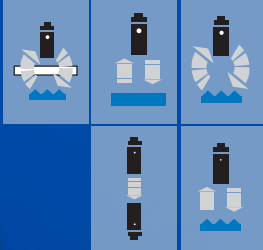




FQ series

M18 photoelectric sensors
with short body



M18 short body

features

- Wide range of models: direct diffuse, retro-reflective, polarized and fixed-focus
- Direct diffuse models with short and long sensing distance, polarized and through beam
- Nickel brass or plastic housing
- NO+NC complementary output
- P67 protection degree
- Complete protection against electrical damages
- Approvals: CE

web contents

- Application notes
- Photos
- Catalogue / Manuals



code description

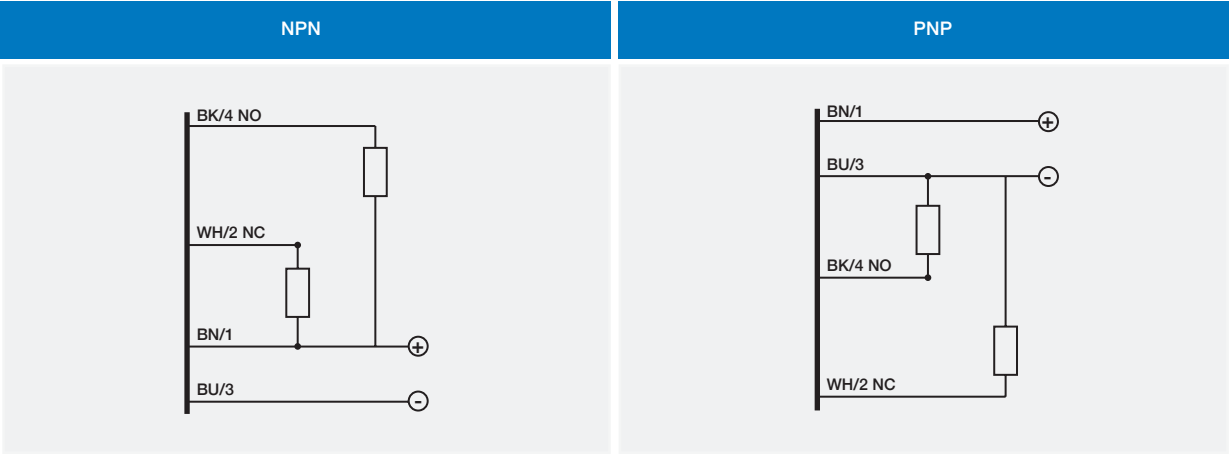
			FQ	I	7	/	B	P	-	0	E
series	FQ	M18 photoelectric sensors with short body									
emission	I	Infrared emission									
	R	Visible red light emission									
type	2	100 mm direct diffuse without sens. adj.									
	3	100 mm direct diffuse with sens. adj.									
	7	400 mm direct. diffuse with sens. adj.									
	8	Direct reflection: 1200 mm (axial), 1000 mm (90°) with adj.									
	C	6 m retro-reflective									
	N	4.5 m retro-reflective with adj.									
	L	Retroreflective for transparent objects 1.5 m									
	H	Emitter without sens. adj.									
housing	Z	20 m Receiver without sens. adj.									
	0	Emitter without check									
output logic	B	Complementary output NO+NC									
	0	Emitter									
	P	PNP output									
housing material	N	NPN output									
	0	Plastic housing, axial optic									
	1	Metal housing, axial optic									
	2	Plastic housing, right angle optic									
cable / plug output	3	Metal housing, right angle optic									
	E	M12 plastic plug cable exit									
	A	2 m axial cable exit									

available models

function	distance	adjustment	output	housing	axial models		right angle models	
					PNP NO + NC	NPN NO + NC	PNP NO + NC	NPN NO + NC
direct diffuse	100 mm	●	cable	plastic	FQR2/BP-0A	-	-	-
	M12 plug		FQR3/BP-0E		-	-	-	
	cable		FQI7/BP-0A		-	-	-	
	M12 plug		FQI7/BP-0E		-	-	-	
	400 mm		cable	metal	FQI7/BP-1A	-	-	-
	M12 plug		FQI7/BP-1E		-	-	-	
	1,200 mm (A) 1,000 mm (R)		cable	plastic	-	FQI8/BN-0A	-	-
			M12 plug		FQI8/BP-0E	FQI8/BN-0E	FQI8/BP-2E	-
			cable	metal	FQI8/BP-1A	-	-	-
retro-reflective	6 m	cable	plastic	FQIC/BP-0A	FQIC/BN-0A	FQIC/BP-2A	FQIC/BN-2A	
	M12 plug	FQIC/BP-0E		-	-	-		
polarized	4.5 m	cable		FQRN/BP-0A	-	FQRN/BP-2A	-	
		M12 plug		FQRN/BP-0E	-	FQRN/BP-2E	-	
		M12 plug	metal	FQRN/BP-1E	-	FQRN/BP-3E		
for transparent objects detection	1.5 m	cable		plastic	-	-	FQRL/BP-2A	-
		M12 plug	FQRL/BP-0E		-	FQRL/BP-2E	-	
		M12 plug	metal	FQRL/BP-1E	-	-	-	
emitter	20 m	-		cable	plastic	FQIH/00-0A	-	-
			M12 plug	FQIH/00-0E		-	FQIH/00-2E	-
			M12 plug	metal	FQIH/00-1E	-	-	-
receiver			plastic		cable	FQIZ/BP-0A	-	-
				M12 plug	FQIZ/BP-0E	-	FQIZ/BP-2E	
				M12 plug	metal	FQIZ/BP-1E	-	-

electric diagrams of the connections

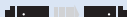
NO + NC complementary exit



technical specification

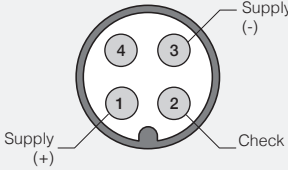
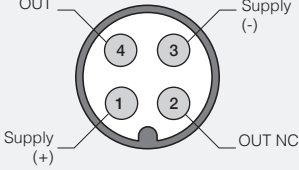


