Potential 2nd order spectrum using the OL490 light source:

# Material list

G & H OL490 light engine:

* Wavelength range of 380-780nm
* Xenon light source

PhotoResearch PR730 spectroradiometer (380nm to 780nm)

Ocean Optics QE65 Pro spectrometer (200nm to 1100nm)

# OL490 light guide as microscope illumination + PR730 fiber detector in the eyepiece tube

For an input wavelength smaller than 390nm, there is a 2nd peak that’s detected (twice the original wavelength) (Figure 1 and 2)



Figure 1: OL490 at microscope light input, PR370 fiber at eyepiece tube, inputs from 380nm to 780nm in steps on 10 nm, measurements from 380 to 780 in steps of 1nm.



Figure 2: OL490 at microscope light input, PR730 fiber at eyepiece tube, inputs from 380nm to 390nm in steps on 1 nm, measurements from 380 to 780 in steps of 1nm

# OL490 light guide + PR730 fiber detector at both ends of a 2” tube

2nd order peak, this rules out the microscope optical train, Figure 3



Figure 3: OL490 fiber and PR730 fiber at both ends of 2" tube, inputs from 380nm to 390nm in steps on 1 nm, measurements from 380 to 780 in steps of 1nm

# OL490 light guide + PR730 with lens detector in a 2” tube

2nd order peak, this rules out the fiber detection attachment, Figure 4.



Figure 4: OL490 light guide + PR730 with lens connected using a 2" diameter tube, inputs from 380nm to 390nm in steps on 1 nm, measurements from 380 to 780 in steps of 1nm

# OL490 light guide + QE65 fiber detector at both ends of a 2” tube

2nd order peak, this rules out the microscope optical train, Figure 5



Figure 5: OL490 fiber and QE65Pro fiber at both ends of 2" tube, inputs from 380nm to 390nm in steps on 1 nm, measurements from 380 to 780 in steps of 1nm