

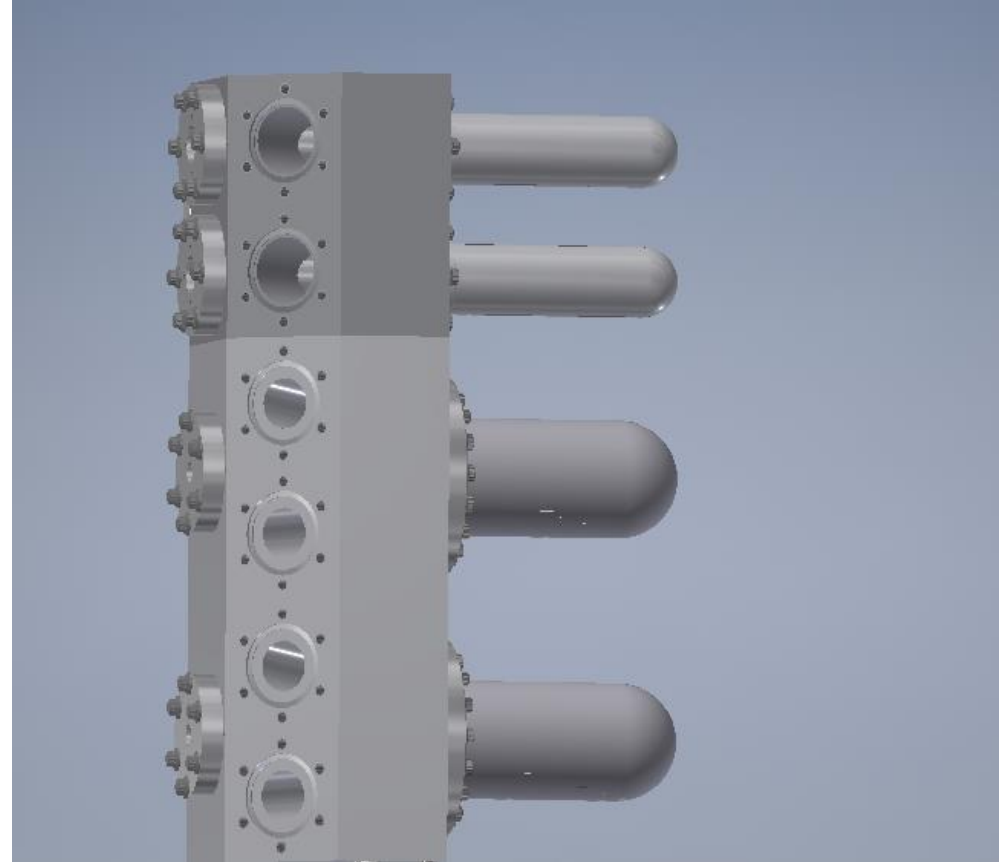
GMn Target

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Target Stack Concept

- Four 15 cm cells
 - Current on 15 cm cells 50 microA
 - One loop (H2) will have two cells
 - With and without Radiator
- Optics Target
 - 5 to 11 positions
 - Centered on $z=0$
- Dummy Target(s)
 - One 15 cm position
- Solid targets
 - 10 solid target positions available
 - Carbon hole and Be occupy 2 of these.
- **There is nothing off mass shell for this configuration**

