

TopWave 266

TopWave 266

Industrial Continuous-Wave UV Laser

Based on more than 15 years of experience in providing high performance, frequency-converted systems TOPTICA has developed the new TopWave 266. This industrial-grade, continuous-wave deep-UV laser system provides 300 mW output power at 266 nm with excellent power stability and highest reliability.

The complete UV beam path, including the resonant doubling cavity, is enclosed in a specially sealed compartment. In combination with a fully automated shifter of the doubling crystal it enables a typical lifetime of > 10,000 hours, which is key for the use in any industrial application.

Consistent beam quality ($M^2 < 1.3$) is provided by an optimized beam shaping setup which is also integrated inside the sealed UV section. To avoid contamination of the exit window in non-clean-room environments the user can connect his purge line to the provided interface.

The TopWave 266 sets new standards with respect to low-noise operation. The narrow linewidth laser emission typically shows < 0.1 % RMS, hence the user benefits from an improved signal-to-noise ratio during measurements

Designed for easy integration the TopWave 266 is a turnkey system which the user can control either via a touch panel at the control unit or using the USB/Ethernet interface in combination with a PC GUI. Due to its high wall-plug efficiency the system can be operated with conduction cooling only. In case no proper heatsinking is possible, a closed loop chiller option is available.

The TopWave 266 is ideal for sophisticated measurement and production tasks in e.g. semicon inspection, lithography or Raman spectroscopy. It is a cost-effective and reliable laser that enables the user to concentrate on their application rather than worrying about the light source.



Applications

- Semicon Inspection
- Raman Spectroscopy & Microscopy
- Fiber Bragg Grating
- Lithography
- Disk Mastering
- Optics Testing
- Photoluminescence (PL)

Key Features

- 300 mW at 266 nm
- Ultra-stable, low noise CW operation
- Excellent lifetime (> 10,000 h)
- Consistent beam quality ($M^2 < 1.3$) over full lifetime
- Sealed doubling cavity (SUV) with automatic optics shifter
- High wall-plug efficiency. No chiller necessary
- User-friendly turnkey system

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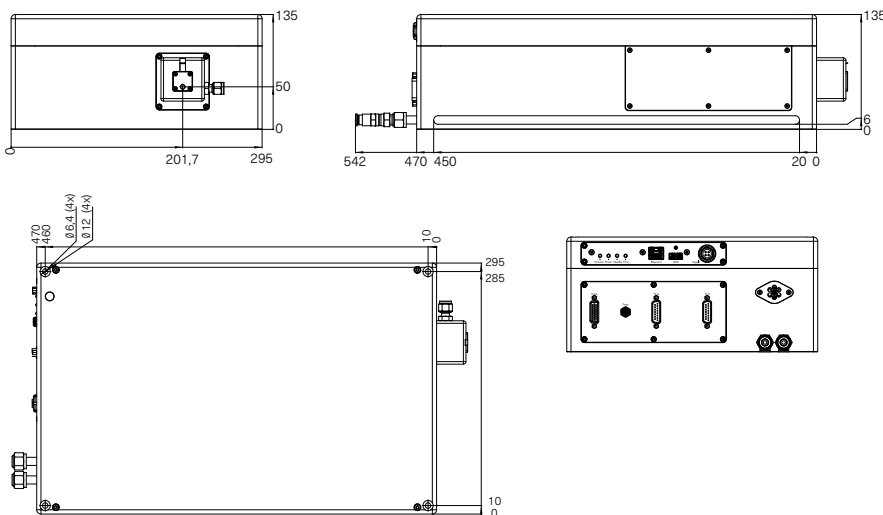


Laser Specifications	TopWave 266-150	TopWave 266-300
Output power	150 mW	300 mW
Wavelength	266 nm ± 0.5 nm	
Linewidth	< 1 MHz	
Beam Waist Diameter @ 1m (1/e ²)	0.4 mm ± 0.2 mm	
Beam divergence (typ.)	< 1.2 mrad	
Ellipticity	< 15 %	
Beam pointing stability ⁽¹⁾	< ± 5 μrad	
Transverse Mode	TEM ₀₀	
M ²	M ² x < 1.3, M ² y < 1.3	
Polarization	linear, vertical < ± 3°	
Polarization extinction ratio	> 200 : 1	
Power stability	< 1 % over 8 h	
RMS noise	< 0.3 % (10 Hz - 10 MHz)	
Lifetime ⁽²⁾ (min. / typ.)	5,000 h / 10,000 h (with optics shift)	
Utility and Environmental Specifications		
Laser head dimensions	135 x 295 x 470 mm ³ (H x W x D)	
Control unit dimensions	154 x 378 x 448 mm ³ (H x W x D)	
Umbilical length	2 m	
Temperature range		
Operating	20 °C to 30 °C, stabilized to ± 1 °C, non-condensing	
Storage & shipping	-10 to + 50 °C	
Cooling requirements		
Laser head	Conduction ⁽³⁾	
Control unit	Air-cooled	
Line voltage	AC 100-240 V 50/60 Hz	
Power consumption	< 250 W (typ. < 120 W)	
Communication interface	USB, Ethernet	

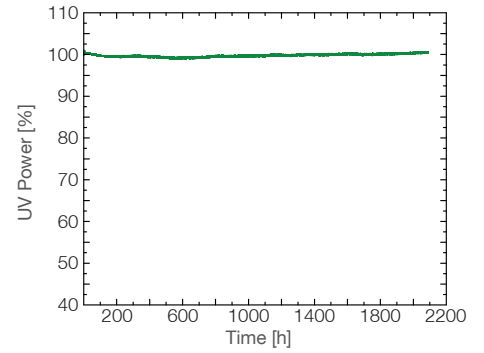
⁽¹⁾ RMS over 8h @ ambient temperature drift less than ± 1 K
⁽²⁾ With optics shifts ⁽³⁾ Sufficient heat sink has to be provided. Optional cooling plate with closed loop chiller available upon request

* Subject to change without notice

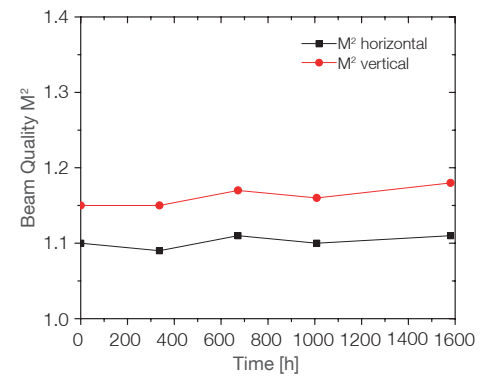
TopWave laser head



All dimensions given in mm.



Excellent long-term power stability (1 optics spot).



Consistent long-term beam quality (1 optics spot).

TopWave controller

