We are the leading designers of products for this field in the world today. We wrote the book in fact. We only make corona discharge products (as UV products simply do not work in water and are unsafe in air). We only make combination ozone and ion products (as just ozone or just ions is far less effective). We only make specialised air products and specialised water products, which have product life spans up to 10 times longer than other designs.

Try one of these products and avoid the temptation of low quality alternatives. We think you won't look back. Then tell your friends - or, even better, sell them one!

High technology products for purifying both the air and water, for home growers and small farms, where intensive plant growth methods, such as hydroponics and horticulture, are used.

These products deliver five benefits: they eliminate odours, increase yield, deter pests, control plant diseases and restore ion and oxygen levels.

They are small scale versions of the same larger products we design for big systems. For example, up to million head of lettuce farms. So you receive the same quality industrial engineering, but in a compact and cost effective package.

1. Eliminate odour.
2. Increase yield.
3. Deter pests (spider mite, white fly, etc).
4. Control plant diseases (bacteria, fungi, viruses, etc).
5. Restore ion balance to natural levels.

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Air Purifiers

Ozone and ions are very effective when generated together. Unfortunately, other products make only one or the other. Recent international research proves that combined ozone + ions can control microbes and odour up to four times better than just ozone or just ions.

Ozone is made from life-giving oxygen. The ozone layer is essential for life on earth and protects us from harmful ultra violet rays. Ozone permanently removes odours by a process of oxidation and destroys microbes and pest eggs by a process of protein restructuring. Then, it converts back into pure oxygen. It controls microbes, diseases and pests in the air, and on plant surfaces, resulting in healthier and faster growing plants.

Ions are charged particles made from oxygen and air. Country air has an ion count of around 3,000 per cm³, but home air of only 100 per cm³. Natural country ion levels stimulate the production of vegetable growth hormones which can result in bigger, faster growing plants.

Water Purifiers

Ozone is an extremely effective disinfectant of waterborne microbes, such as bacteria, viruses, protozoa and fungi, including pythium and fusarium. These products are designed to do this whilst not harming nutrients added to the water.

Ozone promotes oxygenation of the water. It also cleans pipes and media in a recirculating water system. Two more ways that it increases plant health and yield.

To kill microbes in water requires a certain minimum concentrations of dissolved ozone. UV products simply cannot make high enough concentrations to achieve this. The WQA (the international Water Quality Association) states: "It is important to note that ultraviolet generators cannot provide sufficient ozone concentrations to provide effective disinfection".

After corona discharge ozone has done its job, it converts back to oxygen and leaves no chemical residue. This is why it is so environmentally friendly. All you need is electricity.
PH1 Air Purifier

Benefits:
✓ Eliminates odour.
✓ Increases yield.
✓ Deters pests (spider mite, white fly, etc).
✓ Controls plant diseases (bacteria, fungi, viruses, etc).
✓ Restores ion balance to natural levels.

The PH1 Air Purifier has been custom built to suit the demands of the professional hydroponic or indoor gardening system. With double the oxidant output of other models, it will control odour problems across all temperature and humidity conditions. The PH1 also controls small pests and micro-organisms. Yields can increase significantly.

Features:
The PH1 is rich with patented features:
• Combination oxidants and ions (rather than just one or the other). 350 mg/hour of oxidants + 1,000,000 ions per cm³.
• Includes a length of flexible tube and air diffuser ball and an air inlet filter - everything in one package.
• Electrical certifications, including EMI (no interference with TVs, phones, etc - for you or your neighbour!)
• Patented Plasma Emitters, featuring a wafer thin ceramic alloy laminate - microchip technology - with the active electrode removed from the airstream. This means there are no problems with:
  - residue build-up.
  - sparking in humid or smoky environments.
  - formation of nitrogen oxides.
• Extra long-life design. Our components have a design life up to 20 times greater than that of cheap alternative products.
• In-built circulation air compressor to distribute the oxidants.
• Fully potted products. Electrically insulated products are essential for wet areas and, therefore, metal cases must not be used.
• Long life - No need for spare parts; no uv tubes to worry about; maintenance free - a "set and forget" design.
• The PH1 uses "Advanced Oxidation Generator Technology." It purifies the air by using both ozone, the hydroxyl radical and air ions.

