# Accessories

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## General information

When selecting lamps, the button/lens colour of the device should be taken into account.

| transparent colours | Suitable for | | |
|---|---|---|---|
| | Filament lamps | Neon lamps | LED |
| colourless | limited | good | good |
| red | good | good | good |
| yellow | good | good | good |
| green | good | limited | limited |
| blue | limited | limited | good |

**transparent** = clear, grooved on inside for better light diffusion
**translucent** = translucent but not clear

Operating life specifications of lamps refer to AC operation. For DC operation, these values are reduced by approximately 40%. (Operating life specifications: when not mounted).

Neon lamps: rated current tolerance +/- 30%

We recommend to combine coloured lenses with the coresponding LED colours in order to achieve a really intensive colour.
On the other hand, when combining e. g. a white LED with a coloured lens, this will produce a dim colour.

**LED Protective Diode**
LED may be damaged when anode and cathode are connected in a wrong way. An integrated protective diode protects the LED against wrong polarization.

## CE-Conformity

Illumination like lamps and LED displays are exchangeable, overall available as merchandise and not steadily connected with the network – thus, the Low-voltage Directive 73/23/EWG does not apply.

**EMC**
The components of this catalogue are within the meaning of the law concerning the electromagnetic conformity (= EMC) "basic components as f. ex. switches, signal lamps or like" and, therefore, do not all within the scope of the EMC.

**Declarations of Conformity**
Declarations of conformity for lamps are not available.

## General Data

Luminous elements

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## Filament/neon lamp

## Typical accessories Filament/neon lamp

| Description | Photo | Order no. | Additional accessories see page |
|---|---|---|---|
| Lamp extractor for lamp diameter 11 mm | | **1.90.900.007/0000** | 5 - 20 |

## Filament lamps, wedge base W 2 x 4.6d DIN 49846

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 12 V | 0.08 A | 1.2 W | 5 mm | 20 mm | 15000 h | **1.90.120.012/0000** | **1.90.900.003/0000** |
| 24 - 30 V | 0.04 A | 1 W | 5 mm | 20 mm | 1000 h | **1.90.120.005/0000** | **1.90.900.003/0000** |
| 24 V | 0.04 A | 1.2 W | 5 mm | 20 mm | 7000 h | **1.90.120.011/0000** | **1.90.900.003/0000** |
| 48 V | 0.025 A | 1.2 W | 5 mm | 19 mm | 2500 h | **1.90.120.010/0000** | **1.90.900.003/0000** |
| 60 V | 0.02 A | 1.2 W | 5 mm | 19 mm | 3300 h | **1.90.120.009/0000** | **1.90.900.003/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.
The lamps up to 30 V are provided with glass sockets, the other ones with plastic sockets.





**Stock items** are marked by **bold printed order numbers.**

## Filament lamps, Bi-Pin T 1 base

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 - 28 V | 0.016 A | 0.4 - 0.56 W | - | - | 5000 h | **1.90.180.473/0000** | **1.90.900.001/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, Bi-Pin T ¼ base

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 12 V | 0.06 A | 0.72 W | 4.3 mm | 10.5 mm | 10000 h | **1.90.180.474/0000** | **1.90.900.002/0000** |
| 28 V | 0.03 A | 0.84 W | 4.3 mm | 10.5 mm | 5000 h | **1.90.180.475/0000** | **1.90.900.002/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## Filament lamps T 4.5

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 12 V | 0.04 A | 0.48 W | 4.2 mm | 16.5 mm | 10000 h | **1.90.100.022/0000** | **1.90.900.002/0000** |
| 24 V | 0.02 A | 0.48 W | 4.2 mm | 16.5 mm | 8000 h | **1.90.100.023/0000** | **1.90.900.002/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps T 4.6

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 12 V | 0.04 A | 0.3 W | 4 mm | 22 mm | 5000 h | **1.90.100.012/0000** | **1.90.900.002/0000** |
| 24 V | 0.02 A | 0.5 W | 4 mm | 22 mm | 5000 h | **1.90.100.013/0000** | **1.90.900.002/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## Filament lamps, BA 9s base (MBC/MCC), shape G, DIN 72601

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 12 - 15 V | 0.12 A | 1.2 W | 9 mm | 24 mm | 10000 h | **1.90.060.003/0000** | **1.90.900.006/0000** |
| 24 - 30 V | 0.04 A | 1.2 W | 9 mm | 24 mm | 7000 h | **1.90.060.014/0000** | **1.90.900.006/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, BA 9s base (MBC/MCC), shape A, DIN 49851

