



QB NIR Cut-off Filter Glass

成都光明光电股份有限公司

CDGM GLASS CO., LTD.

2017 年 6 月



Thickness =0.80 mm

Reflection Factor P_d=0.920

QB50A

λnm	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480
T%	0.0	0.6	9.1	32.5	55.6	73.9	82.5	86.2	88.3	89.1	89.9	90.4	90.4	90.6	90.9	91.1	91.3	91.5	91.3
λnm	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670
T%	91.5	91.2	91.2	90.8	90.0	89.0	87.7	85.1	82.1	78.6	74.0	68.8	62.7	56.5	50.1	43.7	37.7	31.9	27.0
nm	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
T%	22.8	19.0	15.8	13.2	11.0	9.4	8.0	6.9	6.1	5.4	5.0	4.6	4.3	4.1	4.0	3.9	3.9	4.2	4.2
λnm	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050
T%	4.4	4.6	4.8	5.0	5.3	5.7	6.0	6.4	6.9	7.3	7.8	8.4	9.0	9.6	10.3	11.0	11.8	12.5	13.4
λnm	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200				
T%	14.2	15.2	16.0	17.0	17.9	19.2	20.0	21.2	22.2	23.5	24.6	25.9	27.1	28.4	29.6				

Refractive index

Symbol	C	d	e	F	g
λ nm	656.3	587.6	546.1	486.1	435.8
n	1.508	1.511	1.512	1.515	1.519

Abbe-Numbe

$$v_d = \frac{n_d - 1}{n_F - n_C} = 73.7$$

Tolerances of Transmittance

T _{400nm} (%)	λ _{T50%} (nm)	T _{750nm} (%)	T _{1200nm} (%)
≥89.0	630±6		≤30

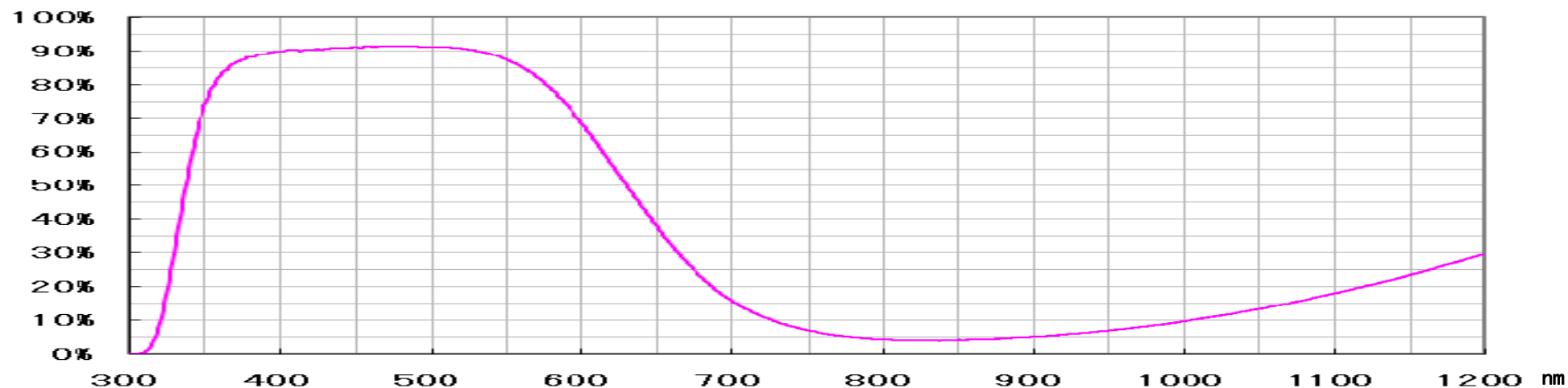
Color Specifications

	x	y	Y	λ _d	P _e
A	0.400	0.421	76.4	500	0.11
C	0.275	0.312	80.9	490	0.13
D ₆₅	0.278	0.325	81.0	490	0.13