Potted Design:
The PH1 has a unique potted design. The advantages of this design include:
• It is impossible for water to reach electrical components under any circumstances.
• Airborne mist, humidity and water vapours cannot reach electrical components. This eliminates corrosion and improves longevity.
• End-users cannot tamper with the product and accidentally reach mains voltage circuits or high voltage circuits.
• The product is solid-state - fasteners cannot loosen, electrical connections cannot corrode, parts cannot move or relocate if the product is knocked, etc.
• The product has excellent resistance to external factors, such as vibration, impact, and ambient temperature.

Installation:
Two installation method can be used. Method 1: simply locate the PH1 at the exhaust fan outlet or in the outlet duct to control outgoing odour. Method 2: locate the PH1 in the growing space. Thus the ions and oxidants benefit the plants by controlling plant diseases, deterring pests and increasing yield. Then when they are exhausted by the fan, they control odour as well. The ideal ozone concentration within the growing space is 0.05ppm. This will ensure optimum odour, micro-organism and pest control without exceeding the workplace exposure standard.

The table below indicates the recommended output levels for various common exhaust fans, based on 30°C, 80% + RH conditions, and an average to high odour load.* For lower ozone levels, use a timer to regulate Purifier output. For higher levels use multiple Purifiers.

<table>
<thead>
<tr>
<th>Exhaust Fan Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (mm)</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>150</td>
</tr>
<tr>
<td>200</td>
</tr>
<tr>
<td>200</td>
</tr>
<tr>
<td>250</td>
</tr>
<tr>
<td>250</td>
</tr>
<tr>
<td>300</td>
</tr>
<tr>
<td>300</td>
</tr>
<tr>
<td>350</td>
</tr>
</tbody>
</table>

* Other conditions require different levels. Indicative only.
**PH1 Water Purifier**

The same PH1 that is used for air purification can alternatively be used to purify your water system. You can change from the one application to the other at any time.

By controlling waterborne microbes and by oxygenating the water, yields can increase significantly. Some customers report yield increase of 30%. Best practise is to treat the recirculation tank and to monitor the effect on your plants. If required, control the oxidant output by connecting the PH1 to a cyclical timer (for example 10 minutes on and 60 minutes off).

The PH1 includes inbuilt air compressor, 350mg/hr oxidant output, tube and diffuser ball, and a fully potted design to suit wet conditions.

**Installation**

For a small home hydroponics system simply drop the porous ball into the recirculation tank. The diagram shows a typical system for three plant centres, connected by nutrient lines. The nutrients are generally unaffected. The water is disinfected and oxygenated.

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**PH2 Air Purifier**

The PC2 is for larger horticulture spaces and greenhouses. It includes all of the features of the smaller PH1, plus much more:

- Combination ozone and ions and hydroxyl radical, with total oxidant output of 2000mg/hr.
- Internal air compressor with inlet filter.
- Silicon tube and air diffuser ball.
- Patented plasma ozone emitters.
- Can join multiple units together for large systems.

**PE2 Water Purifier**

The PE2 is designed for larger hydroponics & horticulture growers, including farmers. It is connected to the feed water tank in conjunction with an Ozone Venturi Kit and a water pump. The result is disinfected and oxygenated healthy water for the whole farm.

The PE2 has many features for such a compact product: high ozone concentrations, plasma ozone emitter and fully potted design.

