Stave QC Update

March 4, 2016

Main goal - Experiment

Reproduce the “lines” experiments to compare the new camera with the one borrowed from FLIR.

- Same physical line measured by five different pixel lines in the detector at -15, -5, 5 and 15˚C.
- In this case, (x-direction experiment) each lines is 480-pixels long. (short side)
- The lines of pixels selected from the new experiments were 7, 149, 298, 462 and 618 (out of 640).

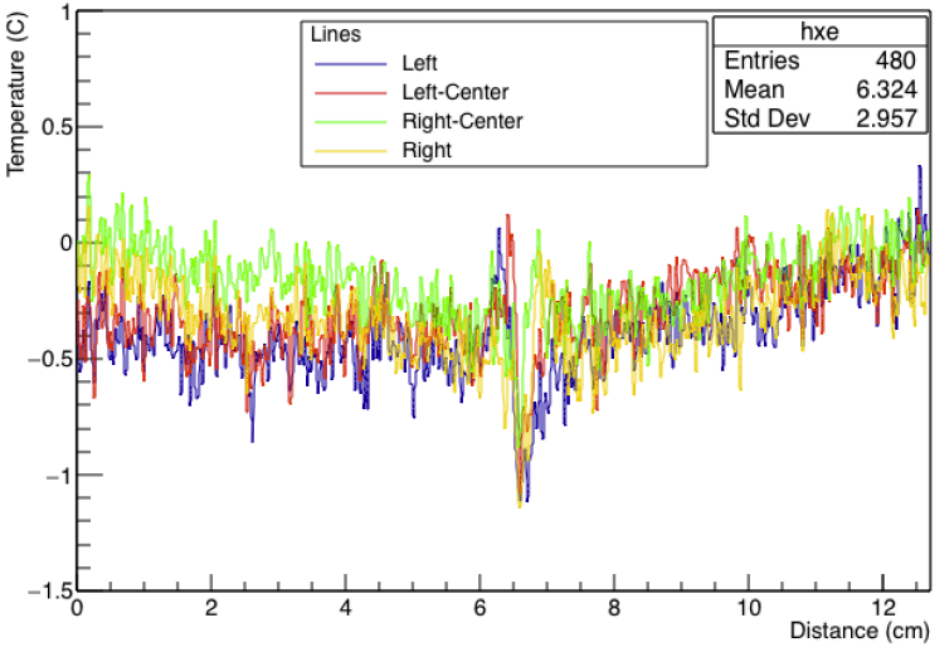
=> Further and a more completed explanation of the old experiment can be found in the notes.

Differences with the old experiment

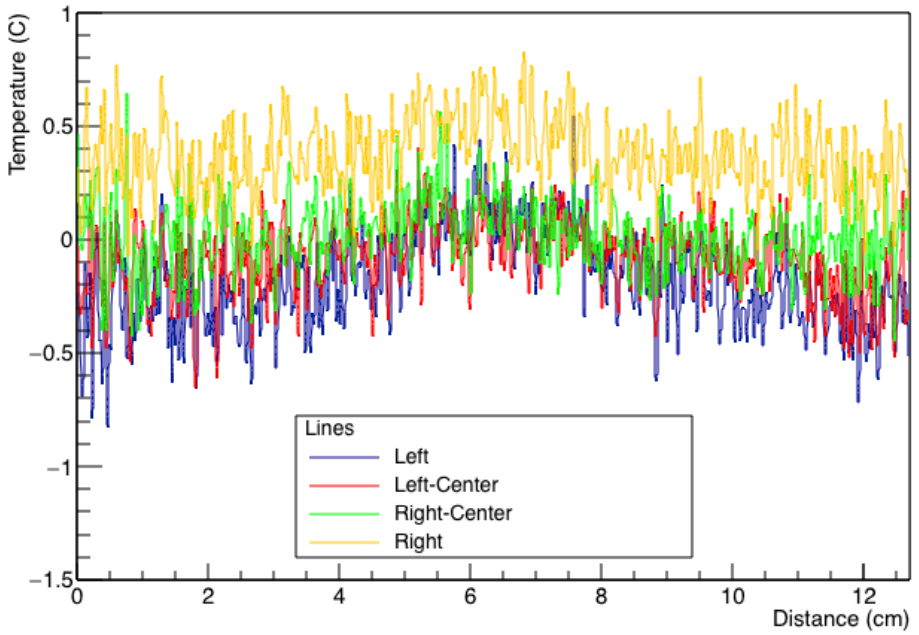
- The humidity under the box was controlled at 0.0% the whole time while a 2PSI of dry nitrogen was pumped into the box continuously.
- A slower process to cool down the plate was performed to avoid ice or frozen parts on the plate.
- No thermocouples were placed on the surface, but a steel ring was placed as reference point.

