



PureLight Stretto Diode Laser

Discover the groundbreaking Stretto laser system, a key member of the PureLight family, offering advanced, high-performance, narrow-linewidth photonic solutions in ultraviolet (UV), Visible, and Near-Infrared (NIR). Drawing inspiration from the musical term 'stretto,' which signifies the intricate overlap and succession of musical parts, this innovative tunable laser is synonymous with precision and accuracy.

Adaptable to Extreme Conditions

Leveraging Daylight's core commitment to quality of light and high performance, Stretto is not just any external-cavity diode laser (ECDL). It is a rugged, compact, and lightweight photonic

solution, engineered to withstand extreme conditions. Unlike typical ECDLs, Stretto excels in environments that challenge other lasers, setting a new standard in rugged narrow-linewidth laser technology. Specifically, all Stretto lasers are:

- **Hermetically Sealed:** Ideal for humid, dusty, or vacuum-compatible applications
- **Shock and Vibration Resistant:** Remains locked to optical references while withstanding 150g shock pulses and extreme vibration scenarios.

**DRS DAYLIGHT
SOLUTIONS** 

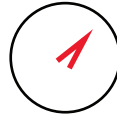
HIGH-PRECISION EXTERNAL CAVITY DIODE LASERS FROM UV TO IR

KEY FEATURES



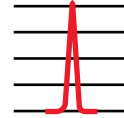
Wide Wavelength Coverage

From 369 nm to 1800 nm, with free-space or fiber-coupled option



Superior Frequency Tuning

Offering mode-hop-free tuning beyond 50 GHz, sustained over challenging environmental conditions



Ultra-Narrow Linewidth

Achieving a free-running linewidth of 100 kHz and closed-loop linewidth of < 1 kHz

APPLICATIONS

- Quantum Computing
- Quantum Sensing
- Quantum Defect Centers
- Quantum Networking
- Optical Clocks
- Precision Spectroscopy
- Qubit Transduction

SPECIFICATIONS

Wavelength coverage	369 - 1800 nm
Typical power	10 - 300 mW (model dependent)
Typical mode-hop free tuning range	≥ 50 GHz
Typical free-running linewidth (5 μs integration time)	100 kHz FWHM
Typical output beam characteristics	Fiber-coupled: SM/PM fiber Free-space: Circular, 1 mm FW @ 1/e ² diameter
Typical output beam polarization	Fiber-coupled: > 18 dB PER Free-space: Linear > 20 dB PER
Optical isolation	30 - 35 dB (integrated)
Power supply	100 - 240 VAC (50/60 Hz)
Power consumption	Typ. < 35 W
Interface	Ethernet and USB 2.0/3.0 networking Analog servo control outputs Windows® 10/11 GUI and full SDK (supports Python® / C++ / LabView®)
Environmental temperature	15 - 30°C (operating) -40 - 70°C (storage / transport)
Environmental humidity	95% non-condensing

