

TEST RESULTS and REPORT

for

Carl Zeiss Vision

**T-CSD052915, T-CSD061915, T-CSD062515
T-CSD062615, T-CSD062915, T-CSD070915**

by



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- Results in this report only relate to the samples analyzed.
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- Unless otherwise requested, test samples will be discarded 21 days from the report date.

COLTS Laboratories

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SUMMARY**Carl Zeiss Vision**

T-CSD052915, T-CSD061915, T-CSD062515, T-CSD062615, T-CSD062915, T-CSD070915

CSD052915-01 & CSD061915-01		Colts Standard AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.00			
Cleaning Cloth Abrasion - DQ	0.02			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-02 & CSD062915-01		Younger Poly Polarized Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.10			
Cleaning Cloth Abrasion - DQ	0.01			
CSD052915-03 & CSD062615-01		Essilor Crizal Forte Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.02			
Cleaning Cloth Abrasion - DQ	0.00			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-04		Hoya Super HiVision AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.00			
Cleaning Cloth Abrasion - DQ	0.01			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	

Note: CC - Concave / CX - Convex

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CSD052915-05		Rodenstock Solitaire Protect+ Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.02			
Cleaning Cloth Abrasion - DQ	0.00			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-06 & CSD070915-04		Zeiss 1.5 Clear and Zeiss HC Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.22			
Cleaning Cloth Abrasion - DQ	0.00			
CSD052915-07 & CSD070915-01		Zeiss 1.5 PhotoFusion and Zeiss HC Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.02			
Cleaning Cloth Abrasion - DQ	0.03			
CSD052915-08		Zeiss 1.6 Clear and Zeiss HC Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.03			
Cleaning Cloth Abrasion - DQ	0.01			
CSD052915-09 & CSD070915-02		Zeiss 1.6 PhotoFusion and Zeiss HC Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.05			
Cleaning Cloth Abrasion - DQ	0.03			
CSD052915-10		Zeiss 1.74 Clear and Zeiss AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.02			
Cleaning Cloth Abrasion - DQ	0.11			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	

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CSD052915-11		Zeiss HMC HC & AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.02			
Cleaning Cloth Abrasion - DQ	0.02			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-12		Zeiss HMC+ HC & AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.00			
Cleaning Cloth Abrasion - DQ	0.00			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-13 & CSD070915-03		Zeiss DV Silver HC & AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.00			
Cleaning Cloth Abrasion - DQ	0.00			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-14		Zeiss Lotutec HC & AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.00			
Cleaning Cloth Abrasion - DQ	0.00			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	

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CSD052915-15		US Hoya Trivex AR Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.09			
Cleaning Cloth Abrasion - DQ	0.01			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-16		US Essilor FSV Orma Flat Crizal Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.02			
Cleaning Cloth Abrasion - DQ	0.02			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD052915-17		US Essilor FSV Airwear Crizal Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.02			
Cleaning Cloth Abrasion - DQ	0.01			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	
CSD062515-01		Carl Zeiss DVP Lens Zeiss lens wipe non-alcoholic		
Oily Cleaning (Pre-Moistened Towelette)-DQ	0.00			
Cleaning Cloth Abrasion - DQ	0.00			
AR Cleaning Solution Soak (CX) 48 HRS-DQ	Crazing-A	Delamination-B	Cloudiness-E	
	5.0	5.0	5.0	
AR Cleaning Solution Soak (CC) 48 HRS-DQ	Crazing-A	Delamintion-B	Cloudiness-E	
	5.0	5.0	5.0	

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Subjective Delamination, Crazing and Crosshatch ratings.

Rate and record the performance for the surface exposed on each lens according to the following classification and description.

Classification Category A - Crazing

Classification	Description
A5	No visible Crazing.
A4	Hairline Crazing only just visible points or cracks.
A3	Hairline Crazing up to 25% of the lens surface.
A2	Hairline Crazing up to 75% of the lens surface.
A1	Hairline Crazing over the entire lens surface.
A0	Severe Fern-like or Matt-like Crazing over any region of lens.

Classification Category B - Delamination - Interlayer detachment.

Classification	Description
B5	No Delamination of individual layers over entire lens surface.
B4	Partial Delamination of individual layers up to 25% of the surface.
B3	Partial Delamination of individual layers up to 75% of the surface.
B2	Total Delamination of individual layers over the entire lens surface.

Classification Category C - Delamination - complete coating detachment

Classification	Description
C5	No Coating Delamination of all layers from the lens surface.
C4	Delamination of all layers up to 25% of the surface.
C3	Delamination of all layers up to 75% of the surface.
C2	Complete Coating Delamination over the entire lens surface.

Classification Category D - Crosshatch

See exhibit B for classifications and descriptions.







NOTE: **Classification B** relates to either a single layer hard coat or the thin film coating where one is delaminating and where one or both have been applied to the lens depending on the product type. (i.e., HC, Thin Film, HC & Thin Film)

Classification C relates to a dual coated product where both a hard coat and a thin film coating has been applied and together are delaminating. (i.e. HC & thin film)

For each lens tested, note any evidence of stains, smears, streaks or cloudiness.



EXHIBIT E
COLTS CIRRUS CLOUDINESS SCALE

Classification	Appearance	Description
5		The lens must not show any evidence of effects.
4		The lens shows effects over less than 5% of the total area. The circles show the affected areas.
3		The area affected is 5% to 25% of the total area. The circles show the affected areas.
2		The area affected is 25% to 50% of the total area.
1		The area affected is 50% to 70% of the total area.
0		The area affected is greater than 70% of the total area.