

Transmittance (T) units: %

λnm	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	5.4	15.6	22.7	20.7	37.5
λnm	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590
T	44.9	43.9	44.2	45.9	45.3	48.0	51.0	51.5	51.1	50.7	50.7	50.9	51.3	51.8	52.1	52.3	52.2	51.7	50.9	50.2
λnm	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790
T	50.2	50.4	50.6	50.6	50.3	50.0	50.0	50.4	51.3	52.4	53.1	53.3	53.2	52.7	52.0	51.2	50.3	49.4	48.4	47.5
λnm	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990
T	46.6	45.8	45.0	44.2	43.5	42.7	42.0	41.3	40.7	40.1	39.5	38.9	38.3	37.8	37.2	36.7	36.2	35.8	35.3	34.9
λnm	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1120	1140	1160	1180	1200				
T	34.6	34.2	33.9	33.6	33.3	33.1	32.9	32.8	32.6	32.5	32.5	32.4	32.5	32.7	33.0	33.5				

Refractive Index/Absorption coefficient/Reflection coefficient

λnm	400	500	600	700	800	900	1000
n	1.515	1.508	1.505	1.503	1.502	1.501	1.500
K	9.0E-06	9.4E-06	1.1E-05	1.2E-05	1.7E-05	2.4E-05	3.1E-05
P	0.919	0.921	0.922	0.922	0.923	0.923	0.923

Classes of Bubbles and Inclusions

Bubble Class
3

Color Specification

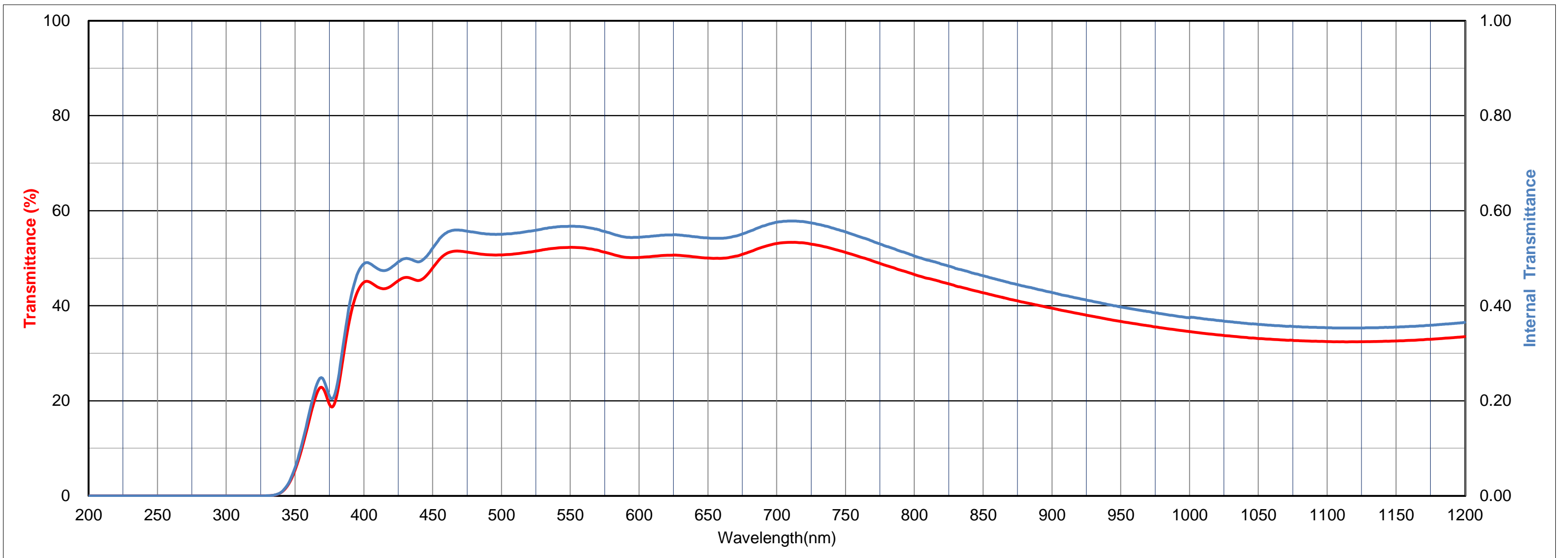
	x	y	Y	λ _d	P _e
A	0.448	0.412	51	571	3
C	0.312	0.325	51	562	3
D65	0.315	0.337	51	562	3

Properties

Chemical		Thermal				Mechanical		Others
D _w	D _A	T _g	T _s	α _{-30/70}	α _{100/300}	H _K	F _A	d
2	4	495	555	62	66	550	90	2.42

Tolerance of Transmittance (T)

Average Transmittance at 400nm-700nm	
T _{av} (%)	OD
50±5	0.30±0.05





HOYA CANDEO OPTRONICS CORPORATION

Thickness (2.5) mm

ND50

Transmittance (T) units: %

λnm	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	5.4	15.6	22.7	20.7	37.5
λnm	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590
T	44.9	43.9	44.2	45.9	45.3	48.0	51.0	51.5	51.1	50.7	50.7	50.9	51.3	51.8	52.1	52.3	52.2	51.7	50.9	50.2
λnm	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790
T	50.2	50.4	50.6	50.6	50.3	50.0	50.0	50.4	51.3	52.4	53.1	53.3	53.2	52.7	52.0	51.2	50.3	49.4	48.4	47.5
λnm	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990
T	46.6	45.8	45.0	44.2	43.5	42.7	42.0	41.3	40.7	40.1	39.5	38.9	38.3	37.8	37.2	36.7	36.2	35.8	35.3	34.9
λnm	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190
T	34.6	34.2	33.9	33.6	33.3	33.1	32.9	32.8	32.6	32.5	32.5	32.4	32.4	32.4	32.5	32.6	32.7	32.8	33.0	33.3
λnm	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390
T	33.5	33.7	34.1	34.4	34.8	35.2	35.7	36.1	36.6	37.1	37.7	38.3	38.8	39.3	39.9	40.5	41.1	41.6	41.9	42.2
λnm	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590
T	42.3	42.8	43.3	43.9	44.4	44.9	45.3	45.7	46.1	46.5	46.9	47.2	47.5	47.9	48.1	48.4	48.6	48.8	49.0	49.2
λnm	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790
T	49.3	49.5	49.6	49.7	49.8	49.9	49.9	50.0	50.1	50.2	50.2	50.3	50.4	50.5	50.5	50.6	50.7	50.8	50.8	50.9
λnm	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990
T	51.1	51.2	51.3	51.4	51.6	51.7	51.9	52.0	52.2	52.4	52.5	52.7	52.9	53.0	53.2	53.4	53.5	53.7	53.8	53.9
λnm	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950
T	54.1	54.9	55.4	55.2	55.0	55.6	56.6	56.9	55.9	55.8	55.2	55.1	55.0	54.9	54.8	54.8	54.8	54.7	54.4	53.9
λnm	3000	3050	3100	3150	3200	3250	3300	3350	3400	3450	3500	3550	3600	3650	3700	3750	3800	3850	3900	3950
T	52.8	50.8	45.2	32.2	17.7	9.2	5.2	3.4	2.6	2.3	2.1	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.4	2.6
λnm	4000	4050	4100	4150	4200	4250	4300	4350	4400	4450	4500	4550	4600	4650	4700	4750	4800	4850	4900	4950
T	2.7	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.7	3.8	3.9	4.0	4.1	4.3	4.4	4.5	4.6	4.8	4.9	5.0
λnm	5000																			
T	5.1																			

