

Hydrogen Thermal

EVT2.1

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Methodology

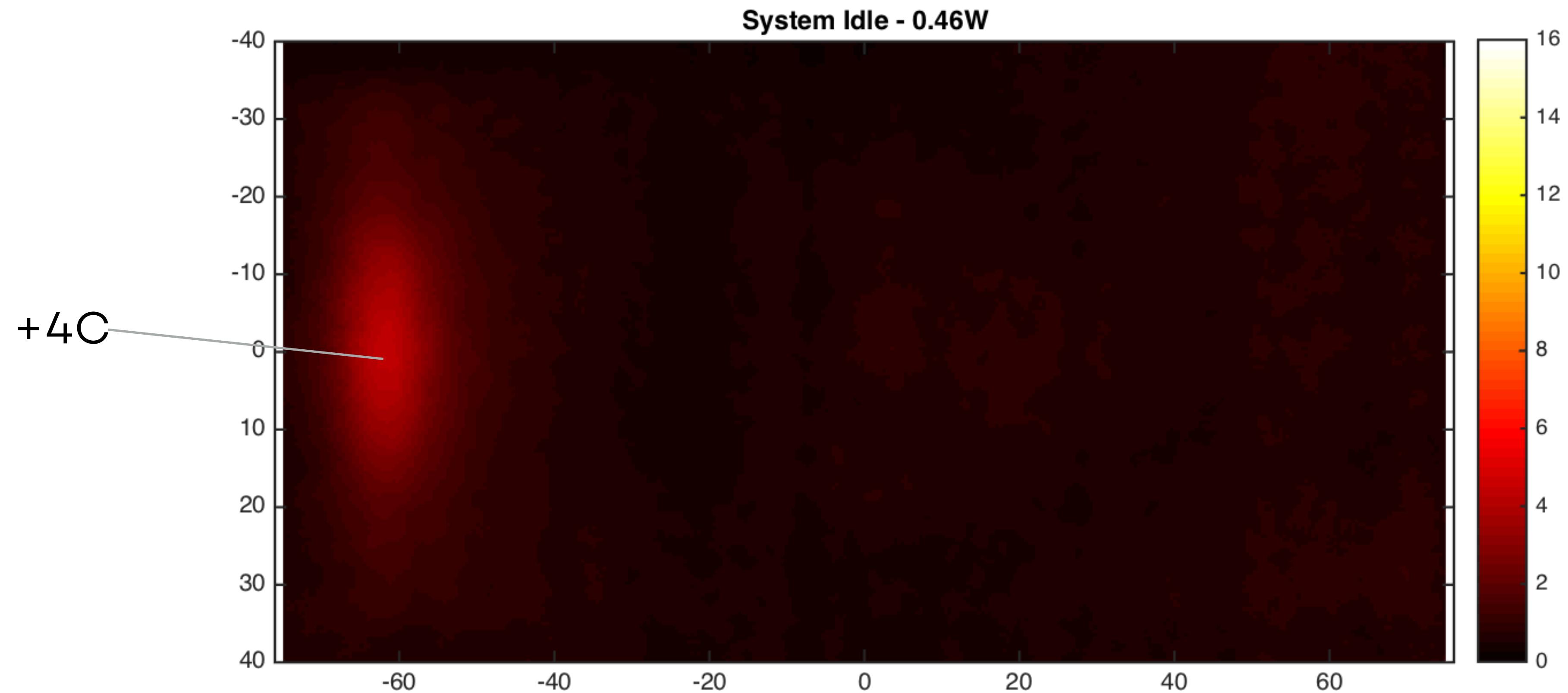
- Measure steady state (>30min) temperature delta caused by independent heat sources on the device
- Predict new configurations by making linear combinations of measured building blocks
- Focused on *front side* since always warmer than back side
- Subtract sleep mode profile to get rid of background noise (IR cam reflection, etc...)



