

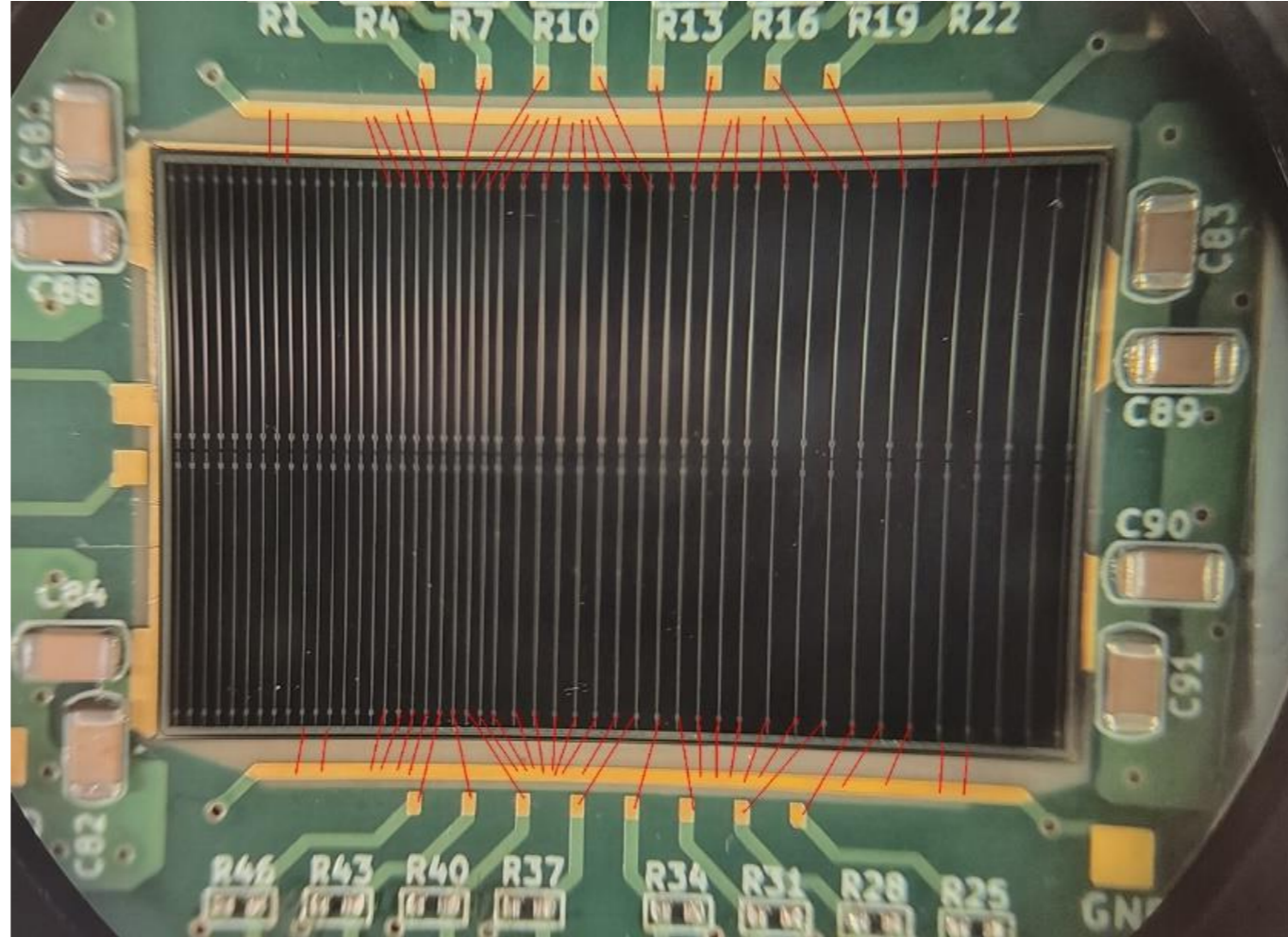


# UCSC ePIC S16694 sensor testing data – 6/18/2025

# HPK S16694 Comparisons

- We will be looking at comparisons between full sized sensors from W15 and W12
- W15: 30 $\mu$ m thick
- W12: 50 $\mu$ m thick

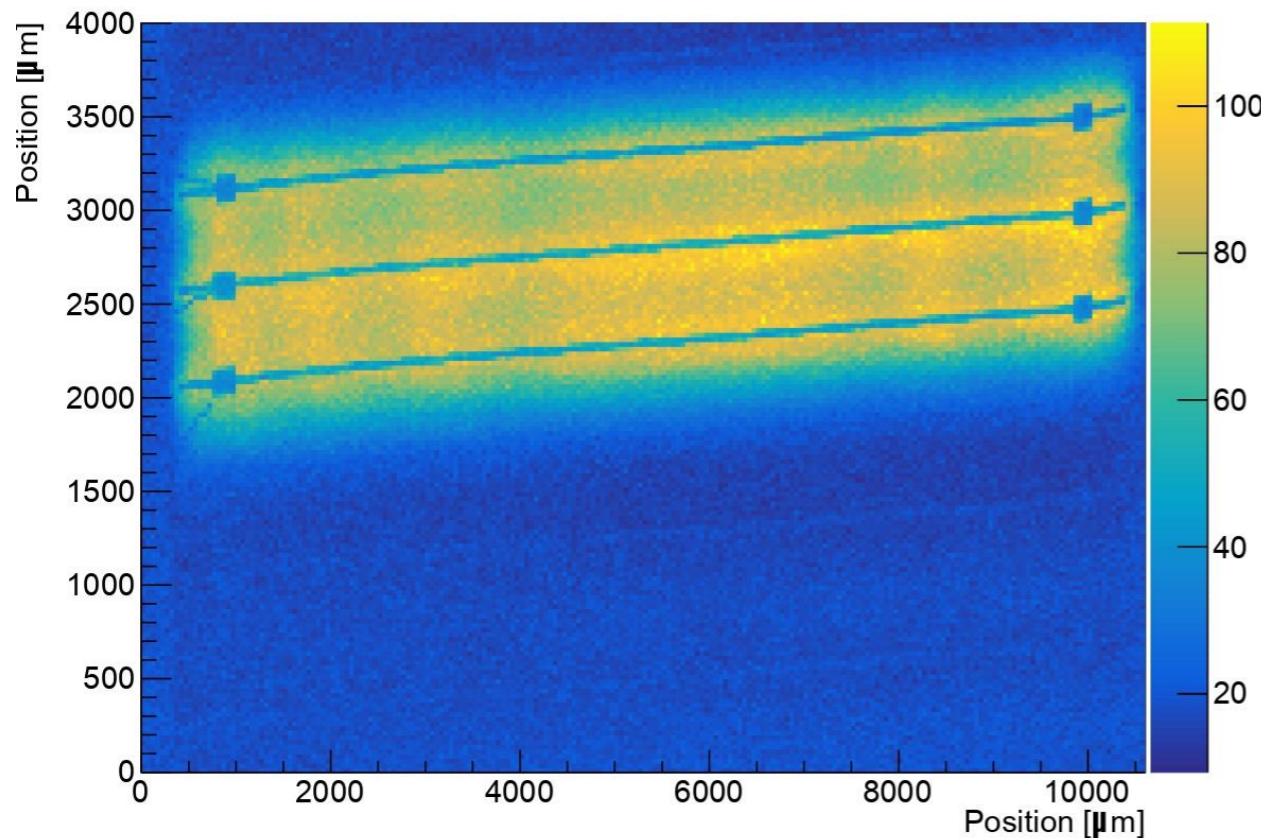
The same bonding scheme was  
used for both sensors



