

**LAMPS, REFLECTIVE DEVICES AND ASSOCIATED EQUIPMENT FMVSS-108**

**EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4) Headlamps  
for 1999-2002 Chevrolet Silverado**

**CALCOAST - ITL**

Lighting Technology  
4072 Watts Street, Suite 204  
Emeryville, CA 94608



21 April 2006

FINAL REPORT

PREPARED FOR

U.S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
400 Seventh Street, S.W.  
Washington, D.C. 20590

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NHTSA Report No. 108-CCITL-06-06



Prepared By:



Approved By:

Approval Date: 21 April 2006

FINAL REPORT ACCEPTANCE BY OVSC:



Accepted By: \_\_\_\_\_

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## TECHNICAL REPORT STANDARD TITLE PAGE

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<b>4. Title and Subtitle</b> Test Series EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4) Headlamps for 1999-2002 Chevrolet Silverado		<b>5. Report Date</b> 21 April 2006	
<b>7. Author(s)</b> Mark A. Evans Photometric Engineer		<b>6. Performing Organization Code</b> N/A	
<b>9. Performing Organization Name and Address</b> Calcoast - ITL 4072 Watts Street Emeryville, CA 94608		<b>8. Performing Organization Report No.</b> 060330-08H	
<b>12. Sponsoring Agency Name and Address</b> U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance 400 7th Street, S.W., Room 6111(NVS 222) Washington, D.C. 20590		<b>10. Work Unit No.</b> N/A	
<b>15. Supplementary Notes</b>		<b>11. Contract or Grant No.</b>	
<b>16. Abstract</b> The scope of this testing was limited to certain photometry and color tests as indicated. Test failures identified were as follows: lower beam photometry (8 of 8) and upper beam photometry (8 of 8).		<b>13. Type of Report and Period Covered</b>	
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INDUSTRIAL TESTING LABORATORY

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**TEST REPORT**

Report Date: 21 April 2006

Test Component: EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4)  
Headlamps for 1999-2002 Chevrolet Silverado

Manufactured By: Eagle Eyes

Submitted By: USDOT / NHTSA

NHTSA Report No.: 108-CCITL-06-06

Test Laboratory: Calcoast - ITL  
Emeryville, CA 94608

Devices Tested: Four (4) Pair

**SUMMARY**

Specifications: FMVSS 108

Photometric Tests - Replaceable Bulb Headlamp

Figure 17-1 Lower Beam .....	8 of 8 FAILED
Figure 17-1 Upper Beam .....	8 of 8 FAILED
Color Tests - SAE J578c FEB77 .....	8 of 8 PASSED

Signature of Responsible Laboratory Official:

Mark A. Evans  
Photometric Engineer

**DESCRIPTION SHEET**

Test Component: EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4)  
Headlamps for 1999-2002 Chevrolet Silverado

**GENERAL DESCRIPTION:**

MARKINGS: LENS: "KS-GM159", "HB4", "HB3", "DOT", "SAE HR99",  
"L" or "H", "12V 19H"

HOUSING: "KS-GM159/GM208" "HB3", "HB4", date codes

See photometry data sheets for production markings

HARDWARE: "KS-GM159" "L" or "R"

LENS: MATERIAL: Polycarbonate (Clear)  
COATING: Unknown  
SHAPE/DIMENSIONS: Wraparound, 15" x 10" x 5" (Overall)  
METHOD OF ATTACHMENT: Clips and Glue

HOUSING: MATERIAL: Plastic (Metalized)  
SHAPE/DIMENSIONS: Wraparound, 15" x 8" x 5" (Overall)  
METHOD OF MOUNTING: Aim Screws and Pivot Joint

HARDWARE: MATERIAL: Plastic  
METHOD OF MOUNTING: Two Metal Pins

**BULBS USED:**

FUNCTION	QUANTITY	TRADE NO.	VOLTS
Upper Beam	One	HB3	12.80V
Lower Beam	One	HB4	12.80V

NOTE: HB3/HB4 bulbs supplied with the lamps were seasoned for 1.5/3.0 hours at design voltage prior to photometry and color testing.

**TEST DATA SHEET**

Test Component: EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4)  
Headlamps for 1999-2002 Chevrolet Silverado

