QX series

DC miniaturized cubic photoelectric sensors

features

- **Axial and right angle optics**
- **2 LEDs (threshold and signal margin)**
- **Visible red light in retro-reflective, polarized and through-beam models**
- **Long distances capability**
- **Precision beam**
- **Fast response time (0,75-0,5 ms)**
- **NPN-PNP selectable output**
- **High output current (>300 mA)**

web content

- **Application notes**
- **Photos**
- **Catalogue / Manuals**

code description

QX 3 / A 0 - 1 A

series	QX	Miniaturized photoelectric sensor
type	3	Diffuse reflection 300 mm
	C	Retro-reflective 5 m
	P	Polarized 3 m
	X	Emitter with check
	R	Receiver 8 m
output	A	NO output state
	C	NC output state
	0	Emitter
axial / radial optics	1	Axial optics
	2	Right angle optics
cable / plug output	A	Cable exit 2 m
	F	M8 plug cable exit
	E	M12 plug cable exit

available models

axial optic

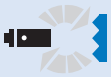
model		distance	cable		plug M8		plug M12	
			NO	NC	NO	NC	NO	NC
direct diffuse		300 mm	QX3/A0-1A	QX3/C0-1A	QX3/A0-1F	QX3/C0-1F	QX3/A0-1E	QX3/C0-1E
retro-reflective		5 m	QXC/A0-1A	QXC/C0-1A	QXC/A0-1F	QXC/C0-1F	QXC/A0-1E	QXC/C0-1E
polarized		3 m	QXP/A0-1A	QXC/C0-1A	QXP/A0-1F	QXP/C0-1F	QXP/A0-1E	QXP/C0-1E
through-beam	emitter	8 m	QXX/00-1A		QXX/00-1F		QXX/00-1E	
	receiver		QXR/A0-1A	QXR/C0-1A	QXR/A0-1F	QXR/C0-1F	QXR/A0-1E	QXR/C0-1E

available models

radial optic

model		distance	cable		plug M8		plug M12	
			NO	NC	NO	NC	NO	NC
direct diffuse		300 mm	QX3/A0-2A	QX3/C0-2A	QX3/A0-2F	QX3/C0-2F	QX3/A0-2E	QX3/C0-2E
retro-reflective		5 m	QXC/A0-2A	QXC/C0-2A	QXC/A0-2F	QXC/C0-2F	QXC/A0-2E	QXC/C0-2E
polarized		3 m	QXP/A0-2A	QXC/C0-2A	QXP/A0-2F	QXP/C0-2F	QXP/A0-2E	QXP/C0-2E
through-beam	emitter	8 m	QXX/00-2A		QXX/00-2F		QXX/00-2E	
	receiver		QXR/A0-2A	QXR/C0-2A	QXR/A0-2F	QXR/C0-2F	QXR/A0-2E	QXR/C0-2E

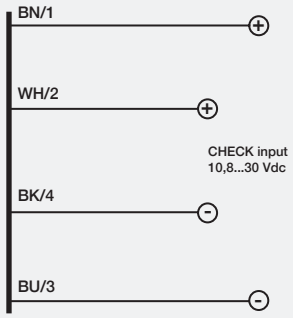
technical specification

	diffuse reflection	retro-reflective	polarized	through-beam
	QX3/*0-**	QXC/*0-**	QXP/*0-**	QXX/*0-** QXR/*0-**
				
nominal sensing distance	300 mm (1)	5 m (2)	3 m (2)	8 m
emission	infrared (880 nm)	red (660 nm)		
minimum detectable object	see characteristic curves			2 mm
tolerance	+ 15 % / - 5 % Sn			-
hysteresis	10 %			
repeatability	5 %			
operating voltage	10,8...30 Vdc			
ripple	10 % max			
load current	20 mA max			20 mA (emitter) 5 mA (receiver)
check voltage	-			10,8...30 Vdc (QXX)
load current	300 mA			
leakage current	100 µA max at 30 Vdc			
output voltage drop	1,2 V max IL = 100 mA			
output type	PNP or NPN selectable			
switching frequency	750 Hz (Tr = 0,5 ms)			500 Hz (Tr = 0,75 ms)
power on delay	200 ms			
operating temperature range	- 25°C...+ 70°C (without freeze)			
power supply protections	polarity reversal, transient			
output protection	short circuit (autoreset)			
protection degree	IP67 (EN60529) (3)			
EMC	in conformity with the EMC Directive according to EN 60947-5-2			
external light interference	3,000 lux (incandescent lamp), 10,000 lux (sunlight)			
LEDs	RED LED (margin low signal) CHECK (QXX) GREEN LED (stability) POWER (QXX)			
housing material	ABS (glass fiber reinforced)			
optic material	acrylic			
weight (approximate)	30 g connector / 70 g cable (single)			

