



Where nothing else works.  
 Built to last, with a chemical-resistant feed gas channel and reactor.  
 Robust and off-grid adapted.

PBS<sup>®</sup>  
 generation



## Product Data Sheet (G2313500XX)

<b>Ozone output (equivalents)</b>	At 17 °C (+10-40% at 3 °C) ambient & feed gas temperature
O3 concentration (air feed, 2.5 bar @ outlet):	<13.0 gram O3/Nm3 @ 4 lpm (15 g at 3 °C)
O3 concentration (-“-):	<7.3 -“- @ 15 lpm (8.0 g at 3 °C)
O3 concentration (-“-):	<4.5 -“- @ 30 lpm (5.0 g at 3 °C)
O3 concentration (-“-):	<2.1 -“- @ 60 lpm (2.6 g at 3 °C)
O3 production (-“-):	<3.1 gram O3/h @ 4 lpm (3.6 g at 3 °C)
O3 production (-“-):	<6.6 -“- @ 15 lpm (7.2 g at 3 °C)
O3 production (-“-):	<8.1 -“- @ 30 lpm (9.0 g at 3 °C)
O3 production (-“-):	<7.6 -“- @ 60 lpm (9.4 g at 3 °C)
<b>Gas</b>	
Feed gas:	Air (any humidity) or oxygen
Feed gas flow (max. through H-unit):	<300 lpm (<150 lpm at 260 cm tubing 4mm I.D)
Max gas pressure at inlet:	7 bar(g) / 101 psi(g) - recommended range 1-3 bar
Gas pressure drop (air feed @ 0 °C):	0.2 bar @ 40 lpm; 0.9 bar @ 100 lpm; 2.8 bar @ 200 lpm
Gas connections:	4x6 mm, push on
Recommended tubing:	PTFE, FEP, silicone or equivalent (O3 resistant)
<b>Water cooling</b>	
Cooling water connections:	Aluminium pipe 12 mm push on, or 8 mm push in
Required cooling water quality:	All water suitable for aluminium pipes
Recommended cooling water flow:	>0.8 lpm
Max cooling water temp:	<20 °C (at continuous operation @ 200 W) <36 °C (at continuous operation @ 150 W)
Max water pressure:	<6 bar(g)
Water pressure drop:	0.2 bar at 3 lpm
<b>Ambient conditions (operation)</b>	
Temperature	-20* to +40* °C (includes thermal safety switch)
Humidity, max	Any (<100% R.H.)
<b>Power supply (only use recommended)</b>	
Voltage rating:	24 V DC (+/- 10%)
Power consumption:	<200 W
Max fuse:	10 A
Electrical connections:	Direct mounting on terminal, or banana connector (plug)
<b>Dimensions (cylinder)</b>	
Size (Length x Diam):	383 x 150 mm (+25 mm at water connections)
Weight:	4.1 kg (8.3 kg with oil)
Volume, oil (transformer fluid)	4.2 liters (4.2 kg)
<b>Compliance and Certifications</b>	
CE*:  * <i>Tentative data. Work in progress</i>	LVD (2014/35/EU), EMC (2014/30/EU), Simple Pressure Vessels (2014/29/EU) and RoHS (2011/65/EU). Harmonised standard in particular: IEC 61010 (see CE declaration*)
Noise level:	<60 dB at 1 m. Operating frequency (<8000Hz)
IP class:	Standard IP67 (optionally IP68)



## Ozone in tough conditions

Using only air and locally produced electricity, our H-unit disinfects and cleans air, materials, and water endlessly\*.

*\* Product lifespan: > 10 years with minimal maintenance, adaptable to even the harshest and most challenging environments.*

### The PBS<sup>®</sup> (H)unit<sup>®</sup> key features:

- **Humid air** – that's our thing. Equipped with a chemical-resistant feed gas channel and reactor, our (H)unit<sup>®</sup> utilizes ambient air with any level of humidity to generate ozone. (You could even introduce water directly into the gas inlet without causing any damage). This distinction (patent Nos: SE 540593, EP 3563643, US 11096267, IN 384897) sets our product apart from prior art and enables us to operate efficiently without pre-treating the air, i.e. less sensitivity and no oxygen cylinders, concentrators or air-dryers needed.  
The gas channel and reactor are consequently easily cleaned using a simple Clean-In-Place (C.I.P.) solution, where you circulate water and a cleaning agent to remove any potential build-ups.
- **Low energy consumption** – up to 200W, 24 V DC. The (H)unit<sup>®</sup> could run on a small solar panel or alternative power source. PBS<sup>®</sup> also offers customized, plug-and-play solar power kits.
- **Small physical size** – 38x15 cm (plus 25 mm at cooling water connections) in a cylinder shape.
- **Minimal maintenance** – No moving parts. No parts to replace. With a simple C.I.P. procedure 1-2 times a year the (H)unit<sup>®</sup> is good to go for the complete lifespan.
- **Long lifespan** – 10+ years. And then... through a rewarding deposit system the (H)unit<sup>®</sup> is sent back to us at PBS<sup>®</sup> for recycling.
- **Robust and off-grid adapted** – Built to last, with highest quality industrial components. Shock-absorbing and vibration damping design. Suitable for harsh condition.
- **High pressures** – up to 7 bar (101 psi) operating pressure, enabled through proprietary components.
- **Water cooled** – enabling active cooling to be adapted for the specific application.
- **Automation cabinet** – our PBS<sup>®</sup> (H)unit<sup>®</sup> autO3 is the optional “extension” for full industrial automation, where our (H)unit<sup>®</sup> either is housed in, or stands beside, an IP55 metal cabinet comprising components for measuring ambient conditions, process parameters (flow, pressure, temp, etc.), as well as ozone leakage detection and error indication. PLC operated, with communication via either Ethernet RJ-45 (ModBus TCP/IP), or through its access point (web interface).



The beneficial combination of ozone and high humidity is a known fact in the industry and has been documented for over 80 years. The synergistic effects cause higher oxidizing and disinfecting properties compared to dry ozone treatments. PBS<sup>®</sup> has the technology to harness this capability.