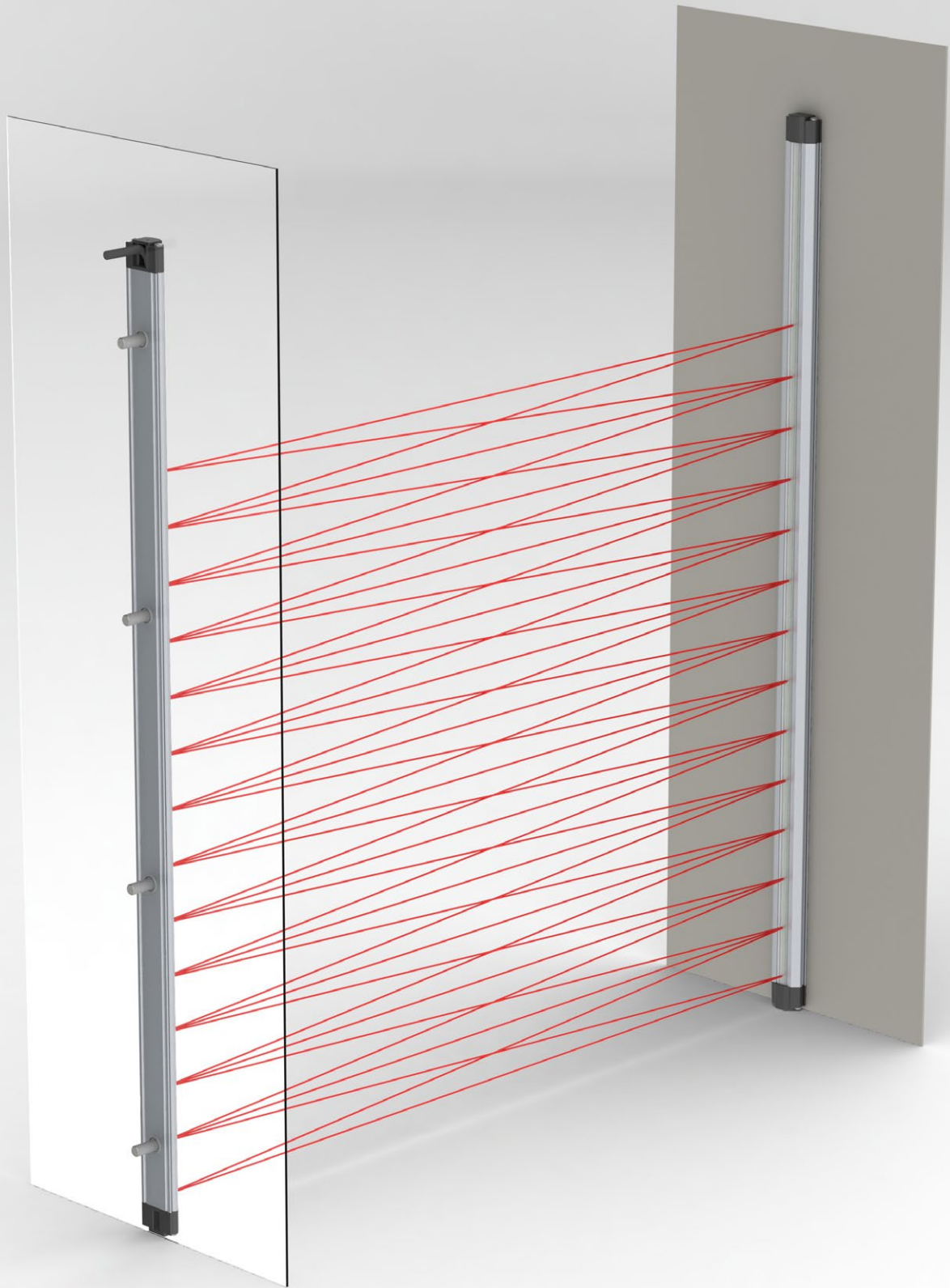


**STRACK**  
LIFT AUTOMATION

ILGA

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ILGA

## Light grid with flat shape.

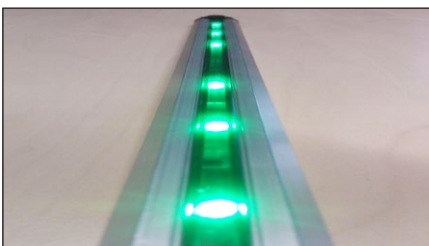


# ILGA

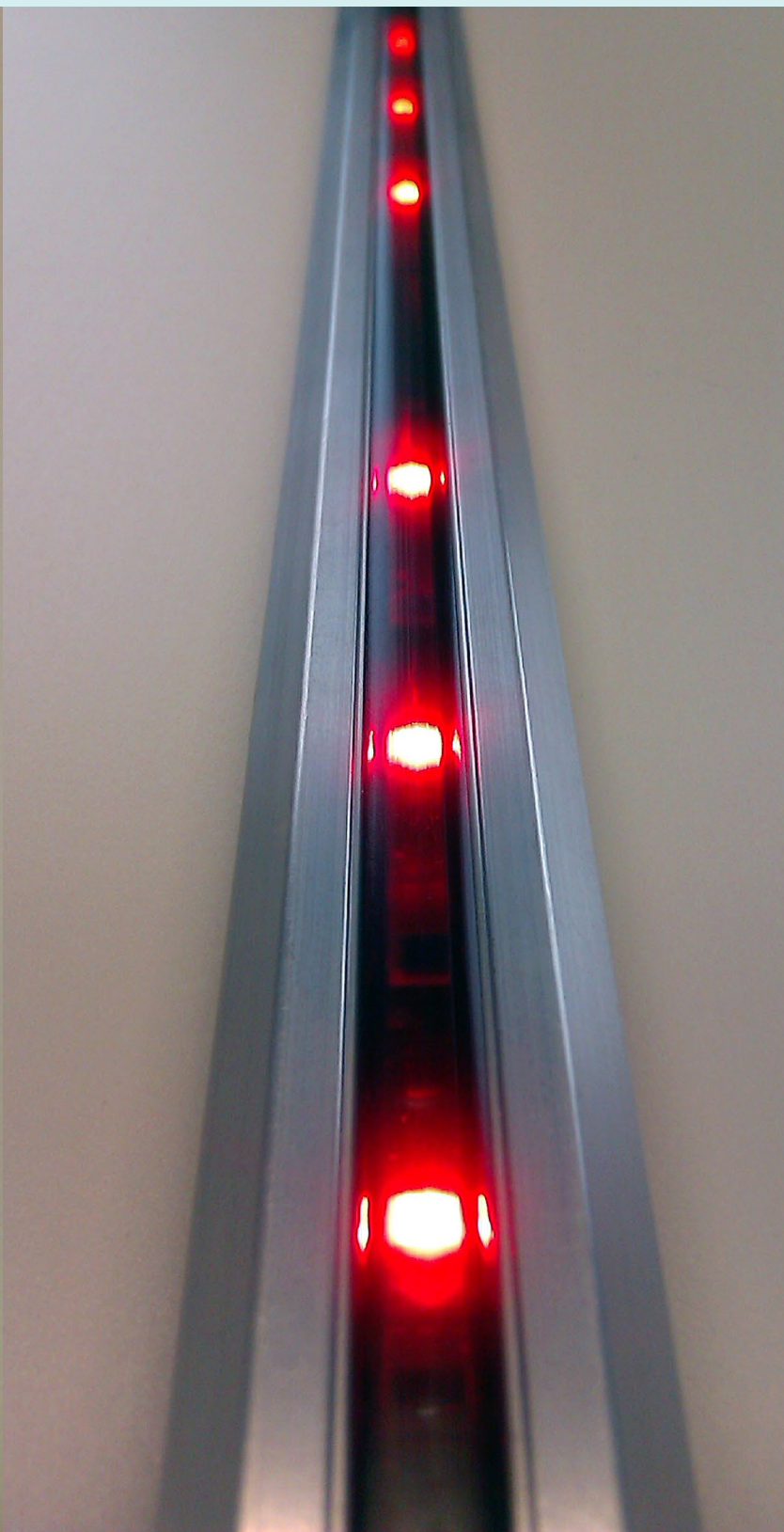
The ILGA extends the ILG product range by a flat version turned through 90° which can be screwed or clamped on, in or behind a wall. It is also as „flat as a pancake“.

The ILGA is the only flat light grid on the market which in the lowest price segment combines an enormous range of different versions together with high technical capabilities. But there is no need to worry: first of all it is a perfectly normal light grid - simply connect and ready to use. Due to the free parameterability