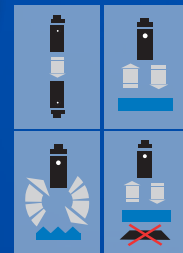




QF series

Metallic cubic miniaturized photoelectric sensors
For harsh environments or food and beverage applications



features

- AISI 316L Stainless steel housing
- IP67-IP68-IP69K protection degree
- Totally protected against electrical damages
- Complementary outputs (NO + NC)
- CE e cULus listed approval



Metallic cubic miniaturized

web content



- Application notes
- Photos
- Catalogue / Manuals



code description

QF R N / B P - 1 F

series	QF	Metallic cubic miniaturized photoelectric sensors for harsh environments or food and beverage applications
emission	I	Infrared emission
	R	Red emission
model	4	Direct reflection 200 mm (wide spot)
	8	Direct reflection 1000 mm
	S	Background suppression
	N	Polarized
output	H	Emitter
	D	Receiver
	0	Emitter
logic output	B	Complementary outputs (NO + NC)
	N	NPN logic output
housing	P	PNP logic output
	1	Stainless steel AISI 316L
connection	A	Cable (length 2m)
	F	Plug M8 4 poles



Metallic cubic miniaturized

available models

model	distance	emission	adjustment	housing	cable		plug M8	
					NPN (NO+NC)	PNP (NO+NC)	NPN (NO+NC)	PNP (NO+NC)
diffuse reflection	200 mm	infrared	●	metallic	QFI4/BN-1A	QFI4/BP-1A	QFI4/BN-1F	QFI4/BP-1F
	1000 mm				QFR8/BN-1A	QFR8/BP-1A	QFR8/BN-1F	QFR8/BP-1F
background suppression	200 mm	red	●	metallic	QFRS/BN-1A	QFRS/BP-1A	QFRS/BN-1F	QFRS/BP-1F
polarized	6 m				QFRN/BN-1A	QFRN/BP-1A	QFRN/BN-1F	QFRN/BP-1F
emitter	15 m	infrared	-	metallic	QFIH/00-1A	-	QFIH/00-1F	-
receiver	15 m		●		QFID/BN-1A	QFID/BP-1A	QFID/BN-1F	QFID/BP-1F

technical specification

	diffuse reflection		background suppression	polarized	emitter	receiver
	QFI4/B*-1*	QFR8/B*-1*	QFRS/B*-1*	QFRN/B*-1*	QFIH/00-1*	QFID/B*-1*
nominal sensing distance (Sn)	200 mm (wide angle)	1 m	25...200 mm	6 m	15 m	
scanning adjustment range (Sr)	20...200 mm	0,1..1 m	25...200 mm	1,7...6 m	-	-
hysteresis	≤ 20%		≤ 10%	≤ 20%	-	≤ 20%
emission	Infrared (850 nm)	Red (617 nm)		Red (625 nm)	Infrared(850 nm)	-
supply voltage	10...30Vdc					
ripple	≤ 10%					
no-load supply current	≤ 25 mA	≤ 40 mA		≤ 25 mA	≤ 20 mA	
load current	≤ 100 mA					
leakage current	100 µA					
output voltage drop	2 Vdc @ 100 mA					
output type	PNP or NPN (NO + NC)			PNP or NPN (NO + NC)	PNP or NPN (NO + NC)	
switching frequency	1 kHz	500 Hz		1 kHz	500 Hz	
power on delay	30 ms			30ms	30ms	200ms
operating temperature range	-25°C...+60°C (without freeze)					
power supply protection	polarity reversal, transient					
output electrical protection	short circuit (auto reset)				-	short circuit (auto reset)
sensing adjustment	Trimmer (210°)			Trimmer (210°)	-	Trimmer (210°)
protection degree	IP68, IP69K					
EMC	conformity with the EMC directive according to EN 60947-5-2					
external light interference	≤ 10.000 lux			≤ 10.000 lux	≤ 10.000 lux	
housing material	Stainless steel AISI 316L					
optical material	PPSU					
weight (approximate)	≤ 100gr (cable); ≤ 65gr (plug)					

