

# Kingbright® - Standard - Display's



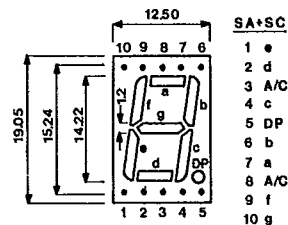
Abmessung + Anschlußbelegung Draufsicht – Displayseite Dimension and pin-connection Top view display side	Typen- bezeichnung Type	Emissions- farbe Colour $\lambda_{peak}$ (nm)	Lichtstärke Luminosity Intensity ( $I_F = 10\text{ mA}$ ) $I_V$ (ucd) min. typ.	Beschreibung Description
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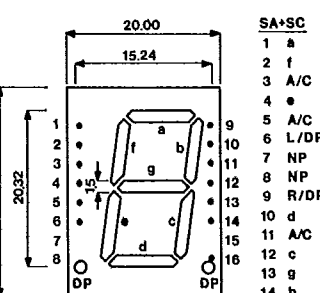
<b>DISPLAY – 7 mm</b>  	SA 03 – 11 HWA	Rot 660 nm Red	300 600	Gemeinsame Anode Common Anode
	SC 03 – 12 HWA			Gemeinsame Kathode Common Cathode
	SA 03 – 11 GWA	Grün 565 nm Green	750 1800	Gemeinsame Anode Common Anode
	SC 03 – 12 GWA			Gemeinsame Kathode Common Cathode
	SA 03 – 11 YWA	Gelb 595 nm Yellow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

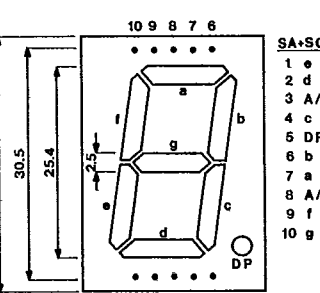
<b>DISPLAY – 10 mm</b>  	SA 04 – 11 HWA	Rot 660 nm Red	300 700	Gemeinsame Anode Common Anode
	SC 04 – 11 HWA			Gemeinsame Kathode Common Cathode
	SA 04 – 11 GWA	Grün 565 nm Green	800 2000	Gemeinsame Anode Common Anode
	SC 04 – 11 GWA			Gemeinsame Kathode Common Cathode
	SA 04 – 11 YWA	Gelb 595 nm Yellow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

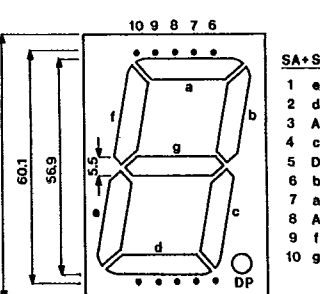
<b>DISPLAY – 13 mm</b>  	SA 52 – 11 HWA	Rot 660 nm Red	300 700	Gemeinsame Anode Common Anode
	SC 52 – 11 HWA			Gemeinsame Kathode Common Cathode
	SA 52 – 11 GWA	Grün 565 nm Green	800 2000	Gemeinsame Anode Common Anode
	SC 52 – 11 GWA			Gemeinsame Kathode Common Cathode
	SA 52 – 11 YWA	Gelb 595 nm Yellow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

<b>DISPLAY – 14 mm</b>   $12.50 \times 19.05 \times 8.00 \text{ mm}^3$	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

<b>DISPLAY – 20 mm</b>   $20.00 \times 27.70 \times 8.40 \text{ mm}^3$	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

<b>DISPLAY – 25 mm</b>   $24.0 \times 34.0 \times 10.5 \text{ mm}^3$ Segment : 2 Chip Dezimal P : 1 Chip	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

<b>DISPLAY – 57 mm</b>   $48.0 \times 70.0 \times 12.0 \text{ mm}^3$ Segment : 4 Chip Dezimal P : 2 Chip	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	$T_{stg}$	-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 emmission ( $I_F = 20 \text{ mA}$ )	$\lambda_P$	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!