 3.937 to 94.488	100 to 5,000 3.937 to 196.850
RF-220	100 to 8,000 3.937 to 314.960 100 to 10,000 3.937 to 393.701	100 to 4,700 3.937 to 185.039 100 to 6,500 3.937 to 255.906	100 to 3,500 3.937 to 137.795 100 to 4,500 3.937 to 177.165	100 to 3,000 3.937 to 118.110 100 to 3,500 3.937 to 137.795	100 to 1,800 3.937 to 70.866 100 to 2,500 3.937 to 98.425	100 to 830 3.937 to 32.677 —	100 to 1,300 3.937 to 51.181	100 to 2,600 3.937 to 102.362
RF-210	100 to 5,500 3.937 to 216.535 100 to 7,000 3.937 to 275.591	100 to 2,700 3.937 to 106.299 100 to 4,000 3.937 to 157.480	100 to 2,400 3.937 to 94.488 100 to 3,600 3.937 to 141.732	100 to 1,500 3.937 to 59.055 100 to 2,800 3.937 to 110.236	100 to 1,200 3.937 to 47.244 100 to 2,100 3.937 to 82.677	100 to 530 3.937 to 20.866 —	100 to 980 3.937 to 38.583	100 to 1,300 3.937 to 51.181

Note: The sensing range is the possible setting range for the reflector. The fiber can detect an object less than 100 mm 3.937 in. However, note that if there are any white or highly-reflective surfaces near the fiber head, reflected incident light may affect the fiber head. If this occurs, adjust the threshold value of the amplifier unit before use.

SENSING RANGE

Fibers are listed in alphabetic order.
Refer to our website for details of each fiber.

Reflective type



Model No.	Sensing range (mm in) (Note 1, 2) / Description								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPH	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FD-30	600	330	250	160	80	25			P.71
	23.622	12.992	9.843	6.299	3.150	0.984	45	155	
	800	460	330	210	140	—	1.772	6.102	
FD-31	515	290	220	125	80	25			P.71
	20.276	11.417	8.661	4.921	3.150	0.984	35	140	
	750	450	310	200	140	—	1.378	5.512	
FD-31W	330	180	140	80	45	12			P.71
	12.992	7.087	5.512	3.150	1.772	0.472	15	60	
	480	310	190	130	80	—	0.591	2.362	
FD-32G	650	380	270	200	95	27			P.71
	25.591	14.961	10.630	7.874	3.740	1.063	70	190	
	1,150	730	420	320	170	—	2.756	7.480	
FD-32GX	630	410	360	200	100	30			P.71
	24.803	16.142	14.173	7.874	3.937	1.181	75	210	
	1,350	730	490	320	180	—	2.953	8.268	
FD-34G	330	185	135	90	49	15			P.71
	12.992	7.283	5.305	3.543	1.929	0.591	29	90	
	480	310	180	130	80	—	1.142	3.543	
FD-40	600	330	250	160	80	25			P.71
	23.622	12.992	9.843	6.299	3.150	0.984	45	155	
	800	460	330	210	140	—	1.772	6.102	
FD-41	515	290	220	125	80	25			P.71
	20.276	11.417	8.661	4.921	3.150	0.984	35	140	
	750	450	310	200	140	—	1.378	5.512	
FD-41S	515	290	220	125	80	25			P.71
	20.276	11.417	8.661	4.921	3.150	0.984	35	140	
	750	450	310	200	140	—	1.378	5.512	
FD-41SW	330	180	140	80	45	12			P.71
	12.992	7.087	5.512	3.150	1.772	0.472	15	60	
	480	310	190	130	80	—	0.591	2.362	
FD-41W	900	630	430	270	150	45			P.72
	35.433	24.803	16.929	10.630	5.906	1.772	80	230	
	1,400	1,000	680	480	270	—	3.150	9.055	
FD-42G	650	380	270	200	95	27			P.72
	25.591	14.961	10.630	7.874	3.740	1.063	70	190	
	1,150	730	420	320	170	—	2.756	7.480	
FD-42GW	670	340	280	150	90	25			P.72
	26.378	13.386	11.024	5.906	3.543	0.984	45	140	
	950	540	330	210	130	—	1.772	5.512	
FD-60	1,550	900	740	520	260	90			P.72
	61.024	35.433	29.134	20.472	10.236	3.543	140	420	
	1,750	1,300	970	750	420	—	5.512	16.535	
FD-61	1,400	840	670	450	200	70			P.72
	55.118	33.071	26.378	17.717	7.874	2.756	120	410	
	1,630	1,180	870	620	380	—	4.724	16.142	
FD-61S	1,200	790	660	420	220	75			P.72
	47.244	31.102	25.984	16.535	8.661	2.953	130	360	
	1,900	1,300	900	650	400	—	5.118	14.173	
FD-61W	900	630	430	270	150	45			P.73
	35.433	24.803	16.929	10.630	5.906	1.772	80	230	
	1,400	1,000	680	480	270	—	3.150	9.055	
FD-62	1,500	1,000	940	520	340	110			P.73
	59.055	39.370	37.008	20.472	13.386	4.331	170	450	
	1,950	1,450	1,140	880	550	—	6.693	17.717	

