

Thruster Report

Magnetic Field: 500 mT
Anode Power: 302 W
Anode Current: 4.0 A
Propellant: Argon 2.000 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 |
|--------|-------------|-----------|-----------|-----------------|------------------|------------------|
| 9.6 mN | 7.7 % | 490.4 sec | 19 | 2.09 | 2.3 mN | 1.1 mN |

Thrust-Stand Uncertainty Components

| | Scale | Hysteresis | Repeatability | Noise | Offset | Drift |
|-------|--------|------------|---------------|--------|--------|--------|
| Value | 0.7 mN | 0.4 mN | 0.2 mN | 0.3 mN | 0.5 mN | 0.4 mN |
| DOF | 6 | 6 | 6 | 31 | 4 | 4 |

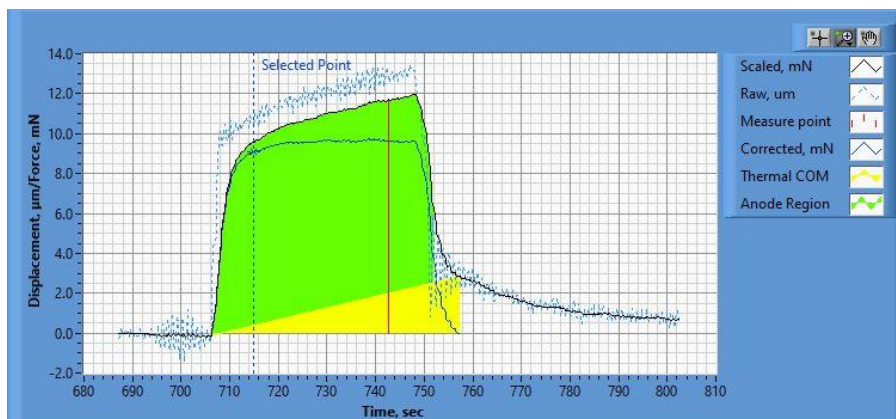


Figure 1. Thrust Plot

File Name: Philtech Data 2024.09.19_10.34.16.csv

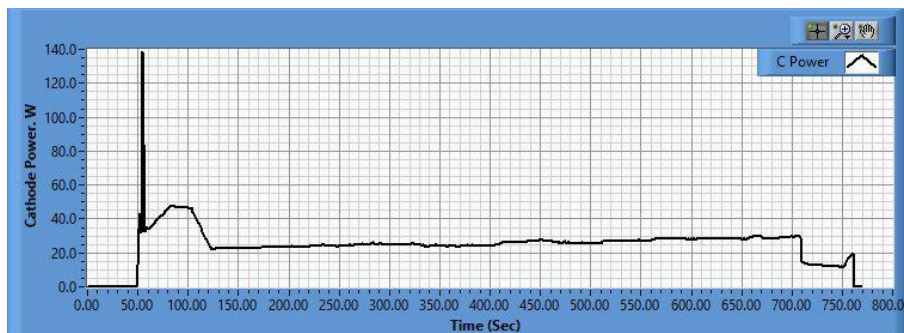
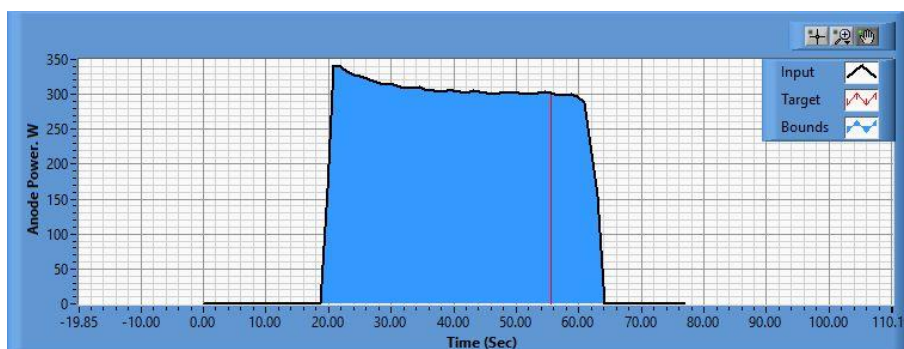


Figure 2. Cathode Power Plot

File Name: PSU C Data 2024.09.19_10.34.14.csv

**Figure 3. Anode Power Plot**

File Name: PSU A Data 2024.09.19_10.45.43.csv

Pre-Cal. Information

File Name: Baseline_Magnet_Philtech Data 2024.09.19_09.21.44.csv

Start/Stop times (24 h): 09:21:55 09:25:40

Sensitivity: 1.32 $\mu\text{m}/\text{mN}$

| Offset | Drift | Scale Factor | Scale Std.Dev |
|----------|-------------|--------------|---------------|
| 0.240 mN | -0.013 mN/s | 0.756 | 0.834 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 | 13.2 mN | 26.9 mN | 41.8 mN | 52.9 mN | 68.0 mN | 52.7 mN | 41.3 mN | 26.7 mN | 12.4 mN | -0.0 mN |

Post-Cal. Information

File Name: Philtech Data 2024.09.19_10.34.16.csv

Start/Stop times (24 h): 10:50:07 10:53:52

Sensitivity: 1.30 $\mu\text{m}/\text{mN}$

| Offset | Drift | Scale Factor | Scale Std.Dev |
|-----------|------------|--------------|---------------|
| -1.009 mN | 0.000 mN/s | 0.770 | 0.833 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 | 13.0 mN | 27.8 mN | 41.6 mN | 53.7 mN | 68.0 mN | 52.6 mN | 41.4 mN | 27.0 mN | 12.9 mN | 0.8 mN |

