BNL IHEP IR Magnets

Mechanical Design Revisions
Andy Marone
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Axial Restraint
axial stress (MPa)

- 13KN applied load away from IP
- Max stress = 97MPa
Axial Restraint

heat flux (mW/mm)

- Ultem 2400 polyetherimide glass reinforced thermoplastic
- $k = 0.22 \text{ w/m-C}$
- 300K – 4K heat load
- 1.5 W total heat load
Lead End revisions

- Bellows flange revised to provide Ø190mm x 50mm clearance
- Pipe stubs added to He lines
- Front plate thickness increased
Lead End Bellows Revision

- Revised bellows design showing 190mm X 50mm clearance
Front Plate Thickness

- Front plate thickness increased from 25.4mm to 41.15mm
Non Lead End helium flow

Helium flow from inner to outer (holes replaced by slots)

Inner helium vessel
Open Issues

- Angle of cryogenic line port in end plate.
- Vacuum pump out port.
- Serviceability of access cover.