

Fiber Optic Cables

Through-Beam type



Identify models by numbers for search
(for specifications, dimensions, etc.)

Type	Tip appearance (typical)	Model No. (made-to-order models marked with ●)	Search ID No.	Prominent feature	Detecting distance (mm) (inapplicable combinations marked with-)					
					F80R		F70R	F71R	F2R	
					Long-distance	High-speed	F70AR			
Long-distance		FT105BC	1	M4 screw, detecting long-distance	1800	1000	1000	600	160	
		FT7202BC	2	Long-distance with lens	2000	1100	1100	660	120	
General-purpose		FT8EBC	3	M3 screw, low-cost	470	260	260	150	60	
		FT8BC	4	M3 screw, small-diameter	230	130	130	75	30	
		FT108BC	5	M3 threaded short head	860	480	480	280	100	
		FT5BC	6	M4 screw	830	460	460	270	80	
		FT7BC	7	M4 screw with M2.6 screw tip	830	460	460	270	80	
		FT81BC	8	φ 1.5 unthreaded	230	130	130	75	30	
		FT3BC	9	φ 2.9 unthreaded	830	460	460	270	80	
		Side-view	FTV74BC	10	φ 4 unthreaded	830	460	460	270	80
			FTV7BC	11	M5 screw	830	460	460	270	80
			FTV502YBC●	12	4-mm square head	470	260	260	160	50
Flexible		FT91YBC●	13	φ 1.5 unthreaded, allowable bending radius 4 mm	180	100	100	60	20	
		FT19YBC	14	M3 screw, allowable bending radius 1 mm	135	75	75	48	15	
		GTKシリーズ	15	M3 screw, allowable bending radius 3.5 mm	-	-	-	-	60	
		FT5YBC	16	M4 screw, allowable bending radius 1 mm	700	380	380	230	70	
Narrow-view		FTN5BC	17	M4 screw, long-distance	2300	1300	1300	750	350	
		FTVN5BC	18	φ 4 unthreaded, long-distance	2200	1200	1200	720	300	
		FTVN501BC	19	4-mm square head	2200	1200	1200	720	300	
SUS tube		FTS88BC	20	M3 screw, SUS 15 mm	230	130	130	75	30	
		FTS53BC	21	M4 screw, SUS 35 mm	230	130	130	75	30	
		FTS8BC	22	M3 screw, SUS 70 mm	230	130	130	75	30	
		FTS5BC	23	M4 screw, SUS 70 mm	230	130	130	75	30	
		Side-view	FTSV82BC	24	φ 2 unthreaded, SUS 20 mm	130	70	70	40	15
			FTSV821BC●	25	φ 2 unthreaded, SUS 20 mm	20	10	8	4	-
			FTSV73BC	26	φ 3 unthreaded, SUS 20 mm	440	240	240	140	40
			FTSV93BC	27	φ 3 unthreaded, SUS 20 mm	40	20	19	11	-
			FTSV84BC●	28	M4 screw, SUS 20 mm	130	70	70	40	15
			FTSV5BC	29	M4 screw, SUS 65 mm	500	280	280	160	60

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					F80R		F70R	F71R	F2R
					Long-distance	High-speed	F70AR		
U-shaped		FU505BC	30	No light axis alignment required Vibration-resistant	7				
		FU712BC	31		12				
		FU715BC	32		15				
		FU725BC●	33		25				
		FU904BC●	34	4 light axes	12				
		FU916BC●	35	16 light axes	30				
Wide area		FTL706BC	36	Detecting width 1.75 mm	300	170	170	95	30
		FTL716BC	37	Detecting width 5.5 mm	680	380	380	220	80
		FTL7165BC	38	Detecting width 11.1 mm	680	380	380	220	80
		FTL7166BC●	39	Detecting width 16 mm	680	380	380	220	80
		FTL745BC●	40	Detecting width 45 mm	540	300	300	180	60
		FTLV702BC●	41	Detecting width 5.5 mm	680	380	380	220	80
		FTVW7YBC	42	Long-distance with detecting width 10 mm	1800	1000	1000	-	-
Elbow		FT704BC	43	Depth space saving with $\phi 2.5$	680	380	380	220	80
Heat-resistant		FUH612BC●	44	U-shaped, heat resistance 130 °C	12				
		FTH7BC	45	Low-cost, heat resistance 105 °C	830	460	460	270	80
		GLT500J series	46	M4 screw, heat resistance 200 °C	610	340	340	195	-
		GT500J series	47	M4 screw, heat resistance 200 °C	610	340	340	195	-
		GTH500J series	48	M4 screw, heat resistance 350 °C	610	340	340	195	-
		FTHV74BC●	49	Low-cost, heat resistance 105 °C	830	460	460	270	80

● Detecting distance depends on light source

Detecting distances depend on the type of light source.




