

### Compact Safety Light Curtains

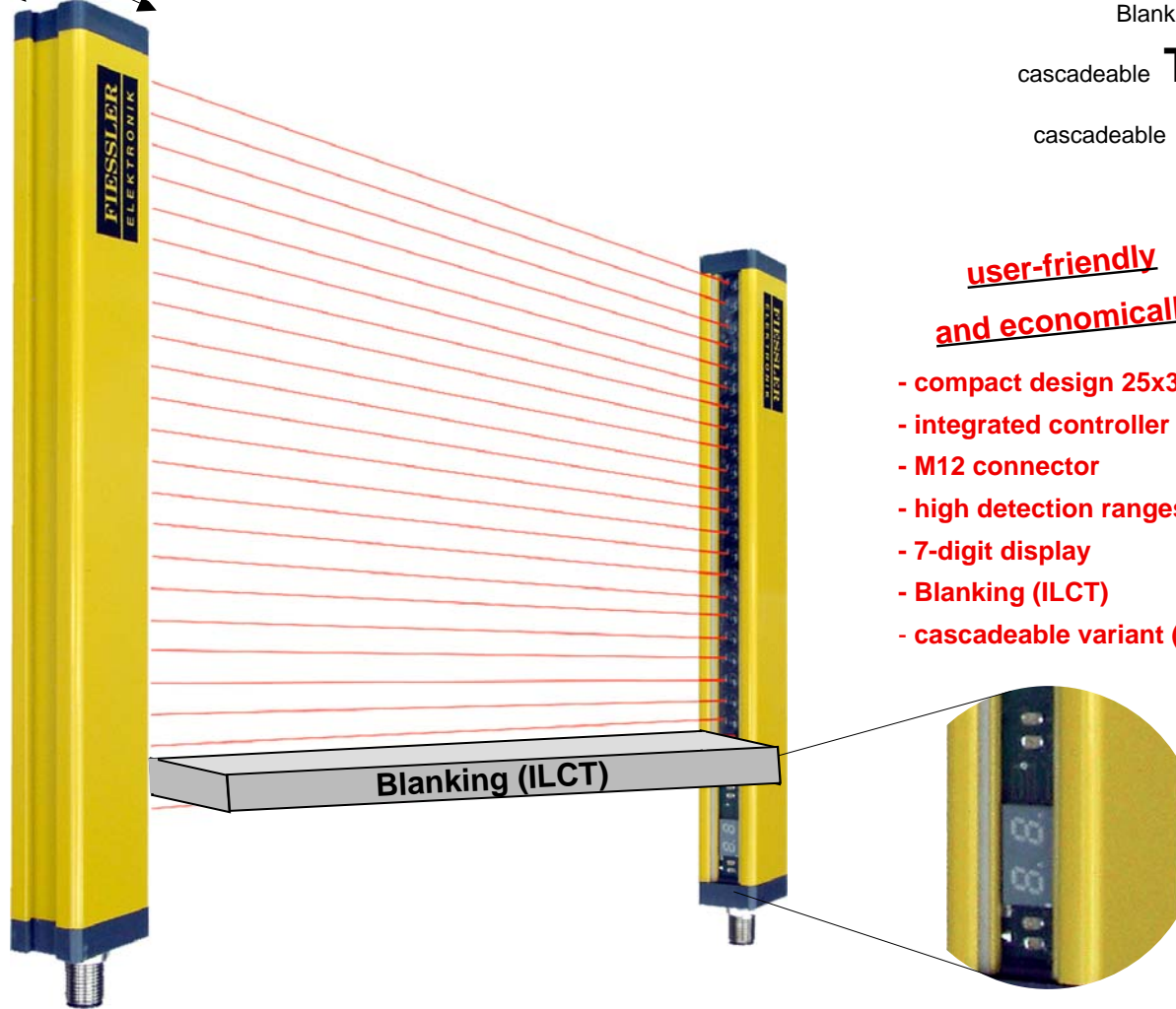
**TLCT**

Blanking **ILCT**

cascadeable **TLCTK**

cascadeable **ILCTK**

25 mm 35 mm



**user-friendly**  
**and economically**

- compact design 25x35mm
- integrated controller
- M12 connector
- high detection ranges
- 7-digit display
- Blanking (ILCT)
- cascadeable variant (...LCTK)

