



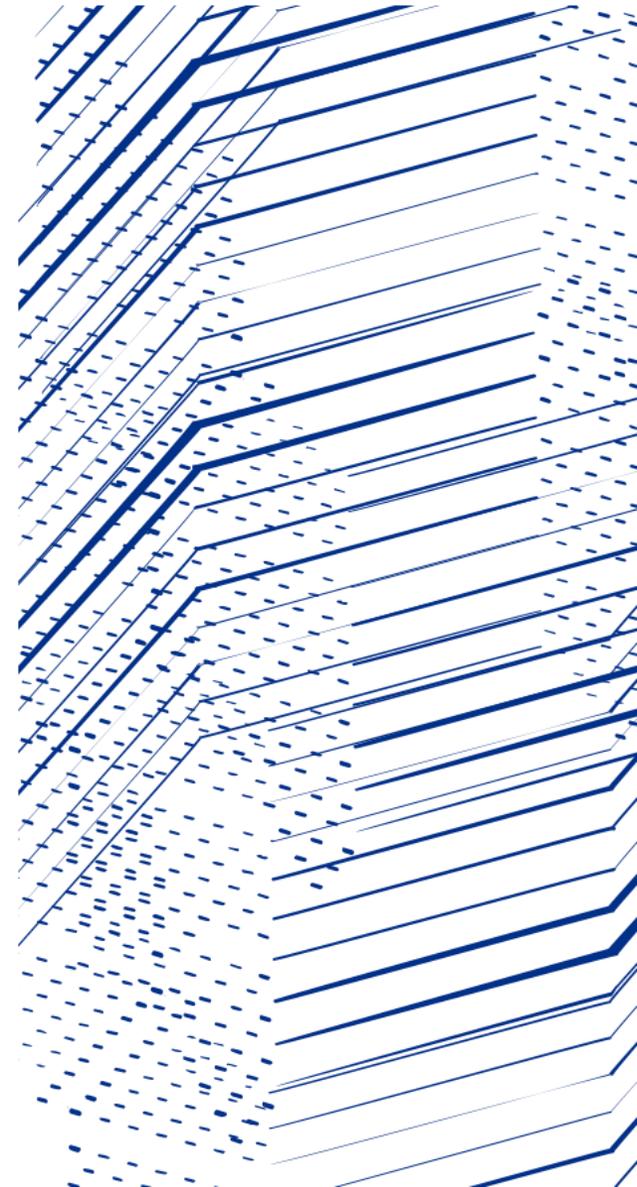
Science and  
Technology  
Facilities Council

