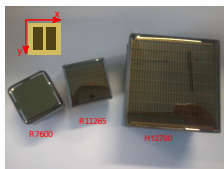




Silvia Gambetta on behalf of the LHCb RICH collaboration

The LHCb upgrade will take place in 2018: higher luminosity  $2 \times 10^{33} \text{ cm}^{-2} \text{ s}^{-1}$

New photon detectors to be installed, different candidates tested

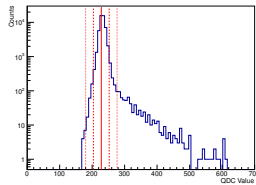
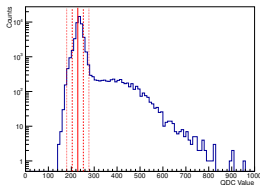
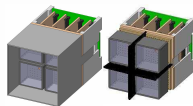


R11265 (Hamamatsu 1" MaPMT 64-channels ): baseline for RICH1 and central part of RICH2

H12700 (Hamamatsu 2" MaPMT 64-channels ): candidate for peripheral region of RICH2

Magnetic fields can cause loss of gain and photo-detection efficiency

Two designs of  $\mu$ -metal shields have been tested:



## Results

- longitudinal field: similar performance, efficiency  $\geq 90\%$
- transverse field: slightly better performance of full shield, efficiency  $\geq 95\%$