



June 11, 2026, ORNL

# DC/DC tests with the bPOL48 module

PRESENTED BY

Norbert Novitzky

ORNL



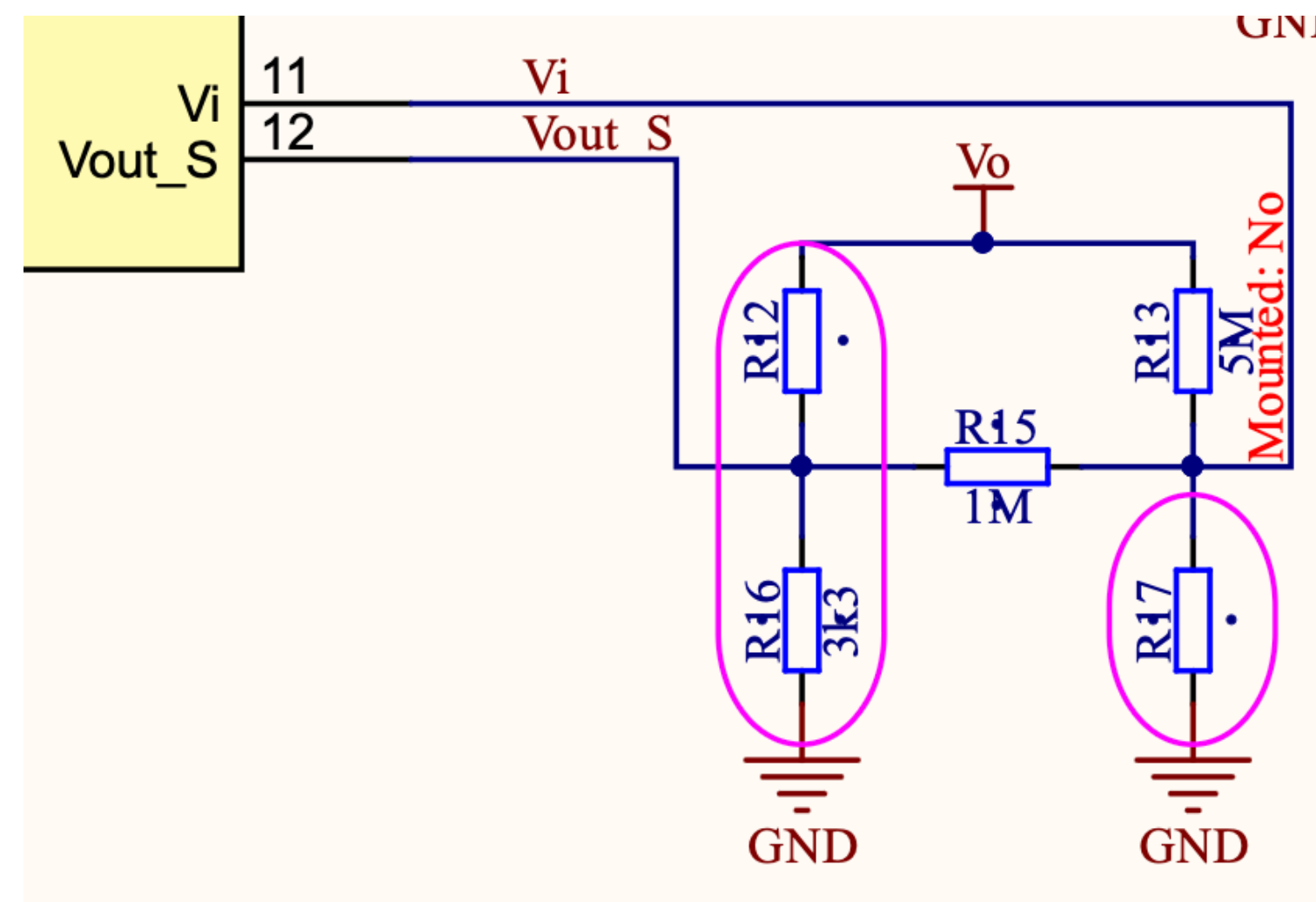
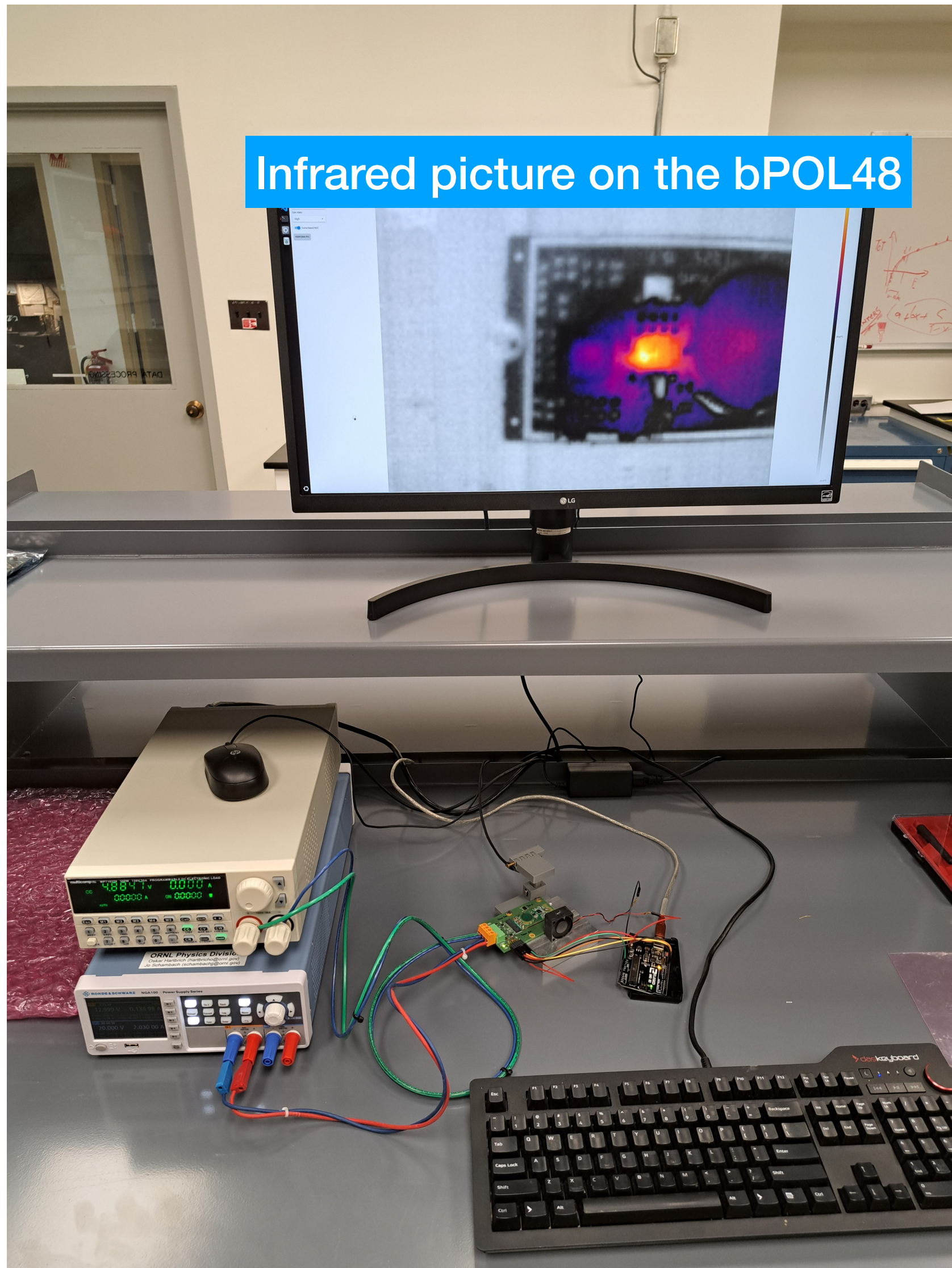
U.S. DEPARTMENT  
of ENERGY

ORNL IS MANAGED BY UT-BATTELLE LLC  
FOR THE US DEPARTMENT OF ENERGY



# Setup

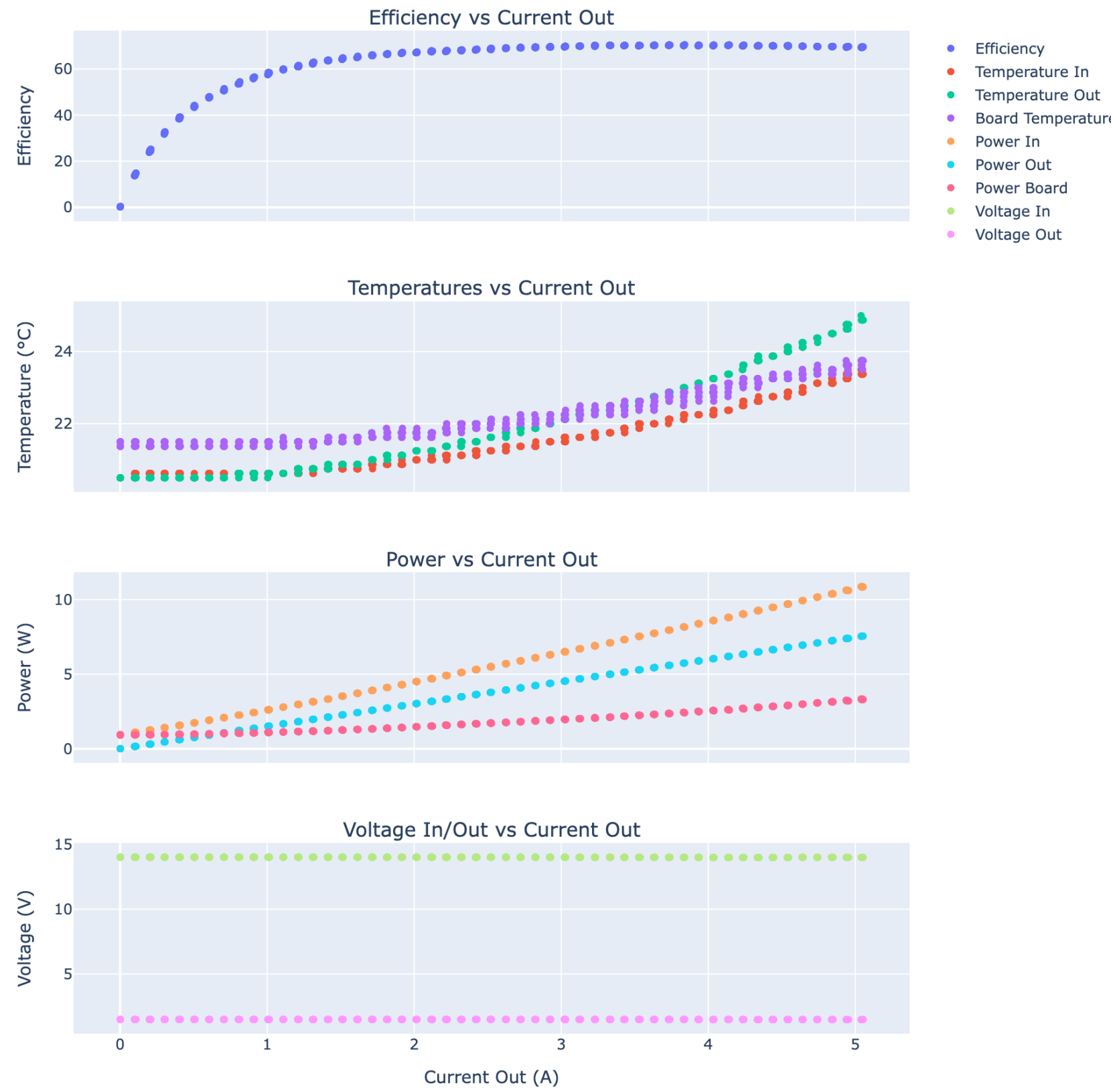
- This current mezzanine:
  - Maxed at 5A output current
  - Input/Output Voltage about 15-20 max
- Two mezzanines (third sent to Gerard):
  - One is a aircoil from CERN
  - One is a iron-powder thing
- DC/DC programable load
- Power Supply (max 2A input)
- Arduino to monitor everything, temperature, power
- Infrared camera, just to see the heat sources