# ITRF Project

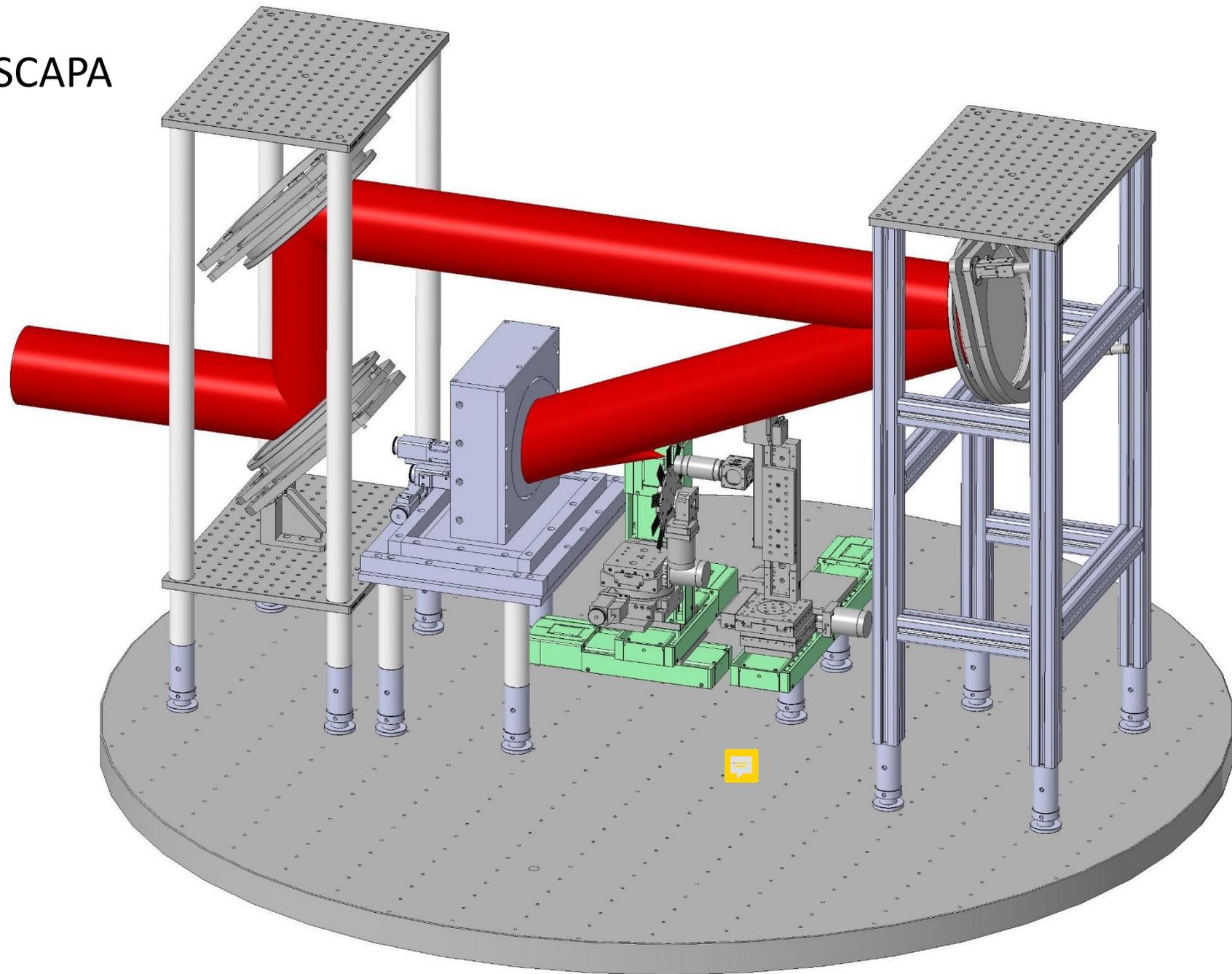
**Mechanical Engineering Design**

**ITRF Target Chamber Discussion**

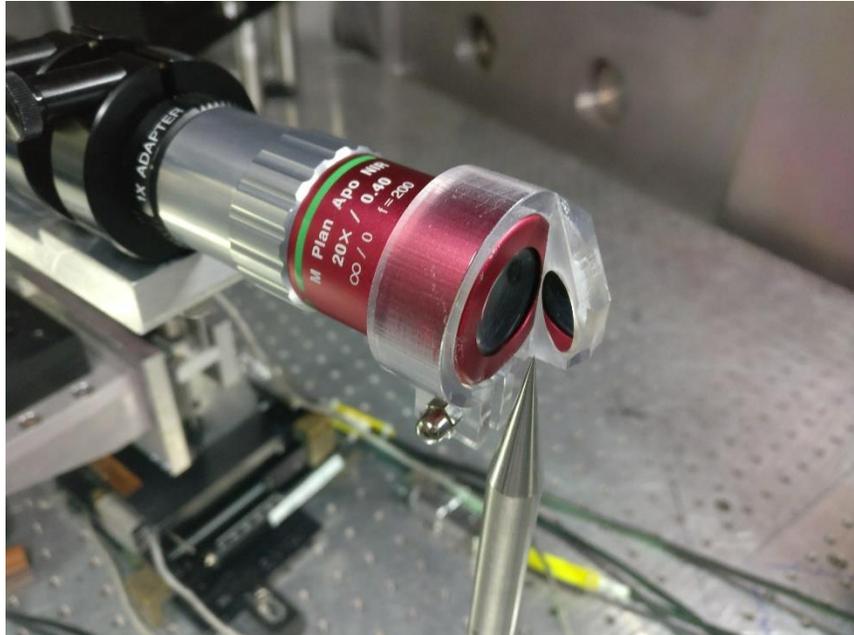
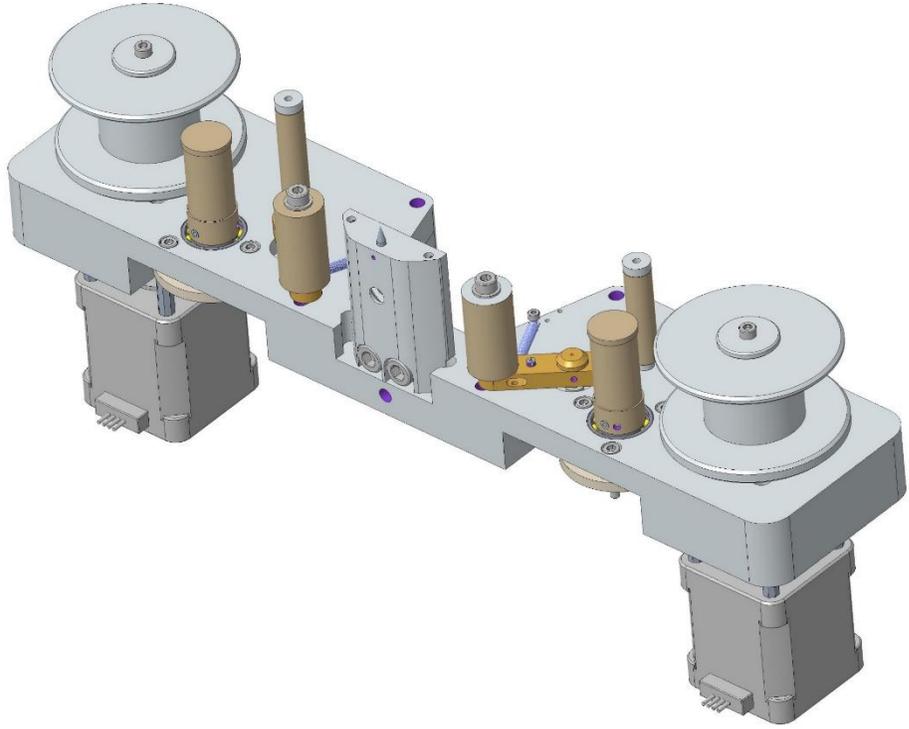
Clive Hill  
23/05/23



