

# Forward Endcap Status (Bochum)

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XLVII. PANDA Collaboration Meeting, GSI  
December 11th, 2013

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**RUB**

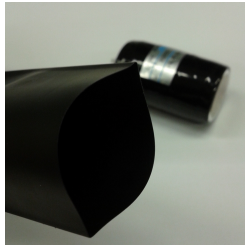


# Outline

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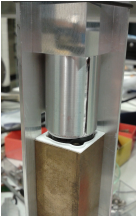
# Photo Detectors for Forward Endcap

- APDs: 12000/6176 pieces ordered
- VPTTs: 100/768 pieces ordered (100/month in 2014)
- Delivery (and mounting) of all photo detectors in 2014
- New shrinking foil (covering tube and preamp/voltage divider):
  - Same foil as used to cover tetrodes (Hamamatsu)
  - Twice as thick ( $150\text{ }\mu\text{m}$ ) as our previously used green foil, free from halogen



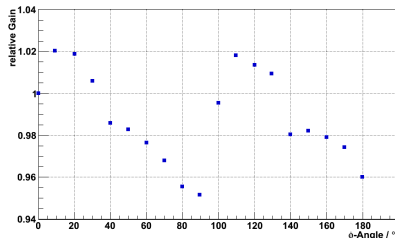
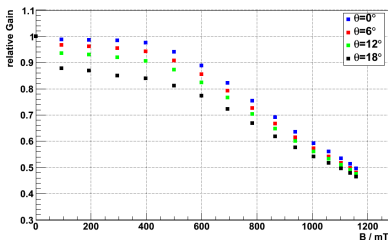
# Photo-Detector Glueing

- New: Capsules also for VPTTs (talk by Christoph)
- Alignment tool for detector glueing
- Set up of mass production (20 crystals in parallel)
- Real time digital camera surveilling of glueing from underneath crystals (LED illuminated)



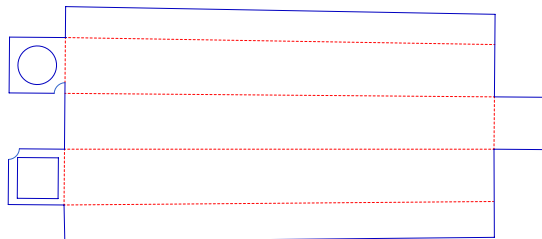
# Gain-Dependence in B-Field

- 'Systematic' magnetic field measurements (10 pieces)
- Loss at maximum  $\theta$ -angle and maximum field (1 degrees, 1 T - simulation by Jan Mulder, KVI) about 50 %
- Weak  $\phi$ -dependence of gain: up to 5 %  
(not adjustable due to space constraints in subunit corners)



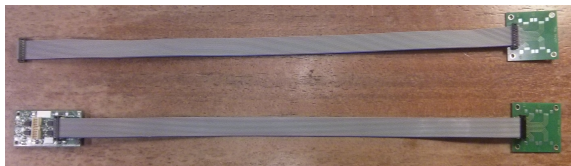
# Crystal Covers

- Crystal cover (3M - DF 2000 MA) design finished
- One universal type (separate tube and APD back side)
- Laser cut and 'folded' test samples absolutely satisfying (H&F Laserbeschriftung GmbH)
- All endcap crystal foils ordered (4000 pieces)
- Delivery December 17th...



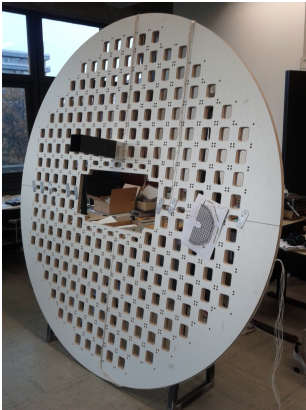
# Slow Control

- Iseg HV modules: Higher channel density (16 channels APDs, 48(?) VPTTs) as in Proto192 supply
- THMP connectors: Change to cheaper ribbon cables/connectors (exchange of units already delivered...)
- Light Pulser problems: nonuniformity of attenuation (LCDs) vs. limited mixer length



# Cable/Fibre Routing

- Wooden 1:1 mock-up of endcap backplate
- Feasibility studies of fibre routing concept from KVI





# Outlook

- Start of crystal-photo detector/preamp glueing
- Final subunits (VPTT, APD) to be tested in beam time with Proto192 (DESY, early 2014):
  - Final alveole geometry
  - Final type of glue
  - Final capsule geometries
  - Final read-out electronics(?)