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 12 - 15 V | 0.166 A | 2 W | 11 mm | 29 mm | 10000 h | **1.90.060.132/0000** | **1.90.900.007/0000** |
| 24 - 30 V | 0.083 A | 2 W | 11 mm | 29 mm | 10000 h | **1.90.060.133/0000** | **1.90.900.007/0000** |
| 110 - 130 V | 0.018 A | 2 W | 11 mm | 30 mm | 25000 h | **1.90.060.137/0000** | **1.90.900.007/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## Neon lamps, BA 9s base (MBC/MCC)

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 220 AC V | 0.0015 - 0.0018 A | - | 10 mm | 24 mm | 1500 h | **1.90.560.002/0000** | **1.90.900.007/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Neon lamps, BA 9s base (MBC/MCC), DIN 49850

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| AC 220 V | 0.0015 - 0.0018 A | - | 10 mm | 28 mm | - | **1.90.560.102/0000** | **1.90.900.007/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, BA 15d base, DIN 49850

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 12 - 15 V | 0.12 A | 2 W | 15.2/12.5 mm | 31 mm | 1000 h | **1.90.070.003/0000** | **1.90.900.008/0000** |
| 24 - 30 V | 0.08 A | 2 W | 15.2/12.5 mm | 31 mm | 1000 h | **1.90.070.004/0000** | **1.90.900.008/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## Filament lamps, BA 15d base, DIN 49852

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 - 30 V | 0.165 A | 4 W | 17 mm | 57 mm | 2000 h | **1.90.070.105/0000** | **1.90.900.009/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, BA 15d base

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 V | 0.2 A | 5 W | 16 mm | 36 mm | 2000 h | **1.90.070.053/0000** | **1.90.900.009/0000** |
| 220 - 260 V | 0,02 - 0,03 A | 5 - 7 W | 16 mm | 36 mm | 1000 h | 1.90.070.061/0000 | **1.90.900.009/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## Filament lamps, E 10 (MES) base

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 - 30 V | 0.083 A | 2 W | 11 mm | 29 mm | 1000 h | **1.90.010.033/0000** | **1.90.900.007/0000** |
| 110 - 130 V | 0.018 A | 2 W | 11 mm | 30 mm | 1000 h | **1.90.010.037/0000** | **1.90.900.007/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Neon lamps, E 10 (MES) base

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 220 AC V | 0.0015 - 0.0018 A | - | 10.4 mm | 28 mm | - | **1.90.510.012/0000** | **1.90.900.006/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, E 14 base, shape B, DIN 49850

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 - 30 V | 0.083 A | 2 W | 14/12.5 mm | 31 mm | 1000 h | **1.90.020.033/0000** | **1.90.900.008/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## Filament lamps, E 14 base, shape A, DIN 49852

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 - 30 V | 0.165 A | 4 W | 17 mm | 57 mm | 1000 h | **1.90.020.105/0000** | **1.90.900.009/0000** |
| 220 - 260 V | 0.023 A | 5 W | 17 mm | 57 mm | 1000 h | **1.90.020.115/0000** | **1.90.900.009/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, E 14 base

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 V | 0.2 A | 5 W | 16 mm | 36 mm | 2000 h | **1.90.020.053/0000** | **1.90.900.009/0000** |
| 220 - 260 V | 0,02 - 0,03 A | 5 - 7 W | 16 mm | 36 mm | 1000 h | **1.90.020.061/0000** | **1.90.900.009/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## Neon lamps, E 14 base, shape B

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 220 AC V | 0.0014 - 0.0026 A | - | 14.1/11.5 mm | 31 mm | - | **1.90.520.002/0000** | **1.90.900.008/0000** |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, tubular lamp, S 8.5 base, shape L, DIN 72601

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 V | - | 3 W | 11.5 mm | 39 mm | 200 h | **1.90.111.003/0000** | - |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.

## Filament lamps, tubular lamp, S 8.5 base, shape K, DIN 72601

| Rated voltage | Rated current | Rated power | Diameter max. | Length | Medium operating life AC | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|---|
| 24 V | - | 5 W | 15.5 mm | 44 mm | 200 h | 1.90.111.103/0000 | - |

Ratings and operating life specifications generally refer to the lower rated voltage value. Operating life specifications of lamps refer to AC operation. With DC operation, these are reduced by about 40%.