**COLOR TEST:** SAE J578c

Test Method: Tristimulus Method using Minolta CL100

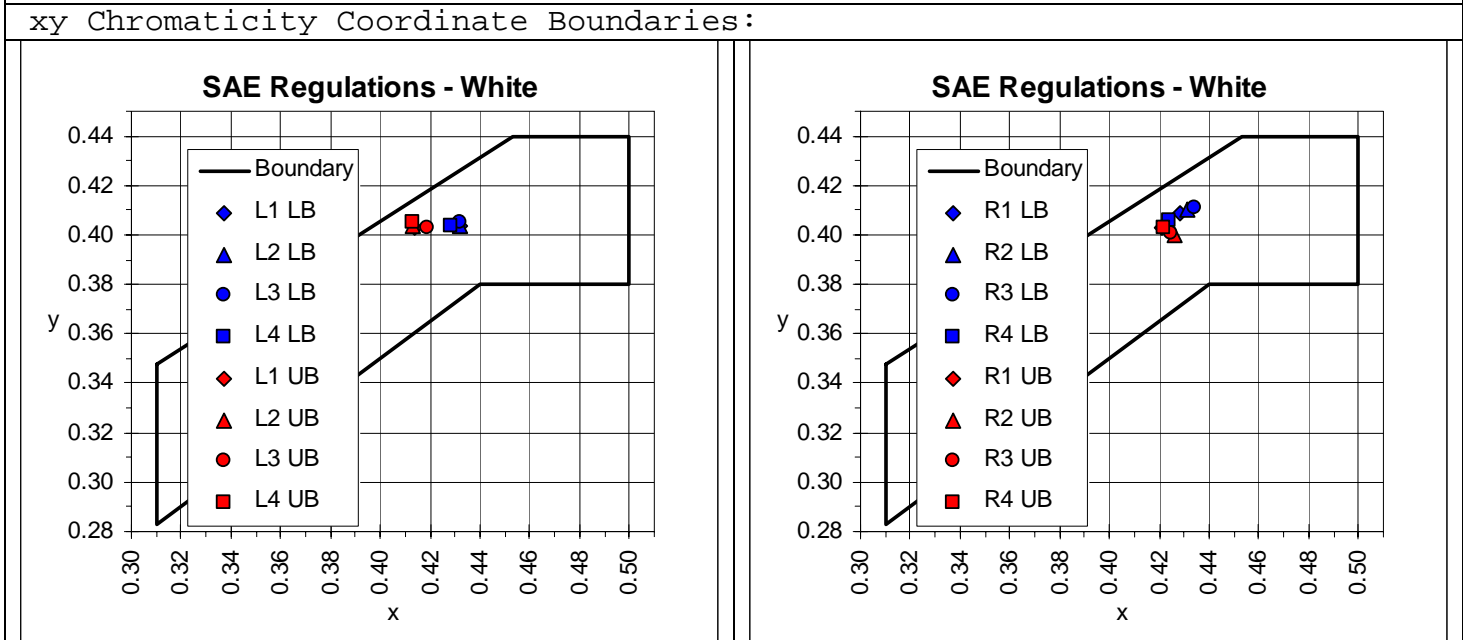
Test Performed by: Mark Evans

Date: 4/06/2006

Lamp Voltage: 12.80V

Test Distance: 50 Feet

Measured average xy chromaticity coordinate values:							
White							
Lower Beam at 1.5D/2R				Upper Beam @ HV			
L1	L2	L3	L4	L1	L2	L3	L4
x=0.432	x=0.432	x=0.432	x=0.428	x=0.414	x=0.413	x=0.419	x=0.413
y=0.404	y=0.404	y=0.405	y=0.404	y=0.403	y=0.404	y=0.403	y=0.405
Lower Beam at 1.5D/2R				Upper Beam @ HV			
R1	R2	R3	R4	R1	R2	R3	R4
x=0.428	x=0.431	x=0.434	x=0.424	x=0.421	x=0.426	x=0.425	x=0.422
y=0.409	y=0.410	y=0.411	y=0.406	y=0.403	y=0.400	y=0.401	y=0.403



Devices comply with all color requirements.

**PHOTOMETRIC TEST SUMMARY SHEET**

Test Component: EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4)  
Headlamps for 1999-2002 Chevrolet Silverado

## SUMMARY OF PHOTOMETRIC TESTS

Tests performed by: Mark Evans

Date: 6 April 2006

Reference calibration detector number: NIST P181-2

Test distance: 100 feet

Aim: Samples aimed mechanically using a CCITL custom built Group II aimer plate with a mirror on the plate which directed a laser beam back onto itself.

Note: The extent of the failure in the 10U-90U zone was determined by first locating the maximum value in the zone then finding the vertical and horizontal spread in which the luminous intensity exceeded the allowable 125 Cd.

The vertical spread about the maximum was determined by tilting the goniometer from the maximum location within the zone until the intensity was just over 125 Cd. The location was then recorded. This was done in both the upward and downward directions. If the intensity at 10° Up was greater than 125 Cd then this value and location was recorded.

The horizontal spread about the maximum was determined by rotating the goniometer from the maximum location within the zone until the intensity was just over 125 Cd. The location was then recorded. This was done in both the inboard and outboard directions.

<u>Test</u>	<u>Equipment</u>
Photometry	Custom Goniometer (Aerotech Rotary Tables, Stepper Motors, Driver) Hoffman TSP-7501 Detector IOtech DaqBoard/2000 16-bit, 200kHz DAC HP 6652A Power Supply Data Precision 2480R DMM (Current) Keithley 197A DMM (Voltage) Kepco 15-12M Power Supply Fluke 23 DMM (Voltage) Keithley 197A (Current)