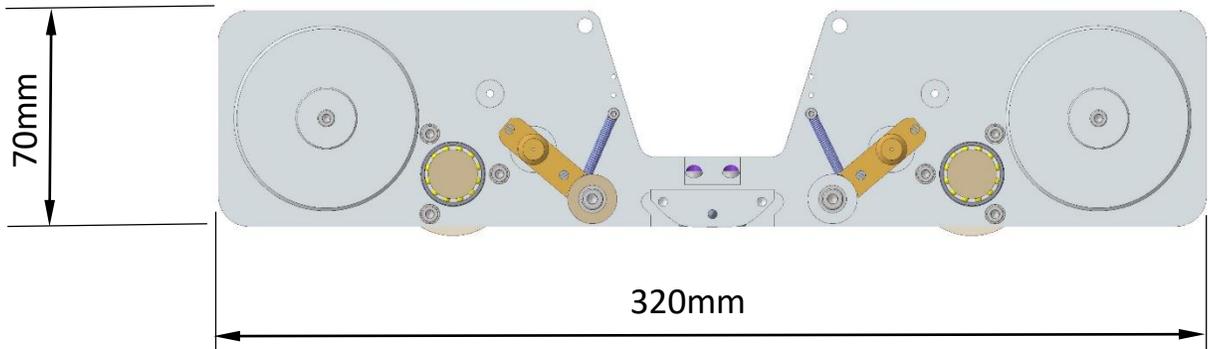
For Reference  
Target Set Up SCAPA



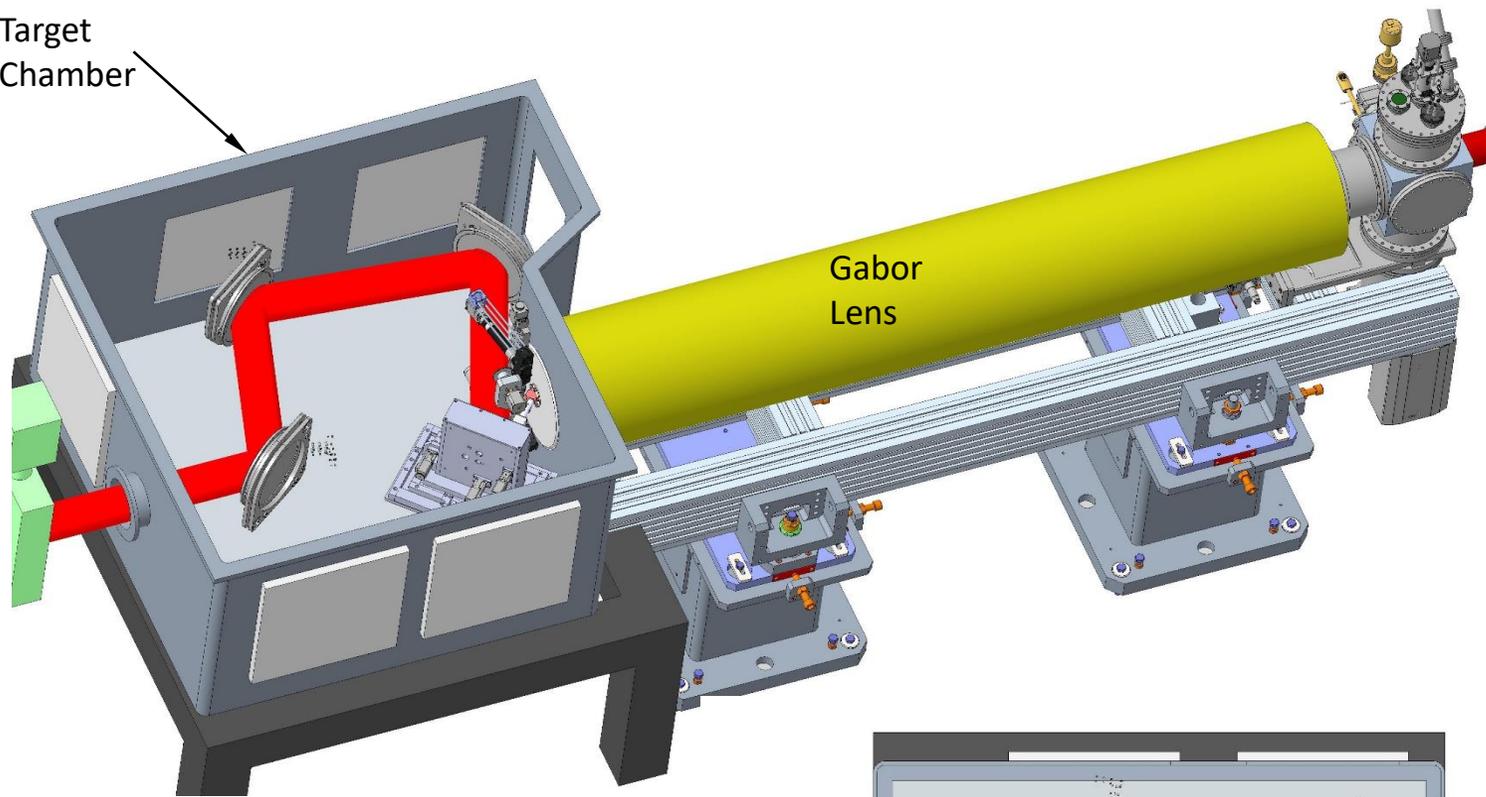
# Tape Drive



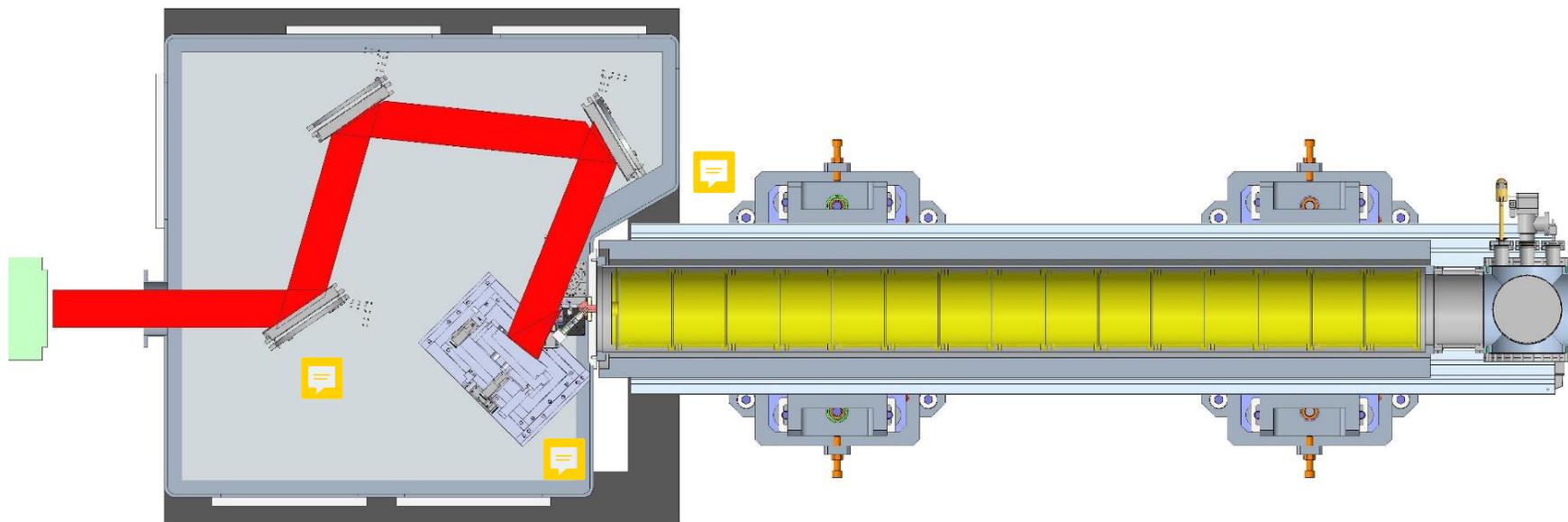
