

# MNC Mask Making Design Rules

## FY16 Mask Charge Rates (valid until 7-1-16)

Academic rate 5mm write head: \$229.65

Academic rate: 2mm write head \$410.41

Non-Academic rate 5mm write head: \$485

Non-Academic rate 2mm write head: \$956

1. 80mm x 80mm area printed on a 4"x4"x 0.060" soda lime print grade photomask blank
2. 110mm x 110mm area printed on a 5"x5"x0.090" soda lime print grade photomask blank
3. Other photomask size available 6"x6"x0.090", 7"x7"x0.090, 8"x8"x0.090" call or email pricing and lead times.
4. Quartz available but not in stock call or email for lead time. The cost for a 4x4x.090 or 5x5x.090 is ~\$115/ photomask + plus the above cost.

## Design Rules

- Scale in microns, 1:1. One unit on the design is equal to 1um.
- File formats- gdsii, dxf (release 12)
- Do not scale features, cells or text.
- One gds or dxf layer per mask.
- Maximum useable area for a 4"x4" mask is 80mmx80mm with label and 85mmx85mm without label.
- Maximum useable area for 5"x5" mask is 110mmx110mm with label and 112mmx112mm without label.
- Polygons must be closed.
- Do not cross polylines- crossed polylines create ambiguities that can lead to data errors.
- Do not create double vertices-Double vertices are successive points with identical coordinates. These points can lead to data errors.
- Do not use main as a name layer, cell or any structure.
- Do not use special characters or spaces in names.
- Single lines without width will be ignored.
- Polygons must show no more than 1,000,000 vertices.
- Definition or reference depth can be at maximum 16.
- The number of definition or references can be at maximum 100,000.
- Designs must not exceed the limits of 2000mm from (0,0) in either axis.
- Avoid placing structures in layer 0.

## Design Rules specific to 5mm write head

- All features (lines, spaces, rectangles, etc.) 1.5um or larger.
- Circles 2.0um or larger
- Text 25um or larger

## Design Rules specific to 2mm write head

- All features (lines, spaces, rectangles, circles etc. 1.0um or larger.
- Circles 1.5um or larger
- Text 15um or larger