

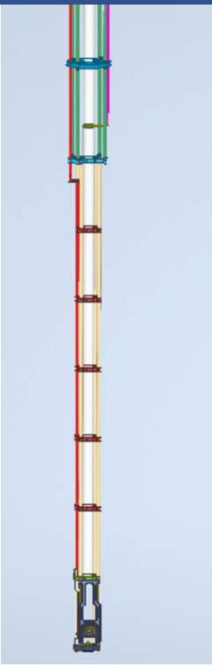
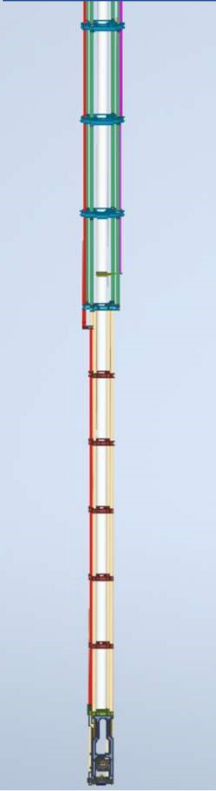
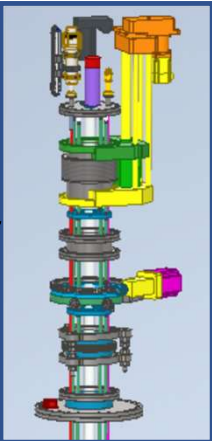
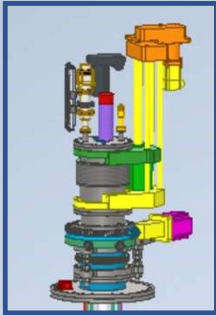
DUNE Laser Periscope Design Progress

Calibration Meeting 2-20-20

Jan Boissevain

DUNE Laser Periscope

Explode



Moveable Mirror Actuator

Laser Periscope Insert

UHVD Linear Translation Component

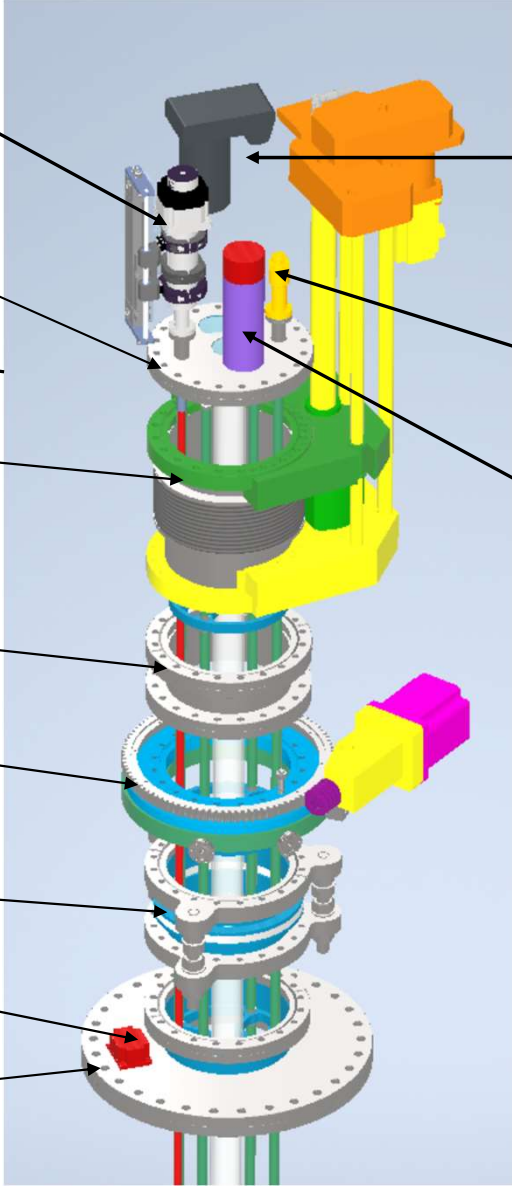
Conflat 8" Nipple

Thermionics RNN-600

Port Aligner

Inclinometer

Conflat 14" to Conflat 8" Adapter

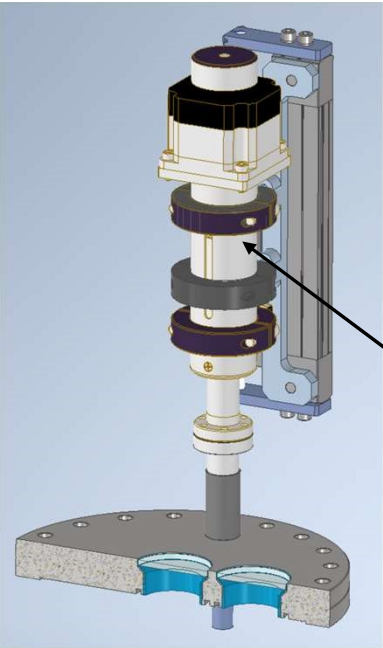


Camera placeholder magically supported – can view either viewport

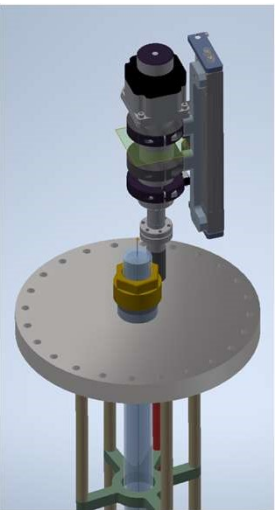
Alignment Target Actuator

PMT placeholder – can view center viewport (shown retracted)