M18 short body

	direct diffuse				retroreflective	polarized	for transpa- rent objects	through beam	
	FQR2	FQR3	FQI7	FQI8	FQIC	FQRN	FQRL ⁽²⁾	FQIZ	FQIH
									
nominal sensing distance	100 mm		400 mm	1,2 m 1 m (90°)	6 m 4 m (90°)	4.5 m 3 m (90°)	0.1...1.5 m		20 m 15 m (90°)
emission	red (660 nm)		infrared (880 nm)			red (660 nm)		infrared (880 nm)	
differential travel	≤ 10 %								
repeatability	≤ 5 %								
operating voltage	10...30 Vcc								
ripple	≤ 10 %								
no-load supply current	≤ 30 mA								
load current	≤ 50 mA								
leakage current	≤ 10 µA								
output voltage drop	2 V max. @ IL = 50 mA								
output type	NPN or PNP NO + NC								
switching frequency	250 Hz								
power on delay	≤ 200 ms								
operating temperature range	- 25°C...+ 70°C (without freeze)								
power supply protections	polarity reversal, impulsive overvoltage								
output electrical protection	short circuit (autoreset), overvoltage								
temperature drift	≤ 10 % Sr								
protection degree	IP67 (EN60529) ⁽¹⁾								
EMC	in conformity with the EMC Directive according to EN 60947-5-2								
interference by external light	5,000 lux (incandescent lamp), 10,000 lux (sunlight)								
LEDs	yellow (Light status)								
housing material	PBT (plastic model) /nicked plated brass (metallic model) / PC (cable exit)								
optic material	PC/PMMA								
tightening torque	1 Nm (plastic), 25 Nm (metallic)								
weight (approx)	20 g plug (40 g metallic version) / 60 g cable								

⁽¹⁾ Protection guaranteed only with plug cable well mounted ⁽²⁾With RL 113G or RL 116

