


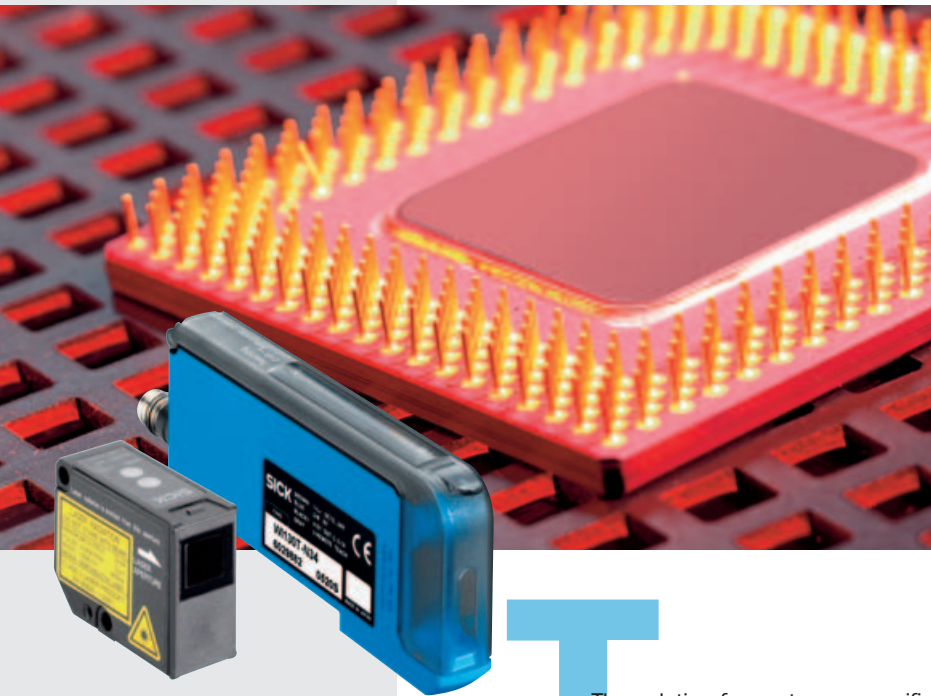


# W130 Laser - Customised through configuration, and small format through external laser heads

	Photoelectric proximity switch energ.
	Photoelectric reflex switch
	Through-beam photoelectric switch



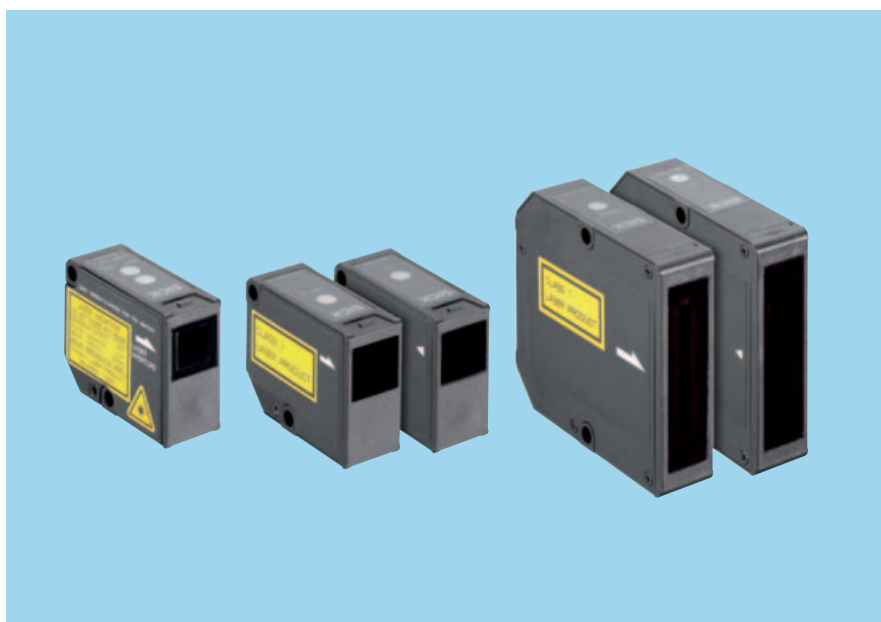
## Included in the system

The sensor heads offered, comprise a photoelectric proximity switch, a photoelectric reflex switch and two through-beam photoelectric switches with small laser spot or a parallel laser line 30 mm in width. The combination of the analogue output and two switching outputs is the basis for a variety of application solutions, such as edge control or sorting parts.

## Application-oriented, easy commissioning

The solution for customer-specific requirements: configurable evaluation units with digital and analogue outputs and external laser heads. By separating optics and evaluation, the W130L offers compact laser sensors with extensive functionality, allowing the configuration-based setup of application-specific sensor functions. Fast and easy commissioning is implemented by clear Teach-in functions.

- 1 or 2 point Teach-in: for the safe Teach-in of switching points,
- Auto Teach-in: for Teach-in during a running process,
- Zone Teach-in: for the Teach-in of an upper and lower switching threshold,
- Transparent Teach-in: for transparent objects such as bottles or films.




◀ Extensive choice of sensor heads for versatile applications, amongst others with parallel laser line 30 mm wide.

▼ Reliable detection of small objects and features, respectively, with W130 Laser.