Change From SBND Laser Periscope Starting Point

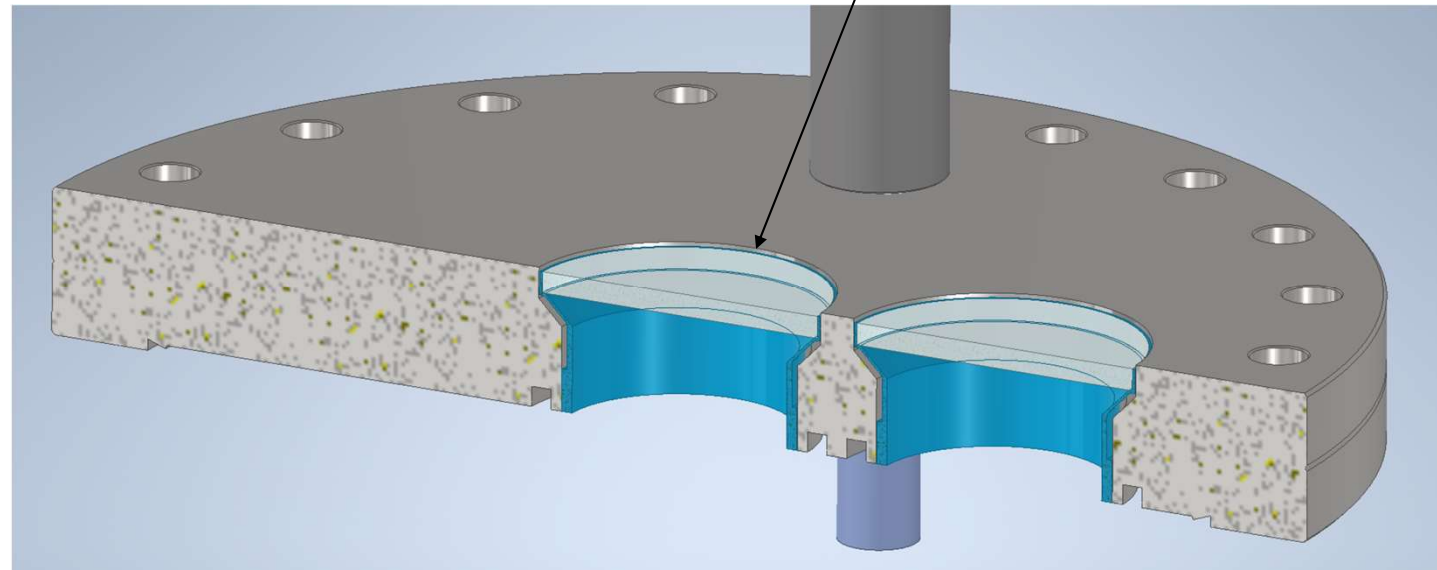


Moveable Mirror
Actuator

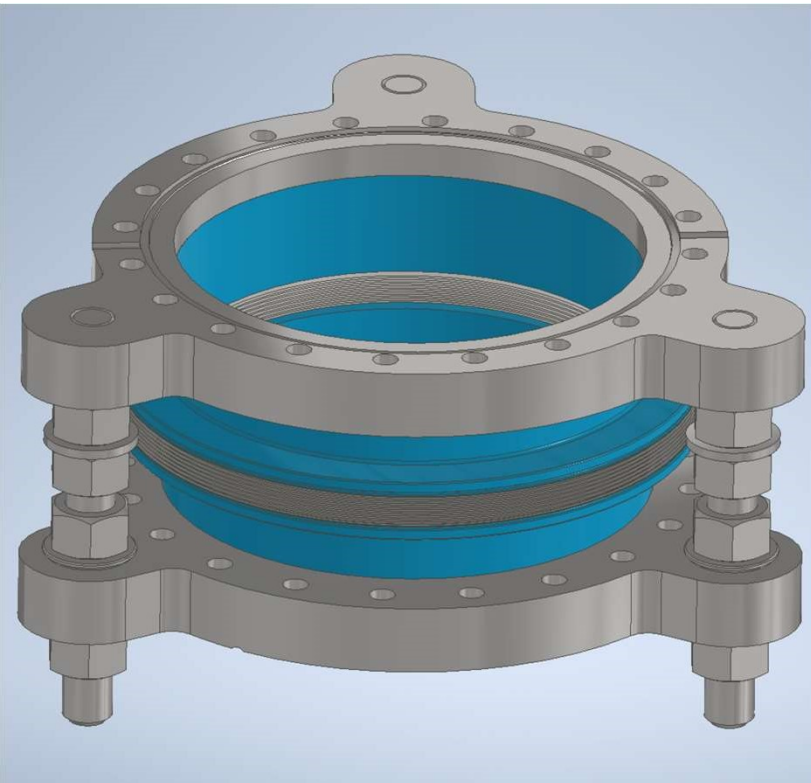


SBND

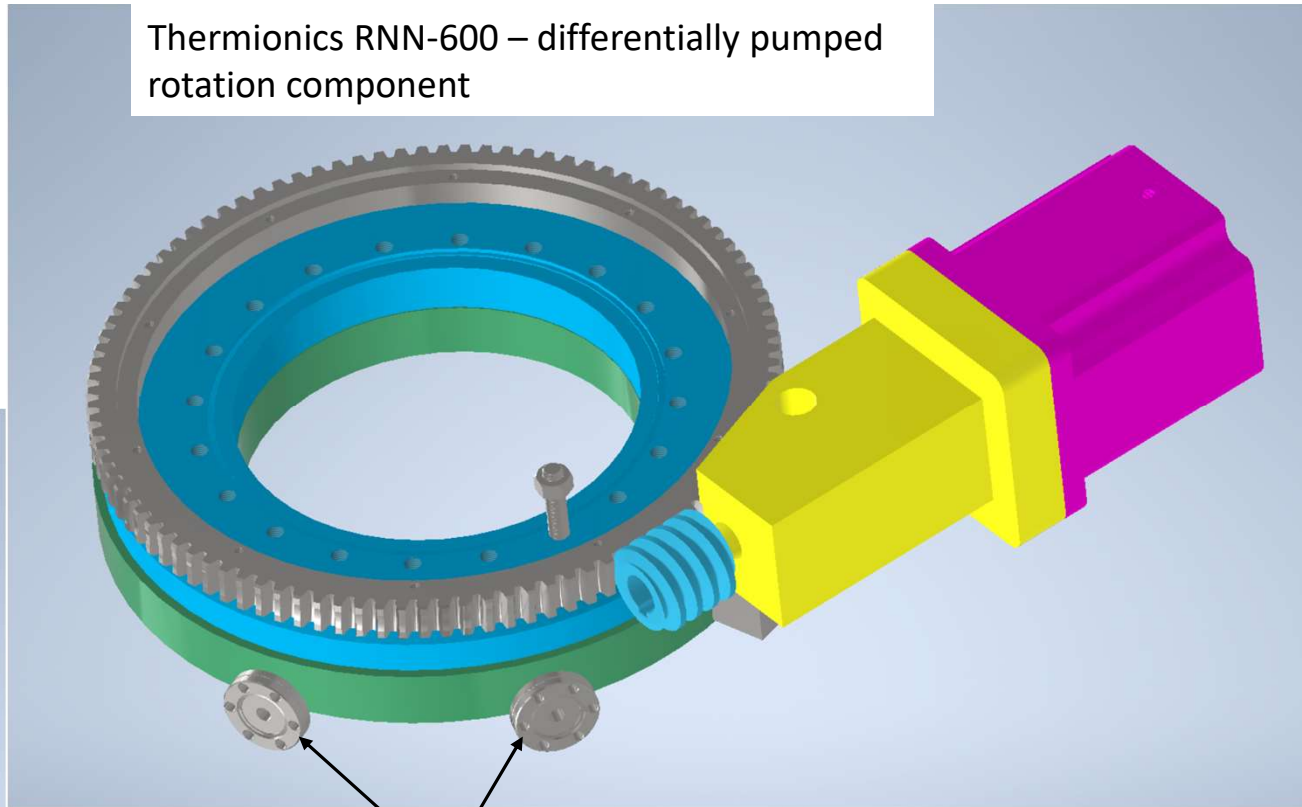
Insulator Seal 107330 View Ports
welded to top flange ($\text{\O}34.6\text{mm}$)
– one port centered, one port
offset by 2"



UHV Port Aligner PA150H



Thermionics RNN-600 – differentially pumped rotation component



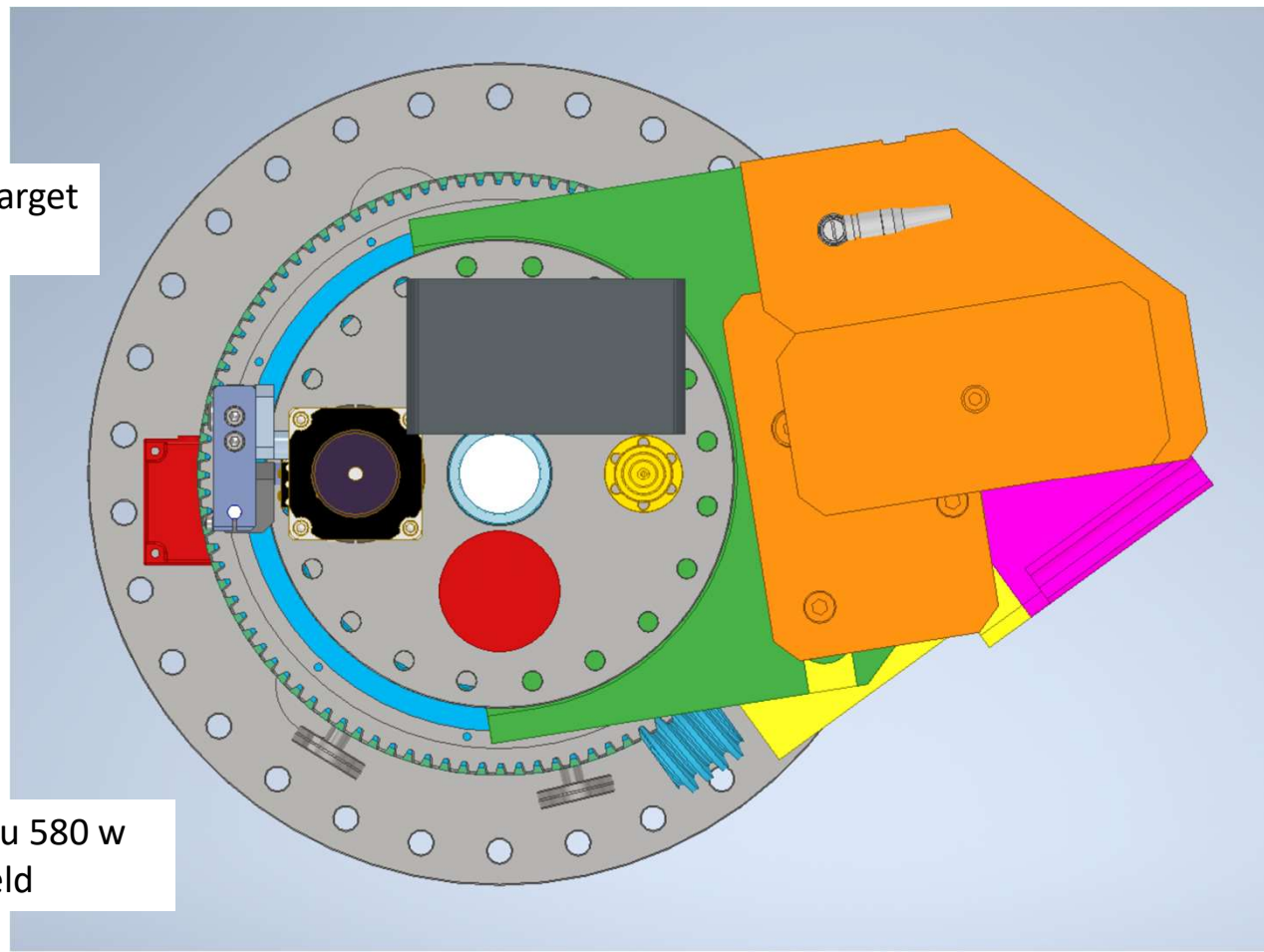
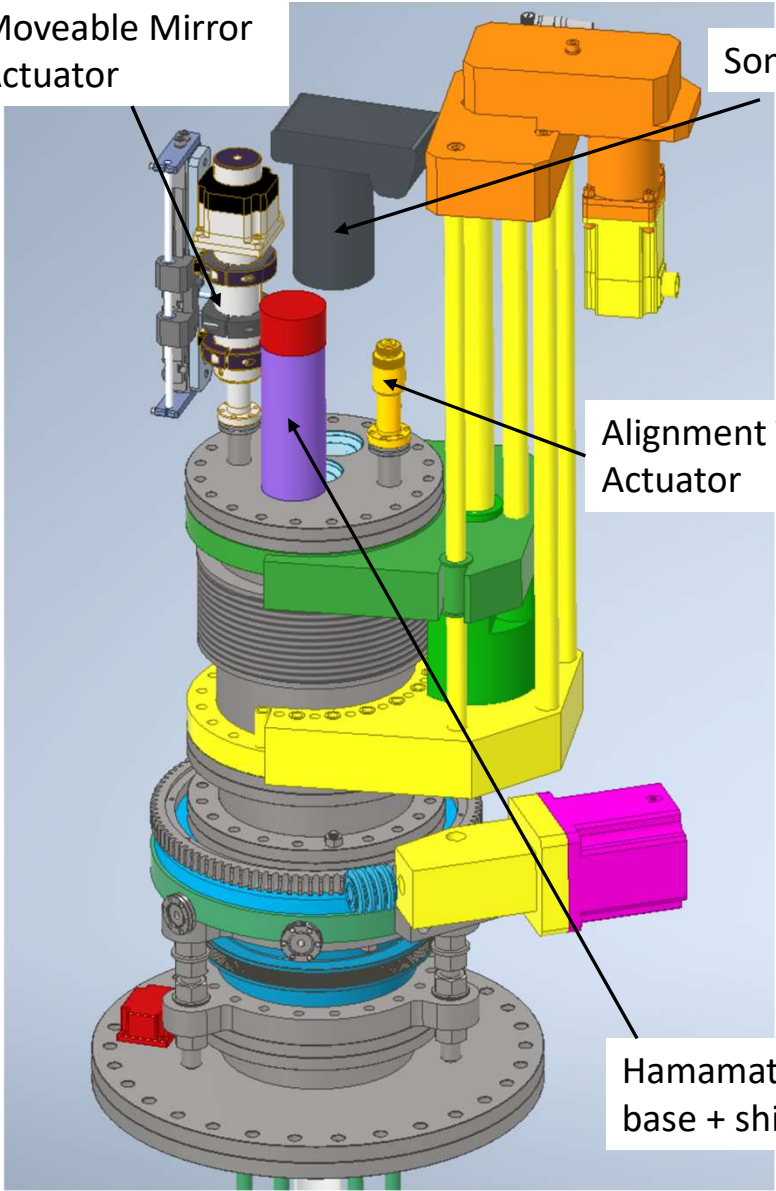
Propose to connect to port purge

