

**DESCRIPTION**

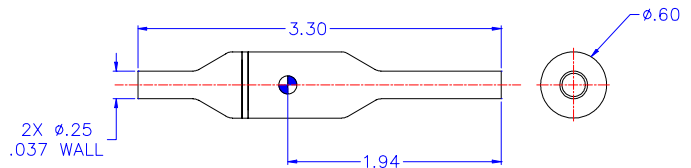
VACCO Industries maintains a product line of flight qualified etched disc filters, providing absolute filtration for satellites and spacecraft since 1961.

The etched disc filter's superior characteristics are due to several features. First, each flow path is chemically etched into metal by a high precision photochemical- etching process. Next, each disc is individually cleaned prior to assembly in a clean room. Finally, no welding is performed on the stack element assembly assuring the cleanest and most reliable filter in the industry.



**FEATURES**

- ⊕ Etched Disc Technology
- ⊕ Stainless Steel Construction  
Titanium Etched Disc Assembly
- ⊕ Weight – 0.068kg (0.15 lbm)
- ⊕ 10 Micron Absolute Filtration
- ⊕ 4000 psig Operating Pressure



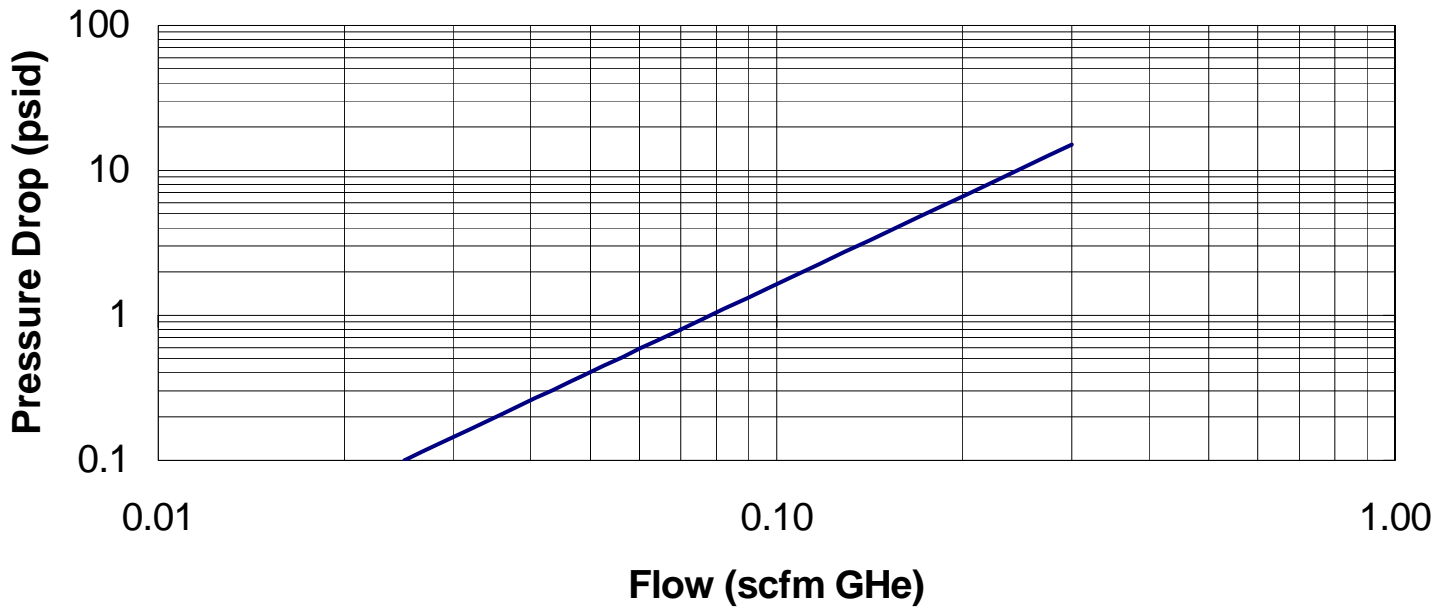
**OPERATING PARAMETERS**

Operating Pressure Range .....	4000 psig	Temperature.....	+19°F to +131° F (-7°C to +55°C)
