UV-Reflectometer by Klaus Wojczykowski

Construction and Installation

- Build the Reflectometer from parts listed below - 3D-printed parts should be printed using black filament. Build according to included design blue-print.
- Connect the Reflectometer with a PC using USB
- Upload the UVReflectometer.ino file to the Arduino using the ARDUINO IDE (https://www.arduino.cc/en/main/software)
- Install SCILAB on your computer (https://www.scilab.org/download)
- Install the Serial Toolbox (https://atoms.scilab.org/toolboxes/serial)
- Copy the UVReflectometer.sce file to your computer
- (edit the UVReflectometer.bat file with the file path of the UVReflectometer.sce file and copy it to your desktop)
- Start the program either by calling it from SCILAB or by clicking UVReflectometer.bat

Parts List

- Microcontroller: Arduino Nano with USB cable
- UVC-Strip: Bioledex MOD-123C-323
- UVC-Sensor: GUVA-S12SD
- 28BYJ-48 Stepper motor with ULN 2003 driver board
- Relais module: YXPCARS KY-019
- Universal circuit board as main board (47x72 mm; 2.54 mm pitch)
- LM385 OP-Amplifier
- 10.000 µF capacitor
- 1 kOhm resistor
- 10 kOhm resistor
- 12V, 1A power supply unit with cable and jack plug
- Jumper wires, solder

- 3D Printed Parts as per design (https://www.tinkercad.com/things/4fHqMrWtHtj)
- Screws to mount housing from 3D printed parts:
    - Small screws for attached parts (3.0x12)
    - Larger screws for main housing (3.5x30)
- Short M3 and M4 bolts and nuts
- 2x small springs (~10 mm diameter)
- Aluminium tube (7 mm outer diameter)
- 2x ball bearings (22 mm outer diameter)
- timing belt (GT2)
- 2x pulley for timing belt
- 3x micro switches with micro screws for mounting
- black adhesive / double adhesive tape