photobiologyFilters Version 0.1.13
Catalogue of filters

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Contents

1 Introduction

```
library(ggplot2)
library(photobiologyFilters)
library(photobiologygg)
```

```
filter.plotter <- function(filter_name, w.low=280, w.high=1100){
  obj.name <- paste(filter_name, ".spct", sep="")
  spct <- get(obj.name)
  trim_spct(spct, waveband(c(w.low, w.high)), fill=NULL)
  print(plot(spct) + labs(title=obj.name) + theme_bw(10))
}
```

2 Dummy filters
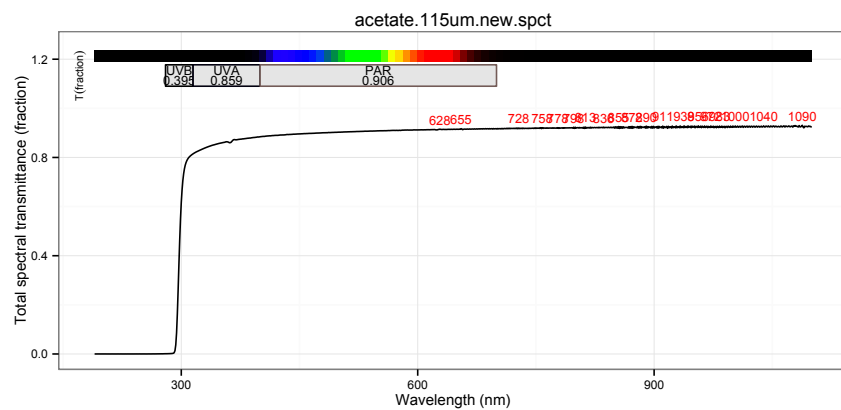
2.1 Perfectly clear filter
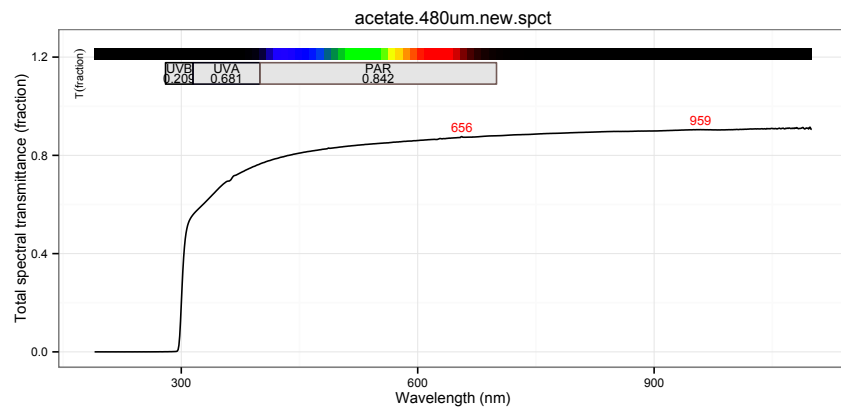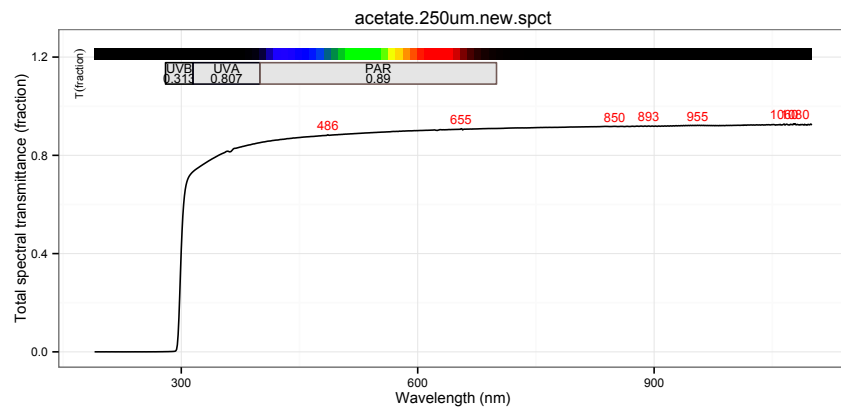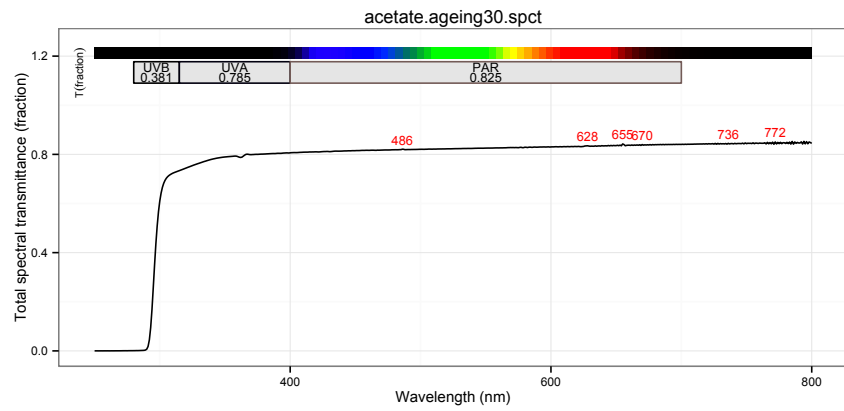
```
filter.plotter("clear")
```
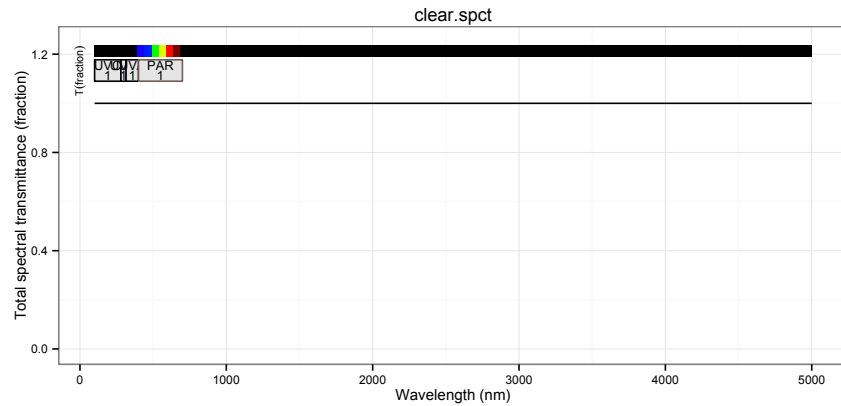

3 Plastic films

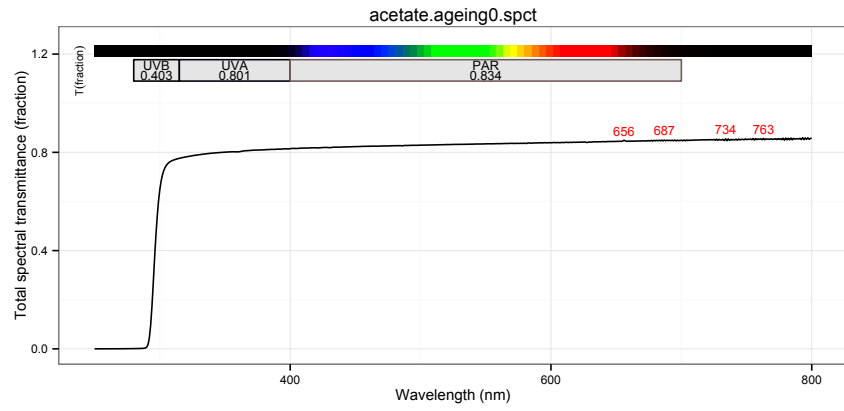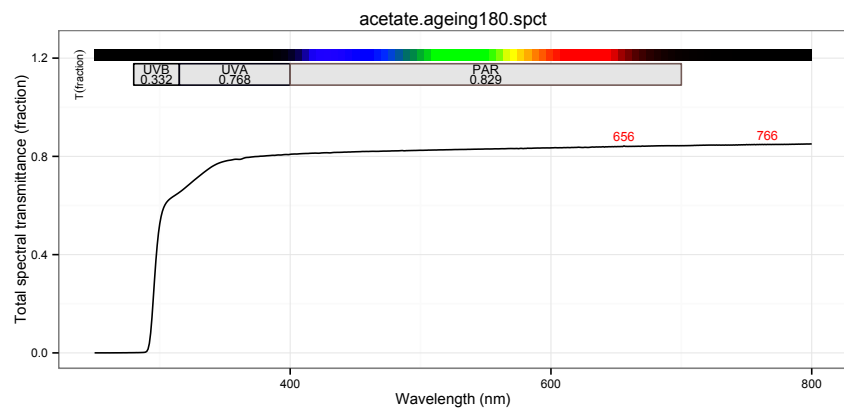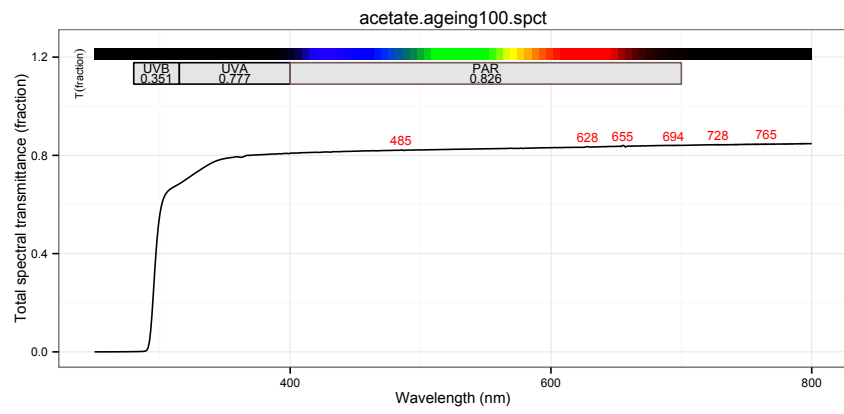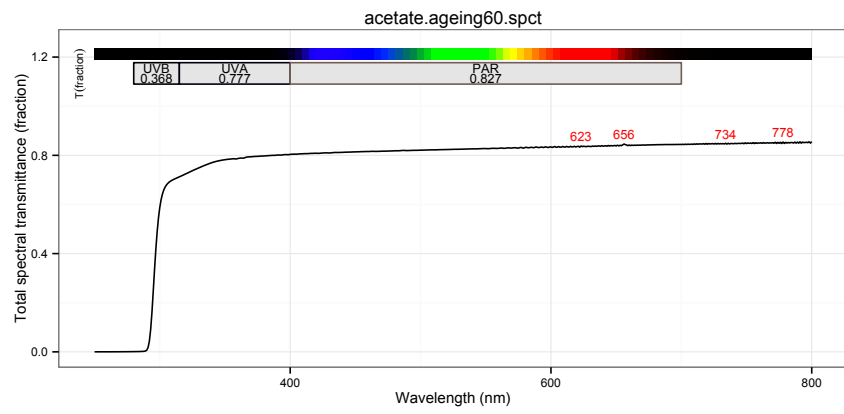### 3.1 Cellulose diacetate

```
for (filter in c("acetate.115um.new", "acetate.250um.new", "acetate.480um.new")) {
  filter.plotter(filter)
}
```