LEDs

Green LED	Yellow LED	Supply Voltage	Output
ON	OFF	ON	OFF (stable)*
OFF	OFF	ON or OFF	OFF
OFF	ON	ON	ON
OFF	ON	ON	ON (stable)*

Emitter			
Green LED	-	Power	-
ON	-	ON	-

electrical diagrams of the connections

PNP output

NPN output

emitter

BN	brown
BU	blue
BK	black
WH	white
PK	pink
GY	gray

plug

QF/B*-1F**

QFIH/00-1F

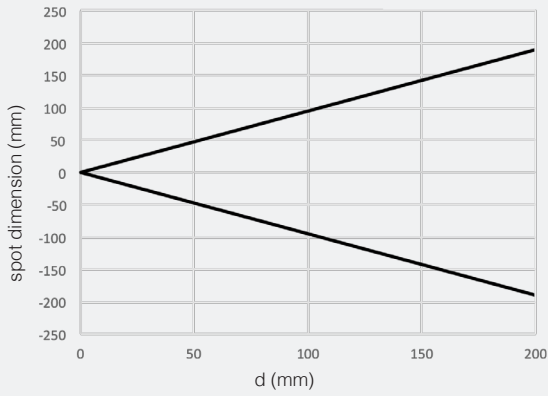


response diagrams

direct reflection models

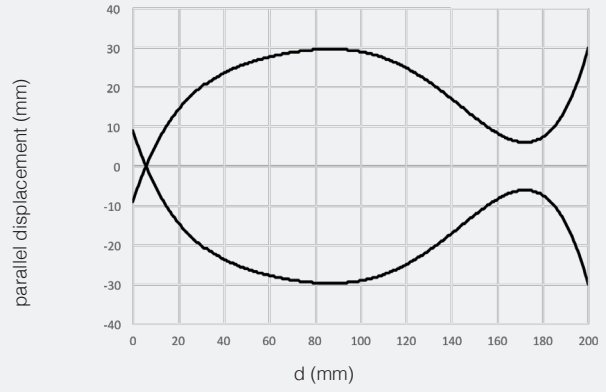
Metallic cubic
miniaturized

QFR4 spot dimension

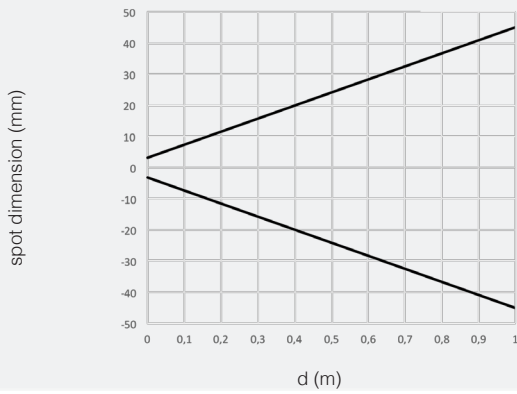


White 90%	0...200 mm
Gray 18%	5...105 mm
Black 6%	10...55 mm

QFR4 parallel displacement

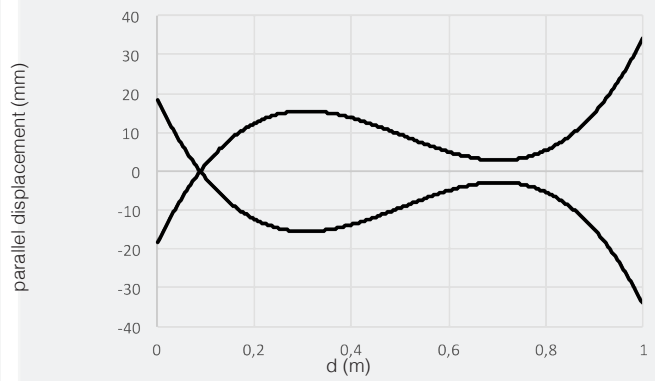


QFR8 spot dimension



White 90%	1...1,000 mm
Gray 18%	5...500 mm
Black 6%	10...300 mm

