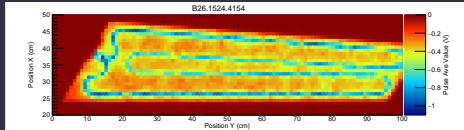


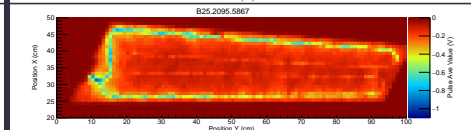
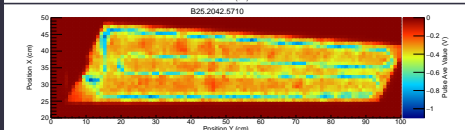
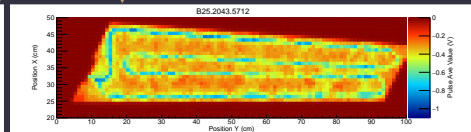
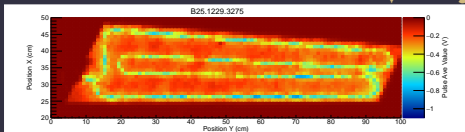
sPHENIX HCal Tile Tests
Chris McGinn
2020.08.06

Tile-by-Tile LED Scans

**Good Tile
From March**

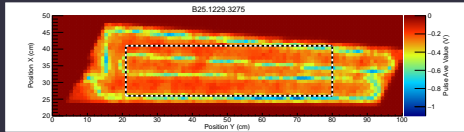


↓ **Newly sent tiles** ↓



- **Tile scans above are final**
- **Comparison with previously sent B26 tile w/ good output**
- **By eye, B25.1229.3275 and B25.2095.5867 are underperforming**

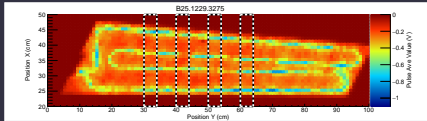
Integral Over Fiducial Region



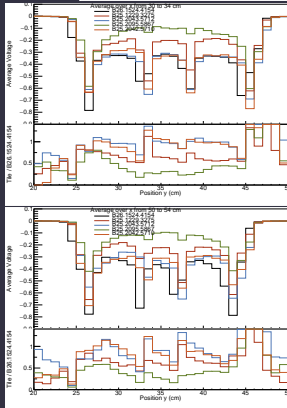
Tile Tag	Fiducial Region Sum (V)
B26.1524.4154	-375.87
B25.1229.3275	-257.125
B25.2043.5712	-342.647
B25.2042.5710	-337.445
B25.2095.5867	-141.441

- Sum over the indicated fiducial region in above figure on a tile-by-tile basis
- Would indicate B25.2043.5712 and B25.2042.5710 are comparable w/B26
 - B25.1229.3275 integral drop but peaks are comparable
 - B25.2095.5867 appears very low

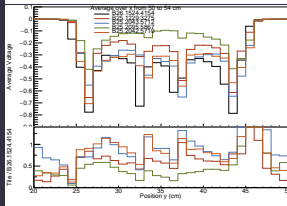
Select 1-D Slices



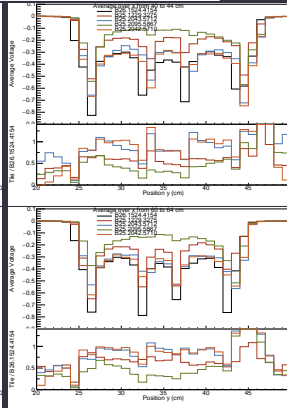
30-34 cm



50-54 cm



40-44 cm

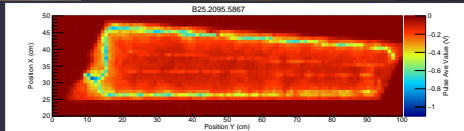
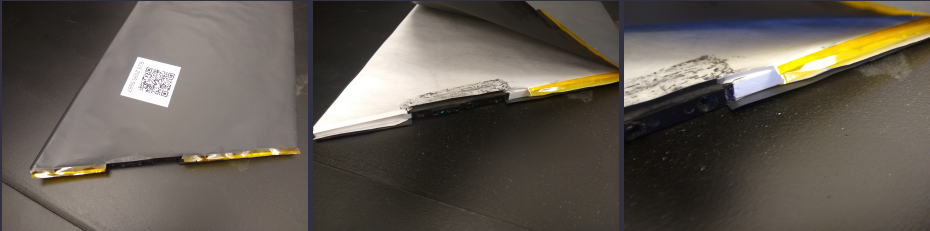