The detecting distances for individual fiber optic cable models in the table above show the values for combinations with amplifiers using red (R) LED as the light source. Detecting distances for combinations with amplifiers using green (G), blue (B) or white (W) LEDs as the light sources are reduced to about 30%.

Fiber Optic Cables

Reflective Type



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Type	Tip appearance (typical)	Model No. (made-to-order models marked with ●)	Search ID No.	Prominent feature	Detecting distance (mm) (inapplicable combinations marked with-)				
					F80R		F70R	F71R	F2R
					Long-distance	High-speed	F70AR		
Long-distance		FR105BC	50	M6 screw, long-distance	570	320	320	190	50
General-purpose		FR83BC	51	φ3 unthreaded, small-diameter	90	50	50	30	9
		FR1083BC	52	φ3 unthreaded	360	200	200	120	40
		FR835BC●	53	φ3 unthreaded short head	190	110	110	65	20
		FR8EBC	54	M3 screw, low-cost	190	110	110	65	20
		FR8BC	55	M3 screw, small-diameter	90	50	50	30	9
		FR84BC	56	M4 screw, small-diameter	90	50	50	30	9
		FR108BC	57	M4 screw	360	200	200	120	40
		FR7BC	58	φ2.5mm head, M6 screw	320	180	180	100	35
Flexible		FR91Y10	60	φ1.5 unthreaded, allowable bending radius 4 mm	40	20	20	12	4
		FR93BC	61	φ3 unthreaded short head, allowable bending radius 4 mm	60	30	30	18	6
		FR19YBC	62	M3 screw, allowable bending radius 1 mm	40	20	13	8	3
		FR8YBC	63	M3 screw, allowable bending radius 4 mm	20	10	10	6	2
		FR84YBC●	64	M4 screw, allowable bending radius 4 mm	60	30	30	16	7
		FR194YBC●	65	M4 screw, allowable bending radius 1 mm	40	20	13	8	3
		FR5YBC	66	M6, 1 mm-pitch screw, allowable bending radius 1 mm	220	120	120	70	25
		FR7YBC	67	M6, 0.75 mm-pitch screw, allowable bending radius 1 mm	220	120	120	70	25
		GXKシリーズ	68	M6 screw, allowable bending radius 3.5 mm	—	—	—	—	20
Narrow-view	Coaxial	FXN84BC	69	M4 screw, coaxial narrow-view	40	22	22	13	5
		FXN841BC	70	M4 screw, coaxial narrow-view with φ1.5 spot	12	6	5.5	3	—
	Extra narrow-view	FR707BC●	71	Narrow-view, angle of aperture 10 degrees	30~270	30~150	30~150	30~110	—

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Detecting distances depend on the type of light source.

