ArgonCube Hardware status

Roger Hänni

Laboratory for High Energy Physics

University of Bern, Switzerland

ArCube Collaboration Meeting

University of Bern

October 16th 2017

Content

Detector infrastructure

- Cryostat
- LN2/LAr supplies

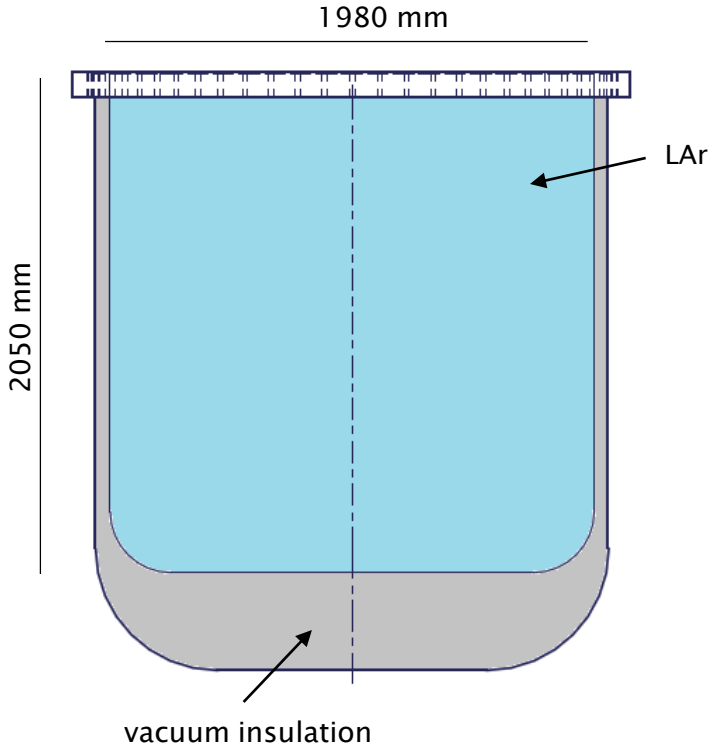
ArgonCube module

- Components
- Design
- Status

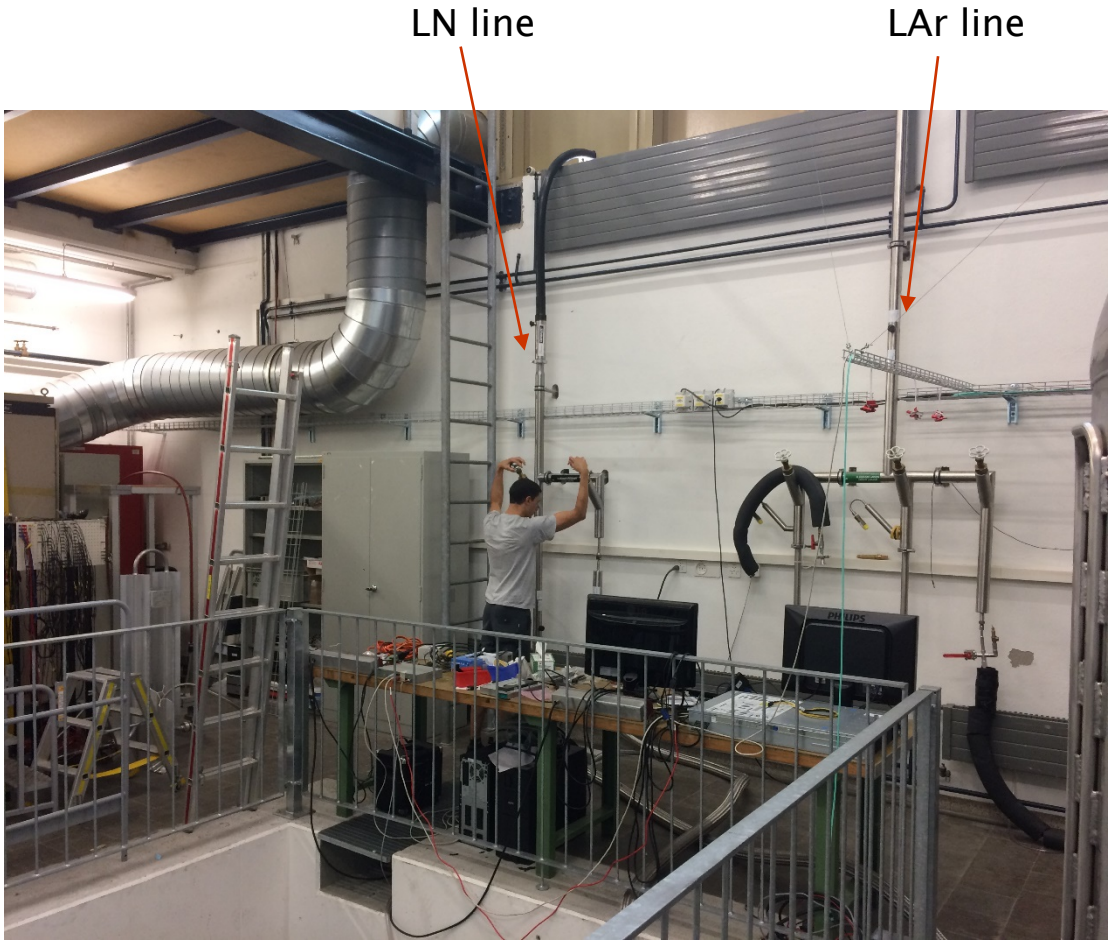
Detector infrastructure

What is done?

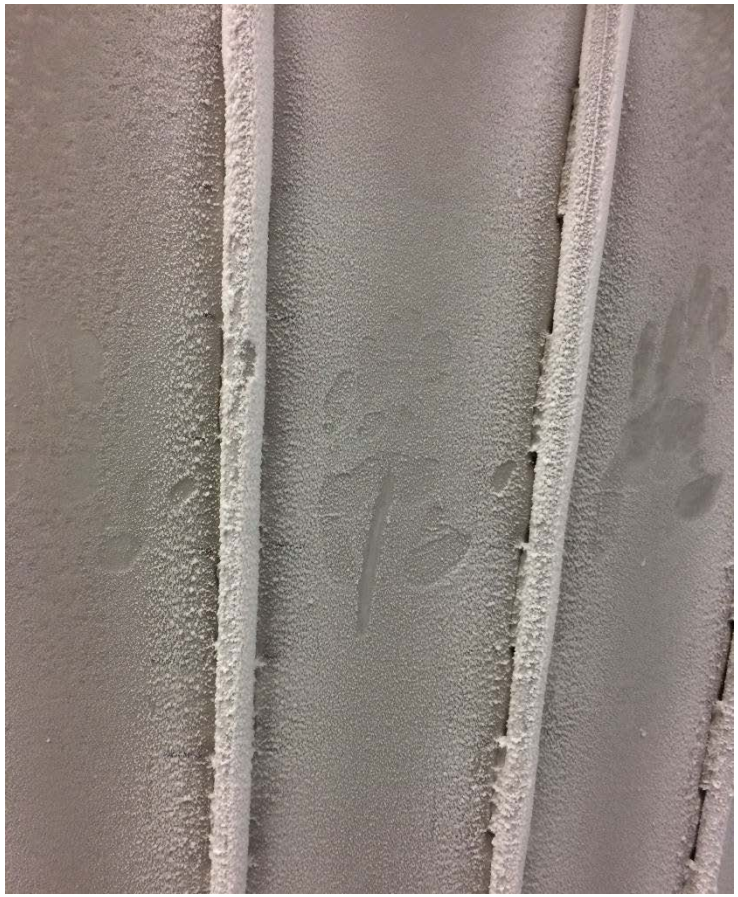
- Replacement middle part
- Production top flange
- LN line installation
- Leak test outer vessel (overpressure)
- Leak test vacuum insulation (vacuum)
- LN cooling line inner vessel
- Leak test LN cooling line
- Test run LN cooling line
- 2. leak test LN cooling line



Detector infrastructure

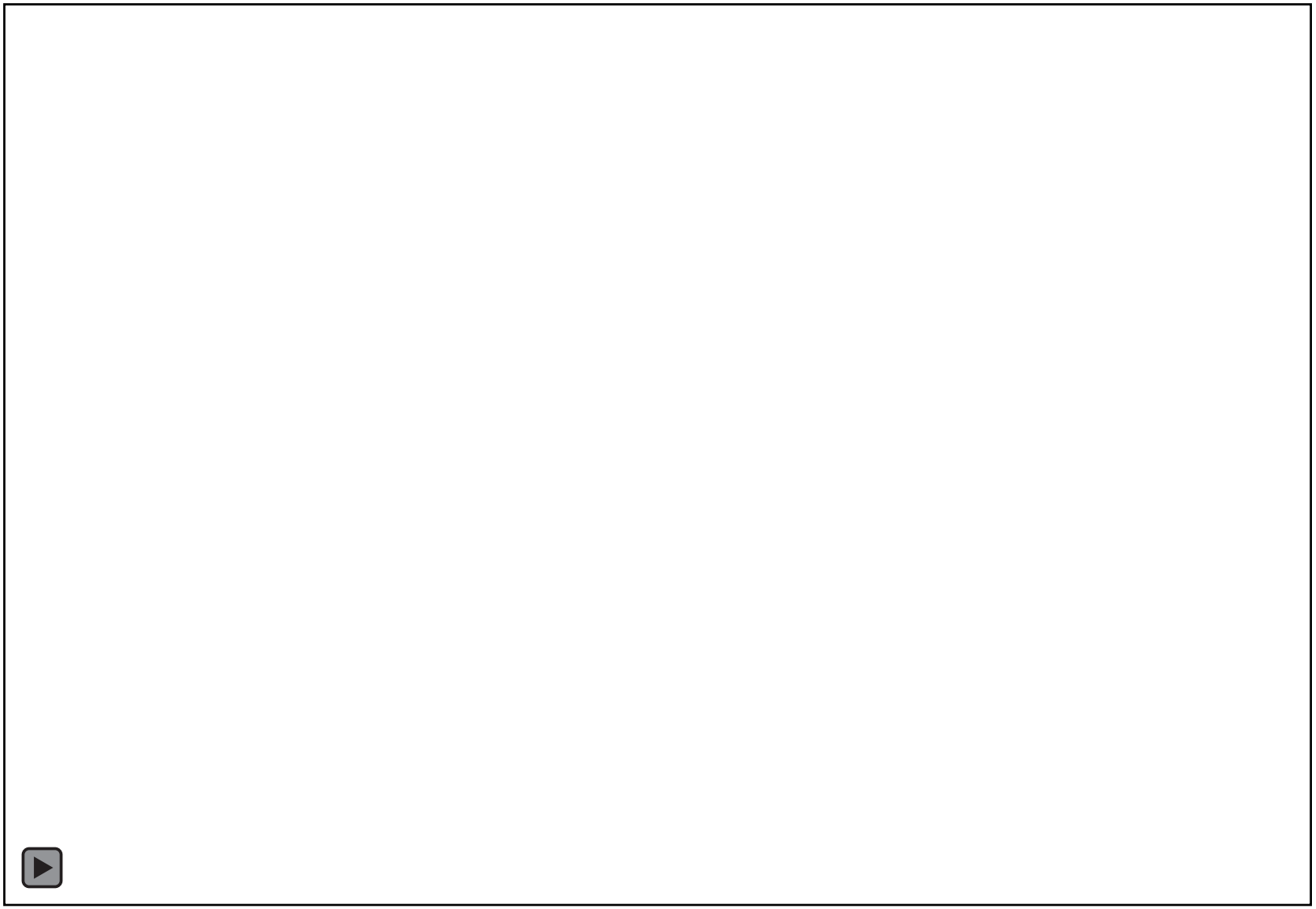


Detector infrastructure



Detector infrastructure

Detector infrastructure

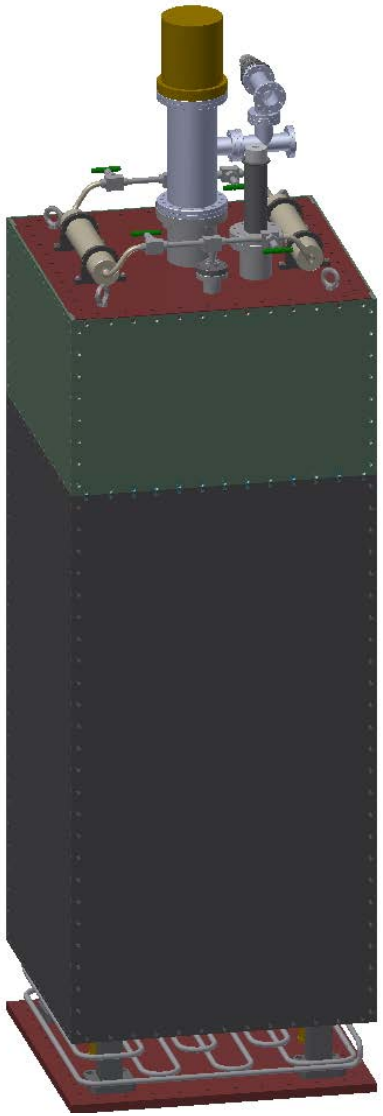


Detector infrastructure

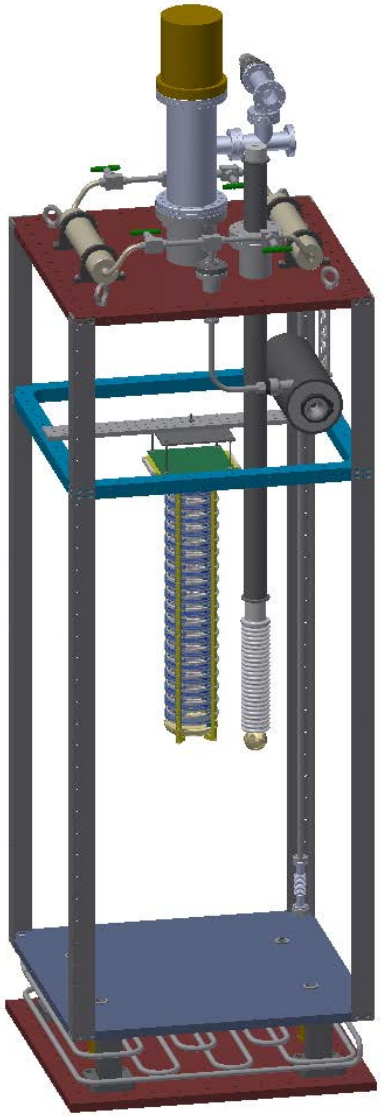
What do we need?

- Installation superinsulation
- Control valves LN-cooling line
- 1. ArCube module (Purity test)