Moveable Mirror
Actuator

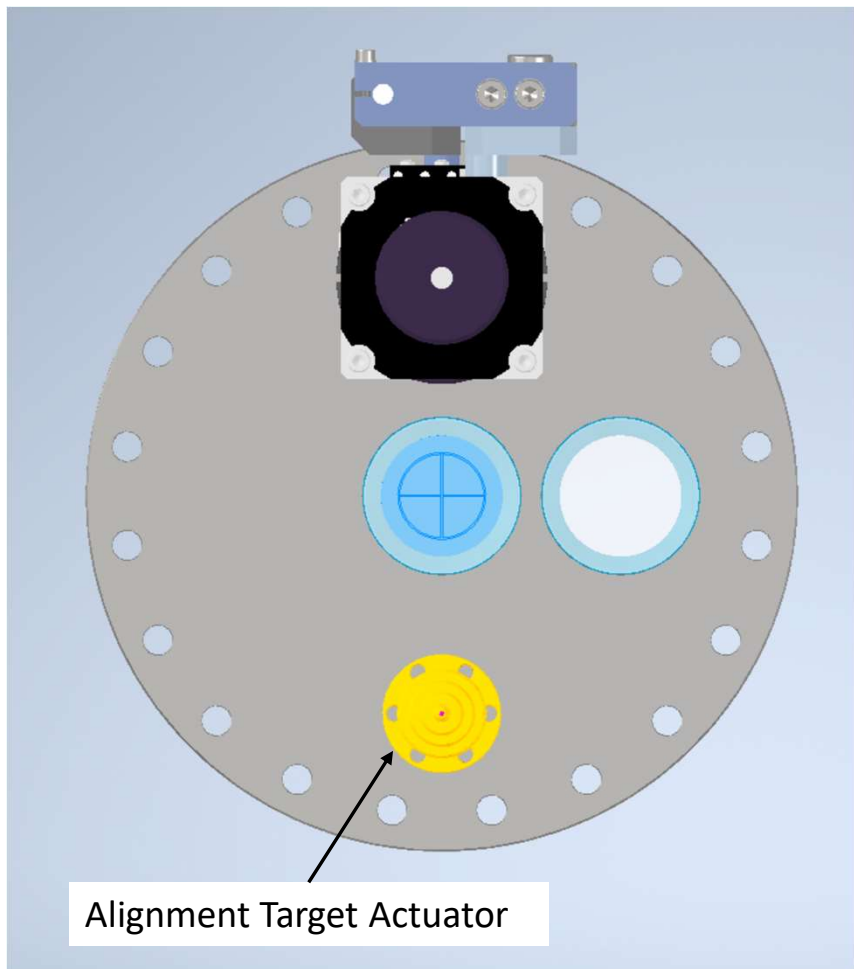
Sony A6000 w lens

Alignment Target
Actuator

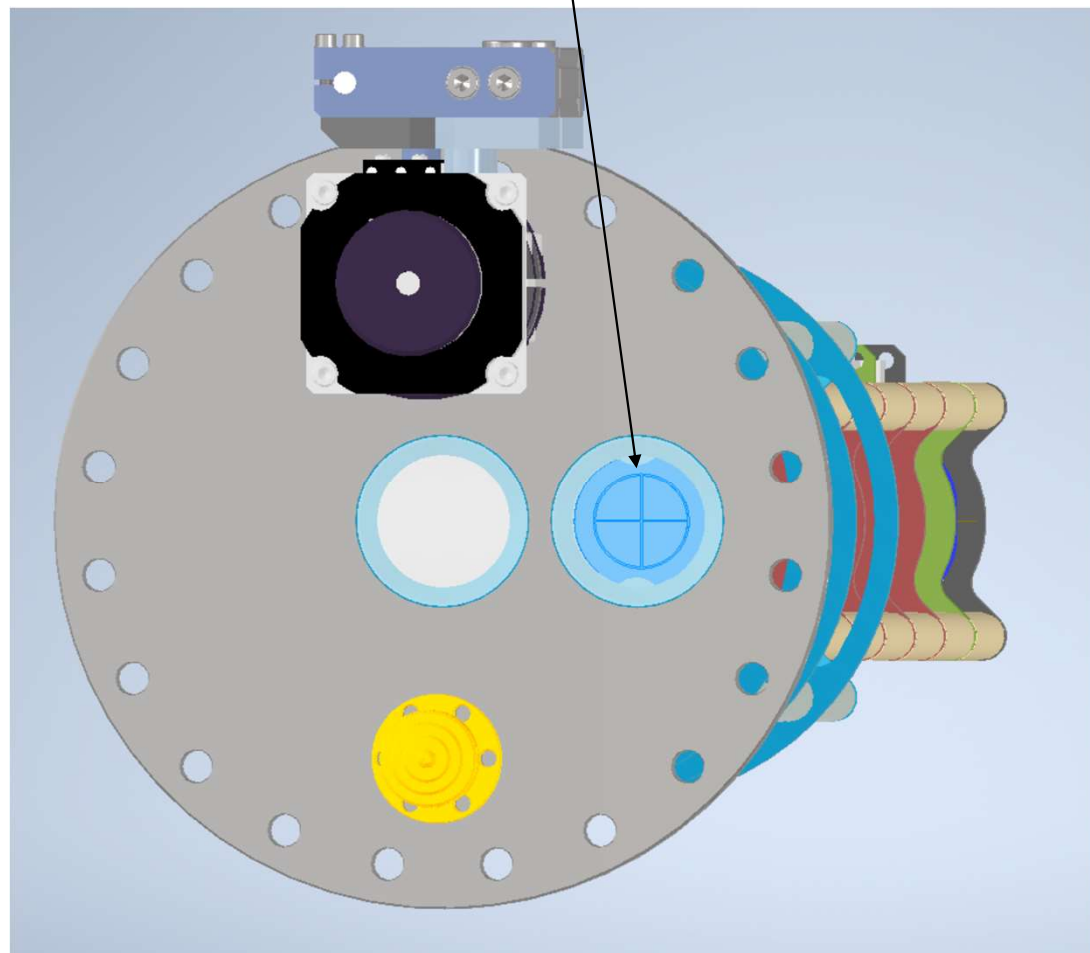
Hamamatsu 580 w
base + shield

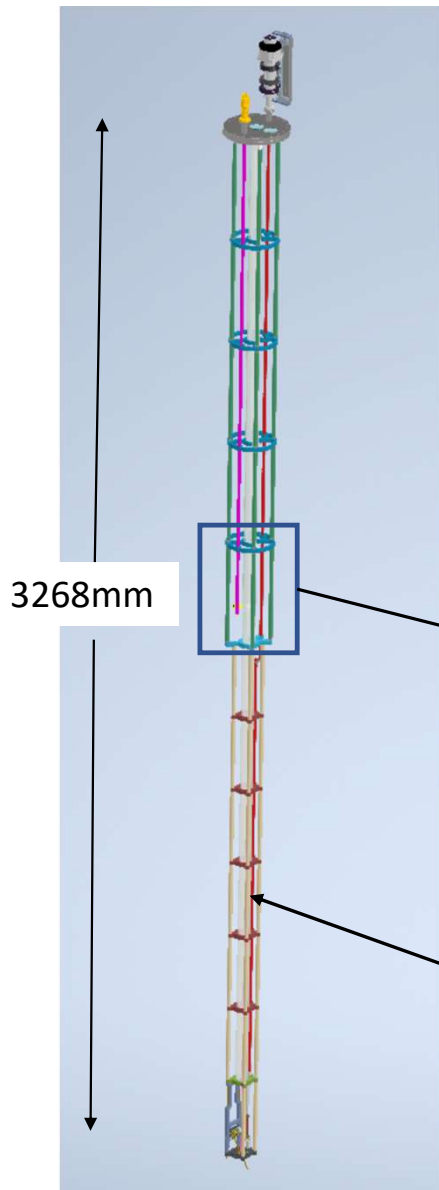


Alignment Target in position



Camera can view target when the alignment target is in position