# HPK S16694 Comparisons: 2D scans

W15: 30 $\mu$ m thick

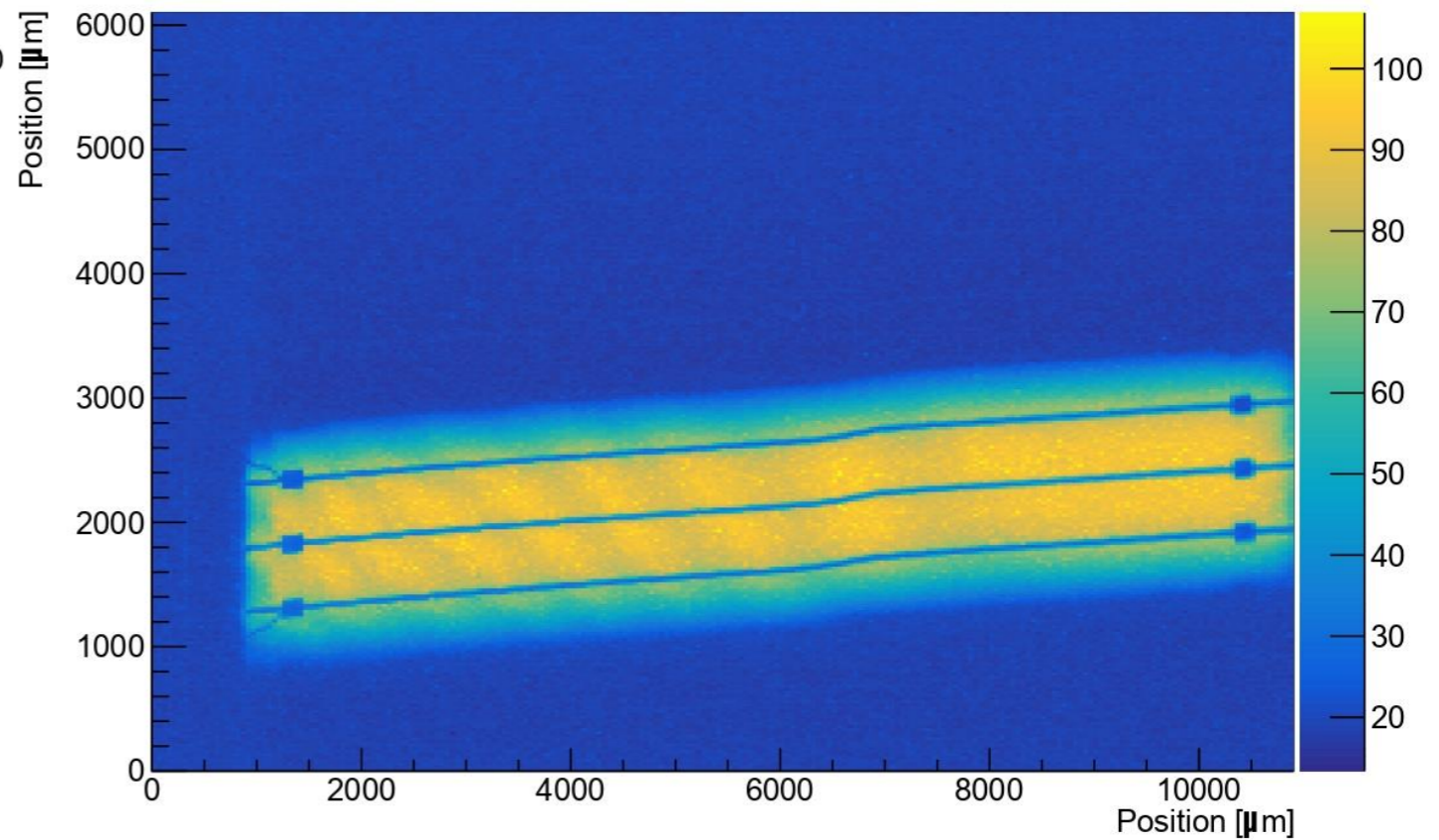
CHall, max



Bias Voltage: 150V

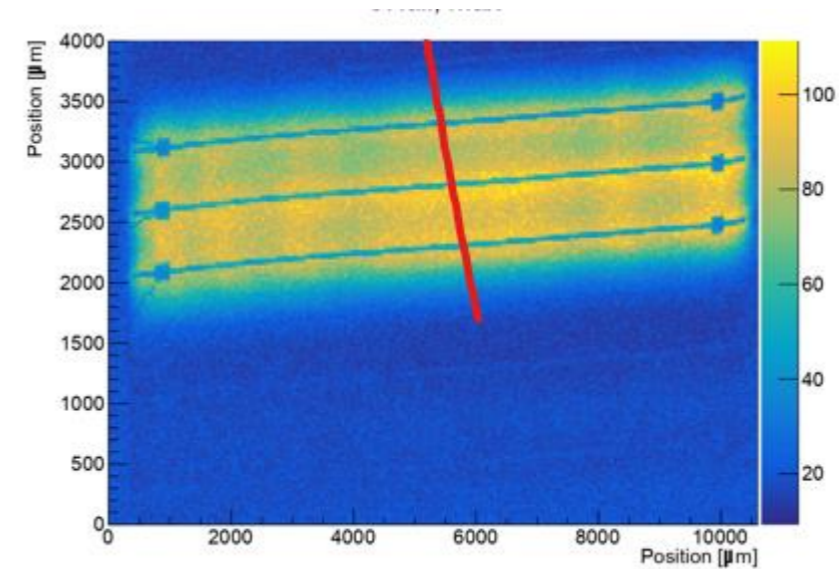
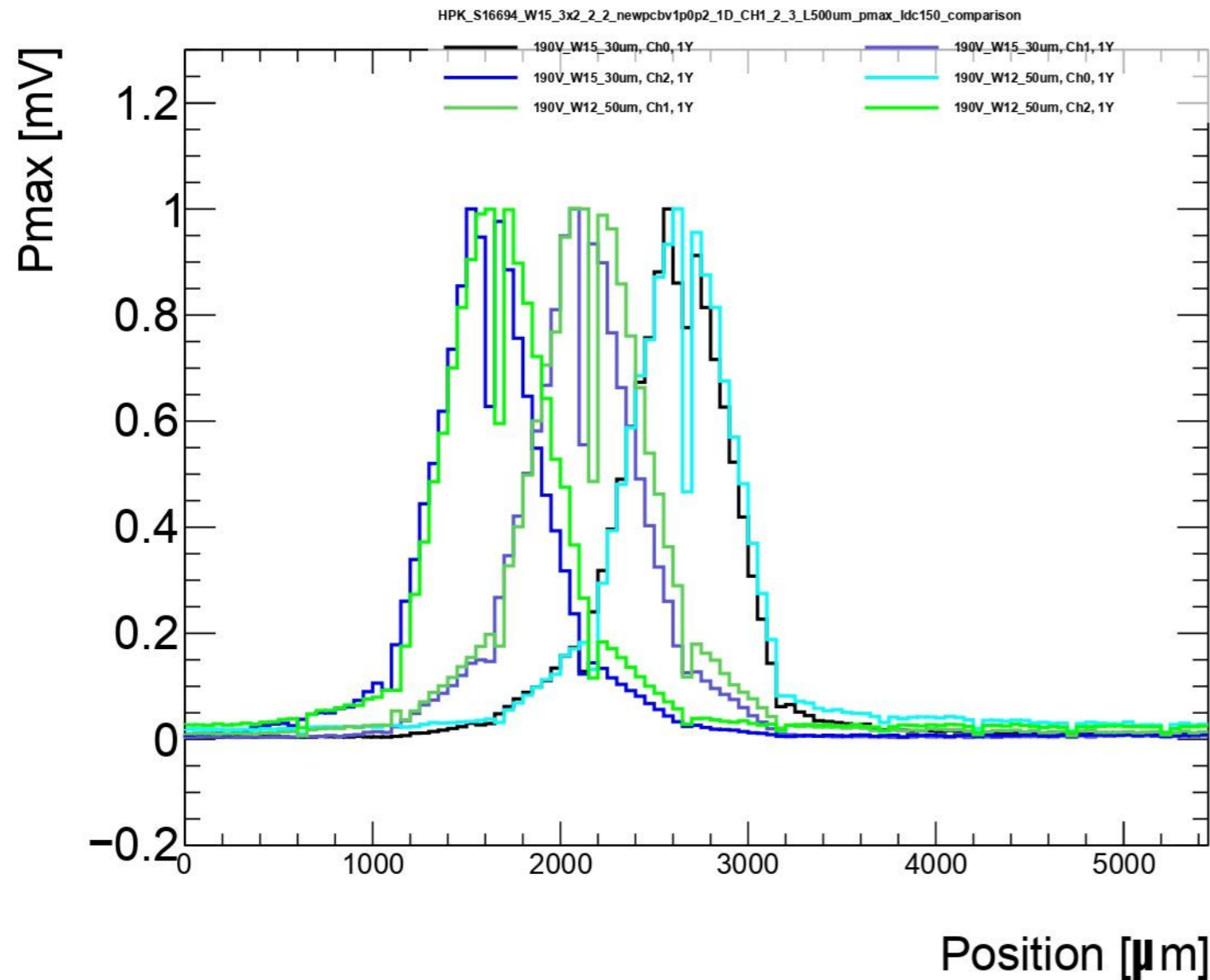
W12: 50 $\mu$ m thick

