

Kingbright® - Standard - Display's



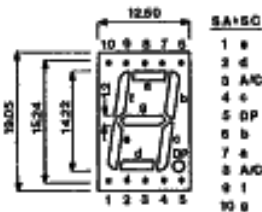
| Abmessung + Anschlußbelegung Draufsicht – Displayseite Dimension and pin-connection Top view display side | Typen- bezeichnung Type | Emissions- farbe Colour λ_{peak} (nm) | Lichtstärke Luminous Intensity ($I_F = 10\text{ mA}$) I_v (ucd) min. typ. | Beschreibung Description |
|--|-------------------------------|--|--|-----------------------------|
|--|-------------------------------|--|--|-----------------------------|

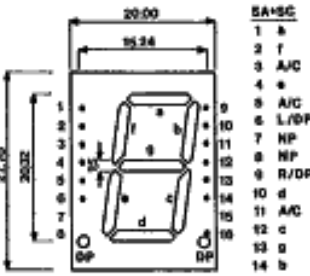
| DISPLAY – 7 mm | SA 03 – 11 HWA | Rot 660 nm Red | 300 600 | Gemeinsame Anode Common Anode |
|-------------------------------|----------------|----------------------------------|----------|--------------------------------------|
| | SC 03 – 12 HWA | | | Gemeinsame Kathode Common Cathode |
| | SA 03 – 11 GWA | Grün 565 nm Green | 750 1800 | Gemeinsame Anode Common Anode |
| | SC 03 – 12 GWA | | | Gemeinsame Kathode Common Cathode |
| | SA 03 – 11 YWA | Gelb 595 nm Yellow | 750 1800 | Gemeinsame Anode Common Anode |
| | SC 03 – 12 YWA | | | Gemeinsame Kathode Common Cathode |
| | SA 03 – 11 EWA | Super-Rot 625 nm Super-Red | 750 1800 | Gemeinsame Anode Common Anode |
| | SC 03 – 12 EWA | | | Gemeinsame Kathode Common Cathode |

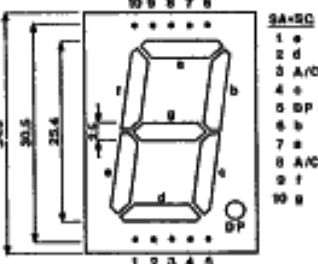
| DISPLAY – 10 mm | SA 04 – 11 HWA | Rot 660 nm Red | 300 700 | Gemeinsame Anode Common Anode |
|--------------------------------|----------------|----------------------------------|----------|--------------------------------------|
| | SC 04 – 11 HWA | | | Gemeinsame Kathode Common Cathode |
| | SA 04 – 11 GWA | Grün 565 nm Green | 800 2000 | Gemeinsame Anode Common Anode |
| | SC 04 – 11 GWA | | | Gemeinsame Kathode Common Cathode |
| | SA 04 – 11 YWA | Gelb 595 nm Yellow | 800 2000 | Gemeinsame Anode Common Anode |
| | SC 04 – 11 YWA | | | Gemeinsame Kathode Common Cathode |
| | SA 04 – 11 EWA | Super-Rot 625 nm Super-Red | 800 2000 | Gemeinsame Anode Common Anode |
| | SC 04 – 11 EWA | | | Gemeinsame Kathode Common Cathode |

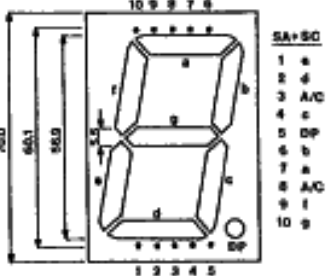
| DISPLAY – 13 mm | SA 52 – 11 HWA | Rot 660 nm Red | 300 700 | Gemeinsame Anode Common Anode |
|--------------------------------|----------------|----------------------------------|----------|--------------------------------------|
| | SC 52 – 11 HWA | | | Gemeinsame Kathode Common Cathode |
| | SA 52 – 11 GWA | Grün 565 nm Green | 800 2000 | Gemeinsame Anode Common Anode |
| | SC 52 – 11 GWA | | | Gemeinsame Kathode Common Cathode |
| | SA 52 – 11 YWA | Gelb 595 nm Yellow | 800 2000 | Gemeinsame Anode Common Anode |
| | SC 52 – 11 YWA | | | Gemeinsame Kathode Common Cathode |
| | SA 52 – 11 EWA | Super-Rot 625 nm Super-Red | 800 2000 | Gemeinsame Anode Common Anode |
| | SC 52 – 11 EWA | | | Gemeinsame Kathode Common Cathode |

