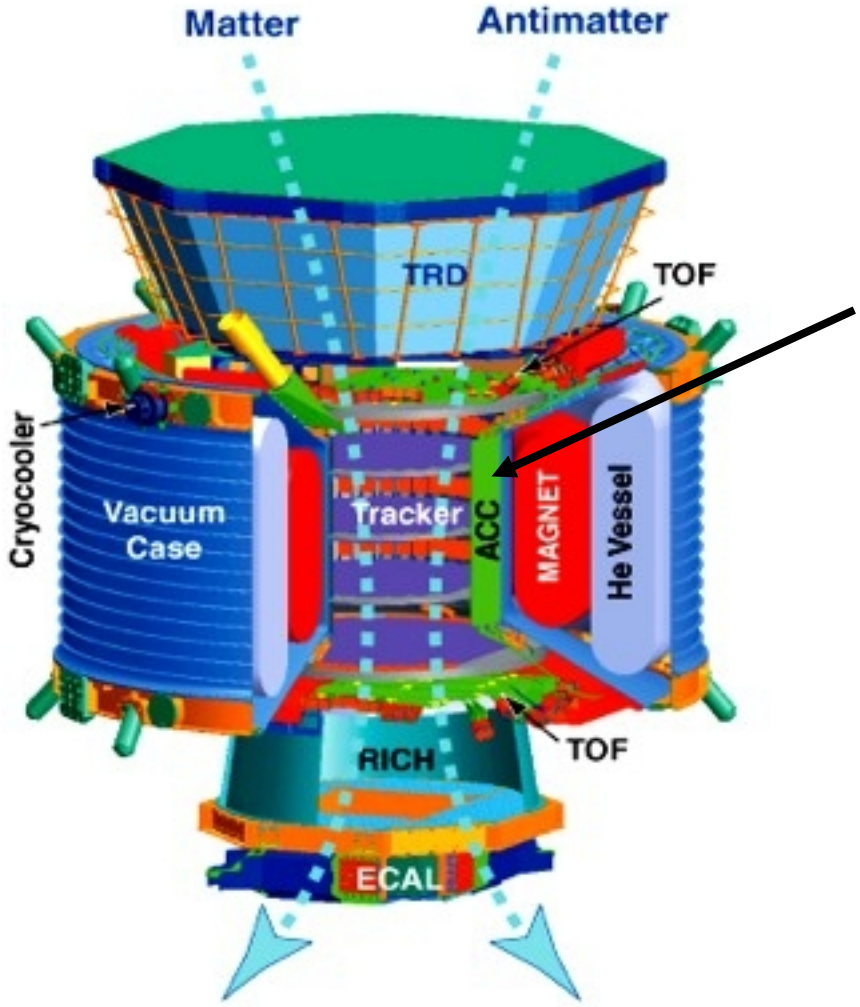
AMS-02: Anti Coincidence Counter ACC



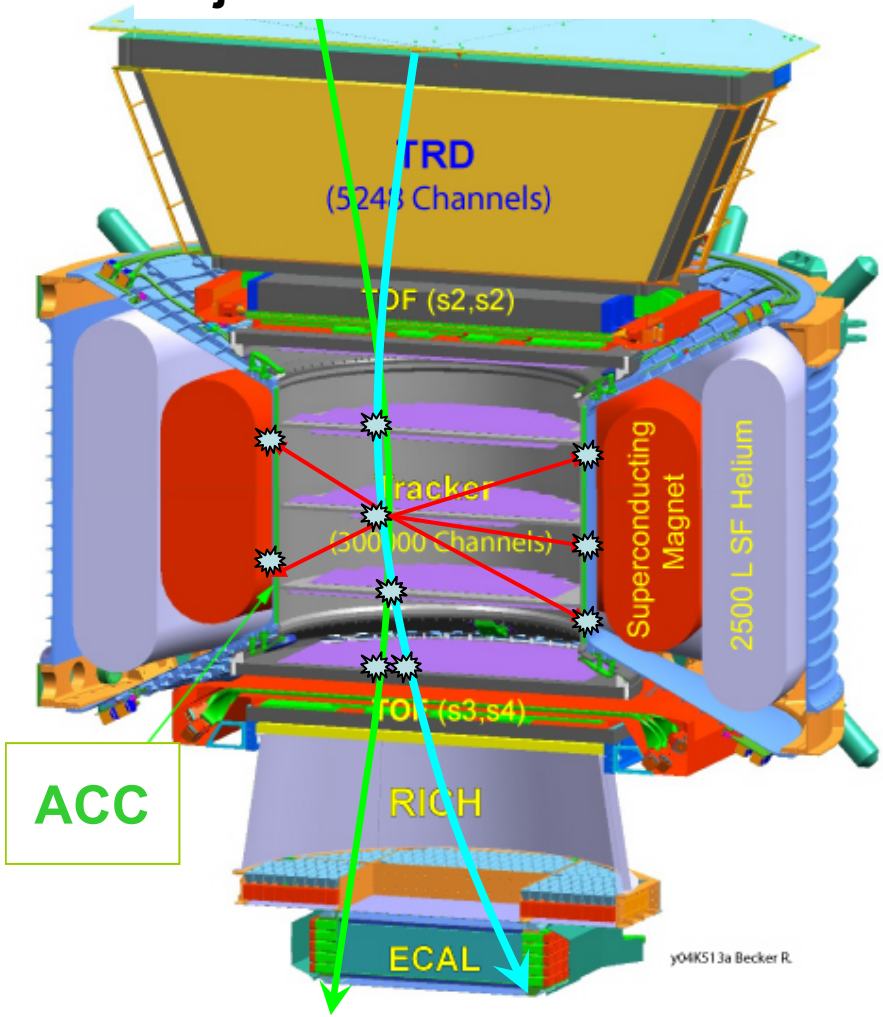
The ACC surrounds the silicon tracker inside the magnet.
It rejects particles that leave or enter AMS-02 through inner shell of the magnet → protection against misidentification of matter nuclei as antimatter nuclei.

