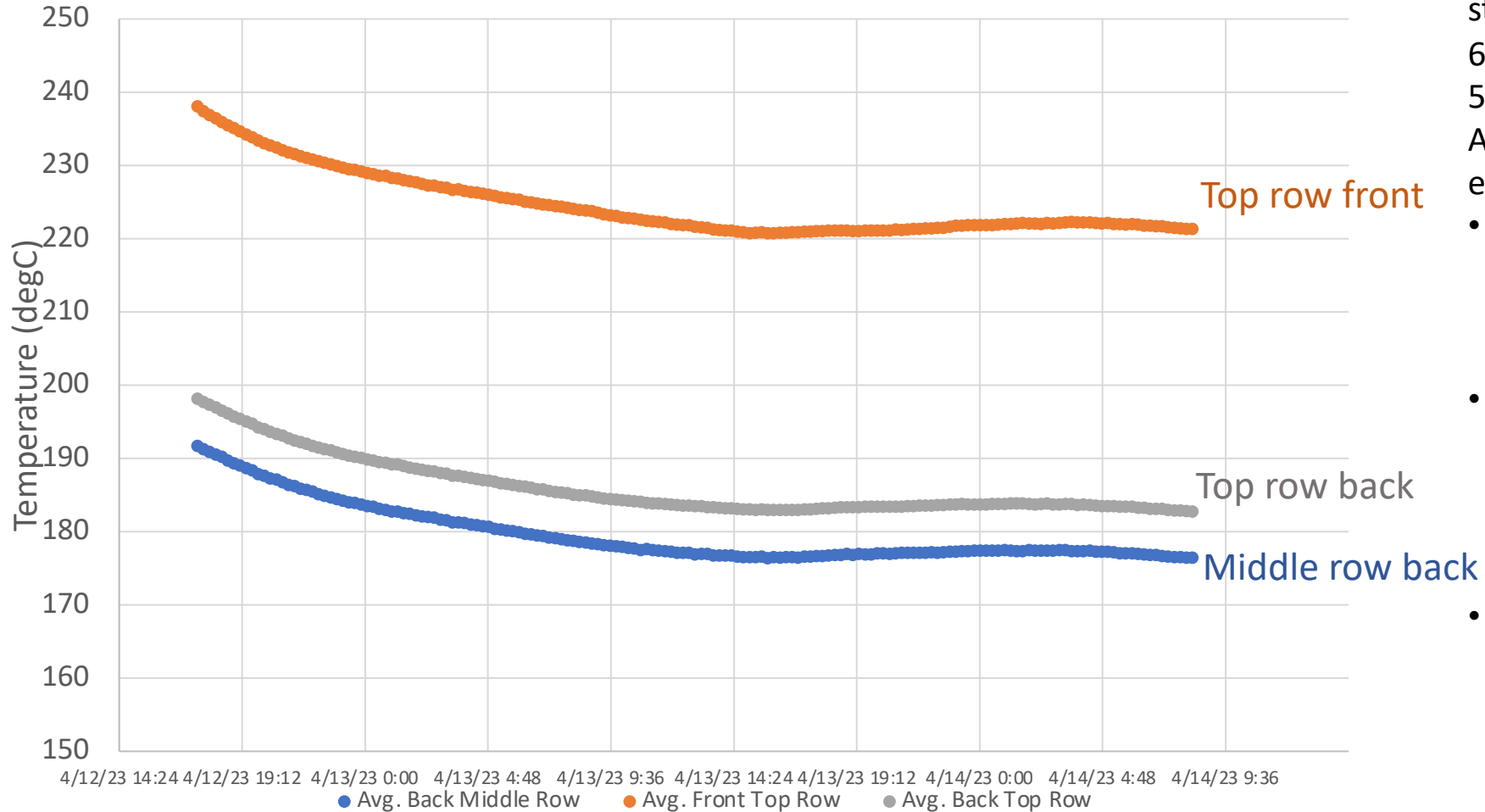


ECal Prototype Temperature vs Time @58V (58W per supermodule)