**Stock items** are marked by **bold printed order numbers.**

## LED

## LED W 2 x 4.6d superbright

| Socket | Colour | Forward voltage typ. $U_F$ at $I_F$ | Max. current, $I_F$ | Light intensity | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|
| W 2 x 4.6d | red | 24 | 12 mA | 70 mcd | **1.90.690.361/0000** | **1.90.900.003/0000** |
| W 2 x 4.6d | green | 24 | 12 mA | 600 mcd | **1.90.690.362/0000** | **1.90.900.003/0000** |
| W 2 x 4.6d | yellow | 24 | 12 mA | 80 mcd | **1.90.690.363/0000** | **1.90.900.003/0000** |
| W 2 x 4.6d | blue | 24 | 12 mA | 300 mcd | **1.90.690.364/0000** | **1.90.900.003/0000** |
| W 2 x 4.6d | white | 24 | 12 mA | 400 mcd | **1.90.690.365/0000** | **1.90.900.003/0000** |

All LEDs are provided with a protective diode. Operating temperature - 30 °C ... + 65 °C.
For more intensive colours, please combine coloured lenses with suitable LED colours.





**Stock items** are marked by **bold printed order numbers.**

## LED Bi-Pin T 1

| Socket | Colour | Forward voltage typ. $U_F$ at $I_F$ | Max. current, $I_F$ | Light intensity | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|
| Bi-Pin T 1 | red | 2 | 10 mA | 26-52 mcd | **1.90.691.026/0000** | **1.90.900.001/0000** |
| Bi-Pin T 1 | green | 2 | 10 mA | 9-33 mcd | **1.90.691.027/0000** | **1.90.900.001/0000** |
| Bi-Pin T 1 | yellow | 2 | 10 mA | 26-52 mcd | **1.90.691.028/0000** | **1.90.900.001/0000** |

Voltage $U_B$: External resistor: $R_V = (U_B - U_F):I_F$
A suitable series resistor must be fitted externally.
Recommended resistor ratings:
- for 5 - 7 V = 270 Ω 0.25 W
- for 12 - 14 V = 680 Ω 0.50 W
- for 24 - 28 V = 1500 Ω 1.00 W

Forward voltage $U_F$: 2 V (3 V max.)
Reverse voltage $U_R$: 5 V
Reverse current $I_R$: 100 µA.
Forward current:10 mA
Operating temperature:-20°C ... +60°C
Storage temperature:-30°C ... +80°C
Operating life:100,000 h at $T_U$ = 25°C)

## LED Bi-Pin T 1 superbright

| Socket | Colour | Forward voltage typ. $U_F$ at $I_F$ | Max. current, $I_F$ | Light intensity | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|
| Bi-Pin T 1 | red | 24 | 11 mA | 70 mcd | **1.90.690.351/0000** | **1.90.900.001/0000** |
| Bi-Pin T 1 | green | 24 | 11 mA | 600 mcd | **1.90.690.352/0000** | **1.90.900.001/0000** |
| Bi-Pin T 1 | yellow | 24 | 11 mA | 80 mcd | **1.90.690.353/0000** | **1.90.900.001/0000** |
| Bi-Pin T 1 | blue | 24 | 11 mA | 300 mcd | **1.90.690.354/0000** | **1.90.900.001/0000** |
| Bi-Pin T 1 | white | 24 | 11 mA | 400 mcd | **1.90.690.355/0000** | **1.90.900.001/0000** |

All LEDs are provided with a protective diode. Operating temperature - 30 °C ... + 65 °C.
For more intensive colours, please combine coloured lenses with suitable LED colours.





**Stock items** are marked by **bold printed order numbers.**

## LED T 4.5

| Socket | Colour | Forward voltage typ. $U_F$ at $I_F$ | Max. current, $I_F$ | Light intensity | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|
| T 4.5 | red | 2 - 3 V | 10 mA | 26-52 mcd | **1.90.692.001/0000** | - |
| T 4.5 | green | 2 - 3 V | 10 mA | 9-33 mcd | **1.90.692.002/0000** | - |
| T 4.5 | yellow | 2 - 3 V | 10 mA | 26-52 mcd | **1.90.692.003/0000** | - |

Voltage $U_B$: External resistor: $R_V = (U_B - U_F):I_F$
A suitable series resistor must be fitted externally.
Recommended resistor ratings:
- for 5 - 7 V = 270 Ω 0.25 W
- for 12 - 14 V = 680 Ω 0.50 W
- for 24 - 28 V = 1500 Ω 1.00 W

Forward voltage $U_F$: 2 V (3 V max.)
Reverse voltage $U_R$: 5 V
Reverse current $I_R$: 100 µA.
Forward current:10 mA
Operating temperature:-20°C ... +60°C
Storage temperature:-30°C ... +80°C
Operating life:100,000 h at $T_U$ = 25°C)

