SHIELDING STUDIES FOR IDS80f-IDS120f

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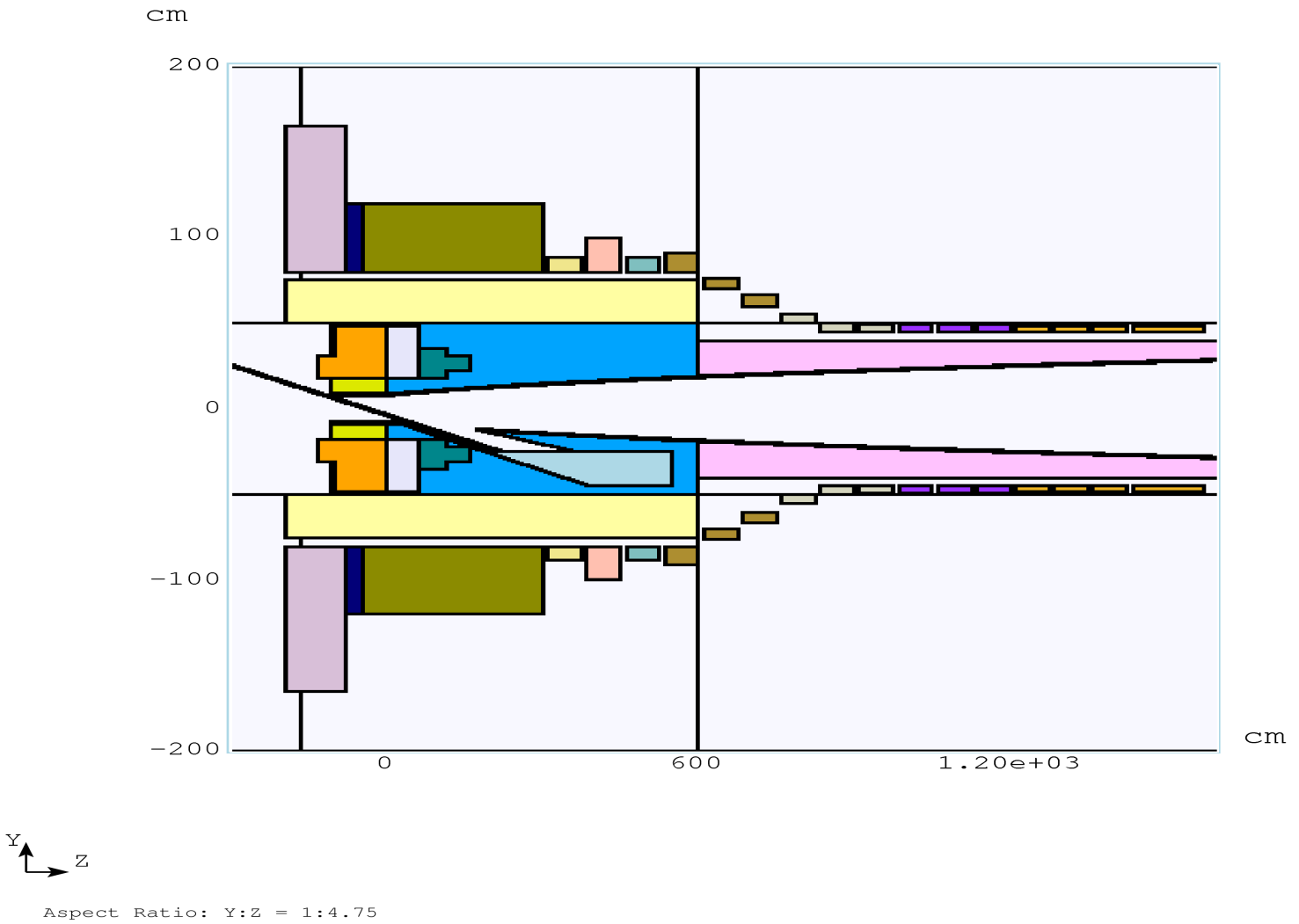
Energy deposition from MARS+MCNP
(10^{-11} MeV NEUTRON ENERGY CUTOFF).

>4 MW proton beam. Np=400,000
>PROTONS ENERGY E=8 GeV.
>GAUSSIAN PROFILE: $\sigma_x=\sigma_y=0.12$ cm.

