

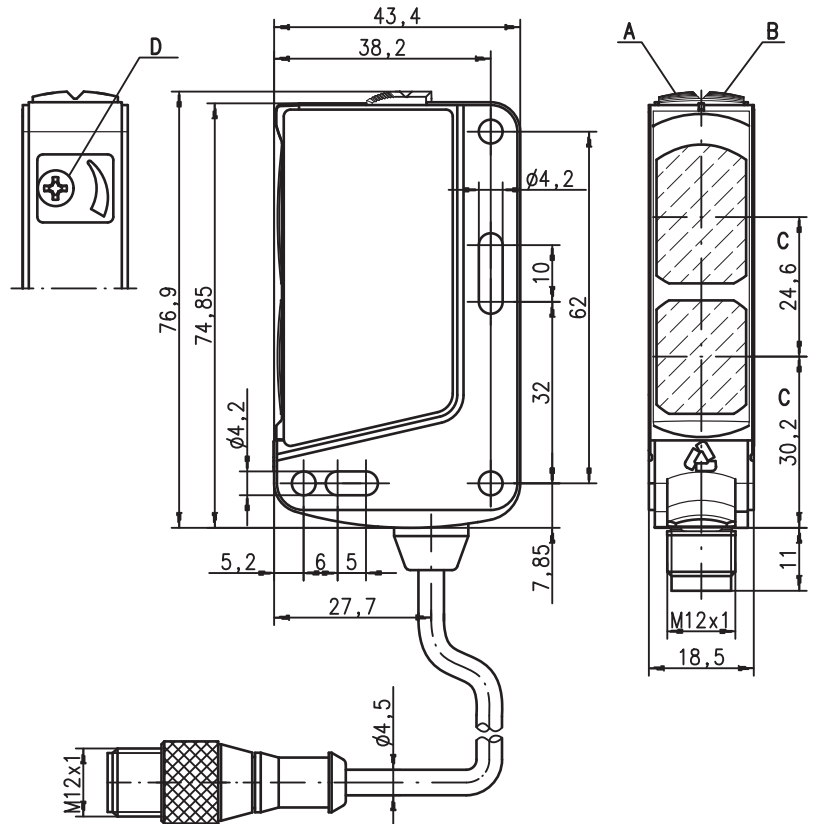
**HRTR 46B "S"**

**Diffuse reflection light scanner with background suppression**

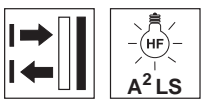
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**Dimensioned drawing**



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



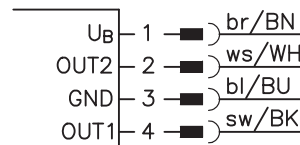
**10 ... 700mm**  
500mm with  
black-white error < 10%



- Adjustable scanner with background suppression
- Optimized light spot for reliable detection of objects with colored structure
- 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



**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\_S\_en.fm

**Specifications**

**Optical data**

Typ. scanning range limit (white 90%) <sup>1)</sup>	10 ... 700mm
Scanning range <sup>2)</sup>	see tables
Adjustment range	120 ... 700mm
Light source	LED (modulated light)
Wavelength	620nm (visible red light)
Light spot	5 x 5mm <sup>2</sup> (focussed at approx. 200mm)

**Red light**

**Timing**

Switching frequency	200Hz
Response time	2.5ms
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 ≥ ( $U_B - 2V$ ) / ≤ 2V
Signal voltage high/low	max. 100mA
Output current	

**Indicators**

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

**Mechanical data**

Housing	plastic
Optics cover	plastic
Weight	50g
Connection type	M12 connector

**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

● **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.

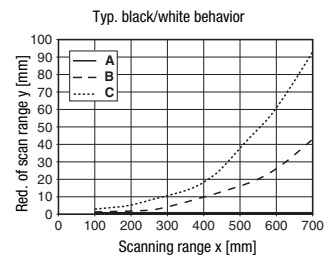
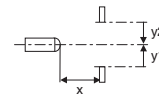
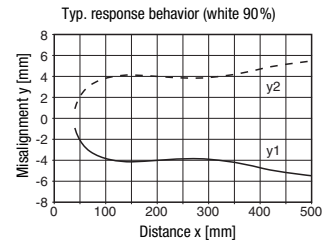
**Tables**

1	10	700
2	30	650
3	60	550

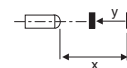
1	white 90%
2	grey 18%
3	black 6%

Scanning range [mm]

**Diagrams**



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



**Remarks**

- With the set scanning range, a tolerance of the upper scanning range limit is possible depending on the reflection properties of the material surface.
- A minimal edge error (reliable detection of objects with colored structure) is achieved at an actuation distance in the range of 150 ... 250mm.

# HRTR 46B "S" 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-S-S12	50106559

## Type key

H	R	T	R		4	6	B	/	6	6	-	S	-	S	1	2
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Operating principle	
<b>HRTR</b>	Scanner with background suppression with light visible red light
Series	
<b>46B</b>	46B Series
Switching output	
<b>/66</b>	Complementary push-pull switching outputs
<b>/44</b>	Complementary PNP switching outputs
<b>/4</b>	Pin 4 PNP switching output, pin 2 no contact or warning output
<b>/6</b>	Pin 4 push-pull switching output, pin 2 no contact
Function characteristics	
<b>N/A</b>	Pin 4 light switching; with push-pull, PNP light switching
<b>D</b>	Inverted switching logic
Product modifications	
<b>-xxxx</b>	Scanning range in mm, only for preset sensors (only on request)
<b>-xxxxF</b>	Permanent setting (only on request)
<b>-S</b>	Focussed at approx. 200mm
Electrical connection	
<b>N/A</b>	Cable, standard length 2000mm
<b>,200-S12</b>	Cable, length 200 mm with M12 connector
<b>-S12</b>	M12 connector

