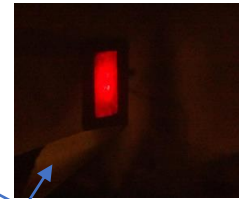


Designed precision 3 axis gantry system for piezo electric and  $\mu$  valves based inkjet printing. Aerotek linear motors operating at 200mm/s.  
*Shown is stock photo during due to confidentiality agreements*

# Laser beam shaping



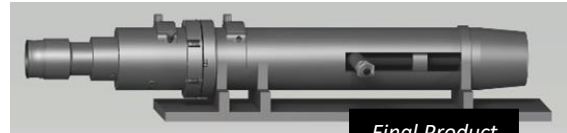
Beam shaping with Zemax



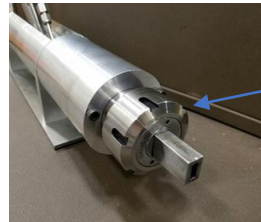
Simulation vs actual



Optical assembly prior to anodization



Final Product



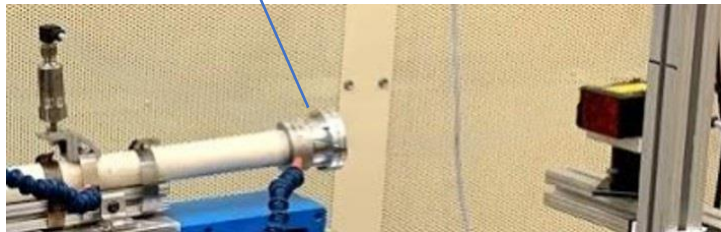
Designed a ER40 collet style system to align a rectangular nozzle and laser beam across 12inches

## Optical window design



*AR coated wedged optical window for  
Laser distance sensor*

Application: Determine the location of a crucible in a tube furnace hotspot for an automated push-pull furnace



*Serviceable  
AR coated wedged optical window  
500psi, 600degC*