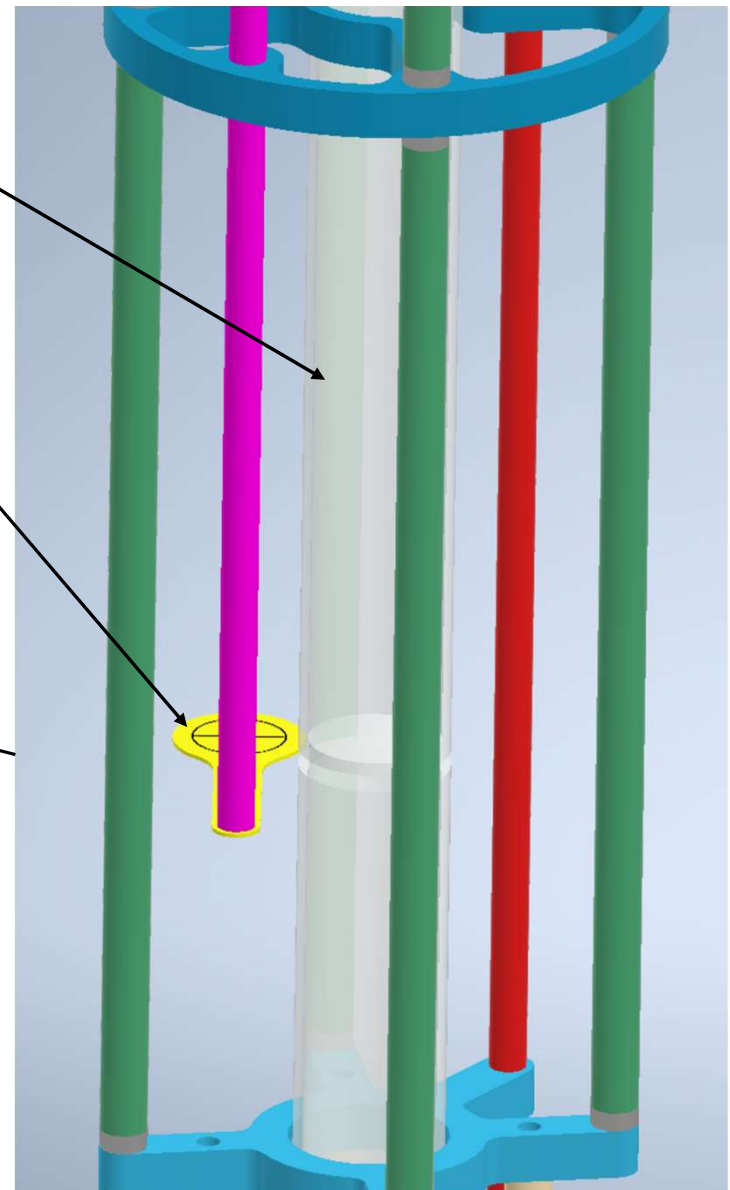


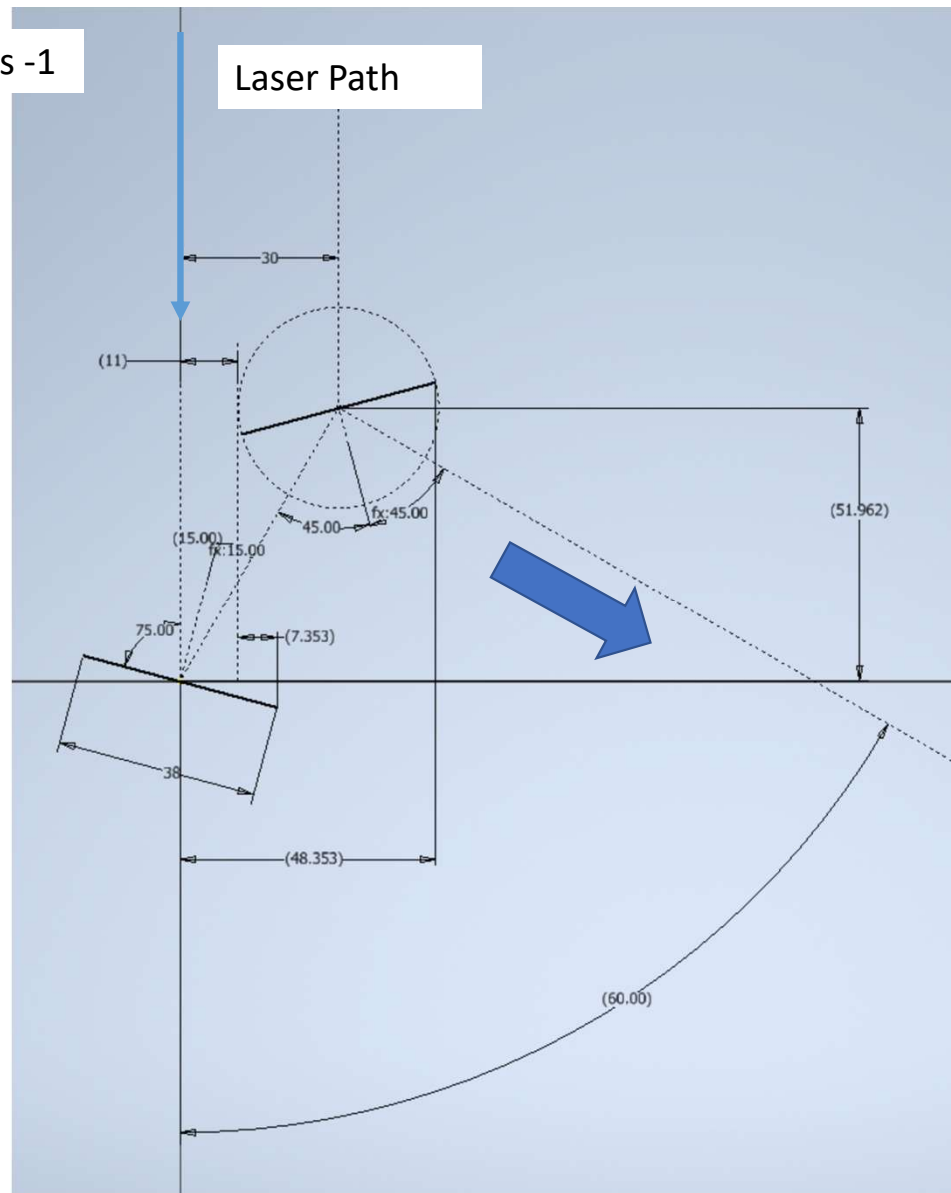
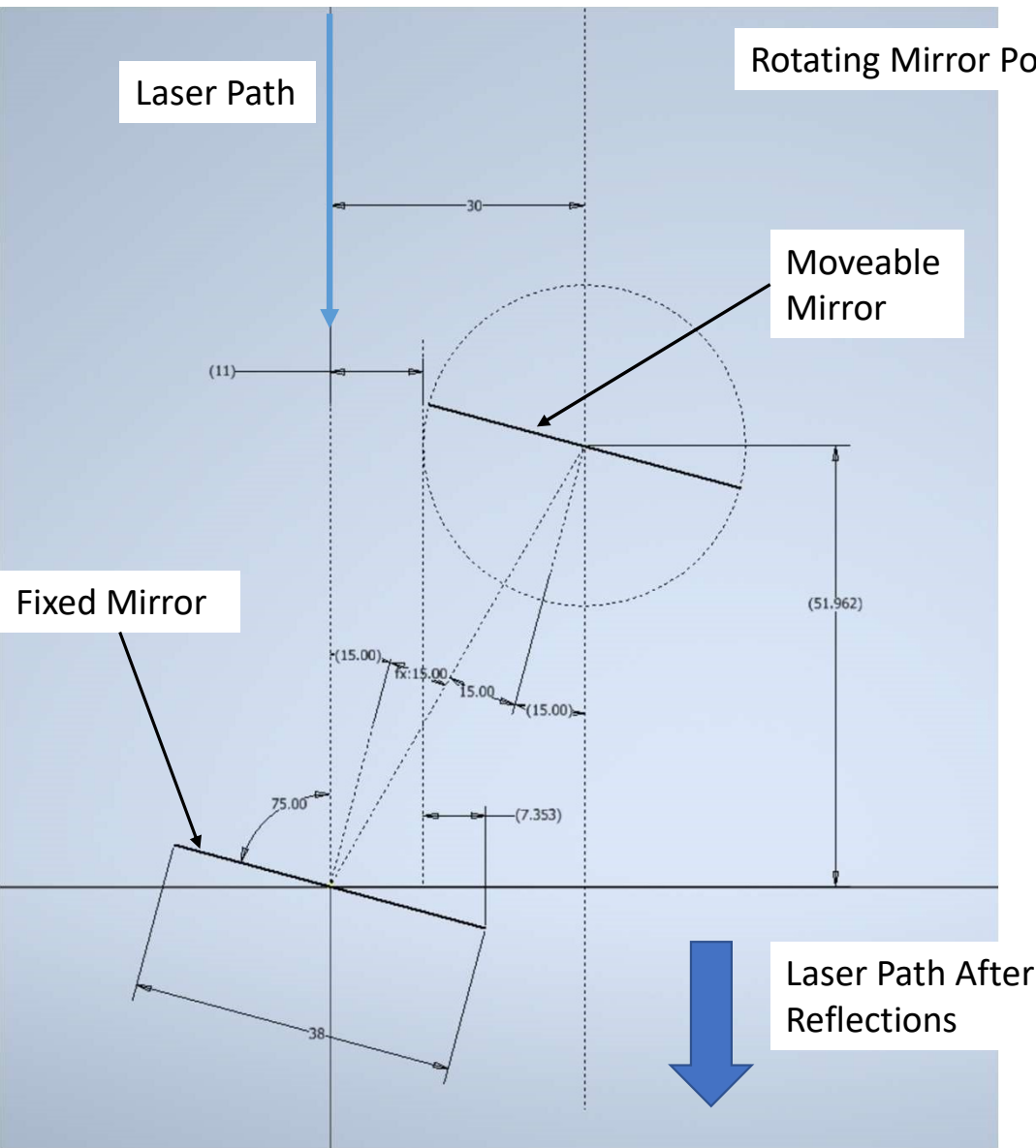


40mm x 2.5mm
wall x 1515mm
long fused silica
tube shown x2

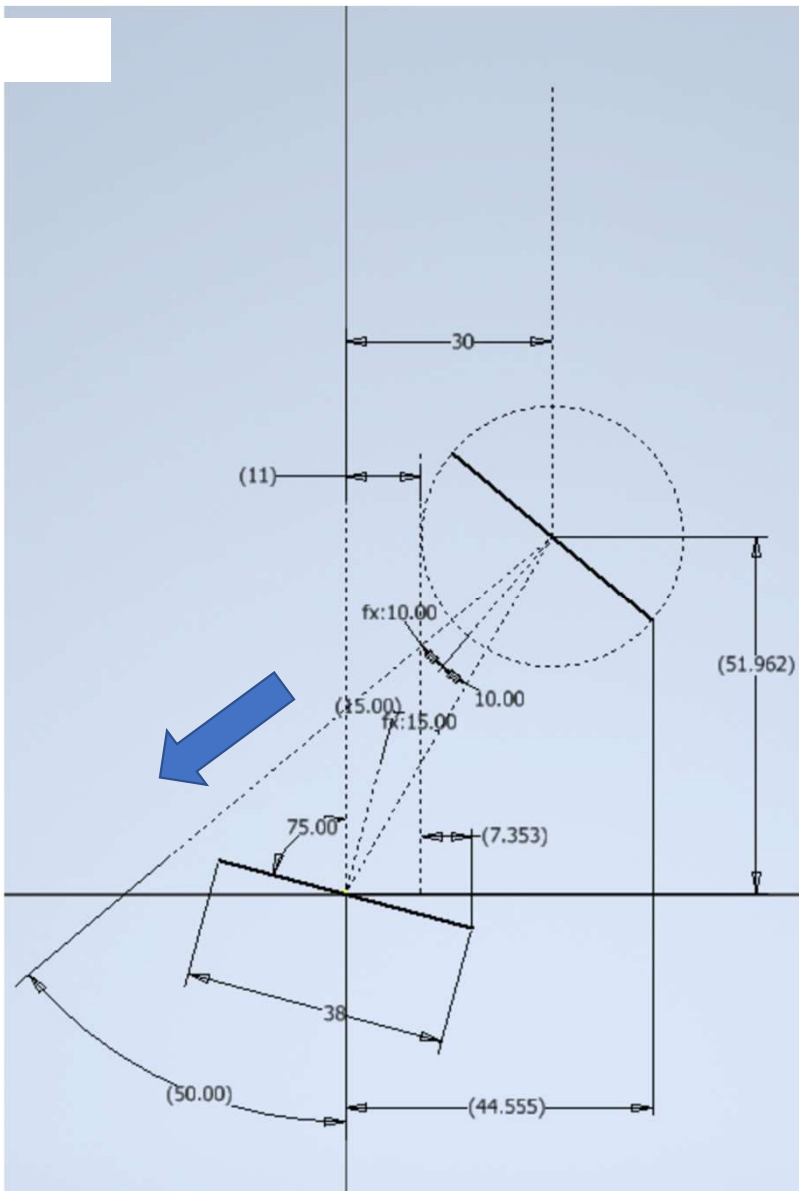
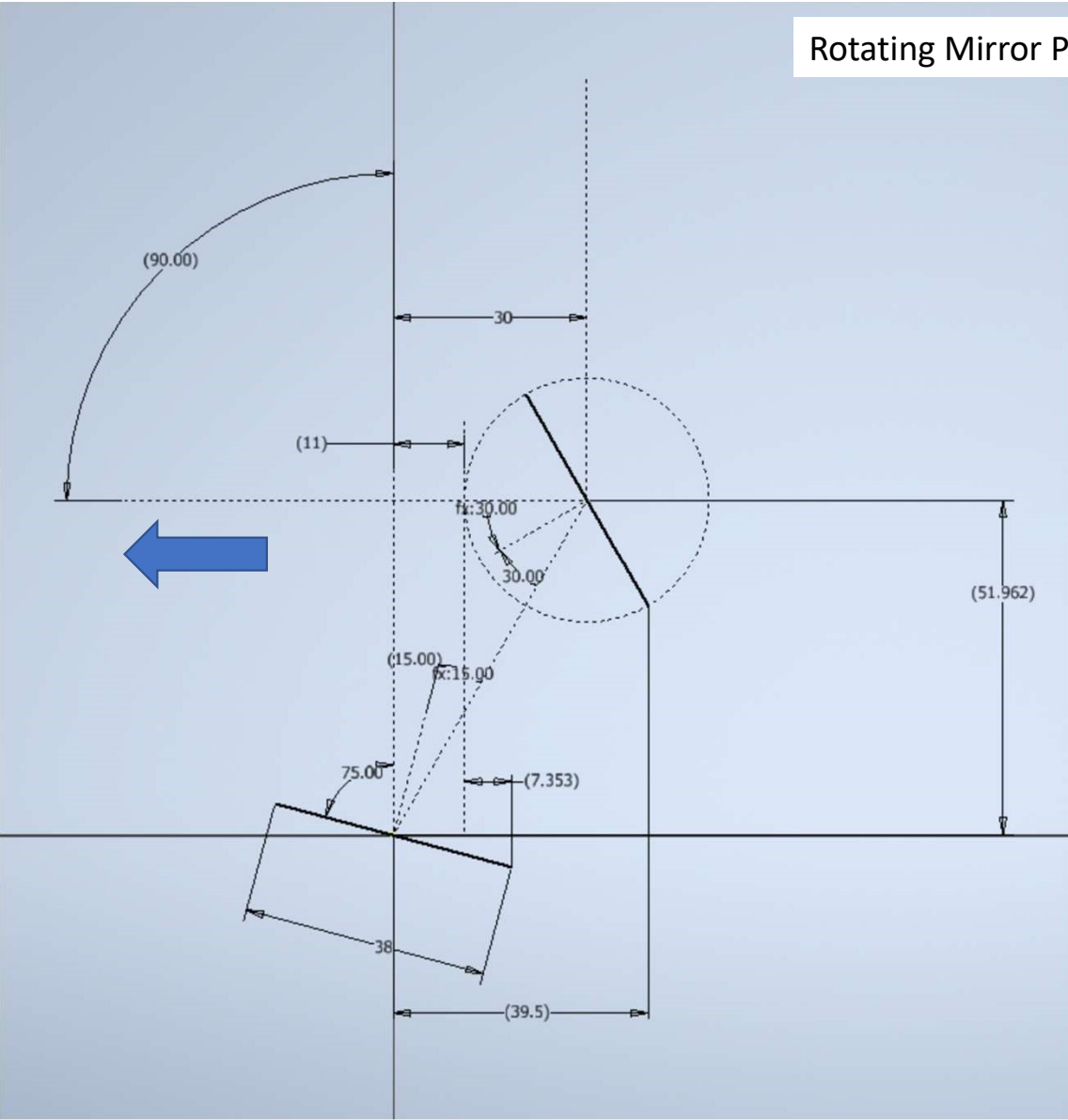
Laser Alignment
Target Retracted