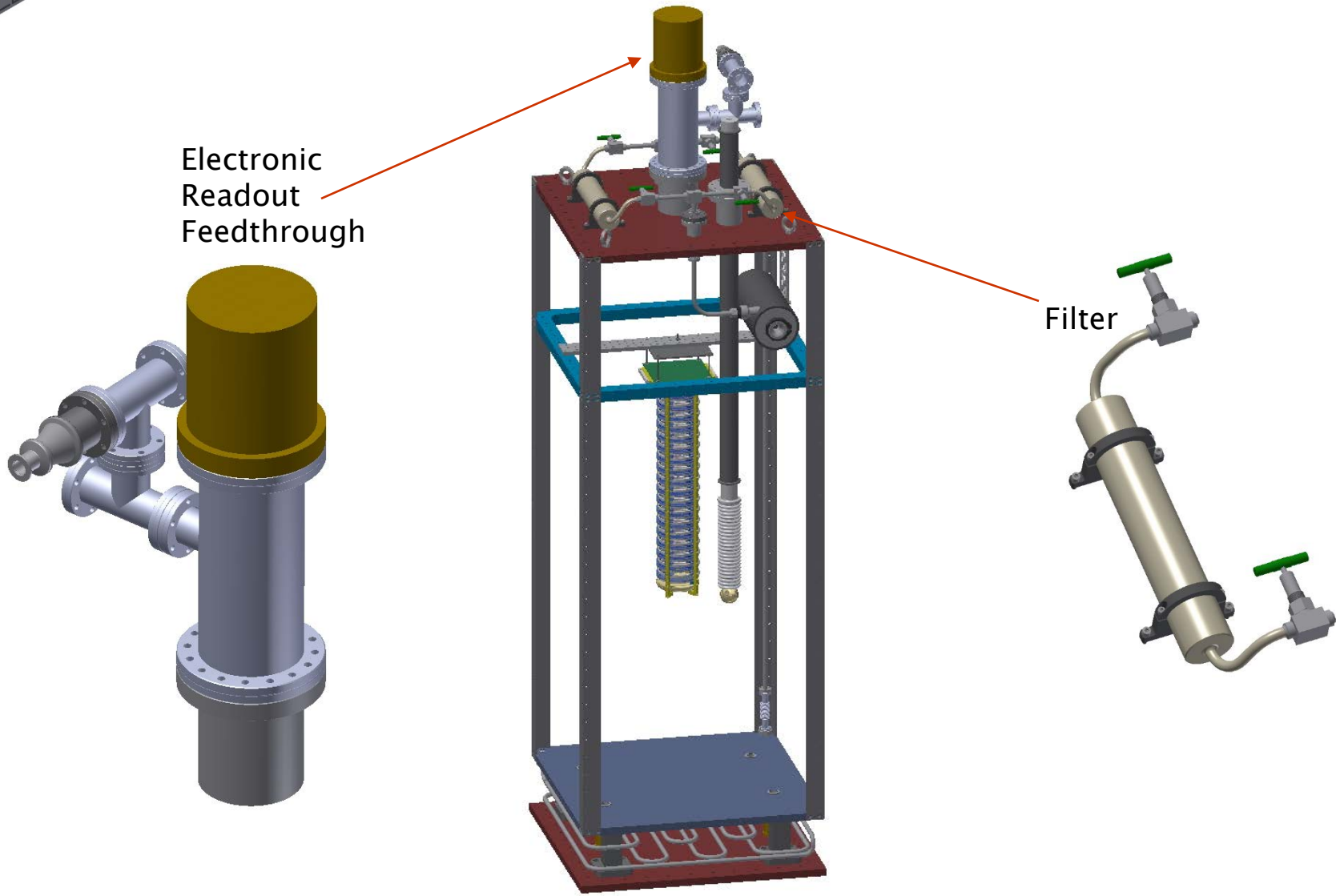
ArCube module



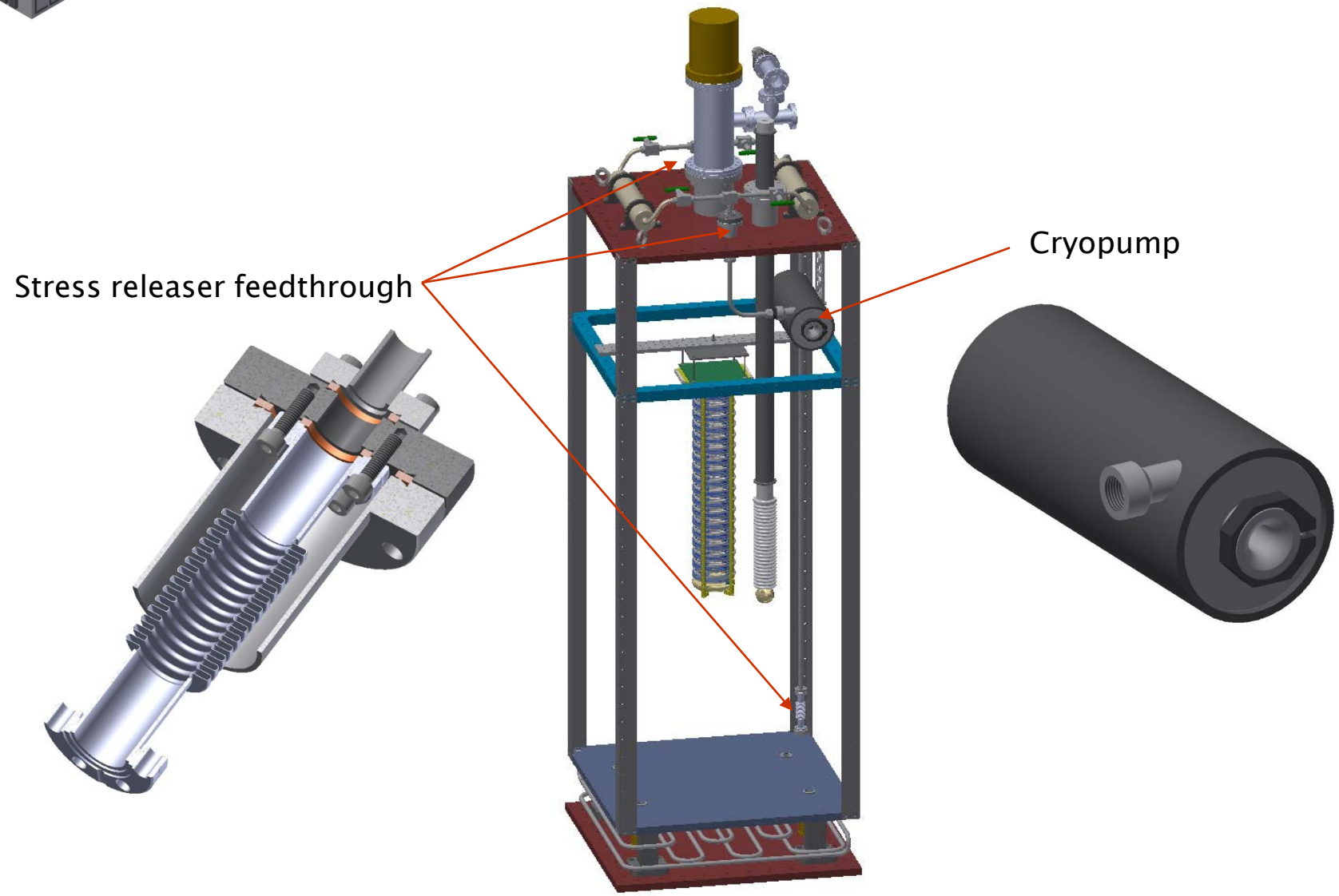
ArCube module



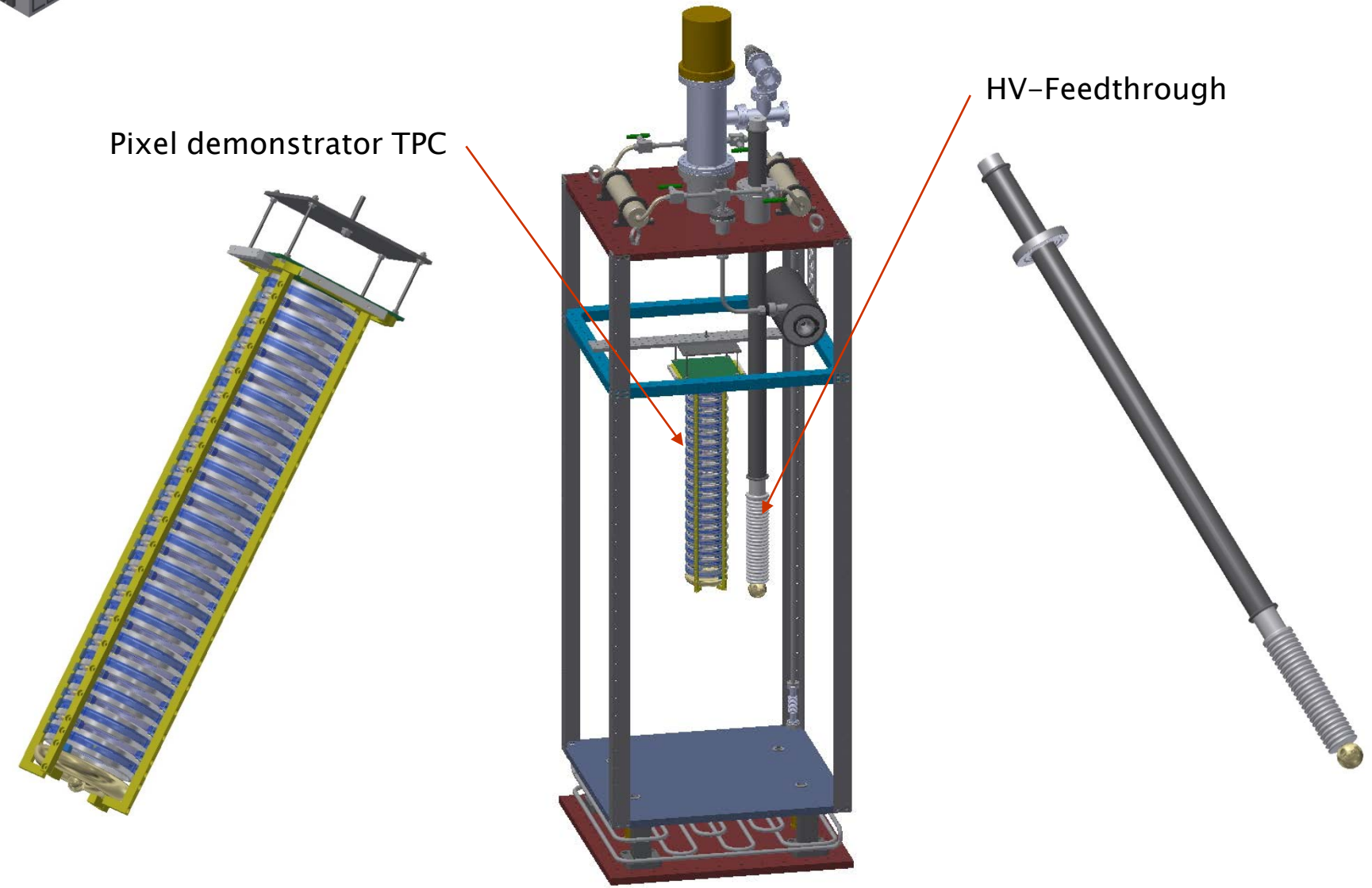
ArCube module_components



ArCube module_components

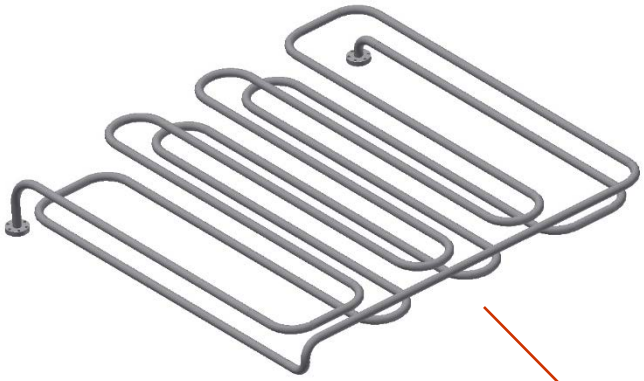


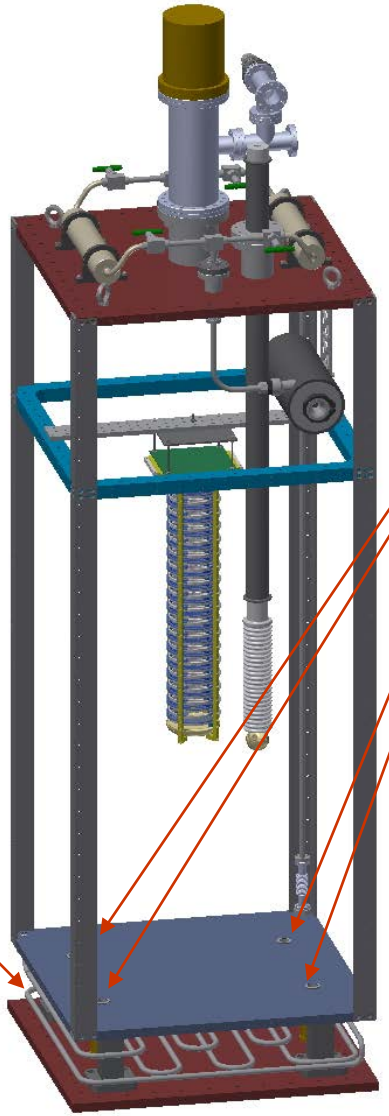
ArCube module_components



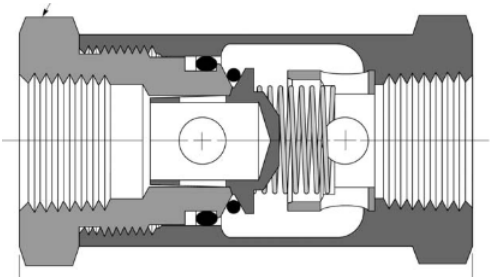
ArCube module_components

Heat exchanger



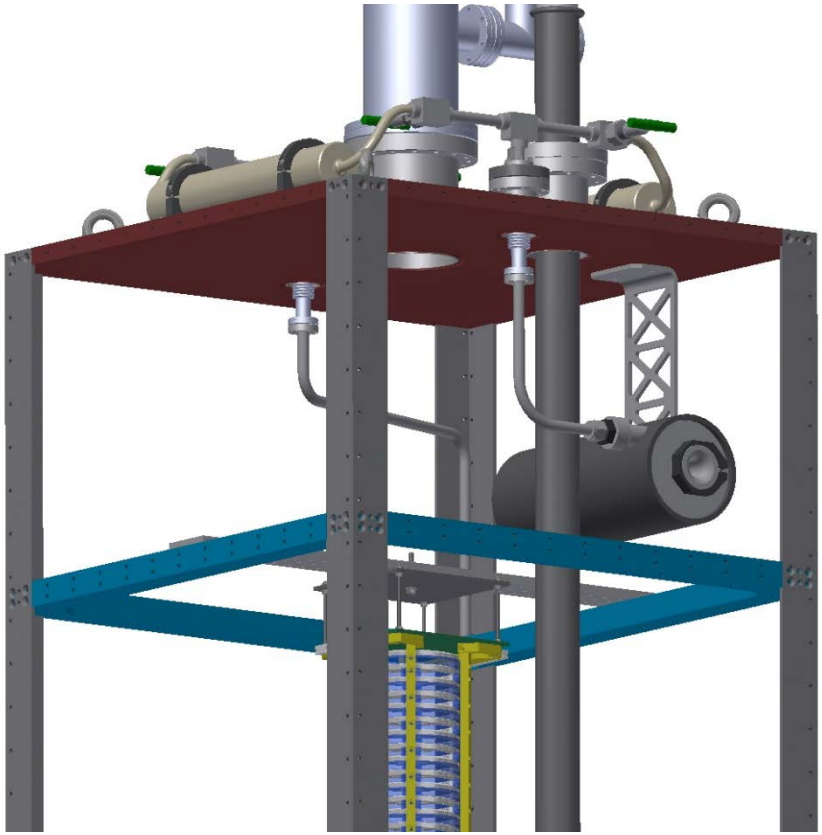


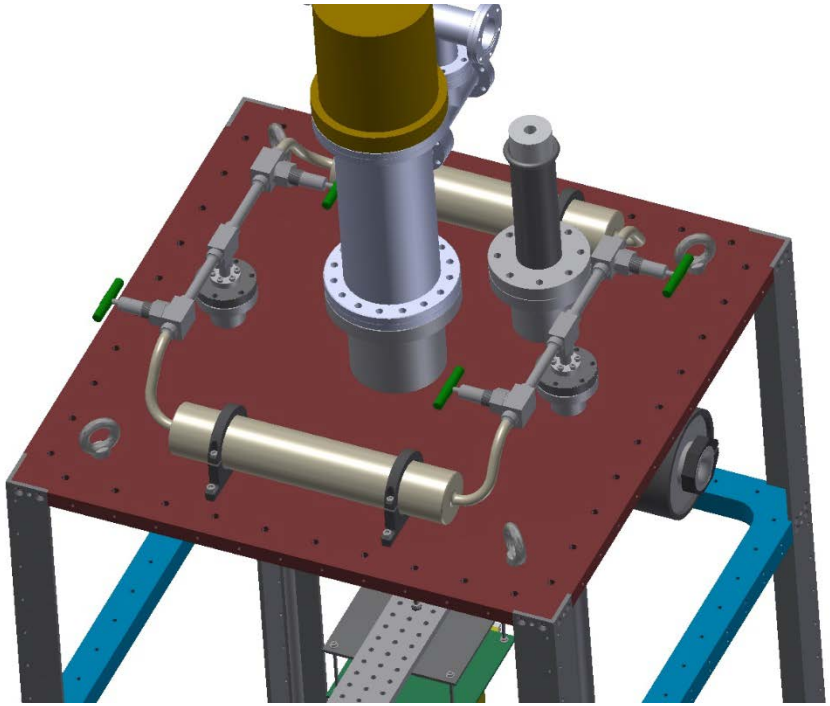
Break away pressure
Check valve



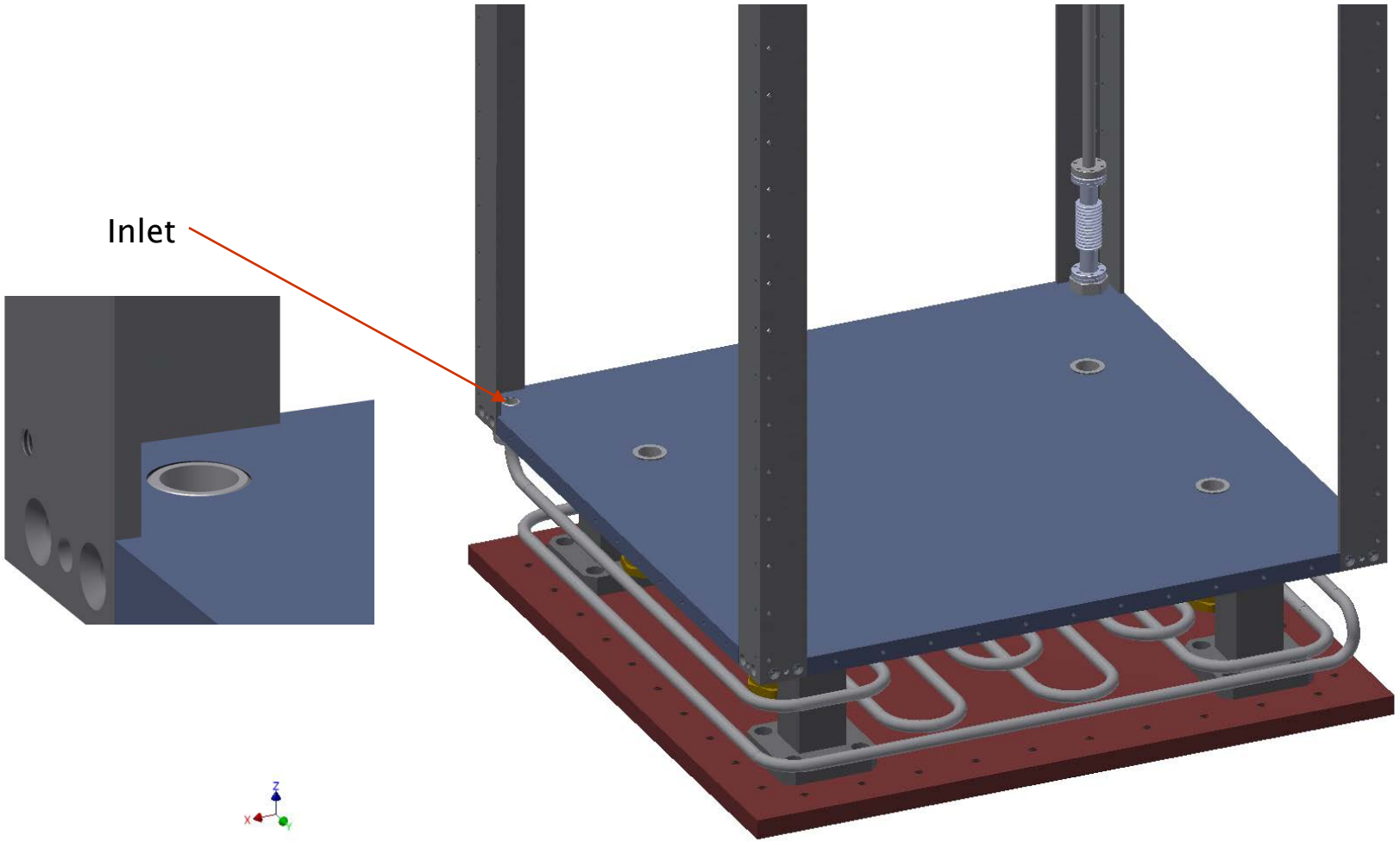
