

HighQ-2™

Ultracompact, air-cooled,
fixed wavelength femtosecond lasers

mks | Spectra-Physics®

The Spectra-Physics' HighQ-2 is an ultracompact, air-cooled, turn-key, fixed wavelength femtosecond laser. It features high peak power and ideal, highly focusable Gaussian spatial beam profile, making it the perfect laser source for fixed wavelength multiphoton imaging in vivo, micro- and nano-structuring, micro- and nano-surgery, and micro-dissection applications.

Designed as a reliable OEM laser for 24/7 operation, the HighQ-2 laser combines true turn-key operation and fast cold start turn-on, ensuring quick installation and easy operation.

HighQ-2 is equipped with long life diodes, a sealed optical cavity design and is manufactured in a controlled, cleanroom environment. The result is a highly dependable laser with long lifetime, high uptime and low cost of ownership.



The HighQ-2 Advantage

- Ultracompact, air-cooled laser head for easy integration
- High TEM₀₀ beam quality with $M^2 < 1.15$
- High peak power for multiphoton imaging and micro-processing
- True turn-key operation
- Proven, dependable performance under 24/7 operation

Applications

- Multiphoton imaging (YFP, RFP, SHG, THG)
- Optogenetics
- Two-photon polymerization
- Micro- and nano-surgery, micro-dissection

HighQ-2 Specifications^{1, 2}

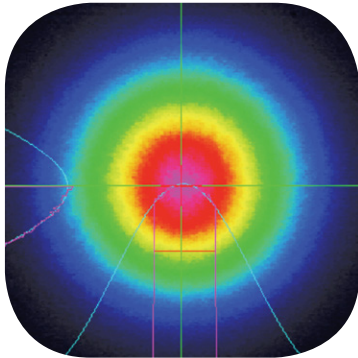
| | HighQ-2 | HighQ-2-SHG |
|-----------------------------------|--|-------------------|
| Output Characteristics | IR | SHG |
| Average Power | >1.5 W | >0.65 W |
| Wavelength | 1045 ±8.0 nm | 522 ±4.0 nm |
| Repetition Rate | 63 MHz | |
| Pulse Width (FWHM) | <250 fs | |
| Pulse Energy | >24 nJ | >10 nJ |
| Peak Power | >80 kW | >35 kW |
| Power Stability | <1% rms (100 hours); <0.5 % rms (12 hours) | |
| Beam Quality | TEM ₀₀ , M ² <1.15 | |
| Beam Diameter, at waist (nominal) | 0.8 mm | 1.0 mm |
| Polarization | 100:1, vertical | 100:1, horizontal |
| Ellipticity | <10% | |
| Cold Start Time | ≤20 min | |
| Warm Start Time | ≤15 min | |
| Operating Temperature Range | 18–32°C | |
| Cooling Requirements | | |
| Laser Head | Air cooled | |
| Power Supply | Air cooled | |
| Utility Requirements | | |
| Voltage | 100–240 VAC, 50/60 Hz, 175 W | |
| Laser Head | | |
| Dimensions (L × W × H) | 8.74 x 8.03 x 3.97 in (222 x 204 x 100.9 mm) | |
| Weight | 13.7 lbs (6.2 kg) | |
| Power Supply Physical | | |
| Dimensions (L × W × H) | 19" rack mountable, 2U. 18.03 x 19.02 x 3.46 in (458 x 483 x 88 mm) | |
| Weight | 28.2 lbs (12.8 kg) | |

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

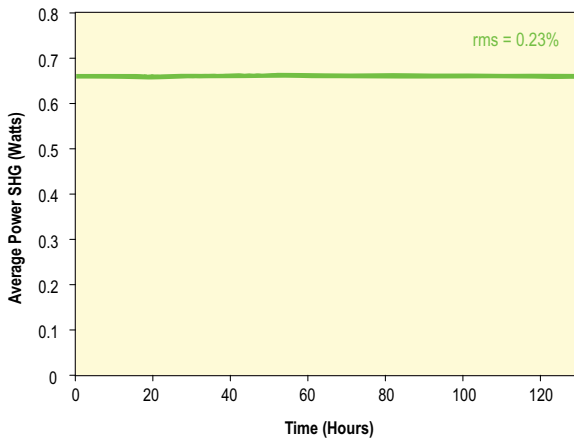
2. HighQ-2 is a Class IV - High Power Laser, whose beam is, by definition, a safety and fire hazard. Take precautions to prevent exposure to direct and reflected beams. Diffuse as well as specular reflections can cause severe skin or eye damage.

HighQ-2

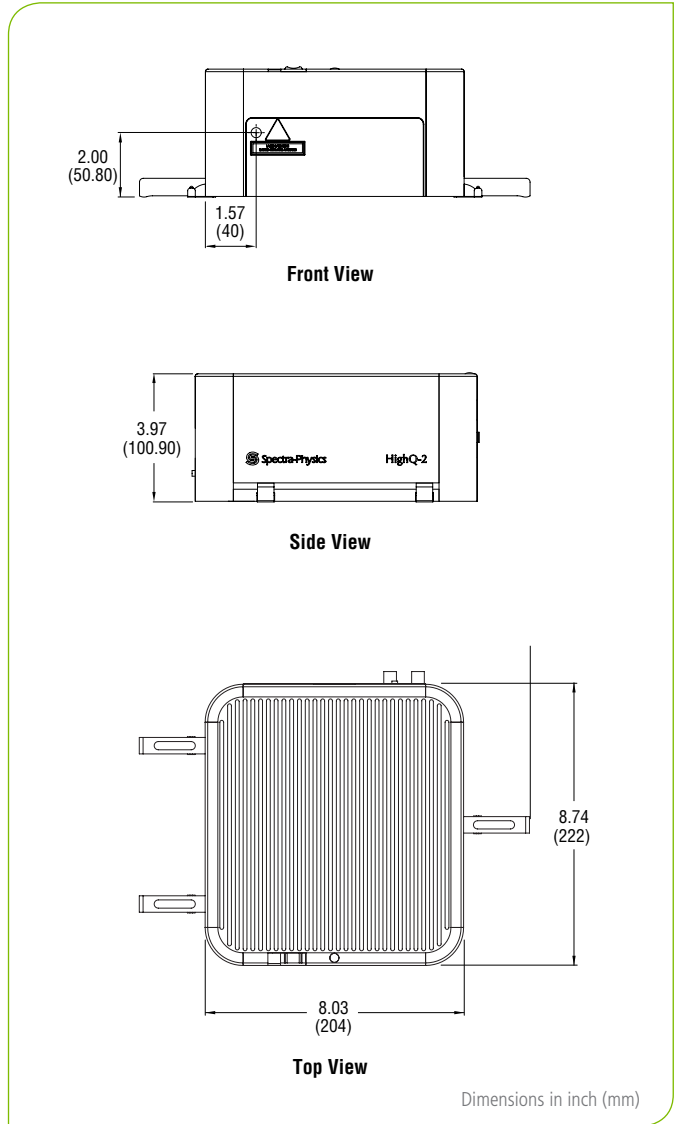
Gaussian Beam Profile



Typical Long Term Power Stability >100 hours¹



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



HighQ-2 Dimensions



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