

Innovative automobile lighting is transforming the industry



As lighting systems for vehicles incorporate new state-of-the-art technology, lighting product designers, original equipment manufacturers (OEMs) and their suppliers, wholesalers and retailers require safer, high-performing automobile lighting options. We enable the possibilities of today while looking ahead to safeguard the unknowns of tomorrow.

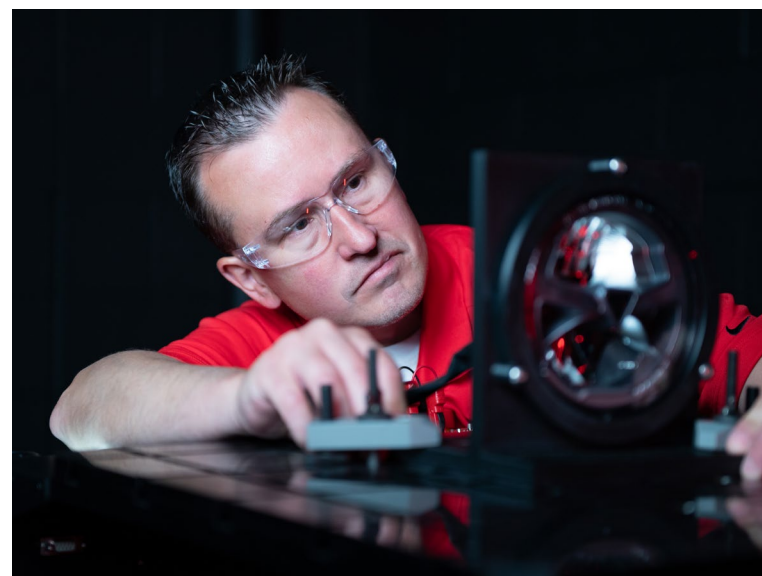
Working with UL Solutions

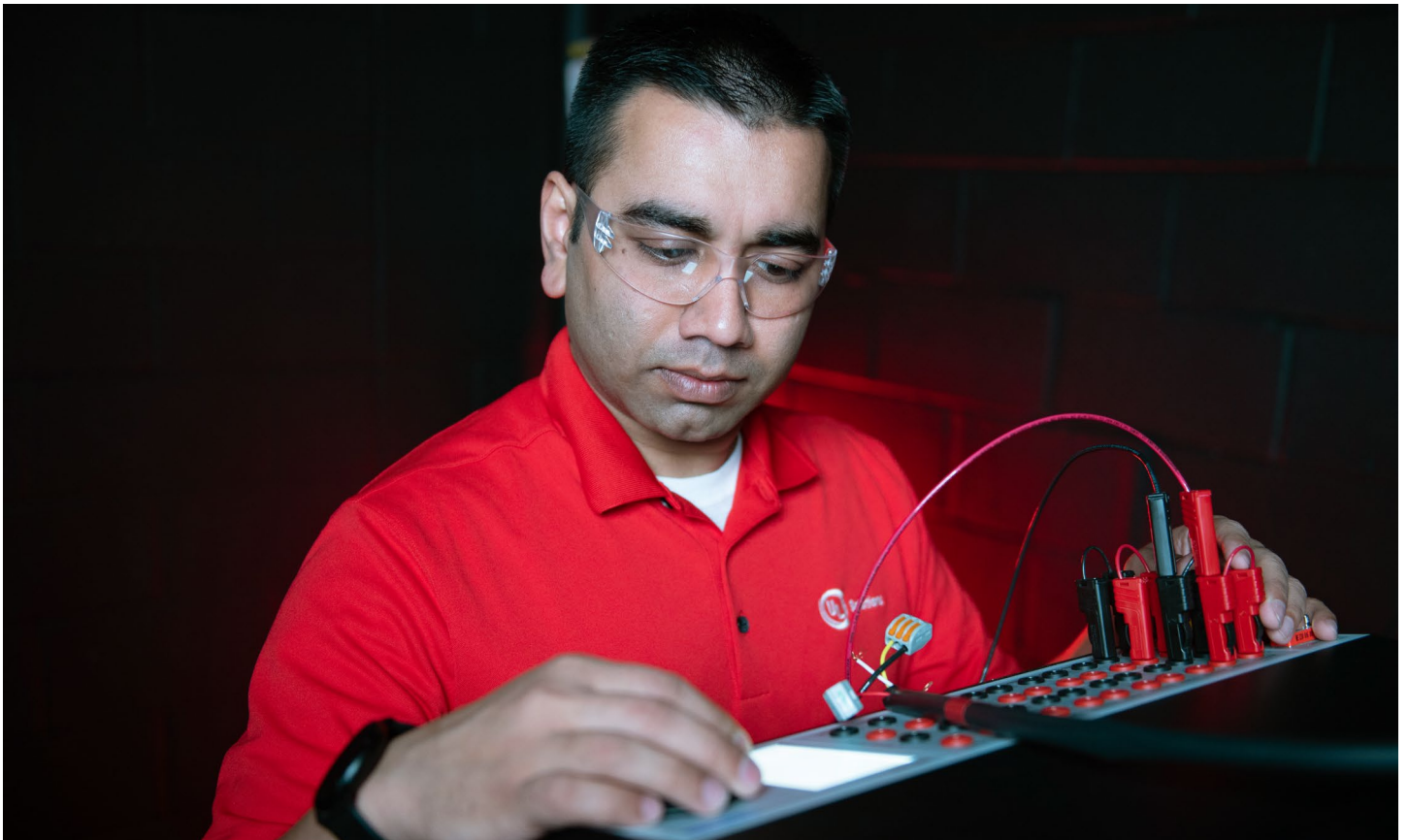
UL Solutions, a world leader in lighting safety and performance testing and certifications, is the partner you can trust to be your single-source provider for your automotive lighting products. UL Solutions has many laboratories which can conduct performance and reliability testing capabilities, and we continue to expand our service scope.

