

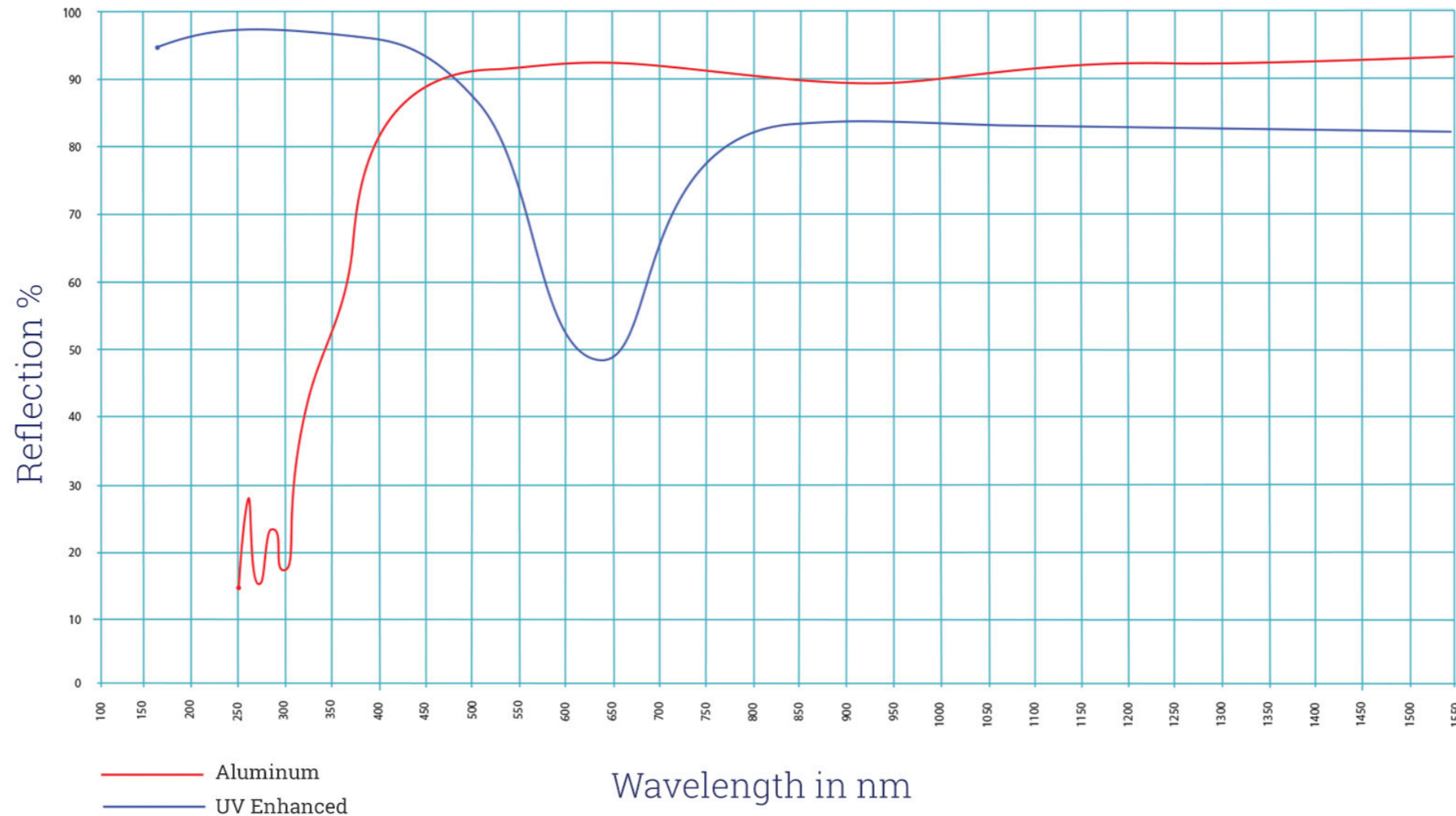
Mirror comparisons

DIRC Meeting: 7/23/19

Vendor reflectivity

Aluminum vs UV Enhanced Coatings

