


Comparison of linear and RISTRA cavities for a 1064-nm pumped CdSiP₂ OPO

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The beam quality of the idler output of a 1064 nm pumped OPO based on CdSiP₂ is compared for linear and Rotated Image Singly-Resonant Twisted RectAngle (RISTRA) cavities. For similar mirrors and cavity round trip times the RISTRA cavity yielded 64 μ J of idler energy (6.4 mW of average power at 100 Hz) compared to 34 μ J with the linear cavity, at a pump level of 21.5 mJ, roughly two times above threshold. The RISTRA cavity generated a smoother idler beam spatial profile (characterized by moving a knife-edge) and produced twice higher intensity in the focus of a 10-cm lens.