plug

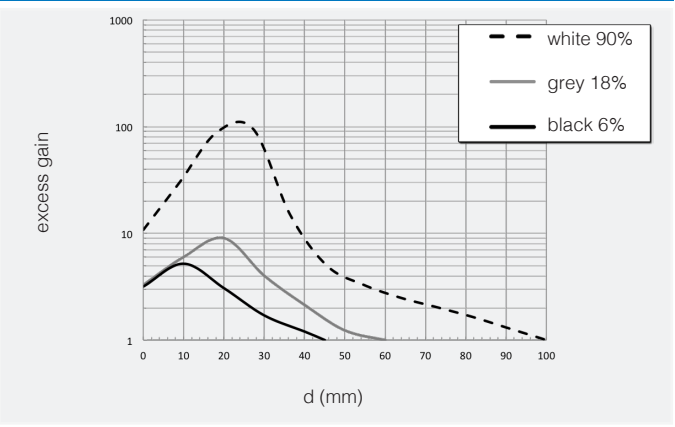
emitter	complementary exit
	



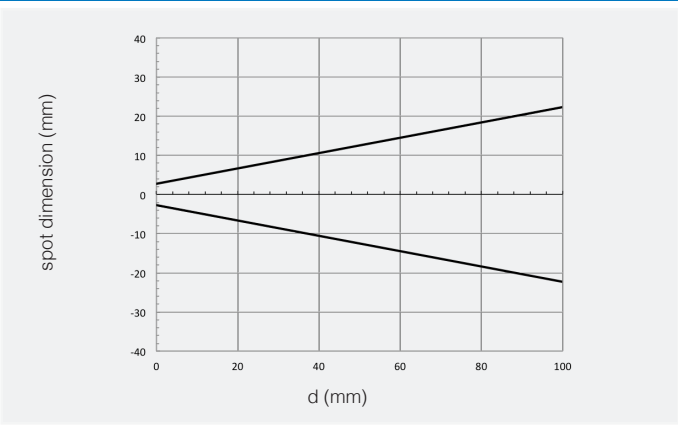
response diagrams

background suppression models

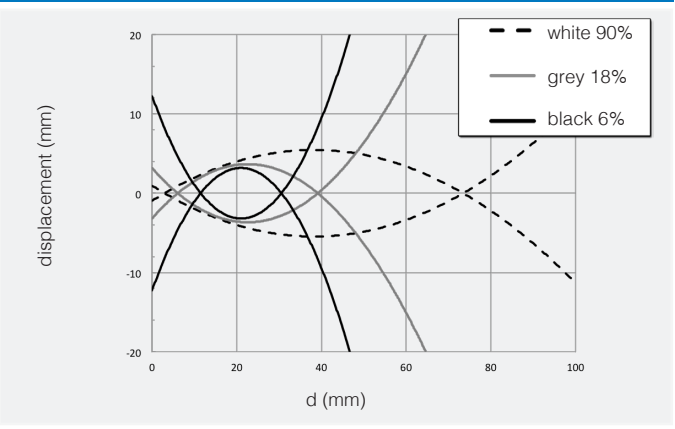
FQR2/FQR3 excess gain



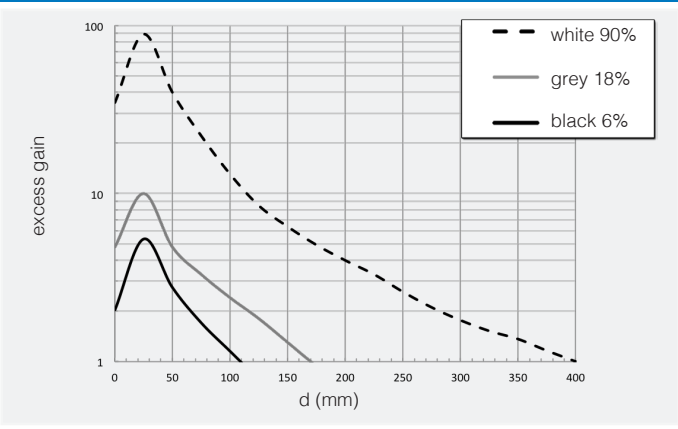
FQR2/FQR3 spot dimension



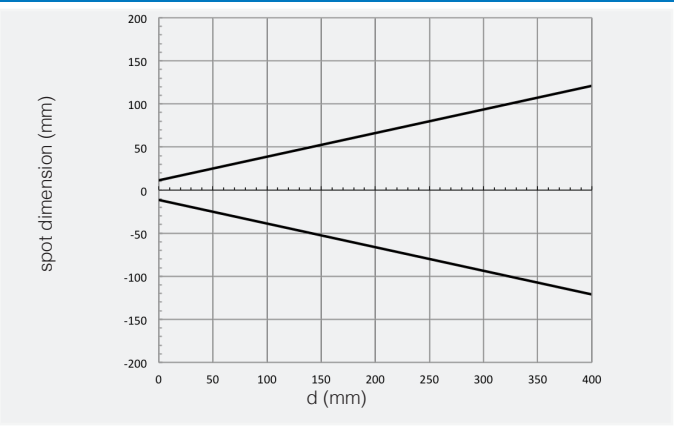
FQR2/FQR3 parallel displacement



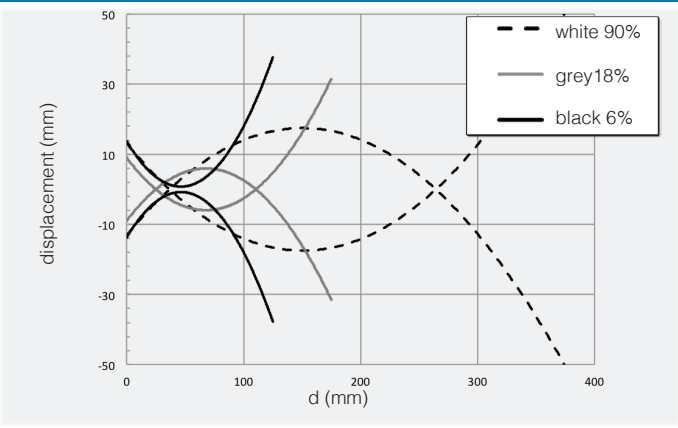
FQI7/B*-** excess gain



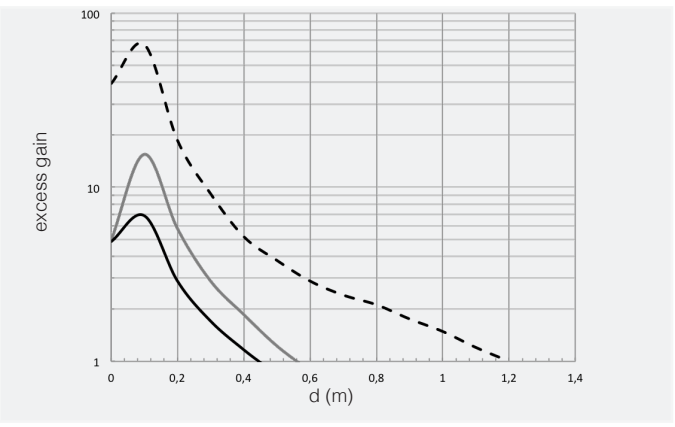
FQI7/B*-** spot dimension



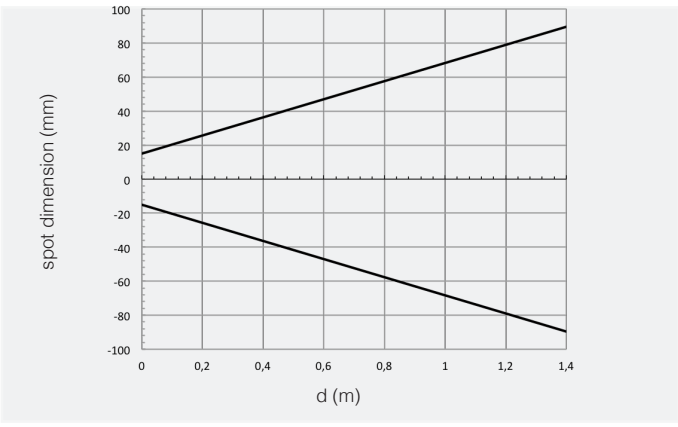