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
2) The sensing range is specified for white non-glossy paper.

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SENSING RANGE

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Refer to our website for details of each fiber.

Reflective type



Model No.	Sensing range (mm in) (Note 1, 2) / Description								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPR	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FD-64X	670 26.378 1,200 47.244	500 19.685 700 27.559	410 16.142 590 23.228	280 11.024 410 16.142	160 6.299 230 9.055	50 1.969 —	75 2.953	220 8.661	P.73
FD-A16	— —	200 7.874 —	200 7.874 350 13.780	200 7.874 350 13.780	140 5.512 250 9.843	75 2.953 —	120 4.724	240 9.449	P.73
FD-AL12	NEW 670 26.378 1,200 47.244	530 20.866 900 35.433	420 16.535 570 22.441	270 10.630 420 16.535	150 5.906 250 9.843	50 1.969 —	80 3.150	240 9.450	P.73
FD-E13	50 1.969 75 2.953	29 1.142 50 1.969	25 0.984 30 1.181	12 0.472 23 0.906	7 0.276 12 0.472	2 0.079 —	5 0.197	15 0.591	P.73
FD-E23	170 6.693 290 11.417	120 4.724 170 6.693	80 3.150 105 4.134	55 2.165 80 3.150	30 1.181 45 1.772	9 0.354 —	20 0.787	70 2.756	P.73
FD-EG30	170 6.693 320 12.598	130 5.118 190 7.480	110 4.331 120 4.724	48 1.890 90 3.543	30 1.181 50 1.969	9 0.354 —	20 0.787	70 2.756	P.73
FD-EG30S	170 6.693 320 12.598	110 4.331 190 7.480	80 3.150 120 4.724	50 1.969 90 3.543	30 1.181 50 1.969	9 0.354 —	20 0.787	70 2.756	P.74
FD-EG31	85 3.346 120 4.724	45 1.772 70 2.756	35 1.378 45 1.772	20 0.787 35 1.378	12 0.472 20 0.787	3.5 0.138 —	7 0.276	25 0.984	P.74
FD-F4	Applicable pipe diameter: Outer dia. ø6 to ø26 mm ø0.236 to ø1.024 in transparent pipe [PFA (fluorine resin) or equivalently transparent pipe, wall thickness 1 mm 0.039 in] Liquid absent: Beam received, Liquid present: Beam not received								P.74
FD-F41	Applicable pipe diameter: Outer dia. ø6 to ø26 mm ø0.236 to ø1.024 in transparent pipe [PVC (vinyl chloride), fluorine resin, polycarbonate, acrylic, glass, wall thickness 1 to 3 mm 0.039 to 0.118 in] Liquid absent: Beam received, Liquid present: Beam not received								P.74
FD-F71	Liquid leak detection Leak absent: Beam received, Leak present: Beam not received Compatible amplifier: FX-500 / FX-550 series only								P.74
FD-F8Y	ø6 mm ø0.236 in Protective tube: Fluorine resin, length 1,000 mm 39.370 in (not cuttable) Liquid surface not contacted: Beam received, Liquid surface contacted: Beam not received								P.74
FD-FA93	Applicable pipe diameter: Outer dia. ø8 mm ø0.315 in or more transparent pipe (When used with the tying bands: ø8 to ø80 mm ø0.315 to ø3.150 in) [PFA (fluorine resin), including translucent] Liquid absent: Beam received, Liquid present: Beam not received								P.74
FD-H13-FM2	880 34.646 1,650 64.961	640 25.197 1,300 51.181	600 23.622 940 37.008	350 13.780 670 26.378	200 7.874 390 15.354	65 2.559 —	100 3.937	280 11.024	P.75
FD-H18-L31	0 to 60 0 to 2.362 0 to 130 0 to 5.118	0 to 32 0 to 1.260 0 to 85 0 to 3.346	0 to 24 0 to 0.945 0 to 60 0 to 2.362	0 to 16 0 to 0.630 0 to 45 0 to 1.772	0 to 13 0 to 0.512 0 to 30 0 to 1.181	2 to 6.5 0.079 to 0.256 —	0 to 10 0 to 0.394	0 to 25 0 to 0.984	P.75
FD-H20-21	770 30.315 1,250 49.213	500 19.685 850 33.465	380 14.961 650 25.591	230 9.055 450 17.717	130 5.118 250 9.843	45 1.772 —	90 3.543	280 11.024	P.75
FD-H20-M1	840 33.071 1,350 53.150	550 21.654 1,000 39.370	500 19.685 650 25.591	330 12.992 450 17.717	200 7.874 300 11.811	55 2.165 —	120 4.724	300 11.811	P.75

