

SW Scintillator Wall Design Studies

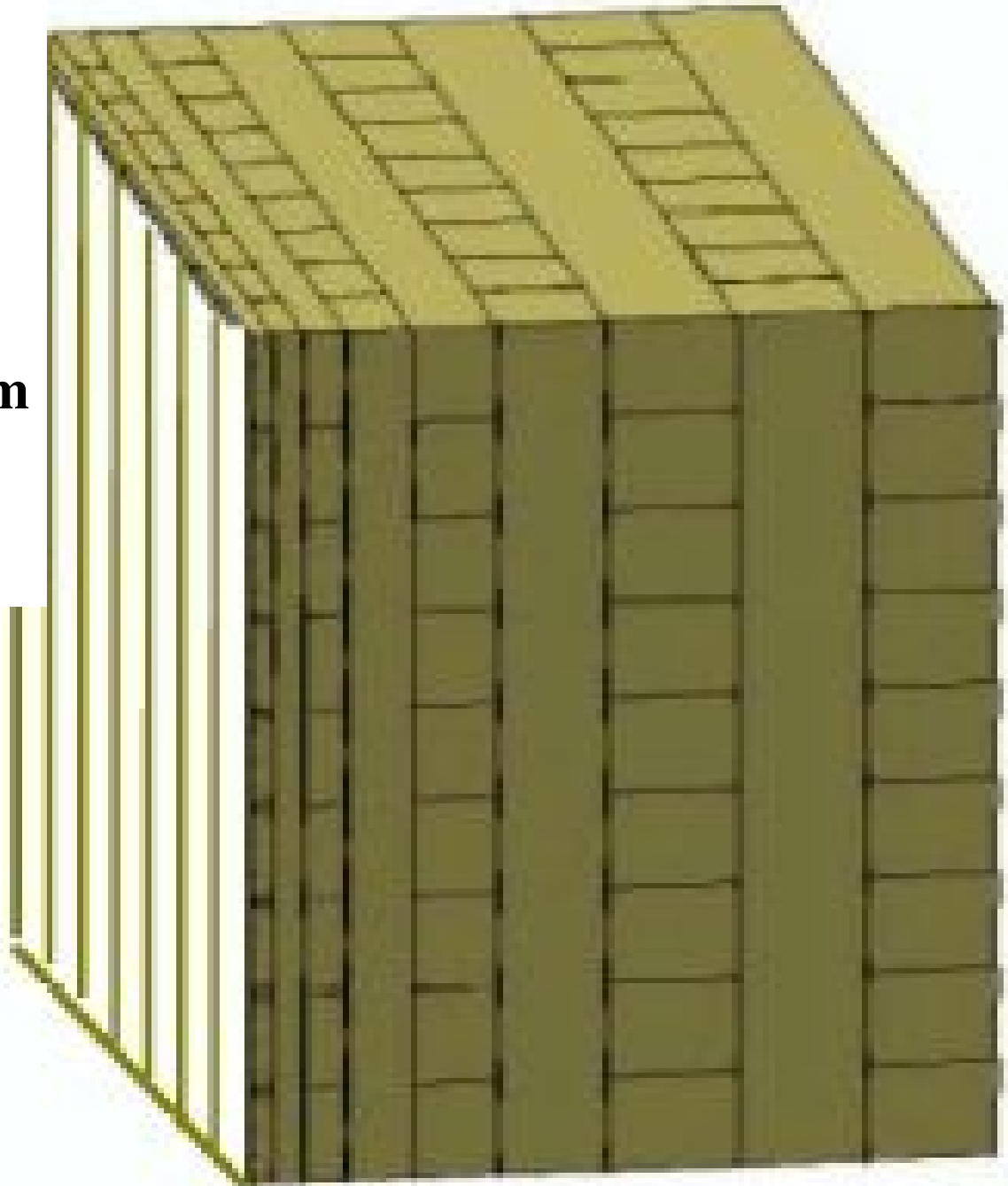
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