Camera and mirror



Target Chamber



LhARA Target Chamber and Gabor Lens

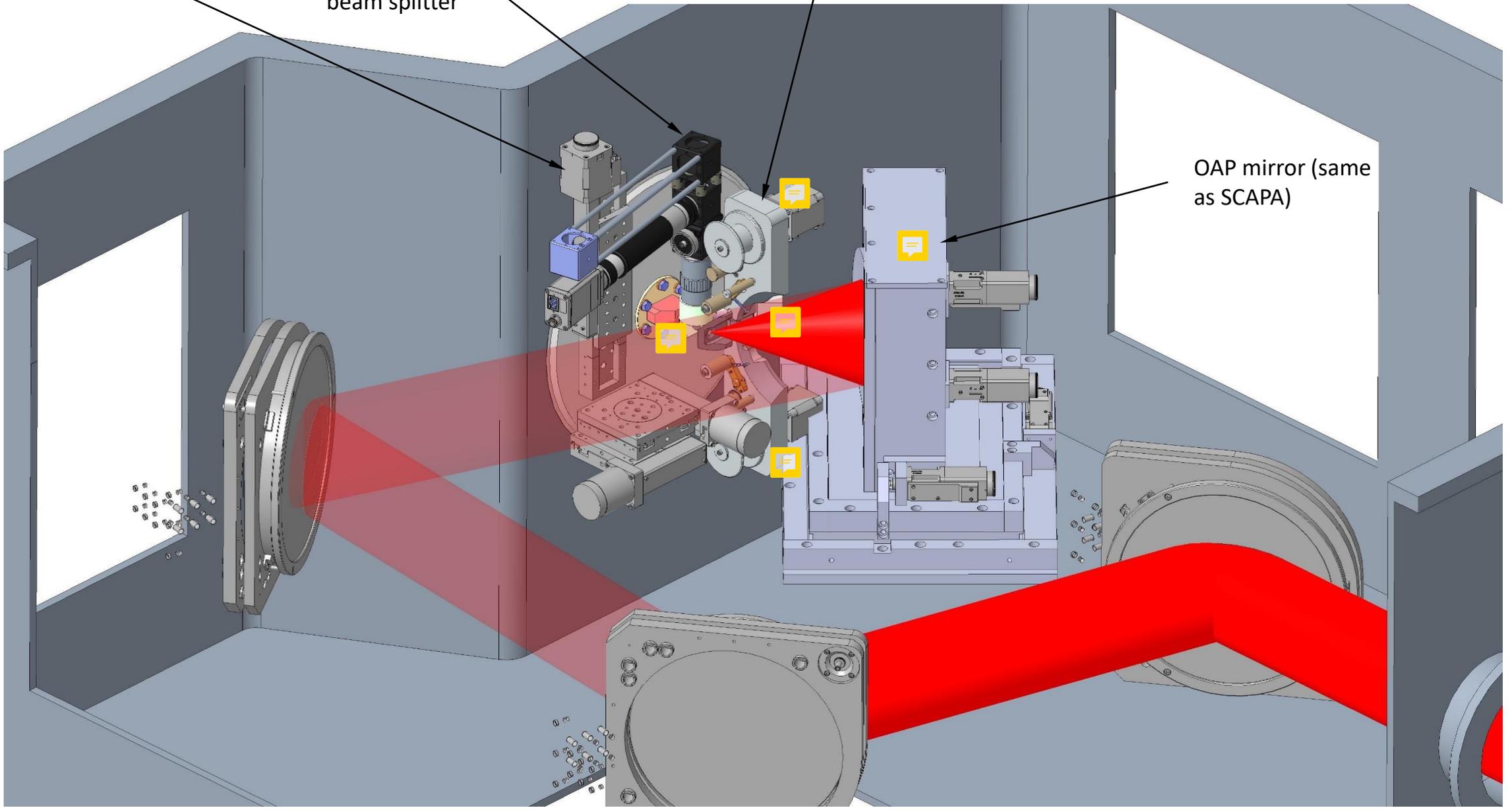


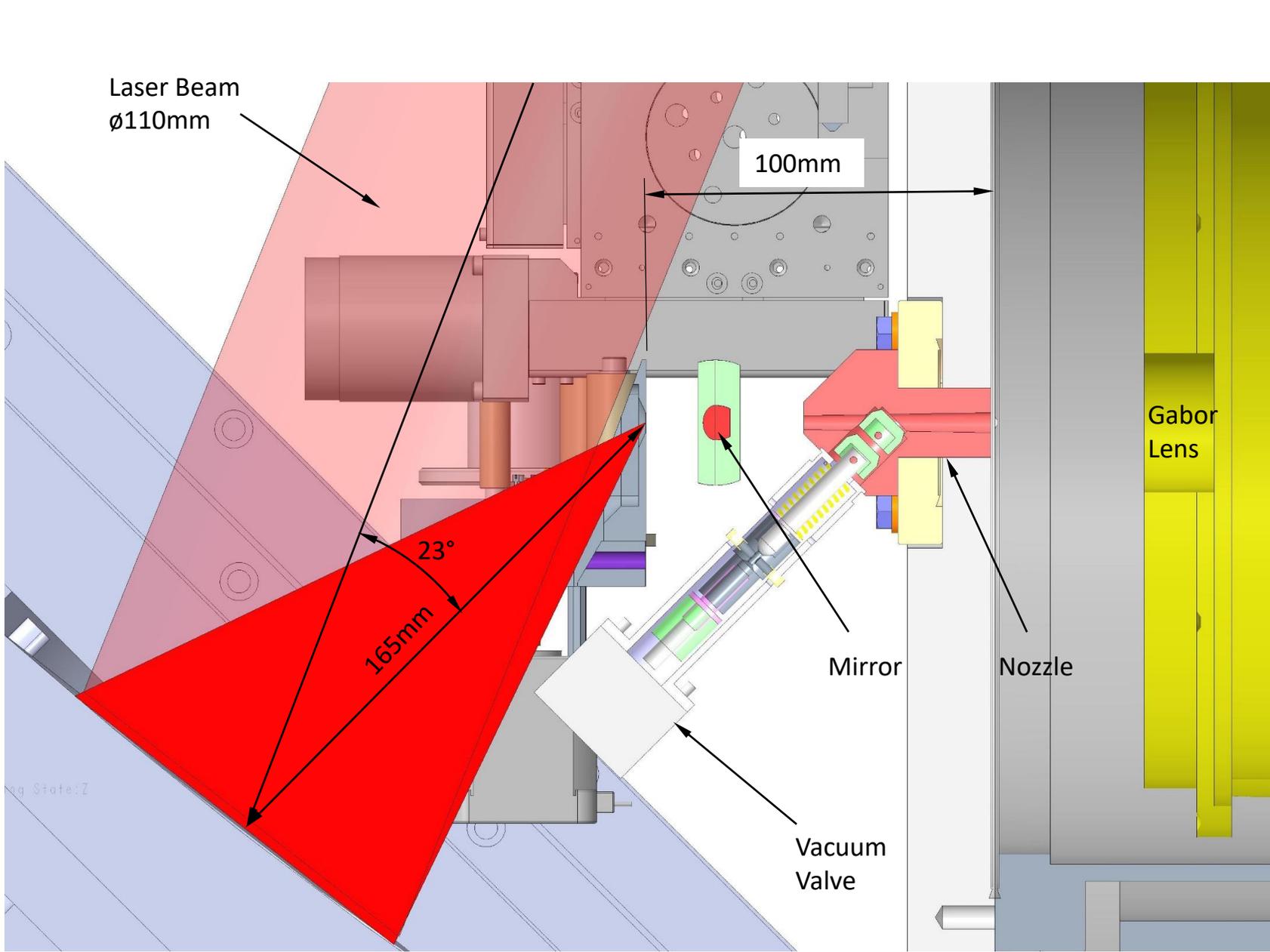
Translation stages

Mirror, camera and  