without auxiliaries you can, however, adapt the ILGA directly on site to most unforeseen installation situations and customer wishes, such as hiding one or more disruptive objects of any size in the light path, or inverting the function of the output. Illuminated ILGA, ILGA with heating, ILGA groups, adjustable buzzers etc. are also available.

ILGA light grids are used as reversing devices on doors and gates, in passenger lifts, on access openings in industrial production, in automatic stores, for the monitoring of cargo, etc.

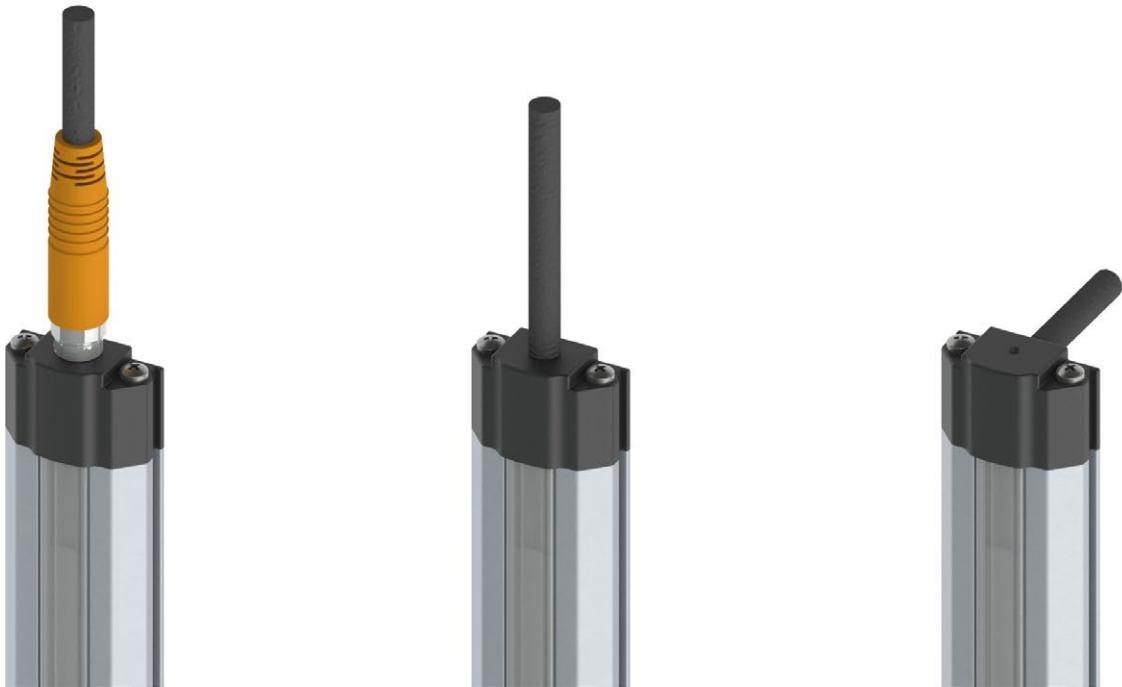






lizensiert unter Patent EP1626924B1

Configuration example: ILGA-LED,  
the ILGA with integrated red-green LEDs for  
signalization of „door will close/closes/is open“