## LED T 4.5 superbright

| Socket | Colour | Forward voltage typ. $U_F$ at $I_F$ | Max. current, $I_F$ | Light intensity | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|
| T 4.5 | red | 24 | 13 mA | 90 mcd | **1.90.690.331/0000** | **1.90.900.004/0000** |
| T 4.5 | green | 24 | 13 mA | 700 mcd | **1.90.690.332/0000** | **1.90.900.004/0000** |
| T 4.5 | yellow | 24 | 13 mA | 100 mcd | **1.90.690.333/0000** | **1.90.900.004/0000** |
| T 4.5 | blue | 24 | 13 mA | 380 mcd | **1.90.690.334/0000** | **1.90.900.004/0000** |
| T 4.5 | white | 24 | 13 mA | 500 mcd | **1.90.690.335/0000** | **1.90.900.004/0000** |

All LEDs are provided with a protective diode. Operating temperature - 30 °C ... + 65 °C.
For more intensive colours, please combine coloured lenses with suitable LED colours.





**Stock items** are marked by **bold printed order numbers.**

## LED BA 9s (MBC/MCC) superbright

| Socket | Colour | Forward voltage typ. $U_F$ at $I_F$ | Max. current, $I_F$ | Light intensity | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|
| BA 9 s | red | 24 | 15 mA | 250 mcd | **1.90.690.341/0000** | **1.90.900.007/0000** |
| BA 9 s | green | 24 | 15 mA | 1000 mcd | **1.90.690.342/0000** | **1.90.900.007/0000** |
| BA 9 s | yellow | 24 | 15 mA | 250 mcd | **1.90.690.343/0000** | **1.90.900.007/0000** |
| BA 9 s | blue | 24 | 15 mA | 450 mcd | **1.90.690.344/0000** | **1.90.900.007/0000** |
| BA 9 s | white | 24 | 15 mA | 600 mcd | **1.90.690.345/0000** | **1.90.900.007/0000** |

All LEDs are provided with a protective diode. Operating temperature - 30 °C ... + 65 °C.
For more intensive colours, please combine coloured lenses with suitable LED colours.

## LED 3 mm, without base

| Socket | Colour | Forward voltage typ. $U_F$ at $I_F$ | Max. current, $I_F$ | Light intensity | Order no. | Accessoires lamp extractor |
|---|---|---|---|---|---|---|
| without socket | red | 1,6 V/1 mA | 30 mA | - | 1.90.690.228/0000 | - |
| without socket | yellow | 1,9 V/20 mA | 50 mA | - | **1.90.690.267/0000** | - |
| without socket | red | 1,9 V/20 mA | 50 mA | - | **1.90.690.269/0000** | - |
| without socket | blue | 3,6 V/20 mA | 30 mA | - | **1.90.690.282/0000** | - |
| without socket | green | 3,5 V/20 mA | 30 mA | - | **1.90.690.285/0000** | - |
| without socket | white | 3,6 V/20 mA | 30 mA | - | **1.90.690.295/0000** | - |

Processing information for 1.90.690.267/0000 and 1.90.690.269/0000
The qualifications for the higher soldering temperatures on lead free soldering processes are as follows:
Temperature stability according J-STD 020 C for reflow soldering 245°C and for wave soldering 245°C/10s.





**Stock items** are marked by **bold printed order numbers.**

## General Data

Other accessories

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| Emergency stop label, Ø 22.3 mm | 5 - 29 |
| Spacers, round | 5 - 30 |

## Accessories

## Lamp extractor

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Lamp extractor for lamp diameter 4 mm | lamp diameter 4 mm | - | **1.90.900.001/0000** |
| Lamp extractor for lamp diameter 4 mm | lamp diameter 4 mm | - | **1.90.900.002/0000** |
| Lamp extractor for lamp diameter 5 mm | lamp diameter 5 mm | - | **1.90.900.003/0000** |
| Lamp extractor for lamp diameter 5-6 mm | lamp diameter 5 - 6 mm | - | **1.90.900.004/0000** |
| Lamp extractor for lamp diameter 7 mm | lamp diameter 7mm | - | **1.90.900.005/0000** |
| Lamp extractor for lamp diameter 10.4 mm | lamp diameter 10.4 mm | - | **1.90.900.006/0000** |
| Lamp extractor for lamp diameter 11 mm | lamp diameter 11 mm | - | **1.90.900.007/0000** |
| Lamp extractor for lamp diameter 14 mm | lamp diameter 14 mm | - | **1.90.900.008/0000** |
| Lamp extractor for lamp diameter 16-17 mm | lamp diameter 16-17 mm | - | **1.90.900.009/0000** |





