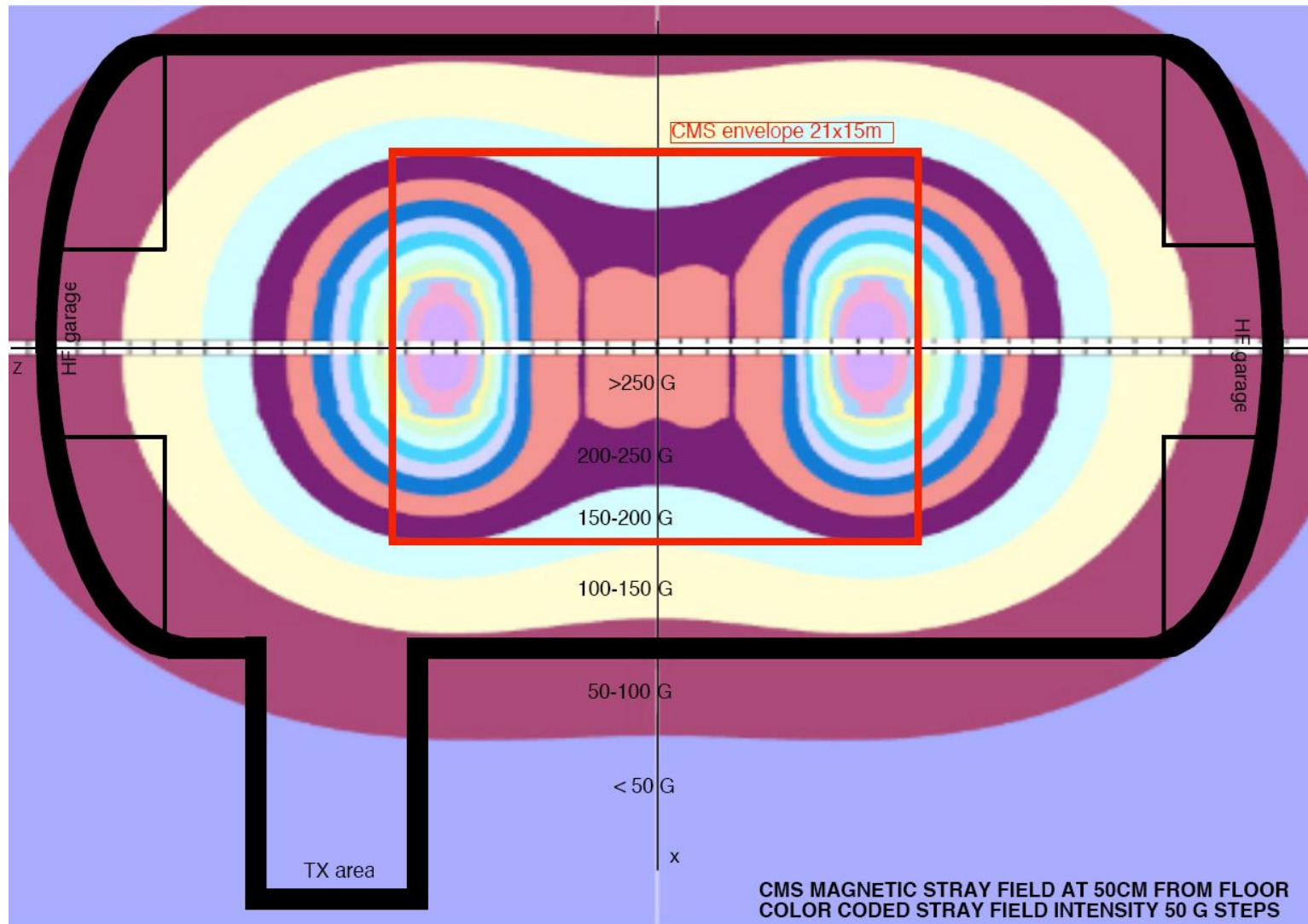
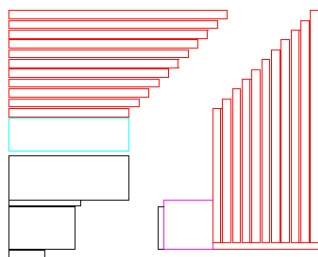
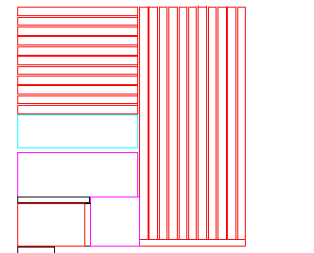
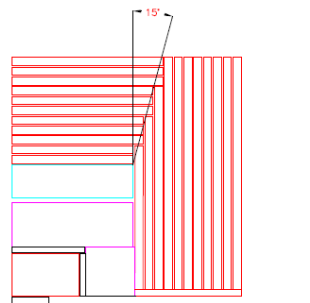
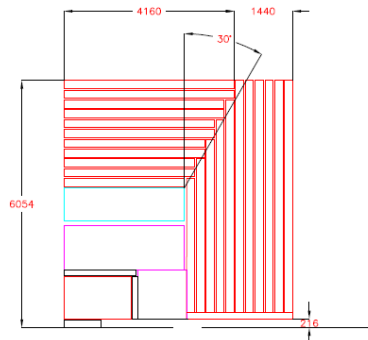
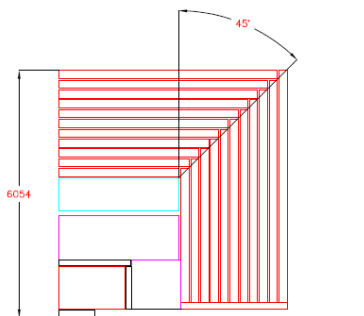


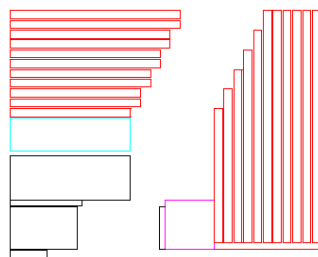
CMS Stray Field at 50cm from floor



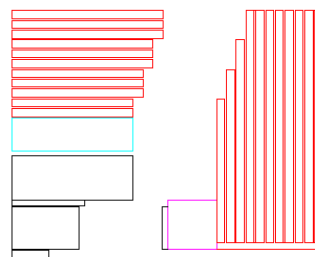
Barrel-Door partitions



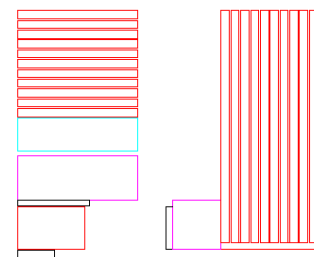
Barrel = 4,439 tons +43%
Door = 1,314 tons -22%



Barrel = 3,810 tons +24,5%
Door = 1,627 tons -18,5%



Barrel = 3,516 tons +14,9%
Door = 1,773 tons -11,2%



Barrel = 3,059 tons
Door = 1,996 tons

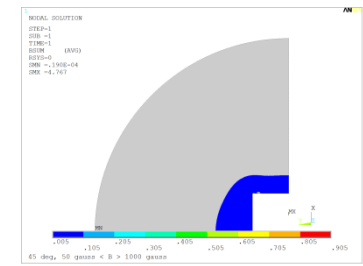
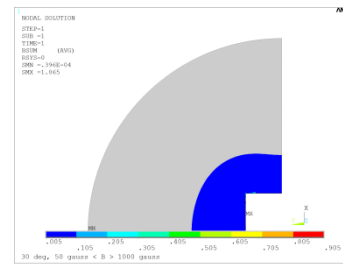
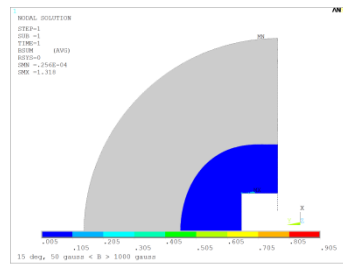
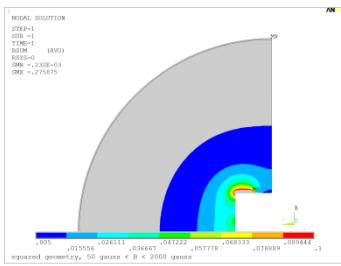
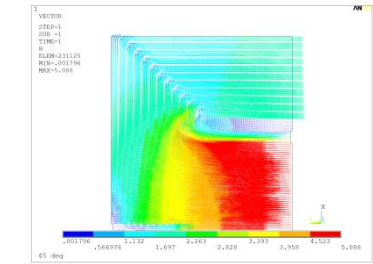
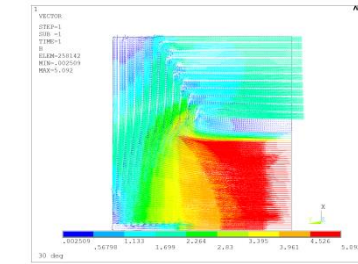
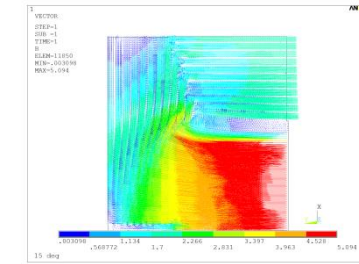
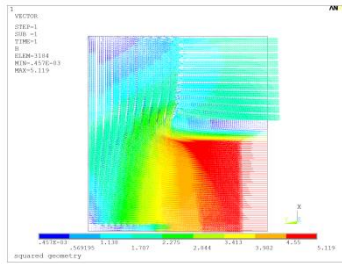
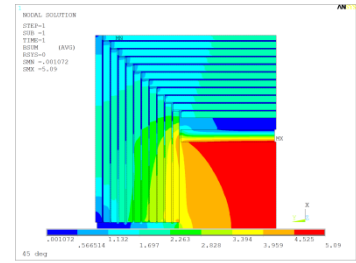
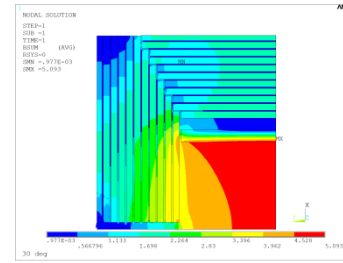
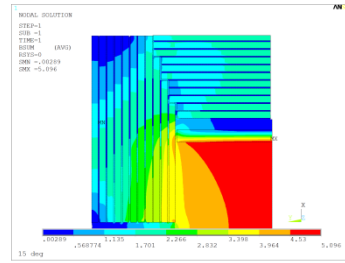
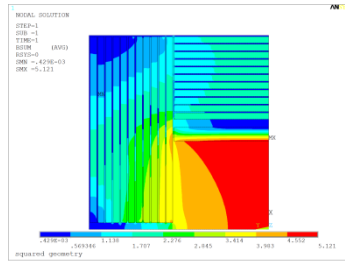
45 deg

30 deg

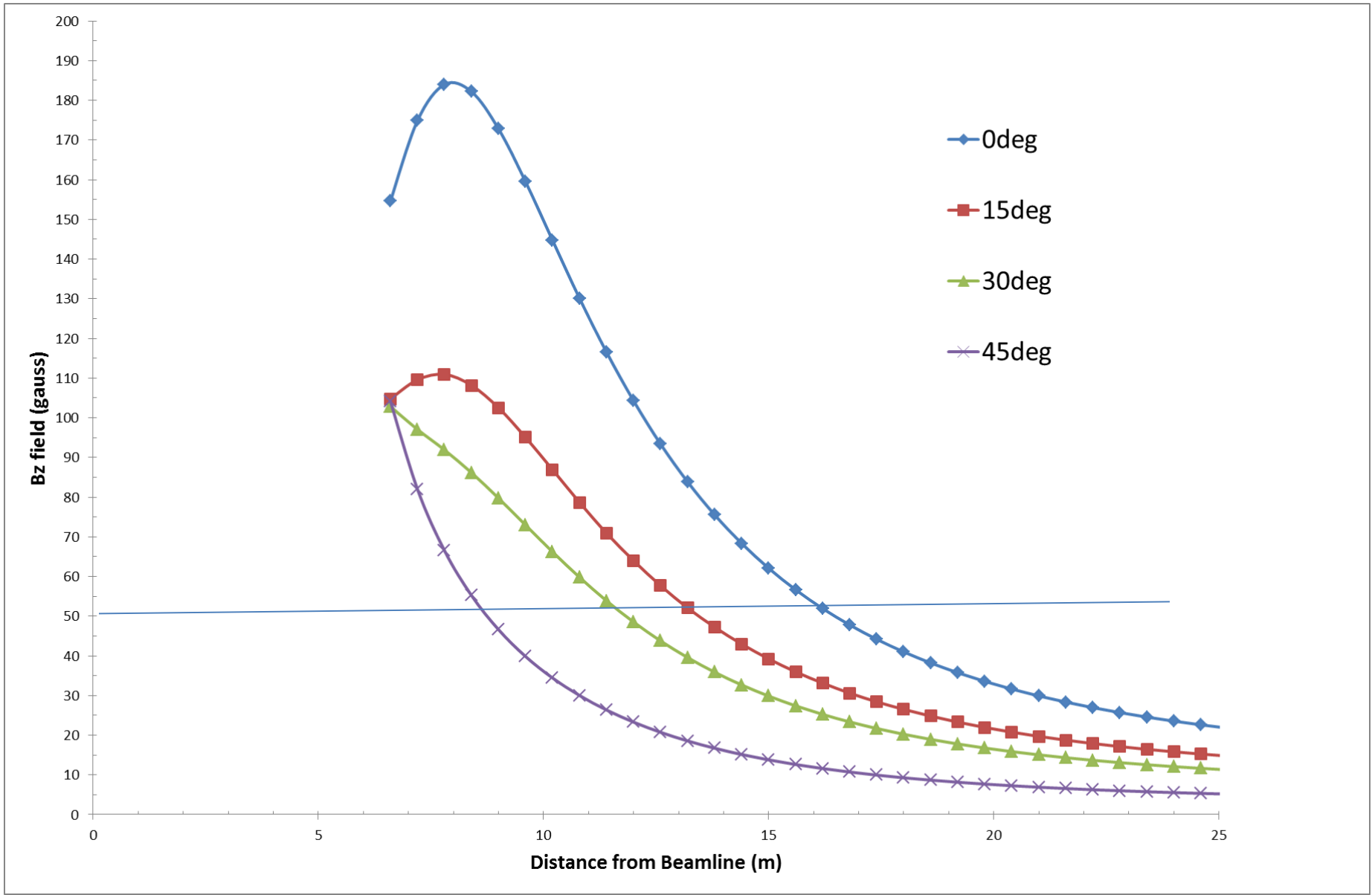
15 deg

0 deg
Baseline

B field – 11 plates, 200mm



Bx field Far Region – 11 plates

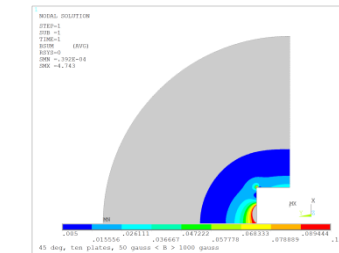
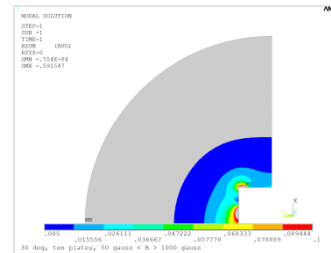
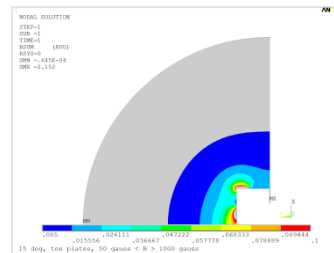
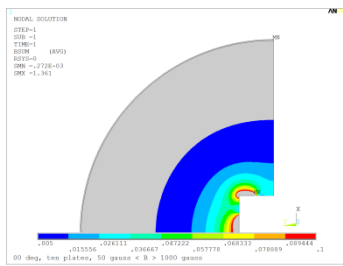
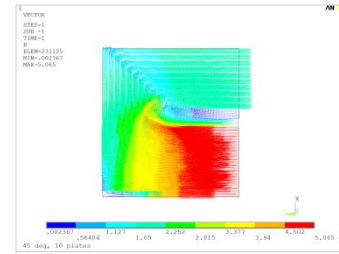
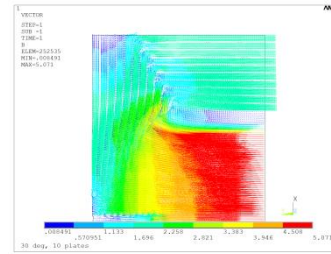
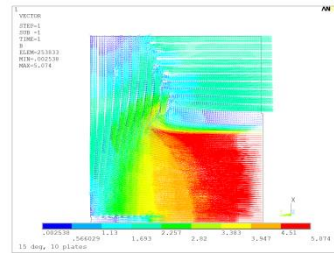
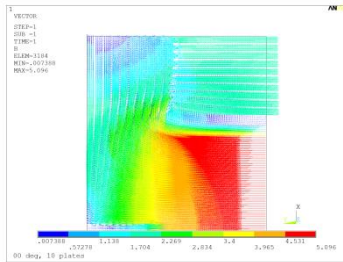
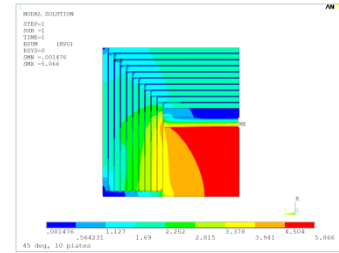
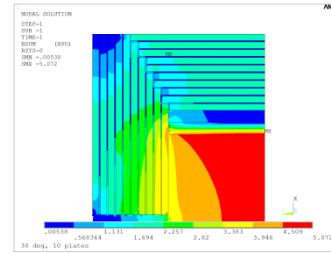
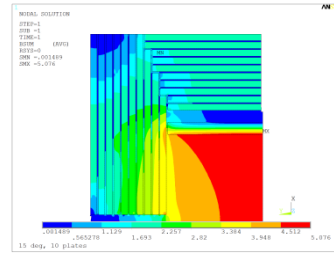
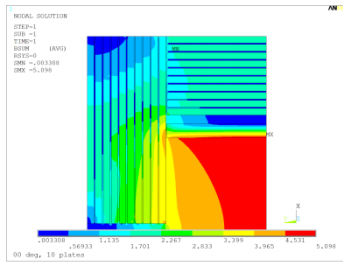