beam splitter

Tape  
Drive

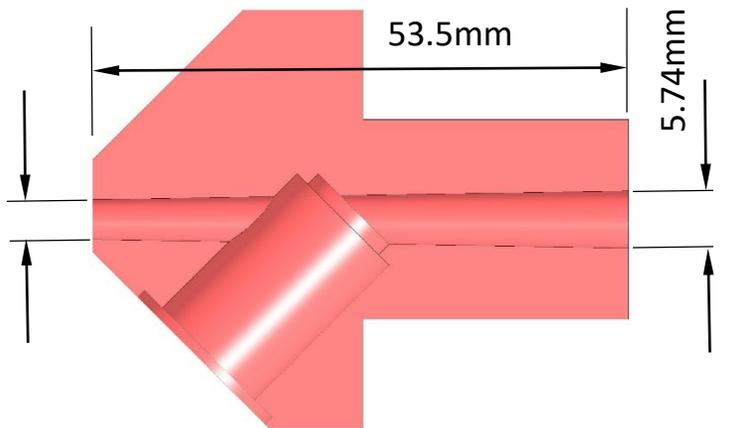
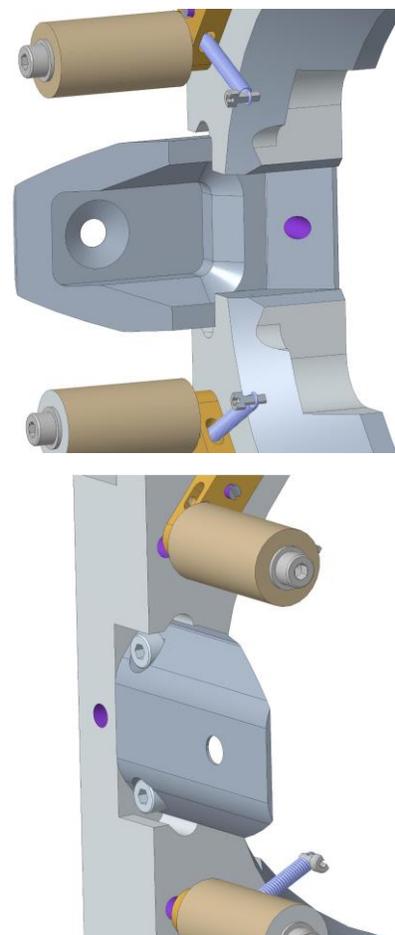
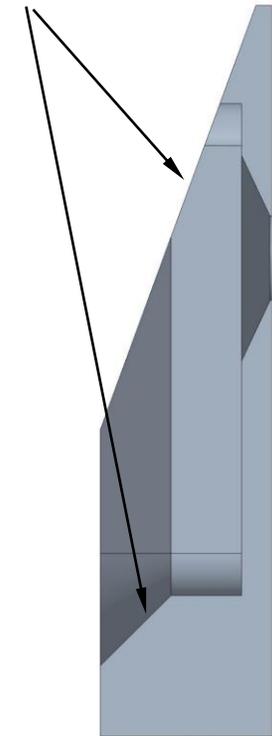
OAP mirror (same  
as SCAPA)

