

Monitoring/Calibration

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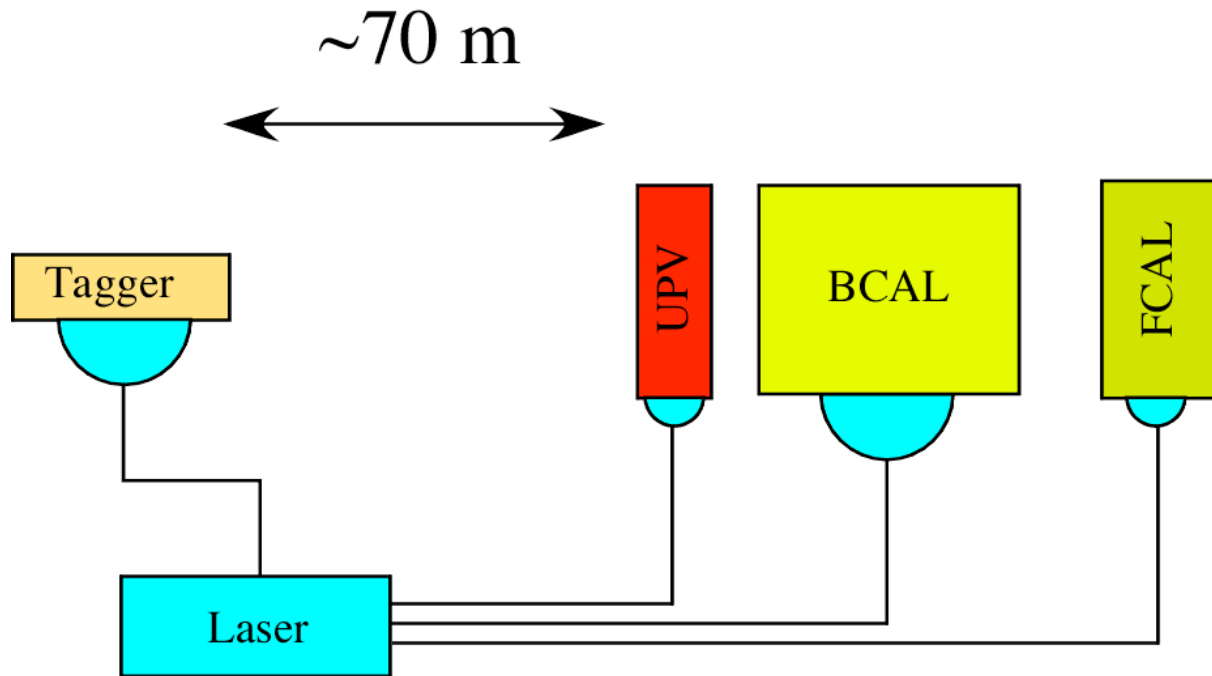
Introduction

- Calorimeters: FCAL, BCAL, UPV
- Calibration
- Gain monitoring
- Timing setup of entire detector system