Building Blocks

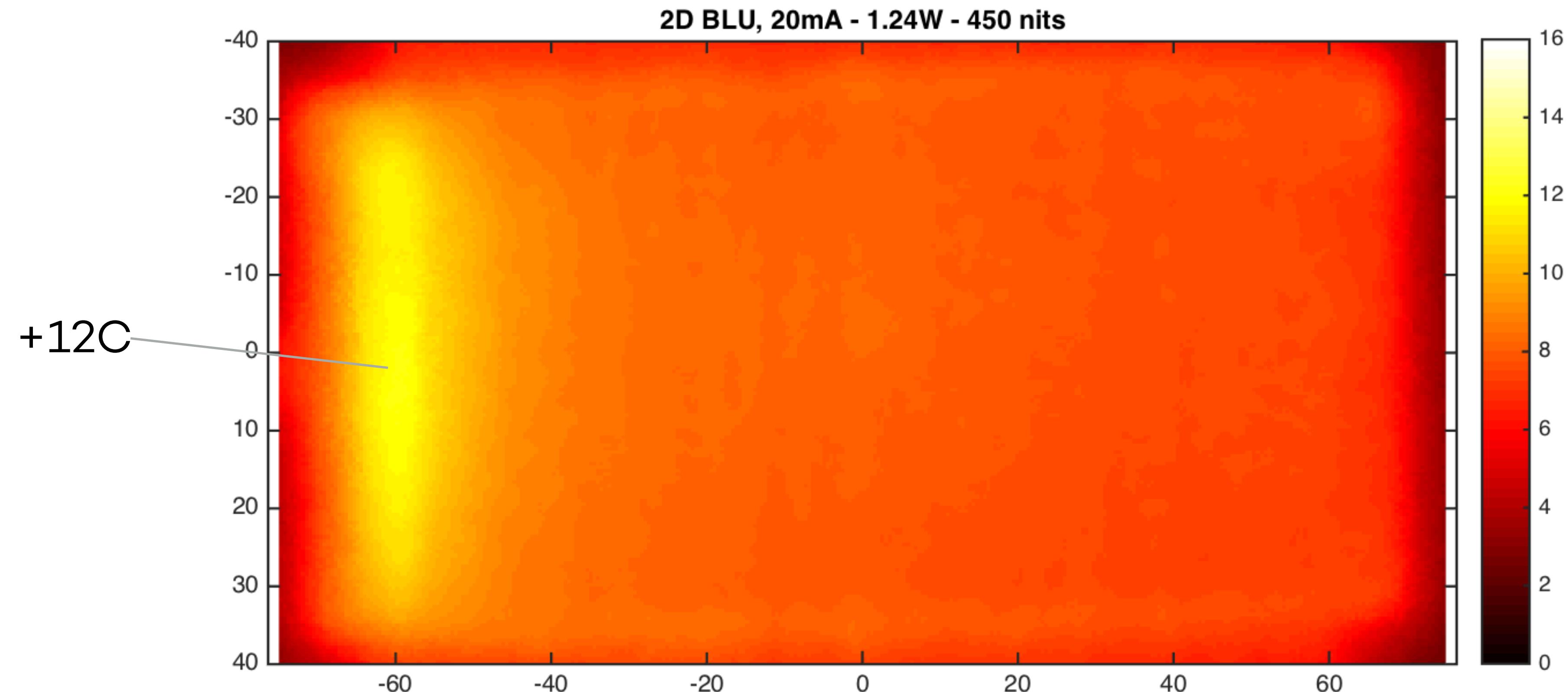
System Idle

System + LCD driver – 0.46W



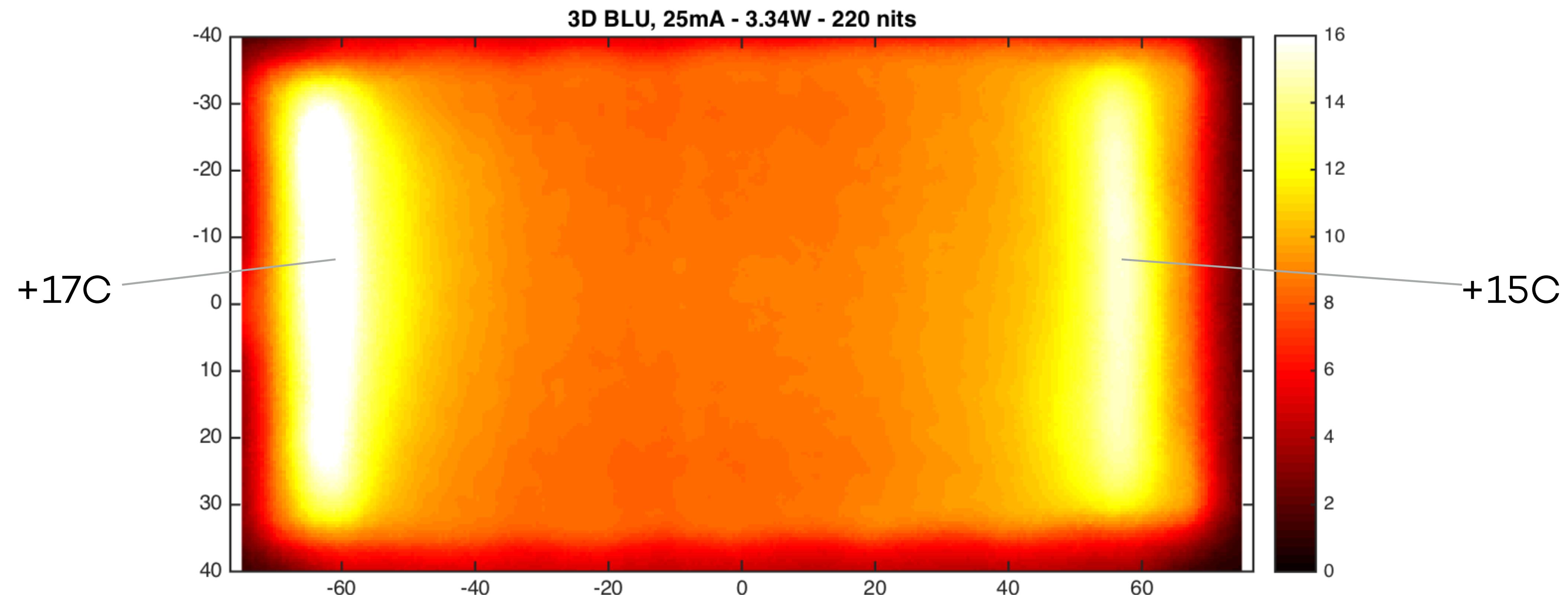
2D BLU

20mA – 450 nits – 0.46W