>>>>IDS:80f, 90f, 100f, 110f, 120f WITH E=8 GeV PROTONS BEAM (ENERGIES, PEAK VALUES)

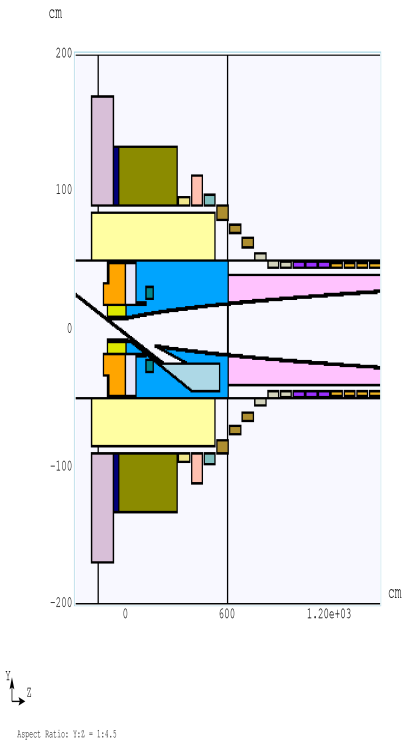
IDS80f GEOMETRY.



SC3: 4.15 kW
TOTAL: 5.69 kW
Peak SC3: 0.42 mW/gr

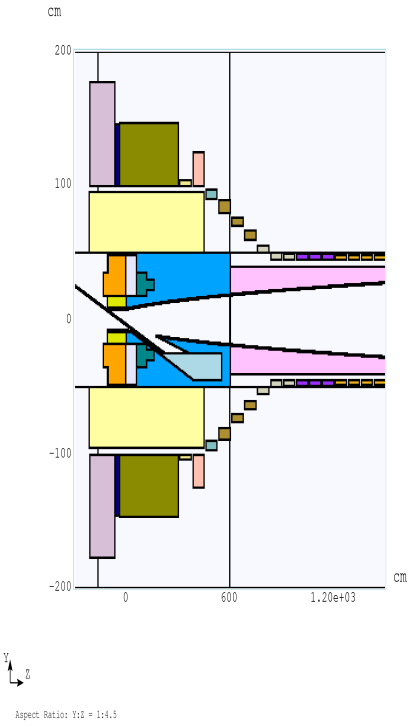
IDS90f-IDS120f GEOMETRIES:ENERGY DEPOSITION (kW), PEAK VALUES (mW/gr).

IDS90f



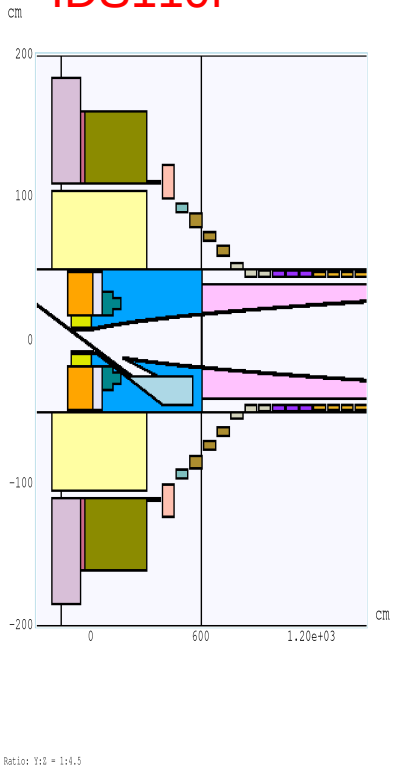
SC3: 2.07
TOTAL: 2.45
Peak SC3: 0.15
SC10: 0.07

IDS100f



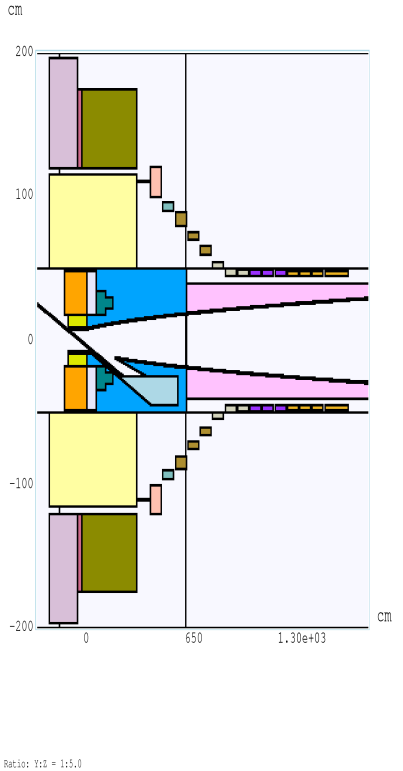
SC3: 1.01
TOTAL: 1.41
Peak SC3: 0.08
SC9 : 0.05
SC10: 0.10
SC11: 0.04