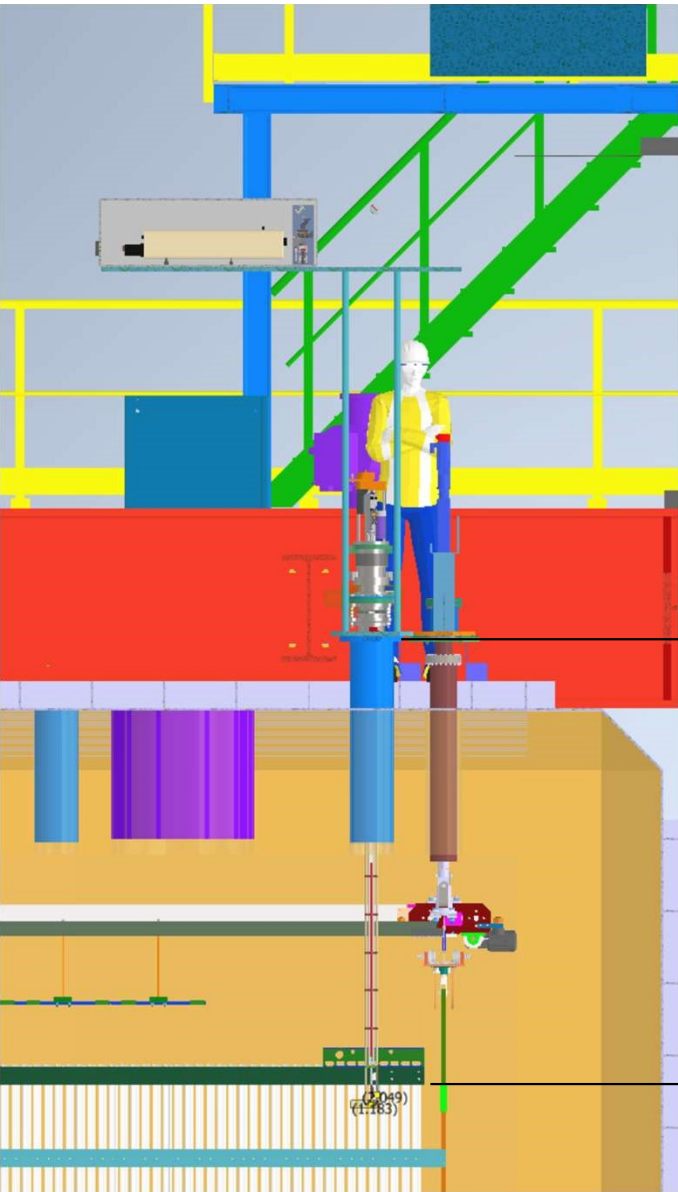
Lower Laser Periscope
Subassembly – allows
installation into DUNE
without a hatch