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.

2) The sensing range is specified for white non-glossy paper (as for **FD-H18-L31** 50 × 50 mm 1.969 × 1.969 in glass substrate).

SENSING RANGE

Fibers are listed in alphabetic order.
Refer to our website for details of each fiber.

Reflective type



Model No.	Sensing range (mm in) (Note 1, 2) / Description								Dimensions
	FX-500 series (Upper value) FX-550 series (Lower value)						FX-100 series		
	HYPR	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FD-H25-L43 (Note 3)	1 to 31 0.039 to 1.220 1 to 31 0.039 to 1.220	1 to 30 0.039 to 1.181 1 to 30 0.039 to 1.181	1 to 28 0.039 to 1.102 1 to 29 0.039 to 1.142	1.5 to 26 0.059 to 1.024 1 to 28 0.039 to 1.102	1.5 to 24 0.059 to 0.945 1 to 26 0.039 to 1.024	2 to 18 0.079 to 0.709 —	4 to 16 0.157 to 0.630	4 to 23 0.157 to 0.906	P.75
FD-H25-L45 (Note 3)	4 to 43.5 0.157 to 1.713 4 to 51 0.157 to 2.008	4 to 43 0.157 to 1.693 4 to 50 0.157 to 1.969	4.5 to 43 0.177 to 1.693 4 to 49 0.157 to 1.929	5 to 42 0.197 to 1.654 4 to 48 0.157 to 1.890	5 to 40 0.197 to 1.575 4 to 44 0.157 to 1.732	6.5 to 34 0.256 to 1.339 —	7 to 35 0.276 to 1.378	7 to 38 0.276 to 1.496	P.75
FD-H30-KZ1V-S (Note 3, 4)	5 to 500 0.197 to 19.685 5 to 1,500 0.197 to 59.055	10 to 340 0.394 to 13.386 10 to 1,000 0.394 to 39.370	15 to 270 0.591 to 10.630 15 to 650 0.591 to 25.591	20 to 200 0.787 to 7.874 20 to 450 0.787 to 17.717	20 to 120 0.787 to 4.724 20 to 300 0.787 to 11.811	20 to 45 0.787 to 1.772 —	25 to 80 0.984 to 3.150	10 to 220 0.394 to 8.661	P.76
FD-H30-L32	0 to 40 0 to 1.575 0 to 60 0 to 2.362	0 to 30 0 to 1.181 0 to 42 0 to 1.654	0 to 25 0 to 0.984 0 to 25 0 to 0.984	0 to 17 0 to 0.669 0 to 21 0 to 0.827	0 to 12 0 to 0.472 0 to 16 0 to 0.630	1.5 to 6 0.059 to 0.236 —	2 to 9 0.079 to 0.354	0 to 17 0 to 0.669	P.76
FD-H30-L32V-S (Note 3, 4)	0 to 18 0 to 0.709 0 to 27 0 to 1.063	0 to 12 0 to 0.472 0 to 19 0 to 0.748	0 to 10 0 to 0.394 0 to 13 0 to 0.512	0 to 8 0 to 0.315 0 to 11 0 to 0.433	0 to 5.5 0 to 0.217 0 to 7.5 0 to 0.295	1.5 to 3 0.059 to 0.118 —	2.5 to 6.5 0.098 to 0.256	0 to 11 0 to 0.433	P.76
FD-H35-20S	840 33.071 850 33.465	550 21.654 750 29.528	440 17.323 550 21.654	260 10.236 410 16.142	140 5.512 230 9.055	45 1.772 —	85 3.346	200 7.874	P.76
FD-H35-M2	720 28.346 750 29.528	540 21.260 600 23.622	460 18.110 500 19.685	260 10.236 400 15.748	150 5.906 220 8.661	45 1.772 —	75 2.953	280 11.024	P.76
FD-H35-M2S6	720 28.346 750 29.528	540 21.260 600 23.622	460 18.110 500 19.685	260 10.236 400 15.748	150 5.906 220 8.661	45 1.772 —	75 2.953	280 11.024	P.76
