

REPORT NO. 111-KAR-09-003

**SAFETY COMPLIANCE TESTING
FOR FMVSS 111**

**REARVIEW MIRRORS
(Other Than School Buses)**

**2009 NISSAN ROGUE S FWD
5-DOOR MPV**

NHTSA NO: C95205

**PREPARED BY:
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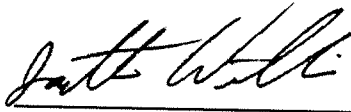
JULY 14, 2009


FINAL REPORT


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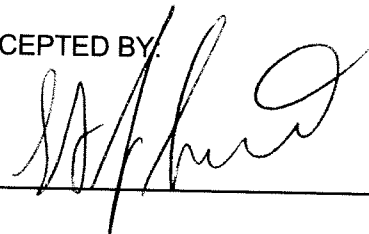
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TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1	Purpose of Compliance Test	1
2	Compliance Test Procedure and Data Summary	2
3	Test Data	5
<u>Appendix</u>		
A	Photographs	A
B	Data Plots	B
C	Test Equipment List and Calibration Information	C
D	Eyelipse Locations Supplied by Manufacturer	D

LIST OF PHOTOGRAPHS

<u>Figure</u>		<u>Page</u>
1	Left Front $\frac{3}{4}$ View	A-1
2	Left Side View	A-2
3	Right Rear $\frac{3}{4}$ View	A-3
4	Right Side View	A-4
5	Manufacturer's Label	A-5
6	Tire Placard	A-6
7	Driver Side Rearview Mirror and Mounting	A-7
8	Passenger Side Rearview Mirror and Mounting	A-8
9	Inside Rearview Mirror and Mounting	A-9
10	Test Set-up	A-10
11	Camera Set-up for Photographing Reference Board	A-11
12	Overall Set-up and Instrumentation for Mirror Break-Away Test	A-12
13	Close-Up of Mirror Break-Away Test	A-13
14	Reflection Test Set-up	A-14
15	Mirror Set-up for Area Measurement	A-15
16	Left Eye Field of View Test (Inside Mirror)	A-16
17	Reference Board for Inside Mirror, Left Eye (From Rear of Vehicle)	A-17
18	Right Eye Field of View Test (Inside Mirror)	A-18
19	Reference Board for Inside Mirror, Right Eye (From Rear of Vehicle)	A-19
20	Left Eye Field of View Test (Driver Side Mirror)	A-20
21	Right Eye Field of View Test (Driver Side Mirror)	A-21
22	Reference Board for Driver Side Mirror (From Rear of Vehicle)	A-22

LIST OF DATA PLOTS

<u>Figure</u>		<u>Page</u>
B-1	Force vs. Displacement and Displacement vs. Time $0^\circ/90^\circ$	B-1
B-2	Force vs. Displacement and Displacement vs. Time $45^\circ/90^\circ$	B-2
B-3	Force vs. Displacement and Displacement vs. Time $-45^\circ/90^\circ$	B-3
B-4	Force vs. Displacement and Displacement vs. Time $-45^\circ/45^\circ$	B-4
B-5	Force vs. Displacement and Displacement vs. Time $45^\circ/45^\circ$	B-5
B-6	Force vs. Displacement and Displacement vs. Time $45^\circ/-45^\circ$	B-6
B-7	Force vs. Displacement and Displacement vs. Time $-45^\circ/-45^\circ$	B-7

1. PURPOSE OF COMPLIANCE TEST

Tests were conducted on a 2009 Nissan Rogue S FWD 5-Door MPV, manufactured by Nissan Motor Co., LTD., to determine compliance with FMVSS 111, "Rearview Mirrors (Other than School Buses)". The purpose of this standard is to reduce the number of deaths and injuries that occur when the driver of a motor vehicle does not have a clear and reasonably unobstructed view to the rear.

All tests were conducted based on the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC) Laboratory Procedures, TP111V-00, dated October 28, 1999, and corresponding KARCO Engineering test procedure KTP-111, dated April 18, 2001. Detailed procedures for receiving, inspecting, testing and reporting of test results are described in the test procedures and are not repeated in this report.