**Safety category Typ 2 - SIL 1 - Performance Level PL c**

**Finger and hand protection (14 mm / 30 mm resolution)  
11 Blanking modes (ILCT)**

**integrated controller  
-selectable valve control and restart interlock**

**connection via M12 connector / 7-digit display**

**compact design 25 x 35 mm with flexible swivel mounting**

**very short response times and large detection ranges**

**protection heights until 1500 mm in steps of 100 mm**



Typ 2  
EN 61496



DIN EN ISO 9001  
Reg.Nr. 96007



optional



#### Features:

- **Safety category 2**  
(EN 954-1 und IEC 61496 part 1 +part 2 or EN 61496)  
**SIL 1** (EN 61508)  
**Performance Level PL c** (ISO 13849-1)
- Contactor control and restart interlock  
Integrated functions can be programmed without a PC
- Directly controllable contactors / valves  
Switching capacity 0,5 A / 24 V
- Beam spacing: 8,33 mm, 25 mm (resolution: 14 mm, 30 mm)
- Protective field widths (range): 5 m
- Protective field heights: 100 mm - 1500 mm
- Short reaction times: TLCT 4 ms - 20 ms, ILCT 7 ms - 29 ms  
depending on the length; correspondingly short safety clearances
- Semiconductor outputs with short-circuit and cross-connection  
monitoring
- Blanking (ILCT)

#### Areas of application:

Safeguarding of hazard zones, Barricading of sectors

#### Protection of fingers and hands, e.g. when operating:

- Presses for wood, wood working machines
- Packaging machines
- Textile Machinery
- Injection moulding machines
- Round-stroke engines (revolving machines)
- storing and materials-handling technology
- Automatic placement machines
- Palleting machines

**Mirrors** can be used to deflect a protective field around hazard zones, permitting creation of multi-sided barricades.

Muting, cycle mode, monitoring Emergency off and protective doors and potentialfree switching contacts are realizable with optional safety switching units.

#### Design and function

TLCT / ILCT safety light curtains each comprise two components: Light transmitter and light receiver. The clearance between these two components and the installation height determine the width and height of the protective field.

Modular design permits realization of protective field heights ranging from 100 mm to 1500 mm in 100-mm steps.

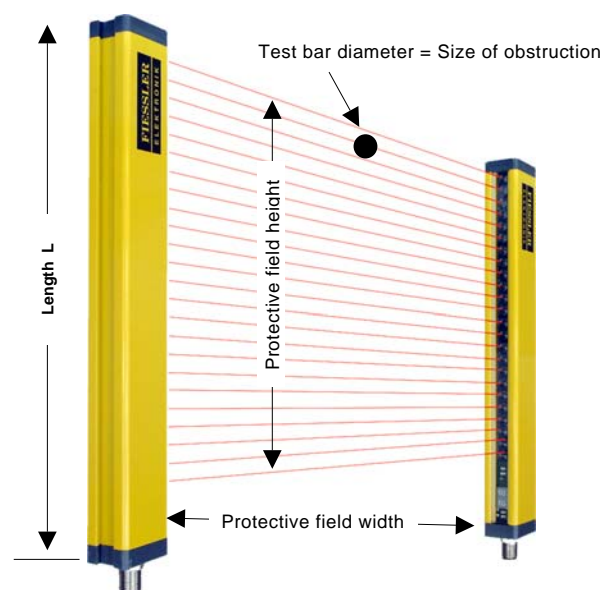
The transmitter generates infrared light beams in rapid pulses. These parallel light beams are analyzed by two single-chip controllers in the transmitter. The beam spacing determines the resolution.

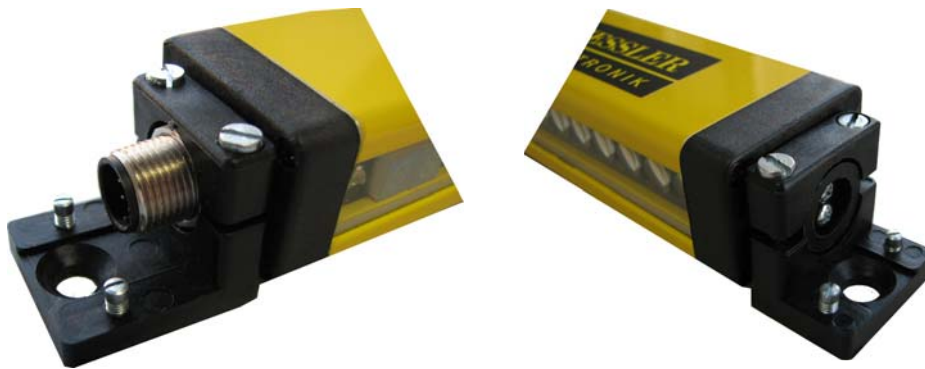
If an object enters the protective field, i.e. if at least one light beam is interrupted, the receiver's two outputs stop the machine or prevent it from starting, thus avoiding hazards.

In the restart with interlock operating mode, the machine can only be restarted by means of the start button once the protective field has been cleared again.

**User-friendly self-testing:** The customary testable category 2 light curtains required a external cyclic system test. With TLCT light curtains this is no longer necessary, because a continuous internal self-testing is active.

