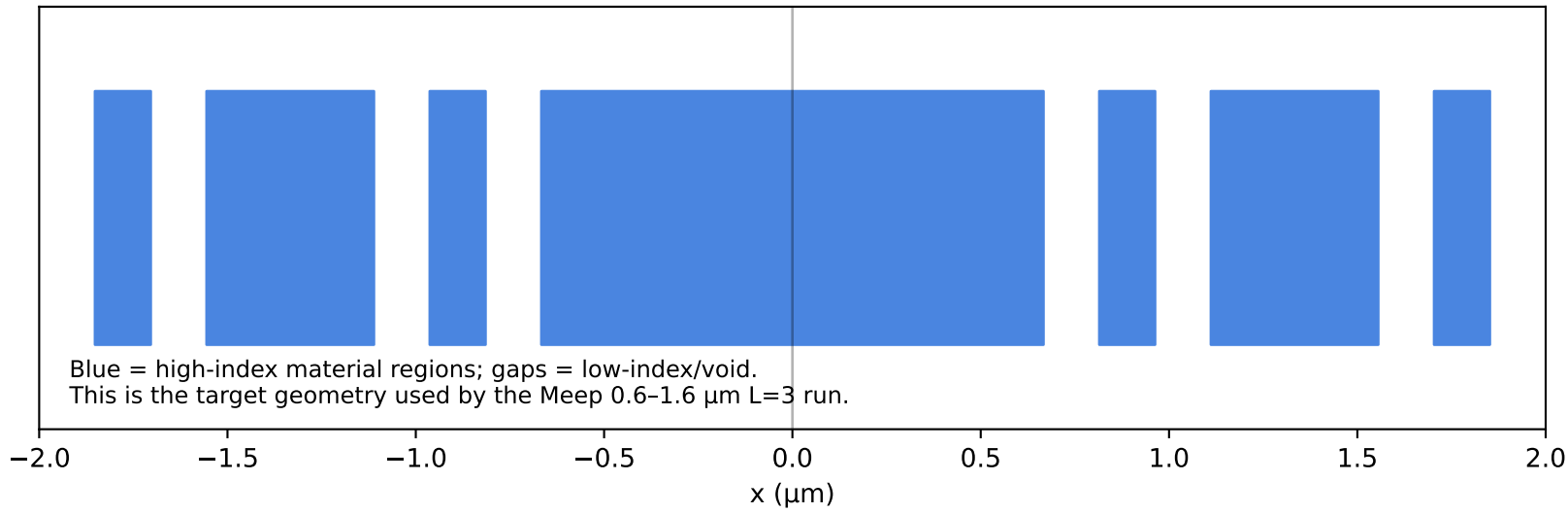
Fabrication Spec (MVP): 1D Optical Cantor Barrier (Level 3)

Target band: 0.6–1.6 µm
Model indices: n_hi=1.5, n_lo=1.0
Cantor window length a = 4.000 µm, levels=3
Min feature ≈ a/3^L = 0.148148 µm ≈ 148 nm
Total high-index length (within a): 2.814815 µm
Suggested tolerance: ±50 nm (feature widths)

1D layout along propagation (x) — high-index segments (Cantor complement)



Segment table (x-start, x-end, length) [µm]

#	x_start	x_end	len
1	-1.851852	-1.703704	0.148148
2	-1.555556	-1.111111	0.444444
3	-0.962963	-0.814815	0.148148
4	-0.666667	0.666667	1.333333
5	0.814815	0.962963	0.148148
6	1.111111	1.555556	0.444444
7	1.703704	1.851852	0.148148

Fabrication notes

Substrate: Fused silica (SiO2) slide, 25x25x1 mm (typical)

1D Cantor multilayer along propagation: alternating high-index material and void/low-index gaps
with the Cantor *complement* occupied by the high-index material.
Measured in free-space normal incidence through the patterned region.

- Start with levels=3 (min feature ~148 nm for a=4 µm).
- Baseline control: uniform slab with same total high-index length.
- Pattern should extend across the illuminated aperture (e.g., 0.5–2 mm in y).