ArCube module_Design

Argon flow

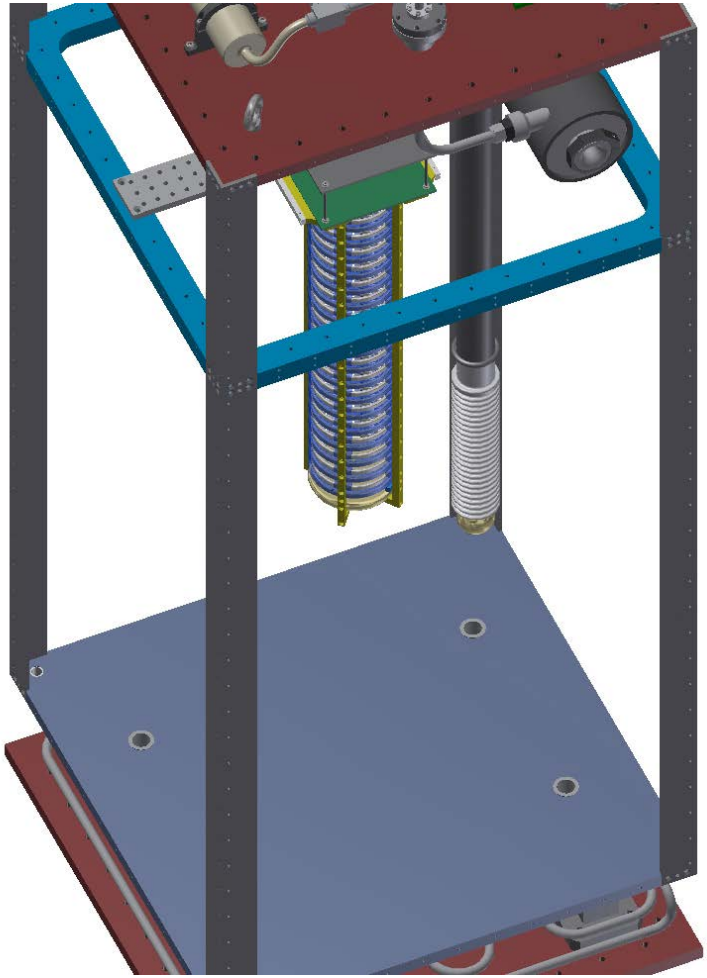




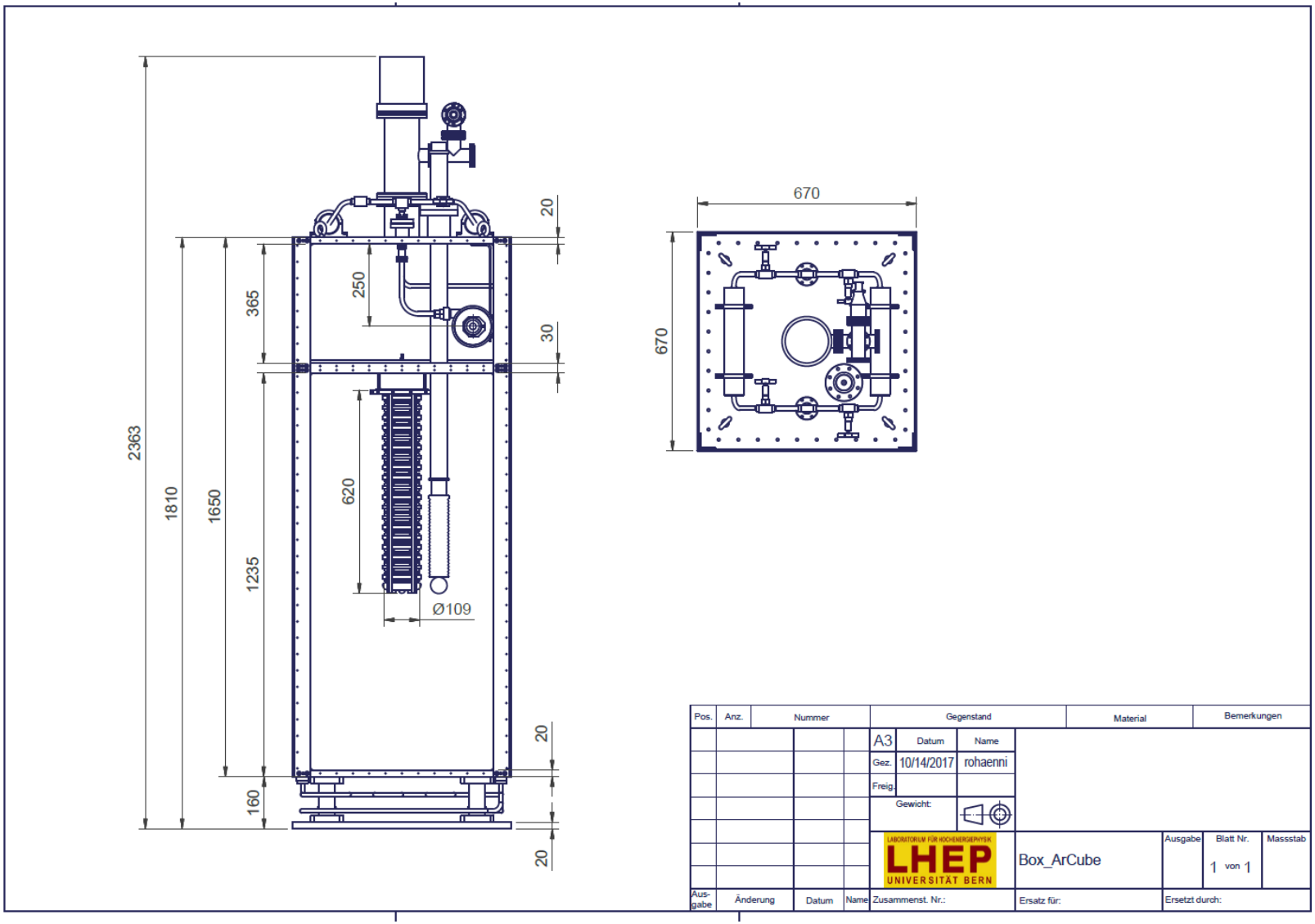
ArCube module_Design



ArCube module_Design



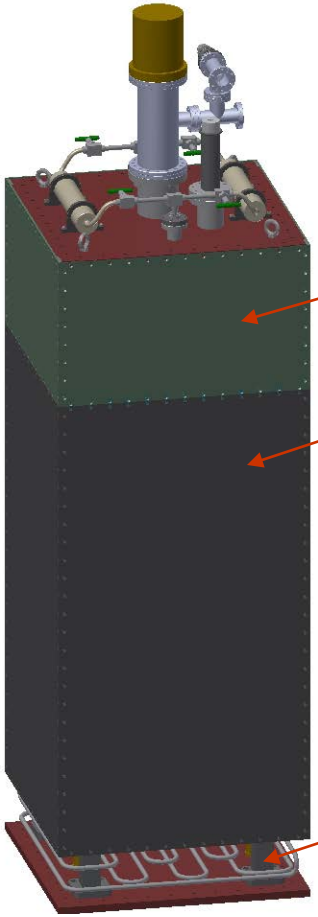
ArCube module_Design



Pos.	Anz.	Nummer	Gegenstand	Material	Bemerkungen
			A3	Datum	Name
			Gez.	10/14/2017	rohaenni
			Freig.		
			Gewicht:		
			LHEP UNIVERSITÄT BERN	Box_ArCube	Ausgabe / Blatt Nr. 1 von 1 / Massstab
Ausgabe	Änderung	Datum / Name	Zusammenst. Nr.:	Ersatz für:	Ersetzt durch:

ArCube module_Design

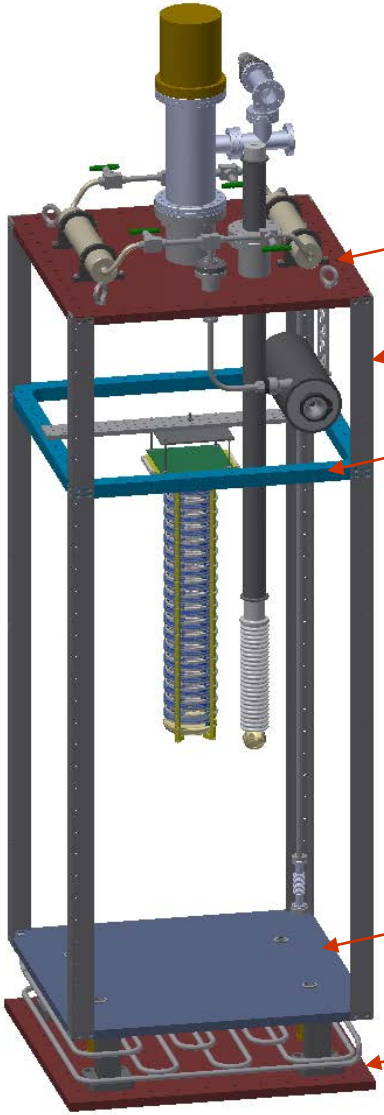
Materials:



