

# Signalleuchten ø 5 mm LEDs Metallfassung

# Indicator lamps ø 5 mm LEDs Metal Holder

## Allgemeine Hinweise und Technische Daten

Allgemeine Hinweise und technische Daten: siehe Seite 6

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## General Remarks and Technical Data

General remarks and technical data: see page 6

Technical data LEDs: see page 78/79

## Spezifische Technische Daten

Gehäusewerkstoff: CuZn

Steckeinsetz: PC schwarz

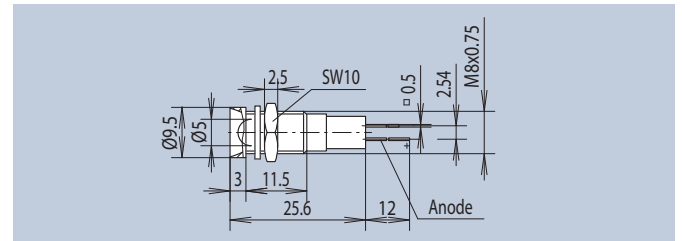
## Specific Technical Data

Housing Material: CuZn

Plug insert: PC black

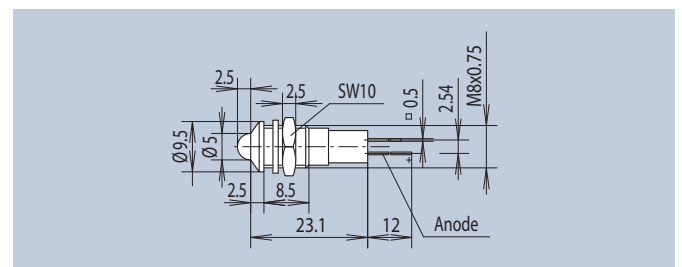
Die Signalleuchten für Frontplatteneinbau sind für Schraubbefestigung mit einer empfohlenen Einbaubohrung von ø 8 mm ausgelegt. Die Fassungen sind mit Außen- oder Innenreflektor lieferbar. Der Einsatz zur LED-Aufnahme wird in das Gehäuse eingepresst. Die Signalleuchten sind mit integriertem Vorwiderstand und Nennspannungen von 5, 12, 24 und 28V ausgelegt. Lieferung inklusive Scheibe und Sechskantmutter.

Signal lamps for front panel installation are designed for screw mounting with a recommended installation hole of ø 8 mm. The sockets can be supplied with an external or internal reflector. The insert for the LED receptacle is pushed into the case. The signal lamps have an integrated series resistor and are designed for nominal voltages of 5, 12, 24, and 28V. Supplied with washer and hexagonal nut.



Standard LED mit Vorwiderstand · Standard LED with series resistance

| Farbe · Color                               | LED-Type | Spannung Voltage (V) | Strom Current (mA) | Gehäuse verchromt<br>Housing chrome plated<br>Art.-Nr. | Gehäuse schwarz<br>Housing black painted<br>Art.-Nr. |
|---|----------|----------------------|--------------------|--|--|
| <span style="color:red">■</span> bright red | A5       | 5                    | 16                 | 2692.8121  | 2692.8123  |
| <span style="color:red">■</span> bright red | A5       | 12                   | 20                 | 2692.8221  | 2692.8223  |
| <span style="color:red">■</span> bright red | A5       | 24                   | 20                 | <b>2692.8321</b>                                       | <b>2692.8323</b>                                     |
| <span style="color:red">■</span> bright red | A5       | 28                   | 20                 | 2692.8421  | 2692.8423  |
| <span style="color:yellow">■</span> yellow  | A7       | 5                    | 16                 | 2692.8171  | 2692.8173  |
| <span style="color:yellow">■</span> yellow  | A7       | 12                   | 20                 | 2692.8271  | 2692.8273  |
| <span style="color:yellow">■</span> yellow  | A7       | 24                   | 20                 | 2692.8371  | 2692.8373  |
| <span style="color:yellow">■</span> yellow  | A7       | 28                   | 20                 | 2692.8471  | 2692.8473  |
| <span style="color:green">■</span> green    | A8       | 5                    | 16                 | 2692.8181  | 2692.8183  |
| <span style="color:green">■</span> green    | A8       | 12                   | 20                 | 2692.8281  | 2692.8283  |
| <span style="color:green">■</span> green    | A8       | 24                   | 20                 | <b>2692.8381</b>                                       | <b>2692.8383</b>                                     |
| <span style="color:green">■</span> green    | A8       | 28                   | 20                 | 2692.8481  | 2692.8483  |



