photobiologyFilters Version 0.2.4
Catalogue of filters

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March 6, 2015

Contents

1 Introduction

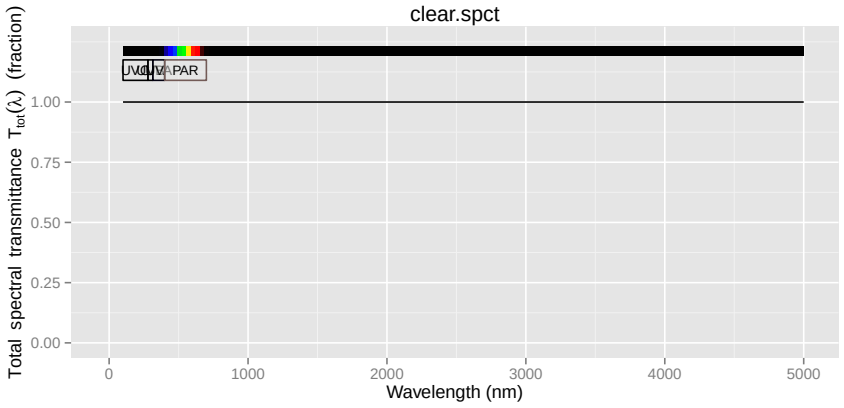
```
library(ggplot2)
library(photobiologyFilters)
library(photobiologygg)
```

```
options(photobiology.plot.annotations = c("boxes", "labels", "colour.guide", "title"))
```

2 Dummy filters

2.1 Perfectly clear filter

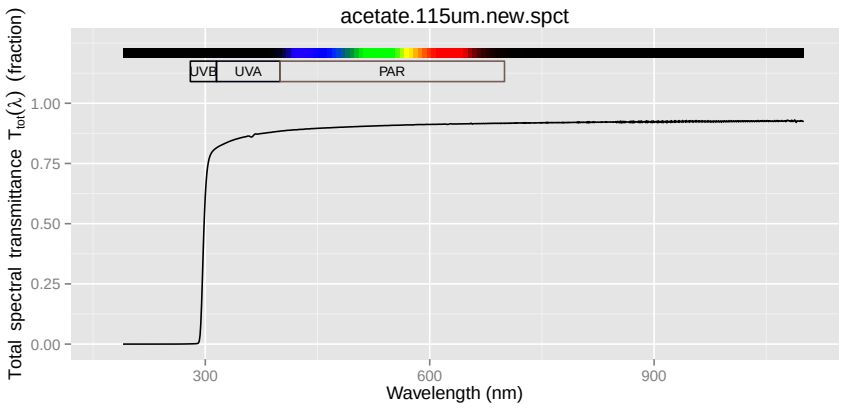
```
plot(clear.spct)
```

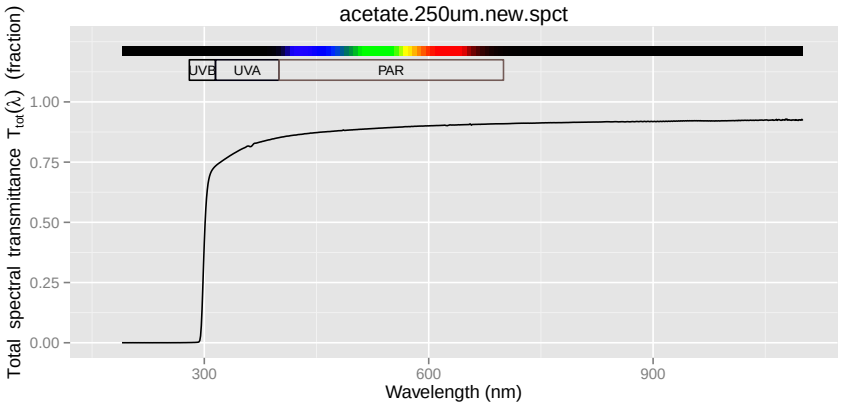


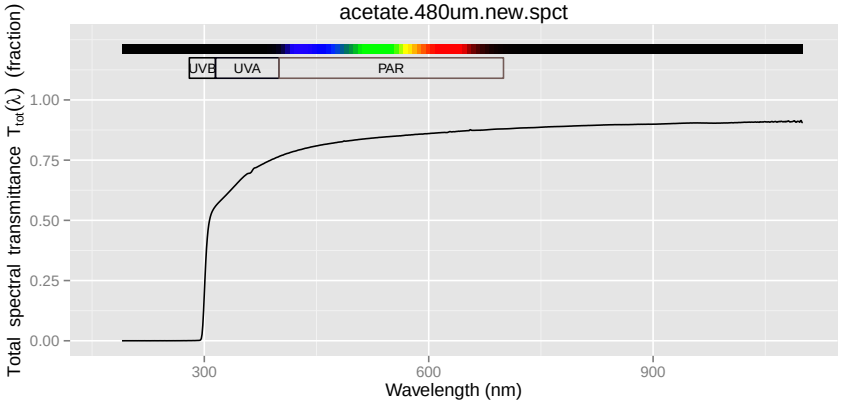
3 Plastic films

3.1 Cellulose diacetate

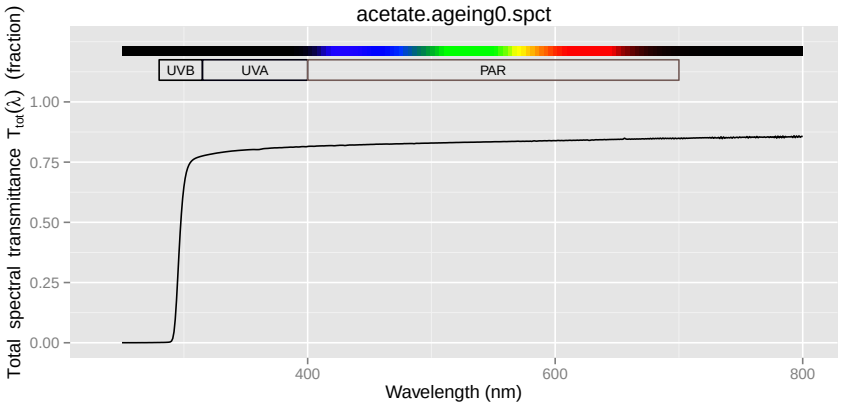
```
plot(acetate.115um.new.spct)
plot(acetate.250um.new.spct)
plot(acetate.480um.new.spct)
```

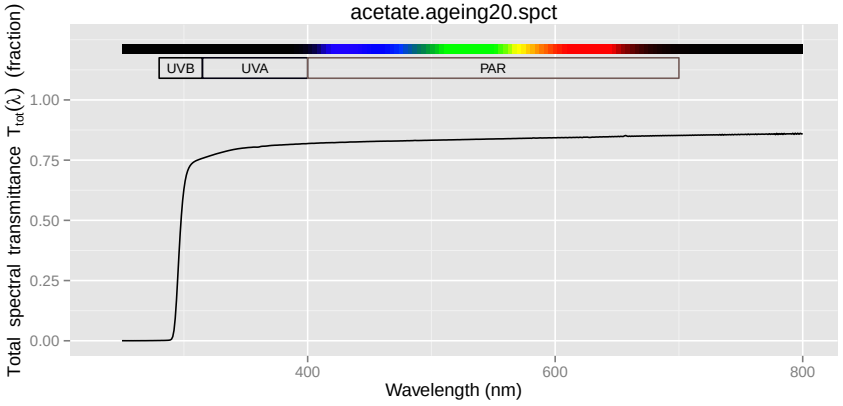


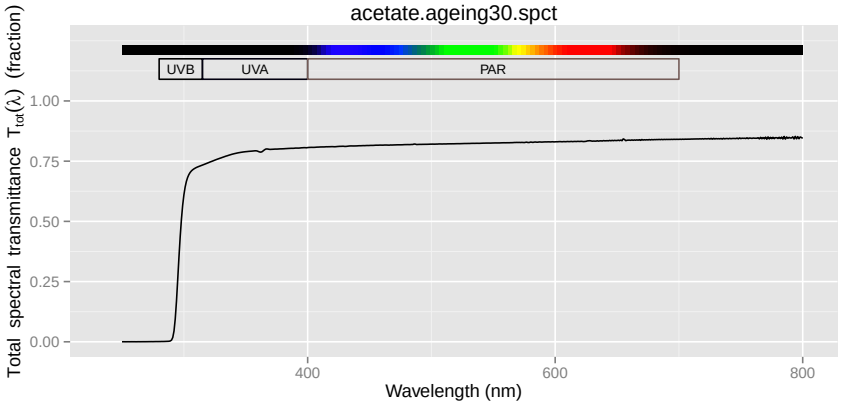


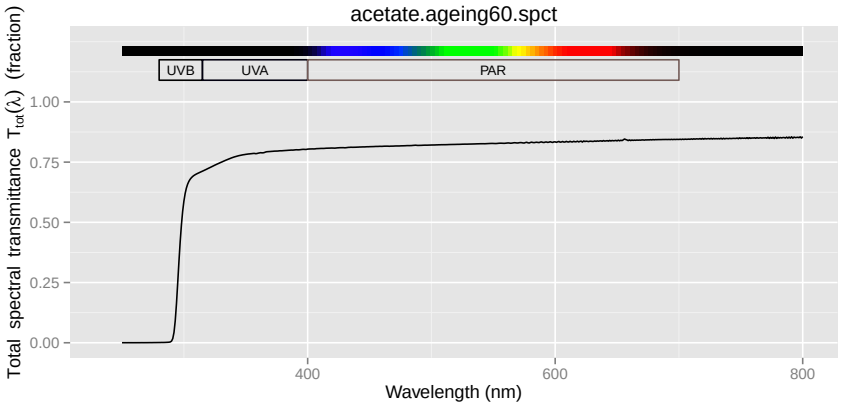


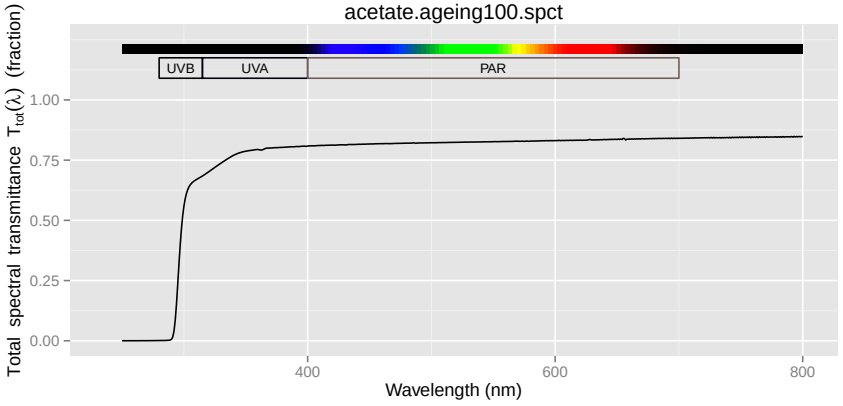

```
plot(acetate.ageing0.spct)
plot(acetate.ageing20.spct)
plot(acetate.ageing30.spct)
plot(acetate.ageing60.spct)
plot(acetate.ageing100.spct)
plot(acetate.ageing180.spct)
plot(acetate.ageing300.spct)
```

