

## Characterization of ellipsoidal plasma mirrors beyond the paraxial approximation

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Ellipsoidal plasma mirrors (EPM) can demagnify the focal spot from a conventional off axis parabolic (OAP) optic to yield ultra high focused intensities beyond the range of  $10^{23}$  W/cm<sup>2</sup> in upcoming laser facilities[1, 2]. The design of these EPMs have traditionally used paraxial approximation to estimate the achievable demagnification[3]. However, numerical codes do exist to characterize the focal spot diameter under tightly focused condition when the output focal spot diameter is comparable to the laser wavelength[4]. In this presentation we compare the measured focal spots to the theoretically predicted values (without paraxial approximation). These results thus guide us to design the simplest geometry of the EPM to achieve a tightly focused spot for a given OAP.

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### References

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