FD-HF40Y (Note 5)	ø4 mm ø0.157 in Protective tube: Fluorine resin, length 500 mm 19.685 in (cuttable) Liquid surface not contacted: Beam received, Liquid surface contacted: Beam not received								P.76
FD-L10 (Note 3)	0 to 6 0 to 0.236 0 to 6 0 to 0.236	0 to 5.5 0 to 0.217 0 to 5.5 0 to 0.217	0 to 5.5 0 to 0.217 0 to 5.5 0 to 0.217	0 to 5 0 to 0.197 0 to 5 0 to 0.197	0 to 4.5 0 to 0.177 0 to 5 0 to 0.197	0 to 4 0 to 0.157 —	0 to 4.5 0 to 0.177	0 to 5.5 0 to 0.217	P.77
FD-L11 (Note 3)	0 to 11.5 0 to 0.453 0 to 14 0 to 0.551	0 to 10.5 0 to 0.413 0 to 13 0 to 0.512	0 to 10 0 to 0.394 0 to 13 0 to 0.512	0 to 9.5 0 to 0.374 0 to 13 0 to 0.512	0 to 9 0 to 0.354 0 to 12 0 to 0.472	0 to 8 0 to 0.315 —	0 to 8 0 to 0.315	0 to 9 0 to 0.354	P.77
FD-L12W (Note 3)	0 to 14 0 to 0.551 0 to 17 0 to 0.669	0 to 12.5 0 to 0.492 0 to 16 0 to 0.630	0 to 12 0 to 0.472 0 to 15 0 to 0.591	0 to 8 0 to 0.315 0 to 12 0 to 0.472	0.5 to 7 0.020 to 0.276 0 to 10 0 to 0.394	0.5 to 4 0.020 to 0.157 —	1 to 4.5 0.039 to 0.177	0.5 to 7 0.020 to 0.276	P.77
FD-L20H	0 to 45 0 to 1.772 0 to 65 0 to 2.559	0 to 35 0 to 1.378 0 to 50 0 to 1.969	0 to 32 0 to 1.260 0 to 40 0 to 1.575	0 to 23 0 to 0.906 0 to 33 0 to 1.299	2 to 15 0.079 to 0.591 0 to 25 0 to 0.984	5 to 9 0.197 to 0.354 —	5 to 15 0.197 to 0.591	1 to 30 0.039 to 1.181	P.77
FD-L21 (Note 3)	1 to 19 0.039 to 0.748 1 to 20 0.039 to 0.787	1 to 18 0.039 to 0.709 1 to 20 0.039 to 0.787	1 to 18 0.039 to 0.709 1 to 19 0.039 to 0.748	1.5 to 16 0.059 to 0.630 1 to 19 0.039 to 0.748	2 to 15 0.079 to 0.591 2 to 18 0.079 to 0.709	3 to 12 0.118 to 0.472 —	3 to 15 0.118 to 0.591	1.5 to 16 0.059 to 0.630	P.77
FD-L21W (Note 3)	1.5 to 15 0.059 to 0.591 1 to 19 0.039 to 0.748	2 to 15 0.079 to 0.591 1 to 19 0.039 to 0.748	2 to 15 0.079 to 0.591 2 to 18 0.079 to 0.709	3 to 14 0.118 to 0.551 2 to 18 0.079 to 0.709	4 to 14 0.158 to 0.551 3 to 17 0.118 to 0.669	6.5 to 10 0.256 to 0.394 —	7 to 12 0.276 to 0.472	3 to 14 0.118 to 0.551	P.77
FD-L24A (Note 3)	0 to 31 0 to 1.220 0 to 34 0 to 1.339	0 to 28 0 to 1.102 0 to 31 0 to 1.220	0 to 26 0 to 1.024 0 to 28 0 to 1.102	0 to 23 0 to 0.906 0 to 24 0 to 0.945	0 to 22 0 to 0.866 0 to 22 0 to 0.866	0 to 18 0 to 0.709 —	0 to 19 0 to 0.748	0 to 21 0 to 0.827	P.77
FD-L25 (Note 3)	0 to 30 0 to 1.181 0 to 34 0 to 1.339	0 to 30 0 to 1.181 0 to 34 0 to 1.339	0 to 30 0 to 1.181 0 to 33 0 to 1.299	0 to 29 0 to 1.142 0 to 33 0 to 1.299	0 to 28 0 to 1.102 0 to 31 0 to 1.220	2 to 23 0.079 to 0.906 —	0 to 25 0 to 0.984	0 to 30 0 to 1.181	P.77

- Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
 2) The sensing range is the value for white non-glossy paper (as for **FD-H30-L32** 50 × 50 mm 1.969 × 1.969 in glass substrate).
 3) The sensing range is specified for transparent glass 100 × 100 × 0.7 mm 3.937 × 3.937 × 0.028 in (**FD-L21** and **FD-L21W**: t2 mm 0.079 in) [**FD-L10**: silicon wafers 100 × 100 mm 3.937 × 3.937 in].
 4) Sold as a set comprising vacuum type fiber + photo-terminal (**FV-BR1**) + fiber at atmospheric side (**FT-J8**).
 5) Liquid inflow prevention joint, protective tube extension joint, fiber mounting joint are available.

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SENSING RANGE

Fibers are listed in alphabetic order.
Refer to our website for details of each fiber.

Reflective type



Model No.	Sensing range (mm in) (Note 1, 2) / Description								Dimensions
	FX-500 series (Upper value)					FX-100 series			
	FX-550 series (Lower value)								
	HYPR	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FD-L30A (Note 3)	0 to 43 0 to 1.693 0 to 72 0 to 2.835	0 to 43 0 to 1.693 0 to 68 0 to 2.677	0 to 43 0 to 1.693 0 to 62 0 to 2.441	0 to 43 0 to 1.693 0 to 52 0 to 2.047	0 to 42 0 to 1.654 0 to 46 0 to 1.811	0 to 29 0 to 1.142 —	0 to 40 0 to 1.575	0 to 50 0 to 1.969	P.77
FD-L31A (Note 3)	3 to 35 0.118 to 1.378 0 to 50 0 to 1.969	4 to 33 0.157 to 1.299 2 to 43 0.079 to 1.693	4 to 33 0.157 to 1.299 3 to 42 0.118 to 1.654	4 to 33 0.157 to 1.299 3 to 42 0.118 to 1.654	4 to 32 0.157 to 1.260 3 to 40 0.118 to 1.575	5 to 25 0.197 to 0.984 —	5 to 30 0.197 to 1.181	4 to 33 0.157 to 1.299	P.77
FD-L32H (Note 3)	0 to 110 0 to 4.331 0 to 100 0 to 3.937	0 to 87 0 to 3.425 0 to 90 0 to 3.543	0 to 74 0 to 2.913 0 to 75 0 to 2.953	0 to 56 0 to 2.205 0 to 65 0 to 2.559	1 to 38 0.039 to 1.496 0 to 50 0 to 1.969	— —	16 to 30 0.630 to 1.181	0 to 50 0 to 1.969	P.78
FD-R31G	530 20.866 900 35.433	310 12.205 600 23.622	260 10.236 400 15.748	170 6.693 290 11.417	85 3.346 160 6.299	27 1.063 —	45 1.772	150 5.906	P.78
FD-R32EG	170 6.693 290 11.417	110 4.331 180 7.087	92 3.622 110 4.331	45 1.772 80 3.150	30 1.181 45 1.772	9 0.354 —	20 0.787	68 2.677	P.78
