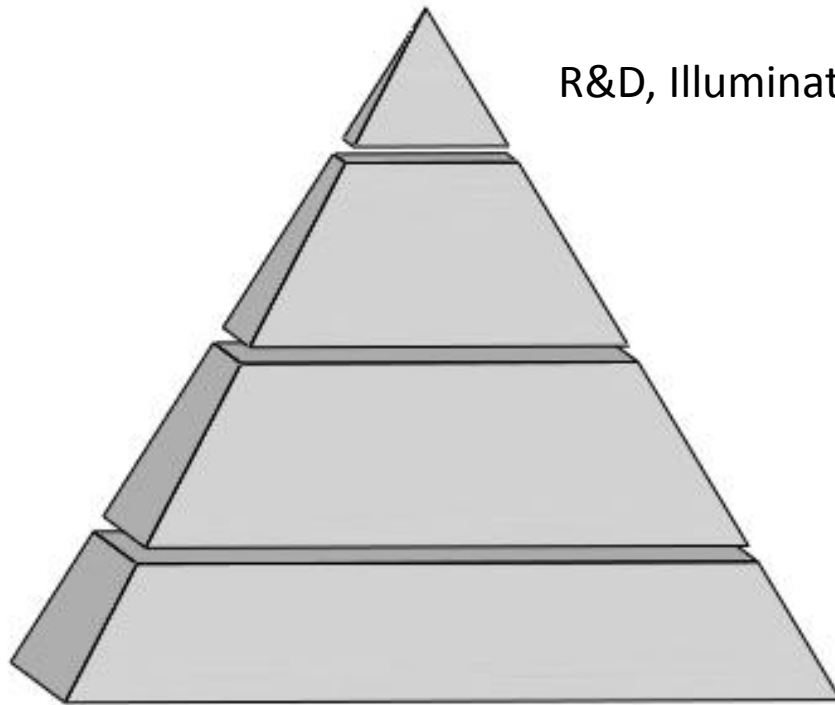


Non-Imaging Optics in Energy Conservation and Generation

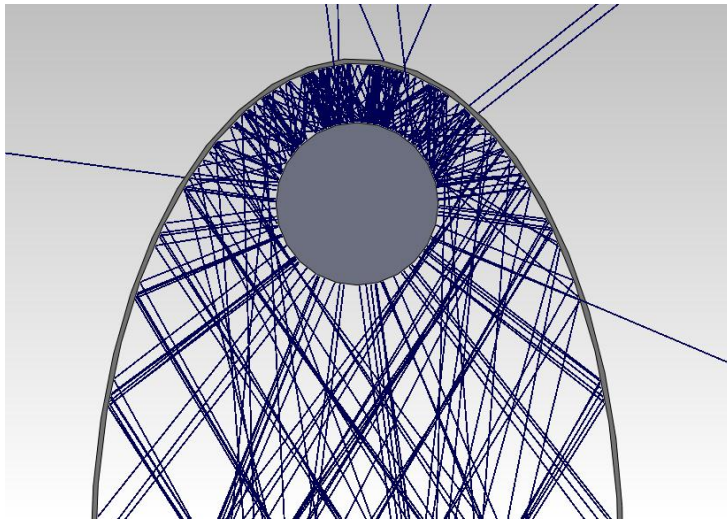


R&D, Illumination and Solar Concentration Systems