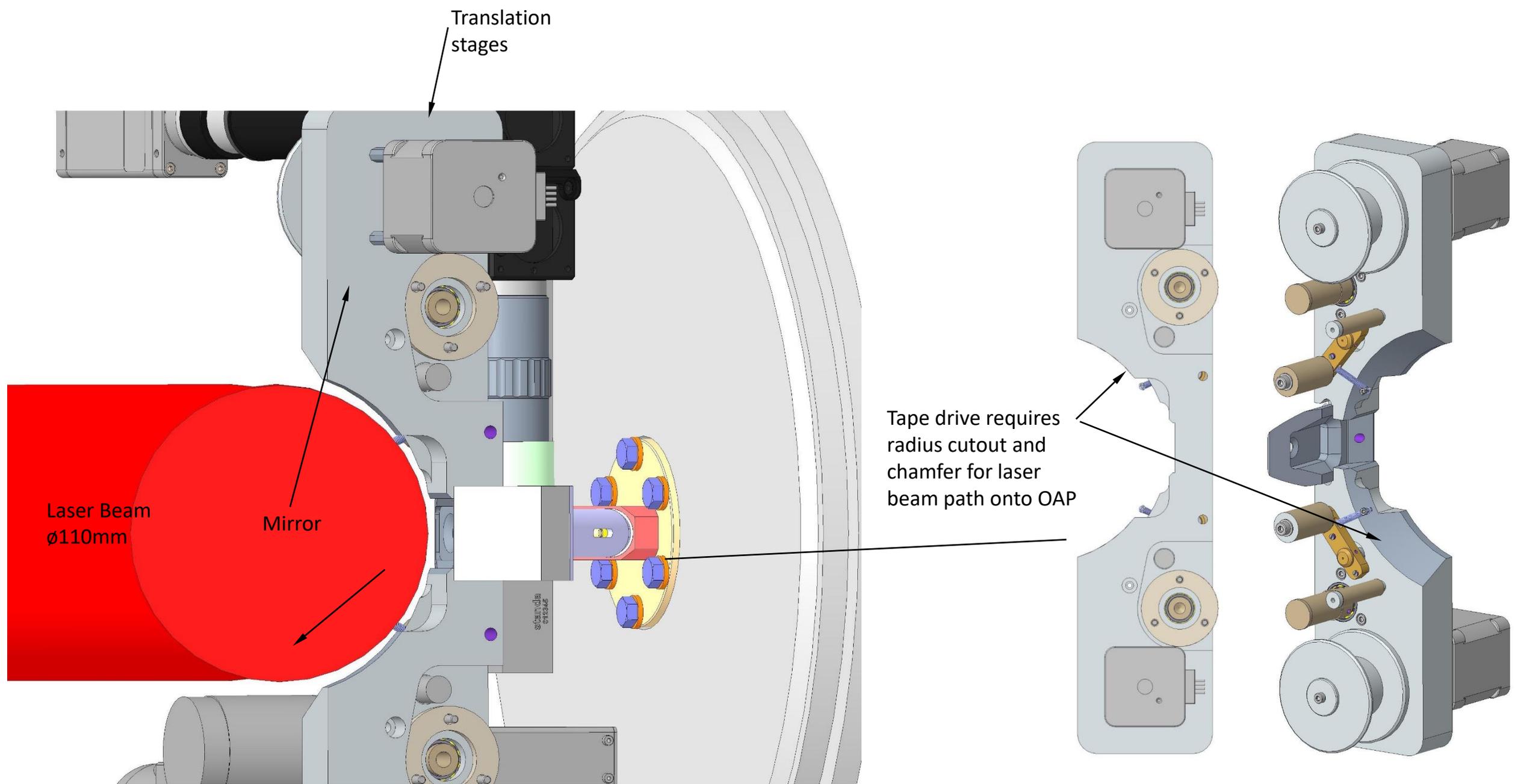


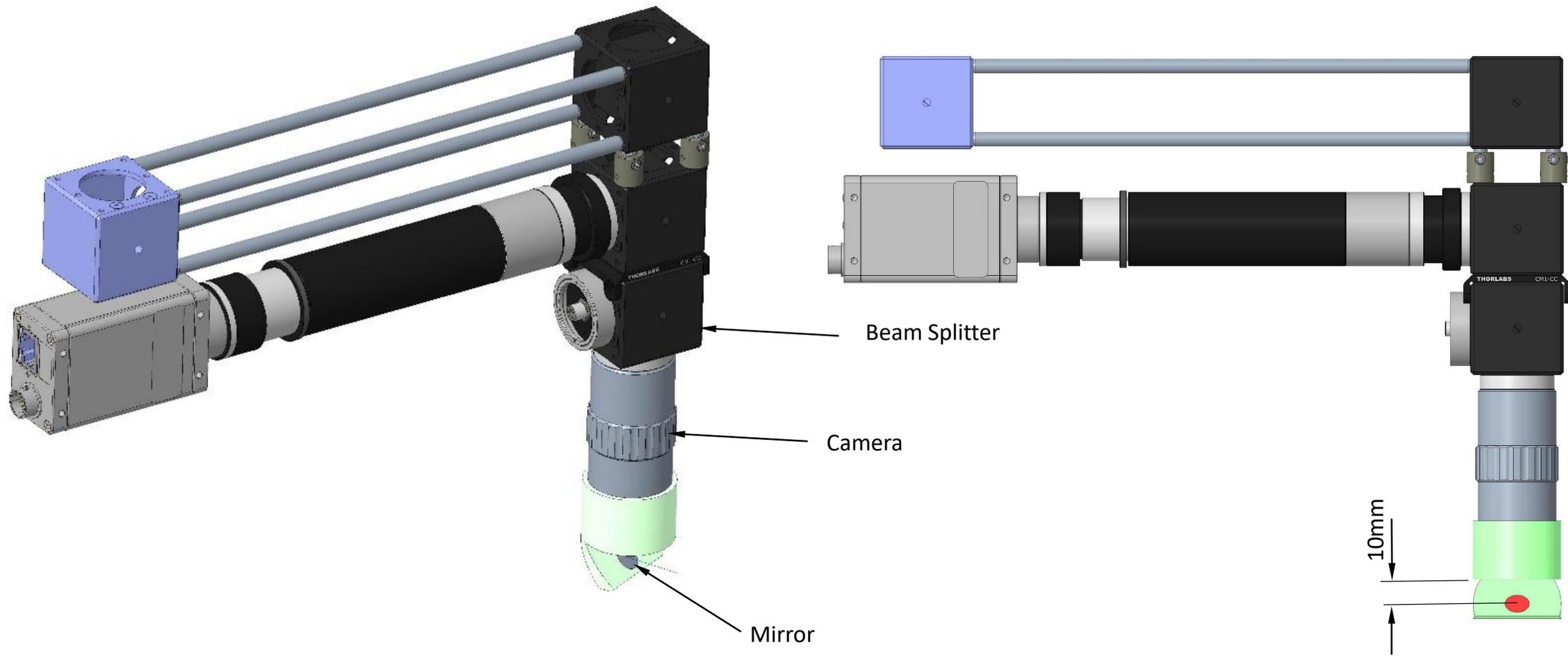


Section View at Beam Height

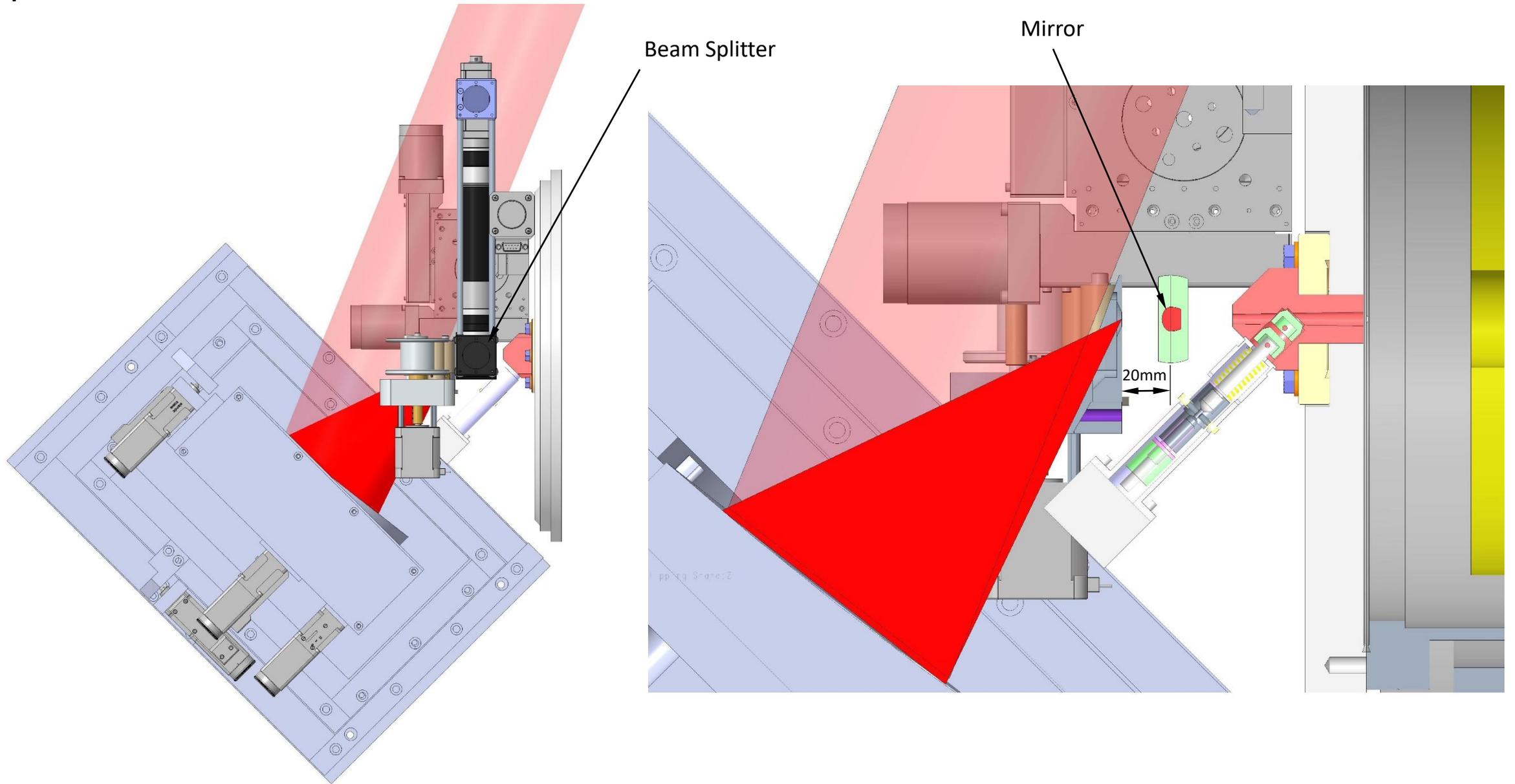
Component with chamfer features required for laser beam clearance