QFR8 parallel displacement

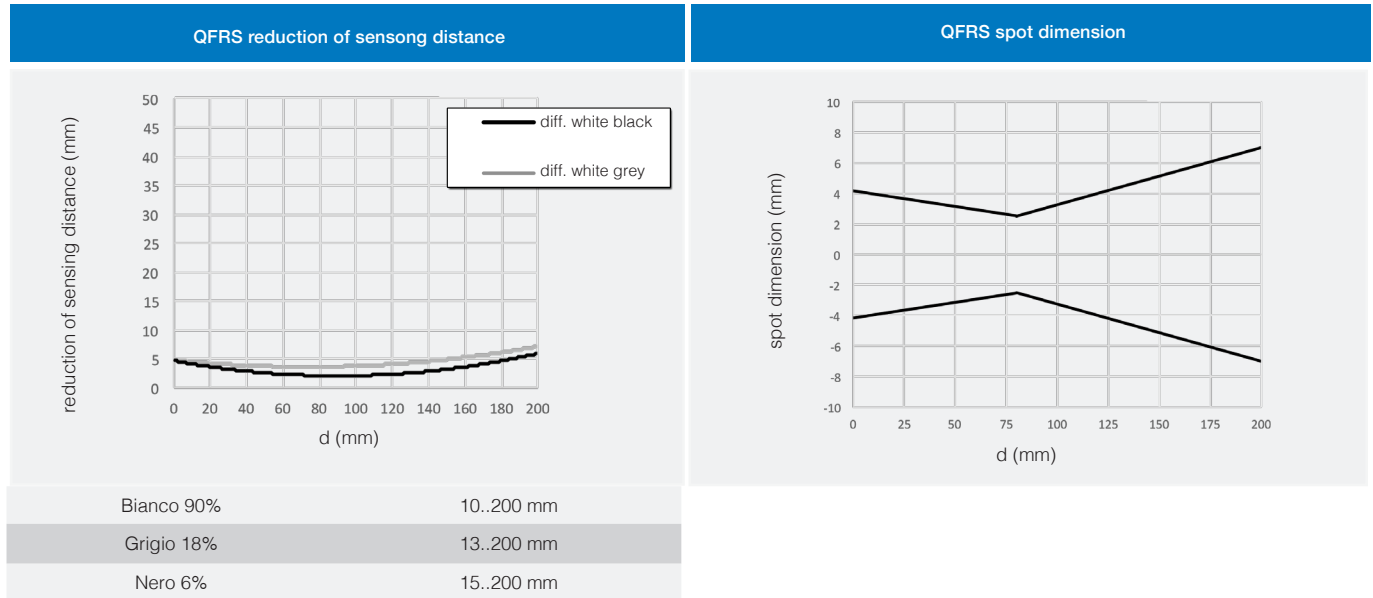


response diagrams

background suppression models

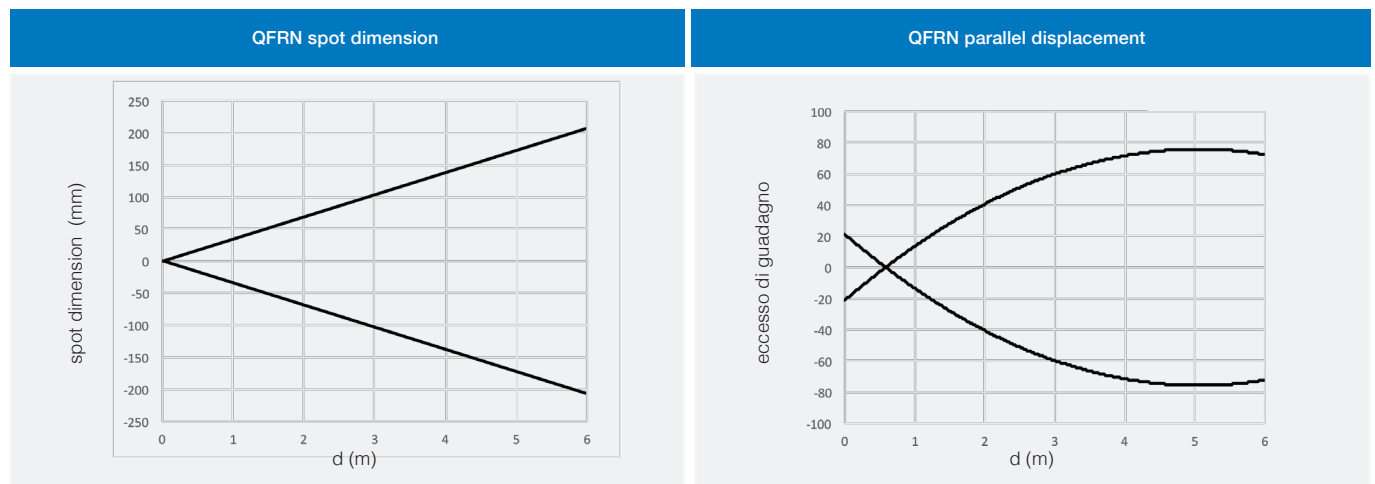


Metallic cubic
miniaturized



response diagrams

polarized models



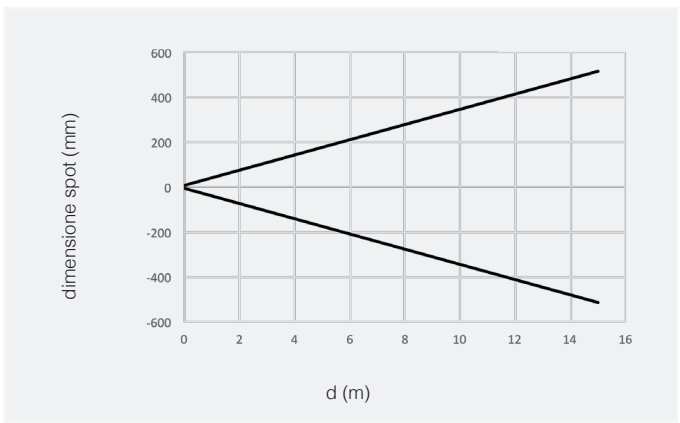
	ExG2 [m]	ExG1 [m]	minimum distance [mm]
RL110	6	7	100
RL113G	3,3	3,4	100
RL116	1,8	2,1	110