Mass Distribution

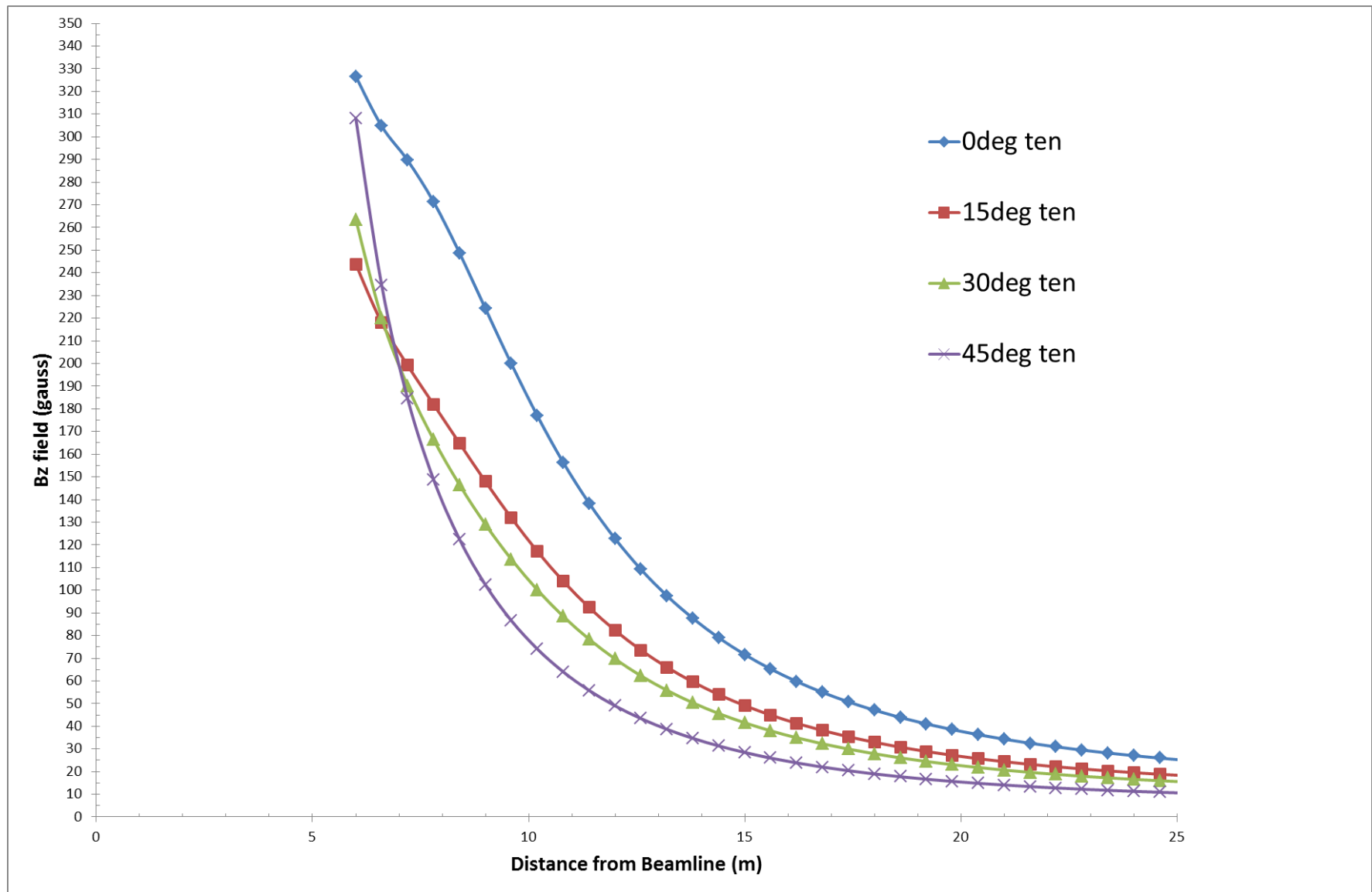
Barrel 00deg				Barrel 15deg				Barrel 30deg				Barrel 45deg			
Plate #	Radius (mm)	Length (mm)	Mass (tons)	Plate #	Radius (mm)	Length (mm)	Mass (tons)	Plate #	Radius (mm)	Length (mm)	Mass (tons)	Plate #	Radius (mm)	Length (mm)	Mass (tons)
1	3554	5900	208	1	3554	5900	208	1	3554	5900	208	1	3554	5900	208
2	3794	5900	222	2	3794	5900	222	2	3794	6396	241	2	3794	6400	241
3	4034	5900	236	3	4034	6396	256	3	4034	6396	256	3	4034	6880	275
4	4274	5900	250	4	4274	6396	271	4	4274	6880	292	4	4274	7360	312
5	4514	5900	264	5	4514	6396	286	5	4514	6880	308	5	4514	7840	351
6	4754	5900	278	6	4754	6880	324	6	4754	7360	347	6	4754	8320	392
7	4994	5900	292	7	4994	6880	341	7	4994	7360	364	7	4994	8800	436
8	5234	5900	306	8	5234	6880	357	8	5234	7840	407	8	5234	9280	482
9	5474	5900	320	9	5474	7360	399	9	5474	7840	426	9	5474	9760	530
10	5714	5900	334	10	5714	7360	417	10	5714	8320	471	10	5714	10240	580
11	5954	5900	348	11	5954	7360	434	11	5954	8320	491	11	5954	10720	633
			3059				3516				3810				4439
							14.9%				24.5%				45.1%

Door 00deg				Door 15deg				Door 30deg				Door 45deg			
Plate #	R In (mm)	R out (mm)	Mass (tons)	Plate #	R In (mm)	R out (mm)	Mass (tons)	Plate #	R In (mm)	R out (mm)	Mass (tons)	Plate #	R In (mm)	R out (mm)	Mass (tons)
1	216	6054	181	1	216	3894	75	1	216	3654	66	1	216	3654	66
2	216	6054	181	2	216	4614	105	2	216	4134	84	2	216	3894	75
3	216	6054	181	3	216	5334	141	3	216	4614	105	3	216	4134	84
4	216	6054	181	4	216	6054	181	4	216	5094	128	4	216	4374	95
5	216	6054	181	5	216	6054	181	5	216	5574	154	5	216	4614	105
6	216	6054	181	6	216	6054	181	6	216	6054	181	6	216	4854	117
7	216	6054	181	7	216	6054	181	7	216	6054	181	7	216	5094	128
8	216	6054	181	8	216	6054	181	8	216	6054	181	8	216	5334	141
9	216	6054	181	9	216	6054	181	9	216	6054	181	9	216	5574	154
10	216	6054	181	10	216	6054	181	10	216	6054	181	10	216	5814	167
11	216	6054	181	11	216	6054	181	11	216	6054	181	11	216	6054	181
			1996				1773				1627				1314
							-11.2%				-18.5%				-34.2%

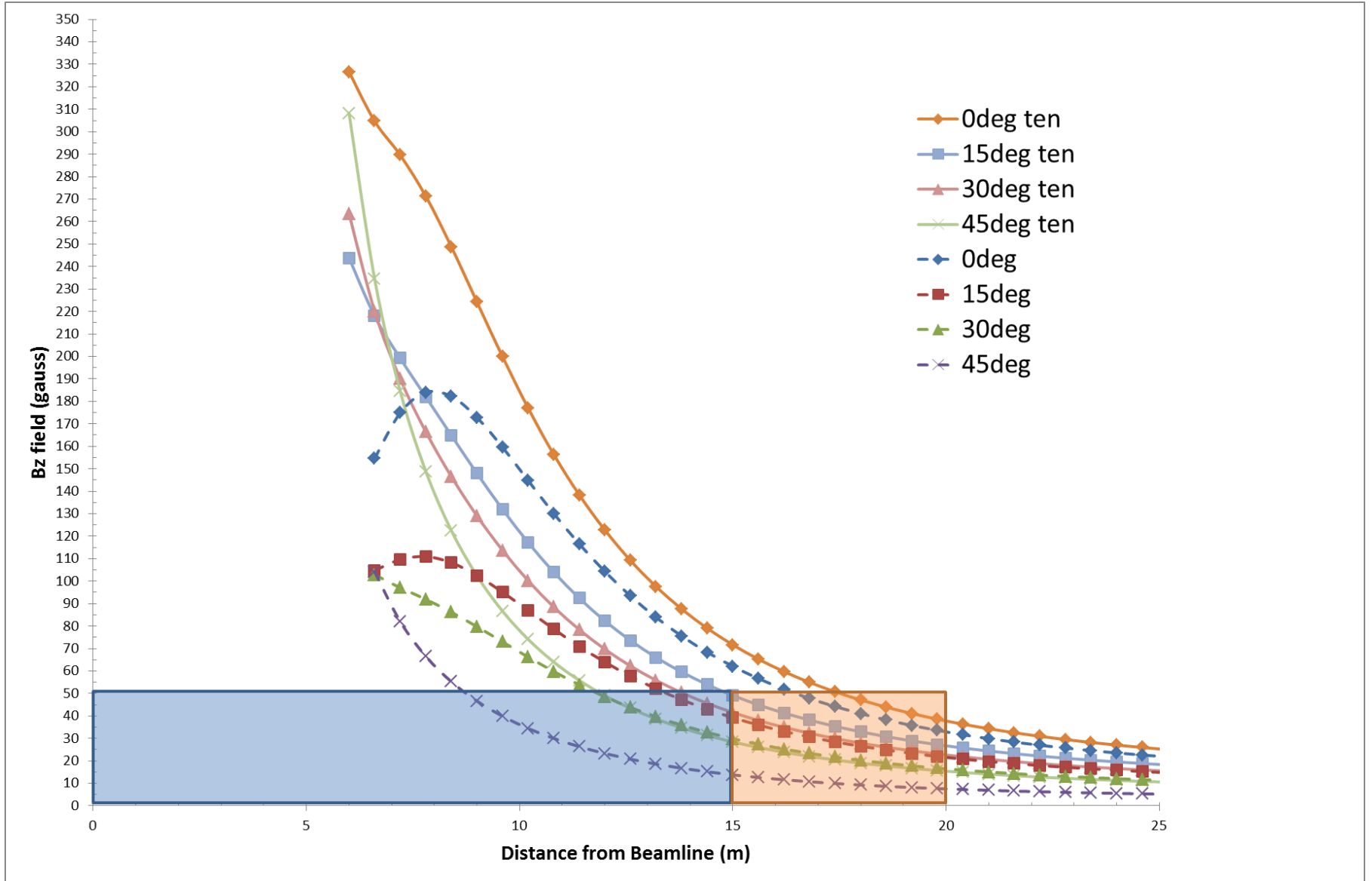
B field – 10 plates, 200mm



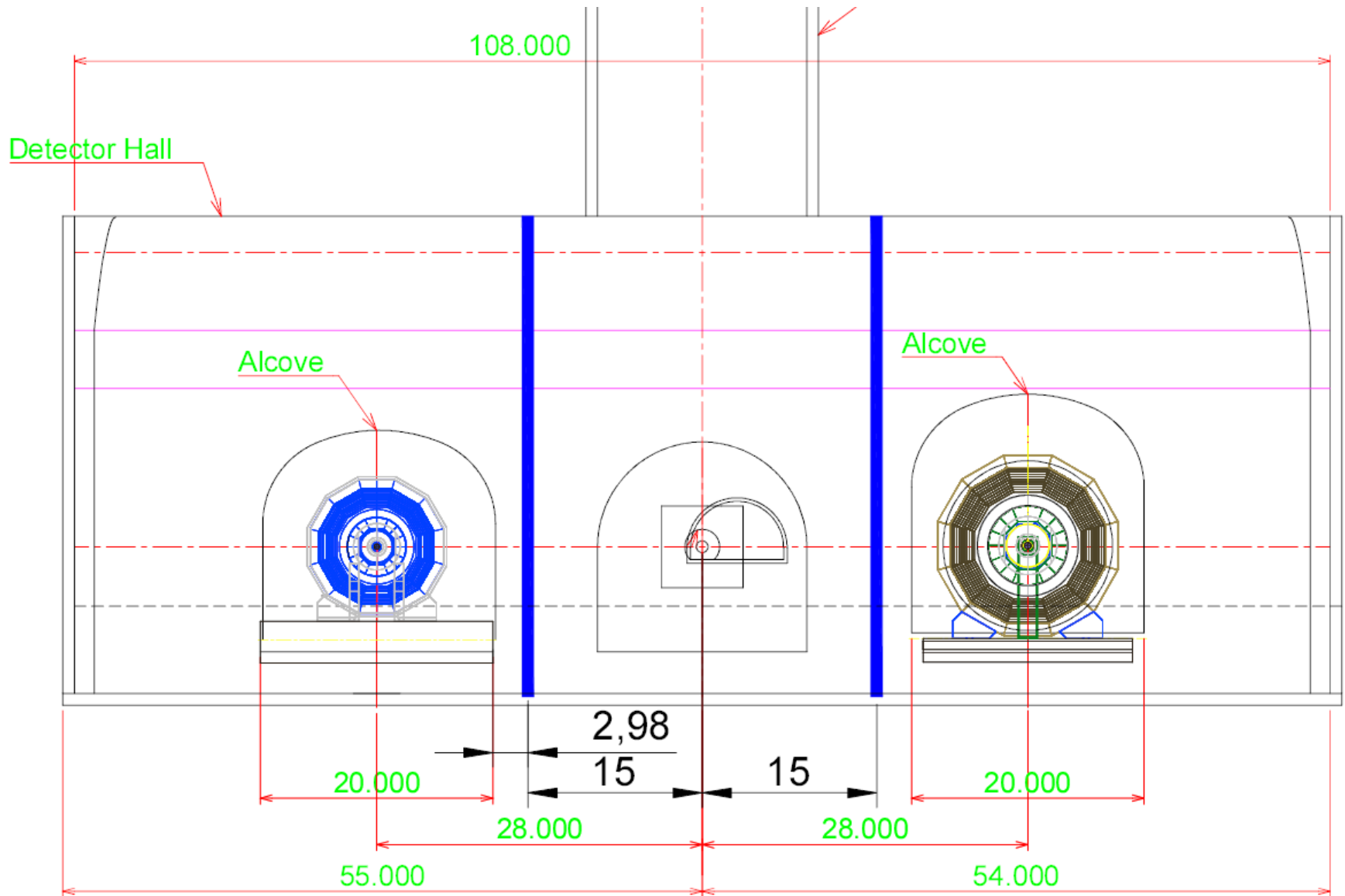
Bx field Far Region – 10 plates



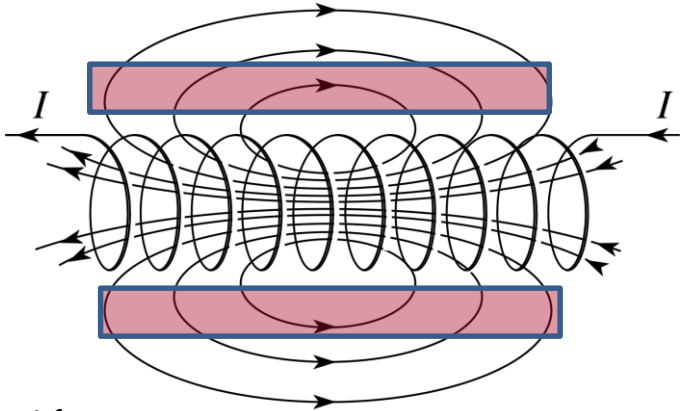
Bx field Far Region - All



Detector Hall

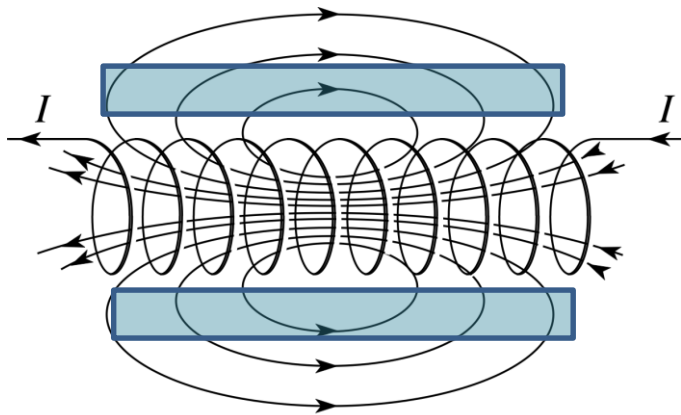


Push-pull and B(r)