acetate.250um.new.spct

acetate.480um.new.spct

```
for (filter in c("acetate.ageing0", "acetate.ageing20", "acetate.ageing30",
                 "acetate.ageing60", "acetate.ageing100", "acetate.ageing180",
                 "acetate.ageing300")) {
  filter.plotter(filter)
}
```
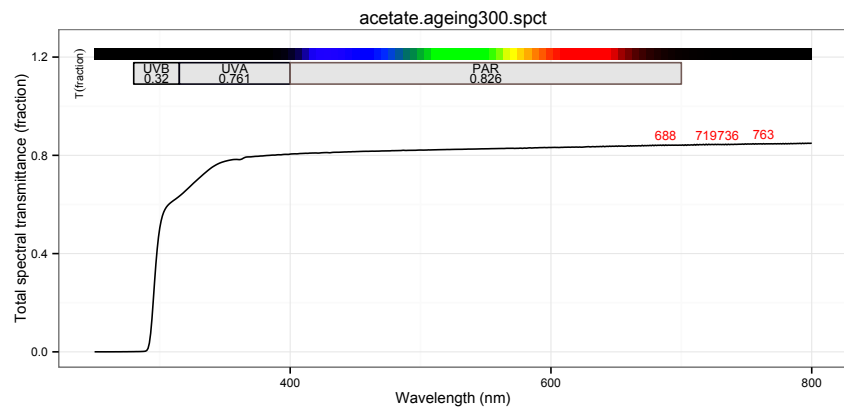
acetate.ageing0.spct

acetate.ageing20.spct

acetate.ageing30.spct

acetate.ageing60.spct

acetate.ageing100.spct
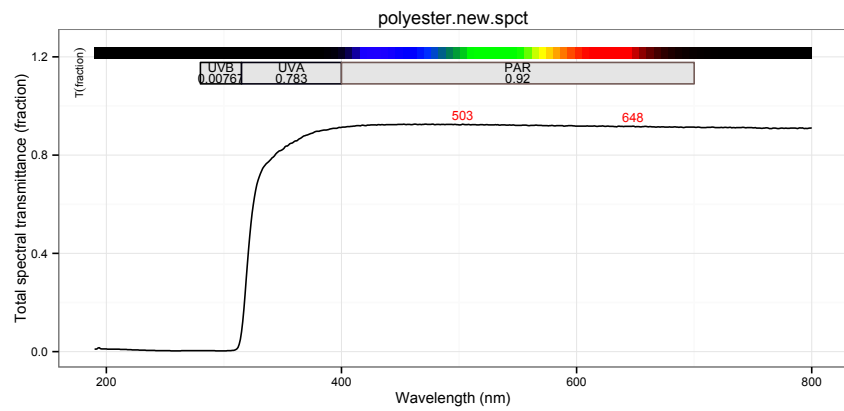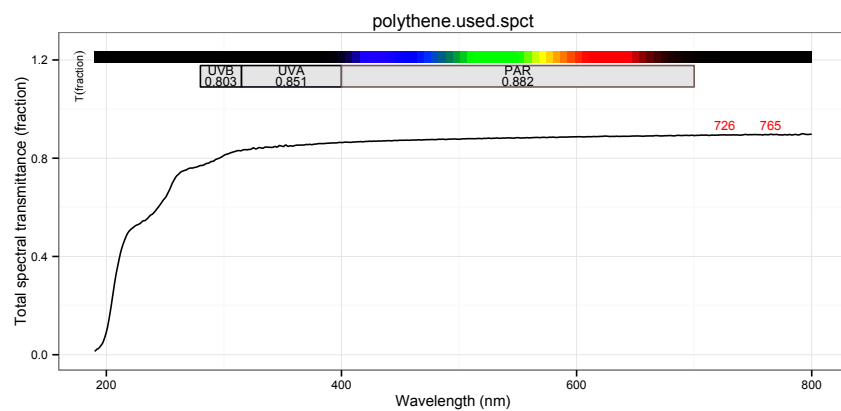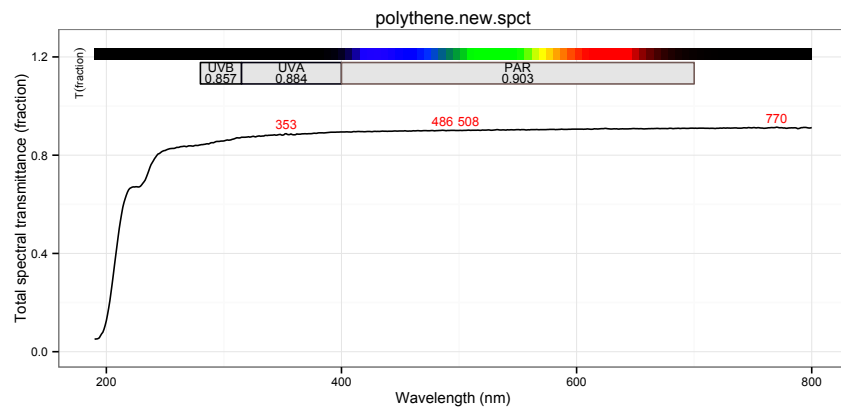

acetate.ageing180.spct

acetate.ageing300.spct
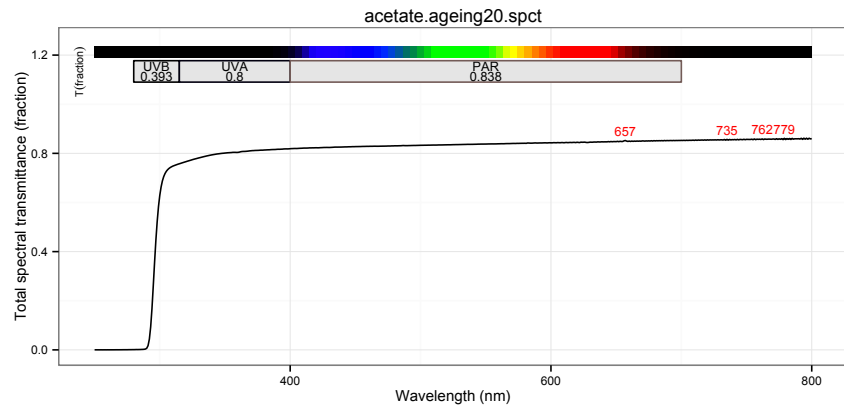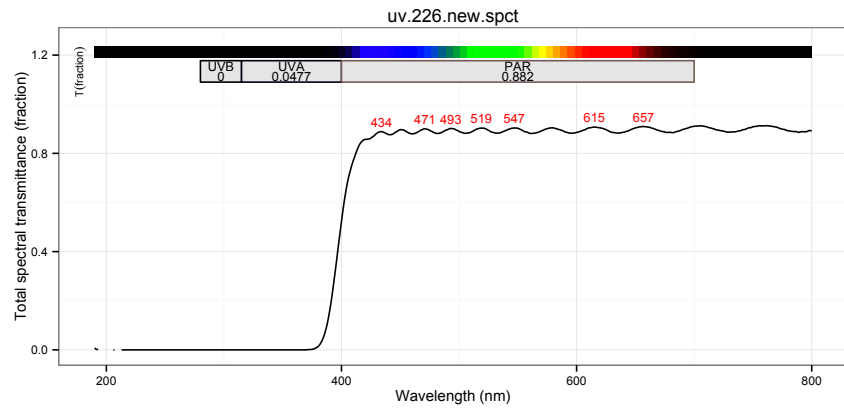
3.2 Polyester

```
filter.plotter("polyester.new")
```
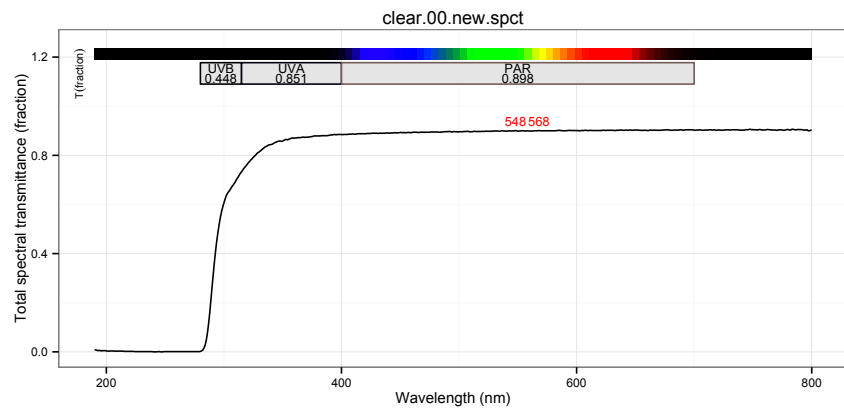

