

## BCAL Module Dimensions and Weights

Z.Papandreou, February 19, 2006 / Updated: L. Teigrob May 2, 2013

No of modules

48

Basic Dimensions (cm)				
Length	Outer radius	Inner radius	Alum.(base,outer)	Alum.(top,inner)
390	90.405	64.25	3.175	0.8

Calorimeter volume ratios			
Pb	SciFi	Glue	Total
0.37	0.49	0.14	1

Volumes (cm <sup>3</sup> )				
Pb	SciFi	Glue	PbSciFi	Aluminum
1578052.78	2089853.681	597101.0518	4265007.513	817750.7204
Total check:			4265007.513	

Material Densities (g/cm <sup>3</sup> )				
Pb	SciFi	Glue	PbSciFi	Aluminum
11.35	1.032	1.2	5	2.7

Component masses (gr)				
Pb	SciFi	Glue	PbSciFi	Aluminum
17910899.05	2156728.999	716521.2622	20784149.31	2207926.945

BCAL Mass	
Total Mass (kg)	22992.08
Total Mass (metric tons)	22.99
Mass per module (metric tons)	0.479

Numbers do not include bolts, fasteners or other such support.

BCAL Number of Fibers	
Scint Area	5358.599183 cm <sup>2</sup>
Fiber Area	0.007853982 cm <sup>2</sup>
No of Fibers	682278.0384
Km of Fibers	2660.88435

Numbers reflect the final, machined dimensions and do not include the amount of material needed for the construction, where there is waste due to final trimming and machining.

Numbers do not include contingency (spare modules)

## Notes

- a 1.25" aluminum base plate instead of the current 1" (2.54 cm) one
- a 8mm aluminum top plate (currently not in there).
- the total thickness of the modules including both aluminum plates should

inner radius of Al plate: 64.25cm

outer radius of Al plate=inner radius of active area: 65.04cm

outer radius of active area: 87.22cm

22.18 is thickness of active area from new informat

90.405 is new outer radius based on this plus thickn

26.155 is now total thickness which is much closer to

be 10.3"      [=3.175cm]  
26.155      [=0.8cm]      [=26.162cm]

tion 87.22-65.04 cm

esses of inner and outer aluminum plates

o your given value of 26.126cm