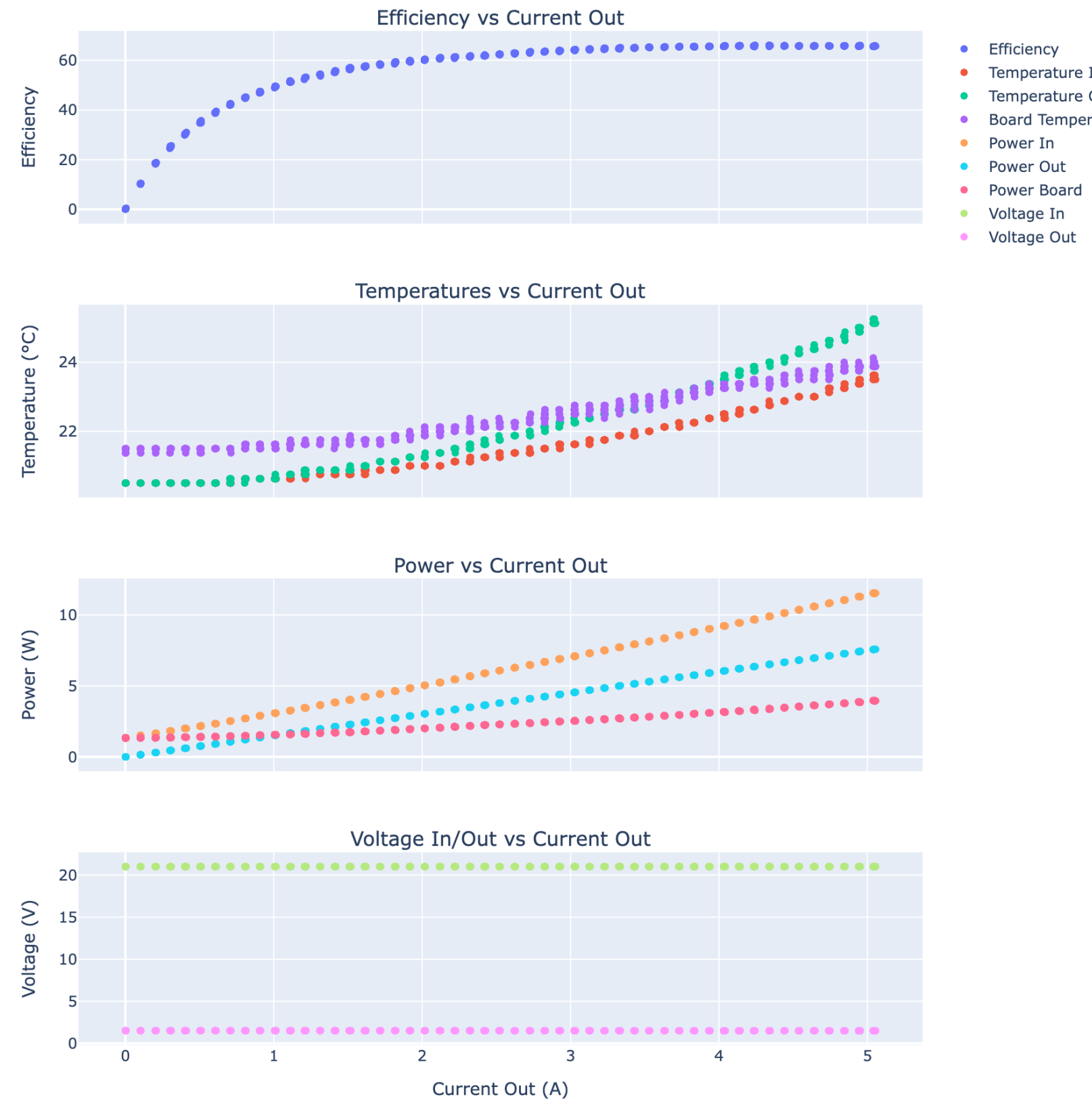
You can setup the output voltage with the resistors

