

# Vamp™ TA-7600

## Tapered Amplifier



The New Focus™ VAMP series Tapered Amplifiers is your solution for high-power tunable and fixed-wavelength applications such as atomic cooling, spectroscopy, and Bose-Einstein Condensation. The VAMP will faithfully amplify tunable single-frequency light produced by External Cavity Diode Lasers as well as other light sources of appropriate wavelength. All New Focus tapered amplifiers include an isolator on the output as standard.

The VAMP is configured with a fiber coupled input, ensuring fast, easy and reliable alignment. Active input power monitoring triggers a safety shutoff when the seed power drops below 10 mW, preventing self-lasing and protecting the lifetime of the tapered amplifier chip.

Simple intuitive control with the TA-7600-LN controller means you are up and running immediately. The TA-7600-LN controller comes standard with tapered amplifier head recognition to automatically set the temperature and current upper limit. It also features front panel control, RS-232 and USB interfaces, and an intuitive GUI.

When seeded with low-ASE sources such as the Vortex™ Plus or Velocity™ lasers the VAMP faithfully reproduces narrow linewidths and high contrast ratios. The VAMP will also accept other seed sources, including many home-built ECDLs. Contact our tech support for help in seeding the VAMP.

### The Vamp TA-7600 Advantage

- Fiber-coupling input ensures fast, easy, and reliable alignment
- Active input power monitoring and safety shutoff feature
- Power lock mode to reduce amplitude noise
- Post-amplification beam shaping

#### Applications

- Atomic spectroscopy
- Laser cooling
- MOT and BEC
- Quantum applications



The VAMP is designed to accept many fiber-coupled seed sources, including the New Focus Vortex Plus and the Velocity laser.

# Vamp TA-7600 Specifications<sup>1</sup>

	Wavelength <sup>2</sup>	Center Wavelength	Free-Space Output Power <sup>3</sup>	Fiber-Coupled Output Power
TA-7612	755–775 nm	765 nm	>1.5 W	0.5 W
TA-7613	775–785 nm	780 nm	>1 W	0.5 W
TA-7613-H	779–790 nm	780 nm	>2 W	N/A
TA-7614-H	787–805 nm	795 nm	>1.8 W	0.5 W
TA-7616	840–855 nm	850 nm	>1 W	0.5 W
TA-7618	910–920 nm	915 nm	>1 W	N/A

	Value
ASE, at maximum power and center wavelength	<-45 dB (0.01 nm OSA resolutions)
Beam Divergence	<1.5 mrad, typical
Beam Pointing Stability	<50 $\mu$ rad ( $\pm 2^\circ$ C)
Frequency Jitter	Seed laser dependent
Linewidth	Seed laser dependent
Long Term Stability, power, closed loop	$\pm 1\%$ ( $\pm 2^\circ$ C), typical, seed laser dependent
Longitudinal Mode	Single
Transverse Mode	TEM <sub>00</sub>
Polarization	Vertical
Optical Output <sup>4</sup>	Optically-isolated, fiber-coupled
Min. Optical Input at FC/APC Connector <sup>5</sup>	10–20 mW
Max. Optical Input at FC/APC Connector	100 mW
User Interface	Controller front panel, RS232, USB
Power Supply Requirement	100–240 VAC (50–60 Hz), power consumption <105 W
Environment Temperature, operating	15–30°C
Environment Temperature, storage	0–50°C
Environment Humidity	Non-condensing

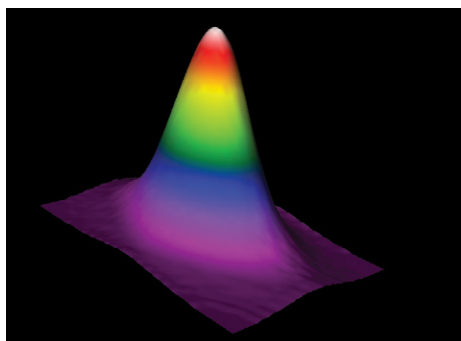
1. Due to our continuous product improvement program, specifications are subject to change without notice.

2. Contact us for all available wavelengths.

3. Power at center wavelength when seeded with appropriate wavelength and power. Contact us for output power at specific seed wavelength and for all available output powers.

4. Integrated 35 dB optical isolator. Fiber-coupled option includes isolator and permanently fixed Panda type PM fiber with FC/APC connector for laser output. Wide-type alignment key aligned with the slow axis of the PM fiber. Dual stage isolation, other fiber types and connectors available upon request. Fiber-coupled output option unavailable for TA-7613-H and TA-7618.

