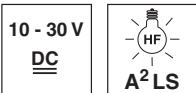


## LRT 8

en 06-2016/11 50118345

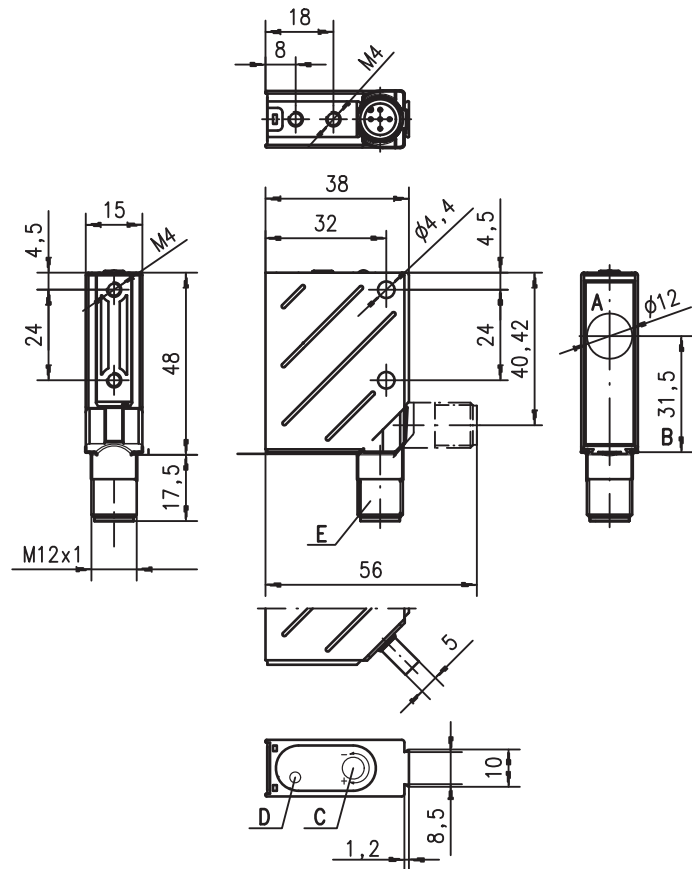


0 ... 500 mm



- Detection of luminescent objects and markings
- Various filter options
- Various light spot sizes
- High switching frequency

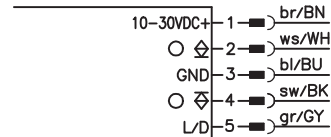
## Dimensioned drawing



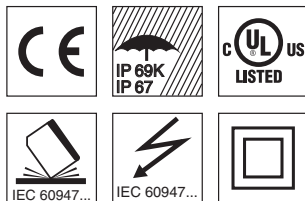
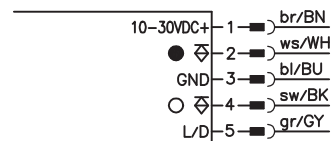
- A Transmitter and receiver
- B Optical axis
- C Operational control
- D Indicator diodes
- E Turning connector, 90° rot. angle

## Electrical connection

1x PNP or 1x NPN



2 x PNP, antivalent



## Accessories:

(available separately)

- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Mounting systems
- Control guard
- Diaphragms

We reserve the right to make changes • DS\_LRT8\_en\_50118345.fm

## Specifications

### Optical data

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Typ. scanning range limit <sup>1)</sup> | see tables                             |
| Typ. scanning range <sup>2)</sup>       | see tables                             |
| Light spot diameter                     | see diagram                            |
| Light source                            | LED                                    |
| Wavelength                              | 370nm (UV light) or 470nm (blue light) |
| Average life <sup>3)</sup>              | 50,000h                                |

### Timing

|                       |         |
|-----------------------|---------|
| Switching frequency   | 1500Hz  |
| Response time         | 0.33ms  |
| Delay before start-up | ≤ 100ms |