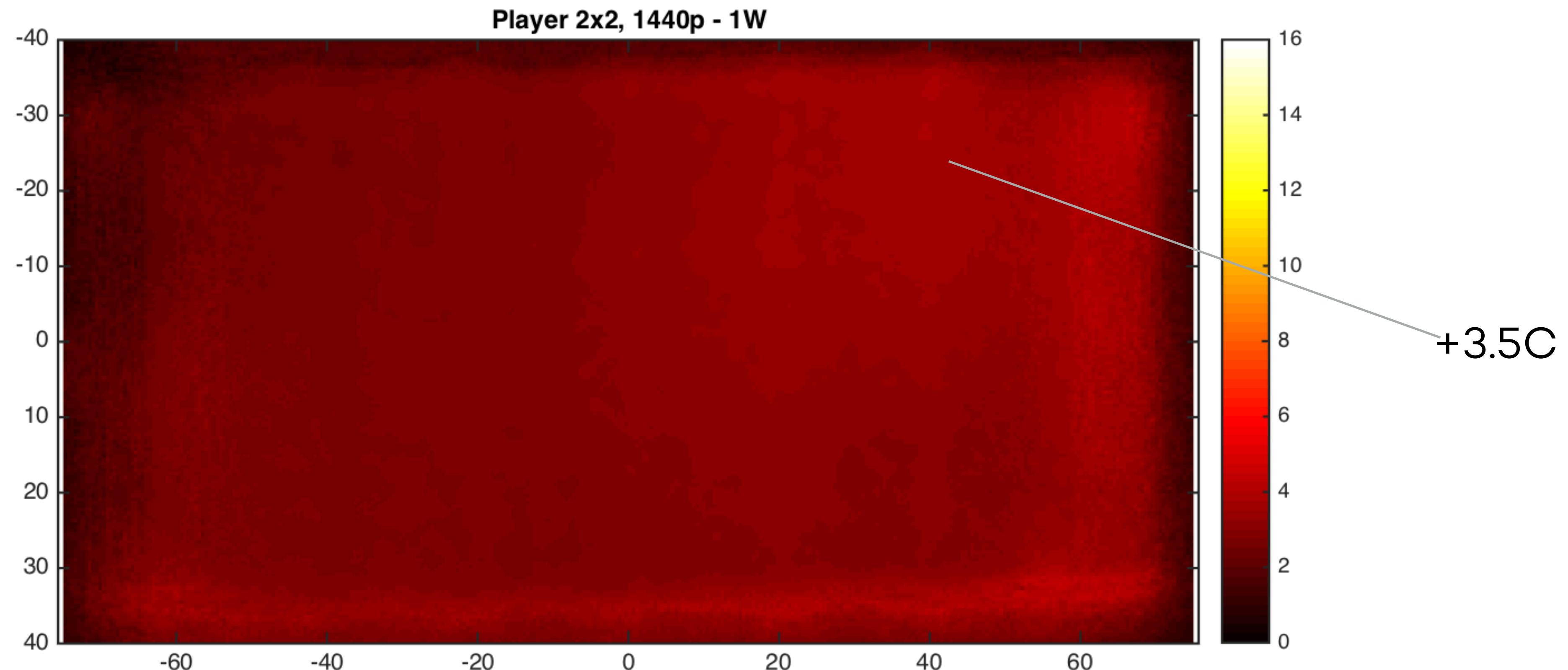
3D BLU

25mA – 220 nits – 3.34W



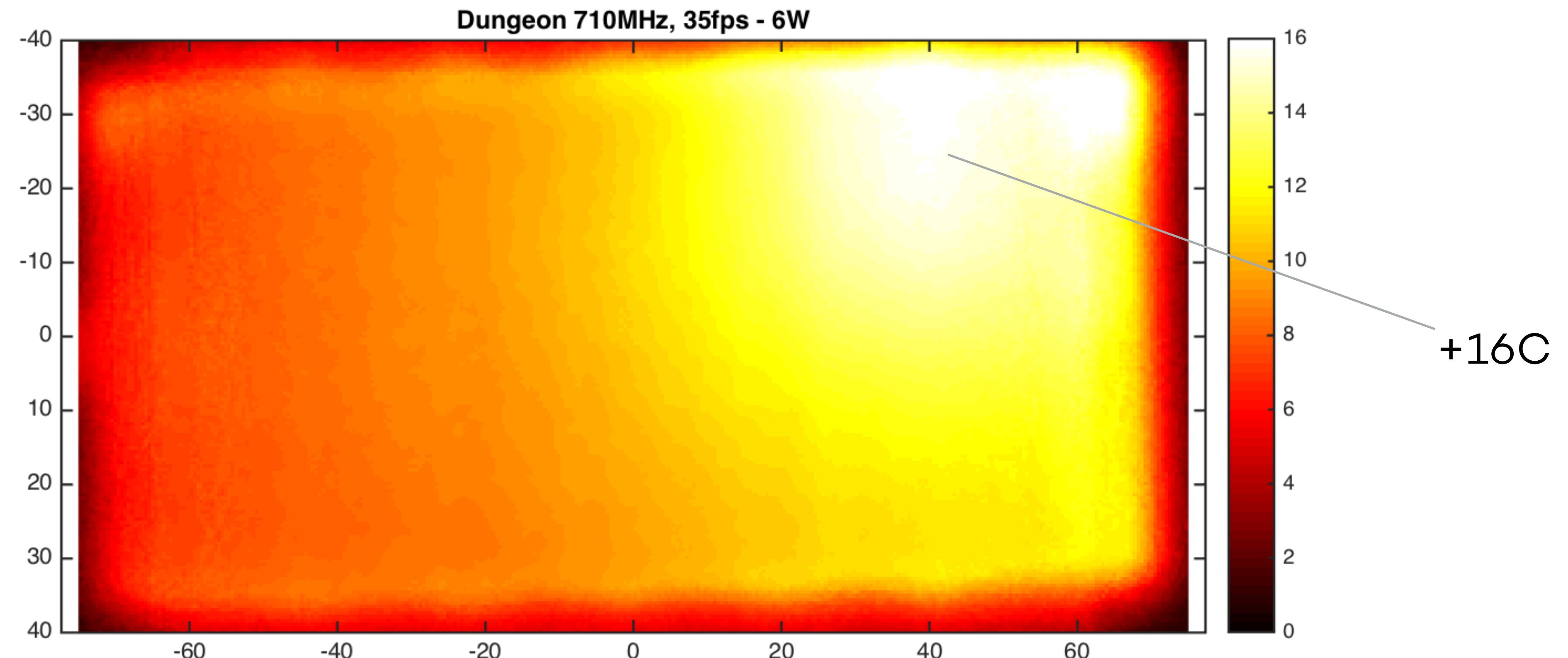
Red Player

2x2 - 1440p – 1.1W



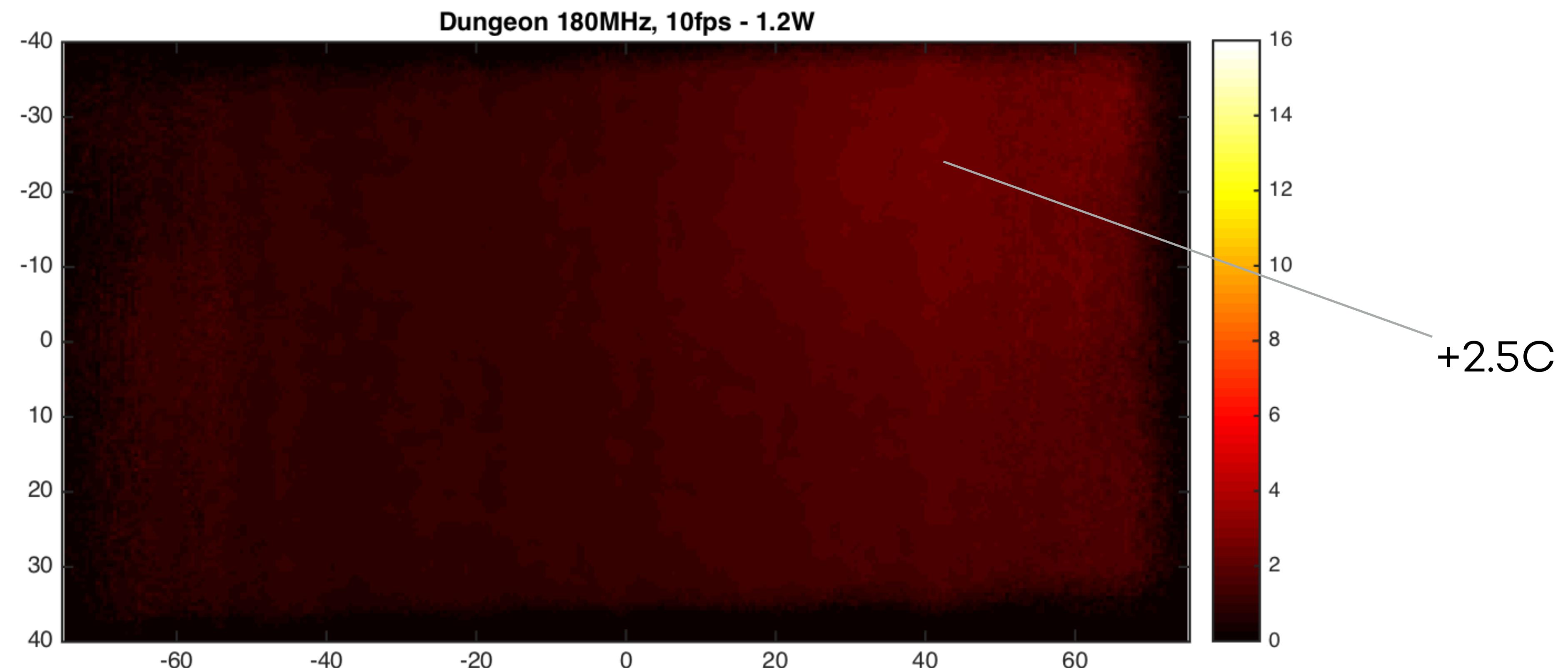
