



HWAMAO OPTICAL (XIAMEN) CO., LTD.

NO. 99, Sikouzhen Road, Xinmin Town, Tong'an District, Xiamen, Fujian Province, China
 Tel: 0592-7213732-8037 E-mail: lly@hwamao.com.cn

Sunglasses Certification Report

Sample Name: A51-103969 QVC THE BOOK CLUE-IWI C100抗蓝光 AC			
Standard: ANSI Z80.3:2015			
Item	Value	Requirement	Result
Lens Primary Function	Cosmetic Lens		
Luminous Transmittance Tv	92.73%	>= 40%	PASS
Color Limit, Yellow(x,y)	(0.5769, 0.4219)		PASS
Color Limit, Green(x,y)	(0.2146, 0.4276)		PASS
Color Limit, D65(x,y)	(0.3304, 0.3573)		PASS
Tsig, Red Signal	95.15%	>= 8%	PASS
Tsig, Yellow Signal	94.48%	>= 6%	PASS
Tsig, Green Signal	91.93%	>= 6%	PASS
Tmin (475 - 650nm)	83.81%	>= 18.55% (0.2Tv)	PASS
Tmax UVB (280 - 315nm)	0.05%	<= 11.59% (0.125Tv)	PASS
Tmax UVA (315 - 380nm)	0.08%	<= 92.73% (Tv)	PASS
Tsb (380 - 500nm)	69.59%		
Standard: EN ISO 12312-1:2013 (A1:2015)			
Item	Value	Requirement	Result
Filter Category	0		
Luminous Transmittance Tv	92.73%	>= 80%	PASS
Incandescent Lights			
Q, Red	1.02	>= 0.80	PASS
Q, Yellow	1.01	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.94	>= 0.60	PASS
LED Signal Lights			
Q, Red	1.02	>= 0.80	PASS
Q, Yellow	1.01	>= 0.60	PASS
Q, Green	0.96	>= 0.60	PASS
Q, Blue	0.89	>= 0.60	PASS
Tmin (475 - 650nm)	83.81%	>= 18.55% (0.2Tv)	PASS
Tsuva (315 - 380nm)	0.05%	<= 92.73% (Tv)	PASS
Tsuvb (280 - 315nm)	0.05%	<= 4.64% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.05%		
Tsb (380 - 500nm)	69.59%		
Road Use and Driving			PASS
Driving In Twilight or At Night	92.73%	Tv >= 75%	PASS
Standard: AS/NZS 1067.1:2016			
Item	Value	Requirement	Result
Lens Category	0		
Luminous Transmittance Tv	92.73%	80% - 100%	PASS
Incandescent Lights			
Q, Red	1.02	>= 0.80	PASS
Q, Yellow	1.01	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.94	>= 0.70	PASS
LED Signal Lights			
Q, Red	1.02	>= 0.80	PASS
Q, Yellow	1.01	>= 0.60	PASS
Q, Green	0.96	>= 0.60	PASS
Q, Blue	0.89	>= 0.70	PASS
Tmin (475 - 650nm)	83.81%	>= 18.55% (0.2Tv)	PASS
Tsuva (315 - 400nm)	0.06%	<= 92.73% (Tv)	PASS
Tsuvb (280 - 315nm)	0.05%	<= 4.64% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.05%		
Tsb (380 - 500nm)	69.59%		
Road Use and Driving			PASS
Tmax (190 - 400nm) for UV400	1.77%	<= 5.0%	PASS

Transmittance Spectrum

Color Limit Regions of Acceptance

Spectrum Data:																			
nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T
190	1.768	200	0.349	210	0.148	220	0.080	230	0.055	240	0.042	250	0.035	260	0.030	270	0.032	280	0.033
290	0.037	300	0.041	310	0.047	320	0.053	330	0.057	340	0.078	350	0.054	360	0.040	370	0.033	380	0.044
390	0.123	400	0.099	410	7.385	420	45.748	430	65.352	440	72.117	450	76.901	460	78.840	470	81.995	480	85.177
490	86.603	500	88.354	510	90.426	520	91.521	530	92.128	540	92.953	550	93.685	560	94.074	570	94.240	580	94.409
590	94.543	600	94.746	610	94.931	620	95.045	630	95.056	640	95.025	650	95.122	660	95.410	670	95.739	680	95.859
690	95.833	700	95.639	710	95.578	720	95.600	730	95.810	740	96.159	750	96.392	760	96.417	770	96.222	780	95.973