FD-R33EG	84 3.307 110 4.331	44 1.732 65 2.559	33 1.299 40 1.575	19 0.748 30 1.181	11 0.433 18 0.709	3 0.118 —	7 0.276	22 0.866	P.78
FD-R34EG	130 5.118 250 9.843	90 3.543 140 5.512	70 2.756 90 3.543	38 1.496 70 2.756	23 0.906 40 1.575	7 0.276 —	17 0.669	60 2.362	P.78
FD-R41	710 27.953 1,150 45.276	430 16.929 750 29.528	320 12.598 450 17.717	210 8.268 340 13.386	100 3.937 190 7.480	34 1.339 —	60 2.362	170 6.693	P.78
FD-R60	1,100 43.307 1,450 57.087	600 23.622 1,150 45.276	550 21.654 800 31.496	290 11.417 500 19.685	190 7.480 350 13.780	65 2.559 —	110 4.331	240 9.449	P.78
FD-R61Y	990 38.976 1,350 53.150	610 24.016 1,000 39.370	435 17.126 650 25.591	280 11.024 450 17.717	160 6.299 250 9.843	50 1.969 —	85 3.346	185 7.283	P.78
FD-S23	NEW 130 5.118 —	90 3.543 130 5.118	65 2.559 110 4.331	46 1.811 75 2.953	20 0.787 40 1.575	7 0.276 —	17 0.669	50 1.969	P.78
FD-S30	600 23.622 800 31.496	330 12.992 500 19.685	250 9.843 330 12.992	160 6.299 220 8.661	80 3.150 140 5.512	25 0.984 —	45 1.772	155 6.102	P.79
FD-S31	515 20.276 700 27.559	290 11.417 450 17.717	220 8.661 300 11.811	125 4.921 200 7.874	80 3.150 130 5.118	25 0.984 —	35 1.378	140 5.512	P.79
FD-S32	1,200 47.244 1,600 62.992	790 31.102 1,200 47.244	660 25.984 900 35.433	420 16.535 600 23.622	220 8.661 350 13.780	75 2.953 —	120 4.724	345 13.583	P.79
FD-S32W	900 35.433 1,400 55.118	630 24.803 1,000 39.370	430 16.929 650 25.591	270 10.630 450 17.717	150 5.906 250 9.843	45 1.772 —	80 3.150	230 9.055	P.79
FD-S33GW	670 26.378 880 34.646	340 13.386 550 22.047	280 11.024 370 14.567	150 5.906 240 9.449	90 3.543 150 5.906	25 0.984 —	45 1.772	140 5.512	P.79
FD-S34G	330 12.992 480 18.898	185 7.283 310 12.205	135 5.305 180 7.087	90 3.543 130 5.118	49 1.929 80 3.150	15 0.591 —	29 1.142	90 3.543	P.79
FD-S60Y	600 23.622 —	590 23.228 700 27.559	420 16.535 550 21.654	320 12.598 450 17.717	200 7.874 380 14.961	75 2.953 —	140 5.512	300 11.811	P.79
FD-V30	240 9.449 430 16.929	130 5.118 210 8.268	120 4.724 145 5.709	65 2.559 90 3.543	35 1.378 65 2.559	14 0.551 —	25 0.984	75 2.953	P.79