Properties

Chemical		Thermal				Mechanical					other
D _w	D _A	T _g	T _s	α _{20~120℃}	α _{20~300℃}	H _k	F _A	E	G	μ	ρ
1	3	362	401	129	151	437	315	7589	2959	0.282	3.35

Transmittance



201309 推广



Thickness =0.40 mm

Reflection Factor $P_d=0.917$

QB52

λ nm	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480
T%	0.0	1.0	10.0	30.2	52.6	67.6	76.3	80.8	83.2	84.6	85.5	86.1	86.7	87.1	87.5	88.0	88.4	88.6	88.9
λ nm	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670
T%	89.1	89.3	89.3	89.2	88.9	88.2	87.1	85.5	83.2	80.2	76.6	72.3	67.4	62.0	56.5	50.8	45.2	39.5	34.6
nm	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
T%	30.3	26.2	22.7	19.7	17.1	14.9	13.2	11.7	10.6	9.6	9.0	8.3	8.1	7.6	7.6	7.4	7.6	8.3	8.3
λ nm	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050
T%	8.5	8.7	9.0	9.4	9.8	10.2	10.6	11.2	11.7	12.3	13.0	13.7	14.4	15.2	16.0	16.8	17.7	18.6	19.7
λ nm	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200				
T%	20.5	21.6	22.6	23.6	24.8	26.0	27.1	28.3	29.5	30.6	31.9	33.1	34.3	35.7	36.9				

Refractive index

Symbol	C	d	e	F	g
λ nm	656.3	587.6	546.1	486.1	435.8
n	1.523	1.526	1.527	1.531	1.535

Abbe-Numb

$$v_d = \frac{n_d - 1}{n_F - n_C} = 68.4$$

Tolerances of Transmittance

T_{400nm} (%)	$\lambda_{T50\%}$ (nm)	T_{750nm} (%)	T_{1200nm} (%)
≥ 85.0	641 ± 6		≤ 38.0

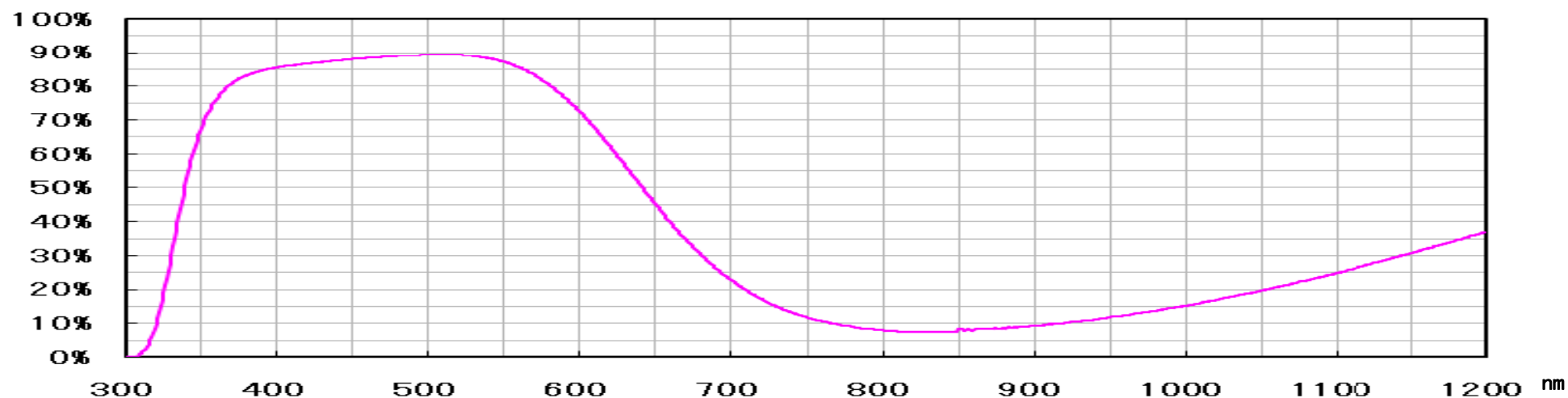
Color Specifications

	x	y	Y	λ_d	P_e
A	0.411	0.420	78.0	501	0.08
C	0.283	0.316	81.6	491	0.13
D ₆₅	0.286	0.328	81.7	491	0.13