Proof Pressure.....	6000 psig	Weight .....	<0.065 Kg (0.143 grams)
Burst Pressure .....	12000 psig	Proof Pressure .....	6000 psig - 5 min.
Filtration Rating.....	10 micron abs	External Leakage .....	6.2 x 10 <sup>-8</sup> sccs @ 4000 psig
Flow Rating .....	4.5 scfm Ghe	Flow / Pressure .....	0.05 psid @ 4.50 scfm GHe
Pressure Drop (Clean) .....	<20 psid @ Rated Flow	Random Vibration.....	17.1 G(rms), 2 min/axis
(Dirty) .....	<50 psid with 0.05 g ACCTD	Dirt Capacity.....	0.275 psid @ 4000 psig
External Leakage.....	<1 x 10 <sup>-6</sup> sccs GHe	.....	with 100 mg ACCTD

*Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations*

**PERFORMANCE CHARACTERISTICS**

### Flow vs Pressure Drop



**DESCRIPTION**

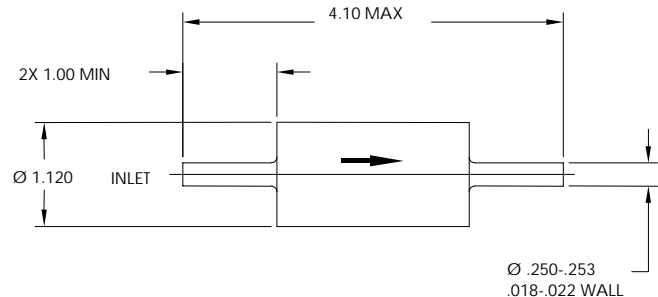
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**FEATURES**

- ⊕ Etched Disc Technology
- ⊕ All Titanium Construction with Titanium Etched Disc Assembly
- ⊕ Weight – 114g/0.25 lbm
- ⊕ 10 Micron Absolute Filtration
- ⊕ 4200 psig Operating Pressure



