

CORNERSTONE

Quick reference design guidelines for the sixth fabrication call – February 2018

Mask submission deadline – Friday 6th April 2018

File format = *.gdsII*.

Manufacturing grid size = 1 nm.

Design area = **11.47 x 4.9 mm²**, with 0.5 mm bleed regions on the east and west facets if desired.

Top cell name: 'Cello_*[Name of Institution]*'.

1. Design rules summary

A summary of the design rules and GDS layer numbers can be found in Table 1 below.

Table 1 – Design rules summary.

Layer description	GDS number	Field	Min. feature size	Min. gap	Max. feature width
Silicon Etch 1 (70 nm ± 10 nm)	6	Dark	250 nm	250 nm	N/a
Silicon Etch 2 (120 nm ± 10 nm)	3	Light	250 nm	250 nm	N/a
	4	Dark			
Silicon Etch 3 (100 nm to BOX)	5	Light	250 nm	250 nm	N/a
Heater Filaments	39	Light	900 nm	10 µm	1.4 µm*
Heater Contact Pads	41	Light	2 µm	10 µm	N/a
Cell Outline	99	N/a	N/a	N/a	N/a
Bleed Area	98	N/a	N/a	N/a	N/a

*The maximum Heater Filament width only applies when NOT overlapping with the Heater Contact Pad layer and is for guidance only; this rule can be broken if you wish.

2. Minimum feature sizes, tolerances and other design rules

- Minimum feature sizes and maximum feature widths (where applicable) for each GDS layer are detailed in Table 1.
- A minimum spacing between waveguides of at least 5 µm is recommended to avoid power coupling.
- An overlap of at least 200 nm between GDS layers is essential to account for the alignment tolerance between layers.
- All structures drawn in GDS layer 6 (Grating couplers) must overlap by at least 200 nm with GDS layer 3 (Waveguides).
- All structures drawn in GDS layer 5 (Rib protect) should extend 10 µm beyond the edge of GDS layer 3 (Waveguides), with the exception of rib-to-strip transitions.
- An overlap of at least 10 µm between GDS layer 39 (Heater Filaments) and GDS layer 41 (Heater Contact Pads) is recommended for optimal heater performance.
- Ensure all structures drawn in GDS layer 6 (Grating couplers) do not overlap with any of the heater layers.

3. Technical support

For all queries, email cornerstone@soton.ac.uk.