Dungeon High GPU

GPU 710MHz - 35fps— 6W



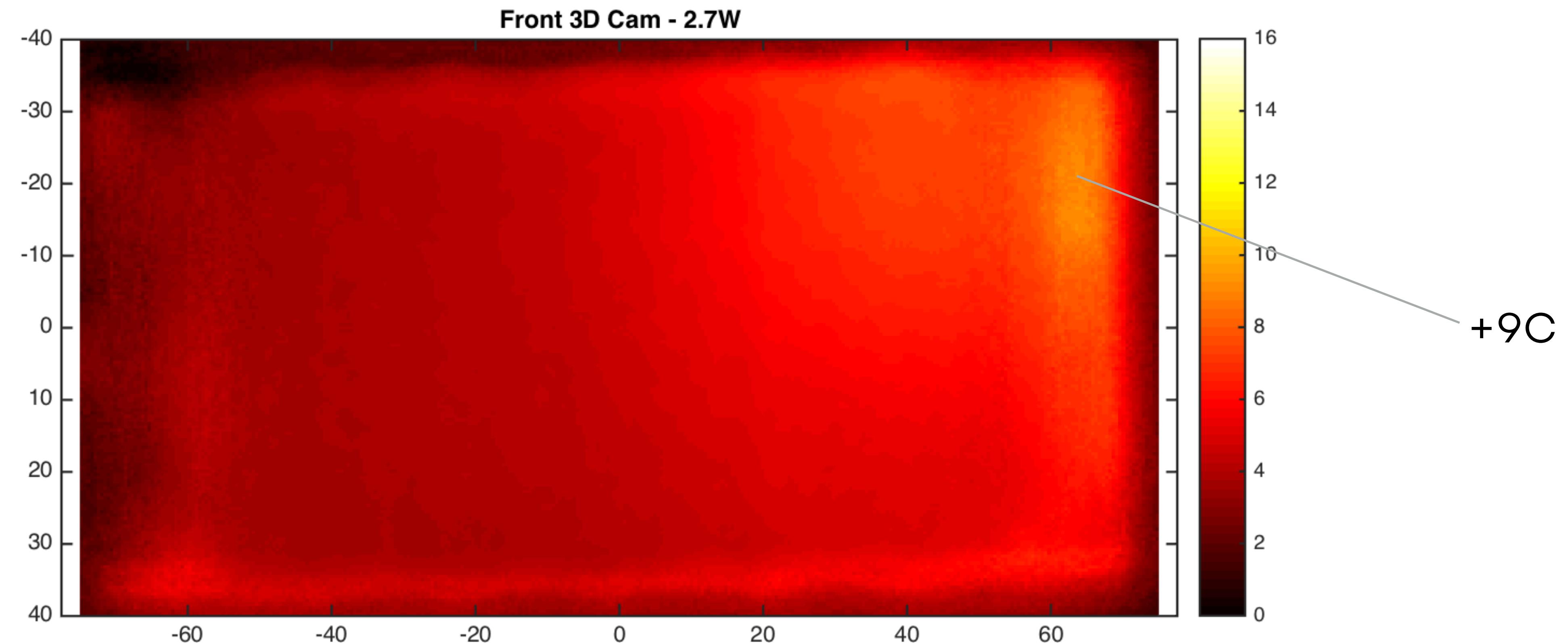
Dungeon Low GPU

GPU 180MHz - 10fps – 1.2W



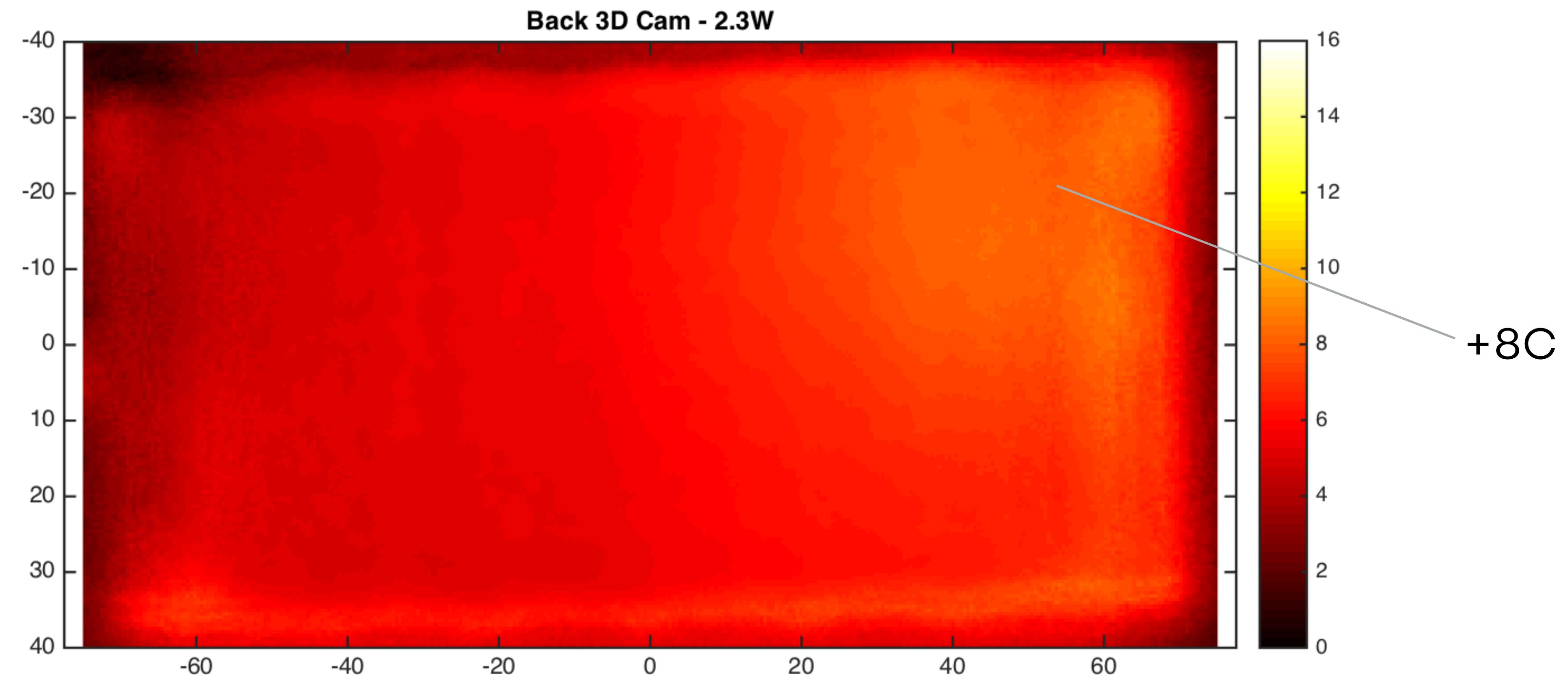