**Stock items** are marked by **bold printed order numbers.**

## Fixing spanner

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Fixing spanner M 18, M 19 | - | - | **5.58.002.017/0105** |
| Fixing spanner M 20, M 22, for ring nut | - | - | **5.58.002.018/0105** |
| Fixing spanner M 15, M 16 | - | - | 5.58.002.019/0105 |
| Fixing spanner M 25, M 30 | - | - | **5.58.002.020/0105** |
| Fixing spanner M 9, M 10 | - | - | **5.58.002.025/0105** |
| Fixing spanner M 11, M 13 | - | - | **5.58.002.026/0105** |
| Fixing spanner M 8 | - | - | **5.58.002.027/7705** |
| Fixing spanner, hexagon, for RAFIX 16 | - | - | 5.58.002.034/0100 |

## RAFIX 22QR/FS - Fixing spanner for ring nut and front ring

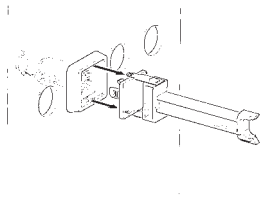
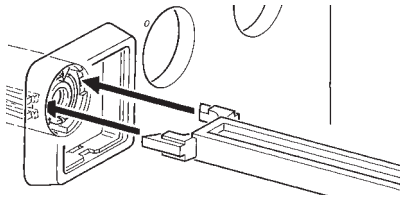
| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Fixing spanner for ring nut and front ring | - | - | **5.05.800.062/0000** |





**Stock items** are marked by **bold printed order numbers.**

## LUMOTAST FK/25 - Disassembly tool

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Disassembly tool for LUMOTAST FK | - | - | 5.05.800.041/0000 |

## LUMOTAST FK/25 - Socket connector, 4-pin

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Socket connector, 4-pin | - | - | **5.92.025.368/0000** |

## LUMOTAST FK/25 - Flat ribbon cable, 10 cm, with socket connector and AMP 4-pin male quick connector

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Cable (flat ribbon cable 10 cm with socket connector and male quick connector, AMP 4-pin) | - | - | **5.03.771.306/0000** |



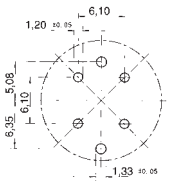


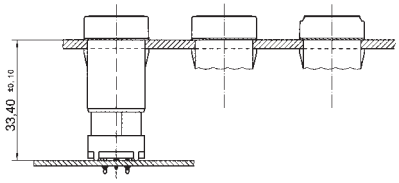
**Stock items** are marked by **bold printed order numbers.**

## LUMOTAST FK/25 - Flat ribbon cable, 4-wire, length 1 m

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Flat ribbon cable, 4-wire, 1 m long | - | - | 5.37.700.124/0000 |

## LUMOTAST FK/25 - Plug-in socket for PCB

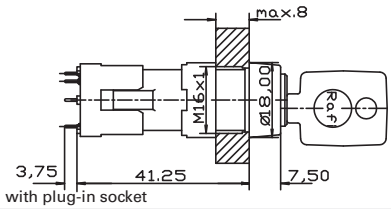



with plug-in socket for PCB

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Plug-in socket for PCB | - | - | **5.00.645.036/0000** |

## Keylock switch - PCB plug-in socket




with plug-in socket

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Plug-in socket for PCB mounting | - | - | 5.05.510.298/0000 |





**Stock items** are marked by **bold printed order numbers.**

## LUMOTAST 75 IP40/65 - Protective cap

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Protective cap (for 18 x 24 collar) | - | - | 5.05.800.027/0000 |
| Protective cap (for 18 x 18 collar) | - | - | 5.05.800.030/0000 |

## LUMOTAST 75 IP40/65 - Sealing cap

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Sealing cap IP65 (for 18 x 24 collar) | 18 x 24 mm | - | 5.05.200.008/0000 |
| Sealing cap IP65 (for 18 x 18 collar) | 18 x 18 mm | - | 5.05.200.009/0000 |

## Signal lamp Ø 22.3 mm - Sealing ring for IP 65

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Sealing ring for IP65 | - | - | 5.30.075.010/0100 |





**Stock items** are marked by **bold printed order numbers.**

## O-ring

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| O-ring, black, for blocking the operating stroke | - | - | 5.30.120.009/0100 |
| O-ring for keylock switch | - | - | 5.30.120.015/0100 |
| O-ring, black, 17.0 x 1.5, for blocking RF 19H keys | - | - | 5.30.125.003/0100 |
| O-ring, black, 16.0 x 1, for blocking RF 19H keys | - | - | 5.30.125.007/0100 |