### Electrical data

|                                       |                                                                                                                                                                                                                                                    |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating voltage $U_B$ <sup>4)</sup> | 10 ... 30VDC                                                                                                                                                                                                                                       |
| Residual ripple                       | ≤ 15% of $U_B$                                                                                                                                                                                                                                     |
| Open-circuit current                  | ≤ 35mA (10mA)                                                                                                                                                                                                                                      |
| Switching output                      | .../24...<br>.../44...<br>1 PNP and 1 NPN transistor output, light switching<br>2 PNP transistor outputs, antivalent reversible, inverted with $+U_B$ on PIN 5<br>$\geq (U_B - 2V) \leq 2V$<br>max. 100mA<br>adjustable with 12-turn potentiometer |
| Function                              |                                                                                                                                                                                                                                                    |
| Signal voltage high/low               |                                                                                                                                                                                                                                                    |
| Output current                        |                                                                                                                                                                                                                                                    |
| Sensitivity                           |                                                                                                                                                                                                                                                    |

### Indicators

|            |                 |
|------------|-----------------|
| Yellow LED | object detected |
|------------|-----------------|

### Mechanical data

|                     |                      |
|---------------------|----------------------|
| Housing             | metal                |
| Optics cover        | glass                |
| Weight (plug/cable) | 70g/140g             |
| Connection type     | M12 connector, 5-pin |

### Environmental data

|                                   |                                                                                          |
|-----------------------------------|------------------------------------------------------------------------------------------|
| Ambient temp. (operation/storage) | -20°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 <sup>7)</sup>    | IP 67, IP 69K <sup>8)</sup>                                                              |
| Eye safety                        | 370nm: in acc. with EN 62471: exempt group<br>470nm: in acc. with EN 62471: risk group 1 |
| Standards applied                 | IEC 60947-5-2                                                                            |
| Certifications                    | UL 508, CSA C22.2 No.14-13 <sup>4) 9)</sup>                                              |

### Options

|                       |                           |
|-----------------------|---------------------------|
| <b>L/D input</b>      |                           |
| Inverted/not inverted | $U_B/0V$ or not connected |
| L/D delay             | < 0.5ms                   |

- 1) Typ. scanning range limit: max. scanning range achievable on object with maximum size and max. luminescence effect
- 2) Typ. scanning range: max. scanning range achievable on a typical object (see table)
- 3) At +25°C
- 4) For UL applications: for use in class 2 circuits according to NEC only
- 5) 2=polarity reversal protection, 3=short circuit protection for all outputs
- 6) Rating voltage 250VAC
- 7) In end position of the turning connector (turning connector engaged)
- 8) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test
- 9) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

## Remarks

### Operate in accordance with intended use!

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with the intended use.

## Tables

### Scanning range limit

| Sensor              | Typ. scanning range limit |
|---------------------|---------------------------|
| LRT 8/24.00-50-...  | 0 ... 100mm               |
| LRT 8/24.04-50-...  | 0 ... 100mm               |
| LRT 8/24.16-80-...  | 0 ... 120mm               |
| LRT 8/24.04-100-... | 0 ... 300mm               |
| LRT 8/44.04-100-... | 0 ... 300mm               |
| LRT 8/24.14-150-... | 0 ... 500mm               |
| LRT 8/44.14-150-... | 0 ... 500mm               |
| LRT 8/24.10-150-... | 0 ... 500mm               |

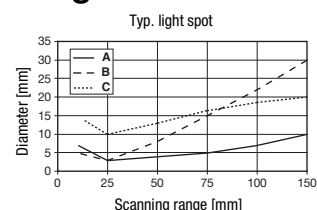
### Scanning range

| Sensor      | Object (white paper) | Typ. scanning range |
|-------------|----------------------|---------------------|
| LRT8/24...  |                      |                     |
| .04-50-...  | 10mm x 10mm          | 0 ... 70mm          |
|             | 20mm x 20mm          | 0 ... 100mm         |
|             | 50mm x 50mm          | 0 ... 150mm         |
| .04-100-... | 10mm x 10mm          | 0 ... 100mm         |
|             | 20mm x 20mm          | 0 ... 150mm         |
|             | 50mm x 50mm          | 0 ... 220mm         |
| .14-150-... | 10mm x 10mm          | 0 ... 200mm         |
|             | 20mm x 20mm          | 0 ... 300mm         |
|             | 50mm x 50mm          | 0 ... 400mm         |

| Sensor      | RED Lyra chalk, mark (5mm x 30mm) on | Typ. scanning range |
|-------------|--------------------------------------|---------------------|
| LRT8/24...  |                                      |                     |
| .00-50-...  | Wood, light, wet                     | 0 ... 80mm          |
|             | OSB                                  | 0 ... 60mm          |
|             | Paper, black                         | 0 ... 40mm          |
|             | Paper, white                         | 0 ... 60mm          |
|             | Piece of chalk                       | 0 ... 130mm         |
| .10-150-... | Wood, light, wet                     | 0 ... 350mm         |
|             | OSB                                  | 0 ... 300mm         |
|             | Paper, black                         | 0 ... 150mm         |
|             | Paper, white                         | 0 ... 300mm         |
|             | Piece of chalk                       | 0 ... 500mm         |