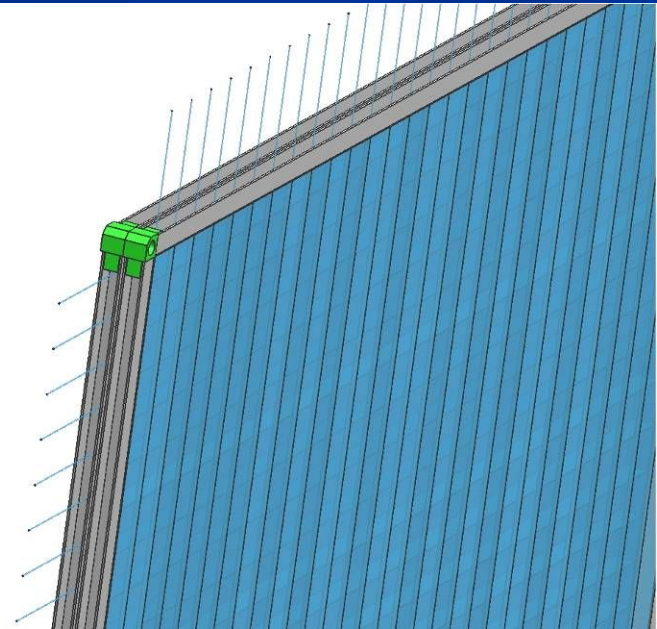
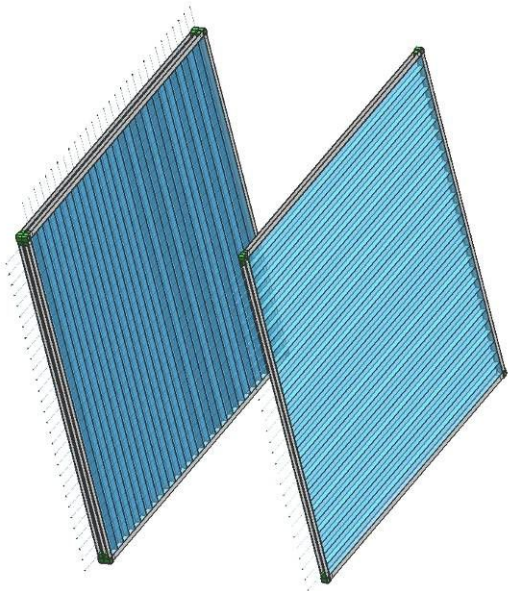
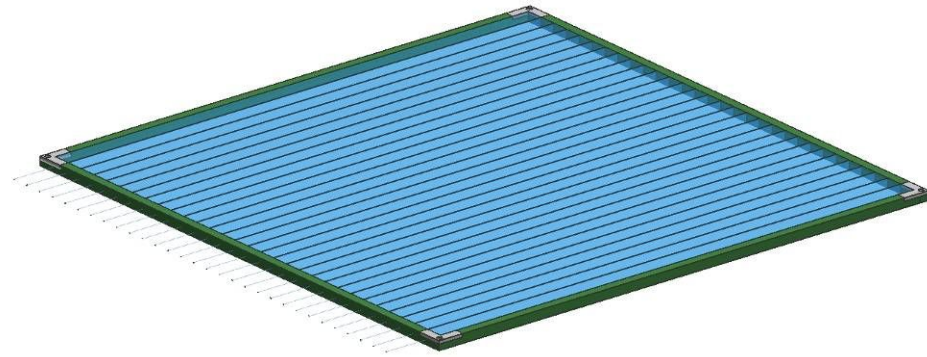
Fully Active Scintillator