polyester.new.spct

3.3 Polythene
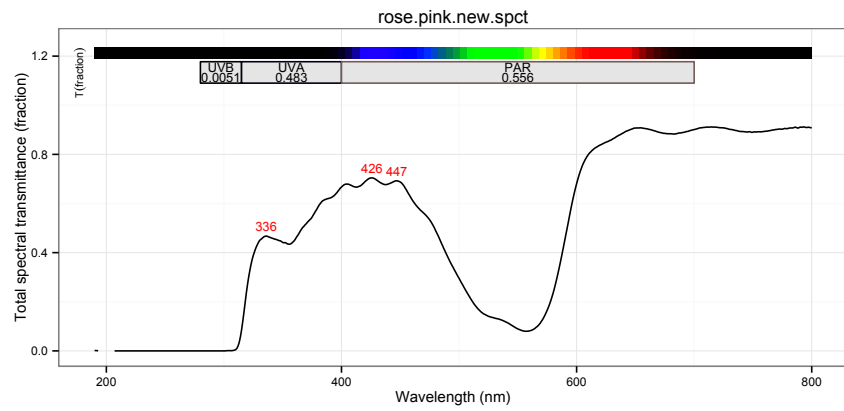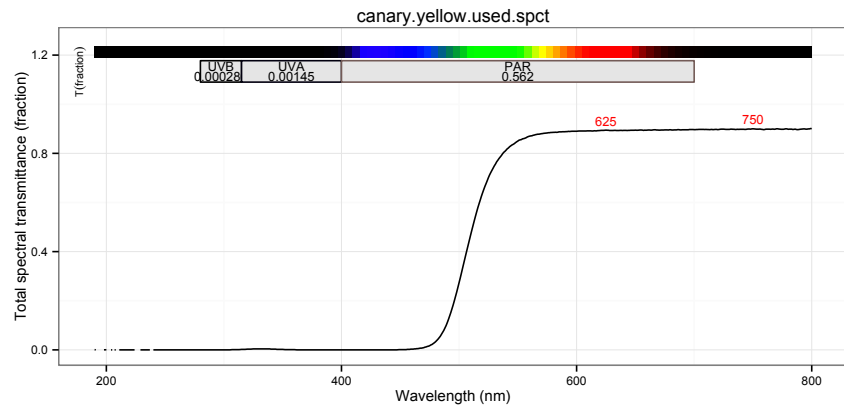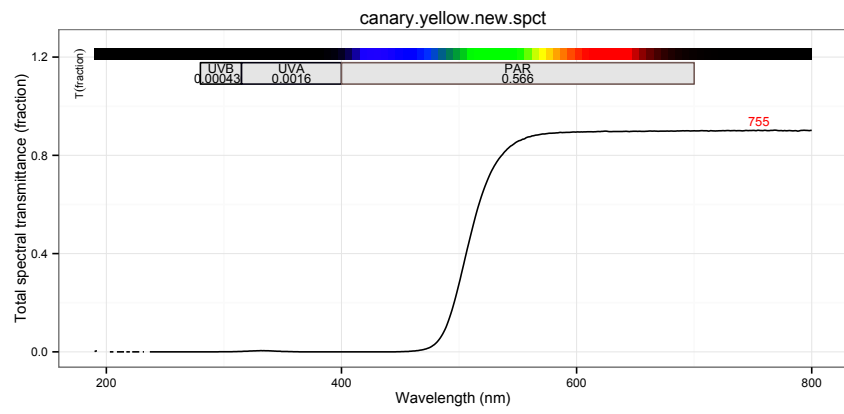
```
filter.plotter("polythene.new")
filter.plotter("polythene.used")
```


polythene.new.spct
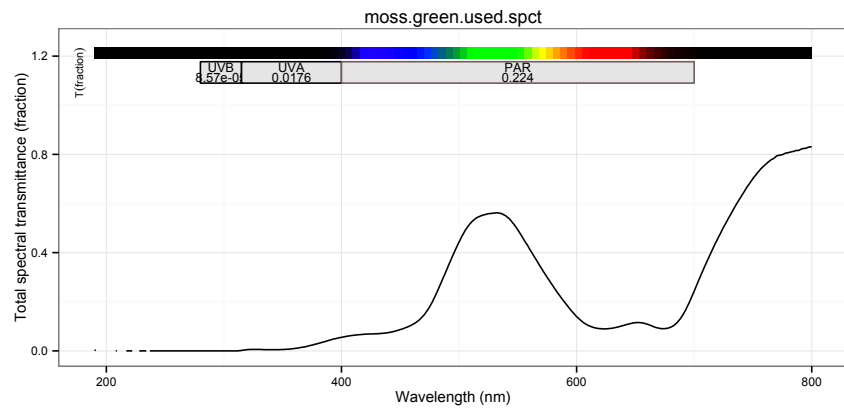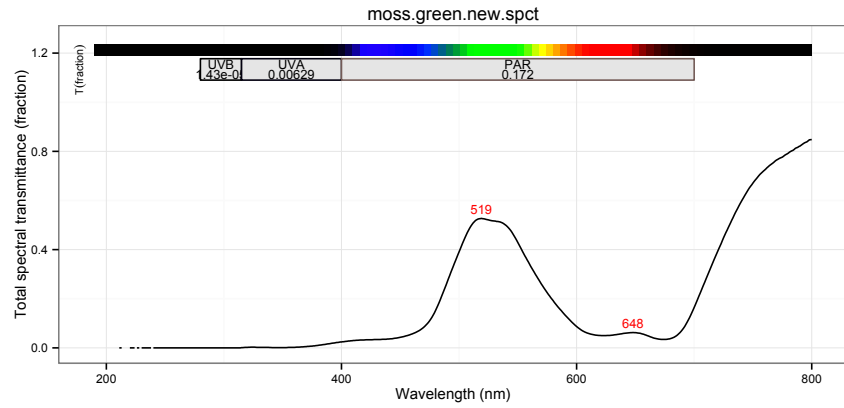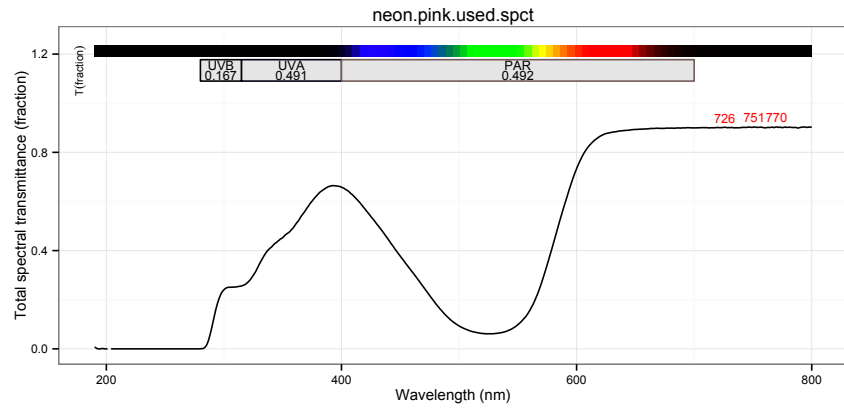

polythene.used.spct

3.4 Rosco theatrical filters

```
for (filter in c("clear.00.new", "uv.226.new", "uv.226.used", "canary.yellow.new",
                 "canary.yellow.used", "rose.pink.new", "neon.pink.used",
                 "moss.green.new", "moss.green.used")) {
  filter.plotter(filter)
}
```

