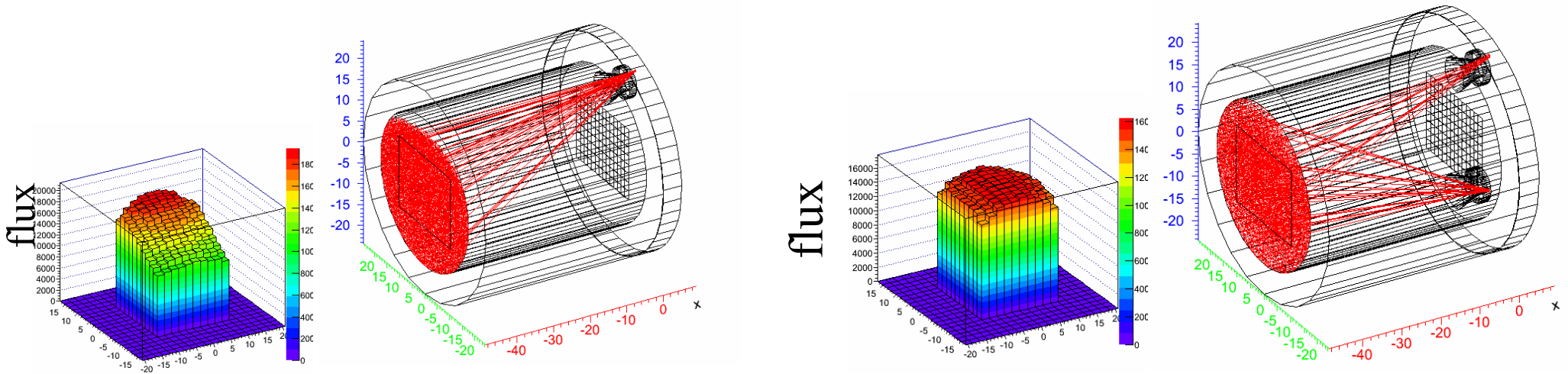


Mini TPC

David Attie, Fabrice Couderc, Sergei Ganjour, Philippe Schwemling, Boris Tuchming

- Recycle existing Chamber present at Saclay
- Use recent micromegas (resistive) detector
 - Relies on existing detector+electronics+DAQ developed for T2K and ILD R&D
 - New TPC end-plate to plug the micromegas device
- Transparent windows to send UV-rays through the chamber
 - Need holes in the end-plate
 - UV rays yield photo-electrons at the cathode level
 - Photo-electrons drift toward micromegas
 - Micromegas amplification yields ion back-flow in drift space
 - Spatial charge is built in ~ 200 ms
- Measure tracking performance with cosmic muons
 - Trigger with 2 scintillators
 - Use 2 micromegas chambers as hodoscope
 - 50×50 cm² with pads of 500×500 μ m²
 - David suggests to use (=buy) a third one for
 - Easier alignment
 - Phantom removal

Photoelectron production



ViewPorts

- Two viewports for better control on photoelectron yield homogeneity
- CaF_2 viewports of diameter 3.8cm
- Ordered in June, should arrive this week

