

# NEWS RELEASE

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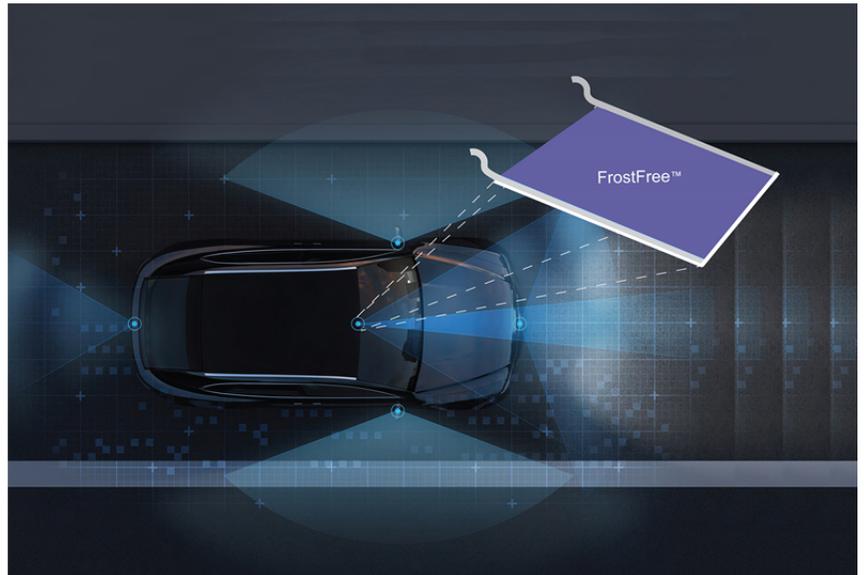
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*For Immediate Release*

## **MAC Thin Films Introduces FrostFree™ Extended-Wavelength Conductive Coating for LiDAR Windows**

- Featuring unsurpassed transmittance in the near-infrared, **FrostFree** is ideal for heating/defrosting windows on semi-autonomous and/or autonomous vehicles.

**Santa Rosa, Calif. – July 30, 2020 – MAC Thin Films (MTF)** ([www.macthinfilms.com](http://www.macthinfilms.com)), specialists in vacuum-deposited thin-film coatings on glass, introduces **FrostFree™**, a ground-breaking, highly-durable, conductive coating with extended operational wavelengths into the near-infrared (NIR). Ideal for light detection and ranging (LiDAR) applications, the new window heater coating, based on MTF's proprietary technology, has defrosting capability and ultra-broadband transmittance while operating from the visible into the NIR spectrum. With its extraordinary thermal management capabilities, it revolutionizes window defrosting/heating solutions for semi-autonomous or autonomous vehicles, including farm equipment, commercial goods transport, passenger automobiles, public transportation, and more.



MTF's **FrostFree** extended-wavelength conductive coating operates without the need for wires in the vehicle window apertures, as seen in common rear-window defrosters in most automobiles. This ensures that there is no interference or modulation in the laser or in the sensor's beam path, thereby maintaining ultimate signal fidelity. The defrosting capability safeguards the LiDAR remote-sensing units by keeping them fully transmissive and functional during cold and inclement weather.

The vehicle's onboard electrical system provides the power to the heater window and may be easily connected to two busbars attached to the window via wire or a flat flexible connector. MAC Thin Films can customize the sheet resistance over a wide range of values, from 10 to 250 ohm/sq (typical) to meet the demands of various LiDAR window designs and available power supplies. The unique, extended-wavelength conductive coating is available on a variety of substrates. Optical performance can also be customized for color-matching and/or to provide additional functionality.

Mark Madigan, CEO of MAC Thin Films, notes, "We are excited to have the opportunity to employ an enhanced version of our proven avionics display technology to support next-generation vehicle architectures. The combination of rapid heating/deicing with high optical transmission maximizes the LiDAR sensor's range and signal-to-noise performance in all weather conditions. Our unique, extended-wavelength conductive coating technology's broadband performance enables sensor designers to implement sensor fusion."

To learn more about the **FrostFree** LiDAR window heater coating with defrosting capability and to view transmission graphs, please go to the data sheet here: [https://cdn.shopify.com/s/files/1/1305/1631/files/LiDAR\\_FROSTFREE\\_WINDOW\\_DATA\\_SHEET\\_07-29-20\\_REV\\_02.pdf?v=1596058521](https://cdn.shopify.com/s/files/1/1305/1631/files/LiDAR_FROSTFREE_WINDOW_DATA_SHEET_07-29-20_REV_02.pdf?v=1596058521).

For additional information about MAC Thin Films' full line of highly-uniform, conductive coatings for precise sheet resistance and consistent conductivity, please visit: <https://www.macthinfilms.com/pages/conductive-coatings>.

**MAC Thin Films (MTF - [www.macthinfilms.com](http://www.macthinfilms.com)) – Santa Rosa, CA** is a world leader in vacuum-deposited, multi-layer, thin-film coatings. MTF coatings are designed for specialized glass applications that require precision anti-reflective properties, conductive anti-reflection features, and high-reflecting front-surface mirror characteristics. The company offers cost-effective optical thin film products for a myriad of applications that serve emerging technologies and meet or exceed stringent customer specifications.

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