CHall, max

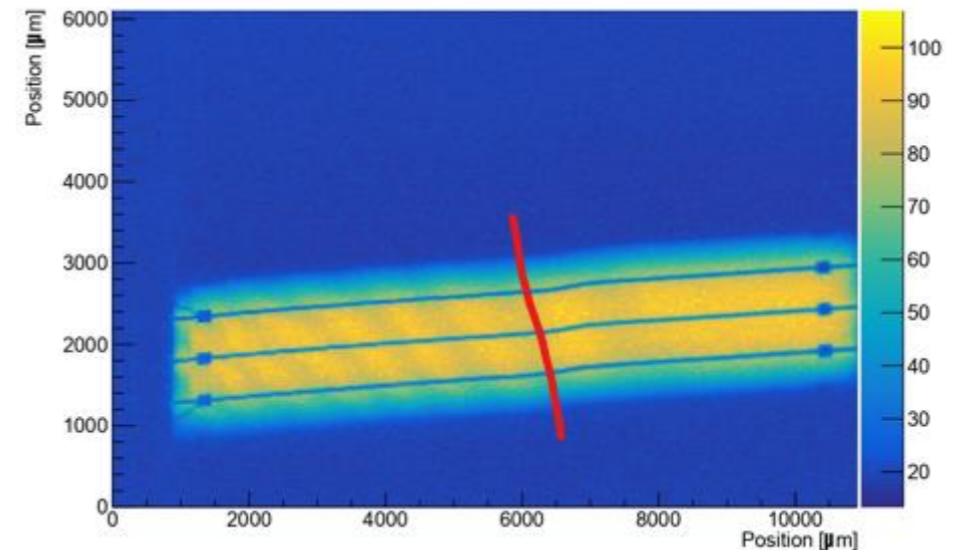


Bias Voltage: 100V (low)

# HPK S16694 Comparisons: Pmax Comparison, 500um Pitch



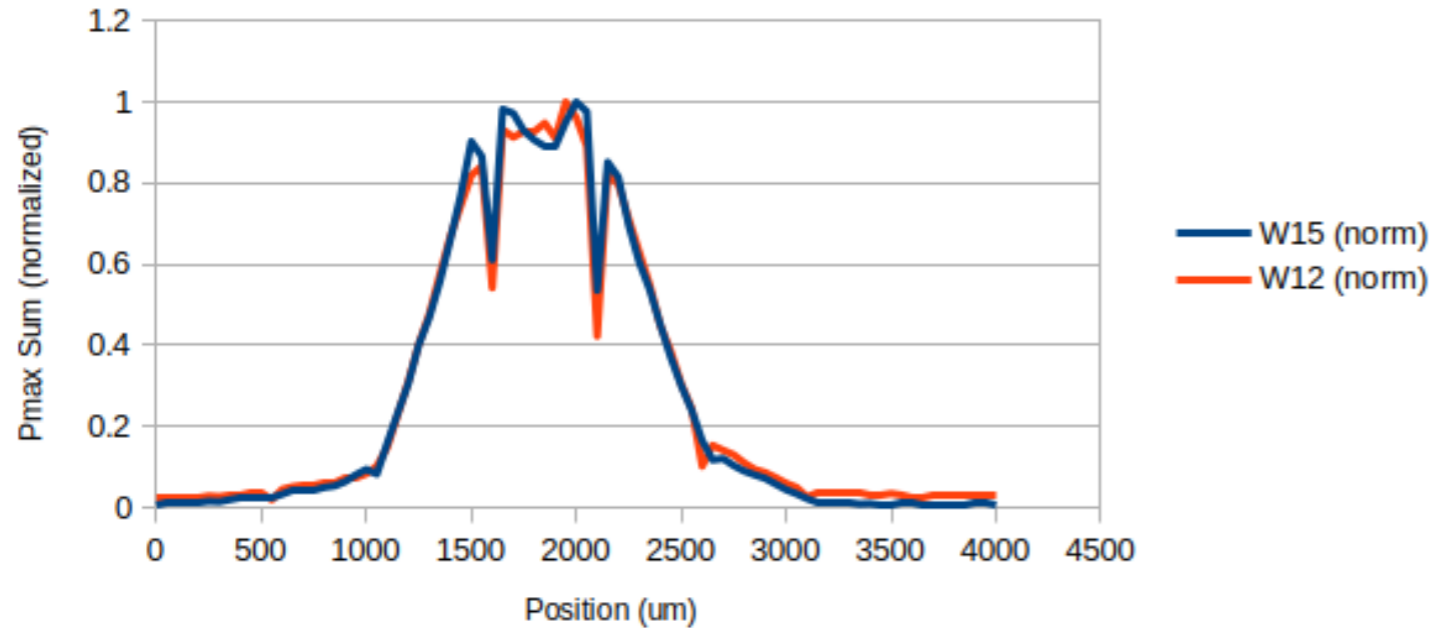
**W15:**  
Black,  
Purple  
Blue



**W12:**  
Cyan,  
Green  
Lime

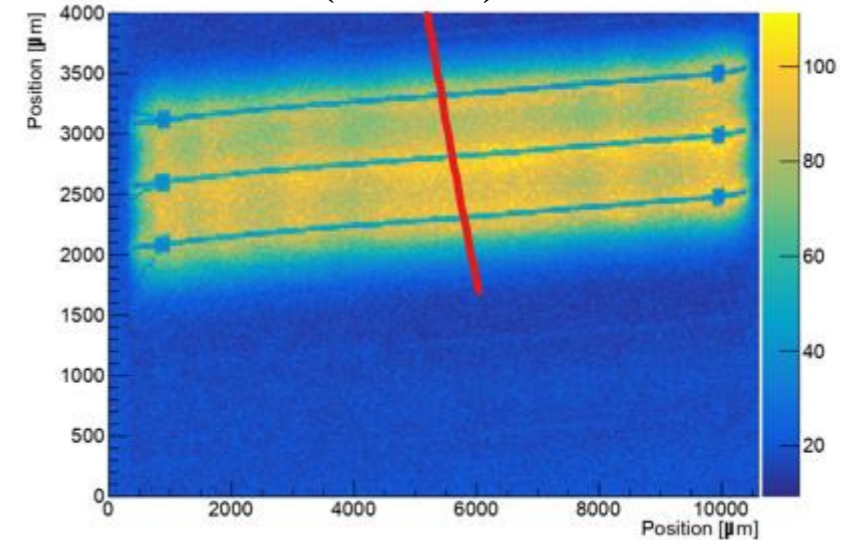
# HPK S16694 Comparisons: Pmax Sum Comparison, 500um Pitch

HPK S19964 W15 (30um) vs. W12 (50um) Pmax Sum  
Comparison: 500 um Pitch

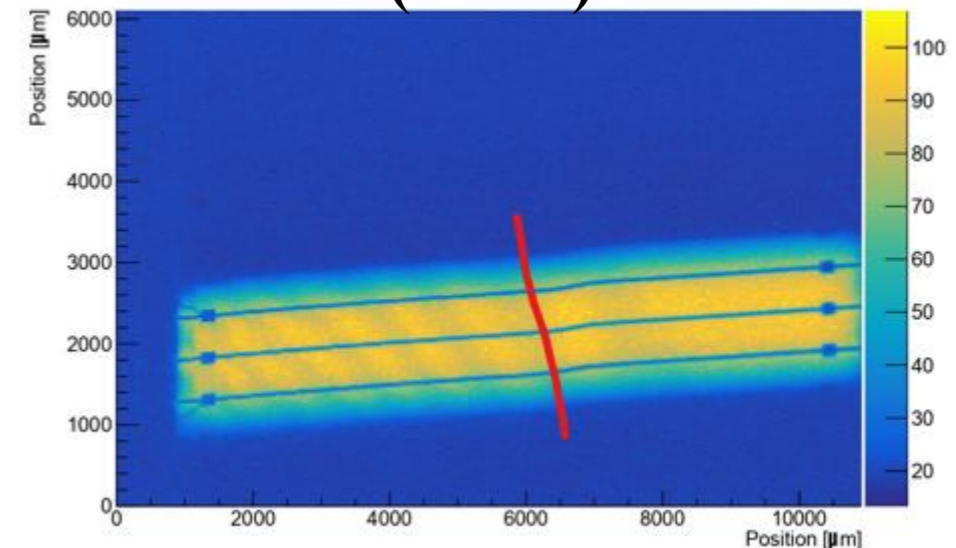


- Pmax Sum: Adding the Pmax of two adjacent channels, then a normalization.
- **The middle area shows the signal to noise loss.**