FQI7/B*-** parallel displacement



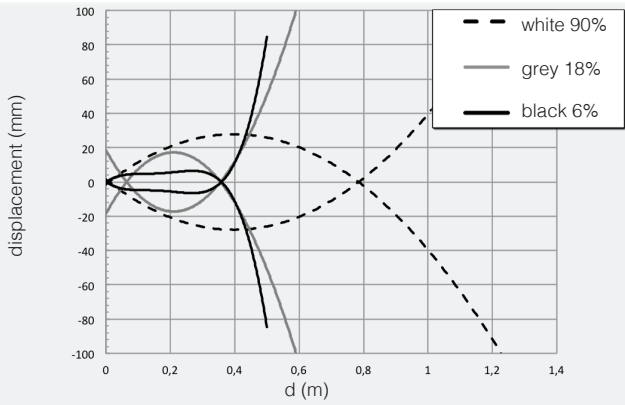
FQI8/B*-(0,1)* excess gain



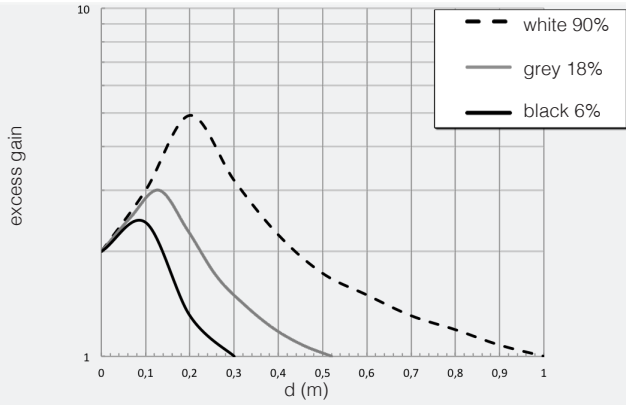
FQI8/B*-(0,1)* spot dimension



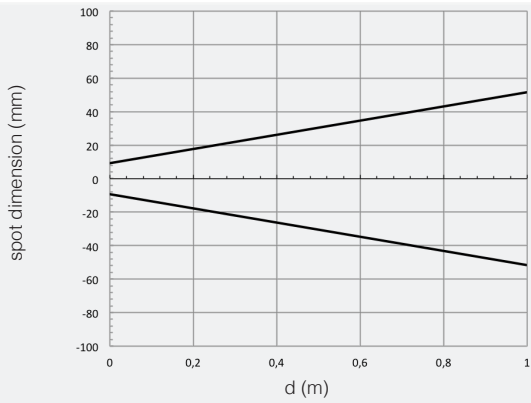
FQI8/B*-(0,1)* parallel displacement



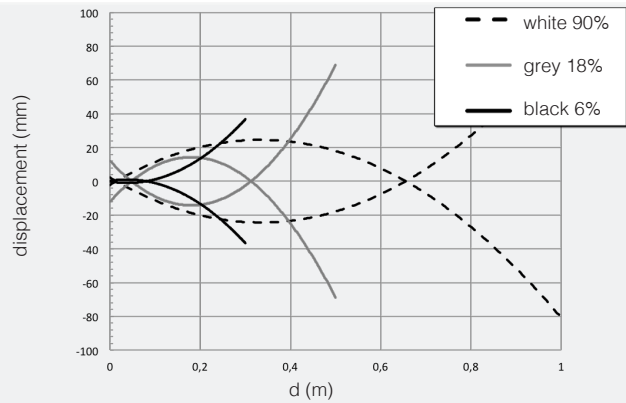
FQI8/B*-(2,3)* excess gain



FQI8/B*-(2,3)* spot dimension



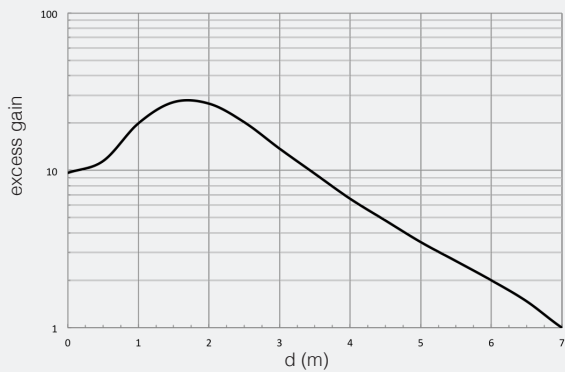
FQI8/B*-(2,3)* parallel displacement



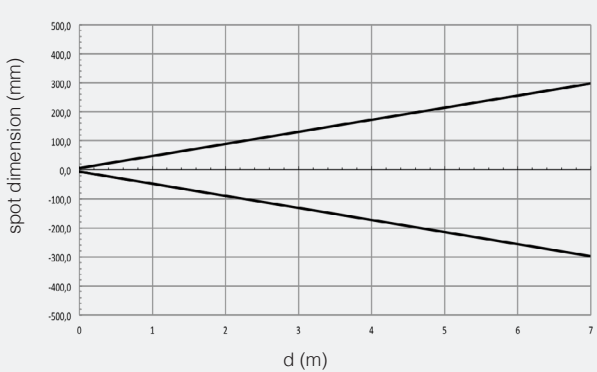
response diagrams

retro-reflective models (diagrams detected using RL110)