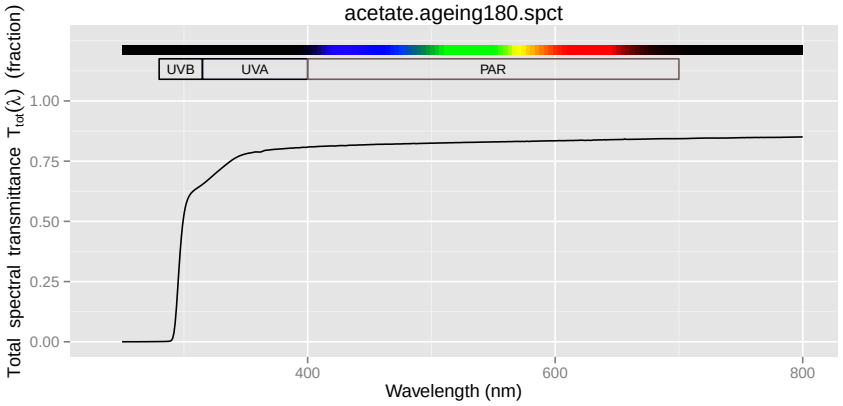

acetate.ageing0.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
400
600
800
Wavelength (nm)

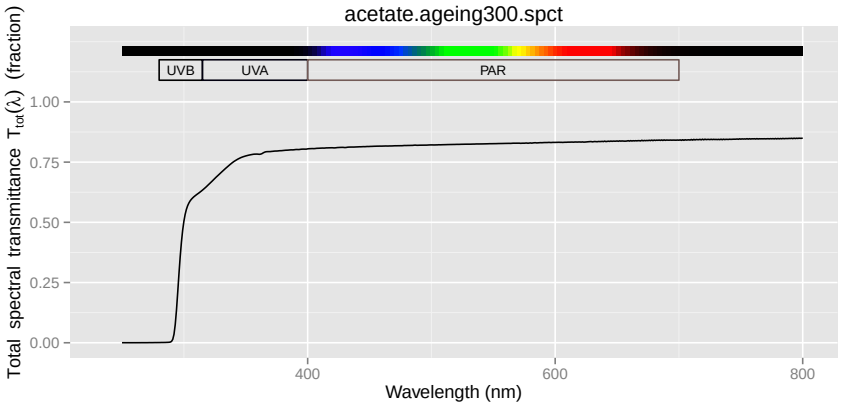

acetate.ageing20.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
400
600
800
Wavelength (nm)


acetate.ageing30.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
400
600
800
Wavelength (nm)


acetate.ageing60.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
400
600
800
Wavelength (nm)

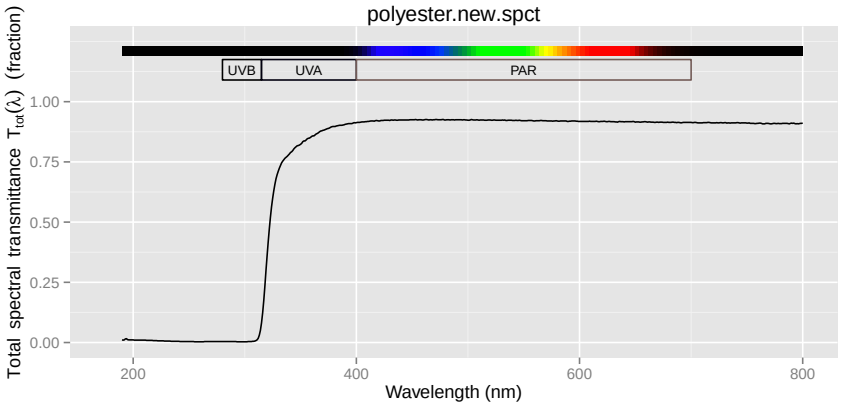

acetate.ageing100.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
400
600
800
Wavelength (nm)


acetate.ageing180.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
400
600
800
Wavelength (nm)



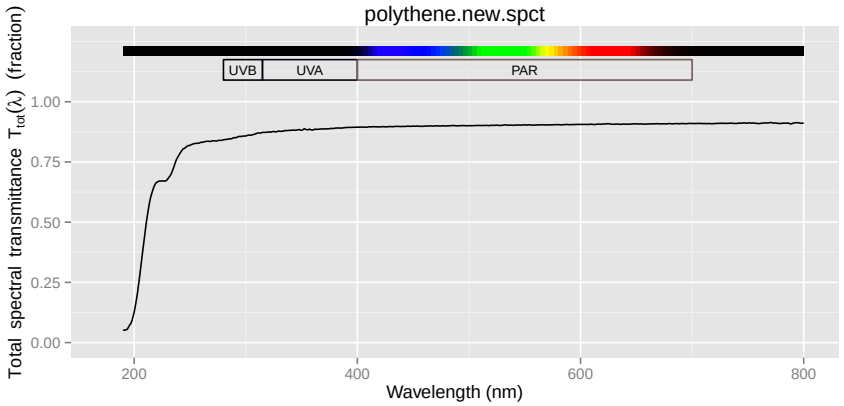
3.2 Polyester

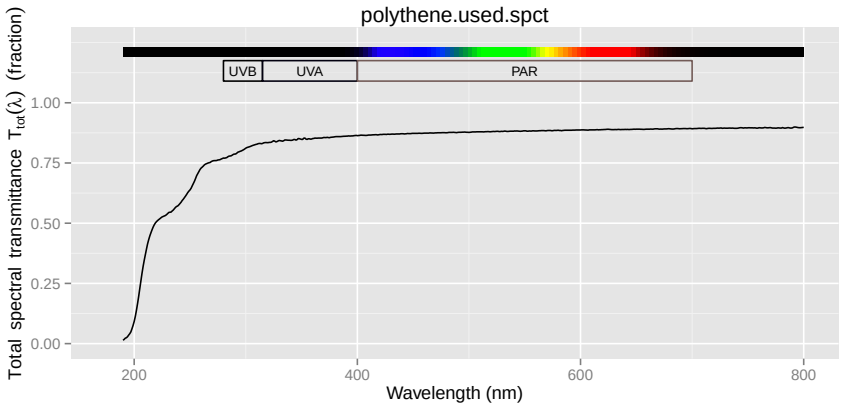
```
plot(polyester.new.spct)
```



3.3 Polythene

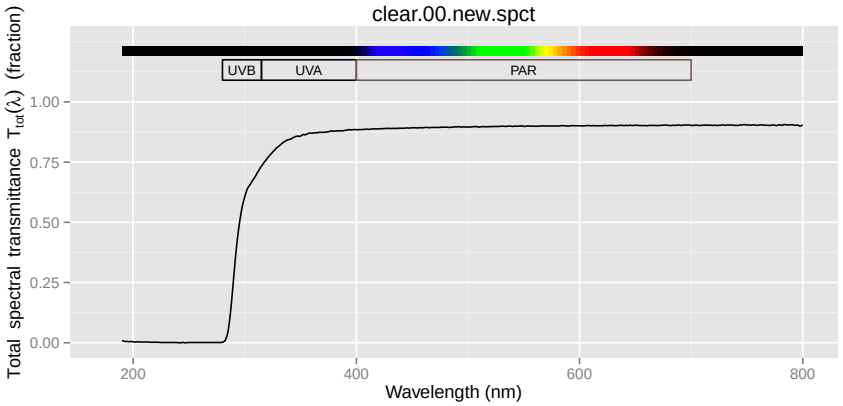
```
plot(polythene.new.spct)
plot(polythene.used.spct)
```

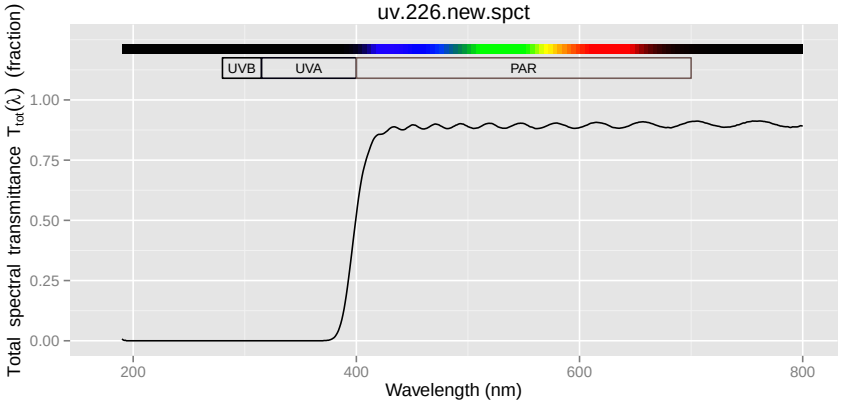


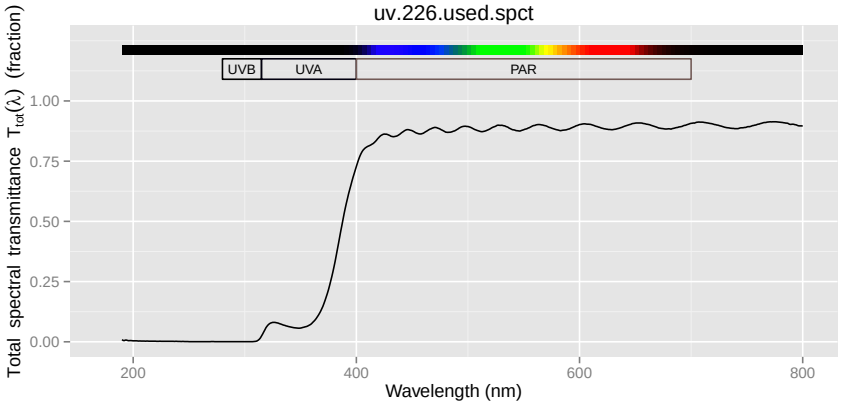


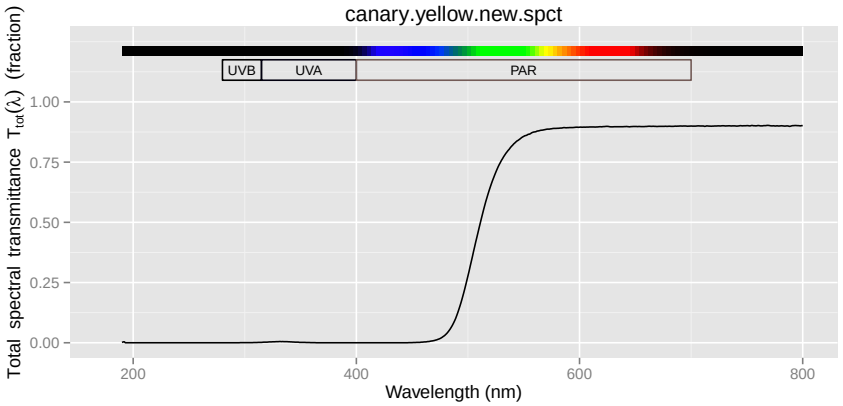
3.4 Rosco theatrical filters

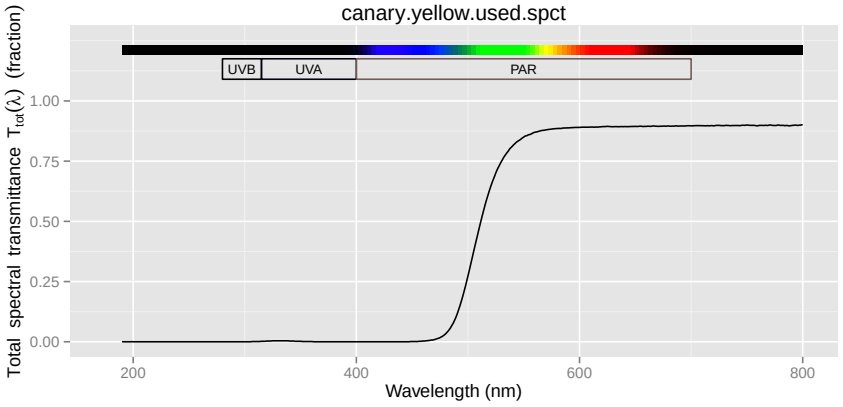
```
plot(clear.00.new.spct)
plot(uv.226.new.spct)
plot(uv.226.used.spct)
plot(canary.yellow.new.spct)
plot(canary.yellow.used.spct)
plot(moss.green.new.spct)
plot(moss.green.used.spct)
plot(rose.pink.new.spct)
plot(neon.pink.used.spct)
```