clear.00.new.spct

uv.226.new.spct

uv.226.used.spct

canary.yellow.new.spct

UVB 0.00043	UVA 0.0016	PAR 0.566	

755

canary.yellow.used.spct

UVB 0.00028	UVA 0.00145	PAR 0.562	

625   750

rose.pink.new.spct

UVB 0.0051	UVA 0.483	PAR 0.556	

336   426 447

neon.pink.used.spct

moss.green.new.spct

moss.green.used.spct
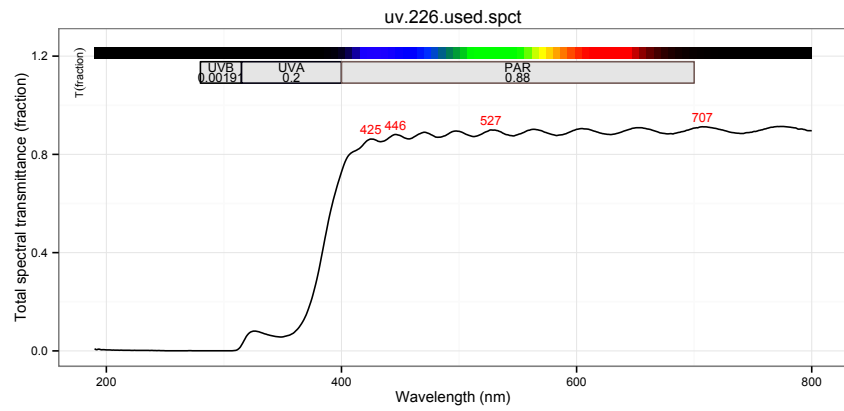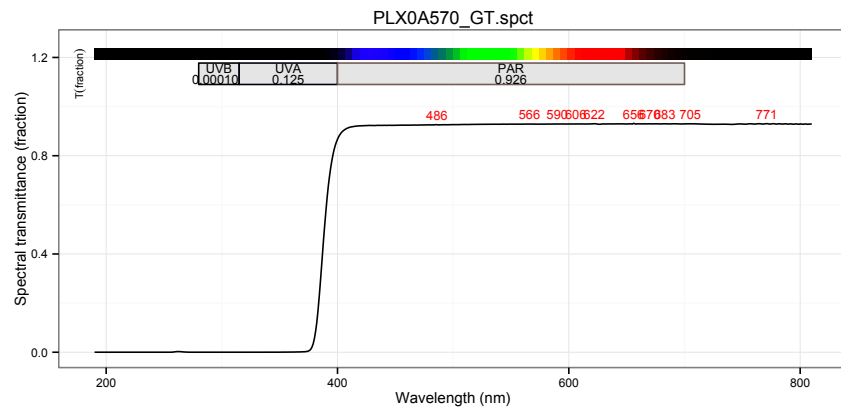
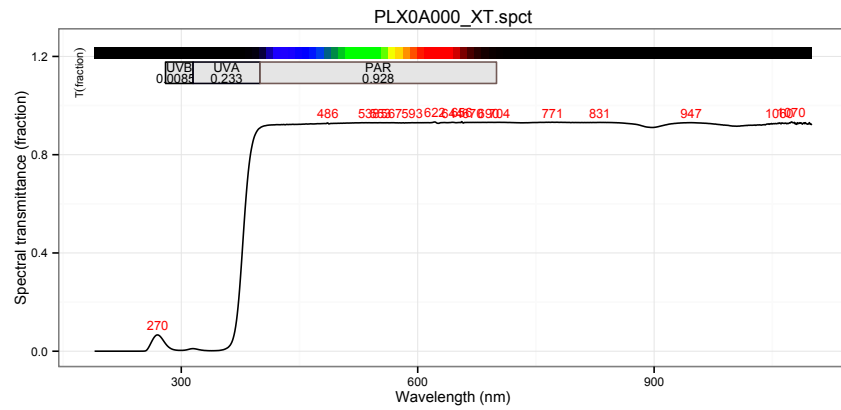## 3.5 Commercial greenhouse films from BPI Agri Visqueen

```r
for (filter in c("solatrol.new", "luminance.new")) {
  filter.plotter(filter)
}
```
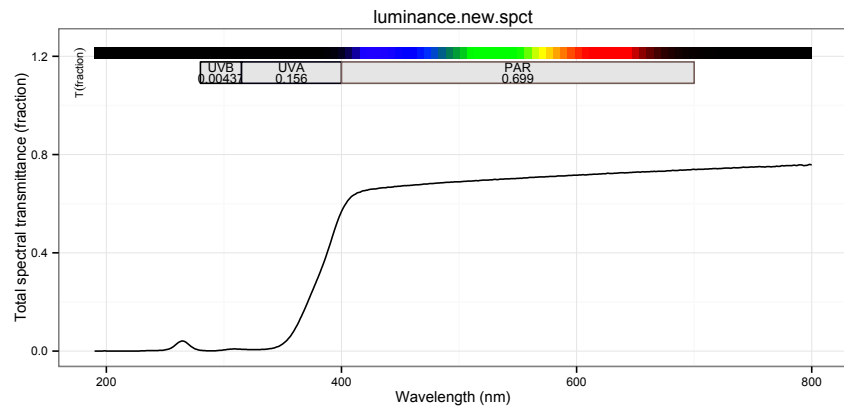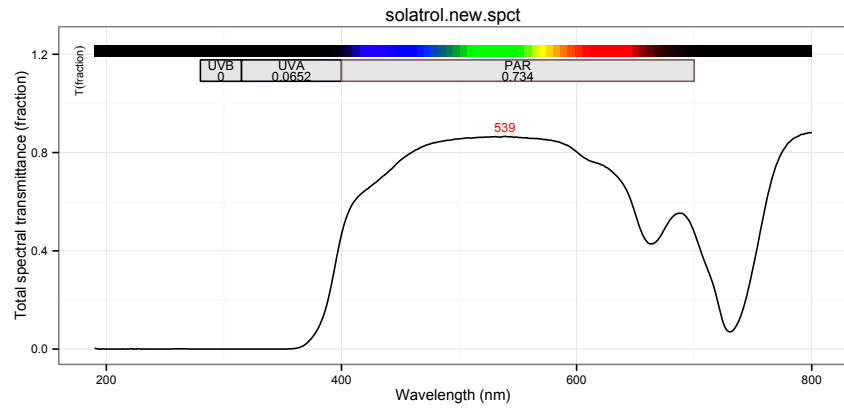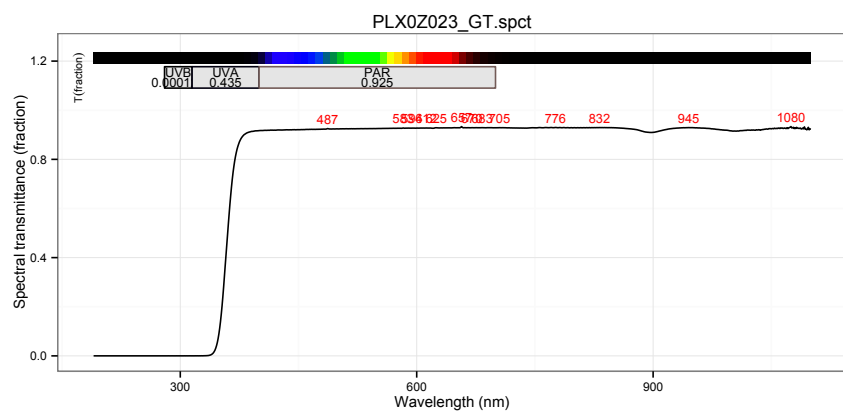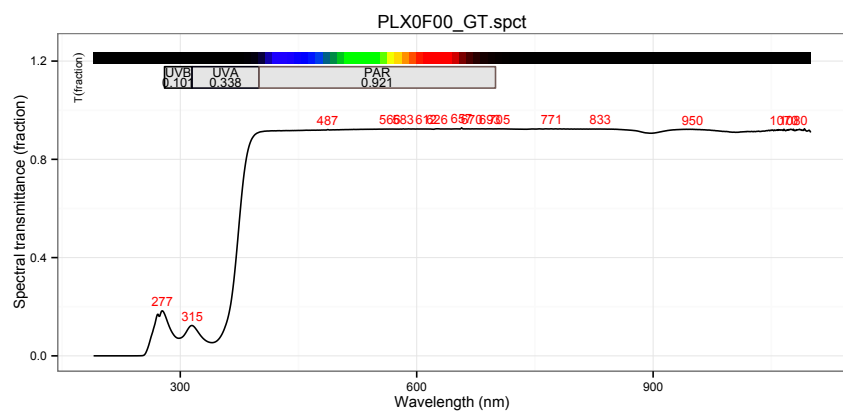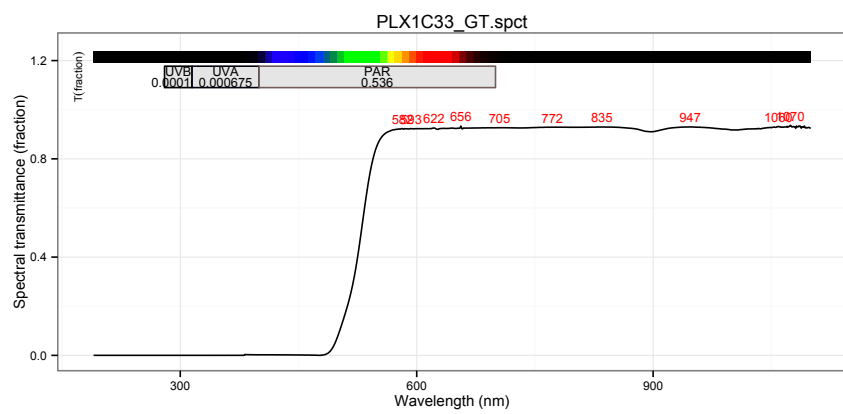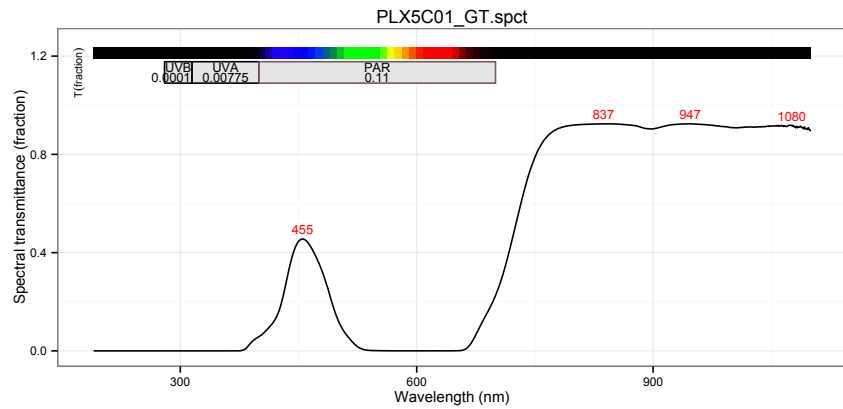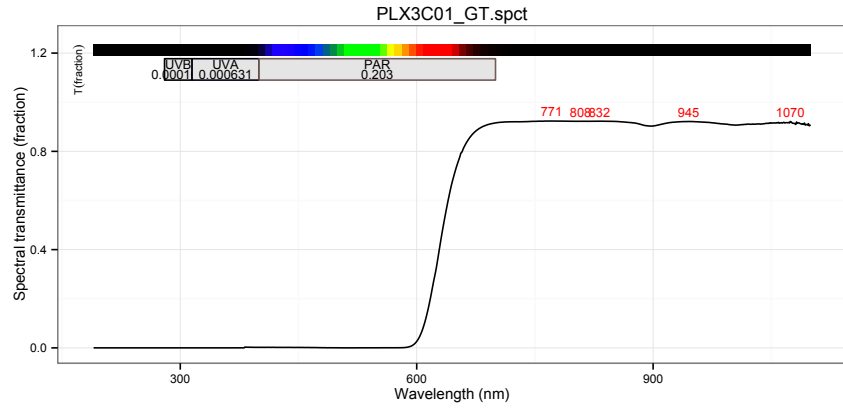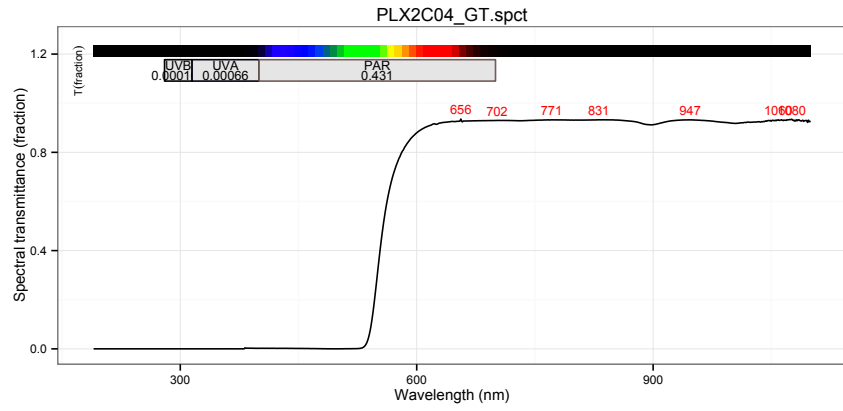
4 Plastic sheets

