

50mm SCHOTT RG780 IR LONGPASS FILTER 3mm thick

<https://www.galvoptics.co.uk/optical-components/optical-filters/schott-longpass-filters/>

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Data Sheet



RG780

Density	
ρ [g/cm ³]	2.94

Notes
Colloidally colored glass
Longpass filter

Reflection factor	
P_d	0.908

Bubble content	
Bubble class	3

Reference thickness	
d [mm]	3

Chemical Resistance	
FR class	5.0
SR class	53.4
AR class	1.3

Spectral values guaranteed	
λ_c ($\tau_i = 0.5$) [nm]	= 780 ± 9
λ_s ($\tau_{i,U} = 10^{-5}$) [nm]	= 610
λ_p ($\tau_{i,L} = 0.97$) [nm]	= 900

Transformation temperature	
T _g [°C]	552

Thermal expansion	
$\alpha_{30/+70^\circ C}$ [10 ⁻⁶ /K]	9.5
$\alpha_{20/300^\circ C}$ [10 ⁻⁶ /K]	10.5
$\alpha_{20/200^\circ C}$ [10 ⁻⁶ /K]	

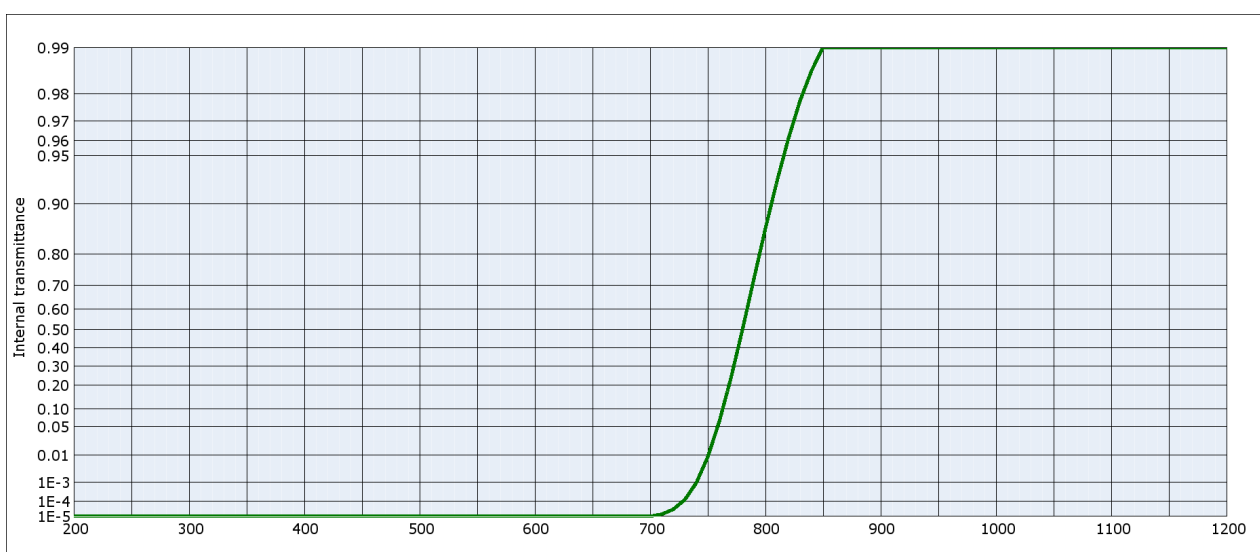
Refractive Index n	
n_e (546.1 nm) =	1.564
n_d (587.6 nm) =	1.562
n_s (852.1 nm) =	1.552
n_i (1014.0 nm) =	1.550
Sellmeier coefficients on request	

Temperature coefficient	
T _K [nm/°C]	0.22

All data without tolerances are to be understood to be reference values.
 Guaranteed values are only those values listed in the section "Spectral values guaranteed".