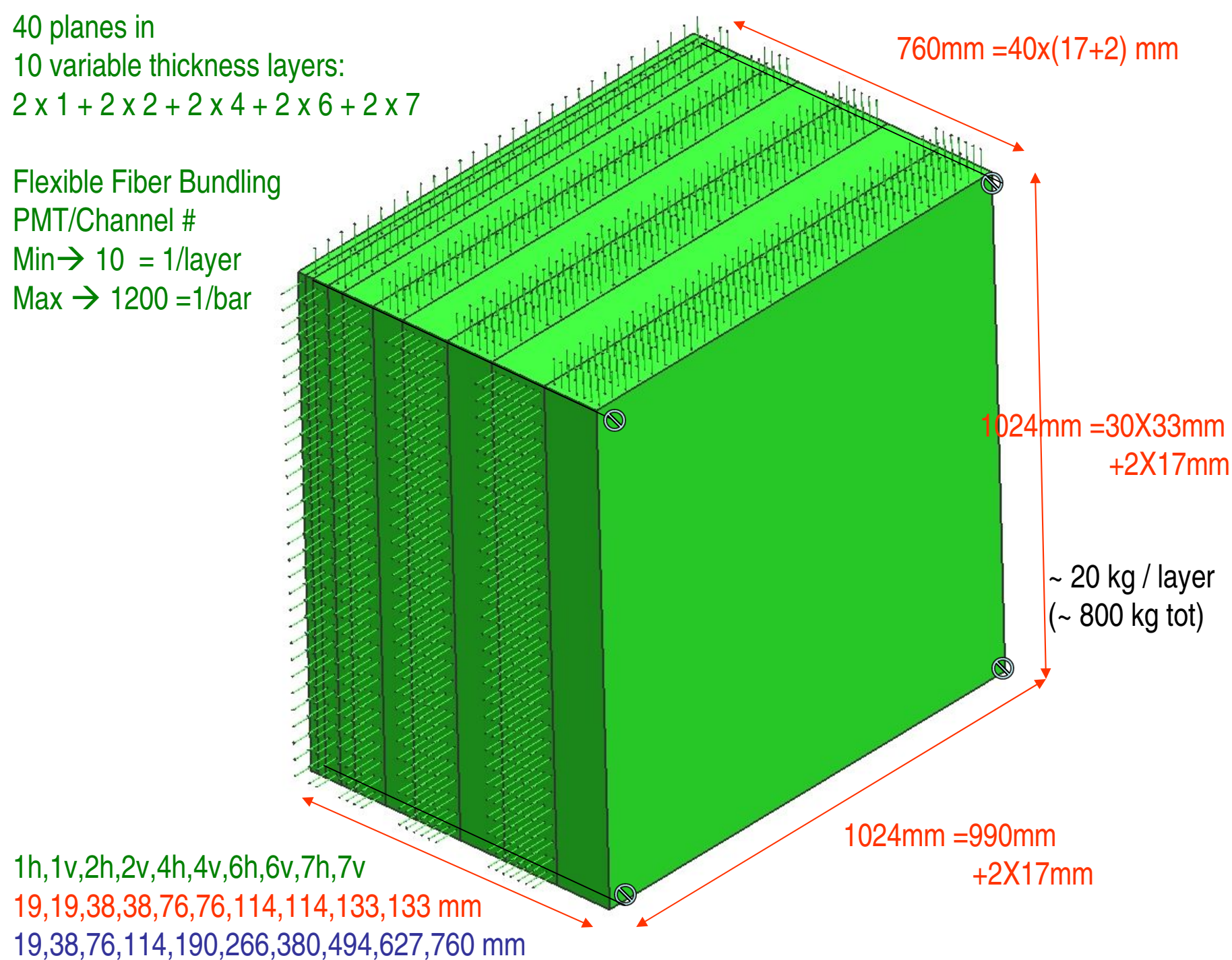
**Plastic Scintillator Bars
(US type): Polystyrene
(Co-extruded with
white diffusive coating)
17mm x 33 mm x 990 mm**

