



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

PBS[®]
 generation



Product Data Sheet (G2311200XX)

Ozone output (equivalents)	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)
Gas	
Feed gas:	Air (any humidity) or oxygen
Feed gas flow (max. through 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)
Water cooling	
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
Ambient conditions (operation)	
Temperature	-20* to +40* °C (includes thermal safety switch)
Humidity, max	Any (<100% R.H.)
Power supply (only use recommended)	
Voltage rating:	24 V DC (+/- 10%)
Power consumption:	<200 W
Max fuse:	10 A
Electrical connections:	Direct mounting on terminal / banana conn.
Dimensions (cylinder)	
Size (Length x Diam):	383x150 (+25 mm at water connections)
Weight (oil filled):	4.1 kg (8.3 kg with oil)
Volume oil (transformer fluid)	4.2 liters (4.2 kg)
Compliance and Certifications	
CE*:	LVD (2014/35/EU), EMC (2014/30/EU), Pressure Equip. (2014/68/EU) and RoHS (2011/65/EU). Harmonised standard in particular: EN 61010 (see CE declaration*)
* Tentative data. Work in progress	
Noise level:	<60 dB at 1 m. Operating frequency (<8000Hz)
IP class:	Standard IP67 (optionally IP68)



With only air and a splash of water as a source, as well as locally produced electricity, we can disinfect and clean air, materials and water unlimitedly *.

** Product lifespan > 10 years, with minimal maintenance and adaptation to the toughest and most difficult environments.*

The PBS[®] (H)unit[®] key features:

- **Humid air** – that's our thing. With a chemical-resistant feed gas channel and reactor our (H)unit[®] can be fed with air holding any moisture content. You can even pour water straight into the gas inlet.
The gas channel and reactor is consequently also easily cleaned through a simple C.I.P. (Clean-In-Place) solution where you circulate water and a cleaning agent to wash out eventual build-ups. Recommended interval 1-2 times a year.
- **Low energy consumption** – up to 200W, 24 VDC. The (H)unit[®] can easily be run from a small solar panel energy supply (or alternative source). Together with a custom cooling water pump and air pump the total energy consumption is less than 300 W. PBS[®] also provides customized, plug-and-play, complete 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[®] is good to go for the complete lifespan.
- **Long lifespan** – 10+ years. And then... through a rewarding deposit system the (H)unit[®] is sent back to us at PBS[®] 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[®] (H)unit[®] AutO3 is the optional “extension” for full industrial automation, where our (H)unit[®] sits in an IP65 sheet 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 and communication via ethernet RJ-45 (ModBus TCP/IP).

The (H)unit[®] itself, as a stand-alone product, could also be configured through a terminal application on your computer – connected by cable at site, or remotely.

The beneficial combination of ozone and high humidity is a known fact in the industry, and has been documented for 80+ years. The synergistic effects causes higher oxidizing and disinfecting properties than a dry ozone treatment does. And PBS[®] has the technology for it.

PBS[®] (H)unit[®] could also be fed with oxygen, for an up to 5 times higher ozone concentration yield.