

**Signal lamps with integrated LED, 5 mm**



**Technical data**

**General information**

Form of lens see order block  
 Colour of lens see order block  
 Diameter of collar see order block

**Dimensions**

Length of collar see order block  
 Overall height see order block  
 Mounting depth see order block  
 Mounting hole 5 mm

**Mechanical design**

Mounting pressing into hole  
 Terminals solder terminals  
 Lamp socket no  
 Lamp see order block

**Electrical characteristics**

Operating voltage see order block  
 $U_B$  see order block  
 Forward voltage  $U_F$  at 25°C at 10 mA forward current  
 2.2 V

Reverse voltage  $U_R$  at 25°C 3 V  
 Forward current,  $I_F$  at 25°C see order block  
 Reverse current  $I_R$  at 25°C 100 µA

Power dissipation  $P_{tot}$  at 25°C max. 120 mW

**Other specifications**

Degree of protection from front side IP40  
 Weight 0.35 g

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Integr.  
LED

**Operating voltage  $U_B$**  : DC voltage from 5 to 28 V

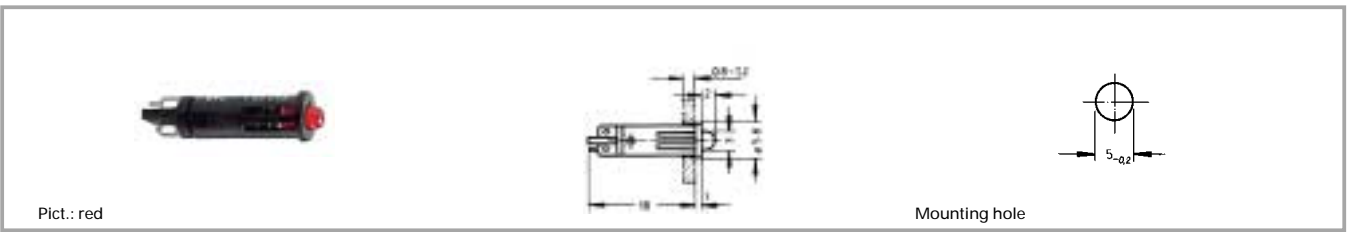
A suitable series resistor is installed in the unit; versions without series resistor must be fitted with an external one.

External resistor:  $R_V = (U_B - U_F) : I_F$

Recommended ratings of external resistors:

- for 5 - 7 V = 330 Ω 0.25 W
- for 12 - 16 V = 1.1 kΩ 0.25 W
- for 24 - 28 V = 2.4 kΩ 0.5 W

## Signal lamps with integrated LED, 5 mm, protruding LED

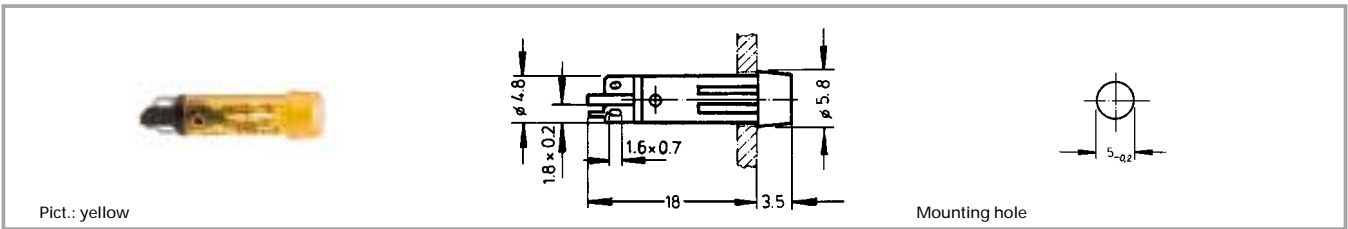


Integrated current resistor	Operating voltage $U_B$	Forward current, $I_F$ at 25°C	Lamp	Colour of lens	Order no.
no	according to series resistor 5 - 28 V	max. 20 mA	LED red	transparent red	1.69.508.801/0000
no	according to series resistor 5 - 28 V	max. 20 mA	LED green	transparent green	1.69.508.807/0000
no	according to series resistor 5 - 28 V	max. 20 mA	LED yellow	transparent yellow	1.69.508.813/0000
yes	24 - 28 V	8 - 12 mA	LED red	transparent red	<b>1.69.508.804/0000</b>
yes	24 - 28 V	8 - 12 mA	LED green	transparent green	<b>1.69.508.810/0000</b>
yes	24 - 28 V	8 - 12 mA	LED yellow	transparent yellow	<b>1.69.508.816/0000</b>

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Long terminal is anode.