Properties

Chemical		Thermal				Mechanical					other
D _w	D _A	T _g	T _s	$\alpha_{20 \sim 120^\circ C}$	$\alpha_{20 \sim 300^\circ C}$	H _k	F _A	E	G	μ	ρ
1	3	351	391	136	155		321	7503	2939	0.276	3.28

Transmittance



201309 推广



Thickness =0.30mm

Reflection Factor $P_d=0.917$

QB53

λ_{nm}	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480
T%	0.0	1.7	13.7	38.0	61.5	75.4	82.6	86.4	88.2	89.1	89.6	90.9	90.3	90.5	90.7	90.8	90.8	90.9	91.0
λ_{nm}	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670
T%	91.0	91.0	90.9	90.6	90.0	89.2	87.9	86.2	83.8	80.7	77.2	72.8	68.1	63.0	57.6	52.1	46.7	41.3	36.6
λ_{nm}	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
T%	32.3	28.3	24.9	21.9	19.4	17.2	15.4	14.1	12.9	11.9	11.2	10.6	10.2	10.0	9.9	9.8	9.9	10.1	10.4
λ_{nm}	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050
T%	10.7	11.2	11.5	12.0	12.6	13.1	13.7	14.5	15.2	16.0	16.8	17.6	18.5	19.3	20.5	21.4	22.4	23.4	24.6
λ_{nm}	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200				
T%	25.7	26.8	28.0	29.3	30.5	31.7	32.9	34.2	35.5	36.8	38.2	39.5	40.8	42.1	43.4				

Refractive index

Symbol	C	d	e	F	g
λ_{nm}	656.3	587.6	546.1	486.1	435.8
n	1.525	1.527	1.529	1.532	1.537

Abbe-Numb

$$v_d = \frac{n_d - 1}{n_F - n_C} = 67.7$$

Tolerances of Transmittance

T_{400nm} (%)	$\lambda_{T50\%}$ (nm)	T_{750nm} (%)	T_{1200nm} (%)
≥ 89.0	644 ± 6		≤ 44.0

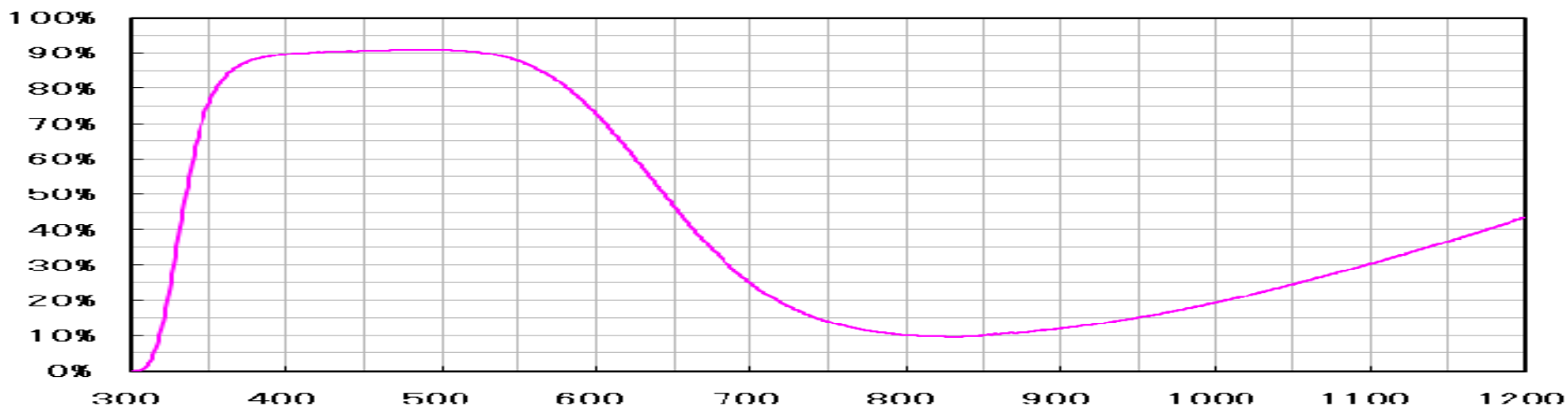
Color Specifications

	x	y	Y	λ_d	P_e
A	0.410	0.419	78.9	500	0.09
C	0.282	0.314	82.6	490	0.11
D ₆₅	0.285	0.326	82.7	490	0.10

