

Laser

AOSense External Cavity Diode Lasers

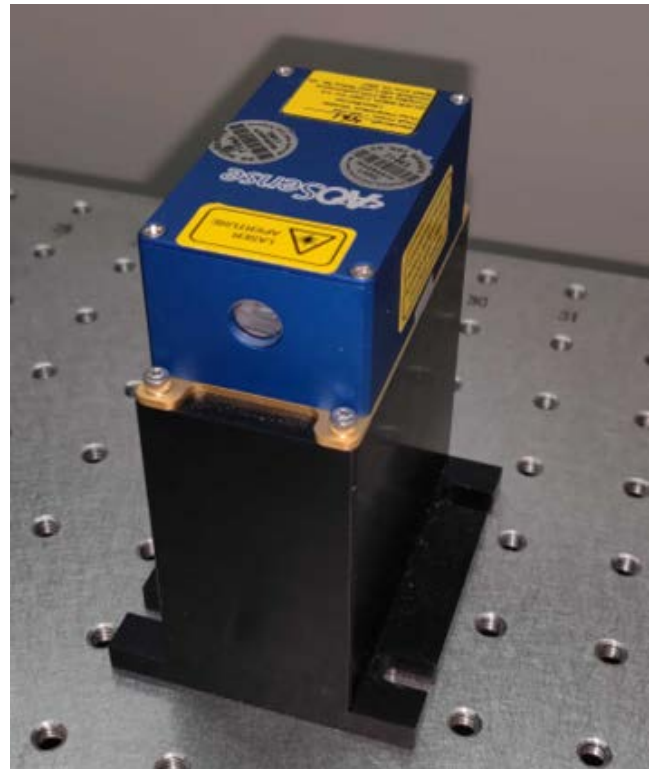
Real-world atomic sensors and other exacting applications require laser sources with specific size, environmental, and optical characteristics, placing unique constraints that most commercial laser systems do not meet. AOSense has developed a line of external cavity diode lasers (ECDLs) designed to meet these needs, offering narrow linewidth in a compact package.

Our AOSense ECDL is built on a semi-monolithic bench with a cat's-eye design for stable operation in demanding environments. The wavelength is factory-set to the desired user wavelength; no subsequent mechanical adjustment is required. A PZT may be used for ~GHz tuning in addition to current and temperature controls.

Current wavelengths include alkali (767 nm, 780 nm, 852 nm) and alkaline earth (423 nm, 461 nm, 657 nm, 689 nm, 698 nm) transitions. Additionally, UV/blue models at 369 nm and 399 nm are now available.

The flexible design is fully translatable to additional wavelengths. The output beam is circularized to optimize fiber coupling (not available for all wavelengths).

Compact laser enclosure 3"x 1.5"x 1.1"
(76 mm x 38 mm x 28 mm).

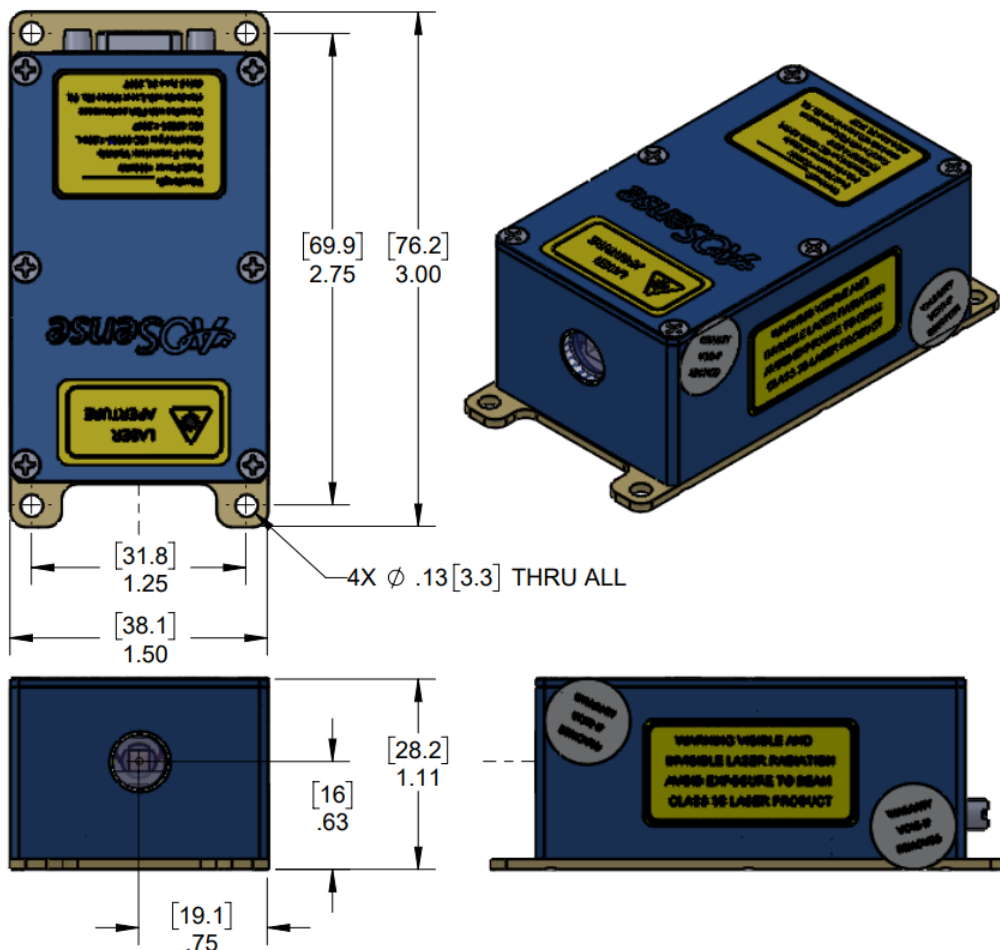


Features

- ⊗ **High performance**
- ⊗ **Stable operation**
- ⊗ **Compact laser enclosure**
- ⊗ **Integrated laser controller available**

