

Solid State Relay

Description

- 1-12 meters sensing range
- 20 to 53 parallel scanning beams
- Active height of 1800 mm to 2340 mm
- Length of 1970 mm to 2510 mm
- 3 different beam patterns
- Gain control input selection
- Colour-coded M8 plug pigtail with extension cables
- Micro aluminium IP67 profile design
- Fully encapsulated electronics
- Power, output and system status indicators
- 10-30 V dc supply voltage
- Solid state relay output
- Test input and static blanking function



The SG 17 light curtain system consists of a self-contained transmitter, SGT and receiver, SGR, which are to be positioned opposite of each other. The detectors are housed in ultra compact, but sturdy, aluminium profiles that are mounted using plastic fixture clips (included). All electronics are fully potted. The light curtain can be fitted with an optional front cover for additional protection of the optoelectronic components.

The system is supplied with a 10-30 V dc power supply and the SGR includes a solid state relay output. The control input in the SGT may be used for either disabling or enabling the transmitter power temporarily for test purpose or for set up of a static blanking function which allows a selection of beams to be permanently ignored (only available in C1 models). The SGT and SGR are electrically synchronised.

The control input in the SGR allows a selection between a fixed high gain setting or an automatic adjusting gain setting with advanced automatic signal-tracking (AST) which automatically adjusts the signal level of each

channel, compensating for misalignment and contamination during operation. No onsite set up or adjustments are required.

The SG 17 series features the Dynamic Sequential Blanking Function which allows the detectors to be positioned in the guide tracks of an industrial door, where the door travels directly in front of the protection area, interrupting the beams sequentially from top to bottom. The special feature ensures that the system can distinguish between the closing door and an object by ignoring the beams that are obstructed by the moving door whilst leaving the below remaining beams active to detect an object below the door edge.

Two sets of SG 17 light curtains can be wire configured together to form a synchronised and multiplexed Master/Slave system, which ensures that optical cross-talk between the two sets is prevented.

The door can stop at any position and reverse, as required for partial door opening. The light curtain has an additional beam positioned 35 mm above the floor for extra safety.

Technical Data			
		SGT	SGR
Supply voltage		10-30 V dc	
Current consumption		70 mA (RMS)	40 mA
Max. output load		Solid State Relay	
		–	100 mA
Short circuit protected		–	Yes
Inductive load protection		–	Yes
Reverse polarity protected		Yes	
Light source		Infrared (880 nm)	–
Number of parallel beams		20, 21, 22, 23, 29, 30, 31, 32, 41, 45, 49 or 53	
Active height		1800, 1980, 2160 or 2340 mm	
Bottom spacing to Ch 1		35 mm	
Spacing between Ch 1 and Ch 2		10 mm	
Channel spacing (Ch 1 excluded)	C1	45 mm: between all channels	
	D1	45 mm: up to 1080 mm 180 mm: from 1080 mm to top	
	F1	45 mm: up to 540 mm 180 mm: from 540 mm to top	
Max. response time		–	40 ms
Max. sequential blanking speed		1,6 m/s	
Minimum size of detectable objects		50 mm / 185 mm	
Power on indicator		Green LED	
Output indicator		–	Yellow LED
System status indicator		Red LED	
Opening angle		–	+/- 10°
Emission angle		+/- 10°	–
Profile dimensions (w x d)		12 mm x 14 mm	
Housing material	Profile	Aluminium (black anodised)	
	Lens cover (optional)	Polycarbonate	
Pigtail, PVC Ø 4,5 mm		0.3 m with 4 pin, M8 male plug (black)	0.3 m with 6 pin, M8 male plug (grey)
Extension cable, PVC Ø 4,5 mm		15 m with 4 pin, M8 female plug (black)	5 m with 6 pin, M8 female plug (grey)

Solid State Relay

Environmental Data

	SGT	SGR
Light immunity @ 5° incidence	–	100 000 lux
Temperature, operation	–20 to +55 °C	
Temperature, storage	–40 to +80 °C	
Sealing class	IP 67	
EU directives	2011/65/EU (RoHS) 2014/30/EU (EMC)	
Standards	IEC 60068-2-6:2007 (vibration) EN 61000-6-2:2019 (EMC emission) EN 61000-6-3:2007 +A1:2011 (EMC immunity)	
Marking	CE UK CA	