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH1 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		1740.77		-	-
4.0U 8.0L		146.56		64	-
4.0U 8.0R		195.38		64	-
2.0U 4.0L		282.31		135	-
1.5U 1.0R TO 3.0R	1.0R	702.09		200	-
1.5U 1.0R TO R	3.7R	974.60		-	1400
1.0U 1.5L TO L	1.5L	558.94		-	700
0.5U 1.5L TO L	1.5L	714.75		-	1000
0.5U 1.0R TO 3.0R	1.0R	1215.61		500	-
0.5U 1.0R TO 3.0R	3.0R	1653.88		-	2700
H 8.0L		692.18		64	-
H 4.0L		836.61		135	-
H V		1534.37		-	-
0.5D 1.5L TO L	1.5L	1375.52		-	3000
0.5D 1.5R		5175.31	7551.64*	10000	20000
1.0D 6.0L		1736.75		1000	-
1.5D 9.0L		1792.09		1000	-
1.5D 2.0R		16005.50		15000	-
1.5D 9.0R		3830.11		1000	-
2.0D 15.0L		1377.34		850	-
2.0D 15.0R		2142.82		850	-
4.0D V		7243.65		-	-
4.0D 4.0R		5344.64		-	12500
MAXIMUM	1.9D 3.1R	21547.59		-	-
MX(10U-90U/90L-90R)	19.6U 44.8L	183.72*		-	125
	11.8U 44.8L	125.14*		-	125
	34.5U 44.8L	125.01*		-	125
	19.6U 58.3L	125.73*		-	125
	19.6U 30.4L	125.60*		-	125
H V		1364.93		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.185A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.



## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH1 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		19899.27	27286.95*	40000	75000
2.0U V		2672.94		1500	-
1.0U 3.0L		7716.71		5000	-
1.0U 3.0R		7661.26		5000	-
H 12.0L		4361.00		1500	-
H 9.0L		4656.01		3000	-
H 6.0L		4887.60	5474.44	5000	-
H 3.0L		12341.22	14252.85*	15000	-
H V		19289.84	26979.01*	40000	75000
H 3.0R		12109.81	13307.55*	15000	-
H 6.0R		9509.22		5000	-
H 9.0R		4221.63		3000	-
H 12.0R		3501.18		1500	-
1.5D 9.0L		5938.16		2000	-
1.5D V		34752.42		5000	-
1.5D 9.0R		5933.85		2000	-
2.5D 12.0L		4314.25		1000	-
2.5D V		13327.98		2500	-
2.5D 12.0R		3824.93		1000	-
4.0D V		3965.17		-	12000
MAXIMUM	1.1D V	38791.68		-	-
H V		19043.32	26424.03*	40000	75000

\* - Denotes Failure.

Bulb: Eaglite HB3 supplied with lamp (seasoned 1.5 hours)  
 12.80V / 5.235A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.  
 Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold  
 Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH2 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		1205.37		-	-
4.0U 8.0L		125.56		64	-
4.0U 8.0R		177.24		64	-
2.0U 4.0L		251.59		135	-
1.5U 1.0R TO 3.0R	1.0R	531.61		200	-
1.5U 1.0R TO R	3.8R	667.84		-	1400
1.0U 1.5L TO L	1.5L	458.36		-	700
0.5U 1.5L TO L	1.5L	585.15		-	1000
0.5U 1.0R TO 3.0R	1.0R	1018.28		500	-
0.5U 1.0R TO 3.0R	3.0R	1194.42		-	2700
H 8.0L		555.21		64	-
H 4.0L		670.05		135	-
H V		1099.26		-	-
0.5D 1.5L TO L	1.5L	1066.51		-	3000
0.5D 1.5R		3893.08	5383.73*	10000	20000
1.0D 6.0L		1266.13		1000	-
1.5D 9.0L		1350.73		1000	-
1.5D 2.0R		10837.39	12499.29*	15000	-
1.5D 9.0R		2944.66		1000	-
2.0D 15.0L		1002.34		850	-
2.0D 15.0R		1463.61		850	-
4.0D V		6281.57		-	-
4.0D 4.0R		6285.54		-	12500
MAXIMUM	2.3D 3.8R	18900.15		-	-
MX(10U-90U/90L-90R)	18.6U 53.7L	185.56*		-	125
	10.0U 53.7L	139.87*		-	125
	25.2U 53.7L	125.15*		-	125
	18.6U 59.1L	125.38*		-	125
	18.6U 33.1L	125.55*		-	125
H V		1013.25		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.151A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH2 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		26877.77	30069.78*	40000	75000
2.0U	V	3454.59		1500	-
1.0U	3.0L	8939.02		5000	-
1.0U	3.0R	8295.17		5000	-
H	12.0L	5258.06		1500	-
H	9.0L	5813.69		3000	-
H	6.0L	6171.14		5000	-
H	3.0L	11726.14	12961.46*	15000	-
H	V	26416.94	29894.80*	40000	75000
H	3.0R	19780.12		15000	-
H	6.0R	11131.47		5000	-
H	9.0R	5007.13		3000	-
H	12.0R	4292.07		1500	-
1.5D	9.0L	5991.59		2000	-
1.5D	V	26103.68		5000	-
1.5D	9.0R	5587.03		2000	-
2.5D	12.0L	3158.65		1000	-
2.5D	V	11134.61		2500	-
2.5D	12.0R	3361.53		1000	-
4.0D	V	2535.67		-	12000
MAXIMUM	0.7D 1.2R	38507.63		-	-
H	V	26297.20	29392.63*	40000	75000

\* - Denotes Failure.