Rotating Mirror Positions -2



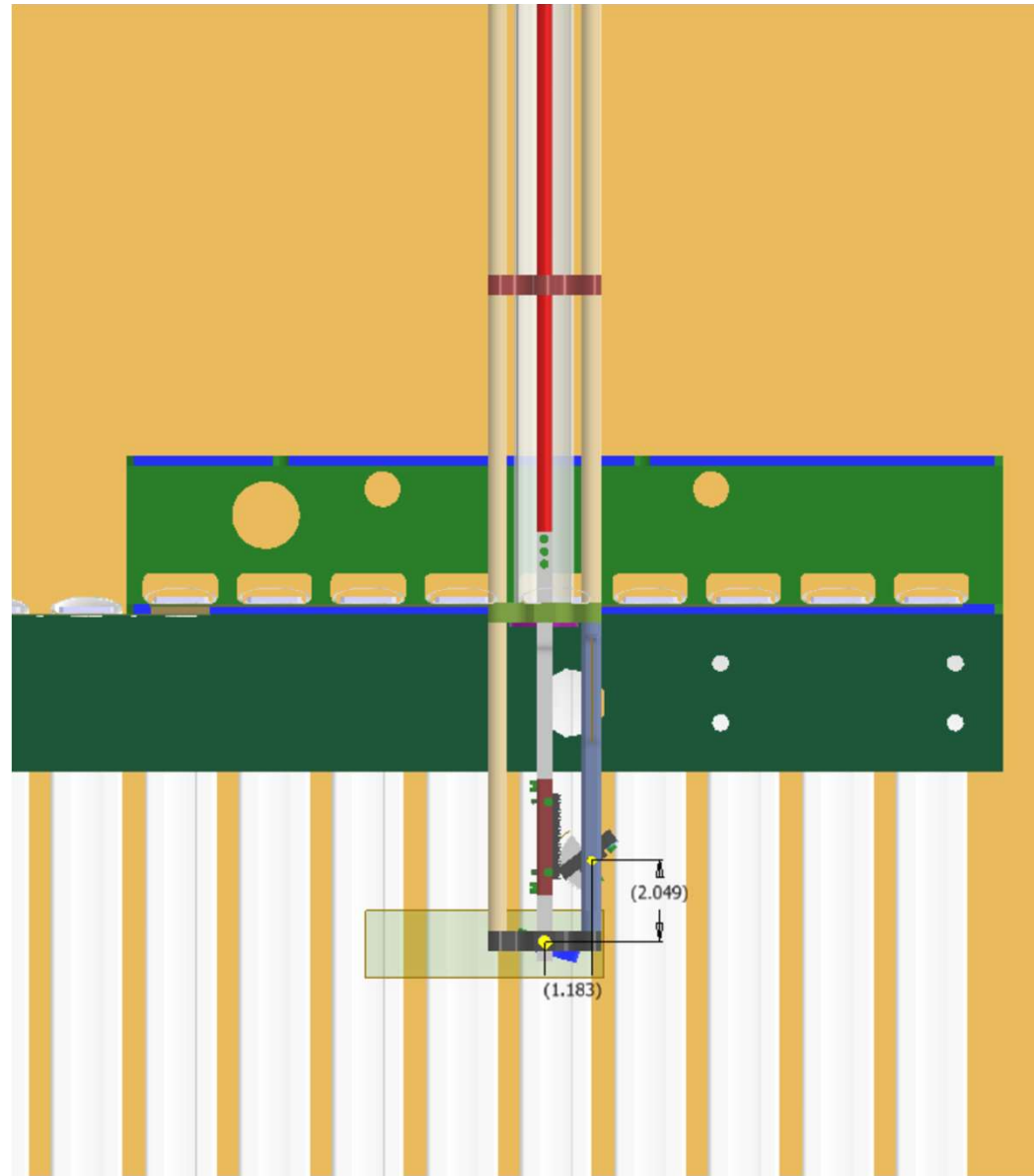


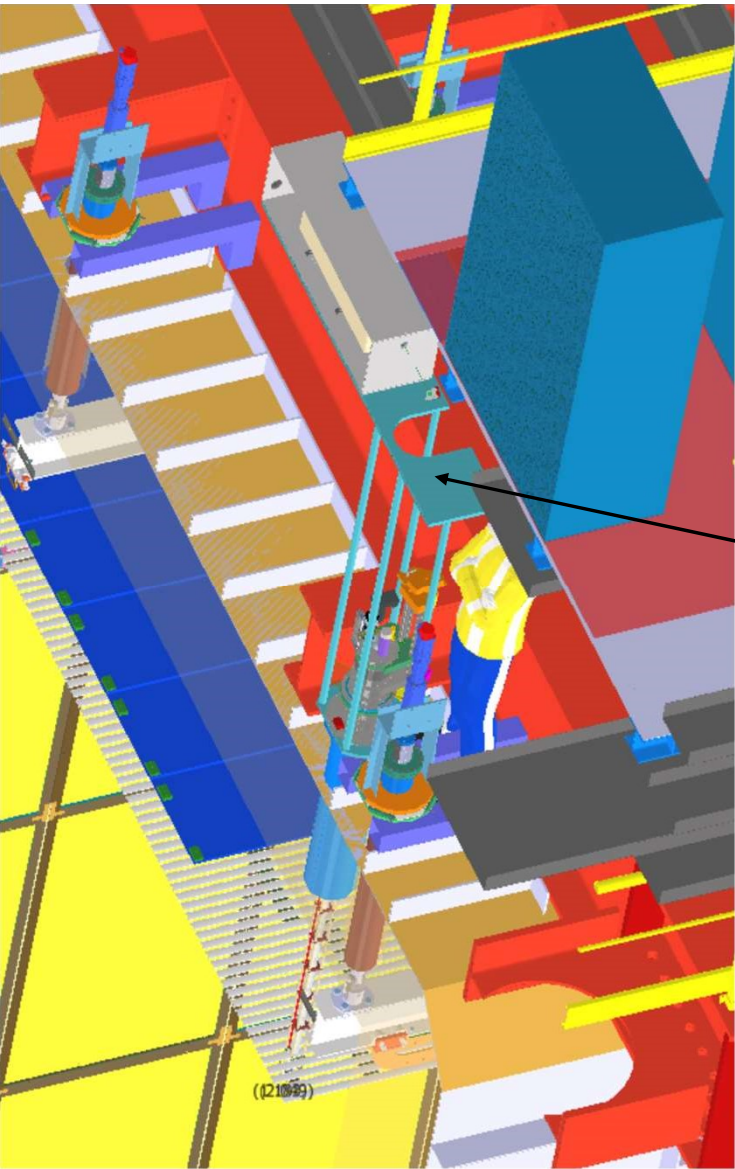
DUNE

Flange top

2484mm

G10 I-Beam bottom

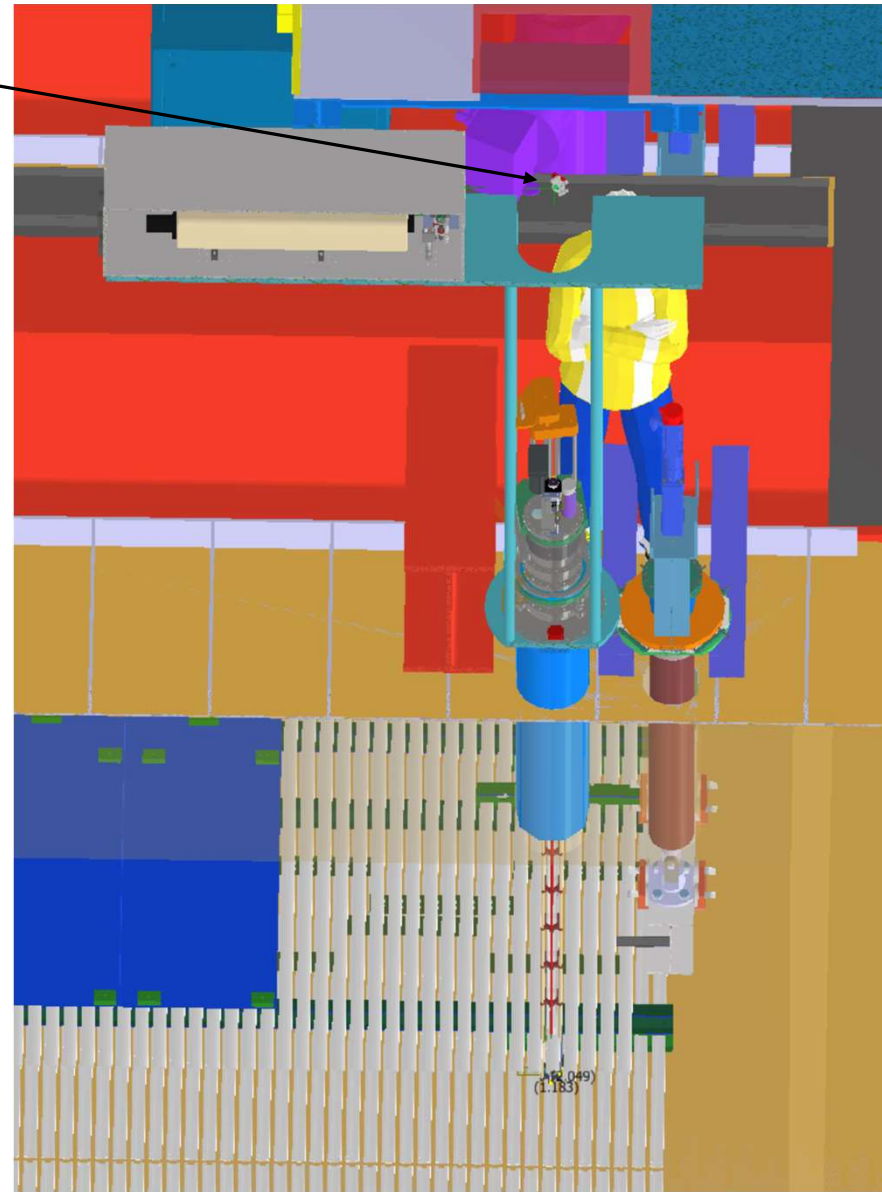




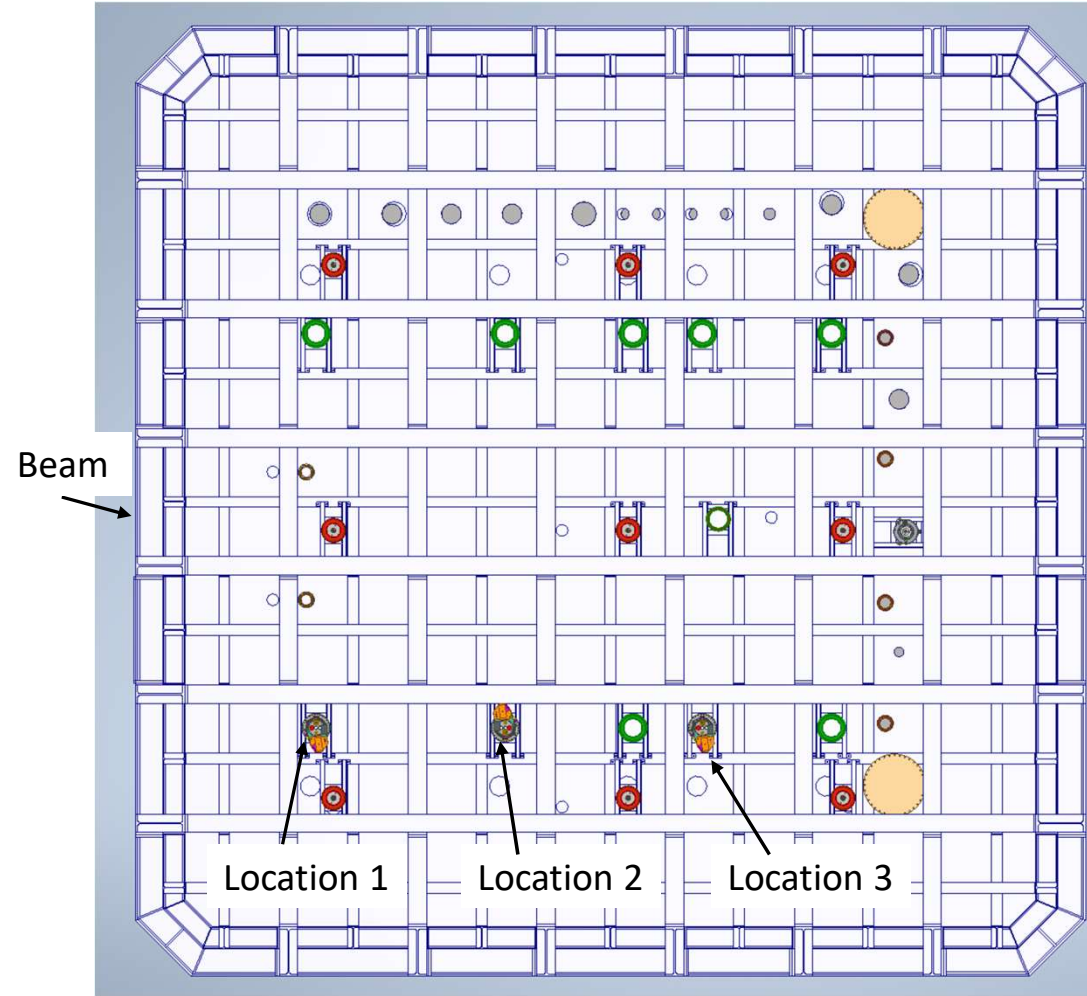
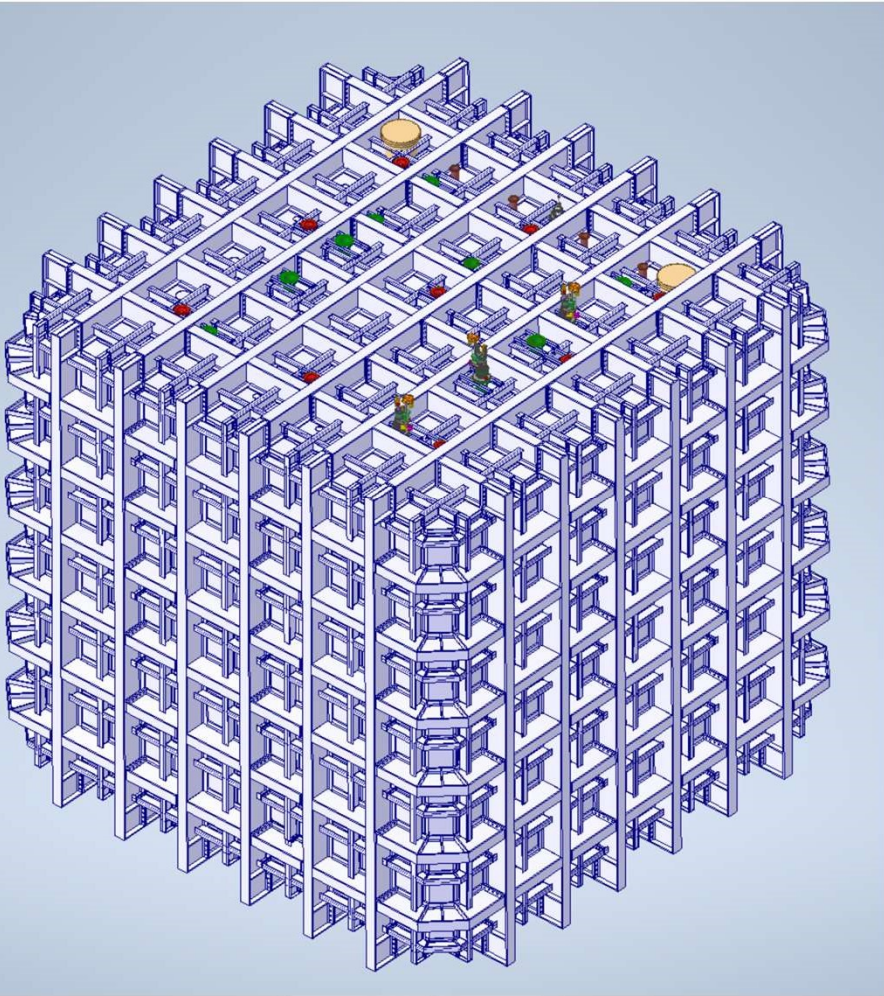
Mirror

