



TOC Reduction Application Brief

In today's world, various industries such as power, PV (Photovoltaic), and semiconductors, require a consistent Ultra Pure Water (UPW) supply for their manufacturing processes. To meet this demand, businesses need efficient and reliable water treatment systems capable of reducing Total Organic Carbon (TOC) and other contaminants to the strictest levels.

Exceeding the TOC limit in UPW can have detrimental consequences. High TOC levels (over 200 ppb) in the power industry can cause corrosion, scaling, and fouling in boilers and turbines, reducing efficiency, increasing downtime, and costly maintenance.



Similarly, in the PV industry, excessive TOC levels (over 20 ppb), can lead to impurities in solar cell production, reducing the overall efficiency and longevity of solar panels. In the semiconductor industry, elevated TOC levels (over 5 ppb), can contaminate microchips and other sensitive components, causing defects and yield loss. As a leading provider of water treatment solutions, our mission is to offer an innovative and effective

UV water treatment system. Atlantium's HOD™ is designed to produce UPW, ensuring consistent quality, and minimizing downtime.

The HOD™ UV is a cutting-edge technology that utilizes a powerful combination of ultraviolet light and an advanced sensor integration network to deliver superior TOC Reduction performance.

HOD™ UV Technology Overview

The system utilizes MP (Medium Pressure) VUV (Vacuum UV) lamps which produce polychromatic wavelengths including 185 to 200nm.

These wavelengths contribute to water photolysis which creates hydroxyl radicals that perform TOC reduction.

MP VUV lamps have higher intensity than conventional UV, enabling using up to 15 times fewer lamps and a smaller footprint.



Fewer lamps enable installing more sensors per lamp and real-time monitoring. Atlantium monitor & control each lamp separately. Enabling real-time control & optimization for better efficiency.

In conclusion, the HOD™ UV water treatment system effectively reduces TOC contaminants while being:



Energy
efficient



Reliable



Easy to
maintain