Det1

$$B(r) \propto \frac{1}{r^n}, \quad \text{with } 2.5 < n < 3$$



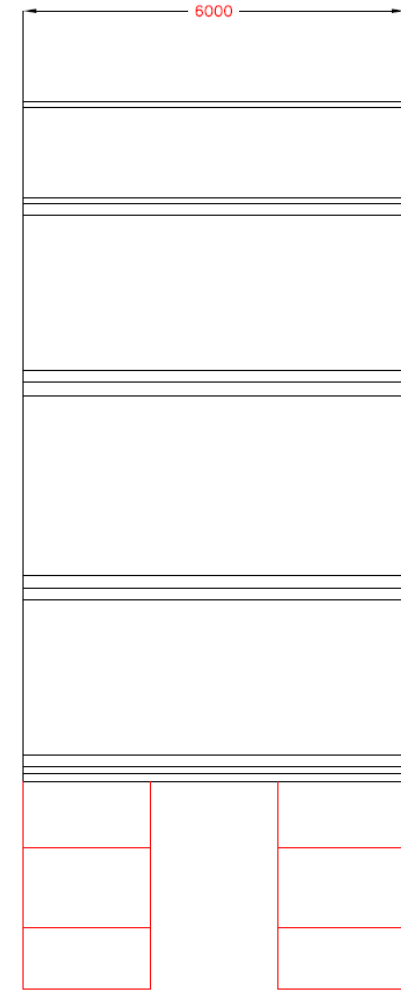
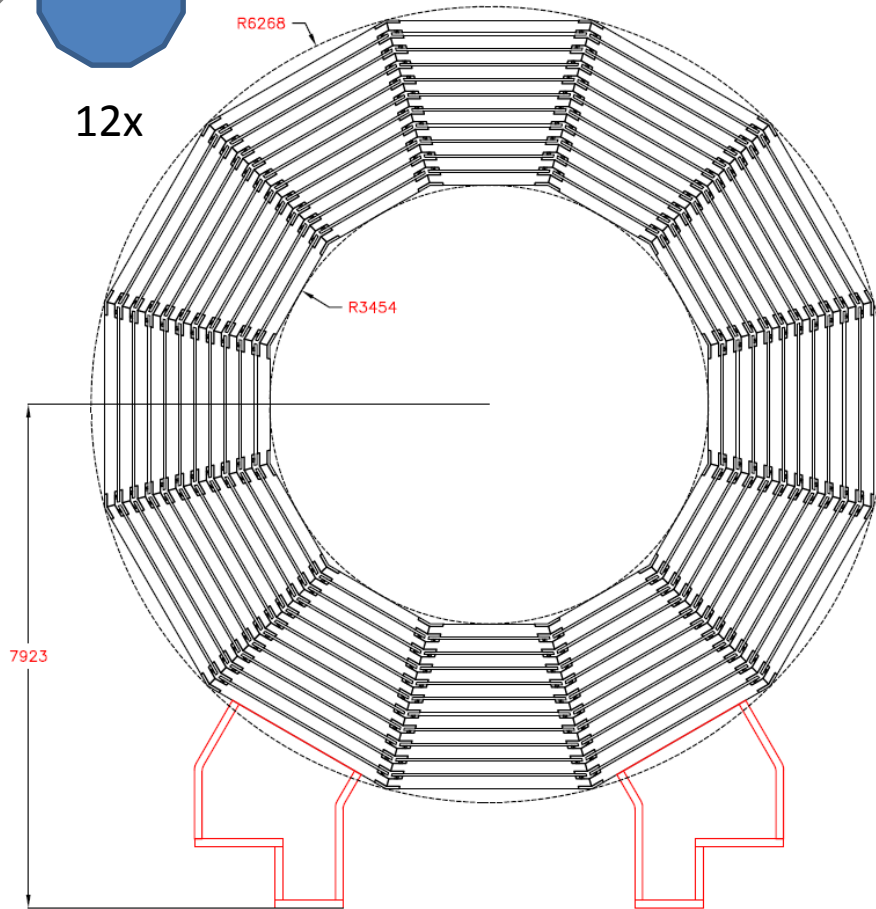
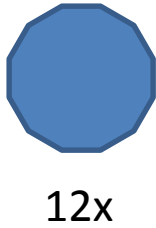
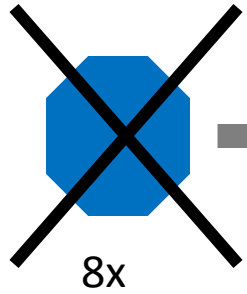
Det2

$\Delta = +3 \text{ m}$

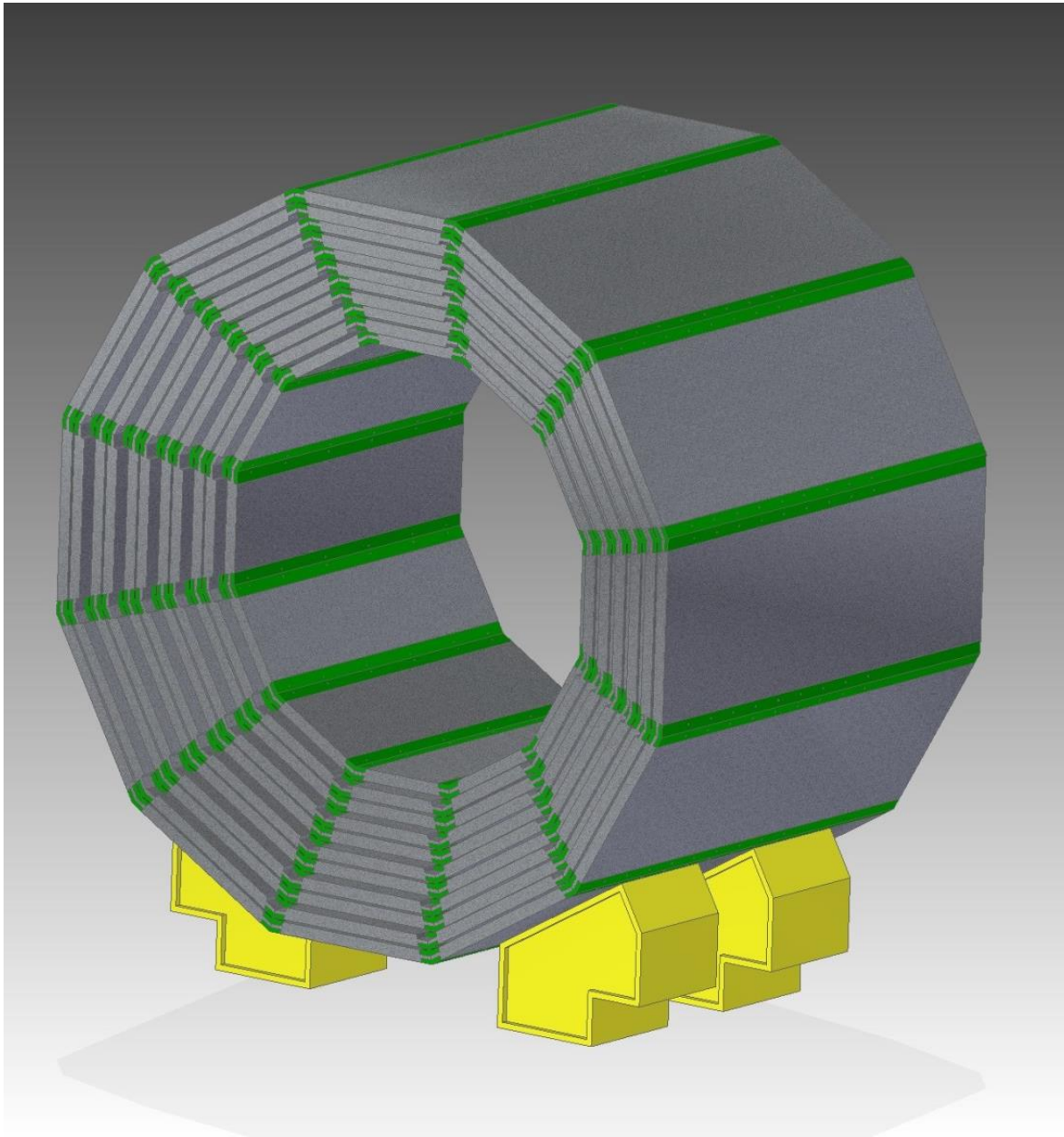
$B(r)$ decreases 50%

$\Delta = +3 \text{ m}$

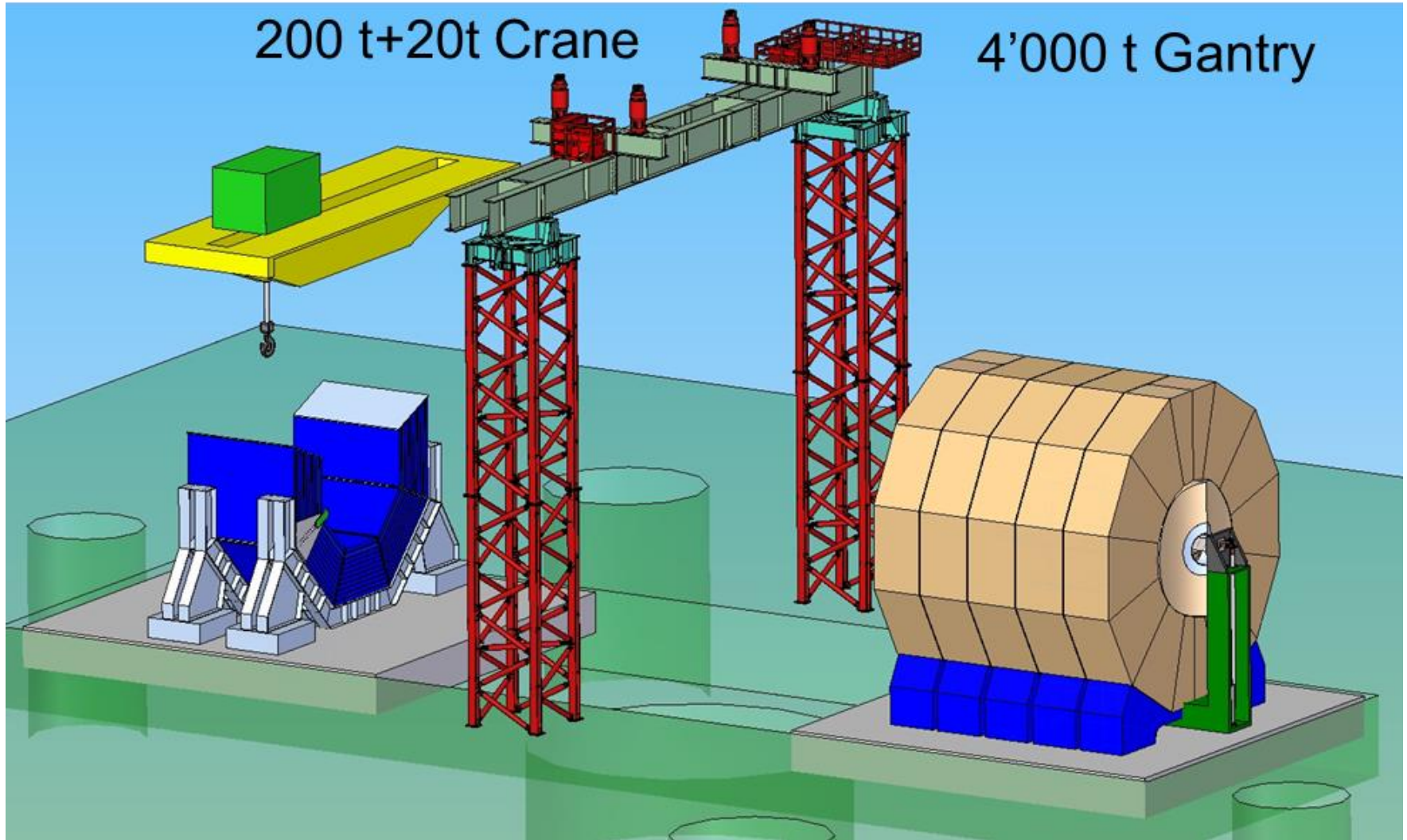
New Iron Design – Higher Phi segmentation