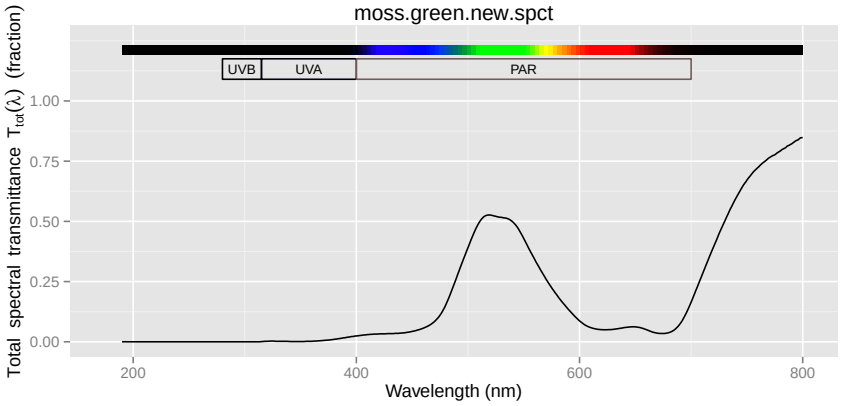

clear.00.new.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
200
400
600
800
Wavelength (nm)

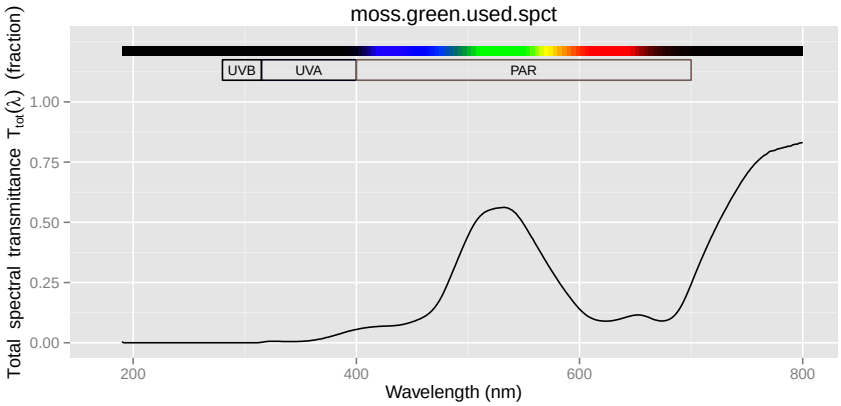

uv.226.new.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
200
400
600
800
Wavelength (nm)

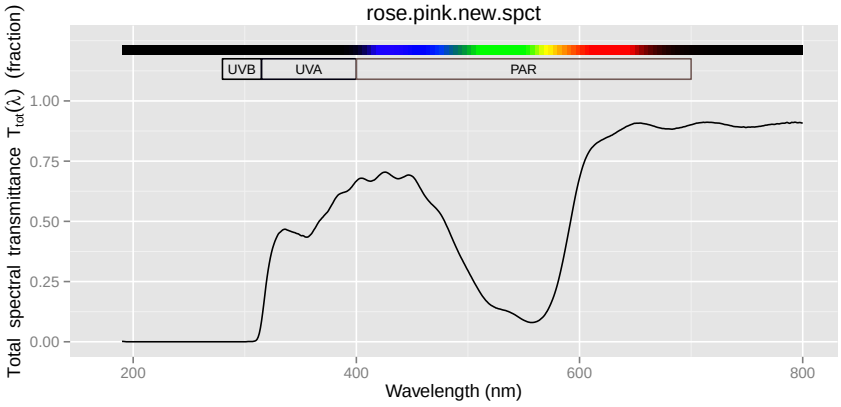

uv.226.used.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
200
400
600
800
Wavelength (nm)

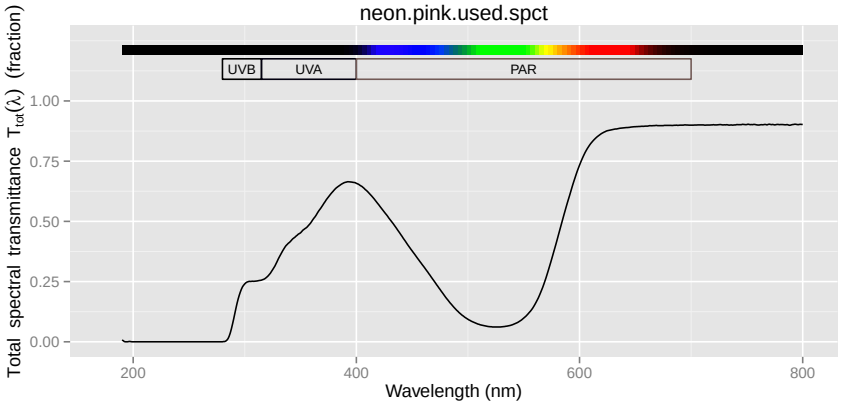

canary.yellow.new.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
200
400
600
800
Wavelength (nm)


canary.yellow.used.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
200
400
600
800
Wavelength (nm)


moss.green.new.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
200
400
600
800
Wavelength (nm)