IDS110f



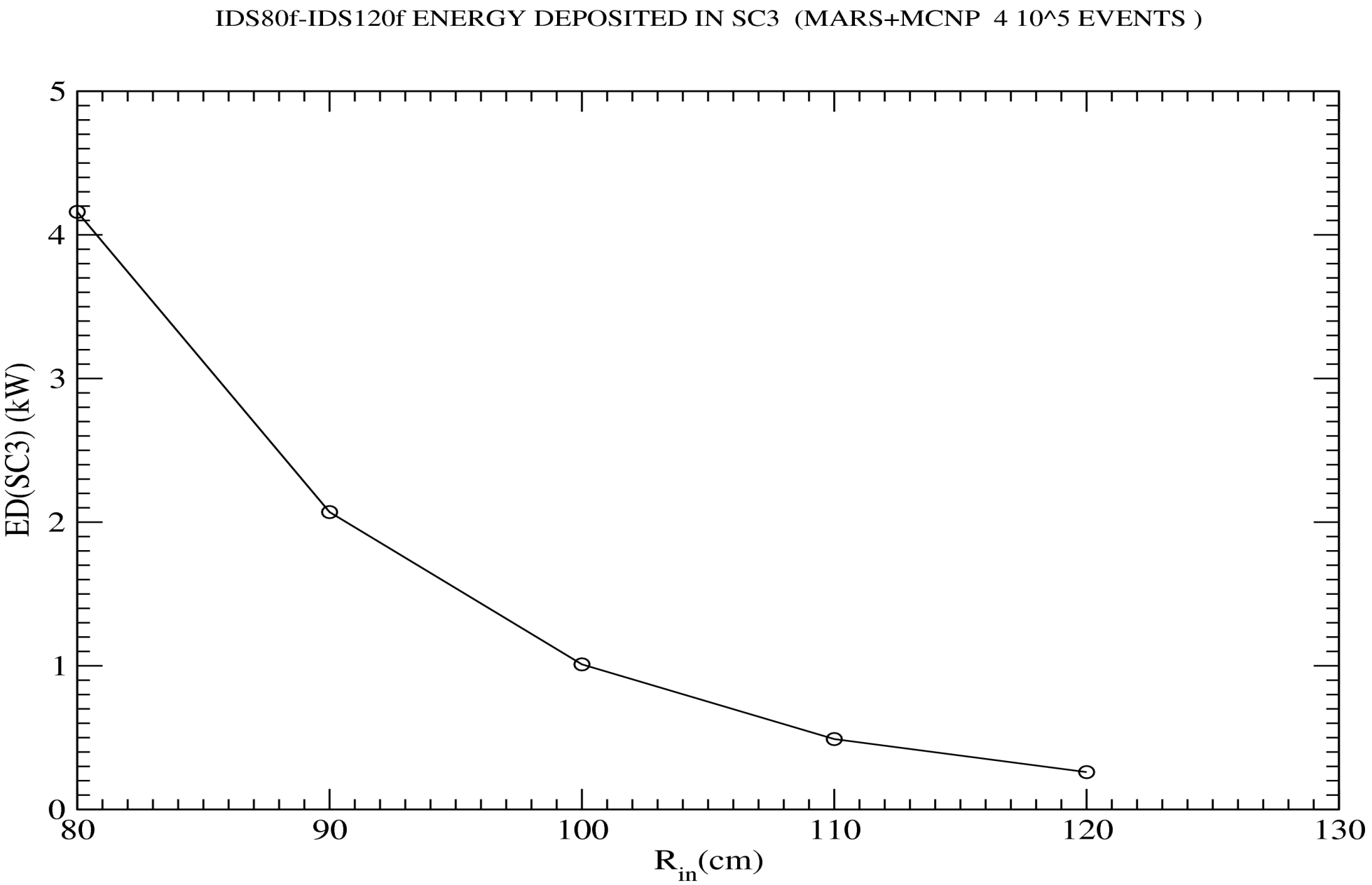
SC3: 0.49
SC5: 0.20
TOTAL: 1.14
Peak SC5: 0.05
SC12/19 : 0.09

