



Discover how we can improve your
instrumentation and supply chain
experience today!

KO | BRINGING QUALITY INTO FOCUS

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Aspheric Lenses Autonomous Vehicle LiDAR Systems

Knight Optical can supply you with custom made [Diamond turned aspheric lenses](#) for use within autonomous vehicle LiDAR systems.

Autonomous vehicle LiDAR systems create driverless cars. Whereby the system produce autonomous vehicles which can perform complex manoeuvres and drive in public with little or no input from a user.

Spherical aberration occurs in common singlet lenses, which results in an image that appears distorted, aspheric lenses correct spherical aberration. An aspheric lens surface is designed non-spherical, which allows a single component lens to collimate or focus highly divergent rays potentially replacing a multi-lens system. This in turn provides the LiDAR system with a better signal quality, at lower costs whilst making the system more compact.

Knight Optical offers diamond turned aspherics from a range of suitable NIR materials for autonomous vehicle LiDAR including N-BK7 or equivalent, sapphire, quartz, UV fused silica, amongst others.

Typical specs:

Material:	BK7, Quartz/UV fused silica, Sapphire, B270, PMMA
Diameter:	Up to 200mm dia +0, -0.02mm
Thickness:	+/- 0.2mm
Flatness:	< 1/2 wave over 90% aperture
Surface Quality:	< 40-20 scratch/dig
Parallelism:	5 arcmin
Coating:	AR Coating @1532nm

Our Aspheric lenses are checked for quality in our state-of-the-art Metrology laboratory using equipment from Trioptics, Varian and Starret allowing us to work to the highest [QA standards](#) and meet the tolerance specifications on these **precision components**.

[Contact our technical sales team](#) to discover how Knight Optical's high quality aspheric lenses and superior service can improve your instrumentation and supply chain experience.

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- View our [QA and metrology information](#)
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