If required, multiple PE2's can be connected together for large systems.
 Specifications subject to change  
© Ozone Environmental Technology 

<table>
<thead>
<tr>
<th>Purifier Code</th>
<th>PH1</th>
<th>PH2</th>
<th>PE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Home</td>
<td>Commercial</td>
<td>Farm</td>
</tr>
<tr>
<td>Application</td>
<td>Air/Water</td>
<td>Air/Water</td>
<td>Water</td>
</tr>
<tr>
<td>Oxidant output, maximum dryer chamber fitted (mg/hour)</td>
<td>350</td>
<td>2000</td>
<td>2000</td>
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<tr>
<td>Oxidant concentration, maximum (ppm)</td>
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<td>2,500</td>
<td>2,500</td>
</tr>
<tr>
<td>Ion output, maximum (per cm² at 1m)</td>
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<td>2,000,000</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Air/gas flow rate, maximum (l/min)</td>
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<td>3</td>
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<tr>
<td>Rated power, nominal (Watts)</td>
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<td>120</td>
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<tr>
<td>Weight, nominal (kg)</td>
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<td>6.5</td>
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<tr>
<td>Dimensions, as standard</td>
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<tr>
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<td>170</td>
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<tr>
<td>Length L (mm)</td>
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<td>210</td>
</tr>
<tr>
<td>Height H (mm)</td>
<td>102</td>
<td>170</td>
<td>170</td>
</tr>
</tbody>
</table>

**Features**

- dual ozone + ion emitters
- plasma discharge (corona)
- emitter type
- air compressor
- porous diffuse individual
- silicon hose included
- potted body, electrically insulated
- certified: no electromagnetic interference

**Accessories**

- Ozone Water Tester EW0
- Ozone Air Tester EZ1
- Ozone Water Controller EZ3
- Silicon Hose HS6
- Ozone Air Controller EZ3
- Water pumps, used with PE2

**Application notes**

1. See your Ozone Distributor for assistance when selecting and installing your Ozone Air or Water Purifiers.
2. The safe threshold for ozone levels in air, in an occupied space is 0.05 ppm. If a space is permanently occupied, use the EZ3 Controller connected to the Purifier. If high levels are generated in an unoccupied space, ventilate before entering. If in doubt, use the EZ1 Tester. Do not breathe Purifier outlets directly.
3. For applications which are new on your site, test the Air or Water Purifiers on a small scale first, before upscaling.
4. Use inlet hose to supply outside air to Air Purifiers, if required.
5. Read Instruction Manual before use.

**Useful Conversions**

1m = 1000 mm = 3.38 feet
1kg = 1000 g = 2.20 pounds
1Pa = 0.102 mm water = 0.004 inches water
1 l/s = 3.60 m³/hr = 2.12 cfm
1kW = 1000 W = 1.34 hp
Ozone: 1 ppm (by volume) = 2 mg/m³ = 2000 mg/m³ (at 1 atmosphere and 25°C).

**Hydroponics & Horticulture Purifiers**

**Ozone: **

The air contains pure oxygen molecules.

- Ozone is formed by the Plasma emitters (enriched oxygen).
- The third oxygen atom attaches to a pollutant to oxidise it to a harmless molecule.
- Leaving pure oxygen again.

**Ion: **

The air contains pure oxygen and nitrogen molecules.

- Ions are formed by the Ion emitter (in a 2:1 ratio). They are charged compounds.
- Dust and particles are attached to the charge.
- The heavy particles drop from the air and can lose their charge.

**The problems with Ultra Violet products**

**UV for Air**

- Not safe. Causes cancers and cataracts if you can see the light.
- Should not locate in growing space, as it can burn plants.
- UV tubes typically last only 6 months, and break easily.
- No ions (ozone only).
- The listed output (e.g. 200 mg/hour) is usually exaggerated by a factor of 5 compared to the actual measured output (e.g. 40 mg/hour).

**UV for Water**

- Doesn’t work. Cannot kill microbes as doesn’t create ozone concentrations which are high enough to dissolve into water.
- Often in metal case, or non-earthed plastic cases. This is unsafe in wet environments.
- UV tubes typically last 6 months, and break easily.
- Output quickly reduces with age as emitters get dirty.