Top Side plates; G10

Bottom Side plates; G10

Spacers; G10



Top flange; stainless steal

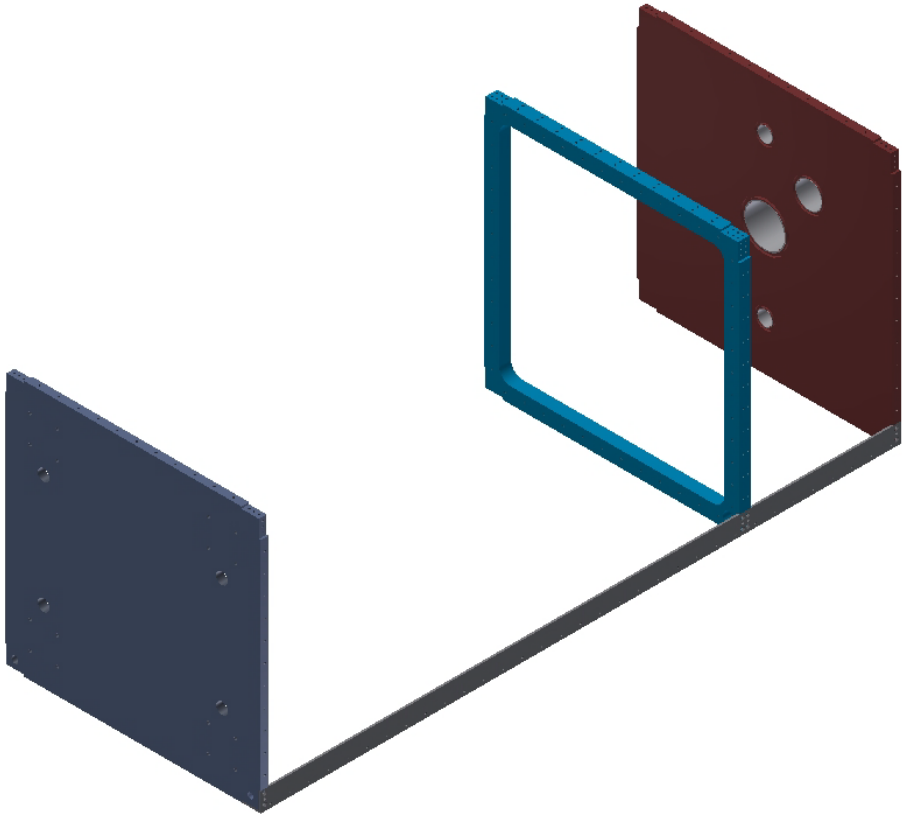
L-profiles; G10

Frame; G10

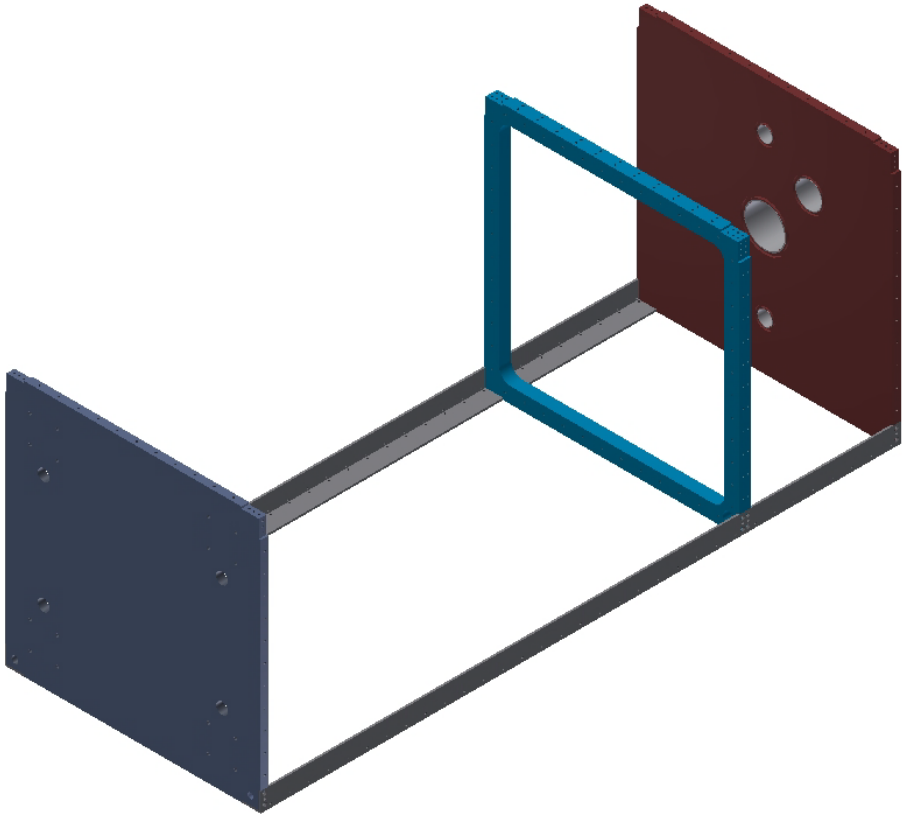
Bottom flange (active volume); G10

Bottom flange; stainless steal

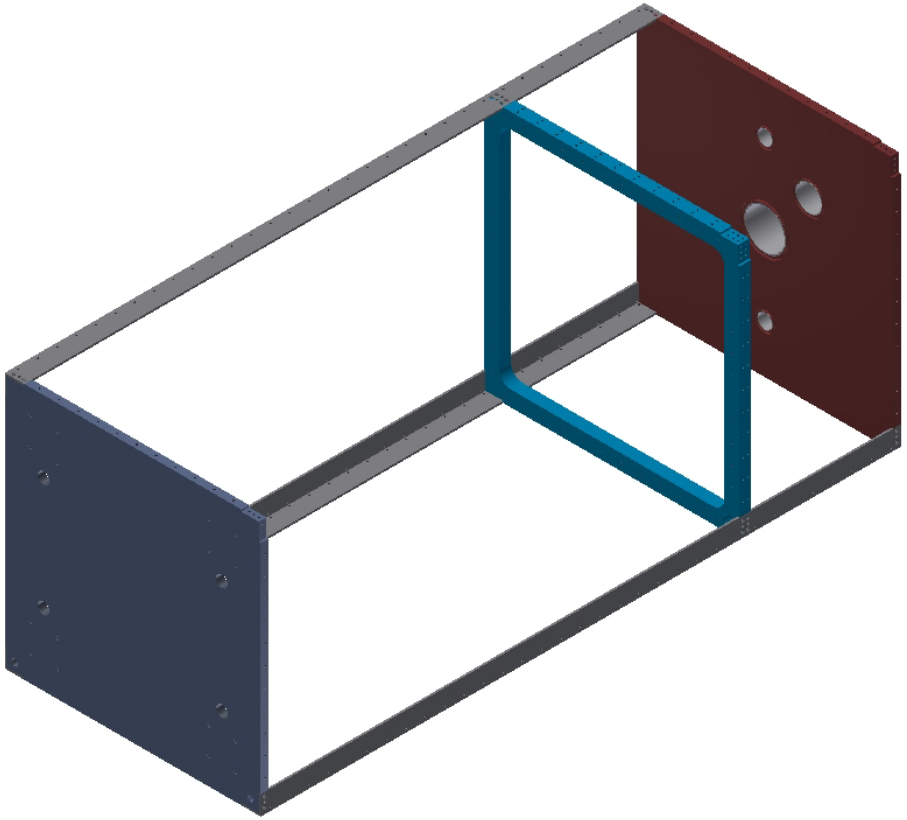
ArCube module_Design



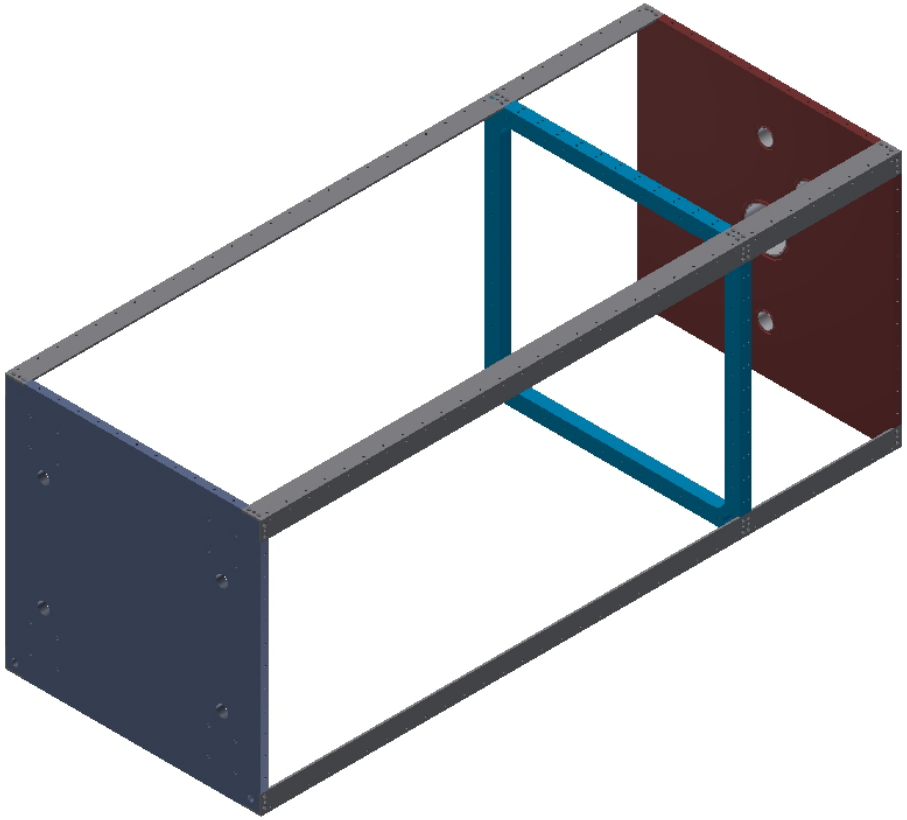
ArCube module_Design



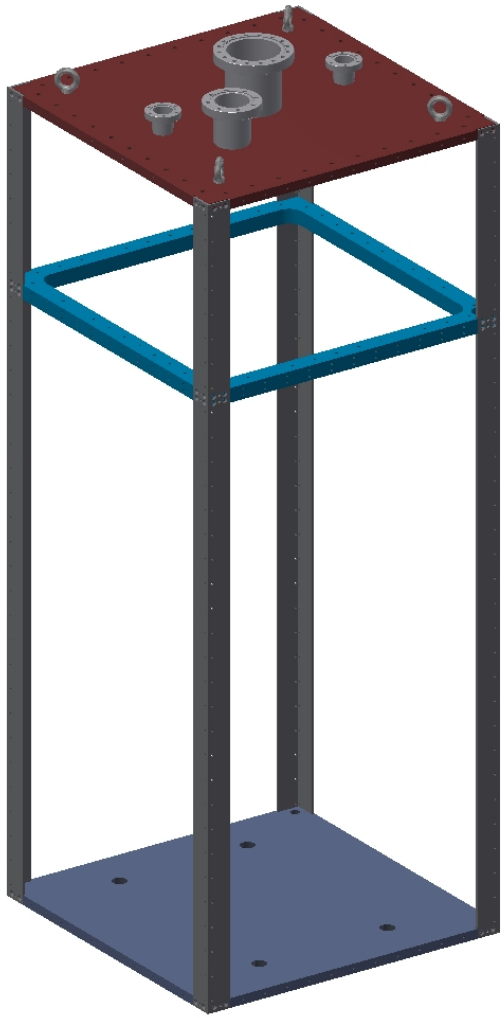
ArCube module_Design



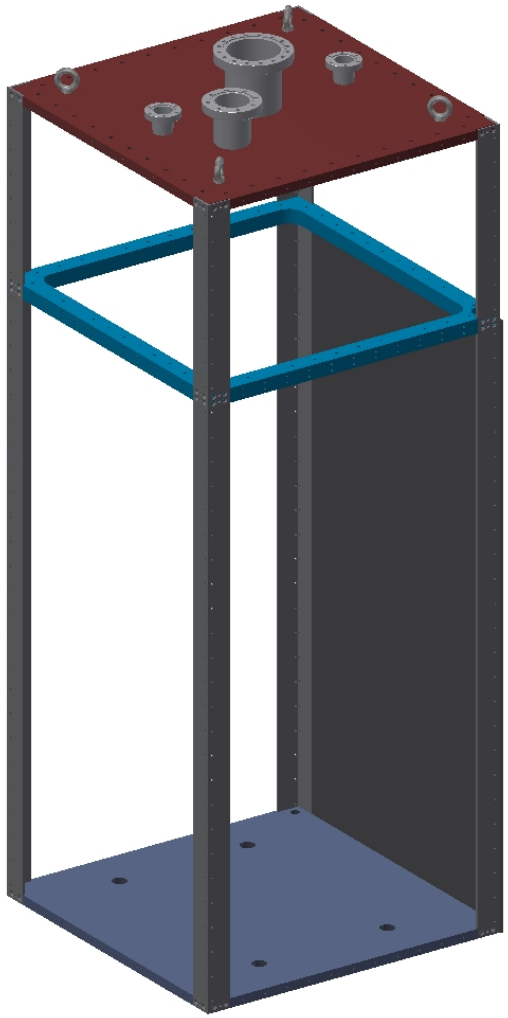
ArCube module_Design



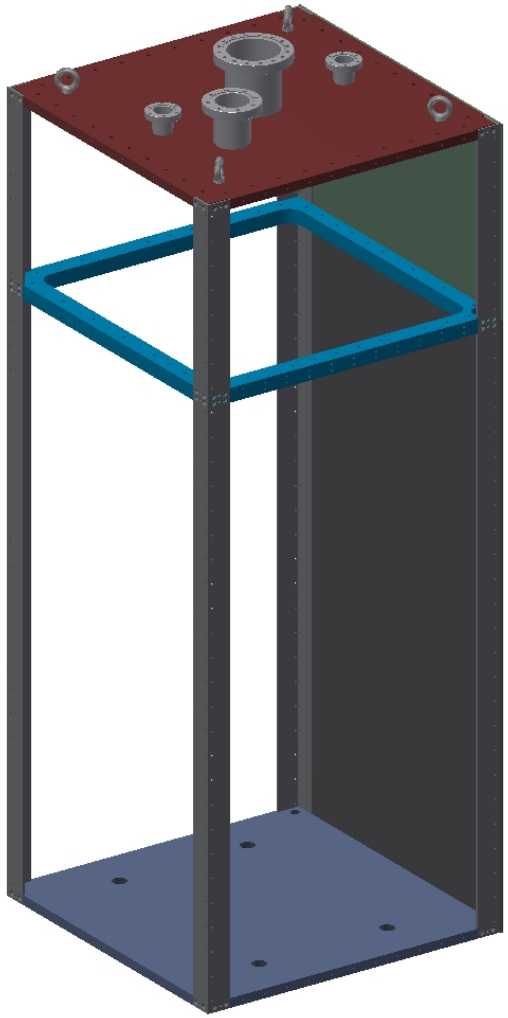
ArCube module_Design



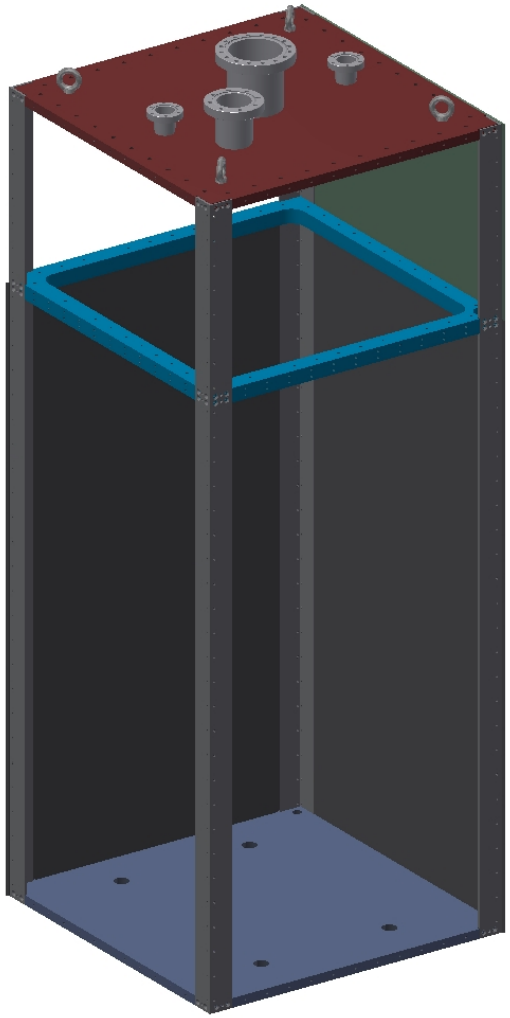
ArCube module_Design