Front 3D Cam

3D Camera + preview— 2.7W



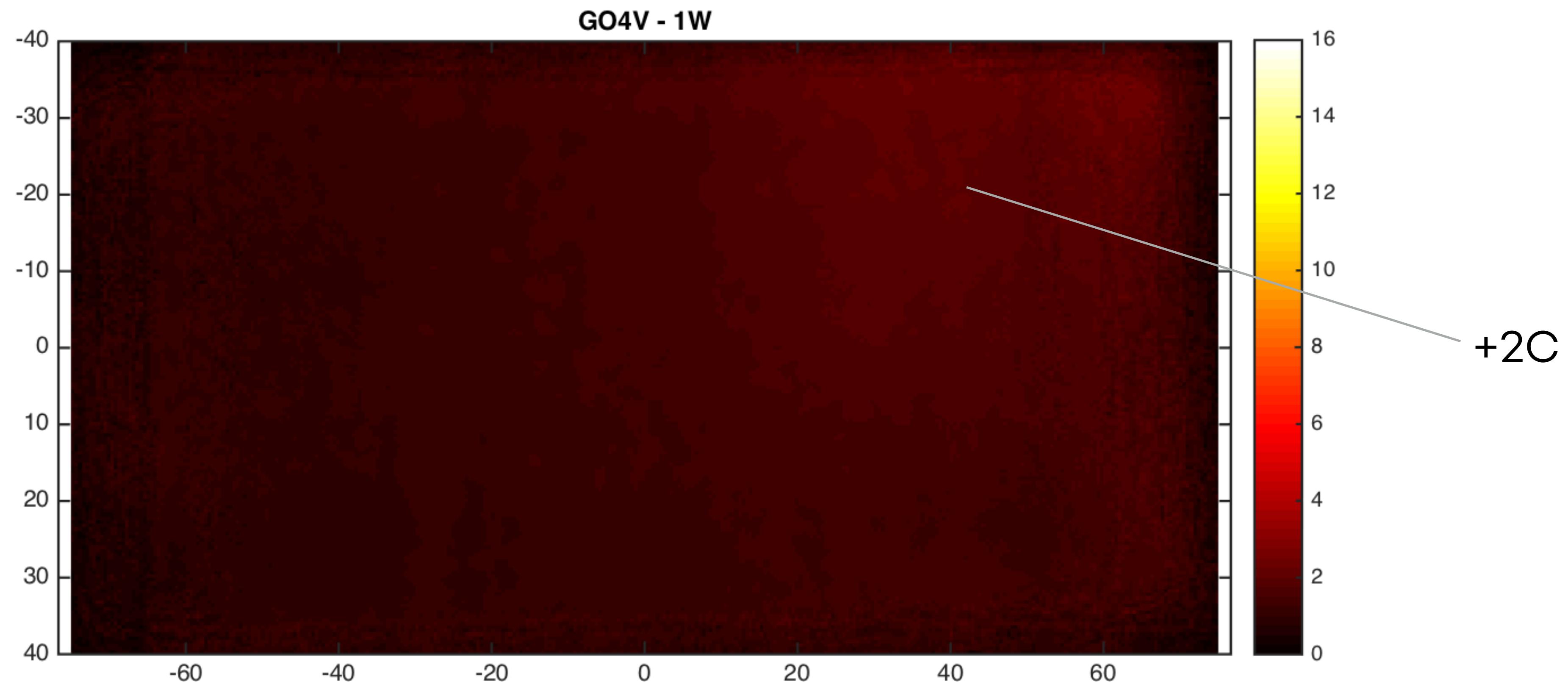
Back 3D Cam

3D Camera + preview— 2.3W



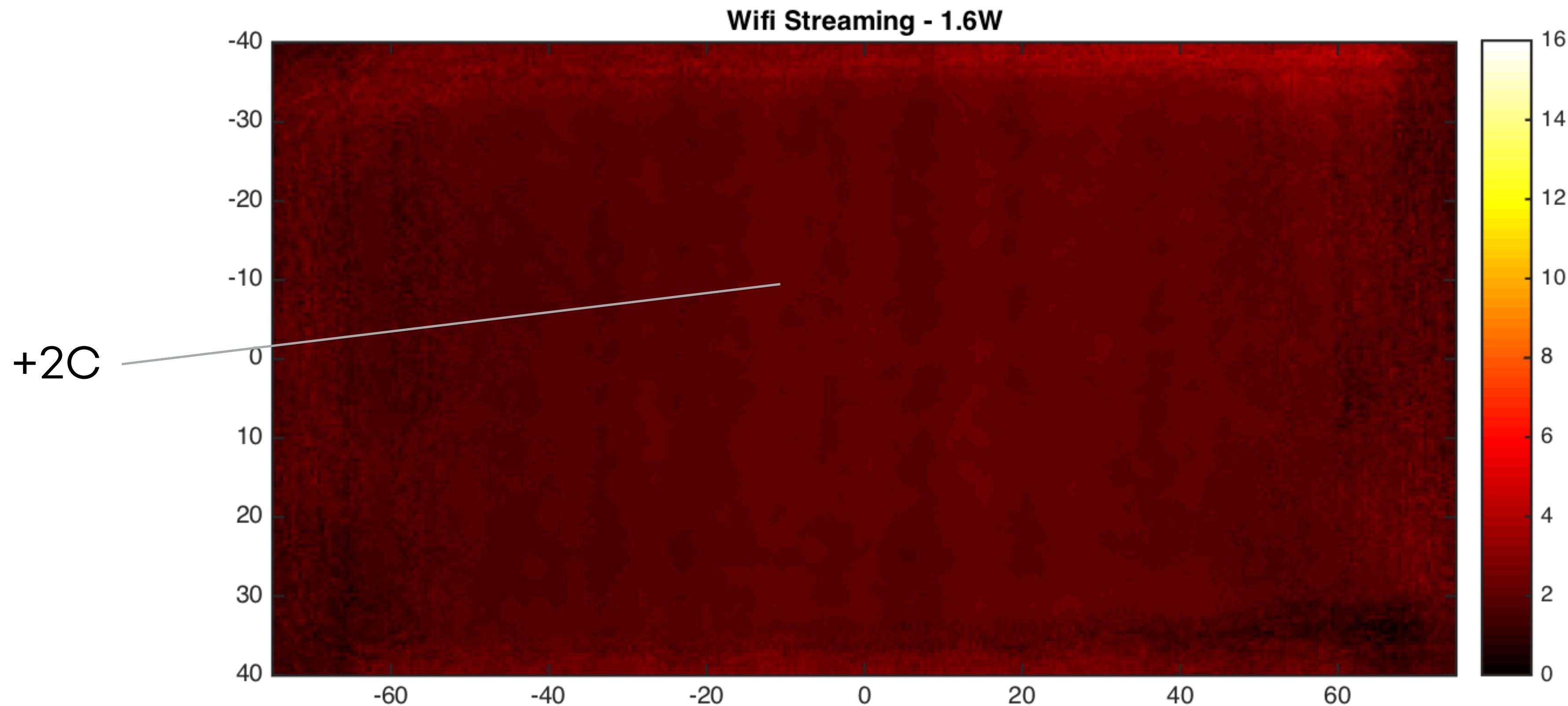
GO4V

