

# StaXXBeam

By Oxxius

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| <b>Product range</b> | Single Frequency Lasers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Product name</b>  | StaxxBeam 553 nm (fixed power)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Reference</b>     | LCX-553S (fixed power)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Description</b>   | <p>The StaxxBeam 553 is a compact and powerful 553 nm laser source that delivers a narrow linewidth emission and a spectrum of outstanding purity. Its robust design, complete with readily available safety features makes it well-suited for both laboratory and industrial use.</p> <p>Its proven performance, stability, and versatility make it a trusted solution for laser Doppler anemometry, interferometry, structured illumination microscopy. <b>Key features:</b></p> <ul style="list-style-type: none"> <li>• Single frequency emission, <math>\leq 1</math> MHz linewidth</li> <li>• <math>\leq 1</math> pm wavelength stability</li> <li>• TEM<sub>00</sub> spatial mode</li> <li>• <math>\pm 1.0\%</math> long-term power stability; low optical noise</li> <li>• Integrated control electronics Fully compatible with Oxxius' AOM option, or with MixxWave combiners, in combination with other laser lines.</li> </ul> |



**Caption: LPX-553S**

## Product Variations

| Part Number          | Power  |
|----------------------|--------|
| LCX-553S-100-CSB-PPF | 100 mW |
| LPX-553S-200-CSB-PPF | 200 mW |

## Optical Characteristics

|                                                                                                               |                                                          |
|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <b>Emission wavelength</b>                                                                                    | 553 nm                                                   |
| <b>Tolerance</b>                                                                                              | $\pm 0.4$ nm                                             |
| <b>Power stability over 8 hours, temperature within <math>\pm 3^{\circ}\text{C}</math></b>                    | $\pm 1$ %                                                |
| <b>Control modes</b>                                                                                          | Automated power control, fixed or adjustable power level |
| <b>Optical noise</b>                                                                                          | $\leq 0.2$ % rms, 10 Hz-20 MHz bandwidth                 |
| <b>Spectral linewidth</b>                                                                                     | 1 MHz                                                    |
| <b>Wavelength stability over 8 hours, temperature within <math>\pm 3^{\circ}\text{C}</math></b>               | $\leq 1$ pm                                              |
| <b>Wavelength drift over consecutive on/off cycles, temperature within <math>\pm 3^{\circ}\text{C}</math></b> | $\leq 1$ pm                                              |
| <b>Coherence length</b>                                                                                       | $\geq 100$ m                                             |
| <b>Side mode suppression ratio, +/- 0.5nm from the main peak</b>                                              | $\geq 30$ dB                                             |
| <b>Side mode suppression ratio, +/- 5nm from the main peak</b>                                                | $\geq 60$ dB typ.                                        |
| <b>Beam diameter, <math>1/e^2</math> level, 50mm from the beam aperture</b>                                   | $0.7 \pm 0.1$ mm ( $\pm 0.15$ mm for 200 mW)             |
| <b>Beam divergence, <math>1/e^2</math> level full beam, far field</b>                                         | $\leq 1$ mrad                                            |
| <b>Beam quality factor <math>M^2</math></b>                                                                   | $\leq 1.1$                                               |
| <b>Beam circularity, far field</b>                                                                            | $\geq 90$ %                                              |
| <b>Polarization state</b>                                                                                     | Linear, vertical, extinction ratio $\geq 20$ dB          |

## General Specifications

|                                         |                                                         |
|-----------------------------------------|---------------------------------------------------------|
| <b>Power consumption</b>                | 20 W max.                                               |
| <b>Supply voltage</b>                   | 5 V to 12 V                                             |
| <b>Operating temperature</b>            | 10 °C to 50 °C                                          |
| <b>Storage temperature and humidity</b> | 0 °C to 60 °C                                           |
| <b>Warm up time</b>                     | ≤ 10 minutes                                            |
| <b>Interfaces</b>                       | USB, RS-232, direct modulation inputs                   |
| <b>Dimensions (laser head)</b>          | 100x40x32 mm                                            |
| <b>Weight (laser head)</b>              | ≤ 300 g                                                 |
| <b>Controler dimensions</b>             | 109x84x30 mm                                            |
| <b>Compliance</b>                       | CE (incl. IEC 60825-1) and FDA 21 CFR 1040.10 / 1040.11 |
| <b>Laser class</b>                      | 3B                                                      |
| <b>Warranty</b>                         | 24 months or 10000 hours, whichever occurs first        |

## Options

|                            |
|----------------------------|
| Single-mode fiber coupling |
| Multimode fiber coupling   |
| Heat management            |
| Electromechanical shutter  |
| Flange                     |
| Optical Isolator           |
| OEM version                |

*Oxxius has a policy of continuous product improvement. Specifications may change without notice.*