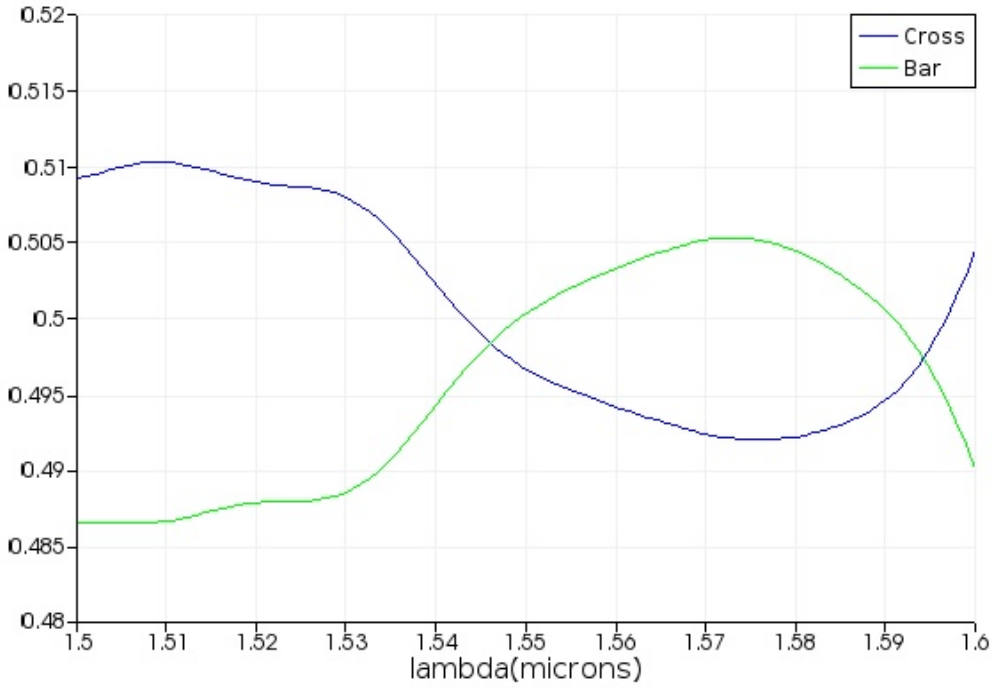
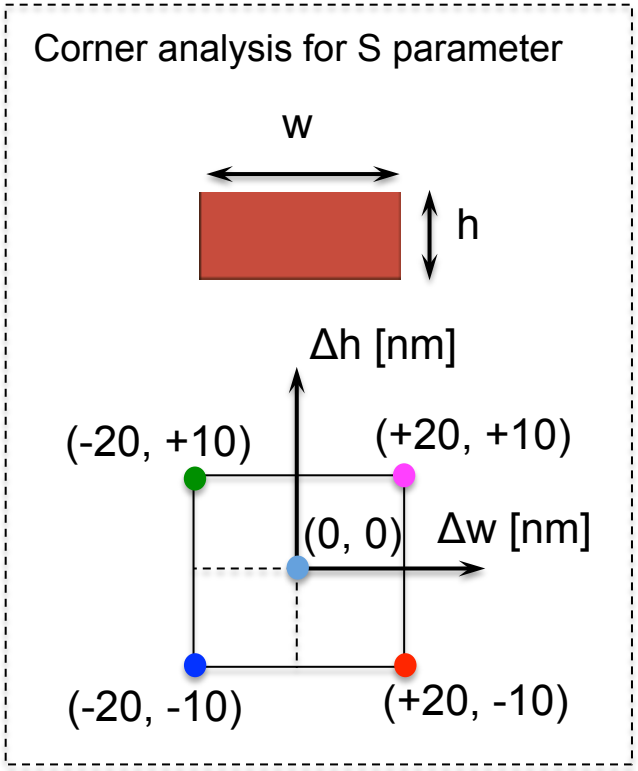
UBC broadband directional coupler

Perfect-case simulated performance:



- TE mode operation
- Deviation in C-band: < 1%
- Insertion Loss: < 1% (0.04 dB)

Corner analysis in C-band:



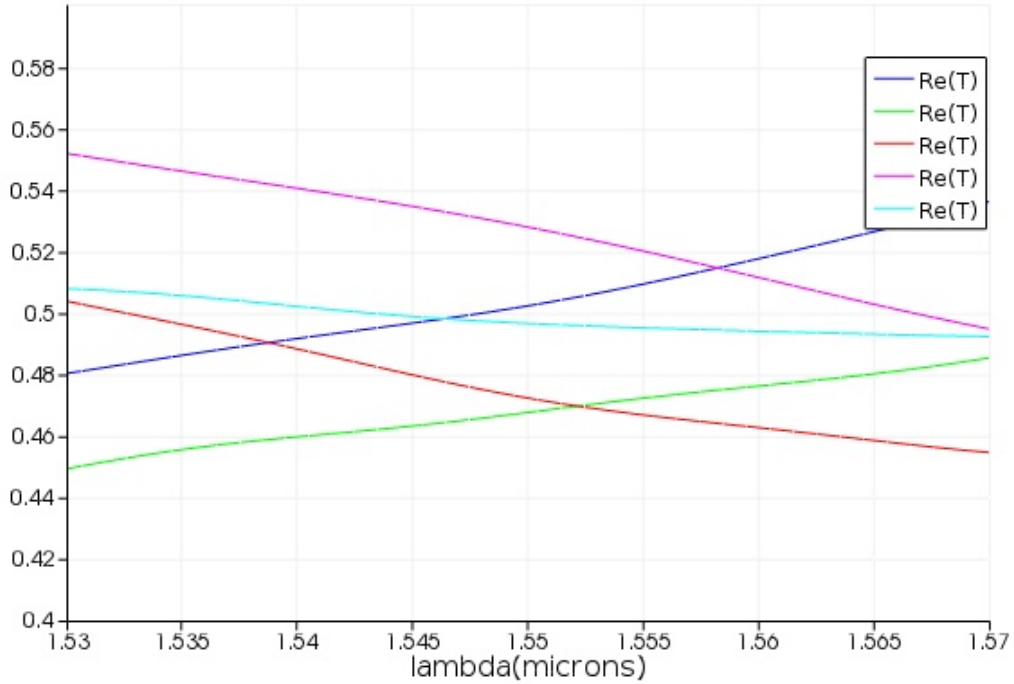
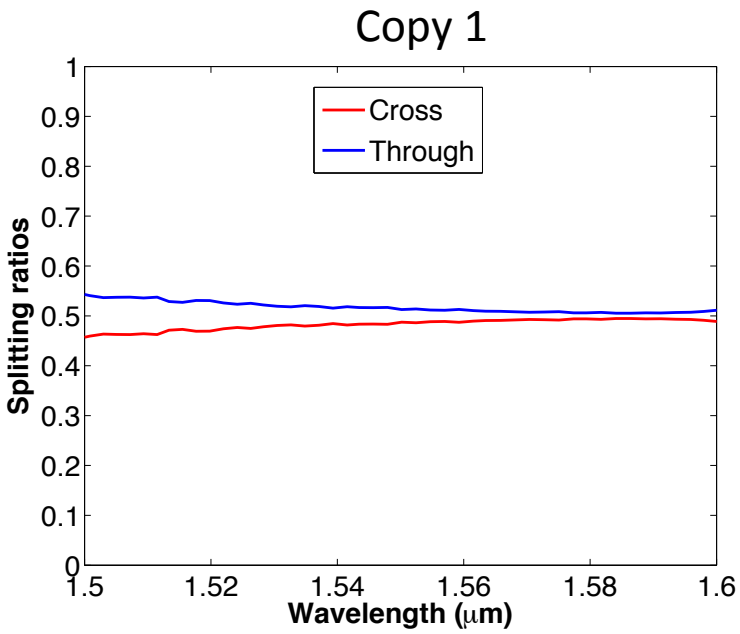
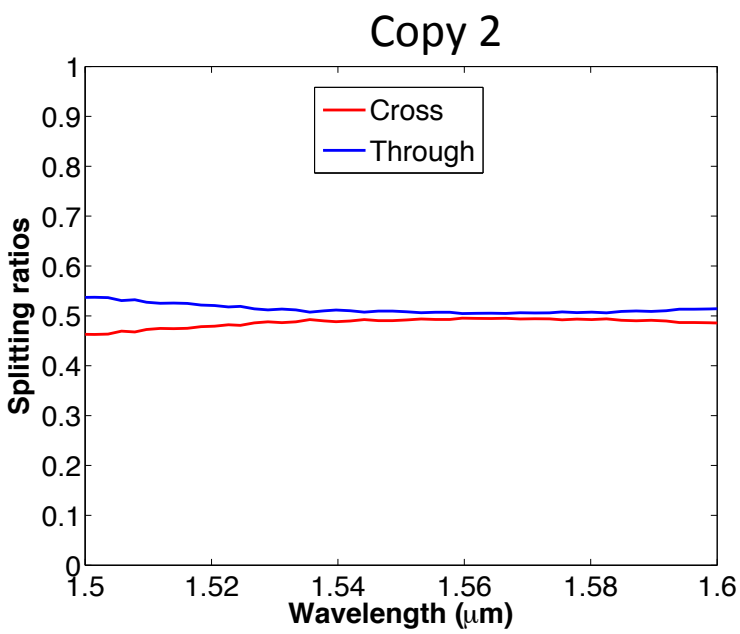


Fig. Variation of cross-splitting ratios in corner analysis

- Deviation in C-band: < 5%
- Insertion Loss: < 1% (0.04 dB)

Measured performance on Ebeam chip:





Testing methodology: Indirect measurement (MZI)

Reference:

Lu, Zeqin; Celo, Dritan; Dumais, Patrick; Bernier, Eric; Chrostowski, Lukas, "Comparison of photonic 2×2 3-dB couplers for 220 nm silicon-on-insulator platforms," in *Group IV Photonics (GFP), 2015 IEEE 12th International Conference on* , vol., no., pp. 57-58, 26-28 Aug. 2015

Point-symmetric layout for high extinction ratio:

Reference:

"Low-power, 2×2 silicon electro-optic switch with 110-nm bandwidth for broadband reconfigurable optical networks," Opt. Express 17, 24020-24029 (2009)