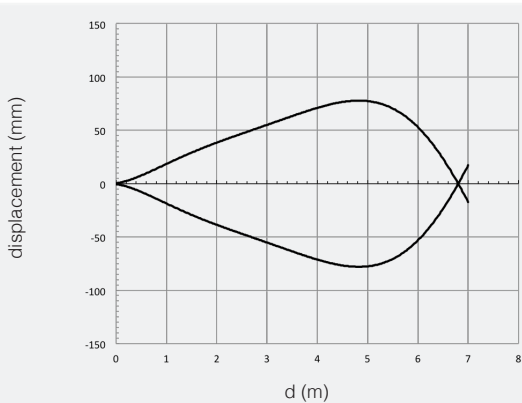
FQIC/B*-(0,1)* excess gain



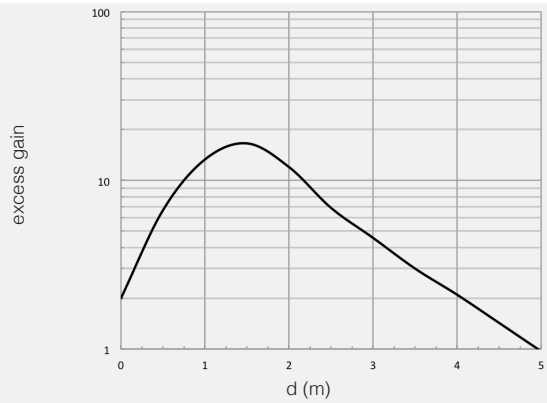
FQIC/B*-(0,1)* spot dimension



FQIC/B*-(0,1)* parallel displacement



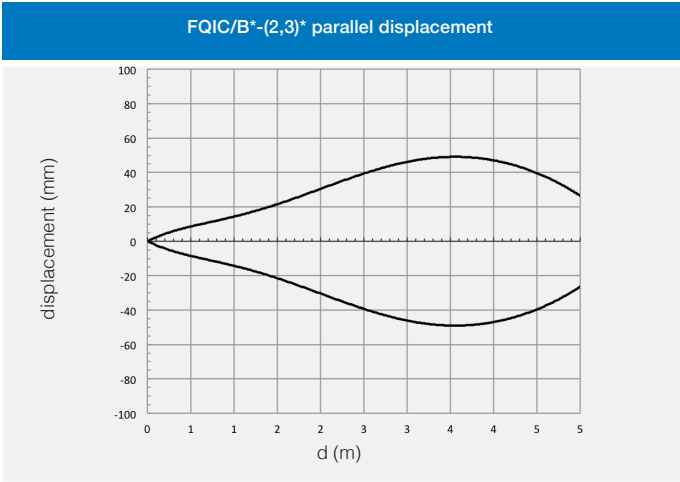
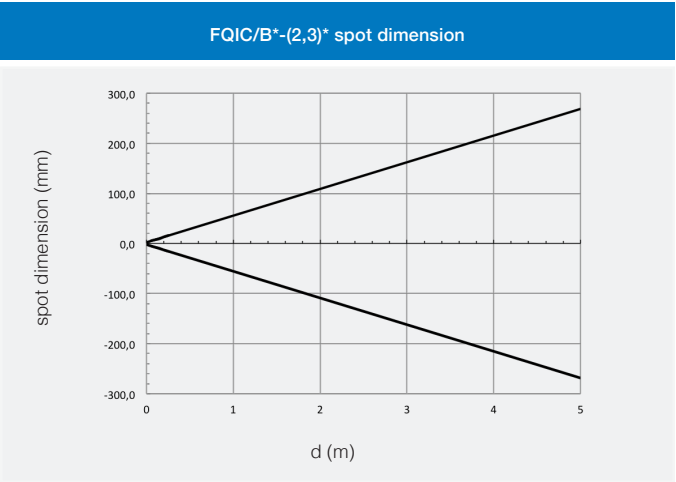
FQIC/B*-(2,3)* excess gain





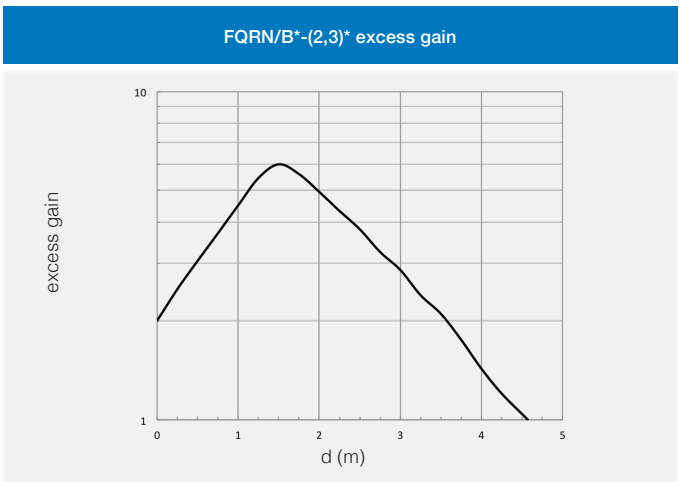
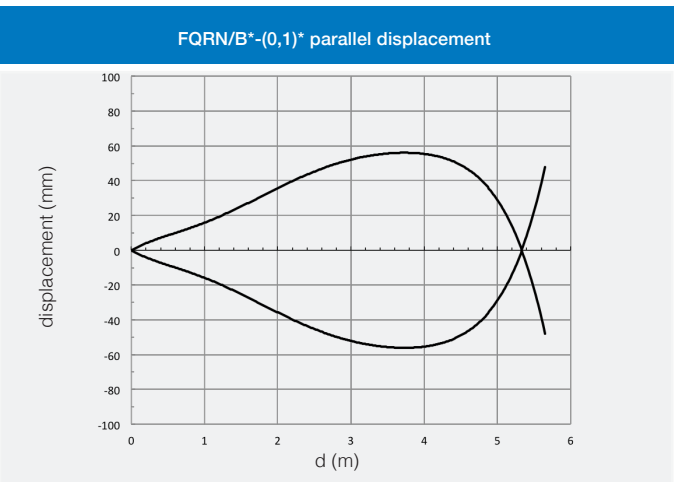
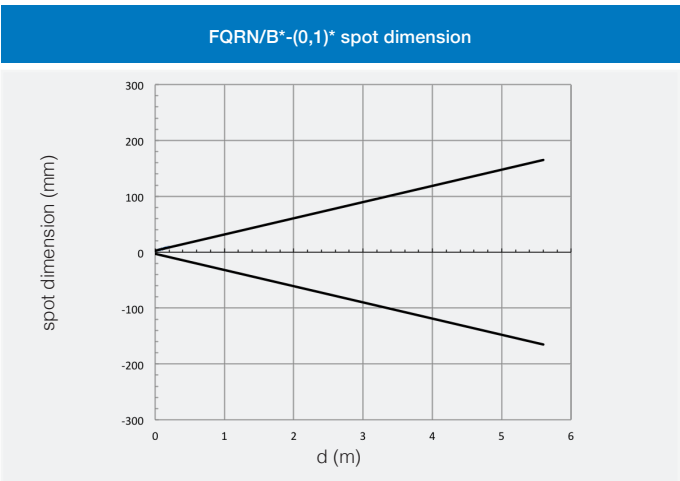
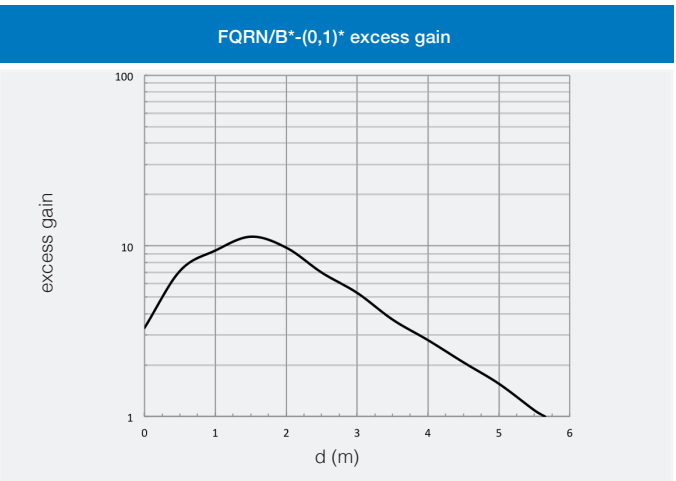
response diagrams