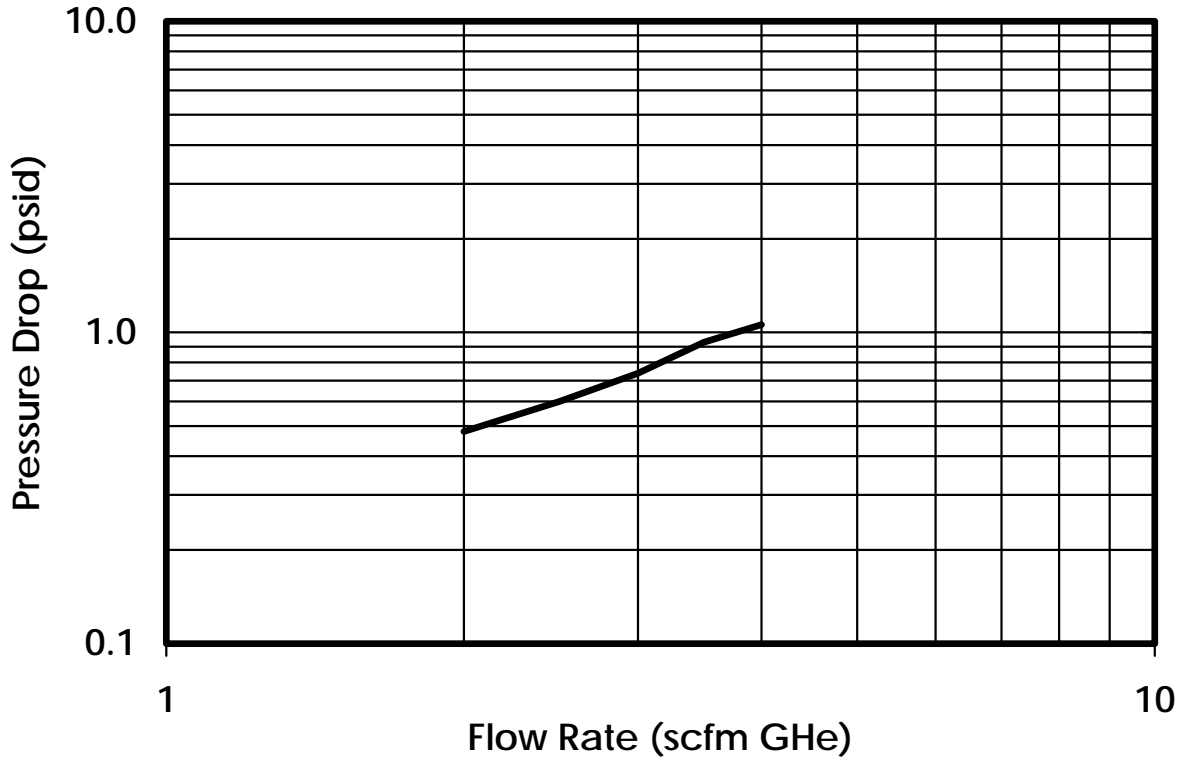
**OPERATING PARAMETERS**

Operating Pressure Range..... 4200 psig  
 Proof Pressure ..... 6300 psig  
 Burst Pressure ..... 16800 psig  
 Flow Rate ..... 4 scfm GHe  
 Pressure Drop (Clean) ..... <1 psid @ rated flow  
 (Dirty) ..... <1 psid (max.) with 100 mg @ rated flow

External Leakage..... <1 x 10<sup>-6</sup> sccs GHe  
 Weight ..... 0.25 lbm (114 grams)  
 Operating Temperature ..... +10° to +170° F  
 Filtration Rating ..... 10 microns absolute  
 Random Vibration ..... 25.32 G(rms), 3 min/axis

**PERFORMANCE CHARACTERISTICS**

**Flow vs Pressure Drop**



**DESCRIPTION**

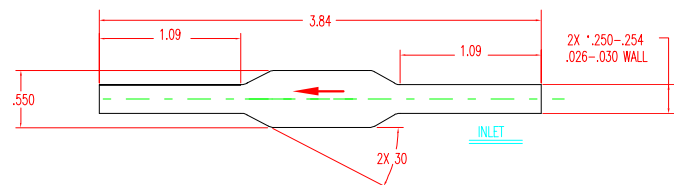
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**FEATURES**

- ⊕ Etched Disc Technology
- ⊕ Flight Qualified
- ⊕ All Titanium Construction with a Titanium Etched Disc Assembly
- ⊕ Weight – 24g/0.053 lbm
- ⊕ 40 Micron Absolute Filtration
- ⊕ 4350 psig Operating Pressure



