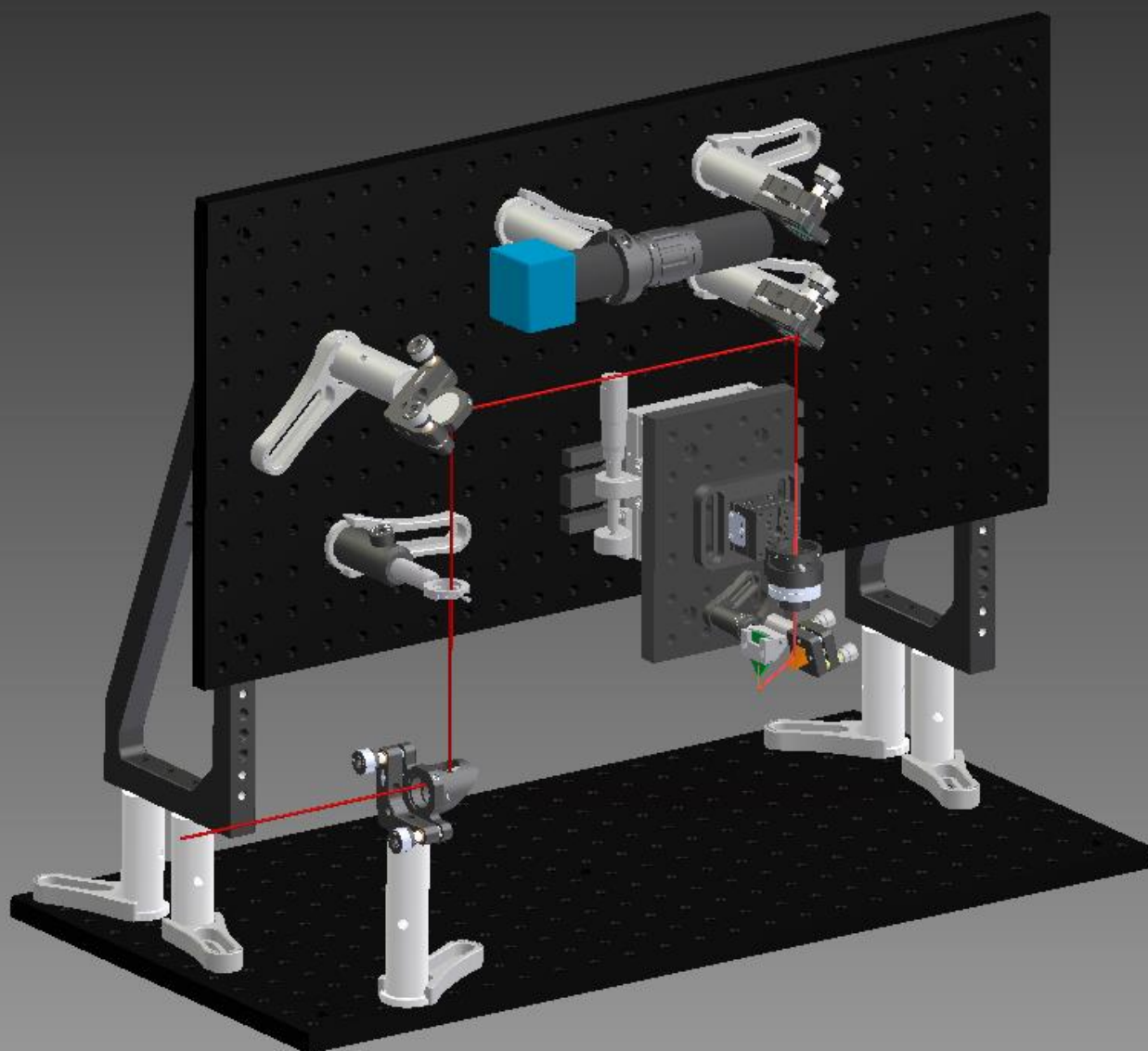


Sub-System D-B2 and Sub-DB2-TR with camera extension

Installation notes

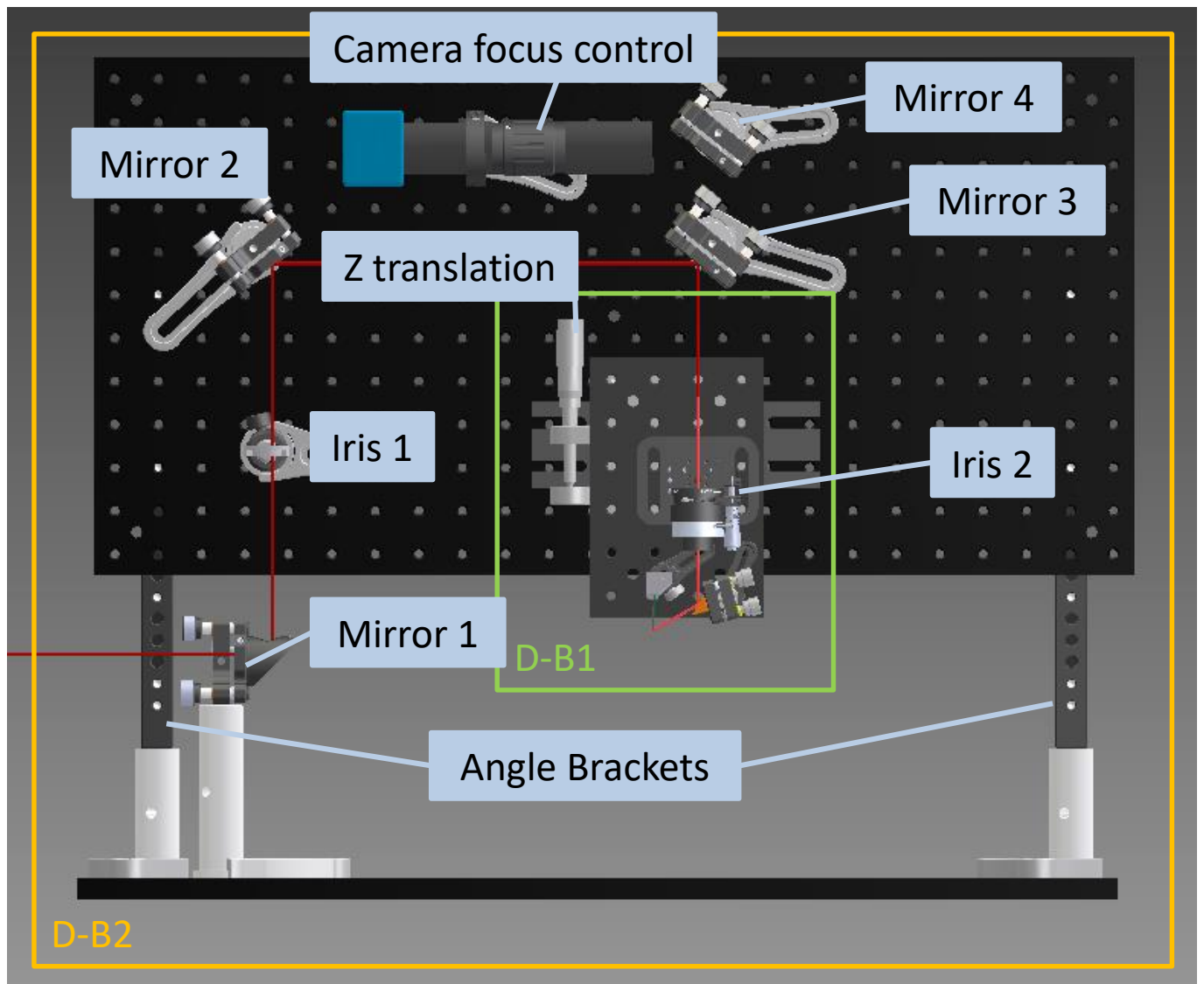
V20210506



Overview

General information:

- The main breadboard of sub-system D-B2 contains pre-aligned optical components.
- Mirror 1 is a separate component which needs to be mounted on your optical table.



