

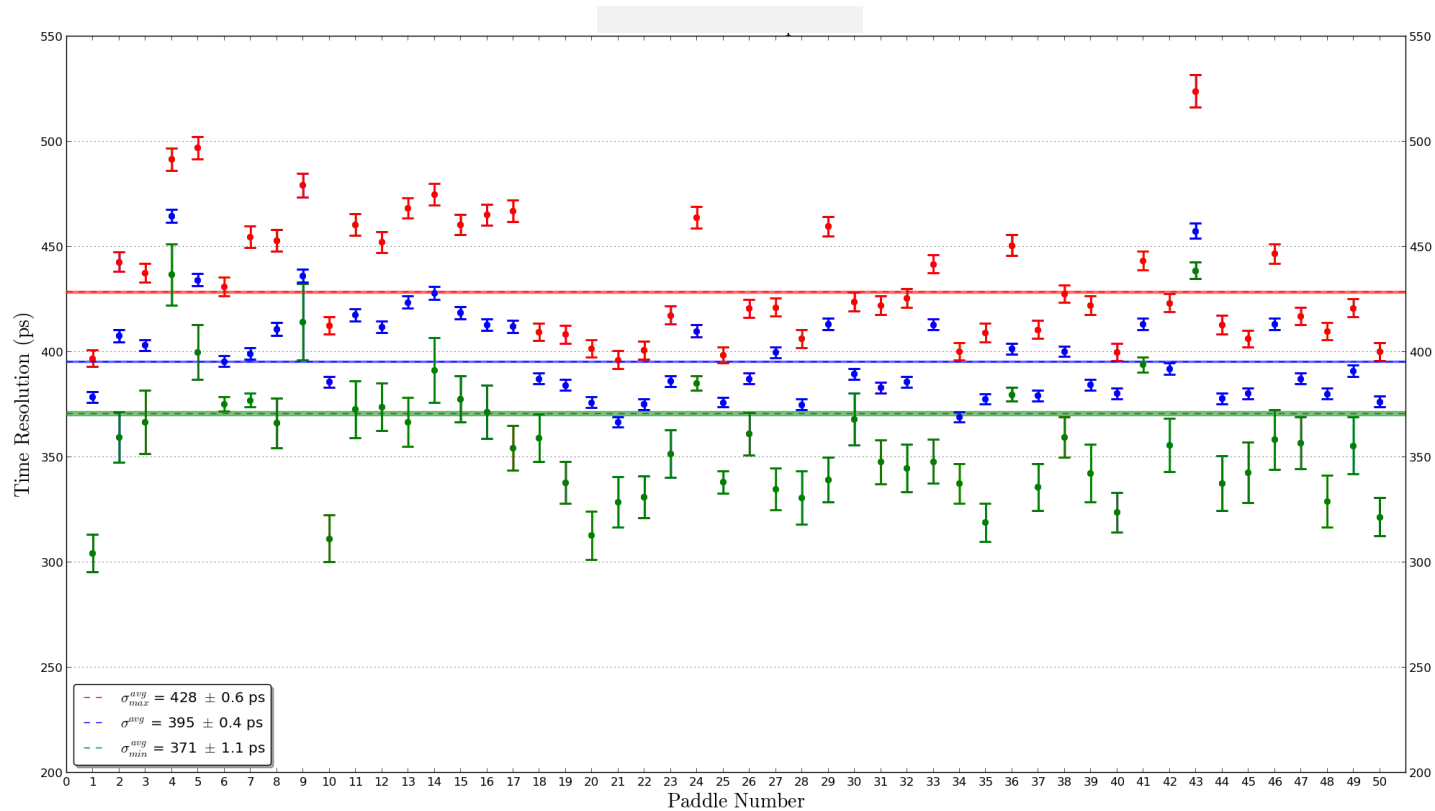
Start Counter Construction Readiness Review

