
NIRSPEC

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NIRSPEC Optics Design Note 5.0a Addendum to NIRSPEC Optics Design Note 5.01 Lyot Stop

This addendum gives the final designed dimensions for the Lyot stops. There are two sizes of Lyot stops. This is a compromise between having just one for all filters and having one for each separate filter. We refer to the two stops as the: nominal Lyot stop (NLS), and the inscribed Lyot stop (ILS). The former matches the image of a 10 m primary at the Lyot stop. The later is for a 9 m primary. The central obscuration is set by the mounting structure behind the secondary of the telescope. Its diameter is 3 m.

Using Zemax, I find $d_{\text{ILS}} = 24.074$ mm and $d_{\text{NLS}} = 26.748$ mm at the Lyot stop.

The central obscuration has $d_{\text{co}} = 8.024$ mm.

Note that the scale factor between an image at the Lyot stop and the primary is 2.675 mm per meter. So, for instance, if we made the central obscuration smaller, say to accommodate a 2.6 m obscuration at the secondary, then the diameter at the Lyot stop would be smaller by 1.070 mm.