Requirements:

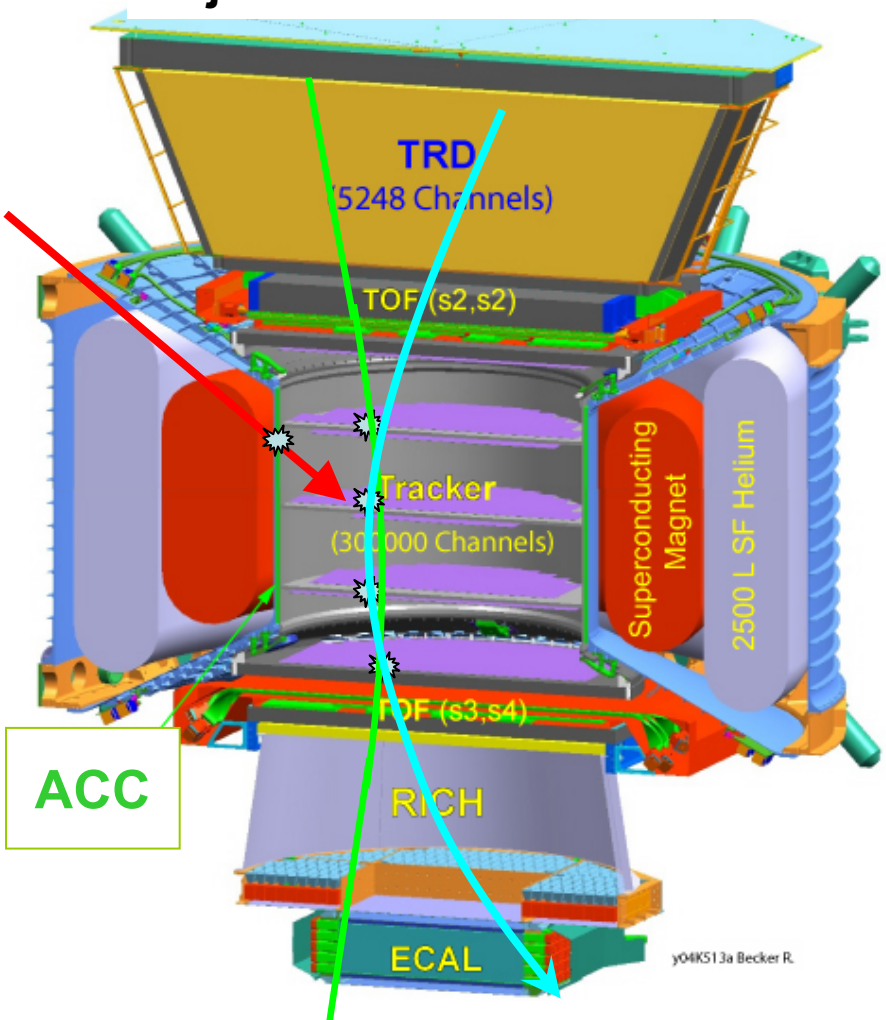
- **High detection efficiency (0.9999)**
- **operational in high magnetic field**
- **fast response for trigger**