W15 (30 um): Blue

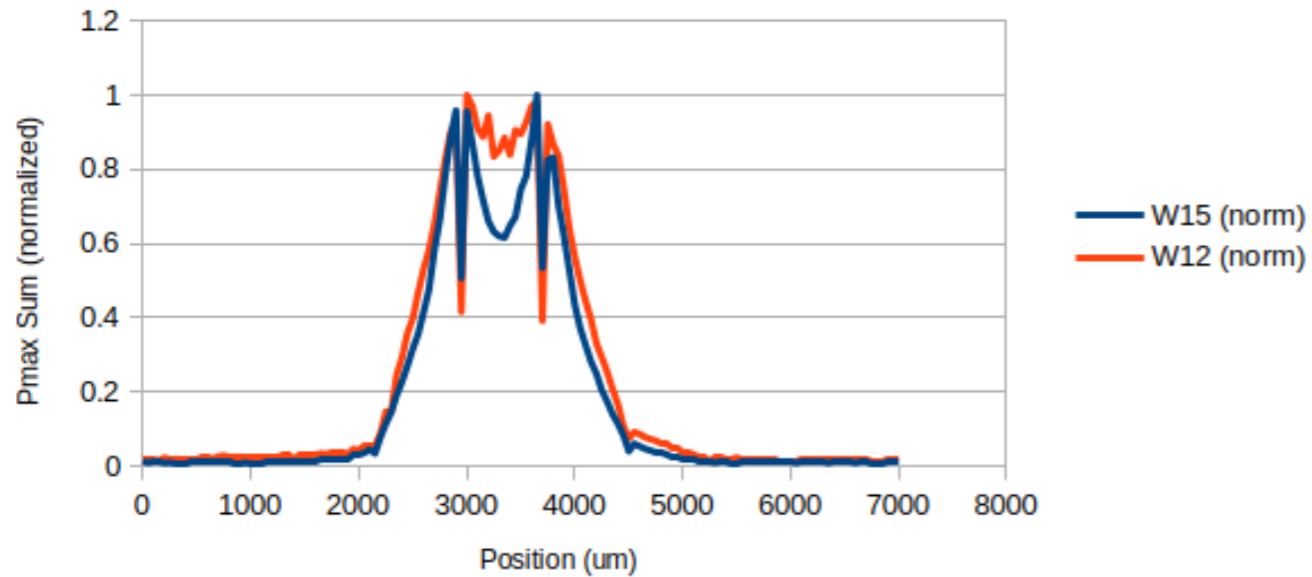


W12 (50 um):Red

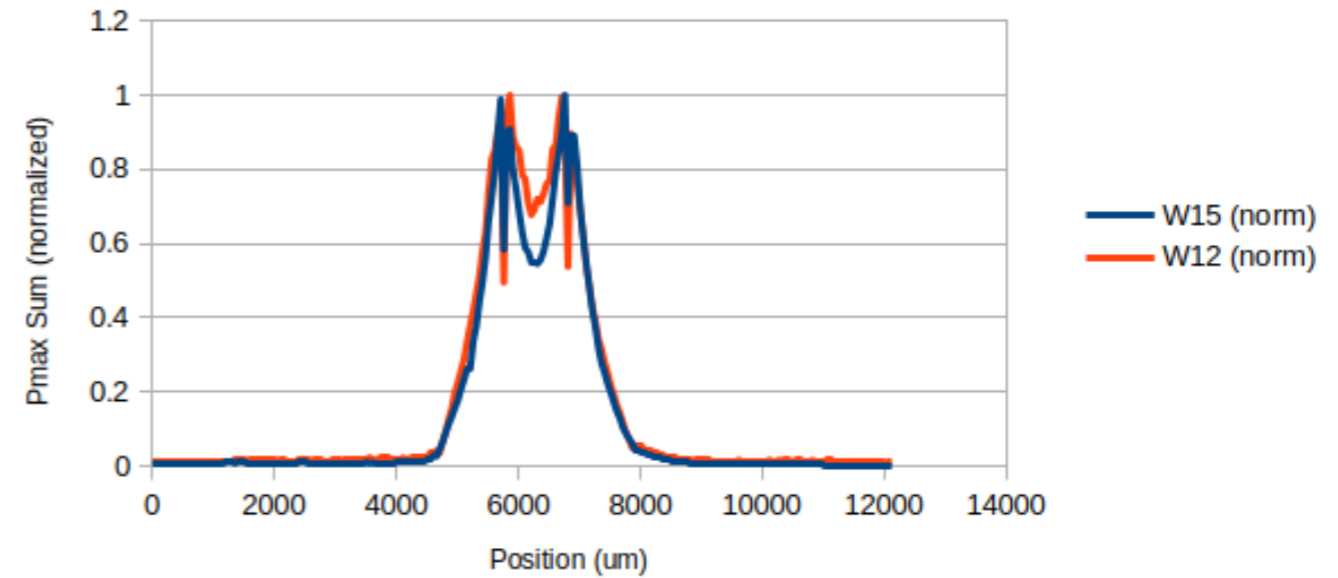


# HPK S16694 Comparisons: Pmax Sum Comparison, 500um Pitch

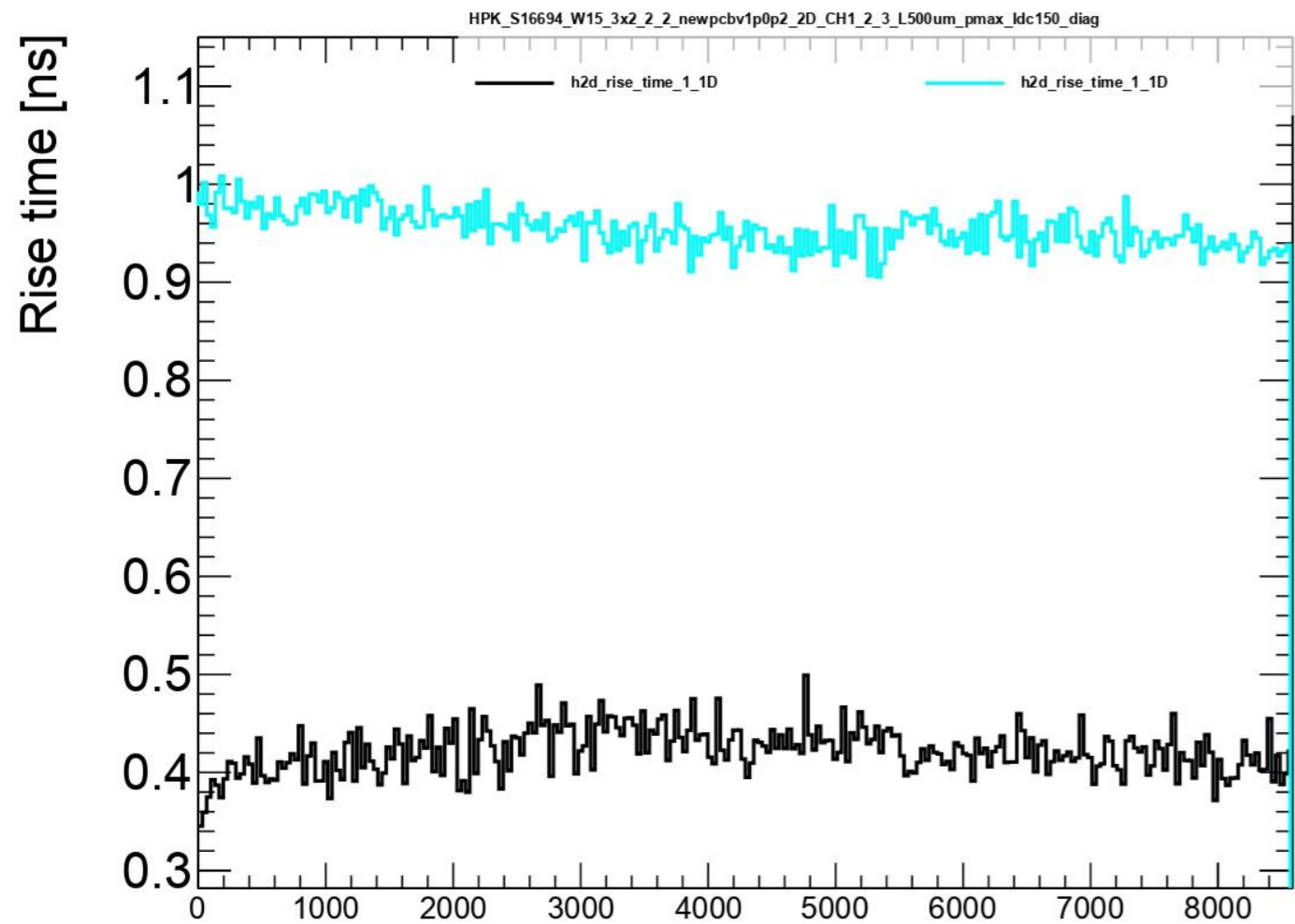
HPK S19964 W15 (30um) vs. W12 (50um) Pmax Sum  
Comparison: 750 um Pitch



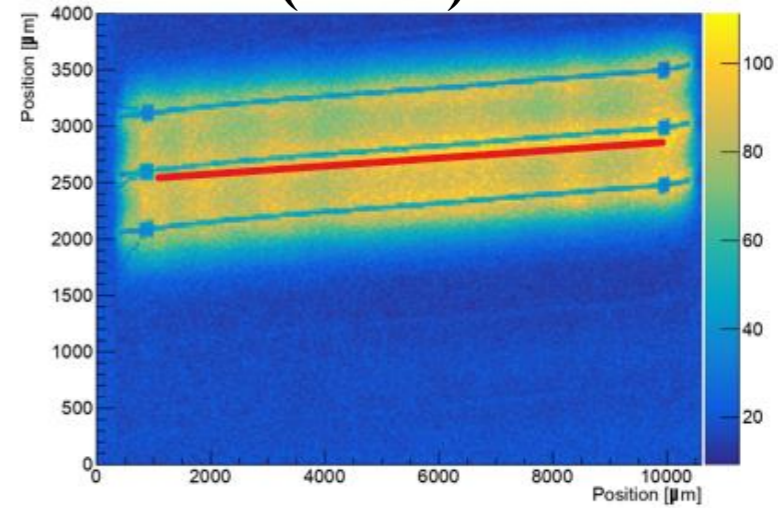
HPK S19964 W15 (30um) vs. W12 (50um) Pmax Sum  
Comparison: 1mm Pitch



