



# CF series

Plastic optical  
fibres

## features

- Wide range of models: ultra slim for small object, long distances, spiral tube for handling
- Wide range of flexible fibre heads (with sleeve)
- Wide range of cutting fibre units
- P67 protection degree
- SSF – FS1 – FX3 – FX4 – F1R – FY2 – FY3 series connectable
- Approvals: CE

## web contents



- Application notes
- Photos
- Catalogue / Manuals



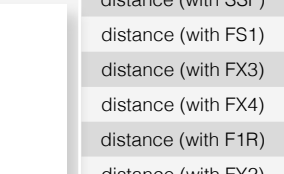
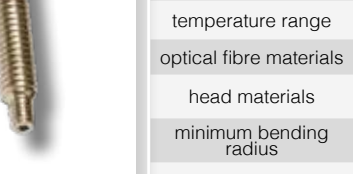
## ordering system

models <sup>(1)</sup>	SSF (EX.G.=1)	FS1 (EX.G.=1)	FX3 (EX.G.=1)	FX4 (EX.G.=1)	F1R	FY2	FY3	type	fibre core	free-cut	length <sup>(2)</sup>	head shape	lenses
CF/CA-M4-205	-	-	120mm	200mm	80mm	45mm	90mm	coaxial	0,5 mm	no	2 m	M4	-
CF/CR-M4-205	-	-	105mm	150mm	65mm	35mm	70mm	coaxial	0,5 mm	no	2 m	M4	-
CF/CA-M6-210	80mm	55mm	200mm	245mm	160mm	110mm	215mm	coaxial	1 mm	yes	2 m	M6	-
CF/DR-F3-205	-	-	38mm	45mm	15mm	10mm	11mm	diffuse	0,5 mm	yes	2 m	ø 3	-
CF/CA2-**	15 mm	15 mm	70 mm	110 mm	40 mm	20 mm	40 mm	diffuse	0,5 mm	no	0,5..1 m	M4	-
CF/CA4-**	15 mm	15 mm	60 mm	80 mm	40 mm	20 mm	40 mm	diffuse	0,5 mm	no	0,5..1 m	M4 with sleeve	-
CF/CA1-20	60 mm	60 mm	140 mm	140 mm	-	50 mm	100 mm	diffuse	0,5 mm	yes	2 m	M5	●
CF/CB1-**	50 mm	50 mm	200 mm	300 mm	150 mm	110 mm	150 mm	diffuse	1 mm	yes	1..2 m	M6	-
CF/CB3-**	50 mm	50 mm	200 mm	300 mm	150 mm	110 mm	150 mm	diffuse	1 mm	yes	1..2 m	M6 with sleeve	-
CF/DR-M6-210	60mm	45mm	185mm	220mm	100mm	60mm	110mm	diffuse	1 mm	yes	2 m	M6	-
CF/RA4-**	30 mm	30 mm	150 mm	250 mm	100 mm	110 mm	125 mm	through- beam	0,5 mm	no	0,5..1 m	M4 with sleeve	-
CF/RB3-20	120 mm	120 mm	700 mm	700 mm	150 mm	250 mm	280 mm	through- beam	1 mm	yes	2 m	M4	-
CF/RB4-**	120 mm	120 mm	600 mm	900 mm	410 mm	400 mm	420 mm	through- beam	1 mm	yes	1..2 m	M4 with sleeve	-
CF/RB6-**	120 mm	120 mm	600 mm	900 mm	410 mm	400 mm	350 mm	through- beam	1 mm	yes	1..2 m	M4	-
CF/RC6-20	100 mm	100 mm	500 mm	500 mm	350 mm	200 mm	230 mm	through- beam	1 mm	yes	2 m	M4	-
CF/TR-M4-210	275mm	140mm	680mm	900mm	480mm	300mm	320mm	through- beam	1 mm	yes	2 m	M4	-
CF/RA7-**	30 mm	30 mm	150 mm	250 mm	100 mm	60 mm	140 mm	through- beam	0,5 mm	no	0,5..1 m	M6	-
CF/CC1-20	15 mm	15 mm	70 mm	110 mm	50 mm	60 mm	60 mm	through- beam	1 mm	yes	2 m	M6	-
CF/RB9-**	1200 mm	1200 mm	8000 mm	10000 mm	4000 mm	3000 mm	3800 mm	through- beam	1 mm	yes	1..2 m	ø 6	●
CF/RC9-20	1000 mm	1000 mm	6000 mm	8000 mm	2200 mm	2500 mm	3000 mm	through- beam	1 mm	yes	2 m	ø 6	●
CF/RBA-**	1200 mm	1200 mm	8000 mm	10000 mm	4000 mm	3000 mm	3800 mm	through- beam	1 mm	yes	1..2 m	M7	●
CF/RCA-20	1000 mm	1000 mm	6000 mm	8000 mm	2200 mm	2500 mm	3000 mm	through- beam	1 mm	yes	2 m	M7	●
CF/TA-H2-210	430mm	45mm	730mm	950mm	510mm	400mm	430mm	area	1 mm	no	2 m	H=20m	-
CF/TR-H6-210	450mm	30mm	760mm	1050mm	550mm	450mm	490mm	area	1 mm	no	2 m	H=60mm	-