# Results - AirCoil 1V5

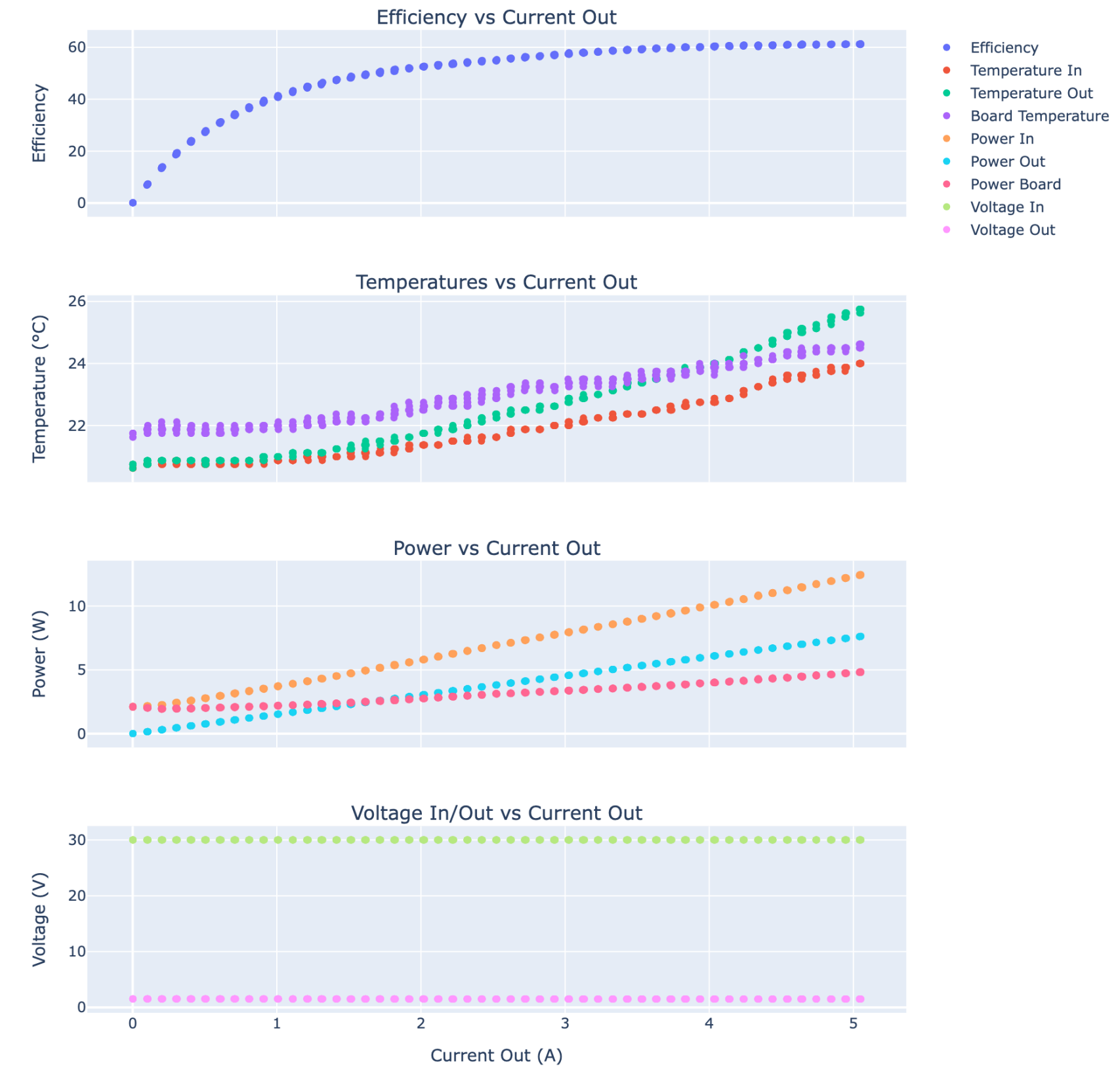
Input Voltage = 14 V



Input Voltage = 21 V

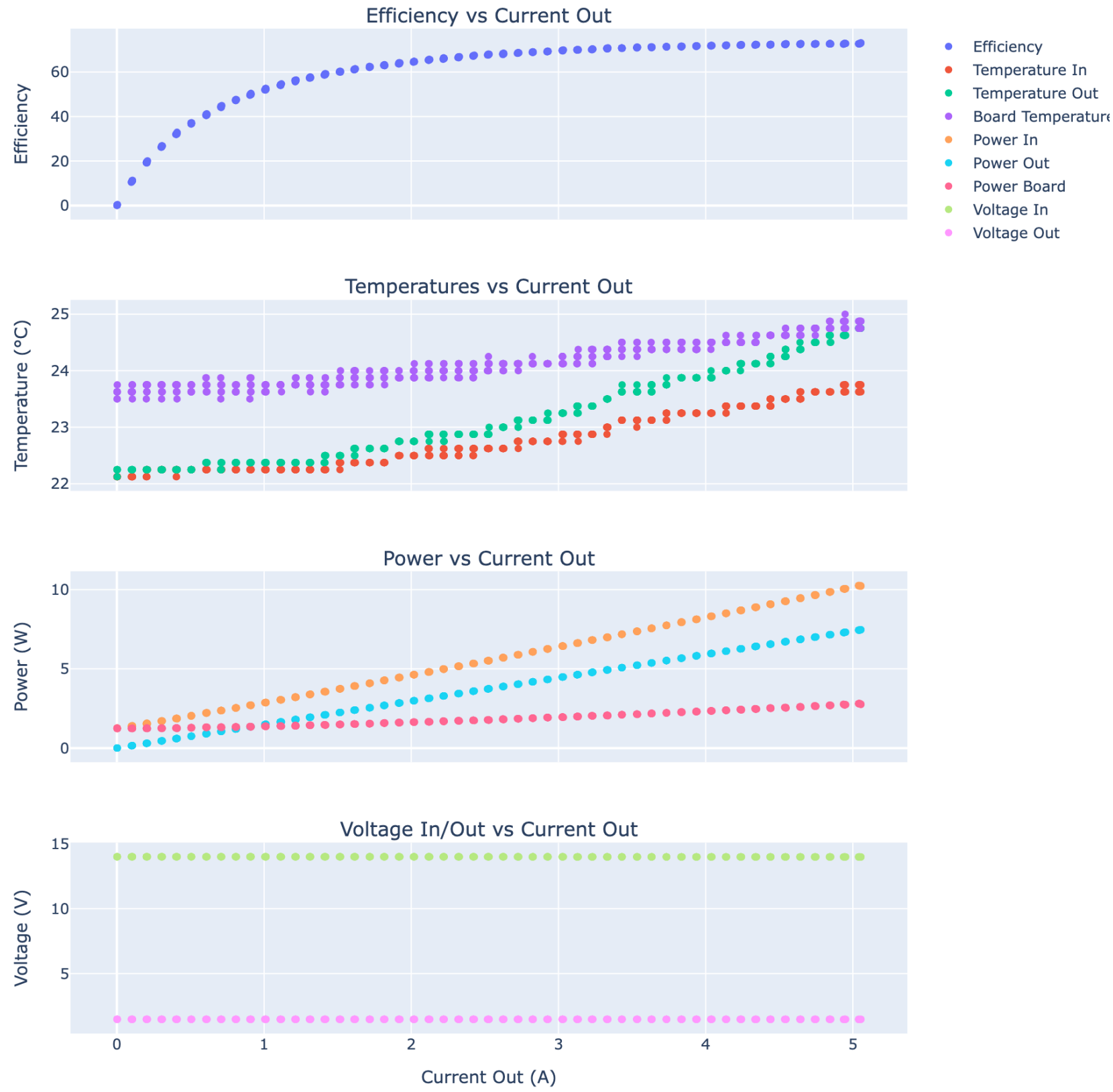


Input Voltage = 30 V

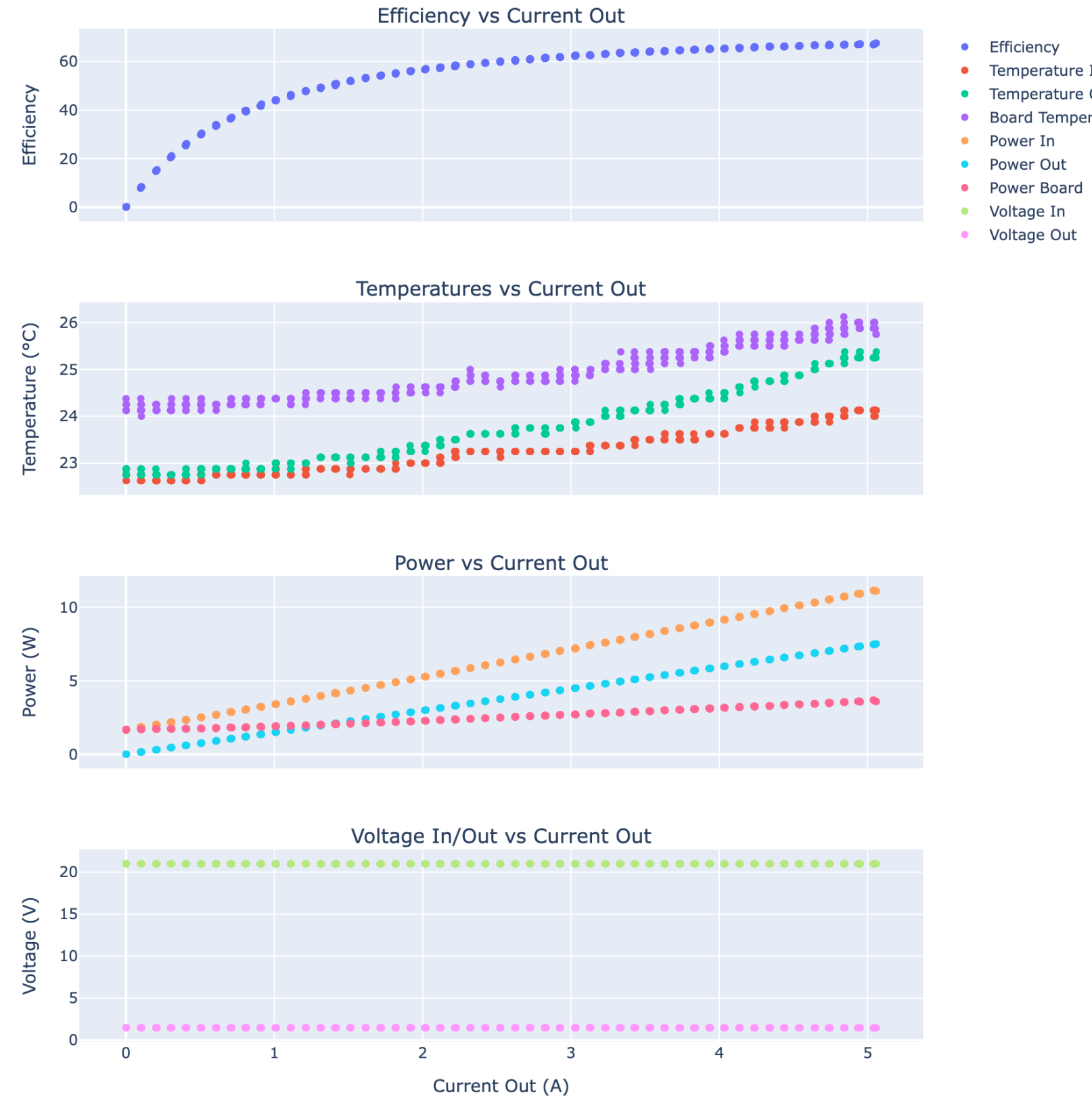


# Results - Ferrite 1V5

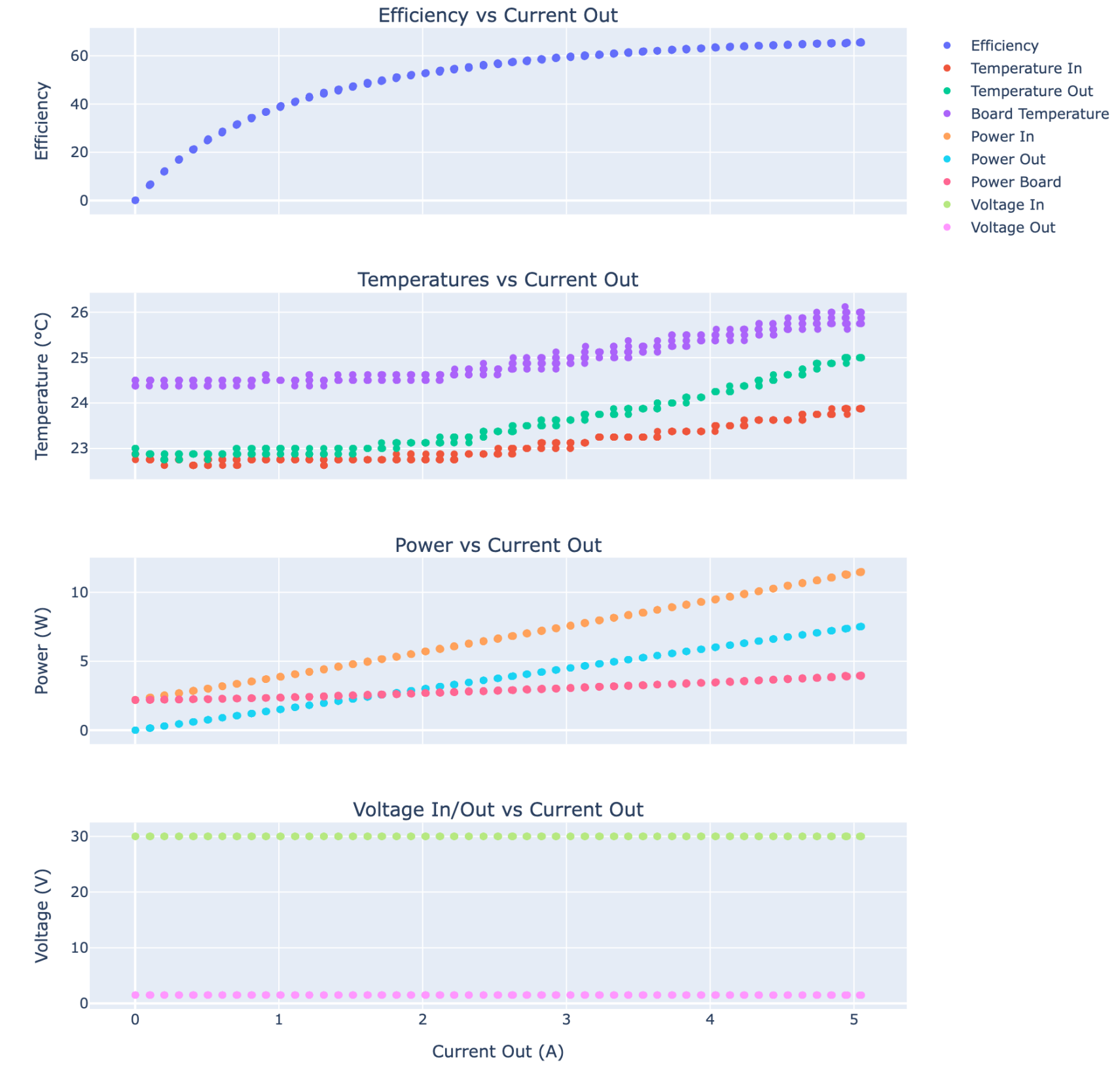
Input Voltage = 14 V