Properties

Chemical		Thermal				Mechanical					other
D _w	D _A	T _g	T _s	$\alpha_{20 \sim 120^\circ C}$	$\alpha_{20 \sim 300^\circ C}$	H _k	F _A	E	G	μ	ρ
1	3	358	397	128	149	432	323	8238	3226	0.277	3.29

Transmittance





Thickness =0.30mm

Reflection Factor $P_d=0.917$

QB54

λ_{nm}	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480
T%	0.0	1.7	13.7	38.0	61.5	75.4	82.6	86.4	88.2	89.1	89.6	90.9	90.3	90.5	90.7	90.8	90.8	90.9	91.0
λ_{nm}	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670
T%	91.0	91.0	90.9	90.6	90.0	89.2	87.9	86.2	83.8	80.7	77.2	72.8	68.1	63.0	57.6	52.1	46.7	41.3	36.6
λ_{nm}	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
T%	25.2	21.5	18.3	15.7	13.5	11.7	10.2	9.1	8.1	7.5	6.9	6.5	6.2	6.0	5.9	5.8	5.9	6.3	6.6
λ_{nm}	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050
T%	6.8	7.1	7.5	7.8	8.3	8.7	9.2	9.7	10.2	10.8	11.5	12.2	13.0	13.7	14.6	15.4	16.3	17.2	18.2
λ_{nm}	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200				
T%	19.2	20.3	21.3	22.4	23.5	24.8	26.0	27.3	28.5	29.8	31.1	32.5	33.8	35.1	36.4				

Refractive index

Symbol	C	d	e	F	g
λ_{nm}	656.3	587.6	546.1	486.1	435.8
n	1.524	1.527	1.528	1.532	1.536

Abbe-Numb

$$\nu_d = \frac{n_d - 1}{n_F - n_C} = 66.4$$

Tolerances of Transmittance

T_{400nm} (%)	$\lambda_{T50\%}$ (nm)	T_{750nm} (%)	T_{1200nm} (%)
≥ 87.5	632 ± 6		≤ 37.0