4.1 Plexiglas

```r
for (filter in c("PLX0A000_XT", "PLX0A570_GT", "PLX0F00_GT", "PLX0Z023_GT")) {
  filter.plotter(filter)
}
```

PLX0F00_GT.spct

PLX0Z023_GT.spct
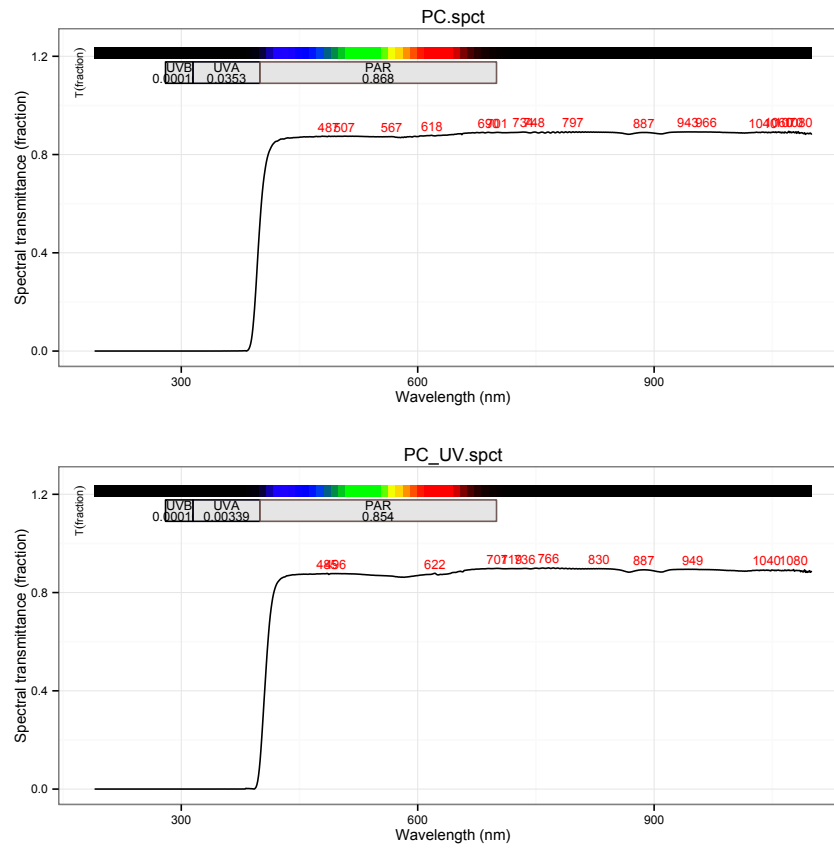
```
for (filter in c("PLX1C33_GT", "PLX2C04_GT", "PLX3C01_GT", "PLX5C01_GT")) {
  filter.plotter(filter)
}
```
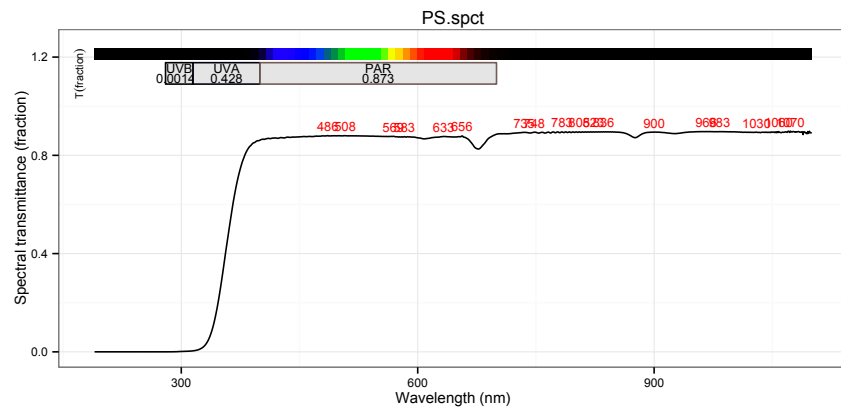

PLX1C33_GT.spct

PLX2C04_GT.spct

PLX3C01_GT.spct

PLX5C01_GT.spct

4.2 Polycarbonate

```r
for (filter in c("PC", "PC_UV")) {
  filter.plotter(filter)
}
```


PC.spct
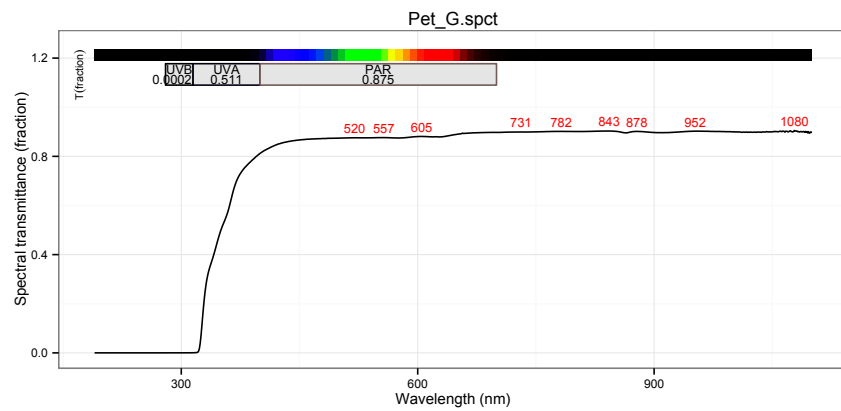

PC_UV.spct

4.3 Polyestyrene

```r
for (filter in c("PS")) {
  filter.plotter(filter)
}
```
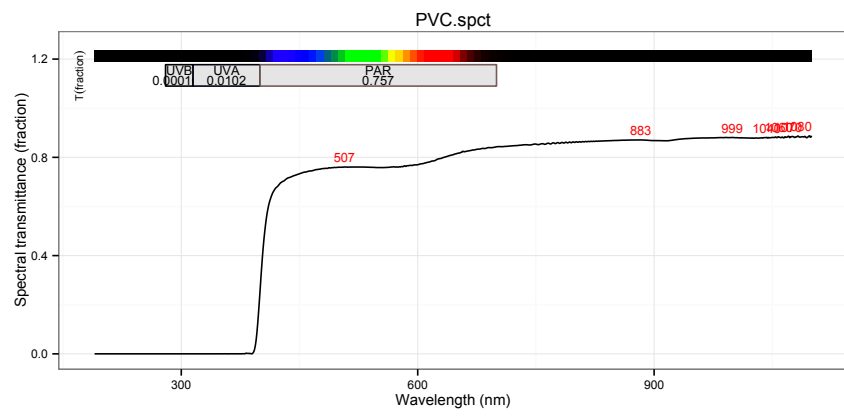
PS.spct

