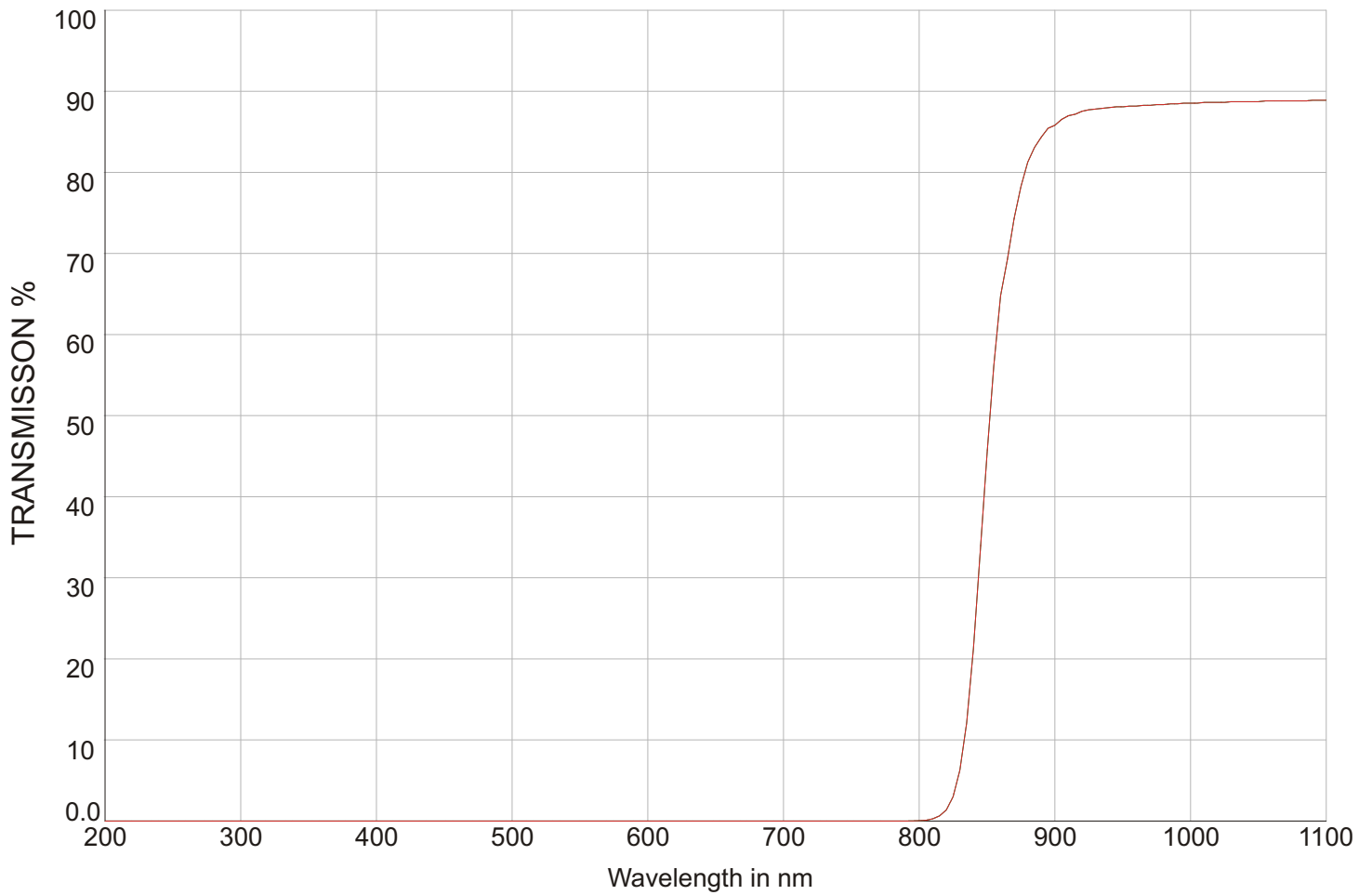


Title: Colour Glass Filter (Longpass)
Material / Specification: Schott RG850 - 850nm
Range / Description: 850FCS



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INTERNAL TRANSMITTANCE FOR 3MM THICK

Title: Colour Glass Filter (Longpass)
Material / Specification: Schott RG850 - 850nm
Range / Description: 850FCS

