

Chemical-Free Water Purification Since 1993:

Photo-Cat destroys organic contaminants in water through a TiO_2 slurry-based photocatalytic process to purify or detoxify water. It's unique chemical-free process removes chemical contaminants, biologicals, NDMA, viruses, oocysts, bromate, EDCs, PPCPs, sub-micron particulate and metals. Photo-Cat is not OH^{\bullet} radical dependent, nor a UV photocatalytic process. It combines the best of "chemical-free" advanced oxidation (**AOP+**) & ceramic ultrafiltration.

Benefits include:

- the strongest oxidation potential of all AOPs
- a unique reductive pathway
- metals removal
- biological destruction/filtration
- significant advantage in efficiency, cost and complexity reduction
- no generated residuals

Photo-Cat lifecycle costs are significantly less than conventional technologies such as activated carbon, UV ozone, UV peroxide, chemical oxidation, air stripping with off-gas treatment, and reverse osmosis, making Photo-Cat the economical choice for multi-year projects with complex water challenges.

This highly automated process can treat water to very high standards that significantly exceed drinking water standards. Photo-Cat is essentially a solid state, automated device that operates unattended, with lamp life and service intervals exceeding 20,000 hours.

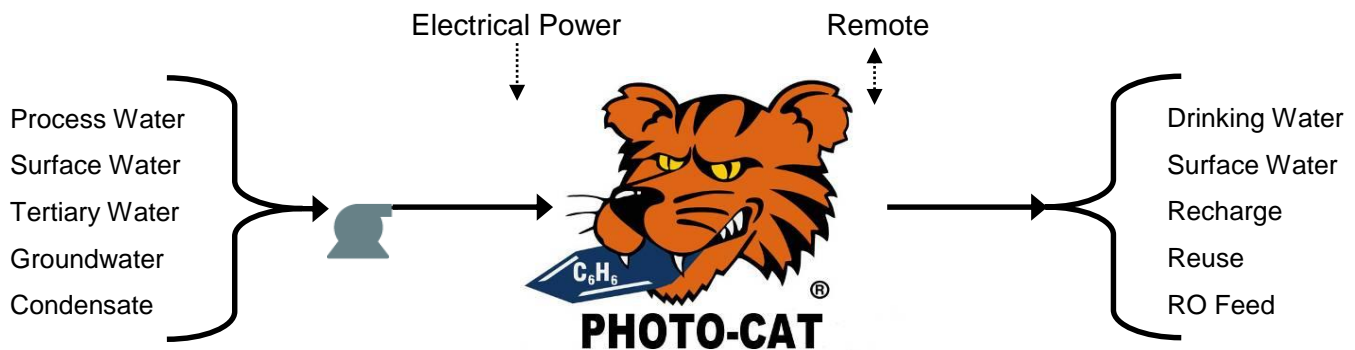
Applications: Municipal, Industrial, Oil & Gas:

- Drinking Water
- Groundwater Remediation
- Disinfection & Sterilization
- Industrial Process Wastewater
- High Purity Water
- Bilge & Ballast Water
- RO Feed & Polish
- Reuse / Recharge
- Zero Discharge / Closed Loop



Features & Benefits

Efficient	Low lifecycle cost - 1/4 the O&M of other AOPs Lamp life - >20,000 hrs between service periods Quick lamp changes - 1 min. w/flooded system No catalyst loss - continuously recovers catalyst Continuous 24/7 duty	Automated	Unattended SCADA/PLC programmed operation Digital service and training manual online Remote monitoring, control, and data logging Automatic fault detection and recovery Smart Access, Service & Sensors
Ability to Treat	Insensitive to dissolved solids and opaque fluids Not inhibited by turbidity, UVT or pH levels Not affected by pressure, temperature, alkalinity No fouling - operates with water containing iron Advanced coalescer technology	Serviceability	Generic parts, easy service availability No quartz tube wipers or quartz tube service Service can be performed by end-users' staff and trades
Simplicity	No wipers; No membrane cleaning	Turn Down	0% to 100% turn down
Manufacturing Excellence	Corrosion resistant High grade stainless steel construction NEMA 4 rating Plug & Play installations Highly reliable using highly developed standard, off the shelf components	Design Benefits	Created for sustainable development 25 year life expectancy Modular design customized to client requirements No pre-treatment required for removal of metals, dissolved solids or turbidity
Community Acceptance	Extremely low noise No off-gas No waste generated	Permitted Installations	History of efficient permitting by regulators such as the EPA and MOE for surface water discharge
Chemical Free	Operated without H ₂ O ₂ and ozone	High Compliance	Established compliance history of regulated discharge since 1994



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0.5 MGD System

Purifics

340 Sovereign Road, London, ON, Canada, N6M 1A8
Ph: 519-473 5788, info@Purifics.com, www.Purifics.com

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