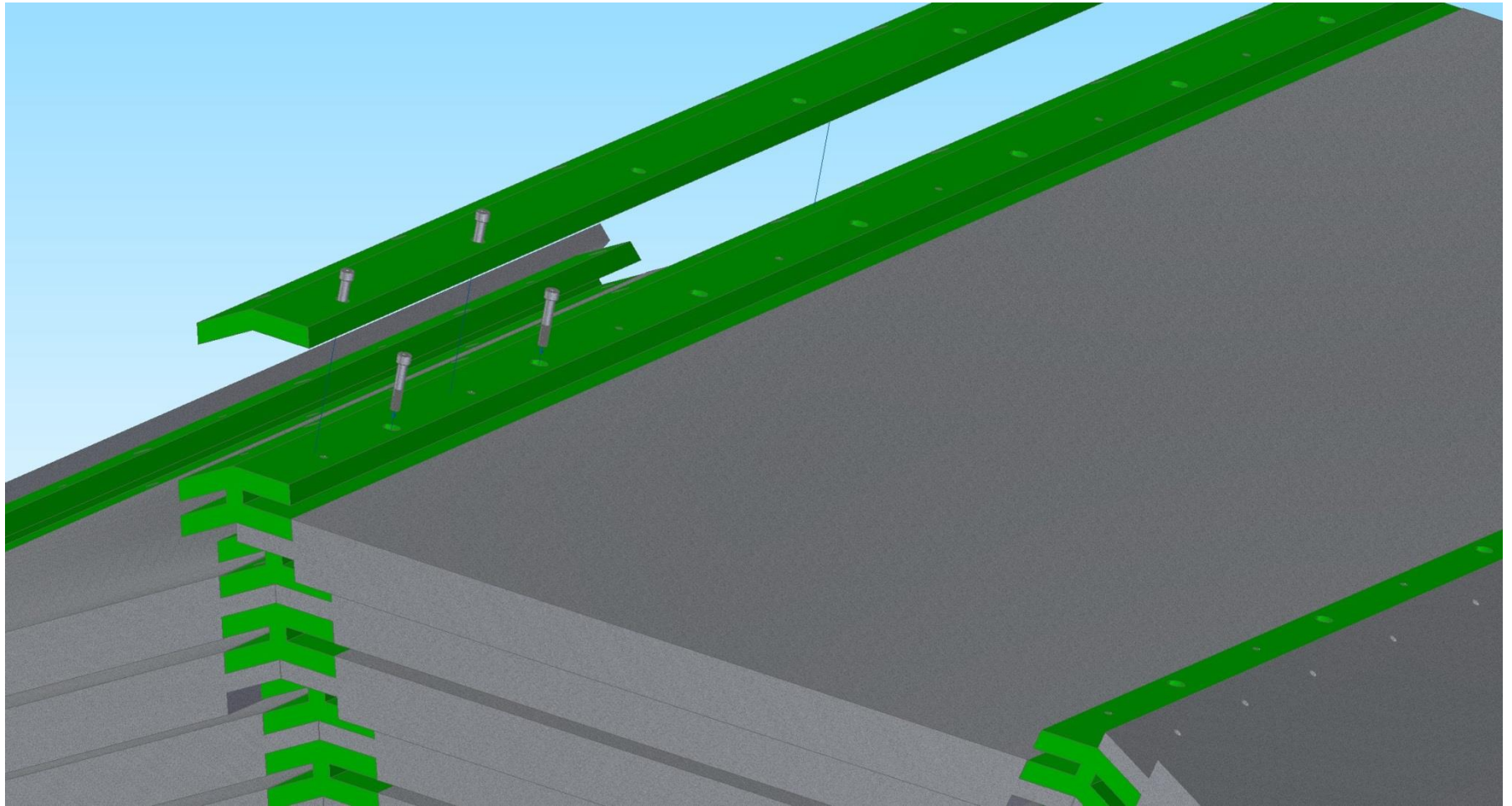


30 Deg cut

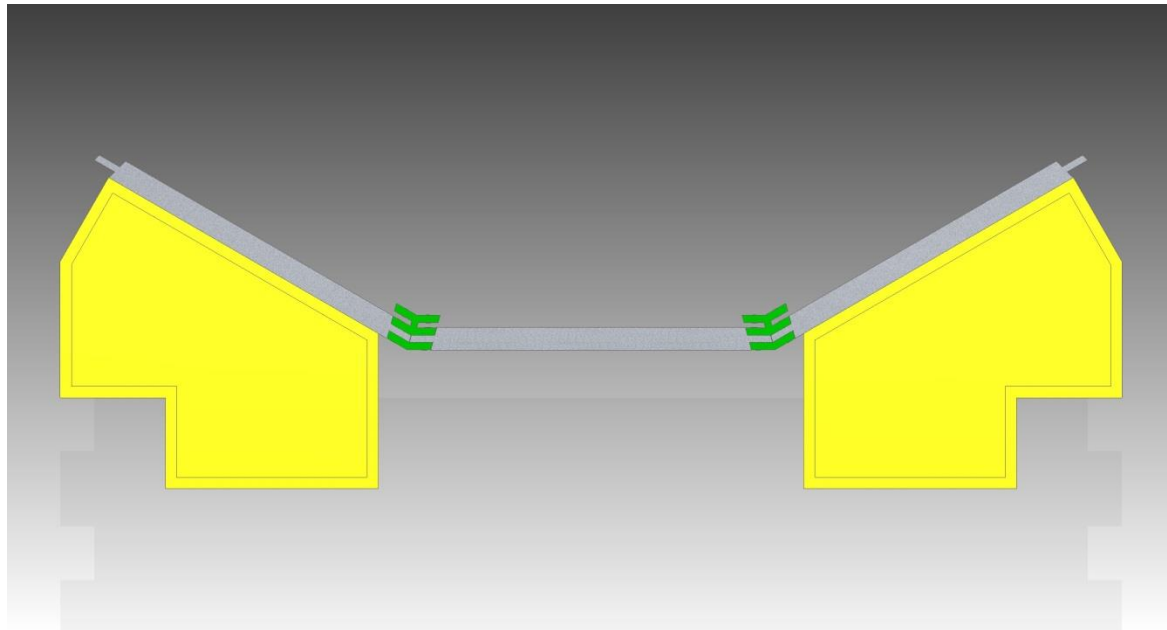
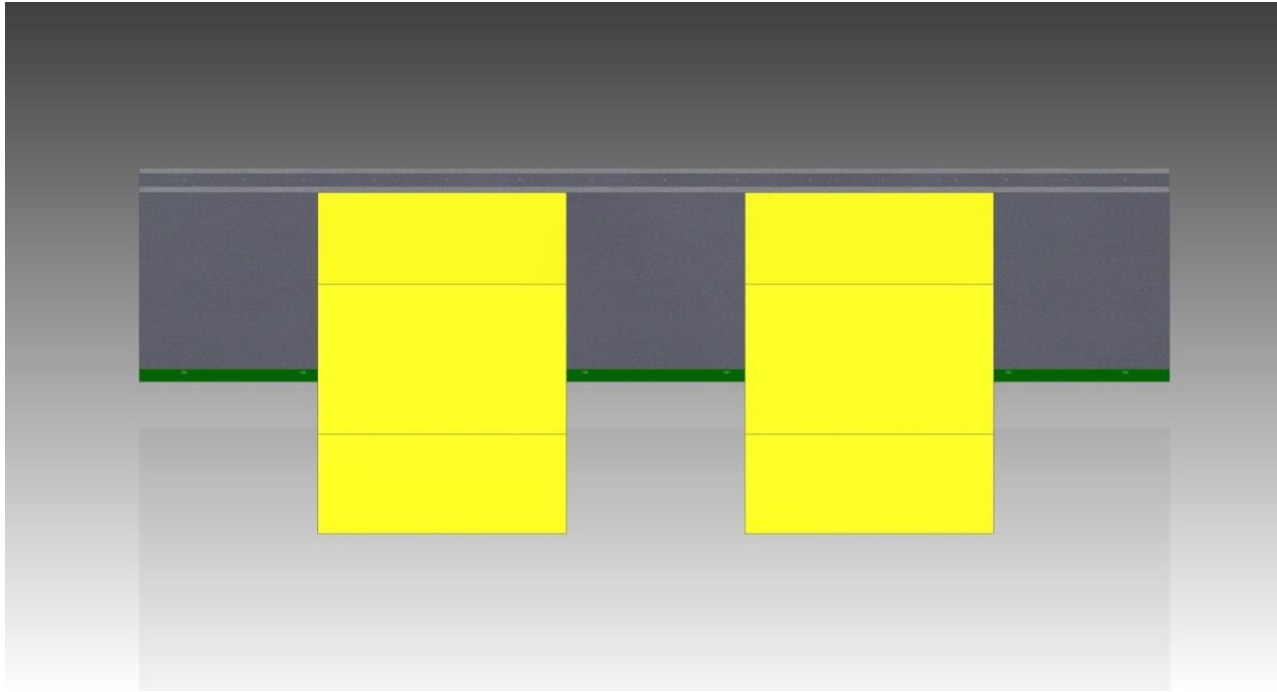


Barrel Construction

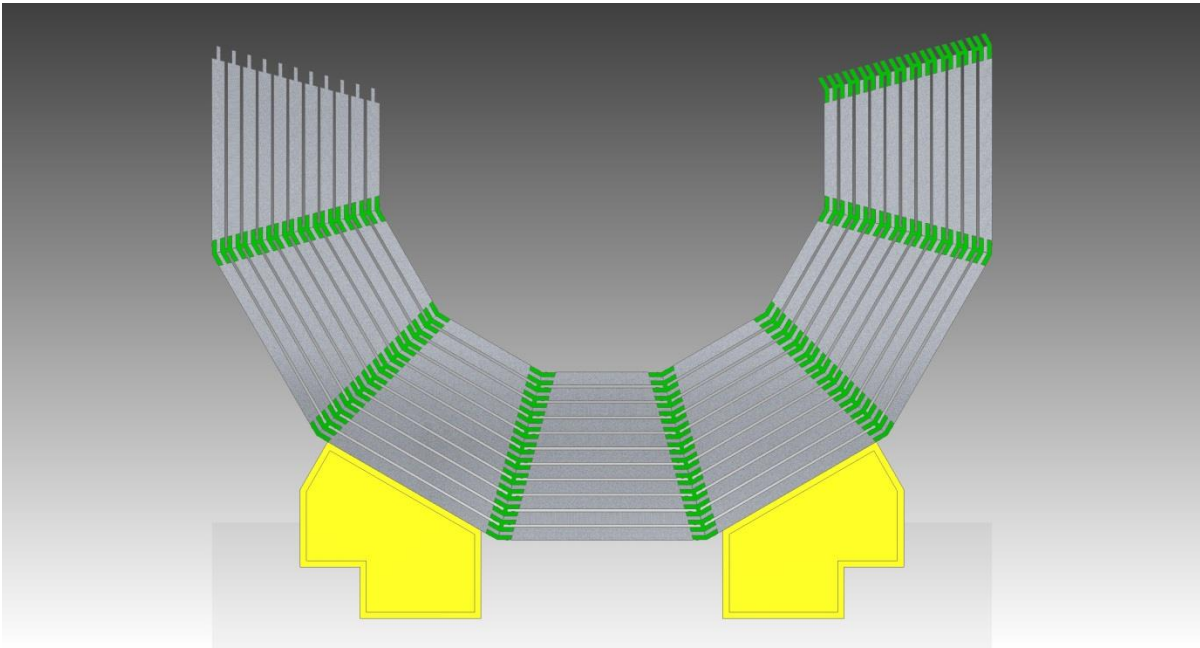
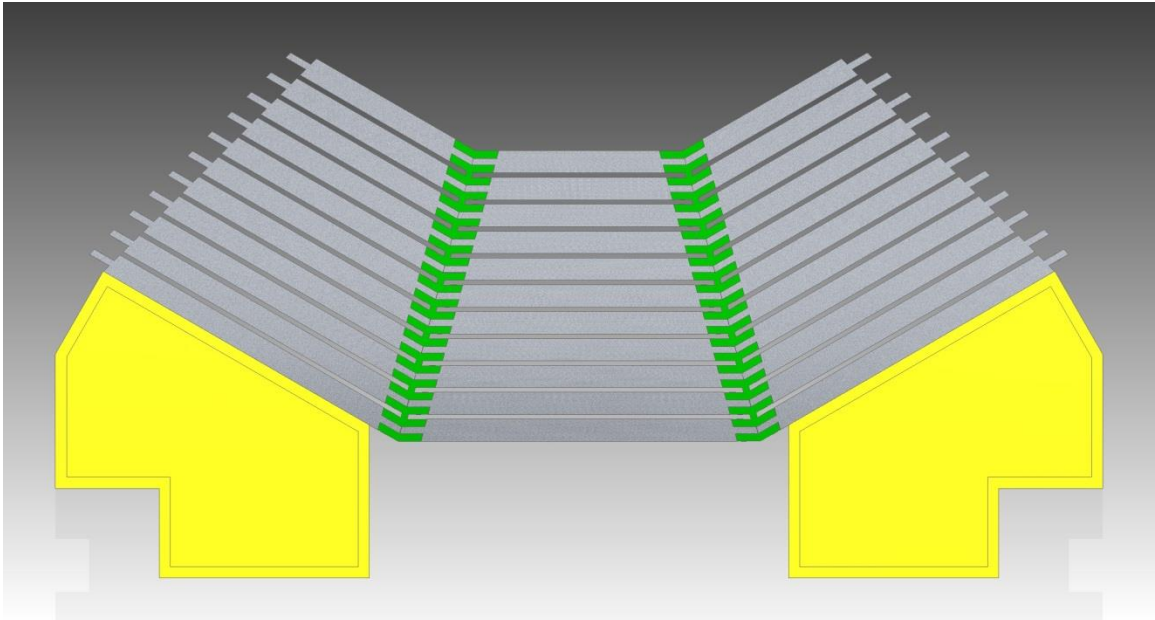


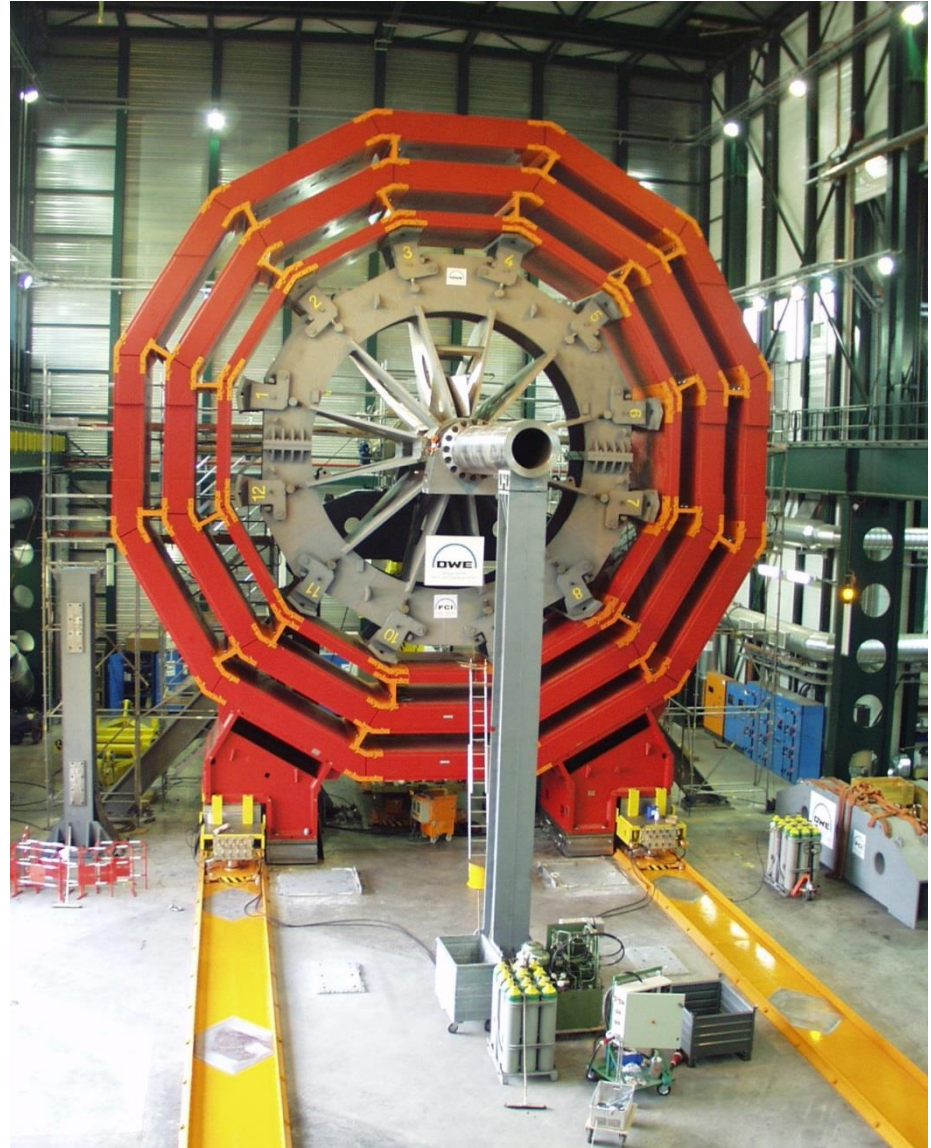


Barrel Assembly

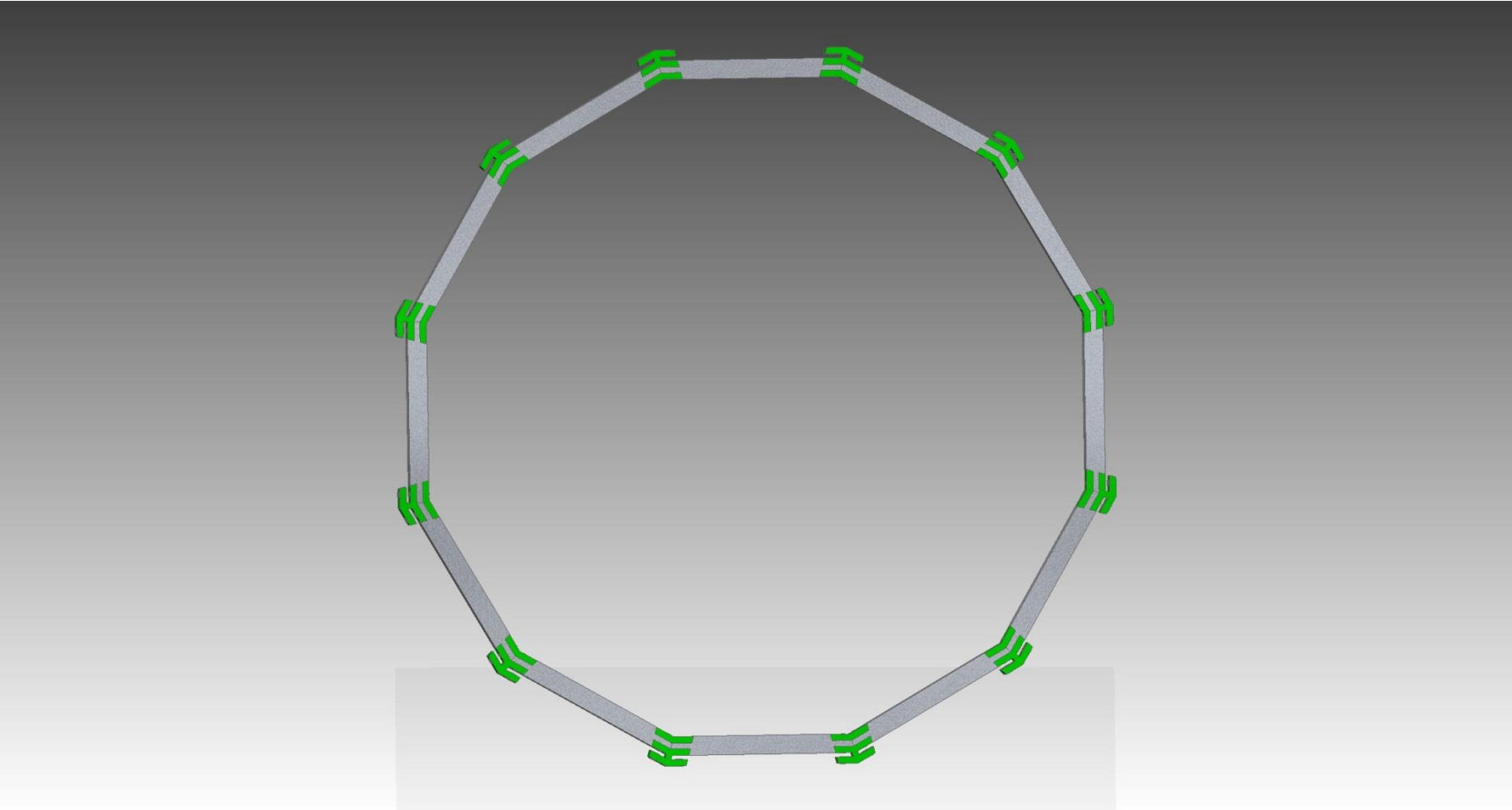


Barrel Assembly





Barrel Assembly

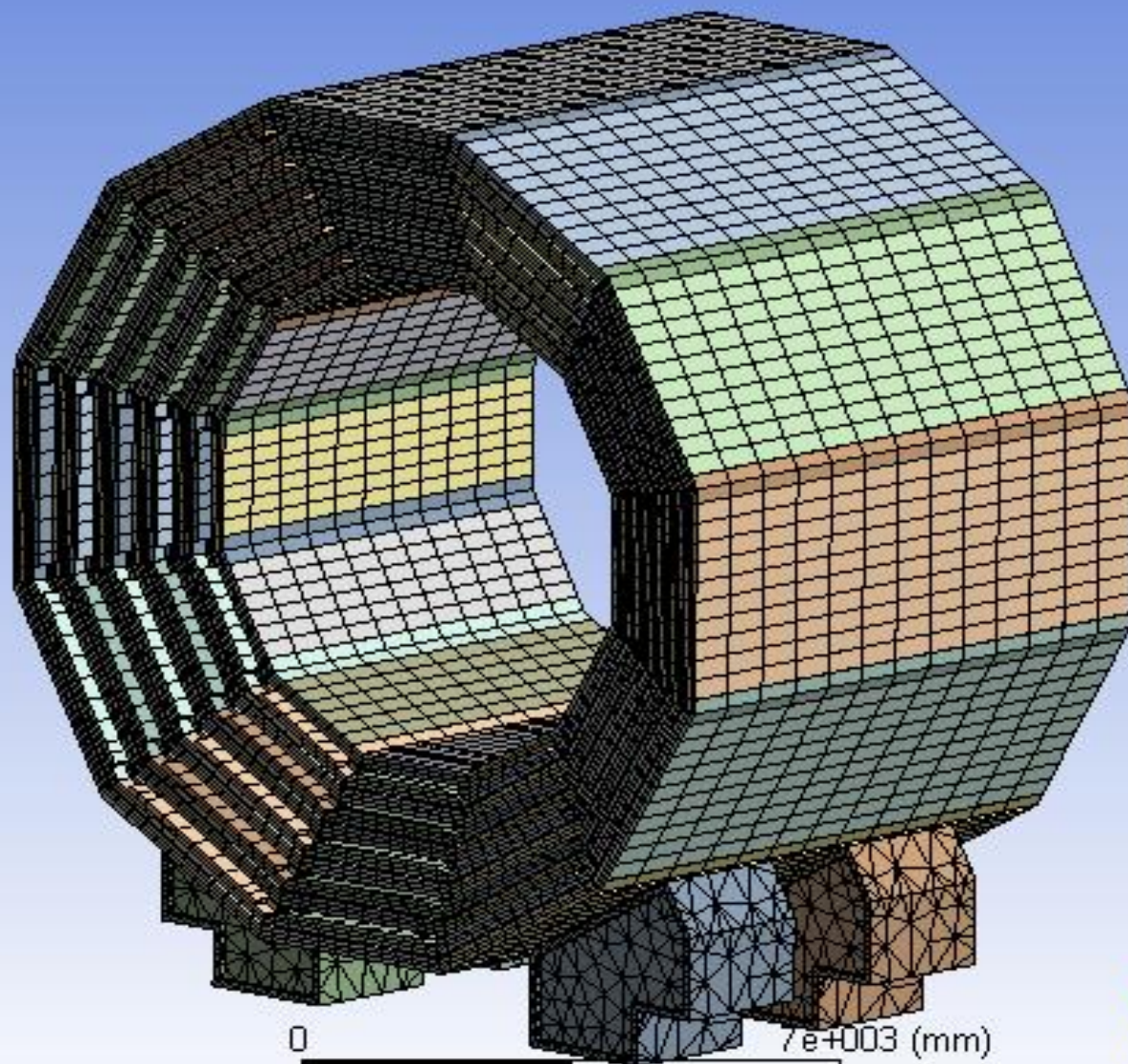


Solenoid Coil Module 64 tons Max.