(1). ANSI Z80.3:2015	PASS	Lens Primary Function	Cosmetic Lens
(2). EN ISO 12312-1:2013 (A1:2015)	PASS	Filter Category	0
(3). AS/NZS 1067.1:2016	PASS	Lens Category	0



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Sunglasses Certification Report

Sample Name: A51-103971 QVC THE BOOK CLUE-IWI C100抗蓝光 AC			
Standard: ANSI Z80.3:2015			
Item	Value	Requirement	Result
Lens Primary Function	Cosmetic Lens		
Luminous Transmittance Tv	91.67%	>= 40%	PASS
Color Limit, Yellow(x,y)	(0.5775, 0.4213)		PASS
Color Limit, Green(x,y)	(0.2167, 0.4316)		PASS
Color Limit, D65(x,y)	(0.3344, 0.3607)		PASS
Tsig, Red Signal	95.45%	>= 8%	PASS
Tsig, Yellow Signal	94.20%	>= 6%	PASS
Tsig, Green Signal	90.36%	>= 6%	PASS
Tmin (475 - 650nm)	79.41%	>= 18.33% (0.2Tv)	PASS
Tmax UVB (280 - 315nm)	0.04%	<= 11.46% (0.125Tv)	PASS
Tmax UVA (315 - 380nm)	0.07%	<= 91.67% (Tv)	PASS
Tsb (380 - 500nm)	66.48%		
Standard: EN ISO 12312-1:2013 (A1:2015)			
Item	Value	Requirement	Result
Filter Category	0		
Luminous Transmittance Tv	91.67%	>= 80%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.60	PASS
Tmin (475 - 650nm)	79.41%	>= 18.33% (0.2Tv)	PASS
Tsuva (315 - 380nm)	0.05%	<= 91.67% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.58% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	66.48%		
Road Use and Driving			PASS
Driving in Twilight or At Night	91.67%	Tv >= 75%	PASS
Standard: AS/NZS 1067.1:2016			
Item	Value	Requirement	Result
Lens Category	0		
Luminous Transmittance Tv	91.67%	80% - 100%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.70	PASS
Tmin (475 - 650nm)	79.41%	>= 18.33% (0.2Tv)	PASS
Tsuva (315 - 400nm)	0.05%	<= 91.67% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.58% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	66.48%		
Road Use and Driving			PASS
Tmax (190 - 400nm) for UV400	1.65%	<= 5.0%	PASS

Transmittance Spectrum

Color Limit Regions of Acceptance

Spectrum Data:																			
nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T
190	1.648	200	0.334	210	0.136	220	0.074	230	0.050	240	0.033	250	0.029	260	0.027	270	0.026	280	0.028
300	0.035	310	0.039	320	0.045	330	0.051	340	0.070	350	0.048	360	0.035	370	0.029	380	0.039	390	0.114
400	0.092	410	7.552	420	43.371	430	62.595	440	69.738	450	71.696	460	75.950	470	78.856	480	80.373	490	83.792
500	89.067	510	91.057	520	91.780	530	92.312	540	93.160	550	93.933	560	94.260	570	94.435	580	94.759	590	94.982
600	95.271	610	95.583	620	95.815	630	95.815	640	95.707	650	95.767	660	96.066	670	96.402	680	96.558	690	96.406
700	95.893	710	96.003	720	96.348	730	96.802	740	97.072										

(1). ANSI Z80.3:2015	PASS	Lens Primary Function	Cosmetic Lens
(2). EN ISO 12312-1:2013 (A1:2015)	PASS	Filter Category	0
(3). AS/NZS 1067.1:2016	PASS	Lens Category	0



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Sunglasses Certification Report