AMS-02: Anti Coincidence Counter ACC

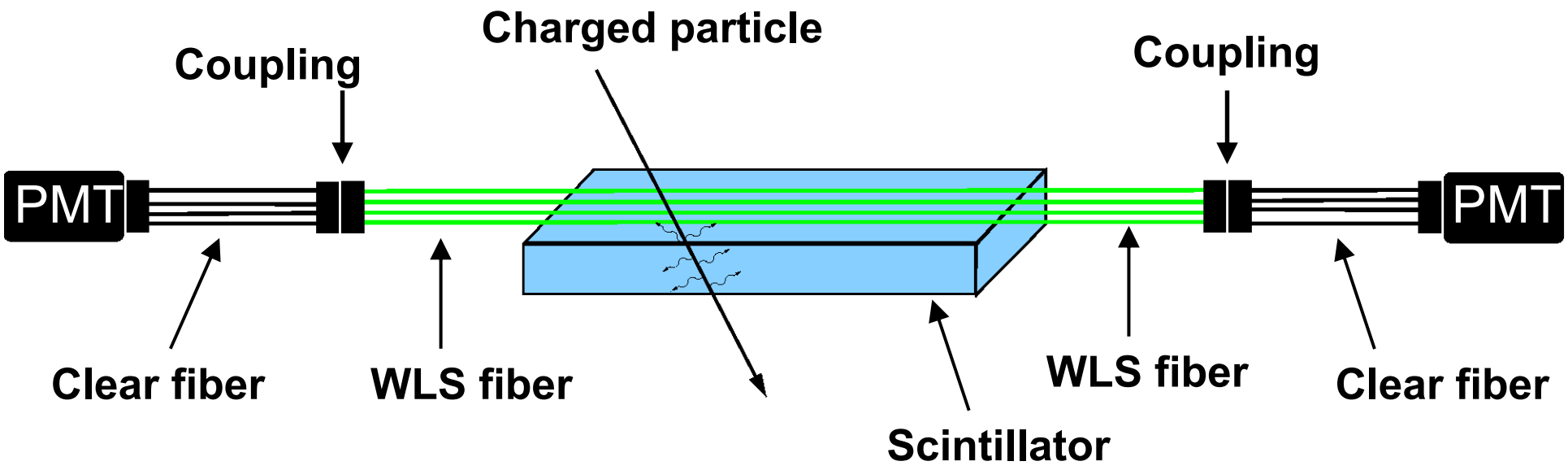
Rejection of internal events



Rejection of external events

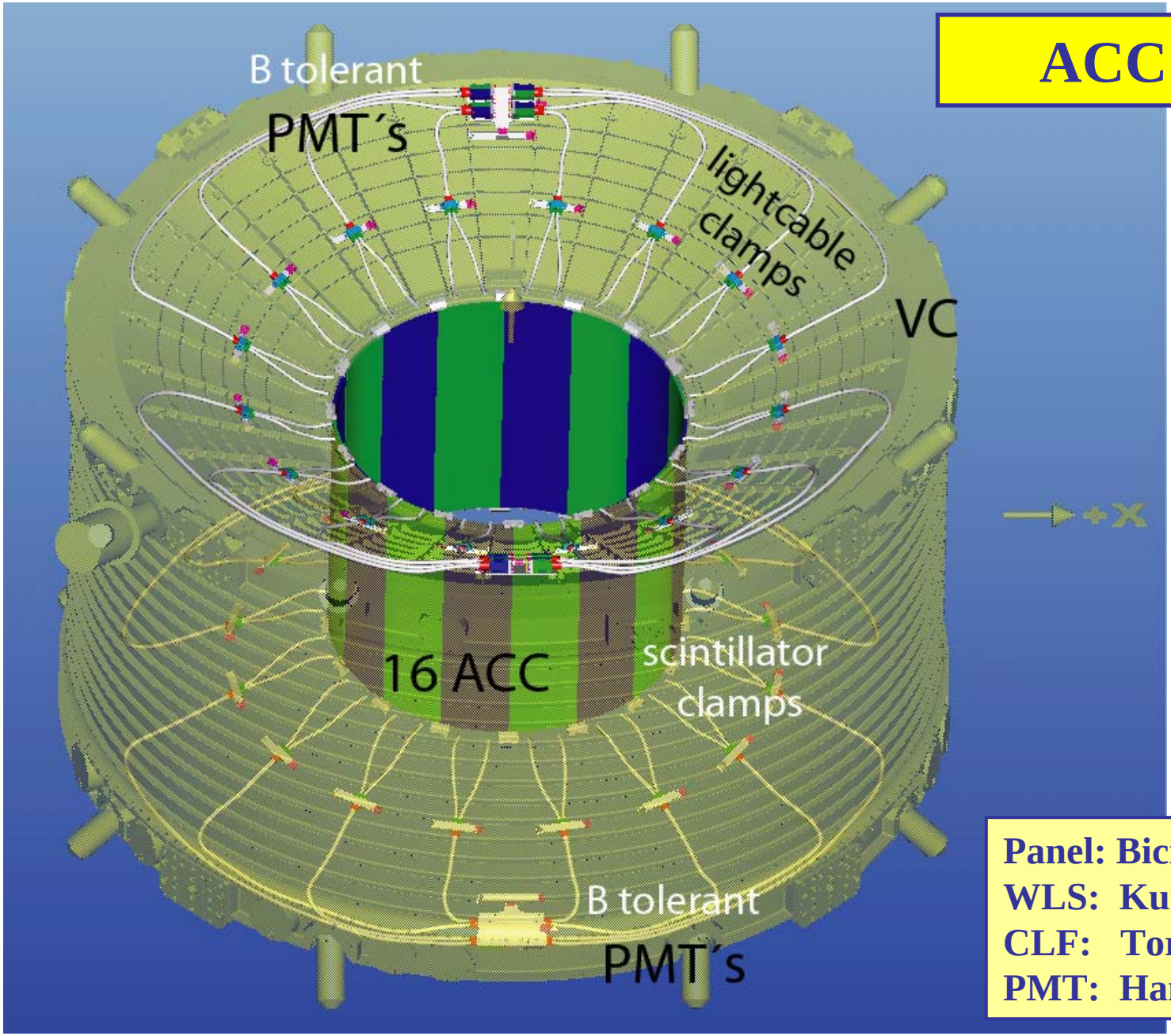


ACC Principle



Scintillator Panel:	**Bicron BC414 (826.5 x 230 x 8 mm³)**
Wavelength Shifting Fiber (WLS):	**Kuraray Y-11(200)M**
Clear Fiber (CLF):	**Toray PJU-FB1000**
Photomultiplier (PMT):	**Hamamatsu R5946**