Reflection factor

P_d 0.91

Bubble content

Bubble class 3

Chemical resistance

FR class 5

SR class 53.4

AR class 1.0

Density

ρ [g/cm³] 2.93

Transformation temperature

T_g [°C] 571

Thermal expansion

$\alpha_{-30/+70^\circ\text{C}}$ [10⁻⁶/K] 9.5

$\alpha_{20/300^\circ\text{C}}$ [10⁻⁶/K] 10.5

Temperature coefficient

T_k [nm/°C] 0.24

Per DIN 58191

LP 850

Per DIN 58191

Colloidally colored glass

Tolerances for long pass filters

for thickness $d = 3$ mm

λ_C ($\tau_i = 0,5$ mm) [nm] 850±9

λ_S ($\tau_{iS} = 1 \cdot 10^{-5}$) [nm] 700

λ_{p1} ($\tau_{ip1} = 0.90$) [nm] 950

λ_{p2} ($\tau_{ip2} = 0.97$) [nm] 1200

Refractive index n

λ [nm] Element n

587.6 He 1.56

852.1 Cs 1.55

1014 Hg 1.55

Tristimulus values

d x y Y λ_d P_e

A 1 [mm]

2856 2

K 3

5

1

3200 2

K 3

5

1

D_{65} 2

3

5

Application notes

Long pass filter

Transmittance τ and internal transmittance $\tau_i = 3$ mm

| λ [nm] | τ | τ_i | λ [nm] | τ | τ_i |
|----------------|---------------------|---------------------|----------------|---------------------|---------------------|
| 550 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1050 | 0.89 | 0.98 |
| 560 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1060 | 0.89 | 0.98 |
| 570 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1070 | 0.89 | 0.98 |
| 580 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1080 | 0.89 | 0.98 |
| 590 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1090 | 0.89 | 0.98 |
| 600 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1100 | 0.89 | 0.98 |
| 610 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1110 | 0.89 | 0.98 |
| 620 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1120 | 0.89 | 0.98 |
| 630 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1130 | 0.89 | 0.98 |
| 640 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1140 | 0.89 | 0.98 |
| 650 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1150 | 0.89 | 0.98 |
| 660 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1160 | 0.89 | 0.98 |
| 670 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1170 | 0.89 | 0.98 |
| 680 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1180 | 0.89 | 0.98 |
| 690 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1190 | 0.89 | 0.98 |
| 700 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1200 | 0.89 | 0.98 |
| 710 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1300 | 0.89 | 0.98 |
| 720 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1400 | 0.89 | 0.98 |
| 730 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1500 | 0.89 | 0.98 |
| 740 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1600 | 0.89 | 0.98 |
| 750 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1700 | 0.89 | 0.98 |
| 760 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1800 | 0.89 | 0.98 |
| 770 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 1900 | 0.89 | 0.98 |
| 780 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 2000 | 0.88 | 0.97 |
| 790 | <1·10 ⁻⁵ | <1·10 ⁻⁵ | 2100 | 0.88 | 0.97 |
| 800 | 5·10 ⁻⁴ | 5·10 ⁻⁴ | 2200 | 0.87 | 0.96 |
| 810 | 0.003 | 0.003 | 2300 | 0.86 | 0.95 |
| 820 | 0.01 | 0.02 | 2400 | 0.86 | 0.94 |
| 830 | 0.06 | 0.07 | 2500 | 0.85 | 0.93 |
| 840 | 0.21 | 0.23 | 2600 | 0.82 | 0.90 |
| 850 | 0.45 | 0.50 | 2700 | 0.76 | 0.83 |
| 860 | 0.65 | 0.71 | 2800 | 0.14 | 0.15 |
| 870 | 0.74 | 0.82 | 2900 | 0.07 | 0.08 |
| 880 | 0.81 | 0.89 | 3000 | 0.05 | 0.05 |
| 890 | 0.84 | 0.93 | 3200 | 0.03 | 0.03 |
| 900 | 0.86 | 0.94 | 3400 | 0.03 | 0.03 |
| 910 | 0.87 | 0.96 | 3600 | 0.02 | 0.02 |
| 920 | 0.88 | 0.96 | 3800 | 0.02 | 0.02 |
| 930 | 0.88 | 0.97 | 4000 | 0.05 | 0.05 |
| 940 | 0.88 | 0.97 | 4200 | 0.04 | 0.04 |
| 950 | 0.88 | 0.97 | 4400 | 0.03 | 0.03 |
| 960 | 0.88 | 0.97 | 4600 | 9·10 ⁻⁴ | 0.001 |
| 970 | 0.88 | 0.97 | 4800 | <1·10 ⁻⁵ | <1·10 ⁻⁵ |
| 980 | 0.88 | 0.97 | 5000 | <1·10 ⁻⁵ | <1·10 ⁻⁵ |
| 990 | 0.88 | 0.97 | 5200 | <1·10 ⁻⁵ | <1·10 ⁻⁵ |
| 1000 | 0.89 | 0.97 | | | |
| 1010 | 0.89 | 0.97 | | | |
| 1020 | 0.89 | 0.97 | | | |
| 1030 | 0.89 | 0.98 | | | |
| 1040 | 0.89 | 0.98 | | | |



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