IDS120f

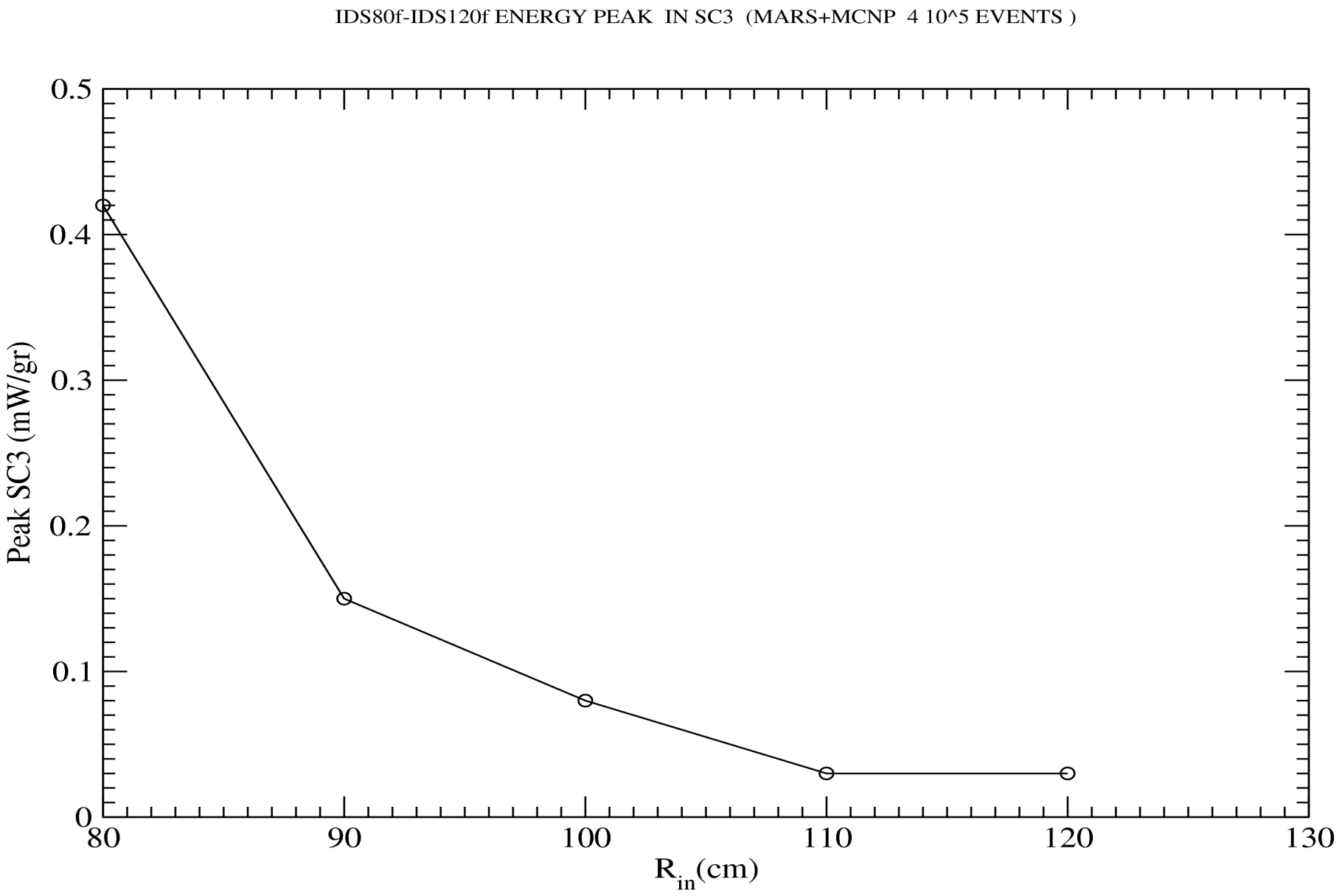


SC3: 0.26
SC5: 0.19
TOTAL: 0.88
Peak SC7: 0.07
