

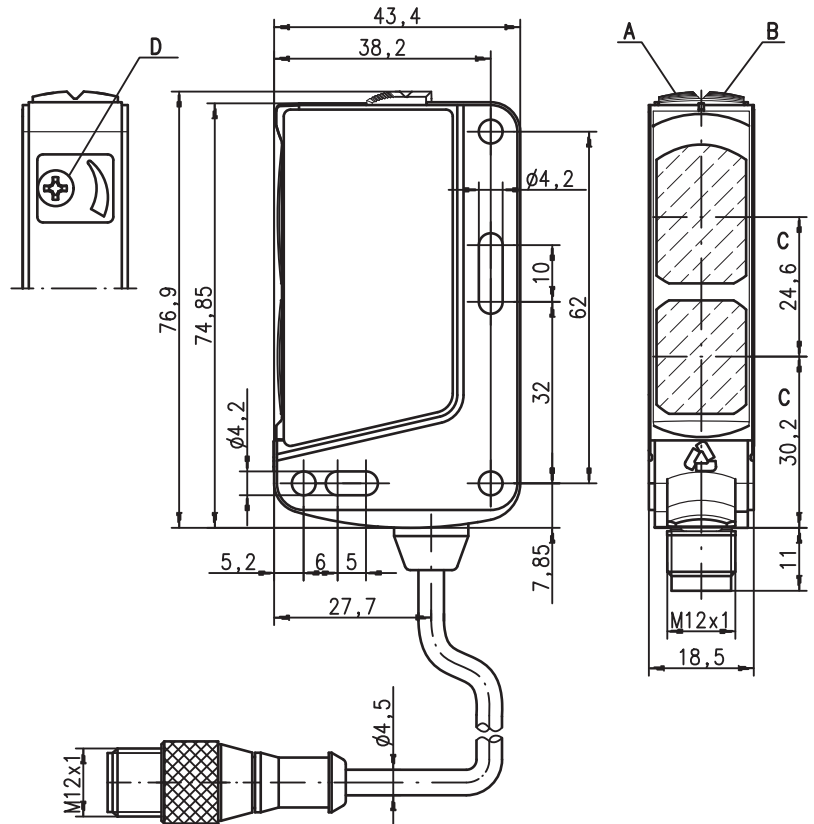
**HRTR 46B**

**Diffuse reflection light scanner with background suppression**

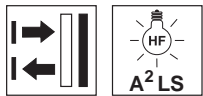
en 04-2010/01 50107351-01



**Dimensioned drawing**



- A** Green indicator diode
- B** Yellow indicator diode
- C** Optical axis
- D** Scanning range adjustment



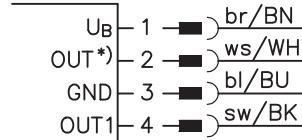
**5 ... 1,800mm**  
800mm with  
black-white error < 10%



- Adjustable scanner with background suppression
- Reliable detection of light and dark, as well as inclined or sloped surfaces
- Exact scanning range adjustment through multiturn potentiometer
- Fast alignment through *brightVision*®
- A²LS - Active Ambient Light Suppression
- Complementary switching outputs for optimal adaptation to the application

**Electrical connection**

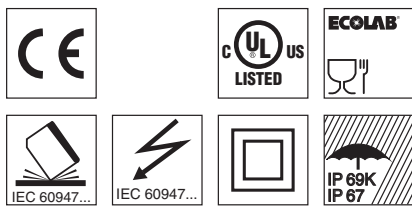
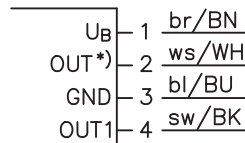
Connector, 4-pin



Selection pin 2

*)	OUT
	OUT 2
	NC

Cable



**Accessories:**

(available separately)

- Mounting systems (BT 46, BT 46.1, BT 46.1.5, BT 46.2)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)

We reserve the right to make changes • DS\_HRTR\_46B\_en.fm

## Specifications

### Optical data

Typ. scanning range limit (white 90%) <sup>1)</sup>	5 ... 1,800mm
Scanning range <sup>2)</sup>	see tables
Adjustment range	120 ... 1,800mm
Light source	LED (modulated light)
Wavelength	620nm (visible red light)