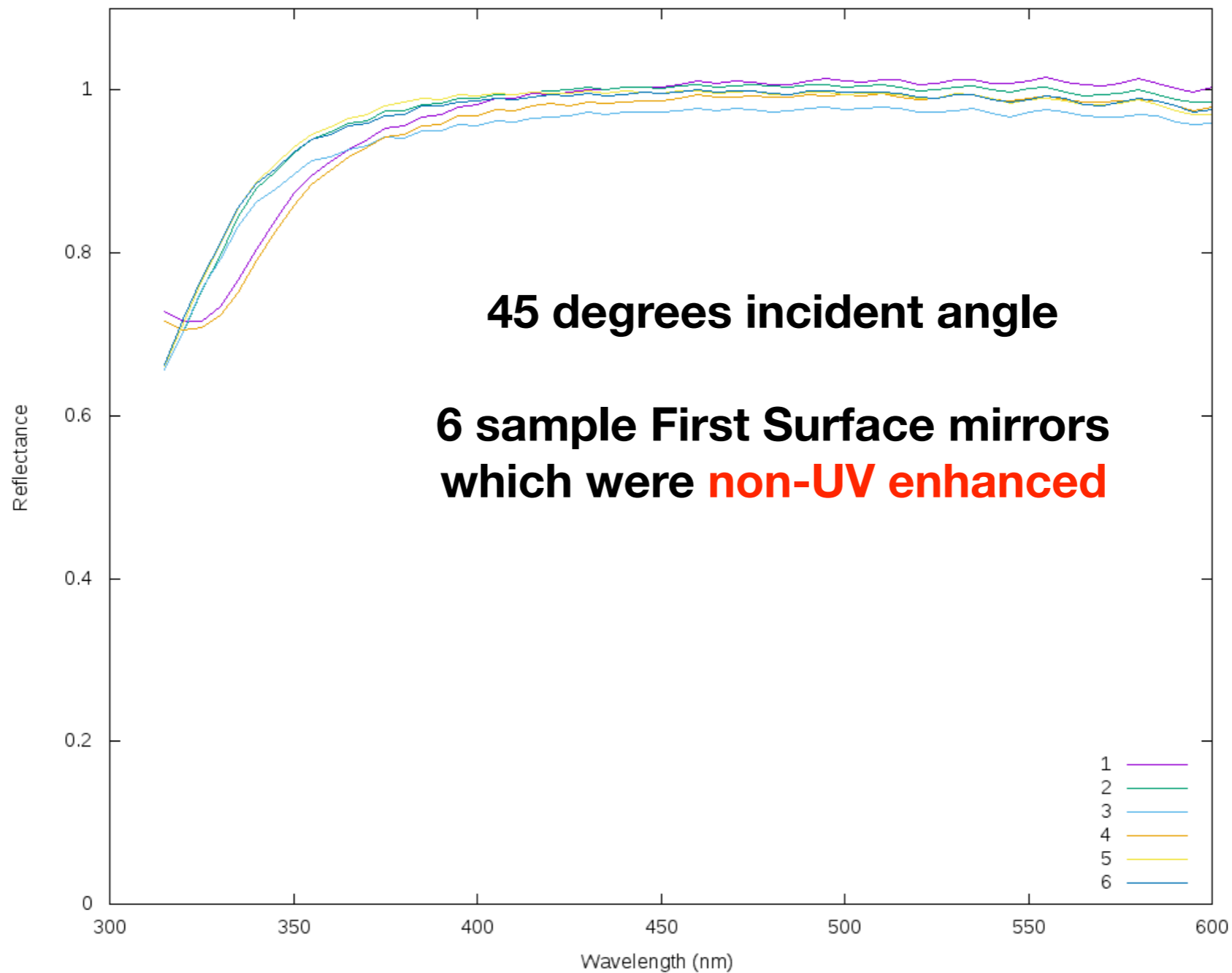
<https://firstsurfacemirror.com>



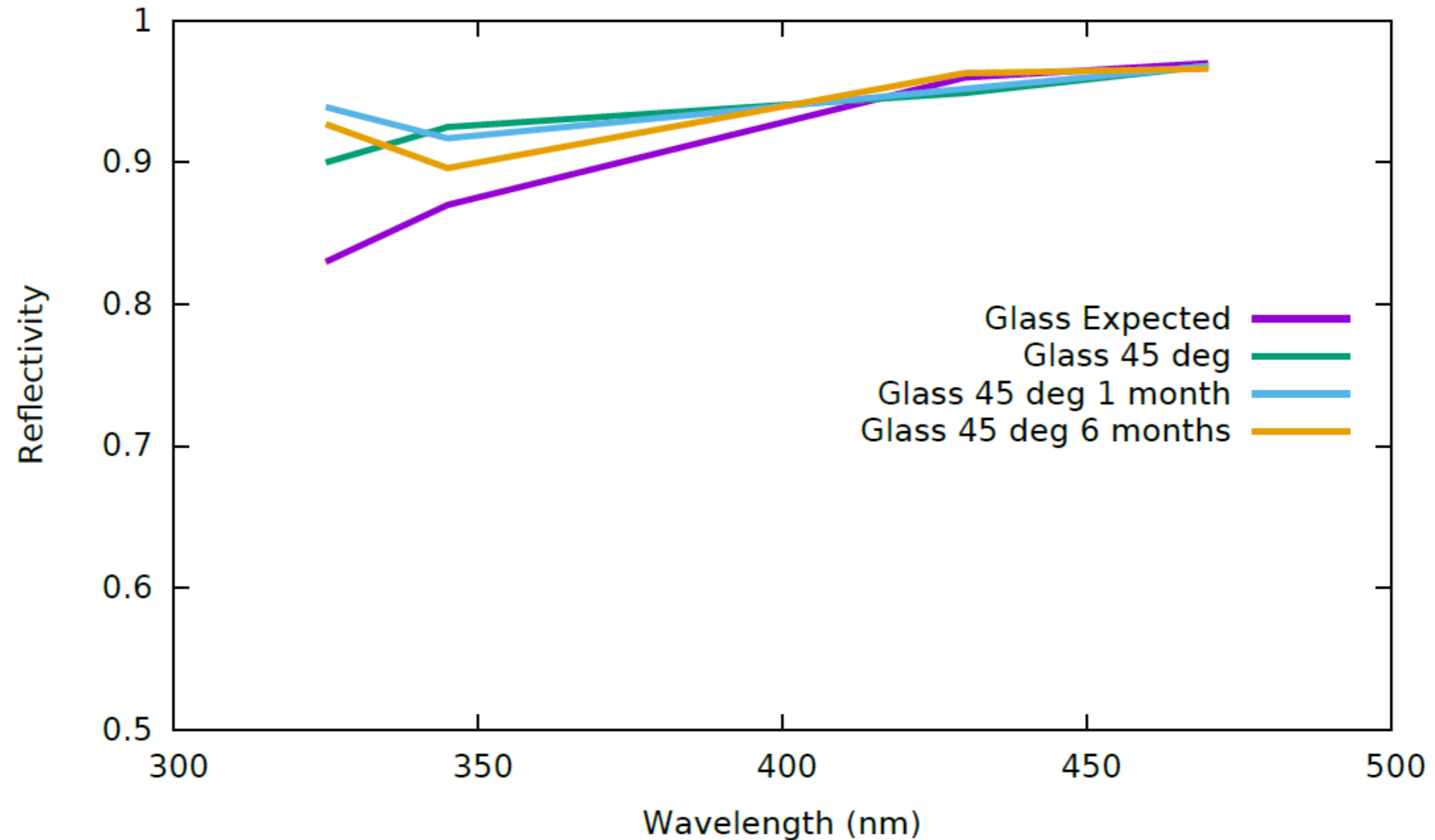
From MIT PO: we're using **UV enhanced mirrors** in the installed mirror boxes

Line	Description
1	32" x 50" UV Enhanced Glass First Surface Mirror - 5/32 Thickness