**Signal lamps with integrated LED, 5 mm, round protruding lens**



Integrated currency resistor	Operating voltage $U_B$	Forward current, $I_F$ at 25°C	Lamp	Colour of lens	Order no.
no	according to series resistor 5 - 28 V	max. 20 mA	LED red	transparent red	1.69.508.831/1301
no	according to series resistor 5 - 28 V	max. 20 mA	LED green	transparent green	1.69.508.837/1503
no	according to series resistor 5 - 28 V	max. 20 mA	LED yellow	transparent yellow	1.69.508.843/1402
yes	24 - 28 V	8 - 12 mA	LED red	transparent red	1.69.508.834/1301
yes	24 - 28 V	8 - 12 mA	LED green	transparent green	1.69.508.840/1503
yes	24 - 28 V	8 - 12 mA	LED yellow	transparent yellow	1.69.508.846/1402
yes	24 - 28 V	8 - 12 mA	LED super bright red	transparent red	1.69.508.835/1300
yes	24 - 28 V	8 - 12 mA	LED super bright yellow	transparent yellow	1.69.508.847/1400

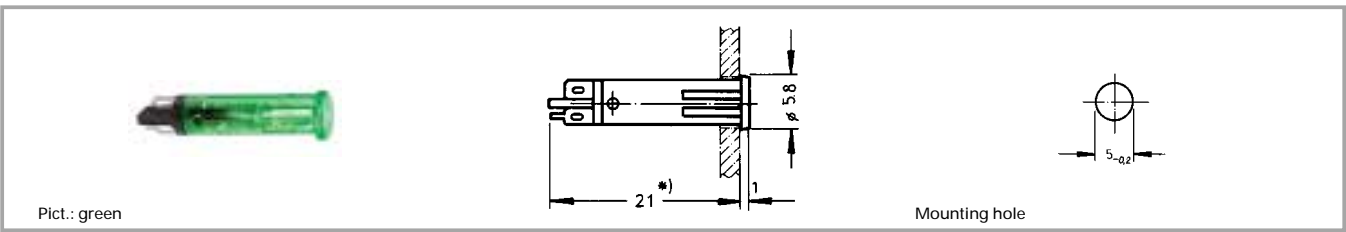
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Long terminal is anode.

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Integr.  
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## Signal lamps with integrated LED, 5 mm, round flush lens



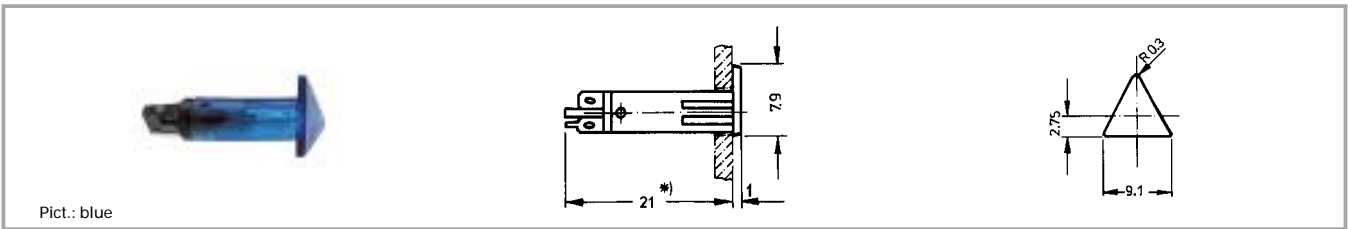
Integrated currency resistor	Operating voltage $U_B$	Forward current, $I_F$ at 25°C	Lamp	Colour of lens	Order no.
no	according to series resistor 5 - 28 V	max. 20 mA	LED red	transparent red	1.69.508.861/1301
no	according to series resistor 5 - 28 V	max. 20 mA	LED green	transparent green	1.69.508.867/1503
no	according to series resistor 5 - 28 V	max. 20 mA	LED yellow	transparent yellow	1.69.508.873/1402
yes	24 - 28 V	8 - 12 mA	LED red	transparent red	<b>1.69.508.864/1301</b>
yes	24 - 28 V	8 - 12 mA	LED green	transparent green	<b>1.69.508.870/1503</b>
yes	24 - 28 V	8 - 12 mA	LED yellow	transparent yellow	<b>1.69.508.876/1402</b>
yes	24 - 28 V	8 - 12 mA	LED super bright red	transparent red	1.69.508.865/1300
yes	24 - 28 V	8 - 12 mA	LED super bright yellow	transparent yellow	1.69.508.877/1400

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Long terminal is anode.