Bulb: Eaglite HB3 supplied with lamp (seasoned 1.5 hours)  
 12.80V / 5.266A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH3 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		1683.70		-	-
4.0U 8.0L		113.70		64	-
4.0U 8.0R		153.23		64	-
2.0U 4.0L		229.27		135	-
1.5U 1.0R TO 3.0R	1.0R	592.87		200	-
1.5U 1.0R TO R	4.1R	811.31		-	1400
1.0U 1.5L TO L	1.5L	459.15		-	700
0.5U 1.5L TO L	1.6L	609.78		-	1000
0.5U 1.0R TO 3.0R	1.0R	1114.99		500	-
0.5U 1.0R TO 3.0R	3.0R	1342.14		-	2700
H 8.0L		612.46		64	-
H 4.0L		744.27		135	-
H V		1416.62		-	-
0.5D 1.5L TO L	1.5L	1247.09		-	3000
0.5D 1.5R		4375.28	6262.40*	10000	20000
1.0D 6.0L		1534.39		1000	-
1.5D 9.0L		1637.03		1000	-
1.5D 2.0R		13664.42	15911.05	15000	-
1.5D 9.0R		3633.23		1000	-
2.0D 15.0L		1221.11		850	-
2.0D 15.0R		1847.66		850	-
4.0D V		5976.51		-	-
4.0D 4.0R		4469.12		-	12500
MAXIMUM	1.9D 3.0R	18465.44		-	-
MX(10U-90U/90L-90R)	19.9U 48.2L	153.02*		-	125
	13.5U 48.2L	125.38*		-	125
	29.9U 48.2L	125.53*		-	125
	19.9U 55.0L	125.47*		-	125
	19.9U 35.9L	125.30*		-	125
H V		1236.87		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.168A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH3 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		20125.37	24304.13*	40000	75000
2.0U	V	2725.75		1500	-
1.0U	3.0L	8463.40		5000	-
1.0U	3.0R	6420.95		5000	-
H	12.0L	4480.69		1500	-
H	9.0L	4689.59		3000	-
H	6.0L	4827.47	5260.83	5000	-
H	3.0L	10747.06	11769.59*	15000	-
H	V	20102.60	24320.96*	40000	75000
H	3.0R	13570.38	15024.91	15000	-
H	6.0R	9640.94		5000	-
H	9.0R	4406.41		3000	-
H	12.0R	3417.52		1500	-
1.5D	9.0L	5296.12		2000	-
1.5D	V	26640.03		5000	-
1.5D	9.0R	5680.92		2000	-
2.5D	12.0L	3544.66		1000	-
2.5D	V	13302.02		2500	-
2.5D	12.0R	3378.95		1000	-
4.0D	V	3016.52		-	12000
MAXIMUM	1.1D 0.5R	32992.35		-	-
H	V	20093.28	24212.45*	40000	75000

\* - Denotes Failure.

Bulb: Eaglite HB3 supplied with lamp designated LH4 (seasoned 1.5 hours)  
 12.80V / 5.218A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

Note2: "LH4" bulb used because supplied bulb failed during seasoning.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH4 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		1109.49		-	-
4.0U 8.0L		131.02		64	-
4.0U 8.0R		172.07		64	-
2.0U 4.0L		251.79		135	-
1.5U 1.0R TO 3.0R	1.0R	647.95		200	-
1.5U 1.0R TO R	3.6R	855.40		-	1400
1.0U 1.5L TO L	1.5L	480.61		-	700
0.5U 1.5L TO L	1.5L	597.53		-	1000
0.5U 1.0R TO 3.0R	1.0R	918.35		500	-
0.5U 1.0R TO 3.0R	3.0R	1345.76		-	2700
H 8.0L		542.95		64	-
H 4.0L		678.13		135	-
H V		1036.96		-	-
0.5D 1.5L TO L	1.5L	1144.21		-	3000
0.5D 1.5R		2425.56	3877.99*	10000	20000
1.0D 6.0L		1556.10		1000	-
1.5D 9.0L		1612.34		1000	-
1.5D 2.0R		13288.78	17257.93	15000	-
1.5D 9.0R		3461.88		1000	-
2.0D 15.0L		1216.76		850	-
2.0D 15.0R		1932.54		850	-
4.0D V		7817.88		-	-
4.0D 4.0R		5559.20		-	12500
MAXIMUM	2.0D 3.1R	22235.63		-	-
MX(10U-90U/90L-90R)	18.5U 53.7L	173.31*		-	125
	10.0U 53.7L	133.81*		-	125
	22.9U 53.7L	125.44*		-	125
	18.5U 56.0L	125.14*		-	125
	18.5U 39.5L	125.30*		-	125
H V		972.59		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.125A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: LH4 - Eagle Eyes GM159-B001L

Production Marking: "2005Y 7 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		13621.92	19777.07*	40000	75000
2.0U	V	2369.55		1500	-
1.0U	3.0L	7026.12		5000	-
1.0U	3.0R	5403.86		5000	-
H	12.0L	4059.02		1500	-
H	9.0L	5055.91		3000	-
H	6.0L	4939.30	5584.94	5000	-
H	3.0L	9871.51	11410.71*	15000	-
H	V	13850.71	19696.11*	40000	75000
H	3.0R	12091.71	14190.75*	15000	-
H	6.0R	9380.36		5000	-
H	9.0R	4422.68		3000	-
H	12.0R	3130.38		1500	-
1.5D	9.0L	6740.35		2000	-
1.5D	V	33184.05		5000	-
1.5D	9.0R	6442.14		2000	-
2.5D	12.0L	4047.23		1000	-
2.5D	V	16812.25		2500	-
2.5D	12.0R	4012.85		1000	-
4.0D	V	3501.10		-	12000
MAXIMUM	1.3D 0.5R	35765.67		-	-
H	V	13360.00	19550.71*	40000	75000

\* - Denotes Failure.