- The U.S. Federal Motor Vehicle Safety Standard 108 (**FMVSS 108**) for Lamps, Reflective Devices and Associated Equipment is administered by the U.S. Department of Transportation's National Highway Traffic Safety Administration.
- The Canada Motor Vehicle Safety Standard 108 (**CMVSS 108**) for Lamps, Reflective Devices and Associated Equipment is administered by Transport Canada Motor Vehicle Safety. CMVSS 108 is very similar to FMVSS 108, except for provisions about daytime running lamps (DRLs) and European headlamps.

For the many different light sources, we use advanced measurement and test equipment that includes:

- High-speed Type A goniophotometers
- Electro-dynamic vibration tables
- Thermal shock chambers
- Heat, humidity, water penetration and salt test chambers





More about FMVSS and CMVSS

The U.S. primary standard for automotive lighting is Federal Motor Vehicle Safety Standard (FMVSS) 108 for lamps, reflective devices and associated equipment. The FMVSS:

- Is administered by the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA).
- Specifies design, construction, performance and durability requirements for motor vehicles and regulated automobile safety-related components, systems and design features.
- Applies to passenger cars, multipurpose passenger vehicles, trucks, buses, trailers (except pole trailers and trailer converter dollies) and motorcycles.

The primary Canadian standard for automotive lighting is Canada Motor Vehicle Safety Standard 108 (CMVSS 108), which is very similar to FMVSS 108. The primary differences are:

- CMVSS 108 requires DRLs on all vehicles made since Jan. 1, 1990, while FMVSS 108 permits but does not require DRLs.
- CMVSS 108, through an adjunct called CMVSS 108.1, permits European headlamps, while FMVSS 108 prohibits them.

Note that U.S. and Canadian standards diverge from the United Nations Economic Commission for Europe (UNECE) standards used in most other countries worldwide, with differences in technical provisions, terminology, requirements and format. Each European standard deals with only one type of lighting device, while the single U.S. and Canadian standards regulate all lighting and reflective devices.

UL Solutions lighting test centers

We have the capabilities to support testing to a wide scope of ASTM, SAE, DIN, IEC and other test methods. Below are some of the most common standards we perform testing to:

Automotive

- Photometry for Automotive lighting: SAE, ECE and FMVSS 108
- Vibration SAE: SAE J575, SAE J577, FMVSS 108
- Vibration 3-axis (shaker) with climate chamber: CS. 00056, GMW 3172, IEC 60068-2-64
- Vibration Temperature/Humidity: ANSI C136.31
- Environmental: FMVSS 108, GM 6121
- Thermal shock: GM 2335, GMW 3172
- Salt, fog and cyclic corrosion: ASTM B117, ASTM D1654, GM 9540P, IEC 60068-2-52
- Dust: FMVSS 108, ASTM C-150-77
- Chemical resistance: FMVSS 108
- Light source modules
- Military procedures/protocols: MIL STD 810G, MIL STD 202

Additional tests

- Photometry: IES standards LM-79, LM-41, LM-46
- Vibration: ANSI C136.31
- Environmental: ASTM D4332 & D3103, IEC 60068-2-13, 2-14, & 2-41, etc
- Thermal shock: MIL-STD-810
- Salt, fog and cyclic corrosion: ASTM B117
- Dust: IEC 60598-1
- Moisture/rain spray: IEC 60598-1

Contact us to learn more about our performance and reliability testing capabilities.

Visit [UL.com/autolighting](https://www.ul.com/autolighting) for more information.

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AHL23CS1193301