Sample Name: A51-103972 QVC THE BOOK CLUE-IWI C100抗蓝光 AC			
Standard: ANSI Z80.3:2015			
Item	Value	Requirement	Result
Lens Primary Function	Cosmetic Lens		
Luminous Transmittance Tv	91.71%	>= 40%	PASS
Color Limit, Yellow(x,y)	(0.5774 , 0.4214)		PASS
Color Limit, Green(x,y)	(0.2162 , 0.4310)		PASS
Color Limit, D65(x,y)	(0.3336 , 0.3603)		PASS
Tsig, Red Signal	95.19%	>= 8%	PASS
Tsig, Yellow Signal	94.04%	>= 6%	PASS
Tsig, Green Signal	90.53%	>= 6%	PASS
Tmin (475 - 650nm)	79.92%	>= 18.34% (0.2Tv)	PASS
Tmax UVB (280 - 315nm)	0.04%	<= 11.46% (0.125Tv)	PASS
Tmax UVA (315 - 380nm)	0.08%	<= 91.71% (Tv)	PASS
Tsb (380 - 500nm)	66.76%		
Standard: EN ISO 12312-1:2013 (A1:2015)			
Item	Value	Requirement	Result
Filter Category	0		
Luminous Transmittance Tv	91.71%	>= 80%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.60	PASS
Tmin (475 - 650nm)	79.92%	>= 18.34% (0.2Tv)	PASS
Tsuva (315 - 380nm)	0.05%	<= 91.71% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.59% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	66.76%		
Road Use and Driving			PASS
Driving in Twilight or At Night	91.71%	Tv >= 75%	PASS
Standard: AS/NZS 1067.1:2016			
Item	Value	Requirement	Result
Lens Category	0		
Luminous Transmittance Tv	91.71%	80% - 100%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.70	PASS
Tmin (475 - 650nm)	79.92%	>= 18.34% (0.2Tv)	PASS
Tsuva (315 - 400nm)	0.05%	<= 91.71% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.59% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	66.76%		
Road Use and Driving			PASS
Tmax (190 - 400nm) for UV400	1.72%	<= 5.0%	PASS

Spectrum Data:																			
nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T
190	1.717	200	0.348	210	0.142	220	0.078	230	0.048	240	0.035	250	0.029	260	0.028	270	0.026	280	0.028
290	0.032	300	0.034	310	0.040	320	0.045	330	0.051	340	0.071	350	0.049	360	0.033	370	0.030	380	0.042
390	0.112	400	0.090	410	7.016	420	42.774	430	62.713	440	69.819	450	72.352	460	76.612	470	79.233	480	81.086
490	84.605	500	86.594	510	87.463	520	89.579	530	91.415	540	91.774	550	92.069	560	93.211	570	94.095	580	94.102
590	93.990	600	94.332	610	94.890	620	95.134	630	95.054	640	95.029	650	95.190	660	95.487	670	95.713	680	95.869
690	95.983	700	95.996	710	95.956	720	95.881	730	95.818	740	95.938	750	96.200	760	96.422	770	96.502	780	96.491

(1). ANSI Z80.3:2015	PASS	Lens Primary Function	Cosmetic Lens
(2). EN ISO 12312-1:2013 (A1:2015)	PASS	Filter Category	0
(3). AS/NZS 1067.1:2016	PASS	Lens Category	0



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Sunglasses Certification Report

Sample Name: A51-103973 QVC THE BOOK CLUE-IWI C100抗蓝光 AC

Standard: ANSI Z80.3:2015

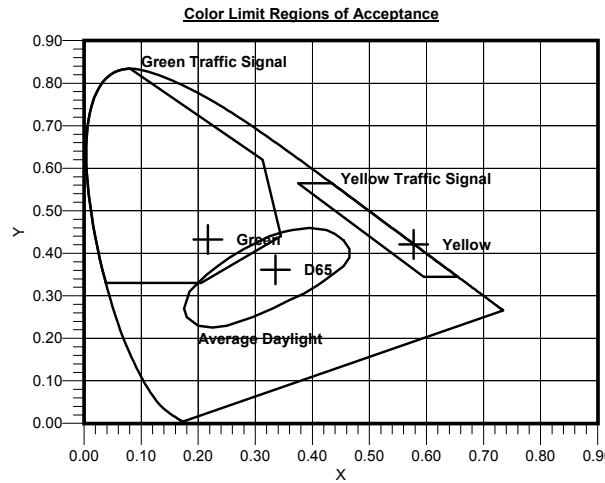
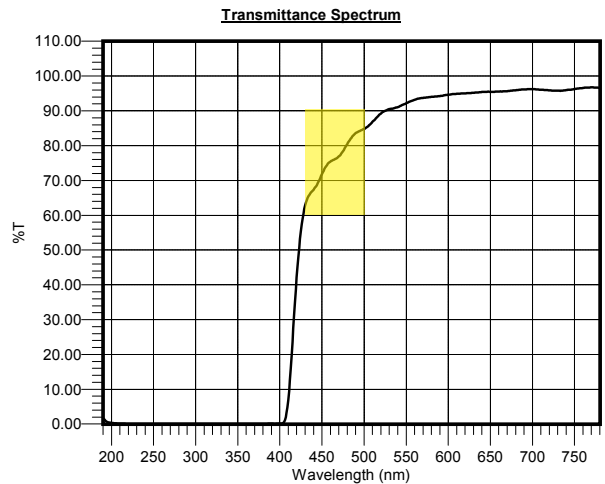
Item	Value	Requirement	Result
Lens Primary Function	Cosmetic Lens		
Luminous Transmittance Tv	91.40%	>= 40%	PASS
Color Limit, Yellow(x,y)	(0.5776 , 0.4212)		PASS
Color Limit, Green(x,y)	(0.2171 , 0.4326)		PASS
Color Limit, D65(x,y)	(0.3352 , 0.3616)		PASS
Tsig, Red Signal	95.33%	>= 8%	PASS
Tsig, Yellow Signal	94.06%	>= 6%	PASS
Tsig, Green Signal	90.02%	>= 6%	PASS
Tmin (475 - 650nm)	78.41%	>= 18.28% (0.2Tv)	PASS
Tmax UVB (280 - 315nm)	0.04%	<= 11.43% (0.125Tv)	PASS
Tmax UVA (315 - 380nm)	0.08%	<= 91.40% (Tv)	PASS
Tsb (380 - 500nm)	65.70%		

