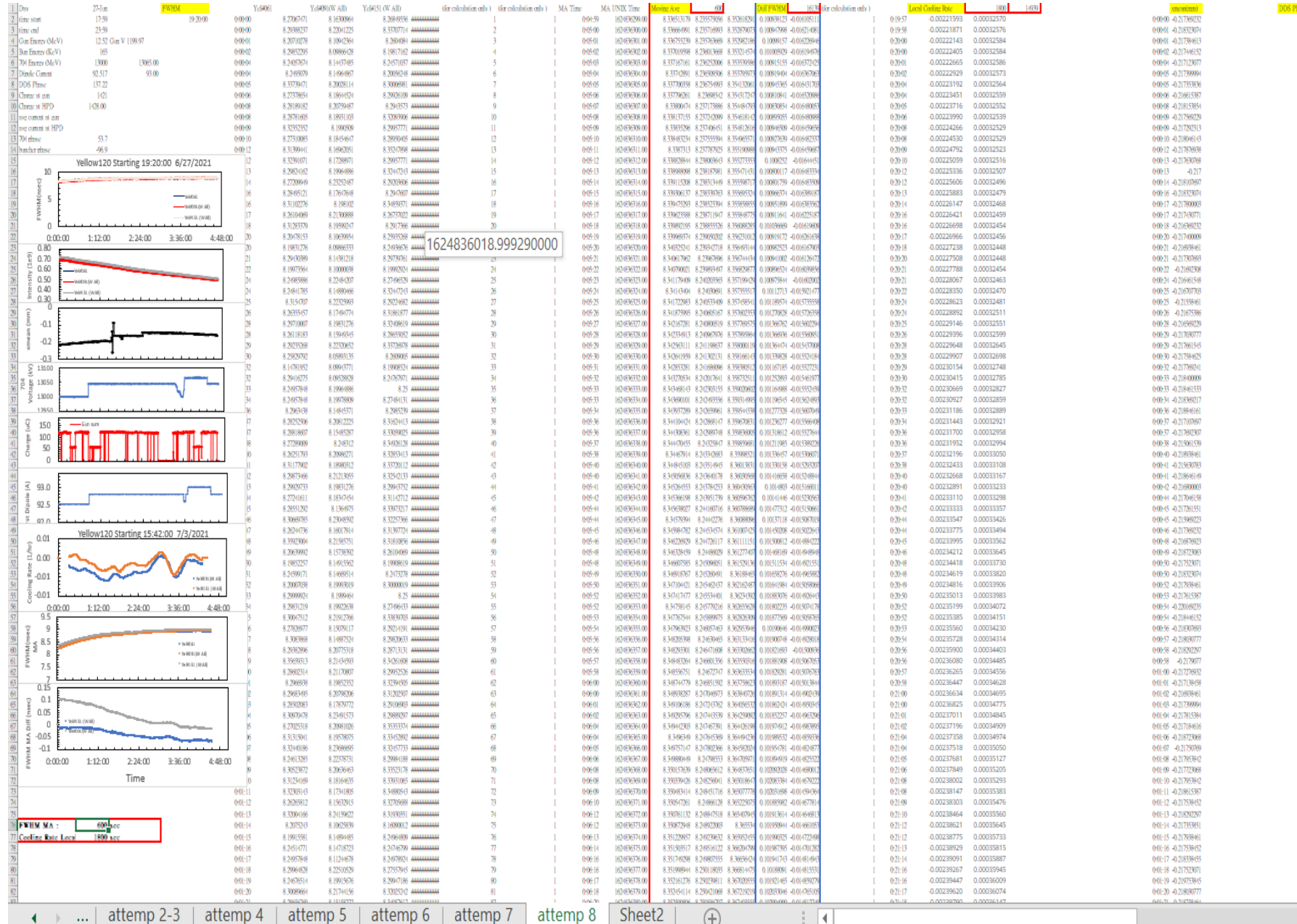


Cooling Rate Analysis

Kai Shih

8/3/21

- | | | |
|----|---------|----------------|
| 1 | 8-Jul | 0:11
6:14 |
| 2 | 5-Jul | 13:59
15:22 |
| 3 | 5-Jul | 16:18
21:54 |
| 4 | 4-Jul | 20:17
21:43 |
| 5 | 3-Jul | 15:42
20:31 |
| 6 | 2-Jul | 22:23
0:00 |