Standard LED mit Vorwiderstand · Standard LED with series resistance

| Farbe · Color                               | LED-Type | Spannung Voltage (V) | Strom Current (mA) | Gehäuse verchromt<br>Housing chrome plated<br>Art.-Nr. | Gehäuse schwarz<br>Housing black painted<br>Art.-Nr. |
|---|----------|----------------------|--------------------|--|--|
| <span style="color:red">■</span> bright red | A5       | 5                    | 16                 | 2693.8121  | 2693.8123  |
| <span style="color:red">■</span> bright red | A5       | 12                   | 20                 | 2693.8221  | 2693.8223  |
| <span style="color:red">■</span> bright red | A5       | 24                   | 20                 | <b>2693.8321</b>                                       | <b>2693.8323</b>                                     |
| <span style="color:yellow">■</span> yellow  | A7       | 5                    | 16                 | 2693.8171  | 2693.8173  |
| <span style="color:yellow">■</span> yellow  | A7       | 12                   | 20                 | 2693.8271  | 2693.8273  |
| <span style="color:yellow">■</span> yellow  | A7       | 24                   | 20                 | 2693.8371  | <b>2693.8373</b>                                     |
| <span style="color:green">■</span> green    | A8       | 5                    | 16                 | 2693.8181  | 2693.8183  |
| <span style="color:green">■</span> green    | A8       | 12                   | 20                 | 2693.8281  | 2693.8283  |
| <span style="color:green">■</span> green    | A8       | 24                   | 20                 | <b>2693.8381</b>                                       | <b>2693.8383</b>                                     |