## ILGA at a glance:

- *only 9,5 mm slim shape*
- *range 4 m with much reserve*
- *fully automatic sensitivity control with parallel and cross beams close to „zero“ distance*
- *outstanding ambient light immunity > 200,000 lux*
- *parametrisable on site without any auxiliaries*
- *output either electronic NO or NC contact, potential-free*
- *switch-on and switch-off delay*
- *test input*
- *ray failure toleration*
- *cut-out of channels on site as desired*
- *completely integrated electronics*
- *EN 81-20 and EN 81-70*
- *high reliability e.g. by 48 hour routine test*
- *budget-priced*
- *option: non-halog., pluggable cable of high flexibility, for >50 million door movements*
- *option: buzzer (see NTR 12)*
- *option: red/green LED door signalling (ILGA-LED)*
- *option: integrated heating*

# Product specification

**Fully automatic control:** The signal intensity of the ILGA is automatically controlled. This ensures that there is steady and optimum luminous power at close range, at extreme values and in the case of contamination, without any readjustment being necessary. Even in the case of ILGA which moves along with the doors or gate, this functionality is maintained down close to zero distance, irrespective of the closing speed.

**Parametrisable on site:** All parameters of the ILGA can be set on site without the need of additional devices. Functions like output NO/NC, ray failure toleration, channel cut-out, test input high or low active, switch-on delay, switch-off delay, and more can be set. Only the parameter of the transmitter must be set. The data are transmitted optically to the receiver and are stored in both.

**Ray failure toleration:** If it is observed during operation that up to 3 of the channels are not switching for more than 60 seconds, the ILGA identifies a defect and deactivates this channels. The ILG then functions normally again, but shows the faulty channel with the red error LED.

**Free cut-out of channels:** If you cover some channels and activate the function "channel cut-out", the ILGA deactivates the hidden channels and saves this configuration permanently. After removing the cover the ILGA functions normally, but without the deactivated channels. This procedure can be repeated all the time.

**Test input:** The ILGA can be checked for correct function by means of the test input. The transmitter switches off with signal at this input. The receiver output then has to switch off as well; this can be monitored by the master control.

**Switch-on delay (door-open period):** As soon as the optical path of the ILGA becomes clear

(again), the ILGA normally switches to alert with the shortest possible response time. It is, however, possible to parameterize a switch-on delay to slow down the alerting. This enables you to realize a door-open period on older doors without further expense when retrofitting the ILGA.

**Switch-off delay (function „slow light grid“):** It is also possible to parameterize a switch-off delay to slow down the recognition of the interrupted optical path. Example: If a switch-off delay of 1 second is parameterized, the ILGA will switch off the output only when the light beam has been permanently interrupted for more than 1 second.

**Heating:** An ILGA with temperature controlled heating in the sensor units is available. In combination with the small dimensions, this feature is also unique on the market.

**LED illumination:** The version ILGA-LED is illuminated with red and green LEDs. The sensor strips are preferably mounted on the door leaves. When the door opens, or if it is already open, the ILGA-LED lights up in green to show that „everything is okay“. Before the door begins to close, it flashes several times in red to indicate „caution, the door is about to close“. When the door is closing, or if it is already closed, it remains red. If the door is closed for more than 60 seconds, the LEDs go off in order to save energy. You have only to connect the additional input of the ILGA-LED to the door close signal of your control system.

The ILGA-LED therefore offers additional safety and a „visible investment“ for your customer. It is particularly well-suited, for example, for retirement homes, hospitals and public buildings.

**Buzzer:** An optional buzzer function is available when using the optional power supply NTR12. The buzzer sounds when the light grid

is interrupted for too long (time selectable) or immediately when the interruption occurs, with a selectable maximum duration. The buzzer can sound at intervals or continuously, and it can be deactivated.

**Electronics:** The complete electronic system is integrated in the sensor units, so that with 10-30V DC no separate power supply unit is required. The relay output is potential-free and electronic, i.e. without contacts and wear-resistant. The closing or opening function can be selected. With the NTR12 power supply unit, direct connection to the mains power supply is also possible.

**EN 81-20:** The standard is met when the light rays are between 25 and 1600 mm above the car door threshold and the light grid can detect a foreign object with a size of at least 50 mm. Use for example min. ILGA-28/06 that you mount recessed from the front edge of the cabin door (mobile or fixed mount) (see product ILG „Object detection with cross beams“). If you also want to mount the light grid directly on the door edge, please use min. ILGA-42/04.

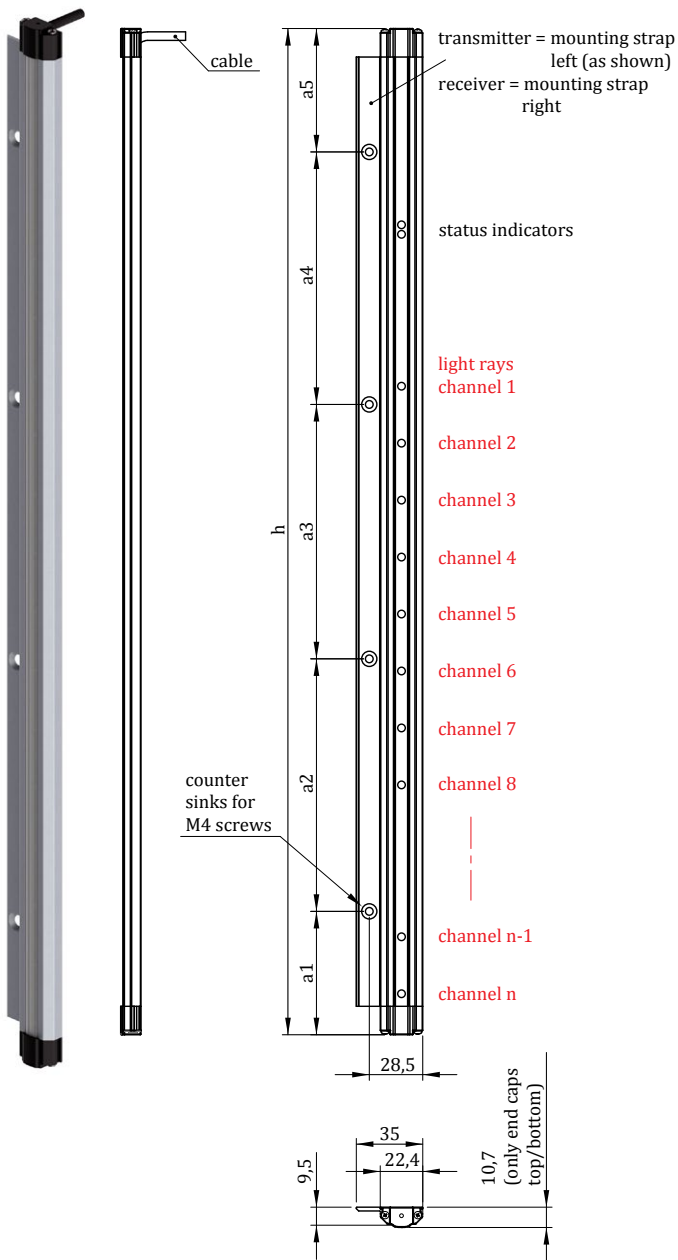
Acc. to EN 81-20 a failure of the light grid must be recognized. The default test input of the ILGA is available for it (see „Test input“).