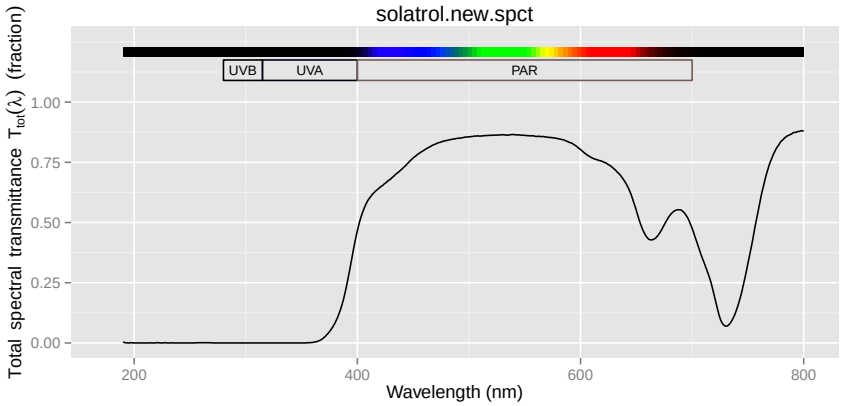


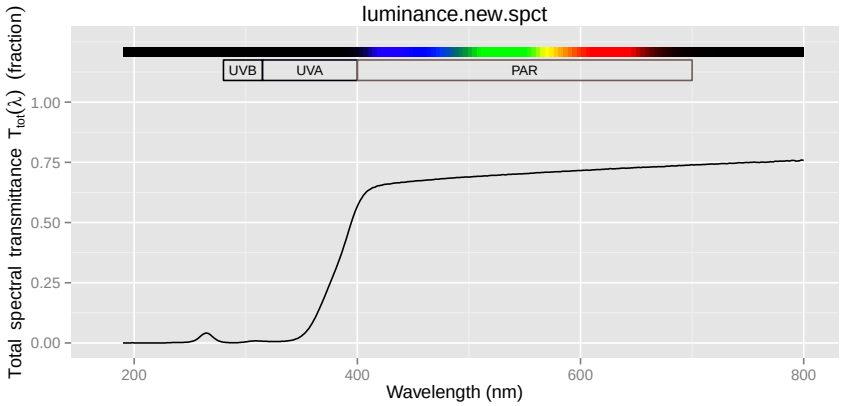




3.5 Commercial greenhouse films from BPI Agri Visqueen

```
plot(solatrol.new.spct)
plot(luminance.new.spct)
```

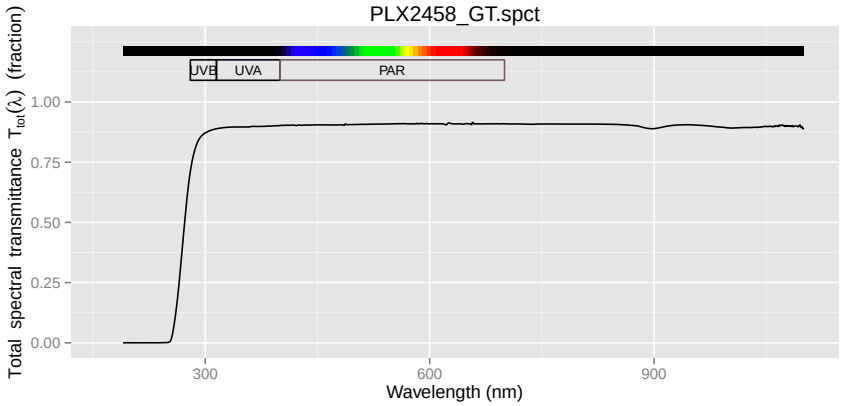


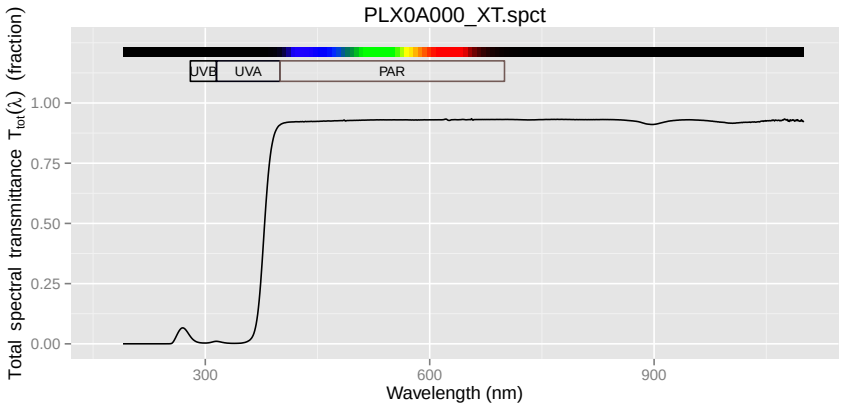


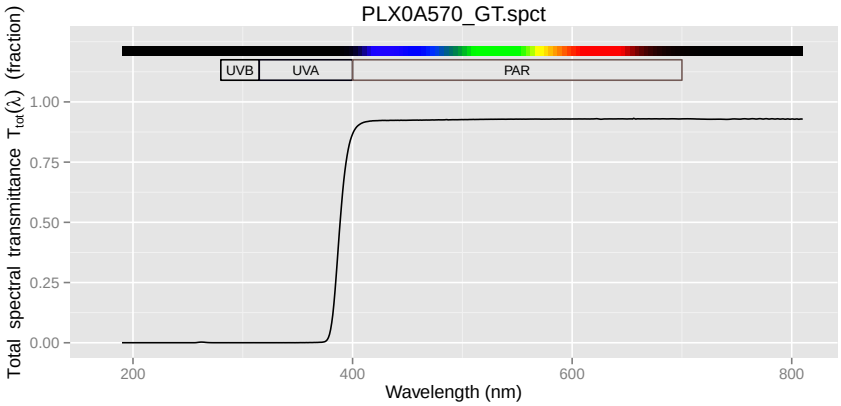
4 Plastic sheets

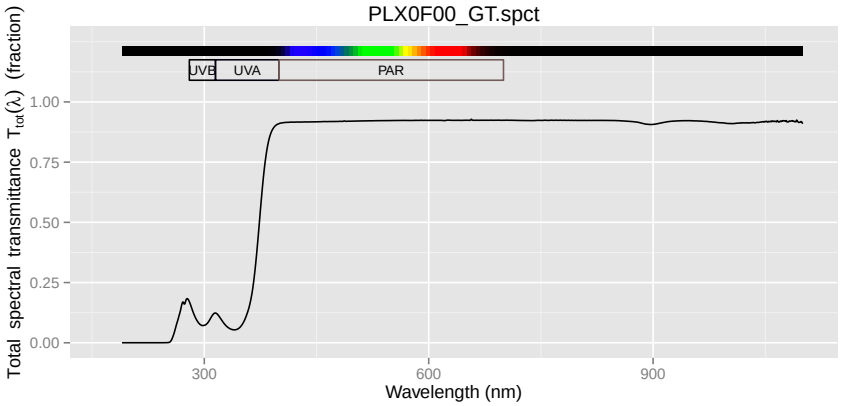
4.1 Plexiglas

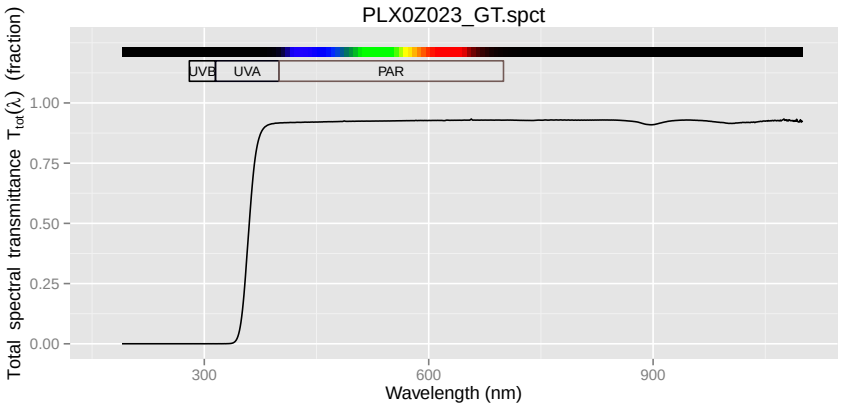
```
plot(PLX2458_GT.spct)
plot(PLX0A000_XT.spct)
plot(PLX0A570_GT.spct)
plot(PLX0F00_GT.spct)
plot(PLX0Z023_GT.spct)
```



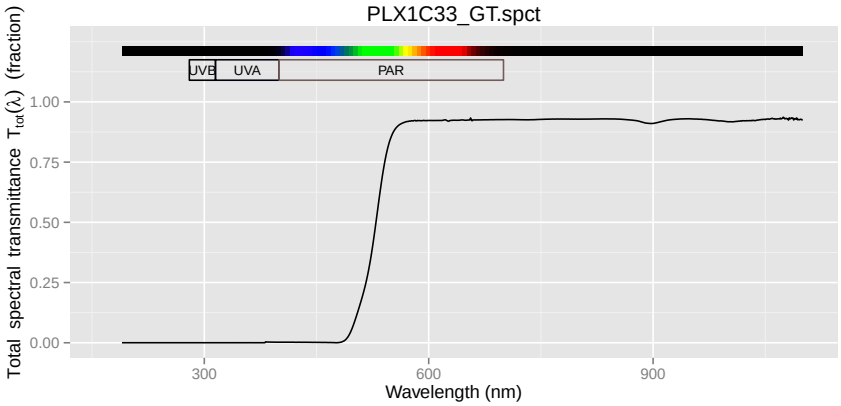


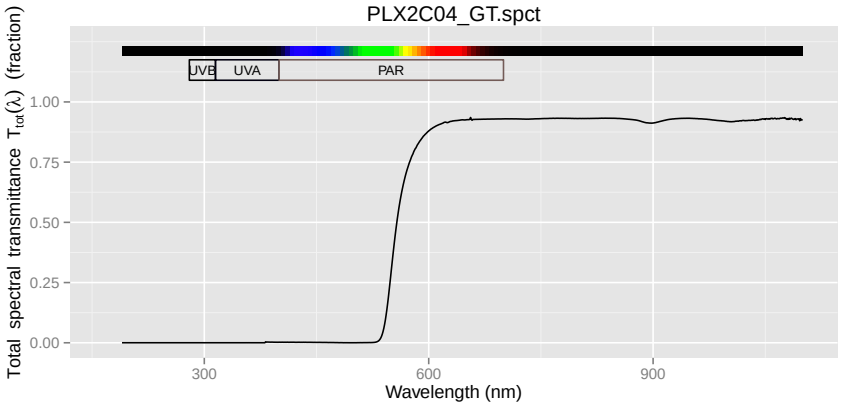


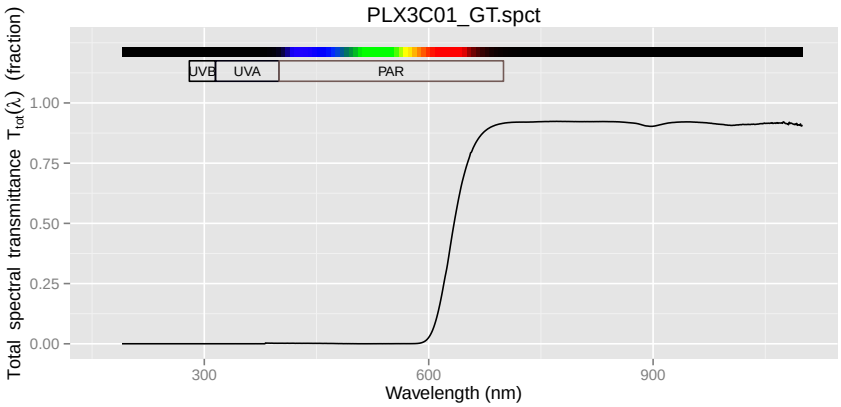


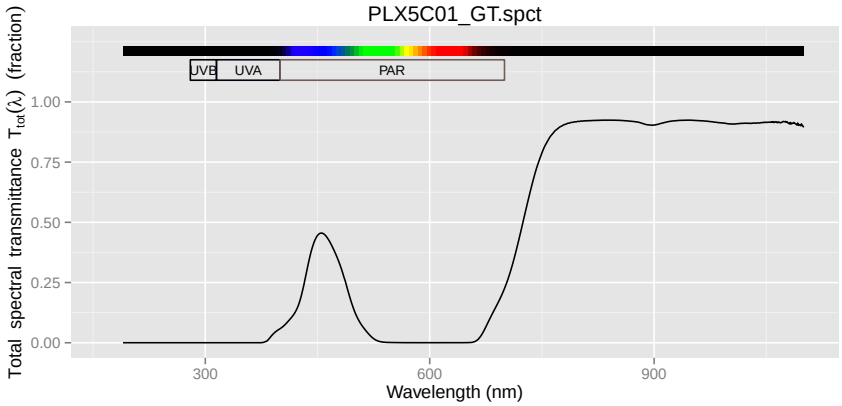



```
plot(PLX1C33_GT.spct)
plot(PLX2C04_GT.spct)
plot(PLX3C01_GT.spct)
plot(PLX5C01_GT.spct)
```


PLX1C33_GT.spct
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
UVB
UVA
PAR
1.00
0.75
0.50
0.25
0.00
300
600
900
Wavelength (nm)

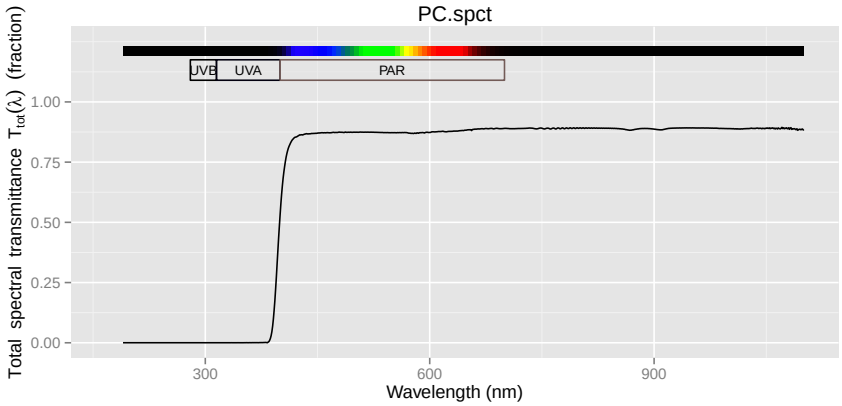

PLX2C04_GT.spct
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
UVB
UVA
PAR
1.00
0.75
0.50
0.25
0.00
300
600
900
Wavelength (nm)

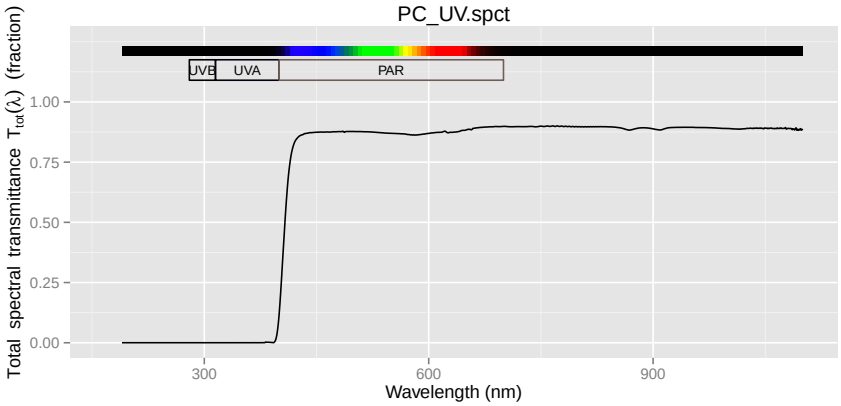

PLX3C01_GT.spct
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
UVB
UVA
PAR
1.00
0.75
0.50
0.25
0.00
300
600
900
Wavelength (nm)