SC14: 0.08

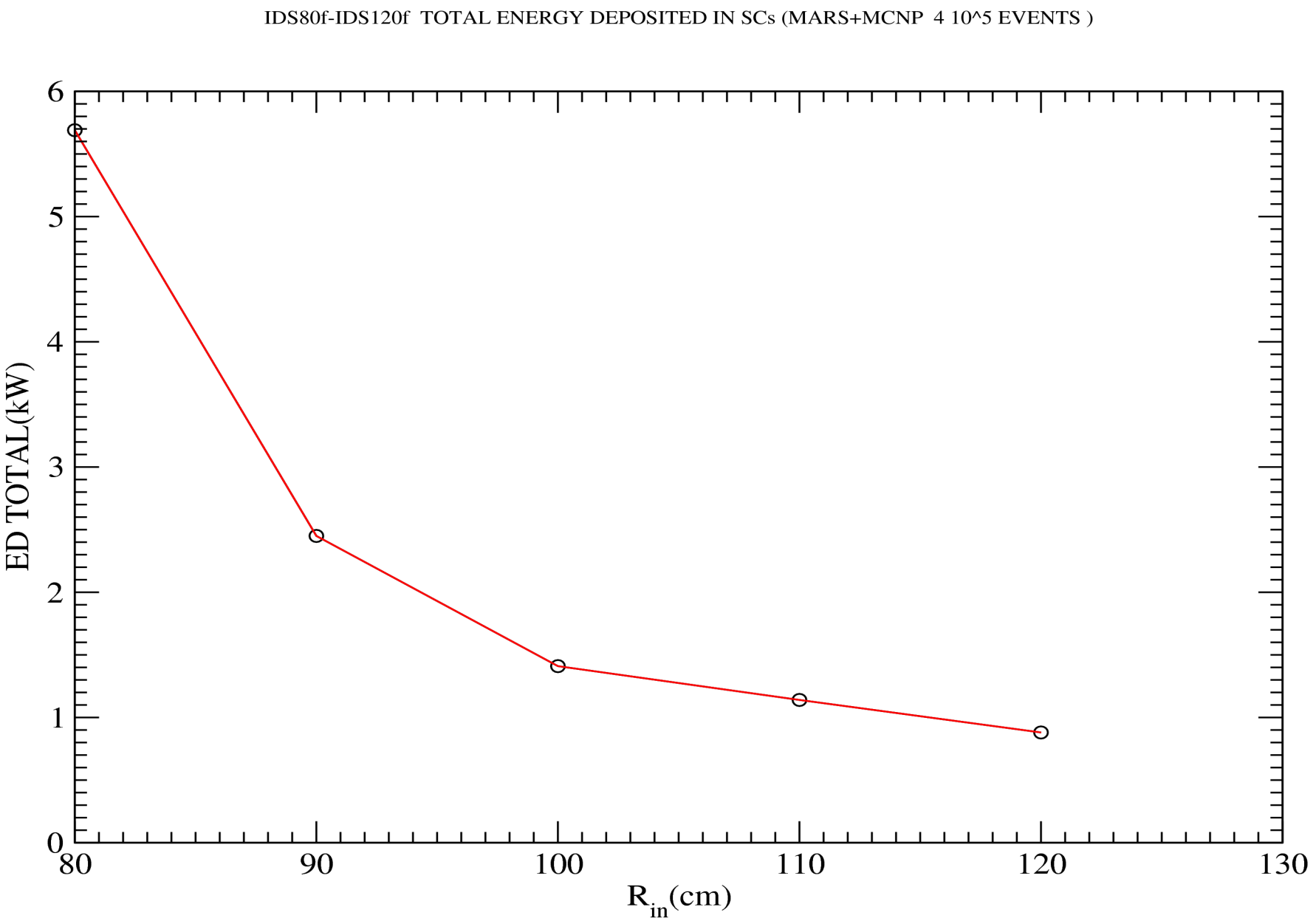
IDS80f-IDS120f GEOMETRIES:SC3 ENERGY DEPOSITION (kW).



