



The facilities owned and operated by Magnetron Inc are detailed below and include wafer fabrication equipment, automated packaging equipment, a state-of-the-art semiconductor electron microscopy/lithography tool and relevant metal processing equipment for in-house package prototyping and production. We intend to move to a larger location in Q4 of 2025 to expand our wafer fabrication and test areas. These facilities are currently being used for the prototype production of Geiger-mode avalanche photodiode detector products for government and commercial customers. Our vertical integration strategy enables rapid iteration, accelerating technology development while maintaining an extremely lean and predictable cost structure. It has also enabled greater design flexibility by allowing us to experiment with new materials and processes which are not compatible with existing foundry flows. Design changes during this research phase can be executed quickly as the typical quoting/production/shipping lags are eliminated.

**Wafer Fabrication Equipment:** Edwards Auto 306 E-Beam Evaporator Deposition System, MicroTechnics RIE, Trion PECVD, Karl Suss MJB4-IR Mask Aligner, Solitec 5110 Photoresist Spin Coater, wet bench, Lindberg/Blue tube furnace, K&S manual ball bonder, Delvotec 6200/6400 automatic ball and wedge bonders, ADT 7200 dicing saw, vacuum furnace, hot plates and optical microscopes.

**Characterization Equipment:** Zeiss DCG Z-Series nProber, this system offers sub-nanometer resolution and can be used for high throughput lithography inspection, lithography writing as well as electrical probing of sub 100 nm features for direct electrical characterization of nanostructures. Electro-optic testing with various sources including continuous wave and pulsed lasers, and an Oriel Cornerstone 0.3 to 2.6  $\mu\text{m}$  monochromator, Philips Xpert System X-Ray Diffraction System, Signatone 6-inch wafer probe station, Keithley 4200 parameter analyzer for capacitance-voltage and current-voltage measurement. Keithley 2400 SMUs, Tektronix Wavemaster oscilloscope, power supplies, optical test equipment and probes.

**Packaging Facilities:** Magnetron has capabilities for in-house metal hermetic packaging with high speed interconnects. This packaging is especially suited to high-speed, high-power and/or low-temperature devices. Magnetron can complete these packages from machining to sealing and testing Equipment includes: Acer Ultima II CNC mill, Bridgeport Mill, manual lathe, Sunstone precision welding system, electroplating and polishing tanks, TIG and gas welders, vacuum leak detectors, hydraulic surface grinder, and other miscellaneous equipment for metal fabrication.

**Software:** Magnetron Inc. has licenses to the relevant software for its role in the development of advanced semiconductor devices and packaging. This includes SolidWorks, COMSOL Multiphysics for package simulation, and MATLAB. A Silvaco TCAD license purchase is currently pending which support to support active device performance.

All the work performed at Magnetron facilities meet all Federal, state, and local environmental laws and regulations including, but not limited to airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.