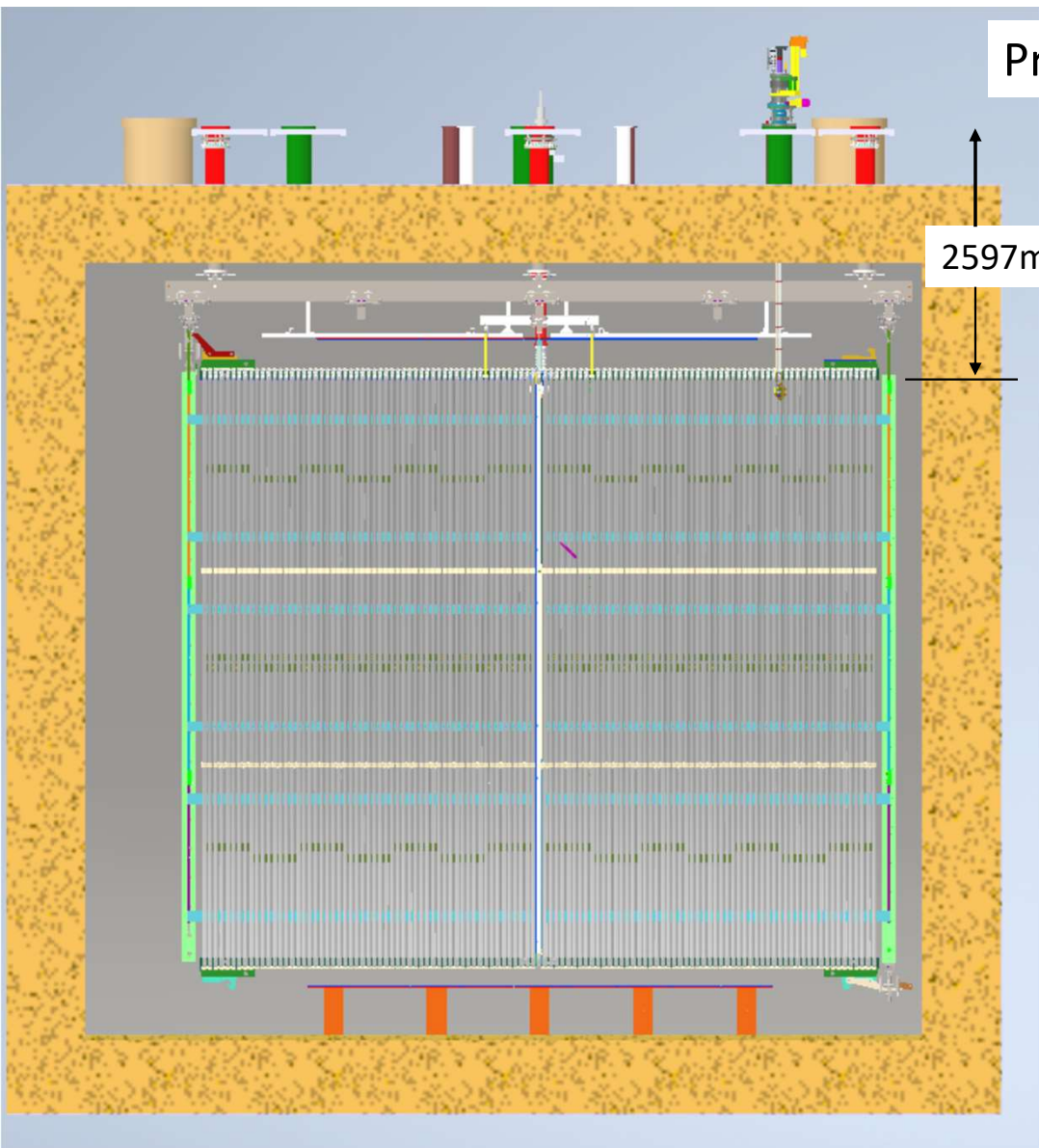
DUNE

First Try at a Laser Table

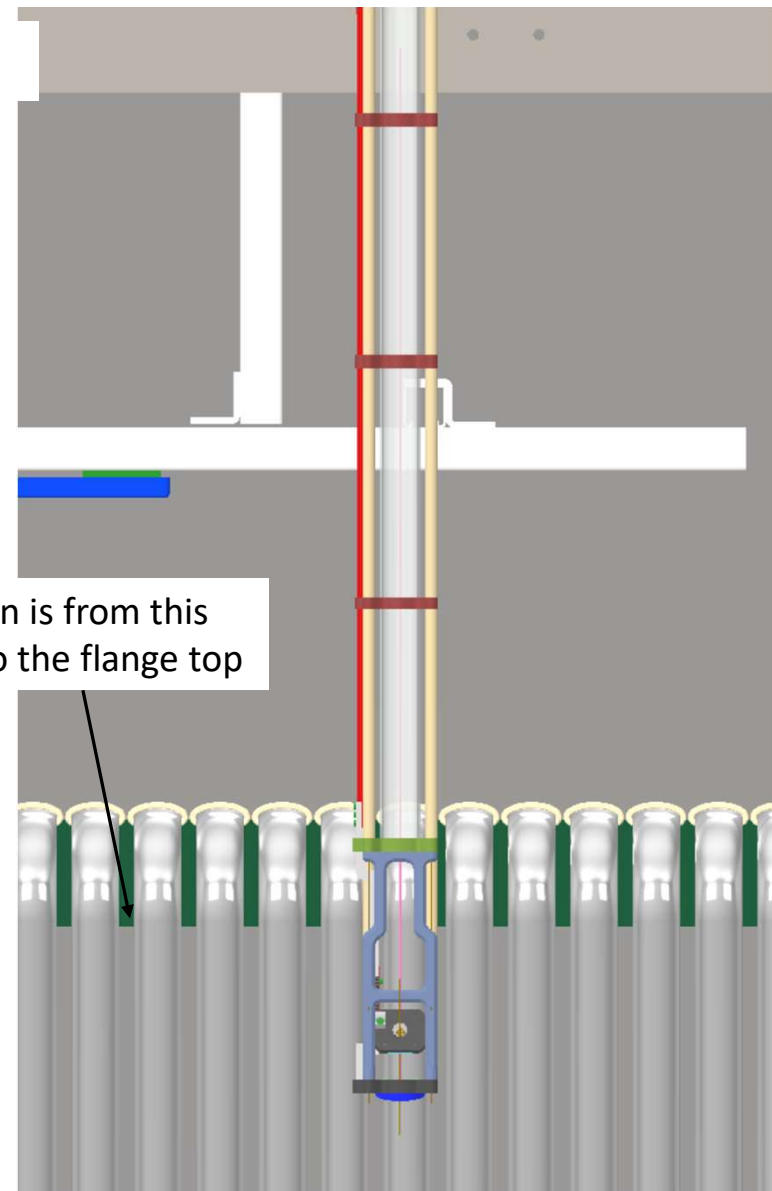


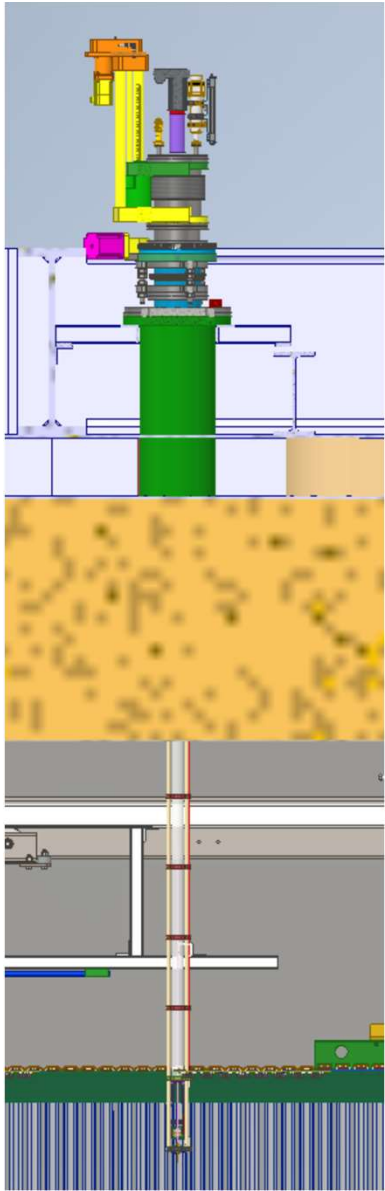
Possible Laser Periscope Locations



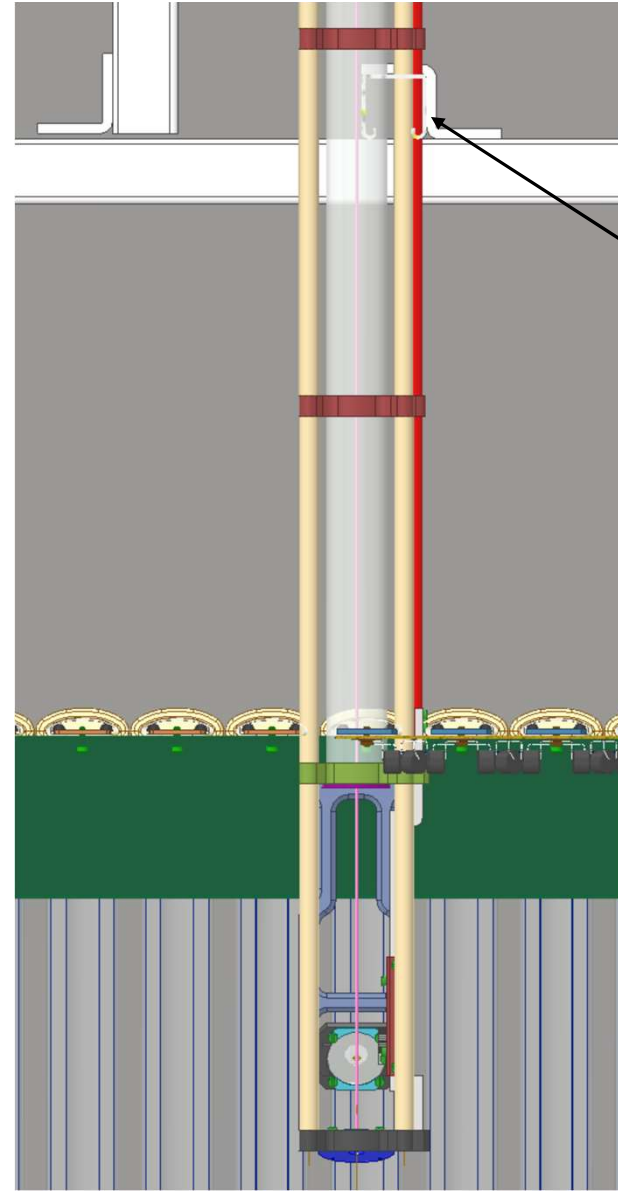