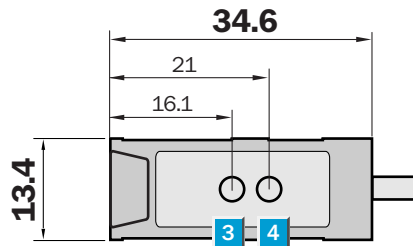
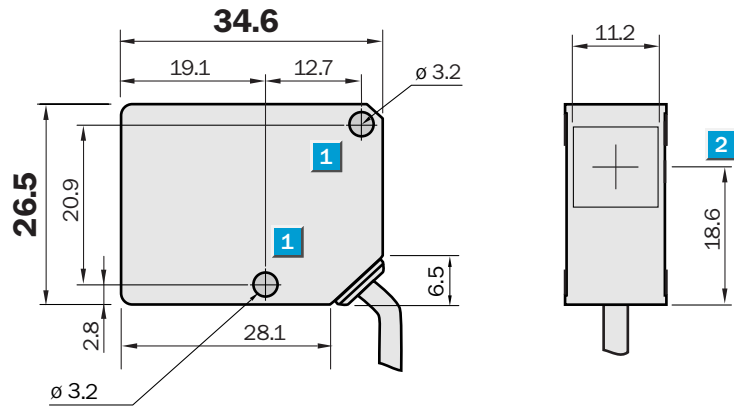


# Photoelectric proximity switch, WT130L, energetic


**Scanning distance**  
**0 ... 1,200 mm**  
**Photoelectric proximity switch**

- Laser sensor in a compact housing
- Easy alignment through red light laser Class 2
- Coaxial light path
- Configuration via amplifier unit

## Dimensional drawing

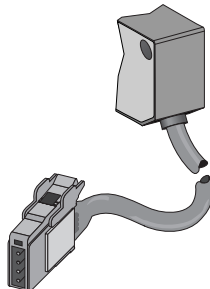


- 1 Through-hole  $\varnothing$  3.2 mm
- 2 Optical axis
- 3 Indicator LED green: operational status indicator
- 4 Indicator LED orange: switching output



## Connection type

WT130L-32



**Technical specifications** WT130L- 32

<b>Sensor head</b>	Operation in combination with amplifier unit W130	
<b>Scanning distance typ. max.</b>	0 ... 1,200 mm <sup>1)</sup>	
<b>Operating distance</b>	30 ... 1,000 mm <sup>1)</sup>	
<b>Light source, light type</b>	Laser, red light <sup>2)</sup>	
<b>Laser protection class</b>	2 (IEC 60 825-1/C.D.R.H)	
Light spot diameter	1 mm at 1 m distance	
<b>Supply voltage V<sub>s</sub></b>	See amplifier unit W130	
<b>Switching outputs</b>	See amplifier unit W130	
<b>Connection type</b>	Cable with plug, PVC/PBT, 2 m <sup>3)</sup>	
<b>VDE protection class</b>	◆	
<b>Enclosure rating</b>	IP 67	
<b>Ambient temperature operation</b>	-10 °C ... +55 °C	
<b>Ambient temperature storage</b>	-25 °C ... +70 °C	
<b>Weight</b>	Approx. 35 g	
<b>Housing material</b>	PC, polycarbonate, glass	

<sup>1)</sup> Object with 90 % remission (based on standard white to DIN 5033). Scanning

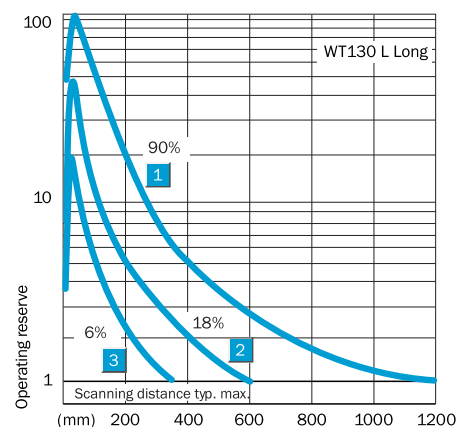
distance depends on chosen operating mode

<sup>2)</sup> Average service life 50,000 h at T<sub>a</sub> = +25 °C

<sup>3)</sup> Connection between sensor head and amplifier unit with system specific plug. Do not bend cable below 0 °C

**Scanning distance and operating reserve**

**Mode: Long**

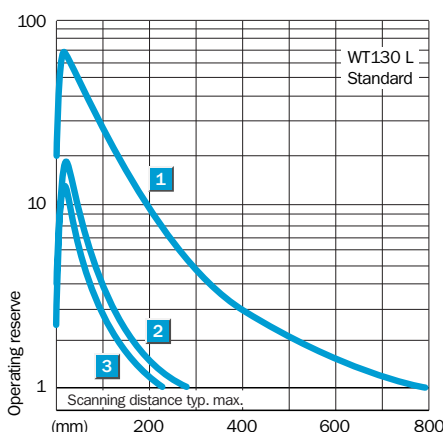


1	0	30	1000	1200
2	0	30	550	600
3	0	30	300	350

Operating distance      Scanning distance typ. max.

1	Scanning distance on white, 90 % remission
2	Scanning distance on grey, 18 % remission
3	Scanning distance on black, 6 % remission

**Mode: Standard**

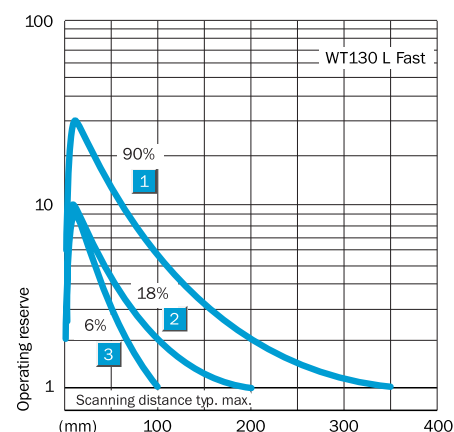


1	0	30	700	800
2	0	30	240	280
3	0	30	200	230

Operating distance      Scanning distance typ. max.

