Brookhaven National Laboratory

U.S. DEPARTMENT OF ENERGY

pfRICH Mirror Reflectivity Measurements – Batch 50 & 51

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10-20-2025

Progress

- ○ Batch 49
- ✓ Batch 50
  - Coating thickness: 5.5kA Cr and 22kA Al,
  - Mounted on 3D printed holder
- ✓ Batch 51
  - Coating thickness: 5.5kA Cr and 22kA Al
  - Mounted on 3D printed holder

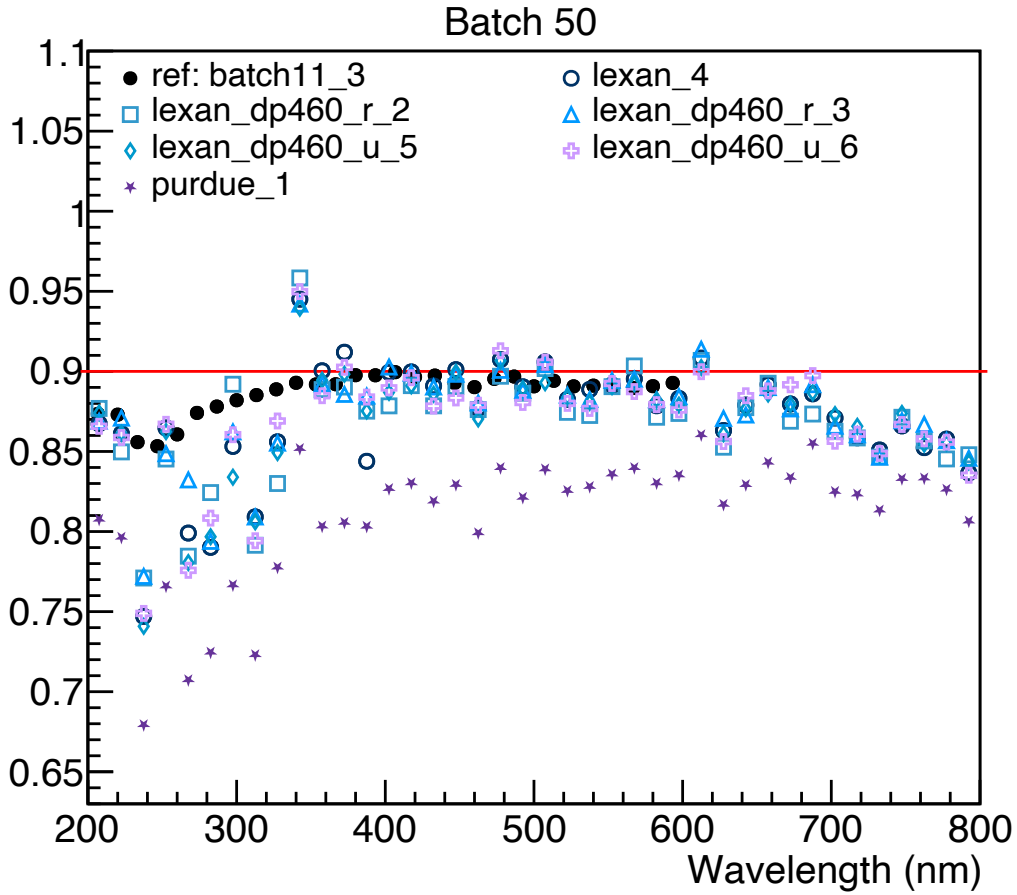
    DP460_DP190_3: This mirror had visible fingerprints on the surface and was larger than 7x7 cm. Jihee attempted to trim it, but it cracked diagonally at the edge (Sorry!). It also appears to be thicker than the other mirrors.

