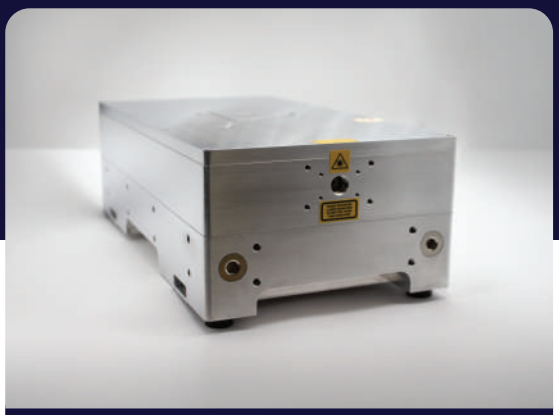


SKYLARK 780

SINGLE FREQUENCY CW DPSS NIR LASER

Key features

Low power noise
≤ 0.3 % RMS

Low ASE noise
< – 80 dB

Stable power output
≤ 2.0 % over 8 hours

Lock to Rubidium hyperfine transition available

Scan to view specifications & product downloads

Laser specifications

Output beam parameters

Output power	up to 400 mW
Wavelength	780 nm
Spectral bandwidth	≤ 300 kHz
Spatial mode	TEM_{00}
Spectral stability	± 0.2 pm (over 8 hours)
Coherence length	> 100 m
Output power stability	≤ 2.0 % (over 8 hours)
Output power noise	≤ 0.3 % RMS (10 Hz – 10 MHz)
ASE noise	< – 80 dB
Beam divergence	1.0 mrad, diffraction limited
Beam diameter at output aperture	0.8 - 1.2 mm
Beam pointing stability	≤ 5 µrad/°C

Absolute referencing and fine tuning

Lock to a rubidium reference with stable mode-hop-free operation.

Fine tuning range via piezo	1 GHz
Coarse tuning via etalon adjustment	40 GHz

What do our customers say about Skylark 780 CW DPSS single frequency lasers?

"Power and frequency with the Skylark 780 remains sufficiently stable over multiple days. This allows for long acquisitions without the impact of drift affecting the experiment."

QUANTUM LAB

"The locking for the Skylark 780 laser is robust and very stable, we never lose the Rubidium frequency."

MICROSCOPE MANUFACTURER

"The Skylark 780 laser has very low ASE noise compared to our previous system; even without any additional ASE suppression measures like gratings and gas cells."

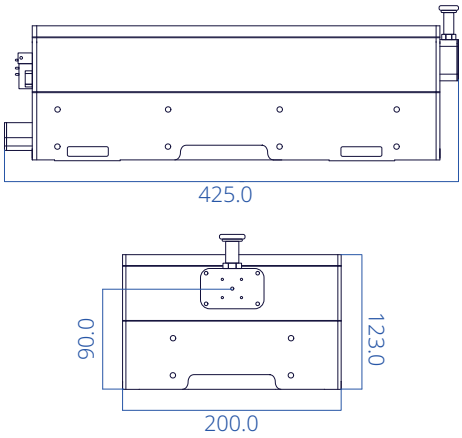
BRILLOUIN MICROSCOPY RESEARCHER

Reveal the unseen,
detect the imperceptible,
measure the unknown.

Skylark DPSS laser system overview

Dimensions

Laser head (L x W x H)	425 x 200 x 123 mm
Beam height	90.0 mm



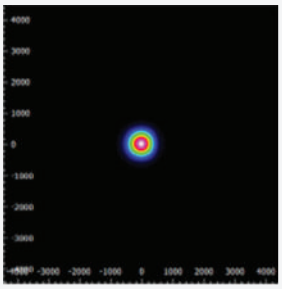
Laser control

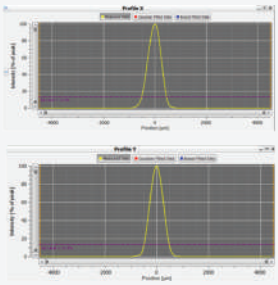
Control interface	Web-based GUI
Control connectivity	Ethernet (TCP/IP) + digital I/O
Safety features	Interlock, mechanical shutter

Environmental conditions

Ambient temperature range	18 - 30 °C
Laser head interface stability	± 1.5 °C
Storage	0 - 50 °C
Humidity	0 - 50 %, non-condensing

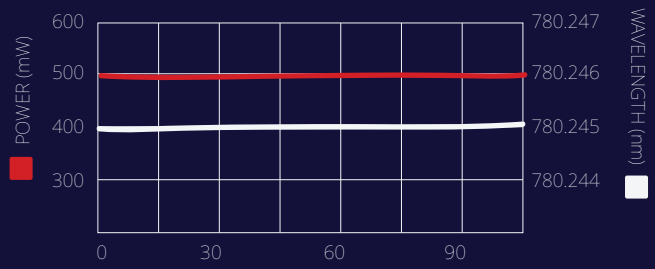
Test data



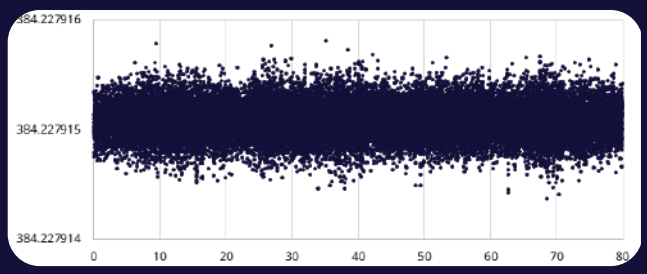


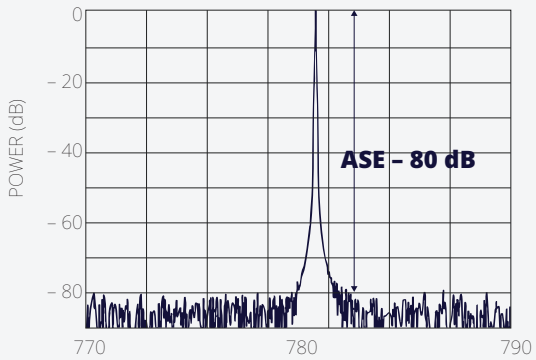
Ellipticity	100.0%
Beam width (4-sigma) X	952.8 µm
Beam width (4-sigma) Y	950.9 µm
Beam width clip X (13.5%)	967.5 µm
Beam width clip Y (13.5%)	972.0 µm

Mode-hop free stability
over 100+ hours



Laser lock to Rb cooling and repump absorption lines
over 80 hours





Unlocked / passive linewidth
12.2 kHz over 1 ms