

# The SDHCAL transportation issue

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# Barrel design

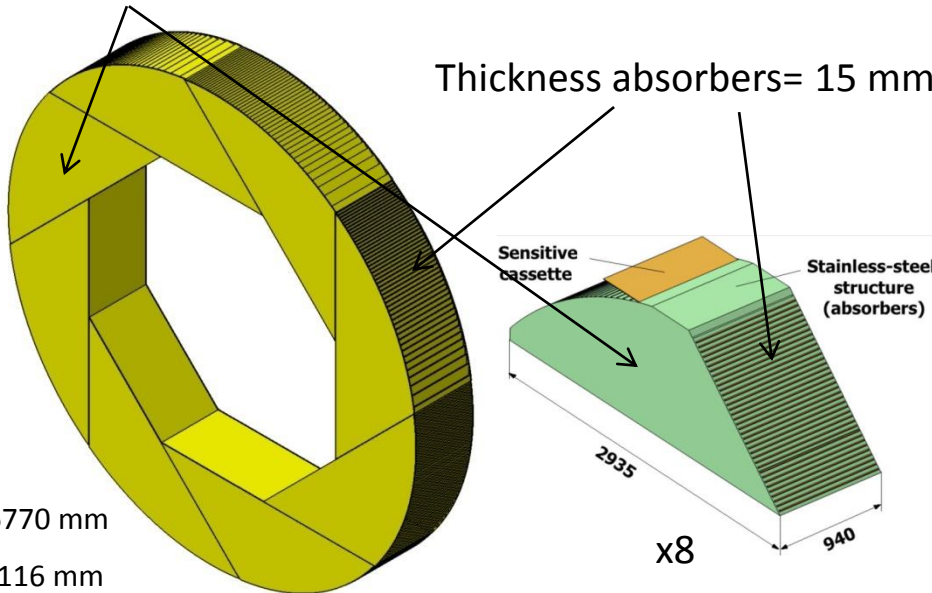
Ext. Diameter 6770 mm

Int. Diameter 4116 mm

Length 4700 mm

Thickness wheel face = 10 mm

Thickness absorbers= 15 mm



Ext. Diameter : 6770 mm

Int. Diameter : 4116 mm

Length : 940 mm

*Stainless steel*

1 wheel (8 mod.)

5 wheels

Weight (t):

88 t

440 t

Detectors W. (t):

36.8 t

184 t

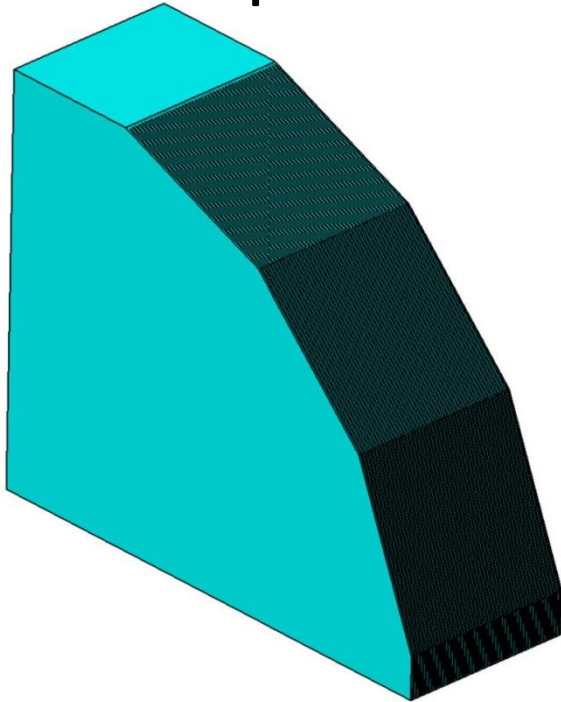
Total Weight (t) :

124.8 t

**624 t**

**1 module Barrel without detector 11 t → no transportation problem**

- Endcap

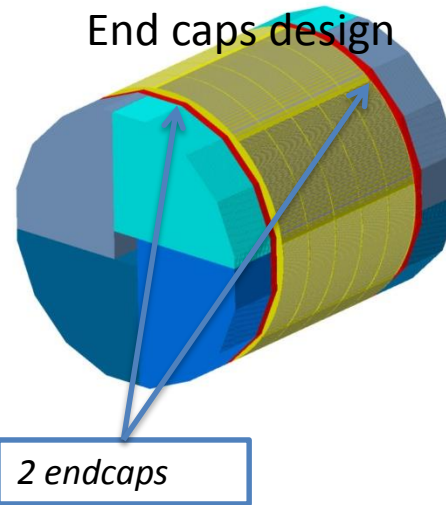


One module

Module Weight : 50 t

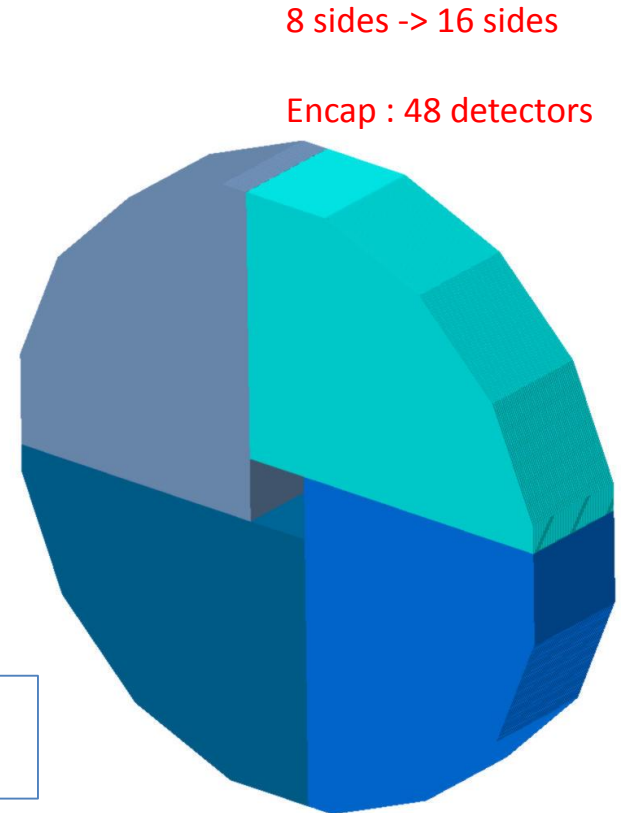
Detectors weight : 22.5 t

Total weight : 72.5 t



*Material : stainless steel*

**Welded structure  
Idem barrel**



One endcap made of 4 modules

Endcap Weight : 200 t

Detectors weight : 90 t

Total weight : **290 t**

**1 module Endcap without detector 50 t → a transportation problem**

# Solutions?

No matter the scenario the insertion of the detectors will take place on the ILC site:

- 1) Exceptional transportations for the 8 Endcap modules
- 2) Build half modules (25 t each + lorry weight) or three parts (16.5 t each + lorry weight) and assemble them two by two or three by three on site using standard welding

The second solution may reduce the total Endcap mechanical structure rigidity and could be a problem in case of an earthquake but this may be studied

Our favourite solution is to have robust roads capable to support the transportation of heavy pieces. These roads are probably needed to transportation the digging machine ...