Available Types

U-profile

Transmitter	Housing Length	Active Height	Number of Channels	Channel Placement	Connection		4 pin M8 plug: 0.3 m pigtail + 15 m extension cable	Range
					Output		Order Reference	
	1970 mm	1800 mm	41	C1	–	–	SGT 17-197-041-C1-U-00-0.3-T4-15	12 m
			29	D1			SGT 17-197-029-D1-U-00-0.3-T4-15	
			20	F1			SGT 17-197-020-F1-U-00-0.3-T4-15	
	2150 mm	1980 mm	45	C1			SGT 17-215-045-C1-U-00-0.3-T4-15	
			30	D1			SGT 17-215-030-D1-U-00-0.3-T4-15	
			21	F1			SGT 17-215-021-F1-U-00-0.3-T4-15	
	2330 mm	2160 mm	49	C1			SGT 17-233-049-C1-U-00-0.3-T4-15	
			31	D1			SGT 17-233-031-D1-U-00-0.3-T4-15	
			22	F1			SGT 17-233-022-F1-U-00-0.3-T4-15	
	2510 mm	2340 mm	53	C1			SGT 17-251-053-C1-U-00-0.3-T4-15	
			32	D1			SGT 17-251-032-D1-U-00-0.3-T4-15	
			23	F1			SGT 17-251-023-F1-U-00-0.3-T4-15	

Receiver	Housing Length	Active Height	Number of Channels	Channel Placement	Connection		6 pin M8 plug: 0.3 m pigtail + 5 m extension cable	Range
					Output		Order Reference	
	1970 mm	1800 mm	41	C1	Solid State Relay	LO (NC)	SGR 17-197-041-C1-U-09-0.3-T6-5	1-12 m
			29	D1			SGR 17-197-029-D1-U-09-0.3-T6-5	
			20	F1			SGR 17-197-020-F1-U-09-0.3-T6-5	
	2150 mm	1980 mm	45	C1			SGR 17-215-045-C1-U-09-0.3-T6-5	
			30	D1			SGR 17-215-030-D1-U-09-0.3-T6-5	
			21	F1			SGR 17-215-021-F1-U-09-0.3-T6-5	
	2330 mm	2160 mm	49	C1			SGR 17-233-049-C1-U-09-0.3-T6-5	
			31	D1			SGR 17-233-031-D1-U-09-0.3-T6-5	
			22	F1			SGR 17-233-022-F1-U-09-0.3-T6-5	
	2510 mm	2340 mm	53	C1			SGR 17-251-053-C1-U-09-0.3-T6-5	
			32	D1			SGR 17-251-032-D1-U-09-0.3-T6-5	
			23	F1			SGR 17-251-023-F1-U-09-0.3-T6-5	

Note: 1. Special lengths are available upon request.

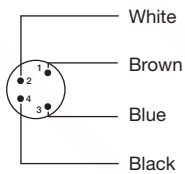
2. Different test input configurations are available upon request.

Solid State Relay

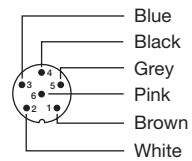
Connections

	M8 Plug / Cable	
	SGT	SGR
Supply +	Pin 1 / Brown	Pin 1 / Brown
Common sync	Pin 2 / White	Pin 2 / White
Supply -	Pin 3 / Blue	Pin 3 / Blue
Control input	Pin 4 / Black	-
Output	-	Pin 4 / Black
Output	-	Pin 5 / Grey
Gain control input	-	Pin 6 / Pink

4 pin, M8

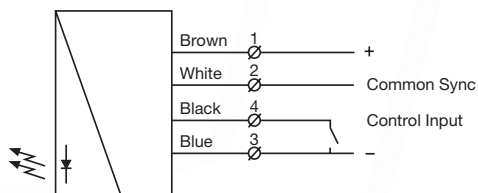
Sensor Plug
(Male)Cable Plug
(Female)

6 pin, M8

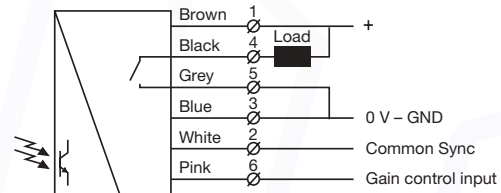
Sensor Plug
(Male)Cable Plug
(Female)

Refer to SpaceGuard Cables datasheet for extension cables.