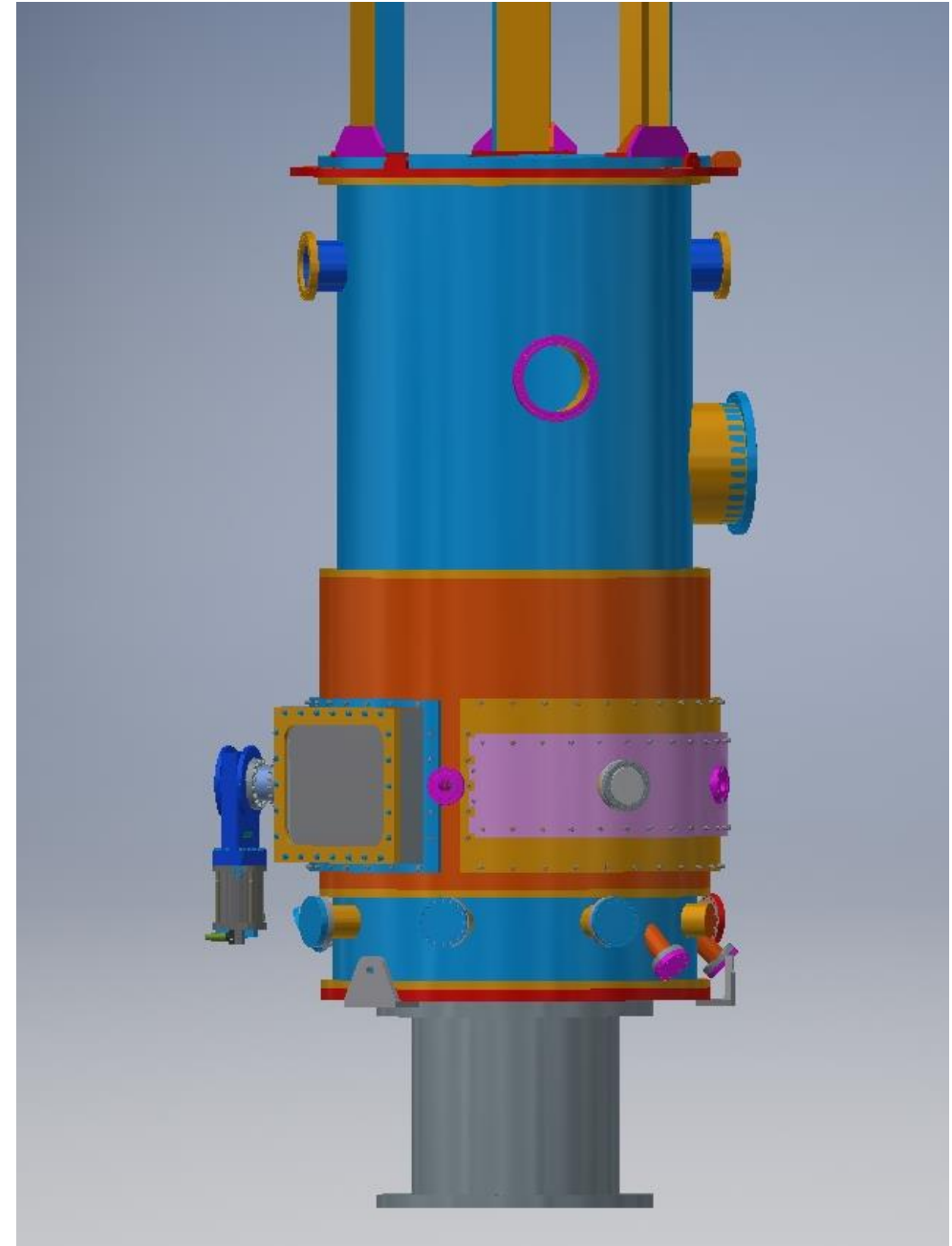


Refrigeration Requirements

- Heat load is:
 - ~300W for Beam
 - ~100 W for Standby loop
 - ~100 W for heater overhead
 - ~100 W for T-line losses.
- This affects Hall C 15K operational capabilities
- When not in use for calibrations is it possible to turn off the H2 loop.

Installation

- Install chamber and align (90 degree from normal)
- Recover from PREX/CREX
 - Install all electronics removed from the Hall during PREX/CREX
 - Test these systems
 - This will likely take a few weeks
- Install target in chamber
 - Connect all plumbing
 - Connect all cables
 - Test motion systems and feedthrus
 - Alignment will be more difficult
- Leak test
- Cold test with He first (not required but should)



Status

Item	Status
Target Cryo/Motion System	On stand in Hall A. T2 configuration back-out required. Check T-line
Cells and blocks	Purchasing cell blocks and cells now.
Electronics	Currently configured to run T2 Will need to backout of T2 config Will need to backout of PREX/CREX config Will need to install all components that were removed for safety.
Controls	Will need to test after install
Chamber configuration	90 degrees from normal presents minor issues for alignment/installation

Needed Infrastructure

Item	Status
Access for alignment	Will need access for alignment and for portable CMM. Cannot assemble beamline completely
New Cells	Will need new cells/blocks (started July 2019)
Leak testing in shop cold	Perform cold and warm leak checks using cold head in shop Cannot start until the cells/blocks are assembled.
Scattering chamber installed	Will need the chamber installed and aligned on the pivot prior to installing the target

Summary

- Spring 2019:
 - Remove T2 electronics and FSDs
- Summer 2019 to Spring 2020:
 - Fabricate cells (blocks also maybe)
 - Return target to standard config (back out of T2)
 - Test cell/block assemblies
- Post CREX
 - Return electronics removed for safety to Hall
 - Install electronics and test
- After chamber placement
 - Install target in chamber
 - Connect piping and cables
 - Test
 - Alignment
 - Leak test
 - Cold test
- Most of target work cannot start until after CREX has been completed and pivot area is cleared