\* Without series resistor, mounting depth = 18 mm.

Signal lamps with integrated LED, 5 mm, triangular flush lens



Pict.: blue

Integrated current resistor	Operating voltage $U_B$	Forward current, $I_F$ at 25°C	Lamp	Colour of lens	Order no.
no	according to series resistor 5 - 28 V	max. 20 mA	LED red	transparent red	1.69.508.931/1301
no	according to series resistor 5 - 28 V	max. 20 mA	LED green	transparent green	1.69.508.937/1503
no	according to series resistor 5 - 28 V	max. 20 mA	LED yellow	transparent yellow	1.69.508.943/1402
yes	24 - 28 V	8 - 12 mA	LED red	transparent red	1.69.508.934/1301
yes	24 - 28 V	8 - 12 mA	LED green	transparent green	1.69.508.940/1503
yes	24 - 28 V	8 - 12 mA	LED yellow	transparent yellow	1.69.508.946/1402
yes	24 - 28 V	8 - 12 mA	LED super bright red	transparent red	1.69.508.935/1300
yes	24 - 28 V	8 - 12 mA	LED super bright yellow	transparent yellow	1.69.508.947/1400

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Long terminal is anode.

\* Without series resistor, mounting depth = 18 mm.

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Integr.  
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**Signal lamps with integrated LED, 7.0 mm**



**Technical data**

**General information**

Form of lens round protruding  
 Colour of lens see order block  
 Diameter of collar 8.5 mm

**Dimensions**

Overall height 5 mm  
 Mounting depth 27.5 mm  
 Mounting hole 7.0 mm

**Mechanical design**

Mounting pressing into hole  
 Terminals solder terminals  
 Lamp socket no  
 Lamp see order block

**Electrical characteristics**

Operating voltage  $U_B$  24 - 28 V  
 Forward voltage  $U_F$  at 25°C at 20 mA forward current 2.4 V  
 Reverse current  $I_R$  at 25°C 3 V  
 Forward current,  $I_F$  max. 20 mA  
 Reverse current  $I_R$  at 25°C 100  $\mu$ A  
 Power dissipation  $P_{tot}$  at 25°C max. 120 mW  
 Light intensity see order block

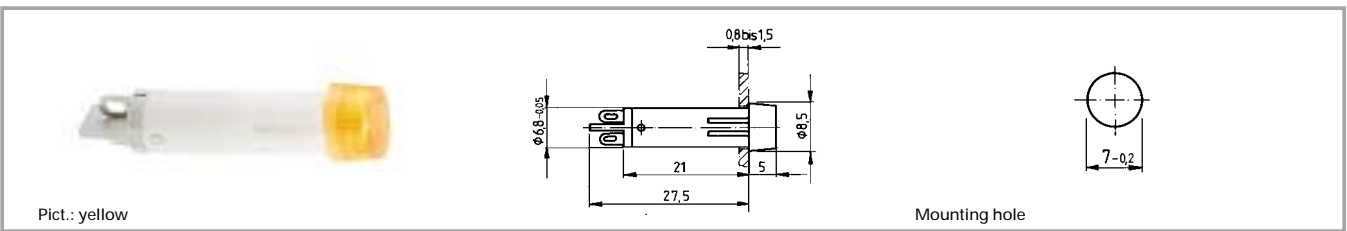
**Other specifications**

Degree of protection from front side IP40

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Integr.  
LED

## Signal lamps with integrated LED, 7.0 mm, round protruding lens



Operating voltage $U_B$	Forward current, $I_F$	Lamp	Colour of lens	Light intensity	Order no.
24 - 28 V	max. 20 mA	LED white	transparent colourless	400 mcd	1.69.511.101/1000
24 - 28 V	max. 20 mA	LED red	transparent red	200 mcd	1.69.511.102/1300
24 - 28 V	max. 20 mA	LED yellow	transparent yellow	200 mcd	1.69.511.103/1400
24 - 28 V	max. 20 mA	LED green	transparent green	1000 mcd	1.69.511.104/1500
24 - 28 V	max. 20 mA	LED blue	transparent blue	300 mcd	1.69.511.105/1600