Overview table		TLCT / ILCT	TLCT
		Finger protection Resolution: 14 mm	Hand protection Resolution: 30 mm
Protective field height (mm)	Length L (mm)	Beam count	Beam count
100	161	12	4
200	261	24	8
300	361	36	12
400	461	48	16
500	561	60	20
600	661	72	24
700	761	84	28
800	861	96	32
900	961	108	36
1000	1061	120	40
1100	1161	132	44
1200	1261	144	48
1300	1361	156	52
1400	1461	168	56
1500	1561	180	60






**Swivel Mounting** (Scope of supply)





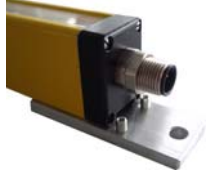


lateral mounting



rear mounting

characteristics	TLCT... / ILCT...	
<b>safety class</b>	Type 2 according to IEC 61496, Cat. 2 and PL c according to EN ISO 13849-1, SIL 1 acc. to IEC 61508/62061	
<b>protective heights</b>	100 mm ... 1500 mm	
<b>protective width (max. detection range)</b>	0 ... 5 m	
<b>resolution</b>	smallest obstacle recognition from 14 mm / 30 mm	
<b>response time</b>	<b>TLCT:</b> 4 - 20 ms, <b>ILCT:</b> 7 - 29 ms, depending on length - smallest safety distance due to short response times	
<b>self-diagnosis</b>	microcontroller monitoring of the safety functions ( <b>User-friendly self-testing</b> ) fault indication by 7-digit display	
<b>operation modes</b>	<ul style="list-style-type: none"> <li>- with / without restart interlock</li> <li>- with / without contactor control (EDM)</li> <li>- <b>11 blanking modes (ILCT)</b></li> <li>- <b>cascadeable variant (...LCTK)</b></li> </ul>	<p><b>with optional safety switching units PLSG...K:</b></p> <ul style="list-style-type: none"> <li>- Muting</li> <li>- cycle mode 1-cycle to 4-cycle (during inserting work)</li> <li>- Monitoring Emergency off and protective doors</li> <li>- potentialfree switching contacts</li> <li>- programming the blanking (for ILCT)</li> </ul> 
<b>Mechanical data</b>		
<b>fastenings</b>	<ul style="list-style-type: none"> <li>- hinge fastening (swivel mounting) at the upper and lower side of the light barrier for fine adjustment</li> <li>- sliding fastening brackets with adjustment screws at rear side of housing</li> <li>- flexible fastening by sliding T-blocks</li> </ul>	
<b>housing</b>	Aluminium profile 25x35mm, plastic-coated RAL 1021 yellow. End pieces made from non-corrosive spherically reinforced plastic (polyamide). Plexiglass light outlets and inlets.	
<b>Operating data</b>		
<b>protection category</b>	IP 65	
<b>protection class</b>	III	
<b>Operating ambient temperature</b>	-10 to 55 °C	
<b>storage temperature</b>	-25 to 70 °C	
<b>Electric data</b>	<b>transmitter TLCT-S / ILCT-S</b>	<b>receiver TLCT-E / ILCT-E</b>
<b>power supply</b>	24 V DC SELV, + 20 % - 15 %	24 V DC SELV, ±20%
<b>current draw</b>	max. 250 mA	max. 250 mA (no load)
<b>outputs</b>	-	OSSD 1 and 2: fail-safe PNP-outputs, max. 0,5 A short-circuit and cross-circuit monitoring
<b>inputs</b>	-	contactor control and Start button 0 V bis 24 V DC ±20%, 10mA
<b>electric connection</b>	M12 connector 4-core	M12 connector 8-core.

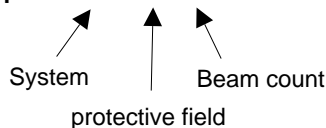
Accessories and Spare parts	Order code
14-mm test rod with fastening clips (in case of strong vibrations)	PS 14
30-mm test rod with chain (in case of strong vibrations)	PS 30
Deflecting mirror	USP 100 ... USP 1500
Laser adjustment aid	JHL2
<b>4-pol. M12- cable connection</b> / emitter / 5 m Length (Other lengths on request)	 XC/M12/4pol/5m
<b>8-pol. M12- cable connection</b> / receiver / 5 m Length (Other lengths on request)	 XC/M12/8pol/5m
<b>4-pol. M12- extension cable for cascaded light grids</b> / 2 m Length	 XC/M12/4pol/2m/K
<b>8-pol. M12- extension cable for cascaded light grids</b> / 2 m Length	 XC/M12/8pol/2m/K
<b>4-pol. M12 Round plug connector</b> Screw terminals	 M12/4/K
<b>4-pol. M12 Round plug connector</b> Screw terminals	 M12/8/K
Satz Schwenkhalterungen für Sender und Empfänger (im Lieferumfang enthalten)	 -
Slot block (1 piece) (optional)	 NS
Aluminium shackles (optional)	 On request
Metallic fastening rocker for a shackle (in case of strong vibrations)	 SM



**Standard system**

Order code of **Standard system**:

i.e. Type: **TLCT 100/12**



**Cascadable light grid**

Order code of **Cascadable light grid**:

additionally **K** in the type designation

i.e. Type: **TLCT-K 300/36**

**cascadable**, to this equipment a standard device or further cascadeable equipment can be attached