

Thruster Report

Magnetic Field: 133 mT
Anode Power: 676 W
Anode Current: 10.0 A
Propellant: Argon 1.499 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 |
|--------|-------------|-----------|-----------|-----------------|------------------|------------------|
| 8.2 mN | 3.3 % | 559.0 sec | 21 | 2.08 | 2.2 mN | 1.1 mN |

Thrust-Stand Uncertainty Components

| | Scale | Hysteresis | Repeatability | Noise | Offset | Drift |
|-------|--------|------------|---------------|--------|--------|--------|
| Value | 0.6 mN | 0.6 mN | 0.2 mN | 0.3 mN | 0.5 mN | 0.1 mN |
| DOF | 6 | 6 | 6 | 31 | 4 | 4 |

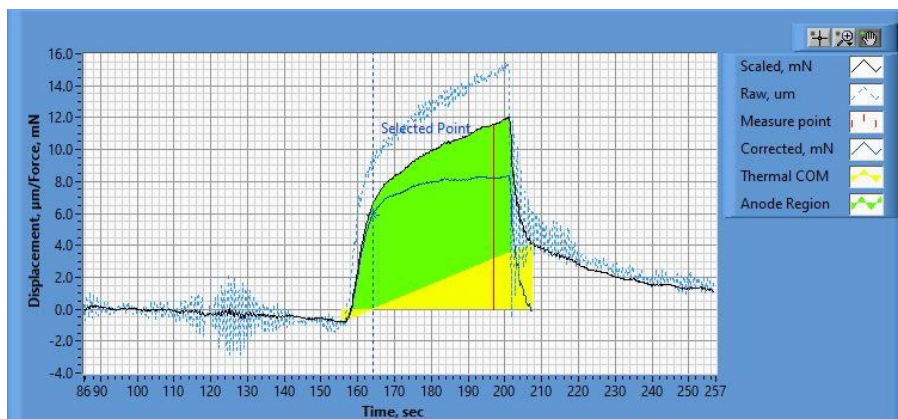


Figure 1. Thrust Plot

File Name: Philtech Data 2024.11.29_02.25.30.csv

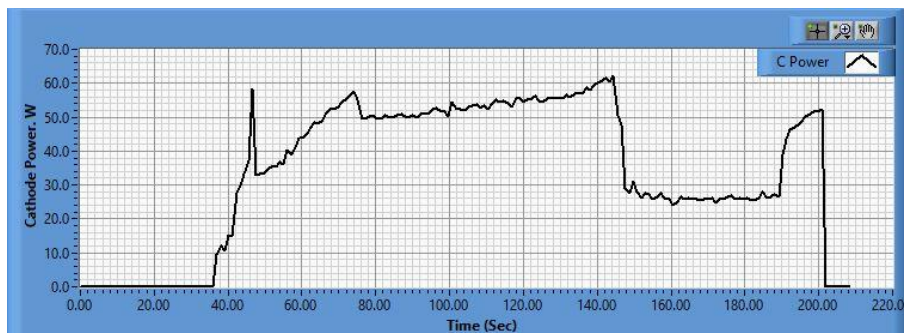
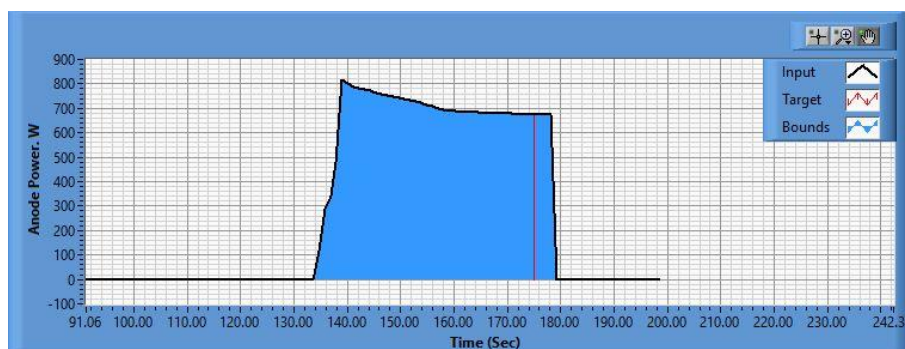


Figure 2. Cathode Power Plot

File Name: PSU C Data 2024.11.29_02.25.41.csv

**Figure 3. Anode Power Plot**

File Name: PSU A Data 2024.11.29_02.25.52.csv

Pre-Cal. Information

File Name: Magnet_NoFlow_Philtech Data 2024.11.29_02.16.29.csv

Start/Stop times (24 h): 02:16:35 02:20:20

Sensitivity: 1.51 $\mu\text{m}/\text{mN}$

| Offset | Drift | Scale Factor | Scale Std.Dev |
|-----------|-------------|--------------|---------------|
| -0.355 mN | -0.006 mN/s | 0.662 | 1.086 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 | 21.2 mN | 39.5 mN | 59.4 mN | 79.5 mN | 100.9 mN | 79.0 mN | 59.2 mN | 38.7 mN | 20.8 mN | 0.9 mN |

Post-Cal. Information

File Name: Philtech Data 2024.11.29_02.25.30.csv

Start/Stop times (24 h): 02:32:01 02:35:53

Sensitivity: 1.51 $\mu\text{m}/\text{mN}$

| Offset | Drift | Scale Factor | Scale Std.Dev |
|-----------|-------------|--------------|---------------|
| -0.714 mN | -0.004 mN/s | 0.664 | 1.031 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 |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| -0.1 mN | 20.6 mN | 39.3 mN | 59.2 mN | 79.2 mN | 100.8 mN | 78.8 mN | 58.9 mN | 37.9 mN | 20.3 mN | 0.1 mN |

