

# Kingbright® - Standard - Display's



Abmessung + Anschlußbelegung Dimension and pin-connection Top view display side	Typen- bezeichnung Type	Emissions- farbe Colour $\lambda_{peak}$ (nm)	Lichtstärke Luminous Intensity ( $I_T = 10 \text{ mA}$ ) $I_v$ (mcd) min. typ.	Beschreibung Description
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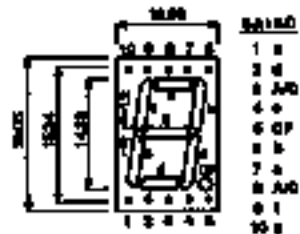
<b>DISPLAY - 7 mm</b> 	SA 03 - 11 HWA	Rot 660 nm Red	300 600	Gemeinsame Anode Common Anode
	SC 03 - 12 HWA			Gemeinsame Kathode Common Cathode
	SA 03 - 11 GWA	Grün 565 nm Green	750 1800	Gemeinsame Anode Common Anode
	SC 03 - 12 GWA			Gemeinsame Kathode Common Cathode
	SA 03 - 11 YWA	Gelb 595 nm Yellow	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

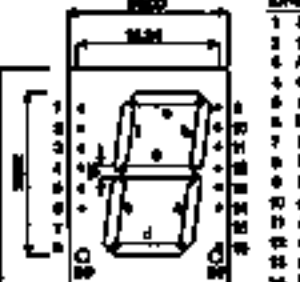
<b>DISPLAY - 10 mm</b> 	SA 04 - 11 HWA	Rot 660 nm Red	300 700	Gemeinsame Anode Common Anode
	SC 04 - 11 HWA			Gemeinsame Kathode Common Cathode
	SA 04 - 11 GWA	Grün 565 nm Green	800 2000	Gemeinsame Anode Common Anode
	SC 04 - 11 GWA			Gemeinsame Kathode Common Cathode
	SA 04 - 11 YWA	Gelb 595 nm Yellow	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

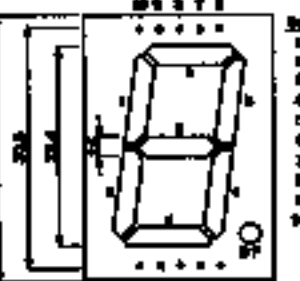
<b>DISPLAY - 13 mm</b> 	SA 52 - 11 HWA	Rot 660 nm Red	300 700	Gemeinsame Anode Common Anode
	SC 52 - 11 HWA			Gemeinsame Kathode Common Cathode
	SA 52 - 11 GWA	Grün 565 nm Green	800 2000	Gemeinsame Anode Common Anode
	SC 52 - 11 GWA			Gemeinsame Kathode Common Cathode
	SA 52 - 11 YWA	Gelb 595 nm Yellow	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

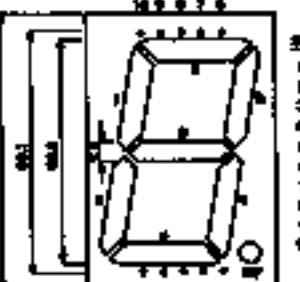


Alle Displays haben weiß-diffuse Segmente und eine graue Oberfläche. Andere Einfärbungen der Segmente oder der Oberfläche - sind auf Wunsch lieferbar  
 All displays have white-diffused segments and a grey surface. Other colours of the segments or of the surface - are deliverable on request!

<b>DISPLAY - 14 mm</b>  14.00 - 14.00 = 2.00 mm <sup>2</sup>	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	

<b>DISPLAY - 20 mm</b>  20.00 - 27.00 = 6.00 mm <sup>2</sup>	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-Flot 625 nm Super-Red	900	2200	Gemeinsame Anode Common Anode	
	SC 08 - 11 EWA				Gemeinsame Kathode Common Cathode	

<b>DISPLAY - 25 mm</b>  25.00 - 44.00 = 19.00 mm <sup>2</sup>	SA 10 - 21 HWA	Rot 660 nm Red	850	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-Flot 625 nm Super-Red	2200	4500	Gemeinsame Anode Common Anode	
	SC 10 - 21 EWA				Gemeinsame Kathode Common Cathode	

<b>DISPLAY - 57 mm</b>  56.5 - 70.0 = 13.5 mm <sup>2</sup>	SA 23 - 12 HWA	Rot 660 nm Red	850	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-Flot 625 nm Super-Red	2200	4500	Gemeinsame Anode Common Anode	
	SC 23 - 12 EWA				Gemeinsame Kathode Common Cathode	

## Charakteristische Daten Characteristic datas

Grenzwerten (Maximal Werte) Absolute maximum ratings ( $T_A = 25^\circ\text{C}$ )			super-rot super-red (GaAsP/GaP)	grün green (GaP)	gelb yellow (GaAsP/GaP)	
Sperrspannung Reverse voltage	$V_R$	5	5	5	6	V
Durchlaßstrom Forward current	$I_F$	20	30	30	30	mA
Stoßstrom ( $t \leq 10 \mu\text{s}$ ) Forward current (peak)	$I_{FM}$	150	150	150	150	mA
Verlustleistung Power dissipation	$P_T$	120	105	105	105	mW
Betriebstemperatur Operating temperature	$T_A$	$-40^\circ$ $+85^\circ$	$-40^\circ$ $+85^\circ$	$-40^\circ$ $+85^\circ$	$-40^\circ$ $+85^\circ$	°C
Lagertemperatur Storage temperature	$T_{stg}$	$-40^\circ$ $+85^\circ$	$-40^\circ$ $+85^\circ$	$-40^\circ$ $+85^\circ$	$-40^\circ$ $+85^\circ$	°C
Kennwerten (Typische Werte) Operating characteristics ( $T_A = 25^\circ\text{C}$ )			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.) ( $I_F = 20 \text{ mA}$ )	$V_{FM}$	2,8	2,8	2,8	2,8	V
Sperrstrom Reverse current ( $V_R = 6 \text{ V}$ )	$I_R$	100	100	100	100	$\mu\text{A}$
Wellenlänge des emittierten Lichtes Wave length at peak emission ( $I_F = 20 \text{ mA}$ )	$\lambda_P$	660	635	585	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.
O	70	140
D	140	240
E	240	350
F	350	660
G	580	900
H	900	1400
I	1400	2200
K	2200	3600
L	3600	5000
M	5000	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	588	561	563
3	588	592	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!

Blockfour-LED's and high brightness LED's in 3, 5, 8 and 10 mm  $\varnothing$  up to 1.500 mcd!