4.2 Polycarbonate

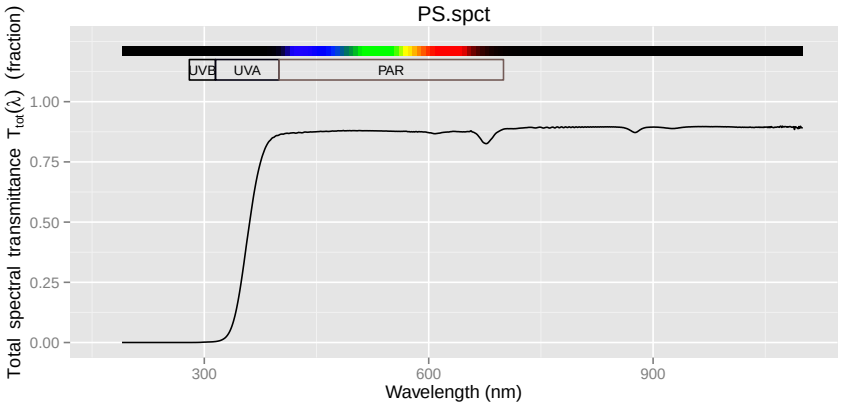
```
plot(PC.spct)
plot(PC_UV.spct)
```





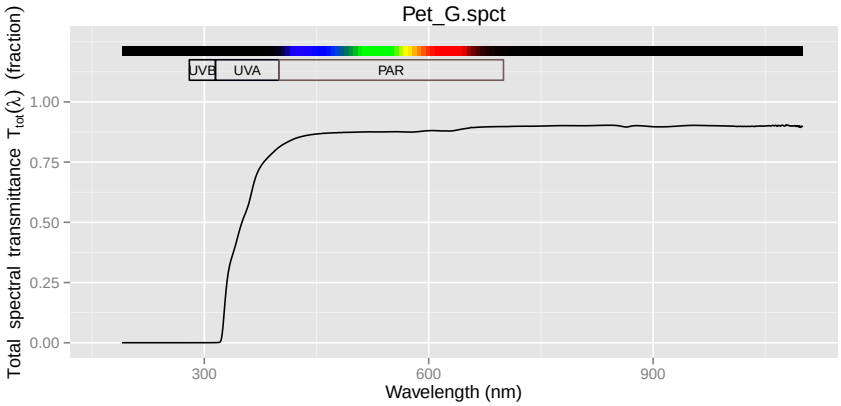
4.3 Polyestyrene

```
plot(PS.spct)
```



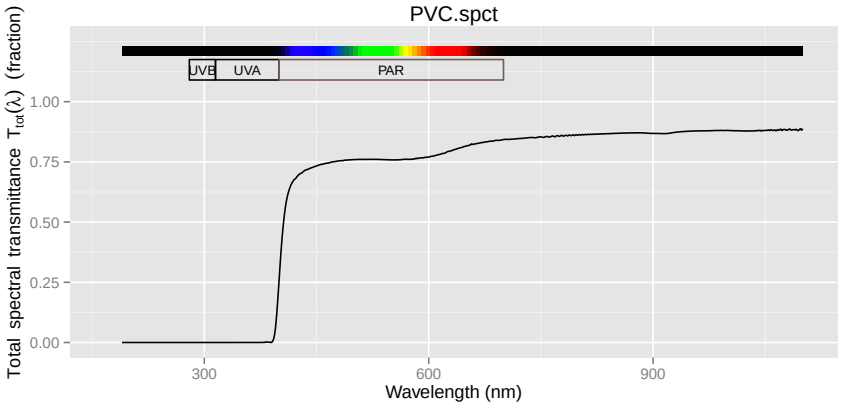
4.4 Polyester

```
plot(Pet_G.spct)
```



4.5 Polyvinilchloride

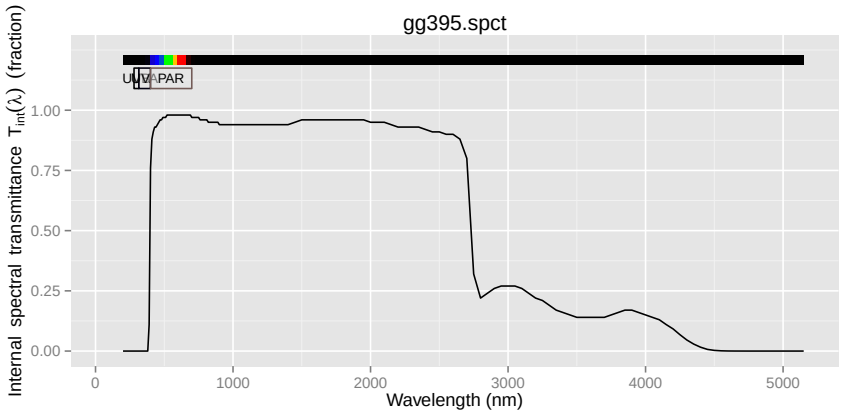
```
plot(PVC.spct)
```

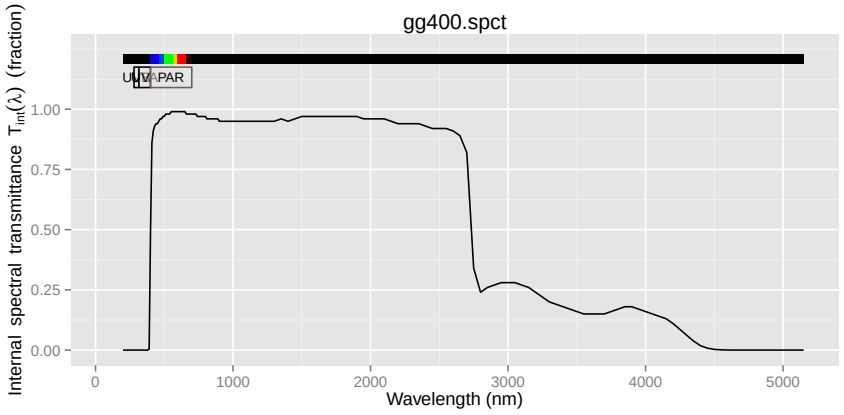


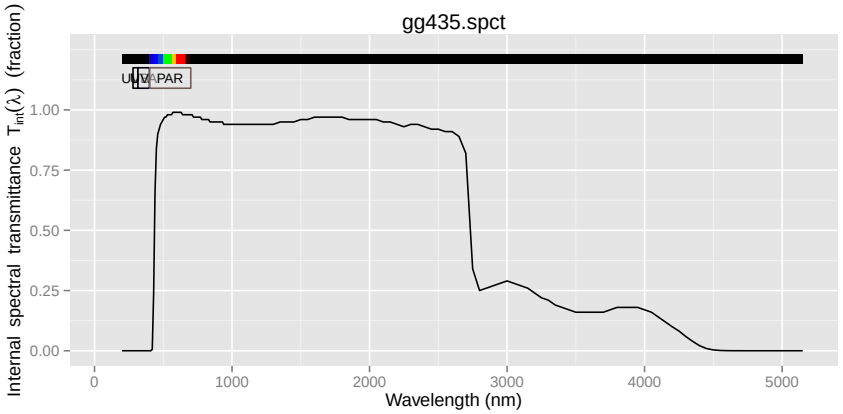
5 Optical glass filters

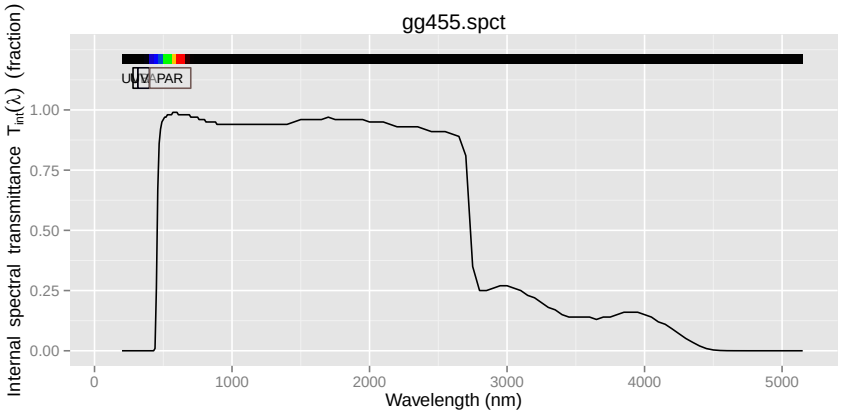
5.1 Schott long-pass filters

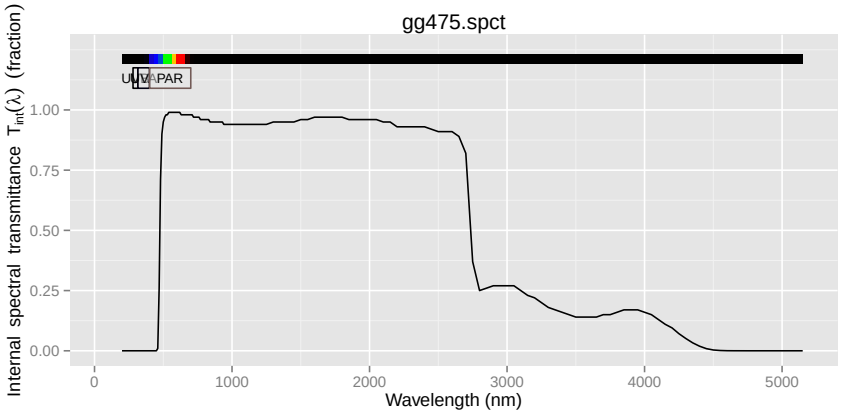
```
plot(gg395.spct)
plot(gg400.spct)
plot(gg435.spct)
plot(gg455.spct)
plot(gg475.spct)
plot(gg495.spct)
```

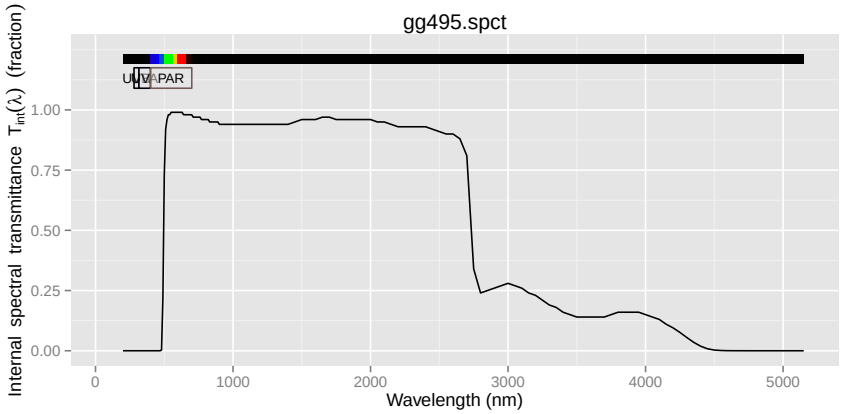




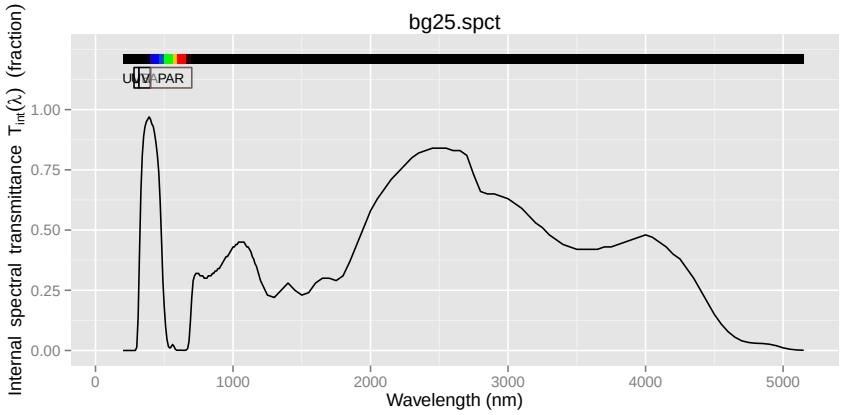

gg435.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)