Alle Displays haben weiß-diffuse Segmente und eine graue Oberfläche. Andere Einfärbungen der Segmente oder der Oberfläche – sind auf Wunsch lieferbar!
All displays have white-diffused segments and a grey surface. Other colours of the segments or of the surface – are deliverable on request!

| DISPLAY – 14 mm  $12.00 \cdot 10.05 \cdot 8.00 \text{ mm}^3$ | SA 56 – 11 HWA | Rot 660 nm Red | 300 | 700 | Gemeinsame Anode Common Anode |
|--|----------------|----------------------------------|-----|------|--------------------------------------|
| | SC 56 – 11 HWA | | | | |
| | SA 56 – 11 GWA | Grün 565 nm Green | 800 | 2000 | Gemeinsame Anode Common Anode |
| | SC 56 – 11 GWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 56 – 11 YWA | Gelb 595 nm Yellow | 800 | 2000 | Gemeinsame Anode Common Anode |
| | SC 56 – 11 YWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 56 – 11 EWA | Super-Rot 625 nm Super-Red | 800 | 2000 | Gemeinsame Anode Common Anode |
| | SC 56 – 11 EWA | | | | Gemeinsame Kathode Common Cathode |

| DISPLAY – 20 mm  $20.00 \cdot 27.70 \cdot 8.40 \text{ mm}^3$ | SA 08 – 11 HWA | Rot 660 nm Red | 300 | 800 | Gemeinsame Anode Common Anode |
|--|----------------|----------------------------------|-----|------|--------------------------------------|
| | SC 08 – 11 HWA | | | | |
| | SA 08 – 11 GWA | Grün 565 nm Green | 900 | 2200 | Gemeinsame Anode Common Anode |
| | SC 08 – 11 GWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 08 – 11 YWA | Gelb 595 nm Yellow | 900 | 2200 | Gemeinsame Anode Common Anode |
| | SC 08 – 11 YWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 08 – 11 EWA | Super-Rot 625 nm Super-Red | 900 | 2200 | Gemeinsame Anode Common Anode |
| | SC 08 – 11 EWA | | | | Gemeinsame Kathode Common Cathode |

| DISPLAY – 25 mm  $24.0 \cdot 34.0 \cdot 10.5 \text{ mm}^3$ | SA 10 – 21 HWA | Rot 660 nm Red | 650 | 1500 | Gemeinsame Anode Common Anode |
|--|----------------|----------------------------------|------|------|--------------------------------------|
| | SC 10 – 21 HWA | | | | |
| | SA 10 – 21 GWA | Grün 565 nm Green | 1400 | 3600 | Gemeinsame Anode Common Anode |
| | SC 10 – 21 GWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 10 – 21 YWA | Gelb 595 nm Yellow | 1400 | 3600 | Gemeinsame Anode Common Anode |
| | SC 10 – 21 YWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 10 – 21 EWA | Super-Rot 625 nm Super-Red | 2200 | 4500 | Gemeinsame Anode Common Anode |
| | SC 10 – 21 EWA | | | | Gemeinsame Kathode Common Cathode |

| DISPLAY – 57 mm  $48.0 \cdot 70.0 \cdot 12.0 \text{ mm}^3$ | SA 23 – 12 HWA | Rot 660 nm Red | 650 | 1500 | Gemeinsame Anode Common Anode |
|--|----------------|----------------------------------|------|------|--------------------------------------|
| | SC 23 – 12 HWA | | | | |
| | SA 23 – 12 GWA | Grün 565 nm Green | 1400 | 3600 | Gemeinsame Anode Common Anode |
| | SC 23 – 12 GWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 23 – 12 YWA | Gelb 595 nm Yellow | 1400 | 3600 | Gemeinsame Anode Common Anode |
| | SC 23 – 12 YWA | | | | Gemeinsame Kathode Common Cathode |
| | SA 23 – 12 EWA | Super-Rot 625 nm Super-Red | 2200 | 4500 | Gemeinsame Anode Common Anode |
| | SC 23 – 12 EWA | | | | Gemeinsame Kathode Common Cathode |