| 7 | 29-Jun | 7:13
10:45 |
| 8 | 27-Jun | 17:59
23:59 |
| 9 | 25-Jun? | ?
? |
| 10 | 3-Jun | 23:26
23:59 |



Cooling Rate Definition

$$\delta\tau(t) = (M.A.[FWHM_{int.}] - M.A.[FWHM_{wis.}])$$

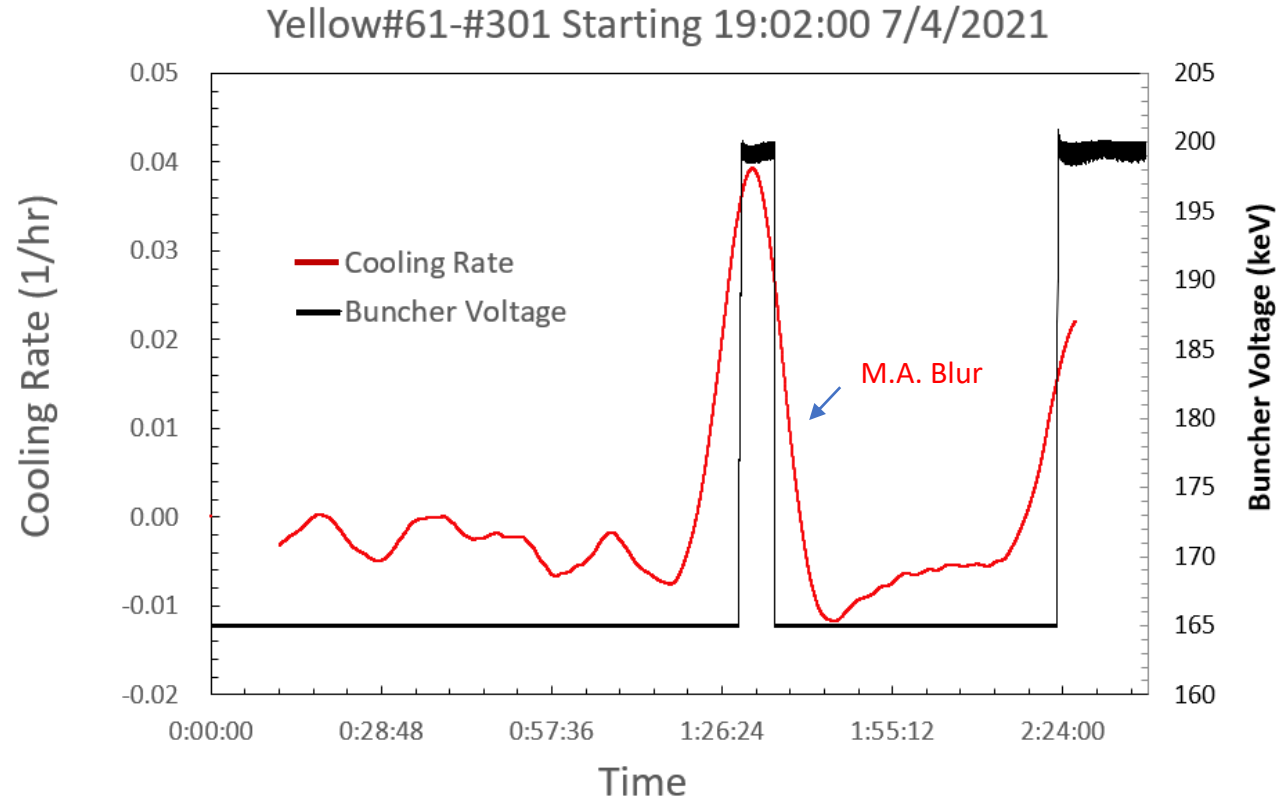


First moving average

Slope fitting patch
Second "moving average"