**EN 81-70:** The standard is met when the light rays are between 25 and 1800 mm above the cabin door threshold. Use for this purpose min. ILGA-31/06 or ILGA-46/04.

**Restrictions:** It is not permissible for ILGA to be used in applications in which the safety of passengers depends exclusively on the function of this device. Also it is not allowed to use the ILGA in explosive hazard areas.

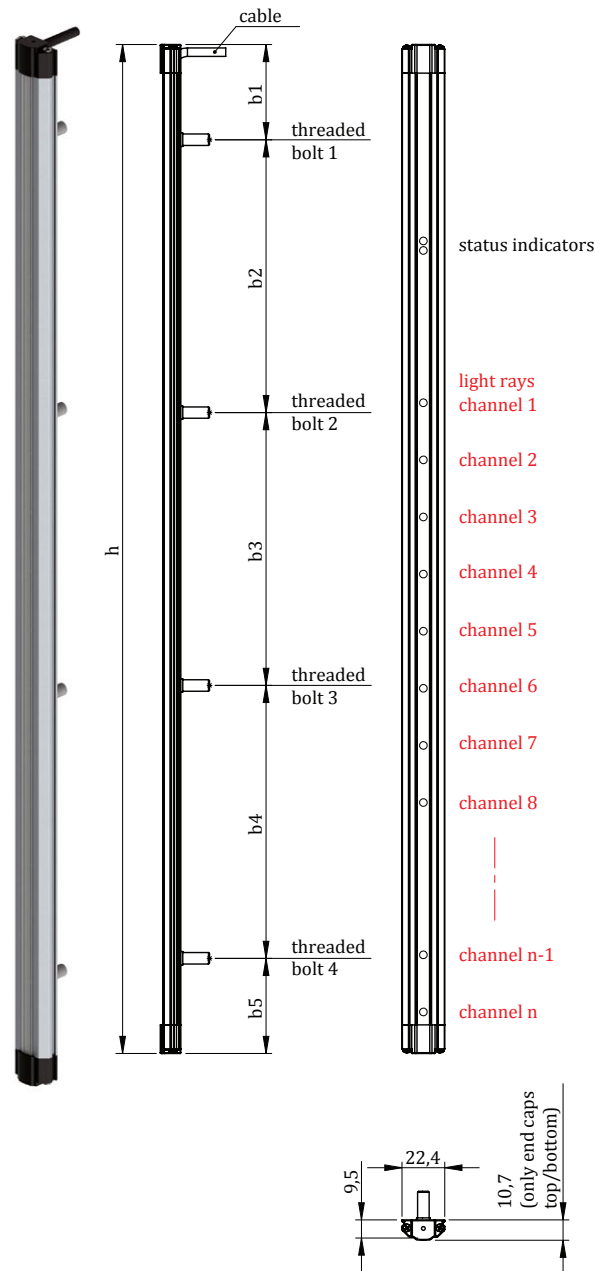
### ILGA

#### Mounting strap fixation

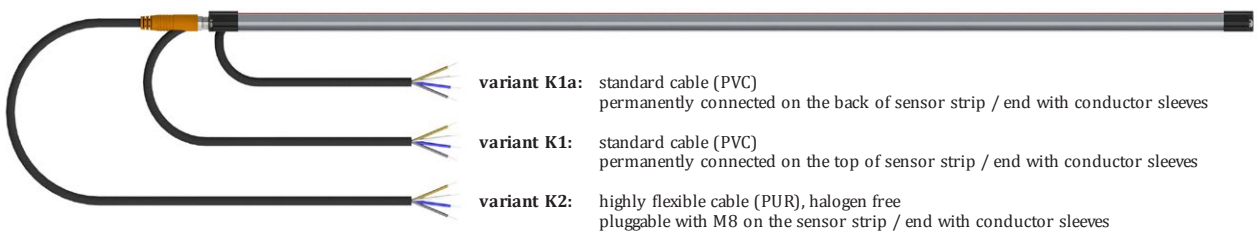


### ILGA

#### Threaded bolt fixation



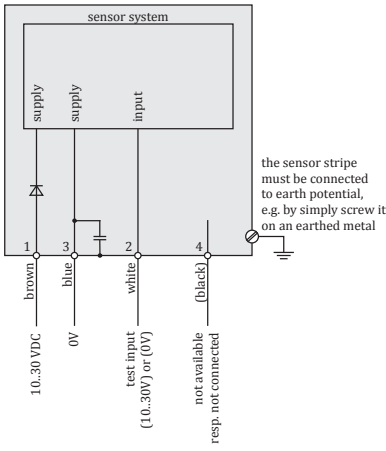
#### Cable variants



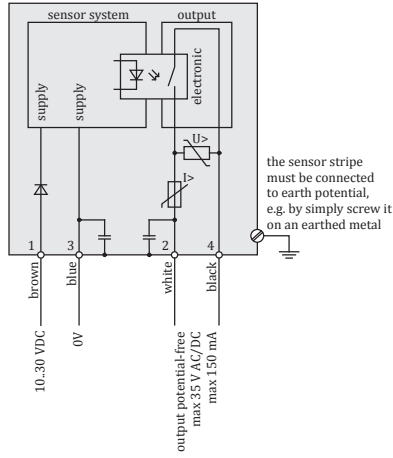


Connection ILGA

transmitter

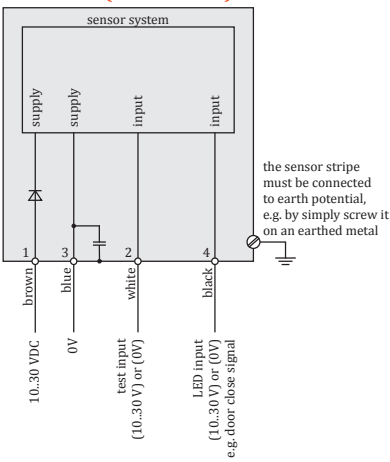


receiver

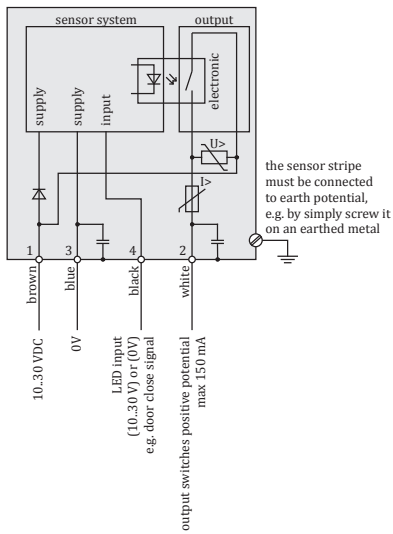


Connection ILGA-LED

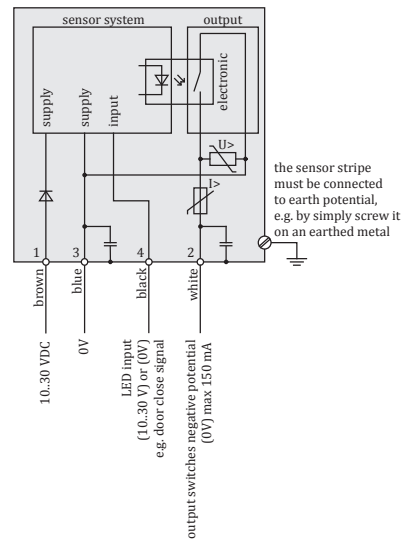
transmitter (LEDP + LEDN)



receiver LEDP (positive output)



receiver LEDN (negative output)



Connector pin assignments

M8 connector (view onto the pins)



M12 connector (view onto the pins)





**Order data**

<b>Type code: a-c-e/g-i-m-p/(q)(-x)(/y)</b>			<b>Customer-specific special versions:</b>
<b>Example: 687-ILGA-16/12-L-K1a-05</b>			It is possible to position the threaded bolts according to your requirements, to use another quantity of bolts, etc. We would be pleased to manufacture your special ILGA.
a	article category	687	
c	model	ILGA	
e	number of channels	03 - 64	number of channels (number of light rays = 3 x number of channels - 2)
g	channel grid	04 06 12	40 mm 60 mm 120 mm
i	profile type	L B	mounting strap fixation threaded bolt fixation