Swiveling platform





0 3.5e+003 7e+003 (mm)

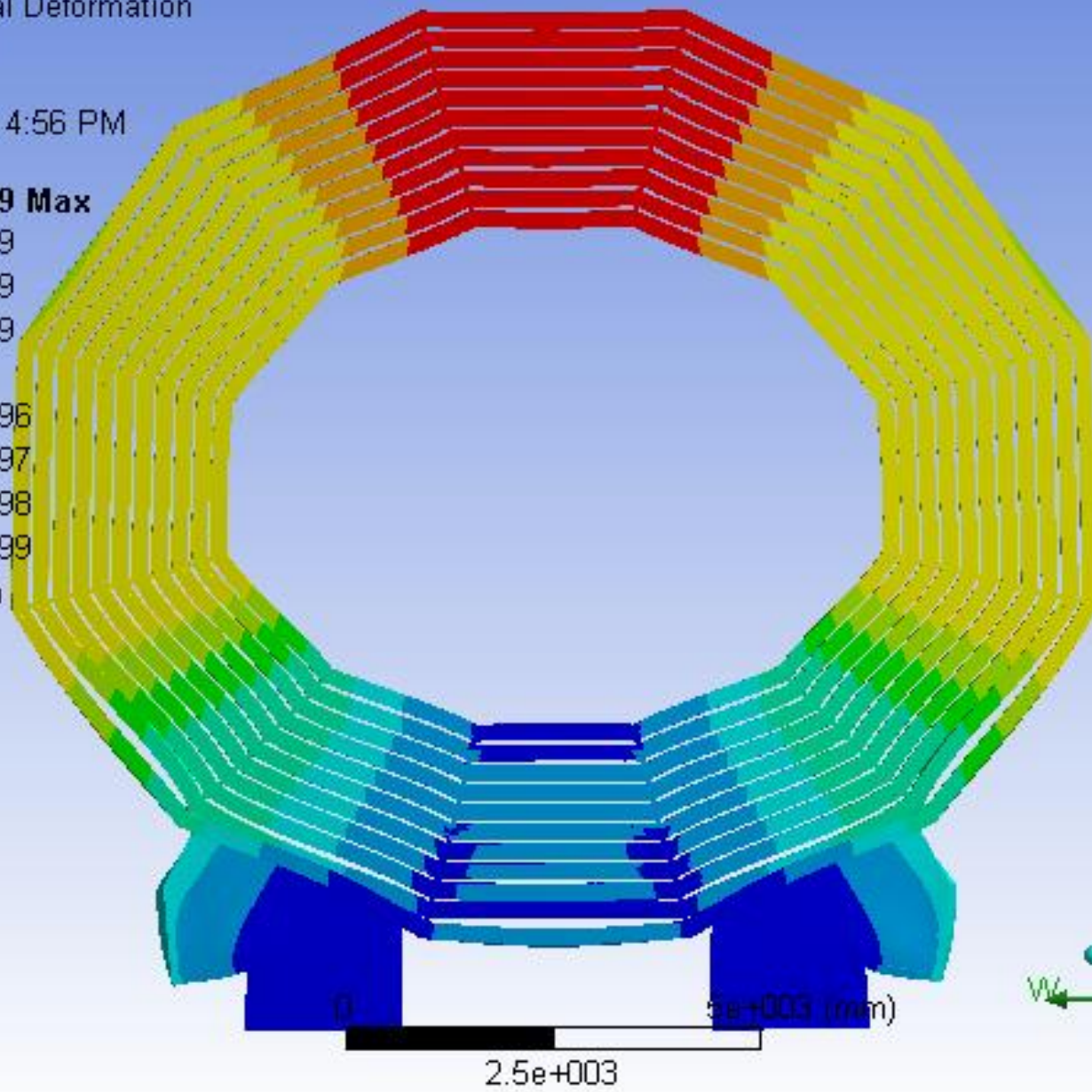
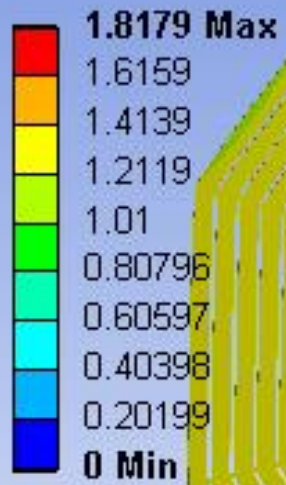
Figure

Type: Total Deformation

Unit: mm

Time: 1

6/30/2015 4:56 PM



Figure

Type: Equivalent (von-Mises) Stress

Unit: MPa

Time: 1

6/30/2015 4:56 PM

59.78 Max

53.138

46.496

39.855

33.213

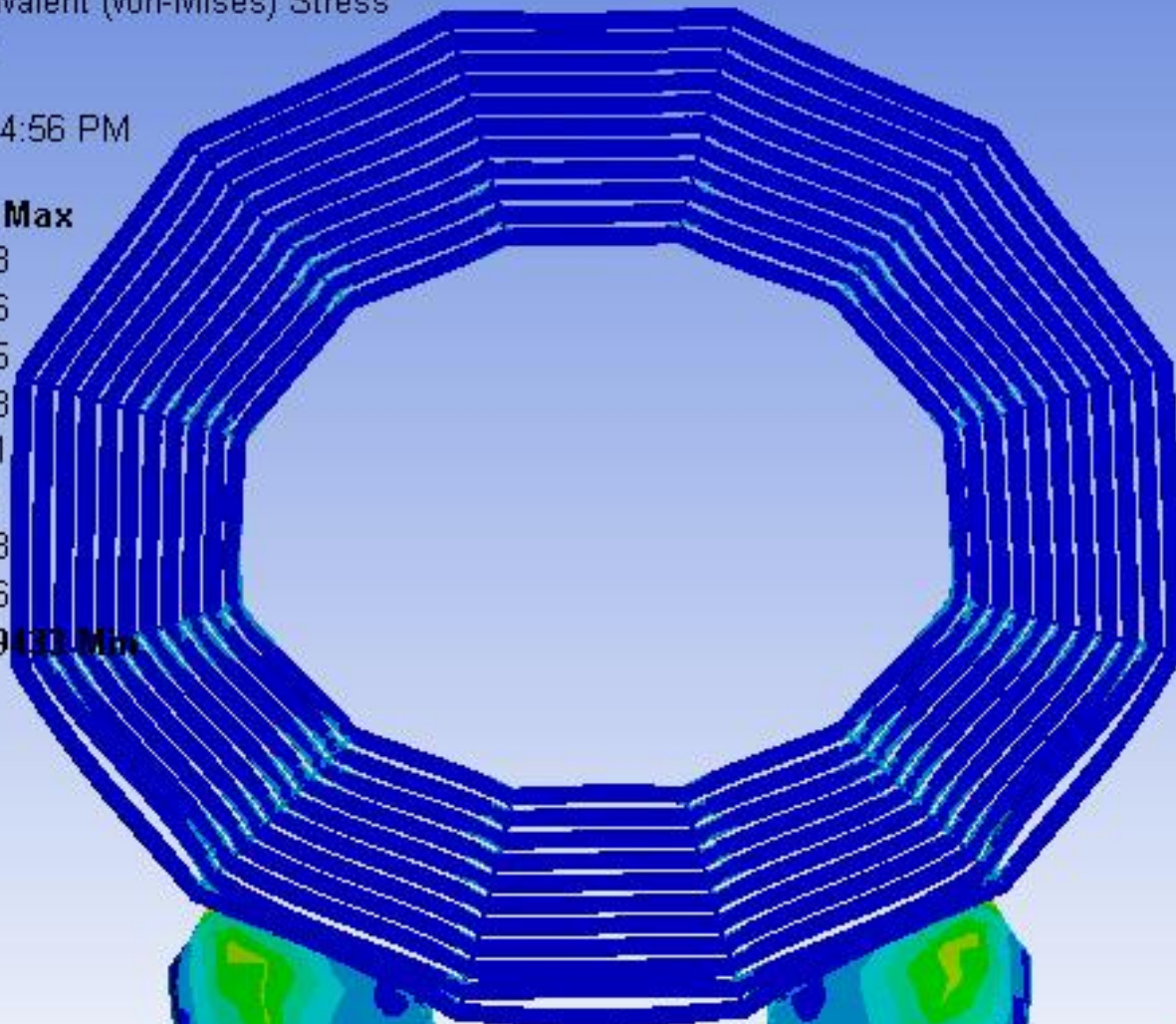
26.571

19.93

13.288

6.6466

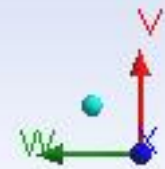
0.0049133 Min

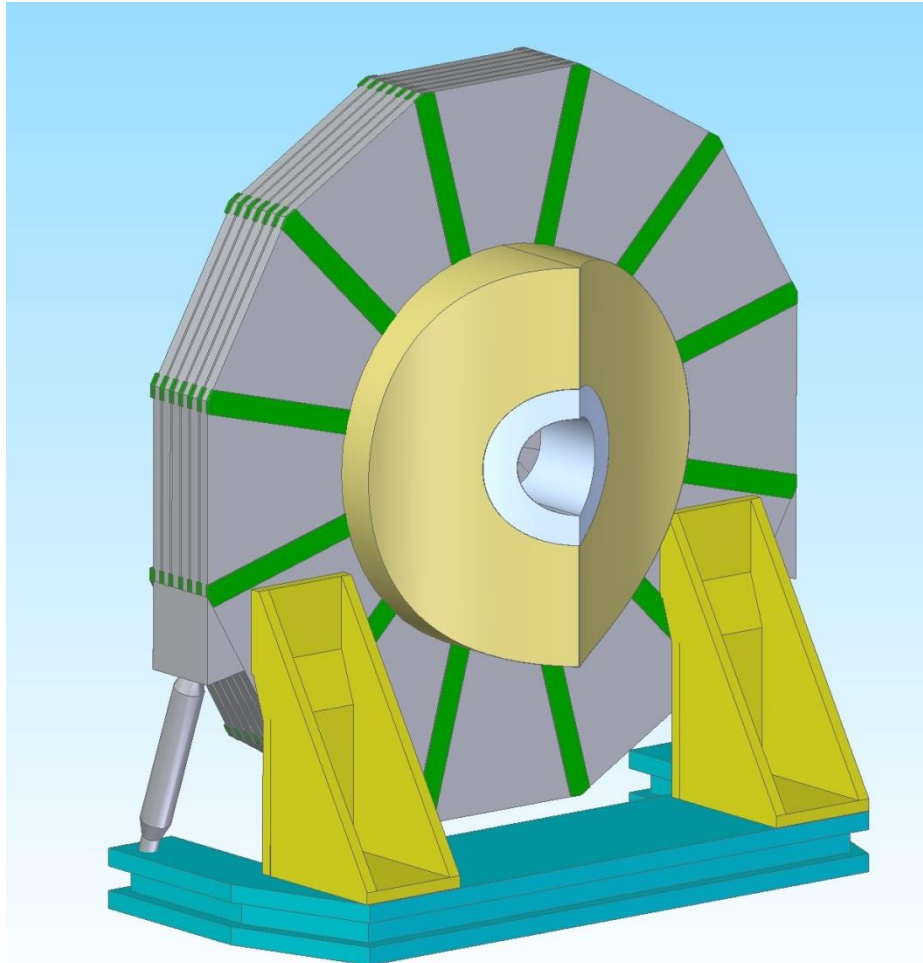
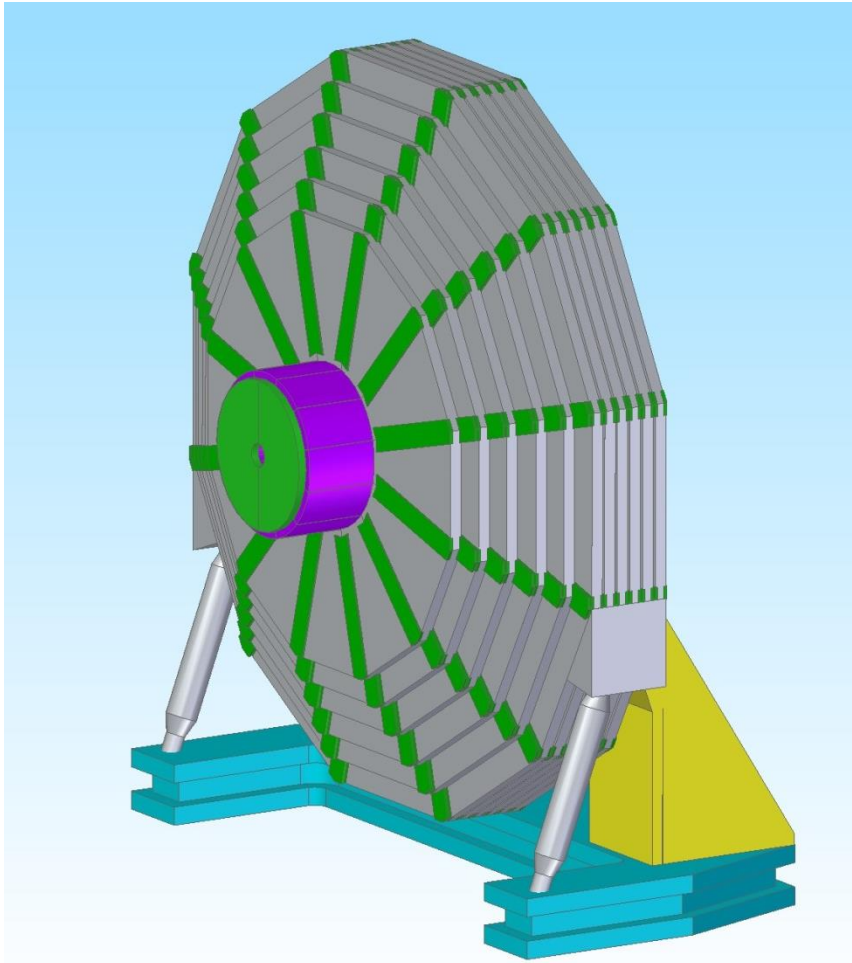