60-64 cm



- Slices as shown in above cartoon
- Orange/blue track black line (B26); others are far below

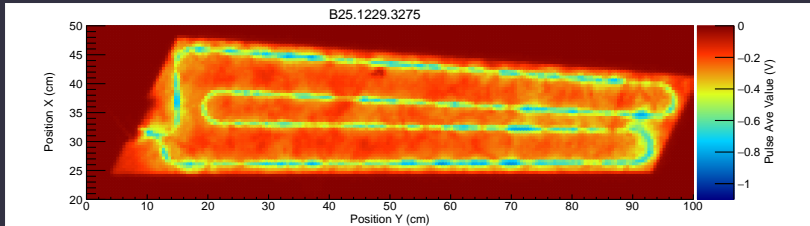
Additional Observation



- **Observed the coating was undone on SiPM edge**
- **Unclear if “as packaged” or occurred “in transit”**
- **Corresponds to poorest light output**

Conclusions

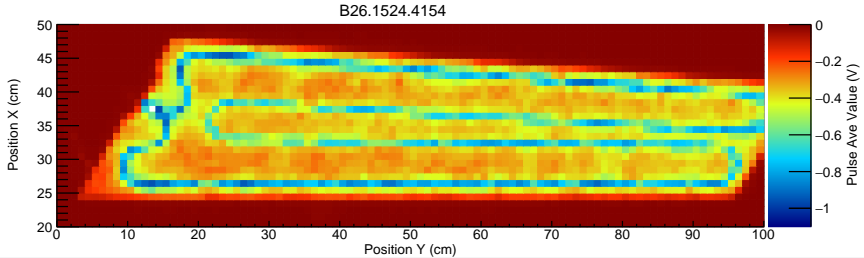
High Res.
Scan of B25.
1229.3275



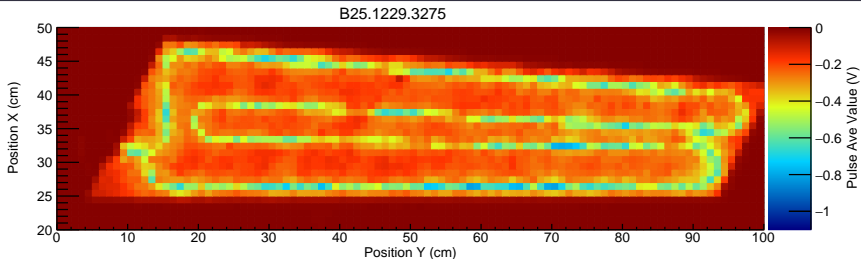
- **Low but comparable to B26 (good tile)**
 - **B25.2043.5712**
 - **B25.2042.5710**
- **Well below B26, uniform**
 - **B25.1229.3275**
- **Well below B26, nonuniform**
 - **B25.2095.5867**
- **Questions/Requests?**

Backup

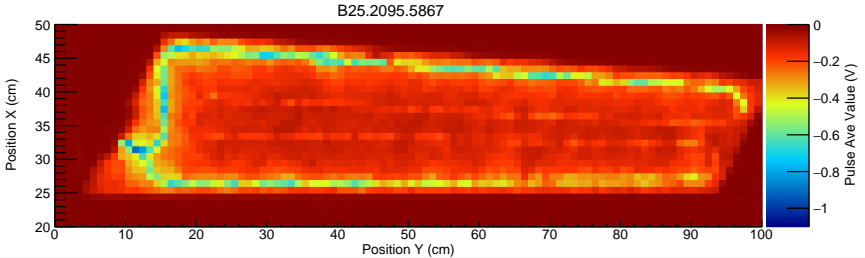
B26.1524.4154 LED Scans



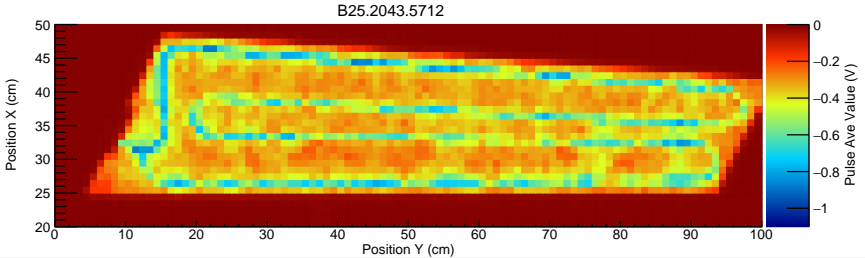
B25.1229.3275 LED Scans



B25.2095.5867 LED Scans



B25.2043.5712 LED Scans



B25.2042.5710 LED Scans

