



# Testing 50W Heater Carts (INITIAL TEST)

Status	Done
Project	Heat Fiber Bundle Mounting Block
Tags	

Goal: Glue Heater Carts into Heater cart mounting block and measure its temperature.

Two Different 50W Heaters:

- <https://www.digikey.com/en/products/detail/birk-manufacturing/DC1101/15790977>
  - 24V DC
  - 1in
  - 250 W /in<sup>2</sup>
- <https://www.grainger.com/product/TEMPCO-Swaged-Cartridge-Heater-50-4NHY8?opr=ILOF>
  - 120V AC
  - 1.25in
  - 180 W/in<sup>2</sup>

Two Different Glues:

- Loctite242
  - 250C for disassembly
- Hot Glue Gun:
  - Tuf-Tac

Procedure:

1. Put glue at entrance of heater cart hole.
2. Insert Heater cart
3. Put glue at entrance of thermocouple hole.
4. Insert Thermocouple
5. add glue to other side of thermocouple hole

Procedure outcome:

insert pic

Setup:

insert pic

Air Temp = 24C

Initial Block Temp = 25C

Max Temperature @ 4V 0.31A

at 76C glue got loose, going to add more glue.

Glue also cools down too fast, Prewarmed the heater cart so glue doesn't solidify quickly. (blipped it to 24V and then off)

Hot glue gets loose around 75C

Used Loctite 242 instead. Holds good. Can use the heater cart's heat to decrease cure time,

Air Temp = 24C

Initial Block Temp = 25C

Max Temperature @ 4V 0.31A = 96C

Temperature @ 8V 0.63A = 160C+ I stopped since loctite max temp is 150C and I didn't want smoke

**Conclusion: Actual 50W heaters get heater cart hotter than simulations. DONT  
USE LOCTITE 242 OR HOT GLUE**