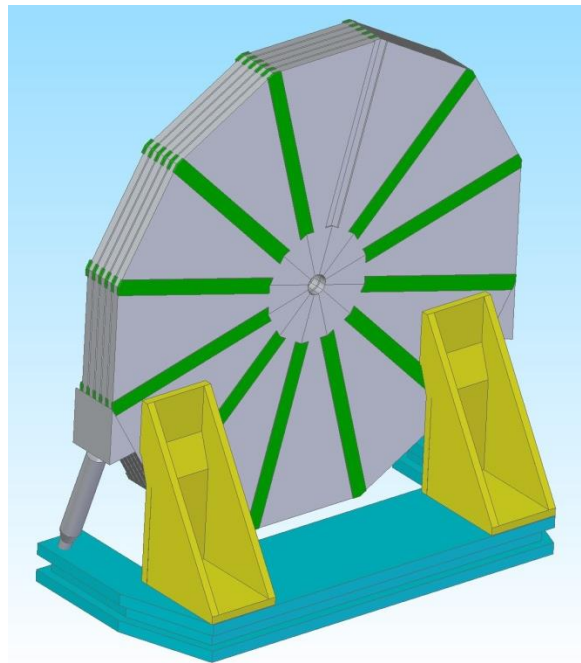
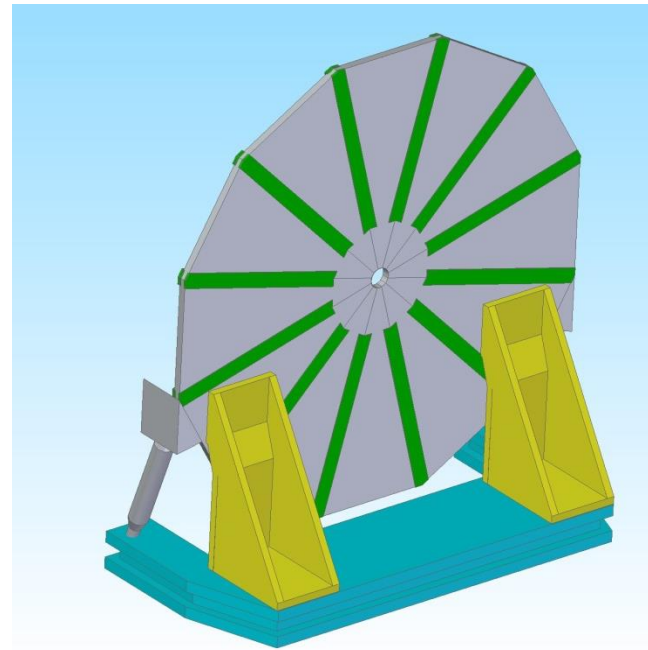
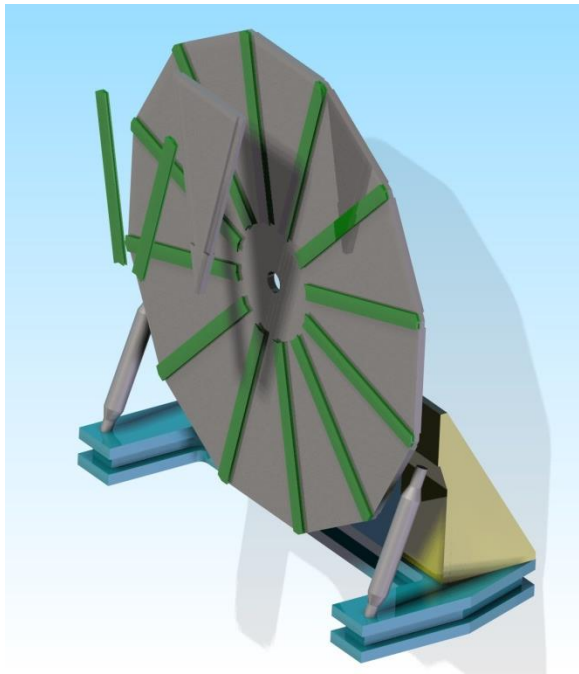
0

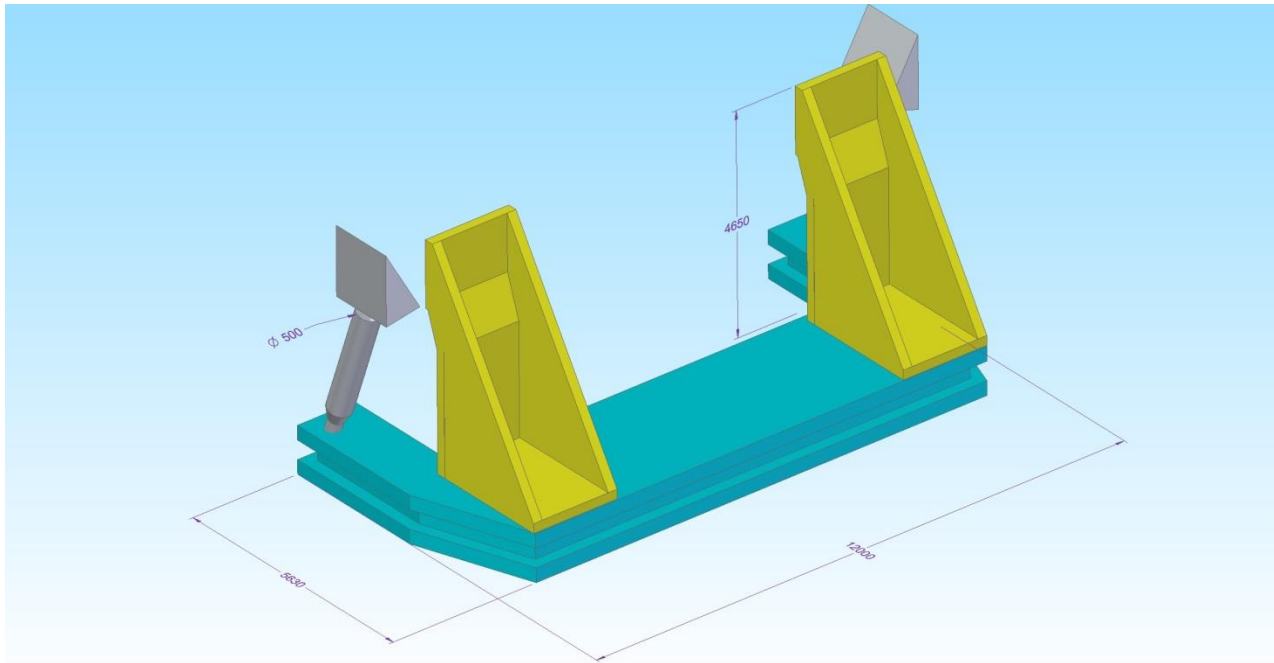
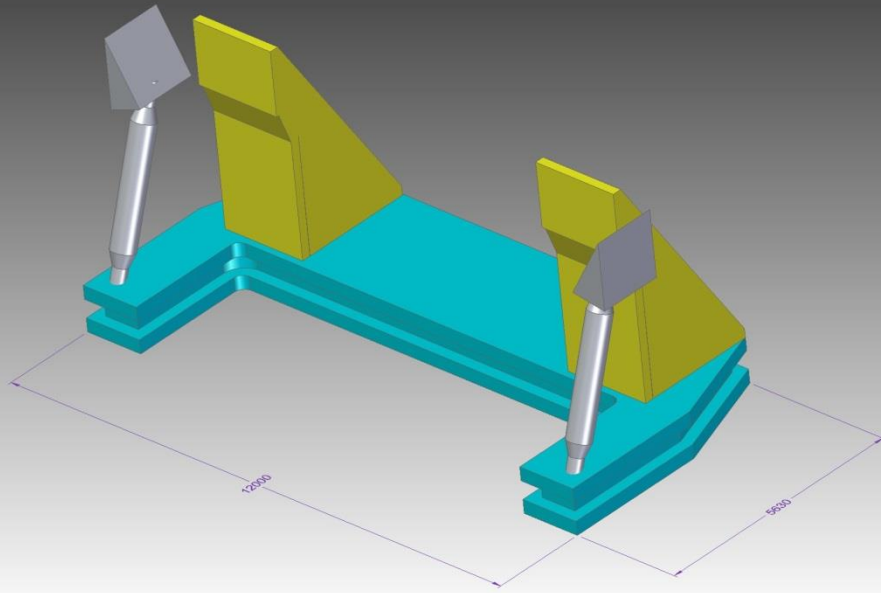
5e+003 (mm)

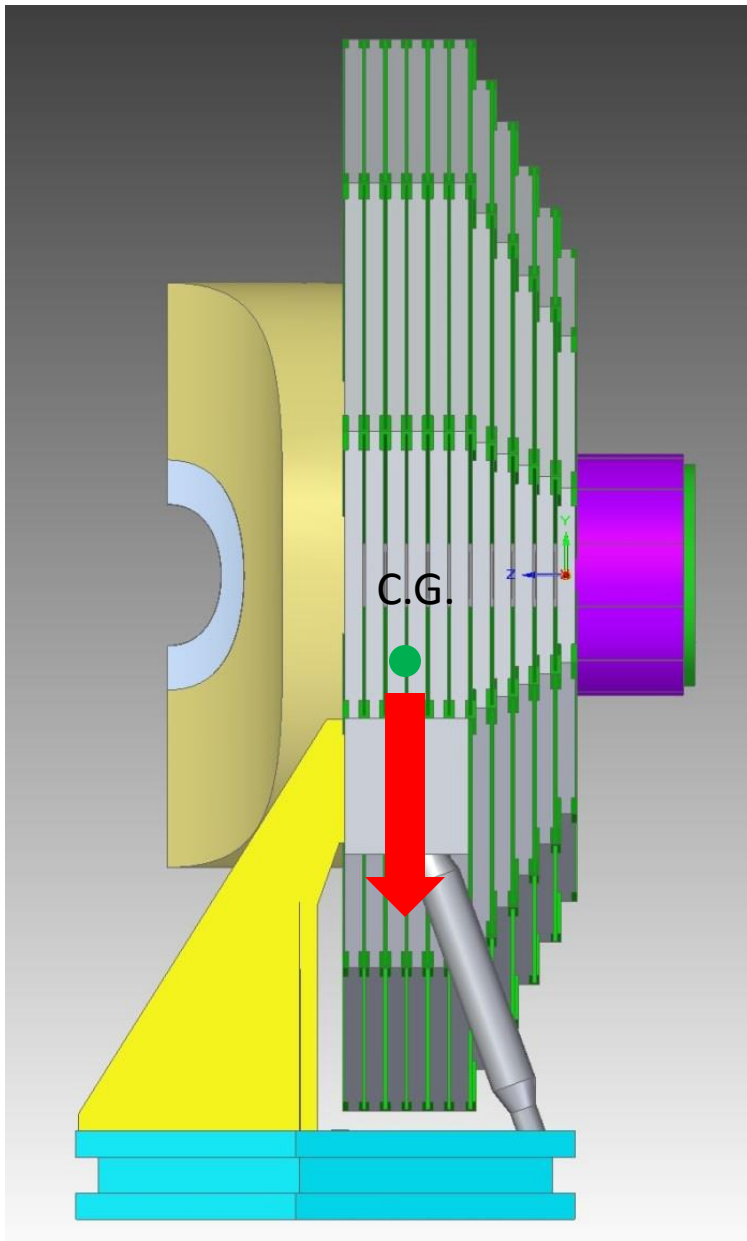
2.5e+003











Total Mass 2,312 tons

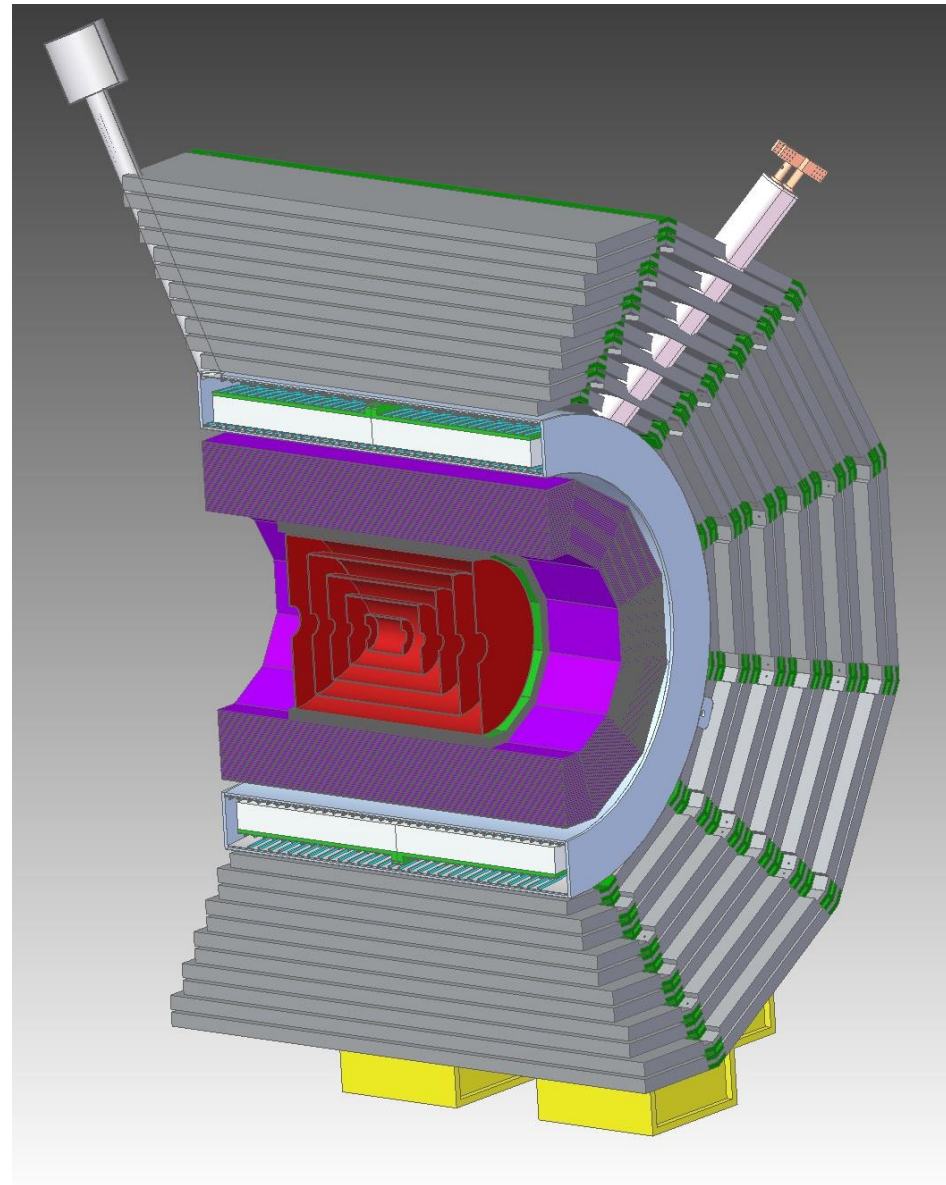
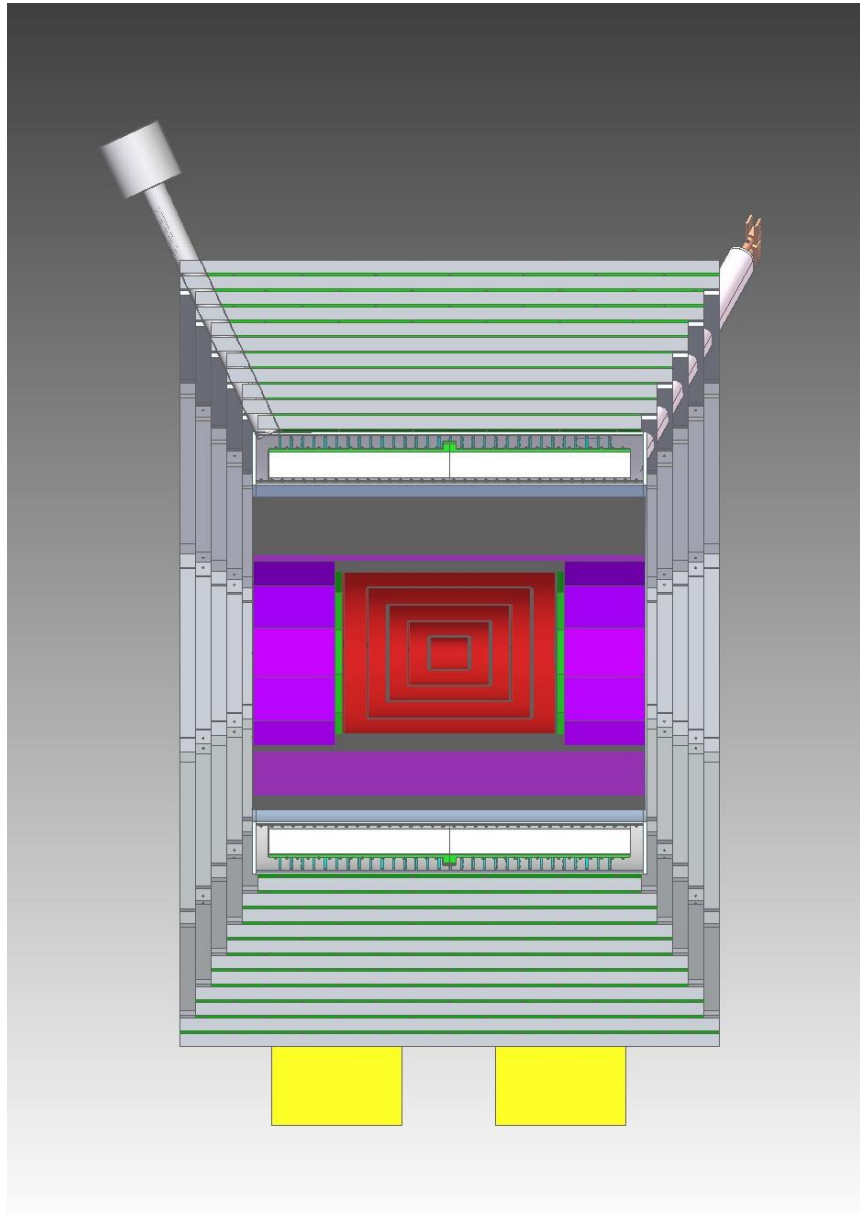
Center of Gravoity