First observations
Dif with center line (-15˚C- avg single line)

Old



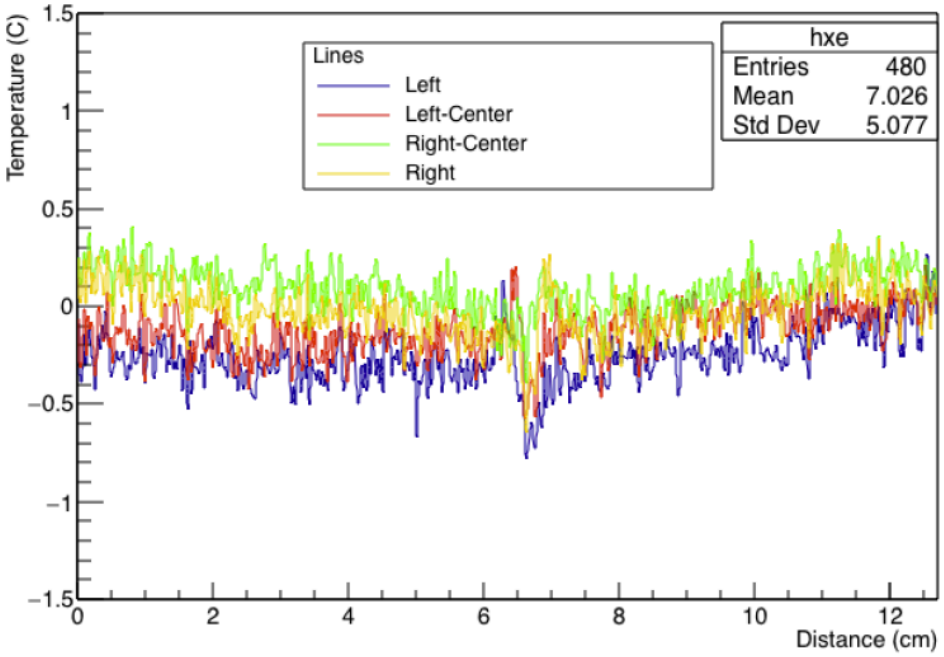
New



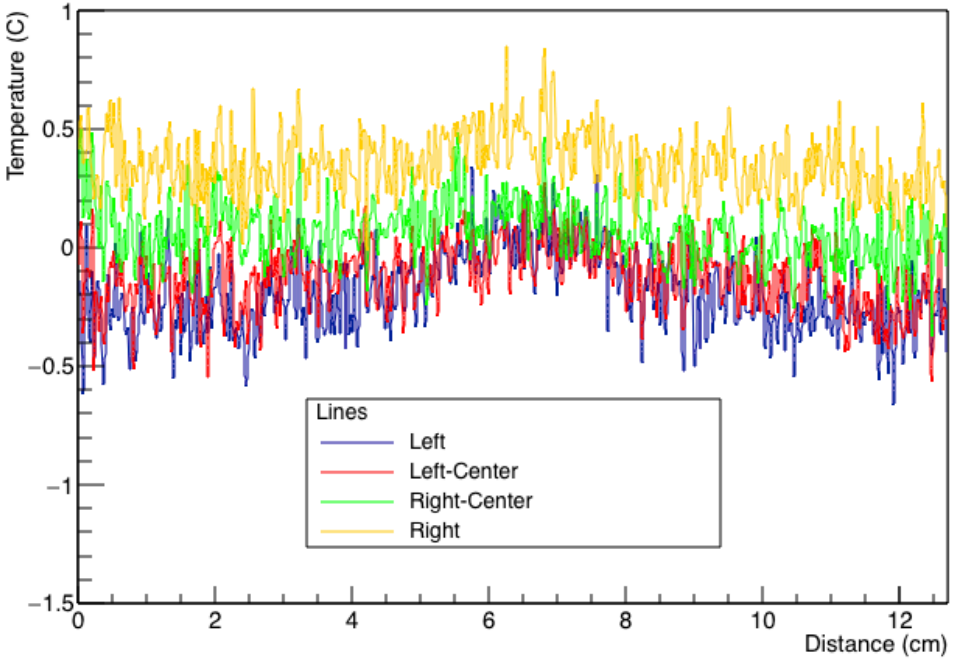
First observations

Dif with center line (-5˚C- avg single line)