Charakteristische Daten Characteristic datas

| Grenzdaten (Maximal Werte) Absolute maximum ratings ($T_A = 25^\circ\text{C}$) | | rot red (GaP) | super-rot super-red (GaAsP/GaP) | grün green (GaP) | gelb yellow (GaAsP/GaP) | |
|--|------------------|---------------------|---------------------------------------|------------------------|-------------------------------|---------------|
| Sperrspannung Reserve voltage | V_R | 5 | 5 | 5 | 5 | V |
| Durchlaßstrom Forward current | I_F | 20 | 30 | 30 | 30 | mA |
| Stoßstrom ($\tau \leq 10 \mu\text{s}$) Forward current (peak) | I_{FS} | 150 | 150 | 150 | 150 | mA |
| Verlustleistung Power dissipation | P_T | 120 | 105 | 105 | 105 | mW |
| Betriebstemperatur Operating temperature | T_A | -40° + 85° | -40° + 85° | -40° + 85° | -40° + 85° | C |
| Lagertemperatur Storage temperature | T_{stb} | -40° + 85° | -40° + 85° | -40° + 85° | -40° + 85° | C |
| Kenndaten (Typische Werte) Operating characteristics ($T_A = 25^\circ\text{C}$) | | rot red (GaP) | super-rot super-red (GaAsP/GaP) | grün green (GaP) | gelb yellow (GaAsP/GaP) | |
| Durchlaßspannung (typ.) Forward voltage (typ.) ($I_F = 20 \text{ mA}$) | V_F | 2,0 | 2,0 | 2,2 | 2,1 | V |
| Durchlaßspannung (max.) Forward voltage (max.) ($I_F = 20 \text{ mA}$) | V_F | 2,8 | 2,8 | 2,8 | 2,8 | V |
| Sperrstrom Reserve current ($V_R = 5 \text{ V}$) | I_R | 100 | 100 | 100 | 100 | μA |
| Wellenlänge des emittierten Lichtes Wave length at peak emission ($I_F = 20 \text{ mA}$) | λ_P | 660 | 625 | 565 | 595 | nm |
| Spektrallinien-Halbwerte Spectral line half-width ($I_F = 20 \text{ mA}$) | $\Delta \lambda$ | 45 | 45 | 30 | 35 | nm |

Selektion-Code für Display's Selection-Code for Display's



| Gruppe Group | Lichtstärke in ucd / 10 mA Light intensity at ucd / 10 mA | |
|-----------------|--|------|
| | min. | max. |
| C | 70 | 140 |
| D | 140 | 240 |
| E | 240 | 360 |
| F | 360 | 560 |
| G | 560 | 900 |
| H | 900 | 1400 |
| I | 1400 | 2200 |
| K | 2200 | 3600 |
| L | 3600 | 5600 |
| M | 5600 | 9000 |

| Gruppe Group | Farbgruppierung Colour Classification | | | |
|-----------------|---|------|--------------|------|
| | Gelb / Yellow | | Grün / Green | |
| | Dom. Wellenlänge (nm) Dom. Wavelength (nm) | | | |
| | min. | max. | min. | max. |
| 1 | 581 | 584 | 559 | 561 |
| 2 | 584 | 586 | 561 | 563 |
| 3 | 586 | 588 | 563 | 565 |
| 4 | 588 | 590 | 565 | 567 |
| 5 | 590 | 592 | 567 | 569 |
| 6 | 592 | 594 | 569 | 571 |
| 7 | | | 571 | 573 |
| 8 | | | 573 | 575 |



Kennen Sie Kingbright Spezial-LED's?

Duo-LED's und superhelle LED's in 3, 5, 8 und 10 mm \varnothing bis zu 1.500 mcd!

Bicolour-LED's and high brightness LED's in 3, 5, 8 and 10 mm \varnothing till 1.500 mcd!