This report is organized in sections containing pertinent test information and data tables as follows:

Section 1	Purpose of Compliance Test
Section 2	Compliance Test Procedure and Data Summary
Section 3	Test Data
Appendix A	Photographs
Appendix B	Data Plots
Appendix C	Test Equipment List and Calibration Information
Appendix D	Eyepsipe Location Supplied By Manufacturer

2. COMPLIANCE TEST PROCEDURE AND DATA SUMMARY

A 2009 Nissan Rogue S FWD 5-Door MPV was subjected to FMVSS 111 compliance testing. The tests were conducted at KARCO Engineering, LLC. in Adelanto, California on June 18, 2009 through July 14, 2009. Summary data is shown on page 24, Data Sheet No. 8. The following tests were performed:

- Inspection
- Mounting Adequacy Test
- Field-of-View Test, Inside Rearview Mirror
- Field-of-View Test, Driver's Side Outside Mirror
- Reflectance Test
- Breakaway Test
- Unit Magnification and Convex Mirror Tests

The tests were conducted per the FMVSS 111 test procedure. The significant aspects of the test procedure are described in the following paragraphs.

A. INSPECTION

Inspect the installation of the inside and outside rearview mirrors.

B. MOUNTING ADEQUACY TEST – ALL REARVIEW MIRRORS

B.1 INSIDE MIRROR (S5.1.2)

Determine that the mirror is securely mounted and determine the positive and negative angles of adjustment for both the vertical and horizontal directions.

B.2 OUTSIDE MIRROR(S) (S5.2.2 and S5.3)

Determine that the mirror(s) is (are) securely mounted. Determine that the driver's side mirror can be tilted in both horizontal and vertical directions from the driver's seated position. Determine that the passenger's side mirror is capable of adjustment by tilting in both the horizontal and vertical directions. Determine the positive and negative angles of adjustment for both horizontal and vertical directions for all outside mirrors. Determine that all outside mirrors are free of sharp points or edges that could contribute to pedestrian injury.

C. FIELD-OF-VIEW TEST – INSIDE REARVIEW MIRROR

C.1 REQUIREMENTS (S5.1.1)

The mirror shall provide a field of view with an included horizontal angle measured from the projected eye point of at least 20 degrees, and sufficient vertical angle to provide a view of a level road surface extending to the horizon beginning at a point not greater than 61m (200 feet) to the rear of the vehicle when the vehicle is occupied by the driver and four passengers or the designated occupant capacity, if less. The line of sight may be partially obscured by seated occupants or by head restraints.

Each car whose inside mirror does not meet the field of view requirements of S5.1.1 shall have an outside mirror of unit magnification or a convex mirror installed on the passenger's side. (S5.3)

D. FIELD-OF-VIEW TEST, DRIVER'S SIDE OUTSIDE REARVIEW MIRROR

D.1 REQUIREMENTS (S5.2)

Each passenger car shall have an outside mirror of unit magnification. The mirror shall provide the driver a view of a level road surface extending to the horizon from a line, perpendicular to a longitudinal plane tangent to the driver's side of the vehicle at the widest point, extending 2.4 meters (8 feet) out from the tangent plane 10.7 meters (35 feet) behind the driver's eyes, with the seat in the rearmost position. The line of sight may be partially obscured by rear body or fender contours. (S5.2.1)

Neither the mirror nor the mounting shall protrude farther than the widest part of the vehicle body except to the extent necessary to produce a field of view meeting or exceeding the requirements of S5.2.1. The mirror shall not be obscured by the un-wiped portion of the windshield. (S5.2.2)

E. REFLECTANCE TEST – ALL MIRRORS

E.1 REQUIREMENT (S11)

All single reflectance mirrors shall have an average reflectance of at least 35 percent. If a mirror is capable of multiple reflectance levels, the minimum reflectance level in the day mode shall be at least 35 percent and the minimum reflectance level in the night mode shall be at least 4 percent. The average reflectance of any mirror required by this standard shall be determined in accordance with SAE Recommended Practice J964, OCT 84.

F. BREAKAWAY TEST – INSIDE REARVIEW MIRROR

F.1 REQUIREMENTS (S5.1.2)

If the mirror is in the head impact area, the mounting shall deflect, collapse, or break away without leaving sharp edges when the reflective surface of the mirror is subjected to a force of 400 N (90 lb) in any forward direction that is not more than 45 degrees from the longitudinal direction.

G. UNIT MAGNIFICATION AND CONVEX MIRROR TESTS

G.1 REQUIREMENTS FOR PASSENGER CARS (S5.3 and S5.4)

The driver's side rearview mirror and the inside rearview mirror shall be unit magnification. If the field-of-view requirements are not met with the inside rearview mirror then the passenger's side rearview mirror is required. It can be either unit magnification or convex.