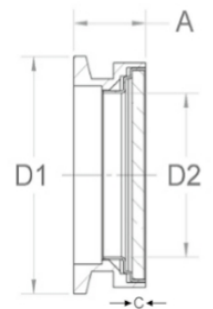
UV Light

- Hamamatsu X2D2 Hamamatsu L10904 borrowed from other SEDI projects

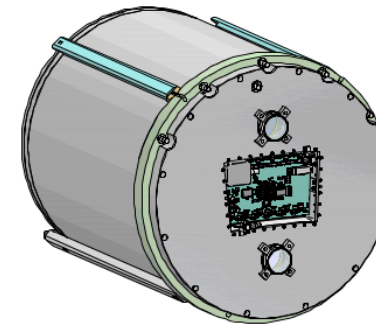
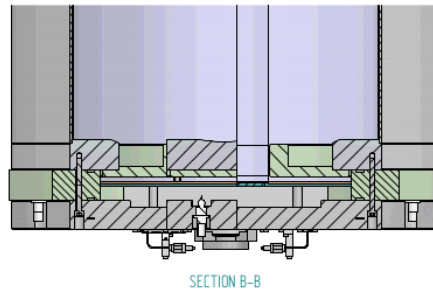
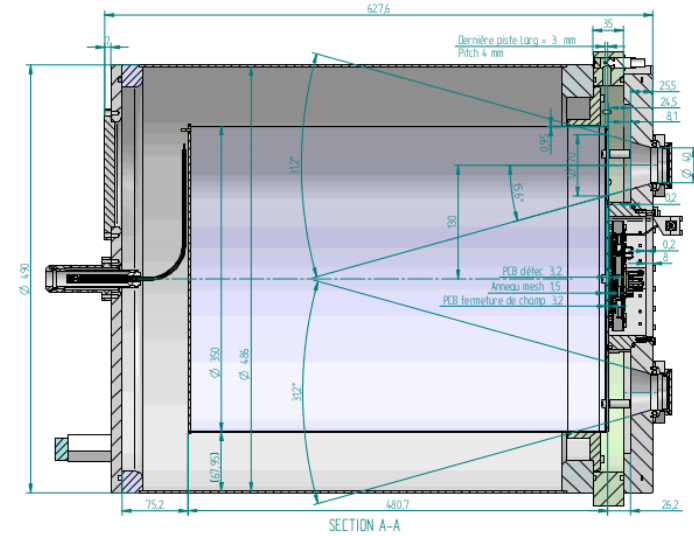
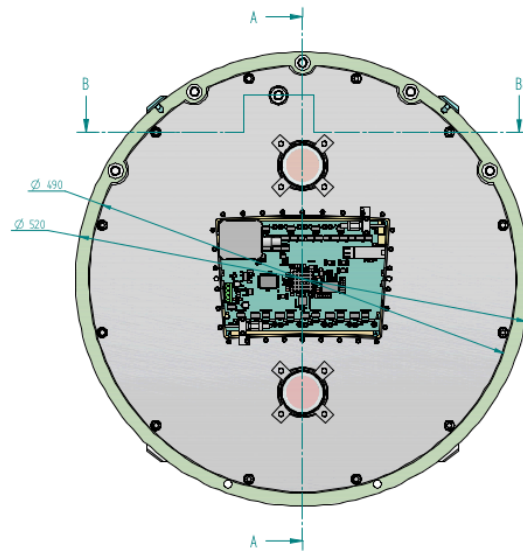
<http://www.hamamatsu.com/jp/en/L10904.html>

Shutter system

- Typically need UV flash at $\sim 300\text{-}1000$ Hz
- To be designed



Final End-plate design ready in June



REV	DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	APPROVED BY
01	Final design	2011-06-15	J. J. J.	J. J. J.	J. J. J.

- End plate ordered
- Received last week at Saclay
- Need also to a (disk shape) termination PCB to ensure voltage uniformity around micromegas detector.
 - David going to order it.

- TPC chamber
 - Endplate/viewports to be commissioned
 - HV (with Fisher plug) ready, Need PCB termination plate
- Micromegas Hodoscopes
 - Chambers to be installed
 - Power supply (with 5 nA resolution) ordered. Expected October 1st
- Alignment: TPC and hodoscope need to be fixed
- Triggering
 - Scintillators + HV OK
 - One PM too noisy. to be fixed
- Gas system
 - Ready (shared with others)
- UV light
 - Need to be commissioned
 - Need to design shutter system to control flux
- DAQ and read-out
 - Use ILC computer
 - May borrow a laptop from SPP
 - Some software development needed to integrate hodoscope+TPC
- Team appointed on Sept. 22 to commission the most of it