## Pushbutton 16.2 mm - Protection against contact

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Protection against contact to VBG 4 | - | - | 5.55.101.715/0200 |

## Signal lamps - Protection against contact

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Protection against contact to VBG 4 | - | - | 5.50.240.063/0209 |
| Protection against contact to VBG 5 | - | - | 5.50.240.065/0200 |



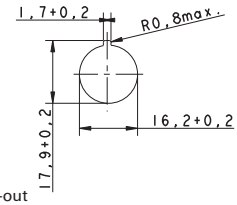


**Stock items** are marked by **bold printed order numbers.**

## LUMOTAST 75 IP40/65 - Blanking cap, black, Ø 16.2 mm

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Blanking cap, black, to cover spare holes, dimensions 18 x 18 mm | - | - | 5.52.006.020/0103 |
| Blanking cap, black, to cover spare holes, dimensions 18 x 24 mm | - | - | 5.52.006.021/0100 |
| Blanking cap, black, to cover spare holes, round 18 mm | - | - | 5.52.006.022/0100 |

## RAFIX 16 - Blanking cap with sealing and threaded ring, Ø 16.2 mm



Panel cut-out

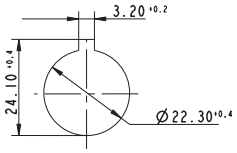
| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Blanking cap complete with sealing disc and ring nut, square | - | - | **5.05.800.049/0100** |
| Blanking cap complete with sealing disc and ring nut, round | - | - | **5.05.800.050/0100** |
| Blanking cap complete with sealing disc and ring nut, square, alignable without gaps | - | - | **5.05.800.051/0100** |





**Stock items** are marked by **bold printed order numbers.**

## RAFIX 22 QR - Blanking cap, Ø 22.3 mm



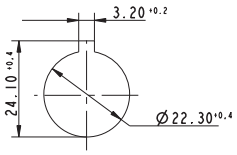

Panel cut-out to IEC 60947-5-1

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Blanking cap IP65, ring nut, square | - | - | **5.05.800.065/0000** |
| Blanking cap IP65, ring nut, round | - | - | **5.05.800.064/0000** |

## RAFIX 22 FS - Blanking cap, Ø 22.3 mm

Pict.: square

round, high version




Panel cut-out to IEC 60947-5-1

| Short text | Feature 1 | Feature 2 | Order no. |
|---|---|---|---|
| Blanking cap IP65, ring nut, square | - | - | 5.05.800.068/0000 |
| Blanking cap IP65, ring nut, round | - | - | 5.05.800.067/0000 |
| Blanking cap IP65, ring nut, round, high version, can be used for covering mounted PCB contact blocks. | - | - | 5.05.200.025/0000 |
| Blanking cap IP65, ring nut, square, high version, can be used for covering mounted PCB contact blocks. | - | - | 5.05.200.026/0000 |





**Stock items** are marked by **bold printed order numbers.**

## Emergency stop label, PVC adhesive, Ø 16.3 mm

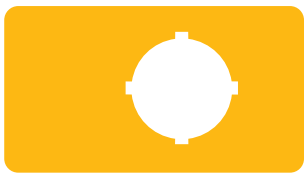
| Short text | Feature 1<br>Ø outward | Feature 2<br>Ø inward | Order no. |
|---|---|---|---|
| Adhesive label yellow, round 16.3 / 60 mm, without legend | 60 mm | 16.3 mm | **5.76.204.400/0400** |
| Adhesive label yellow, round 16.3 / 60 mm, with legend „Not-Aus“ | 60 mm | 16.3 mm | **5.76.204.401/0400** |
| Adhesive label yellow, round 16.3 / 60 mm, with legend „EMERGENCY STOP“ | 60 mm | 16.3 mm | **5.76.204.403/0400** |
| Adhesive label yellow, round 16.3 / 60 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D´URGENCE, EMERGENZA“ | 60 mm | 16.3 mm | 5.76.204.106/0400 |
| Adhesive label yellow, round 16.3 / 60 mm, with legend 4 x „NOT-HALT“ | 60 mm | 16.3 mm | 5.76.204.108/0400 |
| Adhesive label yellow, round 16.3 / 60 mm, with legend 4 x „NOT-AUS“ | 60 mm | 16.3 mm | 5.76.204.110/0400 |
| Adhesive label yellow, round 16.3 / 60 mm, with legend 4 x „EMERGENCY STOP“ | 60 mm | 16.3 mm | 5.76.204.112/0400 |
| Adhesive label yellow, round 16.3 / 40 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D´URGENCE, EMERGENZA“ | 40 mm | 16.3 mm | 5.76.204.114/0400 |
| Adhesive label yellow, round 16.3 / 40 mm, with legend 4 x „NOT-HALT“ | 40 mm | 16.3 mm | 5.76.204.116/0400 |
| Adhesive label yellow, round 16.3 / 40 mm, with legend 4 x „NOT-AUS“ | 40 mm | 16.3 mm | 5.76.204.118/0400 |
| Adhesive label yellow, round 16.3 / 40 mm, with legend 4 x „EMERGENCY STOP“ | 40 mm | 16.3 mm | 5.76.204.120/0400 |