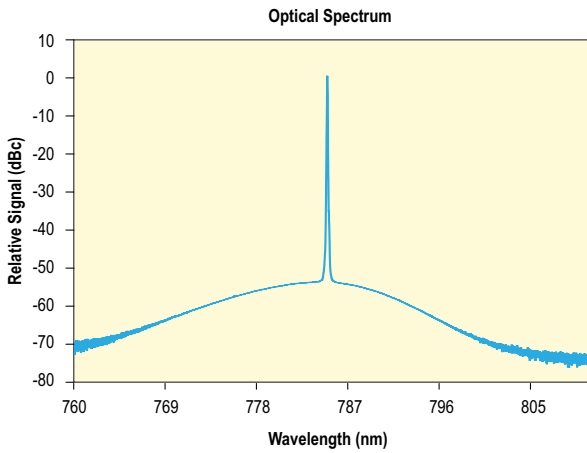
5. Minimum seed power is 15 mW for TA-7612, TA-7616, 20 mW for TA-7613, TA-7613-H, TA-7614-H and 10 mW for TA-7618 to achieve full specified power output. Safety shutoff activated below 10 mW input power. Fiber-coupled input only. Fiber-coupled configuration of the New Focus Vortex Plus, Velocity, and SWL is compatible to the tapered amplifier input. 70 dB isolation recommended between the seed laser and TA-7613-H and TA-7614-H.



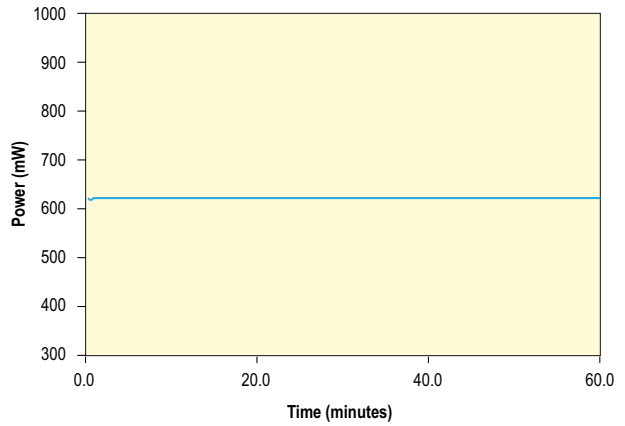
When using the free-space version, you can count on an excellent beam profile due to post-amplifier beam shaping. Beam profile measured at 60 cm.

# Vamp TA-7600

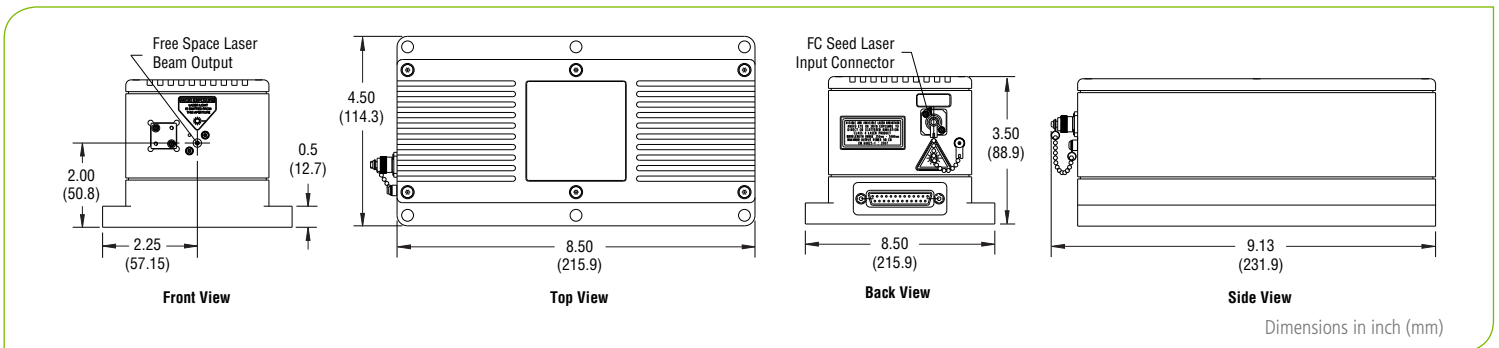
The VAMP TA-7600 features extremely high ASE rejection to improve your signal to noise<sup>1</sup>



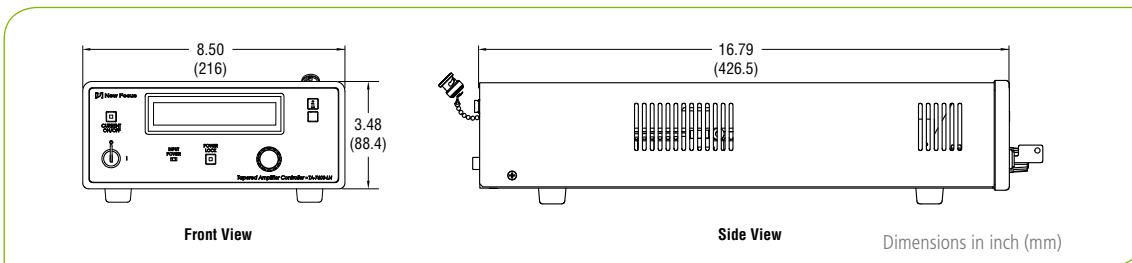
Power measurement of a VAMP TA-7600 tapered amplifier<sup>1</sup>



1. Typically measured performance; not a guaranteed or warranted specification.



VAMP TA-7600 Dimensions



Controller Dimensions



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