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**Signal lamps with integrated LED, 9.1 mm**



**Technical data**

**General information**

Form of lens round protruding  
 Colour of lens see order block  
 Diameter of collar 11 mm

**Dimensions**

Overall height see order block  
 Mounting depth 30.5 mm  
 Mounting hole 9.1 mm

**Mechanical design**

Mounting ring nut  
 Terminals solder terminals  
 Lamp socket no  
 Lamp see order block

**Electrical characteristics**

Operating voltage  
 $U_B$  24 - 28 V  
 Forward voltage  
 $U_F$  at 25°C at 20 mA forward current  
 2.4 V

Reverse voltage  
 $U_R$  at 25°C 3 V  
 Reverse current  
 $I_R$  at 25°C 100 µA  
 Power dissipation  
 $P_{tot}$  at 25°C max. 120 mW  
 Light intensity at 20 mA see order block

**Other specifications**

Degree of protection from front side IP40  
 Weight 1 g

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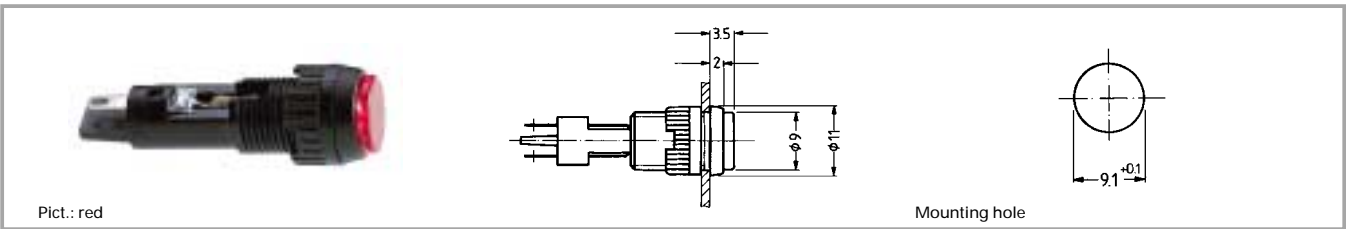
Integr.  
LED

**Accessories Signal lamps with integrated LED, 9.1 mm**

Description	Photo	Order no.	Page
Fixing spanner M 9, M 10		5.58.002.025/0105	5 - 25



## Signal lamps with integrated LED, 9.1 mm, round lens



Operating voltage $U_B$	Light intensity at 20 mA	Lamp	Colour of lens	Order no.
24 - 28 V	200 mcd	LED super bright red	transparent red	<b>1.02.157.105/1300</b>
24 - 28 V	1000 mcd	LED super bright green	transparent green	1.02.157.110/1500
24 - 28 V	200 mcd	LED super bright yellow	transparent yellow	<b>1.02.157.115/1400</b>
24 - 28 V	300 mcd	LED super bright blue	transparent blue	1.02.157.120/1600
24 - 28 V	400 mcd	LED super bright white	transparent colourless	1.02.157.125/1000
24 - 28 V		LED green	transparent green	<b>1.02.157.109/1509</b>

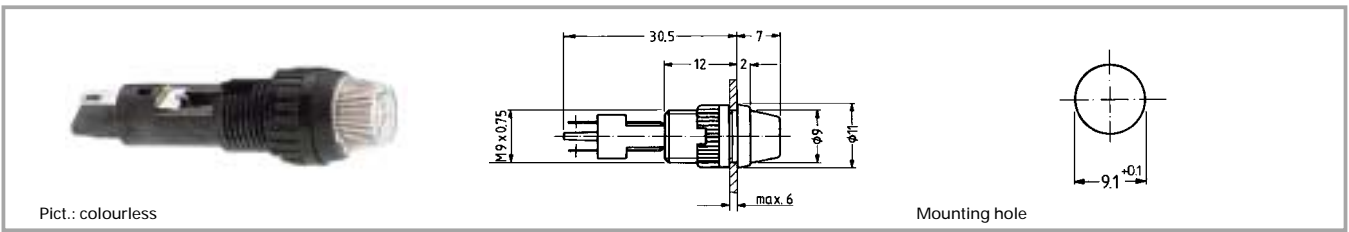
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**Accessories:**

Fixing spanner M 9, M 10: **5.58.002.025/0105**

With integrated series resistor. Other voltages on request.