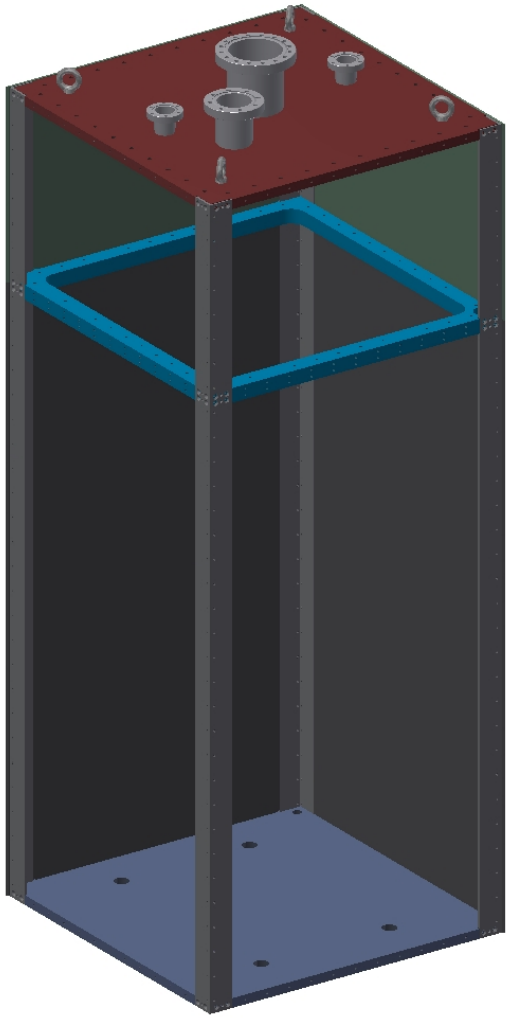
ArCube module_Design



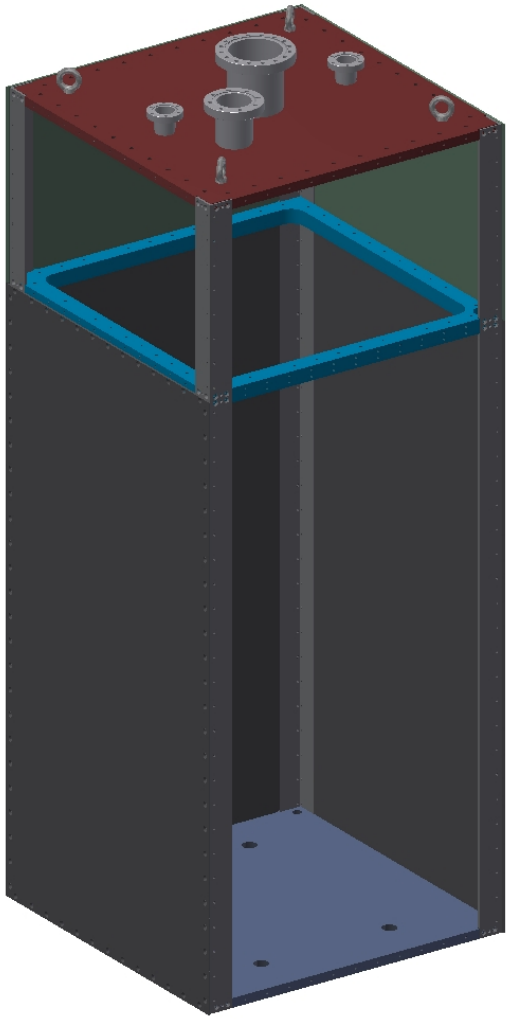
ArCube module_Design



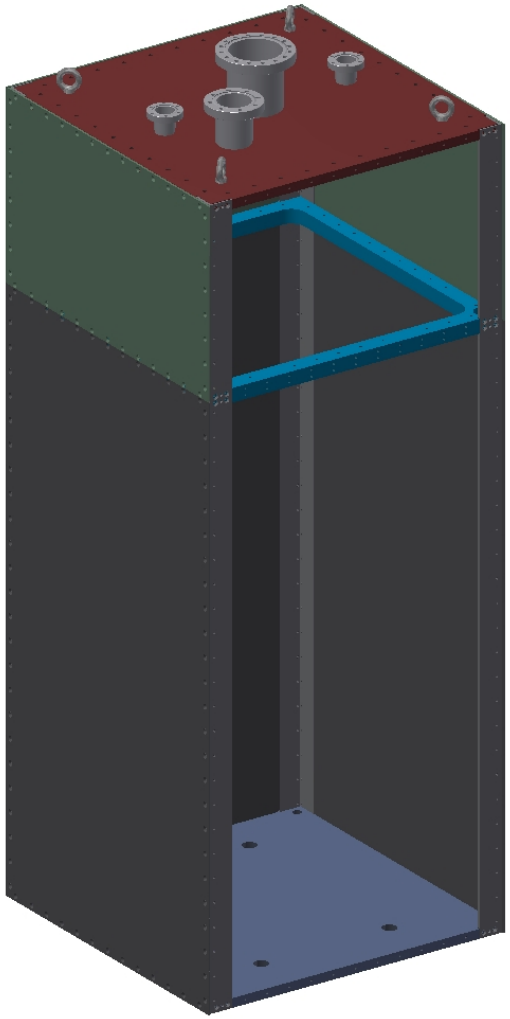
ArCube module_Design



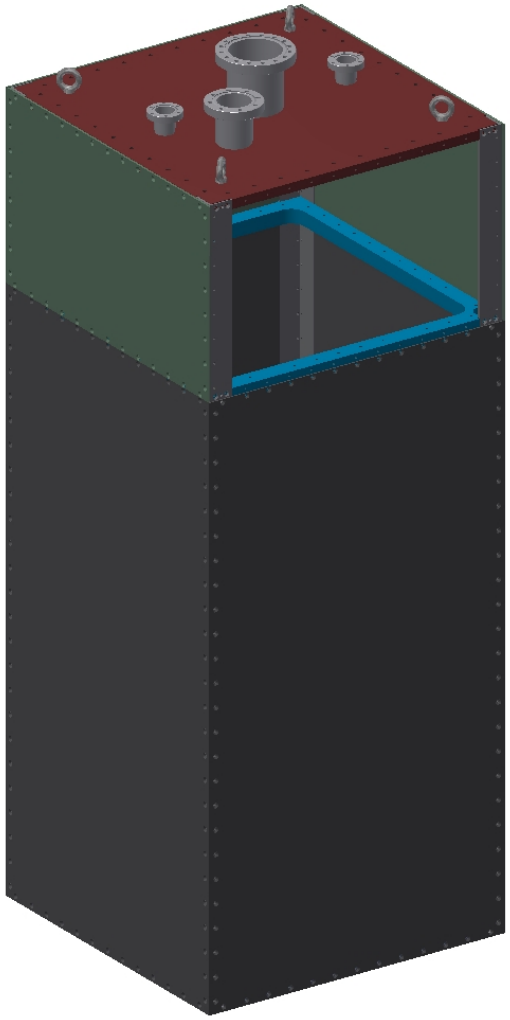
ArCube module_Design



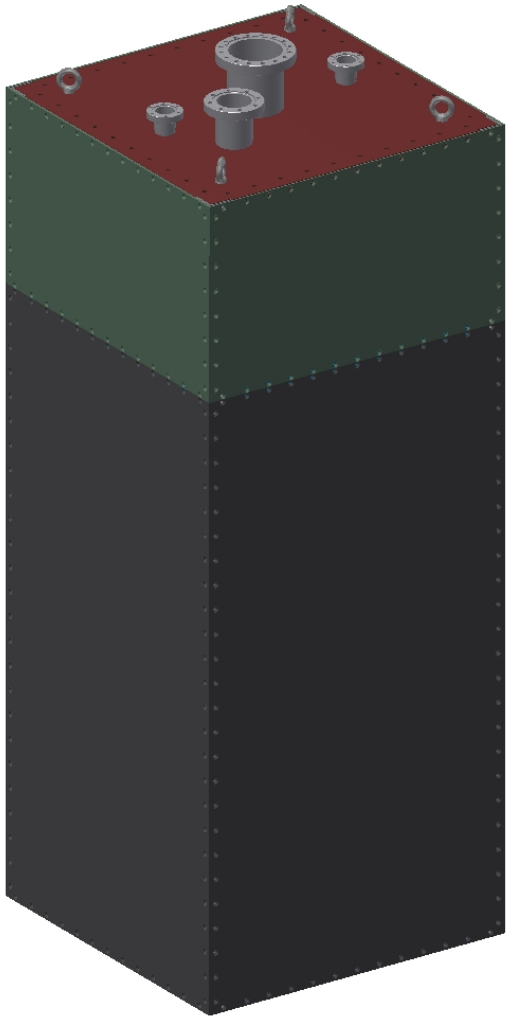
ArCube module_Design



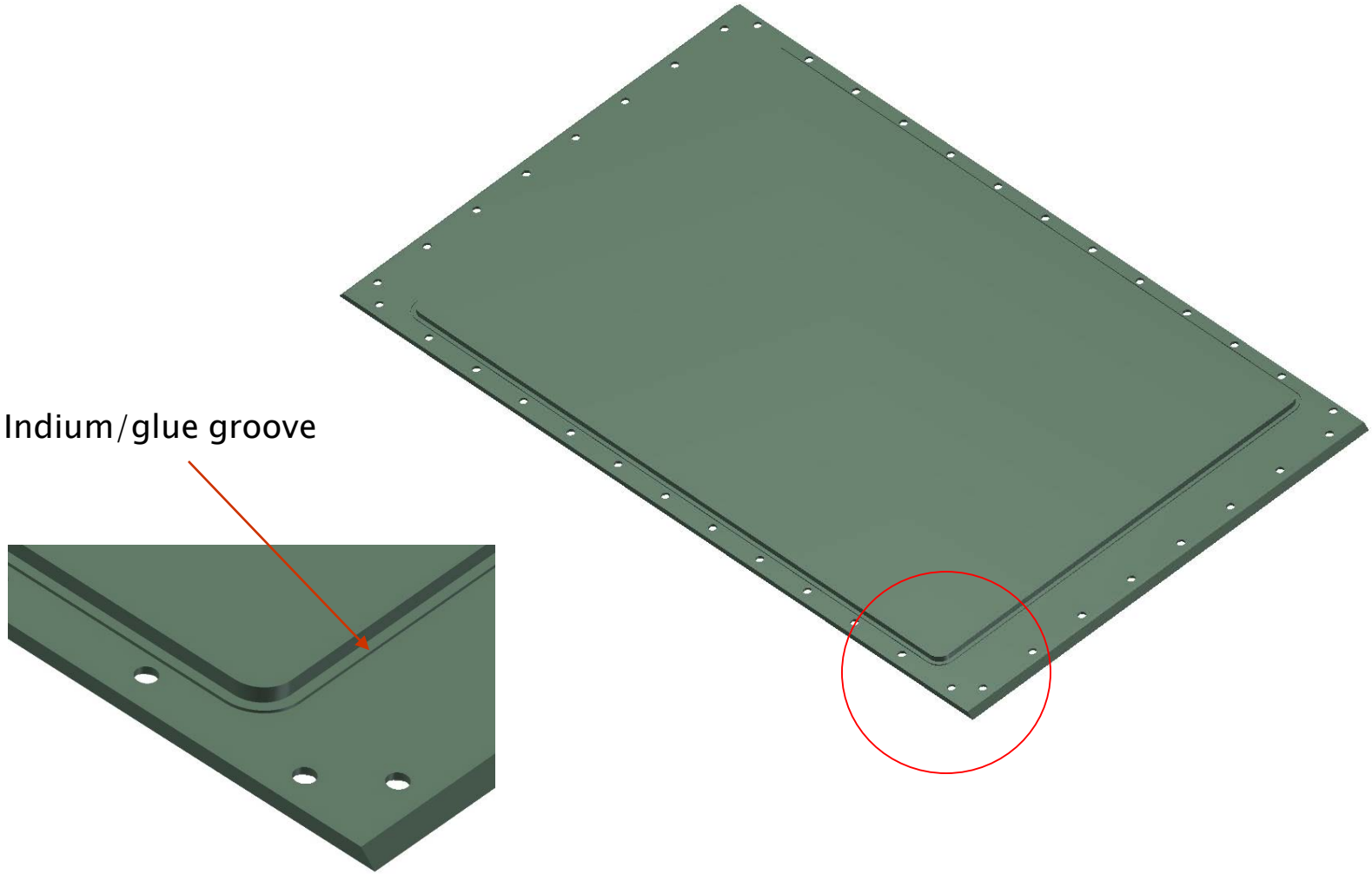
ArCube module_Design



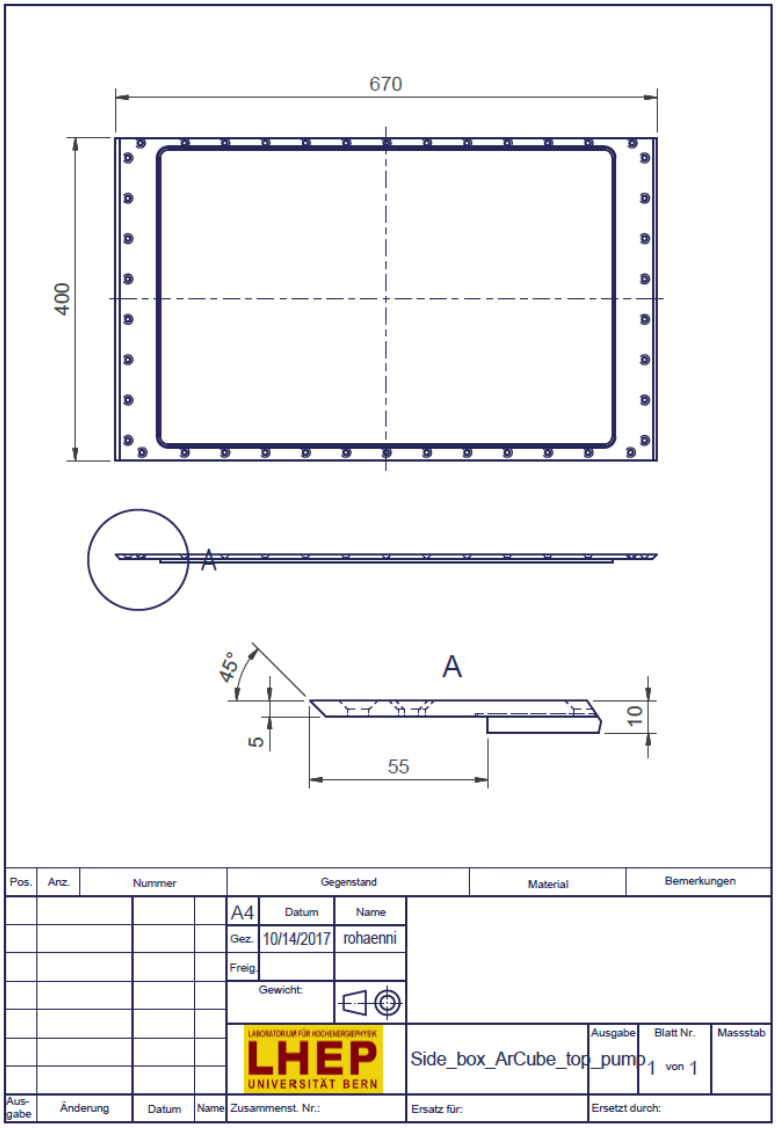
ArCube module_Design



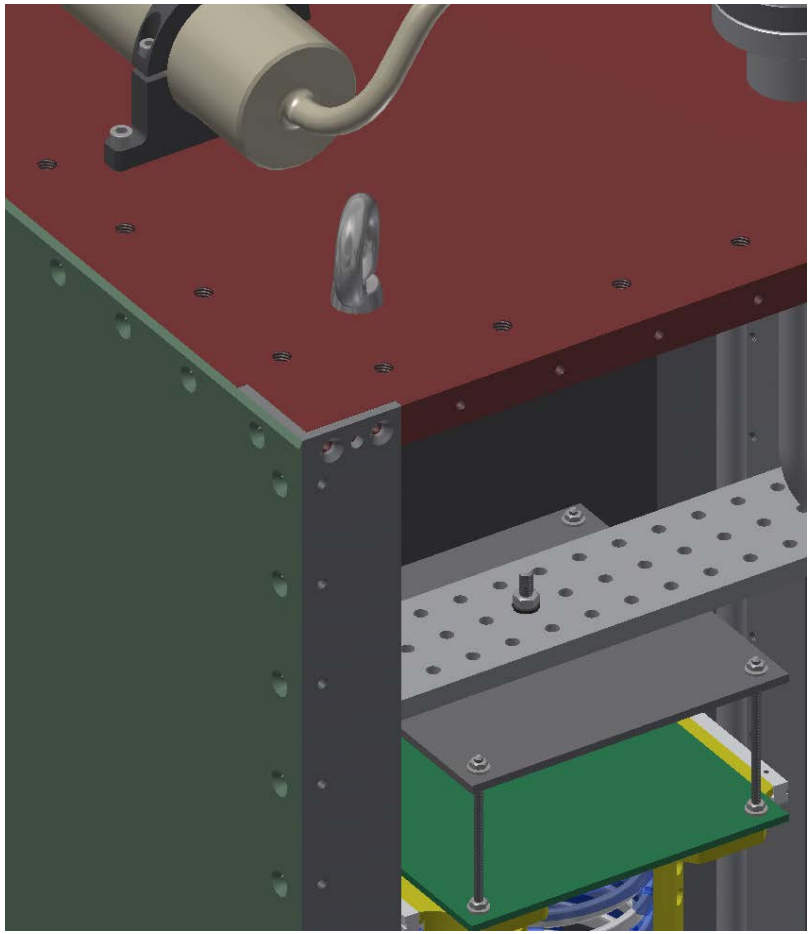
ArCube module_Design

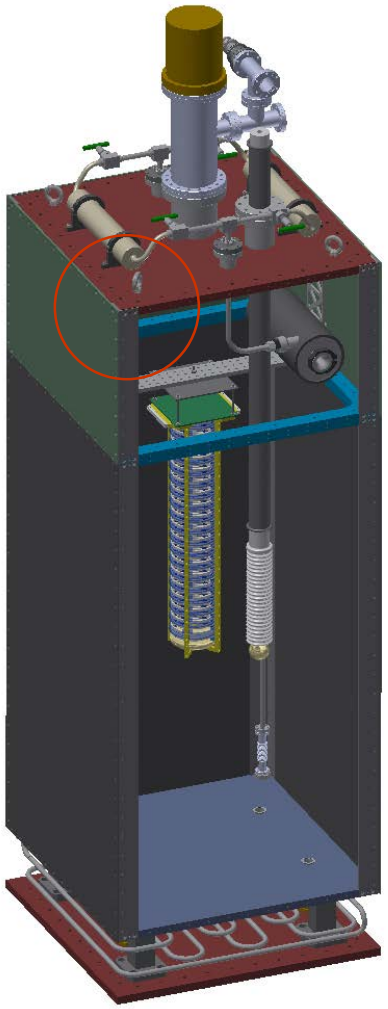


ArCube module_Design

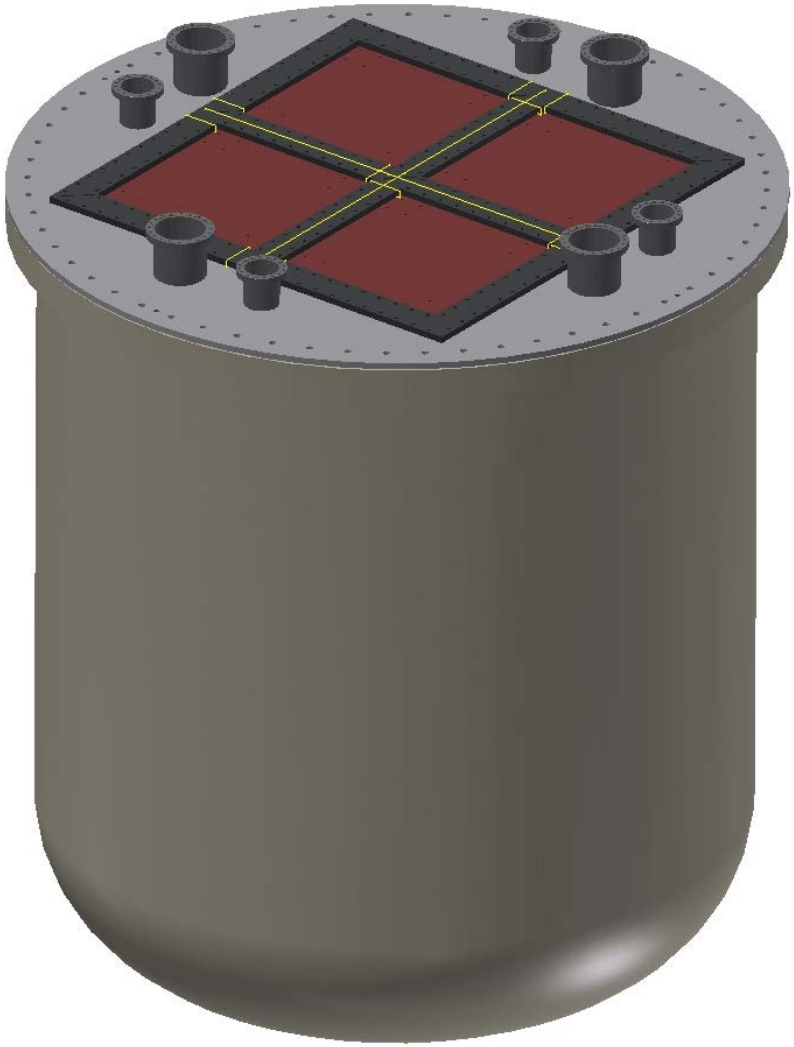


ArCube module_Design