ACC System

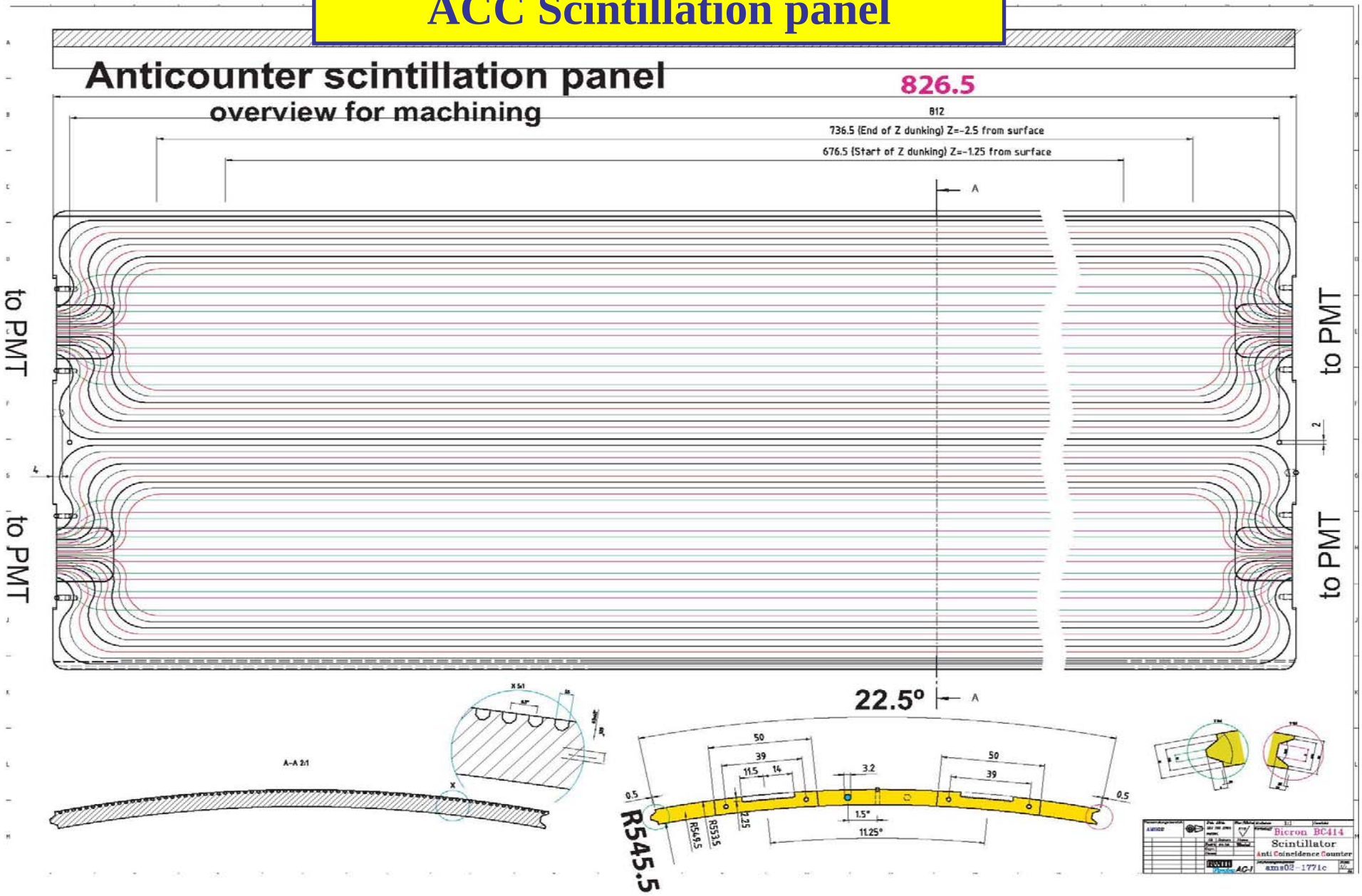


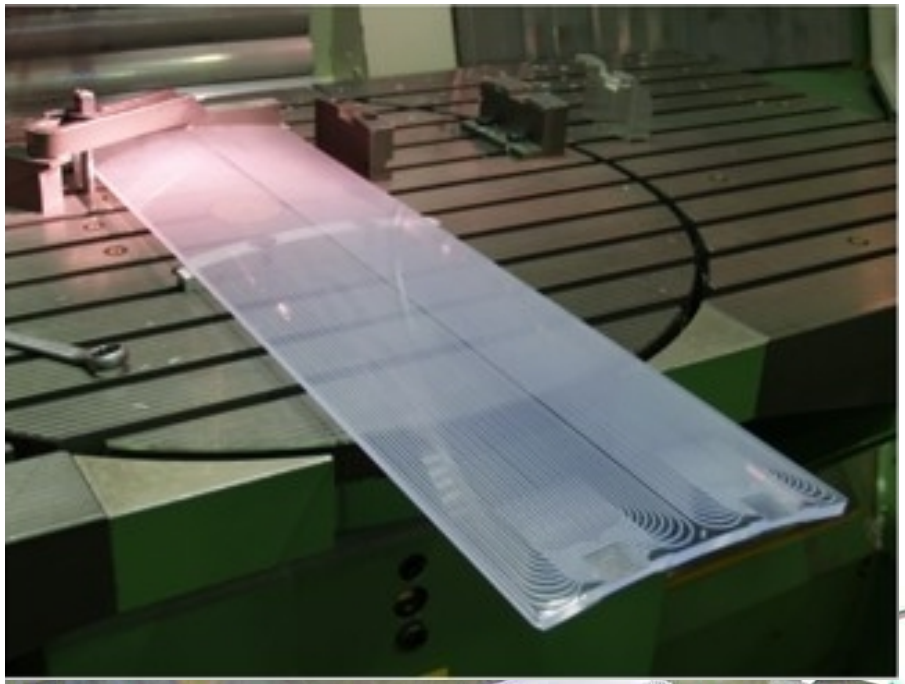
Panel: Bicron BC414
WLS: Kuraray Y-11(200)M
CLF: Toray PJU-FB1000
PMT: Hamamatsu R5946

AMS-01 ACC, ETH Zürich, July 1997

Panel: Bicron BC414
WLS-Fibers: Kuraray Y-11(200)M
Vibration tests and TVT tests performed for AMS-01 (STS-91)