# Technische Daten LEDs

# Technical Data LEDs

| LED-Type | Emission Color            | Wavelength<br>$\lambda$ (nm)<br>dominant | Lense Color      | Forward Voltage<br>$V_f$ (V) |            | Luminous Intensity<br>$I_v$ (mcd) |       |          | at<br>mA | Fwd.<br>Current $I_f$<br>max<br>(mA) | Rev.<br>Voltage<br>$V_R$<br>(V) | 2 $\phi$<br>(50% $I_v$ )<br>deg. |
|----------|---------------------------|--|------------------|------------------------------|------------|-----------------------------------|-------|----------|----------|--------------------------------------|---------------------------------|----------------------------------|
|          |                           |  |                  | typ                          | max        | min                               | typ   | max      |          |                                      |                                 |                                  |
| THT      |                           |  |                  |                              |            |                                   |       |          |          |                                      |                                 |                                  |
| A1       | bright red                | 660                                      | red diffused     | 2.25                         | 2.5        | 1.2                               | -     | 4        | 10<br>20 | 25                                   | 5                               | 60                               |
| A2       | high efficiency red       | 625                                      | red diffused     | 2                            | 2.5        | 15                                | -     | 30       | 10<br>20 | 30                                   | 5                               | 60                               |
| A3       | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 10                                | -     | 20       | 10<br>20 | 30                                   | 5                               | 60                               |
| A4       | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 10                                | -     | 20       | 10<br>20 | 25                                   | 5                               | 40                               |
| A5       | bright red                | 660                                      | red diffused     | 2.25                         | 2.5        | 4                                 | -     | 10       | 10<br>20 | 25                                   | 5                               | 60                               |
| A6       | high efficiency red       | 625                                      | red diffused     | 2                            | 2.5        | 30                                | -     | 80       | 10<br>20 | 30                                   | 5                               | 60                               |
| A7       | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 15                                | -     | 30       | 10<br>20 | 30                                   | 5                               | 60                               |
| A8       | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 15                                | -     | 30       | 10<br>20 | 25                                   | 5                               | 60                               |
| A9       | high efficiency red       | 625                                      | red diffused     | 1.7                          | 2.5        | 1.2                               | -     | 4        | 2        | 30                                   | 5                               | 60                               |
| A10      | yellow                    | 588                                      | yellow diffused  | 1.85                         | 2.5        | 1.2                               | -     | 4        | 2        | 30                                   | 5                               | 60                               |
| A11      | green                     | 568                                      | green diffused   | 1.9                          | 2.5        | 1                                 | -     | 5        | 2        | 25                                   | 5                               | 60                               |
| A12      | high efficiency red       | 625                                      | red diffused     | 2                            | 2.5        | 4                                 | -     | 10       | 2<br>20  | 30                                   | 5                               | 60                               |
| A13      | yellow                    | 588                                      | yellow diffused  | 1.85                         | 2.5        | 1                                 | -     | 5        | 2        | 30                                   | 5                               | 60                               |
| A14      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 1                                 | -     | 5        | 2<br>20  | 25                                   | 5                               | 60                               |
| A22      | bright red                | 660                                      | red diffused     | 2.25                         | 2.5        | 1                                 | -     | 5        | 10<br>20 | 25                                   | 5                               | 70                               |
| A23      | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 5                                 | -     | 17       | 10<br>20 | 30                                   | 5                               | 70                               |
| A24      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 5                                 | -     | 17       | 10<br>20 | 25                                   | 5                               | 70                               |
| A25      | bright red                | 660                                      | red diffused     | 2.25                         | 2.5        | 1.2                               | -     | 6        | 10<br>20 | 25                                   | 5                               | 60                               |
| A27      | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 6                                 | -     | 20       | 10<br>20 | 30                                   | 5                               | 60                               |