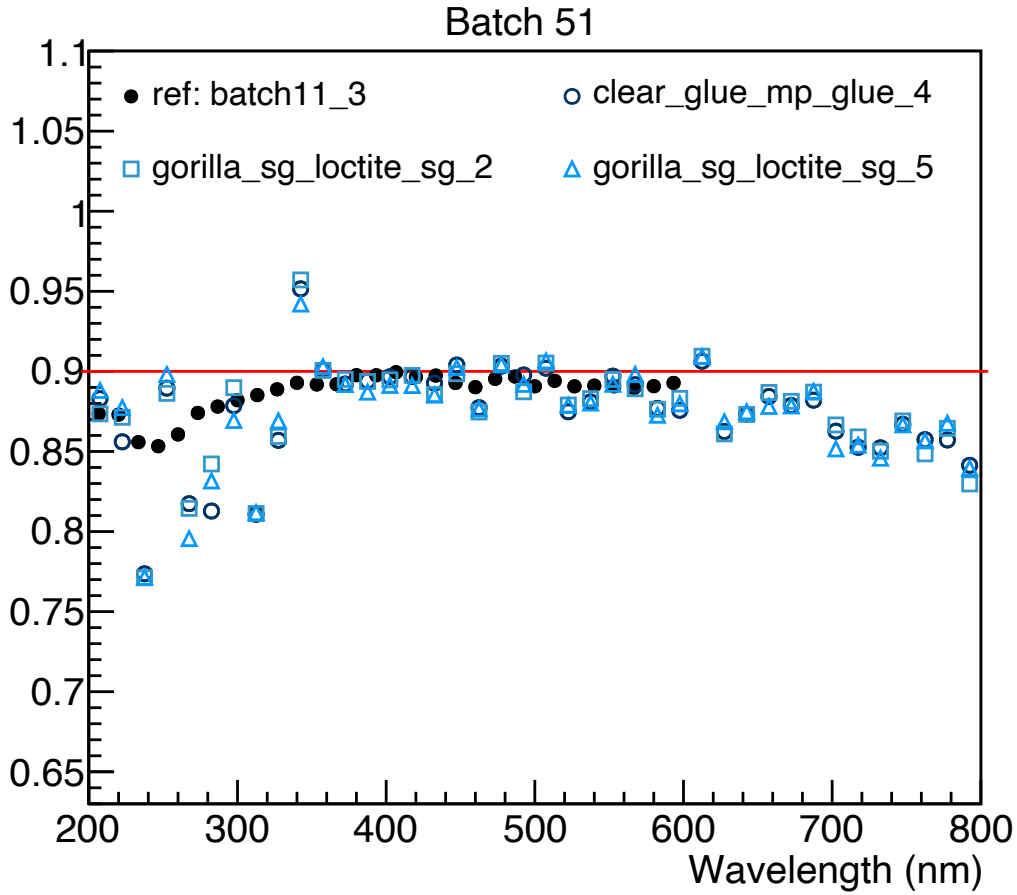
    LEXAN 1: This mirror is also larger than 7x7 cm. Given the outcome with DP460_DP190_3, She was unsure if she can trim it properly without causing damage.

