

# 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

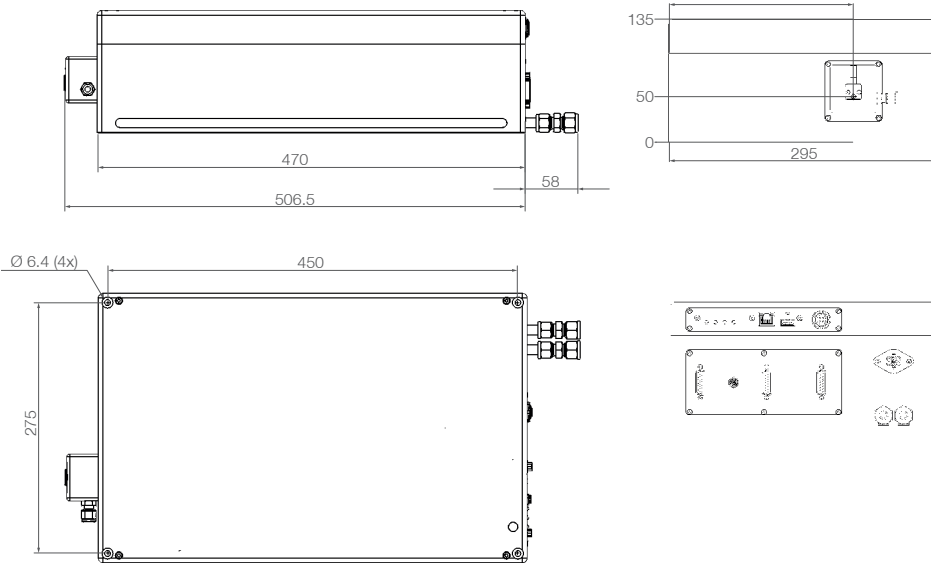
# TopWave 266



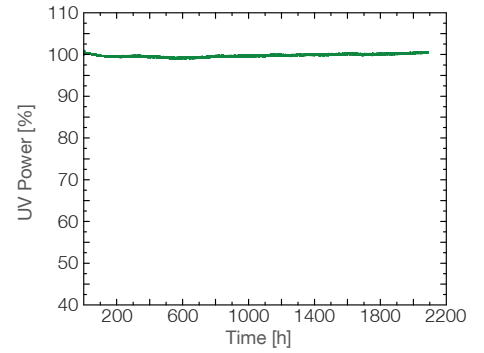
| Laser Specifications                     | TopWave 266-150   | TopWave 266-300 |
|--|---|-----------------|
| Output power                             | 150 mW  | 300 mW          |
| Wavelength                               | 266 nm ± 0.5 nm   |                 |
| Linewidth                                | < 1 MHz   |                 |
| 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                                | < 0.25 % (10 Hz - 10 MHz)   |                 |
| Lifetime (typ.)                          | > 10,000 h (with optics 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   |                 |

TopWave laser head

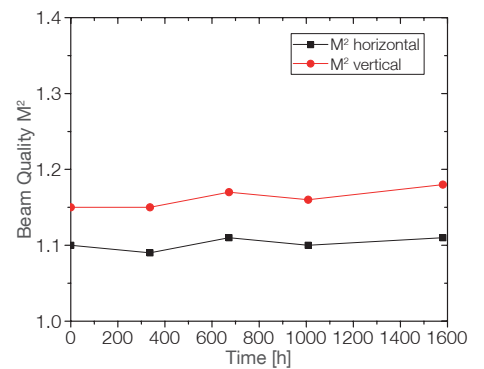
\* Subject to change without notice



All dimensions given in mm.



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



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

TopWave controller