4.4 Polyester

```
for (filter in c("Pet_G")) {
  filter.plotter(filter)
}
```
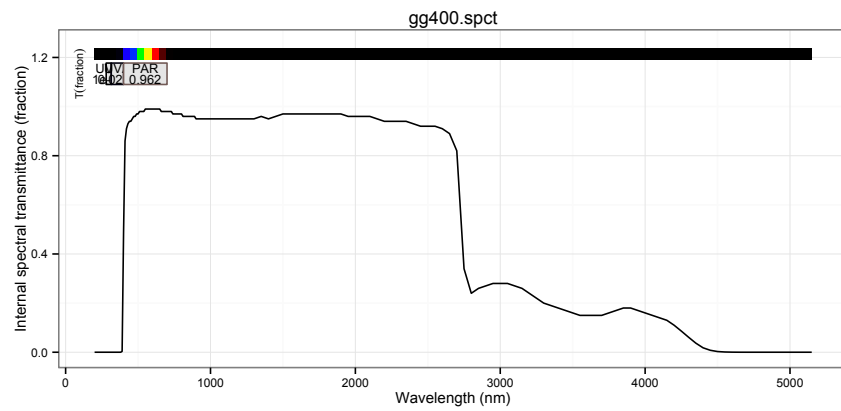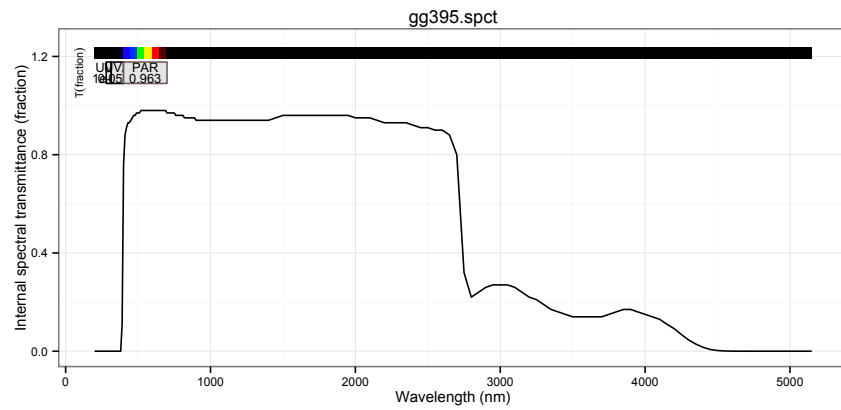

Pet_G.spct

4.5 Polyvinilchloride

```
for (filter in c("PVC")) {
  filter.plotter(filter)
}
```
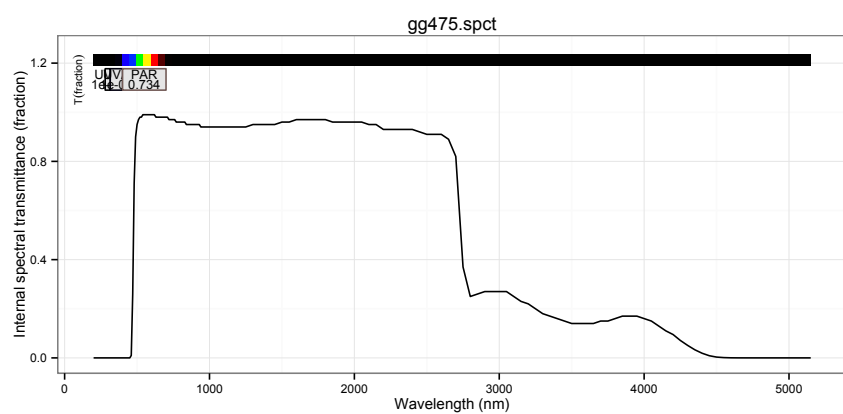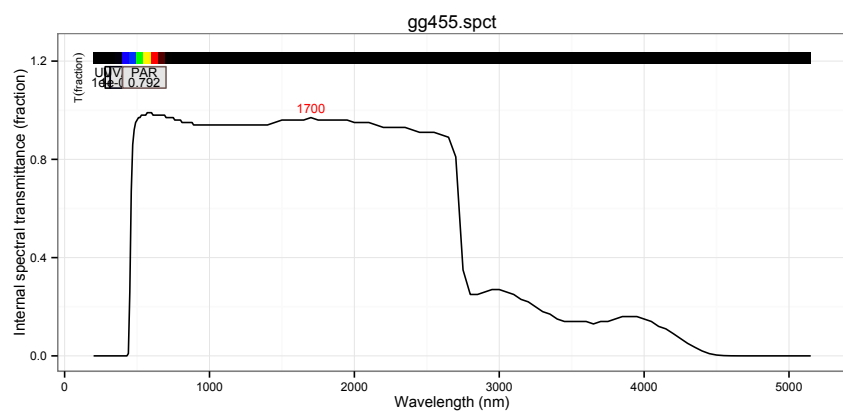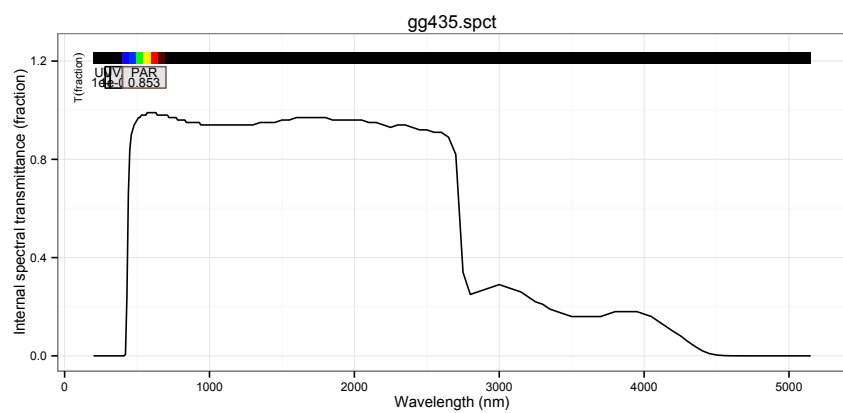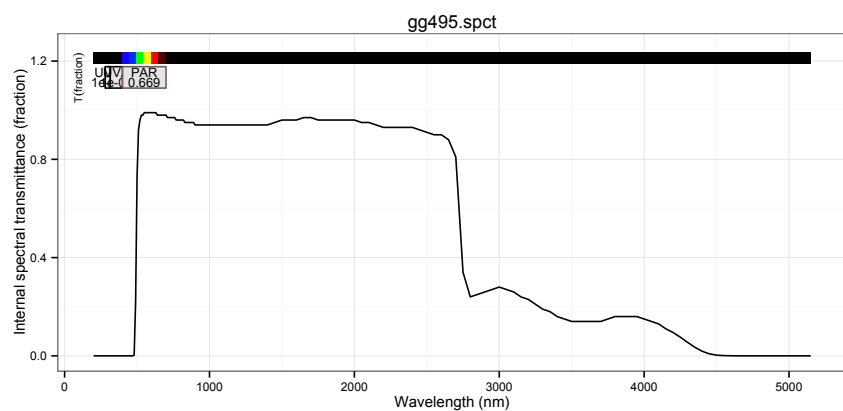
PVC.spct