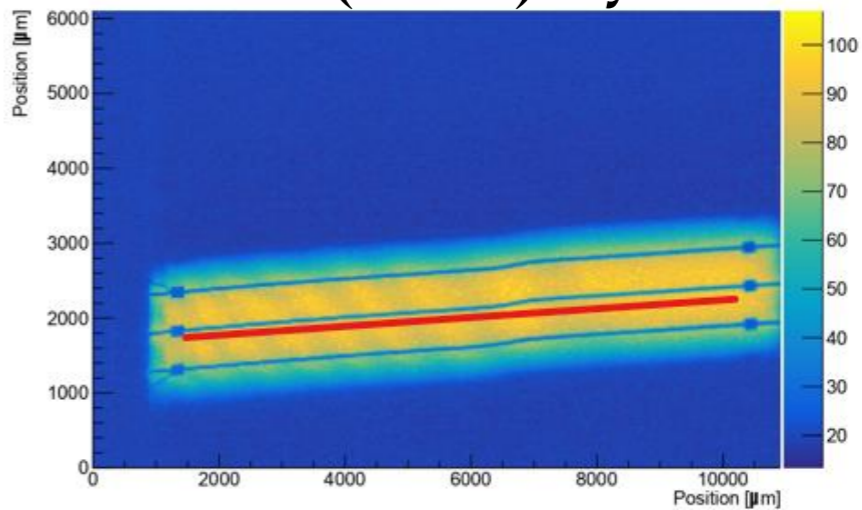
# HPK S16694 Comparisons: Rise Time Comparison, 500um Pitch, ALONG THE STRIP



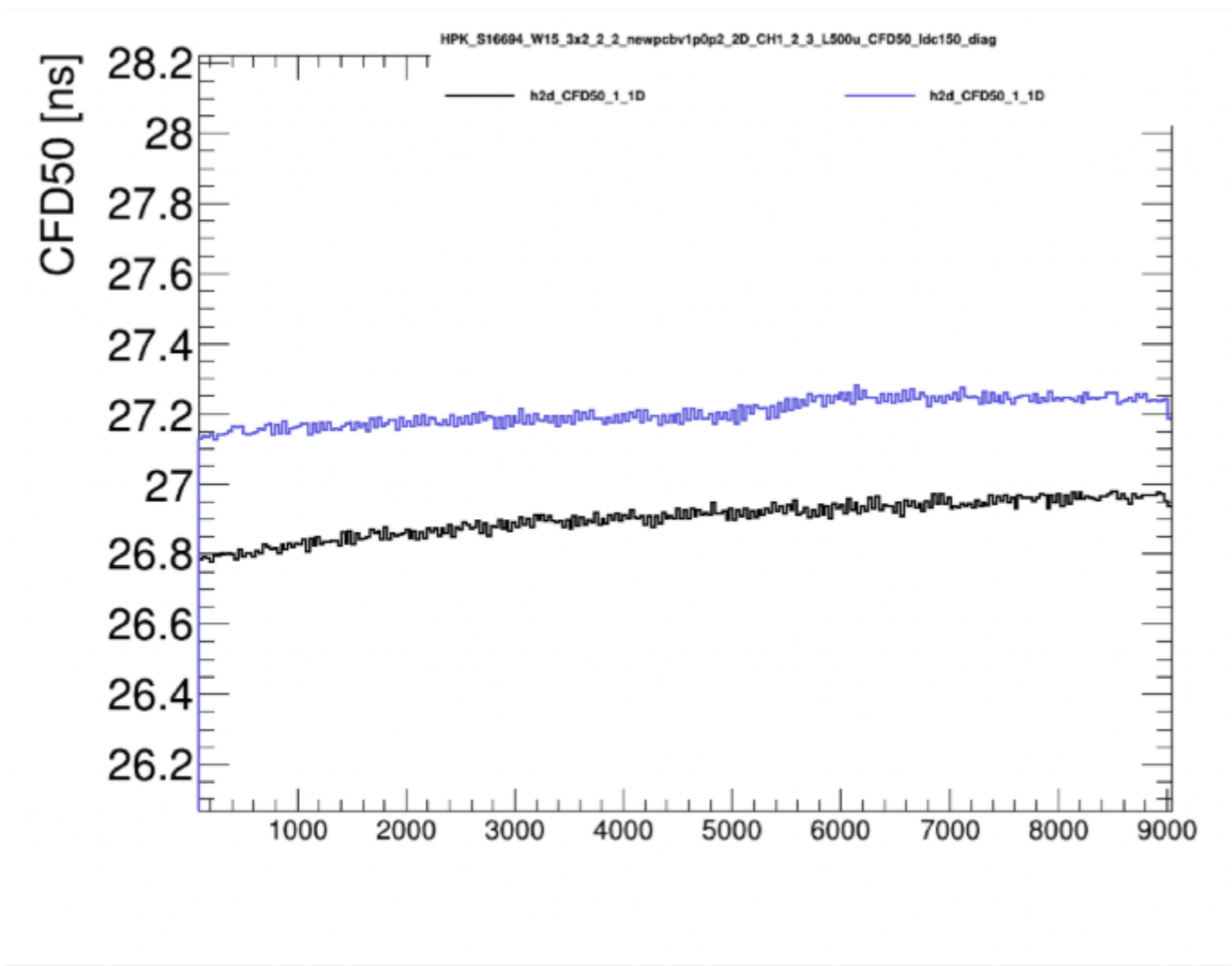
W15 (30  $\mu\text{m}$ ): Black



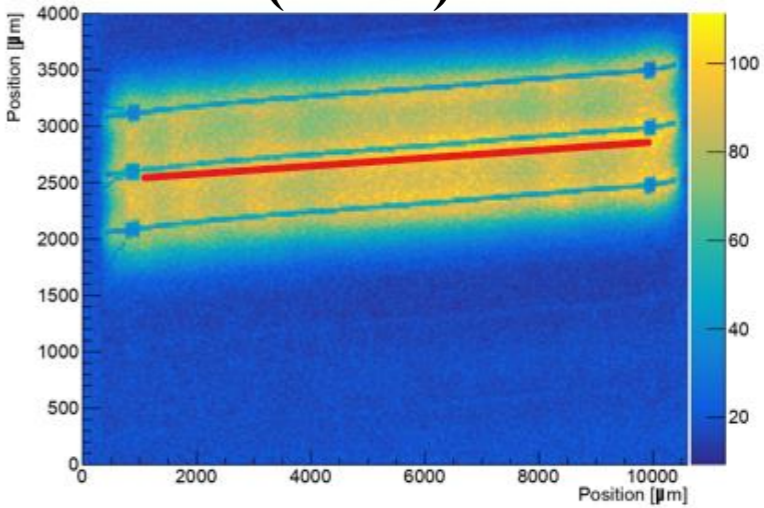
W12 (50  $\mu\text{m}$ ): Cyan



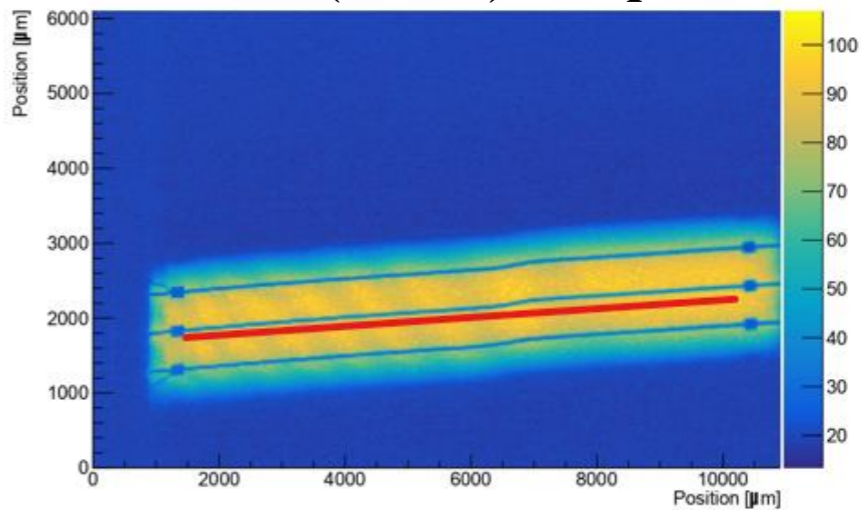
# HPK S16694 Comparisons: CFD50 Comparison, 500um Pitch, ALONG THE STRIP