1	Scanning distance on white, 90 % remission
2	Scanning distance on grey, 18 % remission
3	Scanning distance on black, 6 % remission

**Mode: Fast**

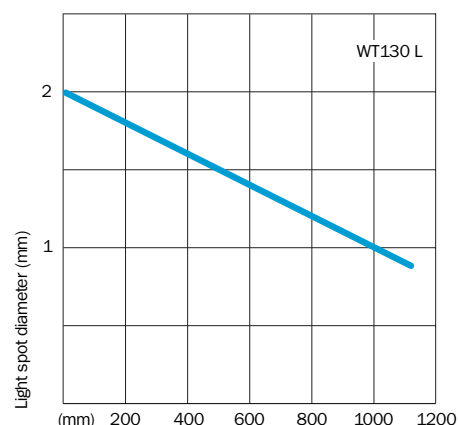


1	0	30	250	350
2	0	30	180	200
3	0	30	90	100

Operating distance      Scanning distance typ. max.

1	Scanning distance on white, 90 % remission
2	Scanning distance on grey, 18 % remission
3	Scanning distance on black, 6 % remission


**Light spot diameter**



**Ordering information**

Type	Order no.
WT130L-32	6 029 861

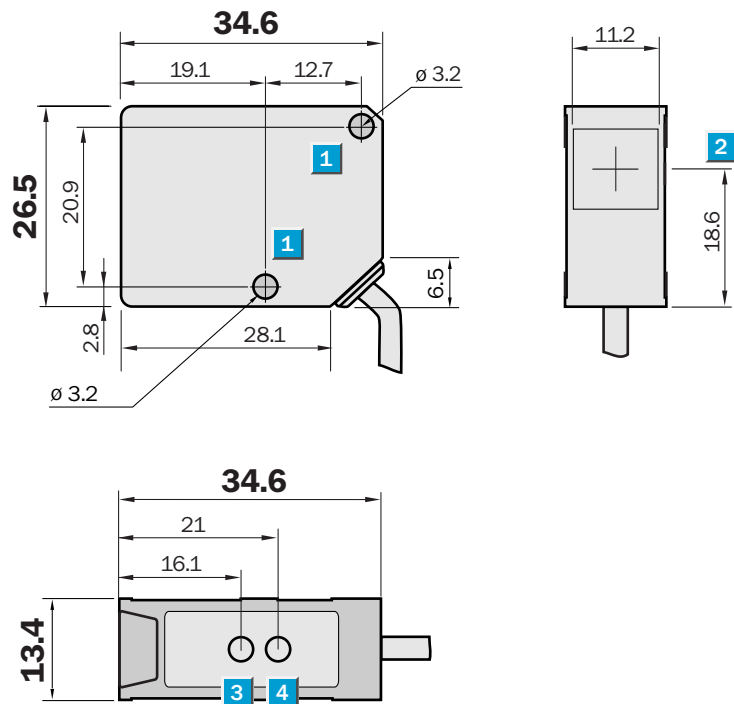
# Photoelectric reflex switch, WL130L


**Scanning range**  
**0 ... 10 m**

Photoelectric reflex switch

- Laser sensor in a compact housing
- Easy alignment through red light laser Class 2
- Coaxial light path
- Configuration via amplifier unit
- Line laser through line attachment

## Dimensional drawing

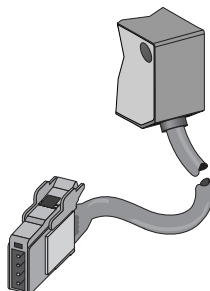


- 1 Through-hole Ø 3.2 mm
- 2 Optical axis
- 3 Indicator LED green: operational status indicator
- 4 Indicator LED orange: switching output



## Connection type

WL130L-32



## See chapter Accessories

Masks

Reflectors

Technical specifications WL130L- 32

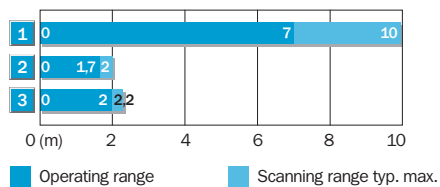
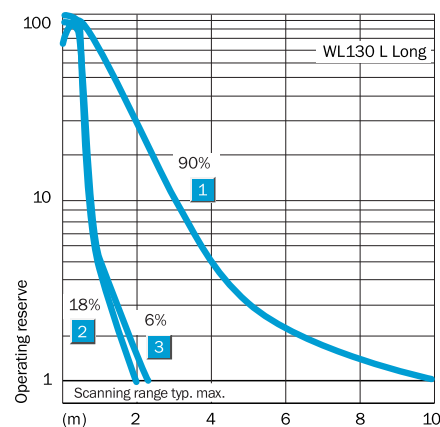
<b>Sensor head</b>	Operation in combination with amplifier unit W130
<b>Scanning range typ. max.</b>	0 ... 10 m
<b>Scanning range, recommended</b>	0 ... 7 m
<b>Laser line through lens</b>	✓
Laser line dimension	26 x 0.5 mm at 200 mm distance
<b>Light source, light type</b>	Laser, red light <sup>1)</sup>
<b>Laser protection class</b>	2 (IEC 60 825-1/C.D.R.H)
Light spot diameter	2 mm in 2m Entfernung
Polarisation filter	✓
<b>Supply voltage V<sub>s</sub></b>	See amplifier unit W130
<b>Switching outputs</b>	See amplifier unit W130
<b>Connection type</b>	Cable with plug, PVC/PBT, 2 m <sup>2)</sup>
<b>VDE protection class</b>	◆
<b>Enclosure rating</b>	IP 67
<b>Ambient temperature operation</b>	-10 °C ... +55 °C
<b>Ambient temperature storage</b>	-25 °C ... +70 °C
<b>Weight</b>	Approx. 35 g
<b>Housing material</b>	PC, polycarbonate, PMMA
<b>Included with delivery</b>	Reflector P41F

<sup>1)</sup> Average service life 50,000 h at T<sub>a</sub> = +25 °C

<sup>2)</sup> Connection between sensor head and amplifier unit with system specific plug. do not bend cable below 0 °C