08/04/2014

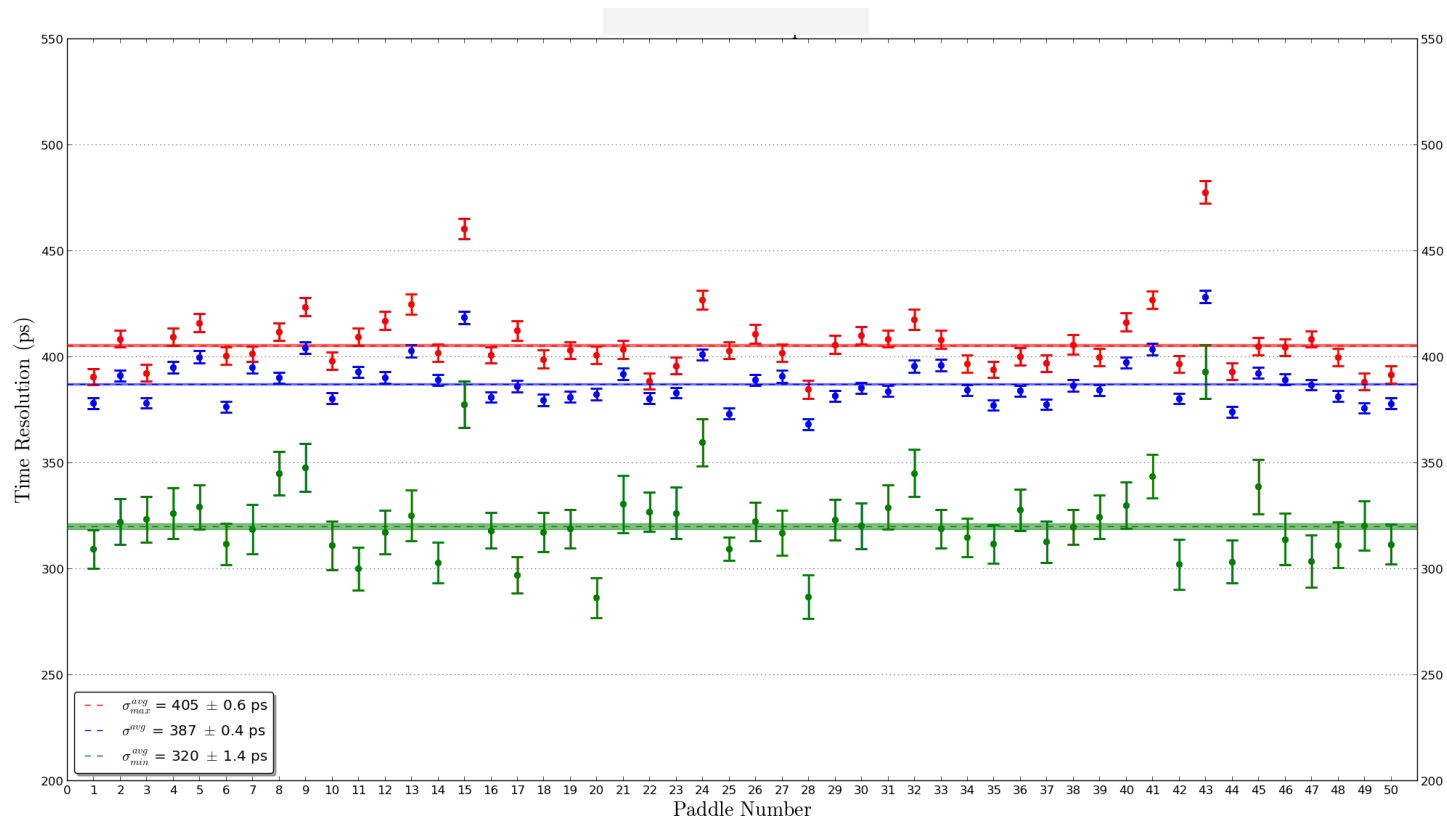
Current Status

- 50 Machined Scintillators from McNeal Enterprises have been fully inspected (see the Inspection SOP) and documented
 - These scintillators are securely stored in dark cabinets (see the Storage SOP)
- All 50 machined scintillators have been fully polished and cleaned (see the Polishing SOP)
 - The scintillators are now void of virtually all scratches and surface defects
 - Our polishing procedures have greatly improved the performance of the scintillators
 - We now have 30 good scintillator paddles that meet, and some cases exceed, the performance of our 5 prototype paddles
 - After 1 month of receiving the scintillators no degradation has been observed
- All components of the Assembly Jig have been assembled and are fully functional
 - The assembly jig is ready for the construction process (see the Construction SOP)
- Initial tests to classify the scintillator performance are complete
 - Data were taken at one point in the **straight section**, one point in the middle of the **bend section**, and one point at the **tip of the nose section**

Initial Scintillator Performance



Polished Scintillator Performance



Plans for the Immediate Future

- The last set of polishing tests with 0.05 micron alumina suspension are set to take place later today
 - If no substantial improvement is found, the scintillators will not be polished further
 - If the tests show further improvement of scintillator performance, we will only polish the best 30 scintillators we have to date
 - This will take approximately 4 days
- Cosmic Measurements are still needed in order to verify the recently modified gain implemented on the ST2V3 PCBs are sufficient for our purposes
 - If the gains are correct then Nick will modify the other 9 ST2s and ship them to FIU
 - The cosmic tests will be complete by the end of the week

Future Plans

- Once the best 30 paddles have been determined they will be immediately wrapped (see the Wrapping SOP) and fully tested utilizing our testing procedures (see the Testing Scintillator Paddles SOP)
 - Wrapping will take 3 days
 - Testing will take 10 days
 - Construction will run in parallel with testing
- The 20 paddles that did not make the cut will also be wrapped
- The worst 30 paddles will be utilized so as to perform a test assembly
 - Without the SiPMs mounted to the aluminum hub, we will attempt to assemble 30 paddles onto the support structure

Future Plans Continued

- When the test assembly is complete the Rohacell support will be painted black for light tightening purposes
- Once all modified ST2V3 PCBs are received from JLab, the SiPMs will be mounted to the aluminum hub (see the Construction SOP)
- Once good scintillators have been wrapped and tested the construction process will begin immediately
 - See installation demonstration