m	connecting cable	K1 K1a K2 K3 K4	standard PVC / permanently connected axial at sensor strip / end with conductor sleeves standard PVC / permanently connected at the back of sensor strip / end with conductor sleeves highly flexible cable PUR halogen free / pluggable with M8 at sensor strip / end with conductor sleeves highly flexible cable PUR halogen free / pluggable with M8 at sensor strip / end with M8 plug highly flexible cable PUR halogen free / pluggable with M8 at sensor strip / end with M12 plug
p	cable length	00 02 05 10	0 m (only with plug-and-socket connector M8 at sensor strip) 2 m 5 m (standard) 10 m
q	special profile length in mm	0000 - 3100	(if not specified, then the lengths are according to the following tables)
x	special variant <i>(several special variants also can be strung to each other)</i>	H LEDP LEDN S001	with integrated regulated heater for utilisation outdoors (LED illumination not possible) with LED illumination and positive receiver output (integrated heater not possible) with LED illumination and negative receiver output (integrated heater not possible) special variant No. 001 (e.g. other threaded bolts)
y		S... E... ...	transmitter strip (optionally followed by the software version, e.g. S2) receiver strip (optionally followed by the software version, e.g. E2) complete system (transmitter and receiver strip)

**Form of delivery / Packing:**

We ship (related to pairs of ILGA with/without NTR power supply) in single and multi-part cartons.

Example: single carton for 1 pair of ILGA with 2070 mm length: weight: 1800 g (without ILGA), carton dimensions HxWxD: 2180x160x120

**Length variants ILGA with channel grid 120 mm**

Grid code 12 / channels at height (mm): 20, 140, 260, 380, ...