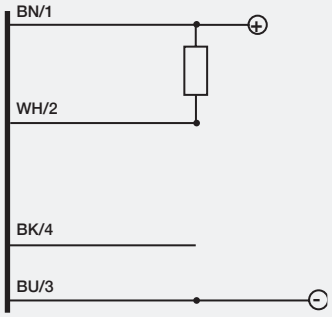
(1) With 100x100 mm white matt paper (2) With standard reflector Ø80 mm (RL110 supplied seperately) (3) Protection guaranteed only with plug cable well mounted

electrical diagrams of the connections

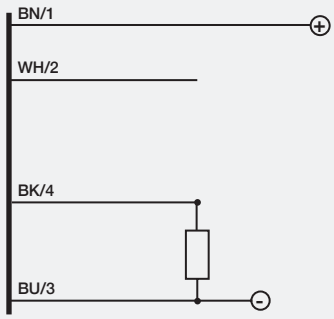
emitter with check



NPN output



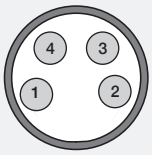
PNP output



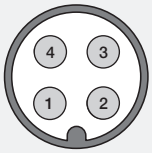
BN	brown
BU	blue
BK	black
WH	white

plug

M8



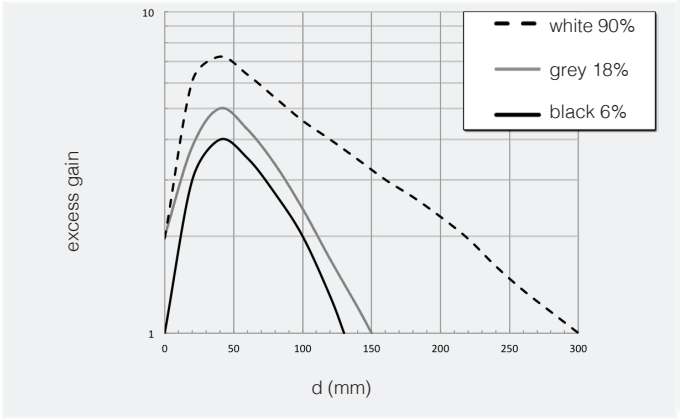
M12



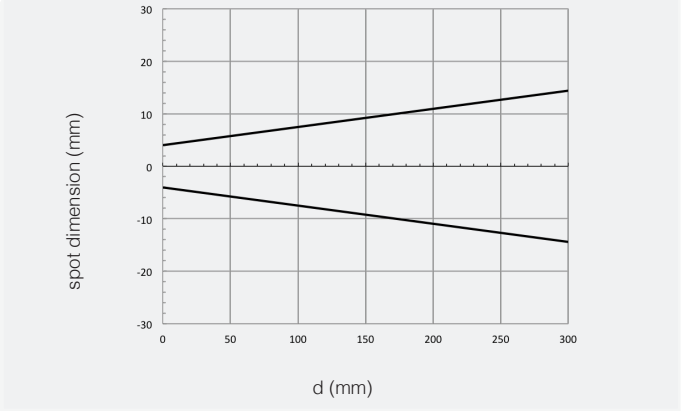
response diagrams

direct reflection models

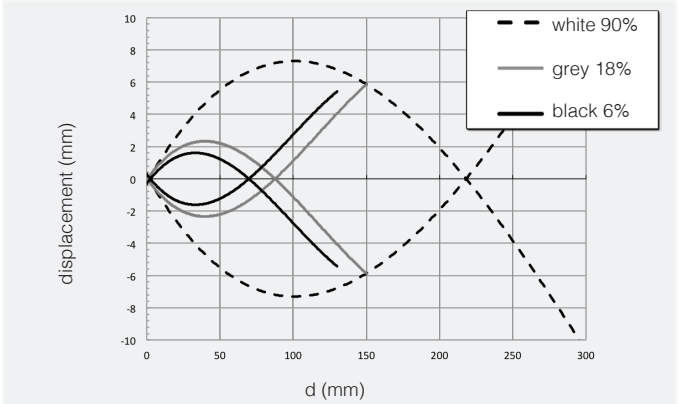
QX3/*0-** excess gain



QX3/*0-** spot dimension



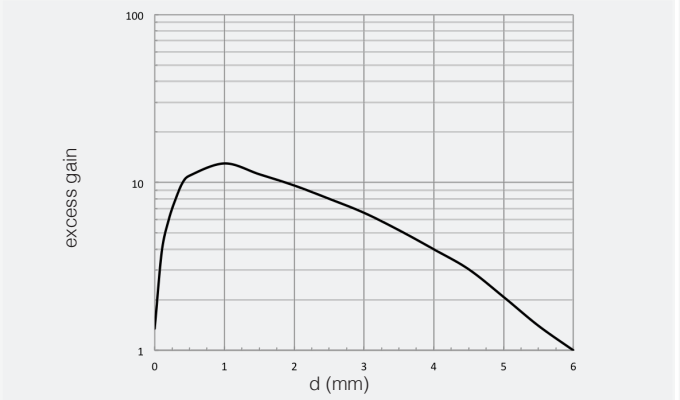
QX3/*0-** parallel displacement



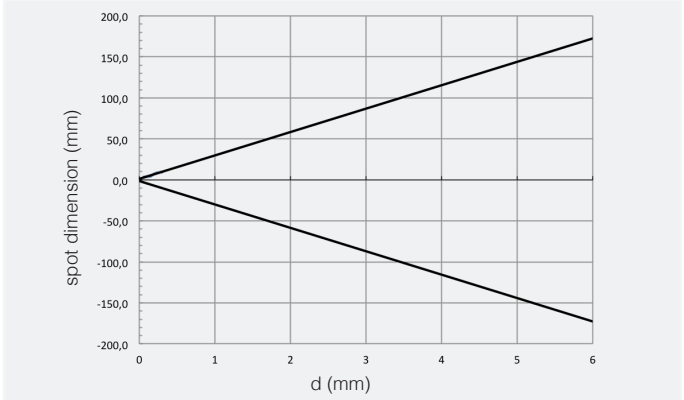
response diagrams

retroreflective models

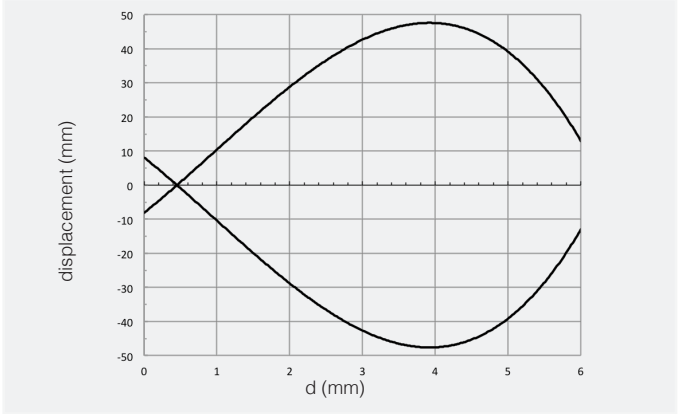
QXC/*0-** excess gain