ACC Scintillation panel



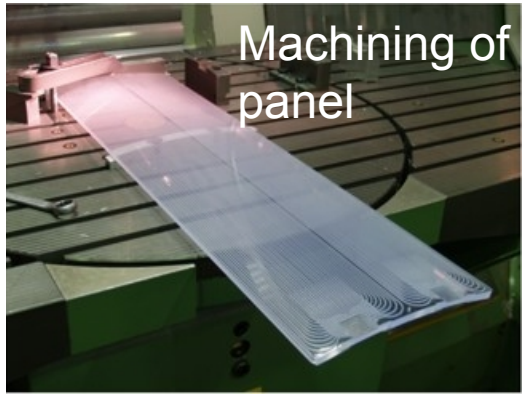


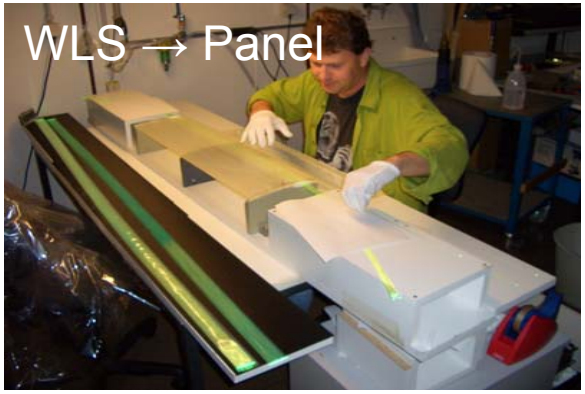
ACC Scintillaton Panel machining

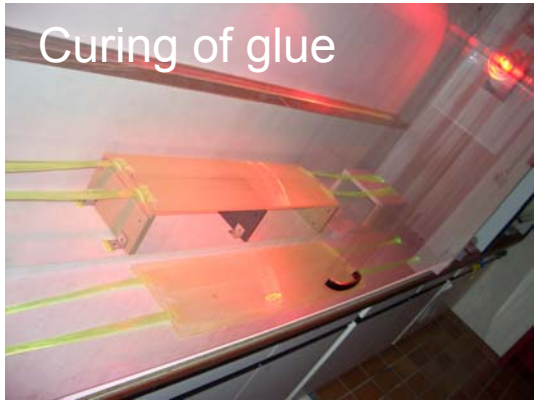
machining (grooves):