X = 0 mm

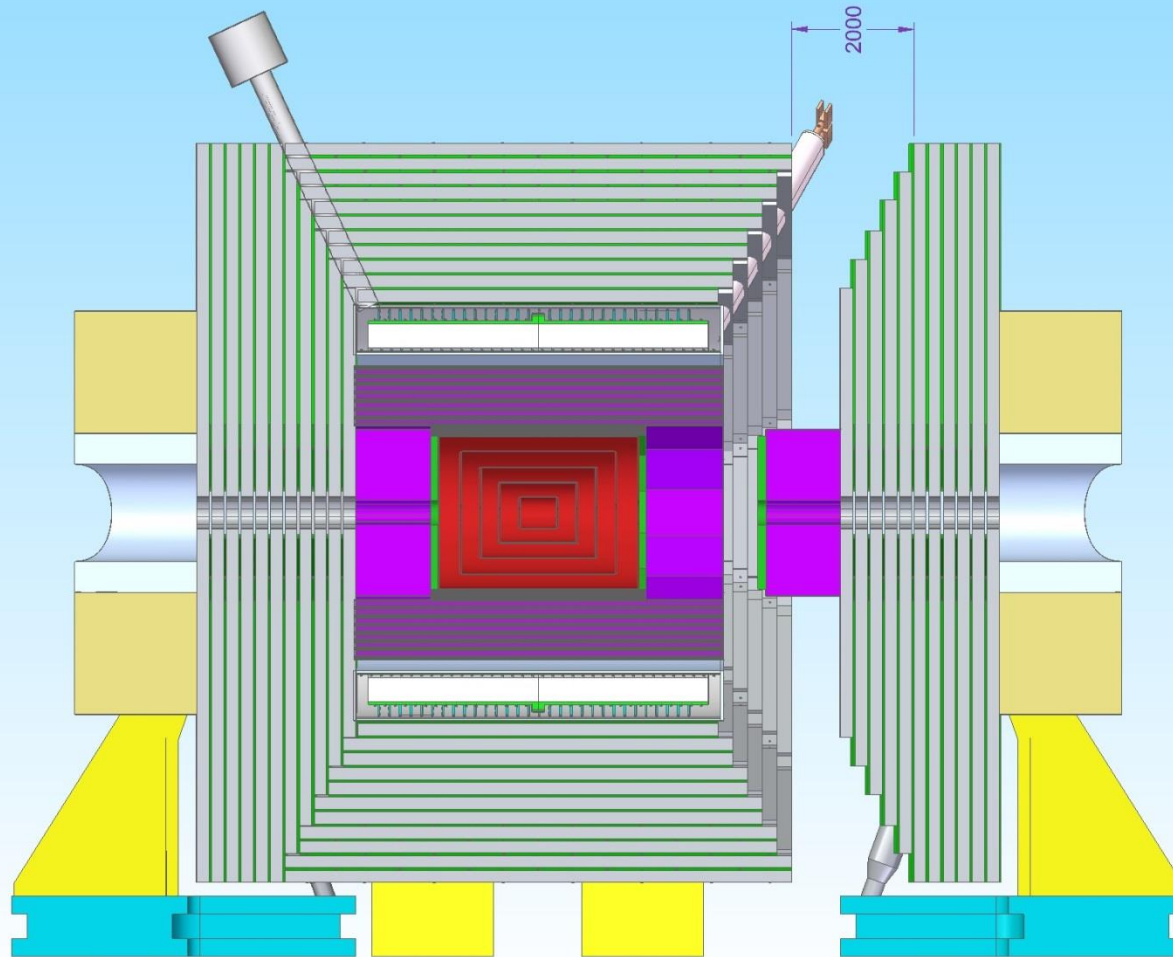
Y = -996 mm

Z = 1826 mm

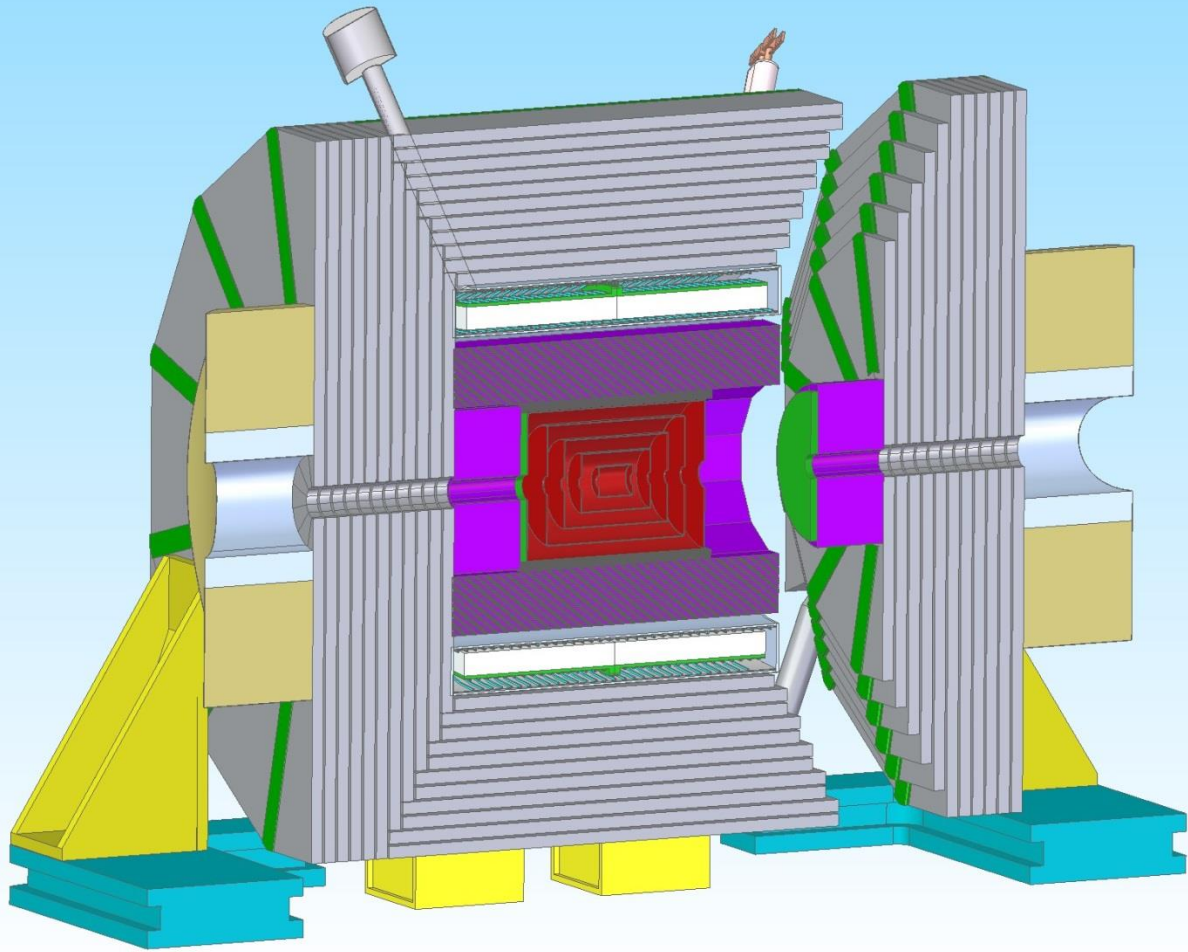
Total Barrel Mass 4,540 tons

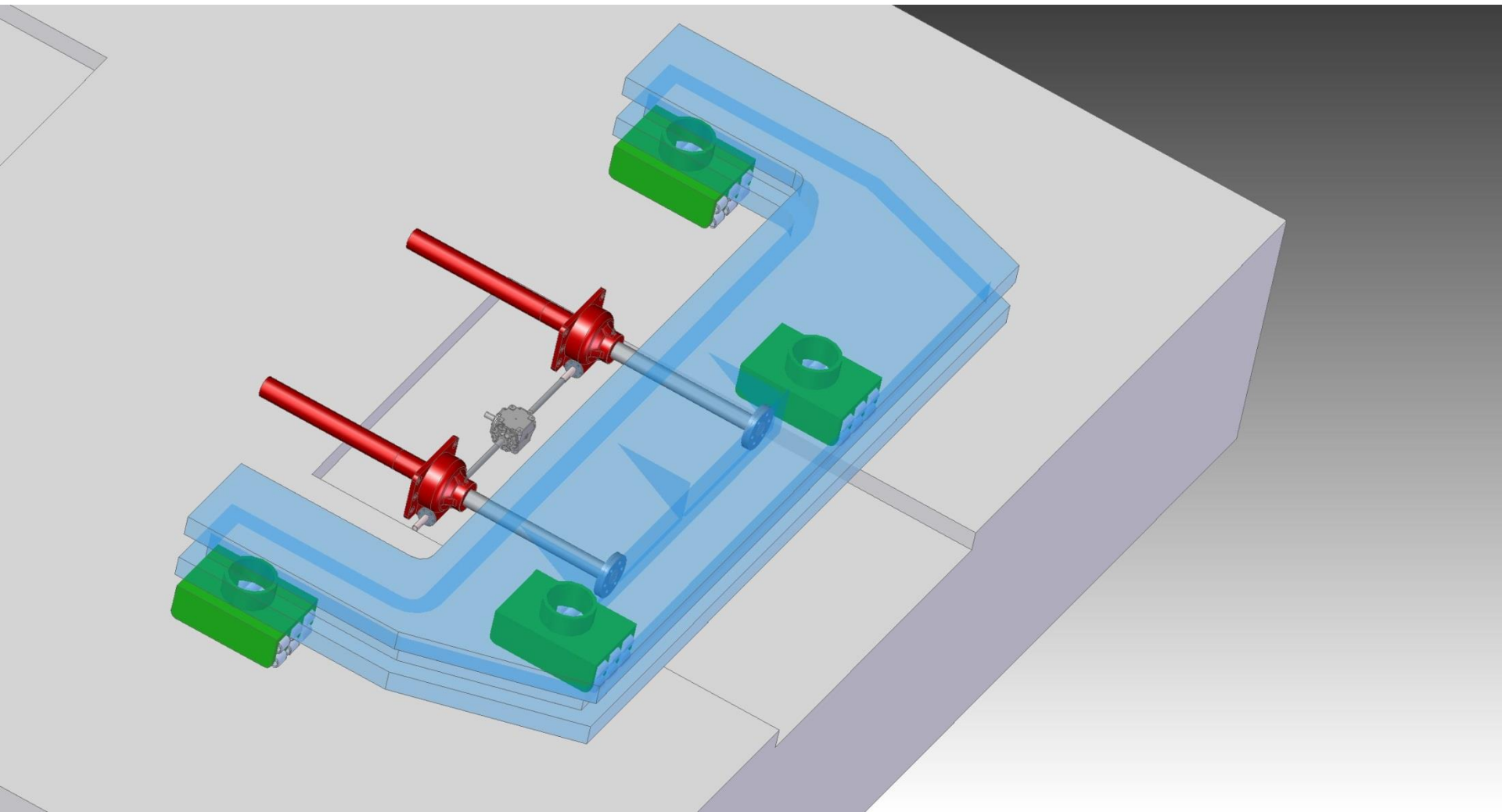


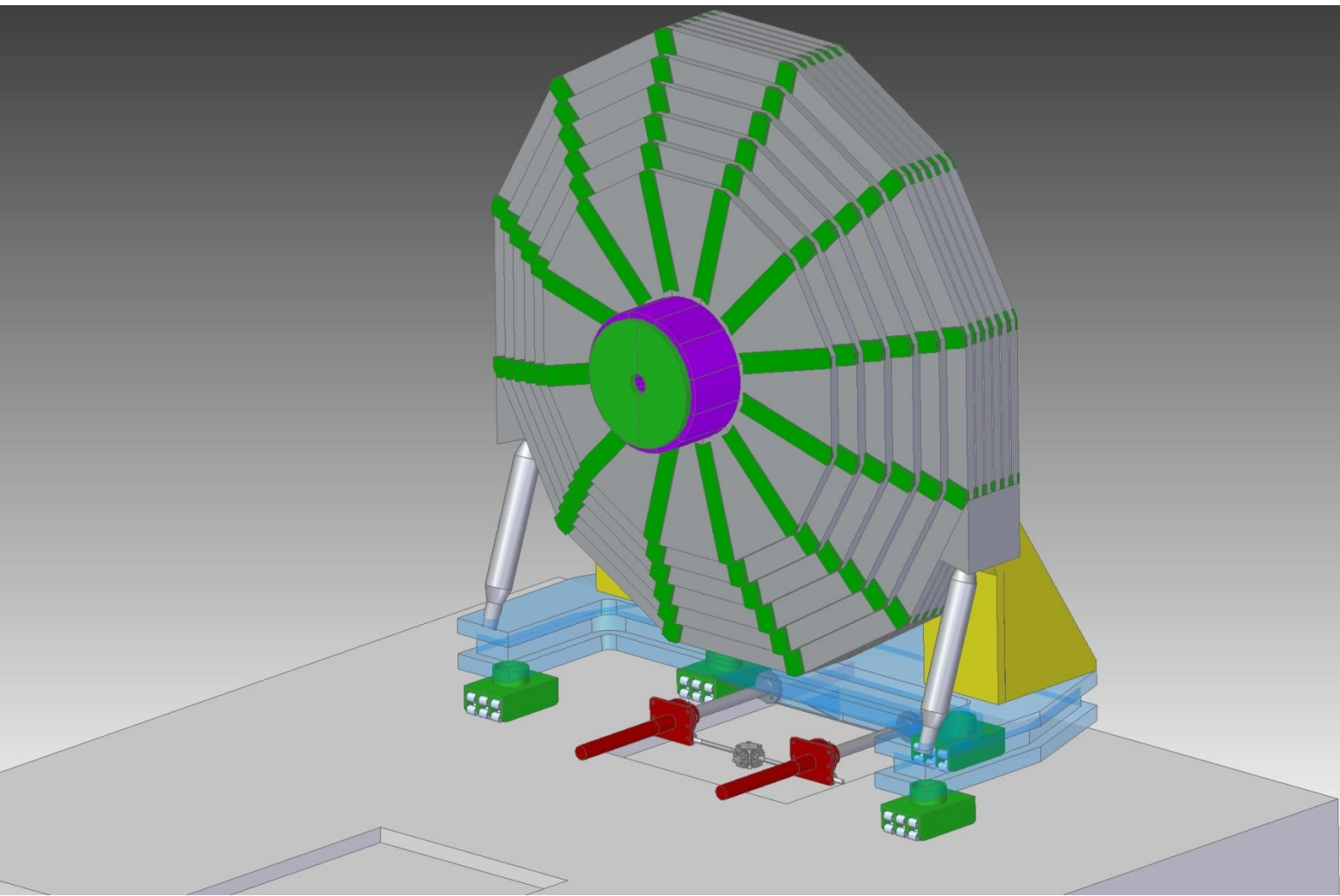
SID 30 deg cut

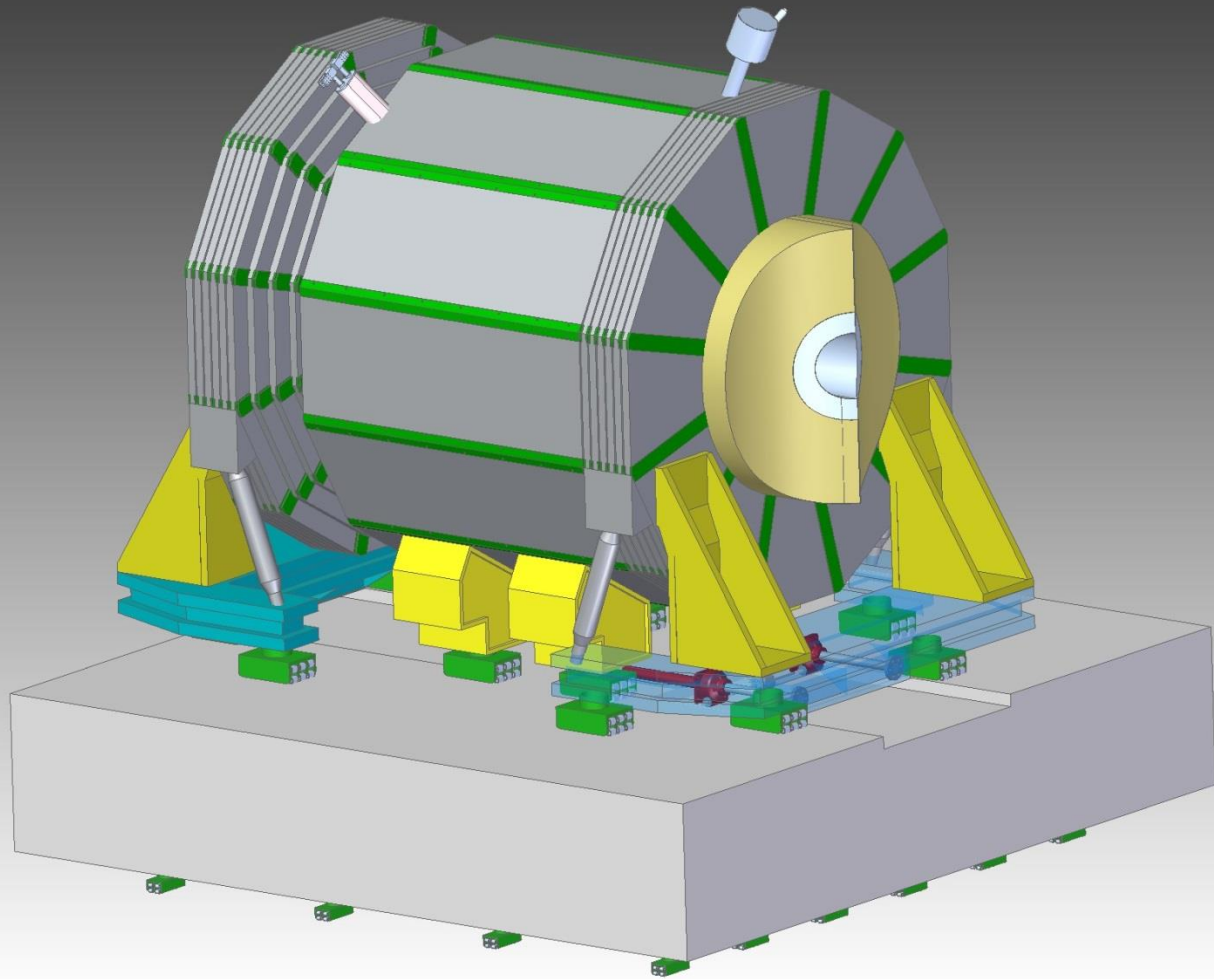


Item	Mass (tons)
Barrel Total	4,540
Barrel Iron	3,863
Feet	80
Solenoid	180
Hcal	417
Door total	2291
Door Iron	1,655
Hcal	55
Emcal	12
Pacmen	216
Brackets	76
Cart	277