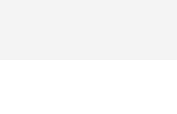

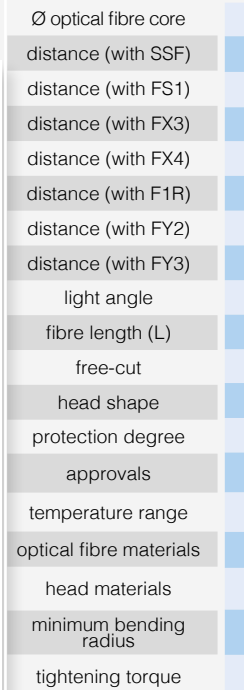
<sup>(1)</sup> The last two bits of the code show the fibre length (in dm) <sup>(2)</sup> Standard length  
Special lengths are available on request.


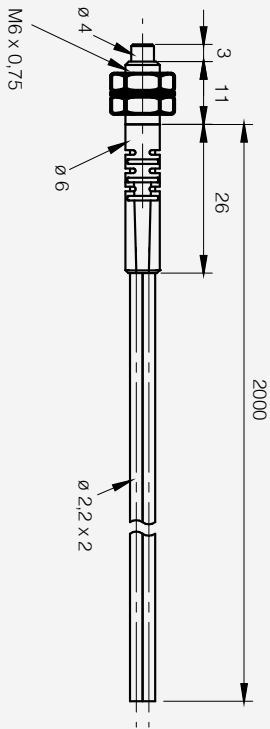
Measures related to white target 90% 100 x 100 mm.

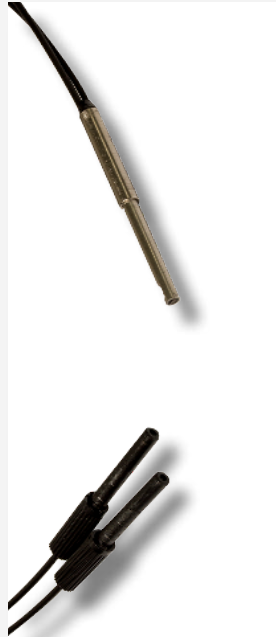
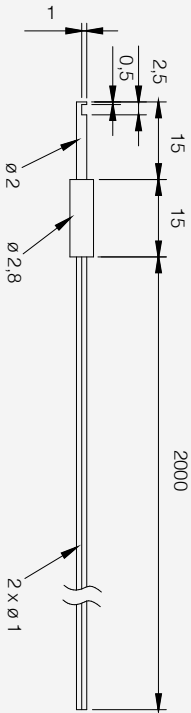
## coaxial direct diffuse CF/CA-M4-205 model


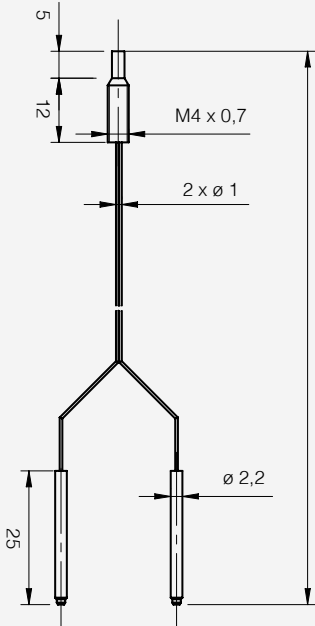
product	main features		dimensions (mm)
	Ø optical fibre core	0,5 mm x 1 / 0,25 mm x 10	
	distance (with SSF)	-	
	distance (with FS1)	-	
	distance (with FX3)	120 mm	
	distance (with FX4)	200 mm	
	distance (with F1R)	80 mm	
	distance (with FY2)	45 mm	
	distance (with FY3)	90 mm	
	light angle	60°	
	fibre length (L)	2 m	
	free-cut	no	
	head shape	M4	
	protection degree	IP67	
	approvals	CE	
	temperature range	-55°C....+70°C	
	optical fibre materials	plastic	
	head materials	steel	
	minimum bending radius	R15	
	tightening torque	0,78 Nm	
	accessories available	-	