Wiring Diagrams

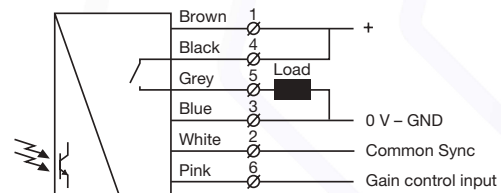


SGT 17

Control wire for test input and static blanking function
(blanking function in C1 models only)

SGR 17

Load as NPN output



SGR 17

Load as PNP output



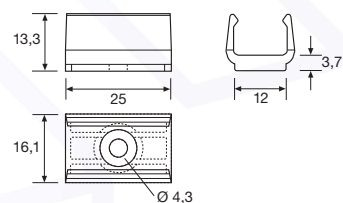
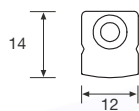
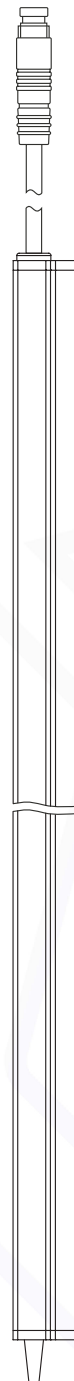
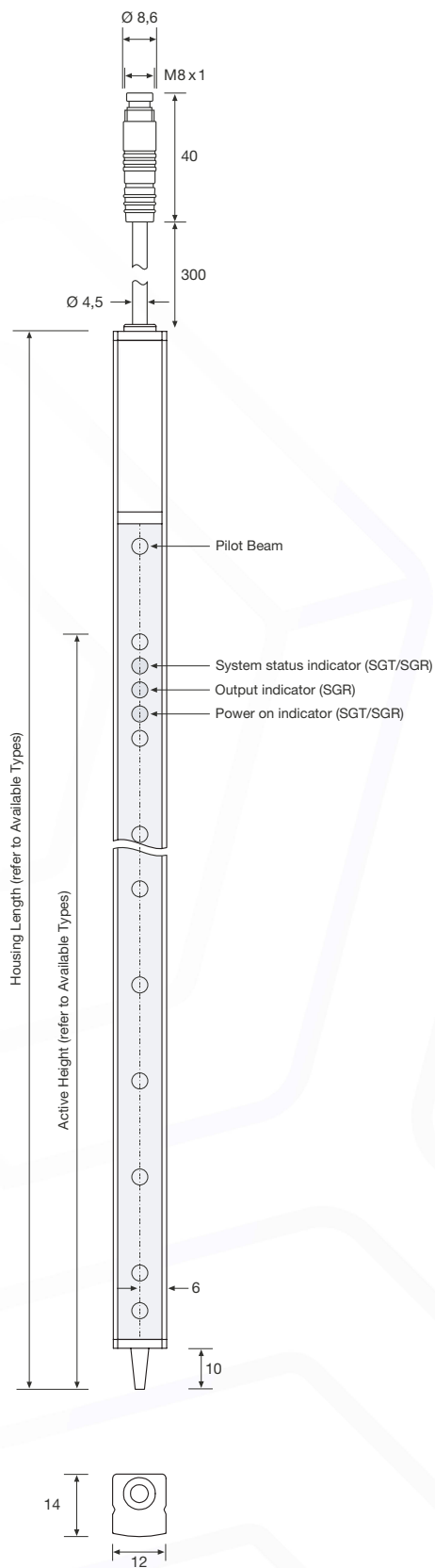
SGR 17

Solid state relay output

Solid State Relay

Dimensions and Descriptions

U-profile



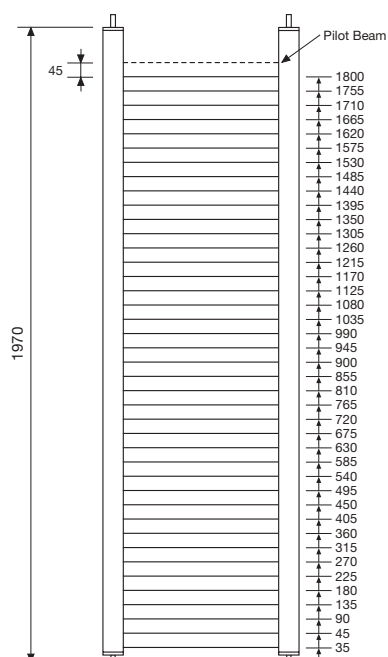
Note: 1. Optional front lens cover to be ordered separately.