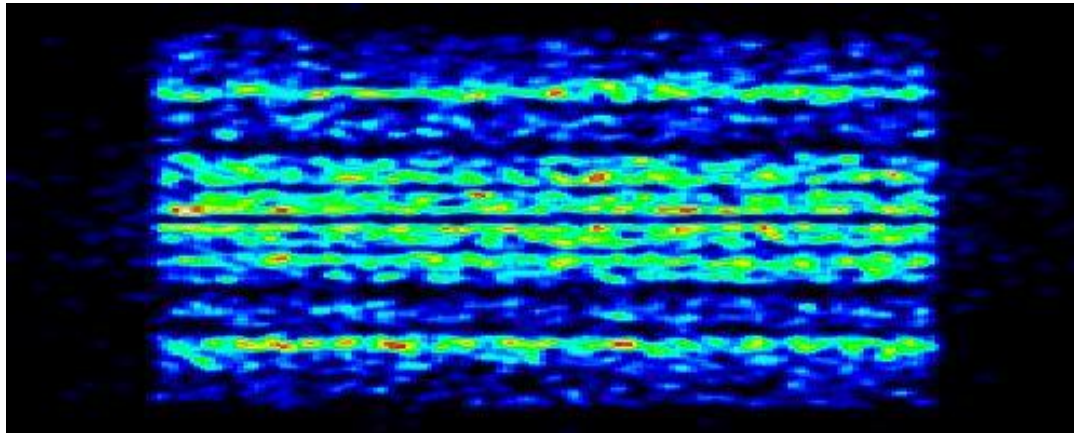
Illumination System Design Services

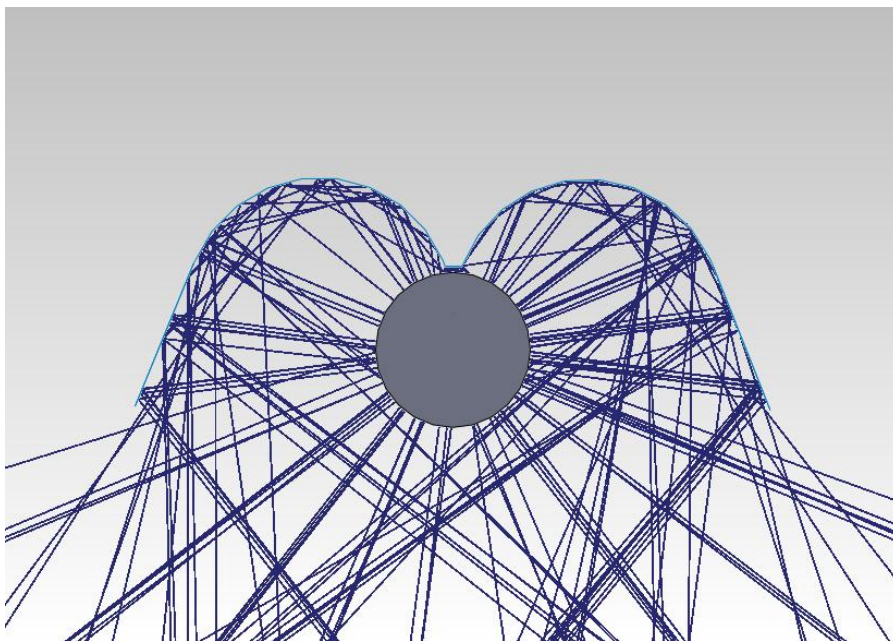
Electro-Mechanical Design Services

Engineering Support Services

