

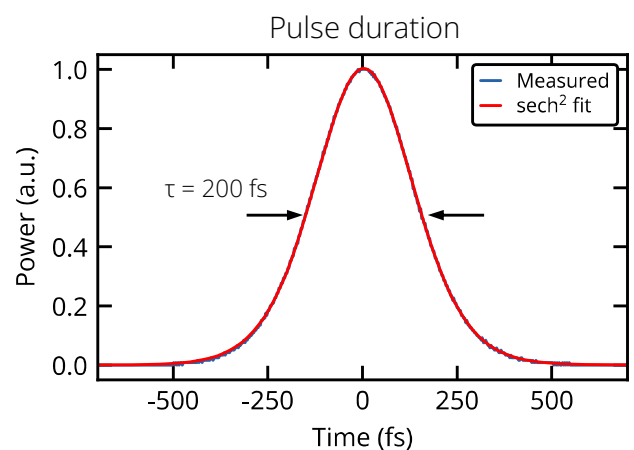
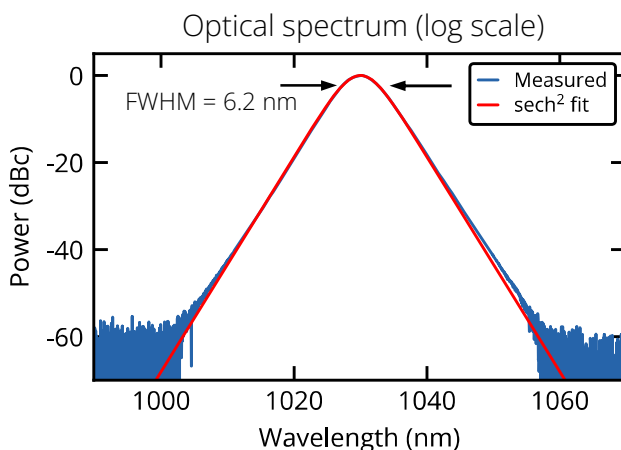
## MENHIR-1030 SERIES – 160 MHz

The MENHIR-1030 SERIES is the first industrial-grade laser of its kind that operates at 1030 nm and achieves the lowest phase noise and timing jitter on the market. The laser is passively air-cooled and fully self-contained, featuring extreme robustness and reliability. In this document, we report the full characterization of the product operating at a repetition rate of 160 MHz.



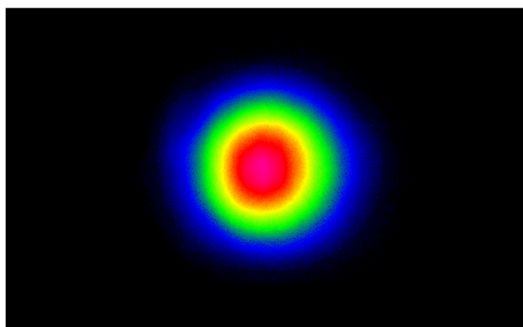
### Key product specifications

- $f_{\text{rep}}$ : 80 – 200 MHz
- Power: > 100 mW
- $\lambda_0$ : 1025 – 1035 nm
- Clean soliton pulse
- Bandwidth: > 5 nm
- Pulse width: < 300 fs (Transform limited)
- Sech<sup>2</sup>-shaped spectrum
- Beam characteristics: TEM<sub>00</sub>,  $M^2 < 1.10$
- Dimensions: (L x W x H) 250 x 260 x 60 mm<sup>3</sup>

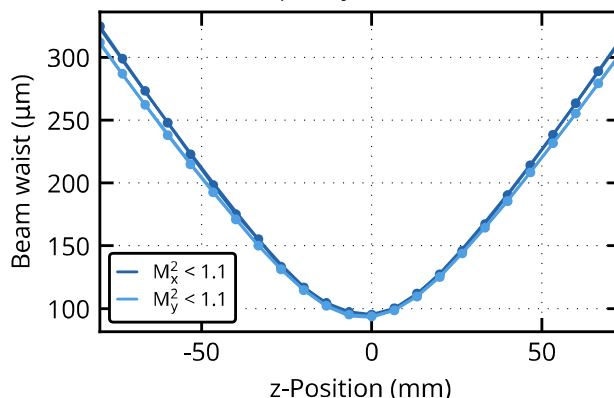


## Beam characteristics

Typical beam profile



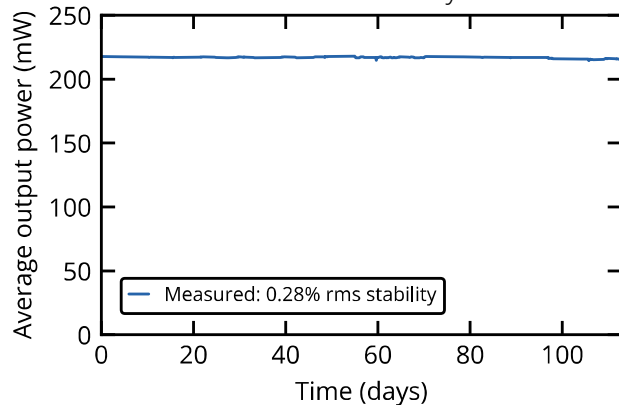
Beam quality measurement



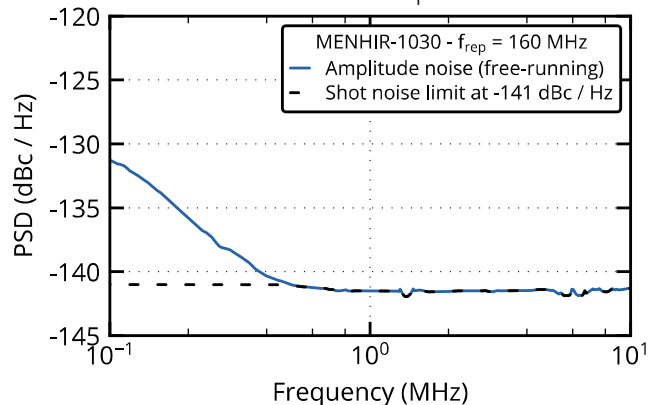
## Power stability

The MENHIR-1030 SERIES demonstrates high long-term power stability and is shot noise-limited above 1 MHz.

2500-hour stability test



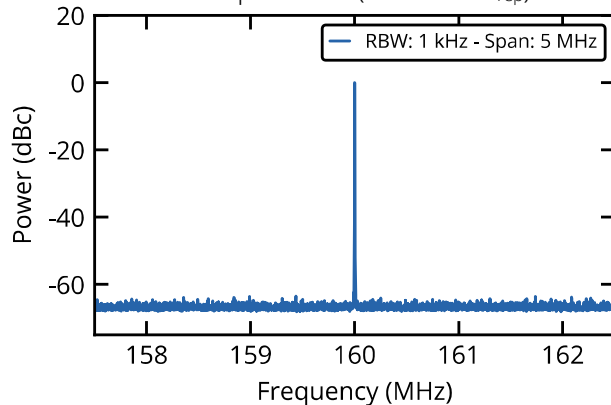
Shot noise limited performance



## Repetition rate stability

The MENHIR-1030 SERIES features extreme repetition rate stability and ultra-low pulse-to-pulse jitter. The free-running phase noise of a MENHIR-1030 at 160 MHz is reported here. The phase noise is measured on the 62<sup>th</sup> harmonic, *i.e.*, at 10 GHz.

RF spectrum (zoom on f<sub>rep</sub>)



Timing noise