Signal lamps with integrated LED, 9.1 mm, round protruding lens



Operating voltage U <sub>B</sub>	Light intensity at 20 mA	Lamp	Colour of lens	Order no.
24 - 28 V	200 mcd	LED super bright red	transparent red	<b>1.02.157.505/1300</b>
24 - 28 V	1000 mcd	LED super bright green	transparent green	1.02.157.510/1500
24 - 28 V	200 mcd	LED super bright yellow	transparent yellow	<b>1.02.157.515/1400</b>
24 - 28 V	300 mcd	LED super bright blue	transparent blue	1.02.157.520/1600
24 - 28 V	400 mcd	LED super bright white	transparent colourless	1.02.157.525/1000
24 - 28 V		LED green	transparent green	<b>1.02.157.509/1503</b>

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With integrated series resistor. Other voltages on request.

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Integr.  
LED

**Signal lamps with integrated LED, 10 mm**



**Technical data**

**General information**

Form of lens                      see order block  
 Colour of lens                    see order block  
 Diameter of collar               12.5 mm

**Dimensions**

Overall height                    see order block  
 Mounting depth                 30.5 mm  
 Mounting hole                    10 mm

**Mechanical design**

Mounting                          pressing into hole  
 Terminals                        quick connector  
    2.8 x 0.8 tin-plated  
 Lamp socket                      no  
 Lamp                                see order block

**Electrical characteristics**

Operating voltage                see order block  
 $U_B$                                 see order block  
 Forward voltage                 at 20 mA forward current  
 $U_F$  at 25°C                    2.4 V  
 Reverse voltage                 3 V  
 $U_R$  at 25°C  
 Forward current,                see order block  
 $I_F$   
 Reverse current                 100 µA  
 $I_R$  at 25°C  
 Power dissipation               max. 120 mW  
 $P_{tot}$  at 25°C  
 Light intensity                 see order block  
 Protecting diode                see order block

**Other specifications**

Degree of protection            IP40  
 from front side  
 Weight                             2.44 g

**Operating voltage  $U_B$ :** DC voltage from 6 - 28 V

A suitable series resistor is installed in the unit; the version without resistor must be fitted with an external one. A version with an additional protective diode is available to protect the LED against any voltage peaks.

External resistor:  $R_V = (U_B - U_F) : I_F$

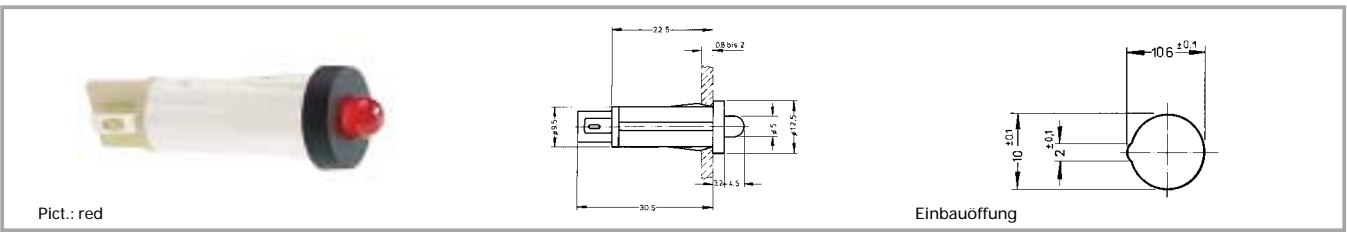
Recommended ratings of external resistors:

- for 6 - 7 V = 330 Ω 0.25 W
- for 12 - 16 V = 680 Ω 0.5 W
- for 24 - 28 V = 1500 Ω 1 W