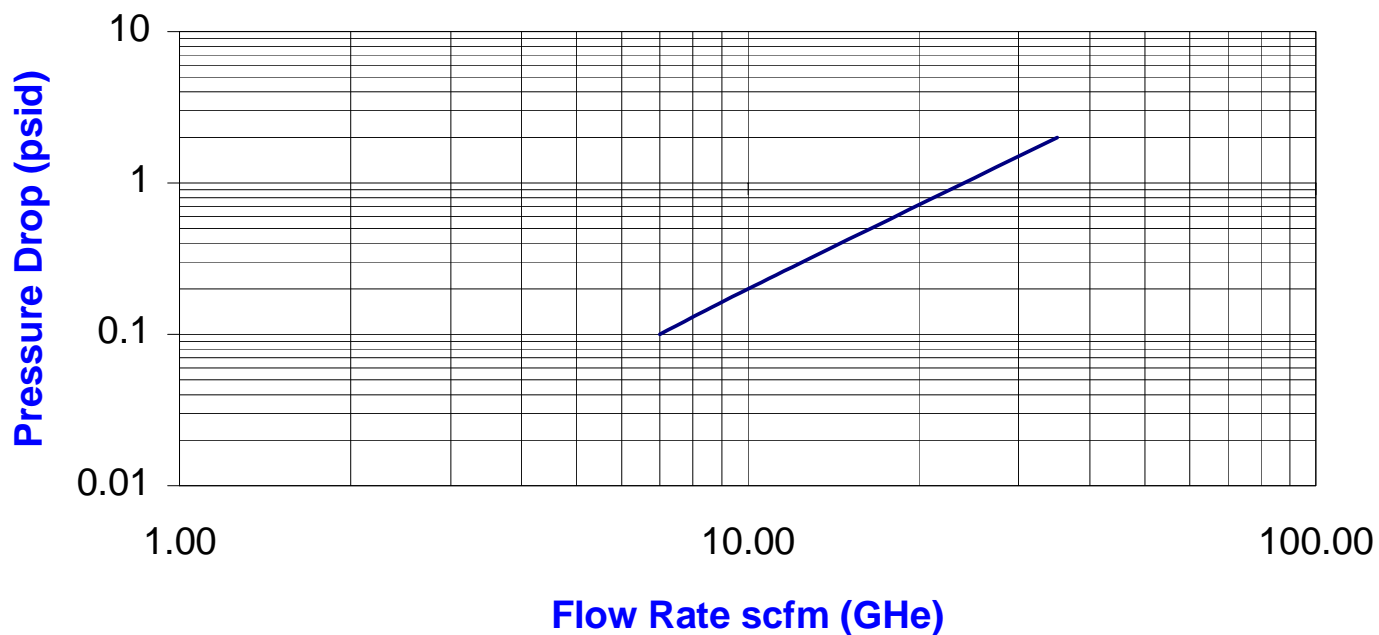
**OPERATING PARAMETERS**

Operating Pressure Range .....	4350 psig	External Leakage .....	<1 x 10 <sup>-6</sup> sccs GHe
Proof Pressure .....	8700 psig	Weight .....	0.053 lbm (24 grams)
Burst Pressure .....	17400 psig	Operating Temperature .....	-22° to +104° F
Flow Rate .....	1 scfm (0.035g/s) GHe	Filtration Rating .....	40 microns absolute
Pressure Drop (Clean) .....	0.725 psid max.	Random Vibration.....	24.0 G(rms), 2 min/axis
(Dirty) .....	N/A	Shock .....	N/A

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**PERFORMANCE CHARACTERISTICS**

**Pressure Drop @ 4060 psig**





# 1/4" HIGH PRESSURE GAS FILTER F1D10636-01

## DESCRIPTION

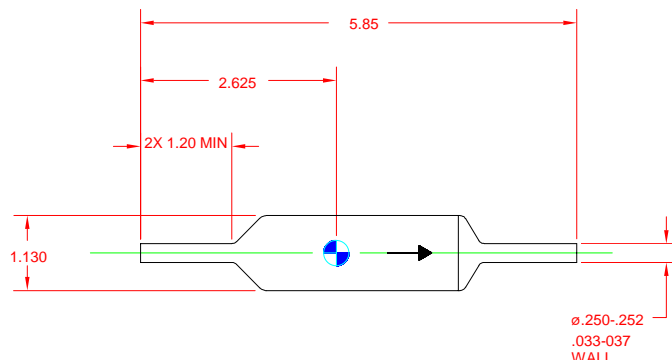
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## FEATURES

- ⊕ Etched Disc Technology
- ⊕ Flight Qualified
- ⊕ 304L Stainless Steel Body
- ⊕ Titanium Etched Disc
- ⊕ Weight – 250g/0.55 lbm
- ⊕ 10 Micro Absolute Filtration
- ⊕ 5000 psig Operating Pressure