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Reflective Type



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Type	Tip appearance (typical)	Model No. (made-to-order models marked with ●)	Search ID No.	Prominent feature	Detecting distance (mm) (inapplicable combinations marked with -)				
					F80R		F70R F70AR	F71R	F2R
					Long- distance	High-speed			
SUS tube		FRS83BC	72	φ3 unthreaded, φ1.3 head	90	50	50	30	9
		FRS801BC●	73	φ4 unthreaded, SUS 22 mm	90	50	50	30	9
		FRS806BC●	74	M3 screw, SUS 40 mm	90	50	50	30	9
		FRS8BC	75	M3 screw, SUS 70 mm	90	50	50	30	9
		FRS2003Jシリーズ	76	M4 screw, SUS 35 mm	23	13	13	7	—
		FRS84BC	77	M4 screw, SUS 70 mm	90	50	50	30	9
		FRS200Jシリーズ	78	M4 screw, SUS 70 mm	23	13	13	7	—
		FRS53BC	79	M6 screw, SUS 35 mm	90	50	50	30	9
		FRS105BC●	80	M6 screw, SUS 40 mm	570	320	320	190	50
		FRS5BC	81	M6 screw, SUS 70 mm	90	50	50	30	9
		FRSV83BC	82	φ3 unthreaded, SUS 20 mm	40	20	20	12	4
		FRSV55BC	83	φ5 unthreaded, SUS 70 mm	90	50	50	30	10
		FRSV8BC	84	M3 screw, SUS 20 mm	40	20	19	10	4
		FRSV84BC●	85	M4 screw, SUS 70 mm	90	50	50	30	10
		FRSV5BC	86	M6 screw, SUS 70 mm	90	50	50	30	10
Coaxial		FX83BC	87	φ3 short head	90	50	44	25	7
		FX801BC	88	M3 screw	110	60	55	33	10
		FX84BC	89	M4 screw, φ2.5 head	90	50	44	25	7
		FX8401BC	90	M4 screw, for use of lens	90	50	44	25	7
		FX8404BC	91	M4 screw, small-diameter	110	60	55	33	10
		FX200Jシリーズ	92	M4 screw, P = 0.7 mm	135	75	75	45	—
		FX7BC	93	M6 screw, φ2.5 head	230	130	130	75	25
		FX716BC	94	M6 screw, P = 0.75 mm	300	170	170	100	30

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					F80R		F70R	F71R	F2R
					Long-distance	High-speed	F70AR		
Limited reflection		FZ801BC	95	Ideal for PCB detection	30				
		FZ802BC	96	Thin body of 3 mm	0~5				
		FZ804BC●	97	Thin body of 3 mm	5~17		-		
		FZ1901YBC	98	Limited reflection, allowable bending radius 1 mm	50				
		FZV8301BC	99	Fits in robot hand	0~20※1				
		FZV191YBC	100	Ideal for glass substrate detection with allowable bending radius 1 mm	0~6		-		
		FZV8203BC●	101	Thin body of 2 mm	0~19				
		FZV8202BC●	102	Thin body of 2 mm	0~5				
		GXZV505BJ●	103	Heat resistance 250 °C	0~5		-		
		GXZV605BJ●	104	Heat resistance 250 °C	0~5				
		GXZV612BJ●	105	Heat resistance 250 °C	1~12				
		Thin, side-view		FZV8203BC●	101	Thin body of 2 mm	0~19		
FZV8202BC●	102			Thin body of 2 mm	0~5				
GXZV505BJ●	103			Heat resistance 250 °C	0~5		-		
GXZV605BJ●	104			Heat resistance 250 °C	0~5				
GXZV612BJ●	105			Heat resistance 250 °C	1~12				
Wide area		FRL7W16BC	106	Detecting width 5.5 mm	170	95	95	55	25
		FRL78BC●	107	Detecting width 14 mm	270	150	150	110	20
		FRL732BC	108	Detecting width 11.1 mm	170	95	95	55	25
		FRL702BC●	109	Detecting width 20.4 mm	170	95	95	55	25
		FRLV816BC	110	Detecting width 5.25 mm, cylindrical	45	25	25	22	10
		FRLV732BC	111	Detecting width 11.1 mm	170	95	95	55	25
Elbow		FX8403BC●	112	M4 screw, coaxial reflective	100	55	55	33	10
Heat-resistant		GLX500Jシリーズ	113	M4 screw, heat resistance 200 °C	135	75	75	45	-
		GXH500Jシリーズ	114	M4 screw, heat resistance 350 °C	135	75	75	45	-
		GX500Jシリーズ	115	M4 screw, heat resistance 230 °C	135	75	75	45	-
		GXSH5015J●	116	M4 screw, SUS 40 mm, heat resistance 350 °C	90	50	50	30	-
		FRH7BC	117	M6 screw, low-cost, heat resistance 105 °C	320	180	180	100	35

*1: Reduce the sensitivity when using with F80R or F70R/AR.