Measured reflectivity

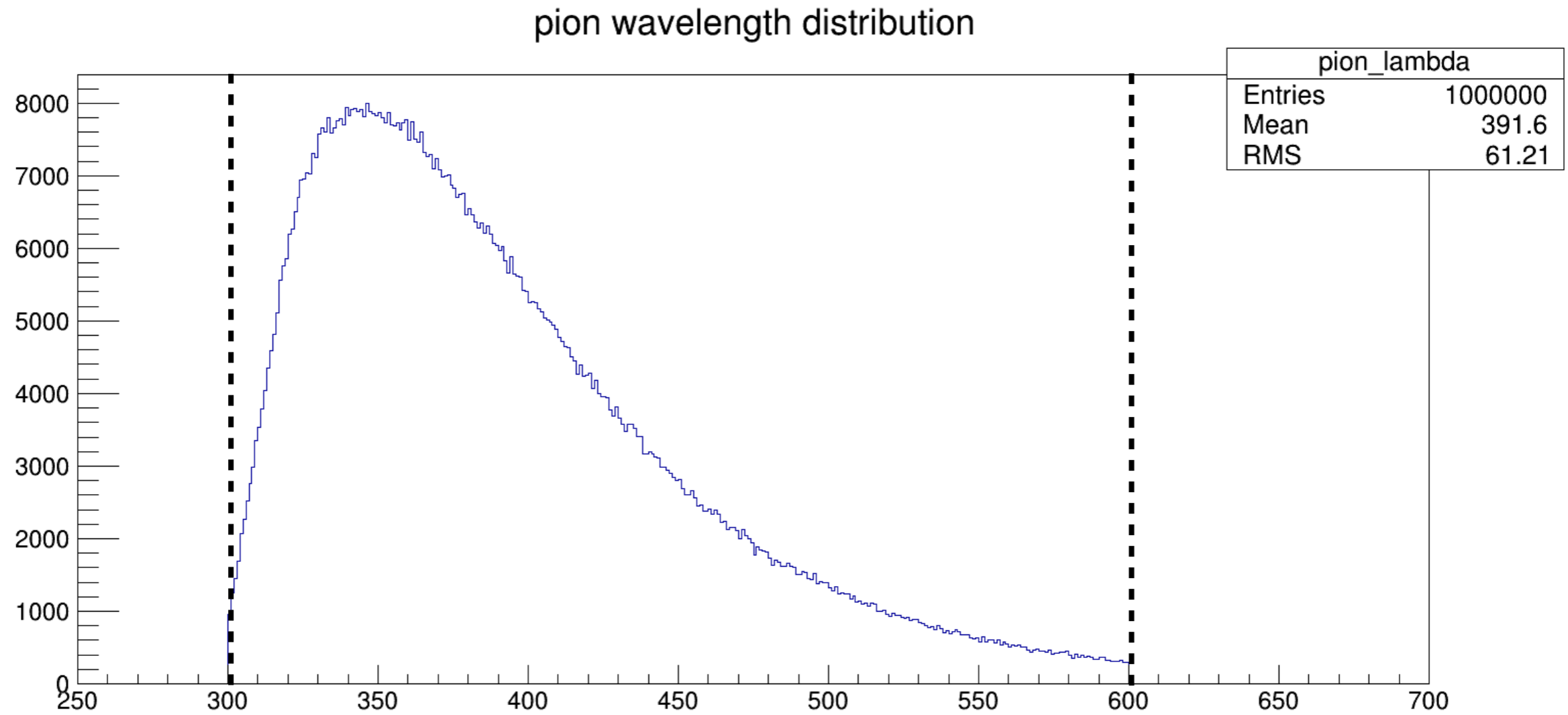


Measured reflectivity



John's test after immersion in water:
<https://gluexdirc.mit.edu/mirror-reflectivity-versus-time>