If the passenger's side mirror is convex, the average radius of curvature shall be not less than 889 mm (35 inches) and not more than 1651 millimeters (65 inches) and shall not deviate from the average by more than plus or minus 12.5 percent. The convex mirror shall have permanently and indelibly marked at the lower edge of the mirror's reflective surface in letters not less than 4.8 mm (3/16 inch) nor more than 6.4 mm (0.25 inch) high the words, "**Objects in Mirror Are Closer Than They Appear.**"

3. TEST DATA

The results of FMVSS 111 compliance tests that were conducted on the 2009 Nissan Rogue S FWD 5-Door MPV on June 18, 2009 through July 14, 2009 to determine compliance with FMVSS 111, "Rearview Mirrors (other than School Buses)" are presented in this section.

DATA SHEET NO. 1
VEHICLE INSPECTION AND IDENTIFICATION

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.:	C95205
Make	Nissan
Model	Rogue S FWD
Body Style	5-Door MPV
Vin No.	JN8AS58T59W320598
Color	Gray
Delivery Date	6/9/2009
Odometer (Miles)	228
Dealer	Jerry's Nissan
Transmission	Automatic
Final Drive	Front
Type/No. Cyl.	Inline 4
Engine Disp. (L)	2.4
Engine Placement	Transverse
Tire Press./ Max (Front)	300 kPa
Tire Press./ Max (Rear)	300 kPa
Recommended Tire Size	P215/70R16
Tire Size on vehicle	P215/70R16
Air Conditioning	Yes
Disc Brakes (Front)	Yes
Disc Brakes (Rear)	Yes

Anti-Lock Brakes	Yes
All Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Side Airbag	Yes
Driver Head Airbag	No
Driver Curtain Airbag	Yes
Pass. Airbag	Yes
Pass. Side Airbag	Yes
Pass. Head Airbag	No
Pass. Curtain Airbag	Yes
Pre-Tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Cold Tire Press. (Front)	230 kPa
Cold Tire Press. (Rear)	230 kPa
Tilt Steering	Yes
Automatic Door Locks	Yes
Power Windows	Yes
Power Seats	No
Other	N/A

DATA FROM MANUFACTURER

Manufactured By	Nissan Motor Co., LTD
Date of Manufacture	Jul-08

GVWR (kg)	1920
GAWR Front (kg)	1017
GAWR Rear (kg)	911

TEST VEHICLE ATTITUDES (mm)

ATTITUDE	LF	RF	LR	RR
As Delivered	789	790	816	810
As Tested	776	777	783	775
Rearview Mirror	1393			

DATA SHEET NO. 1... (Continued)

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	06/18/09	Temperature:	85°F

LEGEND: LE = Left Eye; RE = Right Eye; P = Neck Pivot Point, SRP = Seating Reference Point

COORDINATE SYSTEM:

- X = Longitudinal Dimension
- Y = Lateral Dimension
- Z = Vertical Dimension

Positive Values are as follows:

- X = Forward of Reference Point
- Y = Outboard of Reference Point (to driver's side)
- Z = Above Reference Point

Provide Reference Point or Body Fiduciary Point that dimensions below are measured from. (Point should be usable by laboratory personnel, i.e., center of an anchorage bolt, door jam latch, etc.).

COORDINATES	LEFT SIDE MIRROR			INSIDE MIRROR			RIGHT SIDE MIRROR			SRP
	P1	LE1	RE1	P2	LE2	RE2	P3	LE3	RE3	
X		1374.4	1365.8		1367.1	1387.8		N/A	N/A	
Y		-393.1	-328.7		-393.4	331.8		N/A	N/A	
Z		1048.1	1048.1		1043.1	1043.1		N/A	N/A	
Mirror Mfr., Model And Part No.	Ichikoh Industries 96302 JM000 96302 JM200			Ichikoh 96321 9Y000			Ichikoh Industries 96301 JM000 96301 JM200			
SRP Travel and Eye-ellipse										

Reference Point – Driver's Seat Front Outboard Seat Adjuster Anchorage: (X=998.5, Y=-585.0, Z=106.3)

Note: Coordinates different then initial submission from manufacture as shown in appendix D. Corrected numbers supplied verbally.

