

Ophthalmic Testing Report

Report Number: R-20160606-034 Luminous Transmission

Prepared for:

Chiaro a Gradus Group Company 375 West 35th Street New York, NY 10001

June 15, 2016

NSL Analytical Services, Inc. NSL Analytical 4450 Cranwood Parkway Cleveland, Ohio 44128 Phone: 216-438-5200 Fax: 216-438-5050



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Project Definition and Scope

Twelve lens filters were submitted for a transmission scan on the UV/Vis Spectrophotometer. The transmission scan outlined was performed on all samples. The samples were received on June 6, 2016.

Sample Identification

The samples are labeled as indicated in the table below.

Sample Number	Client Label	Pass/Fail
S-160606-054	Class A (99-UVBTS72)	Pass
S-160606-055	Class AB (99-UVBT72)	Pass
S-160606-056	Class B (98-UVATS72)	Pass
S-160606-057	New Class C (98-UVAT72)	Pass
S-160606-058	Class D (95-UVAT72)	Pass
S-160606-059	Class E (90-UVAT72)	Pass

Opinions, Interpretations, and Conclusions

The samples were loaded into the Perkin Elmer Lambda 650S and scanned from 700nm to 400nm. The resultant spectra are included in the following graphs. The customer was particularly interested in the transmission at 400nm, 550 nm and 700nm.

If you have any questions regarding these results, please contact us.

Report Prepared By: Terry Graham Ophthalmic Technician

Approved by:



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Results

Figure 1: Transmittance Spectra, S-160606-054_056





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Figure 2: Transmittance Spectra, S-160606-057_059

THE RESULTS PROVIDED PERTAIN ONLY TO THE SAMPLES TESTED AND THIS REPORT MAY NOT BE REPRODUCED, EXCEPT IN FULL. THE INFORMATION AND DATA IN THIS REPORT ARE RENDERED UNDER THE CONDITIONS OUTLINED IN THE "TERMS AND CONDITIONS" APPEARING ON OUR WEBSITE: www.nslanalytical.com/terms. THIS REPORT IS CONFIDENTIAL AND INTENDED FOR THE ADDRESSEE ONLY. IF YOU RECEIVE IT IN ERROR, YOU ARE PROHIBITED FROM DISCLOSING, COPYING, DISTRIBUTING OR USING ANY OF THIS INFORMATION. PLEASE CONTACT OUR OFFICE FOR FURTHER INSTRUCTIONS. Report Format Revised: 1/28/16



Table 1: Transmittance, S-160606-054_059

Ophthalmic Materials Test Report for Transmittance measurements							
Submission #:	R-20160606-034			Sample #:	S-160606-054_059		
Date:	June 8, 2016			ens Manufacturer	Gradus Group 110	<u>.</u>	
Buto.						5	
Technician:	TG			Lens Material:	N/A		
Comments				Coating	Ν/Δ		
commenta.				Couling.			
Sample No	Descriptive	Transmittance	Transmittance	Transmittance	Transmittance	Pass/Fail	
	Marks	at 700 nm	at 550 nm	at 400 nm	Avg. (700-400)		
160606-054.1	Class A (99-UVBTS72)	97.983327	98.706472	96.312024	98.96874	Pass	
160606-054.2		98.048039	98.695333	96.27916	98.95396	Pass	
160606-055.1	Class AB (99-UVBT72)	98.467849	98.709301	97.409537	99.14345	Pass	
160606-055.2		98.671205	98.741303	97.308363	99.14364	Pass	
160606-056.1	Class B (98-UVATS72)	96.094095	98.204956	95.639694	98.17946	Pass	
160606-056.2		96.088408	98.286199	95.77204	98.25558	Pass	
160606-057.1	New Class C (98-UVAT72)	96.665294	98.330688	97.182167	98.42974	Pass	
160606-057.2		96.686314	98.296206	96.935884	98.45992	Pass	
160606-058.1	Class D (95-UVAT72)	95.476912	96.513455	92.845676	95.65370	Pass	
160606-058.2		95.317973	96.366152	92.660474	95.47222	Pass	
160606-059.1	Class E (90-UVAT72)	90.18704	91.541328	90.946018	91.11055	Pass	
160606-059.2		90.095122	91.501717	90.831157	91.09220	Pass	
Additional Comm	ents:						
	≥98.6% average transmission = Pass <98.6% average transmission = Fail		T95 Filters:	≥94.6% average transmission = Pass			
199 Filters:				<94.6% average transmission = Fail			
TOO Filterer	≥97.6% average transmission = Pass <97.6% average transmission = Fail		T90 Filters:	≥89.6% average transmission = Pass			
198 Filters:				<89.6% average transmission = Fail			