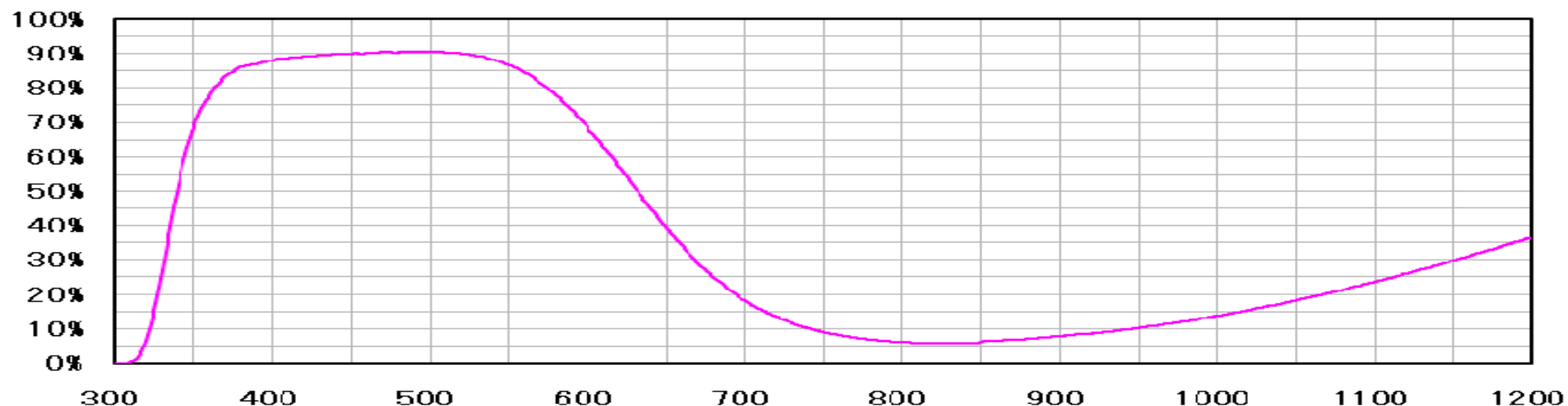
Color Specifications

	x	y	Y	λ_d	P_e
A	0.410	0.419	78.9	500	0.09
C	0.282	0.314	82.6	490	0.11
D ₆₅	0.285	0.326	82.7	490	0.10

Properties

Chemical		Thermal				Mechanical					other
D _w	D _A	T _g	T _s	$\alpha_{20 \sim 120^\circ C}$	$\alpha_{20 \sim 300^\circ C}$	H _k	F _A	E	G	μ	ρ
2	4	356	395	136	155		320	8246	3228	0.277	3.29

Transmittance





Thickness =0.21mm

Reflection Factor P_d=0.916

QB55

λnm	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480
T%	0.0	0.8	8.7	28.9	52.7	69.2	78.9	84.0	86.4	87.9	88.6	89.2	89.4	89.7	89.9	90.2	90.2	90.4	90.5
λnm	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670
T%	90.5	90.6	90.5	90.1	89.6	88.8	87.5	85.6	83.2	80.0	76.3	71.9	66.9	61.5	56.1	50.5	44.9	39.6	34.7
nm	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
T%	30.6	26.6	23.3	20.3	17.8	15.8	14.1	12.8	11.6	10.7	10.0	9.5	9.1	8.9	8.9	8.9	8.9	9.3	9.8
λnm	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050
T%	9.8	10.9	11.3	11.4	11.6	12.1	12.8	13.6	14.2	14.9	15.6	16.4	17.4	18.3	19.1	20.1	21.1	22.0	23.2
λnm	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200				
T%	24.3	25.4	26.5	27.8	29.0	30.2	31.5	32.8	34.1	35.4	36.7	38.1	39.4	40.7	42.1				

Refractive index

Symbol	C	d	e	F	g
λ nm	656.3	587.6	546.1	486.1	435.8
n	1.526	1.528	1.530	1.534	1.538