| Sensor     | Yellow mark (10mm x 30mm) on | Typ. scanning range |
|------------|------------------------------|---------------------|
| LRT8/24... |                              |                     |
| .16-80-... | Paper, light                 | 0 ... 100mm         |
|            | Paper, dark                  | 0 ... 40mm          |

## Diagrams



- A** LRT 8/24.14...S12, LRT 8/44.14...S12, LRT 8/24.16...S12  
**B** LRT 8/24.04...S12, LRT 8/44.04...S12  
**C** LRT 8/24.10...S12

# LRT 8

## Order guide

| Selection table                                    |                                       | Order code →                            |                                          |                                          |                                          |                                          |                                         |                                          |                                         |
|----------------------------------------------------|---------------------------------------|-----------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------|------------------------------------------|-----------------------------------------|
| Equipment ↓                                        |                                       | LRT 8/24.04-50-S12<br>Part no. 50041840 | LRT 8/24.04-100-S12<br>Part no. 50109343 | LRT 8/44.04-100-S12<br>Part no. 50124694 | LRT 8/24.14-150-S12<br>Part no. 50119032 | LRT 8/44.14-150-S12<br>Part no. 50124693 | LRT 8/24.00-50-S12<br>Part no. 50041839 | LRT 8/24.10-150-S12<br>Part no. 50119033 | LRT 8/24.16-80-S12<br>Part no. 50116732 |
| Target application                                 | detection of all visible luminescence | ●                                       | ●                                        | ●                                        | ●                                        | ●                                        |                                         |                                          |                                         |
|                                                    | detection of white paper              | ●                                       | ●                                        | ●                                        | ●                                        | ●                                        |                                         |                                          |                                         |
|                                                    | detection of yellow print marks       |                                         |                                          |                                          |                                          |                                          |                                         |                                          | ●                                       |
|                                                    | detection of red marks on wood        |                                         |                                          |                                          |                                          |                                          | ●                                       | ●                                        |                                         |
| Light spot                                         | large                                 | ●                                       | ●                                        | ●                                        |                                          |                                          | ●                                       |                                          |                                         |
|                                                    | small                                 |                                         |                                          |                                          | ●                                        | ●                                        |                                         | ●                                        | ●                                       |
| Typical scanning range limit <sup>1)</sup> (in mm) |                                       | 100                                     | 300                                      | 300                                      | 500                                      | 500                                      | 100                                     | 500                                      | 120                                     |
| Switching outputs                                  | 1 x PNP, 1 x NPN, light switching     | ●                                       | ●                                        |                                          | ●                                        |                                          | ●                                       | ●                                        | ●                                       |
|                                                    | 2 x PNP, antivalent                   |                                         |                                          | ●                                        |                                          | ●                                        |                                         |                                          |                                         |
| Filter for the detection of                        | blue 400 ... 500 nm                   |                                         |                                          |                                          |                                          |                                          |                                         |                                          |                                         |
|                                                    | blue 400 ... 750 nm                   | ●                                       | ●                                        | ●                                        | ●                                        | ●                                        |                                         |                                          |                                         |
|                                                    | red 590 ... 750 nm                    |                                         |                                          |                                          |                                          |                                          | ●                                       | ●                                        | ●                                       |
|                                                    | yellow 550 ... 750 nm                 |                                         |                                          |                                          |                                          |                                          |                                         |                                          | ●                                       |
|                                                    | green 520 ... 750 nm                  |                                         |                                          |                                          |                                          |                                          |                                         |                                          |                                         |
| Transmitter                                        | UV 370 nm                             | ●                                       | ●                                        | ●                                        | ●                                        | ●                                        |                                         |                                          | ●                                       |
|                                                    | blue 470 nm                           |                                         |                                          |                                          |                                          |                                          | ●                                       | ●                                        |                                         |

1) Typ. scanning range limit: max. scanning range achievable on objects with maximum size and max. luminescence effect.  
Typ. scanning range: see tables.