Old

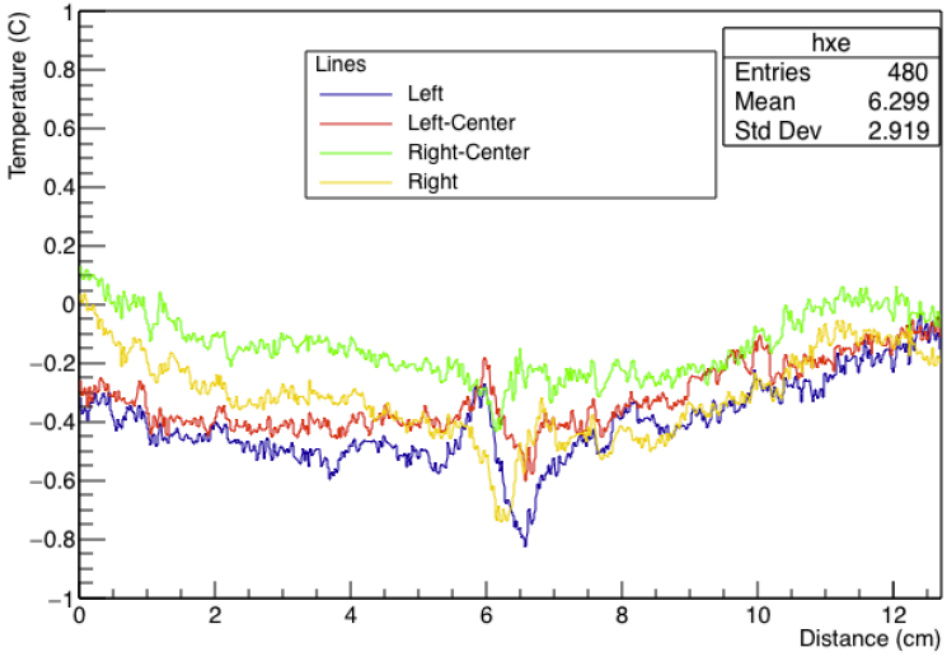


New

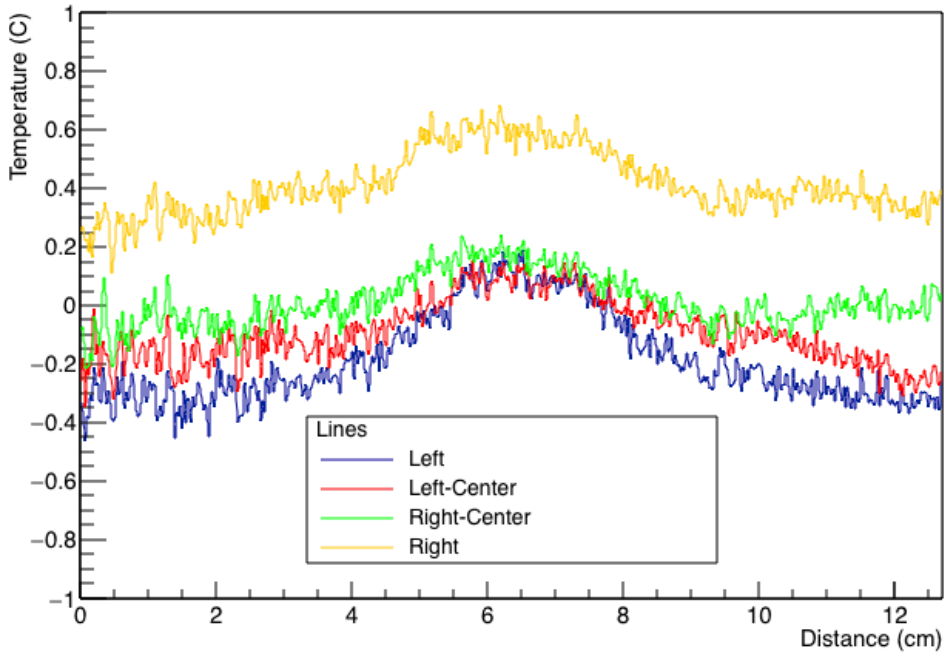


First observations
Dif with center line (-15˚C – avg lines/frames)

