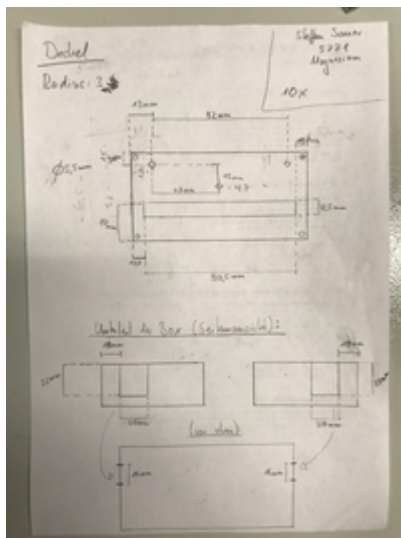
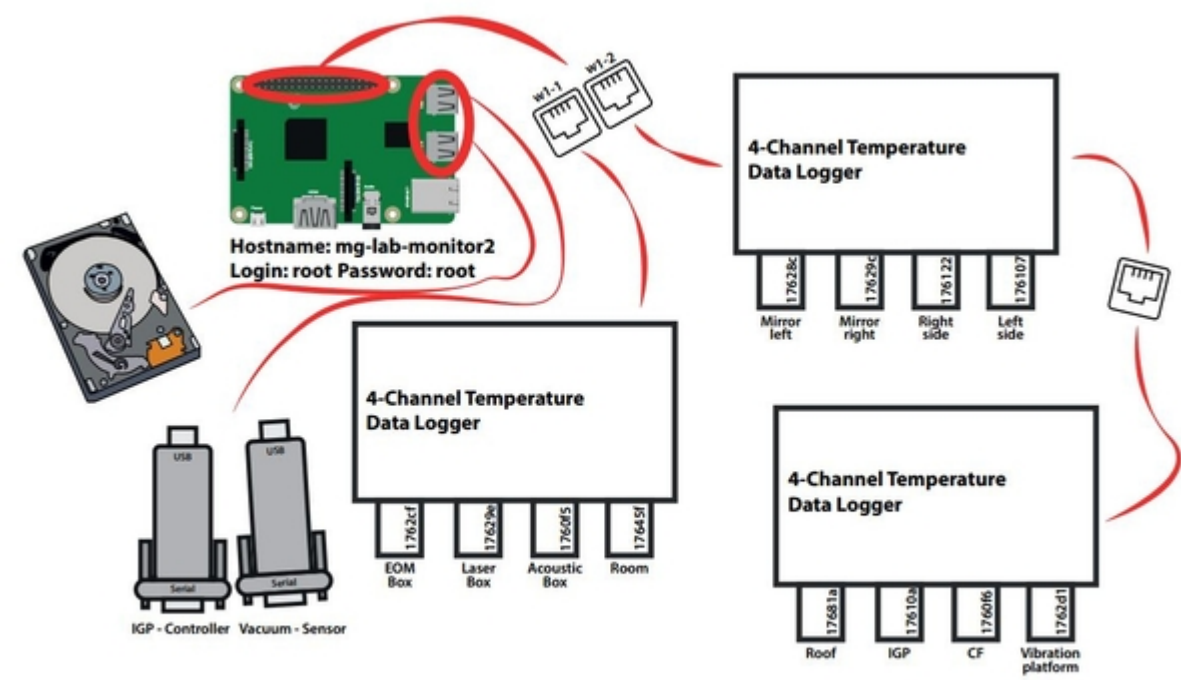


# Bake out

- We use the temperature monitoring design, made by E. Wodey, for the out of loop measurements during the out baking.
  - Talk by E. Wodey for the explanation of the monitoring system:  
2016-08\_geoq\_ctp\_ew.pdf
  - Temperature sensors: <http://www.omega.de/pptst/5SRTC.html>
    - Datasheet:  
Chromega 5SRTC-TT-E-24-80
  - Box-design:



- Setup:  
rasptemp2.pdf



Bake out list

| Item                    | Material                                      | Maximum temperature [°C] | Comments                                                                            |
|-------------------------|-----------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|
| CF Cupper ring          | Cupper                                        | 1084.62                  | Schmelzpunkt, Wikipedia                                                             |
| Mounting for the spacer | (Al ~ Alplan)                                 | 660.2                    |                                                                                     |
| Zerodur rods            | Zerodur                                       | 600                      | Wikipedia                                                                           |
| Heat shields            | Aluminium [EN AW-5083]                        | 660.2                    | <fc #ff0000>Temperatureinsatz (max. °C bei Dauer / Kurzzeiteinsatz): 120/ 180 </fc> |
| Window holder           | Aluminium                                     | 660.2                    |                                                                                     |
| Vacuum chamber          | Aluminium                                     | 660.2                    |                                                                                     |
| CF Flanschkit           |                                               |                          |                                                                                     |
| Glas balls              | Borosilikatglas                               | 500                      | maximale Arbeitstemperatur, Wikipedia                                               |
| IGP                     |                                               | 350                      |                                                                                     |
| Lead wire               | Lead                                          | 327                      |                                                                                     |
| NTC Sensors             |                                               | 300                      |                                                                                     |
| Angle valve             |                                               | < = 300                  |                                                                                     |
| Viton balls             | Viton                                         | 280                      | Wikipedia                                                                           |
| Sub-D Kabel 37FXRR-500  | Kupferdraht versilbert<br>Kaptonband-isoliert | 230                      |                                                                                     |

| Item                                      | Material                                      | Maximum temperature [°C]                         | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|-----------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vacuum pressure sensor                    |                                               | 250 without electronics and magnet               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Gate valve                                |                                               | open: $\leq 250$ (max 24h)<br>closed: $\leq 200$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Sub-D Socket                              |                                               | 230                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Sub-D Feedthrough                         | Peek                                          | 230                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Crimp pins                                | Cu vergoldet                                  | 230                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Caption wires                             | Kupferdraht versilbert<br>Kaptonband-isoliert | 230                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| IGP cable                                 |                                               | $< 220$                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Peltier-elements                          |                                               | 200                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Windows                                   |                                               | 200                                              | Question:<br>What is the maximum (continuous) temperature which the AR coatings are able to withstand? What is the maximum temperature gradient that can be applied (continuously) between the two faces of the 1/2" 3mm BK7 and fused silica windows?<br>Response from Jeremy at Thorlabs:<br>The maximum temperature will be around 200°C or so. We do not spec a maximum temperature gradient since it can depend on the thermal boundary conditions and geometrical boundary conditions of the window. However, I would recommend UVFS over N-BK7 because of its much lower coefficient of thermal coefficient. |
| Vacuum glue [Torrseal]                    |                                               | 175                                              | Flammpunkt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Indium wire                               | Indium                                        | 155                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Indium foil                               | Indium                                        | 155                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Vacuum pressure sensor cable              |                                               |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| CF-Kreuz                                  |                                               |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Screws from the mounting and hield shield | Edelstahl A2                                  |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ULE Spacer                                |                                               |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Mirrors                                   |                                               |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ULE rings                                 |                                               |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Faraday rotator                           |                                               |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Glue from faraday rotator                 |                                               |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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