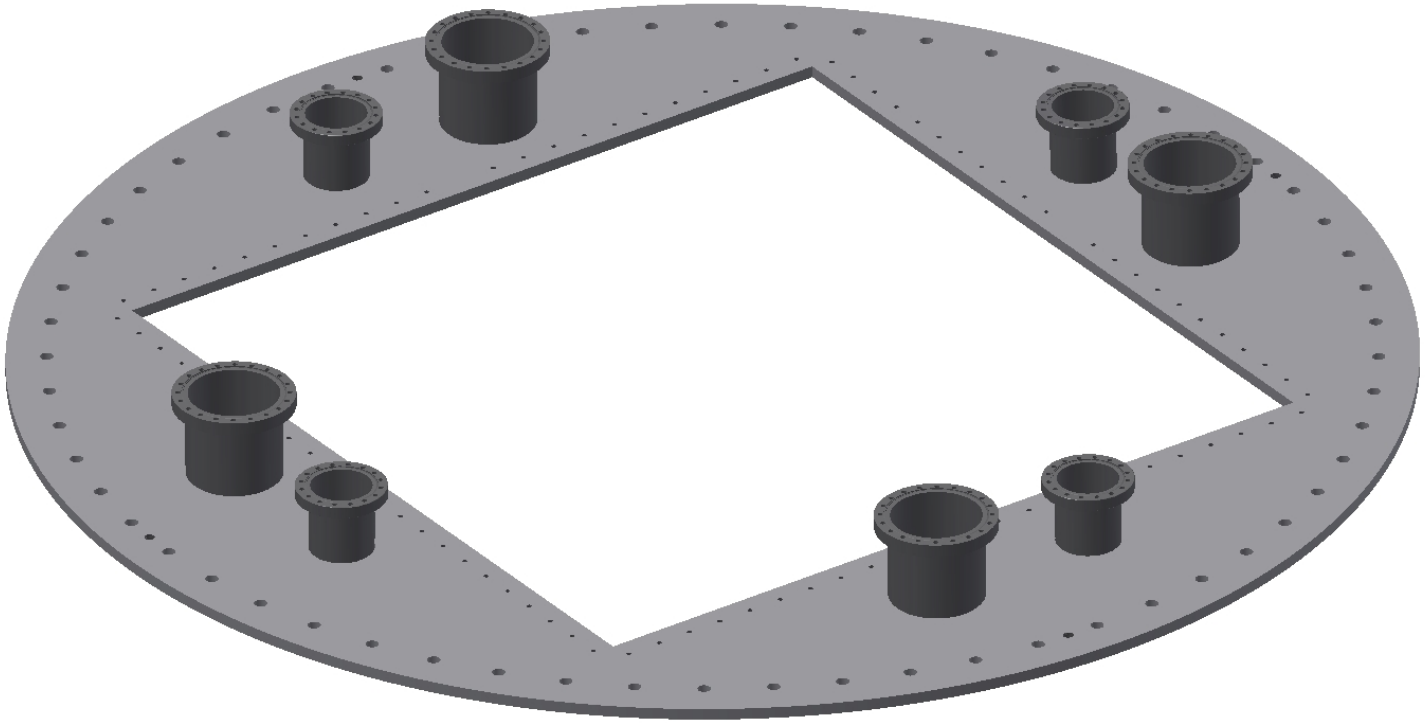




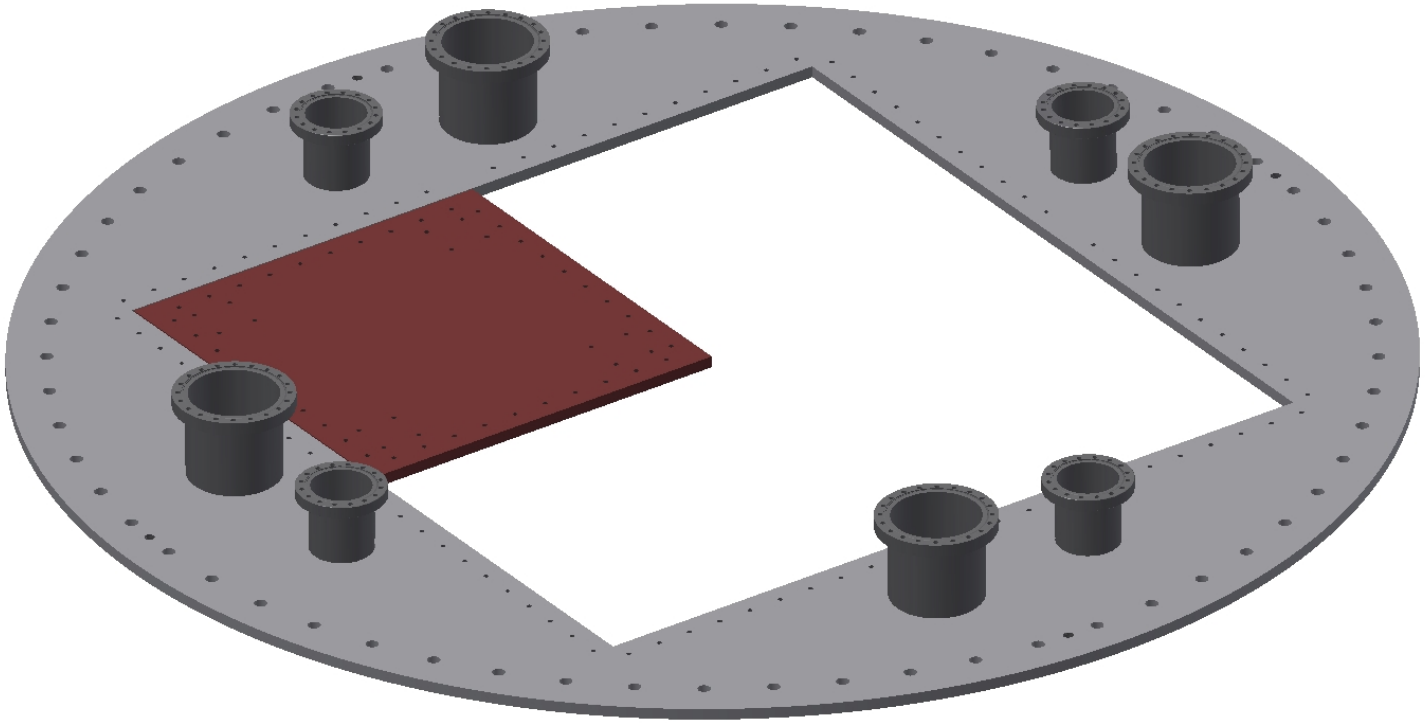
ArCube module_Design



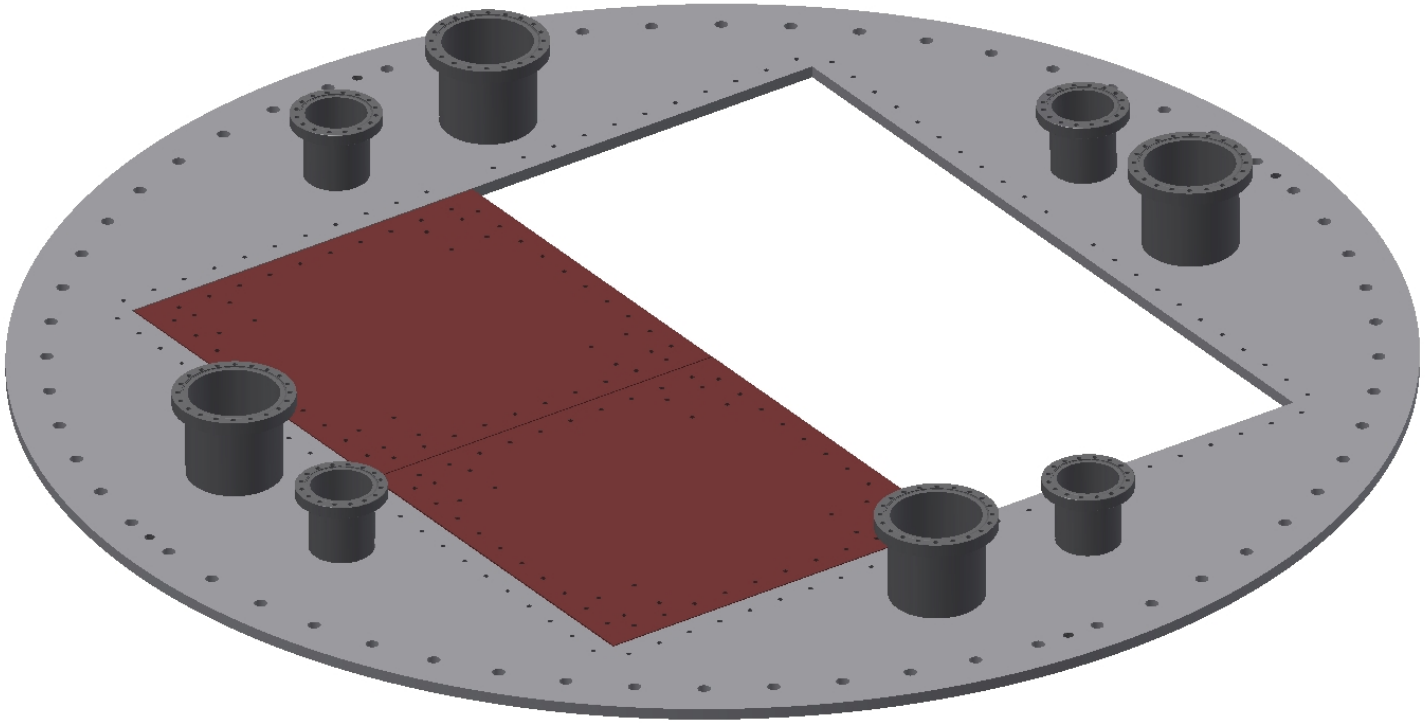
ArCube module_Design



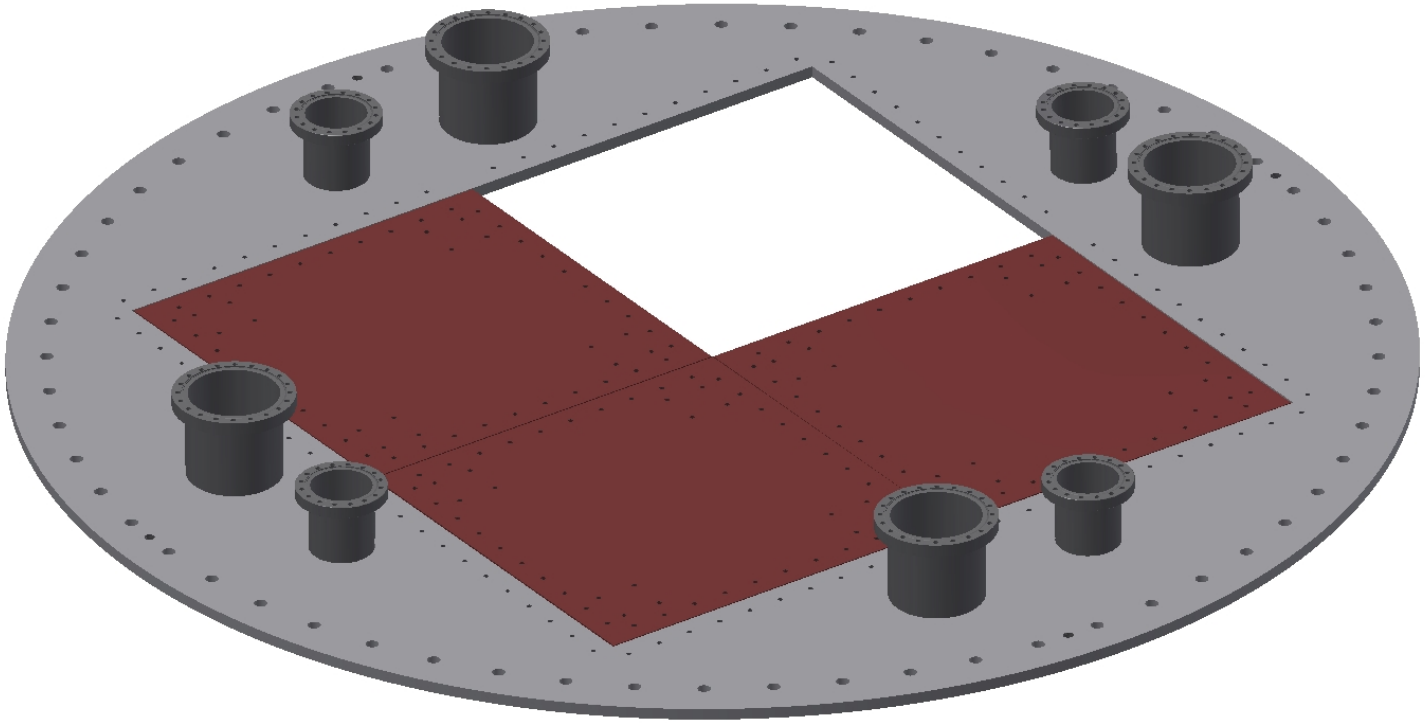
ArCube module_Design



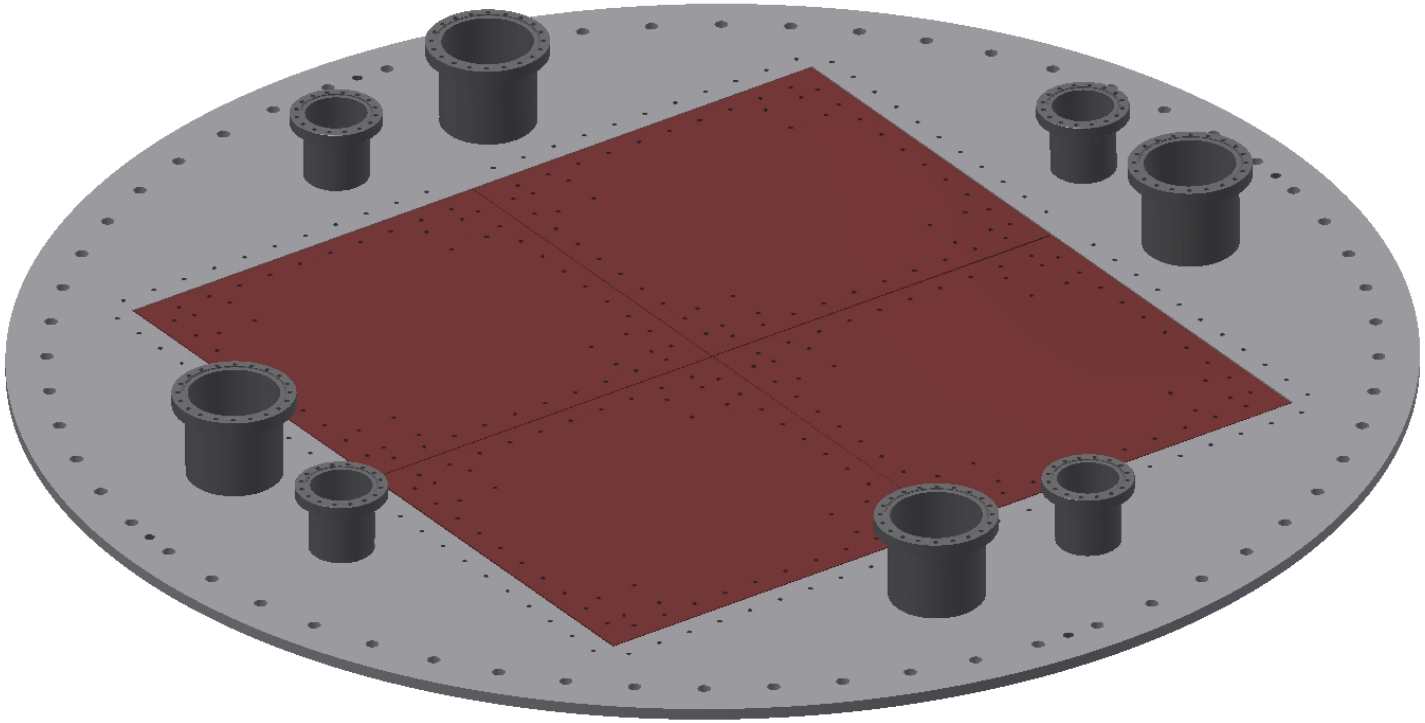
ArCube module_Design



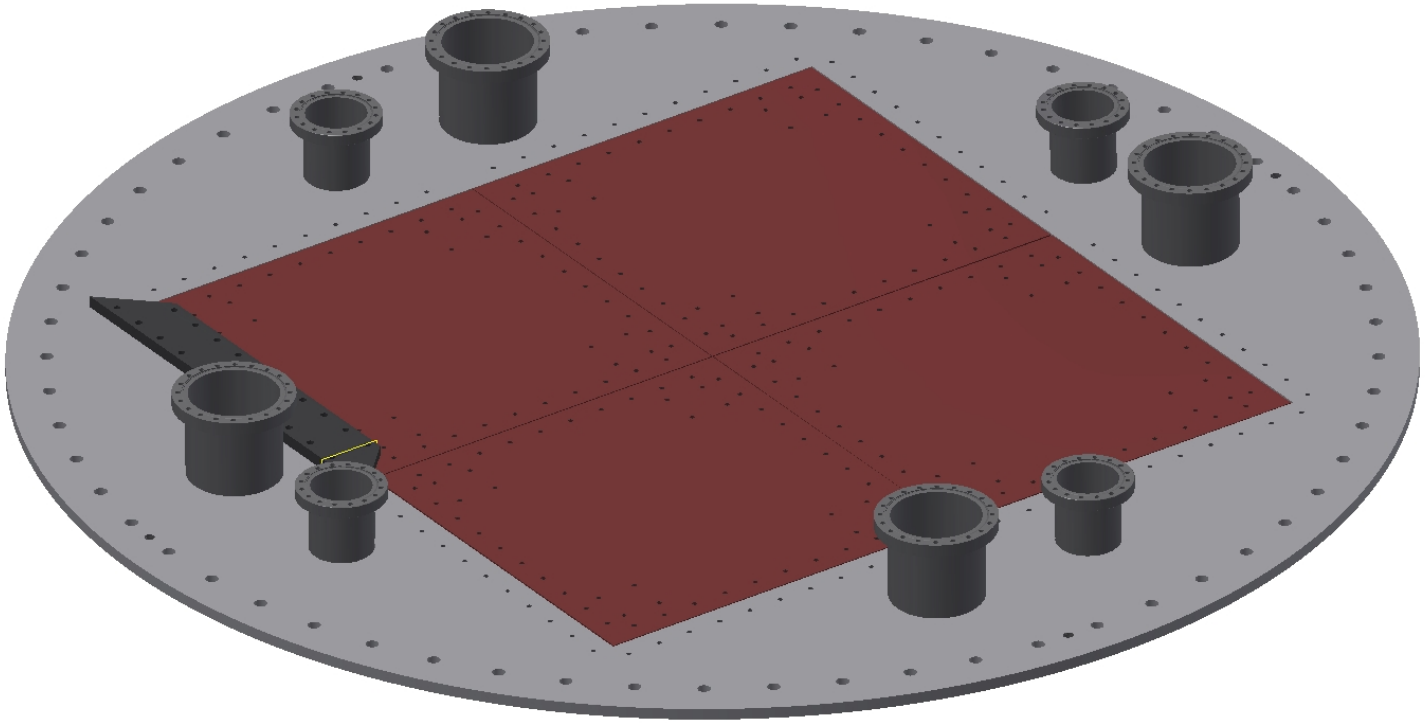
ArCube module_Design



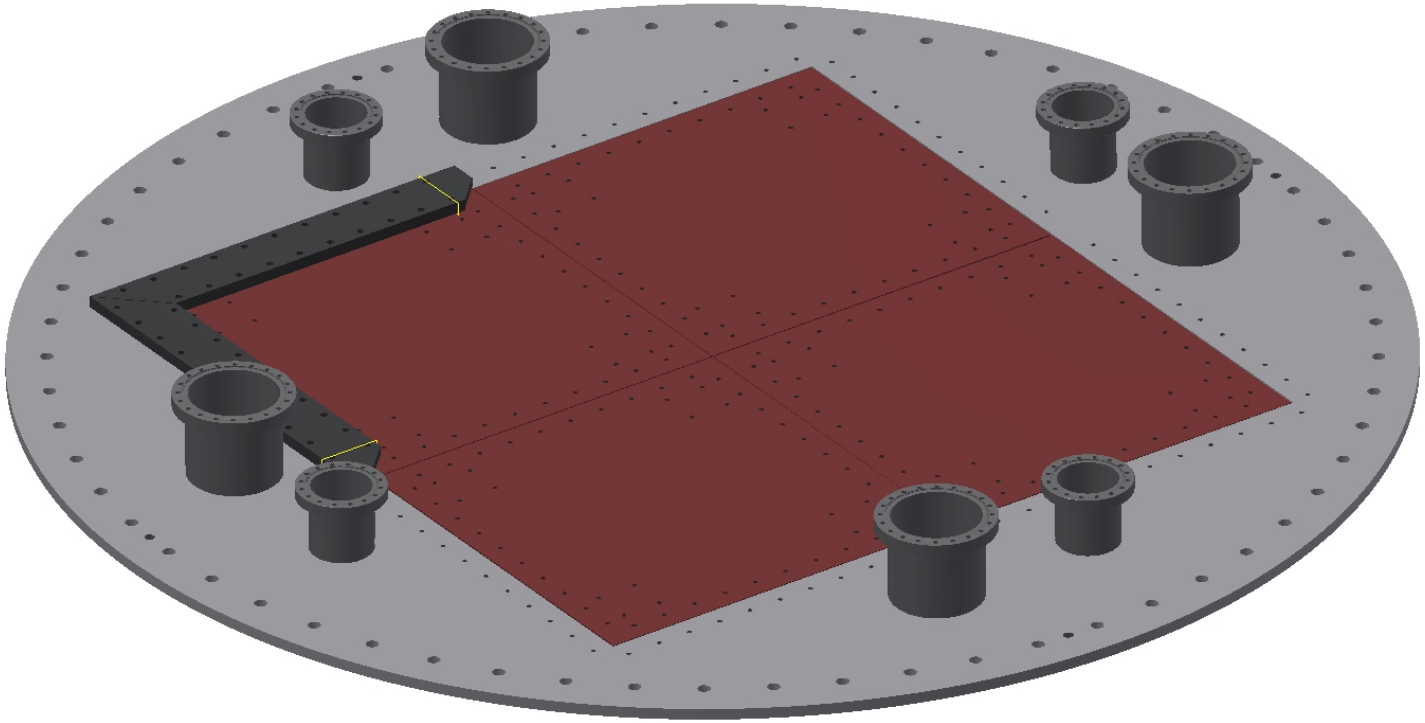
ArCube module_Design



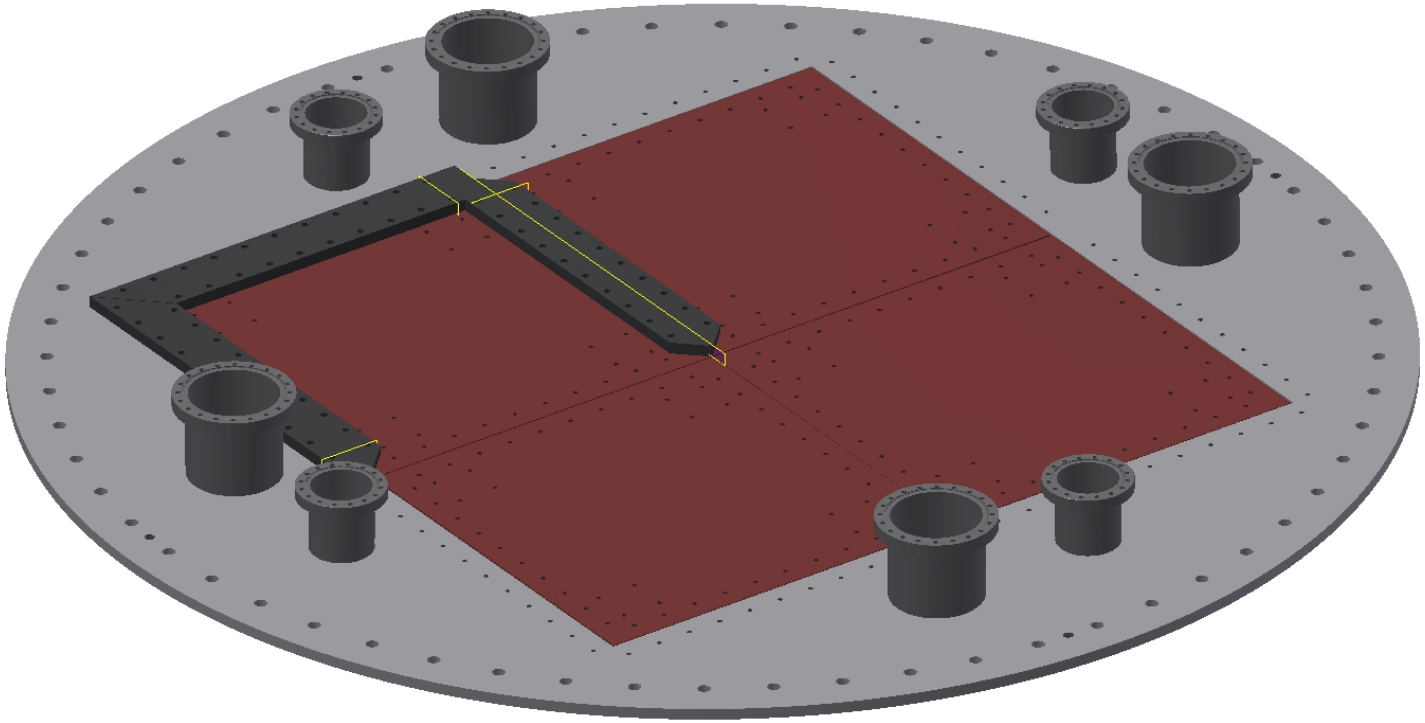
ArCube module_Design



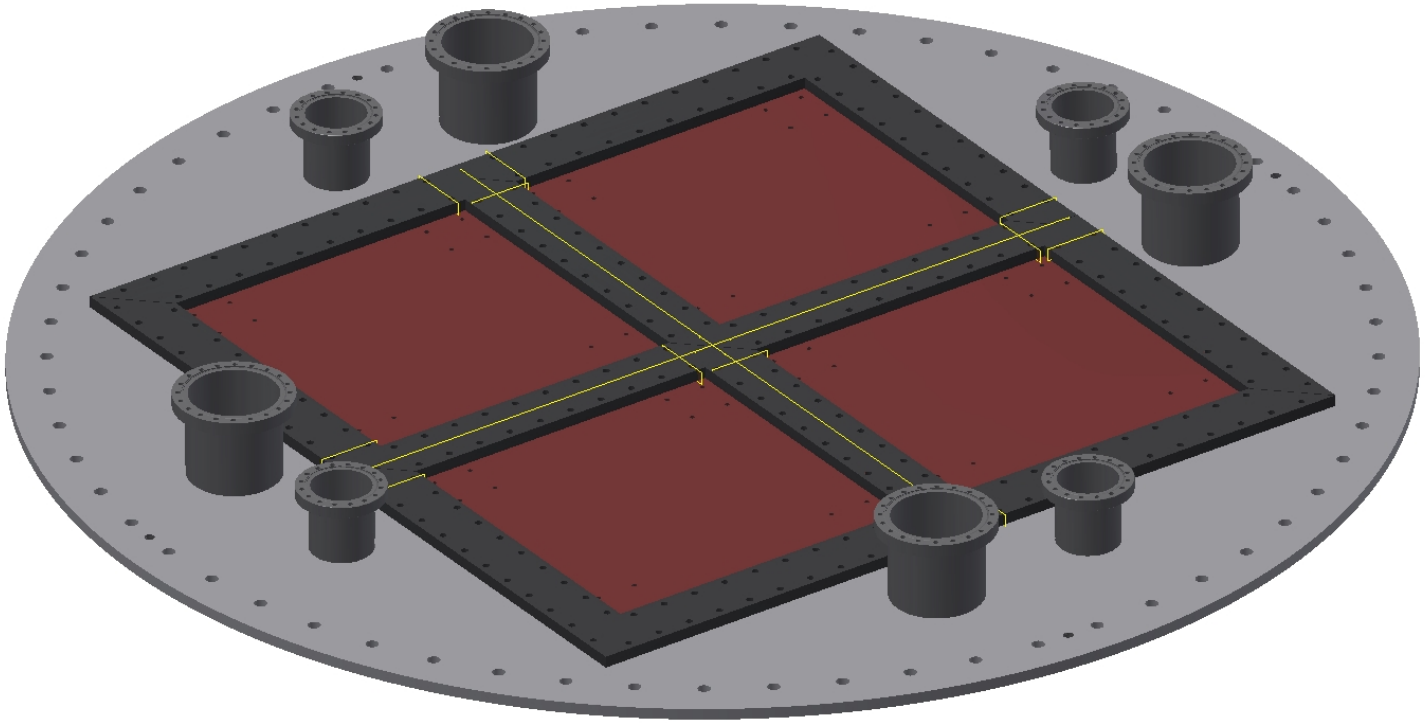
ArCube module_Design



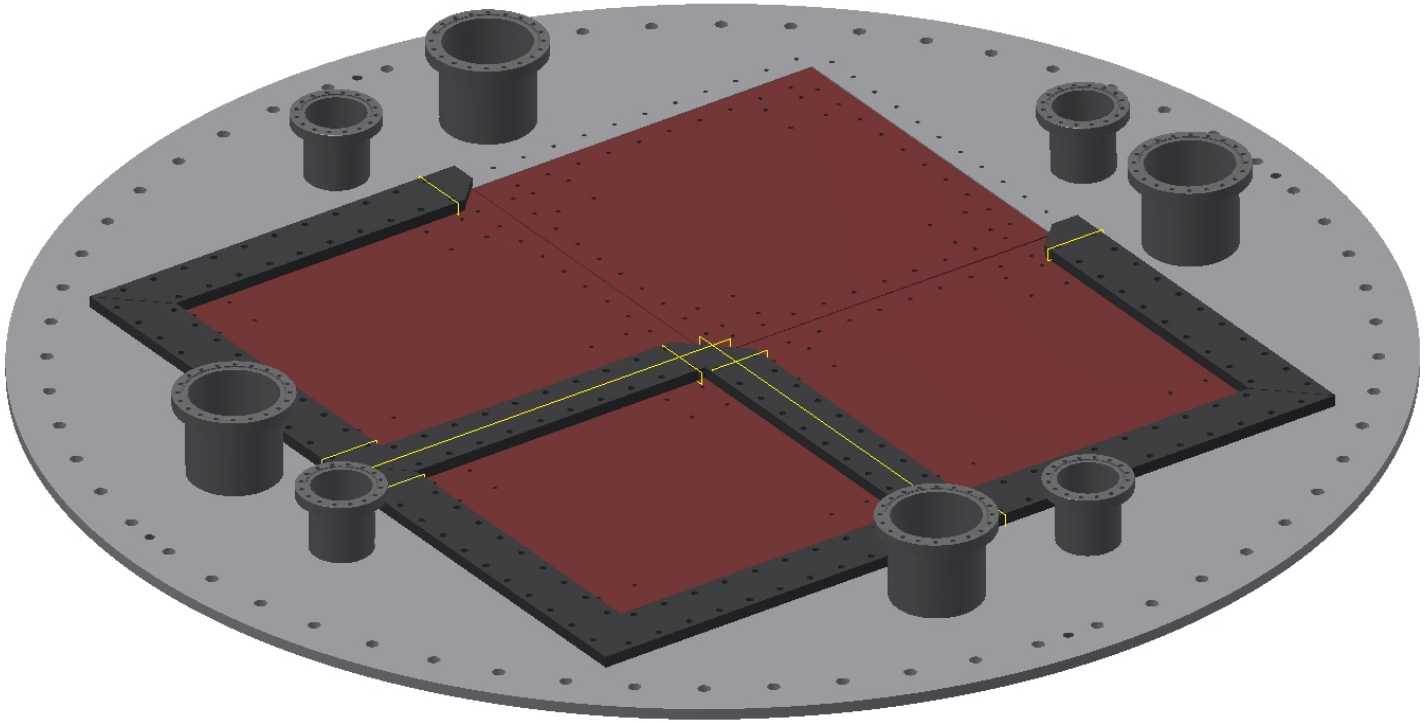
ArCube module_Design



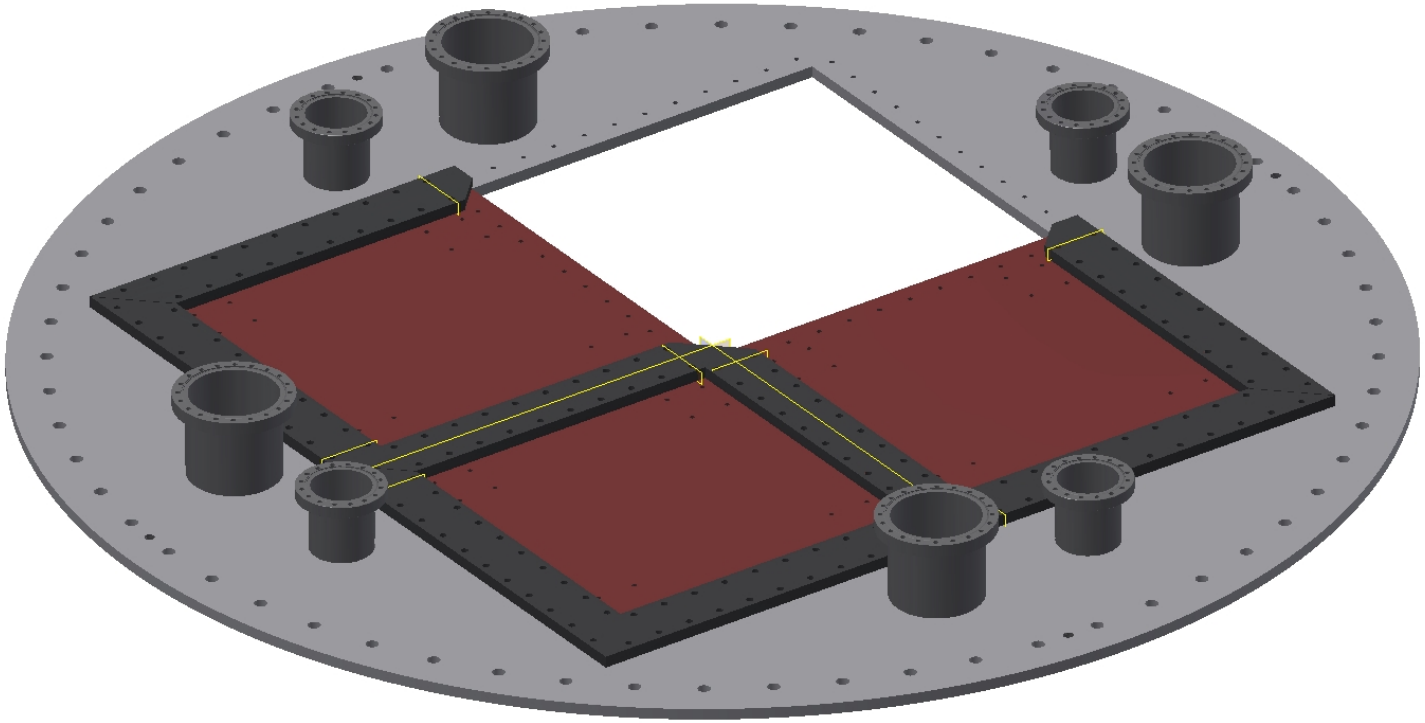