Old

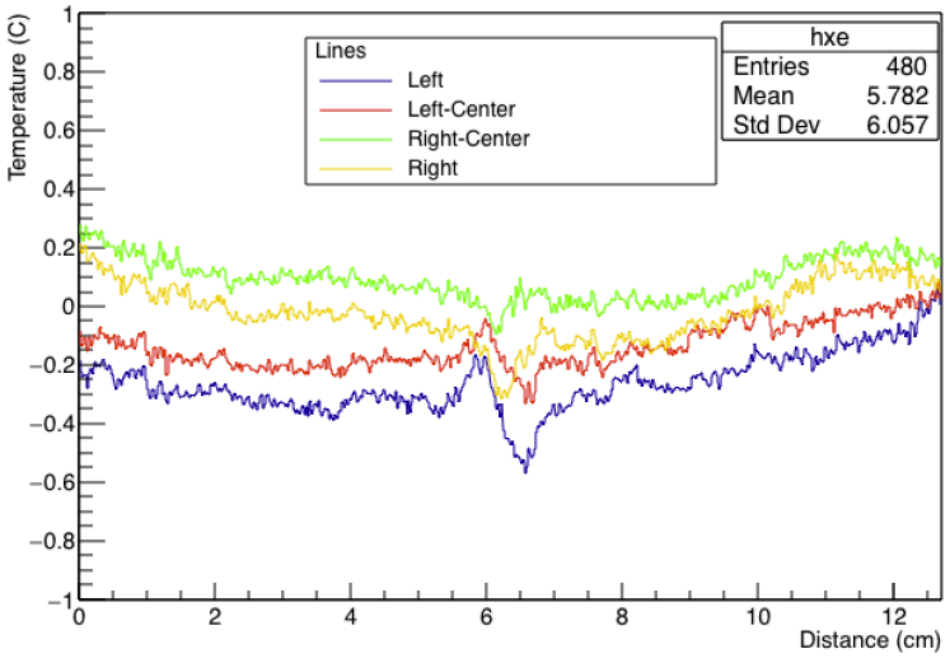


New

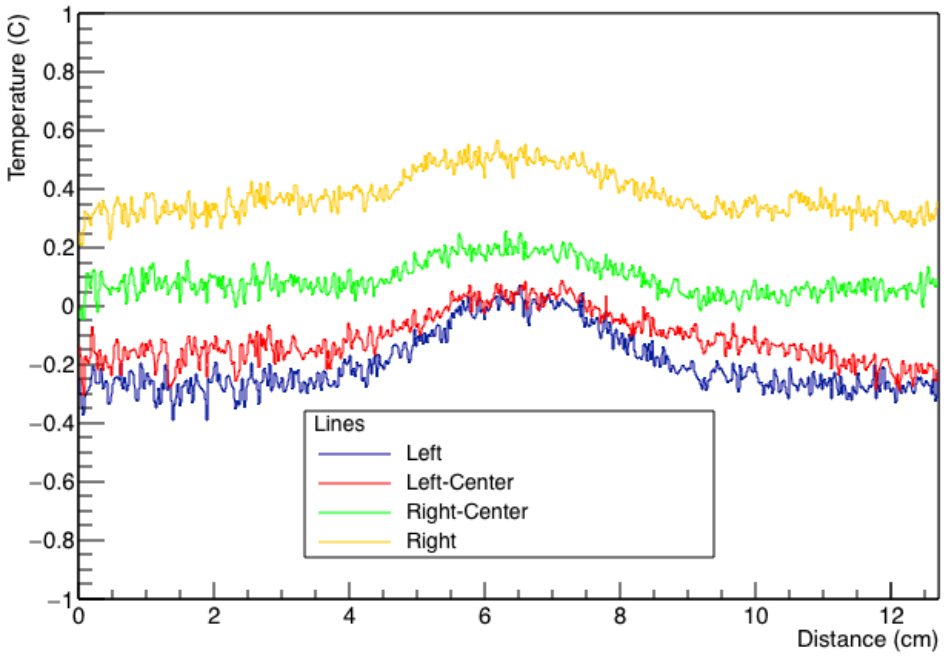


First observations
Dif with center line (-15˚C- single line/frames)