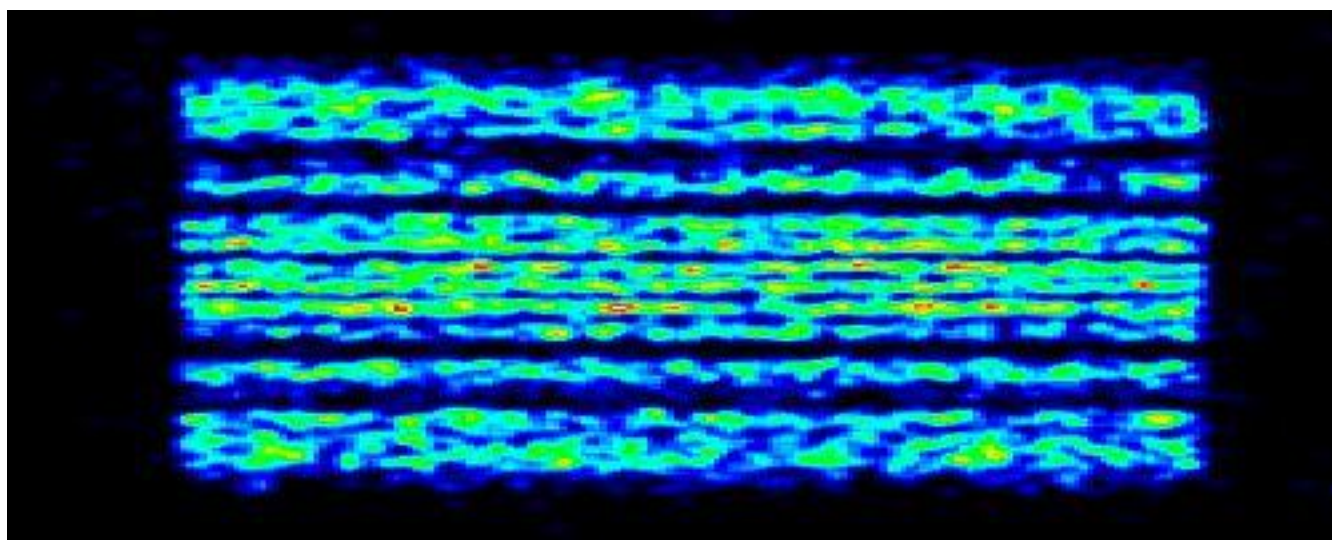


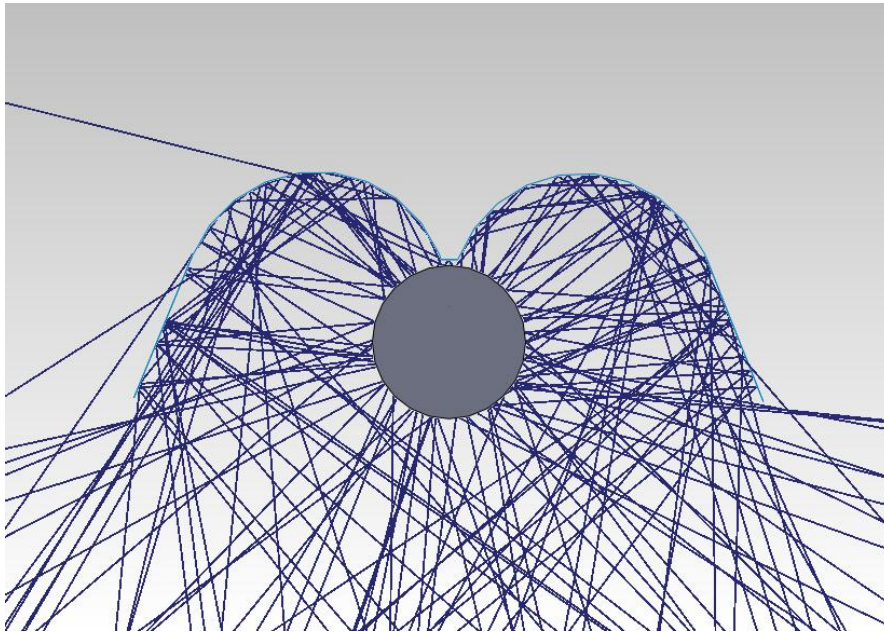
Fairly typical reflector design
Fluorescent Output shown as collimated
67.7% of light is emitted