Number of channels	Number of light rays	Overall length h (mm)	Lowest channel at height h (mm)	Upper channel at height h (mm)	ILGA variant	Dimension a1 (mm)	Dimension a2 (mm)	Dimension a3 (mm)	Dimension a4 (mm)	Dimension a5 (mm)	Bolt size (mm)	Dimension b1 (mm)	Dimension b2 (mm)	Dimension b3 (mm)	Dimension b4 (mm)	Dimension b5 (mm)
3	7	510	20	260	..-03/12-..	50	205	0	205	50	M4x15	50	205	0	205	50
4	10	630	20	380	..-04/12-..	50	265	0	265	50	M4x15	50	265	0	265	50
5	13	750	20	500	..-05/12-..	50	325	0	325	50	M4x15	50	325	0	325	50
6	16	870	20	620	..-06/12-..	50	385	0	385	50	M4x15	50	385	0	385	50
7	19	990	20	740	..-07/12-..	50	445	0	445	50	M4x15	50	445	0	445	50
8	22	1110	20	860	..-08/12-..	50	337	336	337	50	M4x15	50	337	336	337	50
9	25	1230	20	980	..-09/12-..	50	377	376	377	50	M4x15	50	377	376	377	50
10	28	1350	20	1100	..-10/12-..	50	417	416	417	50	M4x15	50	417	416	417	50
11	31	1470	20	1220	..-11/12-..	50	457	456	457	50	M4x15	50	457	456	457	50
12	34	1590	20	1340	..-12/12-..	50	497	496	497	50	M4x15	50	497	496	497	50
13	37	1710	20	1460	..-13/12-..	50	537	536	537	50	M4x15	50	537	536	537	50
14	40	1830	20	1580	..-14/12-..	50	577	576	577	50	M4x15	50	577	576	577	50
15	43	1950	20	1700	..-15/12-..	50	617	616	617	50	M4x15	50	617	616	617	50
16	46	2070	20	1820	..-16/12-..	50	657	656	657	50	M4x15	50	657	656	657	50
17	49	2190	20	1940	..-17/12-..	50	697	696	697	50	M4x15	50	697	696	697	50
18	52	2310	20	2060	..-18/12-..	50	737	736	737	50	M4x15	50	737	736	737	50
19	55	2430	20	2180	..-19/12-..	50	777	776	777	50	M4x15	50	777	776	777	50
20	58	2550	20	2300	..-20/12-..	50	817	816	817	50	M4x15	50	817	816	817	50
21	61	2670	20	2420	..-21/12-..	50	857	856	857	50	M4x15	50	857	856	857	50
22	64	2790	20	2540	..-22/12-..	50	897	896	897	50	M4x15	50	897	896	897	50
23	67	2910	20	2660	..-23/12-..	50	937	936	937	50	M4x15	50	937	936	937	50
24	70	3030	20	2780	..-24/12-..	50	977	976	977	50	M4x15	50	977	976	977	50

## Length variants ILGA with channel grid 60 mm

Grid code 06 / channels at heightHöhe (mm): 20, 80, 140, 200, ...

Number of channels	Number of light rays	Overall length h (mm)	Lowest channel at height h (mm)	Upper channel at height h (mm)	ILGA variant	Dimension a1 (mm)	Dimension a2 (mm)	Dimension a3 (mm)	Dimension a4 (mm)	Dimension a5 (mm)	Bolt size (mm)	Dimension b1 (mm)	Dimension b2 (mm)	Dimension b3 (mm)	Dimension b4 (mm)	Dimension b5 (mm)
3	7	330	20	140	..-03/06..	50	0	230	0	50	M4x15	50	0	230	0	50
4	10	390	20	200	..-04/06..	50	0	290	0	50	M4x15	50	0	290	0	50
5	13	450	20	260	..-05/06..	50	0	350	0	50	M4x15	50	0	350	0	50
6	16	510	20	320	..-06/06..	50	205	0	205	50	M4x15	50	205	0	205	50
7	19	570	20	380	..-07/06..	50	235	0	235	50	M4x15	50	235	0	235	50
8	22	630	20	440	..-08/06..	50	265	0	265	50	M4x15	50	265	0	265	50
10	28	750	20	560	..-10/06..	50	325	0	325	50	M4x15	50	325	0	325	50
11	31	810	20	620	..-11/06..	50	355	0	355	50	M4x15	50	355	0	355	50
12	34	870	20	680	..-12/06..	50	385	0	385	50	M4x15	50	385	0	385	50
13	37	930	20	740	..-13/06..	50	415	0	415	50	M4x15	50	415	0	415	50
14	40	990	20	800	..-14/06..	50	445	0	445	50	M4x15	50	445	0	445	50
15	43	1050	20	860	..-15/06..	50	317	316	317	50	M4x15	50	317	316	317	50
16	46	1110	20	920	..-16/06..	50	337	336	337	50	M4x15	50	337	336	337	50
18	52	1230	20	1040	..-18/06..	50	377	376	377	50	M4x15	50	377	376	377	50
19	55	1290	20	1100	..-19/06..	50	397	396	397	50	M4x15	50	397	396	397	50
20	58	1350	20	1160	..-20/06..	50	417	416	417	50	M4x15	50	417	416	417	50
21	61	1410	20	1220	..-21/06..	50	437	436	437	50	M4x15	50	437	436	437	50
22	64	1470	20	1280	..-22/06..	50	457	456	457	50	M4x15	50	457	456	457	50
23	67	1530	20	1340	..-23/06..	50	477	476	477	50	M4x15	50	477	476	477	50
24	70	1590	20	1400	..-24/06..	50	497	496	497	50	M4x15	50	497	496	497	50
26	76	1710	20	1520	..-26/06..	50	537	536	537	50	M4x15	50	537	536	537	50
27	79	1770	20	1580	..-27/06..	50	557	556	557	50	M4x15	50	557	556	557	50
28	82	1830	20	1640	..-28/06..	50	577	576	577	50	M4x15	50	577	576	577	50
29	85	1890	20	1700	..-29/06..	50	597	596	597	50	M4x15	50	597	596	597	50
30	88	1950	20	1760	..-30/06..	50	617	616	617	50	M4x15	50	617	616	617	50
31	91	2010	20	1820	..-31/06..	50	637	636	637	50	M4x15	50	637	636	637	50
32	94	2070	20	1880	..-32/06..	50	657	656	657	50	M4x15	50	657	656	657	50
34	100	2190	20	2000	..-34/06..	50	697	696	697	50	M4x15	50	697	696	697	50
35	103	2250	20	2060	..-35/06..	50	717	716	717	50	M4x15	50	717	716	717	50
36	106	2310	20	2120	..-36/06..	50	737	736	737	50	M4x15	50	737	736	737	50
37	109	2370	20	2180	..-37/06..	50	757	756	757	50	M4x15	50	757	756	757	50
38	112	2430	20	2240	..-38/06..	50	777	776	777	50	M4x15	50	777	776	777	50
39	115	2490	20	2300	..-39/06..	50	797	796	797	50	M4x15	50	797	796	797	50
40	118	2550	20	2360	..-40/06..	50	817	816	817	50	M4x15	50	817	816	817	50
42	124	2670	20	2480	..-42/06..	50	857	856	857	50	M4x15	50	857	856	857	50
43	127	2730	20	2540	..-43/06..	50	877	876	877	50	M4x15	50	877	876	877	50
44	130	2790	20	2600	..-44/06..	50	897	896	897	50	M4x15	50	897	896	897	50
45	133	2850	20	2660	..-45/06..	50	917	916	917	50	M4x15	50	917	916	917	50
46	136	2910	20	2720	..-46/06..	50	937	936	937	50	M4x15	50	937	936	937	50
47	139	2970	20	2780	..-47/06..	50	957	956	957	50	M4x15	50	957	956	957	50
48	142	3030	20	2840	..-48/06..	50	977	976	977	50	M4x15	50	977	976	977	50