Input Voltage = 21 V

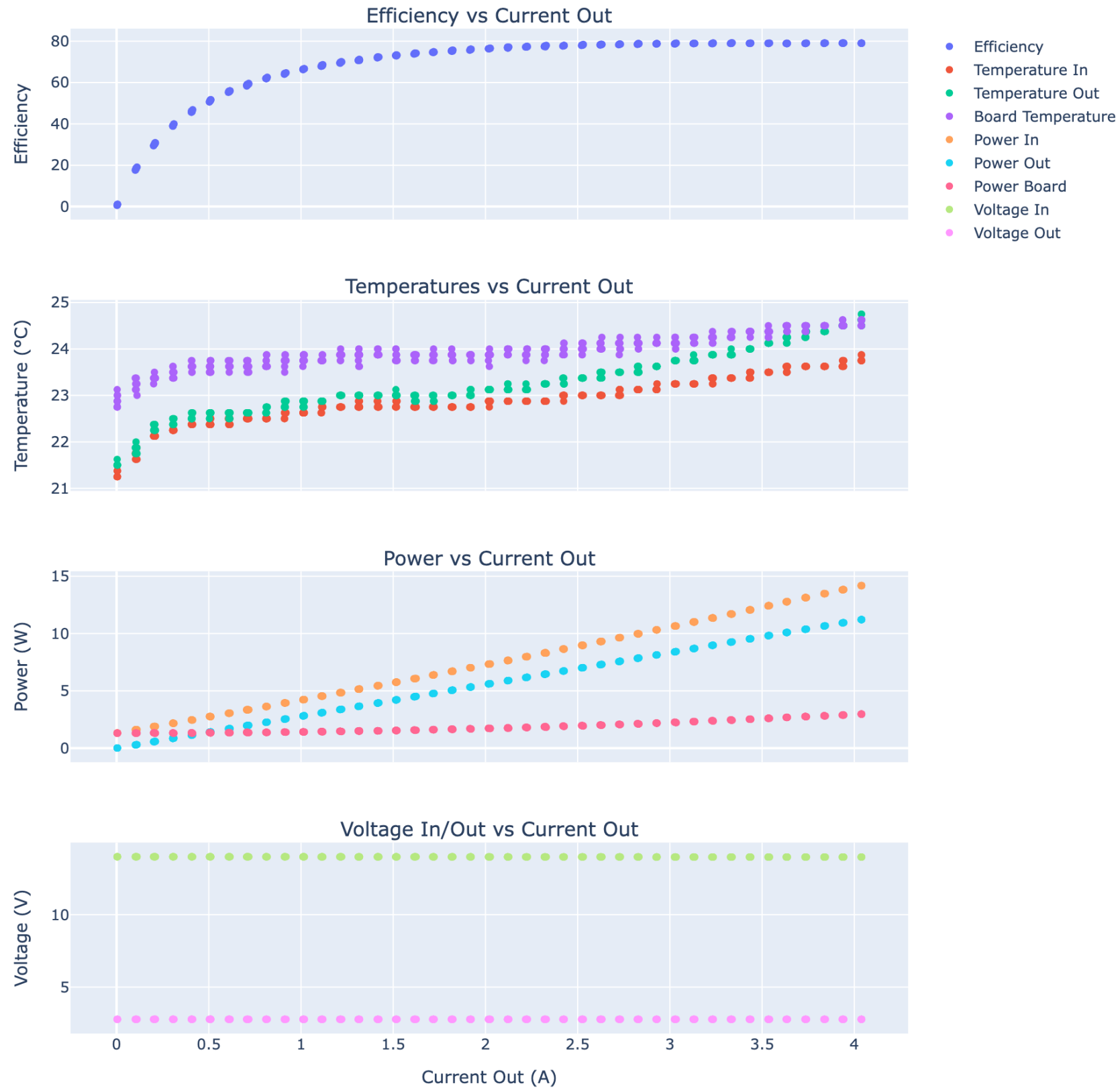


Input Voltage = 30 V

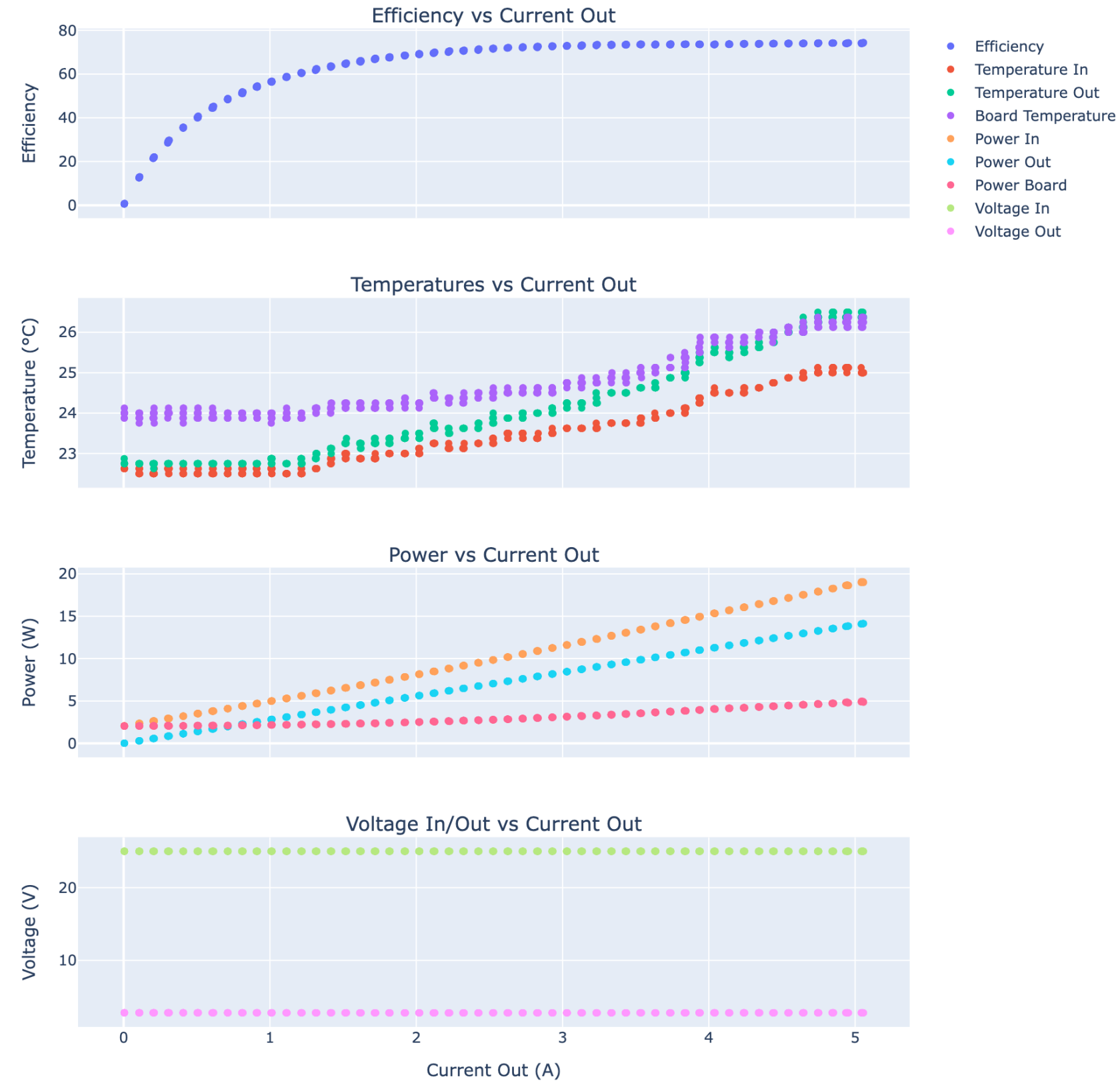


# Results - Aircoil 2V7

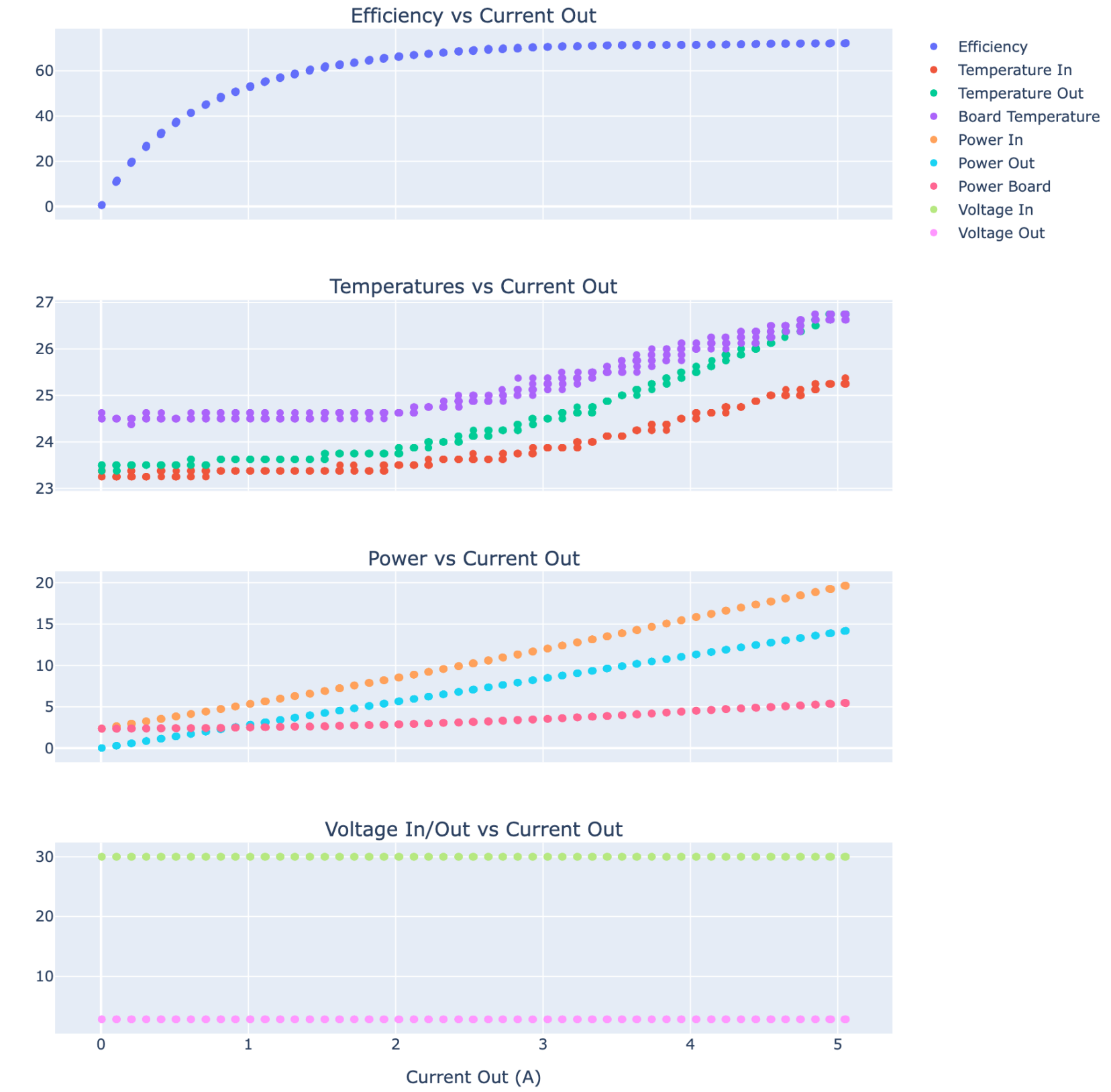
Input Voltage = 14 V



Input Voltage = 25 V

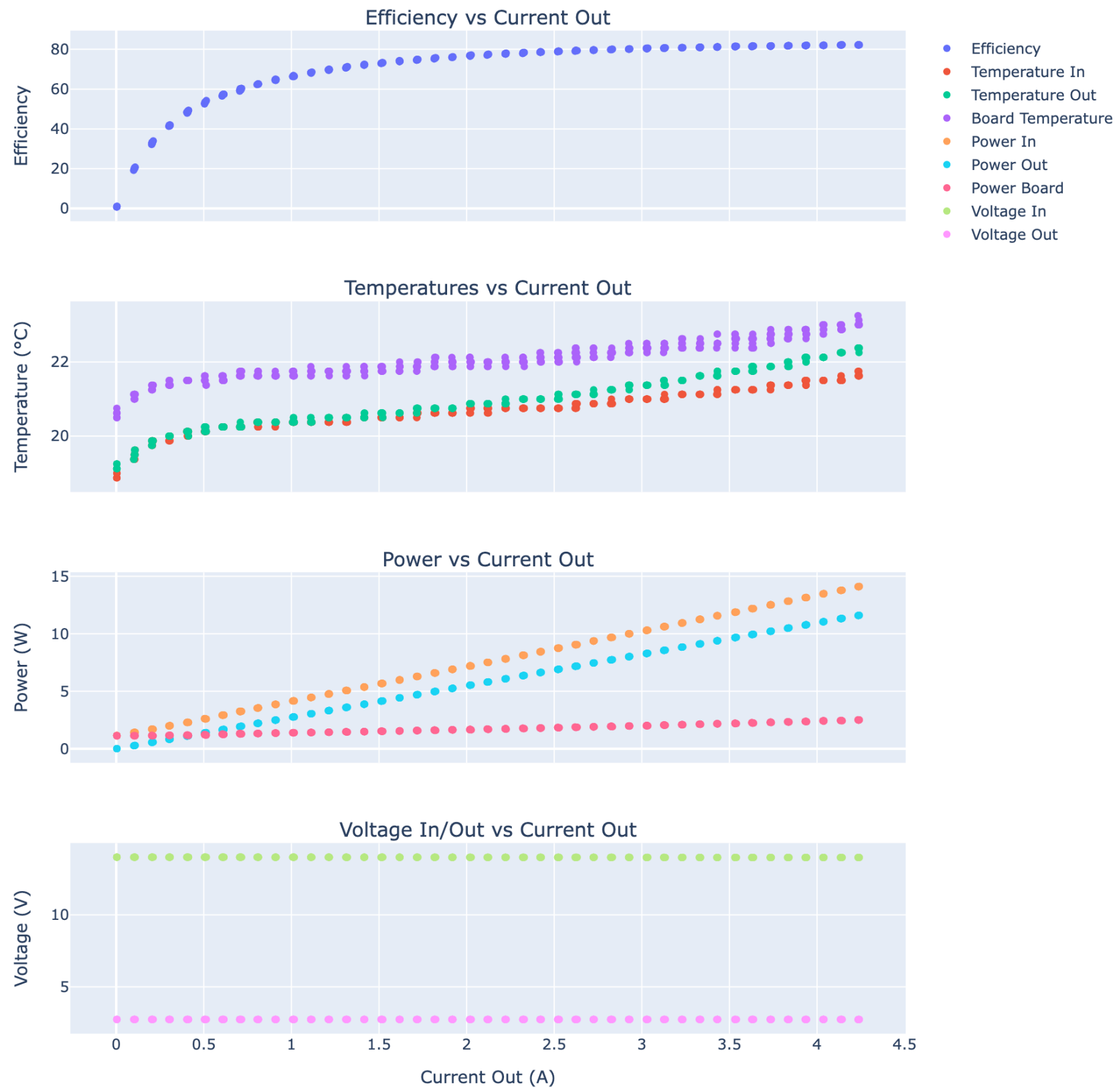


Input Voltage = 30 V