QXC/*0-** spot dimension



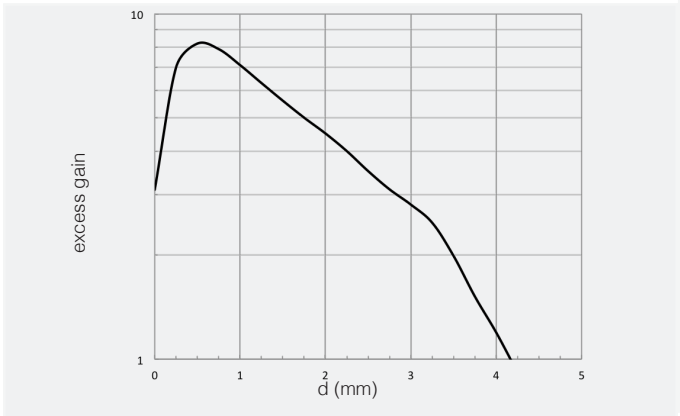
QXC/*0-** parallel displacement



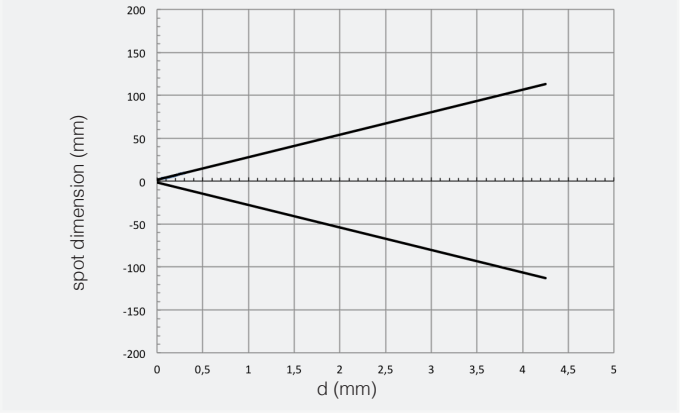
response diagrams

polarized models

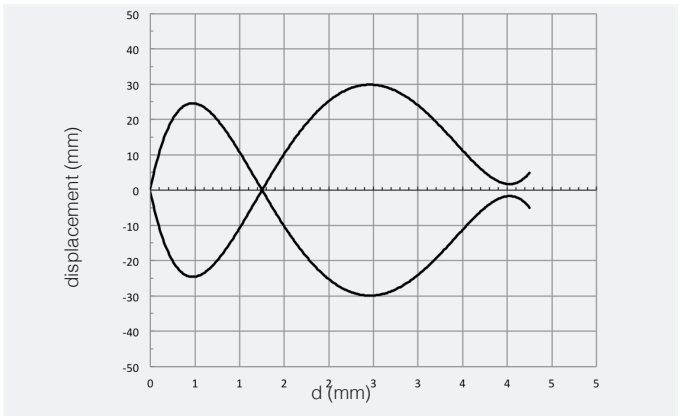
QXP/*0-** excess gain



QXP/*0-** spot dimension



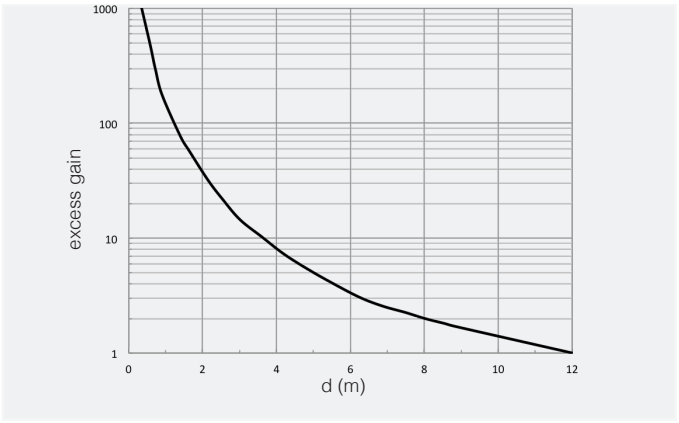
QXP/*0-** parallel displacement



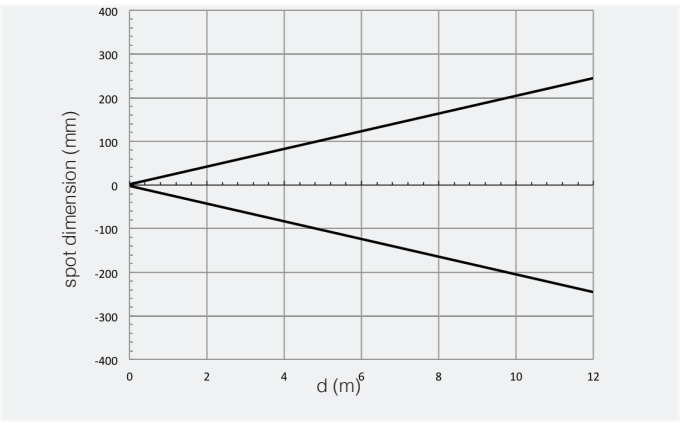
response diagrams

through-beam

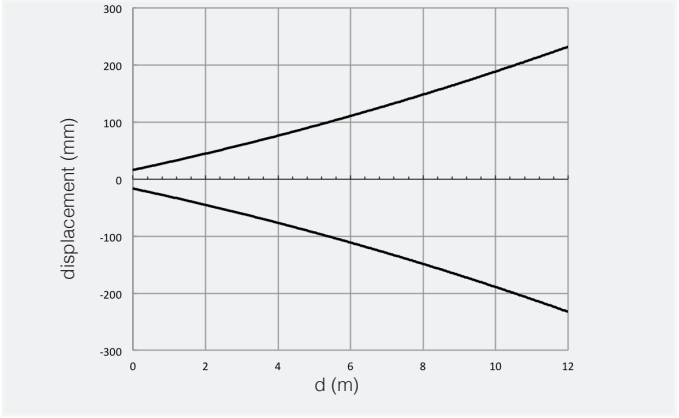