**Length variants ILGA with channel grid 40 mm**

Grid code 04 / channels at height (mm): 20, 60, 100, 140, ...

Number of channels	Number of light rays	Overall length h (mm)	Lowest channel at height h (mm)	Upper channel at height h (mm)	ILGA variant	Dimension a1 (mm)	Dimension a2 (mm)	Dimension a3 (mm)	Dimension a4 (mm)	Dimension a5 (mm)	Bolt size (mm)	Dimension b1 (mm)	Dimension b2 (mm)	Dimension b3 (mm)	Dimension b4 (mm)	Dimension b5 (mm)
3	7	<b>280</b>	20	100	..-03/04..	50	0	180	0	50	M4x15	50	0	180	0	50
4	10	<b>320</b>	20	140	..-04/04..	50	0	220	0	50	M4x15	50	0	220	0	50
5	13	<b>360</b>	20	180	..-05/04..	50	0	260	0	50	M4x15	50	0	260	0	50
6	16	<b>400</b>	20	220	..-06/04..	50	0	300	0	50	M4x15	50	0	300	0	50
7	19	<b>440</b>	20	260	..-07/04..	50	0	340	0	50	M4x15	50	0	340	0	50
8	22	<b>480</b>	20	300	..-08/04..	50	0	380	0	50	M4x15	50	0	380	0	50
10	28	<b>560</b>	20	380	..-10/04..	50	230	0	230	50	M4x15	50	230	0	230	50
11	31	<b>600</b>	20	420	..-11/04..	50	250	0	250	50	M4x15	50	250	0	250	50
12	34	<b>640</b>	20	460	..-12/04..	50	270	0	270	50	M4x15	50	270	0	270	50
13	37	<b>680</b>	20	500	..-13/04..	50	290	0	290	50	M4x15	50	290	0	290	50
14	40	<b>720</b>	20	540	..-14/04..	50	310	0	310	50	M4x15	50	310	0	310	50
15	43	<b>760</b>	20	580	..-15/04..	50	330	0	330	50	M4x15	50	330	0	330	50
16	46	<b>800</b>	20	620	..-16/04..	50	350	0	350	50	M4x15	50	350	0	350	50
18	52	<b>880</b>	20	700	..-18/04..	50	390	0	390	50	M4x15	50	390	0	390	50
19	55	<b>920</b>	20	740	..-19/04..	50	410	0	410	50	M4x15	50	410	0	410	50
20	58	<b>960</b>	20	780	..-20/04..	50	430	0	430	50	M4x15	50	430	0	430	50
21	61	<b>1000</b>	20	820	..-21/04..	50	300	300	300	50	M4x15	50	300	300	300	50
22	64	<b>1040</b>	20	860	..-22/04..	50	313	314	313	50	M4x15	50	313	314	313	50
23	67	<b>1080</b>	20	900	..-23/04..	50	327	326	327	50	M4x15	50	327	326	327	50
24	70	<b>1120</b>	20	940	..-24/04..	50	340	340	340	50	M4x15	50	340	340	340	50
26	76	<b>1200</b>	20	1020	..-26/04..	50	367	366	367	50	M4x15	50	367	366	367	50
27	79	<b>1240</b>	20	1060	..-27/04..	50	380	380	380	50	M4x15	50	380	380	380	50
28	82	<b>1280</b>	20	1100	..-28/04..	50	393	394	393	50	M4x15	50	393	394	393	50
29	85	<b>1320</b>	20	1140	..-29/04..	50	407	406	407	50	M4x15	50	407	406	407	50
30	88	<b>1360</b>	20	1180	..-30/04..	50	420	420	420	50	M4x15	50	420	420	420	50
31	91	<b>1400</b>	20	1220	..-31/04..	50	433	434	433	50	M4x15	50	433	434	433	50
32	94	<b>1440</b>	20	1260	..-32/04..	50	447	446	447	50	M4x15	50	447	446	447	50
34	100	<b>1520</b>	20	1340	..-34/04..	50	473	474	473	50	M4x15	50	473	474	473	50
35	103	<b>1560</b>	20	1380	..-35/04..	50	487	486	487	50	M4x15	50	487	486	487	50
36	106	<b>1600</b>	20	1420	..-36/04..	50	500	500	500	50	M4x15	50	500	500	500	50
37	109	<b>1640</b>	20	1460	..-37/04..	50	513	514	513	50	M4x15	50	513	514	513	50
38	112	<b>1680</b>	20	1500	..-38/04..	50	527	526	527	50	M4x15	50	527	526	527	50
39	115	<b>1720</b>	20	1540	..-39/04..	50	540	540	540	50	M4x15	50	540	540	540	50
40	118	<b>1760</b>	20	1580	..-40/04..	50	553	554	553	50	M4x15	50	553	554	553	50
42	124	<b>1840</b>	20	1660	..-42/04..	50	580	580	580	50	M4x15	50	580	580	580	50
43	127	<b>1880</b>	20	1700	..-43/04..	50	593	594	593	50	M4x15	50	593	594	593	50
44	130	<b>1920</b>	20	1740	..-44/04..	50	607	606	607	50	M4x15	50	607	606	607	50
45	133	<b>1960</b>	20	1780	..-45/04..	50	620	620	620	50	M4x15	50	620	620	620	50
46	136	<b>2000</b>	20	1820	..-46/04..	50	633	634	633	50	M4x15	50	633	634	633	50
47	139	<b>2040</b>	20	1860	..-47/04..	50	647	646	647	50	M4x15	50	647	646	647	50
48	142	<b>2080</b>	20	1900	..-48/04..	50	660	660	660	50	M4x15	50	660	660	660	50
50	148	<b>2160</b>	20	1980	..-50/04..	50	687	686	687	50	M4x15	50	687	686	687	50
51	151	<b>2200</b>	20	2020	..-51/04..	50	700	700	700	50	M4x15	50	700	700	700	50
52	154	<b>2240</b>	20	2060	..-52/04..	50	713	714	713	50	M4x15	50	713	714	713	50
53	157	<b>2280</b>	20	2100	..-53/04..	50	727	726	727	50	M4x15	50	727	726	727	50
54	160	<b>2320</b>	20	2140	..-54/04..	50	740	740	740	50	M4x15	50	740	740	740	50
55	163	<b>2360</b>	20	2180	..-55/04..	50	753	754	753	50	M4x15	50	753	754	753	50
56	166	<b>2400</b>	20	2220	..-56/04..	50	767	766	767	50	M4x15	50	767	766	767	50
58	172	<b>2480</b>	20	2300	..-58/04..	50	793	794	793	50	M4x15	50	793	794	793	50
59	175	<b>2520</b>	20	2340	..-59/04..	50	807	806	807	50	M4x15	50	807	806	807	50
60	178	<b>2560</b>	20	2380	..-60/04..	50	820	820	820	50	M4x15	50	820	820	820	50
61	181	<b>2600</b>	20	2420	..-61/04..	50	833	834	833	50	M4x15	50	833	834	833	50
62	184	<b>2640</b>	20	2460	..-62/04..	50	847	846	847	50	M4x15	50	847	846	847	50
63	187	<b>2680</b>	20	2500	..-63/04..	50	860	860	860	50	M4x15	50	860	860	860	50
64	190	<b>2720</b>	20	2540	..-64/04..	50	873	874	873	50	M4x15	50	873	874	873	50