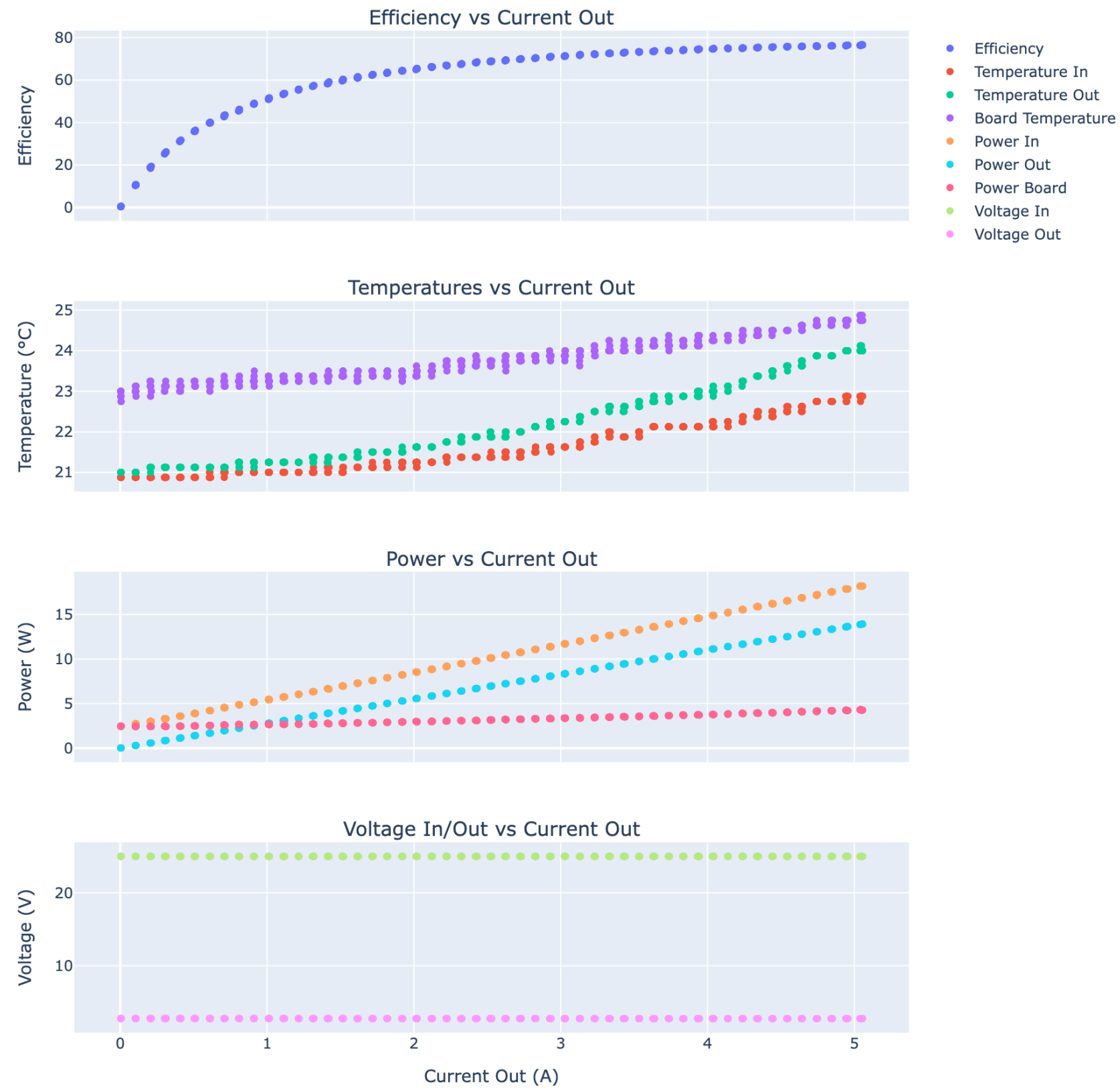


# Results - Ferrite 2V7

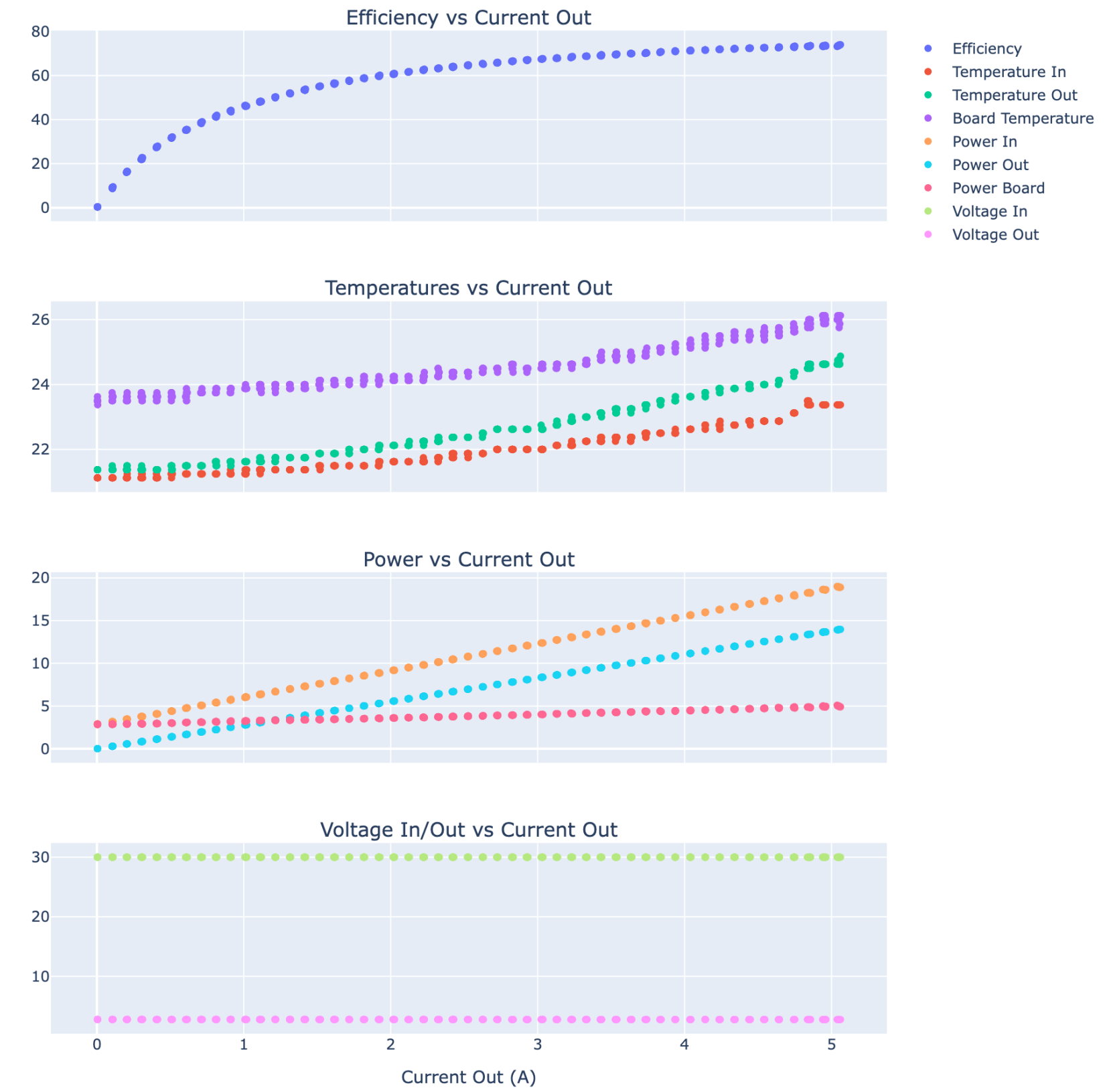
Input Voltage = 14 V



Input Voltage = 25 V

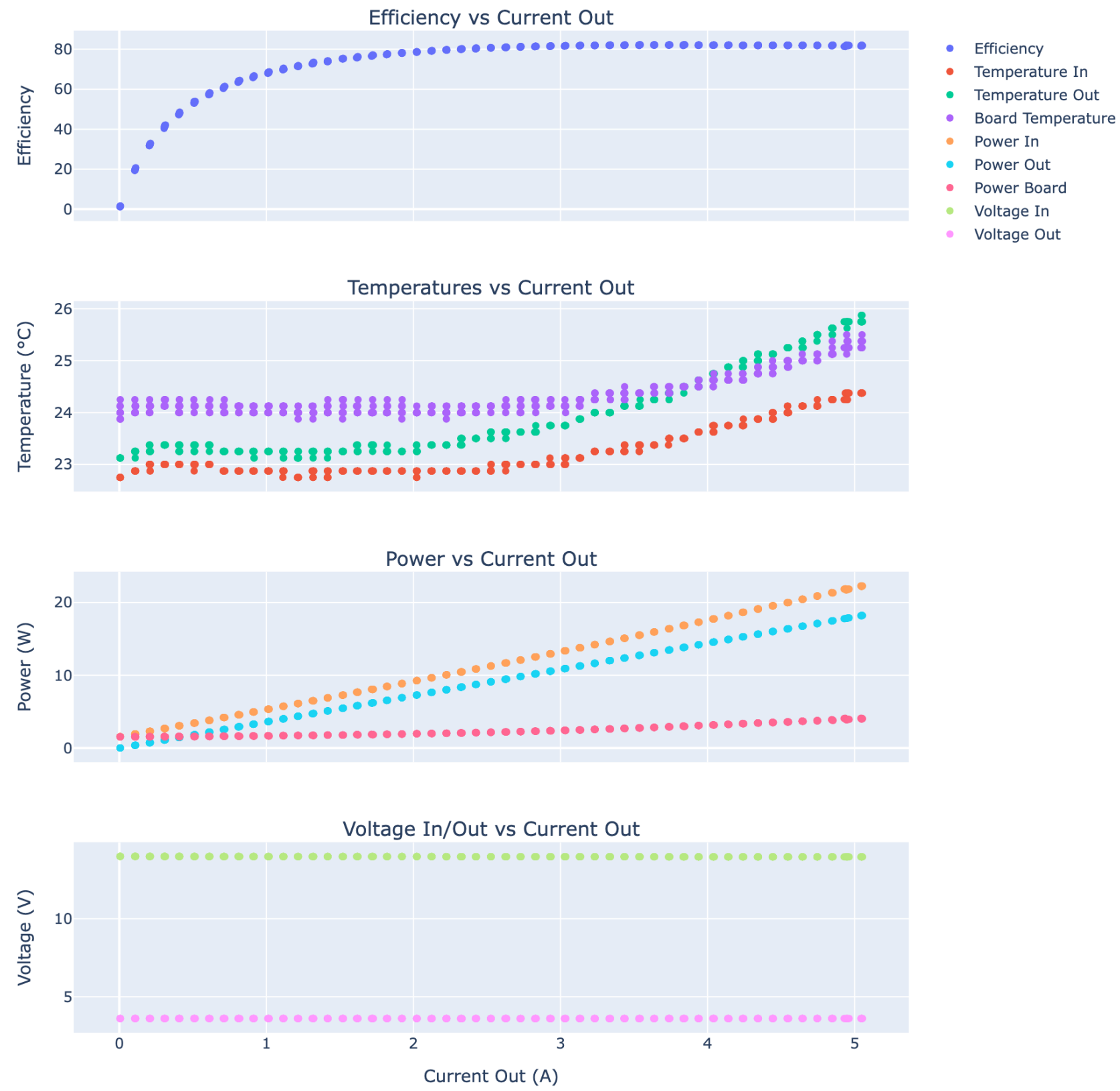


Input Voltage = 30 V

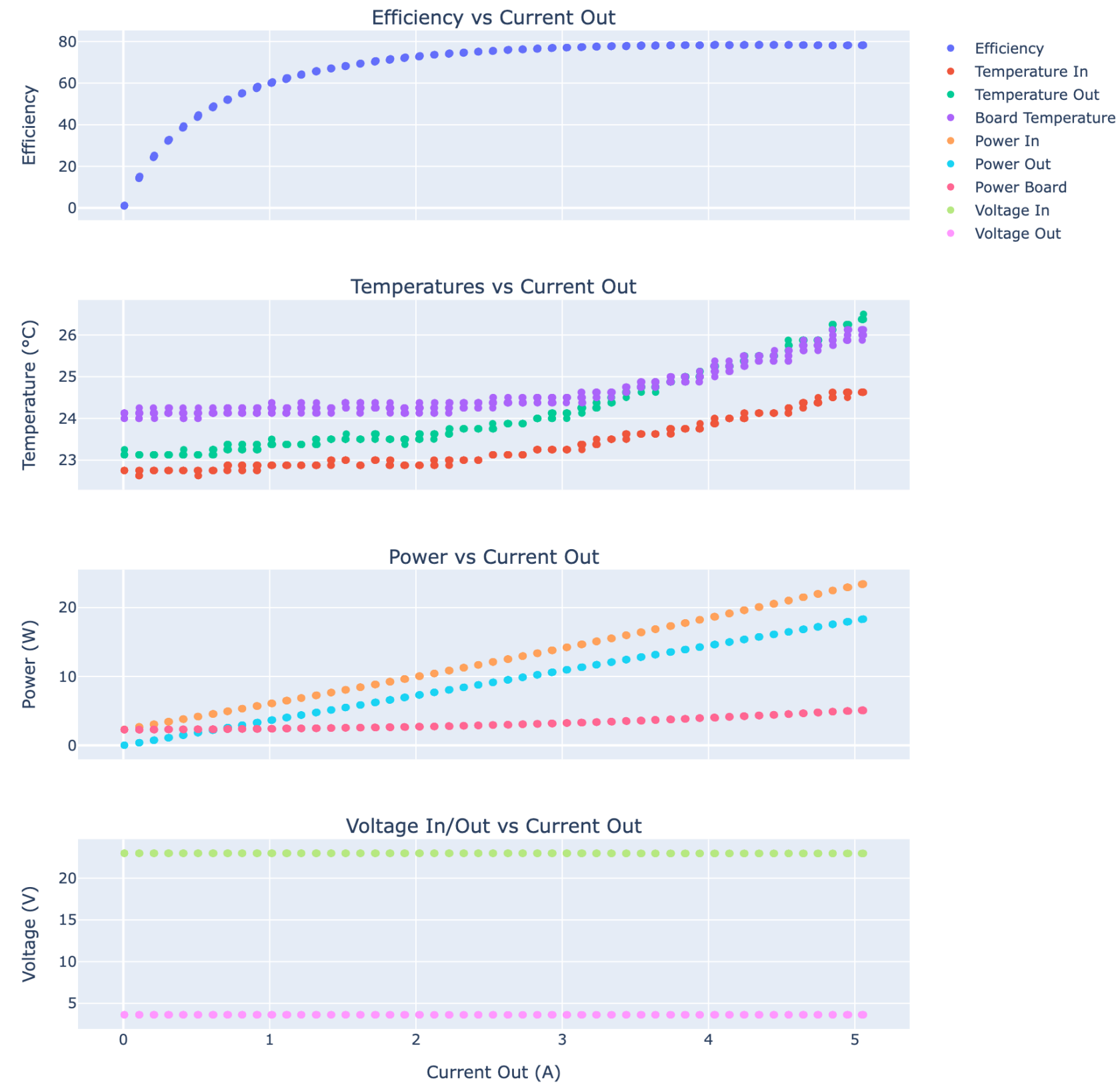


# Results - Aircoil 3V6

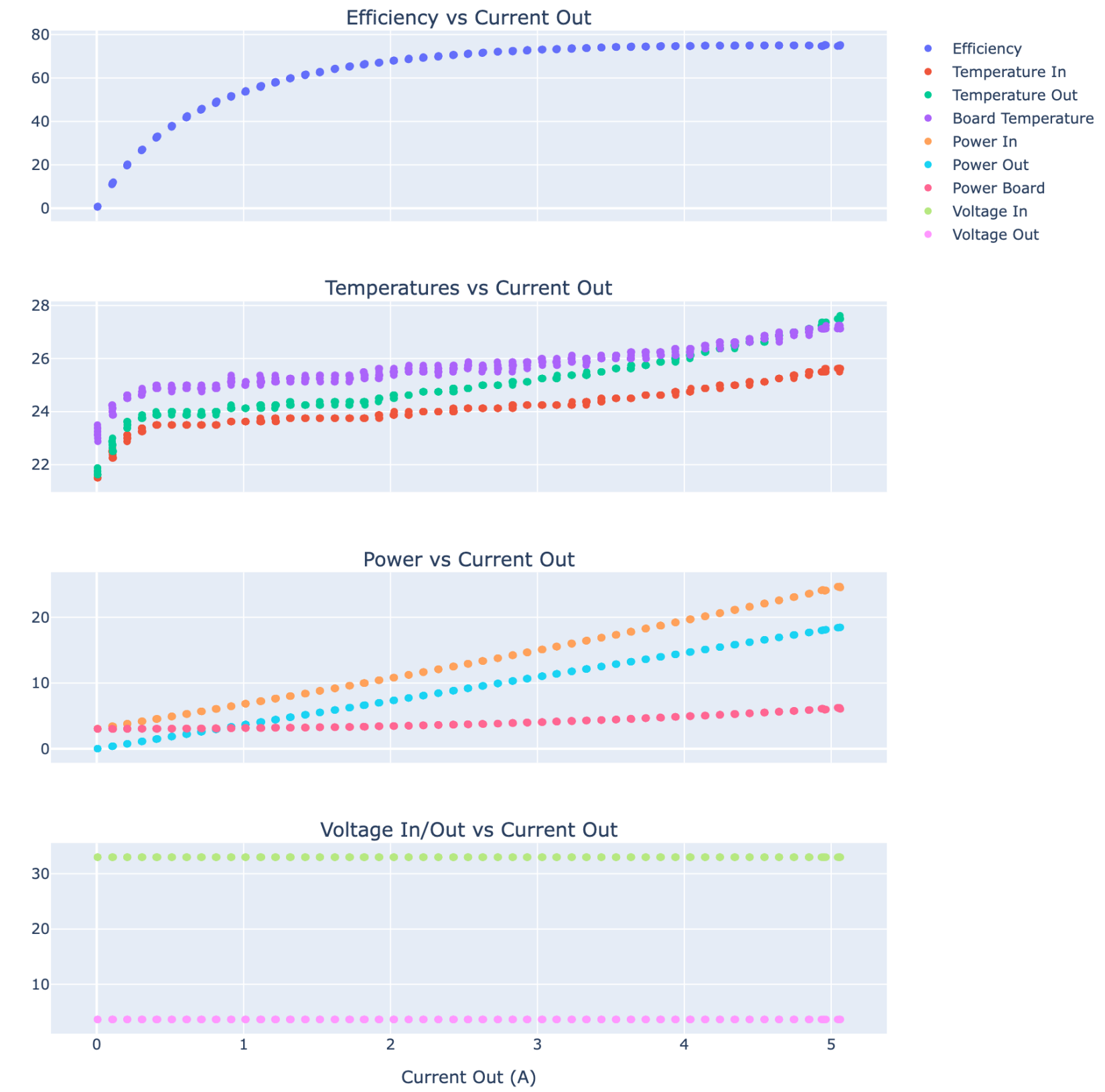