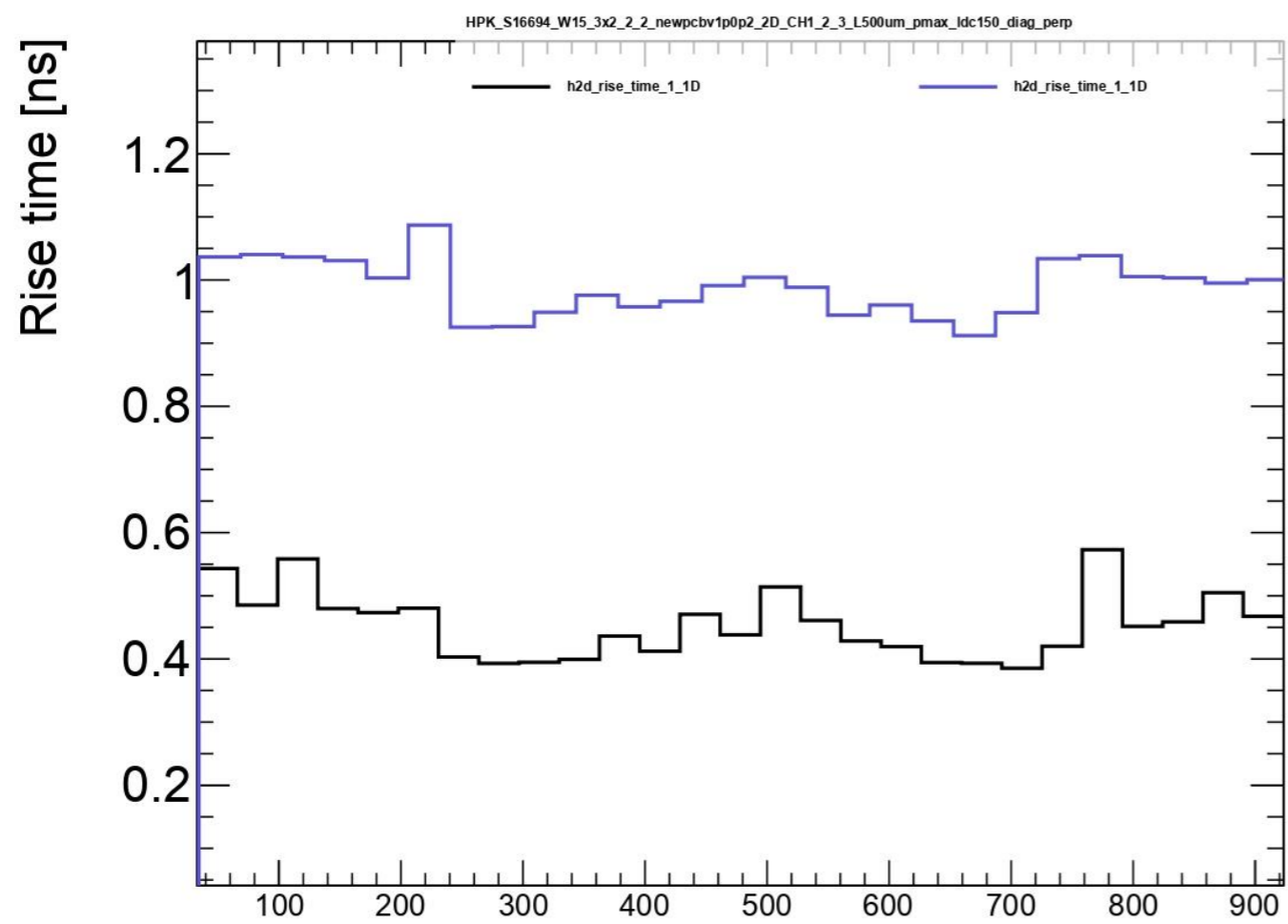
W15 (30 um): Black



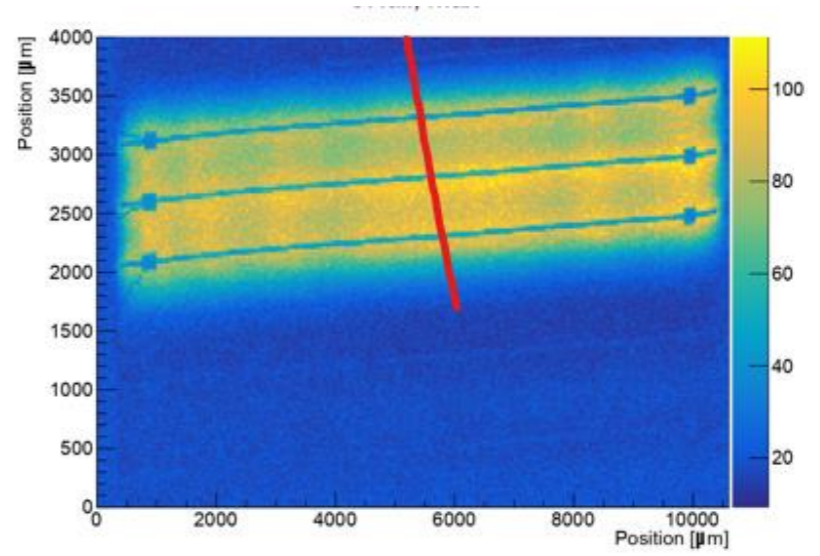
W12 (50 um): Purple



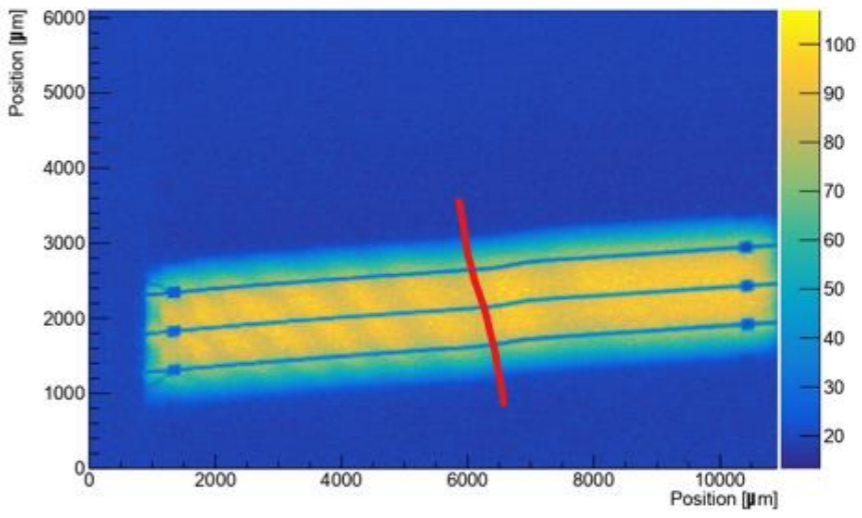
# HPK S16694 Comparisons: Rise Time Comparison, 500um Pitch, PERPENDICULAR TO THE STRIP