5 Optical glass filters
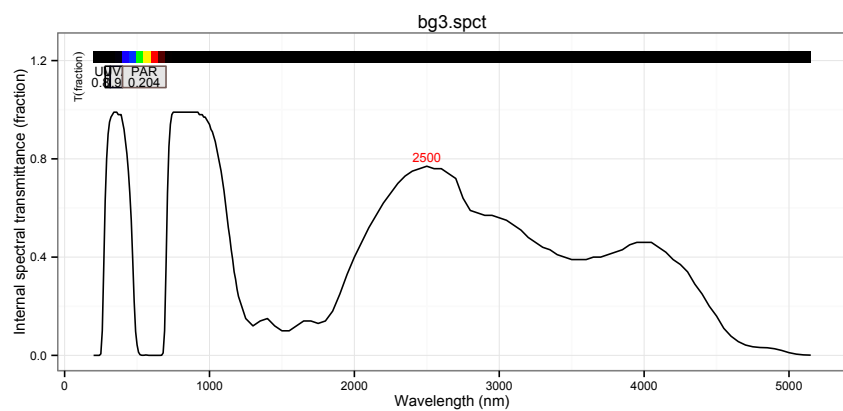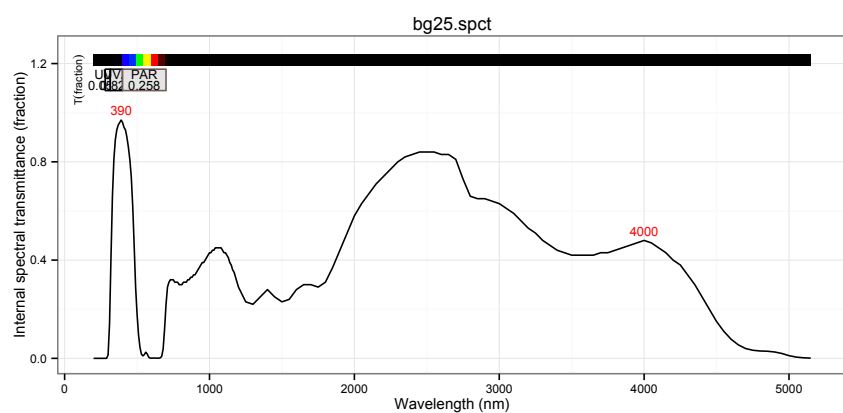
5.1 Schott long-pass filters

```
for (filter in c("gg395", "gg400", "gg435", "gg455", "gg475", "gg495")) {
  filter.plotter(filter)
}
```

gg435.spct

gg455.spct
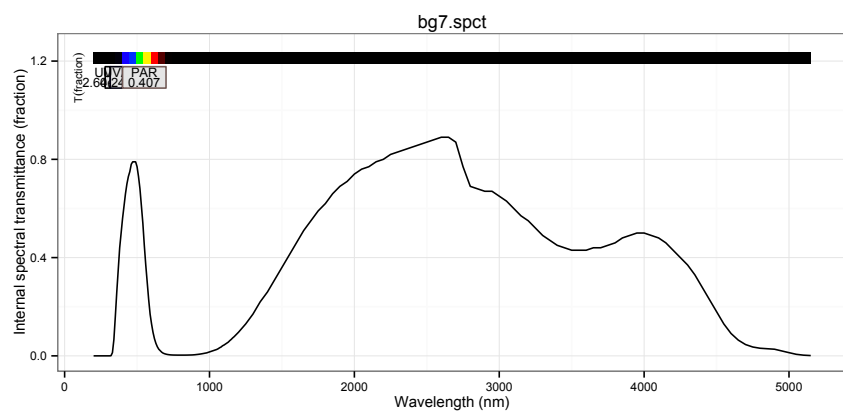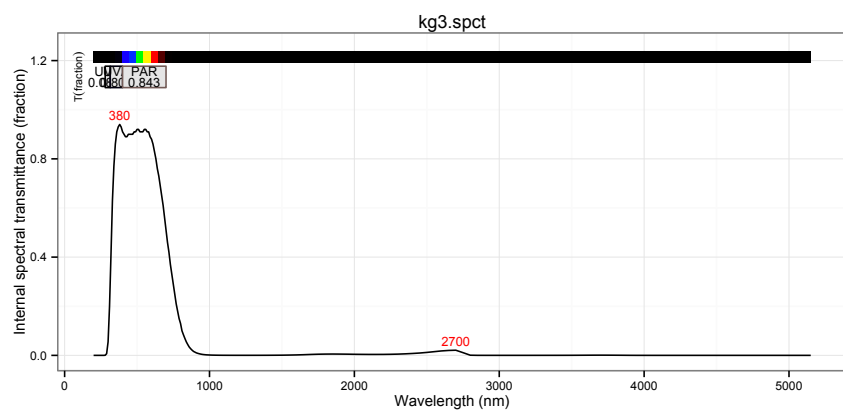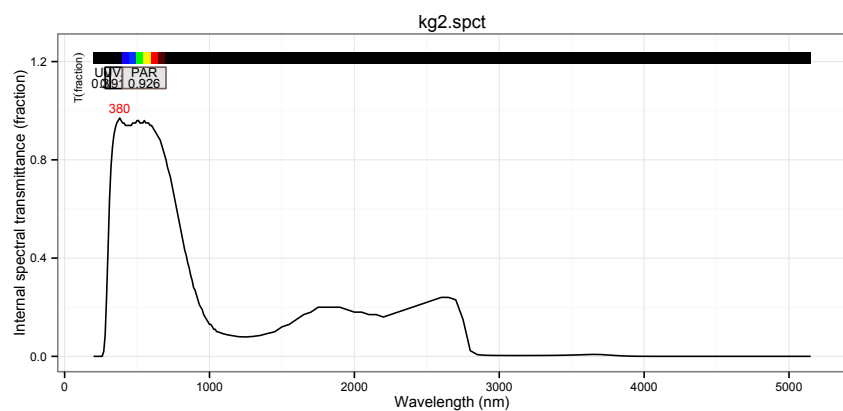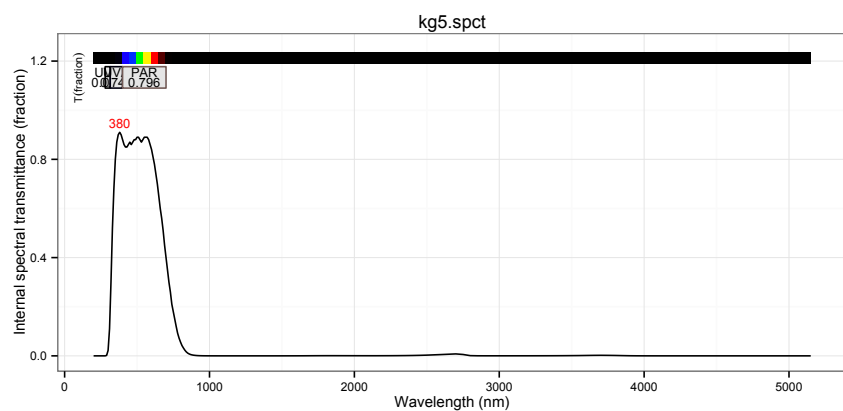

gg475.spct

gg495.spct

```
for (filter in c("bg25", "bg3", "bg7")) {
  filter.plotter(filter)
}
```


bg25.spct

bg3.spct

bg7.spct
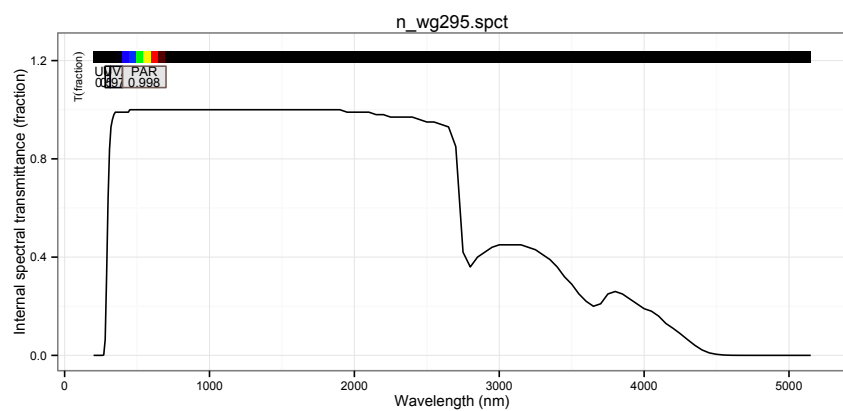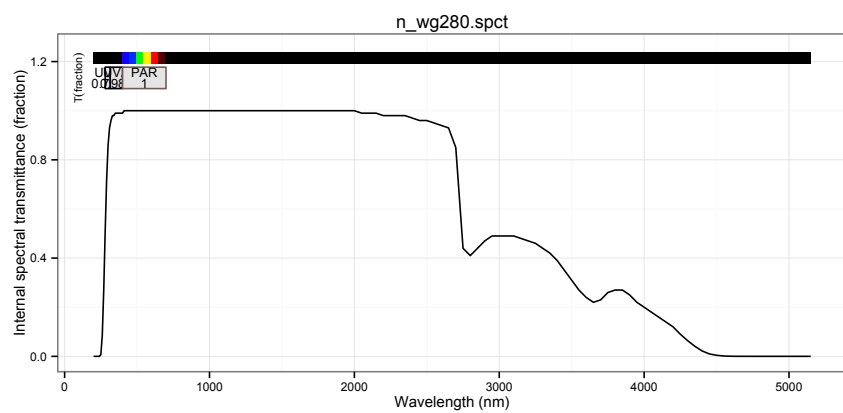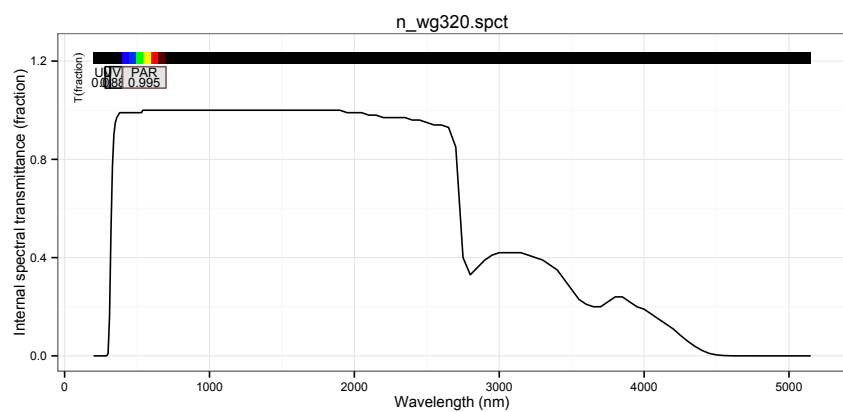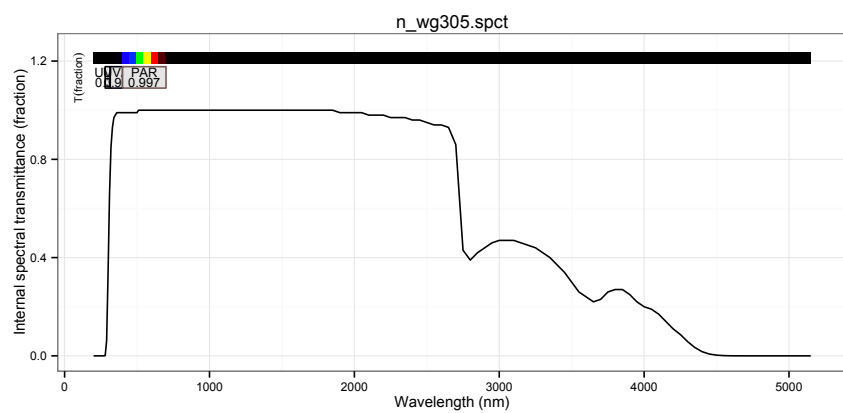
```
for (filter in c("kg2", "kg3", "kg5")) {
  filter.plotter(filter)
}
```