Bulb: Eaglite HB3 supplied with lamp (seasoned 1.5 hours)  
 12.80V / 5.221A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH1 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		1902.97		-	-
4.0U 8.0L		242.25		64	-
4.0U 8.0R		170.18		64	-
2.0U 4.0L		370.54		135	-
1.5U 1.0R TO 3.0R	1.0R	524.74		200	-
1.5U 1.0R TO R	3.2R	538.36		-	1400
1.0U 1.5L TO L	1.5L	688.07		-	700
0.5U 1.5L TO L	1.5L	962.33		-	1000
0.5U 1.0R TO 3.0R	3.0R	986.87		500	-
0.5U 1.0R TO 3.0R	1.3R	1183.53		-	2700
H 8.0L		594.07		64	-
H 4.0L		704.82		135	-
H V		1845.56		-	-
0.5D 1.5L TO L	1.5L	2809.88		-	3000
0.5D 1.5R		3775.84	5013.03*	10000	20000
1.0D 6.0L		1435.43		1000	-
1.5D 9.0L		1974.23		1000	-
1.5D 2.0R		9666.70	10953.82*	15000	-
1.5D 9.0R		2028.42		1000	-
2.0D 15.0L		1852.49		850	-
2.0D 15.0R		1041.54		850	-
4.0D V		9271.91		-	-
4.0D 4.0R		4922.18		-	12500
MAXIMUM	2.1D 0.1R	16837.37		-	-
MX(10U-90U/90L-90R)	18.8U 50.5R	224.17*		-	125
	10.0U 50.5R	158.56*		-	125
	32.7U 50.5R	125.43*		-	125
	18.9U 29.9R	125.26*		-	125
	18.9U 64.7R	125.44*		-	125
H V		1856.93		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.141A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.



**PHOTOMETRIC TEST DATA SHEET**

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH1 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		35379.43	36372.59*	40000	75000
2.0U	V	7012.16		1500	-
1.0U	3.0L	18058.99		5000	-
1.0U	3.0R	10868.47		5000	-
H	12.0L	5014.21		1500	-
H	9.0L	5174.60		3000	-
H	6.0L	10804.90		5000	-
H	3.0L	25428.56		15000	-
H	V	35413.50	36449.52*	40000	75000
H	3.0R	10146.15	10888.29*	15000	-
H	6.0R	5722.19		5000	-
H	9.0R	5572.20		3000	-
H	12.0R	5871.70		1500	-
1.5D	9.0L	3631.29		2000	-
1.5D	V	11262.47		5000	-
1.5D	9.0R	3865.23		2000	-
2.5D	12.0L	2631.44		1000	-
2.5D	V	4243.68		2500	-
2.5D	12.0R	2922.07		1000	-
4.0D	V	1402.38		-	12000
MAXIMUM	H 0.6L	38074.47		-	-
H	V	35418.13	36335.12*	40000	75000

\* - Denotes Failure.

Bulb: Eaglite HB3 supplied with lamp (seasoned 1.5 hours)  
 12.80V / 5.255A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.  
 Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold  
 Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH2 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		3500.69		-	-
4.0U 8.0L		204.06		64	-
4.0U 8.0R		145.27		64	-
2.0U 4.0L		323.84		135	-
1.5U 1.0R TO 3.0R	3.0R	497.58		200	-
1.5U 1.0R TO R	1.1R	623.53		-	1400
1.0U 1.5L TO L	1.5L	940.84	737.01*	-	700
0.5U 1.5L TO L	1.5L	1579.19	1148.42*	-	1000
0.5U 1.0R TO 3.0R	3.0R	1069.56		500	-
0.5U 1.0R TO 3.0R	1.0R	1772.70		-	2700
H 8.0L		666.83		64	-
H 4.0L		1117.16		135	-
H V		3277.31		-	-
0.5D 1.5L TO L	1.5L	6174.72	4362.89*	-	3000
0.5D 1.5R		6243.49	7782.81*	10000	20000
1.0D 6.0L		2013.88		1000	-
1.5D 9.0L		2918.68		1000	-
1.5D 2.0R		11215.41	11785.41*	15000	-
1.5D 9.0R		2490.86		1000	-
2.0D 15.0L		2649.49		850	-
2.0D 15.0R		1394.33		850	-
4.0D V		6341.23		-	-
4.0D 4.0R		4686.18		-	12500
MAXIMUM	1.8D 0.2L	18813.16		-	-
MX(10U-90U/90L-90R)	19.4U 49.9R	226.96*		-	125
	10.1U 49.9R	165.75*		-	125
	32.5U 49.9R	125.20*		-	125
	19.4U 27.6R	125.36*		-	125
	19.4U 64.8R	125.53*		-	125
H V		3101.57		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.130A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH2 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		25279.31	31093.38*	40000	75000
2.0U	V	21676.46		1500	-
1.0U	3.0L	19822.45		5000	-
1.0U	3.0R	14945.34		5000	-
H	12.0L	4449.45		1500	-
H	9.0L	4708.02		3000	-
H	6.0L	9262.53		5000	-
H	3.0L	17557.01		15000	-
H	V	25634.22	31483.42*	40000	75000
H	3.0R	8797.76	10047.46*	15000	-
H	6.0R	4844.98	5351.56	5000	-
H	9.0R	4779.16		3000	-
H	12.0R	5289.10		1500	-
1.5D	9.0L	2605.67		2000	-
1.5D	V	4604.99	6112.09	5000	-
1.5D	9.0R	3020.01		2000	-
2.5D	12.0L	1544.49		1000	-
2.5D	V	2281.96	2621.13	2500	-
2.5D	12.0R	2117.67		1000	-
4.0D	V	1021.61		-	12000
MAXIMUM	0.9U V	40293.88		-	-
H	V	25995.22	31818.50*	40000	75000