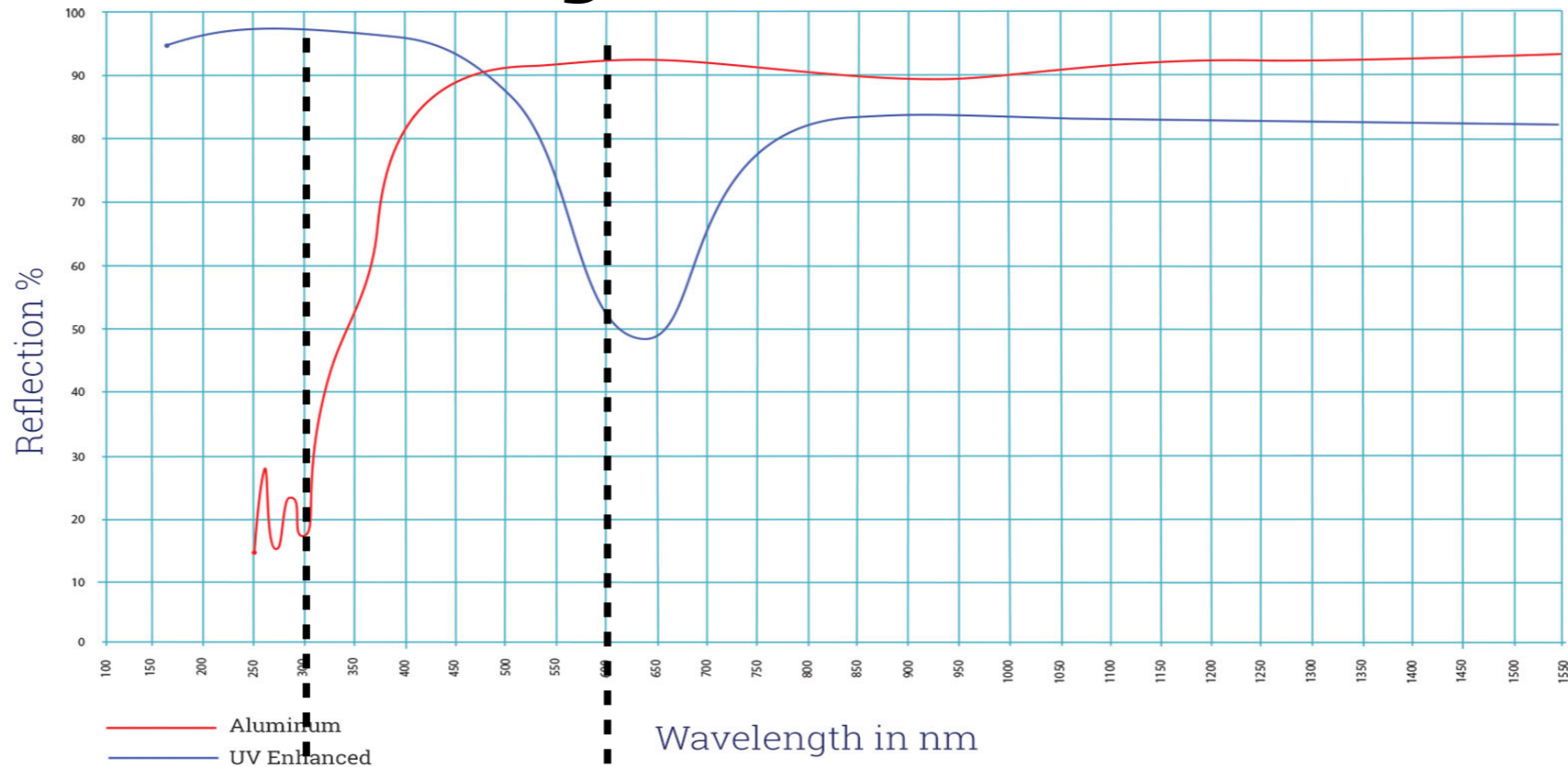
Expected λ distribution



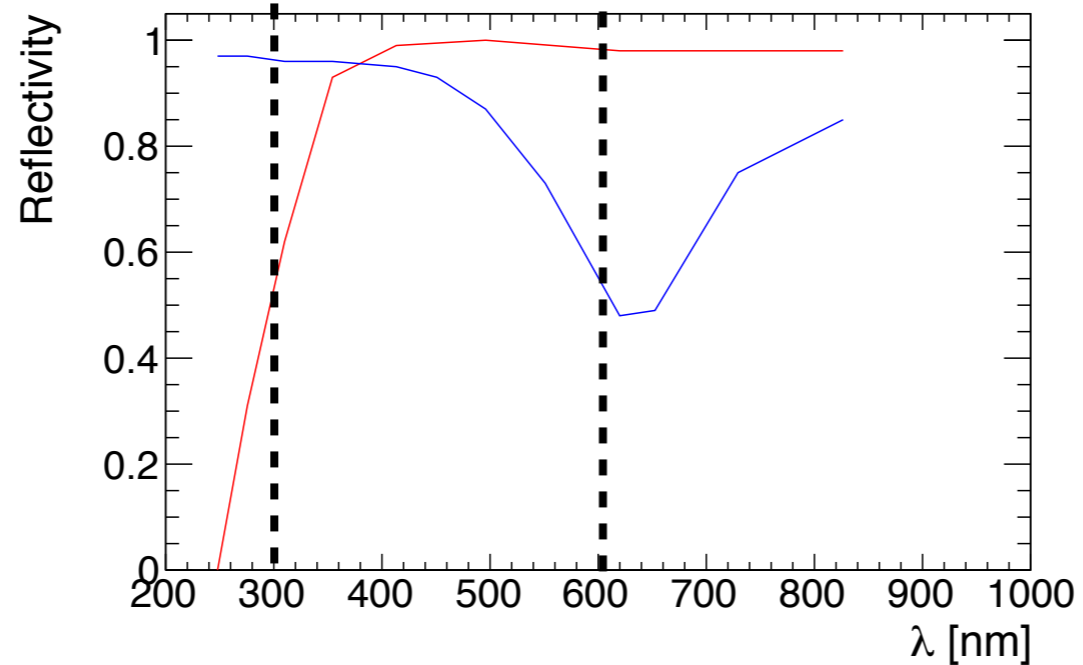
$\sim 1/\lambda$ distribution with cutoff for MAPMT and Epotek glue around 300 nm