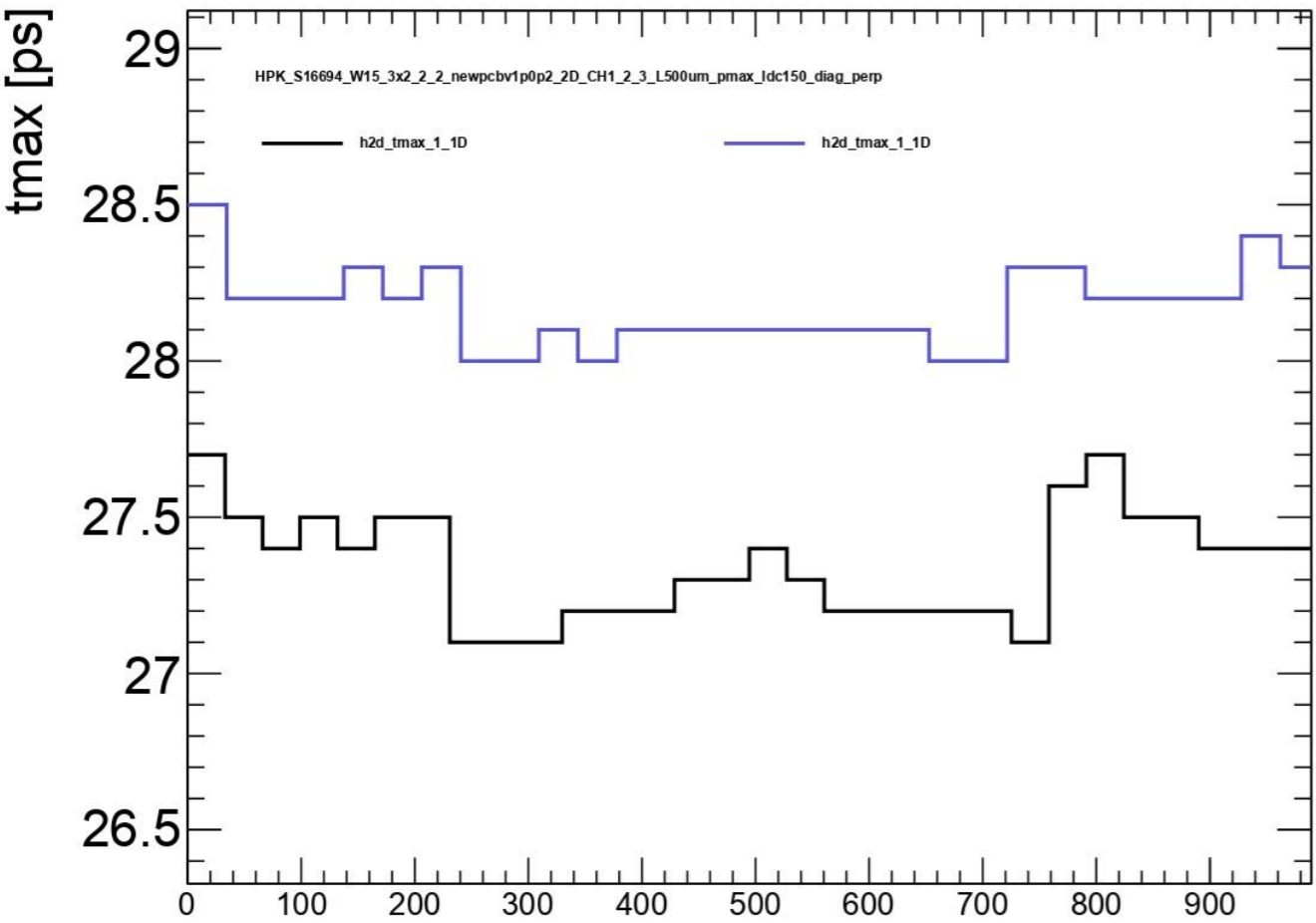
W15 (30 um): Black



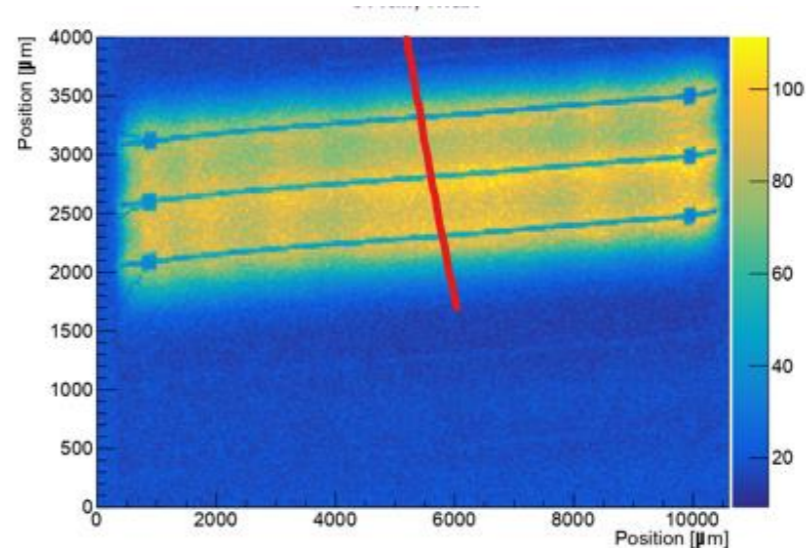
W12 (50 um): Purple



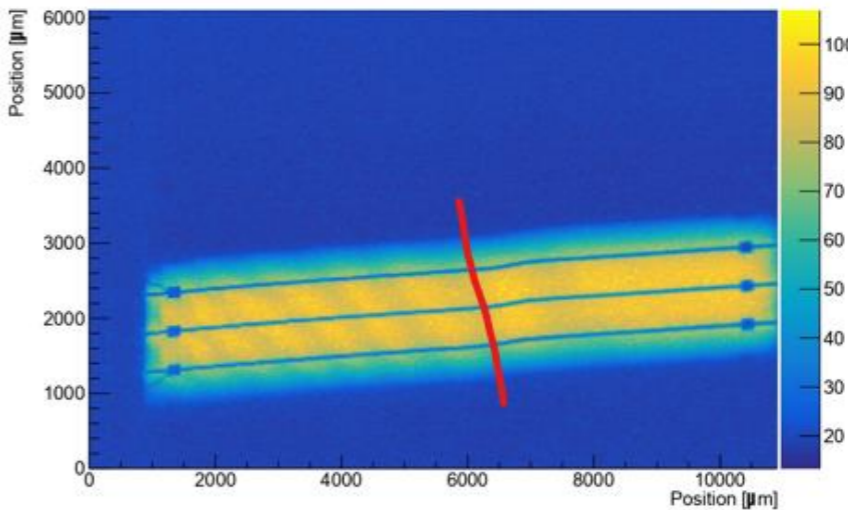
# HPK S16694 Comparisons: Time of Arrival Comparison, 500um Pitch, PERPENDICULAR TO THE STRIP



