



Assuming beginning of fins is on edge of hot plate.

From base location: 2 in from base = 84°C

6 in from base = 35°C

10 in from base = 33°C

Fan wind = 500 ft/min , Wind = $50 - 200 \text{ ft/min}$

Putting fan (Forced convection)

- h is changing because more convection than conduction.
- Not steady state, error of transient because outdoors.
- Film boiling, water dances because between metal and water is water vapor because the surface is so hot (inefficient, vapor is insulator)
- Assuming reached steady state.
 - Outside temp = $87^{\circ}\text{F} = 30.5556^{\circ}\text{C}$
- More layers between thermocouple insulated and eliminates errors in reading.
 - Prevents temperature drop from surroundings
 - Outside temp = $87.8^{\circ}\text{F} = 31^{\circ}\text{C}$
 - Wind = 105 ft/min

5.08 cm, 2 in = 107°C

15.24 cm, 6 in = 38.5°C

25.4 cm, 10 in = 35°C

- Aluminum reflects more than tape, seals cooler than infrared
 - absorptivity and diffusivity
 - Independent is stove heating, dependent is different fins.
- At 20 cm we can assume fin is no longer effective so can cut extra material.
- With fan
 - 2 in = 102°C
 - 6 in = 32°C
 - 10 in = 32°C
- In shade $25^{\circ}\text{C} = 77^{\circ}\text{F}$