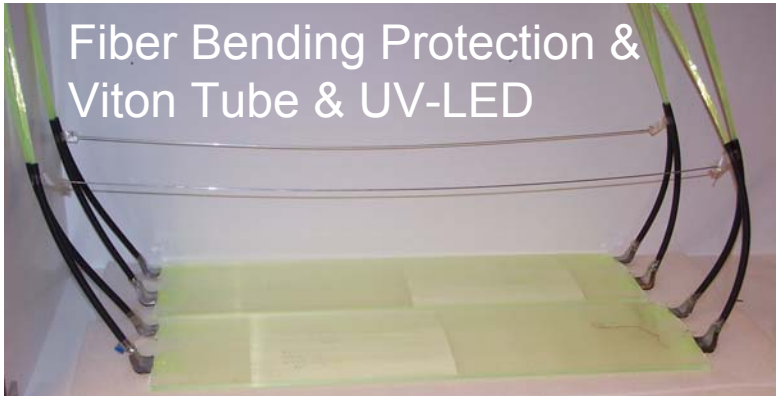
all (16+4) done

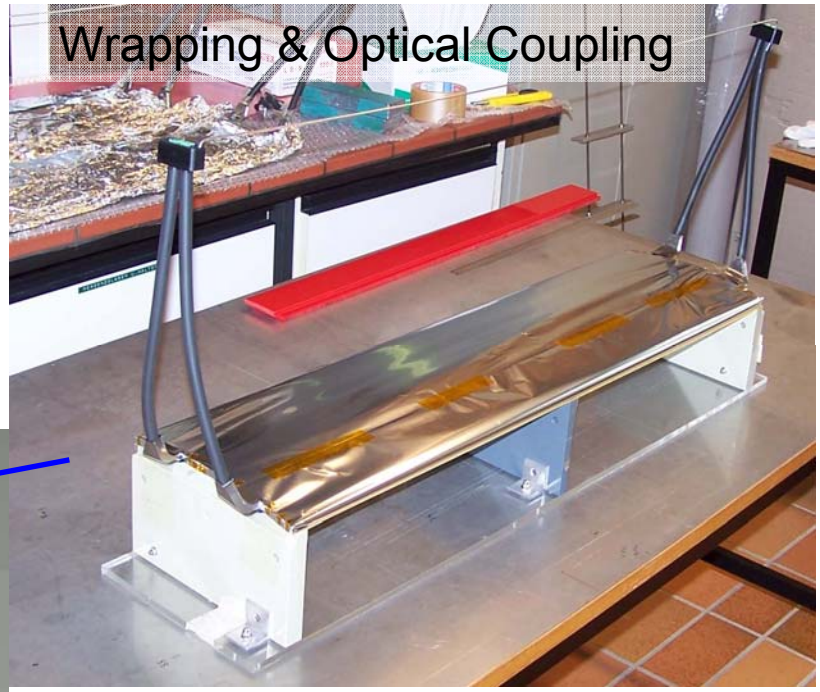
ACC Scintillation Panel Production



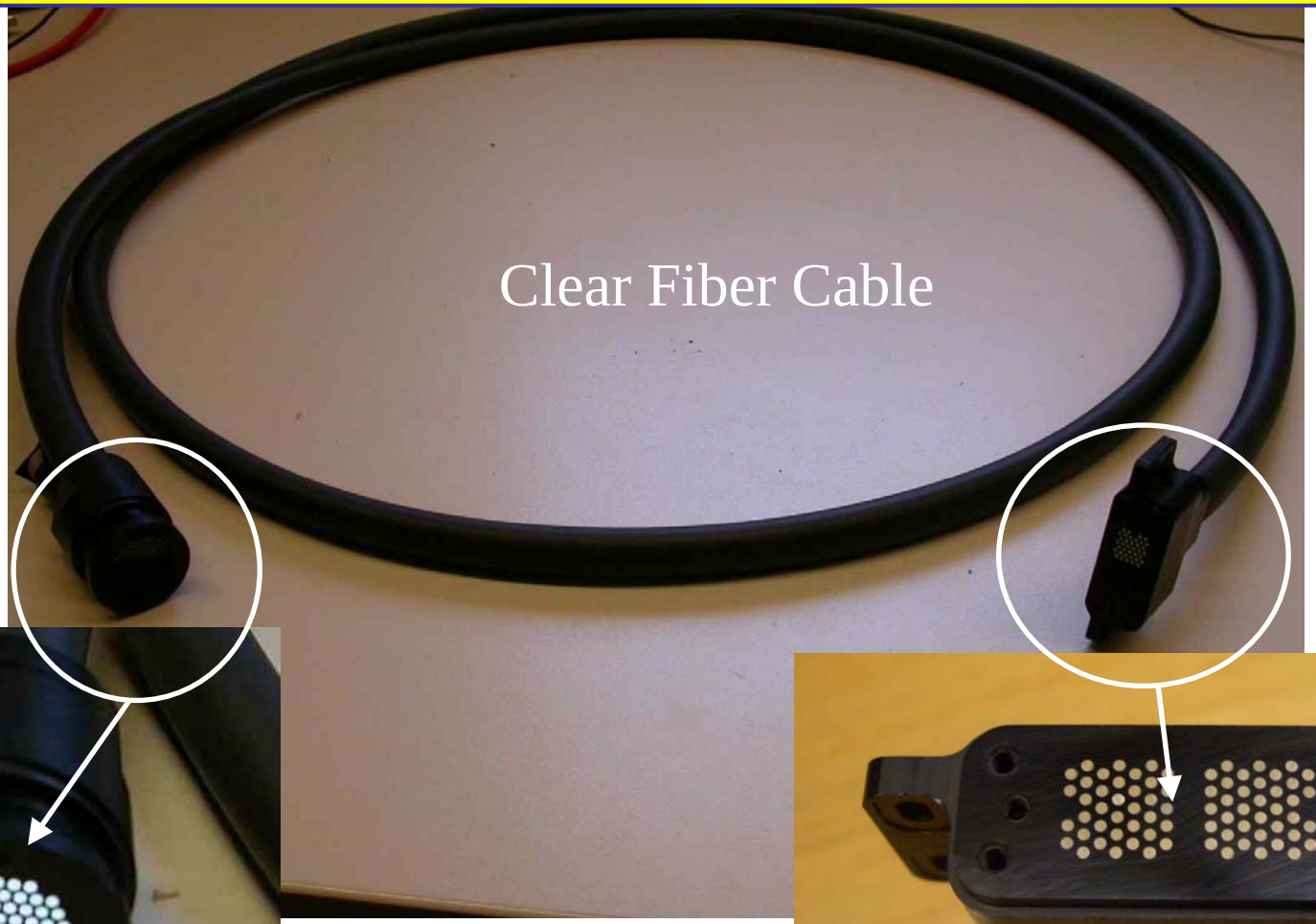