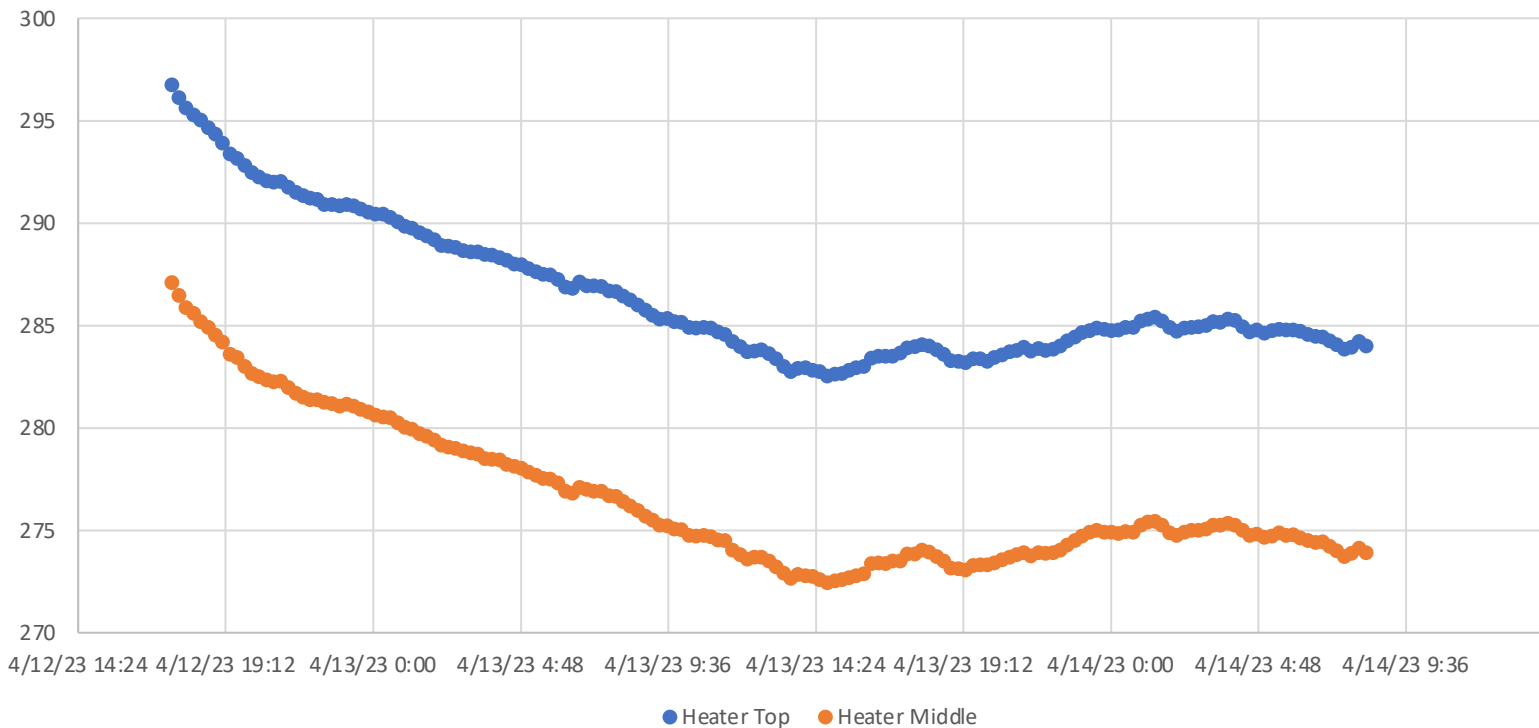


Recently completed prototype heating test. Plot shows system stabilizing (coming down from 60V) under 58VAC which provides 58W per supermodule.

All heaters (front and side) sent equal current: no zoning

- Shown is top row with front temperature ~222degC and back of crystal temperature 183 degC.
- Limited readout channels so similar comparison between front and back not available for all rows but middle row about 5-10 deg cooler.
- Plan to implement stratified zoning (5-10 supermodules per zone) for more uniform heating control. Prototypes show upper rows need less heater power.

Heater Temperature over Time @58 VAC



Heater temperature for top and middle rows shown in plot.

Heaters are clamped on aluminum plate on front of supermodules. 3/8" air gap between plate and crystals, so temperature of front plate where heater is mounted about 60 degrees hotter.

10 degree difference between top row and row underneath.