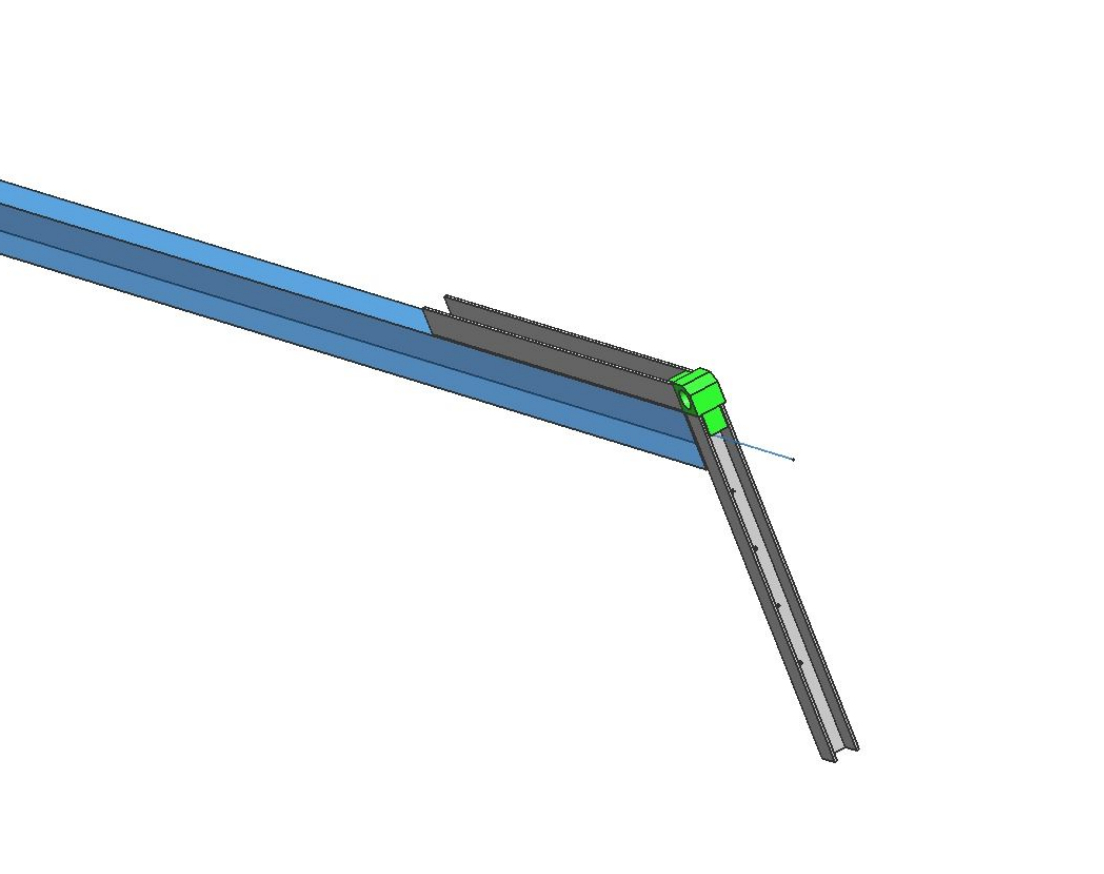
**WLS fibers: 3 x 0.8 mm
Mirrored end**

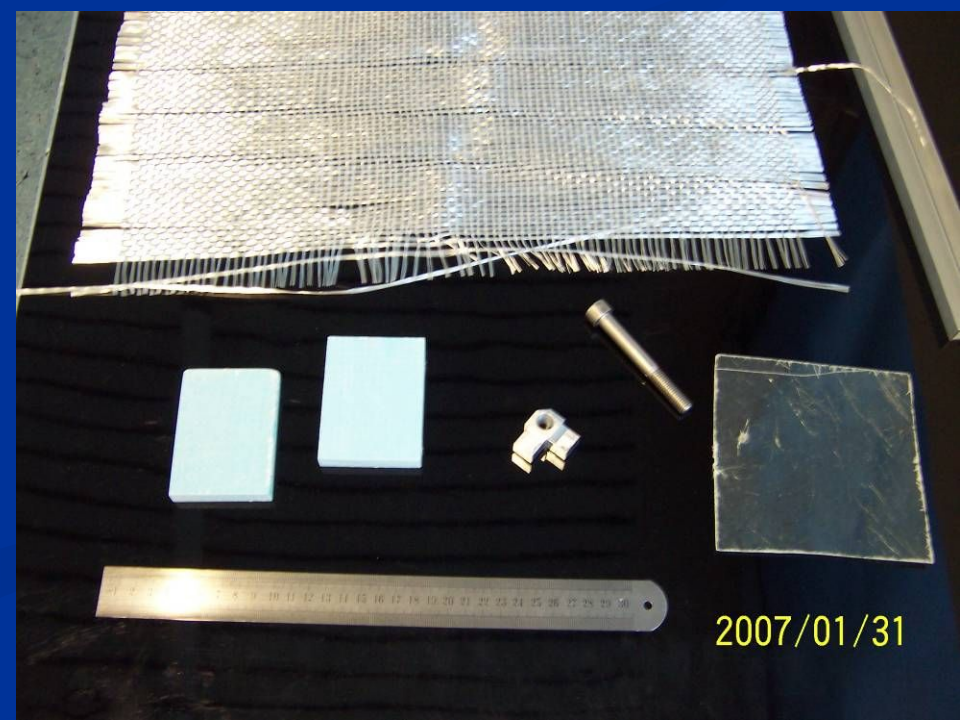
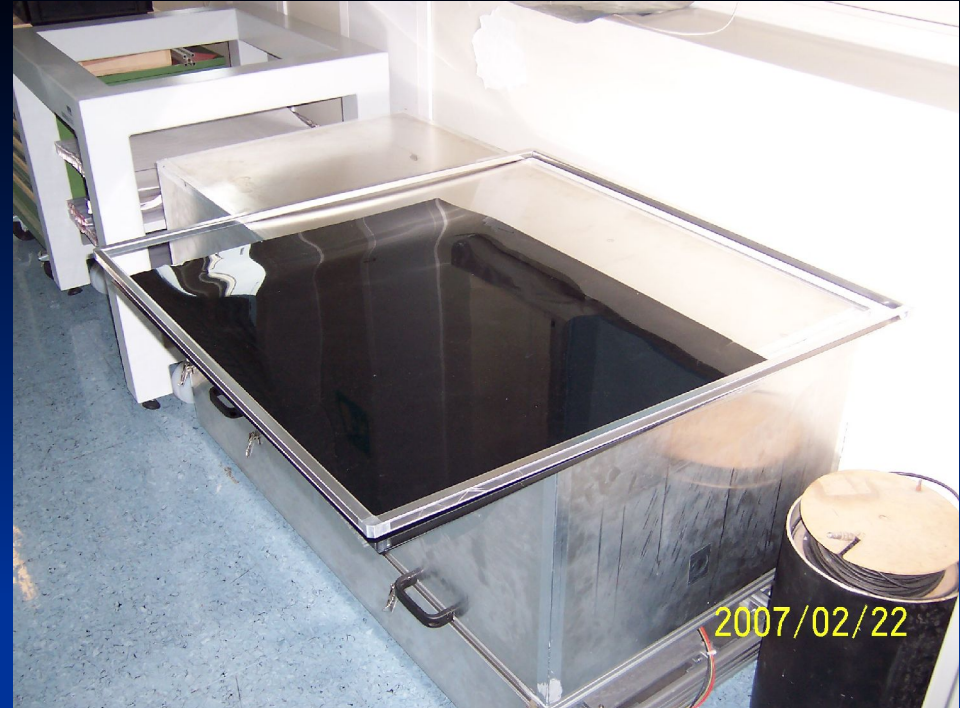


Basic design idea:
modular structure based on planes
of scintillating bars glued together
and reinforced against mechanical
stress by a metallic support and two
fiber-glass layers









Open design issues:

Mechanical support (interface with KL)

Light collection:

- Number of available channels (both PMT and electronics)
- Desired segmentation (simulation in progress)
- Choice of PMTs

PMT mechanical structure and shielding

Light tightness (a big envelop?)

Calibration system (?)

Cost:

Scintillator (9 dollars/Kg) ~7000 dollars

Fibers (1 dollar/m) ~6000 dollars

Mechanical structure of planes (50 euro/plane) ~2000 euro

PMTs (to be recuperated) ?

Electronics (very expensive) !!!

Mechanics and PMT shielding to be estimated (not too much)

