High Vacuum Valves
*Leader in Quality and Value*

# 13000 Series
## Laminar Flow Valve

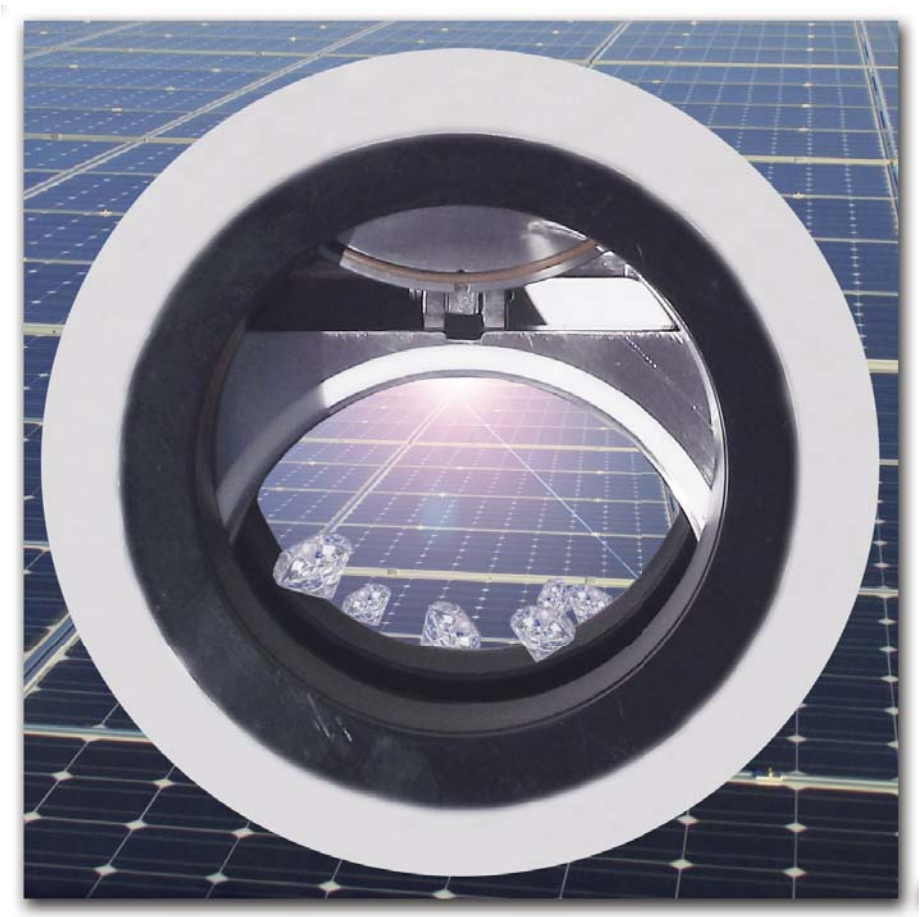
The HVA 13000 Series Laminar Flow Gate Valve features a laminar flow port orifice that effectively seals the valve mechanism from the gas stream. For additonal protection, purge ports are installed in both the upper and lower body areas to allow an insert gas flow to prevent intrusion of the process gas into these areas. Extensive semiconductor applications have proven these valves to be a valuable asset in process systems. Laminar flow valves may be used in etching, CVD and any other process that uses highly corrosive gases which may be damaging to other valves.

**Internal Isolation** - Flow orifice isolates all internal parts from flow path

**Positive Shutoff** - Maintains sealing integrity upon pressure/power failure

**Smooth Movement** - PTFE material allows laminar port to glide with ease

**Corrosion Resistant** - Withstands constant infusion of process gases



Perfect for CVD applications like solar cell processing and synthetic diamond growing

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## Laminar Flow Valve

## Ordering Guides

Pneumatic with Viton Bonnet

| DN mm | DN inch | Model number KF / ISO-K | Model number ISO-F | Model number CF-F* |
|---|---|---|---|---|
| 40 | 1.5 | 13212-0153R | - | 13212-0150R |
| 50 | 2.0 | 13212-0203R | - | 13212-0200R |
| 63 | 2.5 | 13212-0256R | 13212-0253R | 13212-0250R |
| 80 | 3.0 | 13212-0306R | 13212-0303R | 13212-0300R |
| 100 | 4.0 | 1312-0406R | 13212-0403R | 13212-0400R |
| 160 | 6.0 | 13212-0606R | 13212-0603R | 13212-0600R |
| 200 | 8.0 | 13212-0806R | 13212-0803R | 13212-0800R |
| 250 | 10.0 | Recommend ISO-F | 13212-1003R | 13212-1000R |
| 320 | 12.0 | Recommend ISO-F | 13212-1203R | 13212-1200R |

Includes 120V AC Solenoid. For 24V DC solenoid change to: 1321[**1**]-
*For Metric CF change last '0' to '4'

## 13000 Series Standard Technical Specifications

**Materials**

| | |
|---|---|
| Valve body and gate | 304 stainless steel |
| Welded bellows shaft seal | AM-350 |
| **Bonnet / gate seals** | |
| HV | Viton® elastomer |
| **Vacuum** | |
| Pressure Range | |
| HV | 1 x $10^{-9}$ mbar |
| Helium leak rate | < 2 x $10^{-9}$ mbar l/s |
| Differential pressure closed | 1 bar in either direction |
| Maximum Δ pressure before opening | ≤ 30 mbar |
| **Bakeout Temperature** | without solenoid |
| Standard | 150°C |
| Optional | 250°C |
| Actuator | |
| Pneumatic | 60°C |
| **Mechanism** | |
| Pneumatic air service | 80 psig |
| Solenoid | 4.0 Watts |
| supplied voltage | 120V AC, 50/60 Hz |
| Position indicator, max | 115 VAC or 28 VDC, 20 mA |
| **Mounting Position** | any |
| **Cycles Until Service** | 100,000 cycles dependent on process |
| **Purge Port Fittings** | |
| Standard | 1/4-inch female VCR |
| Optional | Swagelock, NW16 KF, Custom |