(Units in mm)

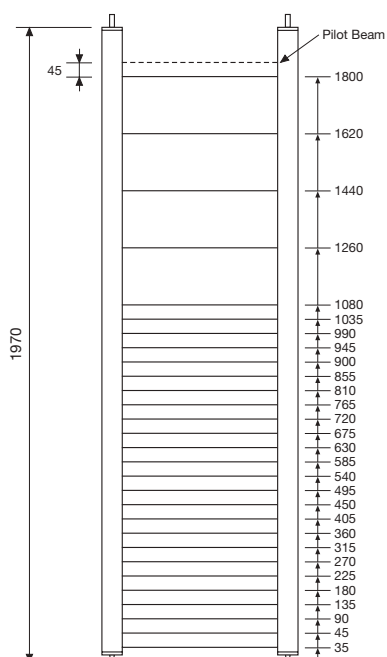
TR PSC-16-25 U
(6 pcs included with each set)

Beam Patterns

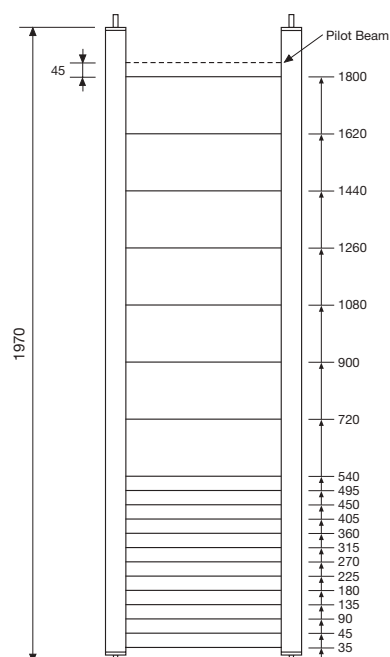
1970 mm housing length



C1



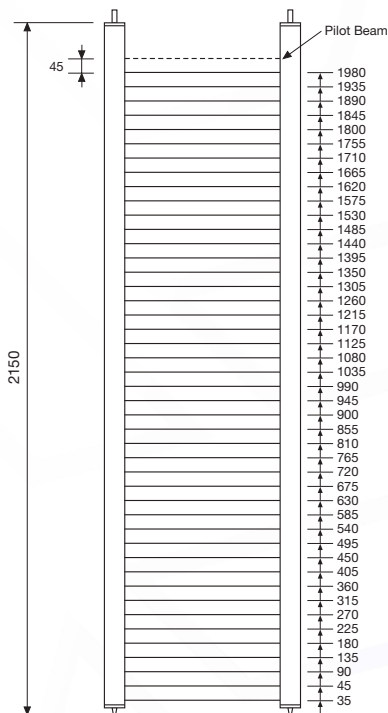
D1



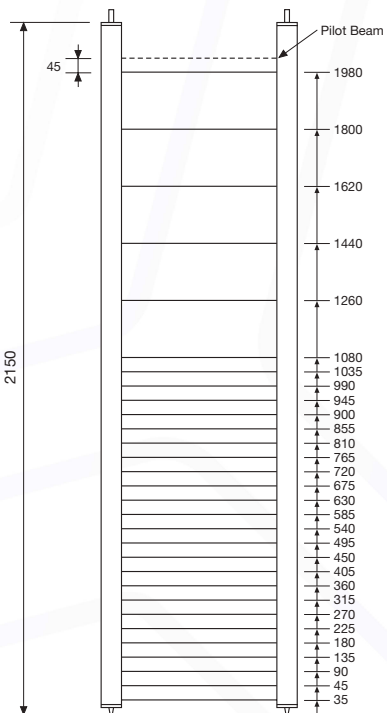
F1

(Units in mm)

