

# TopWave 266

## TopWave 266

Industrial Continuous-Wave UV Laser

Based on more than 15 years of experience in providing highly sophisticated, frequency-converted systems TOPTICA has developed the new TopWave 266. This industrial-grade, continuous-wave deep UV laser system provides 150 mW output power at a wavelength of 266 nm with excellent power stability and highest reliability.

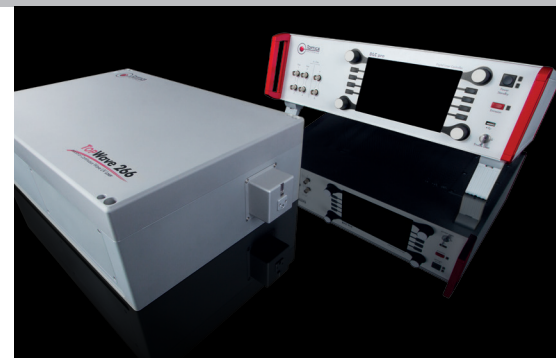
The complete UV beam path, including the resonant doubling cavity, is enclosed in a specially sealed compartment. In combination with a fully automated shifter of the doubling crystal it enables a typical lifetime of > 10,000 hours, which is key for the use in any industrial application.

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

- 150 mW @ 266nm
- Ultra-stable, low noise CW operation
- Excellent lifetime (> 10000 h)
- Consistent beam quality ( $M^2 < 1.3$ ) over full lifetime
- Sealed doubling cavity (SUV) with automatic crystal shifter
- User-friendly turnkey system



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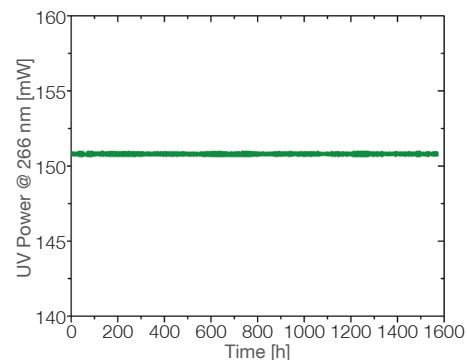
## Laser Specifications\*

Wavelength	266 nm ± 0.5 nm
Linewidth	< 1 MHz
Output power	150 mW
Beam diameter (1/e <sup>2</sup> )	0.6 mm ± 0.2 mm
Beam divergence (full-angle)	< 0.8 mrad
Ellipticity	< 15 %
Beam pointing stability (typ.)	5 μrad / K
Beam quality	TEM <sub>00</sub>
M <sup>2</sup>	M <sup>2</sup> x < 1.3, M <sup>2</sup> 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 (typ.)	> 10000 h @ 150 mW APC (with crystal shifts)

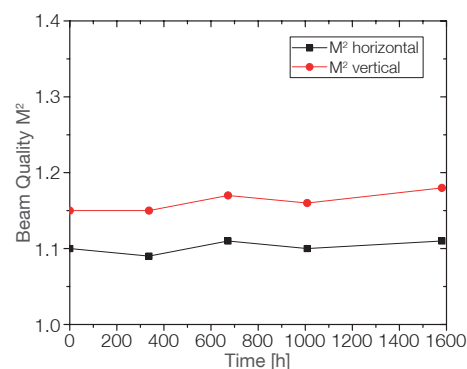
## Utility and Environmental Specifications

Laser head dimensions	135 x 295 x 470 mm <sup>3</sup> ( H x W x D)
Control unit dimensions	154 x 378 x 448 mm <sup>3</sup> ( H x W x D)
Umbilical length	2 m
Temperature range	
Operating	20 °C to 35 °C, stabilized to ± 3 °C, non-condensing
Storage & shipping	-10 to + 50 °C
Cooling requirements	
Laser head	Conduction, if properly stabilized heat sink is provided. Optional cooling plate with closed loop chiller available
Control unit	Air-cooled
Line voltage	AC 100-240 V 50/60 Hz
Power consumption	< 120 W
Communication interface	USB, Ethernet

\* Subject to change without notice

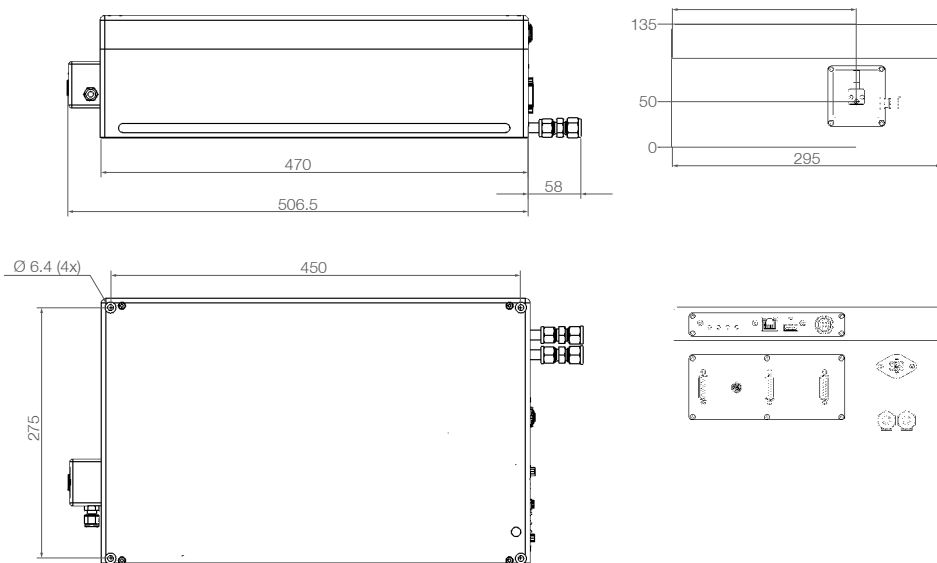


Excellent long-term power stability.



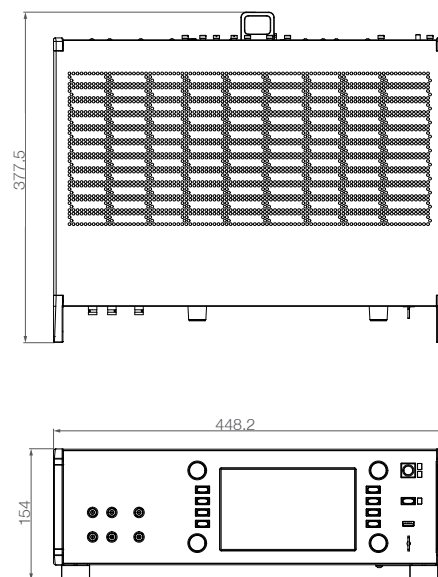
Consistent long-term beam quality.

TopWave laser head



All dimensions given in mm.

TopWave controller



TOPTICA Photonics AG · Lochhamer Schlag 19 · 82166 Graefelfing · Germany  
 T +49 89 85837-0 · F +49 89 85837-200 · sales@toptica.com · www.toptica.com



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