| A28      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 6                                 | -     | 20       | 10<br>20 | 25                                   | 5                               | 60                               |
| A29      | high efficiency red       | 625                                      | red diffused     | 2                            | 2.5        | 70                                | -     | 220      | 20       | 30                                   | 5                               | 60                               |
| A30      | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 36                                | -     | 90       | 20       | 30                                   | 5                               | 60                               |
| A31      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 36                                | -     | 90       | 20       | 25                                   | 5                               | 60                               |
| A32      | high efficiency red       | 625                                      | red diffused     | 2                            | 2.5        | 36                                | 100   | -        | 20       | 30                                   | 5                               | 60                               |
| A33      | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 20                                | -     | 50       | 20       | 30                                   | 5                               | 60                               |
| A34      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 40                                | -     | 60       | 20       | 25                                   | 5                               | 60                               |
| A38      | bright red                | 660                                      | red diffused     | 2.25                         | 2.5        | 0.5                               | -     | 1.2      | 10<br>20 | 25                                   | 5                               | 100                              |
| A40      | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 3                                 | -     | 12       | 10<br>20 | 30                                   | 5                               | 100                              |
| A41      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 3                                 | -     | 12       | 10<br>20 | 25                                   | 5                               | 100                              |
| A42      | bright red                | 660                                      | red diffused     | 2.25                         | 2.5        | 1                                 | -     | 5        | 10<br>20 | 25                                   | 5                               | 100                              |
| A44      | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 3                                 | -     | 12       | 10<br>20 | 30                                   | 5                               | 100                              |
| A45      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 1                                 | -     | 5        | 10<br>20 | 25                                   | 5                               | 100                              |
| A46      | high efficiency red       | 625                                      | red diffused     | 2                            | 2.5        | 3                                 | -     | 7        | 10<br>20 | 30                                   | 5                               | 110                              |
| A47      | yellow                    | 588                                      | yellow diffused  | 2.1                          | 2.5        | 1.8                               | -     | 7        | 10<br>20 | 30                                   | 5                               | 110                              |
| A48      | green                     | 568                                      | green diffused   | 2.2                          | 2.5        | 2                                 | -     | 10       | 10<br>20 | 25                                   | 5                               | 110                              |
| A49      | high efficiency red/green | 617<br>568                               | white diffused   | 2<br>2.2                     | 2.5<br>2.5 | 8<br>8                            | -     | 20<br>40 | 20<br>20 | 30<br>25                             | -                               | 60<br>60                         |
| A51      | blue                      | 466                                      | blue transparent | 3.8                          | 4.5        | 18                                | 100   | -        | 20       | 30                                   | 5                               | 50                               |
| A52      | blue                      | 466                                      | blue transparent | 3.8                          | 4.5        | 70                                | 200   | -        | 20       | 30                                   | 5                               | 30                               |
| A60      | high efficiency red       | 625                                      | red diffused     | 5.7                          | 7.5        | 18                                | 61.56 | -        | 10       | 60                                   | 15                              | 120                              |
| A61      | yellow                    | 588                                      | yellow diffused  | 5.85                         | 7.5        | 7                                 | 37.18 | -        | 10       | 60                                   | 15                              | 120                              |
| A62      | green                     | 568                                      | green diffused   | 6                            | 7.5        | 18                                | 53.3  | -        | 10       | 50                                   | 15                              | 120                              |
| A69      | super red                 | 622-634                                  | red diffused     | 2                            | 2.5        | 6.3                               | -     | 20       | 10       | 40                                   | 12                              | 50                               |

