# Thruster Report

**Magnetic Field:** **199 mT**
**Anode Power:** **416 W**
**Anode Current:** **6.0 A**
**Propellant:** **Argon 1.500 mg/s**

**Thruster Details: Nagoya magnet, LaB6 cathode, 1 mm orifice, copper anode, 80 mm internal diameter.**

| Thrust | Thrust Eff. | ISP | Total DOF | Coverage Factor | Exp. Uncertainty | Std. Uncertainty |
|---|---|---|---|---|---|---|
| 6.8 mN | 3.7 % | 461.8 sec | 23 | 2.08 | 2.7 mN | 1.3 mN |

## Thrust-Stand Uncertainty Components

| | Scale | Hysteresis | Repeatability | Noise | Offset | Drift |
|---|---|---|---|---|---|---|
| Value | 0.8 mN | 0.8 mN | 0.4 mN | 0.6 mN | 0.3 mN | 0.2 mN |
| DOF | 6 | 6 | 6 | 31 | 4 | 4 |

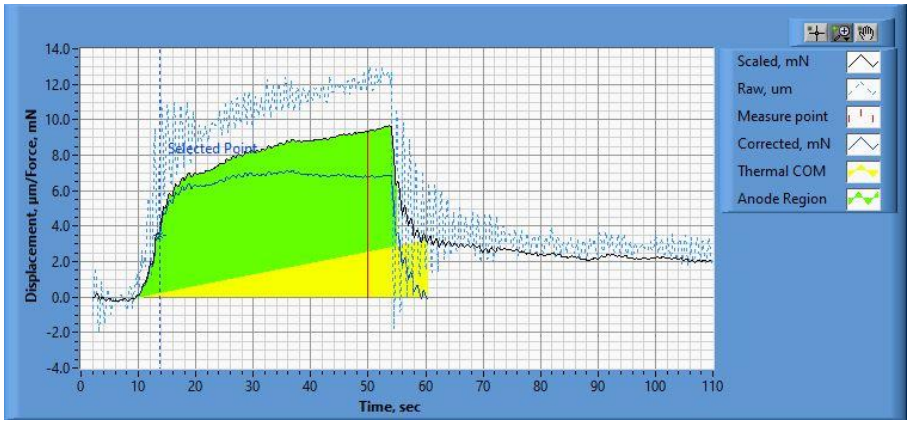


**Figure 1. Thrust Plot**

File Name: Philtech Data 2024.10.09_20.00.39.csv

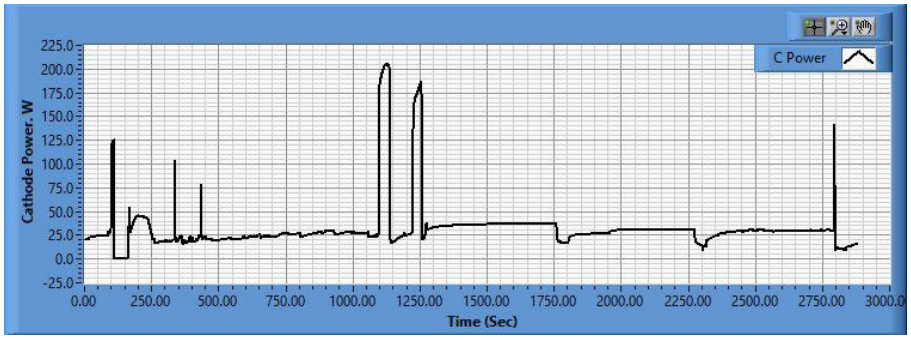


**Figure 2. Cathode Power Plot**

File Name: PSU C Data 2024.10.09_19.14.13.csv

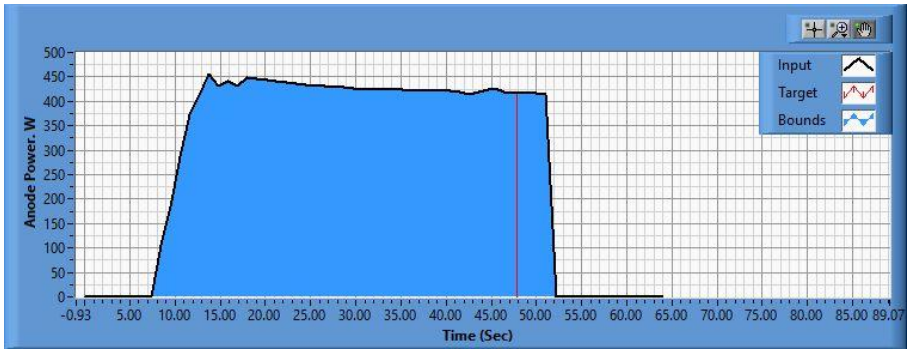


**Figure 3. Anode Power Plot**

File Name: PSU A Data 2024.10.09_20.00.41.csv

## Pre-Cal. Information

File Name: Calibration_with_magnet_and_Cathode_Philtech Data 2024.10.09_19.38.31.csv

Start/Stop times (24 h): 19:38:34 19:42:19
Sensitivity: 1.53 um/mN

| Offset | Drift | Scale Factor | Scale Std.Dev |
|---|---|---|---|
| 0.438 mN | -0.003 mN/s | 0.654 | 0.814 mN |

Plateau values:

| Weight 0 | Weight 1 | Weight 2 | Weight 3 | Weight 4 | Weight 5 | Weight 4 | Weight 3 | Weight 2 | Weight 1 | Weight 0 |
|---|---|---|---|---|---|---|---|---|---|---|
| -0.0 mN | 37.6 mN | 74.4 mN | 110.5 mN | 146.8 mN | 184.9 mN | 147.1 mN | 110.9 mN | 75.6 mN | 36.4 mN | 0.5 mN |

## Post-Cal. Information

File Name: Philtech Data 2024.10.09_20.00.39.csv

Start/Stop times (24 h): 20:04:52 20:08:36
Sensitivity: 1.56 um/mN

| Offset | Drift | Scale Factor | Scale Std.Dev |
|---|---|---|---|
| -2.117 mN | -0.008 mN/s | 0.641 | 1.521 mN |

Plateau values:

| Weight 0 | Weight 1 | Weight 2 | Weight 3 | Weight 4 | Weight 5 | Weight 4 | Weight 3 | Weight 2 | Weight 1 | Weight 0 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.2 mN | 37.6 mN | 73.8 mN | 109.4 mN | 144.6 mN | 183.8 mN | 144.7 mN | 110.3 mN | 75.0 mN | 36.2 mN | 0.5 mN |