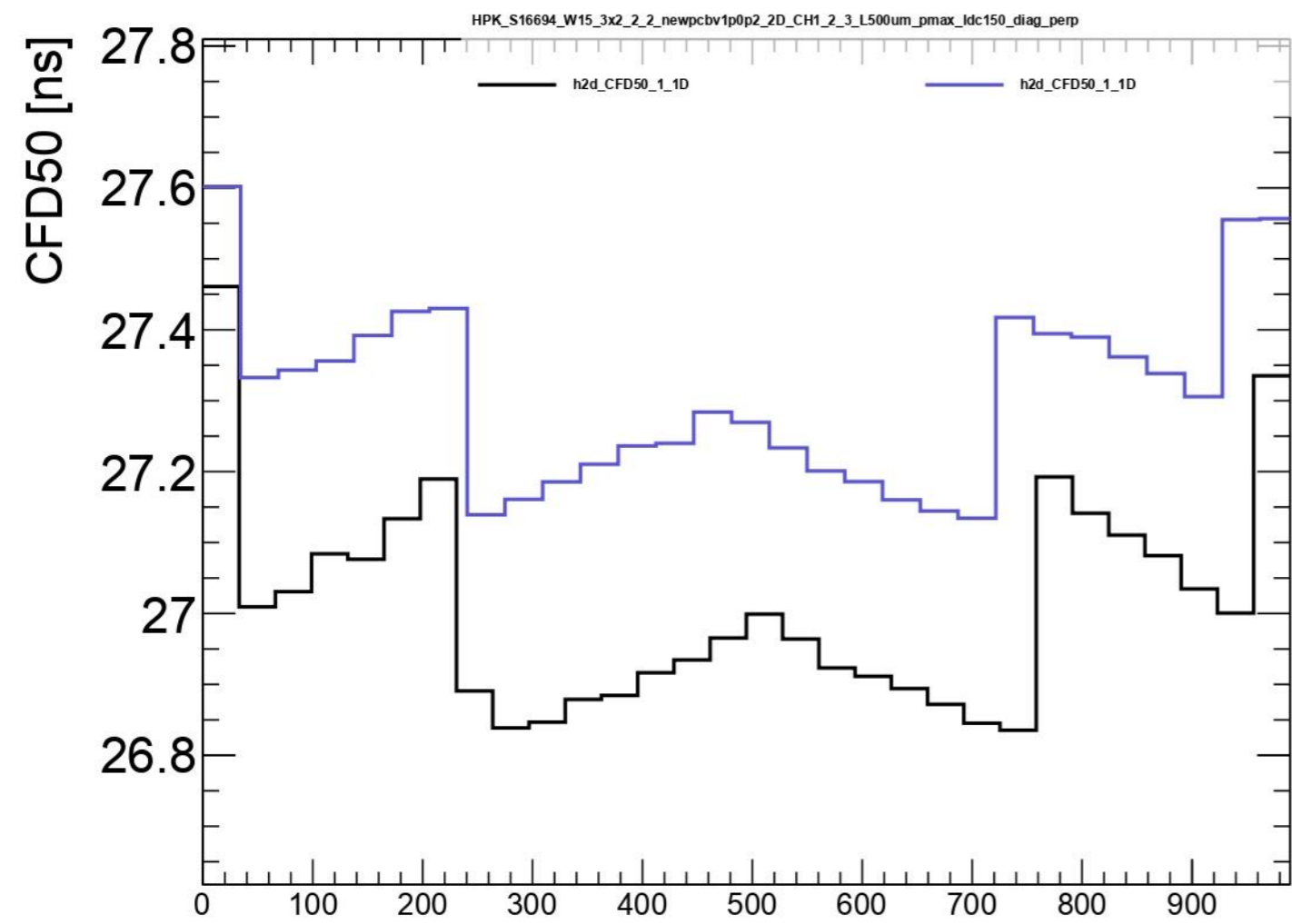
W15 (30  $\mu$ m): Black



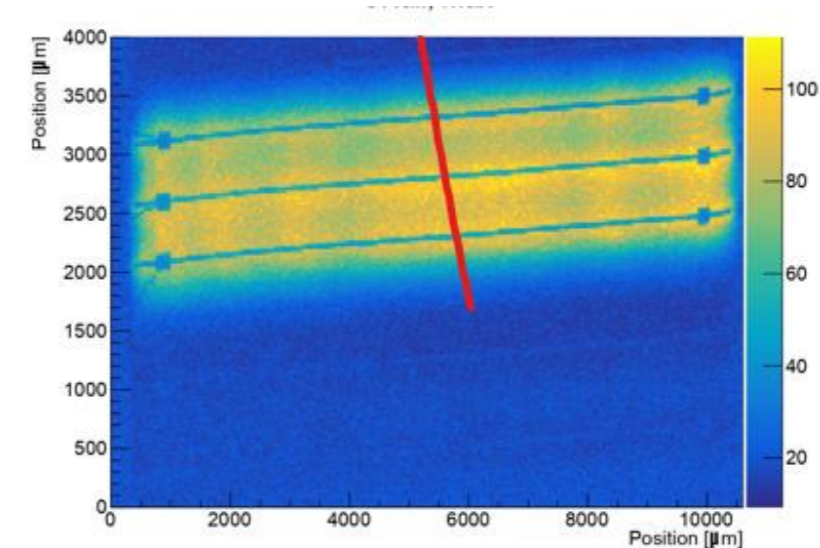
W12 (50  $\mu$ m): Purple



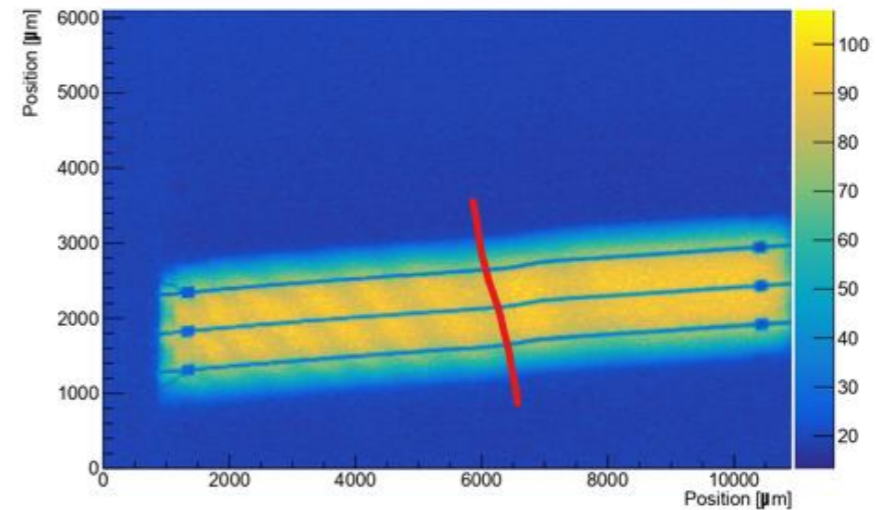
# HPK S16694 Comparisons: CDF50 Comparison, 500um Pitch, PERPENDICULAR TO THE STRIP



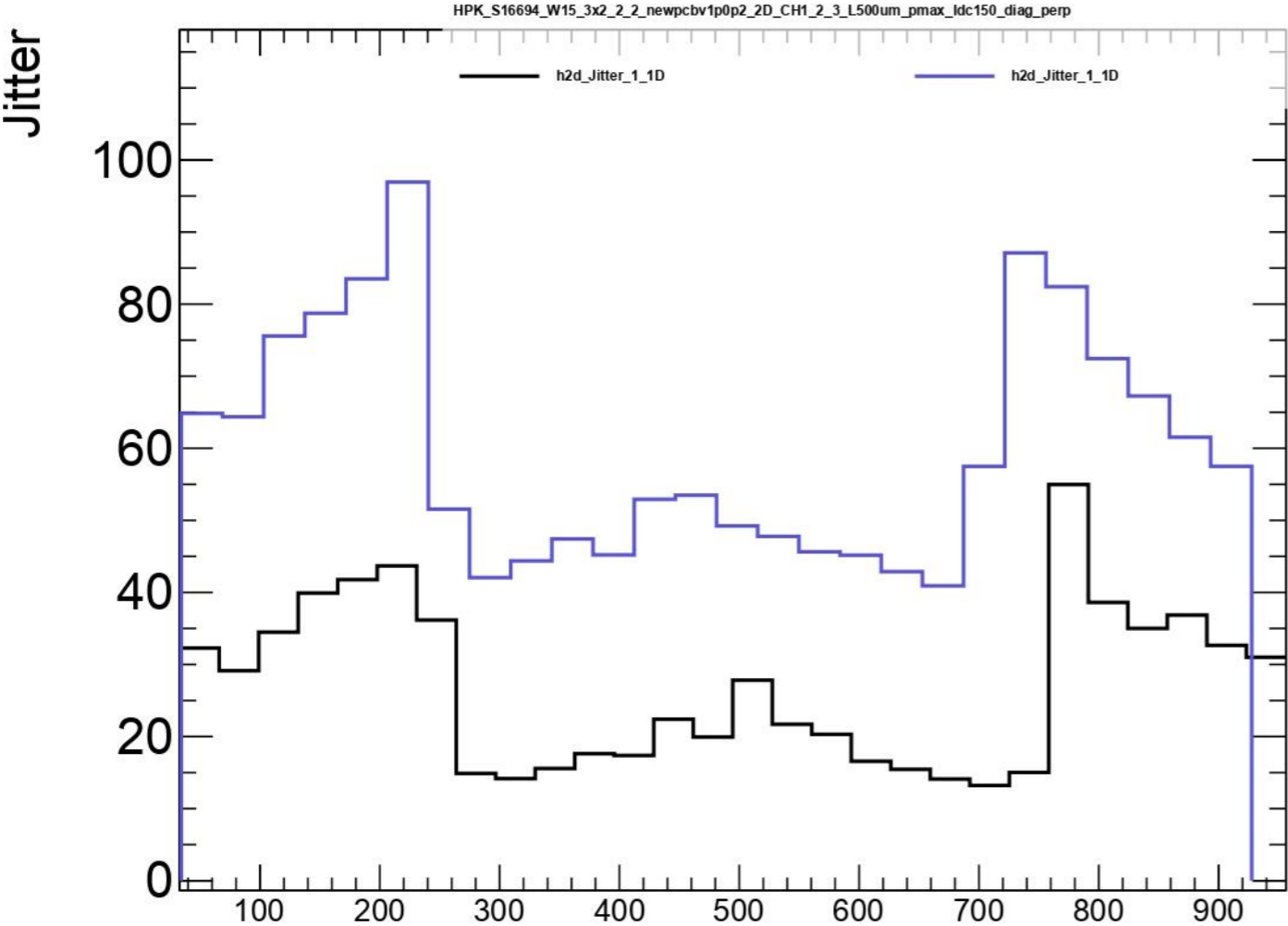
W15 (30 um): Black



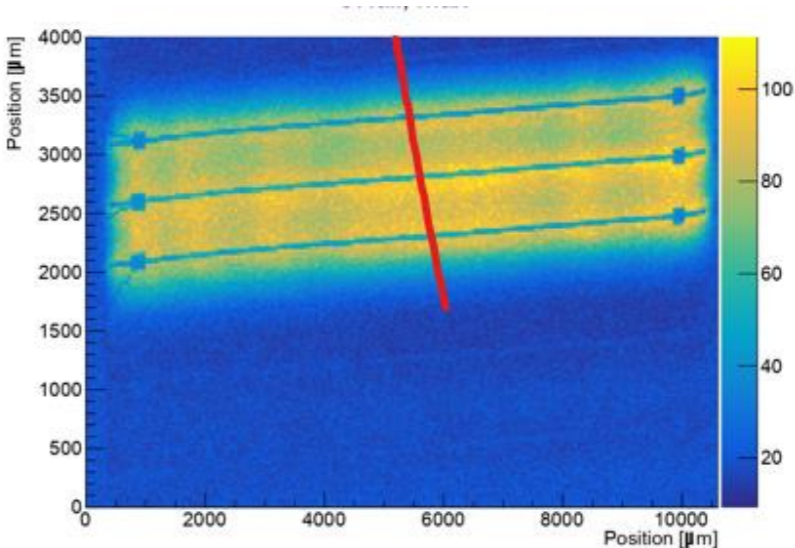
W12 (50 um): Purple



# HPK S16694 Comparisons: Jitter Comparison, 500um Pitch, PERPENDICULAR TO THE STRIP



W15 (30 um): Black



W12 (50 um): Purple