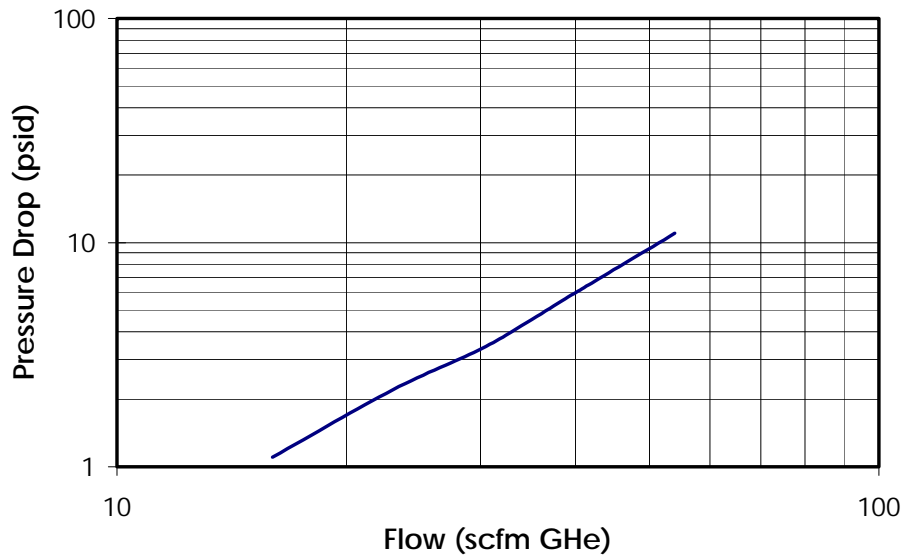
## OPERATING PARAMETERS

Operating Pressure Range .....	5000 psig	External Leakage .....	$1 \times 10^{-6}$ sccs GHe
Proof Pressure .....	7500 psig	Weight .....	0.55 lbm (250 grams)
Burst Pressure .....	12500 psig	Operating Temperature .....	-100° to +120° F
Flow Rate .....	29 scfm (0.005 lb/sec) GHe	Filtration Rating .....	10 microns absolute
Pressure Drop (Clean) .....	10 psid max.	Random Vibration.....	36.9 G(rms), 3 min/axis
(Dirty) .....	20 psid max.w/300mg ACFTD	Shock .....	2500 G

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**PERFORMANCE CHARACTERISTICS**

**Actual Flow vs Pressure Drop @ 5000 psi**





**DESCRIPTION**

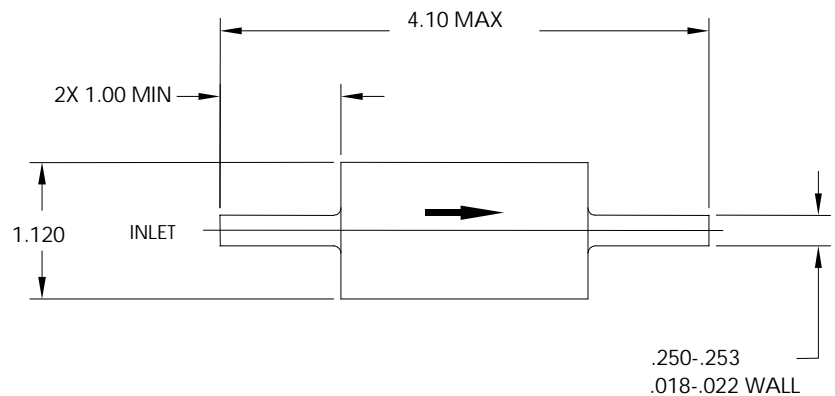
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**FEATURES**

- ⊕ Etched Disc Technology
- ⊕ All Titanium Construction with Titanium Etched Disc Assembly
- ⊕ Weight – 114g/0.25 lbm
- ⊕ 2 Micron Absolute Filtration
- ⊕ 4200 psig Operating Pressure