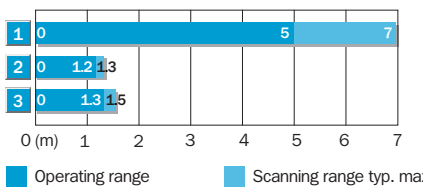
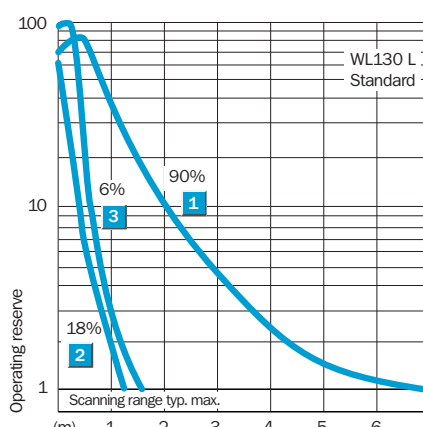
Scanning range and operating reserve

Mode: Long



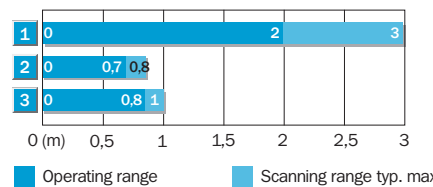
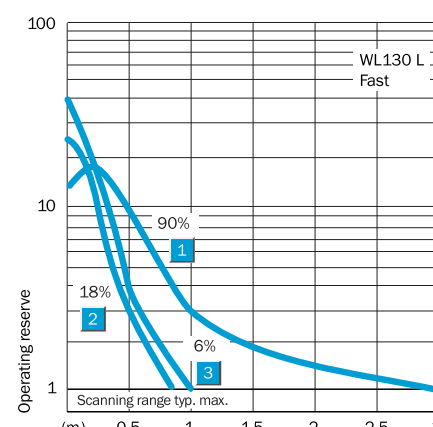
Reflector type	Operating range
1 P41F (without tip adapter lens)	0 ... 7 m
2 P41F (with area tip adapter lens)	0 ... 1.7 m
3 P41F (with line tip adapter lens)	0 ... 2 m

Mode: Standard



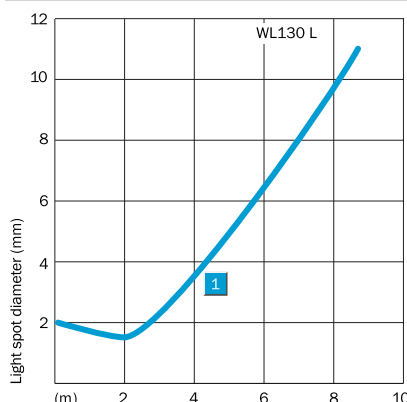
Reflector type	Operating range
1 P41F (without tip adapter lens)	0 ... 5 m
2 P41F (with area tip adapter lens)	0 ... 1.2 m
3 P41F (with line tip adapter lens)	0 ... 1.5 m

Mode: Fast



Reflector type	Operating range
1 P41F (without tip adapter lens)	0 ... 2 m
2 P41F (with area tip adapter lens)	0 ... 0.7 m
3 P41F (with line tip adapter lens)	0 ... 0.8 m

Light spot diameter



Ordering information

Type	Order no.
WL130L-32	6 029 862

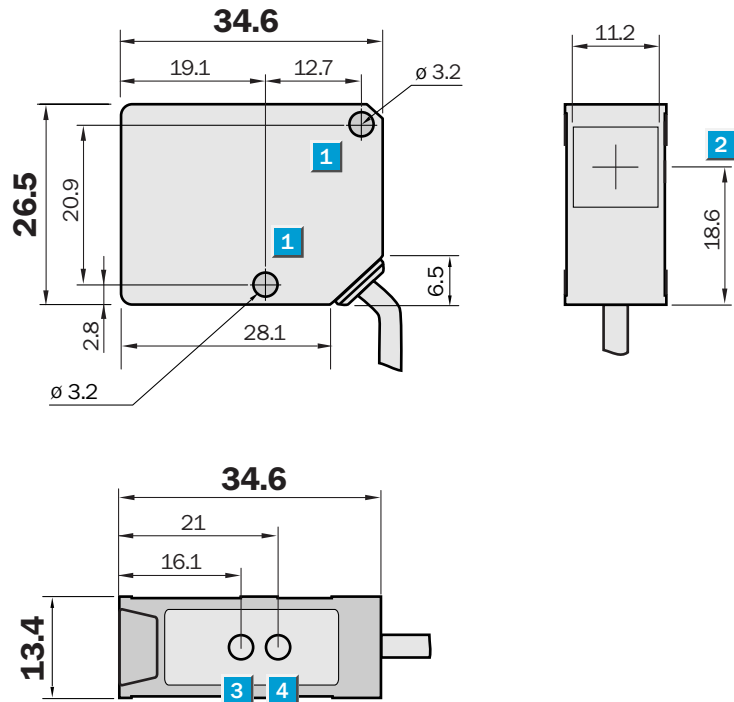
# Through-beam photoelectric switch, WS/WE130L "SPOT"

**Scanning range**  
0 ... 3.5 m

Through-beam photoelectric switch

- Laser sensor in a compact housing
- "Eye safe" (Class 1) red light laser
- Configuration via amplifier unit