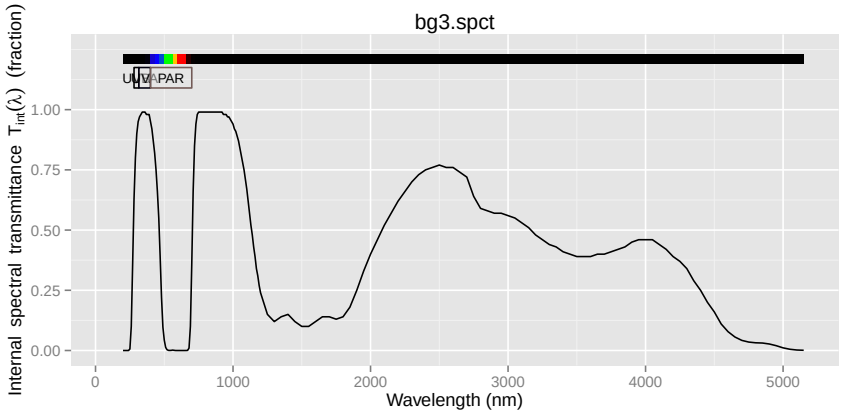

gg455.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)

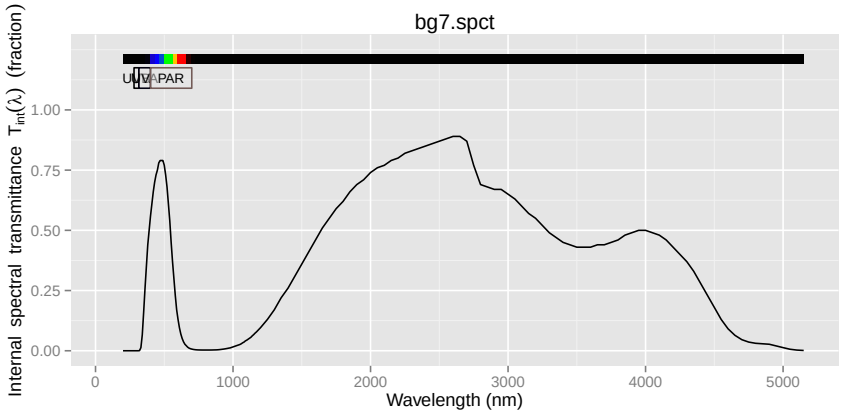

gg475.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)



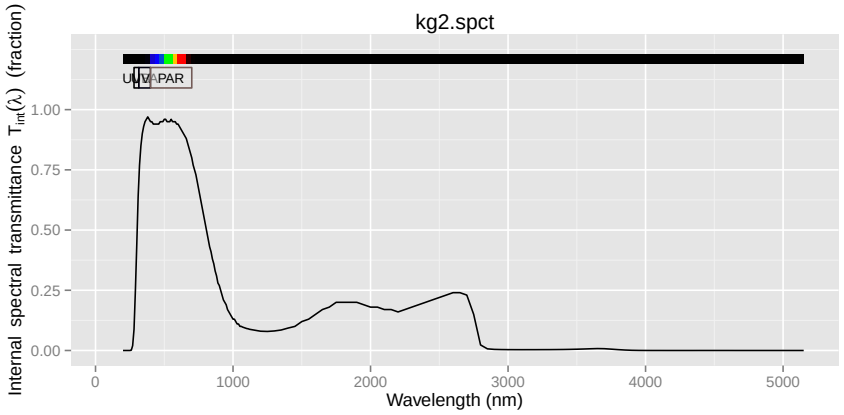

```
plot(bg25.spct)
plot(bg3.spct)
plot(bg7.spct)
```

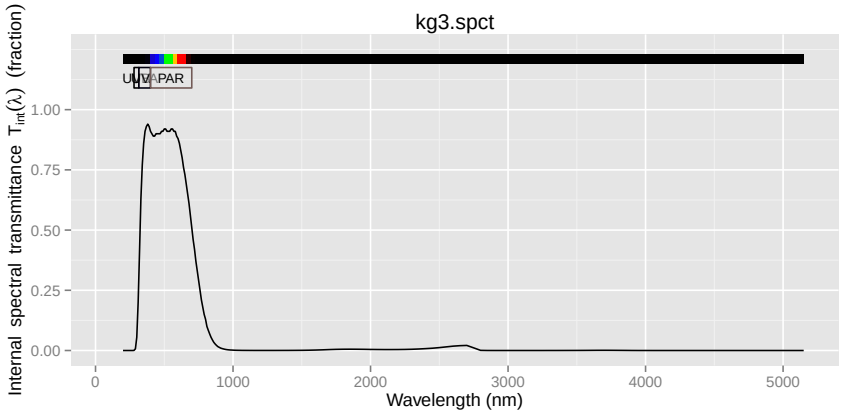


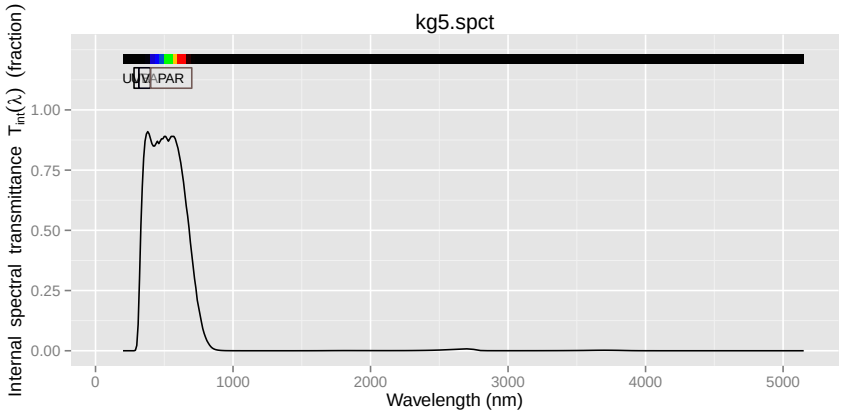




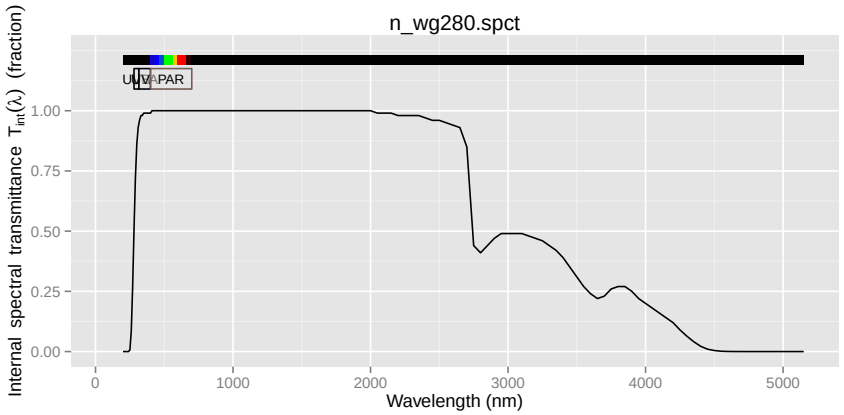

```
plot(kg2.spct)
plot(kg3.spct)
plot(kg5.spct)
```

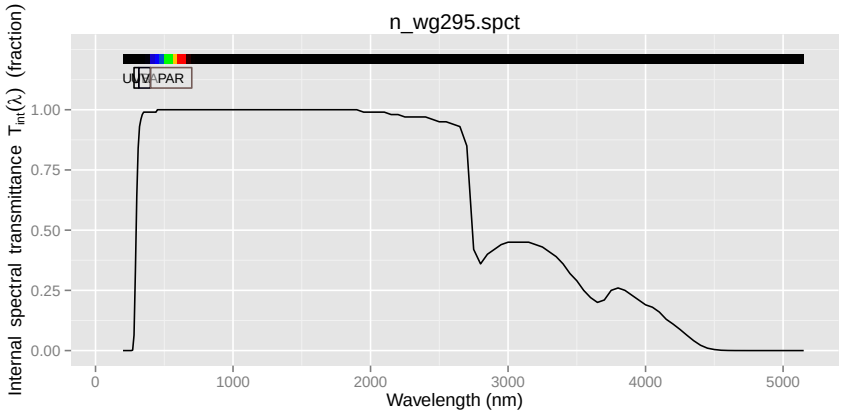


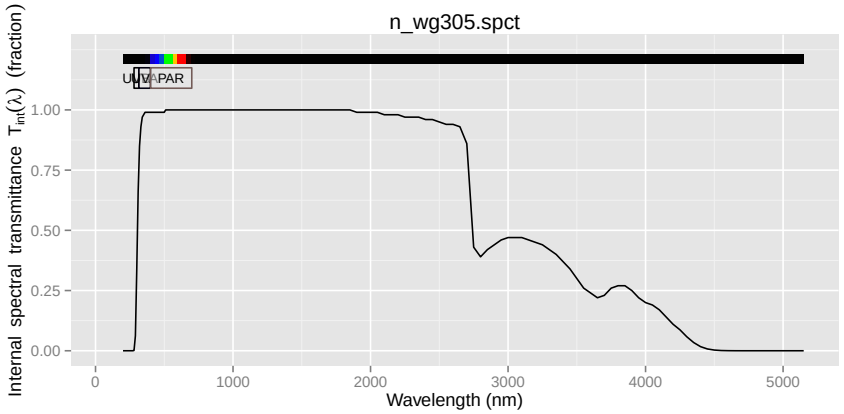


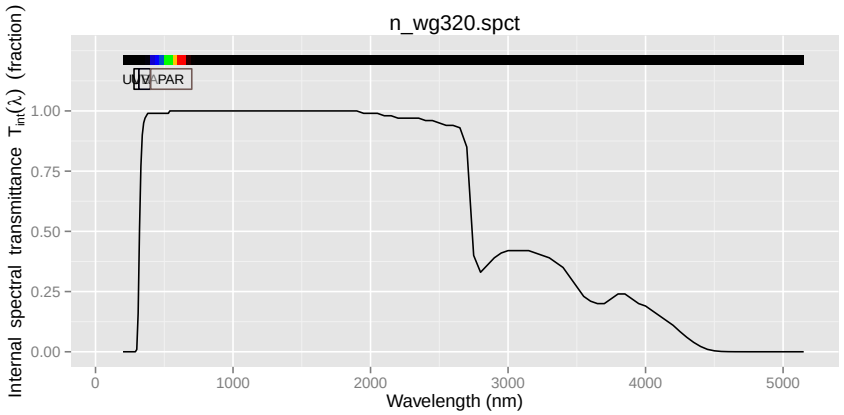



```
plot(n_wg280.spct)
plot(n_wg295.spct)
plot(n_wg305.spct)
plot(n_wg320.spct)
```

