

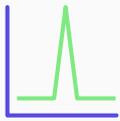
# 813·42 QT

## Ultra-narrow linewidth laser



Skylark supplies ultra-narrow linewidth QT series lasers to our partners in quantum sensing, quantum metrology, and other related technologies, at the specific wavelengths related to the atomic transitions they need to target. Our QT laser series includes the 780·24 QT for rubidium, as well as the 689·4 QT, 698·4 QT and 813·42 QT for strontium.

### Key features



**Ultra-narrow linewidth**  
 $\leq 0.3$  MHz



**High power stability**  
 $\leq 2.0\%$  over 8 hours



**High spectral stability**  
 $\pm 1$  pm over 8 hours



**Excellent beam quality**



**Designed for strontium atoms**

### Applications

Quantum research — strontium

### Specifications

#### Output beam parameters:

Output power	up to 100 mW*
Wavelength	813·42 nm
Spectral bandwidth	$\leq 0.3$ MHz
Spatial mode	TEM <sub>00</sub>
Spectral stability	$\pm 1.0$ pm (over 8 hour operation)
Coherence length	$> 100$ m
Output power stability	$\leq 2.0\%$ (over 8 hour operation)
Output power noise	$\leq 0.1\%$ RMS (10 Hz – 10 MHz)
Beam divergence	$\leq 1$ mrad, diffraction limited
Beam diameter at output aperture	0.8 – 1.2 mm
Beam pointing stability	$\leq 5$ $\mu$ rad/°C
Polarisation ratio	$\geq 100:1$ , vertical

#### Integration features:

Plug-in USB connectivity	Combined heatsink
Versatile control software	Remote diagnostic support

#### Laser head dimensions:

L x W	210 x 100 mm
Beam height	65 mm

#### Environmental conditions:

Ambient temperature range	18 – 30 °C
Laser head interface stability	$\pm 1.5$ °C
Storage	0 – 50 °C
Humidity	5 – 95%, non-condensing

#### Optional accessories:

Heatsink	Fan-assisted
	Water-cooled with thermoelectric chiller
External power control module	0 – 100%, continuous
Tuning range, mode-hop free	25 – 50 GHz

Low power alignment beam mode

\* Other output powers available on request

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## Contact

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🌐 [skylarklasers.com](http://skylarklasers.com)

Designed &  
manufactured  
in the UK



AVOID EYE OR SKIN EXPOSURE TO  
DIRECT OR SCATTERED RADIATION  
**CLASS 4 LASER PRODUCT**  
MAX. POWER: 1000 mW  
(IEC 60825-1)