Real-time 4V conversion – 1W



Wifi

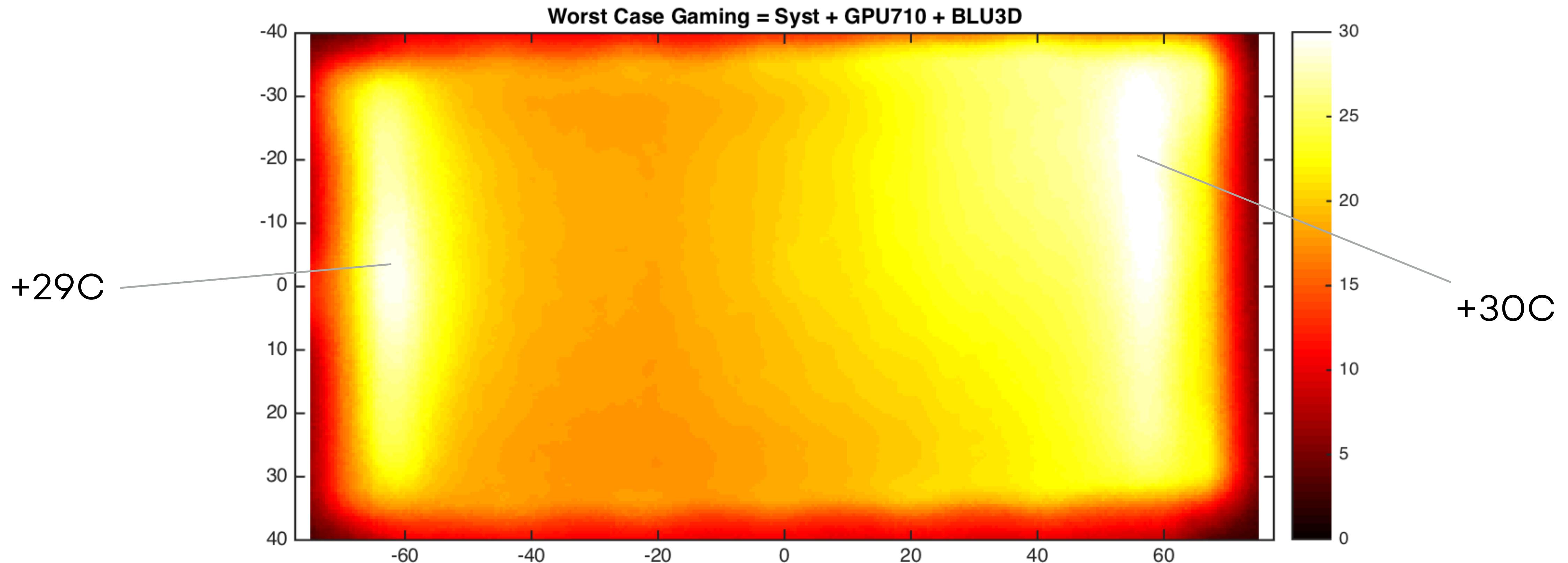
Streaming Video – 1.6W



Combinations

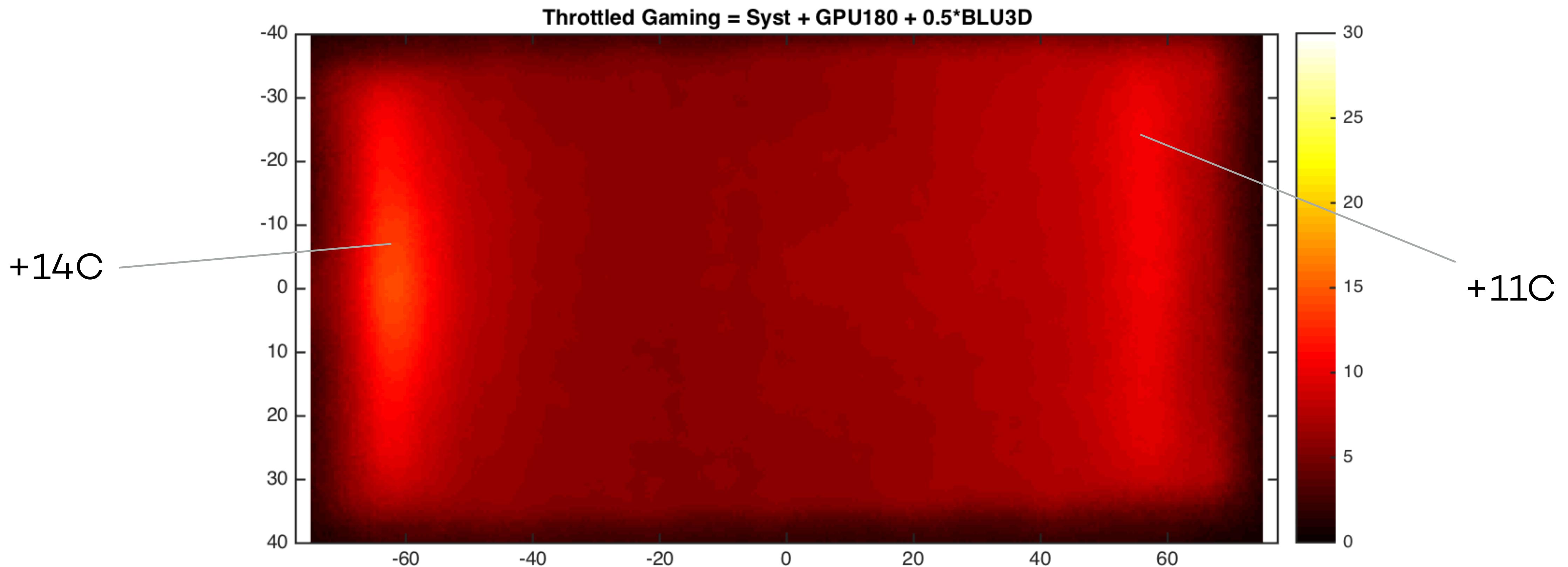
Gaming Worst Case