Colorimetric evaluation

Illuminant	A (Planck T = 2856 K)			Illuminant	Planck T = 3200 K			Illuminant	D65 (T _c = 6504 K)		
	d [mm]	1	2		3	d [mm]	1		2	3	d [mm]
x				x				x			
y				y				y			
Y				Y				Y			
λ_d [nm]				λ_d [nm]				λ_d [nm]			
P _e				P _e				P _e			



STATUS: 01.12.2014

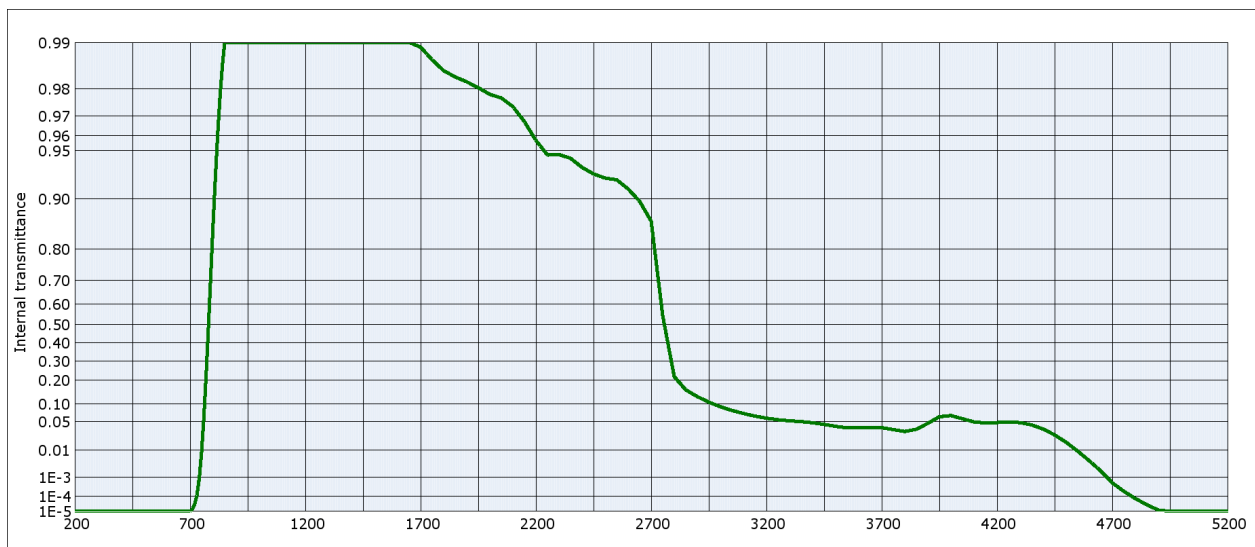
Further explanations see 'Optical Filters 2013' catalogue

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Internal transmittance τ_i at reference thickness $d = 3$ mm
The internal transmittance values, tabulated and graphically represented, are reference values only

λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i	λ [nm]	τ_i
200	$< 10^{-5}$	500	$< 10^{-5}$	800	0.859	1100	0.994	2200	0.957	3700	$3.8 \cdot 10^{-2}$
210	$< 10^{-5}$	510	$< 10^{-5}$	810	0.928	1110	0.994	2250	0.947	3750	$3.4 \cdot 10^{-2}$
220	$< 10^{-5}$	520	$< 10^{-5}$	820	0.961	1120	0.994	2300	0.947	3800	$3.1 \cdot 10^{-2}$
230	$< 10^{-5}$	530	$< 10^{-5}$	830	0.978	1130	0.994	2350	0.944	3850	$3.5 \cdot 10^{-2}$
240	$< 10^{-5}$	540	$< 10^{-5}$	840	0.986	1140	0.994	2400	0.936	3900	$4.6 \cdot 10^{-2}$
250	$< 10^{-5}$	550	$< 10^{-5}$	850	0.990	1150	0.995	2450	0.930	3950	$6.2 \cdot 10^{-2}$
260	$< 10^{-5}$	560	$< 10^{-5}$	860	0.991	1160	0.995	2500	0.926	4000	$6.5 \cdot 10^{-2}$
270	$< 10^{-5}$	570	$< 10^{-5}$	870	0.992	1170	0.995	2550	0.924	4050	$5.7 \cdot 10^{-2}$
280	$< 10^{-5}$	580	$< 10^{-5}$	880	0.992	1180	0.995	2600	0.913	4100	$4.9 \cdot 10^{-2}$
290	$< 10^{-5}$	590	$< 10^{-5}$	890	0.993	1190	0.995	2650	0.896	4150	$4.7 \cdot 10^{-2}$
300	$< 10^{-5}$	600	$< 10^{-5}$	900	0.993	1200	0.995	2700	0.863	4200	$4.8 \cdot 10^{-2}$
310	$< 10^{-5}$	610	$< 10^{-5}$	910	0.993	1250	0.995	2750	0.544	4250	$4.9 \cdot 10^{-2}$
320	$< 10^{-5}$	620	$< 10^{-5}$	920	0.993	1300	0.995	2800	0.218	4300	$4.8 \cdot 10^{-2}$
330	$< 10^{-5}$	630	$< 10^{-5}$	930	0.993	1350	0.995	2850	0.156	4350	$4.3 \cdot 10^{-2}$
340	$< 10^{-5}$	640	$< 10^{-5}$	940	0.993	1400	0.993	2900	0.128	4400	$3.5 \cdot 10^{-2}$
350	$< 10^{-5}$	650	$< 10^{-5}$	950	0.993	1450	0.993	2950	0.107	4450	$2.6 \cdot 10^{-2}$
360	$< 10^{-5}$	660	$< 10^{-5}$	960	0.993	1500	0.994	3000	$9.1 \cdot 10^{-2}$	4500	$1.7 \cdot 10^{-2}$
370	$< 10^{-5}$	670	$< 10^{-5}$	970	0.993	1550	0.994	3050	$8.0 \cdot 10^{-2}$	4550	$9.4 \cdot 10^{-3}$
380	$< 10^{-5}$	680	$< 10^{-5}$	980	0.994	1600	0.993	3100	$7.1 \cdot 10^{-2}$	4600	$4.6 \cdot 10^{-3}$
390	$< 10^{-5}$	690	$< 10^{-5}$	990	0.994	1650	0.991	3150	$6.4 \cdot 10^{-2}$	4650	$1.9 \cdot 10^{-3}$
400	$< 10^{-5}$	700	$< 10^{-5}$	1000	0.994	1700	0.989	3200	$5.8 \cdot 10^{-2}$	4700	$5.5 \cdot 10^{-4}$
410	$< 10^{-5}$	710	$1.4 \cdot 10^{-5}$	1010	0.994	1750	0.987	3250	$5.4 \cdot 10^{-2}$	4750	$2.0 \cdot 10^{-4}$
420	$< 10^{-5}$	720	$3.2 \cdot 10^{-5}$	1020	0.994	1800	0.985	3300	$5.2 \cdot 10^{-2}$	4800	$7.4 \cdot 10^{-5}$
430	$< 10^{-5}$	730	$1.3 \cdot 10^{-4}$	1030	0.994	1850	0.983	3350	$5.0 \cdot 10^{-2}$	4850	$3.0 \cdot 10^{-5}$
440	$< 10^{-5}$	740	$9.3 \cdot 10^{-4}$	1040	0.994	1900	0.982	3400	$4.8 \cdot 10^{-2}$	4900	$1.2 \cdot 10^{-5}$
450	$< 10^{-5}$	750	$8.9 \cdot 10^{-3}$	1050	0.994	1950	0.980	3450	$4.4 \cdot 10^{-2}$	4950	$< 10^{-5}$
460	$< 10^{-5}$	760	$6.3 \cdot 10^{-2}$	1060	0.994	2000	0.978	3500	$4.0 \cdot 10^{-2}$	5000	$< 10^{-5}$
470	$< 10^{-5}$	770	0.235	1070	0.994	2050	0.977	3550	$3.7 \cdot 10^{-2}$	5050	$< 10^{-5}$
480	$< 10^{-5}$	780	0.496	1080	0.994	2100	0.974	3600	$3.7 \cdot 10^{-2}$	5100	$< 10^{-5}$
490	$< 10^{-5}$	790	0.722	1090	0.994	2150	0.967	3650	$3.8 \cdot 10^{-2}$	5150	$< 10^{-5}$