**Technical data****General**

nominal range	m	4 (plus reserve)
ambient temperature	°C	operation/storage -25 to +55, transportation -25 to +70 (without icing and condensation)
ambient relative humidity		operation/storage/transportation 5% to 95%
connecting cable		standard cable: 4x0,25mm <sup>2</sup> / PVC / structure LIYY (fine wire, unshielded) / good resistance to oil highly flexible cable: 4x0,25mm <sup>2</sup> / PUR / flame retarding / silicone, halogen and PVC free / good resistance to chemicals and oil / resistant to microbes and hydrolysis / good resistance to welding sparks / very good weather resistance / drag chain suitable
max system response time (independent of the number of channels)	ms	with parallel beam configuration: light path becomes obstructed: 25 / light path becomes unobstructed: 37 / test input set: 59 / free again: 59 / operating voltage switch-on: 100 with crossed beam configuration (standard): light path becomes obstructed: 85 / light path becomes unobstructed: 74 / test input set: 95 / free again: 95 / operating voltage switch-on: 130
mounting position		arbitrary

**Mechanics**

weight per sensor strip	g	220 je m without cable + 32 additionally per m of cable
housing material of sensor strip		sensor strip made of mill-finished aluminium, end caps made of black plastic
material front pane		acrylic glass
system of protection EN 60529		IP54

**Optics**

wavelength of the light rays	nm	950
clock frequency of the light rays	kHz	250
opening angle of the light rays	°	± 12
interfering light tolerance	Lux	200.000 @ 20° (d.c. and low-frequency light sources)

**Electronics**

operating voltage (min. - max.)	V	11-30 DC, residual ripple max. 10%
current consumption per pair	mA	standard: 75 (with 8 channels) 95 (with 16 channels) 140 (with 32 channels) 180 (with 48 channels) 220 (with 64 channels) with heater additionally to the standard (@TU less than 10-15°C): + 130 mA per 8 channels at grid 02, 04 and 06, but max 780 mA + 130 mA per 4 channels at grid 12, but max 780 mA ILGA-LED additionally to the standard (with active illumination): + 32 mA per 8 channels at grid 02, 04 and 06 + 32 mA per 4 channels at grid 12
switching manner		either 1 potential-free closing contact: electronic "contact" closed when light path is unobstructed or 1 potential-free opening contact: electronic "contact" closed when light path is interrupted
max switching voltage	V	35 AC / DC (resistive load)
max switching current	mA	150 @ TU=20°C / 100 @ TU=55°C (resistive load)
brownout at closed "contact" min / typ / max	V	1,12 / 1,5 / 2,5 (depends on temperature and current)
max leakage current with open "contact"	mA	0,02 @ 20°C / 0,2 @ 60°C
EMC conformity		EN 12015:2021 / EN 12016:2013 / EN 61000-6-1:2007 / EN 61000-6-2:2005 / EN 61000-6-3:2007 + A1:2011 / EN 61000-6-4:2007 + A1:2011

**Status indicators**

	yellow LED	red LED	Description
transmitter	off		transmitter is off (no voltage)
	on		transmitter is operating
	flashing		test input is active
receiver	off	off	receiver is off (no voltage)
	off	on	light path is interrupted (output is not switched)
	on	off	light path is unobstructed (output is switched)
	on	on	light path is unobstructed, but beam failure tolerance is activated (output is switched)