**OPERATING PARAMETERS**

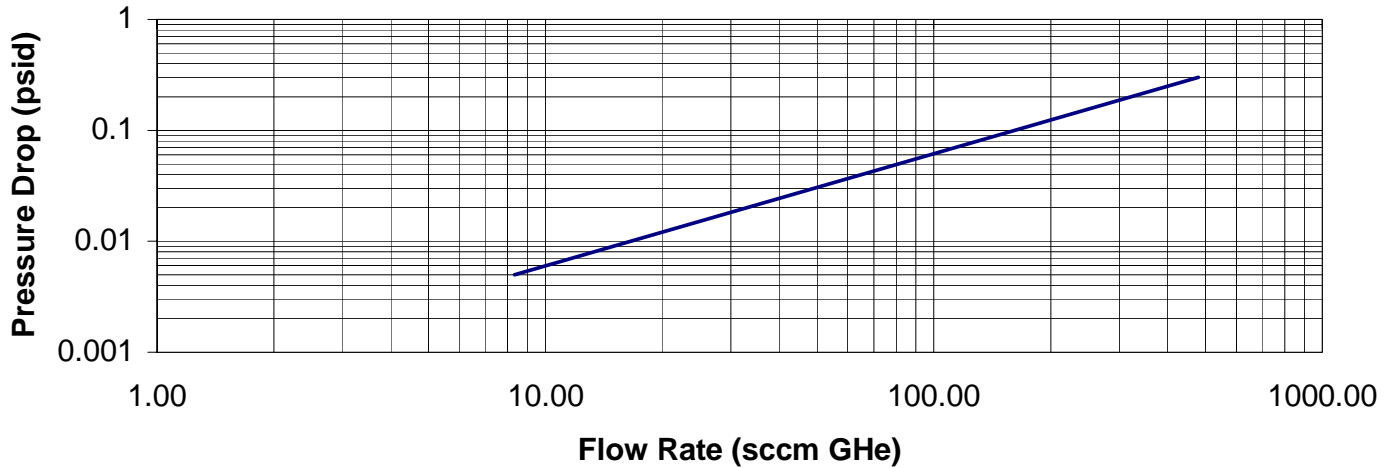
Operating Pressure Range ..... 4200 psig  
 Proof Pressure ..... 6300 psig  
 Burst Pressure ..... 16800 psig  
 Flow Rate ..... >17 sccm GHe  
 Pressure Drop (Clean) .. <1.5 psid @ 300 psig at flow rate  
 (Dirty)..... 0.3 psid @ 300 psig with 385 mg  
 ACFTD @ 19800 scch GHe

External Leakage ..... <1 x 10<sup>-6</sup> sccs GHe  
 Weight ..... 0.25 lbm (114 grams)  
 Operating Temperature..... +10° to +170° F  
 Filtration Rating ..... 2 microns absolute  
 Random Vibration.....25.32 G(rms), 3 min/axis

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**PERFORMANCE CHARACTERISTICS**

**Flow vs Pressure Drop @ 300 psig**



## DESCRIPTION

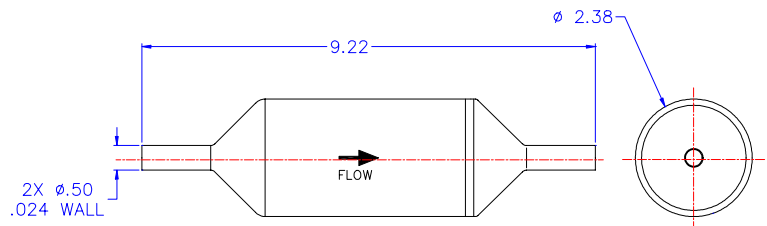
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## FEATURES

- ⊕ Very High Flow Capacity
- ⊕ Etched Disc Technology
- ⊕ Stainless Steel Construction Body, Titanium Etched Disc Assembly
- ⊕ Weight – 1000g/2.2 lbm
- ⊕ 15 μ Absolute Filtration
- ⊕ 500 psig Operating Pressure



## OPERATING PARAMETERS

Operating Pressure Range .....	500 psig
Proof Pressure .....	750 psig
Burst Pressure .....	1250 psig
Flow Rate .....	0.90 lbm/sec N <sub>2</sub> H <sub>4</sub>
.....	0.80 lbm/sec N <sub>2</sub> O <sub>4</sub>
Pressure Drop (Clean) <sup>1</sup> .....	5 psid max
Pressure Drop (Clean) <sup>2</sup> .....	2.1 psid
(Dirty) .....	10 psid max with 1.2 grams of ACCTD

1. Customer Requirement.  
2. Actual Test Data

External Leakage <sup>1</sup> .....	1.0 x 10 <sup>-6</sup> sccs GHe
External Leakage <sup>2</sup> .....	6.2 x 10 <sup>-8</sup> sccs GHe
Weight .....	2.2 lbm (1000 g)
Operating Temperature .....	+40° F to +120° F
Filtration Rating .....	15 microns absolute
Random Vibration .....	36.9 G(rms), 3 min/axis
Shock .....	2500 G – Peak Shock Load

**PERFORMANCE CHARACTERISTICS**

**Pressure Drop @ 500 psig**