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Ophthalmic Materials Test Report for Transmittance measurements

Brand	Descriptive	Transmittance	Transmittance	Transmittance	Transmittance
Chiaro	100-LIV/BTS58 Sample 1	08 451	08 728	95.608	98 972
Chiaro	99-UVBTS58 Sample 2	98.565	98.687	95.000	98.918
Chiaro	99-LIV/BTS67 Sample 1	98.008	98.436	95.694	08.575
Chiaro	99-LIVBTS67 Sample 2	98 484	98.633	95.034	98.823
Chiaro	99-LIV/BT58 Sample 1	99.056	98.623	95.630	98.990
Chiaro	99-UVBT58 Sample 2	97 394	98 410	94 891	98,386
Chiaro	99-UVBT67 Sample 1	98.865	98.322	95 309	98.649
Chiaro	99-UVBT67 Sample 2	98.907	98.292	95.180	98.578
Chiaro	98-UVATS58 Sample 1	96 558	98.618	95 496	98 453
Chiaro	98-UVATS58 Sample 2	98.567	98.738	95.495	99.022
Chiaro	98-UVATS67 Sample 1	96.691	98.457	95.579	98.456
Chiaro	98-UVATS67 Sample 2	96.752	98.390	94.671	98.349
Chiaro	98-UVAT58 Sample 1	97.090	98.538	95.742	98.501
Chiaro	98-UVAT58 Sample 2	96.983	98.469	95.792	98.444
Chiaro	98-UVAT67 Sample 1	97.044	98.425	96.336	98.484
Chiaro	98-UVAT67 Sample 2	97.055	98.393	96.267	98.463
Chiaro	95-UVAT58 Sample 1	95.596	96.801	92.938	95.863
Chiaro	95-UVAT58 Sample 2	95.467	96.783	92.911	95.829
Chiaro	95-UVAT67 Sample 1	95.555	96.971	93.407	96.087
Chiaro	95-UVAT67 Sample 2	95.504	96.590	92.480	95.636
Chiaro	88-UVAT58 Sample 1	90.310	91.725	91.214	91.310
Chiaro	88-UVAT58 Sample 2	90.233	91.708	91.253	91.311
Chiaro	88-UVAT67 Sample 1	90.355	91.755	91.417	91.380
Chiaro	88-UVAT67 Sample 2	90.322	91.756	91.309	91.343
			1	1	
Bower	FUC67	90.799	91.541	90.810	91.251
Bower	FUC67	90.893	91.583	90.739	91.242
Tiffen	67UVP	88.763	91.246	90.262	90.521
Tiffen		88.731	91.263	90.240	90.520
Ноуа		95.757	96.921	88.228	96.457
⊓∪ya Tiffon		95.044	90.242	92.397	97.044
Tiffen	67HZE	87.508	90.940	23.036	87.786
Polaroid		98 681	90.991	24.903 96.663	98.966
Polaroid	PLEILUV67	98.876	99.317	96 680	98.959
B+W	65-070138	98.829	98.382	95 243	98.511
B+W	65-070138	95.153	96.913	89.762	95.569
Hova	A67UVC	98.355	98.866	94,499	98.967
Hova	A67UVC	98.671	98.890	92.519	98.934
Hova	A-NXT67UV	98.146	98.765	92.600	98.685
Ноуа	A-NXT67UV	98.523	98.959	91.094	98.773
MeFoto	MUV67K	97.278	98.216	88.510	97.940
MeFoto					
B+W	66-1066123	99.568	99.100	90.894	98.868
B+W	66-1066123	99.343	99.246	93.879	99.041
B+W	66-070236	99.498	99.129	91.182	98.815
B+W	66-070236	99.569	99.109	91.001	98.816
Ноуа	XEVA-67UV	98.611	98.800	91.301	98.294
Ноуа	XEVA-67UV	99.530	98.331	71.981	96.923
Ноуа	XHD3-67UV	99.352	98.575	73.894	97.880
Hoya	XHD3-67UV	99.145	98.649	71.468	97.549
Hoya	X67UV	99.166	98.779	75.997	97.443
Ноуа	X67UV	99.093	98.658	74.435	97.171