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.

2) The sensing range is specified for white non-glossy paper.

3) The sensing range is specified for transparent glass 100 × 100 × t0.7 mm 3.937 × 3.937 × t0.028 in (FD-L32H: R edge)

SENSING RANGE

Fibers are listed in alphabetic order.
Refer to our website for details of each fiber.

Reflective type

Model No.	Sensing range (mm in) (Note 1, 2) / Description								Dimensions
	FX-500 series (Upper value)						FX-100 series		
	FX-550 series (Lower value)								
	HYPH	U-LG	LONG	STD	FAST	H-SP	FX-101	FX-102	
FD-V30W	80 3.150 120 4.724	40 1.575 65 2.559	30 1.181 37 1.457	20 0.787 30 1.181	10 0.394 16 0.630	2 0.079 —	6 0.236	20 0.787	P.80
FD-V50	370 14.567 530 20.866	220 8.661 400 15.748	210 8.268 240 9.449	120 4.724 180 7.087	75 2.953 110 4.331	25 0.984 —	40 1.575	100 3.937	P.80
FD-Z20HBW	1 to 340 0.039 to 13.386 550 21.654	1 to 210 0.039 to 8.268 370 14.567	1 to 180 0.039 to 7.087 240 9.449	2 to 85 0.079 to 3.346 170 6.693	2 to 55 0.079 to 2.165 100 3.937	3 to 15 0.118 to 0.591 —	2 to 30 0.079 to 1.181	1 to 90 0.039 to 3.543	P.80
FD-Z20W	260 10.236 450 17.717	150 5.906 290 11.417	130 5.118 190 7.480	1 to 65 0.039 to 2.559 130 5.118	2 to 45 0.079 to 1.772 80 3.150	5 to 13 0.197 to 0.512 —	2 to 32 0.079 to 1.260	1 to 80 0.039 to 3.150	P.80
FD-Z40HBW	760 29.921 1,350 53.150	540 21.260 1,000 39.370	470 18.504 680 26.772	260 10.236 480 18.898	1 to 160 0.039 to 6.299 270 10.630	2 to 50 0.079 to 1.969 —	1 to 90 0.039 to 3.543	0.5 to 240 0.020 to 9.449	P.80
FD-Z40W	790 31.102 1,500 59.055	440 17.323 950 37.402	390 15.354 510 20.079	190 7.480 390 15.354	1 to 120 0.039 to 4.724 230 9.055	2 to 35 0.079 to 1.378 —	1 to 74 0.039 to 2.913	200 7.874	P.80
FD-Z50HW	10 to 2,500 0.394 to 98.425 10 to 3,700 0.394 to 145.669	10 to 1,100 0.394 to 43.307 10 to 2,100 0.394 to 82.677	10 to 1,000 0.394 to 39.370 10 to 1,300 0.394 to 51.181	10 to 650 0.394 to 25.591 10 to 950 0.394 to 37.402	10 to 410 0.394 to 16.142 10 to 590 0.394 to 23.228	15 to 130 0.591 to 5.118 —	10 to 200 0.394 to 7.874	10 to 530 0.394 to 20.866	P.80

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.
2) The sensing range is specified for white non-glossy paper.

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