

Zemax Module 2: Fiber Coupling

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Goal: Single Mode Fiber Coupling

Fiber Coupling

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Goal

Methods

The
Environment

Single Mode
Coupling

Results

Conclusion

- 3mm HeNe source.
- Single Mode Fiber.
- Restricted to materials from Thorlabs Catalog.

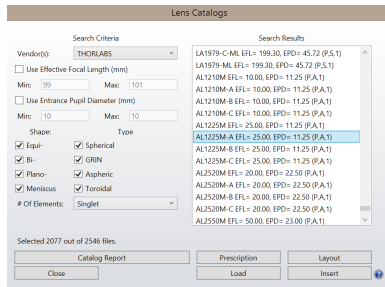


Figure 1: The Thorlabs lens catalog. Get to know it well.

Setting up the system

Fiber Coupling

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- Use a 3mm entrance pupil diameter.
- Turn on Gaussian Apodization.
- Setup a 633nm HeNe source.

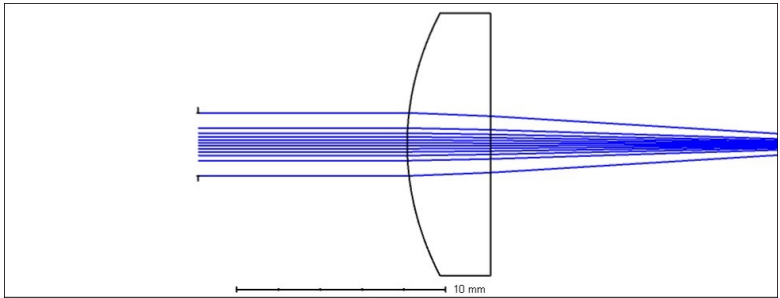


Figure 2: Gaussian Apodization causes rays to congregate towards center of beam.

Figure 4: Merit Function Editor

Figure 5: Fiber Coupling interface and efficiencies.

Conclusion

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- Setup a 3mm Gaussian source into Thorlabs materials.
- Simplest method is to use Single Mode Coupling function.
- Play with your materials to get the largest coupling efficiency.



Figure 6: I thought this was funny, we'll see how funny it is in the morning.