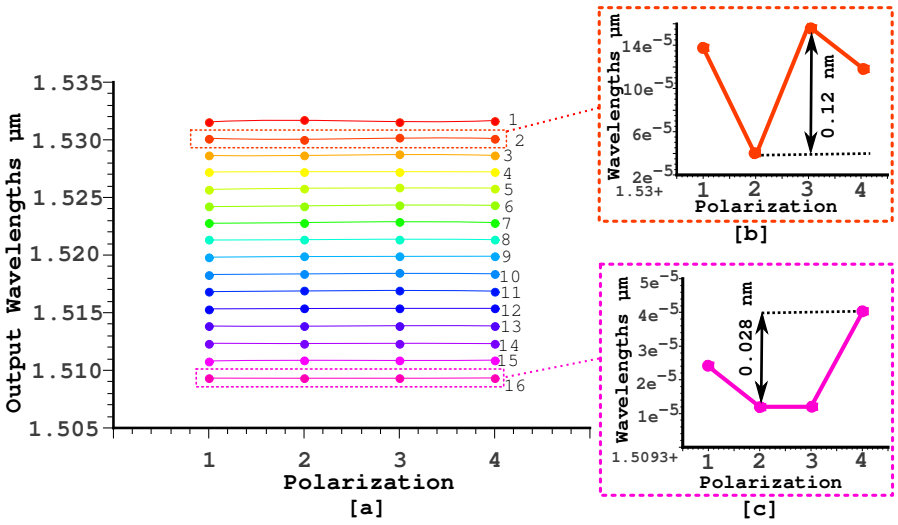

Fig. 8. (a) The output wavelength channel positions of the polarization diversity circuit for $Pol-1$, $Pol-2$, $Pol-3$, and $Pol-4$ polarizations. (b) Maximum shifted output channel. (c) Minimum shifted output channel.

shift is measured to be between $0.12nm$ and $0.028nm$ in the worst respectively best case, as shown in Fig. 8(b) and 8(c).

7. Conclusion

We demonstrate a $16 \times 200GHz$ polarization diversity wavelength de-multiplexer circuit integrated on an SOI platform. Estimated fiber to fiber loss is better than $-15.0dB$. Insertion loss and crosstalk induced by the AWGs are $-2.6dB$ and $21.5dB$, respectively. The polarization dependent loss varies between $0.06dB$ and $2.32dB$ over the 16 channels. The polarization dependent wavelength shift varies between $0.12nm$ and $0.028nm$ over the 16 channels. The total circuit size is $1400 \times 850\mu m^2$.

Acknowledgment

This work was supported by the European Union in the framework of the FP7-project ICT-HELIOS and the ERC-projects INSPECTRA and ULPPIC.