photobiologySun Version 0.1.4
Catalogue of Solar Spectra

Pedro J. Aphalo

November 14, 2014

1 Introduction

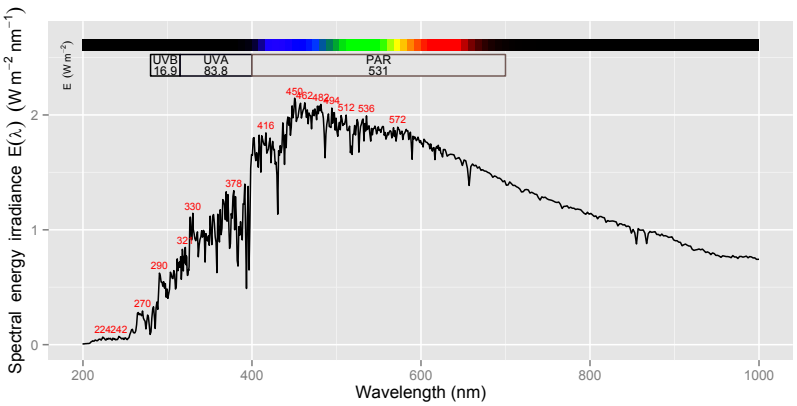
We will plot the emission spectra of the different lamps for which data is provided in the pacakge. We plot side-by-side the lamp output as spectral energy irradiance and as spectral photon irradiance. All spectra are normalized to an area of one under the whole curve.

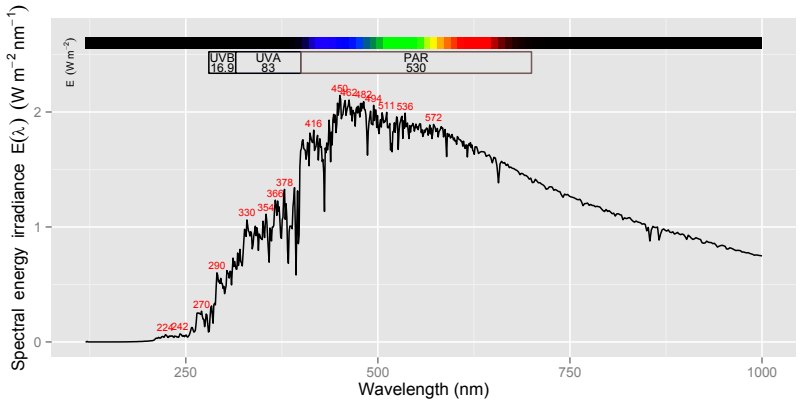
```
library(ggplot2)
library(photobiology)
library(photobiologySun)
library(photobiologygg)
```

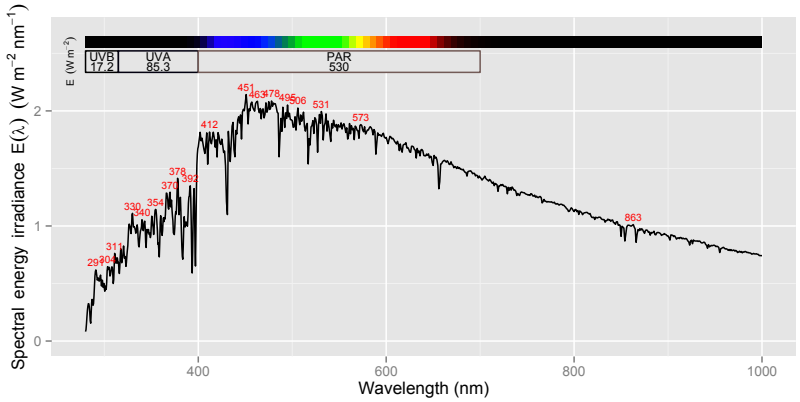
We define a function to do the actual plotting so as to not repeat code, and to make changes easier in the future.

