



# Driver Monitoring System Optics: Engineering Case Review

How Apollo Improved Injection Molded Optical Filter Performance for Consistent Optical and Manufacturing Control in a Tier 1 DMS Program



# Executive Overview

Apollo Optical Systems secured a new DMS optical filter program with a Tier 1 Automotive DMS Customer as part of an automotive OEM program in the Chinese market scheduled for production in Q3 2026. The engagement built on Apollo's existing supplier relationship and involved design review and production tooling development.

Optical filter performance is defined by spectral response, material behavior, and process stability. In DMS applications, these parameters influence sensor signal quality and repeatability in production. Apollo's role was to confirm manufacturability and ensure spectral consistency under real production conditions.

"Apollo solved a spectral issue we couldn't resolve with our previous supplier and gave us a clear path to production."

— Tier 1 Automotive DMS Customer





## Existing Supplier Relationship

Apollo was already an established supplier and got invited to quote as a trusted vendor.



## Apollo Contribution

Apollo reviewed design parameters and collaborated with the customer to confirm manufacturability before tooling commitment, helping reduce risk related to spectral performance variation and manufacturability.



## Engineering Outcomes

- Achieved required spectral transmission profile within defined tolerance.
- Maintained surface form within ROI under production conditions.
- Confirmed manufacturability within process capability.
- Reduced risk prior to tooling commitment.



## Customer Need

The customer required a DMS optical filter meeting defined spectral transmission targets and manufacturable within a compressed timeline.



## Competitive Win

Apollo was selected following a competitive sourcing process, replacing an overseas molding supplier that could not meet optical form requirements in the Region Of Interest.



## Outcome

Selected as production supplier for the Q3 2026 launch.



# Program Context

The customer approached Apollo with an existing filter produced by a non-optical injection molding company, seeking deeper optical expertise.

Driver monitoring systems require filters that allow sensing while blocking visible light — performance defines signal-to-noise behavior, spectral isolation, and consistency across parts.

## Previous Supplier Limitations

The original supplier was unable to maintain required surface form within the ROI, the optical zone used by the camera system. Form deviations resulted in failure to meet optical specifications including flatness and surface quality, introducing variability across parts. Such variation in the ROI affects consistency of optical performance in the functional sensing area.

## Apollo's Development Approach

Apollo developed a custom material and process approach to meet both spectral and form requirements, ensuring consistent production performance.



# Engineering & Program Dynamics

Apollo's win reflected engineering credibility and the ability to deliver consistent optical performance through a structured, multi-stage program process.

O1

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## Multi-Supplier Quote Process

Apollo was selected through a competitive, multi-supplier sourcing evaluation.

O3

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## Tooling Development

Production tooling required precise alignment between manufacturing processes and optical specifications.

O2

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## Design Review

Apollo reviewed design parameters to confirm compatibility with manufacturing capabilities.

O4

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## Sole-Source Award

Apollo was awarded sole-source supplier status for the program.



# Apollo's Scope of Work

Apollo's engagement spanned the full development lifecycle – from initial quoting through production tooling – ensuring optical and manufacturing requirements were validated at every stage before commitment.



## Program Quoting

Evaluated program requirements and submitted a competitive proposal based on optical and manufacturing capabilities.



## Design Parameter Review

Reviewed customer design specifications to identify compatibility with Apollo's optical molding processes.



## Manufacturability Confirmation

Validated that spectral and form requirements could be consistently achieved under production conditions.



## Production Tooling Development

Developed, manufactured, and qualified production tooling aligned to optical specifications and process capability targets



# Why Apollo Won

Apollo's position was built on technical credibility established through earlier work and a differentiated approach to optical manufacturing.

## Optical Performance

Apollo developed a custom formulation achieving required transmission, validating spectral and form control within the ROI under production conditions.

## Dual Capability

Apollo uniquely combined optical formulation expertise with precision injection molding — treating material, optics, and processing as one integrated system.

## Proven Trust

The sole-source award reflects a proven track record as an established supplier and demonstrated technical credibility across prior engagements.



# Strategic Account Value

This program reflects the compounding value of Apollo's long-term customer relationships – translating technical credibility into a production position on a global OEM platform with significant expansion potential.

## Q3

### 2026 Launch

Targeted production start for the global OEM program in China.

## 1

### Sole-Source Award

Apollo named the single selected production supplier for this program.

## 4

### Strategic Pillars

Repeat customer, selected supplier, global OEM program, and expansion potential.



# Program Summary

## Customer

Tier 1 Automotive DMS Customer

## End Platform

Global OEM program in China – Q3  
2026 launch

## Component

DMS optical filter

## Scope

Design review, manufacturability  
confirmation, tooling development

## Competitive Outcome

Apollo awarded sole-source supplier  
status

## Account Position

Established production position with  
future expansion opportunity

"We had already gone through multiple iterations with another supplier and were not able to meet our spectral targets. Apollo approached the problem differently – looking at material, optics, and processing as one system. That made the difference. They were able to recover performance and give us confidence in moving to production."

– Tier 1 Automotive DMS Customer





# Ready to elevate your optical manufacturing?

Apollo combines deep optical expertise with precision injection molding capabilities to deliver high-performance solutions for the most demanding applications.

Partner with us to achieve unmatched spectral and form control, ensuring your products meet the highest standards of quality and consistency.

[Contact Our Experts](#)

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