

Basics for the display size determination

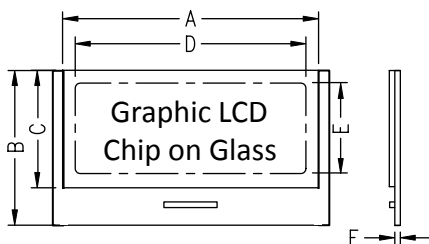
To calculate the required dimension of a planned display unit, we have arranged – from the practice of our daily work – the undermentioned resulting rules of thumb. The design guide comes not with the claim of completeness.

Following general rules for the calculation of display dimension can be noted:

- 1.) With graphic displays, space for the line routing of the horizontal axis based on the position of the IC is needed. This footprint results from the resolution of the Display and is therefore no subject to a standard formula.
- 2.) For the so-called “sealing line”, i.e. the area for bonding the glasses +1.5 mm at each side have to be provided.
- 3.) For the assembly area of the driver IC, with „Chip on Glass“ (COG) Displays, + 7,0 mm should be added to the bottom glass.
- 4.) For displays connected with „elastomeric rubbers“ (Zebras), +1,1 mm should be scheduled additionally for the contact area.
- 5.) For PIN connected displays, + 2,5 mm should two-sided be provided for the pinheader.

In the after-images we advise to observe the position of the glasses.

We would like to indicate the different calculation criteria by using a **128 x 64** Pixel large area, shown with a line pitch of 0,05 mm.



Calculation formula for the size determination with Graphic COG-LCDs

Top Glass

Active Area = D X E

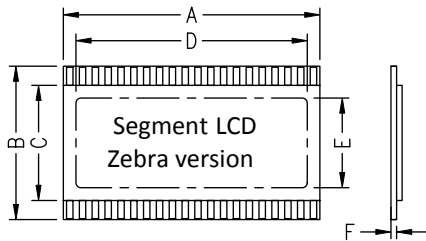
Viewing Area = (D+(2 x 1,5 mm)) x (E+(2 x 1,5 mm))

A = D + 64 x 0,05 + 2 x 1,5

C = E + (2 x 1,5 mm (VA)) + (2 x 1.5 mm (Sealing Line))

Bottom Glass:

B = C + 7,0 mm assembly area for Chip



Standard formula for calculation of segment based LCDs

Rubber connected segment LCD

Bottom Glass:

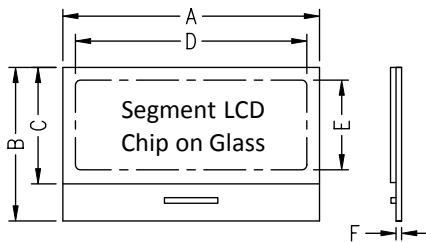
Viewing Area = $D \times E$

$A = D, 2 \times 1,5 \text{ mm}$ (sealing line)

$C = E + 2 \times 1,5 \text{ mm}$ (sealing line)

Top Glass:

$B = C + 1,1 \text{ mm}$ (at double-sided connection)



Chip on Glass Segment LCD (Chip herein below)

Top Glass:

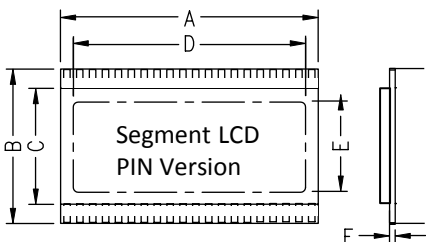
Viewing Area = $D \times E$

$A = D + 2 \times 1,5 \text{ mm}$ (sealing line)

$C = E + 2 \times 1,5 \text{ mm}$ (sealing line)

Bottom Glass:

$B = C + 7,0 \text{ mm}$ (Chip contact area)



PIN connected Segment LCD

Top Glass:

Viewing Area = $D \times E$

$A = D, 2 \times 1,5 \text{ mm}$ (sealing line)

$C = E 2 \times 1,5 \text{ mm}$ (sealing line)

Bottom Glass:

$B = C + 2,5 \text{ mm}$ (at double-sided connection)