Specifications

External Cavity Diode Laser	
ECDL Model No.	AOS-IF-ECDL-λ
Dimensions (L x W x H)	76 [3] x 38 [1.5] x 28 [1.1] mm [in.]
Weight	156 g [5.5 oz.]
Laser Properties	
Wavelength	Tuned at GHz level
Output Power	See table below
Linewidth	<200 kHz typical, <100 kHz possible
Polarization	TM
Tuning Parameters	
Mode-hop-free tuning range (piezo only)	2-5 GHz
Tuning range (current + piezo + temperature)	30-100GHz
Mode-hop-free tuning range (piezo + FFWD current)	>10GHz
Memory	
Serial No., safety limits, settings	NVRAM, in laser head.



AOSense ECDL Portfolio for All Wavelengths

ECDL Model	ILC/SILC Model #	Wavelength (nm)	Popt (mW) ⁽¹⁾
AOS-IF-ECDL-1380	AOS-(S)ILC-P-200	1380 nm	7
AOS-IF-ECDL-1180	AOS-(S)ILC-P-200	1156 nm (Yb)	30 ⁽¹⁾
AOS-IF-ECDL-1112	AOS-(S)ILC-P-100	1112 nm (Yb)	15
AOS-IF-ECDL-1038	AOS-(S)ILC-P-200	1038 nm	60
AOS-IF-ECDL-1060	AOS-(S)ILC-P-200	1092 nm	60
AOS-IF-ECDL-980	AOS-(S)ILC-P-200	976.31 nm	34
AOS-IF-ECDL-935	AOS-(S)ILC-P-100	935 nm (Yb ⁺)	34
AOS-IF-ECDL-920	AOS-(S)ILC-P-200	922nm (Sr)	45
AOS-IF-ECDL-920	AOS-(S)ILC-P-200	894 nm	11
AOS-IF-ECDL-852	AOS-(S)ILC-P-200	852 nm (Cs)	50
AOS-IF-ECDL-813	AOS-(S)ILC-P-200	813 nm (Sr)	40
AOS-IF-ECDL-795	AOS-(S)ILC-P-200	795 nm (Rb)	42
AOS-IF-ECDL-780	AOS-(S)ILC-P-200	780 nm (Rb)	45
AOS-IF-ECDL-780	AOS-(S)ILC-P-200	778 nm (Rb)	40
AOS-IF-ECDL-767	AOS-(S)ILC-P-200	767 nm (K)	35
AOS-IF-ECDL-762	AOS-(S)ILC-P-200	762 nm (Rb)	35
AOS-IF-ECDL-762	AOS-(S)ILC-P-200	759 nm (Yb ⁺)	60
AOS-IF-ECDL-690-HP	AOS-(S)ILC-P-100	707 nm (Sr)	31
AOS-IF-ECDL-690-HP	AOS-(S)ILC-P-100	698 nm (Sr)	33
AOS-ILA-690	AOS-ILC-P-250	Injection lock	200
AOS-IF-ECDL-690-HP	AOS-(S)ILC-P-100	689 nm (Sr)	31
AOS-IF-ECDL-690-HP	AOS-(S)ILC-P-100	688 nm (Sr)	30
AOS-IF-ECDL-690	AOS-(S)ILC-P-100	679 nm (Sr)	15
AOS-IF-ECDL-690	AOS-(S)ILC-P-100	674 nm	11
AOS-IF-ECDL-657	AOS-(S)ILC-P-100	657 nm (Ca)	26
AOS-IF-ECDL-650	AOS-(S)ILC-P-100	650 nm (Ba ⁺)	20
AOS-IF-ECDL-650	AOS-(S)ILC-P-100	649 nm (Yb)	20
AOS-IF-ECDL 493	AOS-(S)ILC-P-200-B	493 nm (Ba ⁺)	15
AOS-IF-ECDL-461	AOS-(S)ILC-P-400-B	461 nm (Sr)	150 ⁽¹⁾
AOS-ILA-461	AOS-ILC-P-500-B	Injection lock	500
AOS-IF-ECDL-461	AOS-(S)ILC-P-400-B	457 nm (Mg)	TBD
AOS-IF-ECDL-423	AOS-(S)ILC-P-100-B	423 nm (Ca)	34
AOS-ILA-423	AOS-ILC-P-500-B	Injection lock	120
AOS-IF-ECDL-420	AOS-(S)ILC-P-200-B	420.3 nm	31
AOS-IF-ECDL-413	AOS-(S)ILC-P-200-B	413 nm (Ba ⁺)	21.5
AOS-IF-ECDL-399	AOS-(S)ILC-P-200-B	399 nm (Yb)	16.5
AOS-ILA-399	AOS-ILC-P-500-B	Injection lock	120
AOS-IF-ECDL-399	AOS-(S)ILC-P-200-B	397 nm (Ca ⁺)	16.5
AOS-IF-ECDL-369	AOS-(S)ILC-P-200-B	369 nm (Sr)	6

Notes: 1) Output power of the ECDLs are being qualified at higher powers

For more information, contact us at sales@aosense.com