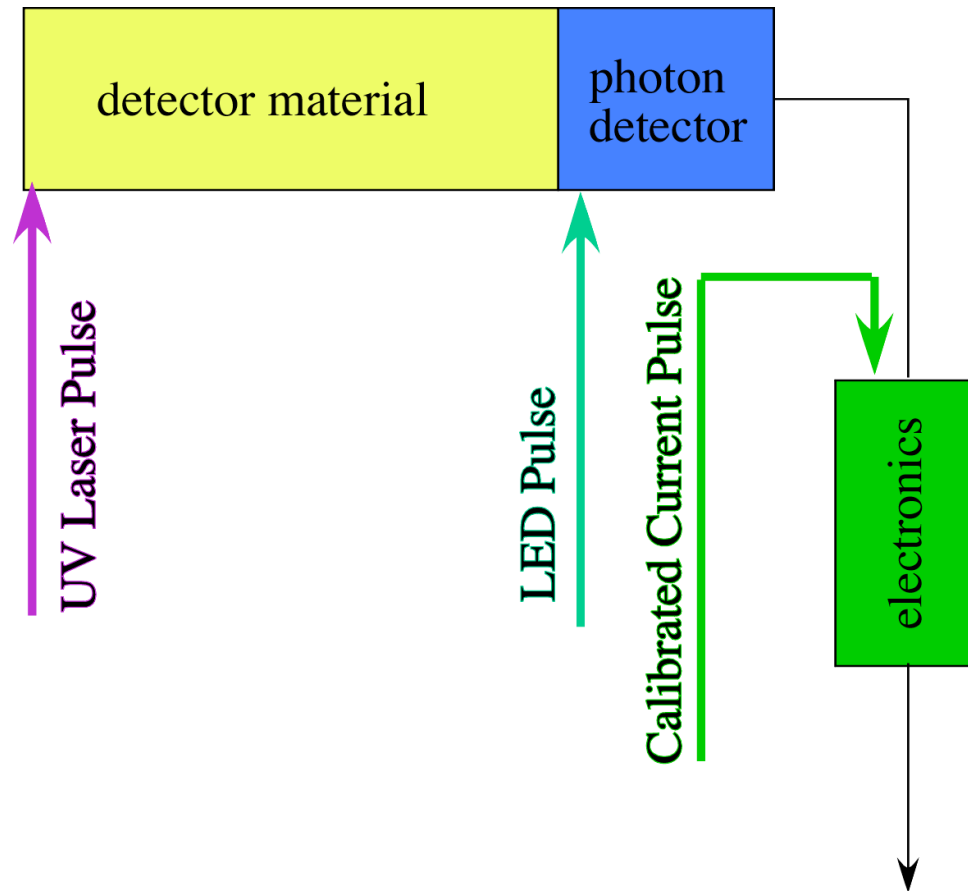
Photon Detector Elements

- detector material (Scintillators etc.)
- optical elements (light guides, mirrors..)
- photon counter (PMT, SiPM ...)
- electronics (amplifiers, ADC's)