Unpacking and Installation

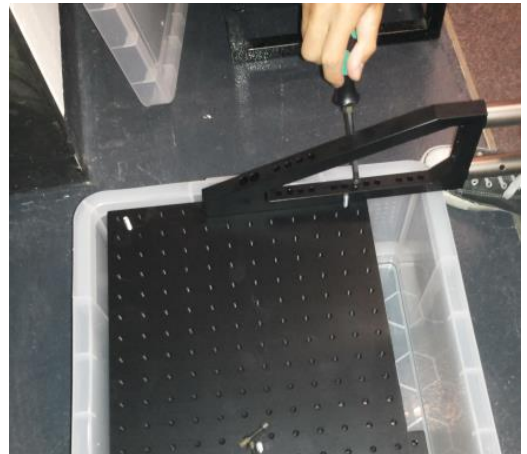
Unpacking:

- Unpack the Sub-D-B2 transportation plastic box and all other components from the carton.
- Unscrew the wing screws on top of the transportation box, open the lid and remove all remaining shims.



Installation:

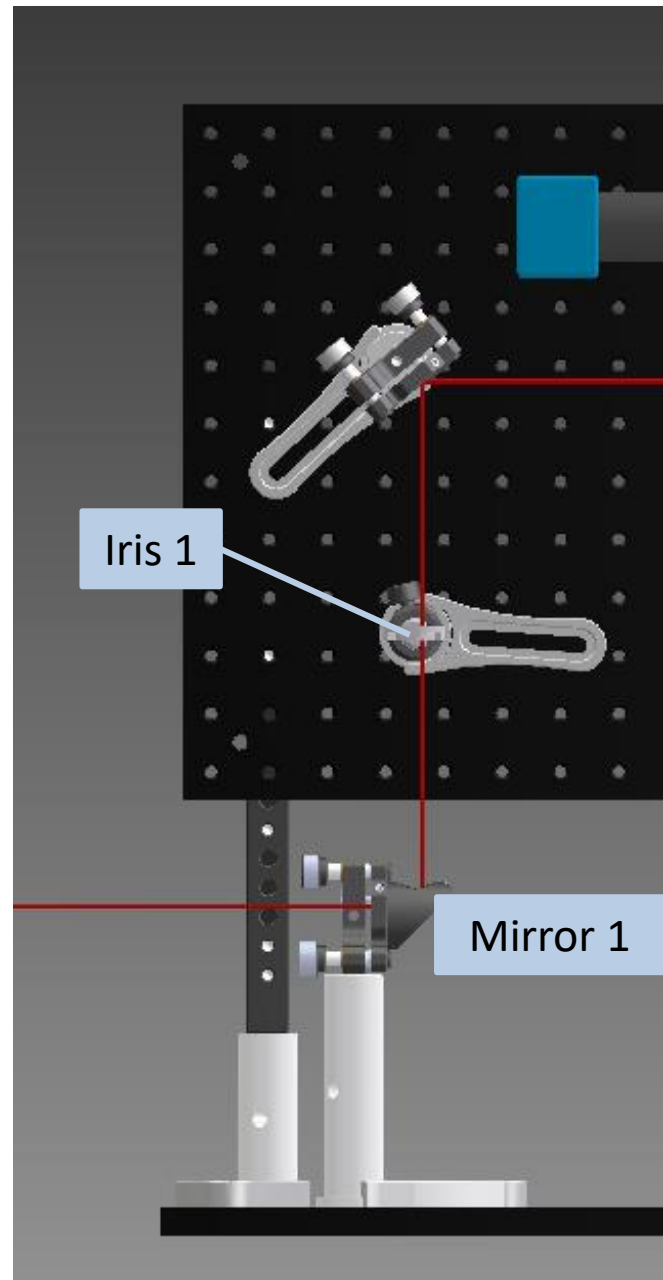
- Before unboxing the system, fix the angle brackets using the included screws at a desired height. Note that the TeraSpike tip will overhang the lower edge of the breadboard.
- Carefully get the D-B2 out of the transportation box and put it on your optical table.
- **Caution!** Take care that the distance tubes do not hit the optics.
- Fix the base mount of the D-B2 on the optical table (using the supplied clamping forks, for shorter brackets on feet or simple screws for longer brackets).



D-B2 Installation

System installation:

- Place the system on its final position on your optical table. Fix it with the provided clamping forks.
- Position and mount **Mirror 1** with one clamping fork to guide the laser beam upwards to **Iris 1**.
- Make sure laser-safety rules are applied, when guiding the beam upwards.
- Adjust **Mirror 1** and the next upstream mirror in your system to centre the beam on **Iris 1** and **Iris 2**. Mirror 2 and 3 should not be realigned.