retro-reflective models



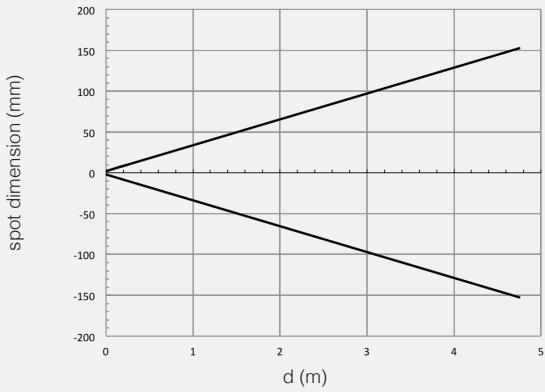
response diagrams

polarized models (diagrams detected using RL110)

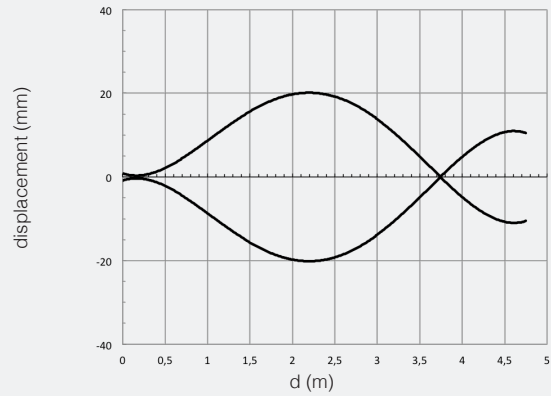




FQRN/B⁺-(2,3)* spot dimension



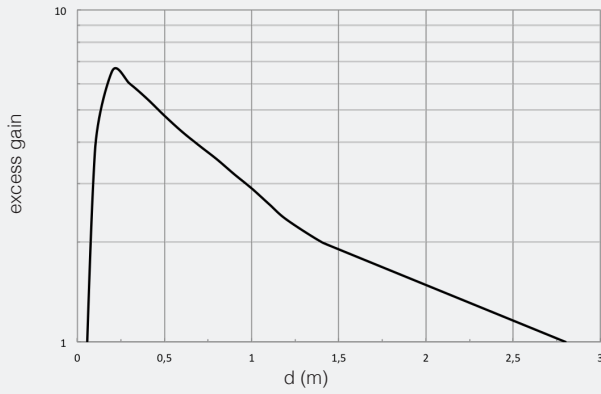
FQRN/B⁺-(2,3)* parallel displacement



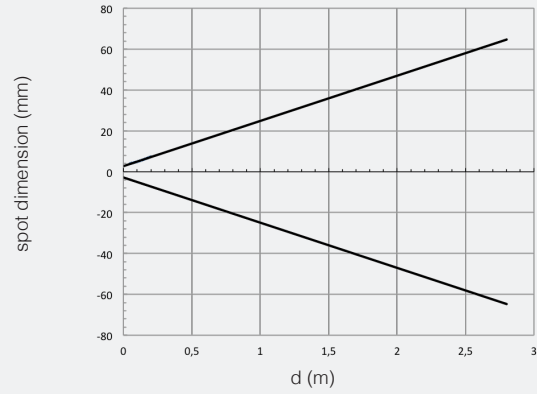
response diagrams

for transparent objects models (diagrams detected using RL110)