System + BLU3D + GPU710 – 35 fps – 220 nits



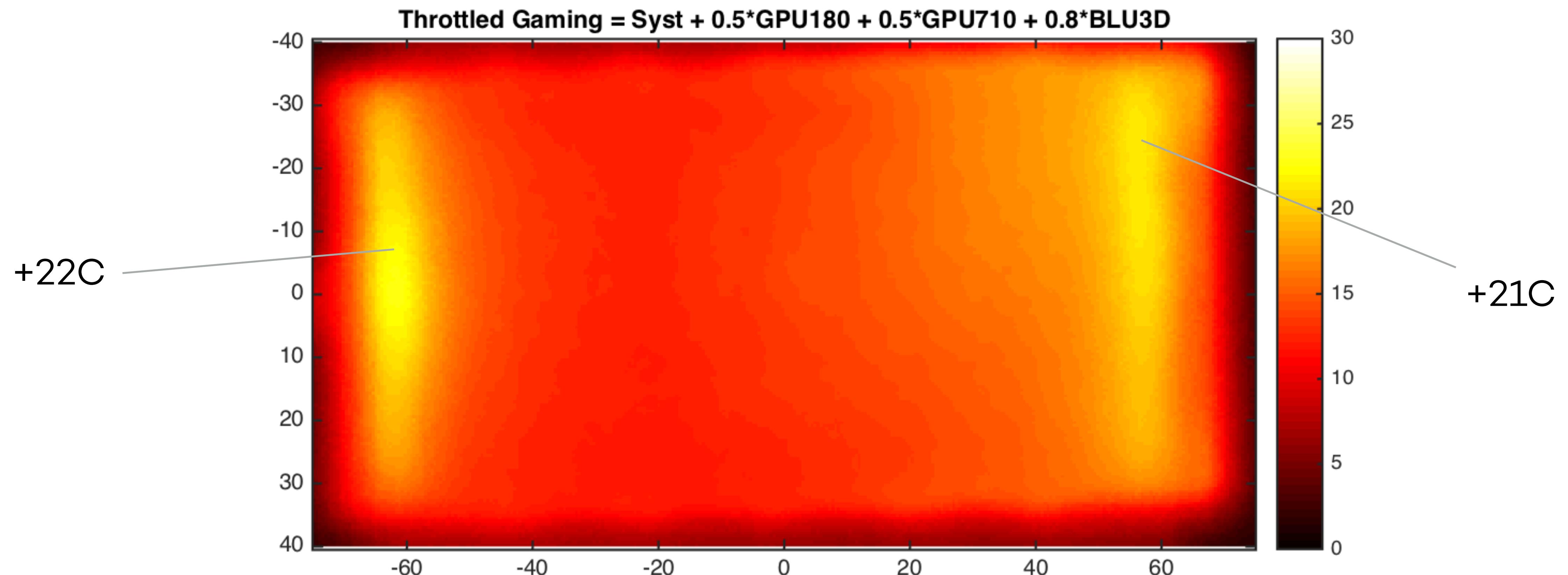
Gaming Throttled

System + 0.5*BLU3D + GPU180 – 10 fps – 110 nits



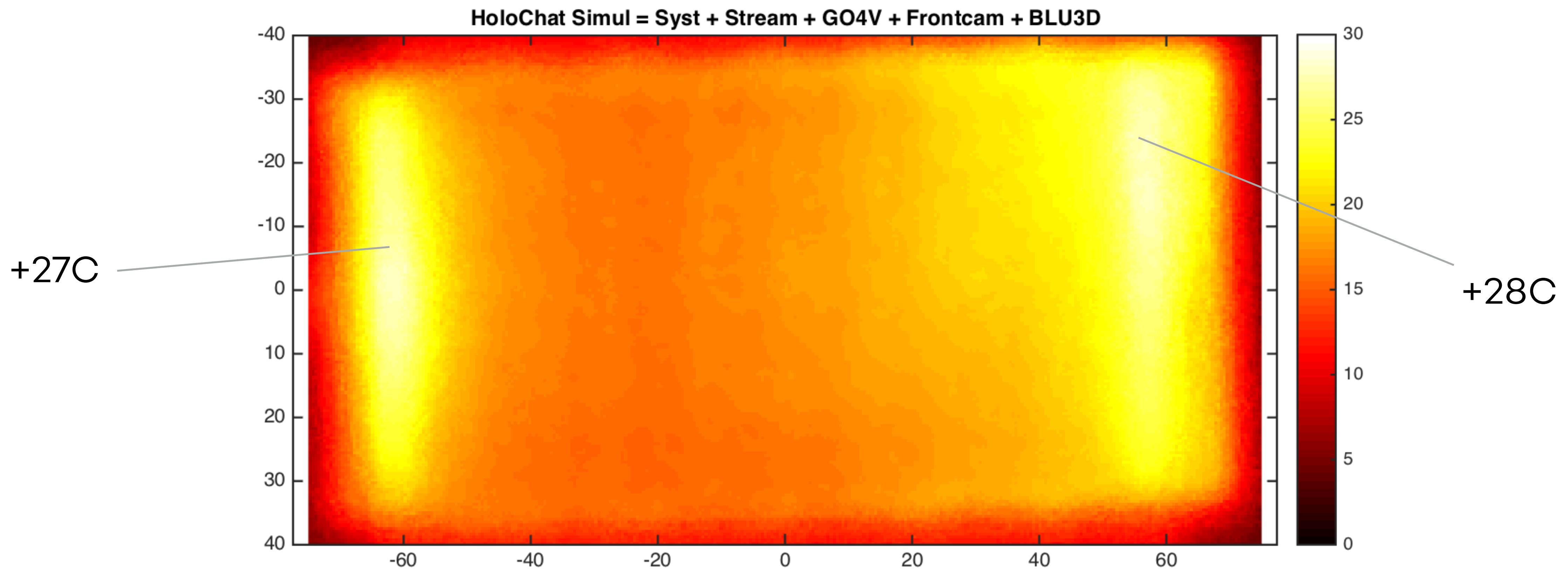
Gaming Balanced

System + 0.8*BLU3D + GPU450 – 25 fps – 175 nits



Holochat Full

System + FrontCam + GO4V + BLU3D



Holochat Throttled

System + FrontCam + 0.5*BLU3D

