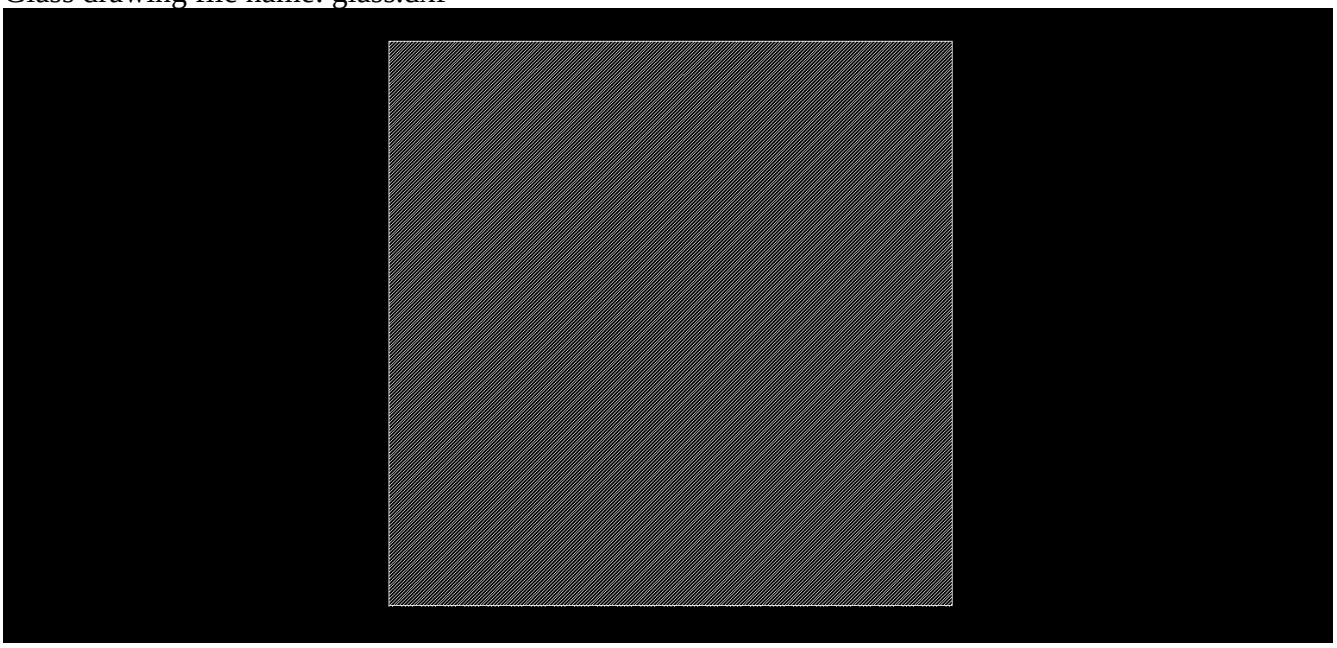
Layout Documentation

Use.
This design and all drawings in this package have been coped without modification from the latest (as of 8 May, 2023) stable release of the POD group layout repository, version 3.2.4, which can be found in its entirety online at https://gitlab.com/pod-group/layouts/-/releases/3.2.4 That project and thus this package is licensed under https://gitlab.com/pod-group/layouts/-/raw/3.2.4/LICENSE.txt

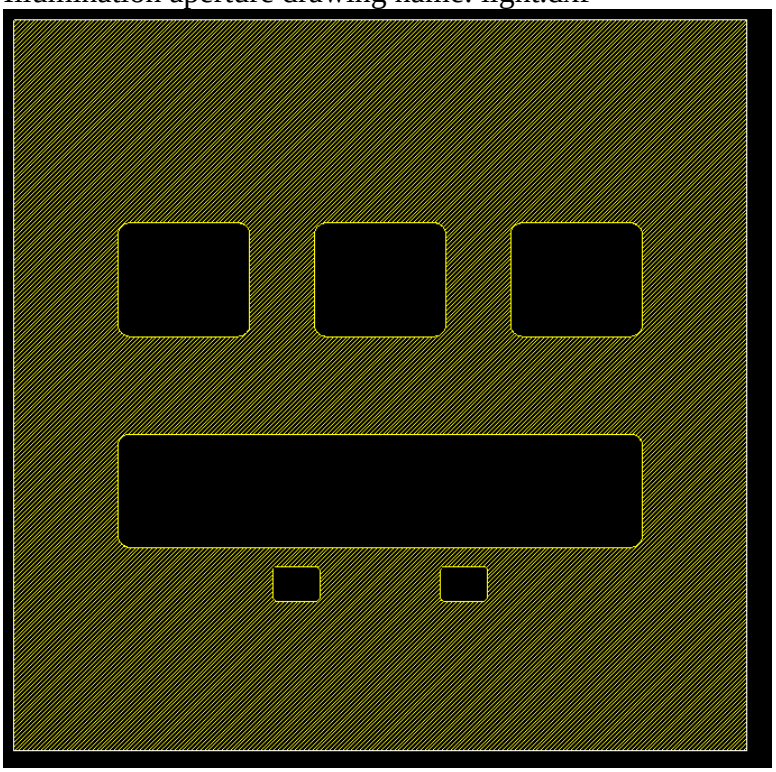
Notes.
Drawing units are millimeters. Any further details not present in this package can be found in the source drawings, available at https://gitlab.com/pod-group/layouts/-/releases/3.2.4