Laser System Overview



Detector Elements



FCAL

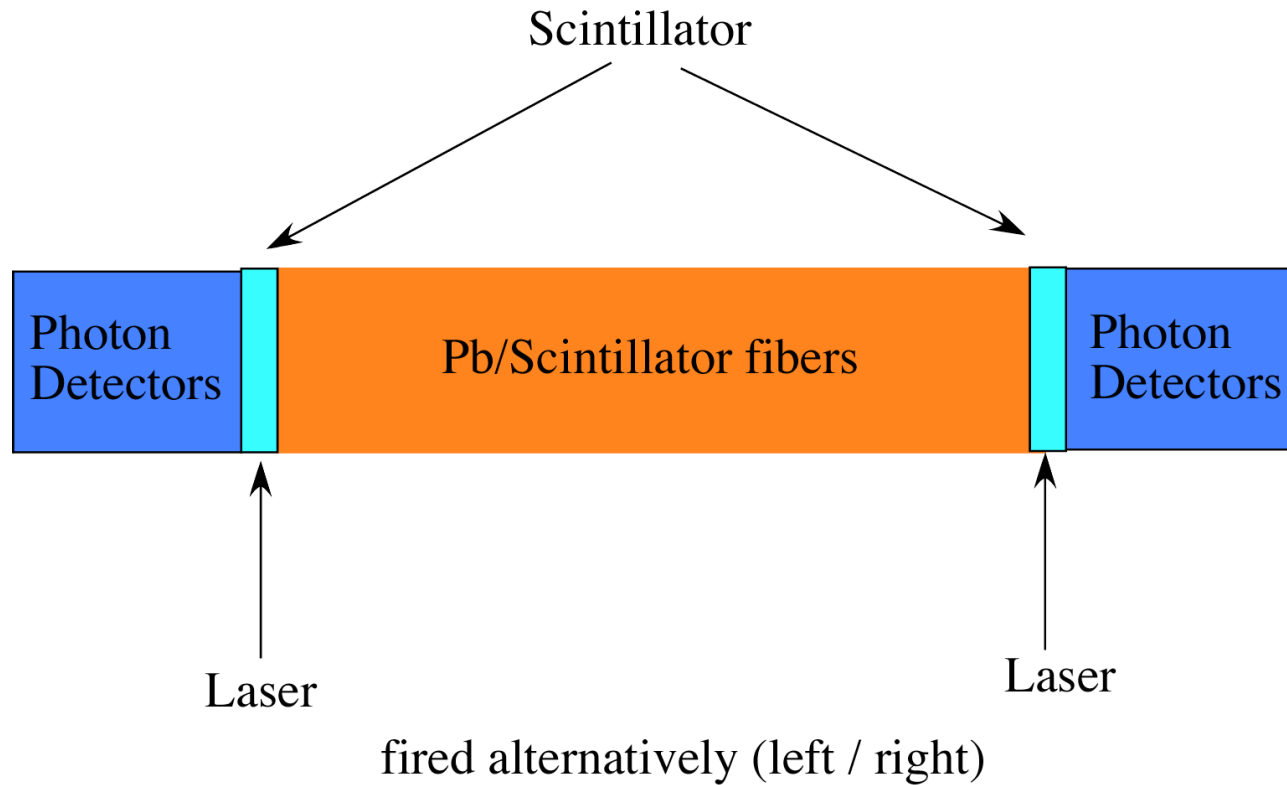
Scintillator



Questions :

- trigger individual detectors ?
- group detectors ?
- performance requirements ?

BCAL



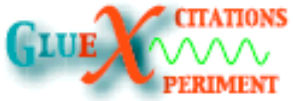
UPV/Tagger

UPV:

- inject light into WLS directly or
- inject light into each scintillator

Tagger:

- inject directly into scintillator
- microscope ?