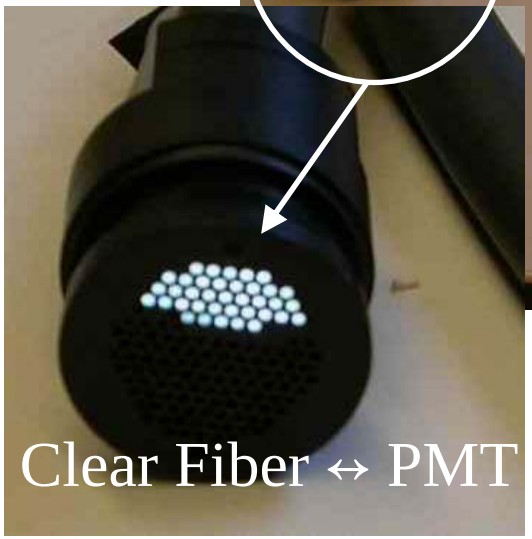


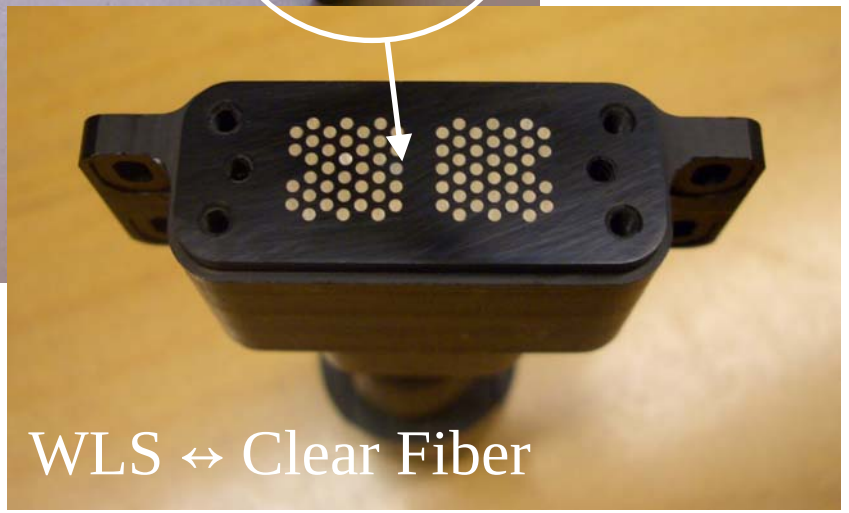




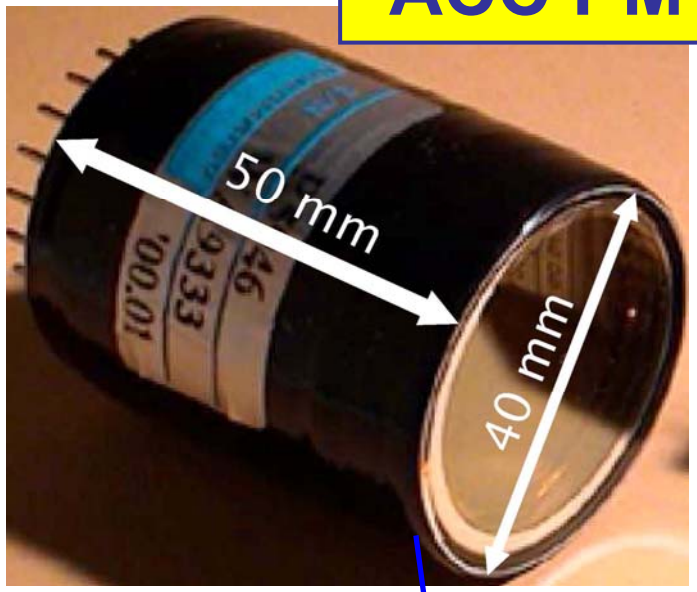
ACC Optical Couplings: WLS Fiber ↔ Clear Fiber ↔ PMT

