



## Mid-Infrared Quantum Cascade Laser-Based Systems

### The Daylight Solutions Difference

Mid-infrared laser light is providing game-changing solutions to molecular spectroscopy, detection and imaging in applications such as: Defense & Security; Life Sciences; Scientific Research; and Industrial Process Control. As a mid-IR technology leader, Daylight Solutions has delivered more ECqCL™ laser systems to more applications world-wide than anyone else. With a highly experienced team—and field-proven, best-in-class product performance—we stand ready to help you with your mid-IR application. Whether you need CW output, pulsed output, fast tuning, broad tuning, linewidths <5 MHz, Watt-level output powers, or low RIN, please ask how our unmatched selection of mid-IR lasers, spanning 3 to >13  $\mu\text{m}$ , can help you. *For more details, please visit [www.daylightsolutions.com](http://www.daylightsolutions.com)*

#### MIRcat-QT™ Mid-IR Laser (Rapid-Scan Ultra-Broadly Tunable)

The new MIRcat-QT provides rapid tuning and high-quality light output to help you collect high-SNR spectroscopic data at speed. It offers: CW or pulsed operation; tuning speeds to > 5000  $\text{cm}^{-1}/\text{s}$ ; tuning ranges to > 950 $\text{cm}^{-1}$ ; RIN as low as -150 dBc/Hz; peak powers up to 1W; average powers up to 0.5W, and wavelength repeatability as low as < 0.1  $\text{cm}^{-1}$ . MIRcat-QT's TEM<sub>00</sub> beam and total beam pointing <2 mrad over the tuning range also enables high-efficiency fiber coupling. A true one-box, fully automated system, MIRcat-QT's flexible, modular design allows users to factory-configure their system for up to four modules, upgrade later, and add a visible aiming beam. A new laser module option also extends wavelength coverage to 14 microns.



#### Hedgehog™ Compact, Rapid-Scan Mid-IR Lasers (Broadly Tunable)

Hedgehog is a unique combination of small size, high-quality CW or pulsed output, high power, and high tuning speed (to >5000  $\text{cm}^{-1}/\text{s}$ ). Hedgehog enables rapid acquisition of molecular spectra with high accuracy, repeatability and low SNR. Built on Daylight's proven QCL technology, Hedgehog is Daylight's next-generation tunable laser head. Now available in -UT (> 200  $\text{cm}^{-1}$ ) and -LT (30  $\text{cm}^{-1}$ ) tuning range options, Hedgehog is ideal for lab or OEM use. SideKick™ controller included with systems.



#### ChemDetect™ Rapid-Scan Molecular Analyzer (Broadly Tunable)

ChemDetect is a fully integrated sensor/analyzer platform that uses Daylight's latest high-speed, broadly tunable QCL technology, combined with advanced detection & embedded chemical ID algorithms. ChemDetect can be configured for: real-time measurements of multiple molecules (gas or condensed phase); high sensitivity (ppb to %); & high dynamic range (>10<sup>3</sup>).



#### CW-MHF™ Mid-IR Lasers (Narrow Linewidth)

Unique to Daylight, the CW-Mode-Hop-Free laser guarantees <5 MHz linewidth, CW output that tunes without mode hops (i.e. tunes phase continuously) to > 100  $\text{cm}^{-1}$ . Ideal for high-resolution (e.g. gas) spectroscopy, the CW-MHF system provides tens to 100+ mW output powers, low RIN, and current- and piezo-modulation capability. SideKick™ controller included with systems.



#### Aries™ / Unicorn™ Mid-IR Lasers (High Power, Fixed Wavelength)

Providing up to 2 W (Aries) or up to 500 mW (Unicorn), the Aries and Unicorn laser systems are Daylight's high-power, fixed-wavelength workhorses. With ultra-rugged cavities, both lasers provide high-stability CW/pulsed output, great beam quality, linewidths <100 MHz CW and <1  $\text{cm}^{-1}$  pulsed (Unicorn) or <120  $\text{cm}^{-1}$  pulsed (Aries) pulsed. SideKick™ controller included with systems.