## Technische Daten LEDs

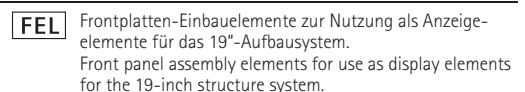
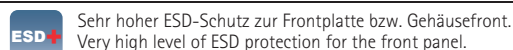
## Technical Data LEDs

| LED-Type     | Emission Color            | Wavelength<br>$\lambda$ (nm)<br>dominant | Lense Color        | Forward Voltage<br>$V_f$ (V) |            | Luminous Intensity<br>$I_v$ (mcd) |            |          | at<br>mA             | Fwd.<br>Current $I_f$<br>max<br>(mA) | Rev.<br>Voltage<br>$V_R$<br>(V) | 2 $\phi$<br>(50% $I_v$ )<br>deg. |
|--------------|---------------------------|--|--------------------|------------------------------|------------|-----------------------------------|------------|----------|----------------------|--------------------------------------|---------------------------------|----------------------------------|
|              |                           |  |                    | typ                          | max        | min                               | typ        | max      |                      |                                      |                                 |                                  |
| <b>THT</b>   |                           |  |                    |                              |            |                                   |            |          |                      |                                      |                                 |                                  |
| A70          | yellow                    | 580-595                                  | yellow diffused    | 2                            | 2.5        | 7.1                               | -          | 18       | 10                   | 40                                   | 12                              | 50                               |
| A71          | green                     | 564-576                                  | green diffused     | 2                            | 2.5        | 7.1                               | -          | 18       | 10                   | 40                                   | 12                              | 50                               |
| A72          | super red                 | 622-634                                  | red diffused       | 2                            | 2.5        | 7.1                               | -          | 18       | 10                   | 40                                   | 12                              | 70                               |
| A76          | high efficiency red/green | 625<br>568                               | white diffused     | 2<br>2.2                     | 2.5<br>2.5 | 5<br>5                            | -          | 20<br>20 | 20<br>20             | 30<br>25                             | -                               | 70<br>70                         |
| A77          | super bright red          | 640                                      | red diffused       | 1.85                         | 2.5        | 280                               | 400        | -        | 20                   | 30                                   | 5                               | 60                               |
| A78          | yellow                    | 588                                      | yellow transparent | 2.1                          | 2.5        | 50                                | -          | 120      | 10<br>20             | 30                                   | 5                               | 30                               |
| A79          | green                     | 568                                      | green transparent  | 2.2                          | 2.5        | 50                                | -          | 120      | 10<br>20             | 25                                   | 5                               | 30                               |
| A83          | high efficiency red       | 625                                      | red transparent    | 2                            | 2.5        | 30                                | -          | 80       | 10<br>20             | 30                                   | 5                               | 50                               |
| A84          | yellow                    | 588                                      | yellow transparent | 2.1                          | 2.5        | 20                                | -          | 50       | 10<br>20             | 30                                   | 5                               | 50                               |
| A85          | green                     | 568                                      | green transparent  | 2.1                          | 2.5        | 30                                | -          | 50       | 10<br>20             | 25                                   | 5                               | 50                               |
| C5           | orange red/<br>green      | 612-625<br>552-575                       | white diffused     | 2<br>2.4                     | 3<br>3     | 1<br>1                            | 2.5<br>2.5 | -        | 10<br>20<br>10<br>20 | 30                                   | 6                               | 60                               |
| C12          | red                       | 630                                      | red diffused       | 2                            | 3          | 4                                 | -          | 32       | 10<br>20             | 20                                   | 6                               | 40                               |
| C13          | yellow                    | 581-594                                  | yellow diffused    | 2.4                          | 3          | 2.5                               | -          | 12.5     | 10<br>20             | 30                                   | 6                               | 40                               |
| C14          | green                     | 562-575                                  | green diffused     | 2.4                          | 3          | 4                                 | -          | 20       | 10<br>20             | 30                                   | 6                               | 40                               |
| C15          | red                       | 612-625                                  | red diffused       | 2                            | 3          | 6.3                               | -          | 20       | 10<br>20             | 30                                   | 6                               | 60                               |
| C16          | yellow                    | 581-594                                  | yellow diffused    | 2.4                          | 3          | 6.3                               | -          | 20       | 10<br>20             | 30                                   | 6                               | 60                               |
| C17          | green                     | 562-575                                  | green diffused     | 2.4                          | 3          | 10                                | -          | 32       | 10<br>20             | 30                                   | 6                               | 60                               |
| E3           | high efficiency red/green | 625<br>568                               | white diffused     | 2<br>2.2                     | 2.5<br>2.5 | 10<br>10                          | 50<br>30   | -        | 20<br>20             | 30<br>25                             | 5<br>5                          | 60<br>60                         |
| G1           | bright red                | 660                                      | red diffused       | 2.25                         | 2.5        | 0.4                               | -          | 3        | 20                   | 25                                   | 5                               | 40                               |
| G2           | yellow                    | 588                                      | yellow diffused    | 2.1                          | 2.5        | 2.6                               | 10         | -        | 20                   | 30                                   | 5                               | 40                               |
| G3           | super bright green        | 568                                      | green diffused     | 2.2                          | 2.5        | 2.6                               | 10         | -        | 20                   | 25                                   | 5                               | 40                               |
| H1           | super deep red            | 639                                      | red diffused       | 2                            | 2.4        | 40                                | 80         | -        | 20                   | 25                                   | 5                               | 100                              |
| H2           | super yellow              | 589                                      | yellow diffused    | 2                            | 2.4        | 25                                | 50         | -        | 20                   | 25                                   | 5                               | 100                              |
| H3           | super yellow green        | 573                                      | green diffused     | 2                            | 2.4        | 6.3                               | 12.5       | -        | 20                   | 25                                   | 5                               | 60                               |
| H4           | hyper red                 | 624                                      | red diffused       | 2                            | 2.4        | 10                                | 20         | -        | 20                   | 25                                   | 5                               | 100                              |
| M2           | white                     | -  | colorless clear    | 3.6                          | 4          | 3900                              | -          | 11000    | 20                   | 30                                   | 5                               | 20                               |
| W1           | white                     | -  | colorless clear    | 3.2                          | 3.8        | 1400                              | -          | 3550     | 5                    | 25                                   | 5                               | 45                               |
| <b>Argus</b> |                           |  |                    |                              |            |                                   |            |          |                      |                                      |                                 |                                  |
| A15          | super red                 | 628                                      | red clear          | 2.1                          | 2.5        | 35.5                              | -          | 71       | 15                   | 40                                   | 12                              |                                  |

## Symbole

## Symbols

### Besonderheiten · Specifics



### Kundenspezifisch · Customised

