

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
--	-------------------------------	--	--	-----------------------------

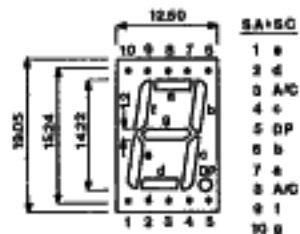
DISPLAY — 7 mm 	SA 03 — 11 HWA	Rot 660 nm Red	300 600	Gemeinsame Anode Common Anode
	SC 03 — 12 HWA			Gemeinsame Kathode Common Cathode
	SA 03 — 11 GWA	Grün 565 nm Green	750 1800	Gemeinsame Anode Common Anode
	SC 03 — 12 GWA			Gemeinsame Kathode Common Cathode
	SA 03 — 11 YWA	Gelb 595 nm Yellow	750 1800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

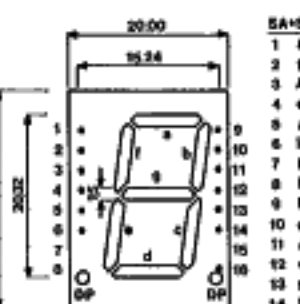
DISPLAY — 10 mm 	SA 04 — 11 HWA	Rot 660 nm Red	300 700	Gemeinsame Anode Common Anode
	SC 04 — 11 HWA			Gemeinsame Kathode Common Cathode
	SA 04 — 11 GWA	Grün 565 nm Green	800 2000	Gemeinsame Anode Common Anode
	SC 04 — 11 GWA			Gemeinsame Kathode Common Cathode
	SA 04 — 11 YWA	Gelb 595 nm Yellow	800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

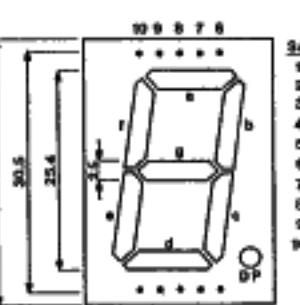
DISPLAY — 13 mm 	SA 52 — 11 HWA	Rot 660 nm Red	300 700	Gemeinsame Anode Common Anode
	SC 52 — 11 HWA			Gemeinsame Kathode Common Cathode
	SA 52 — 11 GWA	Grün 565 nm Green	800 2000	Gemeinsame Anode Common Anode
	SC 52 — 11 GWA			Gemeinsame Kathode Common Cathode
	SA 52 — 11 YWA	Gelb 595 nm Yellow	800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

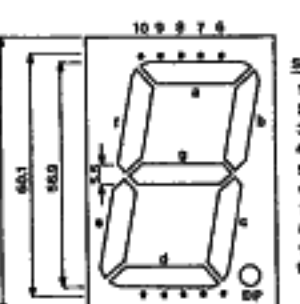


Alle Displays haben weiß-diffuse Segmente und eine graue Oberfläche. Andere Einfärbungen der Segmente oder der Oberfläche — sind auf Wunsch lieferbar!
All displays have white-diffused segments and a grey surface. Other colours of the segments or of the surface — are deliverable on request!

DISPLAY – 14 mm  $12.90 \times 19.05 \times 8.00 \text{ mm}^3$	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

DISPLAY – 20 mm  $20.00 \times 27.70 \times 6.40 \text{ mm}^3$	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

DISPLAY – 25 mm  $24.0 \times 34.0 \times 10.5 \text{ mm}^3$ Segment: 12 Chip Decimal 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

DISPLAY – 57 mm  $48.0 \times 70.0 \times 12.0 \text{ mm}^3$ Segment: 14 Chip Decimal 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 Reverse 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° $+85^\circ$	-40° $+85^\circ$	-40° $+85^\circ$	-40° $+85^\circ$	$^\circ\text{C}$
Lagertemperatur Storage temperature	T_{stg}	-40° $+85^\circ$	-40° $+85^\circ$	-40° $+85^\circ$	-40° $+85^\circ$	$^\circ\text{C}$
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 Reverse 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-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!