Old

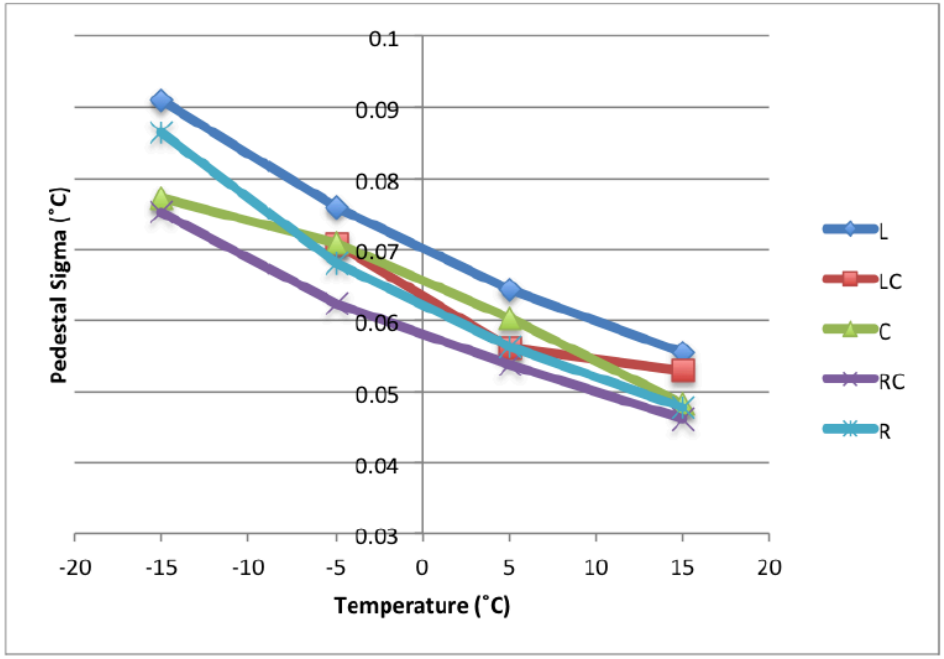


New

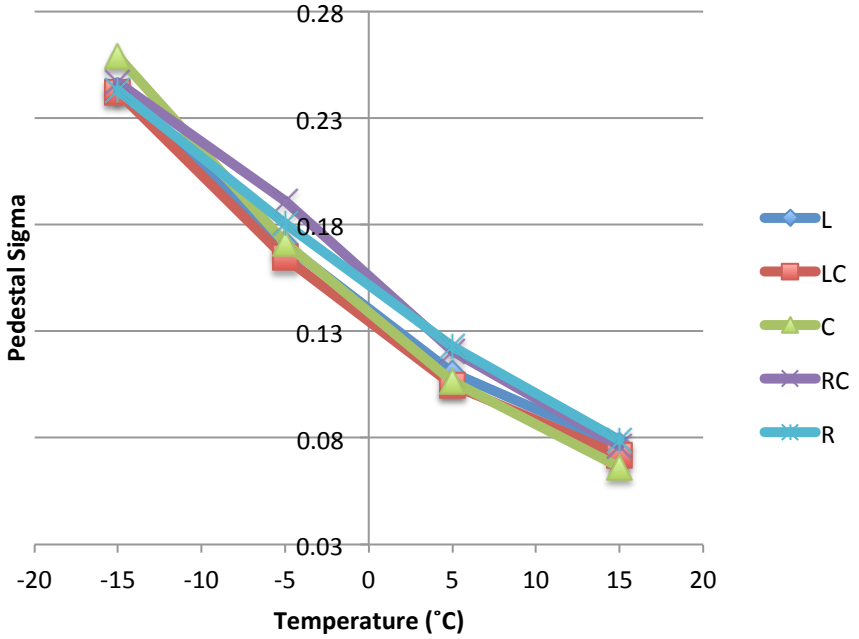


Pedestal mode (480-pixels of a single line and 61 frames)