## Dimensional drawing



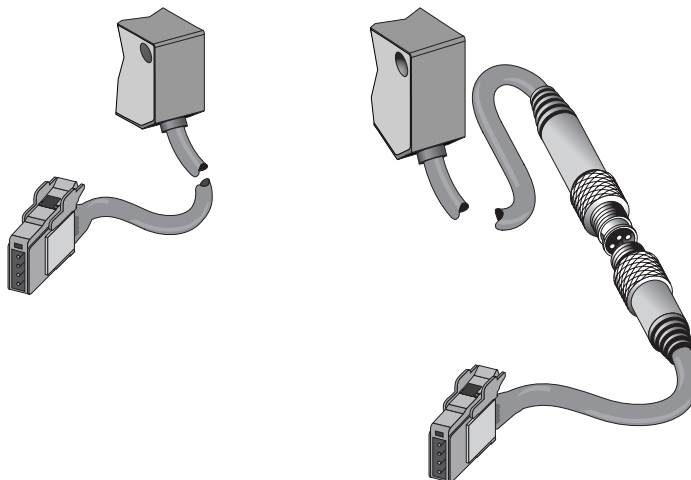
- 1 Through-hole  $\varnothing$  3.2 mm
- 2 Optical axis
- 3 Indicator LED green: operational status indicator
- 4 Indicator LED orange: switching output



## Connection type

WS/WE130L-32

WS/WE130L-34



Technical specifications		WS/WE130L-	32	34								
<b>Sensor head</b>	Operation in combination with amplifier unit W130											
<b>Scanning range typ. max.</b>	0 ... 3.5 m											
<b>Scanning range, recommended</b>	0 ... 2 m											
<b>Light source, light type</b>	Laser, red light <sup>1)</sup>											
<b>Laser protection class</b>	1 (EN 60 825-1)											
Light spot diameter	2 mm at 2 m distance											
<b>Supply voltage V<sub>s</sub></b>	See amplifier unit W130											
<b>Switching outputs</b>	See amplifier unit W130											
<b>Connection type</b>	Cable with plug, PVC/PBT, 2 m <sup>2)</sup>											
	Cable with plug and coupling, PVC/PBT, 2 m <sup>3)</sup>											
<b>VDE protection class</b>	◆											
<b>Enclosure rating</b>	IP 67											
<b>Ambient temperature operation</b>	-10 °C ... +55 °C											
<b>Ambient temperature storage</b>	-25 °C ... +70 °C											
<b>Weight</b>	Approx. 70 g											
<b>Housing material</b>	PC, polycarbonate, PMMA											

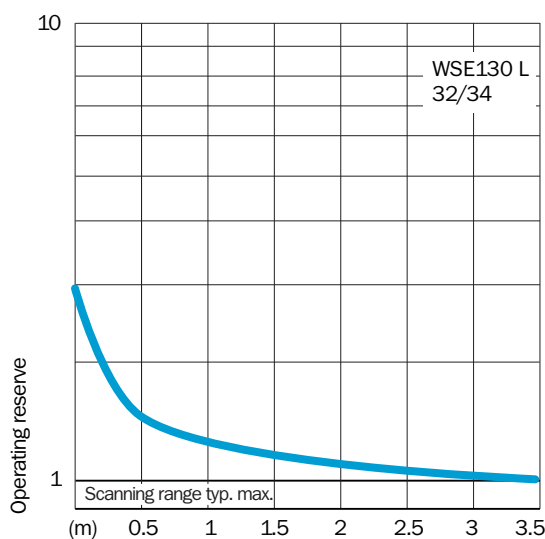
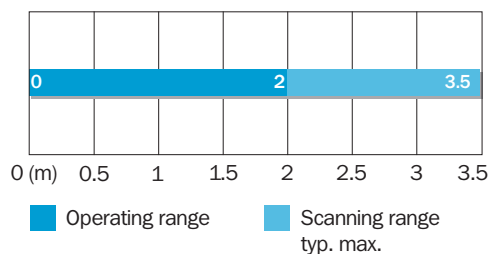
<sup>1)</sup> Average service life 50,000 h at T<sub>a</sub> = +25 °C

<sup>2)</sup> Connection between sensor head and amplifier unit with system specific plug.

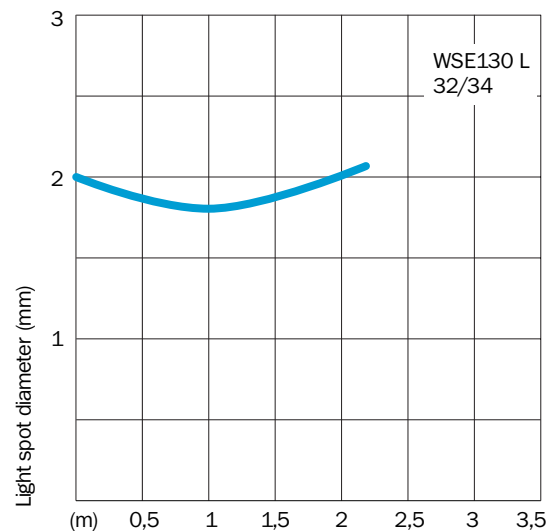
Do not bend cable below 0 °C  
<sup>3)</sup> System cable M8, 2 m necessary for

