

# Palladium Hydrogen Purifiers: PD1, PD2

*Palladium hydrogen purifiers produce the purest hydrogen on the planet*

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 H<sub>2</sub> 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



PS7-PD2 Purifier (left) PS7-PD1 Purifier (right)

## STANDARD FEATURES

- PLC with HMI color touchscreen
- Inlet 0.5 µm particle filter
- CE compliant
- Automatic N<sub>2</sub> purge
- H<sub>2</sub> 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 145 mm (5.7") HMI color touchscreen
- Purifier hold down brackets

## SPECIFICATIONS

<b>Flow rate</b>	1 – 140 Nm <sup>3</sup> /hr. (17 – 2,170 slpm)
<b>Maximum inlet pressure</b>	20.7 Barg (300 psig)
<b>Inlet purity</b>	99.99%
<b>Outlet purity</b>	99.9999999% O <sub>2</sub> , H <sub>2</sub> O, CO, CO <sub>2</sub> , N <sub>2</sub> , CH <sub>4</sub> , NMHC, He, Ar All removed to <1 ppb
<b>N<sub>2</sub> purge</b>	5 – 6.8 Barg (72 – 98 psig)
<b>Instrument air or N<sub>2</sub> z-purge (optional)</b>	6.6 – 9.7 Barg (95 – 140 psig)
<b>Cabinet ventilation</b>	PD1: 260 Nm <sup>3</sup> /hr (150 scfm) at 0.2" H <sub>2</sub> O vacuum PD2: 400 Nm <sup>3</sup> /hr (235 scfm) at 0.2" H <sub>2</sub> O vacuum
<b>Main power</b>	200 – 240 VAC (50 or 60 Hz)
<b>Dimensions</b>	PD1: 762 W x 483 D x 1000 mm H (30" W x 19" D x ~39.4" H) PD2: 864 W x 559 D x 1888 mm H (34" W x 22" D x 74.3" H)
<b>Weight</b>	PD1: <150 kg (331 lbs) PD2: <300 kg (<660 lbs)

## PERFORMANCE DATA

### Typical Flow Rate

(260 psig inlet pressure; 80 psig outlet pressure)

Model number		
PS7-PD1-05	48 slpm	2.9 Nm <sup>3</sup> /hr
PS7-PD1-10	96 slpm	5.8 Nm <sup>3</sup> /hr
PS7-PD1-15	145 slpm	8.7 Nm <sup>3</sup> /hr
PS7-PD1-20	193 slpm	11.6 Nm <sup>3</sup> /hr
PS7-PD1-25	241 slpm	14.5 Nm <sup>3</sup> /hr
PS7-PD1-30	290 slpm	17.4 Nm <sup>3</sup> /hr
PS7-PD1-40	386 slpm	23.2 Nm <sup>3</sup> /hr
PS7-PD1-50	483 slpm	29.0 Nm <sup>3</sup> /hr
PS7-PD1-60	580 slpm	34.8 Nm <sup>3</sup> /hr
PS7-PD1-70	676 slpm	40.6 Nm <sup>3</sup> /hr
PS7-PD2-40	773 slpm	46.4 Nm <sup>3</sup> /hr
PS7-PD2-50	966 slpm	58.0 Nm <sup>3</sup> /hr
PS7-PD2-60	1,160 slpm	69.6 Nm <sup>3</sup> /hr
PS7-PD2-70	1,353 slpm	81.2 Nm <sup>3</sup> /hr

*Other models available*

## FOR MORE INFORMATION

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