ArCube module_Design



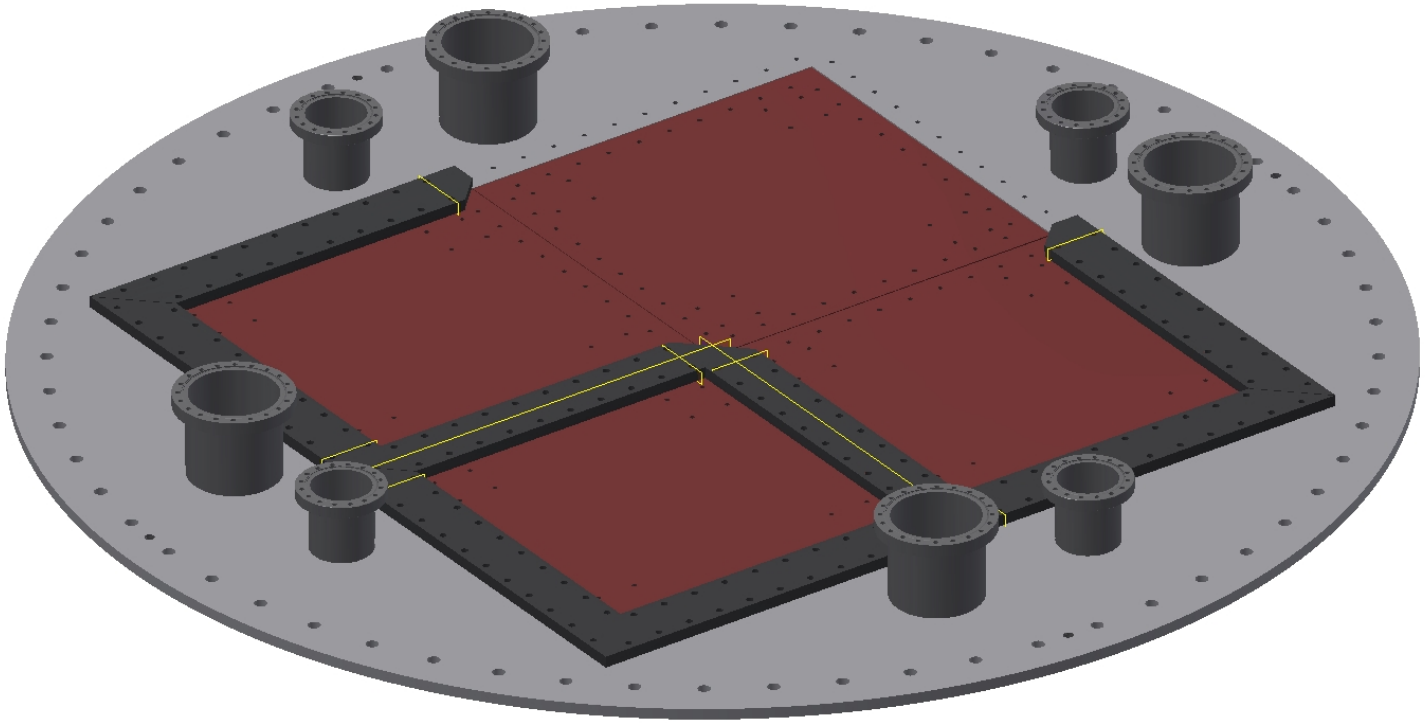
ArCube module_Design



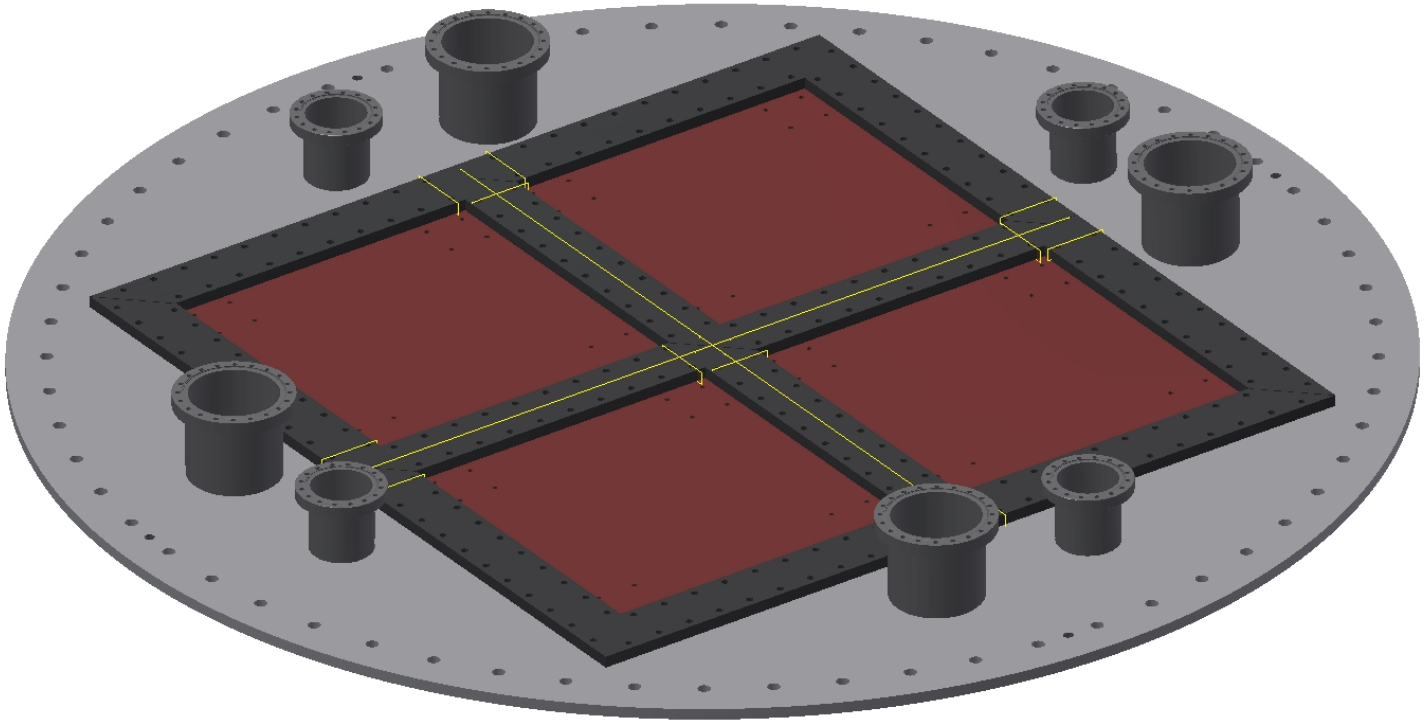
ArCube module_Design



ArCube module_Design

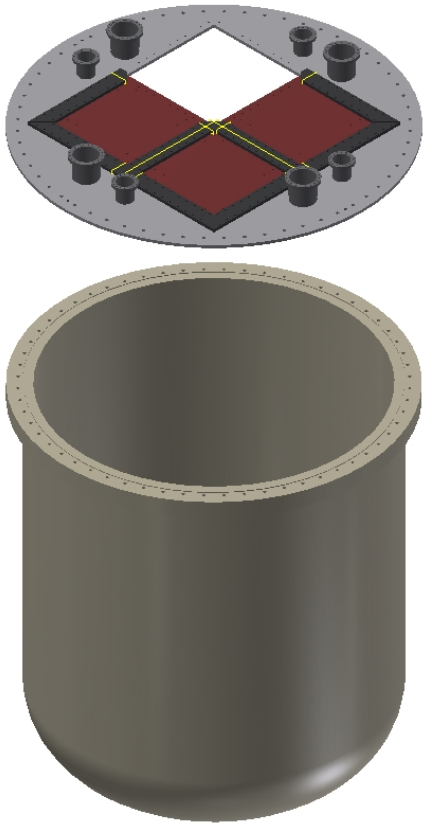


ArCube module_Design

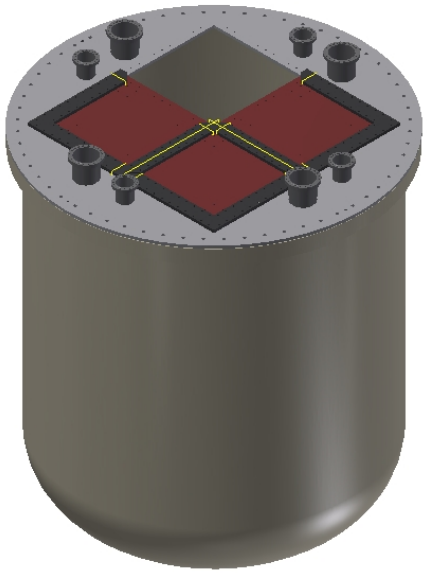


ArCube module_Design

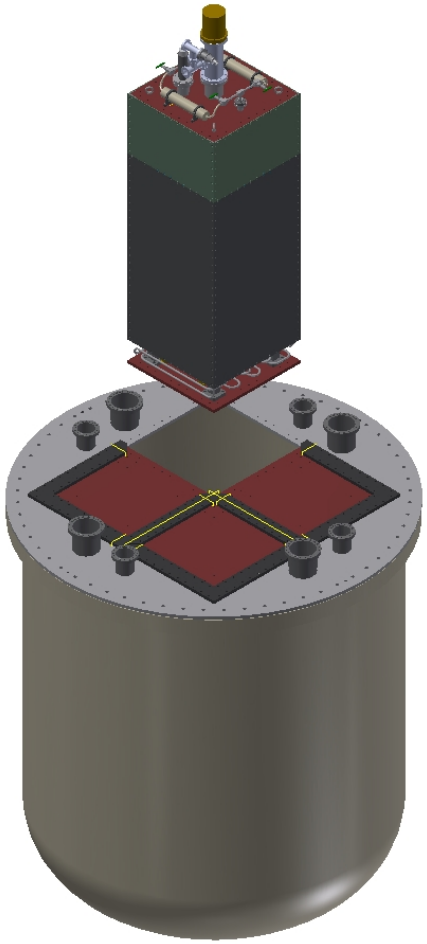
ArCube module_Design



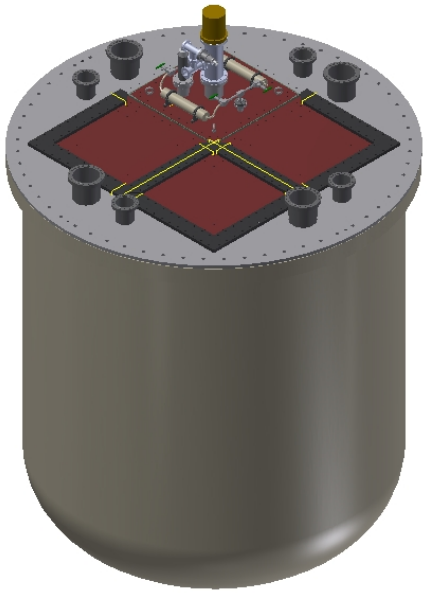
ArCube module_Design



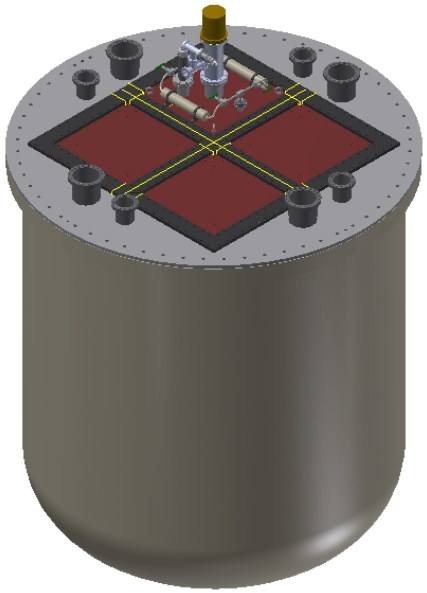
ArCube module_Design



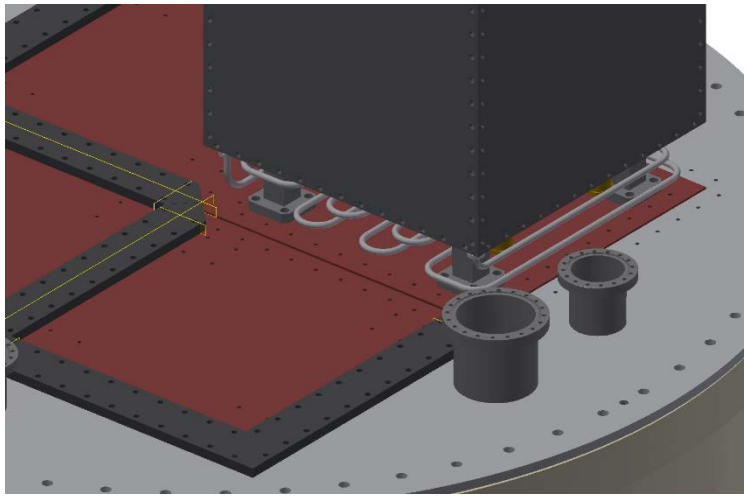
ArCube module_Design

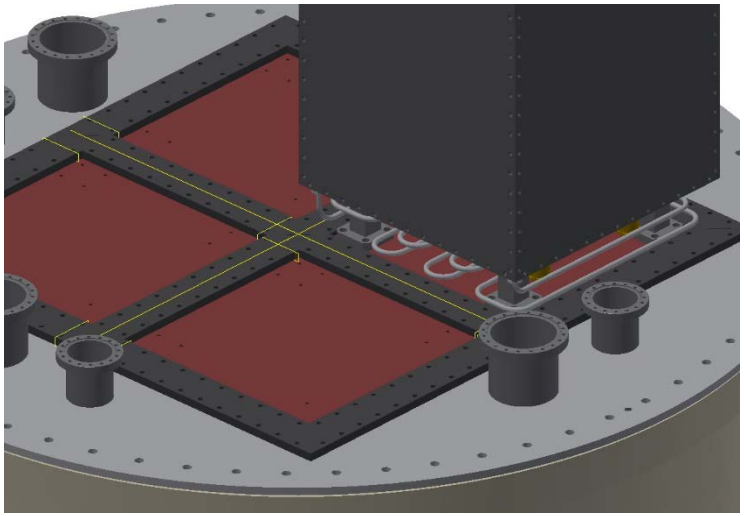


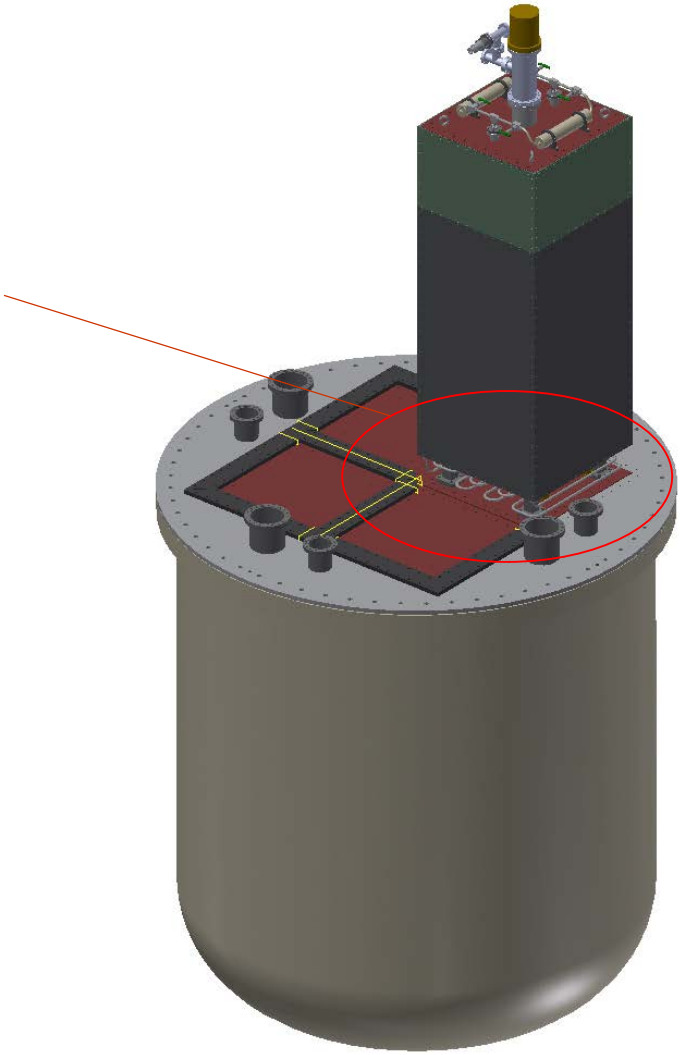