connection. Included with delivery. Do not bend cable below 0 °C

**Scanning range and operating reserve**



**Light spot diameter**



**Ordering information**

Type	Order no.
WS/WE130L-32	6 029 863
WS/WE130L-34	6 029 866



# Through-beam photoelectric switch, WS/WE130L "LINE"

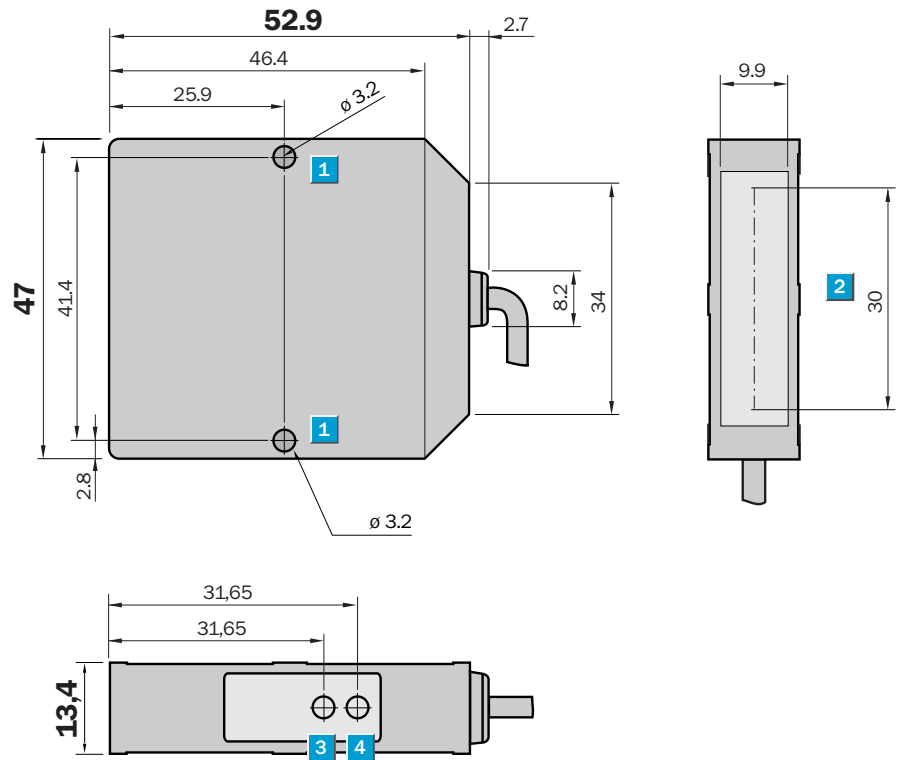


**Scanning range**  
0 ... 3.5 m

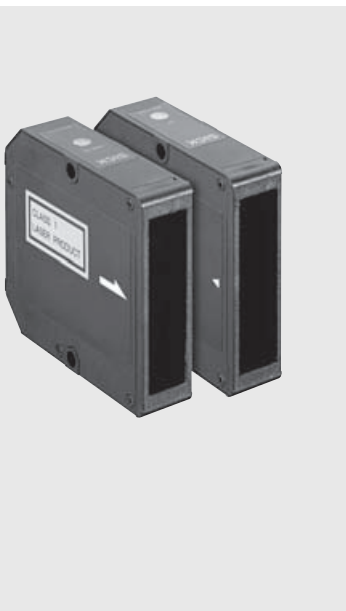
Through-beam photoelectric switch

- Parallel laser line 30 mm wide
- Range up to 2 m
- "Eye safe" (Class 1) red light laser
- Configuration via amplifier unit enables application solutions such as edge control and detection of objects with position tolerance

## Dimensional drawing



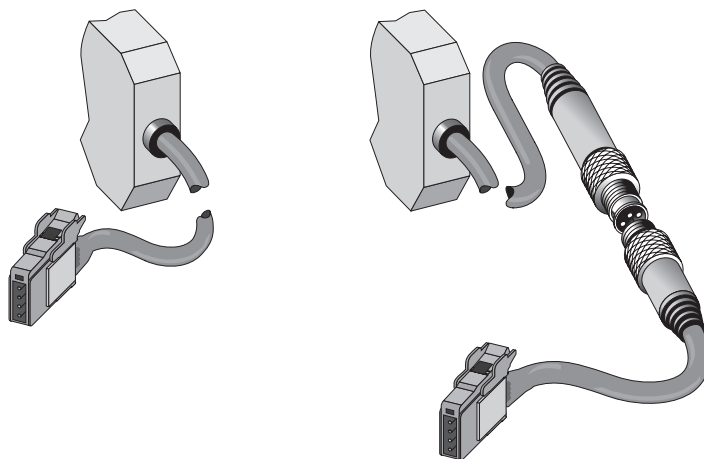
- 1 Through-hole  $\phi 3.2$  mm
- 2 Parallel laser line
- 3 Indicator LED green: operational status indicator
- 4 Indicator LED orange: switching output



## Connection type

WS/WE130L-52

WS/WE130L-54



Technical specifications		WS/WE130L-	52	54								
<b>Sensor head</b>	Operation in combination with amplifier unit W130											
<b>Scanning range typ. max.</b>	0 ... 3.5 m											
<b>Scanning range, recommended</b>	0 ... 2 m											
<b>Laser line dimension</b>	30 x 2.5 mm parallel											
<b>Light source, light type</b>	Laser, red light <sup>1)</sup>											
<b>Laser protection class</b>	1 (EN 60 825-1)											
<b>Supply voltage V<sub>s</sub></b>	See amplifier unit W130											
<b>Switching outputs</b>	See amplifier unit W130											
<b>Connection type</b>	Cable with plug, PVC/PBT, 2 m <sup>2)</sup>											
	Cable with plug and coupling, PVC/PBT, 2 m <sup>3)</sup>											
<b>VDE protection class</b>	◆											
<b>Enclosure rating</b>	IP 67											
<b>Ambient temperature operation</b>	-10 °C ... +55 °C											
<b>Ambient temperature storage</b>	-25 °C ... +70 °C											
<b>Weight</b>	Approx. 100 g											
<b>Housing material</b>	PC, polycarbonate, PMMA											

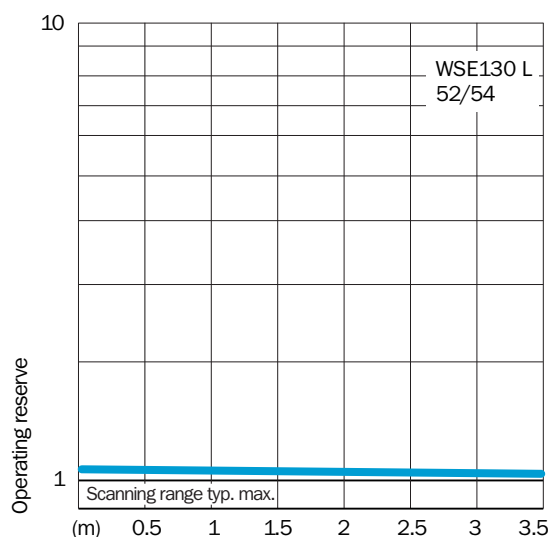
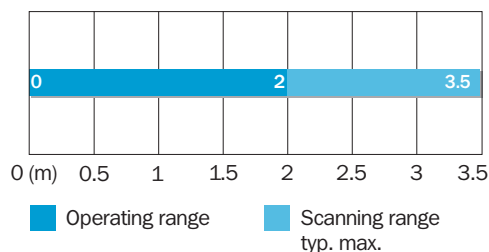
<sup>1)</sup> Average service life 50,000 h at T<sub>a</sub> = +25 °C

<sup>2)</sup> Connection between sensor head and amplifier unit with system specific plug.