    DP460_DP190_6: This arrived as two smaller pieces.
- ○ Batch 52

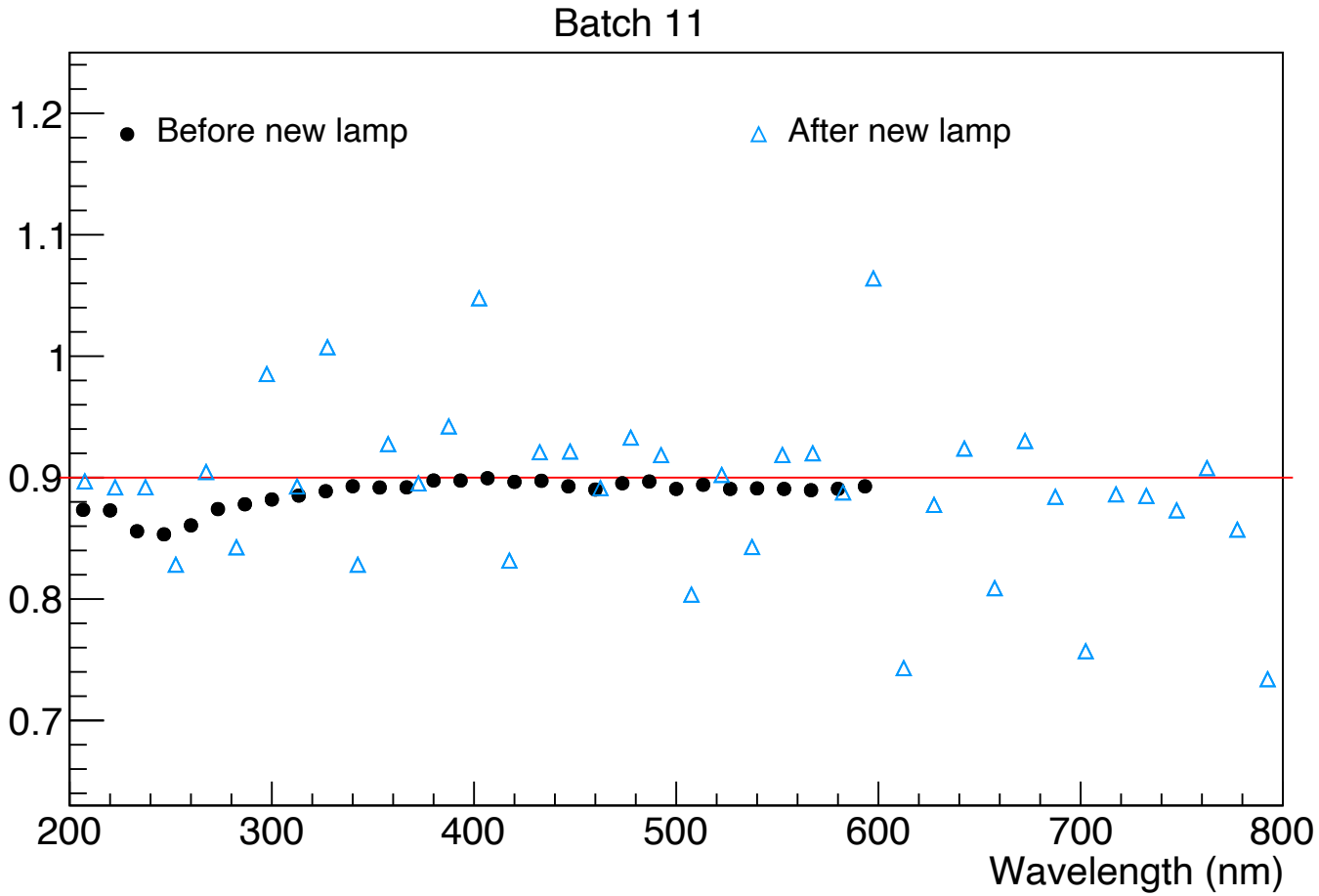
Reflectivity

Errors not shown





Reflectivity of Batch 11 Mirror 3 (Old vs New Lamp)



Past Measurements

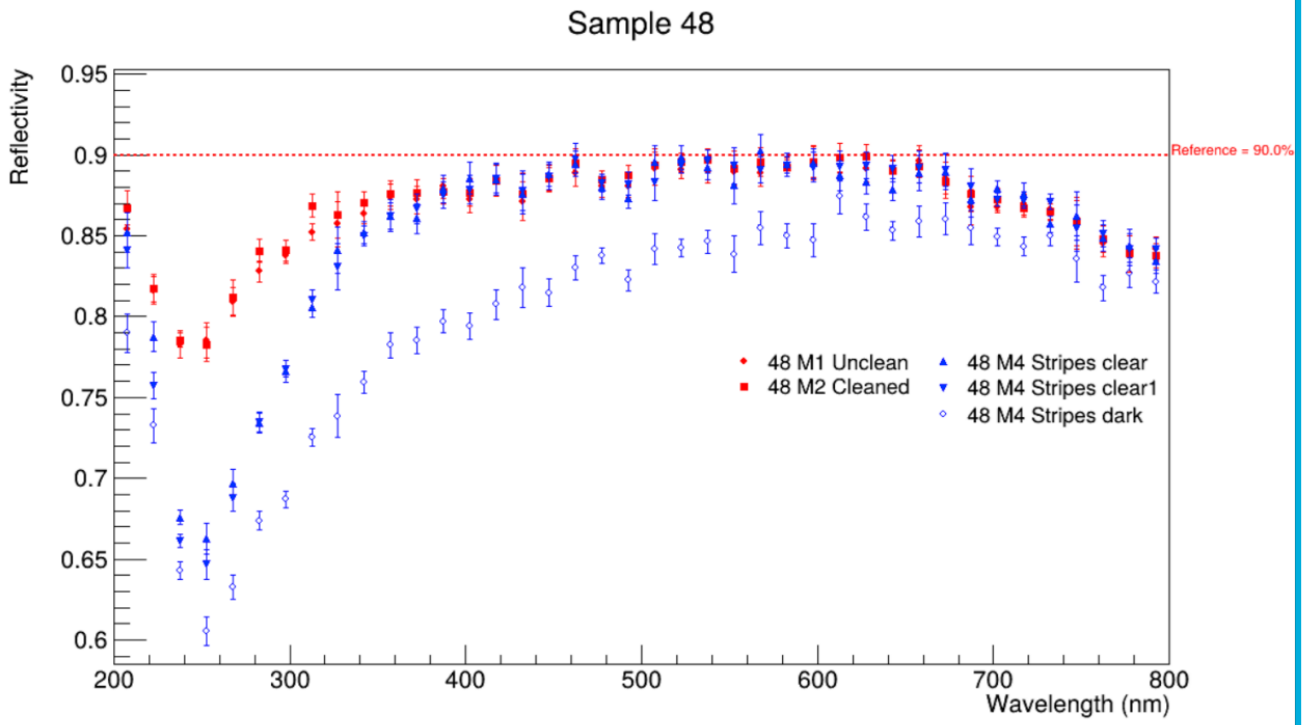
https://indico.bnl.gov/event/29158/

Coating 48(2kA Cr, 8kA Al): Dark spots on epoxy area

M4 “Stripes” mirror(blue) vs M1 & M2 reference (red)

With Lexan substrate but two stripes of DP460 epoxy on one side.

- Dark spots on epoxy stripes area only.
- Clear spots consistent with M1 & M2.
- ~5% reflectivity drop on dark spots. Also, dropping effect is weaker at higher wavelength



Smooth curve and reasonably sized error bars before new lamp installation

To-do List

- Reflectivity measurements for batch 49 and 52
- Investigate the fluctuation of the reflectivity curve and errors