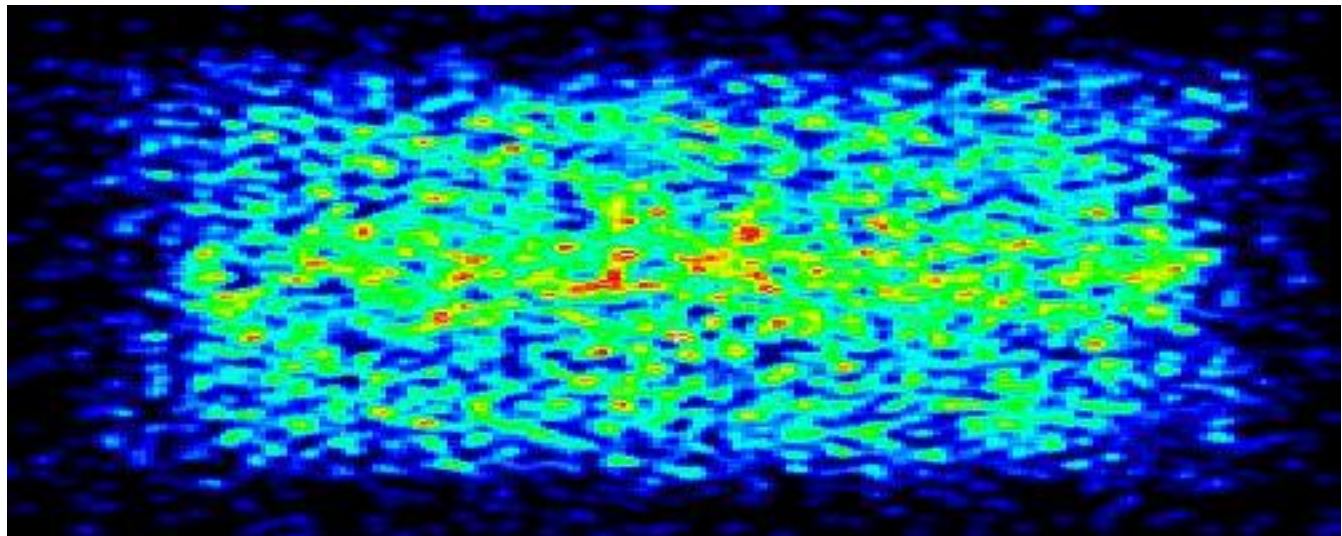


'W' Reflector Design
90.27% of light emitted



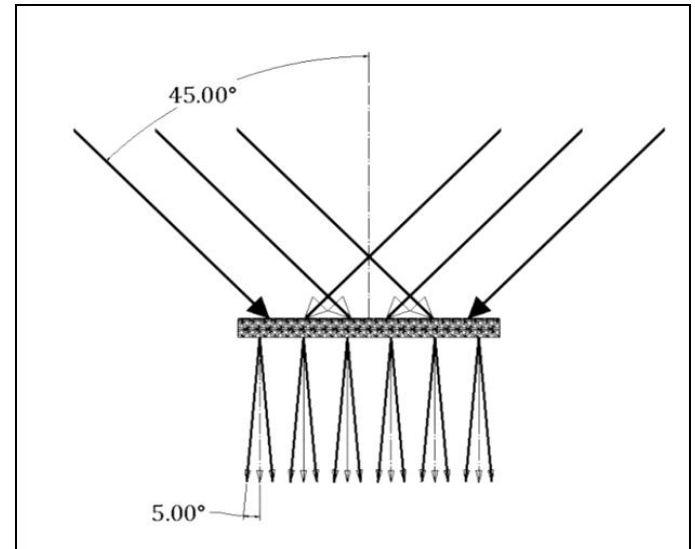
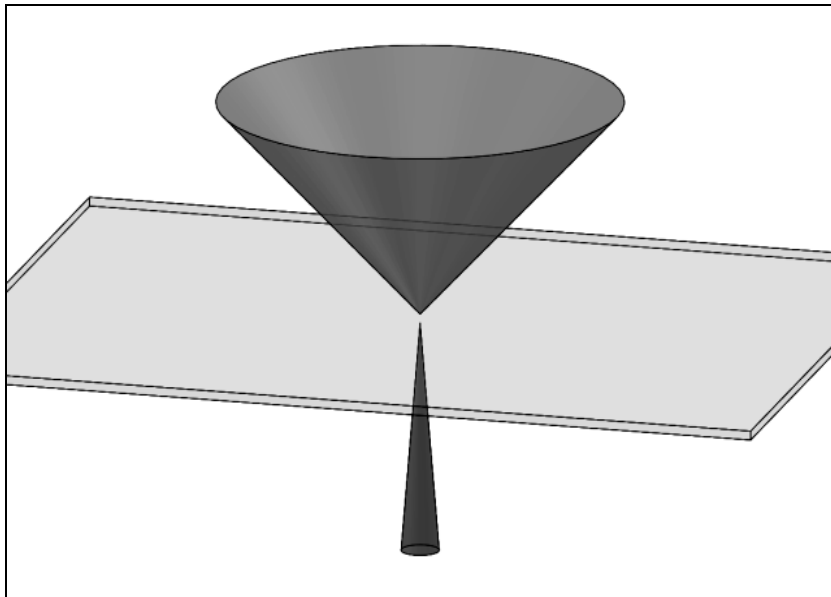


