



## SIDEKICK™ QCL CONTROLLER

### Multi-Function, QCL Controller with Industry-Leading Noise Performance

SideKick supports Daylight's broad range of external cavity quantum cascade laser (ECQCL™) systems, functionality, and QCL wavelength selection. SideKick is compatible with all Daylight's tunable and fixed-wavelength laser heads<sup>[2]</sup>. Sidekick allows flexible, high-precision and high-stability control of laser: output power; wavelength; temperature; scan speed ( $>5,000 \text{ cm}^{-1}/\text{s}^{[2]}$ ); pulse width, repetition rate and duty cycle (up to  $1 \mu\text{s}$ , 3 MHz and 30% respectively)<sup>[2][3]</sup>—all while protecting your gain chip with Daylight's proven High-Fidelity Quantum Cascade Drive (HFQD™) circuitry.

Signal-to-Noise is critical in most MWIR applications, and laser performance is only as good as controller performance. Recognizing this, SideKick's design emphasizes low noise and, when paired with a suitable laser head, produces extremely low RIN<sup>[4]</sup>. With a compact form factor and USB/Ethernet

connectivity, SideKick is ideally suited to OEM integration and laboratory use. The included GUI<sup>[5]</sup> and SDK provide elegant local/remote control, error messaging, and also allow user-programmable tuning, swept scans, step-and-measure scans, and multiple triggering modes. With a SideKick in your Daylight laser system, you'll find your mid-infrared applications easier than ever before. Just connect SideKick to your PC, laser head and go!



# COMPACT, LOW NOISE CONTROLLER

## HIGHLIGHTS

- OEM or laboratory use
- Supports CW or pulsed laser operation
- Integrated laser power, tuning, and temperature control
- Ultra-low current noise enables ultra-low optical RIN
- USB/Ethernet connectivity with GUI and SDK included for robust local/remote control
- Remote diagnostics and error messaging for rapid troubleshooting

## PERFORMANCE SPECIFICATIONS<sup>1</sup>

Modes of Operation	Pulsed, CW, CW-Mode-Hop-Free
Compatibility	41xxx tunable   31xxx tunable & fixed- $\lambda$ laser heads
Tuning Modes	Set wavelength, uni- and bi-directional scans, step and measure, start/stop scan <sup>3</sup>
External Interfaces	USB 2.0, Ethernet 10/100
Control Interfaces	GUI and SDK command set (included)

## ELECTRICAL PARAMETERS

Pulse Width <sup>2</sup>	Supports 40 ns to 10 <sup>[3,4]</sup> $\mu$ s, 20-ns steps
Pulse Repetition Rate <sup>2,3</sup>	Supports 0.1 kHz to 3 MHz
Maximum Duty Cycle	10% (option: up to 30% -please inquire) <sup>[3,4]</sup>
Temperature Adjust	$\pm 5$ °C programmable
Scan Speed	Supports > 30,000 cm <sup>-1</sup> /s (max.), 0.5 cm <sup>-1</sup> /s (min.) <sup>[3]</sup>
Triggered	Internal clock, external trigger (External Pulse, External Trigger)
Trigger Input	TTL
Current Modulation	Not included (applied direct to laser head) <sup>[3]</sup>
Input Power	90-264 VAC, 47-63 Hz with included AC-DC Power Supply (or <3 A, 22-30 VDC)
Cooling	Passive air, no fans <sup>3</sup>
Regulatory Compliance	CDRH <sup>2</sup>
Temperature Range	10-40°C (operation); -20-60°C (stored)
Humidity	0-80% RH, non-condensing
Size	SideKick: 7.3 x 5.2 x 1.4 ins (18.5 x 13.2 x 3.5 cm) Power Supply: 2.7 x 5.2 x 1.6 ins (6.9 x 13.2 x 4.1 cm)

<sup>[1]</sup> All specifications are defined after a 10-minute warm up; subject to change without notice.

<sup>[2]</sup> Requires suitable laser head and/or gain chip -please inquire.

<sup>[3]</sup> Laser operation above 10% duty cycle and/or 3 MHz repetition rate requires a suitable QCL chip and may require supplemental cooling of the laser head -please inquire.

<sup>[4]</sup> Typical RIN as low as -150 dBc/Hz was measured in the range of 400 kHz to 1 MHz using SideKick with a TLH-41060-MHF laser head

<sup>[5]</sup> GUI compatible with Windows 7,8.1 & 10. Please inquire for other OS.

COMPLIES WITH 21 CFR 1040.10 AND 1040.121 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007. COMPLIES WITH IEC 60825-01

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