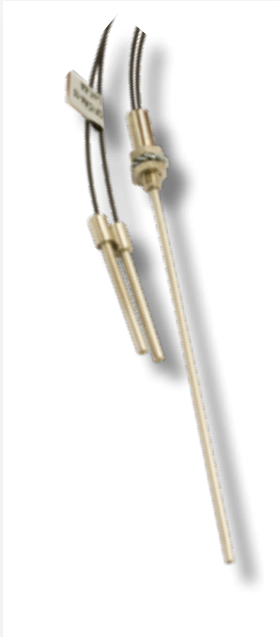
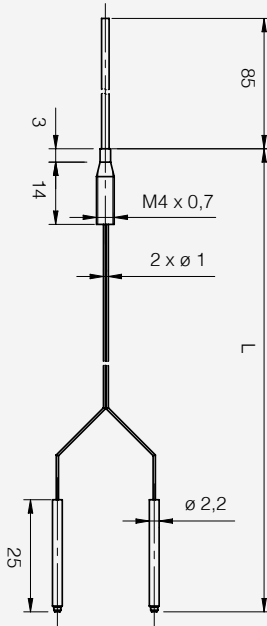
## coaxial direct diffuse CF/CR-M4-205 model


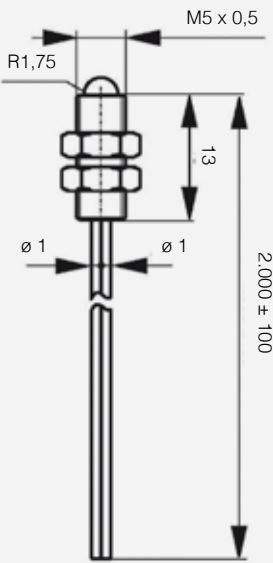
product	main features		dimensions (mm)
	Ø optical fibre core	0,5 mm x1 / 0,25 mm x10	Ø 0,5 Core x 1 Ø 0,265 Core x 10  <b>DETT.A</b> <b>10:1</b>
	distance (with SSF)	-	
	distance (with FS1)	-	
	distance (with FX3)	105 mm	
	distance (with FX4)	150 mm	
	distance (with F1R)	65 mm	
	distance (with FY2)	35 mm	
	distance (with FY3)	70 mm	
	light angle	60°	
	fibre length (L)	2 m	
	free-cut	no	
	head shape	M4	
	protection degree	IP67	
	approvals	CE	
	temperature range	-55°C...+ 70°C	
	optical fibre materials	plastic	
	head materials	steel	
	minimum bending radius	R15	
	tightening torque	0,78 Nm	
	accessories available	-	

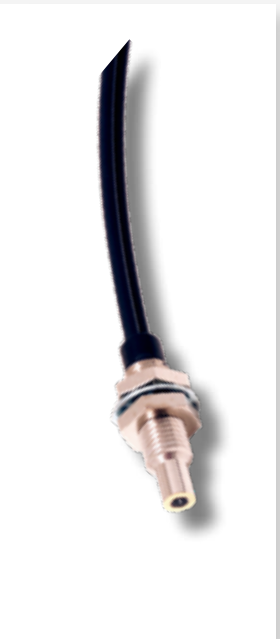
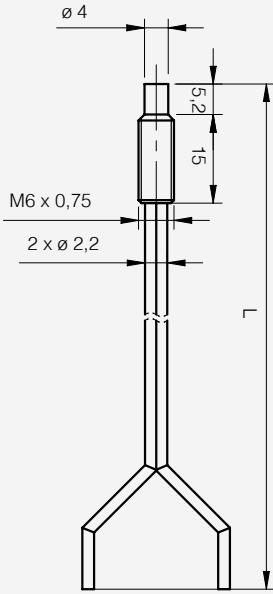
coaxial direct diffuse CF/CA-M6-210 model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm x1 / 0,265 mm x 15
	distance (with SSF)	80 mm
	distance (with FS1)	55 mm
	distance (with FX3)	200 mm
	distance (with FX4)	245 mm
	distance (with F1R)	160 mm
	distance (with FY2)	110 mm
	distance (with FY3)	215 mm
	light angle	60°
	fibre length (L)	2 m
	free-cut	yes
	head shape	M6
	protection degree	IP67
	approvals	CE
	temperature range	-55°C...+ 70°C
	optical fibre materials	plastic
	head materials	steel
	minimum bending radius	R25
	tightening torque	0,98 Nm
	accessories available	-
		

direct diffuse CF/DR-F3-205 model		
product	main features	dimensions (mm)
	Ø optical fibre core	0,5 mm
	distance (with SSF)	-
	distance (with FS1)	-
	distance (with FX3)	38 mm
	distance (with FX4)	45 mm
	distance (with F1R)	15 mm
	distance (with FY2)	10 mm
	distance (with FY3)	11 mm
	fibre length (L)	2 m
	free-cut	yes
	head shape	Ø 2 mm
	protection degree	IP67
	approvals	CE
	temperature range	-40°C...+ 70°C (no freezing)
	optical fibre materials	plastic
	head materials	nickel-plated brass
	minimum bending radius	R11
	tightening torque	-
	accessories available	-
		