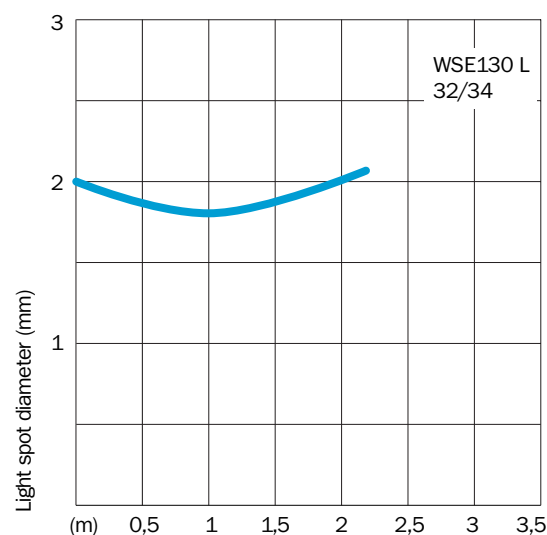
Do not bend cable below 0 °C  
<sup>3)</sup> System cable M8, 2 m necessary for

connection. Included with delivery. Do not bend cable below 0 °C

**Scanning range and operating reserve**



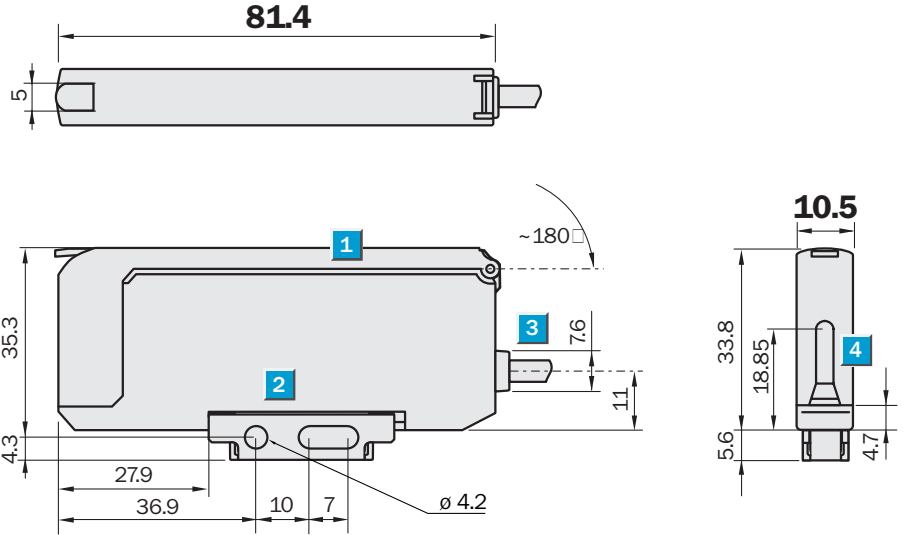
**Light spot diameter**



Ordering information	
Type	Order no.
WS/WE130L-52	6 029 865
WS/WE130L-54	6 029 868

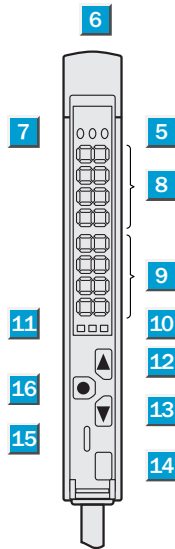
# Amplifier unit, WI130T, with switching output

## Dimensional drawing



- Provision of varied functions for configuration
- Easy commissioning
- Display for operational status indicator and operator guidance
- Switching and analogue outputs
- Switching frequency up to 8.3 kHz

## Adjustments possible

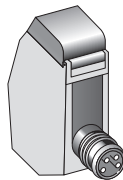


- 1 Protective hood; can be folded open (180° approx.)
- 2 Mounting bracket (included with delivery)
- 3 Connection
- 4 Connection for sensor heads
- 5 Indicator LED: output 1
- 6 Indicator LED: laser active
- 7 Indicator LED: output 2
- 8 Display: measurement value
- 9 Display: switching point
- 10 Indicator: SET active
- 11 Indicator LED: output 1 or 2 activated
- 12 Function key
- 13 Function key
- 14 Teach-in key
- 15 Set/Run selector switch
- 16 Operating key