Standard: EN ISO 12312-1:2013 (A1:2015)

Item	Value	Requirement	Result
Filter Category	0		
Luminous Transmittance Tv	91.39%	>= 80%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.60	PASS
Tmin (475 - 650nm)	78.41%	>= 18.28% (0.2Tv)	PASS
Tsuva (315 - 380nm)	0.05%	<= 91.39% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.57% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	65.70%		
Road Use and Driving			PASS
Driving in Twilight or At Night	91.39%	Tv >= 75%	PASS

Standard: AS/NZS 1067.1:2016

Item	Value	Requirement	Result
Lens Category	0		
Luminous Transmittance Tv	91.39%	80% - 100%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.70	PASS
Tmin (475 - 650nm)	78.41%	>= 18.28% (0.2Tv)	PASS
Tsuva (315 - 400nm)	0.05%	<= 91.39% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.57% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	65.70%		
Road Use and Driving			PASS
Tmax (190 - 400nm) for UV400	1.67%	<= 5.0%	PASS



Spectrum Data:

nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T
190	1.669	200	0.329	210	0.138	220	0.071	230	0.047	240	0.034	250	0.030	260	0.025	270	0.025	280	0.028	290	0.032
300	0.036	310	0.040	320	0.046	330	0.050	340	0.070	350	0.048	360	0.035	370	0.029	380	0.037	390	0.113	400	0.090
410	6.939	420	42.138	430	62.853	440	67.382	450	71.810	460	75.441	470	76.891	480	80.454	490	83.595	500	84.810	510	86.814
520	89.261	530	90.499	540	91.108	550	92.194	560	93.216	570	93.735	580	94.010	590	94.252	600	94.641	610	94.890	620	95.026
630	95.208	640	95.417	650	95.476	660	95.575	670	95.671	680	95.942	690	96.185	700	96.224	710	96.085	720	95.898	730	95.801
740	95.977	750	96.280	760	96.588	770	96.756	780	96.629												

(1). ANSI Z80.3:2015	PASS	Lens Primary Function	Cosmetic Lens
(2). EN ISO 12312-1:2013 (A1:2015)	PASS	Filter Category	0
(3). AS/NZS 1067.1:2016	PASS	Lens Category	0



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Sunglasses Certification Report

Sample Name: A51-103974 QVC THE BOOK CLUE-IWI C100抗蓝光 AC

Standard: ANSI Z80.3:2015

Item	Value	Requirement	Result
Lens Primary Function	Cosmetic Lens		
Luminous Transmittance Tv	91.67%	>= 40%	PASS
Color Limit, Yellow(x,y)	(0.5775, 0.4213)		PASS
Color Limit, Green(x,y)	(0.2167, 0.4316)		PASS
Color Limit, D65(x,y)	(0.3344, 0.3607)		PASS
Tsig, Red Signal	95.45%	>= 8%	PASS
Tsig, Yellow Signal	94.20%	>= 6%	PASS
Tsig, Green Signal	90.36%	>= 6%	PASS
Tmin (475 - 650nm)	79.41%	>= 18.33% (0.2Tv)	PASS
Tmax UVB (280 - 315nm)	0.04%	<= 11.46% (0.125Tv)	PASS
Tmax UVA (315 - 380nm)	0.07%	<= 91.67% (Tv)	PASS
Tsb (380 - 500nm)	66.48%		