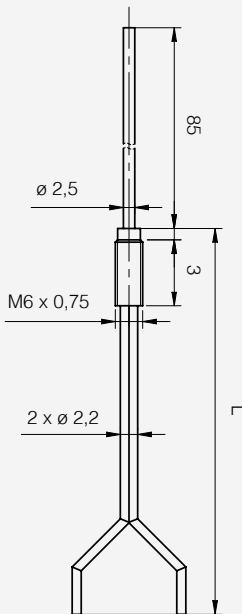
diffuse reflection CF/CA2-**- model		
product	main features	dimensions (mm)
	Ø optical fibre core	0,5 mm
	distance (with SSF)	15 mm
	distance (with FS1)	15 mm
	distance (with FX3)	70 mm
	distance (with FX4)	110 mm
	distance (with F1R)	40 mm
	distance (with FY2)	20 mm
	distance (with FY3)	40 mm
	fibre length (L)	0,5... 1 m
	free-cut	no
	head shape	M4
	protection degree	IP67
	approvals	CE
	temperature range	-40°C...+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	AF/1A2
		

diffuse reflection with sleeve CF/CA4-**- model		
product	main features	dimensions (mm)
	Ø optical fibre core	0,5 mm
	distance (with SSF)	15 mm
	distance (with FS1)	15 mm
	distance (with FX3)	60 mm
	distance (with FX4)	80 mm
	distance (with F1R)	40 mm
	distance (with FY2)	20 mm
	distance (with FY3)	40 mm
	fibre length (L)	0,5... 1 m
	free-cut	no
	head shape	M4 with sleeve
	protection degree	IP67
	approvals	CE
	temperature range	-40°C...+55°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	AF/1A2
		


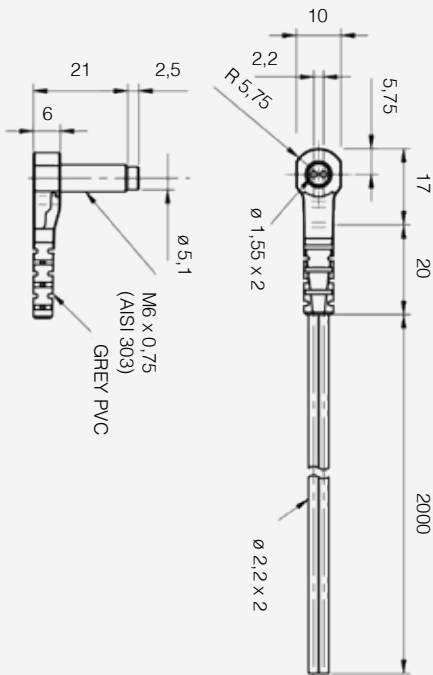
diffuse reflection with narrow beam CF/CA1-20 model		
product	main features	dimensions (mm)
	Ø optical fibre core	0,5 mm
	distance (with SSF)	60 mm
	distance (with FS1)	60 mm
	distance (with FX3)	140 mm
	distance (with FX4)	140 mm
	distance (with F1R)	-
	distance (with FY2)	50 mm
	distance (with FY3)	100 mm
	fibre length (L)	2 m
	free-cut	yes
	head shape	M5
	protection degree	IP67
	approvals	CE
	temperature range	-25°C....+70°C
	optical fibre materials	PE, plastic
	head materials	steel
	accessories available	AF/1A2
		

diffuse reflection CF/CB1-** model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm
	distance (with SSF)	50 mm
	distance (with FS1)	50 mm
	distance (with FX3)	200 mm
	distance (with FX4)	300 mm
	distance (with F1R)	150 mm
	distance (with FY2)	110 mm
	distance (with FY3)	150 mm
	fibre length (L)	1...2 m
	free-cut	yes
	head shape	M6
	protection degree	IP67
	approvals	CE
	temperature range	-40°C....+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	-
		


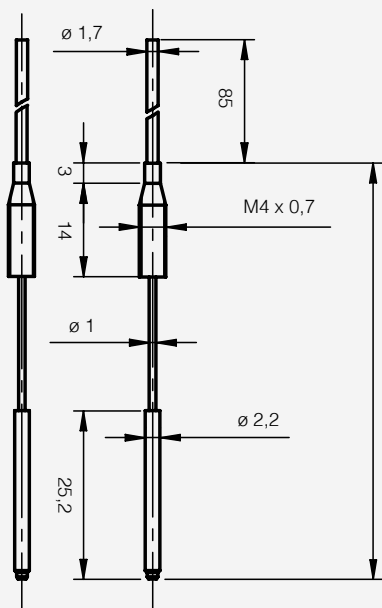
## diffuse reflection with sleeve CF/CB3-\*\* model

product	main features		dimensions (mm)
	Ø optical fibre core	1 mm	
	distance (with SSF)	50 mm	
	distance (with FS1)	50 mm	
	distance (with FX3)	200 mm	
	distance (with FX4)	300 mm	
	distance (with F1R)	150 mm	
	distance (with FY2)	110 mm	
	distance (with FY3)	150 mm	
	fibre length (L)	1...2 m	
	free-cut	yes	
	head shape	M6 with sleeve	
	protection degree	IP67 (EN60529)	
	approvals	CE	
	temperature range	-40°C...+55°C	
	optical fibre materials	PE, plastic	
	head materials	nickel-plated brass	
	accessories available	-	