Abbe-Numb

$$v_d = \frac{n_d - 1}{n_F - n_C} = 65.3$$

Tolerances of Transmittance

T _{400nm} (%)	λ T _{50%} (nm)	T _{750nm} (%)	T _{1200nm} (%)
≥88.0	641±6		≤43.0

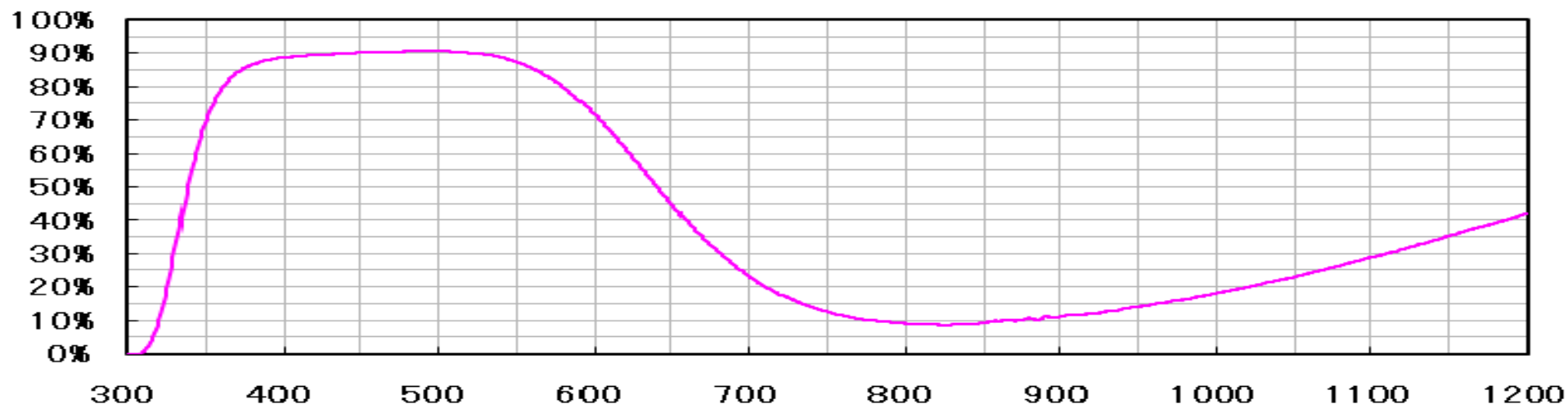
Color Specifications

	x	y	Y	λ _d	P _e
A	0.409	0.419	78.1	500	0.09
C	0.281	0.614	81.9	490	0.11
D ₆₅	0.284	0.326	82.0	490	0.11

Properties

Chemical		Thermal				Mechanical					other
D _w	D _A	T _g	T _s	α _{20~120℃}	α _{20~300℃}	H _k	F _A	E	G	μ	ρ
1	3	360	395	125	148	446	313	8236	3226	0.277	3.30

Transmittance





Thickness =0.21mm

Reflection Factor P_d=0.916

QB56

λnm	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480
T%	0.0	0.0	4.1	19.5	42.8	61.4	73.2	79.9	83.4	85.4	86.5	87.3	87.8	88.3	88.6	88.9	89.3	89.5	89.7
λnm	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670
T%	89.7	89.8	89.7	89.4	88.8	87.8	86.4	84.3	81.6	78.0	73.8	68.9	63.5	57.8	51.8	46.0	40.3	34.7	30.0
nm	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
T%	25.9	22.2	18.9	16.2	14.1	12.1	10.8	9.5	8.6	7.8	7.2	6.7	6.5	6.3	6.1	6.1	6.3	7.0	7.0
λnm	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050
T%	7.2	7.4	7.8	8.2	8.6	8.9	9.5	10.1	10.6	11.3	11.8	12.6	13.3	14.1	15.0	15.7	16.8	17.6	18.6
λnm	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200				
T%	19.7	20.7	21.8	23.0	24.1	25.2	26.4	27.7	29.0	30.3	31.6	32.9	34.2	35.6	36.9				

Refractive index

Symbol	C	d	e	F	g
λ nm	656.3	587.6	546.1	486.1	435.8
n	1.527	1.530	1.532	1.535	1.540