kg2.spct

kg3.spct

kg5.spct

```
for (filter in c("n_wg280", "n_wg295", "n_wg305", "n_wg320")) {
  filter.plotter(filter)
}
```


n_wg280.spct

n_wg295.spct

n_wg305.spct

n_wg320.spct

```
for (filter in c("og515", "og530", "og550", "og570", "og590")) {
  filter.plotter(filter)
}
```


og515.spct

og530.spct

Internal spectral transmittance (fraction)

Wavelength (nm)

og550.spct

Internal spectral transmittance (fraction)

Wavelength (nm)

og570.spct

Internal spectral transmittance (fraction)

Wavelength (nm)

og590.spct
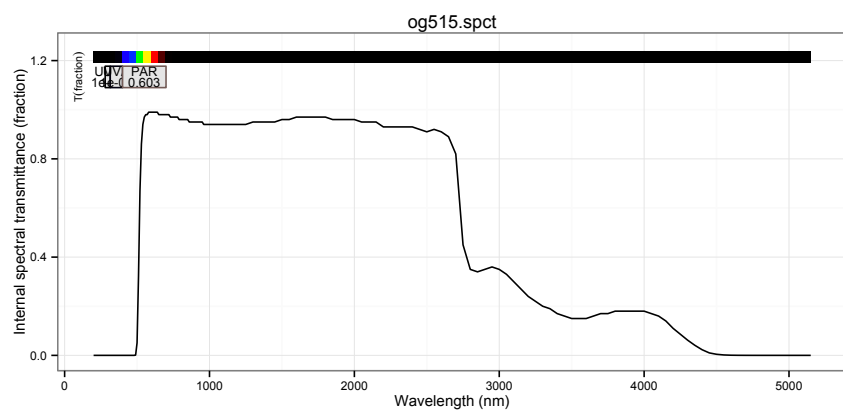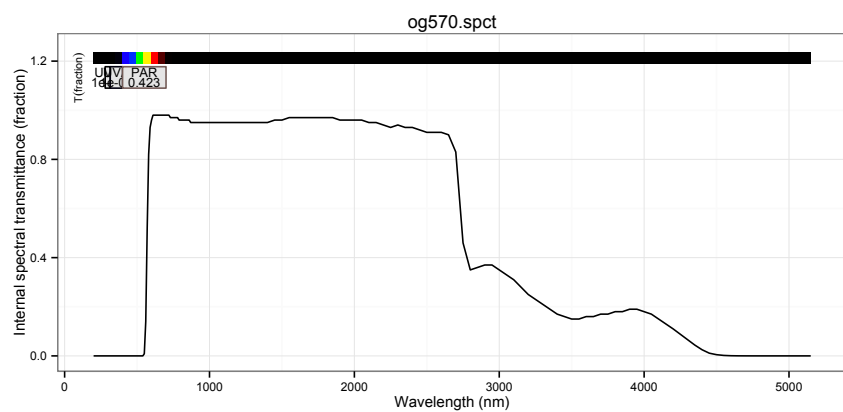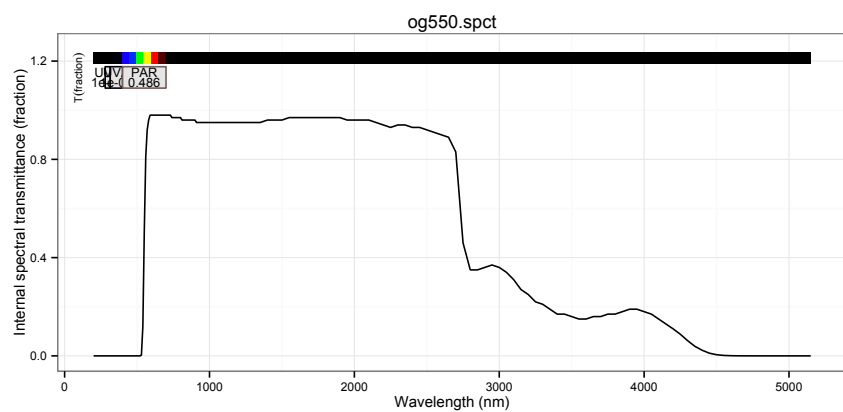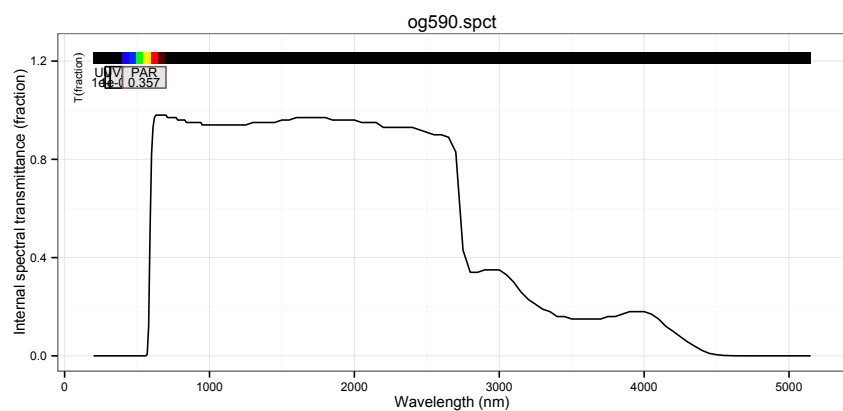
```
for (filter in c("rg610", "rg630", "rg645", "rg665", "rg695", "rg715",
                 "rg780", "rg830", "rg850", "rg9")) {
  filter.plotter(filter)
}
```


rg610.spct

rg630.spct

rg645.spct

Internal spectral transmittance (fraction)

T (fraction)

UV PAR

1e-00 0.174

Wavelength (nm)

rg665.spct

Internal spectral transmittance (fraction)

T (fraction)

UV PAR

1e-00 0.109

Wavelength (nm)

rg695.spct

Internal spectral transmittance (fraction)

T (fraction)

UV PAR

1e-00 0.0251

3950

Wavelength (nm)

rg715.spct

Internal spectral transmittance (fraction)

UVV PAR
T (fraction)
1e-0.00119

Wavelength (nm)

rg780.spct

Internal spectral transmittance (fraction)

UVV PAR
T (fraction)
1e-0.69e-05

Wavelength (nm)

rg830.spct

Internal spectral transmittance (fraction)

UVV PAR
T (fraction)
1e-0.1e-05

4000

Wavelength (nm)

rg850.spct

rg9.spct

5.2 Schott band-pass filters

```r
for (filter in c("ug1", "ug5", "ug11")) {
  filter.plotter(filter)
}
```
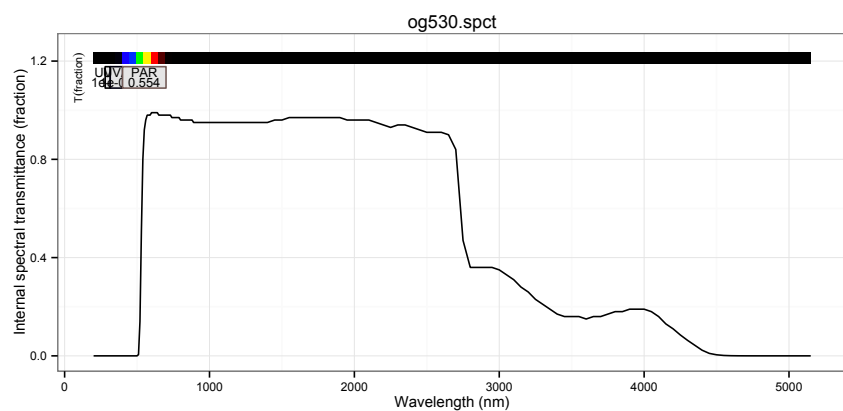
ug1.spct

ug5.spct

ug11.spct