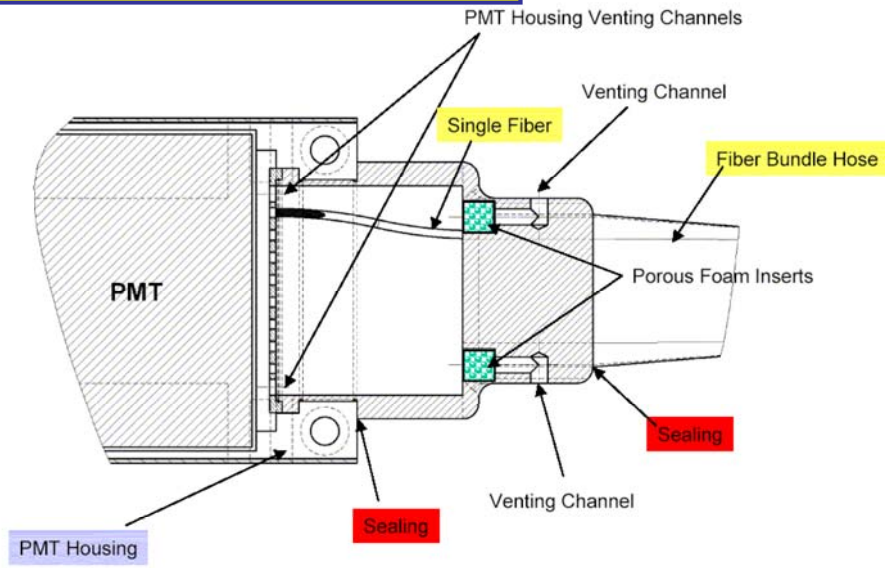




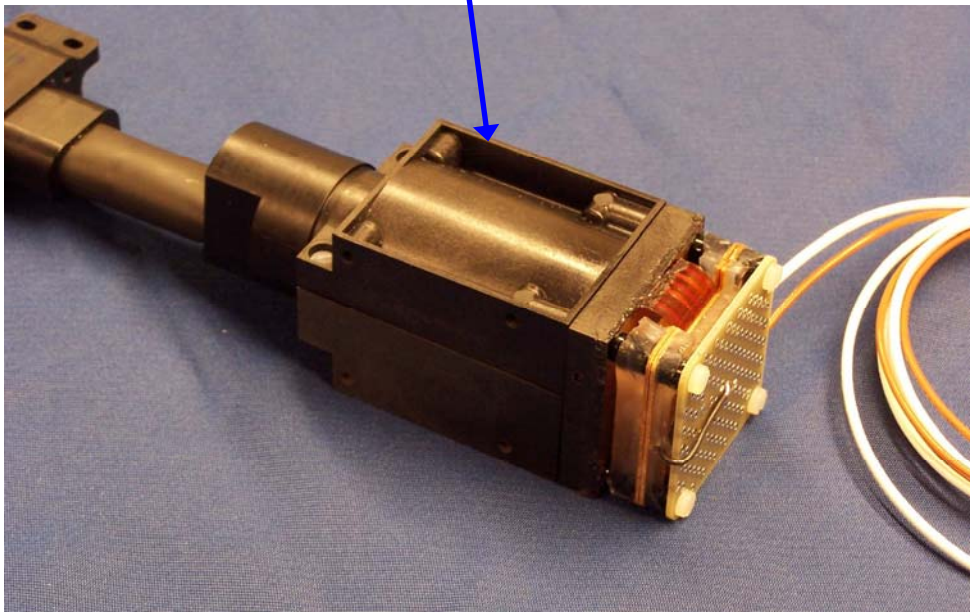


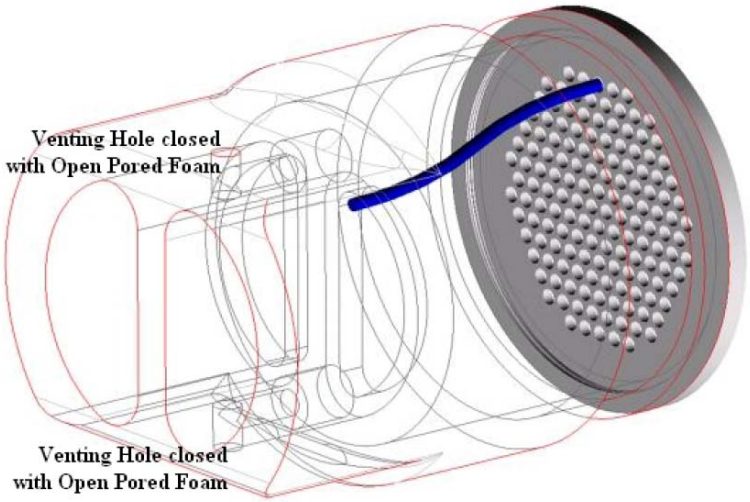
ACC PMT: Hamamatsu R5946



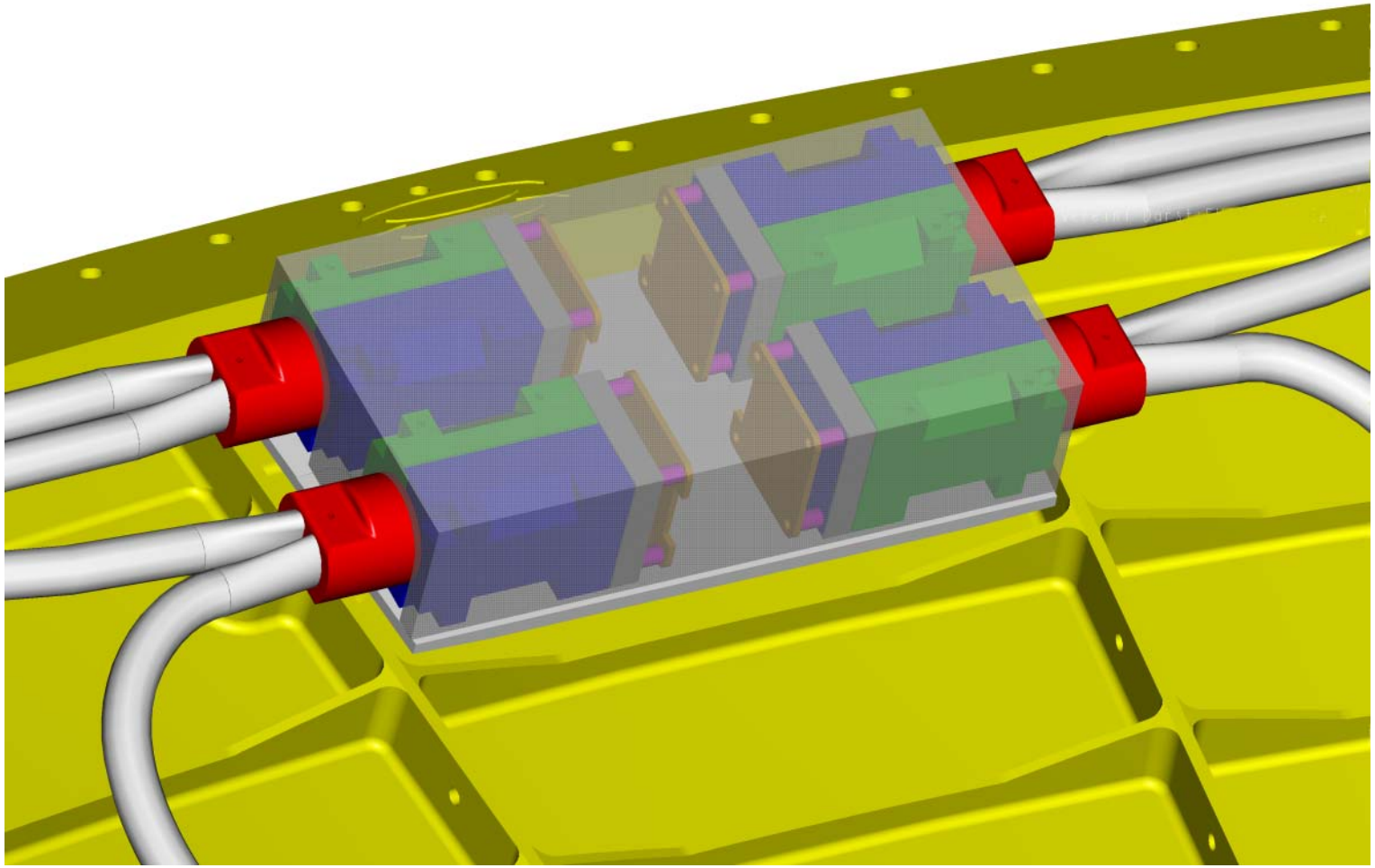


ACC PMT Construction Detail (Variance from TOF design)





ACC PMT: 4 Hamamatsu R5946 in Box



Vibration Testing and Thermal Vacuum Testing are ongoing