
# Squeeze Laser

The Squeeze Laser is a compact, table-top system (footprint 41 cm x 61 cm) designed for the generation of continuous-wave squeezed vacuum states at either 1550 nm or 1064 nm. This advanced system achieves squeezing levels of up to 10 dB in the MHz frequency regime, with the flexibility to extend the squeezing regime down to the kHz range through a dedicated locking scheme. The output is a high-quality, free-space TEM00 spatial mode, ensuring excellent beam characteristics.

The control electronics are integrated in a compact 6U rack, featuring an intuitive touch screen interface for seamless operation and monitoring of the Squeeze Laser.

Beyond standard squeezed vacuum generation, our technology enables the creation of entangled beams derived from squeezed vacuum states. Furthermore, Noisy Labs' Squeeze Lasers can produce indistinguishable photon pairs in TEM00 beams at significantly reduced pump powers.

We specialize in tailoring our Squeeze Laser systems to meet specific research and application requirements. If you are interested in customized solutions, including entangled beam generation or photon pair sources, we encourage you to contact us to discuss your project needs and explore how our technology can advance your work.

## Optical characteristics

| Characteristics | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Coherent input power | - | - | - | 500 | - | mW |
| Peak output squeeze factor | - | - | - | 10 | - | dB |
| Mode of operation | - | - | - | CW | - | - |
| Output beam mode | - | - | - | TEM00 | - | - |
| Central wavelength | Pump laser dependent | λ | - | 1064 or 1550 | - | nm |
| 6 dB squeeze factor up to | - | - | - | 30 | - | MHz |
| Polarization of output signal | - | - | - | Linear, s-pol | - | - |

## General characteristics

| Characteristics | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Average ambient operating temperature | - | T | 19 | - | 25 | °C |
| Ambient operating temperature range | - | - | T-1 | T | T+1 | °C |
| Storage temperature | Deviations from operating temperature might require realignment | - | 15 | - | 30 | °C |
| Warm up time to full stabilization | - | - | - | 60 | - | min |
| Humidity | - | - | 30 | 40 | 50 | % |
| Squeeze Laser optical module dimensions | W x H x D | - | - | 610 x 290 x 410 | - | mm |
| Control unit dimensions | - | - | - | 19 inch, 6 U | - | - |

## Control Interface

| Characteristics | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Controls | 10" TFT touch display for GUI navigation | - | - | - | - | - |

## Electrical characteristics

| Characteristics | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Supply Voltage | - | - | - | 230 | - | VAC |

| | | | | | | |
|---|---|---|---|---|---|---|
| Connection | - | - | - | CEE-7/7 | - | - |

Hide Specifications