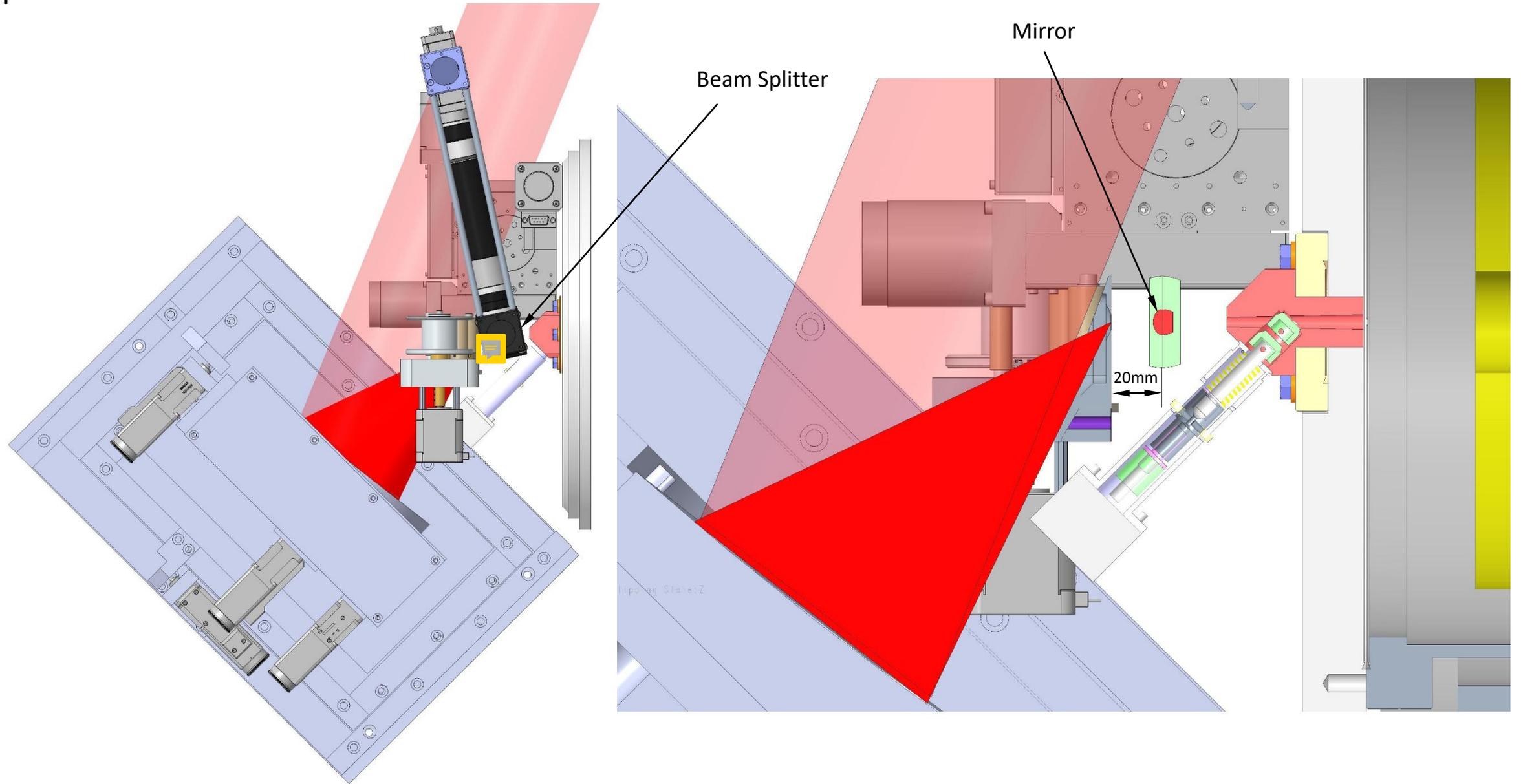




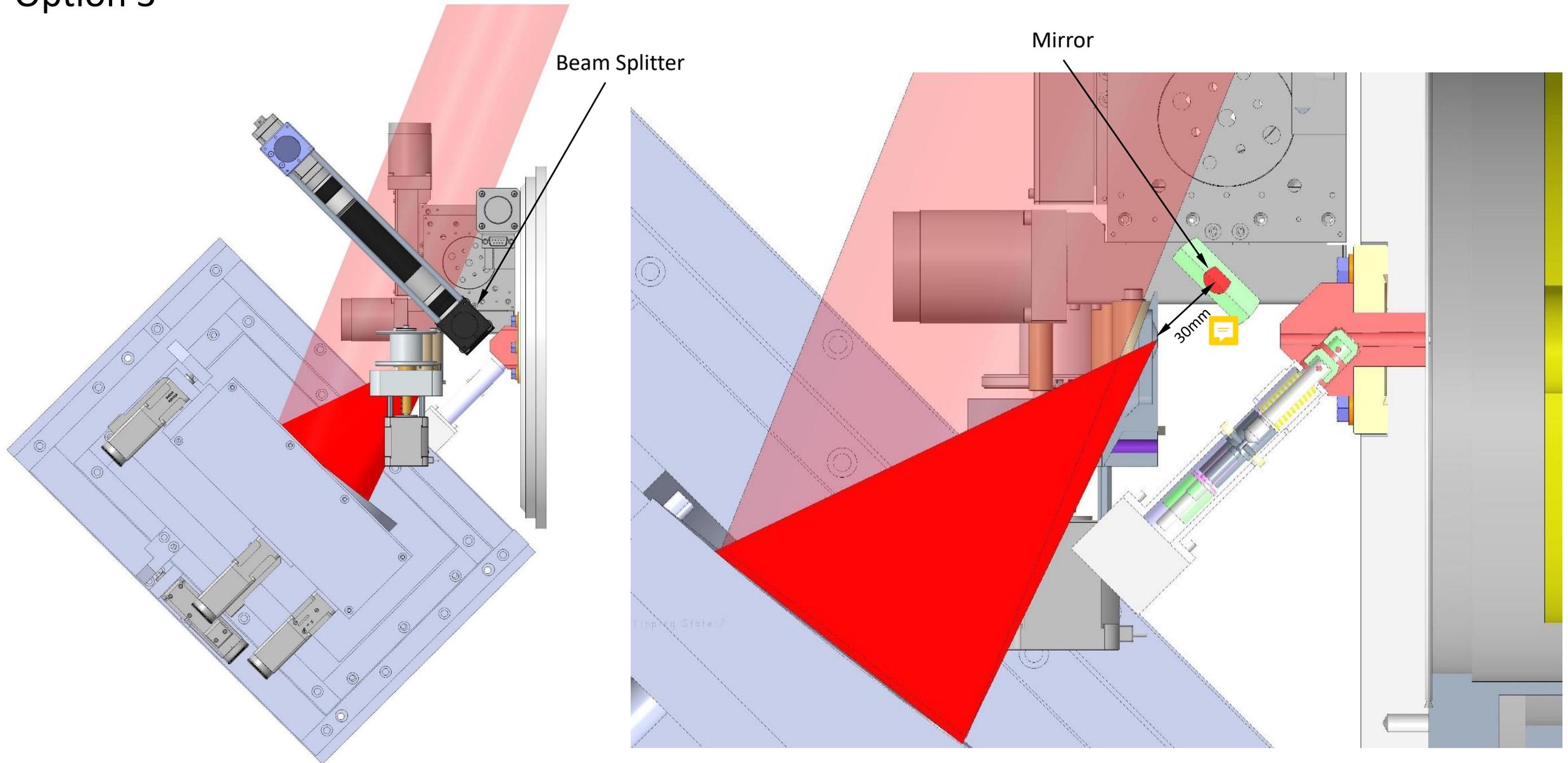
# Option 1



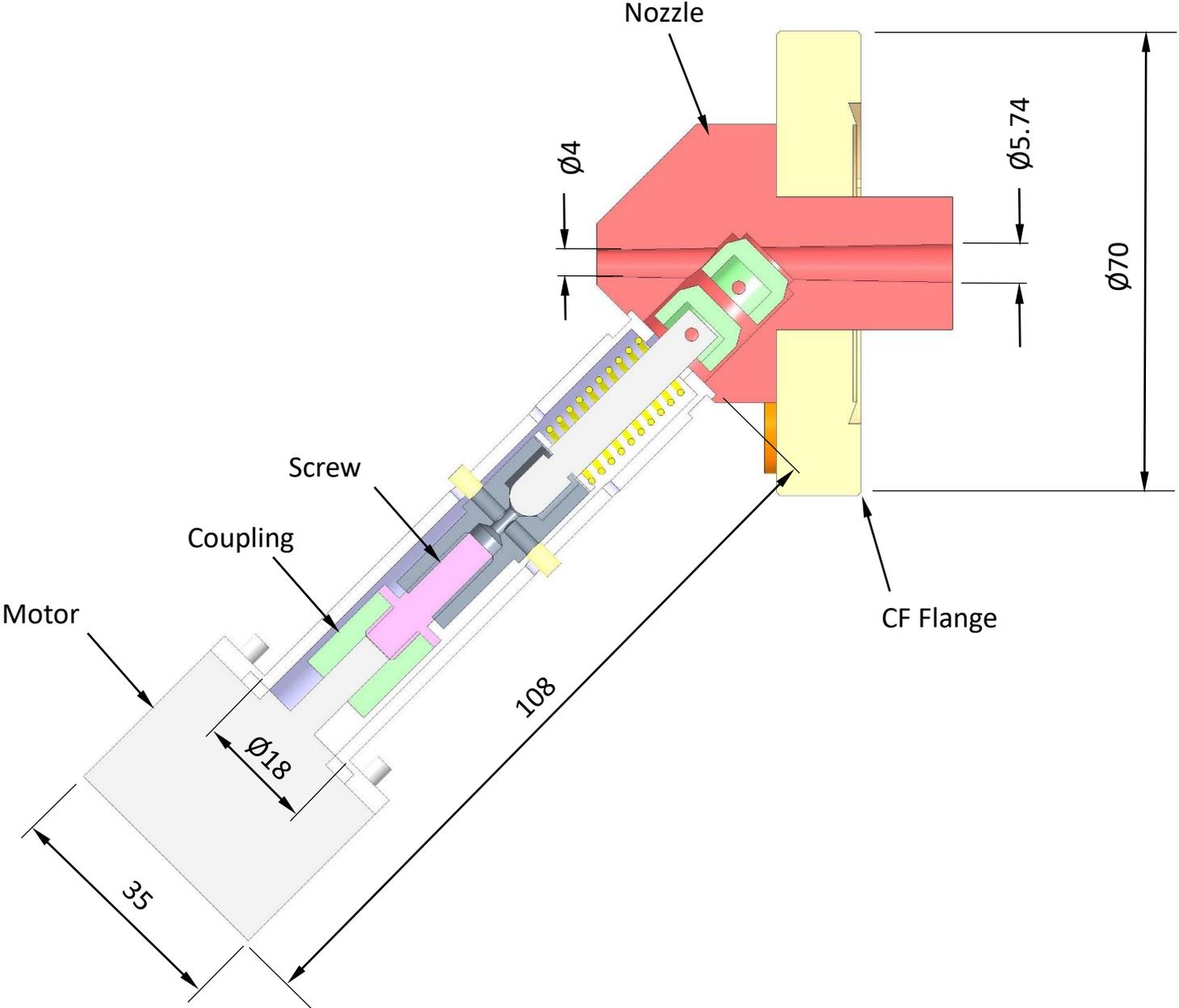
# Option 2



# Option 3



# Vacuum Valve and Nozzle



# Questions

1. Acceptable minimum clearance between laser beam and components
2. Mirror and beam splitter, preferred position and orientation
3. Range and accuracy of required translation stages
4. Alignment pin on tape drive – alternative design for setting up