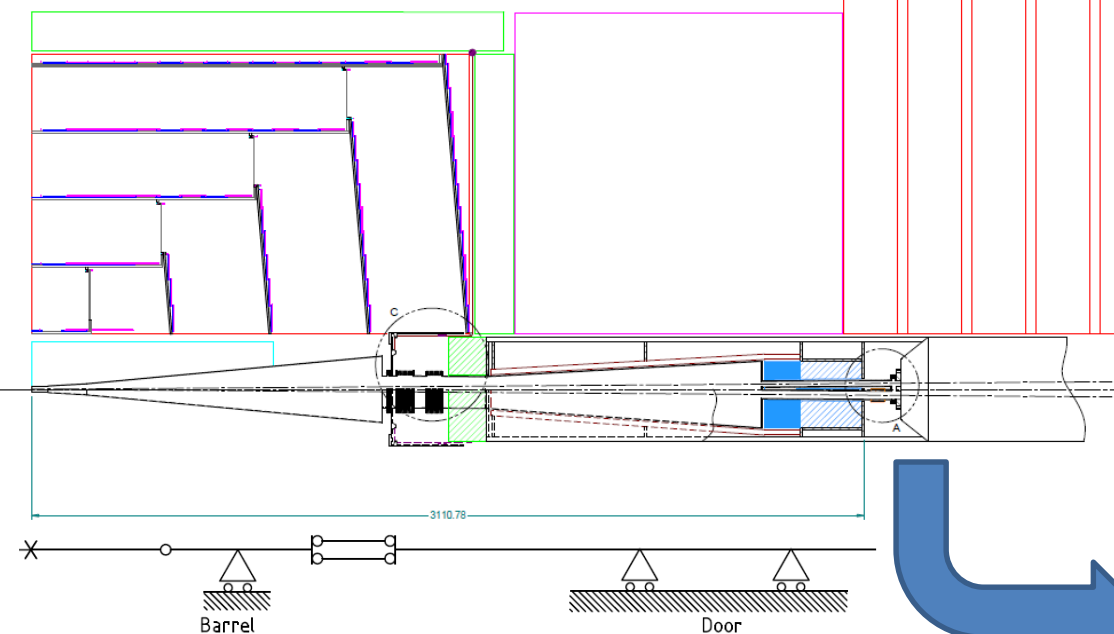




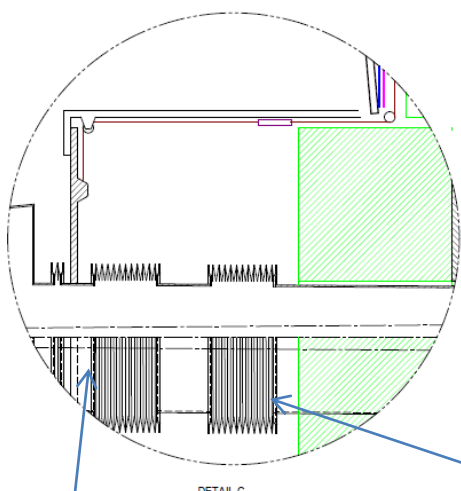




SiD – Old $L^*=3.5\text{m}$

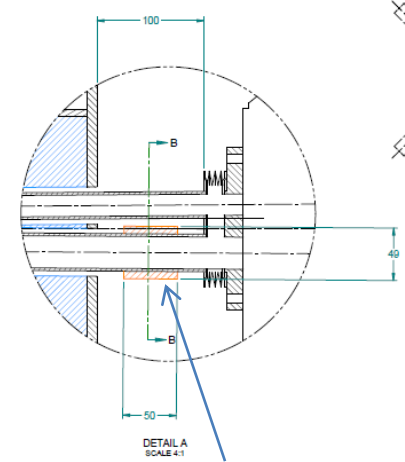


BPM arrangement,
under study

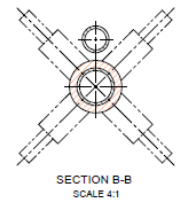


Single convolution bellow
Kinematic Mount. VTX

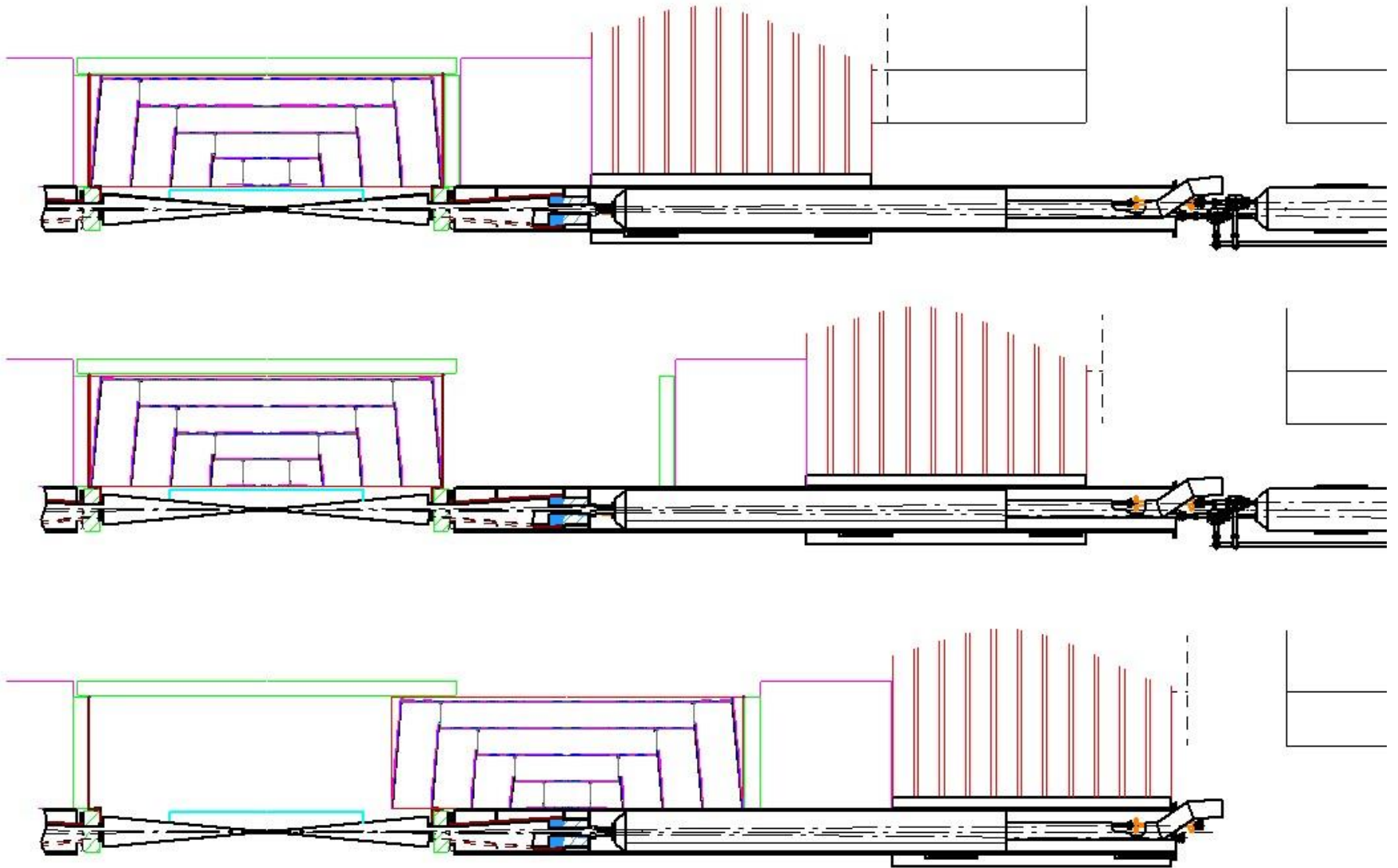
Multi convolution bellows
Stress Relief QD0 vs. VTX



Gap Lumical vs. QD0
BPM for IP Lum. Feedback

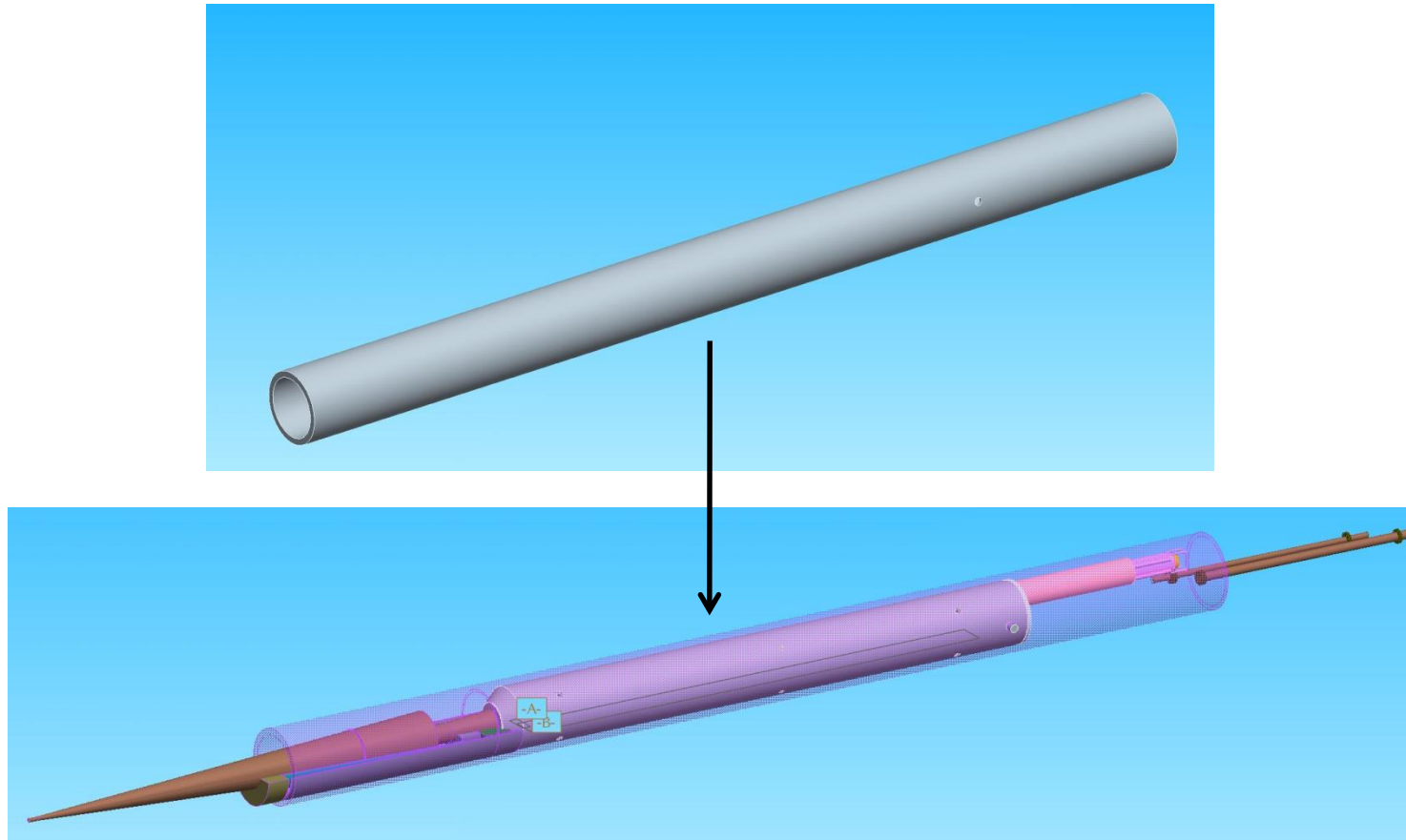


Door Opening and Tracker access

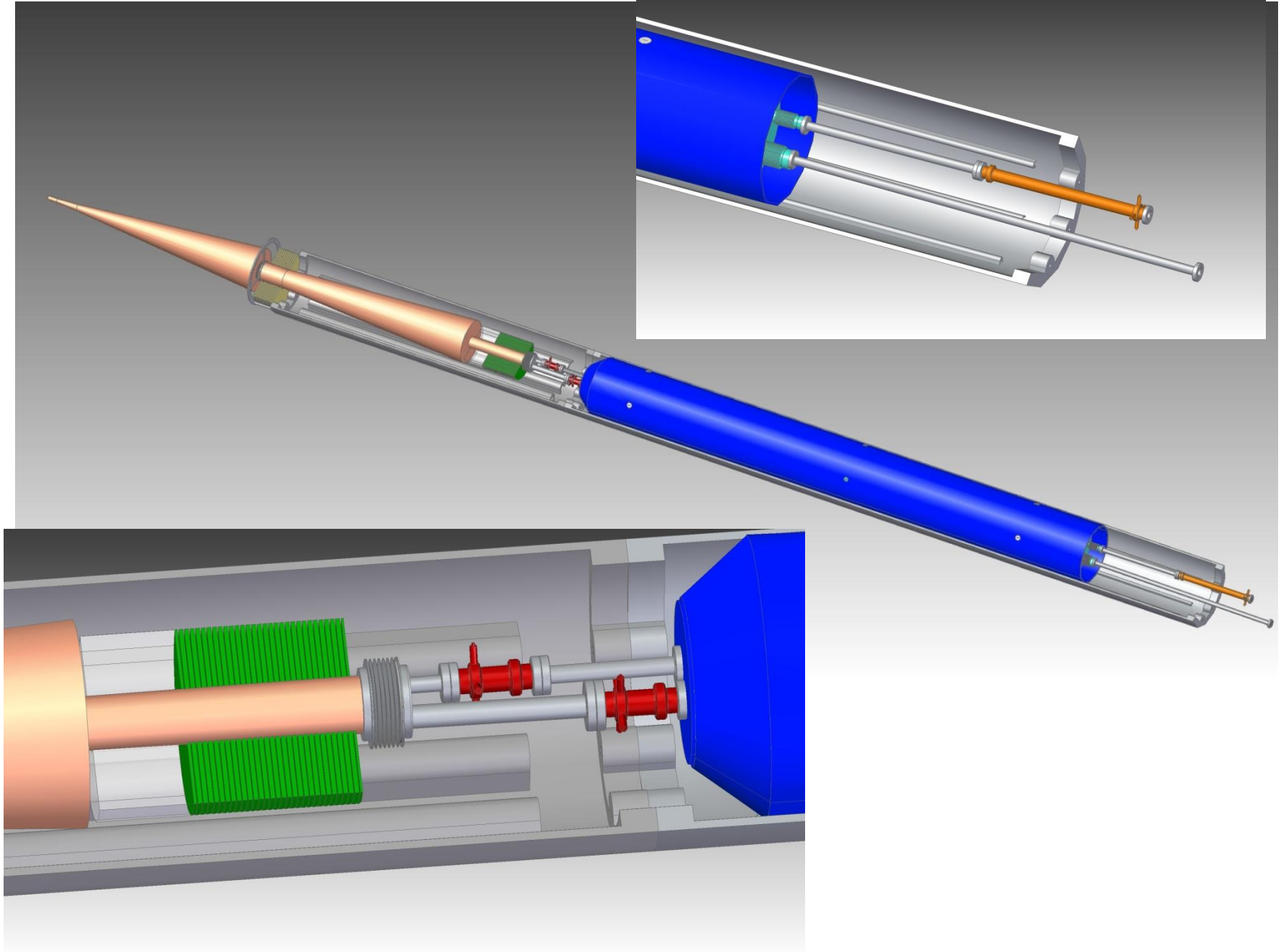


QD0 Support Tube Proposal

Rev. A



New Layout $L^* = 4.1\text{m}$



$$L^* = 4.1 \text{ m}$$

Beampipe support at the Lumical-Tracker interface