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Special Purpose Type



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Type	Tip appearance (typical)	Model No. (made-to-order models marked with ●)	Search ID No.	Prominent feature	Detecting distance (mm) (inapplicable combinations marked with -)						
					F80R		F70R	F71R	F2R		
					Long-distance	High-speed	F70AR				
Vacuum-proof, heat-resistant	Fiber pin connection	GTH705V●	118	1 x 10 ⁻⁸ Pa vacuum resistance allowing work detection in high-vacuum, high-temperature chambers, etc.	680	380	380	220	-		
		GTH710V●			680	380	380	220	-		
		GTSH705V●			680	380	380	220	-		
		GTSH710V●			680	380	380	220	-		
		FA7VP-M5●		-	-	-	-	-			
		FT7VBC-M5●		-	-	-	-	-			
	Flange connection	Straight	GTHN605V●	119	Vacuum-side through-beam M4 screw with M2.6 tip	480	270	270	230	-	
			GTHN610V●		Vacuum-side through-beam M4 screw with M2.6 tip	450	250	250	220	-	
			GTHN615V●		Vacuum-side through-beam M4 screw with M2.6 tip	430	240	240	200	-	
			GTHN620V●		Vacuum-side through-beam M4 screw with M2.6 tip	380	210	210	170	-	
			GTHN705V●		120	Vacuum-side through-beam M4 screw	480	270	270	230	-
			GTHN710V●			Vacuum-side through-beam M4 screw	450	250	250	220	-
			GTHN715V●			Vacuum-side through-beam M4 screw	430	240	240	200	-
			GTHN720V●			Vacuum-side through-beam M4 screw	380	210	210	170	-
		Curved	121	GTSHN705V●	Vacuum-side through-beam M4 screw	480	270	270	230	-	
				GTSHN710V●	Vacuum-side through-beam M4 screw	450	250	250	220	-	
				GTSHN715V●	Vacuum-side through-beam M4 screw	430	240	240	200	-	
				GTSHN720V●	Vacuum-side through-beam M4 screw	380	210	210	170	-	
		Straight	122	GXHN405V●	Vacuum-side reflective φ4	60	35	35	30	-	
				GXHN410V●	Vacuum-side reflective φ4	60	35	35	30	-	
	GXHN705V●			123	Vacuum-side reflective M4	60	35	35	30	-	
	GXHN710V●				Vacuum-side reflective M4	60	35	35	30	-	
	Flange	Atmosphere side	FA7VG702●	124	Relay flange 3-ch VG-type φ70	-	-	-	-	-	
			FA7VG703●	125	Relay flange 3-ch VG-type φ70	-	-	-	-	-	
			FT7VGBC●	126	Free cutting on atmosphere side	-	-	-	-	-	

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					F80R		F70R	F71R	F2R	
					Long-distance	High-speed	F70AR			
Liquid level detection		FL-6BC	127	Covered with PFA tube for detection of virtually any type of liquid including water, oil, chemicals, etc.	Detection occurs when sensor is immersed in liquid					
		FL-7013								
		FL-7013-02								
		FL-7013-05								
		FL-7013-1								
		FL-7161								
		FL-7161-05								
		FL-7161-1								
		FL-7161-2								
		FL-7314								
		FL-7326								
		FLH-6BC								
		FLH-7013								
		FLH-7013-02								
		FLH-7013-05								
FLH-7013-1										
Detection of level of liquid in pipe		FU901BC	128	Mountable on translucent or transparent pipes of glass, PFA, etc. of 6-26 mm in diameter						
Chemical-resistant		Through-Beam type	FTH7FEBC	129	Excellent oil/chemical resistance, long-distance detection	2300	1300	1300	780	230
		Reflective Type	GTH510FEJ	130	Covered with PFA tube, heat resistance 200 °C	1000	1000	1000	-	-
			GTH540FEJ		1800	1000				
			FTV7FEBC ●	131	Through-beam side-view	990	550	550	400	100
			FRH7FEBC	132	Excellent oil / chemical resistance	130	70	70	70	35
U-shaped		FU1001BC	133	Replaceable with photo micro sensor, heat resistance 115 °C	5					
		FU1002BC	134							
		FU1004BC	135							
Wafer detection		FR706BC	136	2-ch fiber optic cable for reliable detection	130	70	70	50	-	