\* - Denotes Failure.

Bulb: Eaglite HB3 supplied with lamp (seasoned 1.5 hours)  
 12.80V / 5.250A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.  
 Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold  
 Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH3 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		5197.94		-	-
4.0U 8.0L		201.89		64	-
4.0U 8.0R		149.18		64	-
2.0U 4.0L		362.95		135	-
1.5U 1.0R TO 3.0R	3.0R	624.78		200	-
1.5U 1.0R TO R	1.0R	831.44		-	1400
1.0U 1.5L TO L	1.5L	1271.45	973.12*	-	700
0.5U 1.5L TO L	1.5L	2142.00	1554.51*	-	1000
0.5U 1.0R TO 3.0R	3.0R	1377.11		500	-
0.5U 1.0R TO 3.0R	1.0R	2394.99		-	2700
H 8.0L		883.80		64	-
H 4.0L		1558.81		135	-
H V		4970.14		-	-
0.5D 1.5L TO L	1.5L	8214.68	6165.49*	-	3000
0.5D 1.5R		7844.57	9183.13*	10000	20000
1.0D 6.0L		2595.19		1000	-
1.5D 9.0L		3443.63		1000	-
1.5D 2.0R		11415.58	11987.16*	15000	-
1.5D 9.0R		2913.23		1000	-
2.0D 15.0L		3054.97		850	-
2.0D 15.0R		1647.33		850	-
4.0D V		6030.06		-	-
4.0D 4.0R		4791.59		-	12500
MAXIMUM	1.5D 0.2L	17572.04		-	-
MX(10U-90U/90L-90R)	19.8U 46.5R	242.12*		-	125
	10.0U 46.5R	171.67*		-	125
	37.5U 46.5R	125.48*		-	125
	19.8U 26.1R	125.35*		-	125
	19.8U 66.9R	125.60*		-	125
H V		4753.22		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.153A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH3 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		20830.37	25543.12*	40000	75000
2.0U V		22647.09		1500	-
1.0U 3.0L		22613.50		5000	-
1.0U 3.0R		12976.58		5000	-
H 12.0L		3941.62		1500	-
H 9.0L		3981.27		3000	-
H 6.0L		8676.75		5000	-
H 3.0L		19045.41		15000	-
H V		20888.74	25591.58*	40000	75000
H 3.0R		7788.92	8826.73*	15000	-
H 6.0R		4348.27	4817.05*	5000	-
H 9.0R		4226.49		3000	-
H 12.0R		4505.08		1500	-
1.5D 9.0L		2372.59		2000	-
1.5D V		3746.87	4756.21*	5000	-
1.5D 9.0R		2781.26		2000	-
2.5D 12.0L		1679.64		1000	-
2.5D V		2165.86	2427.61*	2500	-
2.5D 12.0R		2098.69		1000	-
4.0D V		913.54		-	12000
MAXIMUM	1.0U 0.1R	37845.21		-	-
H V		20687.61	25156.29*	40000	75000

\* - Denotes Failure.

Bulb: Eaglite HB3 supplied with lamp (seasoned 1.5 hours)  
 12.80V / 5.273A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.  
 Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold  
 Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH4 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Lower Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		1704.32		-	-
4.0U 8.0L		252.26		64	-
4.0U 8.0R		179.28		64	-
2.0U 4.0L		381.53		135	-
1.5U 1.0R TO 3.0R	3.0R	474.68		200	-
1.5U 1.0R TO R	2.3R	499.35		-	1400
1.0U 1.5L TO L	1.5L	635.18		-	700
0.5U 1.5L TO L	1.5L	896.58		-	1000
0.5U 1.0R TO 3.0R	3.0R	781.21		500	-
0.5U 1.0R TO 3.0R	1.0R	1005.38		-	2700
H 8.0L		579.51		64	-
H 4.0L		731.15		135	-
H V		1642.60		-	-
0.5D 1.5L TO L	1.5L	2531.63		-	3000
0.5D 1.5R		3402.23	4492.55*	10000	20000
1.0D 6.0L		1285.92		1000	-
1.5D 9.0L		1876.90		1000	-
1.5D 2.0R		8224.83	9403.74*	15000	-
1.5D 9.0R		1951.31		1000	-
2.0D 15.0L		1777.06		850	-
2.0D 15.0R		988.88		850	-
4.0D V		9668.74		-	-
4.0D 4.0R		4642.16		-	12500
MAXIMUM	2.3D 0.2L	17774.58		-	-
MX(10U-90U/90L-90R)	20.0U 44.6R	227.56*		-	125
	10.0U 44.6R	159.93*		-	125
	39.7U 44.6R	125.67*		-	125
	20.0U 27.4R	125.68*		-	125
	20.0U 65.5R	125.18*		-	125
H V		1632.25		-	-

\* - Denotes Failure.