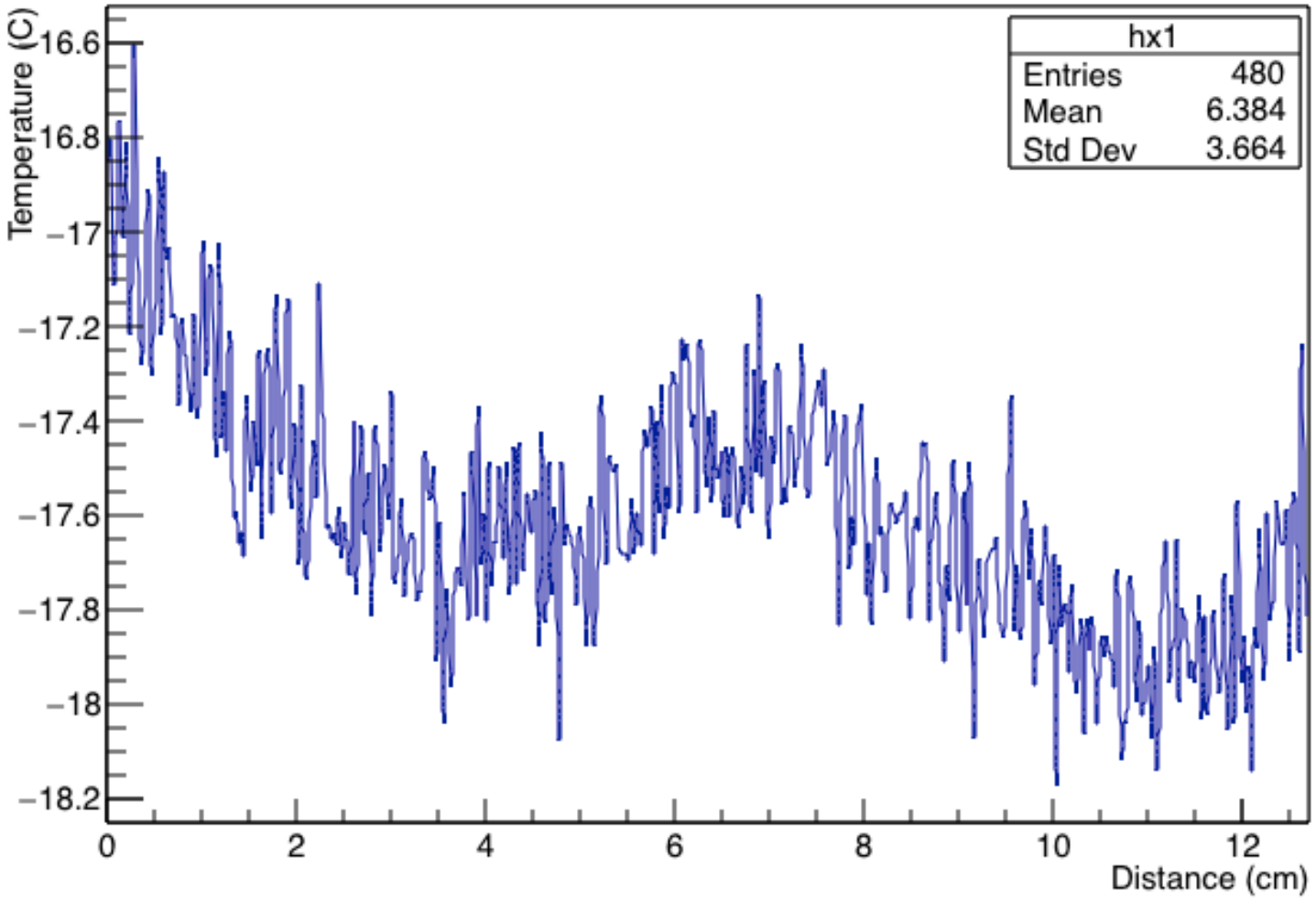
Old



New

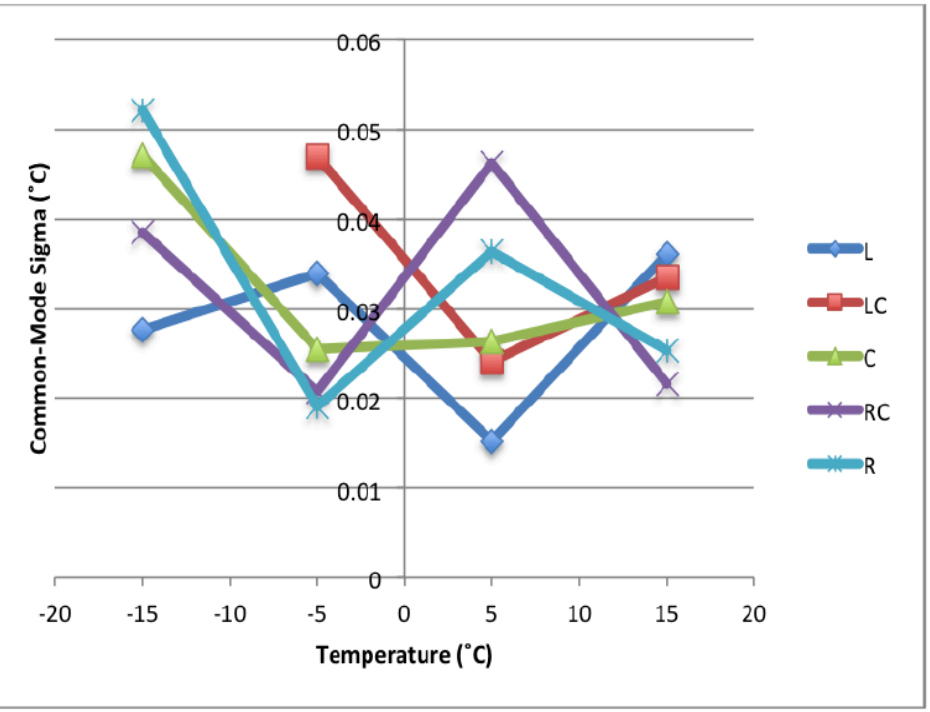


The pedestal mode (sensor) seems to be larger than