



HOYA CANDEO OPTRONICS CORPORATION

Thickness 3.00 mm

W-R610

Internal Transmittance ( $\tau$ )

$\lambda$ nm	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	
$\tau$	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	
$\lambda$ nm	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	
$\tau$	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	0.001	0.017
$\lambda$ nm	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	
$\tau$	0.169	0.522	0.806	0.921	0.959	0.971	0.976	0.978	0.979	0.980	0.980	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981
$\lambda$ nm	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990	
$\tau$	0.981	0.981	0.980	0.980	0.981	0.981	0.980	0.981	0.981	0.982	0.983	0.983	0.984	0.984	0.985	0.986	0.986	0.987	0.987	0.987	0.988
$\lambda$ nm	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1120	1140	1160	1180	1200					
$\tau$	0.988	0.989	0.986	0.989	0.988	0.989	0.989	0.990	0.990	0.990	0.990	0.991	0.991	0.992	0.992	0.992					

Refractive Index/Absorption coefficient/Reflection coefficient

$\lambda$ nm	400	500	600	700	800	900	1000
n	1.547	1.536	1.531	1.527	1.525	1.524	1.523
K	3.6E-04	2.2E-04	3.0E-05	2.6E-07	4.9E-08	1.2E-08	3.8E-09
P	0.912	0.914	0.916	0.917	0.917	0.917	0.918

Classes of Bubbles and Inclusions

Bubble Class
3

Color Specification

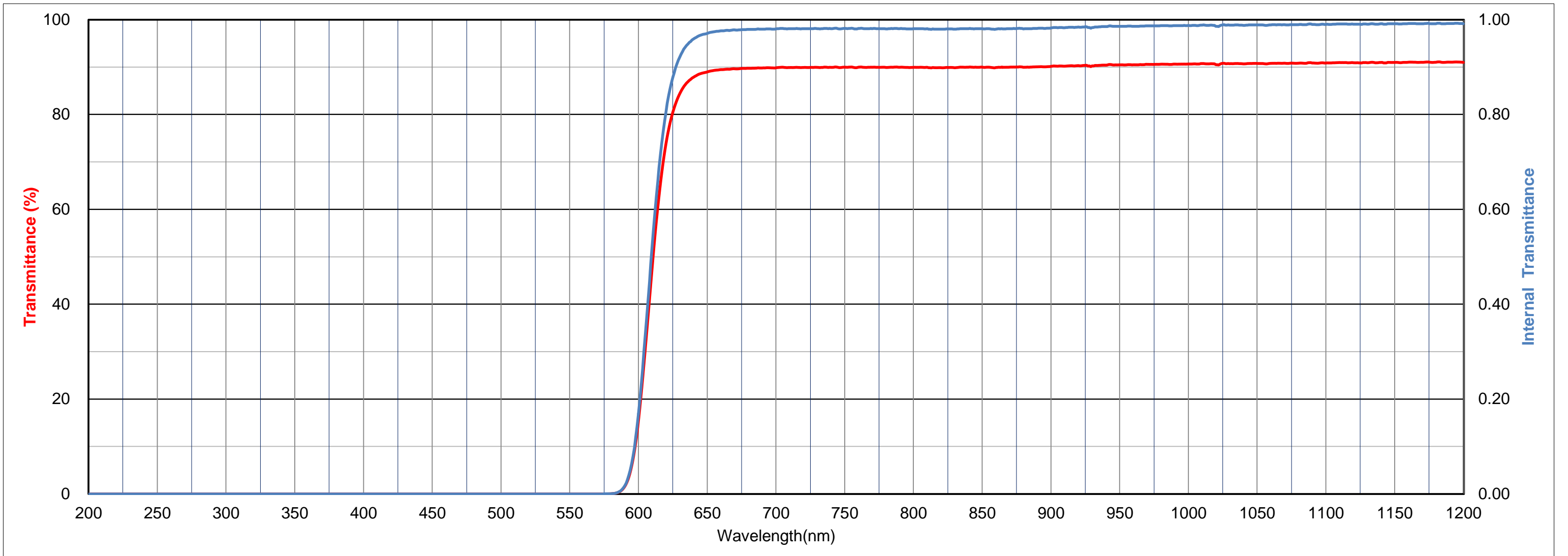
	x	y	Y	$\lambda_d$	$P_e$
A	0.698	0.301	17	624	100
C	0.696	0.304	10	622	100
D65	0.695	0.305	10	622	100

Properties

Chemical		Thermal				Mechanical		Others
$D_w$	$D_A$	$T_g$	$T_s$	$\alpha_{-30/70}$	$\alpha_{100/300}$	$H_K$	$F_A$	d
1	2	560	620	93	103	520	140	2.69

Tolerance of Transmittance ( $\tau$ )

$\lambda\tau$ (nm)	$\lambda L$ (nm)	$\lambda H$ (nm)
610±5	<540	>690



All data is mean values of various melts.



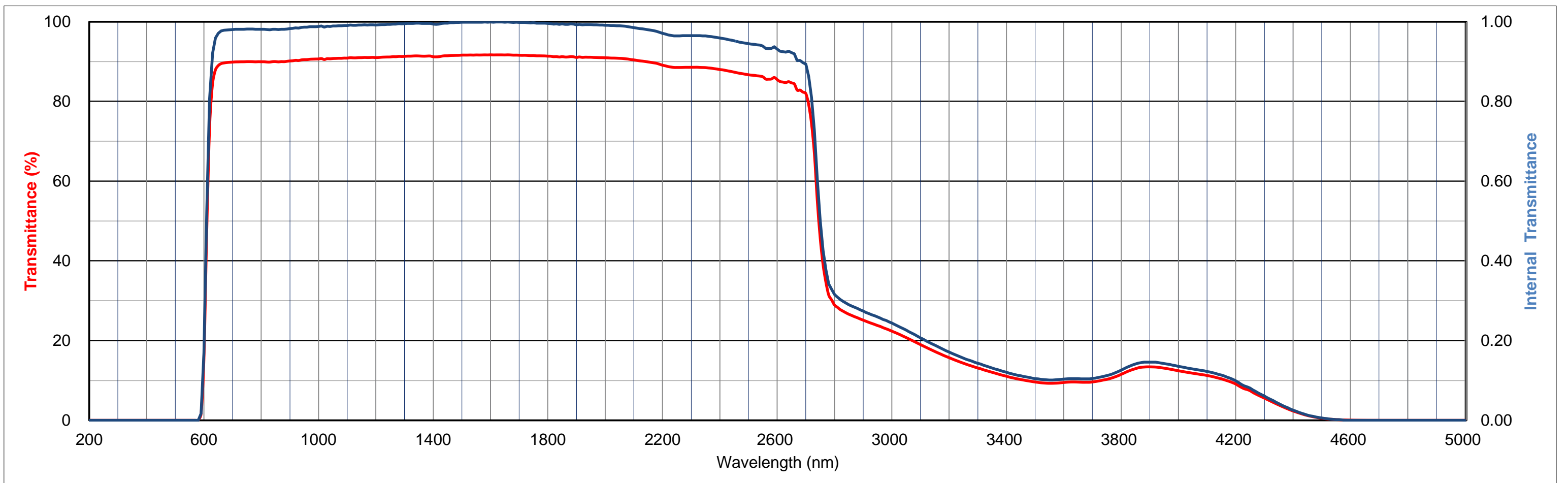
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$\tau$	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05
$\lambda$ nm	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590
$\tau$	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	0.001	0.017
$\lambda$ nm	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790
$\tau$	0.169	0.522	0.806	0.921	0.959	0.971	0.976	0.978	0.979	0.980	0.980	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981
$\lambda$ nm	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990
$\tau$	0.981	0.981	0.980	0.980	0.981	0.981	0.980	0.981	0.981	0.982	0.983	0.983	0.984	0.984	0.985	0.986	0.986	0.987	0.987	0.988
$\lambda$ nm	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190
$\tau$	0.988	0.989	0.986	0.989	0.988	0.989	0.989	0.990	0.990	0.990	0.990	0.991	0.991	0.991	0.991	0.991	0.992	0.992	0.992	0.992
$\lambda$ nm	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390
$\tau$	0.992	0.992	0.993	0.993	0.993	0.993	0.994	0.994	0.995	0.995	0.995	0.995	0.995	0.996	0.996	0.996	0.995	0.995	0.995	0.996
$\lambda$ nm	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590
$\tau$	0.994	0.993	0.994	0.995	0.996	0.996	0.997	0.997	0.998	0.998	0.998	0.998	0.998	0.999	0.998	0.999	0.999	0.999	0.999	0.999
$\lambda$ nm	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790
$\tau$	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.998	0.998	0.998	0.998	0.998	0.997	0.997	0.997	0.996	0.996	0.996	0.996
$\lambda$ nm	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990
$\tau$	0.995	0.995	0.994	0.994	0.993	0.994	0.993	0.993	0.994	0.994	0.992	0.993	0.992	0.993	0.992	0.992	0.992	0.992	0.991	0.991
$\lambda$ nm	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950
$\tau$	0.991	0.990	0.985	0.980	0.971	0.965	0.965	0.964	0.959	0.952	0.945	0.939	0.931	0.922	0.893	0.500	0.315	0.290	0.274	0.259
$\lambda$ nm	3000	3050	3100	3150	3200	3250	3300	3350	3400	3450	3500	3550	3600	3650	3700	3750	3800	3850	3900	3950
$\tau$	0.244	0.226	0.207	0.188	0.171	0.156	0.143	0.131	0.120	0.112	0.105	0.101	0.103	0.104	0.105	0.112	0.125	0.141	0.146	0.143
$\lambda$ nm	4000	4050	4100	4150	4200	4250	4300	4350	4400	4450	4500	4550	4600	4650	4700	4750	4800	4850	4900	4950
$\tau$	0.135	0.129	0.122	0.113	0.099	0.081	0.061	0.042	0.025	0.013	0.006	0.002	0.001	0.001	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05	<1E-05
$\lambda$ nm	5000																			
$\tau$	<1E-05																			



All data is mean values of various melts.

The content of this catalog is accurate as of April ,2014