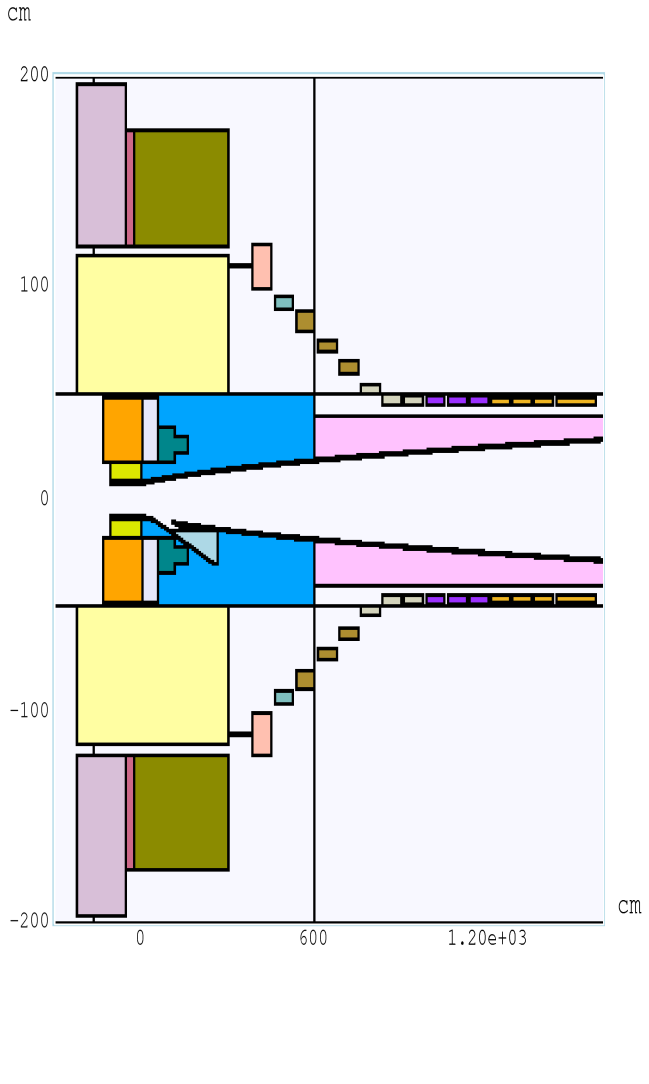
IDS80f-IDS120f GEOMETRIES:SC3 PEAK VALUES (mW/gr).



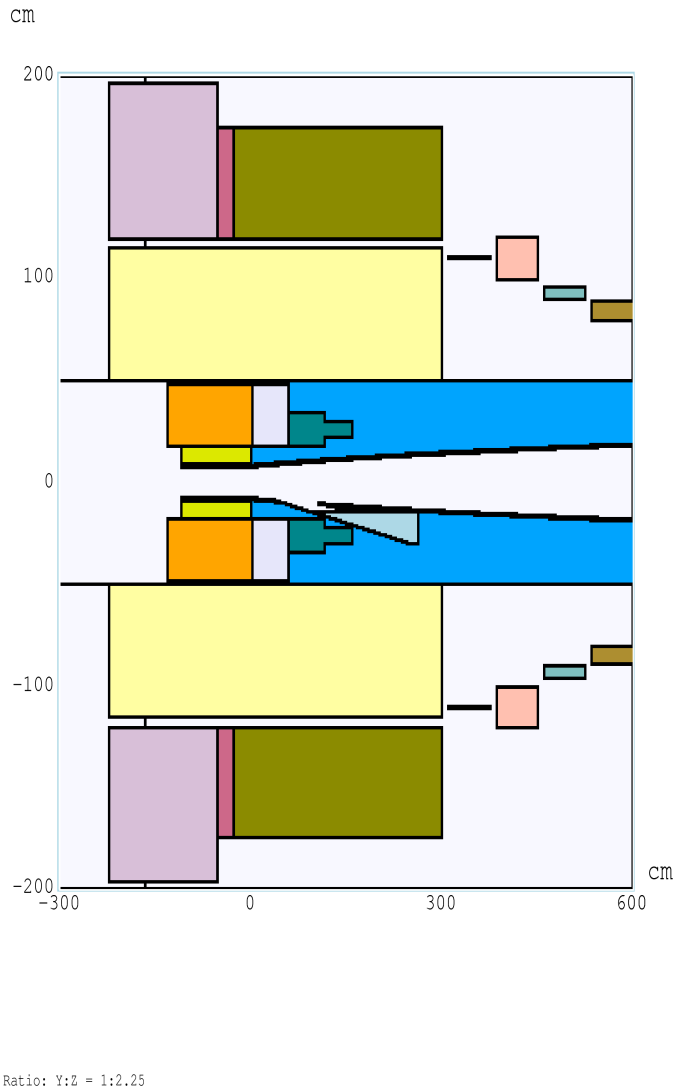
IDS80f-IDS120f GEOMETRIES:TOTAL ENERGY IN SOLENOIDS (kW).