Bulb: Eaglite HB4 supplied with lamp (seasoned 3 hours)  
 12.80V / 4.134A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.

Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold

Lamp aiming hardware used to position lamp.

## PHOTOMETRIC TEST DATA SHEET

Project Name: Eagle Eyes GM159-B001L/R RBHL for 1999-2002 Chevrolet Silverado

Sample Number: RH4 - Eagle Eyes GM159-B001R

Production Marking: "2005Y 3 B0009" - on a sticker

Specification: FMVSS108 Figure 17-1 (Replaceable Bulb Headlamp)

Color: White, Upper Beam

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
H V		37577.61	37875.74*	40000	75000
2.0U	V	5542.61		1500	-
1.0U	3.0L	19828.24		5000	-
1.0U	3.0R	12027.42		5000	-
H	12.0L	4892.27		1500	-
H	9.0L	5039.05		3000	-
H	6.0L	9972.20		5000	-
H	3.0L	22203.05		15000	-
H	V	37659.73	37888.48*	40000	75000
H	3.0R	9989.68	11229.17*	15000	-
H	6.0R	5572.79		5000	-
H	9.0R	5337.61		3000	-
H	12.0R	5568.54		1500	-
1.5D	9.0L	3348.13		2000	-
1.5D	V	9683.26		5000	-
1.5D	9.0R	3626.66		2000	-
2.5D	12.0L	2312.85		1000	-
2.5D	V	3371.32		2500	-
2.5D	12.0R	2882.68		1000	-
4.0D	V	1327.71		-	12000
MAXIMUM	0.1U 0.3L	38151.72		-	-
H	V	37579.63	37790.80*	40000	75000

\* - Denotes Failure.

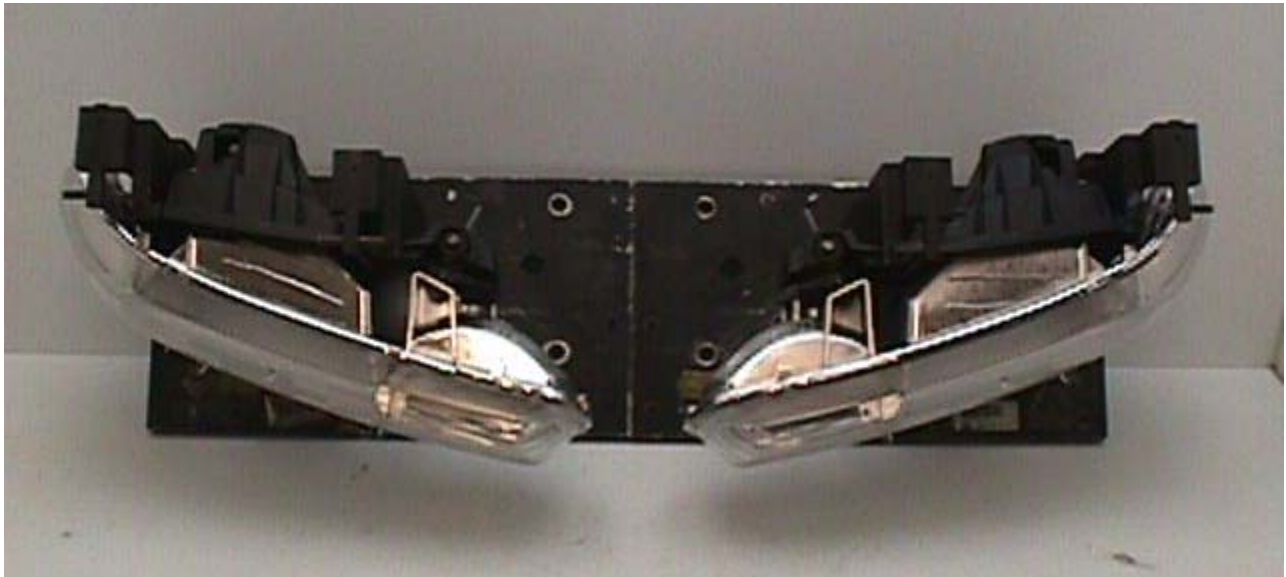
Bulb: Eaglite HB3 supplied with lamp (seasoned 1.5 hours)  
 12.80V / 5.285A / Flux not measured / Filament not measured  
 Operated 3 minutes prior to testing.

Note: Lamp mounted on Guide test fixture 16524404-TE2.  
 Fixture placed on level goniometer with filament at center of rotation.