**Stock items** are marked by **bold printed order numbers.**

## Emergency stop label, Ø 22.3 mm



| Short text | Feature 1<br>Ø outward | Feature 2<br>Ø inward | Order no. |
|---|---|---|---|
| Emergency stop label, yellow, round 60 mm, rigid PVC, with legend „Not-Aus“ | 60 mm | 22.3 mm | **5.76.207.001/0400** |
| Emergency stop label, yellow, round 60 mm, rigid PVC, with legend „EMERGENCY-STOP/ARRET D'URGENCE“ | 60 mm | 22.3 mm | **5.76.207.002/0400** |
| Adhesive label yellow, round 22.3 / 60 mm, without legend | 60 mm | 22.3 mm | **5.76.204.100/0400** |
| Adhesive label yellow, round 22.3 / 60 mm, with legend 1 x „Not-Aus“ | 60 mm | 22.3 mm | **5.76.204.101/0400** |
| Adhesive label yellow, round 22.3 / 60 mm, with legend 1 x „ARRET D'URGENCE“ | 60 mm | 22.3 mm | 5.76.204.102/0400 |
| Adhesive label yellow, round 22.3 / 60 mm, with legend 1 x „EMERGENCY-STOP“ | 60 mm | 22.3 mm | **5.76.204.103/0400** |
| Emergency stop label, yellow rectangular 36 x 64 mm, without legend | 36 x 64 mm | 22.3 mm | 5.76.205.011/0400 |
| Adhesive label yellow, round 22.3 / 60 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D´URGENCE, EMERGENZA“ | 60 mm | 22.3 mm | 5.76.204.107/0400 |
| Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „NOT-HALT“ | 60 mm | 22.3 mm | 5.76.204.109/0400 |
| Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „NOT-AUS“ | 60 mm | 22.3 mm | 5.76.204.111/0400 |
| Adhesive label yellow, round 22.3 / 60 mm, with legend 4 x „EMERGENCY STOP“ | 60 mm | 22.3 mm | 5.76.204.113/0400 |
| Adhesive label yellow, round 22.3 / 40 mm, with legend „NOT-HALT, EMERGENCY STOP, ARRET D´URGENCE, EMERGENZA“ | 40 mm | 22.3 mm | 5.76.204.115/0400 |
| Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „NOT-HALT“ | 40 mm | 22.3 mm | 5.76.204.117/0400 |
| Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „NOT-AUS“ | 40 mm | 22.3 mm | 5.76.204.119/0400 |
| Adhesive label yellow, round 22.3 / 40 mm, with legend 4 x „EMERGENCY STOP“ | 40 mm | 22.3 mm | 5.76.204.121/0400 |

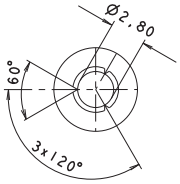
Degree of protection: rigid PVC: IP40, adhesive foil: IP65