**3**

Integr.  
LED

## Signal lamps with integrated LED, 10 mm, protruding LED



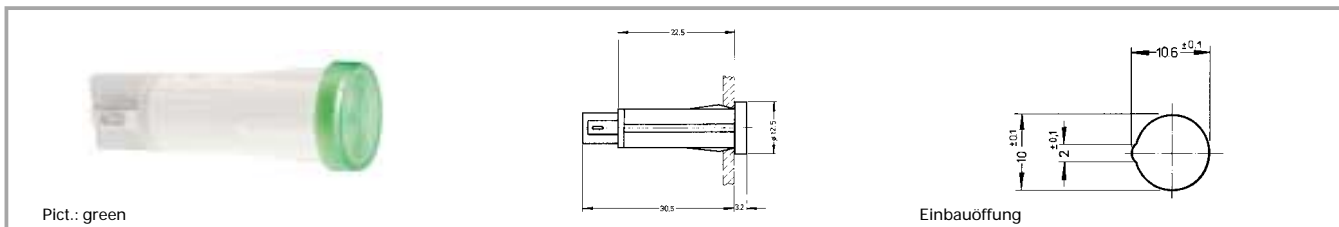
Integrated curren- cy resistor	Protecting diode	Operating voltage $U_B$	Forward current, $I_F$	Lamp	Light intensi- ty	Order no.
no	yes	according to series resistor 6 - 28 V	max. 20 mA	LED red	1000 mcd	1.69.525.051/0000
no	yes	according to series resistor 6 - 28 V	max. 20 mA	LED green	1000 mcd	1.69.525.056/0000
no	yes	according to series resistor 6 - 28 V	max. 20 mA	LED yellow	200 mcd	1.69.525.061/0000
no	no	according to series resistor 6 - 28 V	max. 20 mA	LED red	200 mcd	1.69.525.001/0000
no	no	according to series resistor 6 - 28 V	max. 20 mA	LED green	1000 mcd	1.69.525.006/0000
no	no	according to series resistor 6 - 28 V	max. 20 mA	LED yellow	200 mcd	1.69.525.011/0000
yes	yes	24 - 28 V	15 - 20 mA	LED red	200 mcd	1.69.525.054/0000
yes	yes	24 - 28 V	13 - 18.5 mA	LED green	1000 mcd	1.69.525.059/0000
yes	yes	24 - 28 V	13 - 18.5 mA	LED yellow	200 mcd	1.69.525.064/0000
yes	no	24 - 28 V	15 - 20 mA	LED red	200 mcd	1.69.525.004/0000
yes	no	24 - 28 V	13 - 18.5 mA	LED green	1000 mcd	1.69.525.009/0000
yes	no	24 - 28 V	13 - 18.5 mA	LED yellow	200 mcd	1.69.525.014/0000

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Integr.  
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**Signal lamps with integrated LED, 10 mm, round lens**



Integrated current resistor	Protecting diode	Operating voltage $U_B$	Forward current, $I_F$	Lamp	Light intensity	Order no.
yes	yes	24 - 28 V	15 - 20 mA	LED red	200 mcd	1.69.525.255/1000
yes	yes	24 - 28 V	15 - 20 mA	LED red	200 mcd	1.69.525.255/1300
yes	yes	24 - 28 V	13 - 18.5 mA	LED green	1000 mcd	1.69.525.260/1000
yes	yes	24 - 28 V	13 - 18.5 mA	LED green	1000 mcd	1.69.525.260/1500
yes	yes	24 - 28 V	13 - 18.5 mA	LED yellow	200 mcd	1.69.525.265/1000
yes	yes	24 - 28 V	13 - 18.5 mA	LED yellow	200 mcd	1.69.525.265/1400
yes	yes	24 - 28 V		LED blue	300 mcd	1.69.525.266/1000
yes	yes	24 - 28 V		LED blue	300 mcd	1.69.525.266/1600
yes	yes	24 - 28 V		LED white	400 mcd	1.69.525.271/1000
yes	no	24 - 28 V	15 - 20 mA	LED red	200 mcd	1.69.525.205/1000
yes	no	24 - 28 V	15 - 20 mA	LED red	200 mcd	1.69.525.205/1300
yes	no	24 - 28 V	13 - 18.5 mA	LED green	1000 mcd	1.69.525.210/1000
yes	no	24 - 28 V	13 - 18.5 mA	LED green	1000 mcd	1.69.525.210/1500
yes	no	24 - 28 V	13 - 18.5 mA	LED yellow	200 mcd	1.69.525.215/1000
yes	no	24 - 28 V	13 - 18.5 mA	LED yellow	200 mcd	1.69.525.215/1400
yes	no	24 - 28 V		LED blue	300 mcd	1.69.525.216/1000
yes	no	24 - 28 V		LED blue	300 mcd	1.69.525.216/1600
yes	no	24 - 28 V		LED white	400 mcd	1.69.525.221/1000

Technical data see page 3 - 18

Other voltages on request.

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