More realistic light source:
85.96% of light is emitted

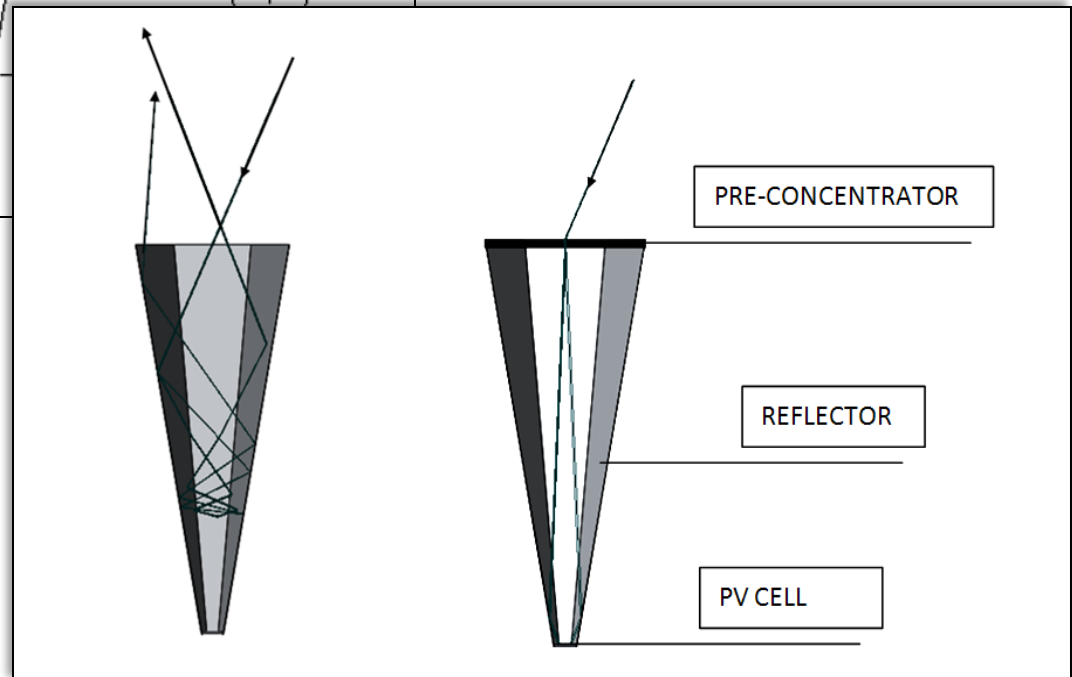
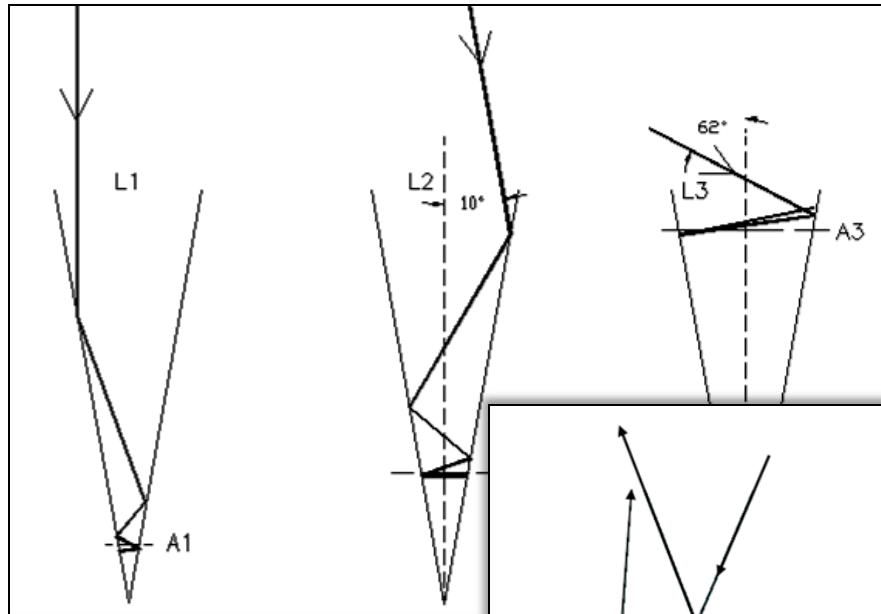


“Etendue Confining Lens”