Dimension is from this surface to the flange top

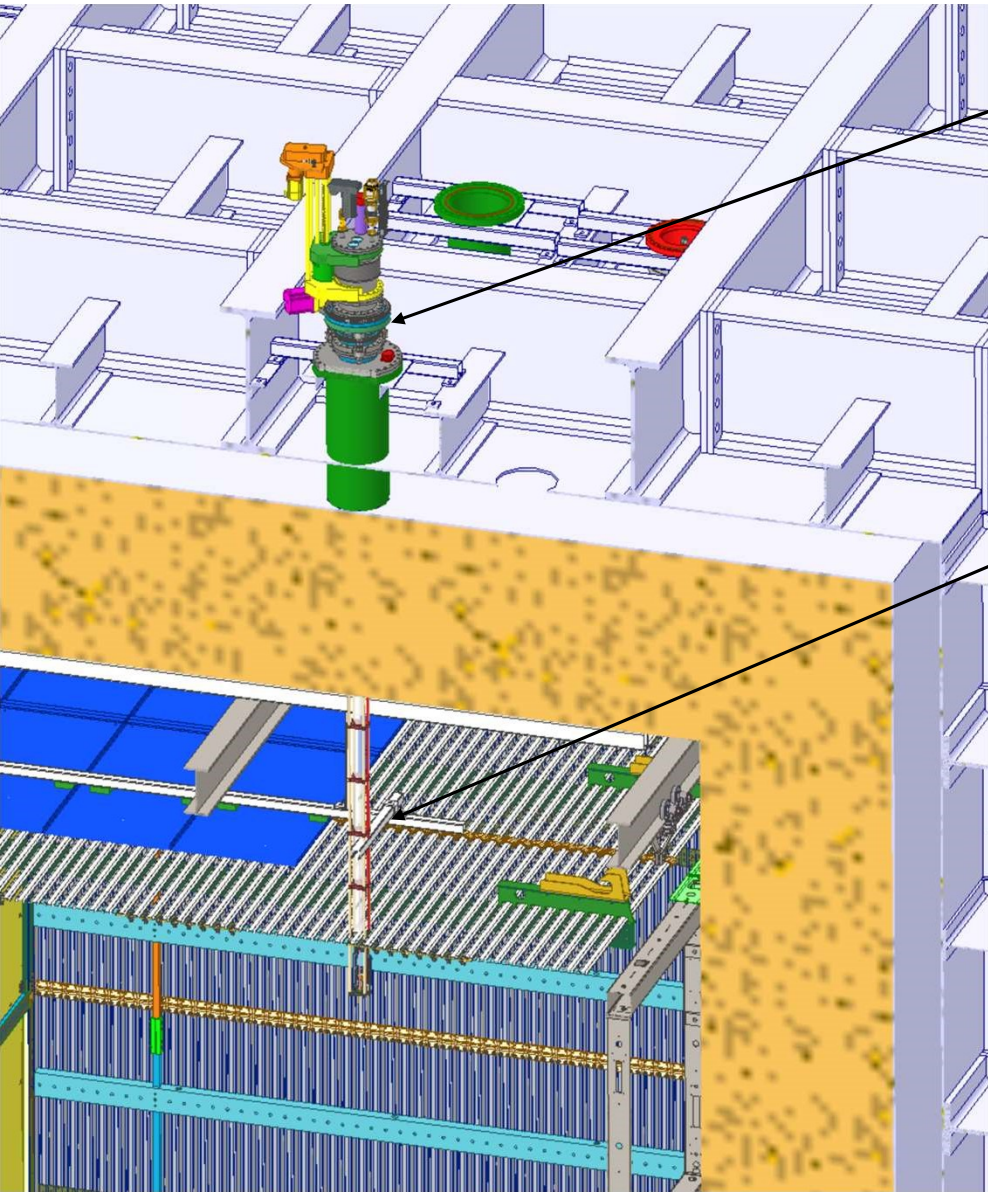




ProtoDUNE II
Location 2

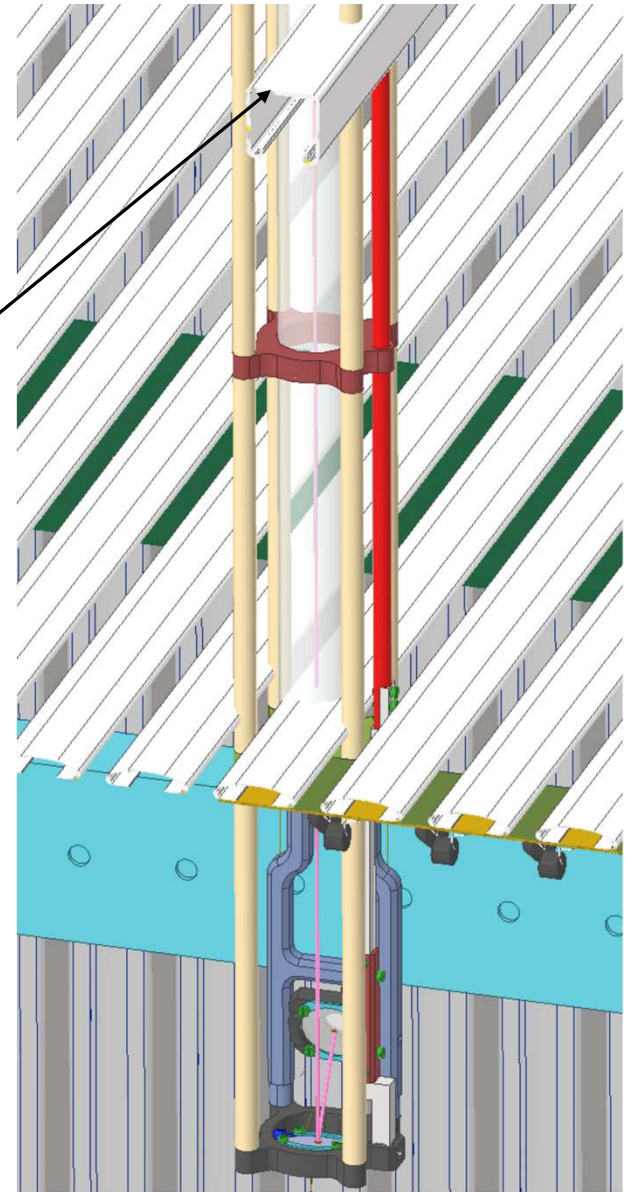


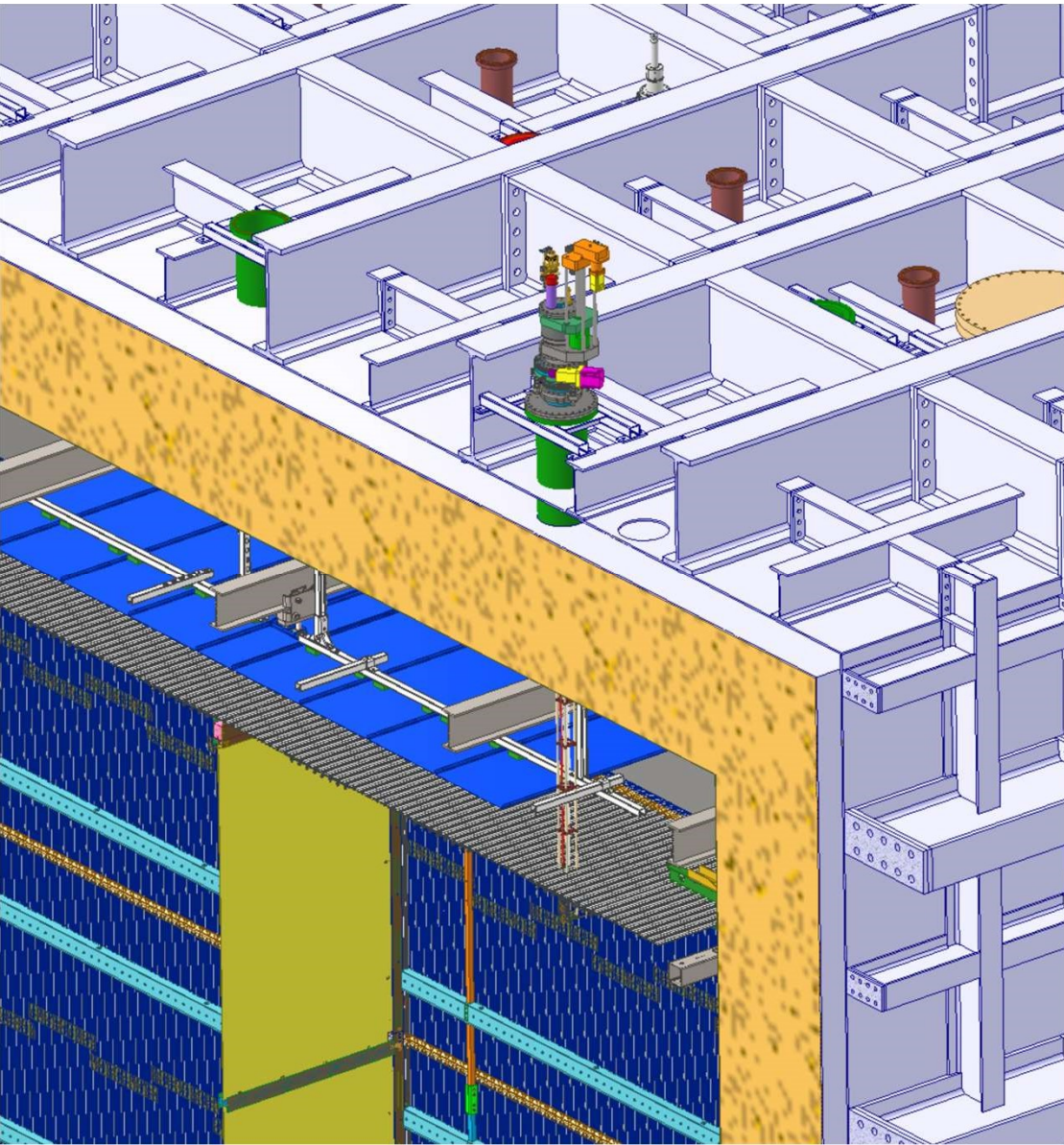
Interference



Preferred Port Location 2

Interference Problem





Location 3

