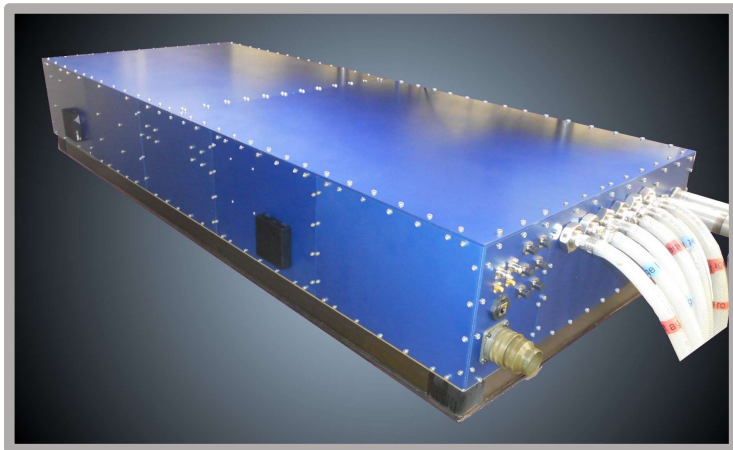


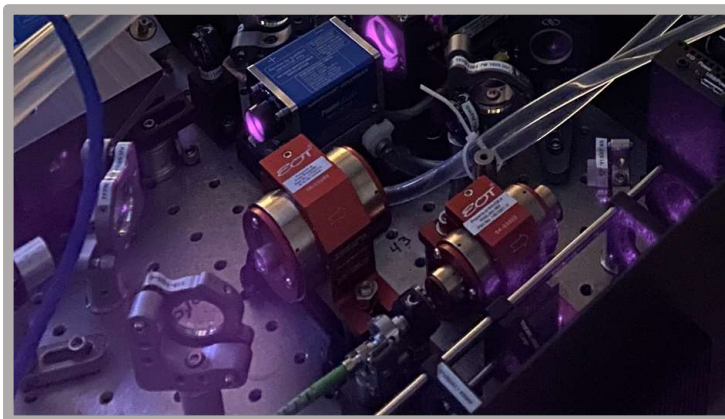
## VALOR™ Series Lasers

Up to 400 mJ, 1-ns Pulses at 1-kHz



The VALOR™ Series consists of three configurations of high repetition rate, 1-ns pulsed lasers that utilize diode-pumped, solid-state (DPSS) Nd:YAG amplifiers to achieve pulse energies up to 400 mJ per pulse. The repetition rate is fixed at 1-kHz. The VALOR™-12 is based on a regenerative amplifier design and is seeded by a diode laser source at 1064 nm. The regenerative amplifier reliably produces a 12-mJ (12 W average power) output with a shot-to-shot variability that is less than 2%. Long term power drift is eliminated using a closed-loop control system. The VALOR™-150 includes a double-pass amplifier stage to increase the pulse energy to 150 mJ per pulse energy (150 W average power). The VALOR™-400 includes an additional single-pass amplifier to achieve 400 mJ per pulse (400 W average power). The seed laser is passively shaped to produce an output pulse that is approximately square, with a risetime of 300 ps. The laser cavity is optimized to incorporate thermally induced effects within the gain media.

	VALOR™-12	VALOR™-150	VALOR™-400
Wavelength	1064 nm		
Pulse Energy	12 mJ	150 mJ	400 mJ
Shot-to-shot Energy Variation	<2% (Standard Deviation)		
Pulse Duration	1 ns (FWHM), Rise/Fall approx. 300 ps		
Repetition Rate	1 kHz		
Polarization	Linear		
Output Beam Diameter	9 mm (typically)		
Spatial Mode	Multimode		
Laser Head Dimensions	(L×W×H) 45"×14"×8"	(L×W×H) 60"×16"×8"	(L×W×H) 60"×24"×8"
Power Supply Dimensions	(L×W×H) 43"×24"×55"	(L×W×H) 43"×24"×55"	(L×W×H) 43"×24"×86"
Heat Exchange Dimensions	NA	(L×W×H) 43"×24"×55"	(L×W×H) 43"×24"×86"
AC Unit (Optional)	(L×W×H) 36"×24"×39"	(L×W×H) 36"×24"×39"	(L×W×H) 36"×24"×39"
Power Requirement	3 Phase AC 208 V, 20 A	3 Phase AC 208 V, 50 A	3 Phase AC 208 V, 80 A
Chilled Water Requirement	none	2 Ton cooling capacity	3 Ton cooling capacity



The VALOR™ lasers are research grade systems with turn-key operation. It is recommended that the laser be operated in a Class-1000 clean room or better with stabilized room temperature. The VALOR™-400 has been demonstrated to work effectively in room temperature ranges between 68 °F and 80 °F. A customizable umbilical length promotes remote placement of the power and cooling supply cabinets in order to reduce the heat load on the room AC. Voss Scientific offers an optional cooling unit to supply temperature controlled, HEPA-filtered, forced air cooling to the laser head for operating environments that do not meet these requirements.

Sales are subject to Export Control Regulations (Category 6)

Custom modifications of the standard models are possible. Each laser is built to order. Contact Voss Scientific for options, pricing, and service contracts.