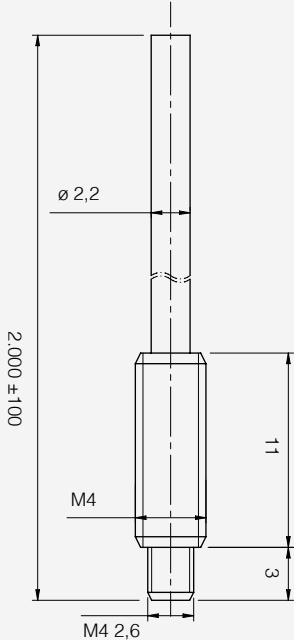
## direct diffuse CF/DR-M6-210 model


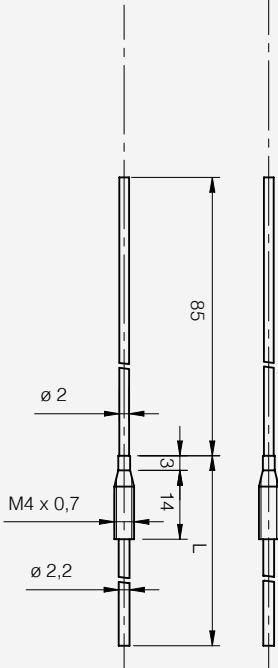
product	main features		dimensions (mm)
	Ø optical fibre core	1 mm	
	distance (with SSF)	60 mm	
	distance (with FS1)	45 mm	
	distance (with FX3)	185 mm	
	distance (with FX4)	220 mm	
	distance (with F1R)	100 mm	
	distance (with FY2)	60 mm	
	distance (with FY3)	110 mm	
	light angle	12°	
	fibre length (L)	2 m	
	free-cut	yes	
	head shape	M6	
	protection degree	IP67	
	approvals	CE	
	temperature range	-55°C...+ 70°C	
	optical fibre materials	plastic	
	head materials	steel	
	minimum bending radius	R15	
	tightening torque	0,98 Nm	
	accessories available	-	


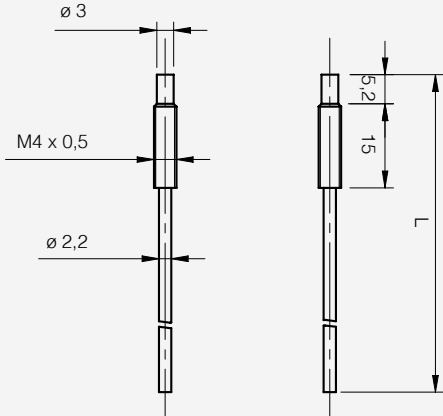
through-beam with sleeve CF/RA4-\*\* model

product	main features		dimensions (mm)
	Ø optical fibre core	0,5 mm	
	distance (with SSF)	30 mm	
	distance (with FS1)	30 mm	
	distance (with FX3)	150 mm	
	distance (with FX4)	250 mm	
	distance (with F1R)	100 mm	
	distance (with FY2)	110 mm	
	distance (with FY3)	125 mm	
	fibre length (L)	0,5...1 m	
	free-cut	no	
	head shape	M4 with sleeve	
	protection degree	IP67	
	approvals	CE	
	temperature range	40°C....+55°C	
	optical fibre materials	PE, plastic	
	head materials	nickel-plated brass	
	accessories available	AF/1A2	


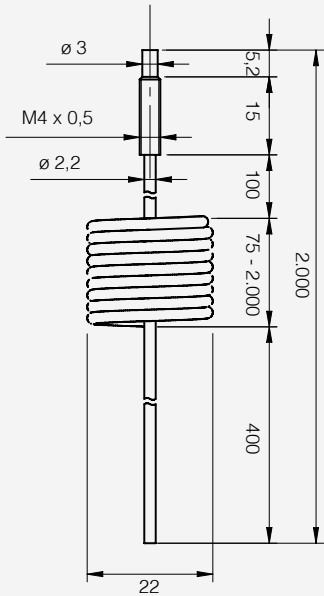
diffuse reflection with sleeve CF/RB3-20 model