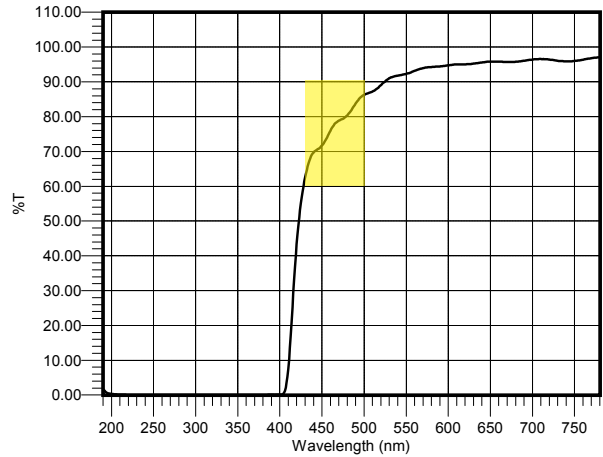
Standard: EN ISO 12312-1:2013 (A1:2015)

Item	Value	Requirement	Result
Filter Category	0		
Luminous Transmittance Tv	91.67%	>= 80%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.60	PASS
Tmin (475 - 650nm)	79.41%	>= 18.33% (0.2Tv)	PASS
Tsuva (315 - 380nm)	0.05%	<= 91.67% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.58% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	66.48%		
Road Use and Driving			PASS
Driving in Twilight or At Night	91.67%	Tv >= 75%	PASS

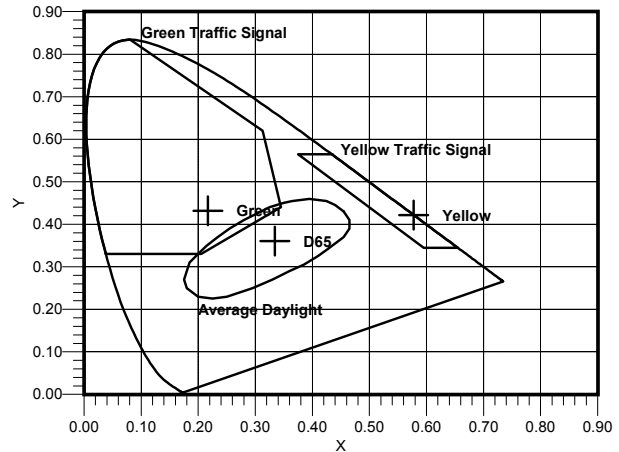
Standard: AS/NZS 1067.1:2016

Item	Value	Requirement	Result
Lens Category	0		
Luminous Transmittance Tv	91.67%	80% - 100%	PASS
Incandescent Lights			
Q, Red	1.03	>= 0.80	PASS
Q, Yellow	1.02	>= 0.60	PASS
Q, Green	0.99	>= 0.60	PASS
Q, Blue	0.93	>= 0.70	PASS
Tmin (475 - 650nm)	79.41%	>= 18.33% (0.2Tv)	PASS
Tsuva (315 - 400nm)	0.05%	<= 91.67% (Tv)	PASS
Tsuvb (280 - 315nm)	0.04%	<= 4.58% (0.05Tv)	PASS
Tsuv (280 - 380nm)	0.04%		
Tsb (380 - 500nm)	66.48%		
Road Use and Driving			PASS
Tmax (190 - 400nm) for UV400	1.65%	<= 5.0%	PASS

Transmittance Spectrum



Color Limit Regions of Acceptance



Spectrum Data:

nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T
190	1.648	200	0.334	210	0.136	220	0.074	230	0.050	240	0.033	250	0.029	260	0.027	270	0.026	280	0.028	290	0.031
300	0.035	310	0.039	320	0.045	330	0.051	340	0.070	350	0.048	360	0.035	370	0.029	380	0.039	390	0.114	400	0.092
410	7.552	420	43.371	430	62.595	440	69.738	450	71.696	460	75.950	470	78.856	480	80.373	490	83.792	500	86.274	510	87.216
520	89.067	530	91.057	540	91.780	550	92.312	560	93.160	570	93.933	580	94.260	590	94.435	600	94.759	610	94.982	620	95.034
630	95.271	640	95.583	650	95.815	660	95.815	670	95.707	680	95.767	690	96.066	700	96.402	710	96.558	720	96.406	730	96.039
740	95.893	750	96.003	760	96.348	770	96.802	780	97.072												

(1). ANSI Z80.3:2015	PASS	Lens Primary Function	Cosmetic Lens
(2). EN ISO 12312-1:2013 (A1:2015)	PASS	Filter Category	0
(3). AS/NZS 1067.1:2016	PASS	Lens Category	0