Reflectivity in simulation

From Vendor



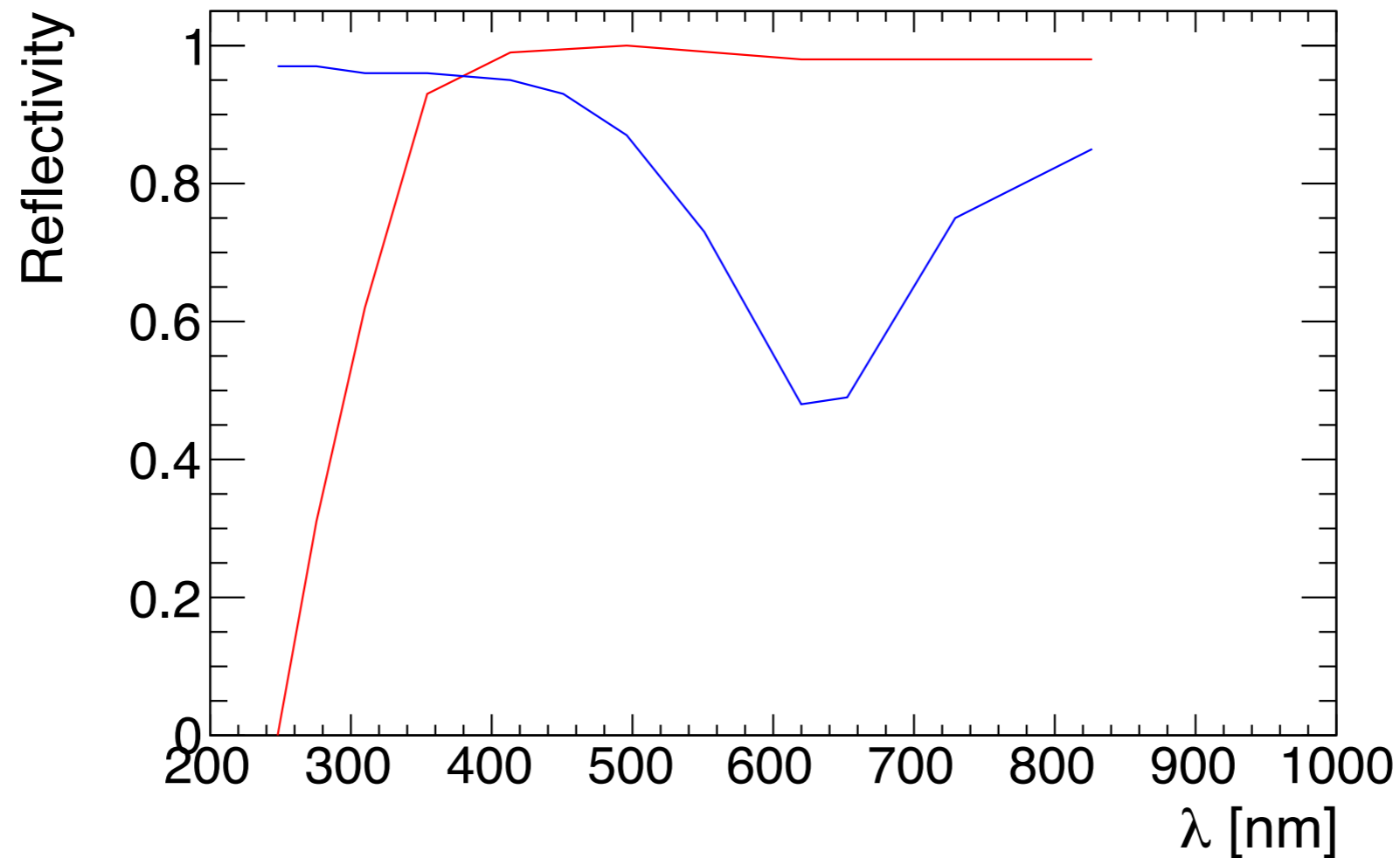
Used in simulation



UV enhanced
non-UV enhanced

Materials.xml reflectivity in simulation taken from measurements of non-UV enhanced
However, we have UV enhanced mirrors installed and need to test

Next steps



- Running new simulation with **expected UV enhanced** reflectivity profile (now)
- Test UV enhanced mirrors under water at JLab (ongoing)
- Measure wavelength dependence of UV enhanced mirror reflectivity at JLab