Glass drawing file name: glass.dxf



Nominal dimensions: 30.00 mm square
Final shape tolerance: 0.2mm or better on the “shadow” (2D projection) of the glass piece

Illumination aperture drawing name: light.dxf



This light mask exposes six devices, three “small,” one “big” and two “tiny.”

light mask hole dimensions, nominally:
fr: corner fillet radius = 0.50 mm

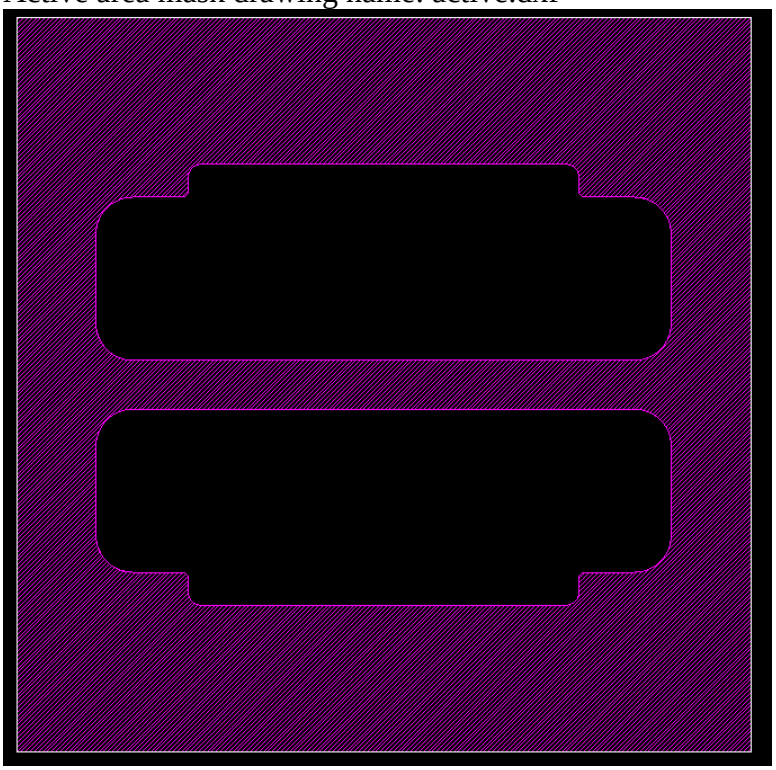
ab: area of big device = 100 mm^2
wb: width of big device = 12.50 mm
hb: height of big device = (ab-fr^2*(π-4))/wb =~ 4.66 mm

as: area of a small device = 25 mm^2
hs: height of a small device = hb ~= 4.66 mm
ws: width of a small device = (as-fr^2*(π-4))/hs =~ 5.41 mm