D-B1 Alignment

Fine adjustment:

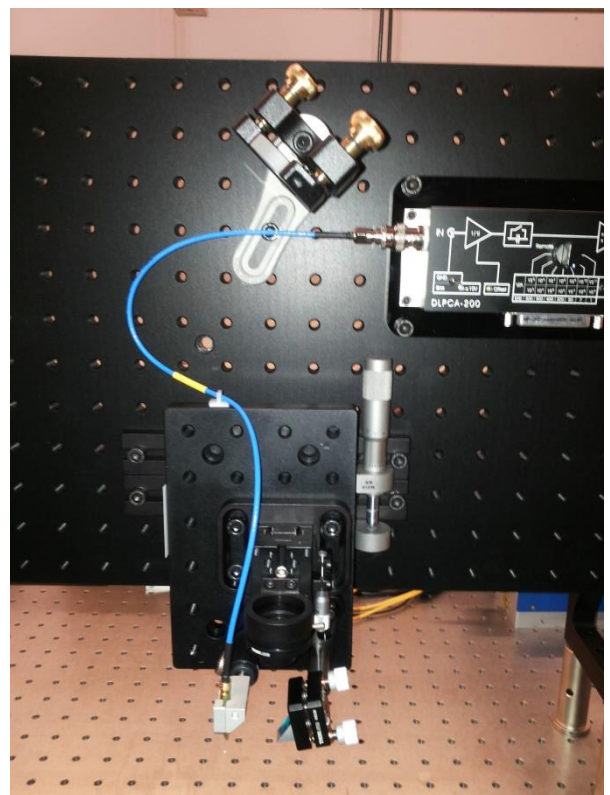
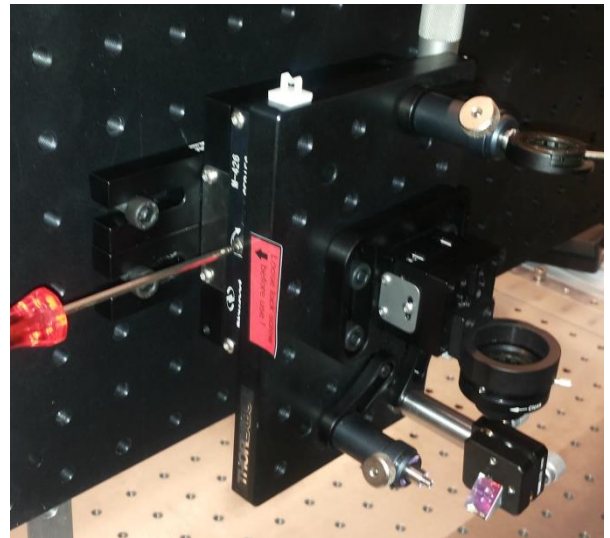
- Though your sub-system **D-B2 / D-B1** comes pre-aligned, some fine adjustment might be necessary.
- Loose all marked lock screws of the translation stages by one turn and remove all other indicated fixation components

Not loosening these screws can cause damages during translation!

- Next adapt the optical power to the values recommended in the TeraSpike application notes.
- Now you can build in your microprobe and connect the cable to the current amplifier.

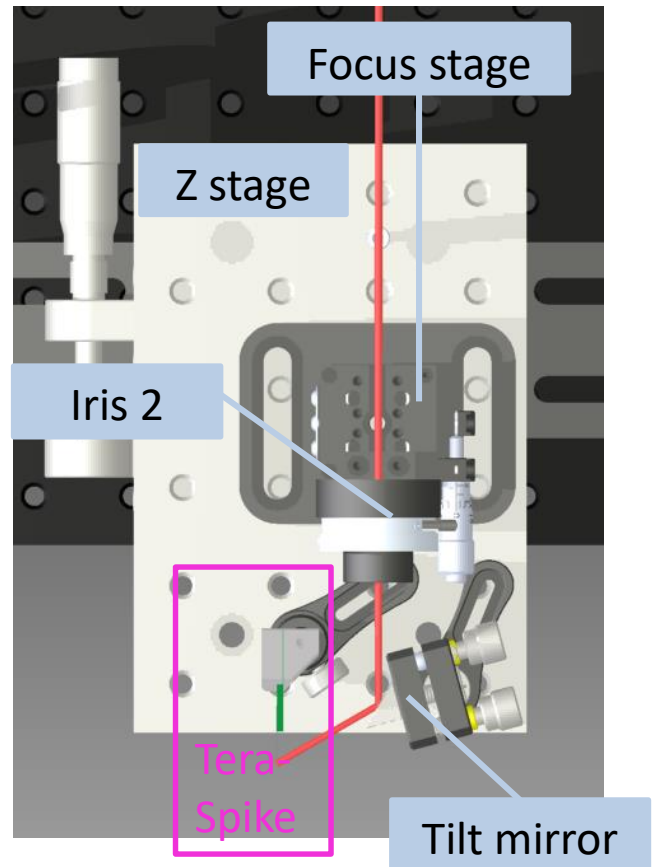
Please read carefully the corresponding application notes before installing the TeraSpike into the setup.

