A.L.P. LexaLite® brand’s Charlevoix, MI location features two Moldable Optical Silicone (MOS) injection machines. Both the 180-ton and 240-ton tie-barless molding machines have advanced production features including a built-in conveyor, ERC robot, Electro Servo injection and coining technology. We have capacity to mold parts up to approximately 175 square inches.

Liquid Silicone has low viscosity that is close to water and requires molds built with very tight tolerances to avoid leaks. Typically, tooling costs for silicone molds are 50% higher than thermoplastics molds. A.L.P. LexaLite operates a high speed CNC machining center and close-tolerance surface grinder. This machine allows the fast turnaround of prototype and production optical quality tools. We inventory mold bases and custom or stock inserts to reduce lead time. Tooling time is further compressed because the part surface finish is cut so precisely, it does not require hours of polishing. Prototypes or production-ready molds now take weeks instead of months.

With this precision Silicone equipment and our existing tooling and optical engineering expertise, A.L.P. LexaLite is an ideal partner to quickly take your project from concept to production. Our in-house photometry lab allows real-time evaluation of first samples.

The strengths of optical silicone include:

- Greater than 91% light transmittance
- 1.41 refractive index
- Low viscosity yields excellent mold replication and allows low clamp tonnage compared to thermoplastics
- Exceptional continuous service temperature range of -45 to +200 degrees C.
- Immune to UV degradation (most grades)
- Exceptional impact resistance
- Potential to “wet” against an LED lens to eliminate the air interface and increase transmittance by 3-5%
- Allows undercut (negative draft) features, including optics
- Potential for self-gasketing
- Potential for self-mounting
- Suited for insert molding with plastic, metal and glass
- Silicone expands when molded, allowing very thick wall sections with no sink marks
A.L.P.’s LexaLite® brand has two state-of-the-art Moldable Optical Silicone (MOS) machines that can produce high quality optical parts for unique lighting requirements. Silicone is a versatile, high performance material that offers some distinct advantages over injection molded thermoplastics for some specific, challenging lighting fixture design applications.

- Over 91% light transmittance
- 1.41 refractive index
- Low viscosity for excellent mold replication
- Low clamp tonnage compared to thermoplastics
- Continuous service temperature range of -45 to +200 degrees C.
- Most grades immune to UV degradation
- Can “wet” against an LED lens to remove the air interface and increase transmittance by 3-5%
- Exceptional impact resistance
- Allows undercut (negative draft) features, including optics
- Permits for self-gasketing
- Permits for self-mounting
- Suited for insert molding with plastic, metal and glass
- Expands when molded, allowing very thick wall sections with no sink marks

For more information on Silicone Optical Molding for lighting applications contact George Kruggel (231) 547-1422 or Pam Hodge (231) 675-2531.