Status of the SciGlass barrel electromagnetic calorimeter in DD4hep
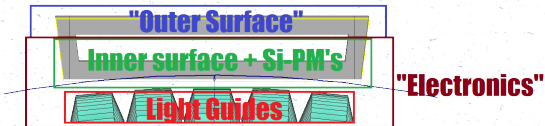
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Material behind the SciGlass: Input

https://github.com/eic/epic/issues/206

"Cap" of the wedge box

(Illustration provided by Joshua Crafts)

I believe, the labels are misleading here. What is pictured corresponds to "Barrel EMcal", "EMCal Electronics" and "EMCal Outer Surface" in Menagerie, but not to "EMCal Inner Surface".

Support frame

Sub-Component	WBS	Length (cm)	Inner Radius (cm)	Outer Radius (cm)	Offset from Center (cm)	Physical Start (cm)	Physical End (cm)	Volume (m³)	Weight (kg)	Technology	Notes
EMCal Outer Support		492.2	132	141		-293.9	198.3	3.80	5,965	Steel	Weight: calculated as 20% of total volume as steel (balance is air)

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Material behind the SciGlass: Implementation

https://github.com/eic/epic/pull/213

Before:
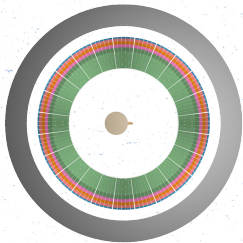
After:
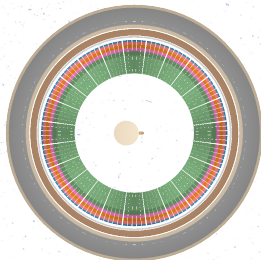
(ignore extra rings showing up in the magnet – ROOT orthographic projection rendering bugs?)

Two cylinders:

» 2.5 cm of Aluminum (1.5 cm "Inner" and 1 cm "Outer" of the wedge box cap combined)

» 9 cm of 20% density Stainless Steel

Wedge box thickness

A change

Front face and "flaps" thickness increased to 3 mm in
`https://github.com/eic/epic/pull/207`.

Question unresolved

» Material between sectors is still implemented as just 3 mm Aluminum

» The 3 mm Aluminum + 6 mm Air + 3 mm Aluminum is requested (Elke)

» That is not possible with the current tower geometry:
  `https://github.com/eic/epic/issues/214`