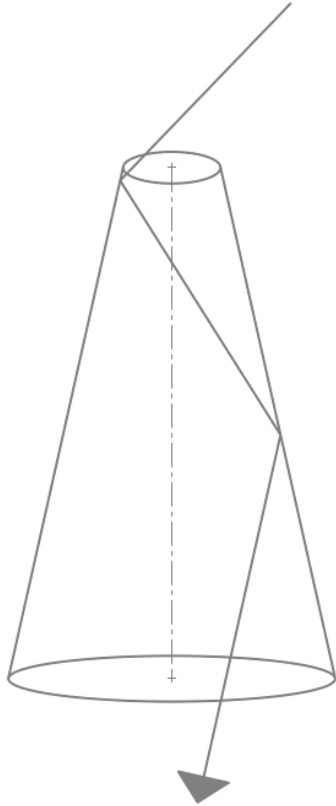
$$\theta_{o\max} < \theta_{i\max}$$



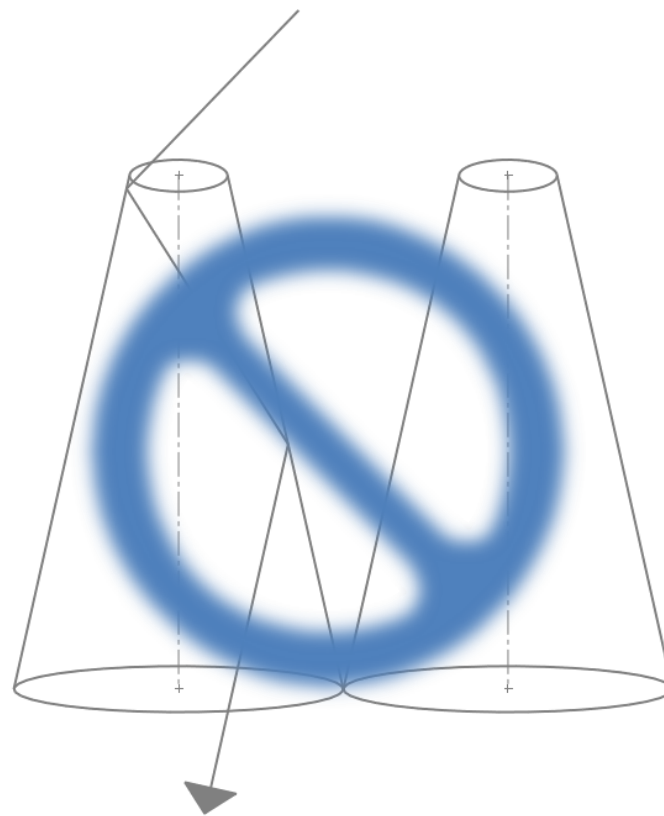
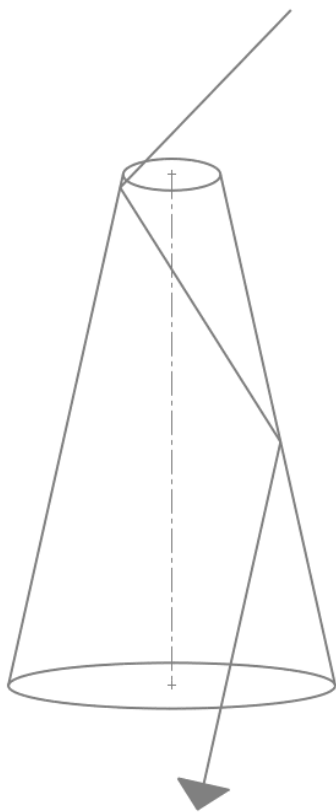
- Solar Concentrator



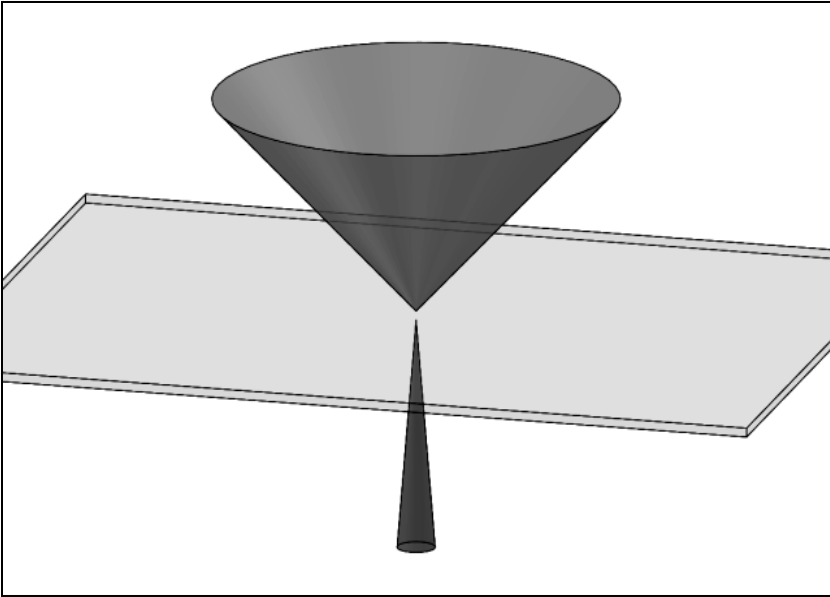
Partial Collimation thru Expansion



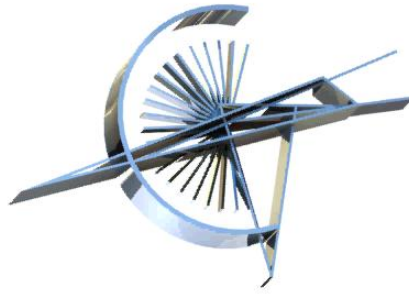
Partial Collimation thru Expansion



$$\theta_{omax} < \theta_{imax}$$



- Able to be nested
- High Throughput
- Inexpensive
- Stackable?



Project Status: