

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	0.0	0.0	0.6	1.8	1.8	6.6
λnm	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590
T	10.5	10.6	10.9	12.0	12.0	13.6	15.5	15.9	15.6	15.2	15.1	15.2	15.4	15.8	16.4	16.8	17.0	16.6	15.6	14.7
λnm	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790
T	14.5	14.8	15.2	15.3	15.1	14.9	15.0	15.5	16.7	18.2	19.5	20.3	20.5	20.3	19.8	19.2	18.6	17.8	17.1	16.5
λnm	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990
T	15.9	15.4	14.9	14.4	14.0	13.6	13.3	12.9	12.6	12.3	12.0	11.7	11.4	11.1	10.9	10.6	10.4	10.2	10.0	9.8
λnm	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1120	1140	1160	1180	1200				
T	9.6	9.4	9.2	9.1	8.9	8.8	8.7	8.6	8.5	8.5	8.4	8.3	8.3	8.3	8.4	8.6				

Refractive Index/Absorption coefficient/Reflection coefficient

λnm	400	500	600	700	800	900	1000
n	1.538	1.527	1.521	1.518	1.515	1.514	1.513
K	3.1E-05	3.2E-05	3.9E-05	3.9E-05	4.9E-05	6.5E-05	8.0E-05
P	0.914	0.917	0.918	0.919	0.919	0.920	0.920

Classes of Bubbles and Inclusions

Bubble Class
3

Color Specification

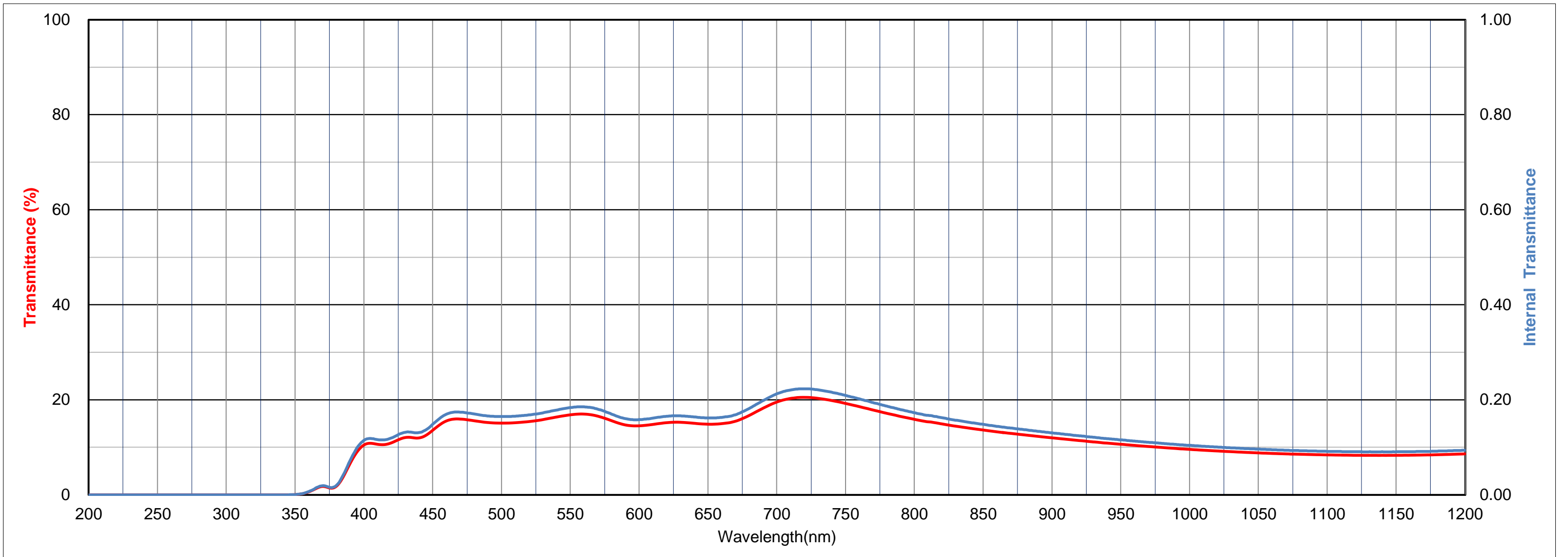
	x	y	Y	λ _d	P _e
A	0.447	0.418	16	569	7
C	0.315	0.336	16	562	7
D65	0.317	0.348	16	561	7

Properties

Chemical		Thermal				Mechanical		Others
D _w	D _A	T _g	T _s	α _{-30/70}	α _{100/300}	H _K	F _A	d
1	1	535	595	58	68	530	100	2.43

Tolerance of Transmittance (T)

Average Transmittance at 400nm-700nm	
Tav(%)	OD
15±2	0.82±0.1





HOYA CANDEO OPTRONICS CORPORATION

Thickness (2.5) mm

ND15

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	0.0	0.0	0.6	1.8	1.8	6.6
λnm	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590
T	10.5	10.6	10.9	12.0	12.0	13.6	15.5	15.9	15.6	15.2	15.1	15.2	15.4	15.8	16.4	16.8	17.0	16.6	15.6	14.7
λnm	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790
T	14.5	14.8	15.2	15.3	15.1	14.9	15.0	15.5	16.7	18.2	19.5	20.3	20.5	20.3	19.8	19.2	18.6	17.8	17.1	16.5
λnm	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990
T	15.9	15.4	14.9	14.4	14.0	13.6	13.3	12.9	12.6	12.3	12.0	11.7	11.4	11.1	10.9	10.6	10.4	10.2	10.0	9.8
λnm	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190
T	9.6	9.4	9.2	9.1	8.9	8.8	8.7	8.6	8.5	8.5	8.4	8.4	8.3	8.3	8.3	8.3	8.3	8.4	8.4	8.5
λnm	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390
T	8.6	8.7	8.9	9.0	9.2	9.5	9.7	10.0	10.3	10.6	10.9	11.2	11.7	12.2	12.7	13.1	13.6	13.9	14.2	14.5
λnm	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590
T	14.9	15.4	16.0	16.5	17.0	17.3	17.8	18.2	18.7	19.1	19.6	20.0	20.4	20.8	21.2	21.5	21.8	22.2	22.5	22.8
λnm	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790
T	23.1	23.4	23.6	23.9	24.1	24.3	24.5	24.6	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	26.0	26.2	26.3	26.5
λnm	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990
T	26.7	26.9	27.1	27.3	27.5	27.7	27.9	28.1	28.3	28.5	28.8	29.0	29.2	29.4	29.6	29.9	30.1	30.3	30.5	30.7
λnm	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950
T	30.9	31.9	32.8	33.4	33.7	34.5	35.6	36.4	36.5	36.9	37.1	37.2	37.3	37.4	37.6	37.6	37.9	37.9	37.9	37.7
λnm	3000	3050	3100	3150	3200	3250	3300	3350	3400	3450	3500	3550	3600	3650	3700	3750	3800	3850	3900	3950
T	37.1	36.1	33.0	24.9	15.1	8.7	5.4	3.8	3.1	2.9	2.7	2.7	2.7	2.8	2.8	2.9	3.0	3.1	3.3	3.4
λnm	4000	4050	4100	4150	4200	4250	4300	4350	4400	4450	4500	4550	4600	4650	4700	4750	4800	4850	4900	4950
T	3.5	3.6	3.7	3.9	4.0	4.1	4.2	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6
λnm	5000																			
T	5.7																			