Aim: Group II mechanical aim (12V 19H) - aimed cold  
 Lamp aiming hardware used to position lamp.

**PHOTOGRAPH SHEET**

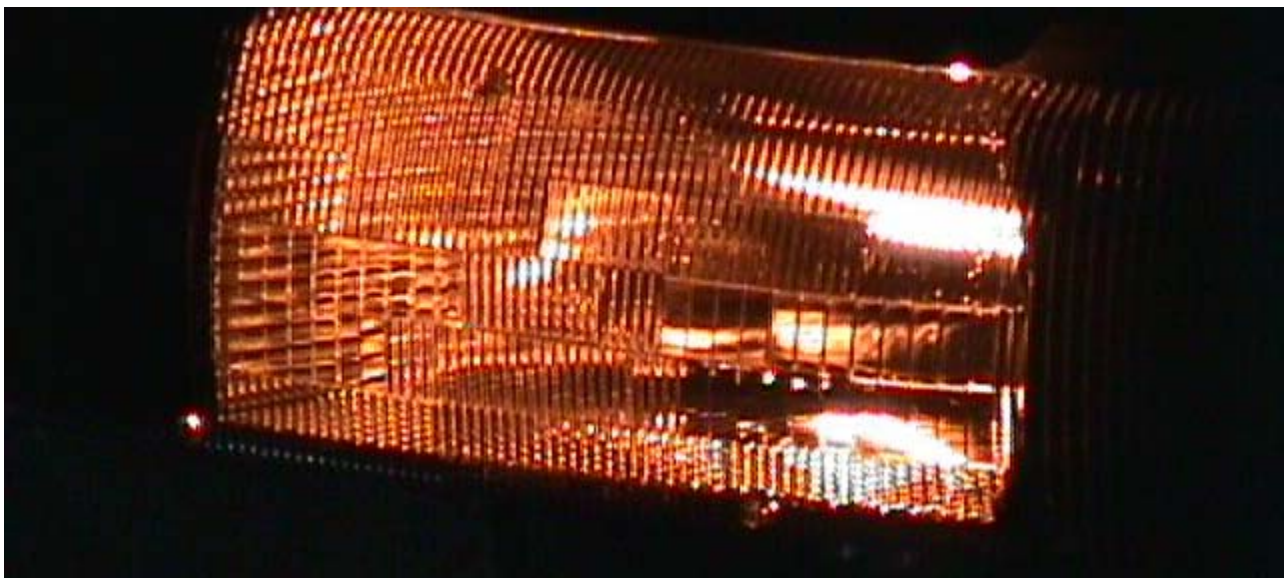
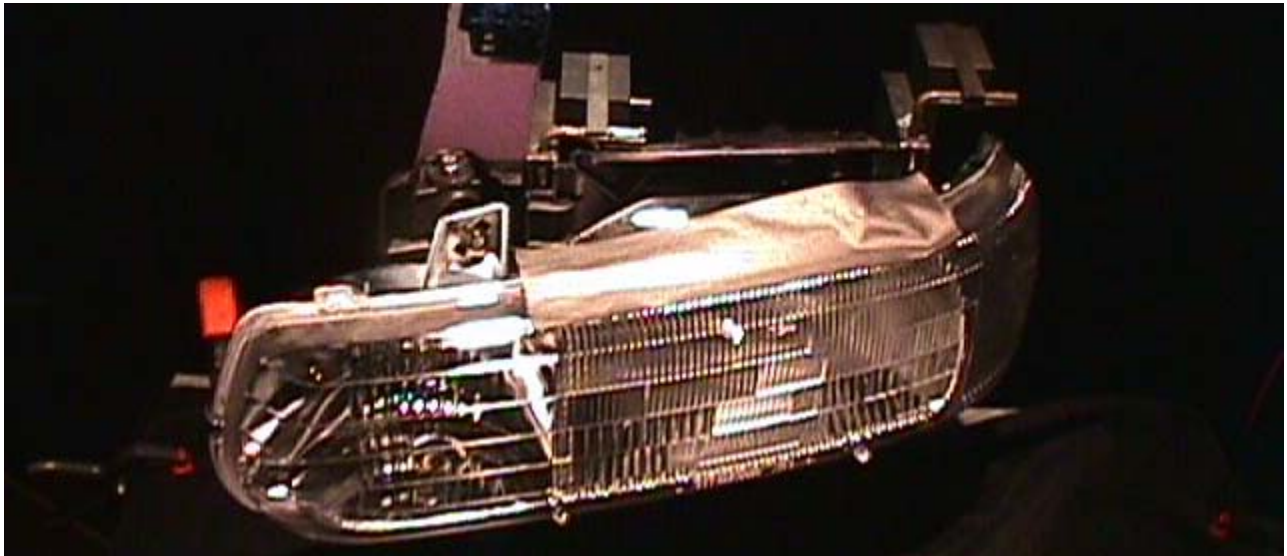
Device Name: EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4) Headlamps for 1999-2002 Chevrolet Silverado





**PHOTOGRAPH SHEET**

Device Name: EAGLE EYES GM159-B001L/R Replaceable Bulb (HB3/HB4) Headlamps for 1999-2002 Chevrolet Silverado



As Viewed From Maximum in the 10U-90U Region (Reduced Voltage)