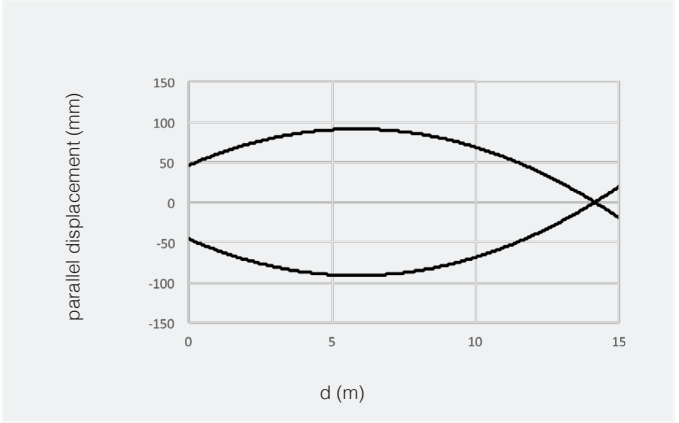
response diagrams

through-beam models

QFI* spot dimension

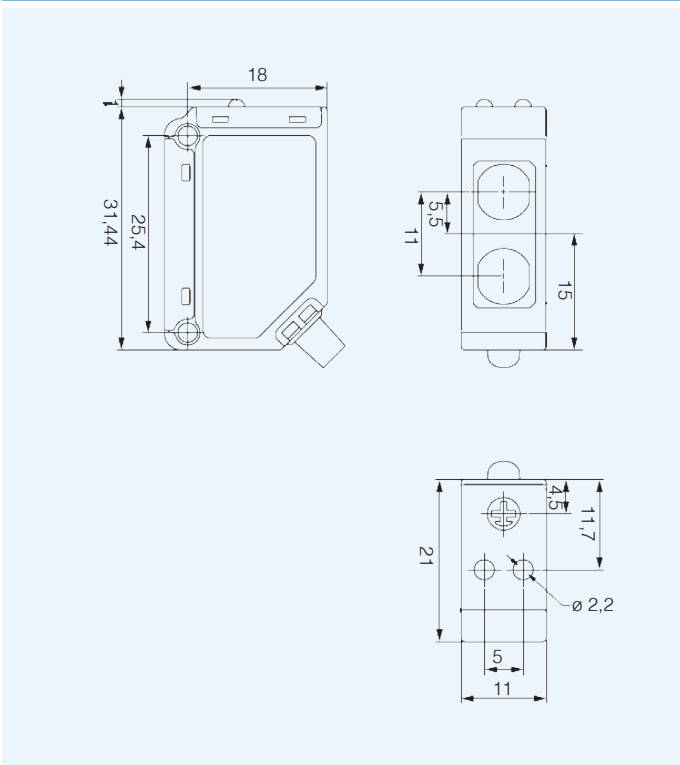


QFI* parallel displacement

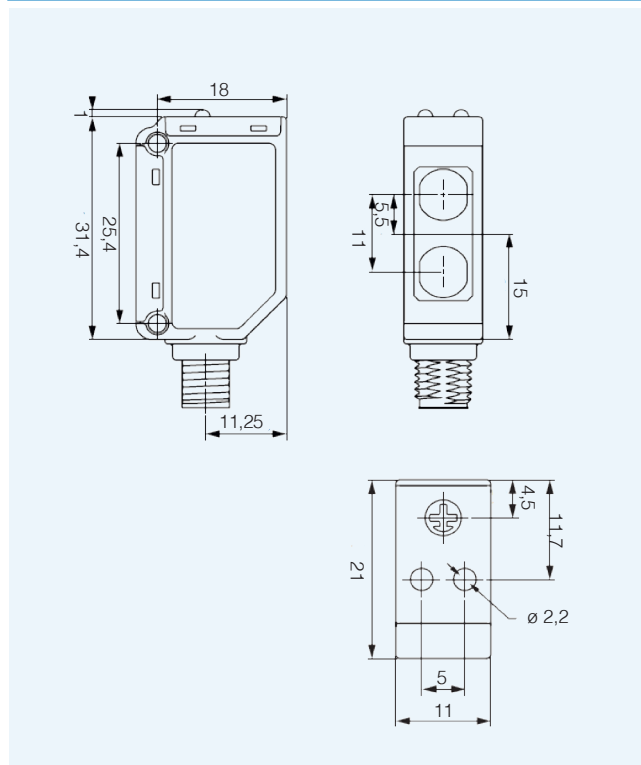


dimensions (mm)

cable models



plug models

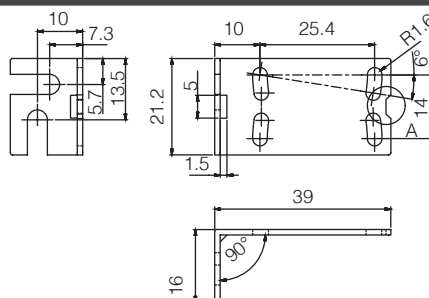


accessories

ST 105			
product	suitable for	dimensions (mm)	description / installation



QF sensors



galvanized stainless steel
AISI 304

QF

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