Clocklaser

ECDL (downstairs)

The laser consists of a MOPA in littman-configuration. The diode runs at 80 mA (7-10 mW seed-power) and the TA at typically 800 mA (output power ~ 100 mW) The laser frequency can be controlled by a piezo and jumps cyclicly with linear length change. An intra-ECDL-etalon is used to course-adjust the frequency and jump-ranges. **Do not** use the laser-diode current to change the frequency.

Typical power values

- Laser diode: 7-10 mW @ 80 mA
- TA: 100 mW @ 800 mA
- Power infront of fiber going upstairs: 30 mW
- Power for the double-pass AOMs: ~ 10 mW
- Power infront of the clock-resonators: 100 µW

> ⚠️ Werte checken

Tapered amplifier (upstairs)

Typical power values

- Seedpower: min 10 mW
- Outputpower:~ 800 mW @ 2.2 A
- Max outpupower related to the datasheet: 1.5 W @ 3 A

The system was build by Sina Malobabic and is described in her diplomathesis.

- EYP-TPA-0915-01500-3006-CMT03-0000

SHG

Typical power values

- Outputower: ~ 120 mW
- Power transfered through the fiber: slightly above 50% of the incoupled power (20-40 mW)
- Power behind the lattice mirror: ~7 - 8 mW

SHG Photodiode detect the IR light and is saturated for full TA power. An additional Photodiode for blue light is implemented. Align the SHG *mainly* on the blue signal!

- SHG beamprofil has some additional *spots* on both sides (before realigning the spots has been mostly on on side)
    - The SHG beam is at the edge of the lens direct behind the SHG outcoupling mirror. In case of low power check if the beam do not fully pass the lens.
- SHG beam direction of the blue beam changes with the TA power → Adjust at maximal power.
- If the Toptica PID cannot lock the SHG signal, try removing and re-connecting the "Analog Interface" cable on upper left corner of Toptica controller.

From:
https://iqwiki.iqo.uni-hannover.de/ - **IQwiki**

Permanent link:
https://iqwiki.iqo.uni-hannover.de/doku.php?id=groups:mg:experiment:laser:clocklaser

Last update: **2017/05/29 17:55**