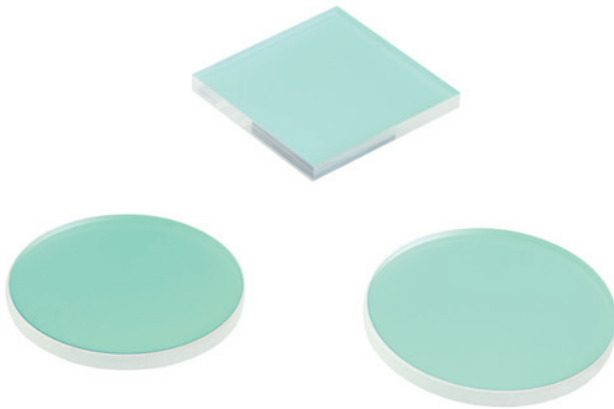


# Mercury-SC™ Filters

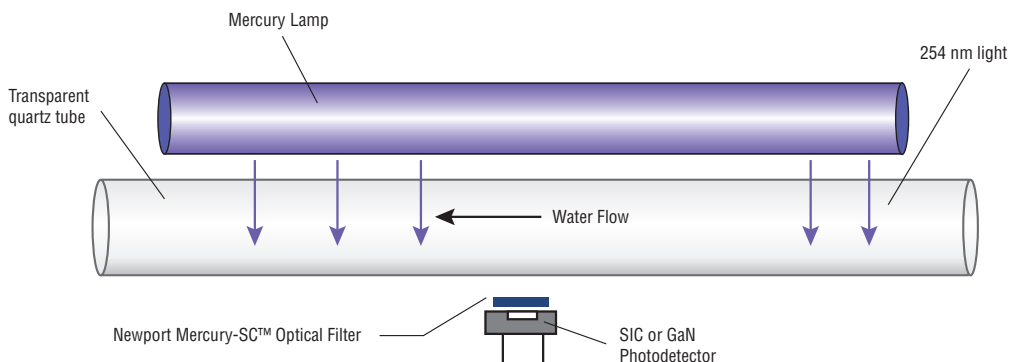


- High transmission: >60% typical at 254 nm
- Qualified for high temperature (300 °C)
- Spectral stability in any environment
- Low autofluorescence
- Qualified for high humidity - MIL-STD-810E, Method 507.3, Procedure III, 30 cycles
- Minimized thickness: ≤1 mm (typical)

Newport's patent-pending Mercury-SC™ optical filter was developed to address the world's problem of providing clean, pure water in poor, underdeveloped nations. Addressing the goal of eradicating water-borne illnesses and diseases such as cholera and dysentery, Mercury-SC™ optical filters are a key enabler of the development of low-cost point-of-use ultraviolet-light water disinfection applications. These novel filters allow the precise monitoring of mercury arc-lamp ultraviolet light emissions at a small fraction of the cost of current technologies. Tuned to optically pass only the critical anti-microbial ultraviolet wavelengths including 254 nm, these filters are designed for use with a Silicon Carbide or Gallium Nitride photo-detector to accurately monitor the purifying effectiveness of mercury lamps in real-time.

Typical UV disinfection mercury lamps have limited lifetimes; their critical disinfection emissions deteriorate even though their ineffective visible emissions remain, creating the impression that the lamp is operating at full efficiency. Although the lamp may have a bright appearance, it may lack the crucial 254 nm antimicrobial light intensity necessary for effective disinfection. The combined response of the Mercury-SC™ filter and the Silicon Carbide or Gallium Nitride detector optically rejects background light while allowing the critical 254 nm energy to be accurately monitored. This system provides effective purification energy monitoring and enables a major cost-savings by eliminating the need to prematurely replace mercury lamps.

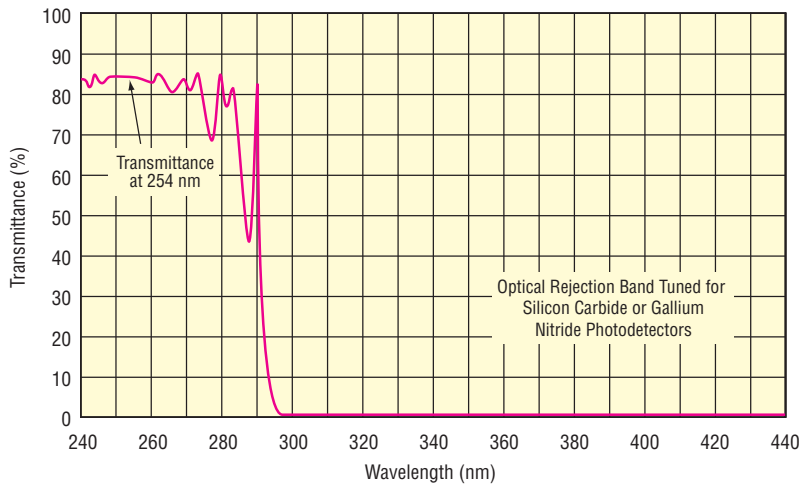
Standard 254 nm optical filters are not the best choice for point-of-use water purification applications due to their high cost, large size and limited field-life. Newport's Mercury-SC™ optical filters are offered at substantially lower cost than traditional UV filters. Produced on a single, thin silica substrate (≤1mm) using our patented Stabilife® coating technology, these filters have exceptional durability and are able to withstand the harshest environments with no perceptible changes in their performance. Available in basically any size (from 50 mm square to 1.5 mm square), these filters make possible, a true cost-effective means to improve point-of-use drinking water purity.



Typical point-of-use UV water disinfection system incorporating a Newport-SC™ filter paired with a Silicon Carbide or Gallium Nitride photo-detector for monitoring of germicidal effectiveness of the Mercury lamp.

## Typical Specifications

Transmittance @ 254 nm	≥60%
Transmittance Band	240 nm to 280 nm
Spectral Blocking 305 nm to 425 nm	≤1% average transmission
Surface Quality	F/F (80/50) per MIL-F-48616 (typical)
Coating Hardness	MIL-C-48497
Coating Abrasion Resistance	MIL-C-48497
Coating Adhesion	MIL-C-48497
Coating Humidity Resistance	MIL-STD-810, Method 507.3, Procedure III, Modified to 40 cycles
Coating Operating Temperature Range	-100 ° C to 300 ° C
Filter Size Range	1.5 mm sq. to 50 mm sq.
Filter Thickness	≤1 mm



**Mercury-SC™ filters are provided as custom designed OEM components. Please contact us with your specific requirements.**

Optical Filters & Coatings Technical Sales: 1-508-528-4411 [filters.sales@newport.com](mailto:filters.sales@newport.com)



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