ArCube module_Design



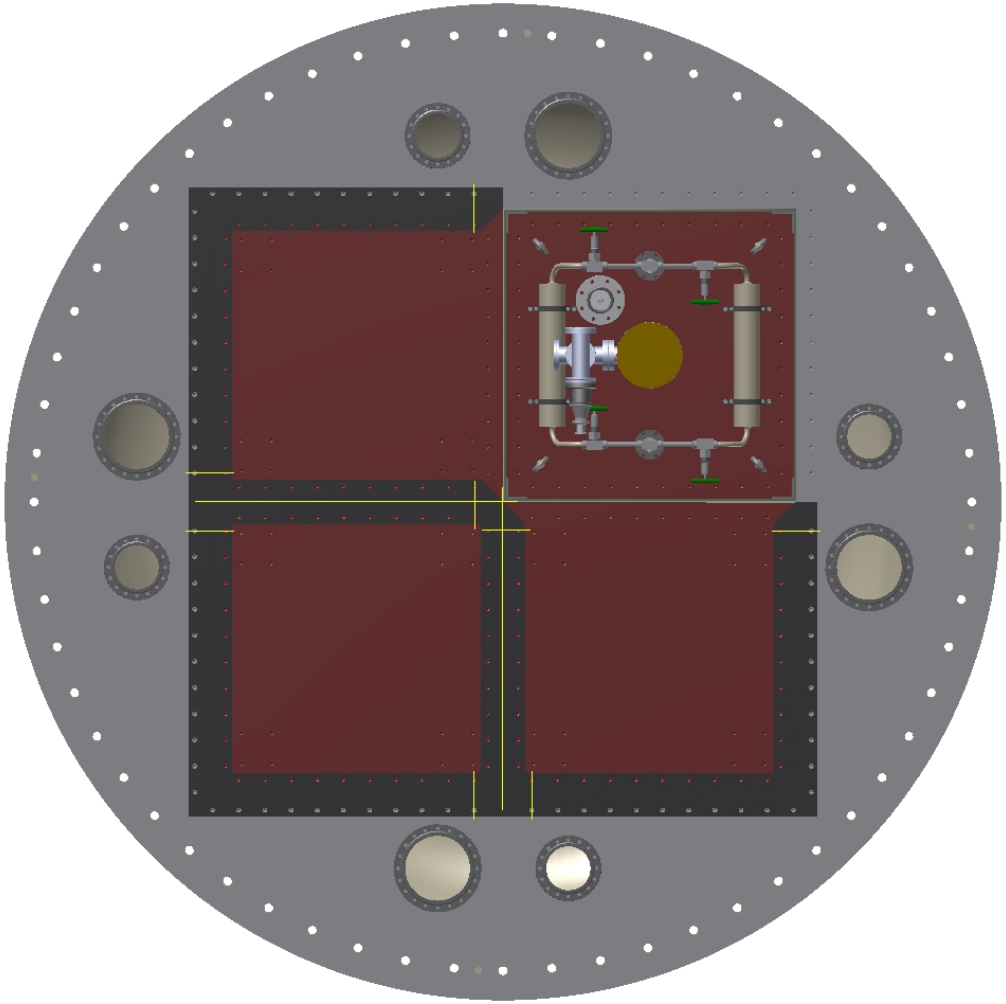
ArCube module_Design



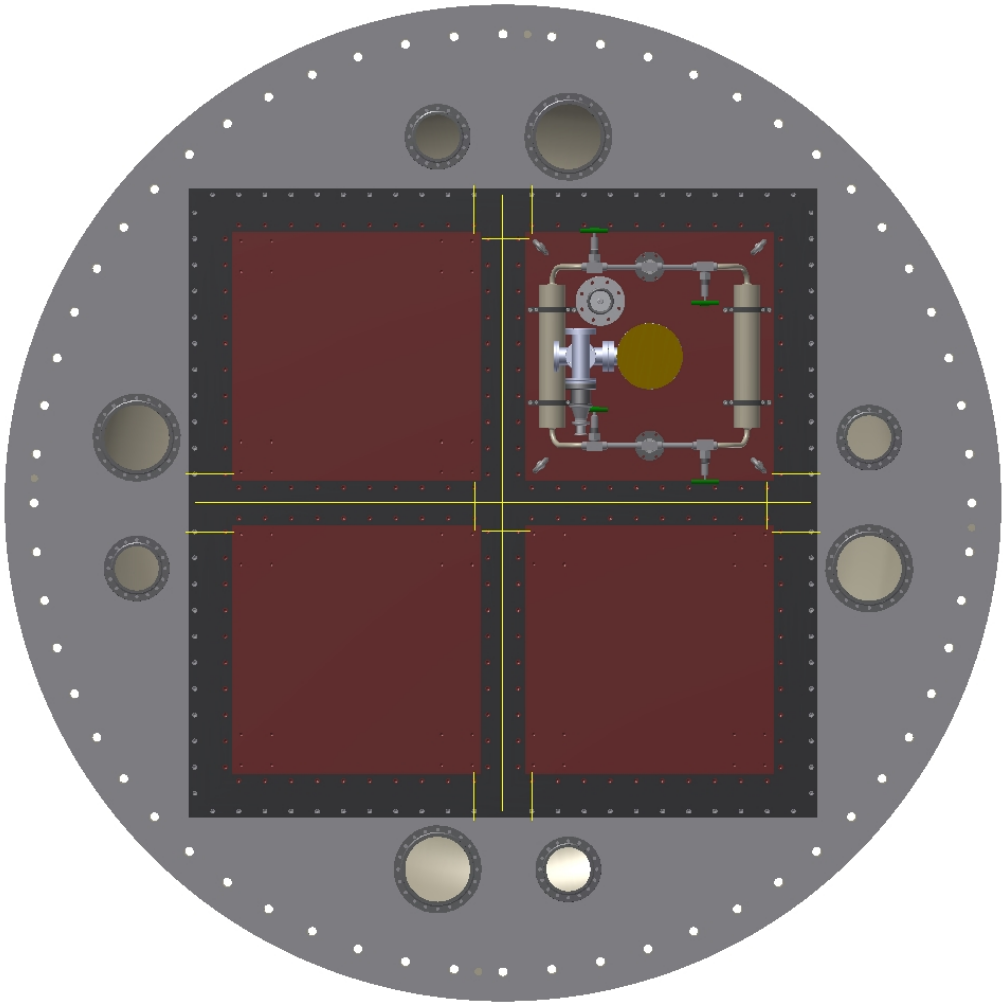




ArCube module_Design



ArCube module_Design



ArCube module_status

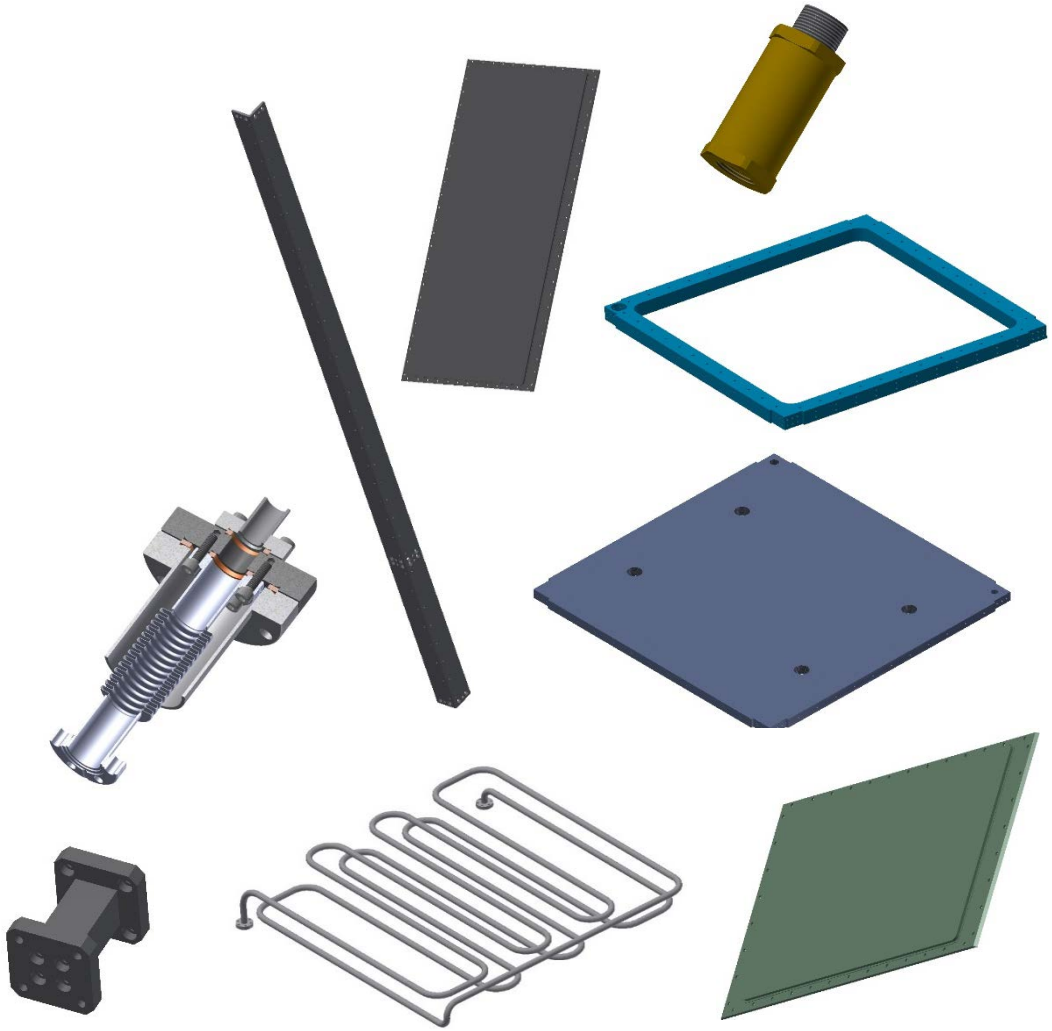
What do we have?

- Cryostat_vessel
- Cryostat_topflange
- Cryopump
- Electronic readout feedthrough
- HV-feedthrough
- Pixel demonstrator TPC
- Filters

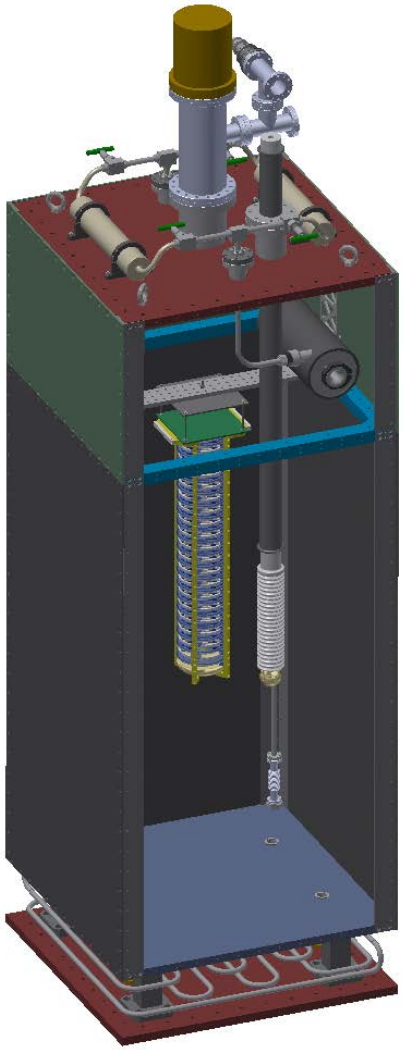
ArCube module_status

What do we need?

- Stress releaser feedthrough
- Frame
- L-profiles
- Bottom flange
- Top side plates
- Bottom side plates
- G10 screws
- Spacers
- Check valves
- Heat exchanger



Thank you!



Questions?