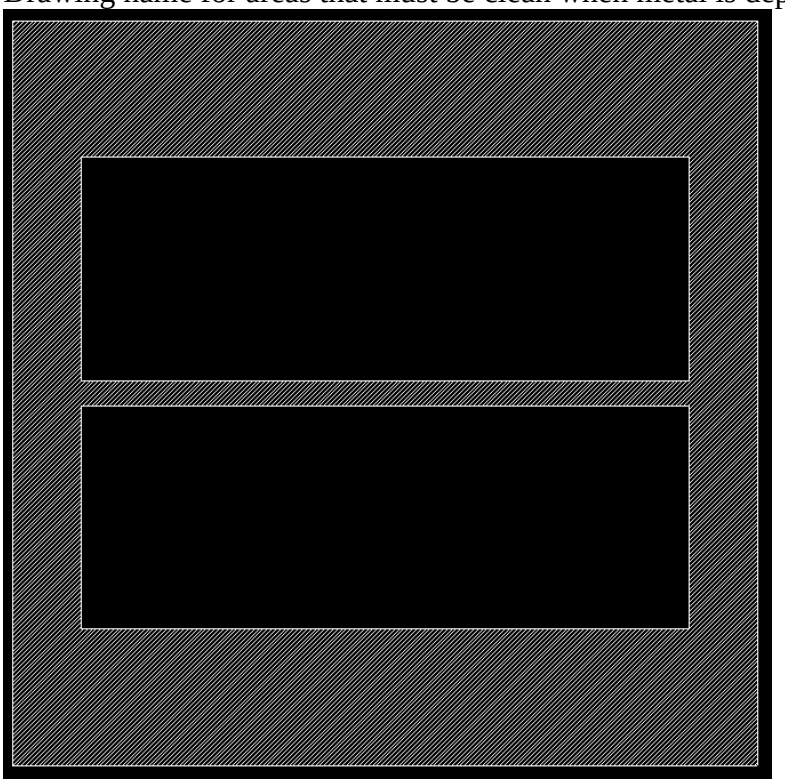
nominal geometric dark areas:
dab: dark area big =~ 113.9196 (for ~114% of light area)
das: dark area small =~ 30.8744 (for ~123% of light area)
found by inspection of the drawings

The size and shape of the tiny light mask holes is not important. These mask holes expose tiny cells with nominally square-shaped metal-TCO overlap regions that have 1mm side lengths. Due to edge effects, the effective electronic area of these devices is unknown, and since they’re fully illuminated, illuminated area is unknown, making current density also unknown for these tiny devices.