- In case you also ordered a DLPCA current amplifier prepare it for alignment procedure by switching on the bias (preadjusted to 1V) and connect a Voltmeter to measure photo-current using an amplification of 10^6 V/A – 10^4 V/A.



D-B1 Alignment

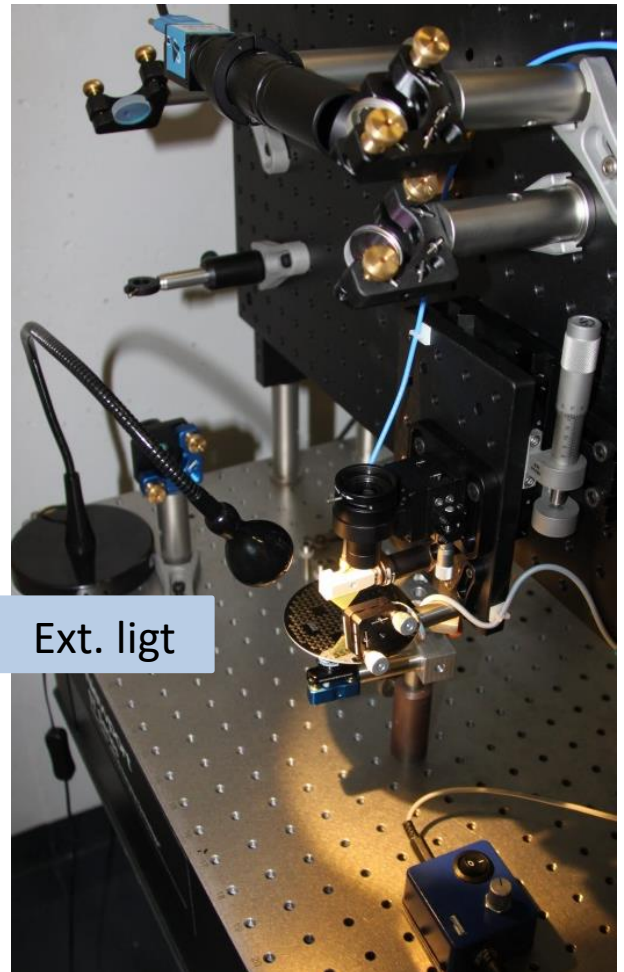
- Start the alignment procedure as described in the TeraSpike application notes using the focus stage and the tilt mirror. Small readjustments should be sufficient.
- Refer to Sub-DB1 and TeraSpike Applications notes.



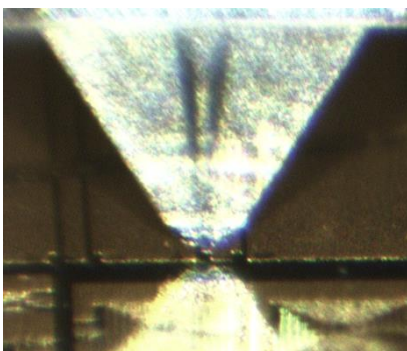
Camera-Extension

Operation and Lighting:

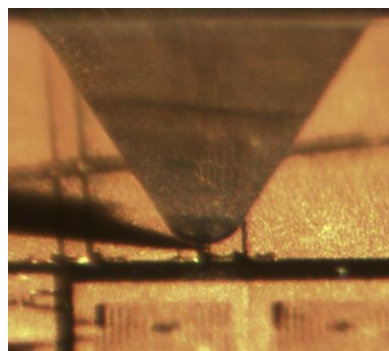
- The actual laser-spot cannot or only hardly be seen on the camera image. Also the image of the probe-tip stays in place during movement of the z-translation.
- For tip approach carefully watch the sample approaching the microprobe.
- Depending on the sample-structure internal lighting might not be optimal for good visibility of the sample. In this cases additionally an external light source can be added (see exemplary images below).