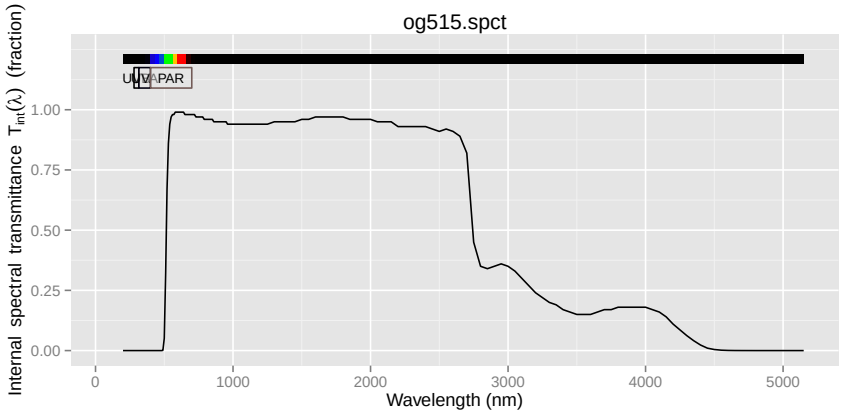


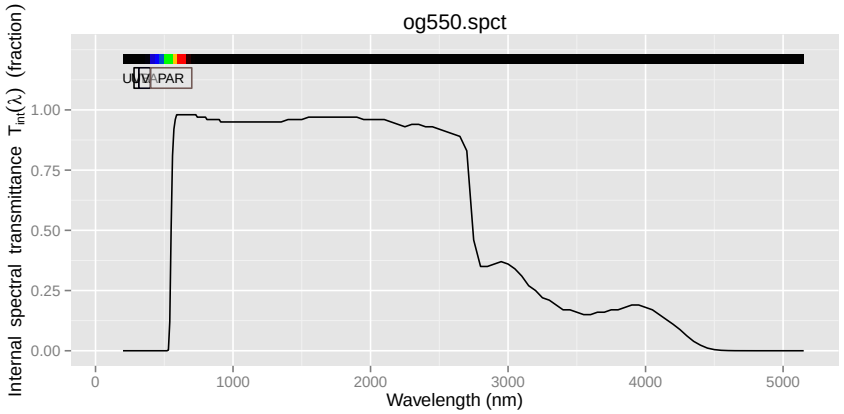


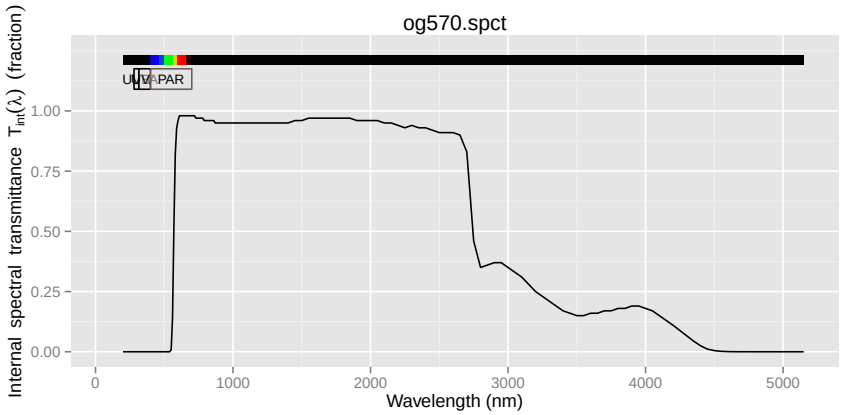


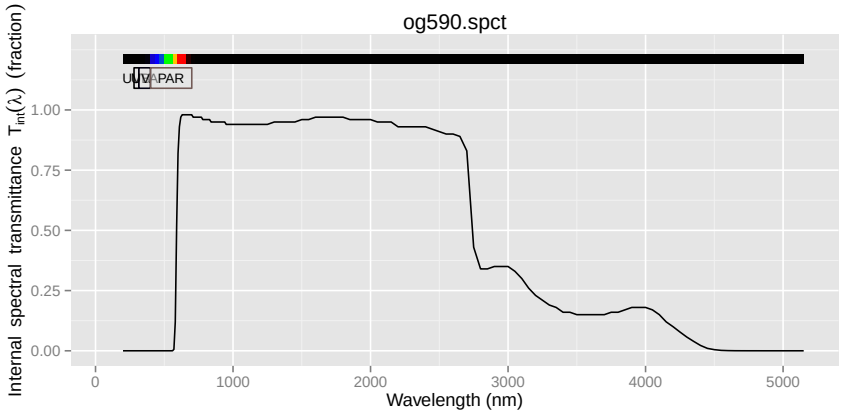



```
plot(og515.spct)
plot(og550.spct)
plot(og570.spct)
plot(og590.spct)
```



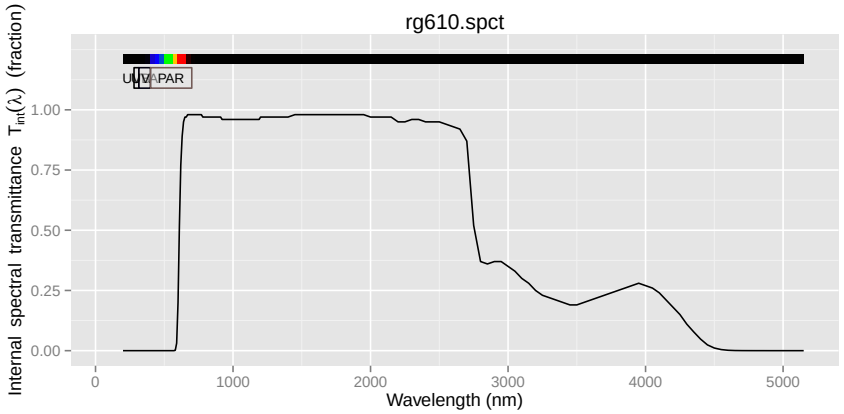


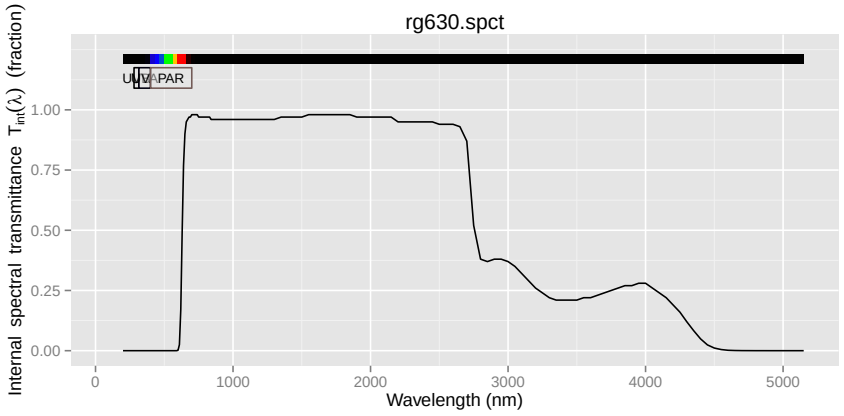


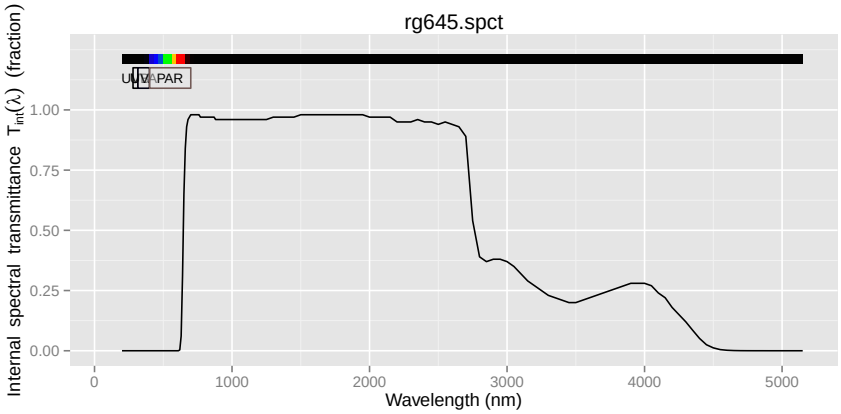


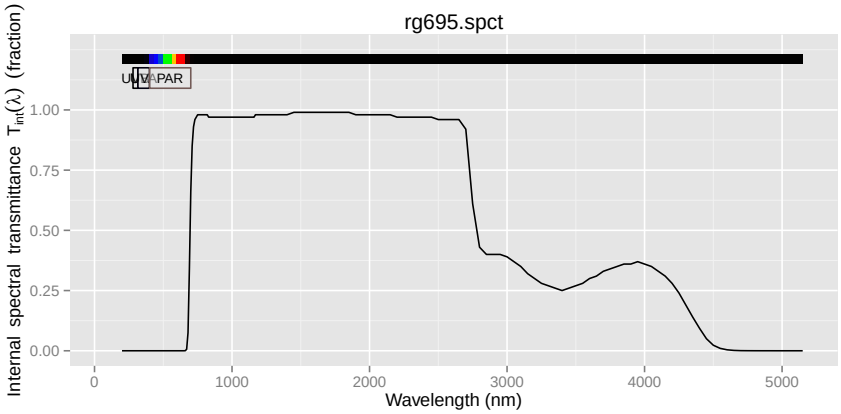

```
plot(rg610.spct)
plot(rg630.spct)
plot(rg645.spct)
plot(rg695.spct)
```

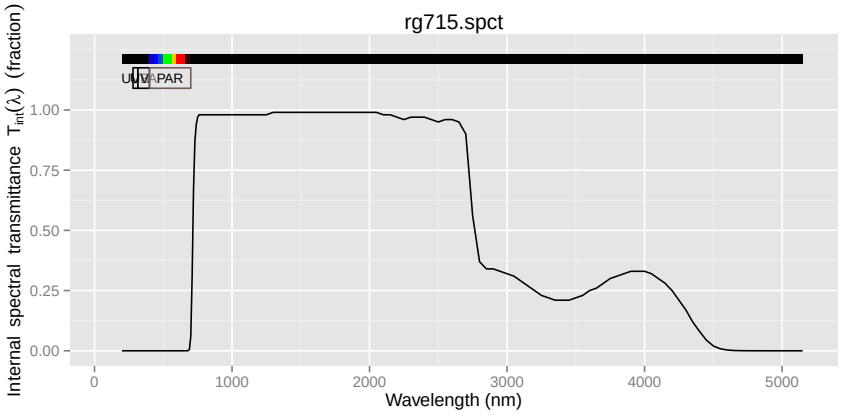
```
plot(rg715.spct)
plot(rg780.spct)
plot(rg830.spct)
plot(rg850.spct)
plot(rg9.spct)
```