$$\begin{aligned} \text{Cooling Rate}(t) \\ \therefore \text{unit } 1/\text{hr} \end{aligned} = \frac{\text{slope}[\delta\tau(t_{t-\Delta t}:t_{t+\Delta t})]}{FWHM_{int.}} \times 3600$$

Attempt 4 Heating

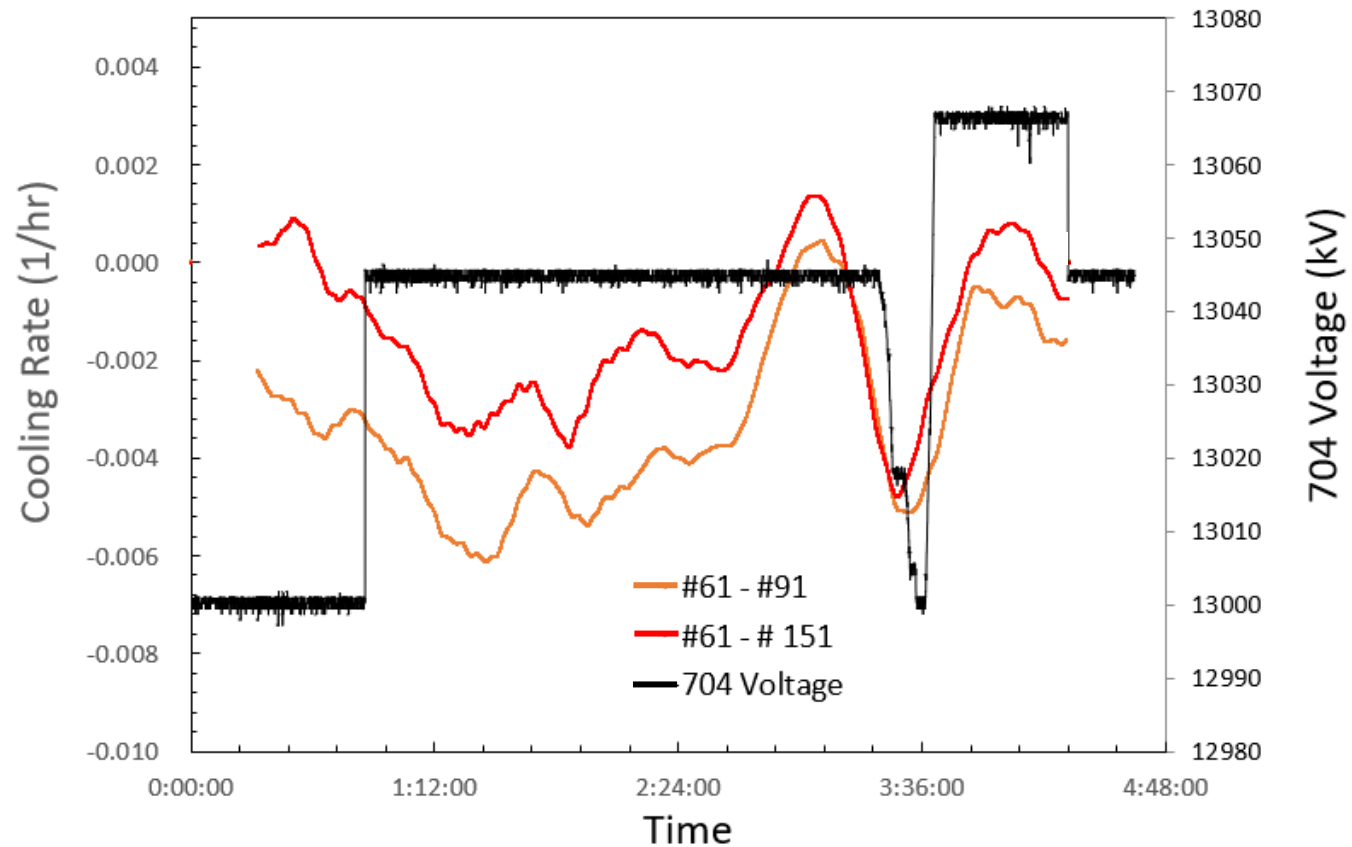


FWHM M.A. ~ 600 sec

Slope fitting patch ~ 800 sec