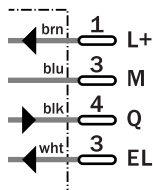


## Connection type

- WI130T-P340
- WI130T-N340



M8, 4-pin



### See chapter Accessories

- Connector, M8, 4-pin
- Male bus connector for Mounting systems

Technical specifications		W130T-	P340	N340										
<b>Amplifier unit</b>	Operation in combination with sensor heads from the W130L series													
Adjustment of operating distance	Teach-in: teach button & cable (ET)													
<b>Supply voltage <math>V_s</math></b>	DC 12 ... 24 V <sup>1)</sup>													
Power consumption	≤ 50 mA													
<b>Switching outputs</b>	PNP, Q													
	NPN, Q													
Switching mode	Programmable/configurable													
Output current $I_a$ max	≤ 100 mA													
Response time	60 μs / 500 μs / 5 ms													
Time delay	On / Off Delay, 0 ... 9 s													
<b>Connection type</b>	Connector, M8, 4-pin													
<b>VDE protection class</b>	◆													
<b>Circuit protection</b>	$V_s$ connections reverse-polarity protected / Output Q short-circuit protected													
<b>Enclosure rating</b>	IP 50													
<b>Ambient temperature operation</b>	-25 °C ... +55 °C <sup>2)</sup>													
<b>Ambient temperature storage</b>	-40 °C ... +70 °C													
<b>Weight</b>	Approx. 20 g													
<b>Housing material</b>	PPE / PC													
<b>Included with delivery</b>	Mounting bracket													

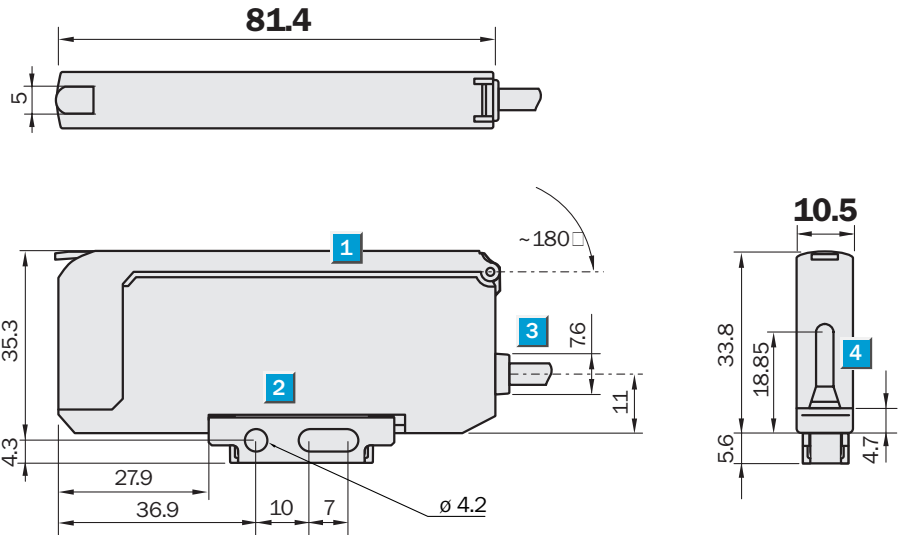
<sup>1)</sup> ± 10 %

<sup>2)</sup> more than 2 devices mounted as a block max 50 °C

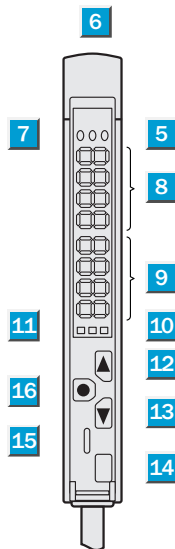
#### Ordering information

Type	Order no.
W130T-P340	6 032 851
W130T-N340	6 032 852

## Dimensional drawing



## Adjustments possible



- 1 Protective hood; can be folded open (180° approx.)
- 2 Mounting bracket (included with delivery)
- 3 Connection
- 4 Connection for sensor heads
- 5 Indicator LED: output 1
- 6 Indicator LED: laser active
- 7 Indicator LED: output 2
- 8 Display: measurement value
- 9 Display: switching point
- 10 Indicator: SET active
- 11 Indicator LED: output 1 or 2 activated
- 12 Function key
- 13 Function key
- 14 Teach-in key
- 15 Set/Run selector switch
- 16 Operating key

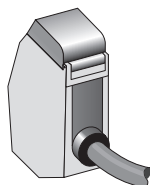
- Provision of varied functions for configuration
- Easy commissioning
- Display for operational status indicator and operator guidance
- Switching and analogue outputs
- Switching frequency up to 8.3 kHz



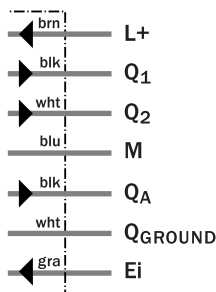
## Connection type

WI130T-N720

WI130T-P720



## 7 wire



## See chapter Accessories

Male bus connector

Mounting systems

Technical specifications		W130T-	N720	P720										
<b>Amplifier unit</b>	Operation in combination with sensor heads from the W130L series													
Adjustment of operating distance	Teach-in: teach button & cable (ET)													
<b>Supply voltage <math>V_s</math></b>	DC 12 ... 24 V <sup>1)</sup>													
Power consumption	≤ 50 mA													
<b>Switching outputs</b>	NPN, Q1, Q2 and analogue output													
	PNP, Q1, Q2 and analogue output													
Switching mode	Programmable/configurable													
Output current $I_a$ max	≤ 100 mA													
Response time	60 μs / 500 μs / 5 ms													
Time delay	On / Off Delay, 0 ... 9 s													
<b>Connection type</b>	Cable, PVC/PBT, 2 m													
<b>VDE protection class</b>	◆													
<b>Circuit protection</b>	$V_s$ connections reverse-polarity protected / Output Q short-circuit protected													
<b>Enclosure rating</b>	IP 50													
<b>Ambient temperature operation</b>	-25 °C ... +55 °C <sup>2)</sup>													
<b>Ambient temperature storage</b>	-40 °C ... +70 °C													
<b>Weight</b>	Approx. 80 g													
<b>Housing material</b>	PPE / PC													
<b>Included with delivery</b>	Mounting bracket													

<sup>1)</sup> ± 10 %

<sup>2)</sup> more than 2 devices mounted as a block max 50 °C

#### Ordering information

Type	Order no.
W130T-N720	6 032 854
W130T-P720	6 032 853