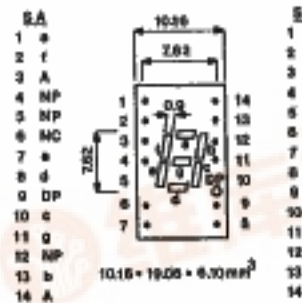
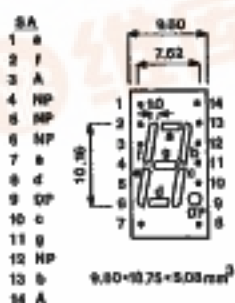


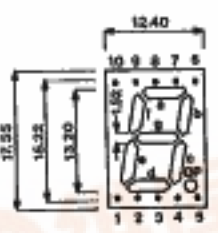


# Kingbright® - Standard - Display's

Abmessung + Anschlußbelegung Draufsicht – Displayseite Dimension and pin-connection Top view display side	Typen- bezeichnung Type	Emissions- farbe Colour $\lambda_{peak}$ (nm)	Lichtstärke Luminous Intensity ( $I_F = 10\text{ mA}$ ) $I_V$ (ucd) 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!



DISPLAY – 14 mm							
<p>12.90 • 19.05 = 246.0 mm<sup>2</sup></p>	SA 56 – 11 HWA	Rot 660 nm Red	300	700	Gemeinsame Anode Common Anode		
	SC 56 – 11 HWA				Gemeinsame Kathode Common Cathode		
	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							
<p>20.00 • 27.70 = 554.0 mm<sup>2</sup></p>	SA 08 – 11 HWA	Rot 660 nm Red	300	800	Gemeinsame Anode Common Anode		
	SC 08 – 11 HWA				Gemeinsame Kathode Common Cathode		
	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							
<p>24.0 • 34.0 = 816.0 mm<sup>2</sup></p>	SA 10 – 21 HWA	Rot 660 nm Red	650	1500	Gemeinsame Anode Common Anode		
	SC 10 – 21 HWA				Gemeinsame Kathode Common Cathode		
	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							
<p>48.0 • 70.0 = 3360.0 mm<sup>2</sup></p>	SA 23 – 12 HWA	Rot 660 nm Red	650	1500	Gemeinsame Anode Common Anode		
	SC 23 – 12 HWA				Gemeinsame Kathode Common Cathode		
	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	$T_{st0}$	-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	$\mu\text{A}$
Wellenlänge des emittierten Lichtes Wave length at peak emission ( $I_F = 20 \text{ mA}$ )	$\lambda_P$	660	625	565	595	nm
Spektrallinien-Halbweite 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!