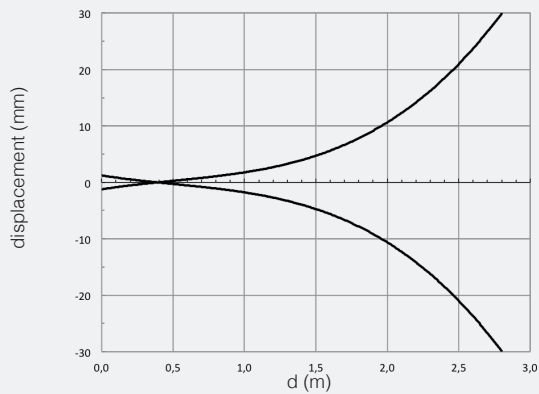
FQRL/B⁺-(0,1)* excess gain



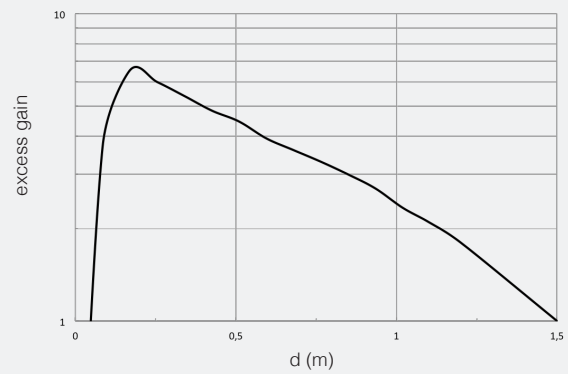
FQRL/B⁺-(0,1)* spot dimension



FQRL/B⁺-(0,1)* parallel displacement



FQRL/B⁺-(2,3)* excess gain

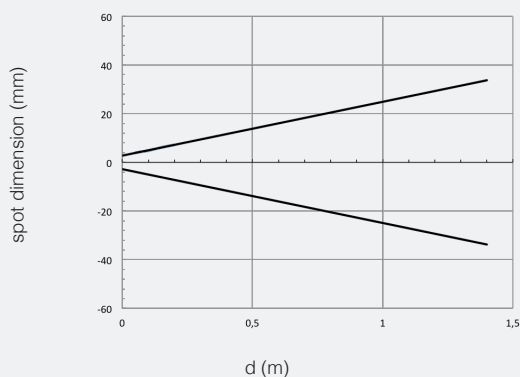




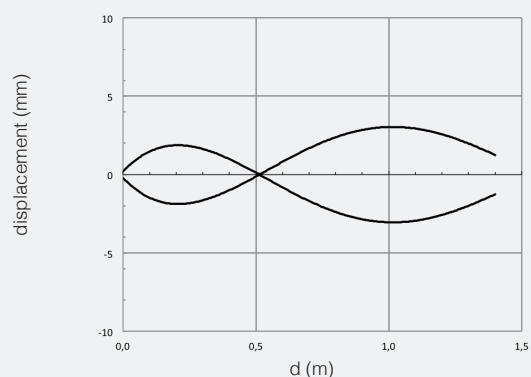
response diagrams

transparent models

FQRL/B⁺-(2,3)⁺ spot dimension



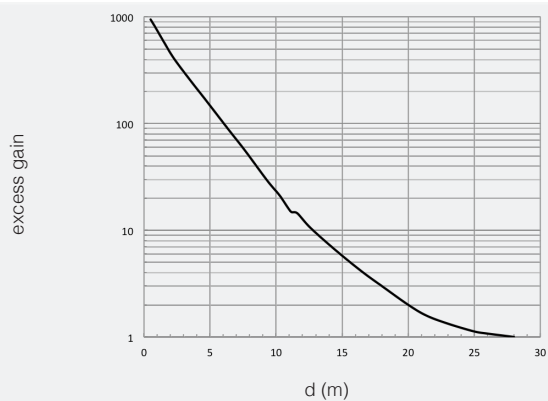
FQRL/B⁺-(2,3)⁺ parallel displacement



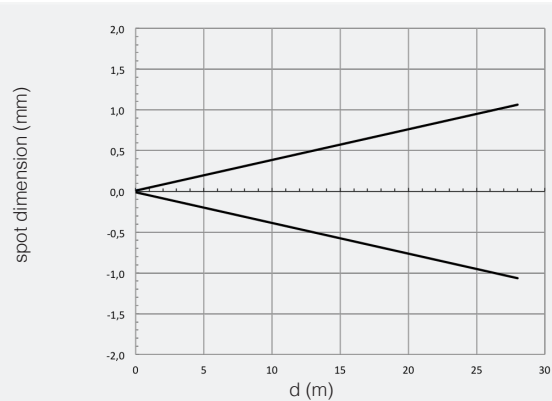
response diagrams

through-beam models

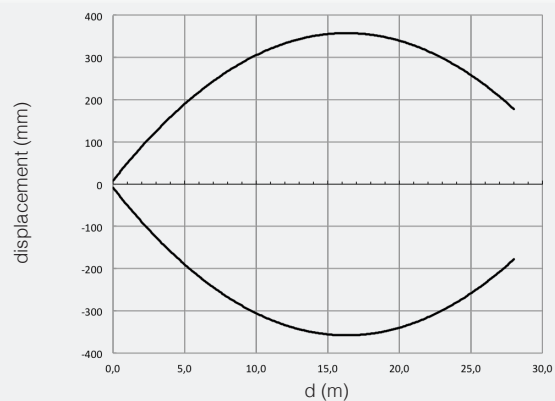
FQIH/00⁻-(0,1) - FQIZ/B⁺-(0,1) excess gain



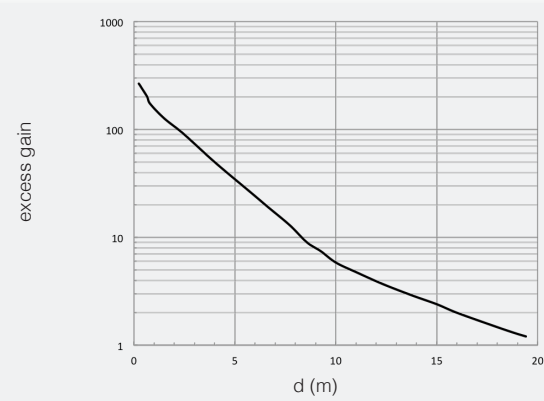
FQIH/00⁻-(0,1) - FQIZ/B⁺-(0,1) dimensione spot