Attempt 8 Cooling

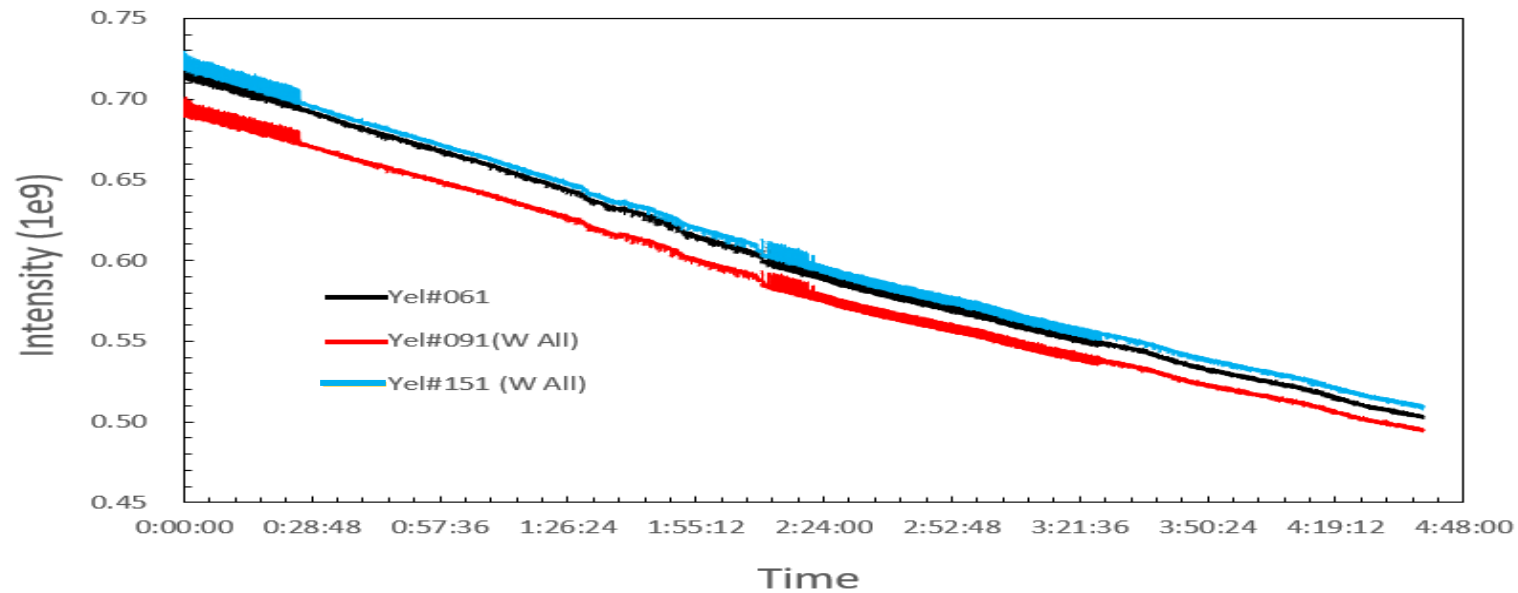
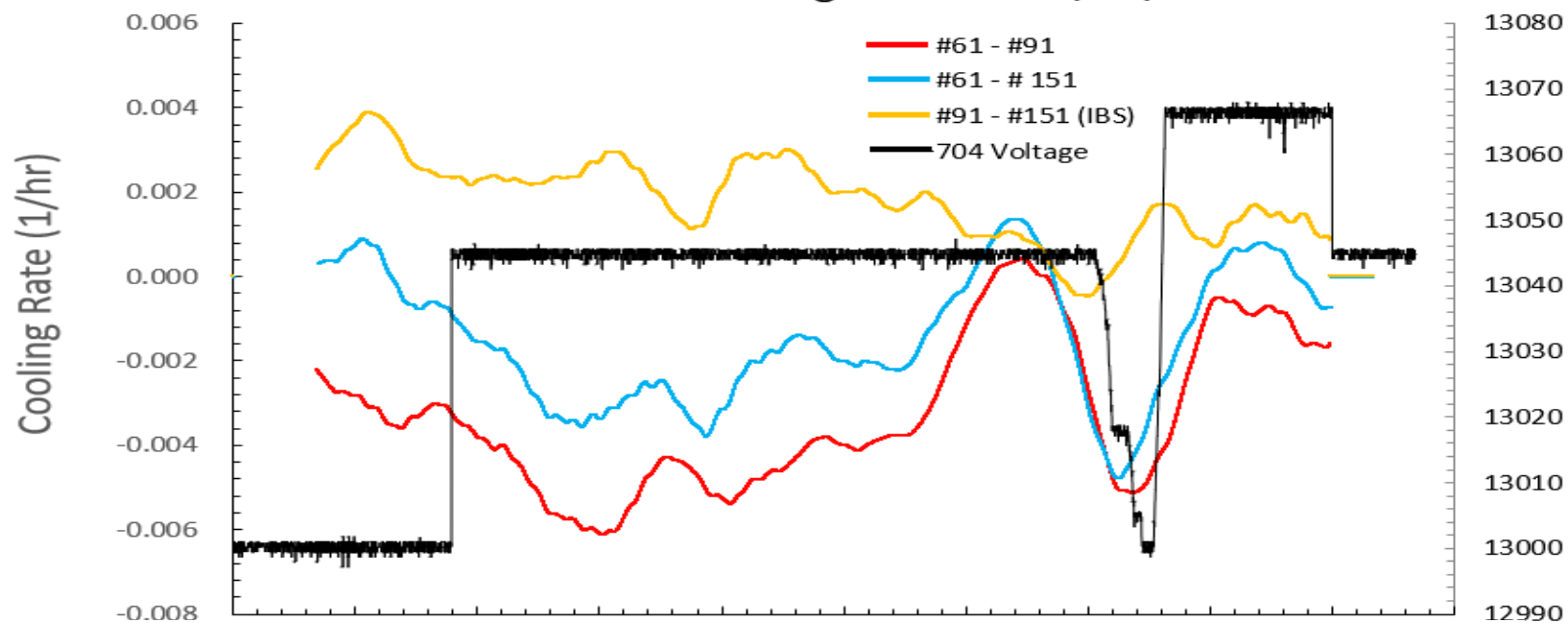
Starting 19:20:00 6/27/2021



