

Thermo Scientific LightDrive Optical Engine

Performance and peace of mind...for a decade to come

The Thermo Scientific™ LightDrive™ Optical Engine built into the Thermo Scientific™ Nicolet™ Apex FTIR Spectrometer leverages years of optical design expertise, innovation, and creativity from the market leader in FTIR spectroscopy.

The LightDrive optical engine is composed of:

- 1 a rugged and ultra-reliable interferometer
- 2 a novel single-point infrared source
- 3 a durable solid-state diode laser

that deliver performance and reliability beyond other industry standard FTIR spectrometers. This technical note will review each component of the LightDrive optical engine to help you discover why you can achieve reproducible and meaningful results, time after time with the Nicolet Apex FTIR Spectrometer.

1

Interferometer produces market-leading precision

Get more from your data and see the details with spectral resolution that can stay ahead of your future needs. The improved Michelson interferometer design delivers 0.25 cm⁻¹ spectral resolution for best-in-class optical quality. Increased reliability, long-term stability, and a simplified design contribute to a relative lifetime 5x greater than previous interferometers (Figure 2), all backed by a 10-year warranty.



Figure 1. Nicolet Apex FTIR Spectrometer shown with the Thermo Scientific Smart iTX ATR accessory.

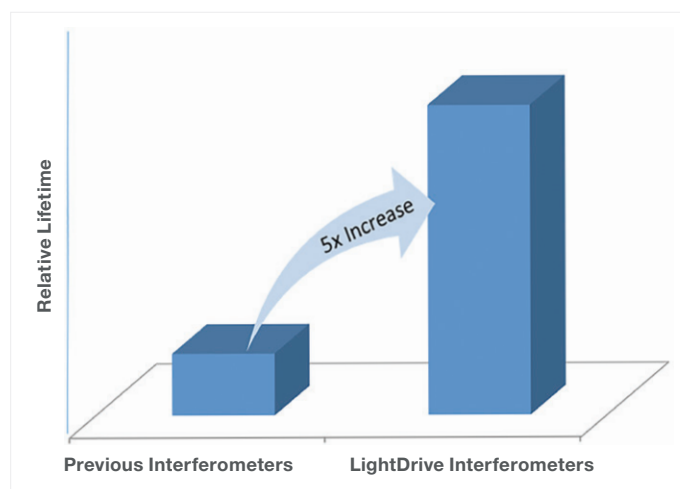


Figure 2. The LightDrive interferometer shows a 5x increase in relative lifetime compared to previous interferometers.

2

Infrared Source delivers unmatched consistency

First pioneered on the Thermo Scientific™ Nicolet™ FTIR Spectrometer, the new state-of-the-art infrared source provides more consistent identification and quantification results. Peak shapes and signal-to-noise ratios are improved thanks to a stable hotspot location and energy intensity (Figure 3 and 4). A 10-year warranty ensures more reproducible, high-quality library and quantification data sets for years to come.

3

Laser supplies maximum accuracy

Eliminate future maintenance costs with a modern, solid-state diode laser. The long-lifetime, temperature-stabilized design guarantees accurate and precise data acquisitions scan after scan, day after day.

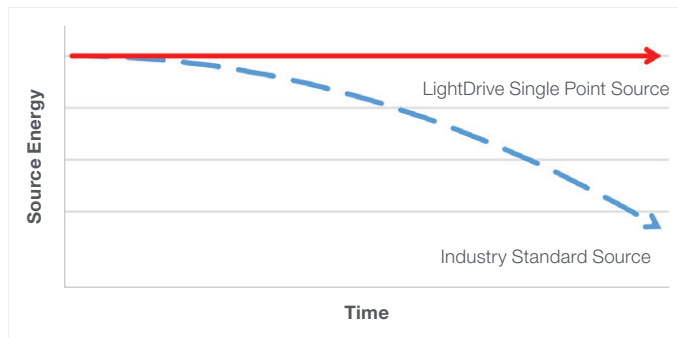


Figure 3. Source energy stays constant over time, producing more consistent and reliable answers.

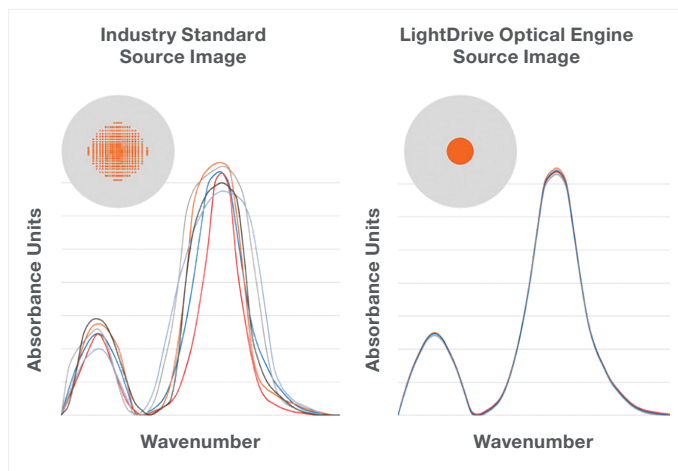


Figure 4. Single-point infrared source image produces more consistent peak shapes.

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