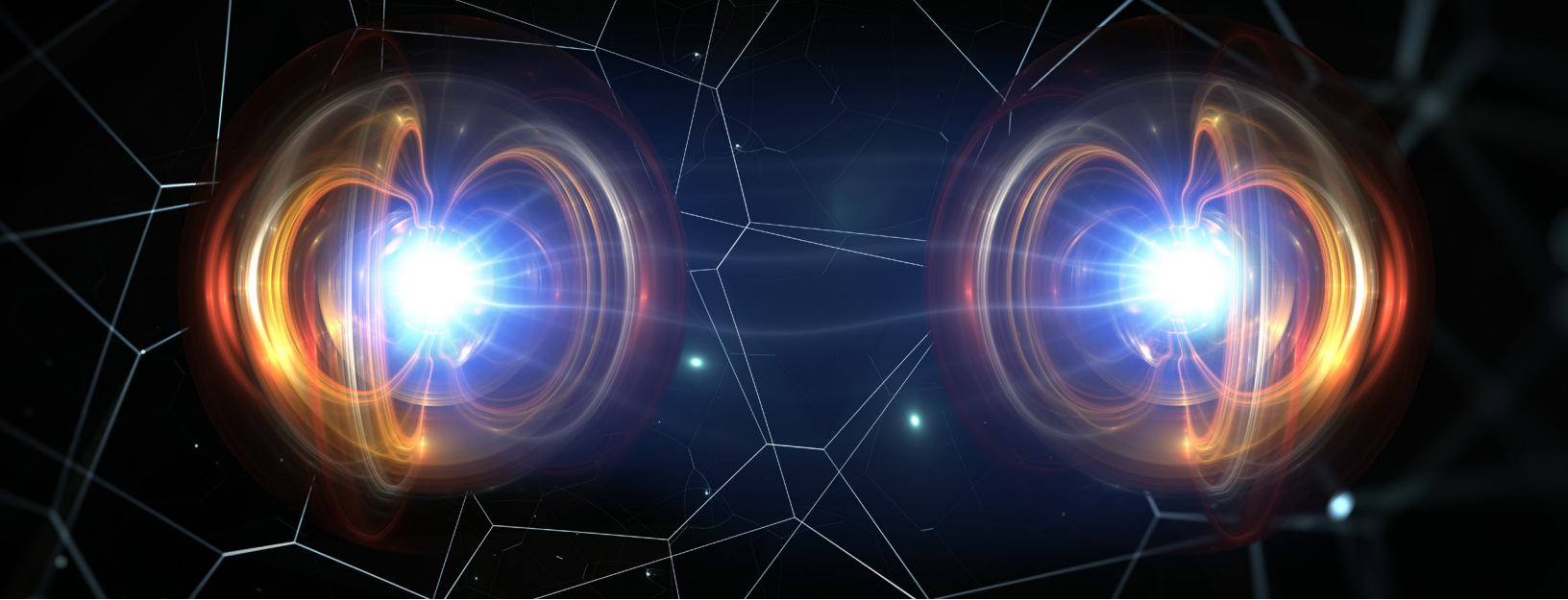
PHYSICAL CHARACTERISTICS

Dimensions laser head (H × W × D)	8.8 × 4.8 × 2.3 inches (220 × 120 × 58 mm)
Weight laser head	7 lb (3.2 kg)
Dimensions control unit (H × W × D)	13.1 × 8.1 × 2.6 inches (340 × 205 × 65 mm)
Weight control unit	1 lb (0.4 kg)

The information in this datasheet is to the best of our knowledge, accurate as of the date of issue. Leonardo DRS, Inc. reserves the right to change this information without notice. Nothing herein shall be deemed to create any warranty, expressed or implied. Copyright © Leonardo DRS, Inc. 2024. All Rights Reserved.

daylightsolutions.com/products/stretto

**DRS DAYLIGHT
SOLUTIONS** 



EXAMPLE WAVELENGTHS AND TYPICAL POWER OUTPUT

λ^* (nm)	Target	P** (mW)
369, 399	Yb+, Yb	10 [†]
405, 413, 480, 493	Sr+, Ba+, Rb	20
511, 553, 614	Cs, Ba+	50
619	SnV	10
689, 698	Sr	4
737	SiV	10
762, 767, 770, 776, 780	Rb, K	30
795	Rb	40
814	Sr	40
852	Cs	50
894, 935, 1033, 1038	Cs, Yb+	100
987	Ba+	85
1020	Rb (Ryd)	80
1762	Ba+	10

* Wavelength must be specified to nearest ± 2 GHz at time of order (as frequency or vacuum wavelength)

** Fiber-coupled output (nominal); free-space output power higher

[†] Only available as free-space variant

Optical isolation > 30 dB typical for all wavelengths listed

COMPLIES WITH 21 CFR 10.40.10 AND 10.40.11 EXCEPT FOR CONFORMANCE WITH IEC 60825-1 Ed. 3., AS DESCRIBED IN LASER NOTICE NO. 56. DATED MAY 8, 2019



VISIBLE OR INVISIBLE LASER RADIATION
AVOID EXPOSURE TO THE BEAM

REV-4-2024

DRS Daylight Solutions
16465 Via Esprillo
San Diego, CA 92127
T +1 858 432 7500
dls-info@drs.com

daylightsolutions.com/products/stretto



**DRS DAYLIGHT
SOLUTIONS** 