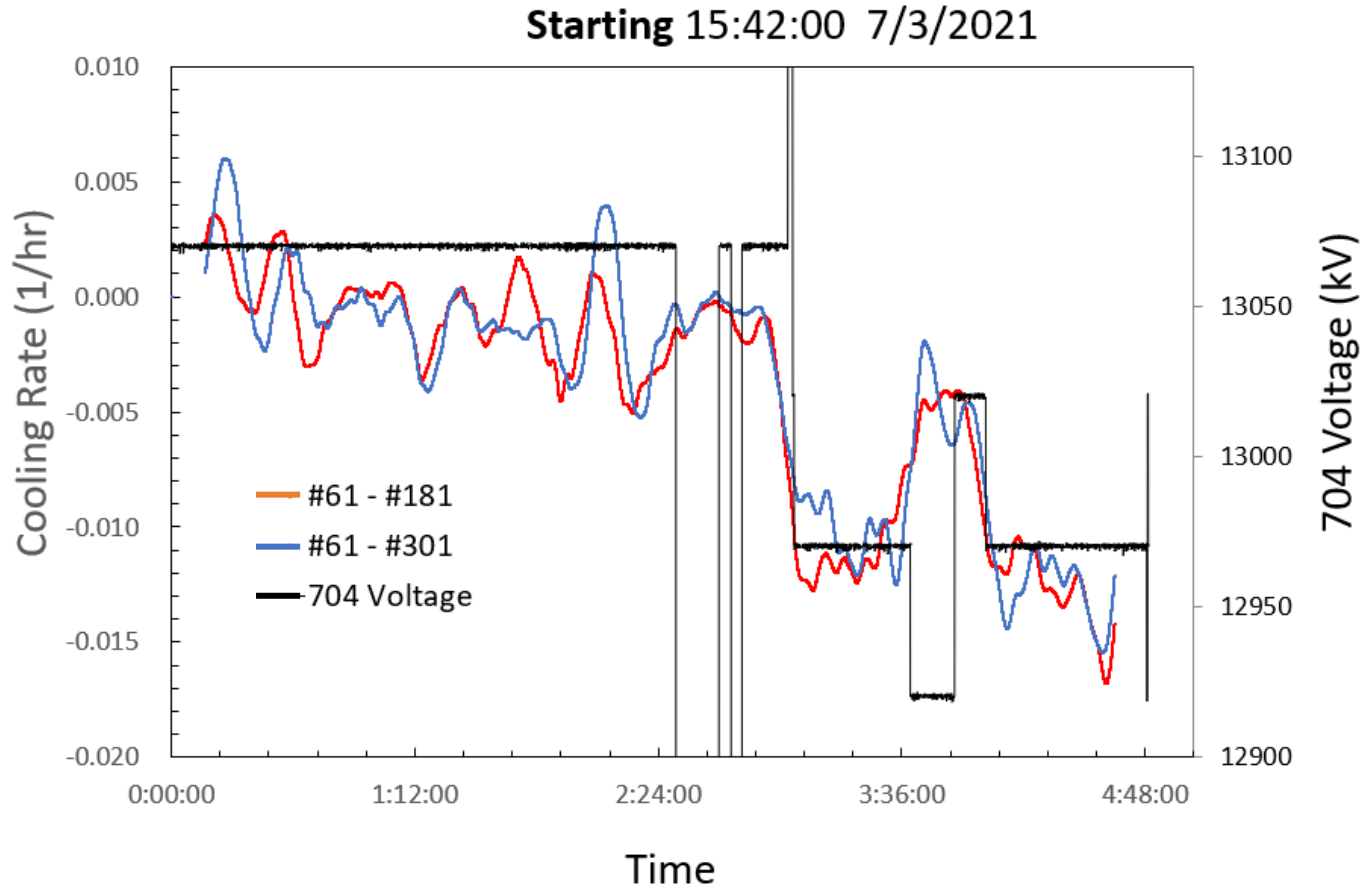
FWHM M.A. $\sim$ 600 sec

Slope fitting patch $\sim$ 1800sec

Yellow120 Starting 19:20:00 6/27/2021



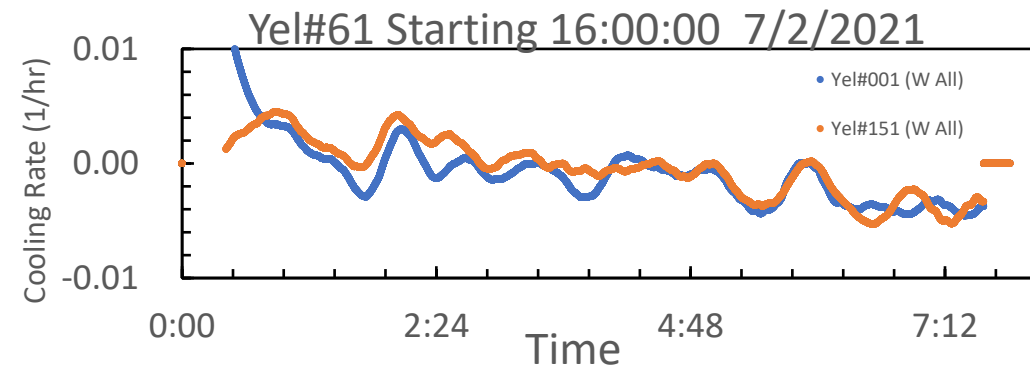
Attempt 5 Cooling



FWHM M.A. $\sim$ 600 sec

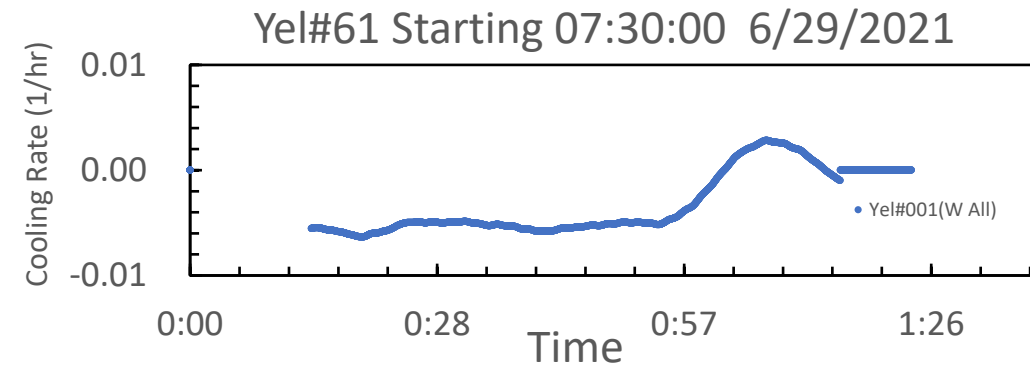
Slope fitting patch $\sim$ 600sec