2 Extraterrestrial solar spectra

```
plot(trim_spct(WMO_Wehrli_AM0.spct, high.limit=1000))
plot(trim_spct(ASTM_E490_AM0.spct, high.limit=1000))
plot(trim_spct(Gueymard_AM0.spct, high.limit=1000))
```

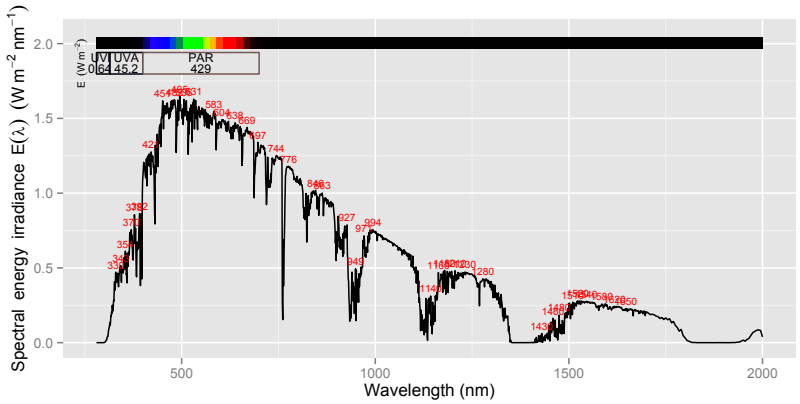


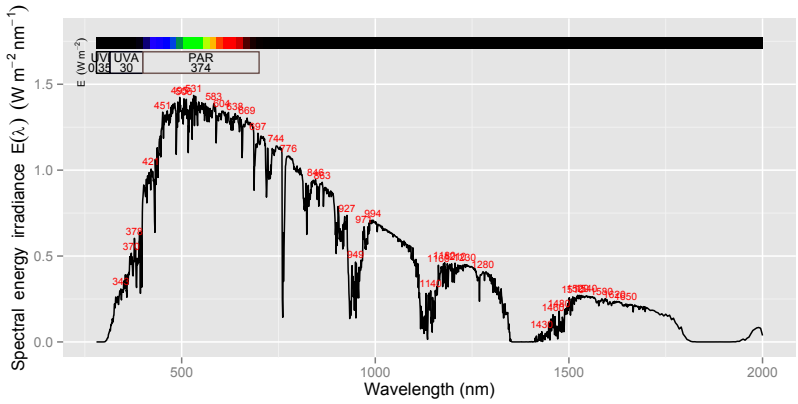




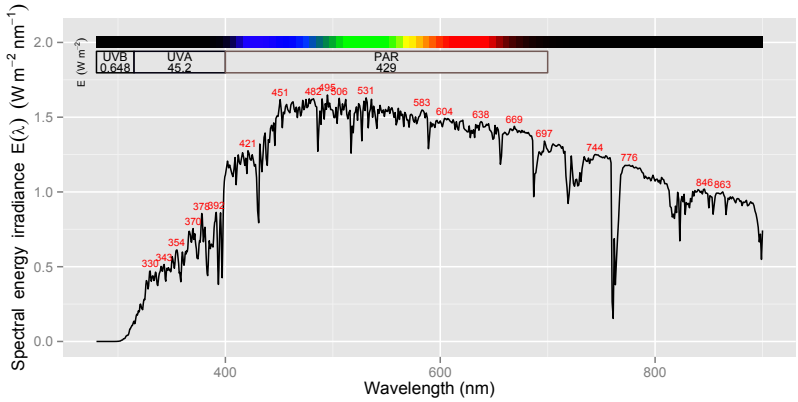
3 Standard terrestrial solar spectra

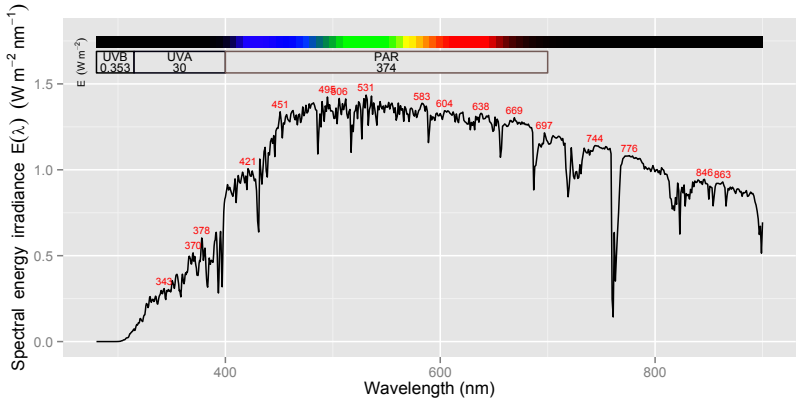
```
plot(trim_spct(ASTM_G173_direct.spct, high.limit=2000))
plot(trim_spct(ASTM_G173_global.spct, high.limit=2000))
```






```
plot(trim_spct(ASTM_G173_direct.spct, low.limit=250, high.limit=900))
plot(trim_spct(ASTM_G173_global.spct, low.limit=250, high.limit=900))
```





4 Measured dayligh spectra

```
plot(sun_May_morning.spct)
```