QXX/00-** - QXR/*0-** excess gain



QXX/00-** - QXR/*0-** spot dimension

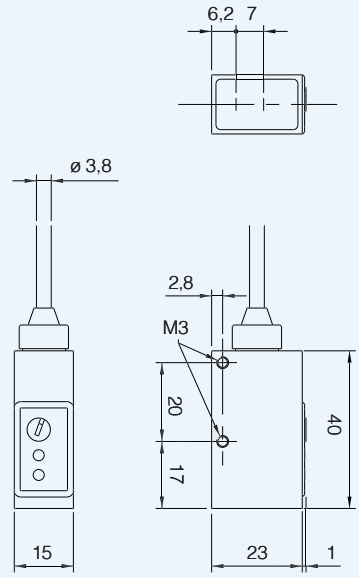


QXX/00-** - QXR/*0-** parallel displacement

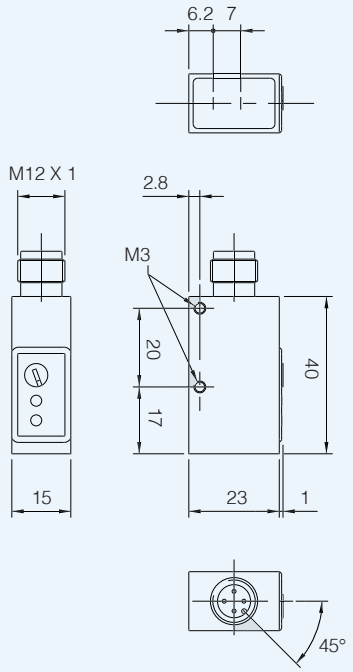


dimensions (mm)

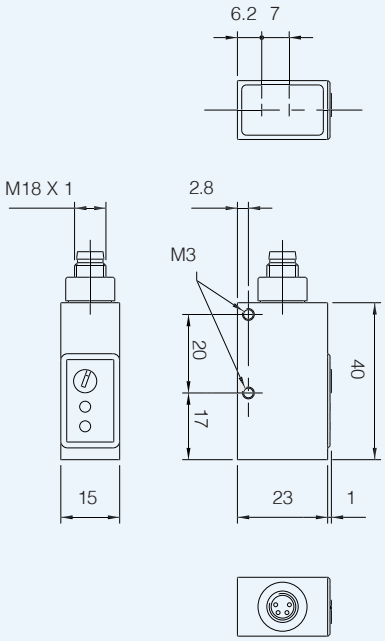
QX*/**-1A



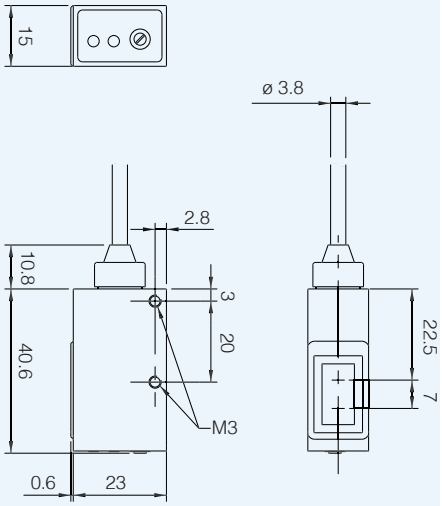
QX*/**-1E



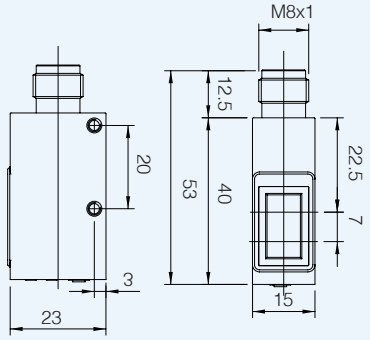
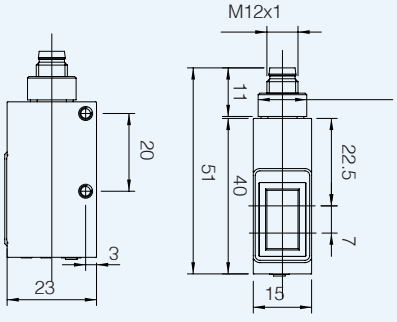
QX*/**-1F



QX*/**-2A



QX*/**-2E



QX*/**-2F