DATA SHEET NO. 2
MOUNTING AND TILTING ADEQUACY TEST

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	06/18/09	Temperature:	70°F

MIRROR MOUNTING PROVIDES A STABLE SUPPORT	PASS	FAIL	CONDITIONAL
INSIDE REARVIEW MIRROR	X		
DRIVER SIDE OUTSIDE MIRROR	X		
PASSENGER SIDE OUTSIDE MIRROR	X		

OUTSIDE MIRRORS FREE OF SHARP POINTS OR EDGES	PASS	FAIL
DRIVER SIDE OUTSIDE MIRROR	X	
PASSENGER SIDE OUTSIDE MIRROR	X	

MIRROR IS ADJUSTABLE VERTICALLY & HORIZONTALLY	PASS	FAIL	CONDITIONAL
INSIDE REARVIEW MIRROR	X		
DRIVER SIDE OUTSIDE MIRROR	X		
PASSENGER SIDE OUTSIDE MIRROR	X		

DRIVER'S OUTSIDE MIRROR ADJUSTABLE FROM THE DRIVER'S SEATED POSITION	PASS	FAIL
DRIVER SIDE OUTSIDE MIRROR	X	

MIRROR ADJUSTMENT ANGLE	V+	V-	H+	H-
INSIDE REARVIEW MIRROR	22.2°	-22.5°	45°	-44°
DRIVER SIDE OUTSIDE MIRROR	17.0°	-8.0°	-8°	-33°
PASSENGER SIDE OUTSIDE MIRROR	17.8°	-7.8°	42°	17°

THIS SECTION IS RESERVED FOR MPVs, TRUCKS AND BUSES, OTHER THAN SCHOOL BUSES, NOT CONFORMING TO PASSENGER CAR REQUIREMENTS

MIRROR PROVIDES A VIEW TO THE REAR ALONG BOTH SIDES OF THE VEHICLE	PASS	FAIL	CONDITIONAL
DRIVER SIDE OUTSIDE MIRROR	X		
PASSENGER SIDE OUTSIDE MIRROR	X		

TEST STATUS:	PASSED —	X	FAILED —	
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RECORDED BY: JONATHAN WILLIAMS DATE: 07/14/09

APPROVED BY: MICHAEL L. DUNLAP DATE: 07/14/09

DATA SHEET NO. 3
FIELD OF VIEW TEST - INSIDE REARVIEW MIRROR

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	06/18/09	Temperature:	75°F

- E Distance from center of mirror to projected eye point location = 625.0 mm
- A Distance from rear of vehicle to projected eye point location = 3371.0 mm
- X1 Distance from rear of vehicle to field of view grid = 8398.0 mm
- Z1 Vertical distance to lowest point of field of view at distance X1 = 572.0 mm
- Z2 Height of center of mirror = 1393.0 mm
- X2 Distance from rear of vehicle where the road surface is first visible
 $X2 = [(Z2 \times X1) + (Z1 \times A)] / (Z2 - Z1) =$
(S111 REQUIREMENT = 61m maximum) 16598 mm (16.6 m)

EYE LOCATION	MONOCULAR DATA (ALR & ARL ARE ANGLES)			
	YL (mm)	YR (mm)	ALR (°)	ARL (°)
LEFT EYE POINT	YLL = 1657	YRL = 2019		9.7°
RIGHT EYE POINT	YLR = 1938	YRR = 1548	9.4°	

CALCULATED HORIZONTAL AMBINOCULAR VIEW ANGLE (AB)