Abbe-Numb

$$v_d = \frac{n_d - 1}{n_F - n_C} = 64.8$$

Tolerances of Transmittance

T _{400nm} (%)	λ _{T50%} (nm)	T _{750nm} (%)	T _{1200nm} (%)
≥85.0	633±6		≤38.0

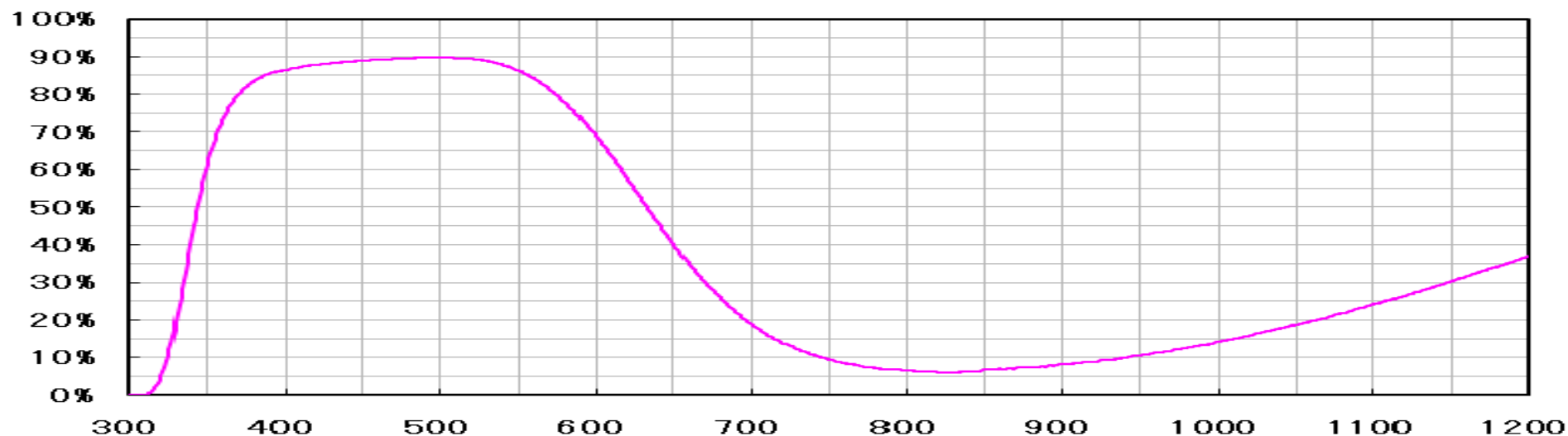
Color Specifications

	x	y	Y	λ _d	P _e
A	0.409	0.419	78.1	500	0.09
C	0.281	0.314	81.9	490	0.11
D ₆₅	0.284	0.326	82.0	490	0.11

Properties

Chemical		Thermal				Mechanical					other
D _w	D _A	T _g	T _s	α _{20~120℃}	α _{20~300℃}	H _k	F _A	E	G	μ	ρ
1	3	343	389	138	156		321	7666	3001	0.277	3.31

Transmittance





Thickness =0.175mm

Reflection Factor $P_d=0.914$

QB58

λ_{nm}	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480
T%	0.0	0.0	3.1	16.4	38.8	58.0	70.9	78.0	82.0	84.2	85.5	86.4	87.0	87.4	88.0	88.3	88.6	88.8	89.1
λ_{nm}	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670
T%	89.3	89.4	89.3	89.0	88.4	87.5	86.0	83.9	81.1	77.5	73.2	68.3	62.8	56.8	50.9	45.0	39.3	33.6	28.9
λ_{nm}	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
T%	24.7	20.9	17.7	15.2	12.9	11.1	9.6	8.5	7.6	6.8	6.4	6.0	5.5	5.3	5.3	5.3	5.3	6.0	6.0
λ_{nm}	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050
T%	6.2	6.6	6.6	6.8	7.2	7.8	8.0	8.5	9.3	9.8	10.3	10.8	11.6	12.3	13.1	13.8	14.6	15.5	16.5
λ_{nm}	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200				
T%	17.3	18.4	19.4	20.4	21.4	22.7	23.8	24.9	26.1	27.4	28.7	30.0	31.3	32.5	33.9				

Refractive index

Symbol	C	d	e	F	g
λ_{nm}	656.3	587.6	546.1	486.1	435.8
n	1.534	1.537	1.539	1.543	1.548

Abbe-Numb

$$v_d = \frac{n_d - 1}{n_F - n_C} = 62.0$$

Tolerances of Transmittance

T_{400nm} (%)	$\lambda_{T50\%}$ (nm)	T_{750nm} (%)	T_{1200nm} (%)
≥ 84.0	632 ± 6		≤ 35.0

Color Specifications

	x	y	Y	λ_d	P_e
A	0.377	0.428	67.4	500	0.16
C	0.260	0.311	73.4	490	0.19
D ₆₅	0.263	0.324	73.6	490	0.19

Properties

Chemical		Thermal				Mechanical					other
D _w	D _A	T _g	T _s	$\alpha_{20 \sim 120^\circ C}$	$\alpha_{20 \sim 300^\circ C}$	H _k	F _A	E	G	μ	ρ
1	3	352	394	125	148	437	321	8238	3230	0.276	3.27

Transmittance