### Timing

Switching frequency	200Hz
Response time	2.5 ms
Delay before start-up	≤ 100ms

### Electrical data

Operating voltage $U_B$ <sup>3)</sup>	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Open-circuit current	≤ 20mA
Switching output	.../66. ... 2 push-pull switching outputs <sup>4)</sup>
	pin 2: PNP dark switching, NPN light switching
	pin 4: PNP light switching, NPN dark switching
	.../4. ... PNP switching output
	pin 4: PNP light switching
	.../4D. ... PNP switching output
	pin 4: PNP dark switching
Signal voltage high/low	≥ ( $U_B - 2V$ ) / ≤ 2V
Output current	max. 100mA

### Indicators

Green LED	ready
Yellow LED	reflection
Yellow LED, flashing	reflection, no performance reserve

### Mechanical data

Housing	plastic
Optics cover	plastic
Weight	50g (with connector) / 65g (with cable and conn.)
Connection type	M12 connector, or cable with M12 connector, cable length: 200mm

### Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C / -40°C ... +70°C
Protective circuit <sup>5)</sup>	2, 3
VDE safety class <sup>6)</sup>	II, all-insulated
Protection class	IP 67, IP 69K
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

- 1) Typ. scan. range limit: max. achievable scanning range for light objects (white 90%)
- 2) Scanning range: recommended scanning range for objects with different diffuse reflection
- 3) For UL applications: for use in class 2 circuits only
- 4) The push-pull switching outputs must not be connected in parallel
- 5) 2=polarity reversal protection, 3=short-circuit protection for all outputs
- 6) Rating voltage 50V

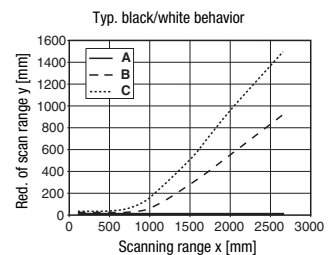
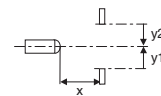
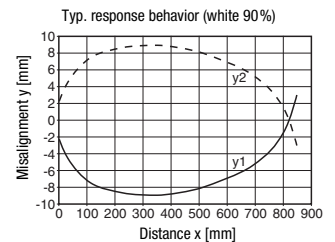
## Tables

1	0	1,800
2	15	1,000
3	20	700

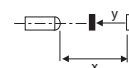
1	white 90%
2	grey 18%
3	black 6%

Scanning range [mm]

## Diagrams



- A white 90%
- B grey 18%
- C black 6%



## Remarks

- **Approved purpose:**  
This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.
- With the set scanning range, a tolerance of the upper scanning range limit is possible depending on the reflection properties of the material surface.

## HRTR 46B

## Diffuse reflection light scanner with background suppression

### Order guide

The sensors listed here are preferred types; current information at [www.leuze.com](http://www.leuze.com).

	Designation	Part No.
<b>With M12 connector</b>		
Complementary switching output	HRTR 46B/66-S12	50106555
No contact with pin 2, direct connection to AS-interface I/O coupling modules possible	HRTR 46B/4-S12	50106557
No contact with pin 2, direct connection to AS-interface I/O coupling modules possible	HRTR 46B/4D-S12	50106558
<b>Cable with M12 connector</b>		
Complementary switching output	HRTR 46B/66, 200-S12	50106556

### Type key

HRTR 46B / 66 - S - S12

#### Operating principle

**HRTR** Scanner with background suppression with light visible red light

#### Series

**46B** 46B Series

#### Switching output

**/66** Complementary push-pull switching outputs  
**/44** Complementary PNP switching outputs  
**/4** Pin 4 PNP switching output, pin 2 no contact or warning output  
**/6** Pin 4 push-pull switching output, pin 2 no contact

#### Function characteristics

**N/A** Pin 4 light switching; with push-pull, PNP light switching  
**D** Inverted switching logic

#### Product modifications

**-xxxx** Scanning range in mm, only for preset sensors (only on request)  
**-xxxxF** Permanent setting (only on request)  
**-S** Focussed at approx. 200mm

#### Electrical connection

**N/A** Cable, standard length 2000mm  
**,200-S12** Cable, length 200 mm with M12 connector  
**-S12** M12 connector