before; however, line is not constant in temperature…

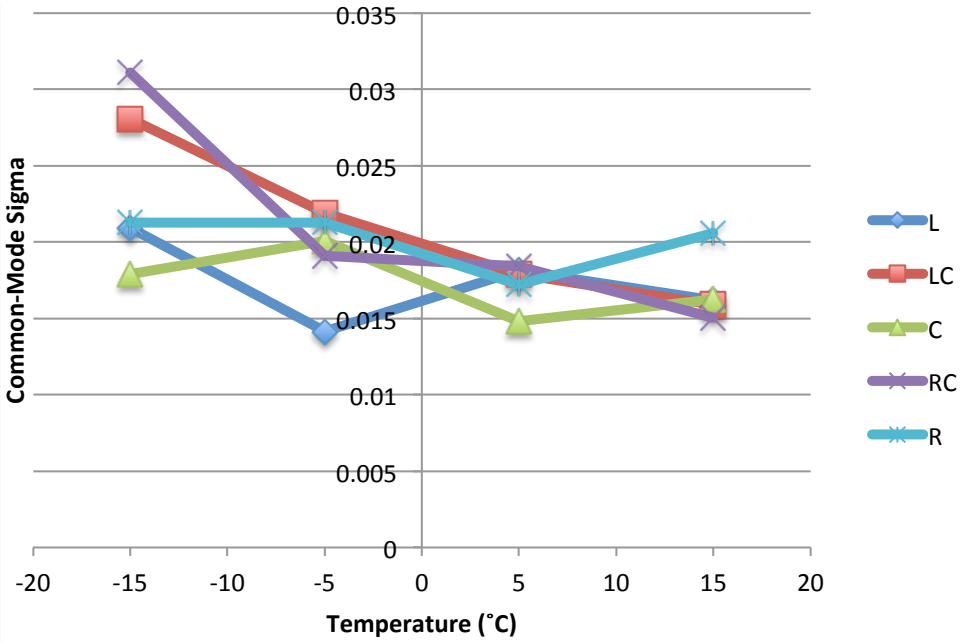


Common mode (480-pixels of a single line and 61 frames)