FQIH/00⁻-(0,1) - FQIZ/B⁺-(0,1) parallel displacement



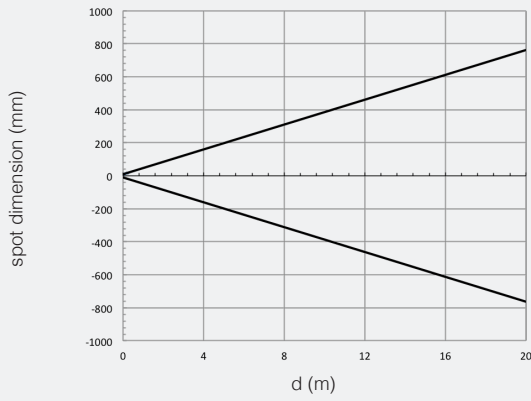
FQIH/00⁻-(2,3)⁺ - FQIZ/B⁺-(2,3)⁺ excess gain



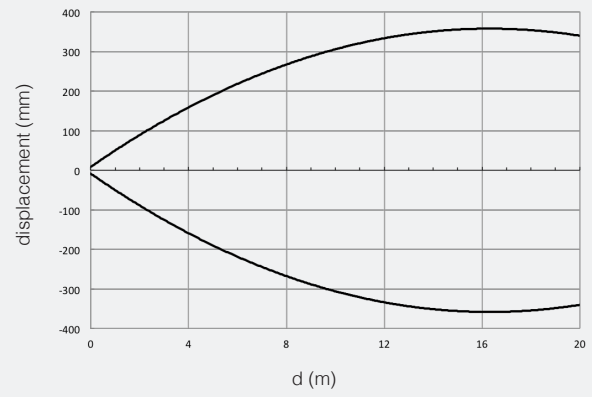


M18 short body

FQIH/00-*(0,1) - FQIZ/B*-(0,1) spot dimension

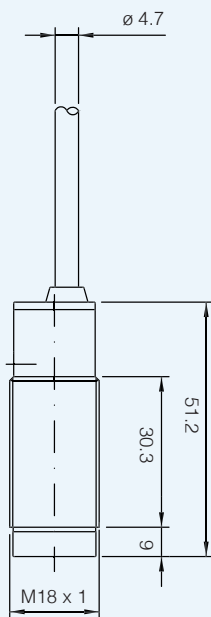


FQIH/00-*(0,1) - FQIZ/B*-(0,1) parallel displacement

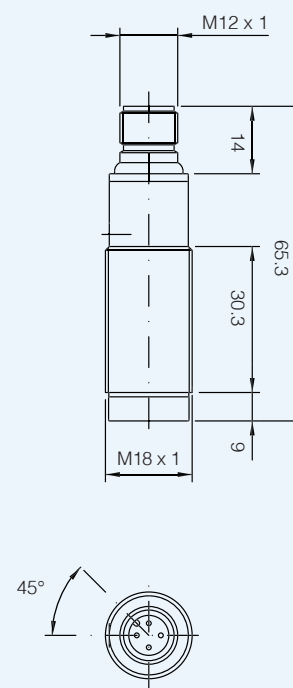


dimensions (mm)

FQ**/**-0A; FQ**/**-1A



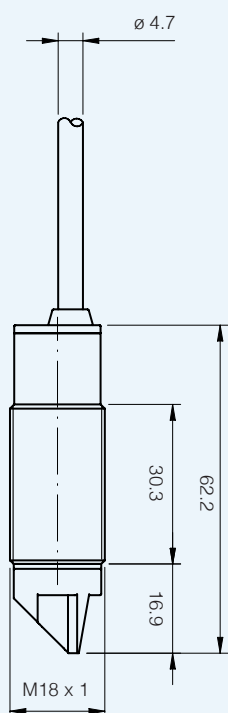
FQ**/**-0E; FQ**/**-1E



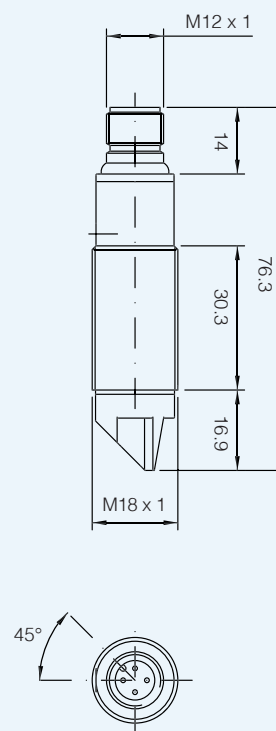


dimensions (mm)

FQ**/**-2A; FQ**/**-3A

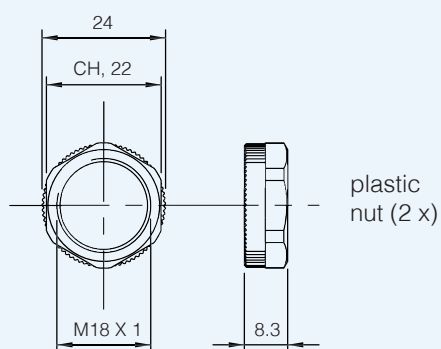


FQ**/**-2E; FQ**/**-3E



dimensions (mm)

accessories included in all plastic models



dimensions (mm)

accessories included in all metallic models