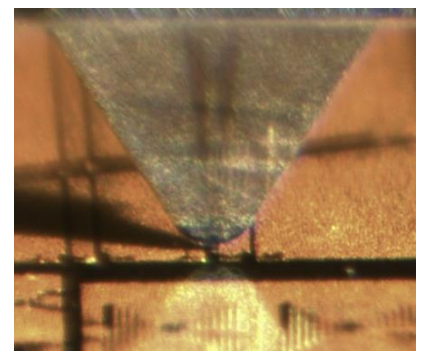
Exemplary camera images:



Internal light only



External light only



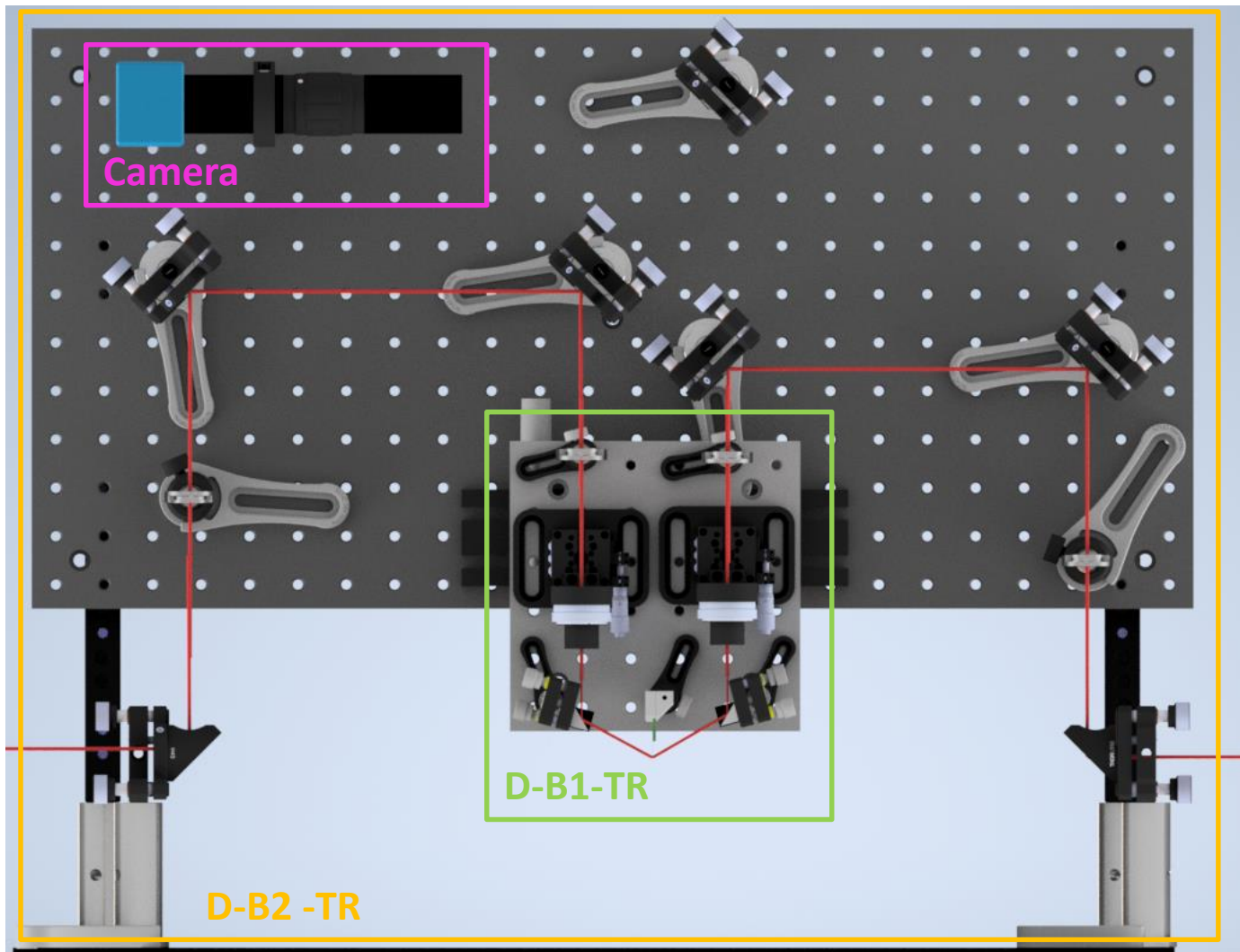
Both lights

Sub-DB2-TR

Including a second beam path

Additional information for Sub-DB2-TR:

- The main breadboard of sub-system D-B2-TR contains mirrors for a second laser beam path guiding the beam towards the Sub-DB1-TR.
- The alignment for the second beam path follows the same procedures as described above for the first beam path.

