

Diamond UV

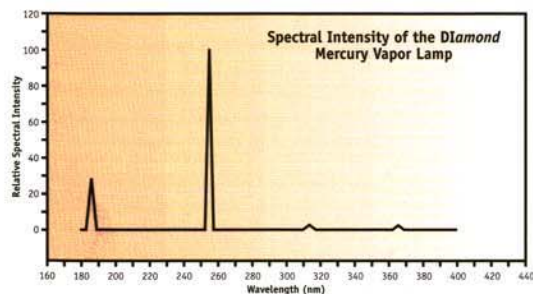
The ideal system for your most critical analytical applications, which require the absolute lowest levels of organic carbon, including HPLC, GC-MS, IC, and TOC analysis, and also trace metal analysis by ICP-MS where organically bound metals are of concern.

Ultraviolet (UV) photo oxidation

For ultralow TOC concentrations and germicidal action, the addition of UV oxidation is unparalleled.

UV chamber – A UV oxidation chamber is placed between the third and fourth (final) purification beds in the cartridge pack. The chamber is constructed of highly polished 316 stainless steel and a UV-transparent quartz sleeve. Within the sleeve resides the mercury vapor lamp.

Germicidal action – The mercury vapor lamp creates a high fraction of light at 254 nm, which keeps bacterial levels in the system very low.



Organic carbon oxidation – The lamp also creates a high fraction of 185 nm light which, in conjunction with the 254 nm radiation, produces hydroxyl-free radicals ($\bullet\text{OH}$). The radicals quickly oxidize residual organic carbon to CO_2 , water, and some organic intermediates.

Organic removal cartridge – A specially formulated media removes oxidation by-products (carbon dioxide and organic intermediates) to produce water virtually free of TOC. A final fraction of semiconductor-grade mixed-bed resin is the last step in producing the highest purity water.