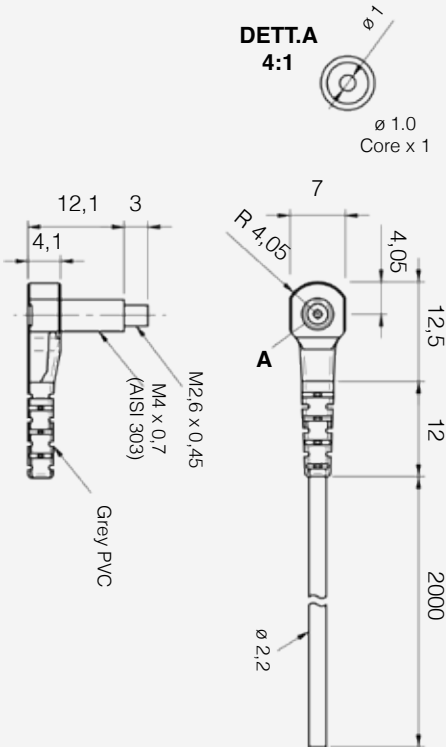
product	main features		dimensions (mm)
	Ø optical fibre core	1 mm	
	distance (with SSF)	120 mm	
	distance (with FS1)	120 mm	
	distance (with FX3)	700 mm	
	distance (with FX4)	700 mm	
	distance (with F1R)	150 mm	
	distance (with FY2)	250 mm	
	distance (with FY3)	280 mm	
	fibre length (L)	2 m	
	free-cut	yes	
	head shape	M4	
	protection degree	IP67	
	approvals	CE	
	temperature range	-40°C....+55°C	
	optical fibre materials	PE, plastic	
	head materials	nickel-plated brass	
	accessories available	AF/ER9	

through-beam with sleeve CF/RB4-** model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm
	distance (with SSF)	120 mm
	distance (with FS1)	120 mm
	distance (with FX3)	600 mm
	distance (with FX4)	900 mm
	distance (with F1R)	410 mm
	distance (with FY2)	400 mm
	distance (with FY3)	420 mm
	fibre length (L)	1...2 m
	free-cut	yes
	head shape	M4 with sleeve
	protection degree	IP67
	approvals	CE
	temperature range	-40°C....+55°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	-
		


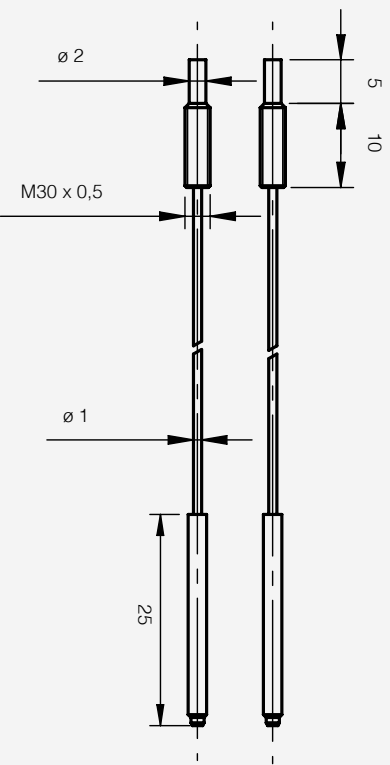
through-beam CF/RB6-** model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm
	distance (with SSF)	120 mm
	distance (with FS1)	120 mm
	distance (with FX3)	600 mm
	distance (with FX4)	900 mm
	distance (with F1R)	410 mm
	distance (with FY2)	400 mm
	distance (with FY3)	350 mm
	fibre length (L)	1...2 m
	free-cut	yes
	head shape	M4
	protection degree	IP67
	approvals	CE
	temperature range	-40°C....+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	-
		




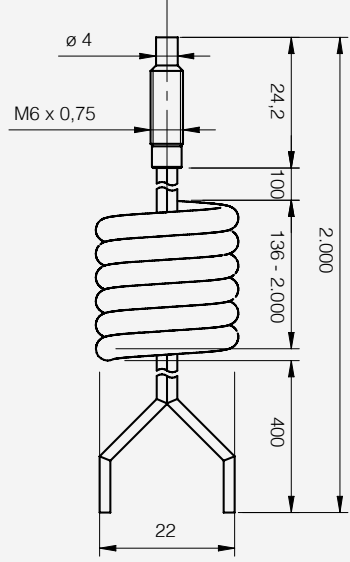
through-beam CF/RC6-** model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm spiral tube
	distance (with SSF)	100mm
	distance (with FS1)	100 mm
	distance (with FX3)	500 mm
	distance (with FX4)	500 mm
	distance (with F1R)	350 mm
	distance (with FY2)	200 mm
	distance (with FY3)	230 mm
	fibre length (L)	2 m
	free-cut	yes
	head shape	M4
	protection degree	IP67
	approvals	CE
	temperature range	-40°C....+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	-
		