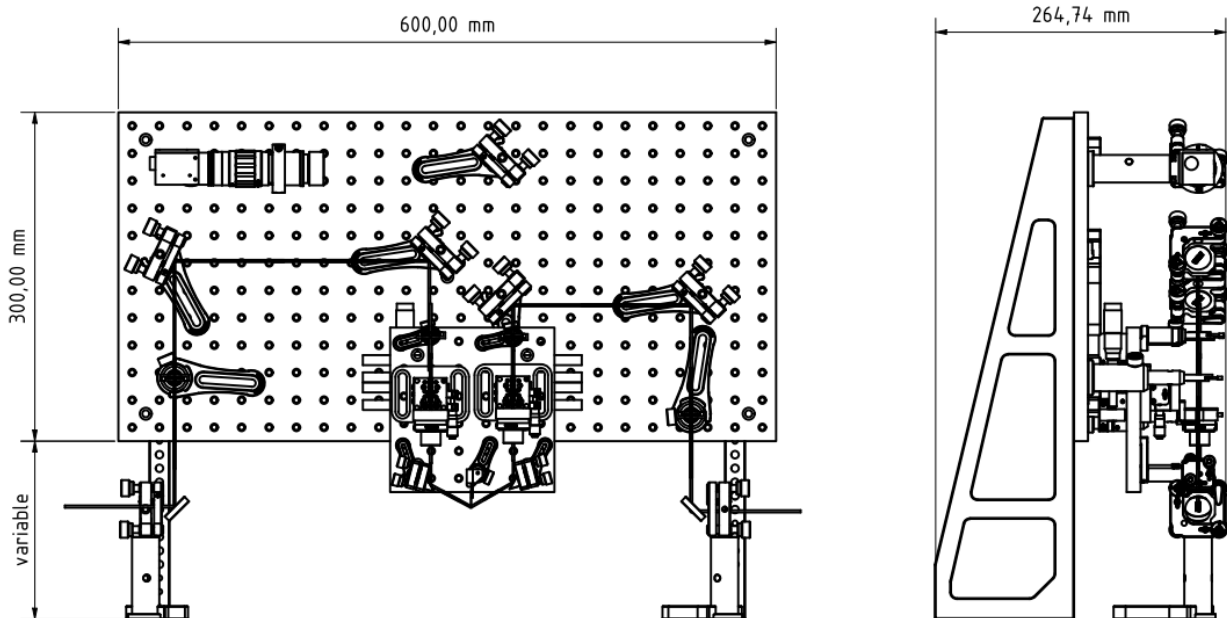


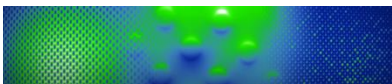
Sub-DB2-TR

Dimensions

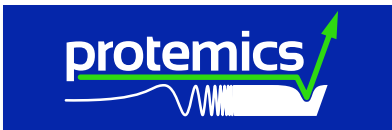
Technical drawings for Sub-DB2-TR:

- The height of the main breadboard at the mounting posts is “variable” and can be adjusted by the user during system installation. Typically 10-25 cm
- The placement of optics on the main breadboard is exemplary and varies for individual systems





Questions? Please contact us:



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