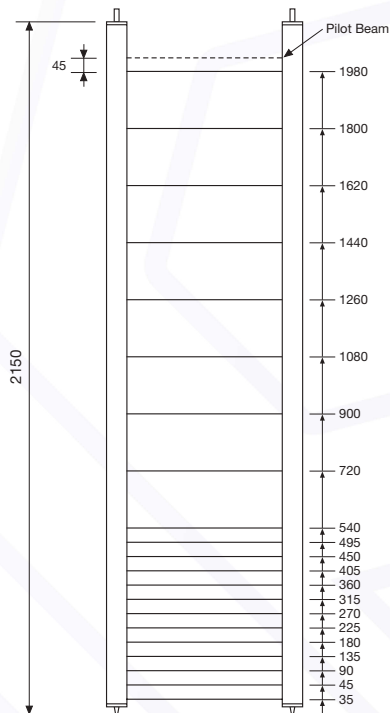
2150 mm housing length



C1



D1



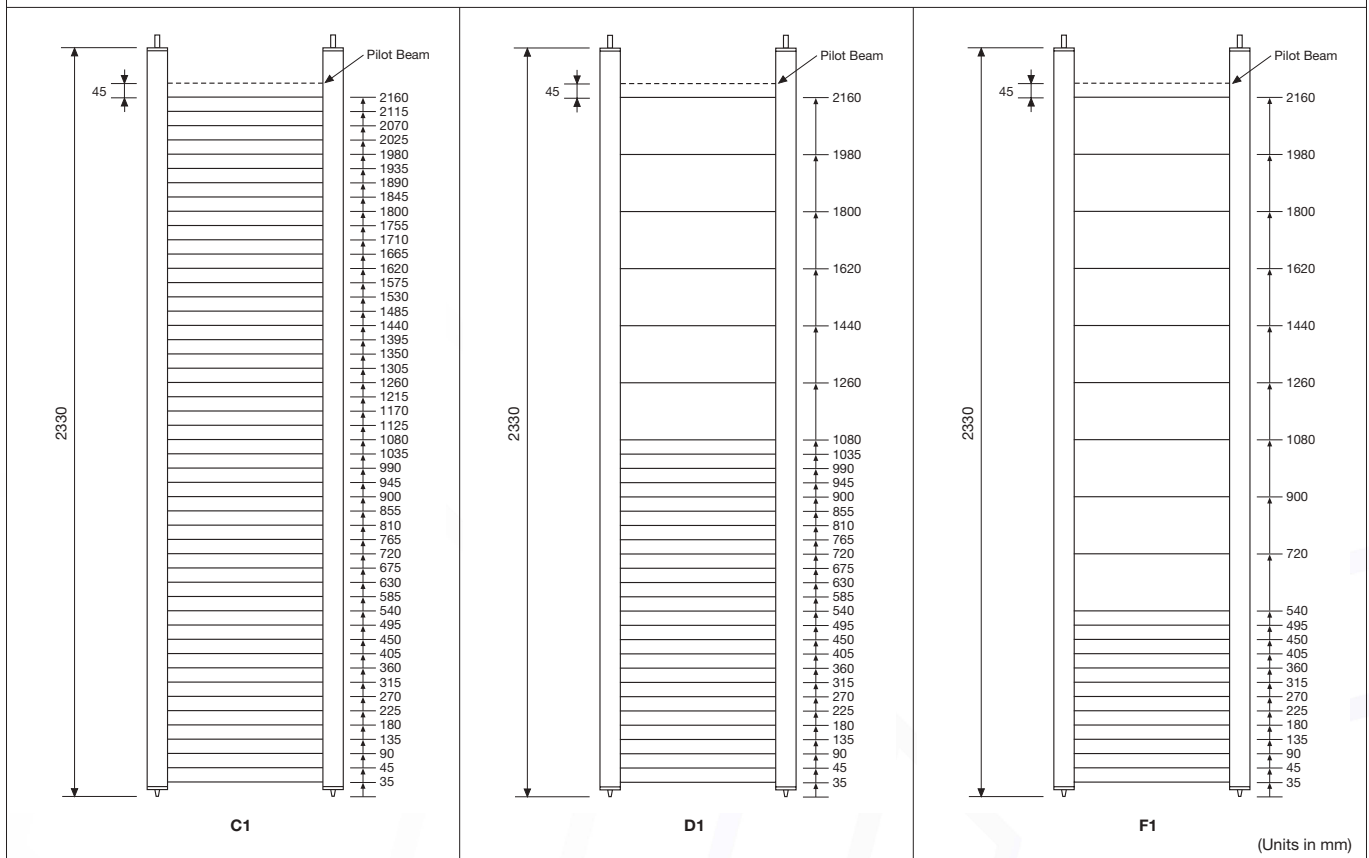
F1

(Units in mm)