Input Voltage = 14 V



Input Voltage = 23 V

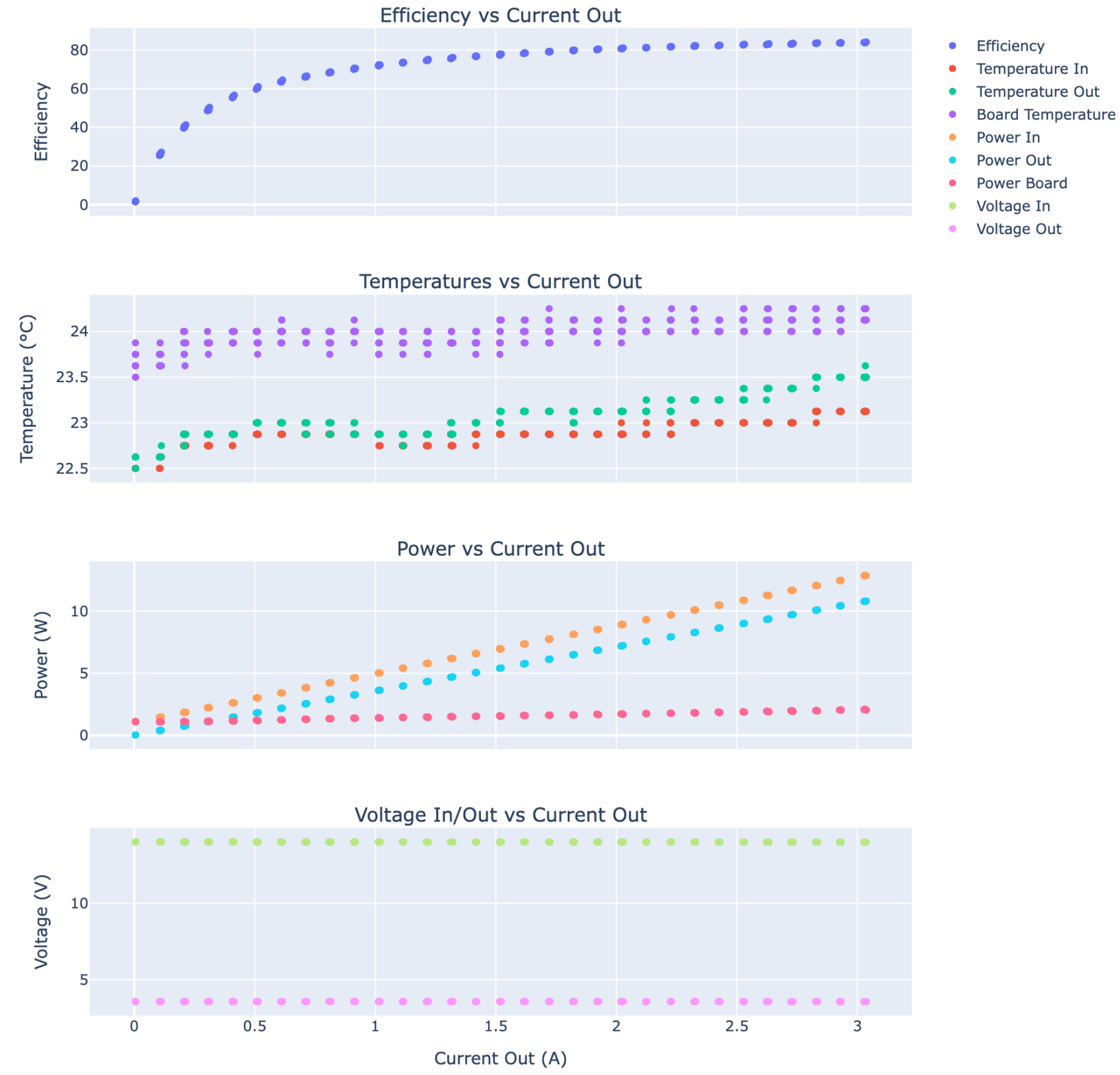


Input Voltage = 33 V

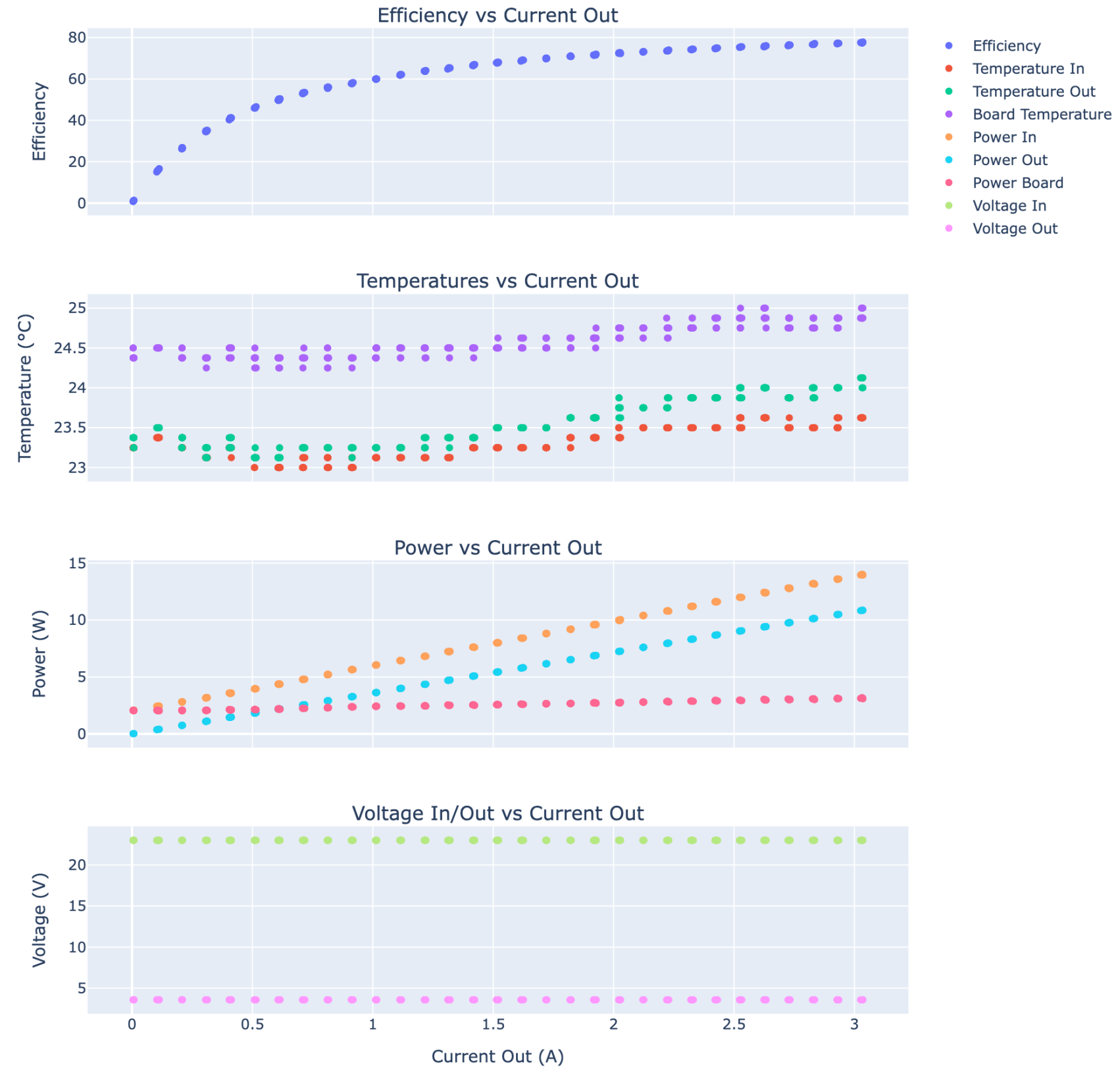


# Results - Ferrite 3V6

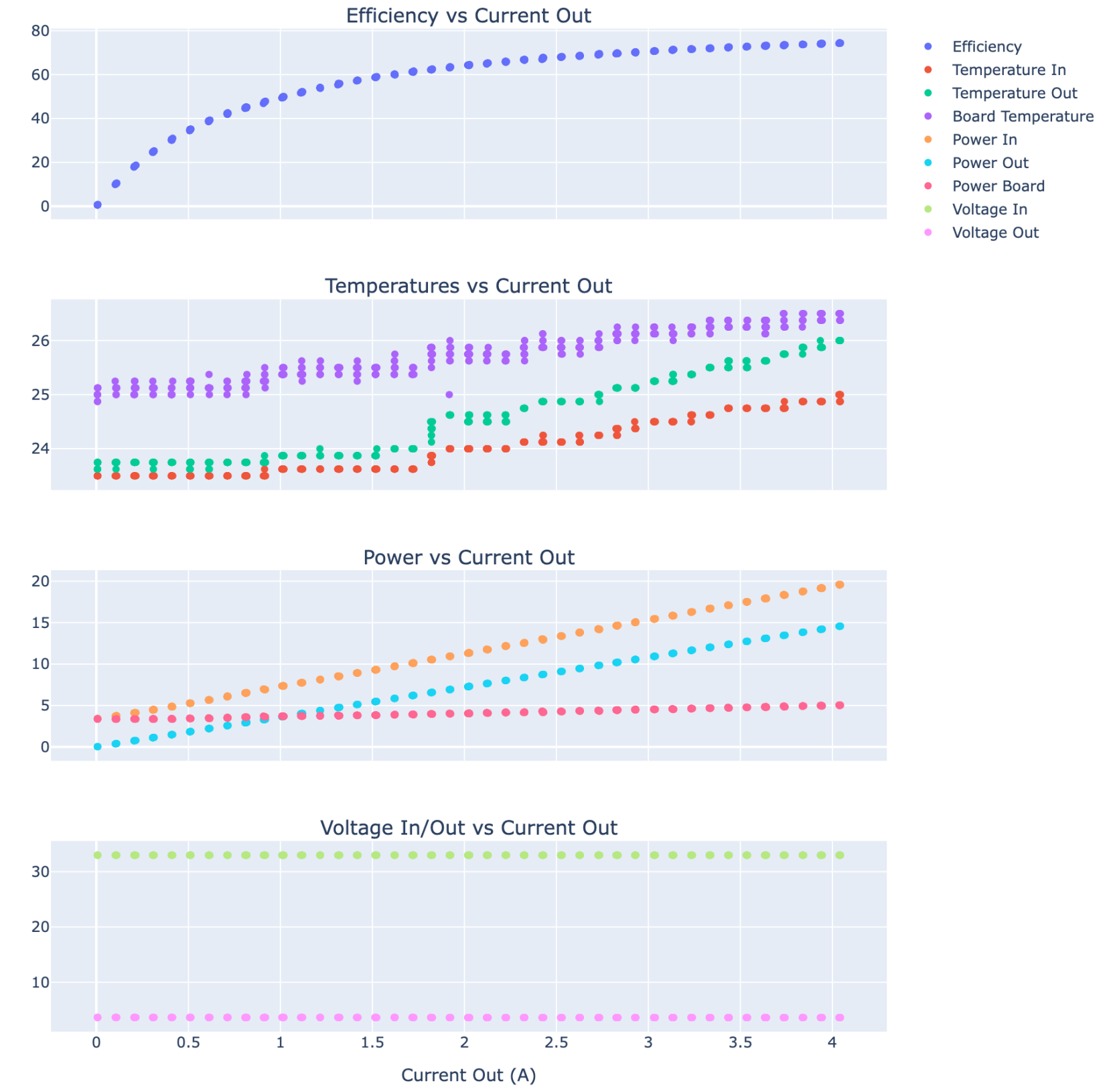
Input Voltage = 14 V



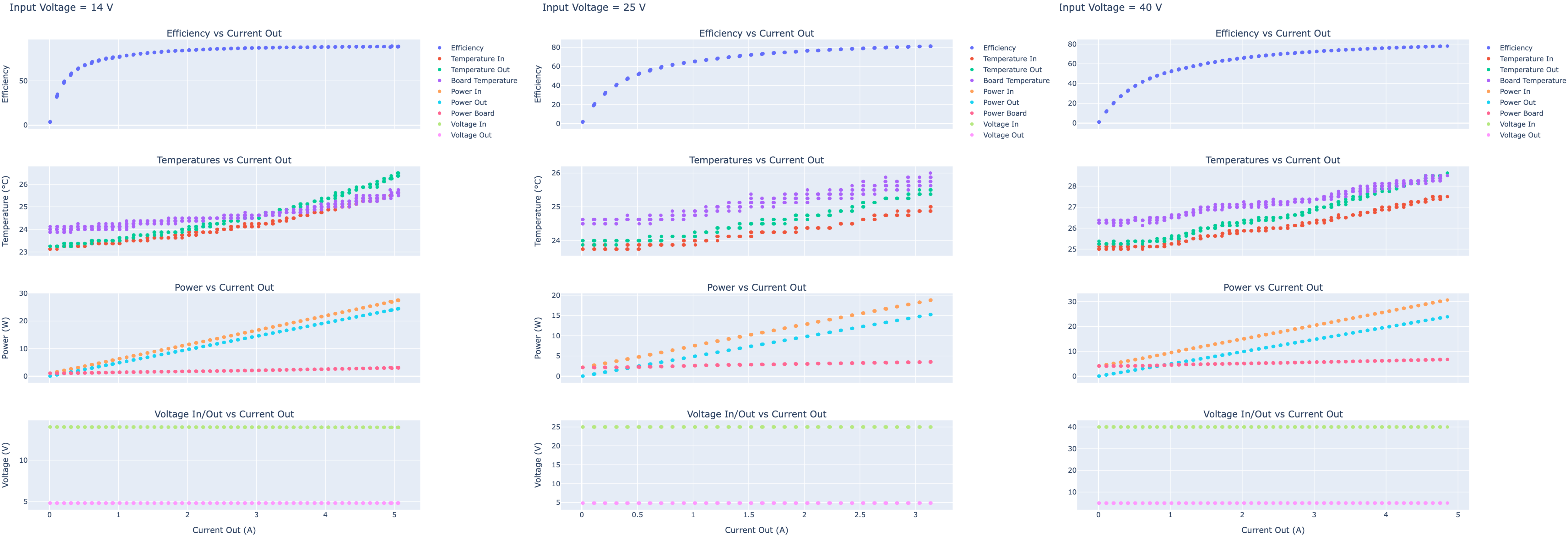
Input Voltage = 23 V



Input Voltage = 33 V



# Results - Ferrite 4V8 (only)



# Table of measurements

Ferrite/Aircoil

Output	Input	1A	2A	3A	4A
<b>4.8V</b>	<b>14 V</b>	80/-	85/-	88/-	89/-
	<b>25 V</b>	65/-	76/-	80/-	-/-
	<b>40 V</b>	52/-	66/-	72/-	76/-
<b>3.6 V</b>	<b>14 V</b>	71/67	81/79	83/82	-/82
	<b>23 V</b>	60/60	72/73	77/77	-/79
	<b>33 V</b>	50/54	64/68	71/73	74/74
<b>2.7 V</b>	<b>14 V</b>	66/52	77/76	80/79	82/79
	<b>25 V</b>	51/56	65/69	71/73	75/74
	<b>30 V</b>	45/53	61/69	68/71	71/72
<b>1.5 V</b>	<b>14 V</b>	52/58	65/67	70/70	72/72
	<b>21 V</b>	44/50	57/60	63/64	65/66
	<b>30 V</b>	40/41	53/53	60/58	63/60