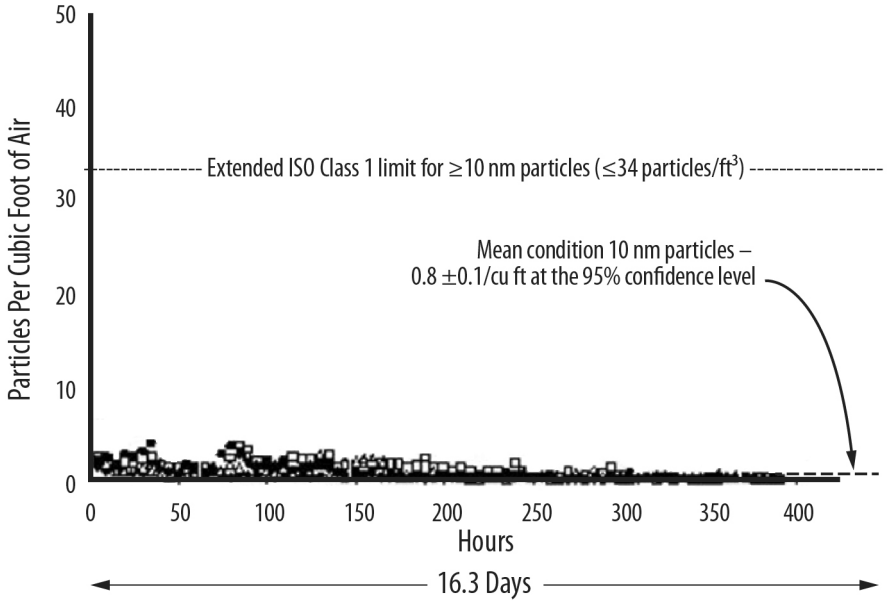
Extended ISO Class 1 Cleanliness

Semiconductor manufacturers now routinely manufacture devices using geometries at 65 nm and smaller. Killer particles are usually defined as particles half the geometry size, making it critical to evaluate ionizer cleanliness measuring particles down to 10 nm in size. Yet the industry's cleanliness standard, ISO 14644-1, only addresses particle sizes down to 100 nm. Simco-Ion has developed an in-house standard based on an extrapolation of ISO 14644-1, which we call "Extended ISO Class 1". The basis of the extrapolation employs the formula which was used to define the existing ISO 14644-1 class limit lines. When extrapolated the permitted number of particles sized 0.01 micron and larger is 1200 particles/m^3 (or 34 particles/ft^3) The Simco-Ion in-house standard makes no changes to ISO 14644-1. It only extrapolates ISO 14644-1 to smaller particle sizes. Additional information regarding the ISO 14644-1 standard can be found at www.iso.org.



Superior Emitter Point Technology

To achieve the 'Extended ISO Class 1" level of cleanliness, manufacturers should use single-crystal silicon emitter as it is the standard for semiconductor processing, specified by major fabs worldwide. This non-metallic material provides complete compatibility with silicon wafers, assuring the user no possible metal contamination issues that could affect chip circuitry. The purity and high thermal conductivity of single-crystal silicon emitter points, combined with the MP technology, provide the customer with the most advanced cleanliness performance of any ionizing bar on the market, meeting Extended ISO Class 1 cleanliness.