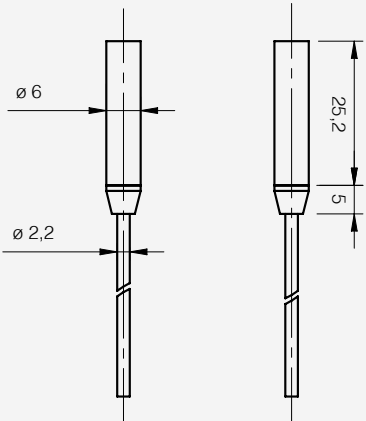
through-beam CF/TR-M4-210 model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm
	distance (with SSF)	275 mm
	distance (with FS1)	140 mm
	distance (with FX3)	680 mm
	distance (with FX4)	900 mm
	distance (with F1R)	480 mm
	distance (with FY2)	300 mm
	distance (with FY3)	320 mm
	light angle	60°
	fibre length (L)	2 m
	free-cut	yes
	head shape	M4
	protection degree	IP67
	approvals	CE
	temperature range	-55°C...+ 70°C
	optical fibre materials	plastic
	head materials	steel
	minimum bending radius	R25
	tightening torque	0,78 Nm
	accessories available	-
		


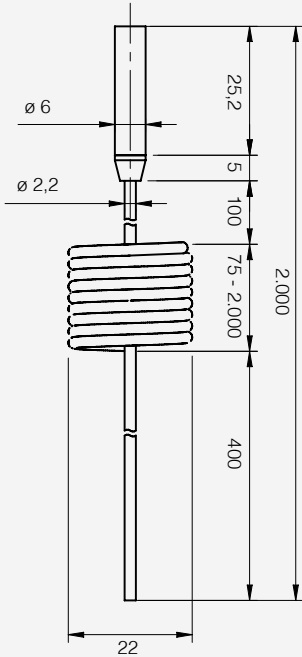
## through-beam CF/RA7-\*\*-\*\* model


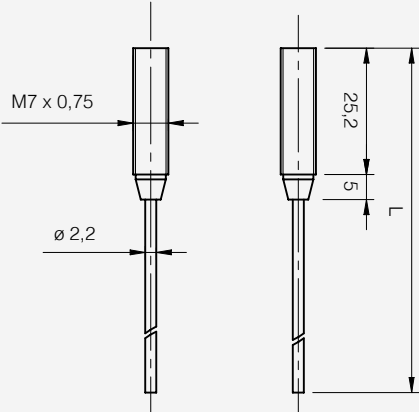
product	main features		dimensions (mm)
	Ø optical fibre core	0,5 mm	
	distance (with SSF)	30 mm	
	distance (with FS1)	30 mm	
	distance (with FX3)	150 mm	
	distance (with FX4)	250 mm	
	distance (with F1R)	100 mm	
	distance (with FY2)	60 mm	
	distance (with FY3)	140 mm	
	fibre length (L)	0,5...1 m	
	free-cut	no	
	head shape	M3	
	protection degree	IP67	
	approvals	CE	
	temperature range	-40°C....+70°C	
	optical fibre materials	PE, plastic	
	head materials	nickel-plated brass	
	accessories available	AF/1A2	


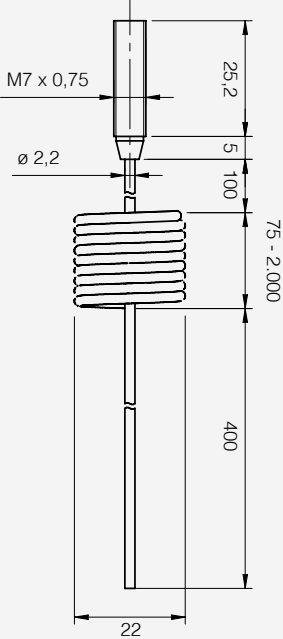
## diffuse reflection CF/CC1-\*\*-\*\* model

product	main features		dimensions (mm)
	Ø optical fibre core	1 mm spirial tube	
	distance (with SSF)	15 mm	
	distance (with FS1)	15 mm	
	distance (with FX3)	70 mm	
	distance (with FX4)	100 mm	
	distance (with F1R)	50 mm	
	distance (with FY2)	60 mm	
	distance (with FY3)	60 mm	
	fibre length (L)	2 m	
	free-cut	yes	
	head shape	M6	
	protection degree	IP67 (EN60529)	
	approvals	CE	
	temperature range	-40°C....+70°C	
	optical fibre materials	PE, plastic	
	head materials	nickel-plated brass	
	accessories available	-	


