Precision Optics





R&D Tax credits

For every dollar spent on qualified research, the IRS will credit the company seven to ten cents via an income tax credit or a payroll tax deduction.

At the initial engagement, claims can typically be submitted for the open tax years, usually three years. Once the claim is submitted, RK will work with you on an annual basis to calculate your research tax credit and file it on an original return, saving both time and money.

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RK Partners did a great job of finding all qualifying R&D work in my business and documenting it professionally. We were also able to find current work that will qualify for our claim next year, so I look forward to working with them in the future! I would recommend using RK Partners to look into your current process, they have very specialist people over there that will make sure you get the best possible benefit within the regulations



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The optics industry progresses through defined stages that transform raw materials into precision optical systems.

MATERIAL PREPARATION & SUBSTRATE DEVELOPMENT

- Purpose: Create high-quality optical materials and blanks.
- · Activities:
 - Produce and shape glass, crystal, or ceramic substrates.
 - Develop tooling and fixturing for delicate materials.
 - Control temperature to limit stress and birefringence.
 - Measure homogeneity, purity, and refractive index.
 - Run trials to improve yield and dimensional accuracy.

OPTIC FABRICATION & FINISHING

- Purpose: Turn blanks into precision optical components.
- Activities:
 - Grind, lap, and polish to required curvature and finish.
 - Test pad, slurry, pressure, and rotation combinations.
 - Design carriers for edge protection and stability.
 - Manage heat and stress during polishing.
 - Use metrology to confirm surface and wavefront accuracy.

COATINGS & SURFACE ENGINEERING

- Purpose: Enhance optical and environmental performance.
- Activities:
 - Apply anti-reflective, dielectric, or metallic coatings.
 - Control deposition rate (speed at which coating is applied), temperature, and pressure.
 - Measure film thickness, reflectivity, and durability.
 - Build multi-layer or broadband coating stacks.
 - Prepare and clean surfaces for optimal adhesion.

ASSEMBLY, ALIGNMENT & TESTING

- Purpose: Build and qualify complete optical systems.
- Activities:
 - Position and bond components within housings.
 - Perform optical and environmental/real world testing.
 - Establish repeatable alignment procedures.
 - Evaluate system data to improve reliability.

ADVANCED & EMERGING OPTICS R&D

- Purpose: Push new materials and technologies forward.
- Activities:
 - Develop adaptive optics, metasurfaces, and photonics.
 - Explore new coating, polishing, and growth methods.
 - Use automation and modeling to increase precision.