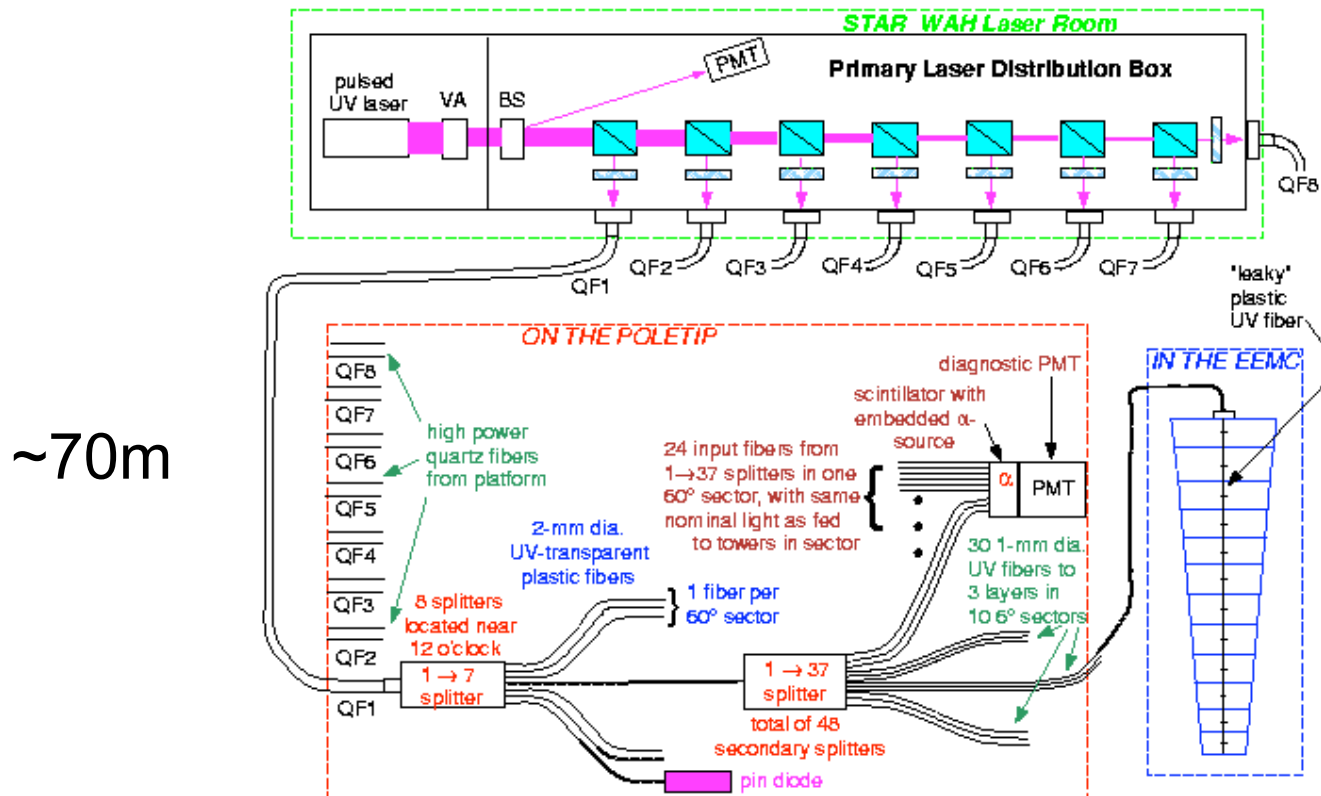
Channel Count

- FCAL : 2500
- BCAL : 96
- UPV : 21
- Tagger: 141 + 80

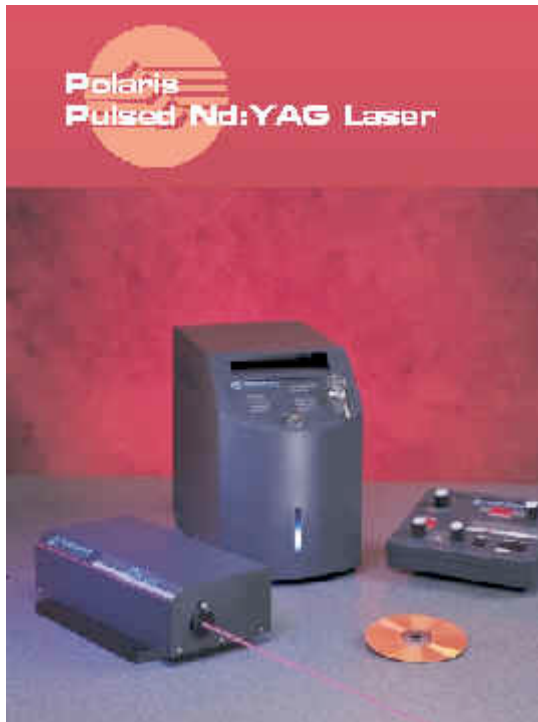
Total: 2838

Similar system: STAR EEMC

Schematic Layout of EEMC Laser System



Laser:



- externally triggerable
- 355 nm
- 13 mJ/Pulse
- max. rate 10 Hz
- pulse to pulse amplitude stability: ~5%
- pulse width > 3-4ns

Open Questions:

- additional monitoring of photon detectors ?
- monitoring of amplifiers and electronics ?
- Wire chambers:
 - high intensity pulse: ionize gas similar to MIP
 - need different laser
 - injecting into detector ?
 - necessary ?

R&D

Laser system in general

- main beam splitters
- 2nd and 3rd beam splitters
- timing and amplitude studies
- coupling to various detectors

Wire chambers:

- generate necessary ionization
- stability
- how to access gas inside detector ?