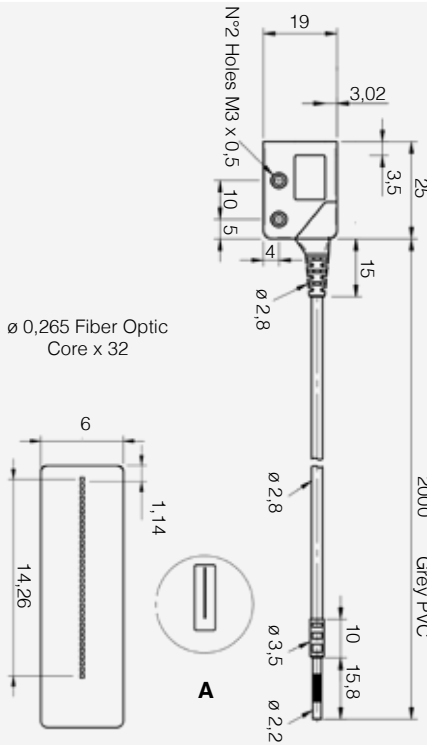
through-beam with lenses CF/RB9-**- model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm
	distance (with SSF)	1.200 mm
	distance (with FS1)	1.200 mm
	distance (with FX3)	8.000 mm
	distance (with FX4)	10.000 mm
	distance (with F1R)	4.000 mm
	distance (with FY2)	3.000 mm
	distance (with FY3)	3.800 mm
	fibre length (L)	1...2 m
	free-cut	yes
	head shape	Ø 6 with lenses
	protection degree	IP67
	approvals	CE
	temperature range	-40°C.....+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	-
		

through-beam with lenses CF/RC9-**- model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm spirial tube
	distance (with SSF)	1.000 mm
	distance (with FS1)	1.000 mm
	distance (with FX3)	6.000 mm
	distance (with FX4)	8.000 mm
	distance (with F1R)	2.200 mm
	distance (with FY2)	2.500 mm
	distance (with FY3)	3.000 mm
	fibre length (L)	2 m
	free-cut	yes
	head shape	Ø 6 with lenses
	protection degree	IP67
	approvals	CE
	temperature range	-40°C.....+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	-
		


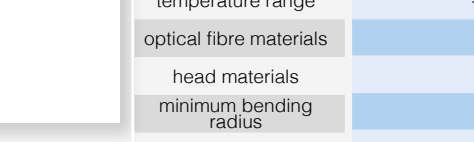
through-beam with lenses CF/RBA-** model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm
	distance (with SSF)	1.200 mm
	distance (with FS1)	1.200 mm
	distance (with FX3)	8.000 mm
	distance (with FX4)	10.000 mm
	distance (with F1R)	4.000 mm
	distance (with FY2)	3.000 mm
	distance (with FY3)	3.800 mm
	fibre length (L)	1...2 m
	free-cut	yes
	head shape	M7 with lenses
	protection degree	IP67
	approvals	CE
	temperature range	-40°C....+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	ST 28
		

through-beam with lenses CF/RCA-** model		
product	main features	dimensions (mm)
	Ø optical fibre core	1 mm spirial tube
	distance (with SSF)	1.000 mm
	distance (with FS1)	1.000 mm
	distance (with FX3)	6.000 mm
	distance (with FX4)	8.000 mm
	distance (with F1R)	2.200 mm
	distance (with FY2)	2.500 mm
	distance (with FY3)	3.000 mm
	fibre length (L)	2 m
	free-cut	yes
	head shape	M7 with lenses
	protection degree	IP67
	approvals	CE
	temperature range	-40°C....+70°C
	optical fibre materials	PE, plastic
	head materials	nickel-plated brass
	accessories available	ST 28
		

through-beam area CF/TA-H2-210 model

product	main features		dimensions (mm)
	Ø optical fibre core	0,265 mm x 32	 <p>             19              3,02              3,5              10,5              4              15              15              10              15,8              10              15,8              10              15,8              2500              Grey PVC              0,265 Fiber Optic Core x 32              6              1,14              14,26              A              DETT.A              4:1           </p>
	distance (with SSF)	430 mm	
	distance (with FS1)	45 mm	
	distance (with FX3)	730 mm	
	distance (with FX4)	950 mm	
	distance (with F1R)	510 mm	
	distance (with FY2)	400 mm	
	distance (with FY3)	430 mm	
	light angle	60°	
	fibre length (L)	2 m	
	free-cut	no	
	head shape	rectangular	
	protection degree	IP67	
	approvals	CE	
	temperature range	-55°C...+ 70°C	
	optical fibre materials	plastic	
	head materials	plastic	
	minimum bending radius	R5	
	accessories available	-	

through-beam area CF/TR-H6-210 model

product	main features		dimensions (mm)
	Ø optical fibre core	0,265 mm x 32	
	distance (with SSF)	450 mm	
	distance (with FS1)	30 mm	
	distance (with FX3)	760 mm	
	distance (with FX4)	1050 mm	
	distance (with F1R)	550 mm	
	distance (with FY2)	450 mm	
	distance (with FY3)	490 mm	
	light angle	60°	
	fibre length (L)	2 m	
	free-cut	no	
	head shape	rectangular	
	protection degree	IP67	
	approvals	CE	
	temperature range	-55°C...+ 70°C	
	optical fibre materials	plastic	
	head materials	plastic	
	minimum bending radius	R5	
	accessories available	-	