Active area mask drawing name: active.dxf

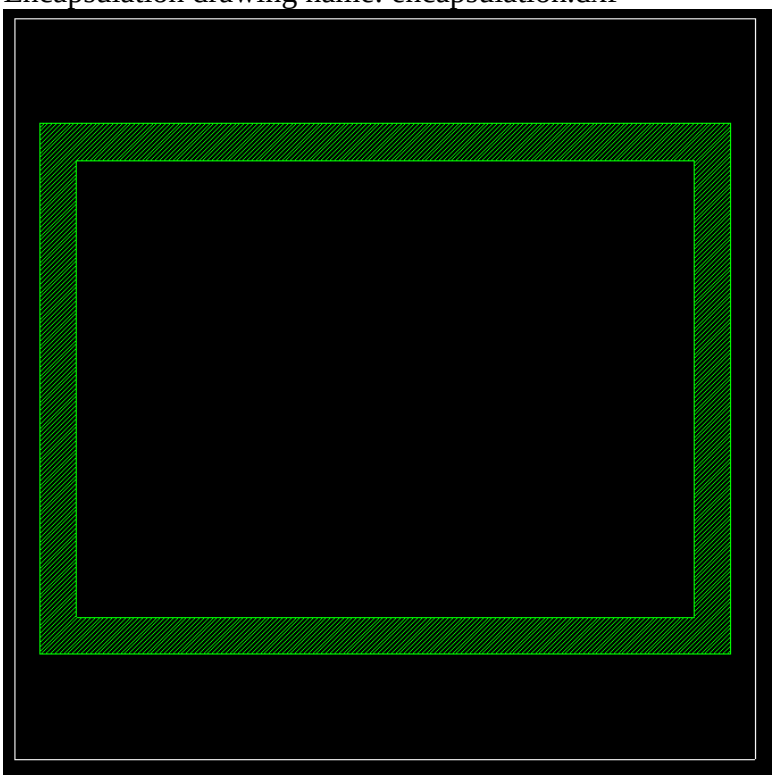


Drawing name for areas that must be clean when metal is deposited: clean.dxf



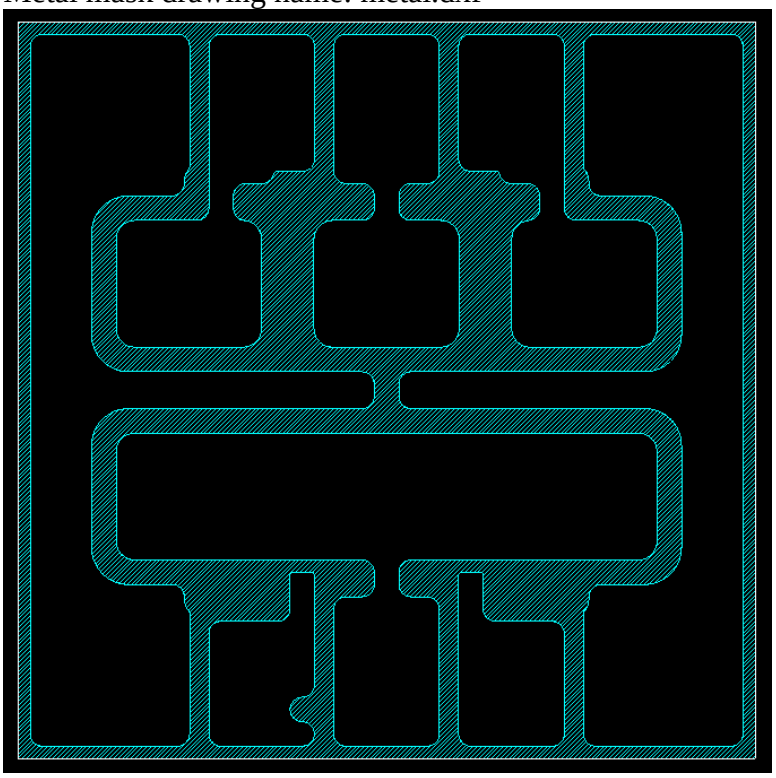
Hatched areas shown here must be completely clean when metal deposition takes place so that metal is deposited directly onto glass or TCO with no abrorber/ETL/HTL or other device layers in between. Failure to clean the white hatched area prior to metal deposition may impact electrical connectivity during measurement.

Encapsulation drawing name: encapsulation.dxf



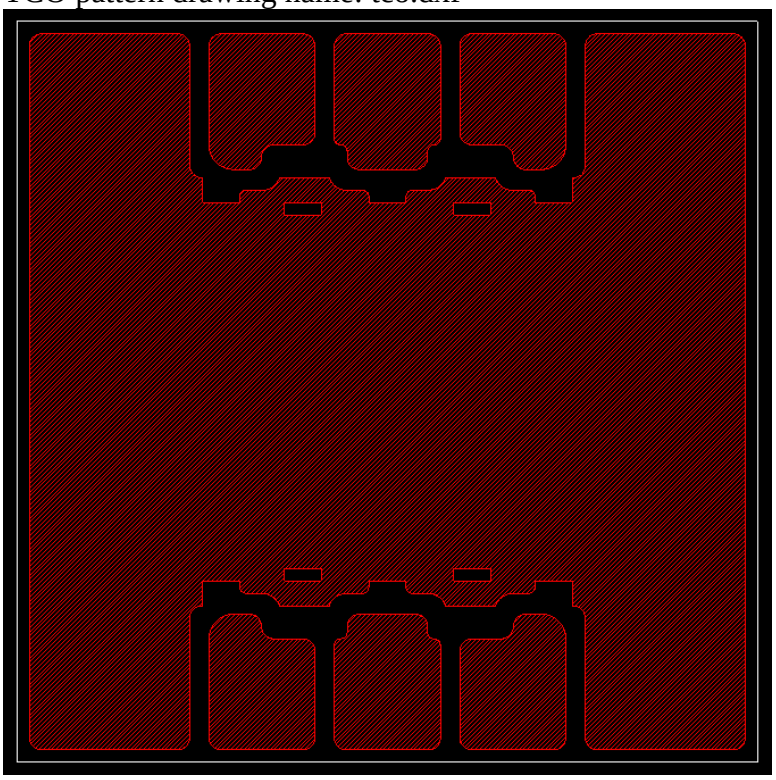
The outer dimensions of the encapsulation glass should be 28.0mm by 12.5mm. The inner pocket should be 25.0mm by 18.5mm so that the nominal width of glued region is 1.5mm wide. It is extremely important that glue does not spread beyond the green hatched region in this drawing at any time and that the encapsulation glass is positioned precisely as in this drawing. Any deviation may impact electrical connectivity.

Metal mask drawing name: metal.dxf



Pixel #1 indicated by a bump in the lower left pad.

TCO pattern drawing name: tco.dxf



TCO should remain in the red hatched areas, bare glass in the black areas.