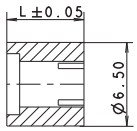


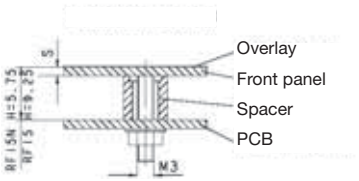


**Stock items** are marked by **bold printed order numbers.**

## Spacers, round




| Length | Width | Overall height | Diameter | Colour | Order no. |
|---|---|---|---|---|---|
| 3.50 mm | - | - | - | blue transparent | 5.30.759.023/0000 |
| 4 mm | - | - | - | green | 5.30.759.025/0000 |
| 4.25 mm | - | - | - | blue | 5.30.759.026/0000 |
| 4.50 mm | - | - | - | red | 5.30.759.027/0000 |
| 4.75 mm | - | - | - | blue transparent | 5.30.759.028/0000 |
| 5 mm | - | - | - | black | 5.30.759.029/0000 |
| 5.25 mm | - | - | - | yellow orange transparent | 5.30.759.030/0000 |
| 5.50 mm | - | - | - | yellow | 5.30.759.031/0000 |
| 5.75 mm | - | - | - | green | **5.30.759.032/0000** |
| 6 mm | - | - | - | blue | **5.30.759.033/0000** |
| 6.2 mm | - | - | - | blue | 5.30.759.251/0000 |
| 6.25 mm | - | - | - | red | **5.30.759.034/0000** |
| 6.50 mm | - | - | - | blue transparent | **5.30.759.035/0000** |
| 6.75 mm | - | - | - | black | **5.30.759.036/0000** |
| 7 mm | - | - | - | yellow orange transparent | **5.30.759.037/0000** |
| 7.25 mm | - | - | - | yellow | **5.30.759.038/0000** |
| 7.50 mm | - | - | - | green | **5.30.759.039/0000** |
| 7.75 mm | - | - | - | blue | **5.30.759.040/0000** |
| 8 mm | - | - | - | red | **5.30.759.041/0000** |
| 8.25 mm | - | - | - | blue transparent | **5.30.759.042/0000** |
| 10.00 mm | - | - | - | black | **5.30.759.043/0104** |

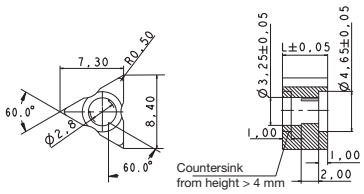
Required spacer length = Overall height of key - front panel thickness - 0.5 mm (area embossing).

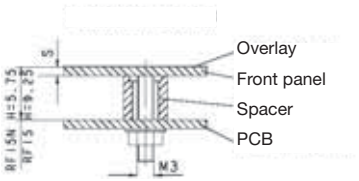




**Stock items** are marked by **bold printed order numbers.**

## Spacers, triangular




| Length | Width | Overall height | Diameter | Colour | Order no. |
|---|---|---|---|---|---|
| 2.50 mm | - | - | - | blue | 5.30.759.094/0000 |
| 2.75 mm | - | - | - | red | 5.30.759.095/0000 |
| 3 mm | - | - | - | blue transparent | 5.30.759.096/0000 |
| 3.25 mm | - | - | - | black | 5.30.759.097/0000 |
| 3.50 mm | - | - | - | yellow orange transparent | 5.30.759.098/0000 |
| 3.75 mm | - | - | - | yellow | 5.30.759.099/0000 |
| 4 mm | - | - | - | green | 5.30.759.100/0000 |
| 4.25 mm | - | - | - | blue | 5.30.759.101/0000 |
| 4.50 mm | - | - | - | red | 5.30.759.102/0000 |
| 4.75 mm | - | - | - | blue transparent | 5.30.759.103/0000 |
| 5 mm | - | - | - | black | 5.30.759.104/0000 |
| 5.25 mm | - | - | - | yellow orange transparent | 5.30.759.105/0000 |
| 5.50 mm | - | - | - | yellow | 5.30.759.106/0000 |
| 5.75 mm | - | - | - | green | 5.30.759.107/0000 |
| 6 mm | - | - | - | blue | 5.30.759.108/0000 |
| 6.2 mm | - | - | - | blue | 5.30.759.253/0000 |
| 6.25 mm | - | - | - | red | 5.30.759.109/0000 |
| 6.50 mm | - | - | - | blue transparent | 5.30.759.110/0000 |
| 6.75 mm | - | - | - | black | 5.30.759.111/0000 |
| 7 mm | - | - | - | yellow orange transparent | 5.30.759.112/0000 |
| 7.25 mm | - | - | - | yellow | 5.30.759.113/0000 |
| 7.50 mm | - | - | - | green | 5.30.759.114/0000 |
| 7.75 mm | - | - | - | blue | 5.30.759.115/0000 |





**Stock items** are marked by **bold printed order numbers.**

| Length | Width | Overall height | Diameter | Colour | Order no. |
|---|---|---|---|---|---|
| 8 mm | - | - | - | red | 5.30.759.116/0000 |
| 8.25 mm | - | - | - | blue transparent | 5.30.759.117/0000 |
| 9 mm | - | - | - | blue | 5.30.759.254/0000 |
| 10.00 mm | - | - | - | black | 5.30.759.124/0000 |
| 10.25 mm | - | - | - | yellow orange transparent | 5.30.759.125/0000 |

Required spacer length = Overall height of key - front panel thickness - 0.5 mm (area embossing).





**Stock items** are marked
by **bold printed order numbers.**