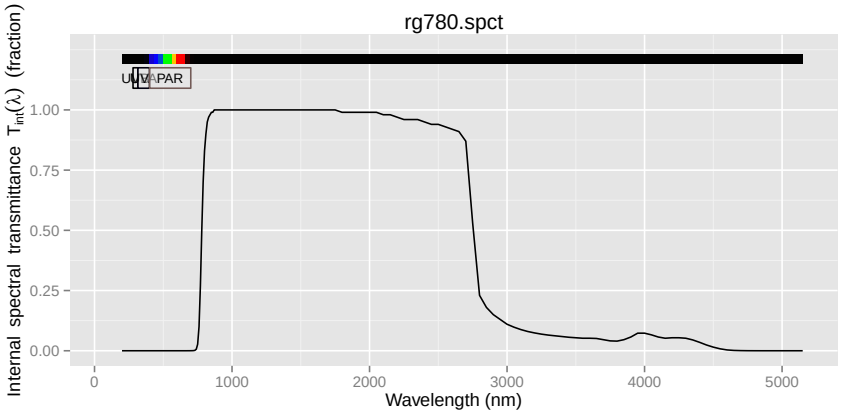


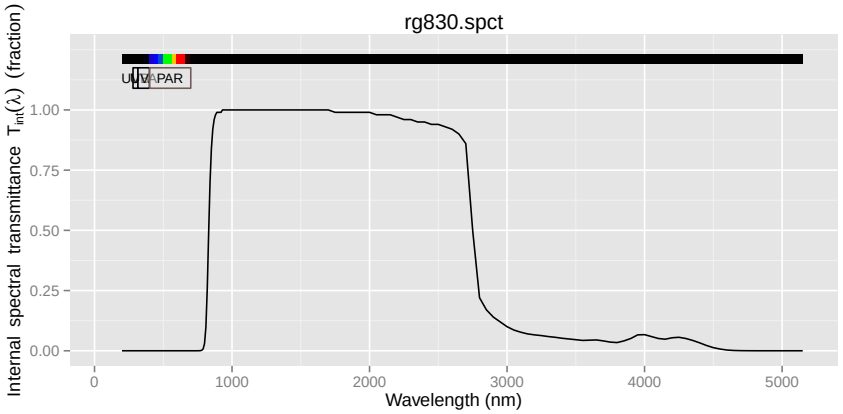


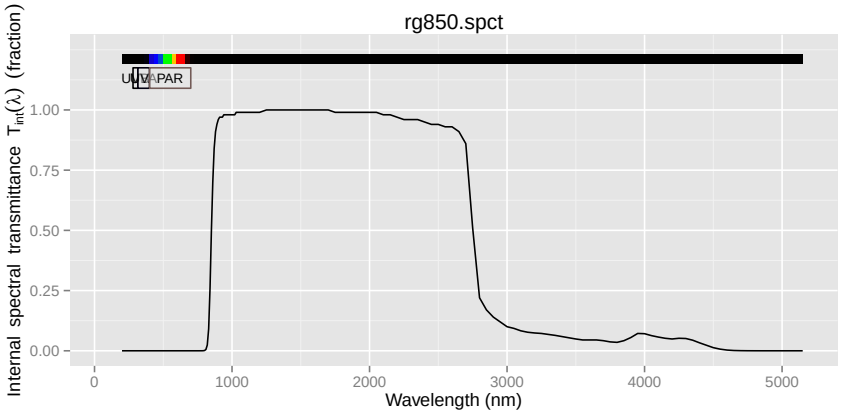

rg645.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)

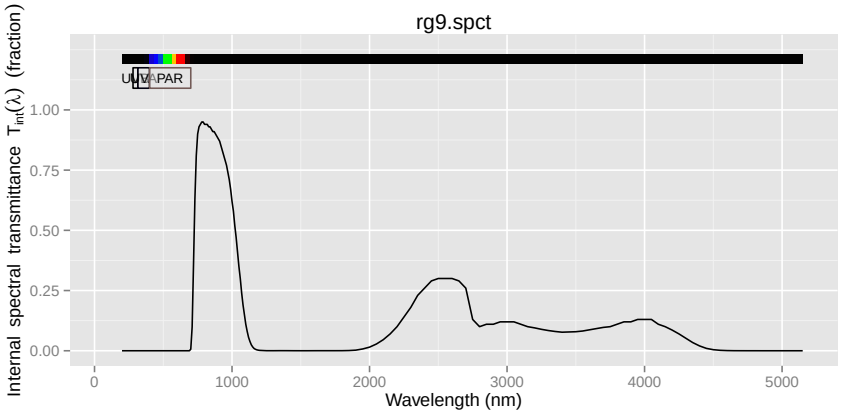

rg695.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)


rg715.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)


rg780.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)

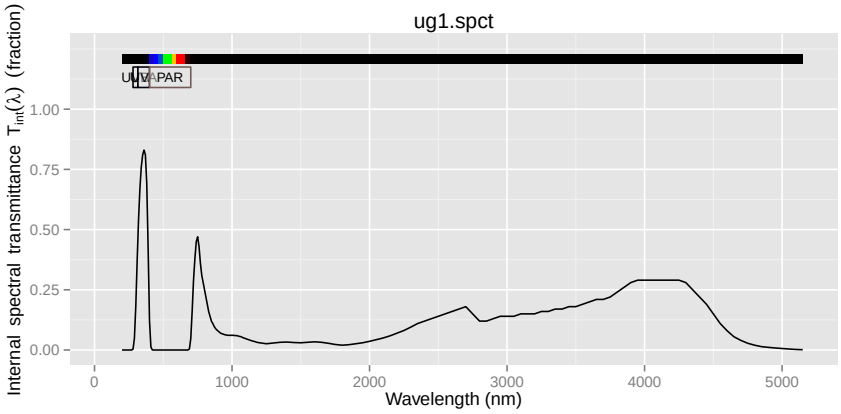

rg830.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)

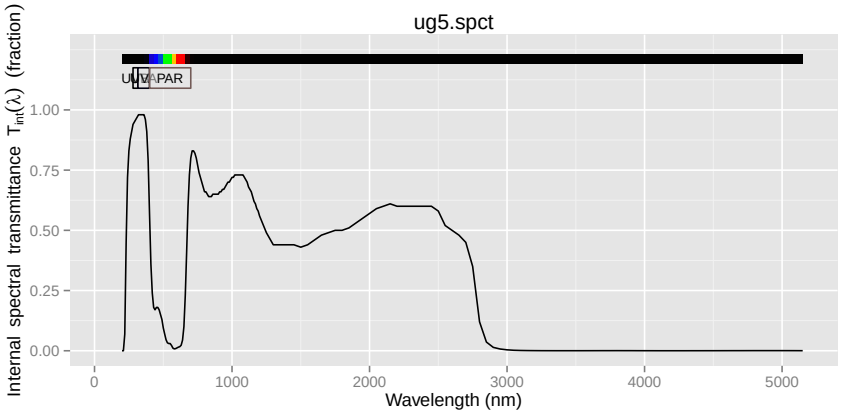

rg850.spct
UV
VIS
PAR
Internal spectral transmittance $T_{int}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
0
1000
2000
3000
4000
5000
Wavelength (nm)

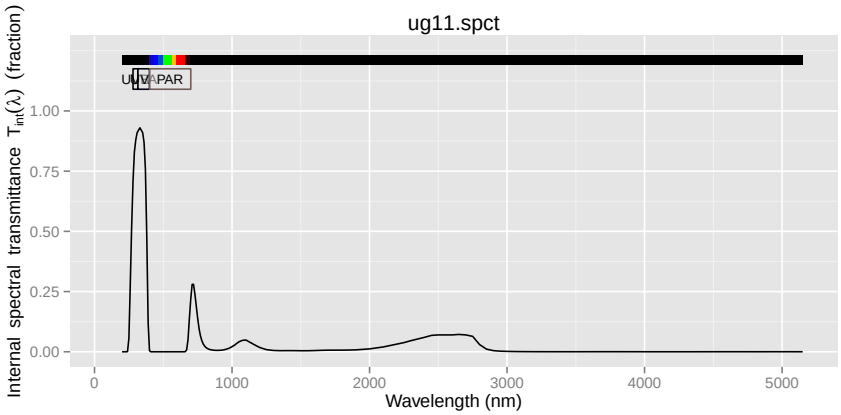


5.2 Schott band-pass filters

```
plot(ug1.spct)
plot(ug5.spct)
plot(ug11.spct)
```

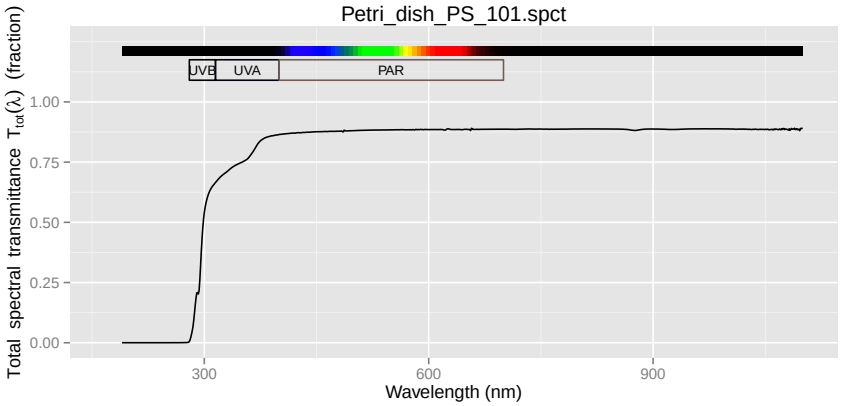


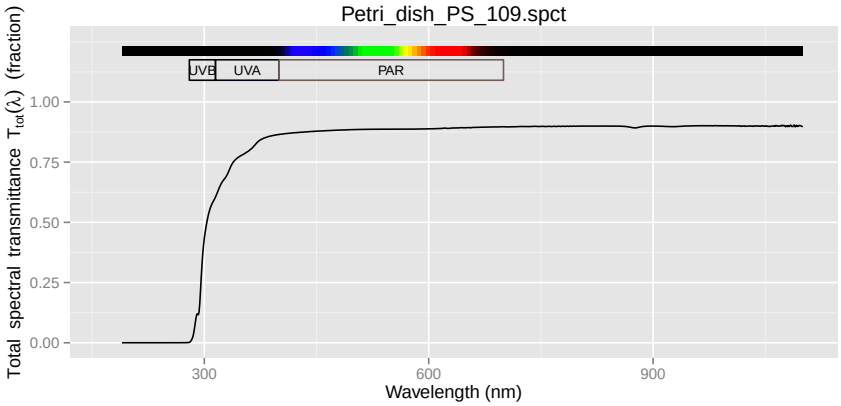


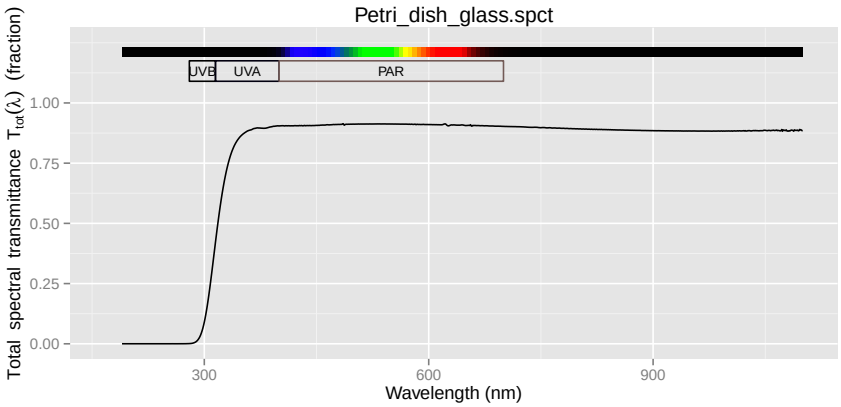


6 Petri dishes

```
plot(Petri_dish_PS_101.spct)
plot(Petri_dish_PS_109.spct)
plot(Petri_dish_glass.spct)
```


Petri_dish_PS_101.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
300
600
900
Wavelength (nm)


Petri_dish_PS_109.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
300
600
900
Wavelength (nm)


Petri_dish_glass.spct
UVB
UVA
PAR
Total spectral transmittance $T_{tot}(\lambda)$ (fraction)
1.00
0.75
0.50
0.25
0.00
300
600
900
Wavelength (nm)