



SAES Pure Gas

The Technology of Pure Gas



Palladium Hydrogen Purifiers: PD1, PD2



PS7-PD2 Purifier

PS7-PD1 Purifier

SAES Pure Gas Palladium Hydrogen Purifiers produce the purest hydrogen on the planet. Only hydrogen is able to pass through the palladium membrane, while all other impurities travel out the bleed line. This patented micro-channel palladium membrane technology removes all impurities to below part-per-billion (ppb) levels.

Two platforms are available, each with 22 different cell sizes, creating 44 different models to suit any application.

- PS7-PD1 - One Cell
- PS7-PD2 - Two Cells in parallel

Applications

- LED device manufacturing
- III/V and II/VI MOCVD
- Crystal growth
- Photovoltaic production
- GaN and SiC epitaxy
- Semiconductor Manufacturing
- Fuel Cell

Palladium Advantages

- Only Hydrogen passes through to the pure side
- Every impurity is removed - no exceptions
- Unlimited lifetime - no regeneration or vessel replacement
- Pure H₂ from a variety of source gases with ppm or % level impurities
- Patented Micro-Channel Palladium technology
- Easy to verify performance with Helium leak check
- Low power consumption and small footprint

Palladium Hydrogen Purifiers: PD1, PD2



Standard Features

- PLC with HMI color touchscreen
- Inlet 0.5µm particle filter
- CE compliant
- Automatic N₂ purge
- H₂ sensor with alarm
- Inlet and outlet pressure sensor
- Alarm history and data storage
- Helium leak test port

Optional Features

- Deoxo catalyst pre-purifier
- Inlet mass flow meter
- MODBUS communication
- Z-Purge of electrical bay
- Auto or manual bypass
- Separate control power
- Larger 5.7" HMI color touchscreen
- Purifier hold down brackets

Feature	Specification
Flow Rate	17 - 2,170 slpm (1 - 140 Nm ³ /hr.)
Maximum Inlet Pressure	300 psig (20.7 Barg)
Inlet Purity	99.99%
Outlet Purity	99.9999999% O ₂ , H ₂ O, CO, CO ₂ , N ₂ , CH ₄ , NMHC, He, Ar All removed to <1 ppb
N ₂ Purge	72 - 98 psig (5 - 6.8 Barg)
Instrument Air or N ₂ Z-Purge (optional)	95 - 140 psig (6.6 - 9.7 Barg)
Cabinet Ventilation	PD1: 260 Nm ³ /hr (150 scfm) at 0.2" H ₂ O vacuum PD2: 400 Nm ³ /hr (235 scfm) at 0.2" H ₂ O vacuum
Main Power	200 - 240 VAC 50/60 Hz
Dimensions	PD1: 30"W x 19"D x 36"H (762 x 483 x 922 mm) PD2: 34"W x 22"D x 74.3"H (864 x 559 x 1888 mm)
Weight	PD1: < 440 lb (< 200 kg) PD2: < 660 lb (< 300 kg)

Model Number	Typical Flow Rate 260 psig inlet pressure 80 psig outlet pressure	
	slpm	Nm ³ /hr
PS7-PD1-05	48	2.9
PS7-PD1-10	96	5.8
PS7-PD1-15	145	8.7
PS7-PD1-20	193	11.6
PS7-PD1-25	241	14.5
PS7-PD1-30	290	17.4
PS7-PD1-40	386	23.2
PS7-PD1-50	483	29.0
PS7-PD1-60	580	34.8
PS7-PD1-70	676	40.6
PS7-PD2-40	773	46.4
PS7-PD2-50	966	58.0
PS7-PD2-60	1,160	69.6
PS7-PD2-70	1,353	81.2

Other models available



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