Old



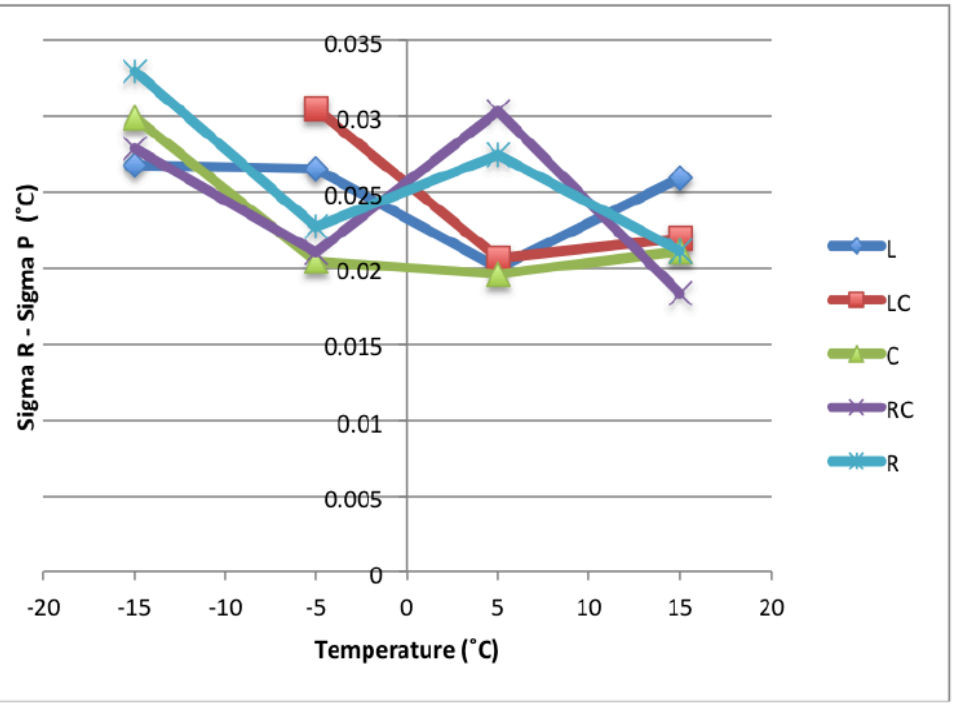
New



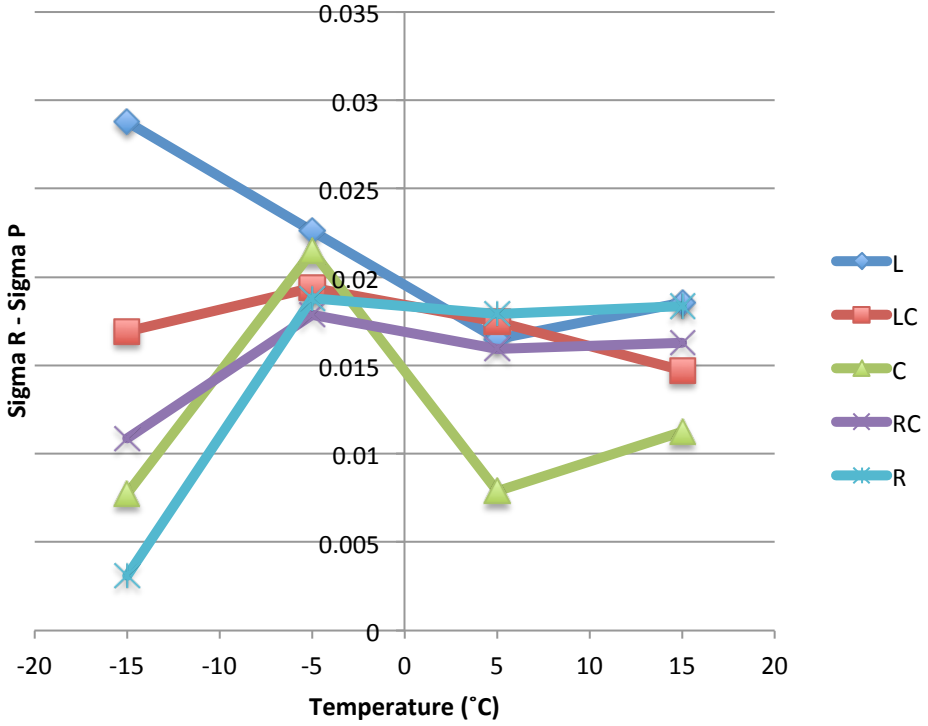
Common mode seems to be fairly consistent with the first camera we tried.

Sigma R – Sigma P (480-pixels of a single line and 61 frames)

Old



New



To Do List:

- Idea: Do a similar experiment, but with more lines in between. Maybe focusing only in temperatures below freezing.

- Determine the pedestal mode of the camera, and find if it is comparable with the one we borrow from FLIR. Finding a constant temperature “line” on the plate’s surface.