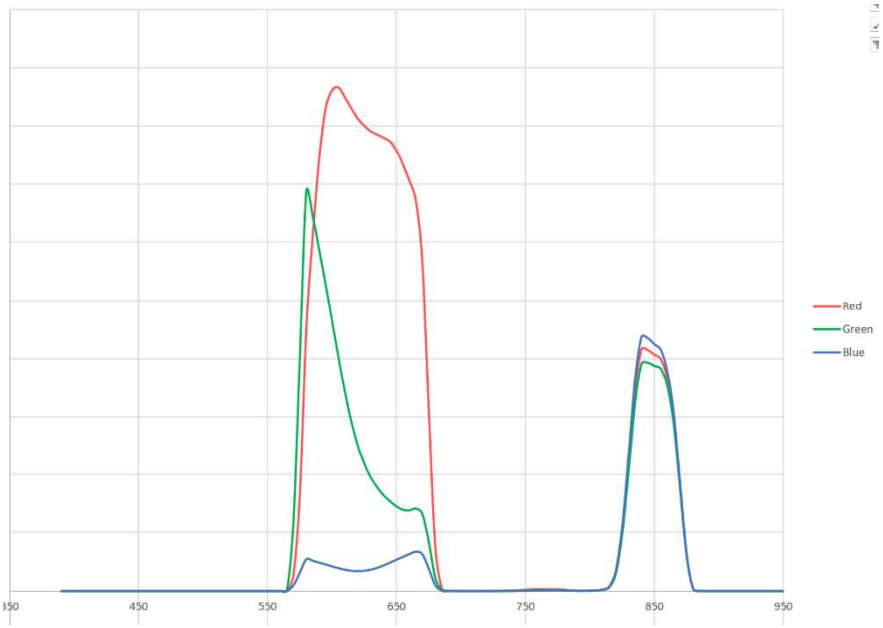
NDVI/NDRE

NDVI (Ag+ Filter)

For the NIR/Red Edge camera, we have the following combined spectral response:



Note that from this imager, we only use the Blue channel for NIR and the Red channel for Red. The green channel is discarded when performing index and band calculations.

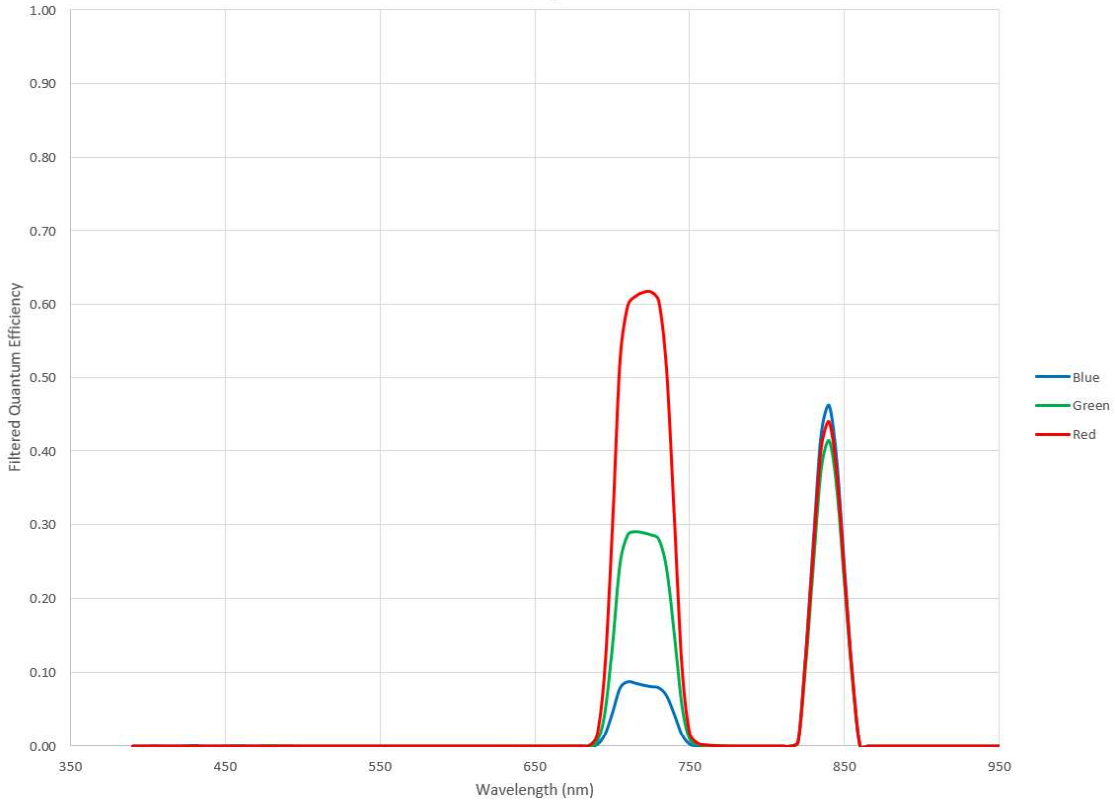
If it is necessary to separate the channels further, we can use a system of equations to subtract out the effect of the out of band channels on each band. This calculation assumes that the incoming light is approximately uniform (which is the case with daylight). We also add the constraint that the power across each of the filtered bands is equal. This allows us to perform calculations across each of the color bands, even if the filter widths vary. This results in the following:

```
Red = -0.966*DNblue + 1.000*DNred
NIR = 4.350*DNblue - 0.286*DNred

NDVI = (NIR - Red) / (NIR + Red)
```

NDRE (NDRE Filter)

For the NIR/Red Edge camera, we have the following combined spectral response:



Note that from this imager, we only use the Blue channel for NIR and the Red channel for Red Edge. The green channel is discarded when performing index and band calculations.

If our light source has smooth power across our wavelengths of interest, we can subtract out the us of band wavelengths in the NIR and Red Edge portions via the following:

```
RedEdge = -0.956*DNblue + 1.000*DNred
NIR     = 2.426*DNblue - 0.341*DNred

NDRE      = (NIR - RedEdge) / (NIR + RedEdge)
```