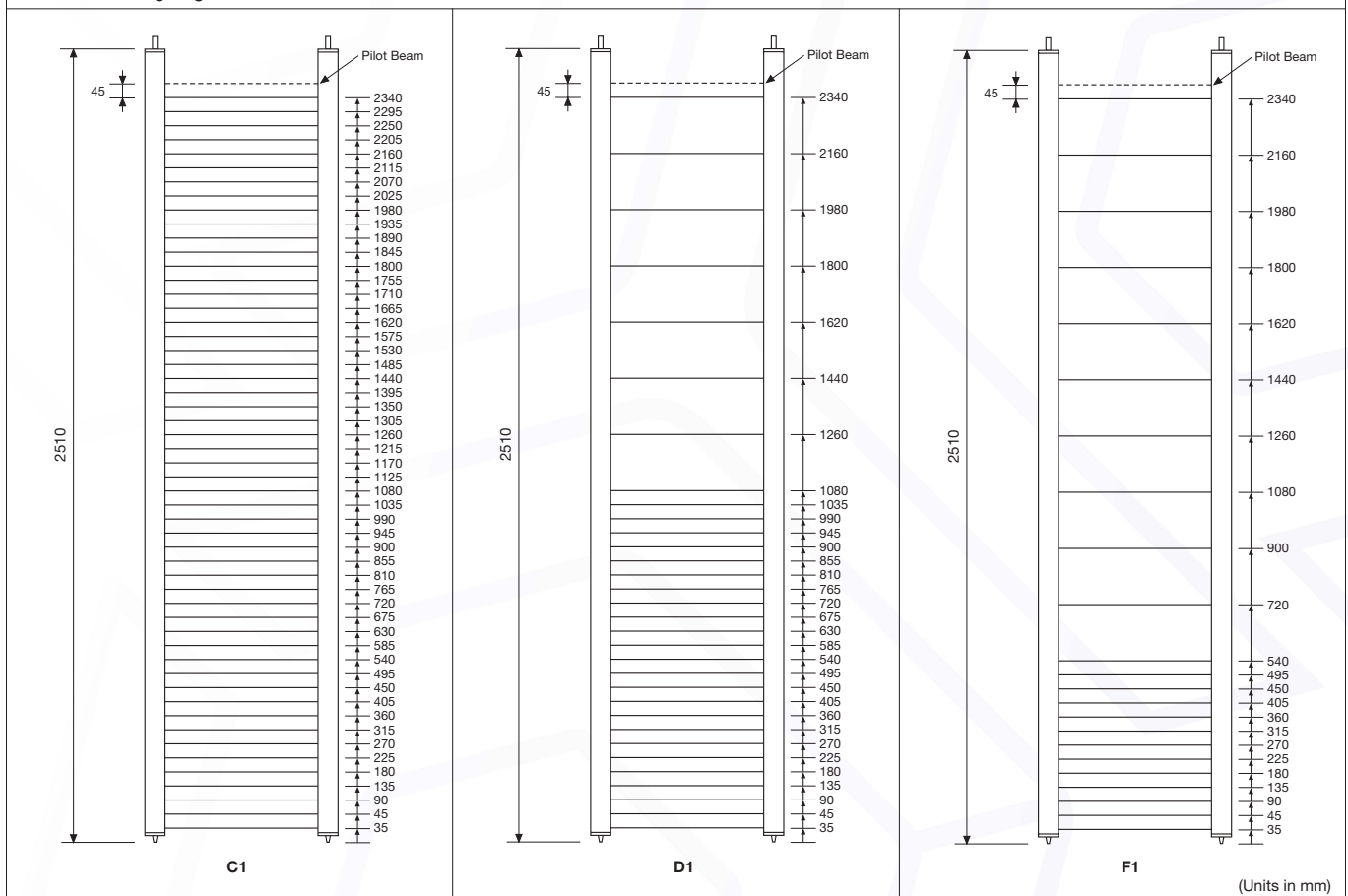
Solid State Relay

Beam Patterns

2330 mm housing length

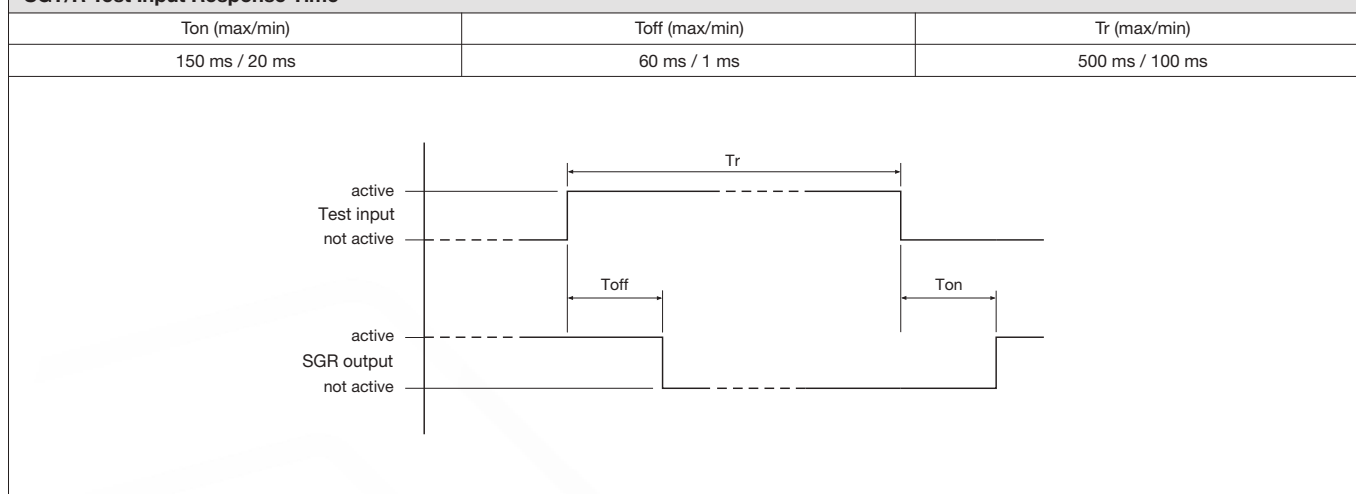


2510 mm housing length



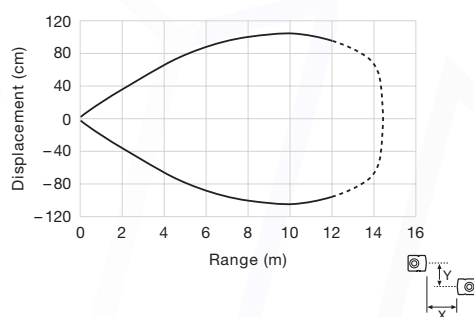
Solid State Relay

SGT/R Test Input Response Time

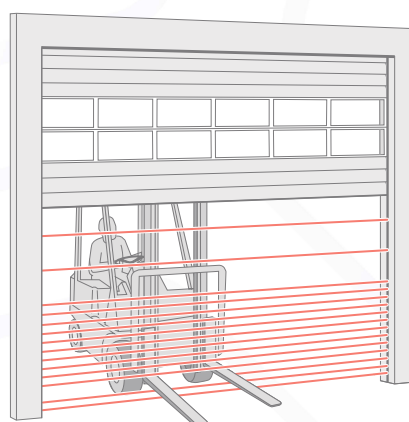


Sensing Characteristics

Parallel Displacement



Applications



OVERHEAD DOOR

Telco reserves the right to change specifications without notice.