Attempt 6



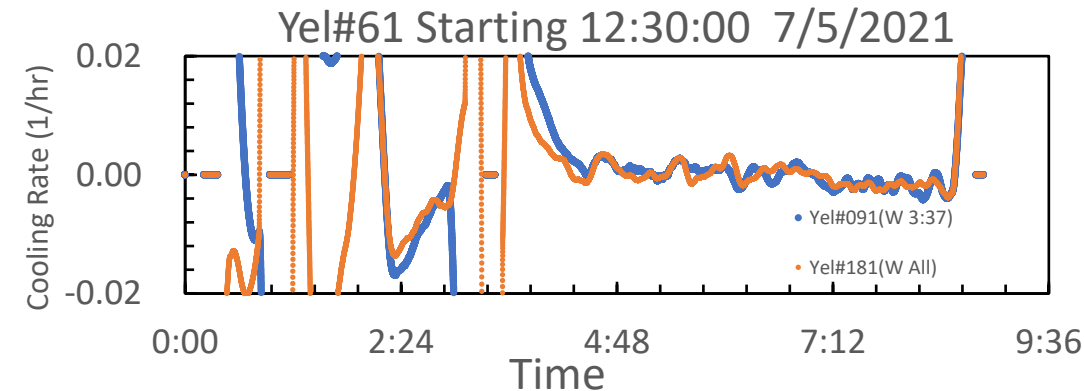
FWHM M.A. ~ 1200 sec
Slope fitting patch ~ 1800 sec

Attempt 7



FWHM M.A. ~ 500 sec
Slope fitting patch ~ 1200 sec

Attempt 2-3



FWHM M.A. ~ 300 sec
Slope fitting patch ~ 1200 sec

Have Low cooling rate
and no obvious cause of rate variation