IDS120f GEOMETRY

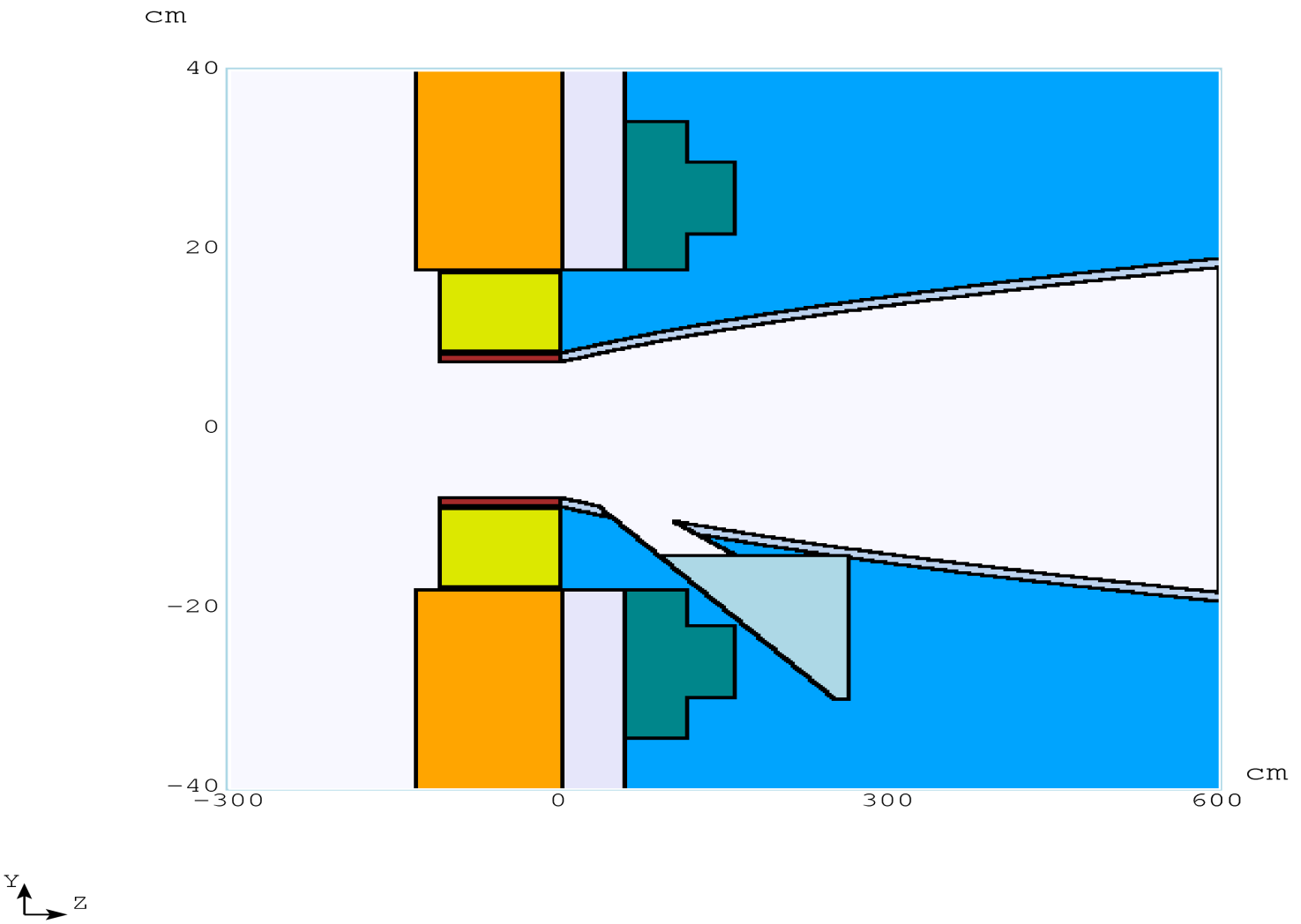


Aspect Ratio: Y:Z = 1:4.75



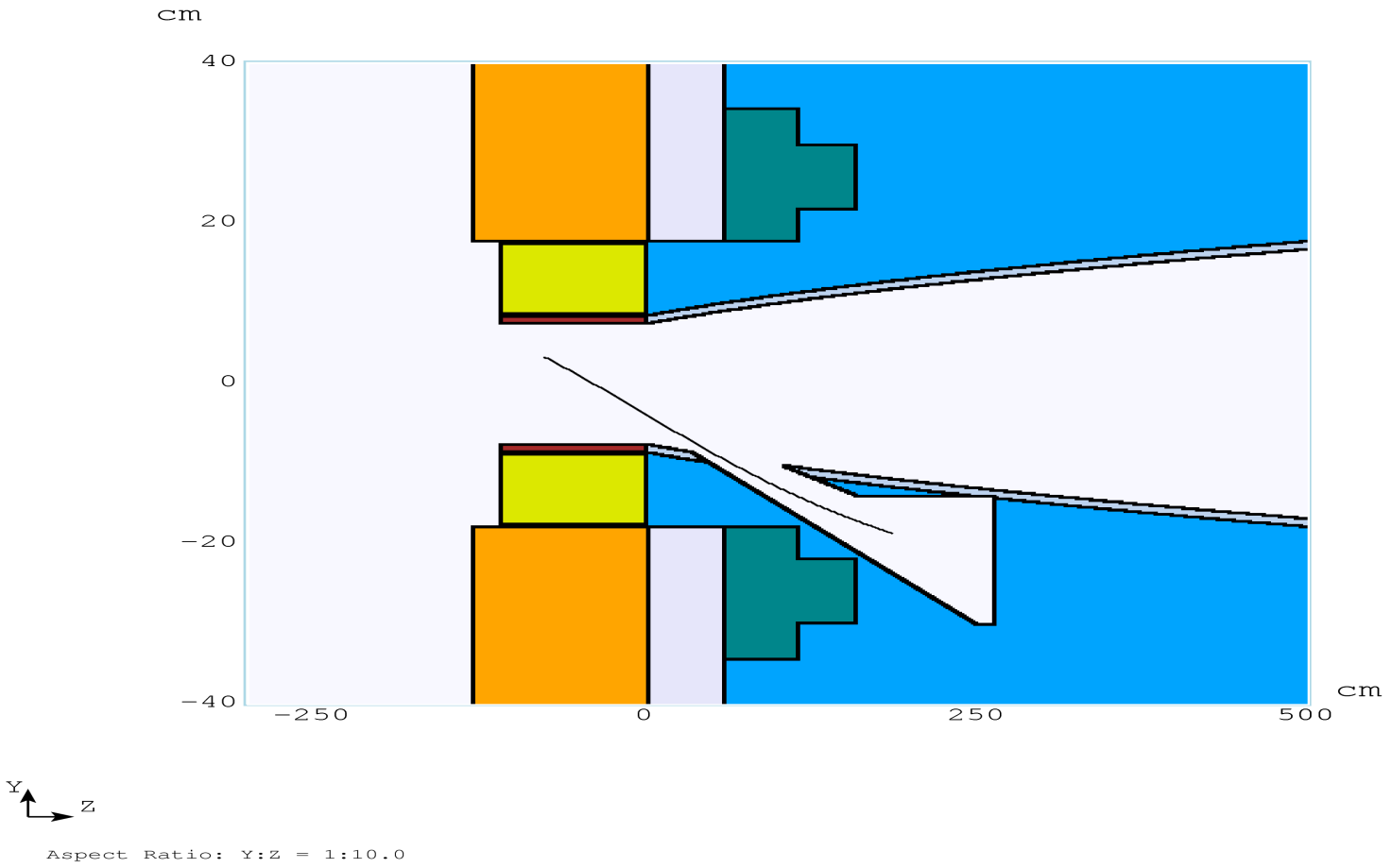
Aspect Ratio: Y:Z = 1:2.25

IDS120f GEOMETRY:Hg POOL AREA DETAIL



IDS120f GEOMETRY:PROTON TRAJECTORY WITHOUT Hg JET/POOL

Proton centroid initial position and directional cosines:
(x,y,z)=(-1.427, 3.379, -75)cm
(cx,cy,cz)=(0.047493448, -0.085001340, 0.995248303)



Hg Pool free surface at y=-14 cm and -8<x<8 cm

Protons trajectory length in Hg pool>72.2 cm or >5 Hg interaction lengths (14 cm)

IDS100f GEOMETRY: TRACKS OF PARTICLES FOR EVENT #20 AND FOR THE FIRST 9 EVENTS.