ANGLE AB = ANGLE ALR + ANGLE ARL

$ALR = \tan^{-1} [YLR / (X1 + A)]$ $ARL = \tan^{-1} [YRL / (X1 + A)]$

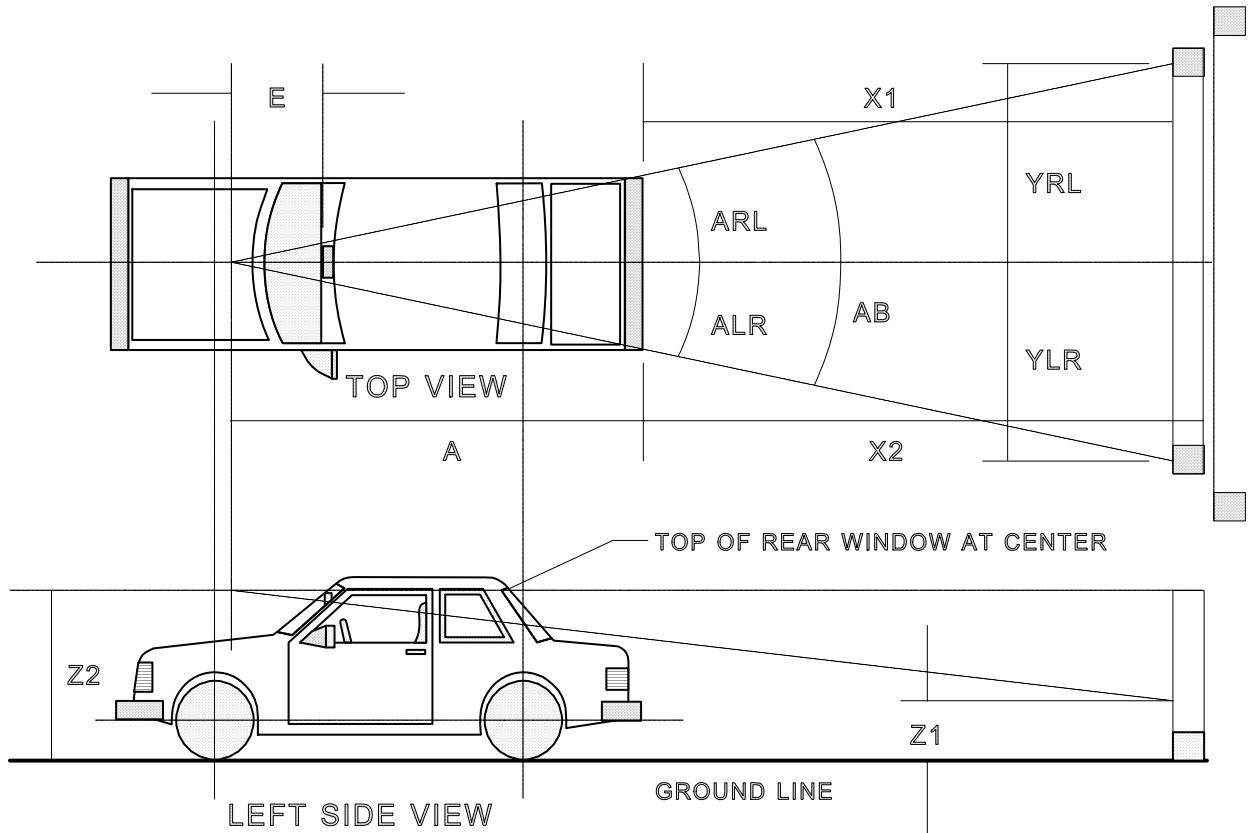
ANGLE AB = 19.1° (S111 REQUIREMENT = 20 degrees minimum)

REMARKS: Passed, has a passenger side mirror

TEST STATUS:	PASSED —	X	FAILED —	
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DATA SHEET NO. 3... (Continued)

INSIDE REARVIEW MIRROR FIELD OF VIEW
TEST GRID AND MARKER SETUP



DATA SHEET NO. 3... (Continued)

DRIVER SIDE MIRROR (S5.2)

MIRROR OBSCURED BY UNWIPED PORTION OF WINDSHIELD YES _____ NO X

HEIGHT OF TARGET DISC ON MIRROR 1183 mm

DISTANCE OF TARGET DISC ON MIRROR FROM VEHICLE TANGENT PLANE 10 mm

TARGET DISC LOCATION RELATIVE TO VEHICLE TANGENT PLANE INBOARD
(Inboard or Outboard)

ENTIRE TRIANGULAR TEST TARGET AREA ON SCREEN VISIBLE YES X NO _____

MIRROR PROTRUDES BEYOND VEHICLE TANGENT PLANE YES X NO _____

PROTRUSION REQUIRED TO MEET FIELD OF VIEW REQUIREMENT YES X NO _____

TEST STATUS:	PASSED —	X	FAILED —	
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PASSENGER SIDE MIRROR (S5.3 or MFG. OPTION)

PASSENGER SIDE MIRROR TYPE (convex or unit magnification) CONVEX

REMARKS:

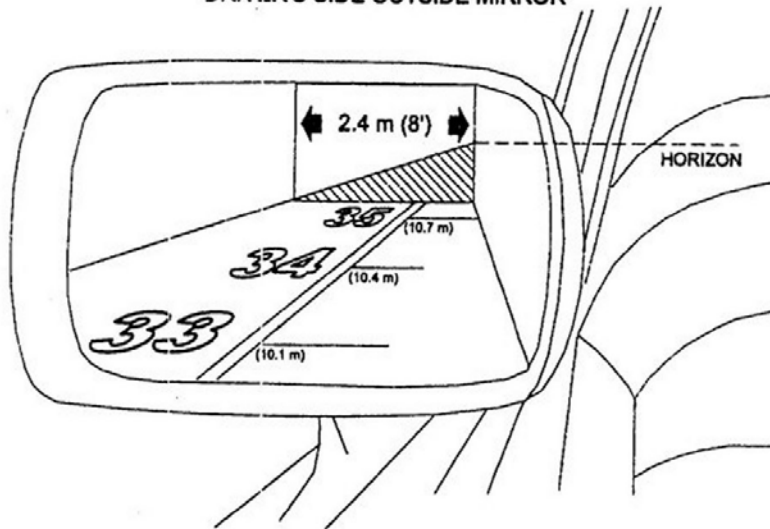
VEHICLE ATTITUDE AND GROUND LEVEL WERE RAISED 4" (101.6) TO PERFORM THE TEST.

RECORDED BY: JONATHAN WILLIAMS DATE: 07/14/09

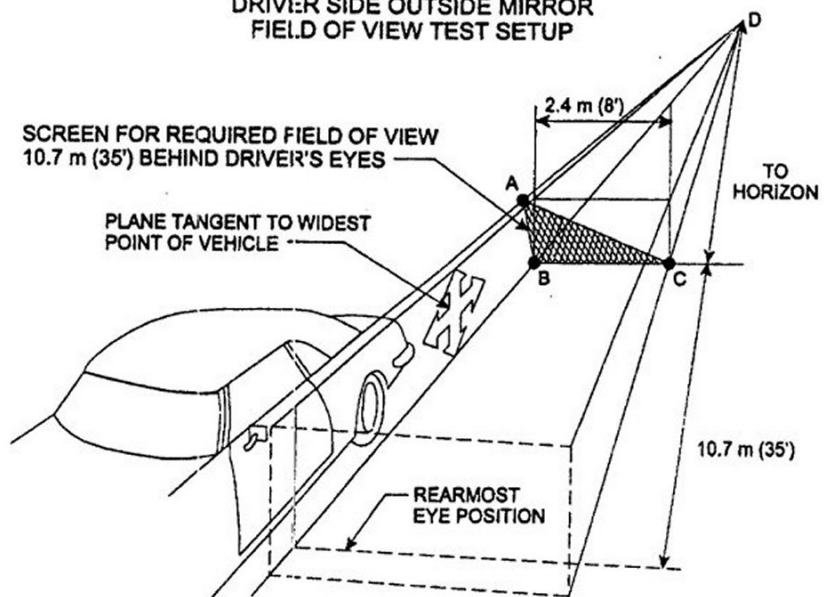
APPROVED BY: MICHAEL L. DUNLAP DATE: 07/14/09

DATA SHEET NO. 3... (Continued)

REQUIRED FIELD OF VIEW AS SEEN IN DRIVER'S SIDE OUTSIDE MIRROR

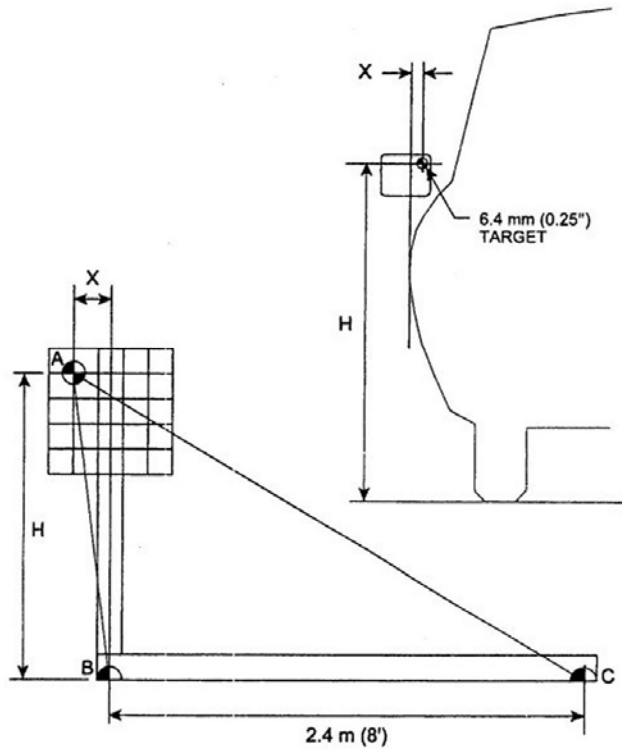


DRIVER SIDE OUTSIDE MIRROR FIELD OF VIEW TEST SETUP

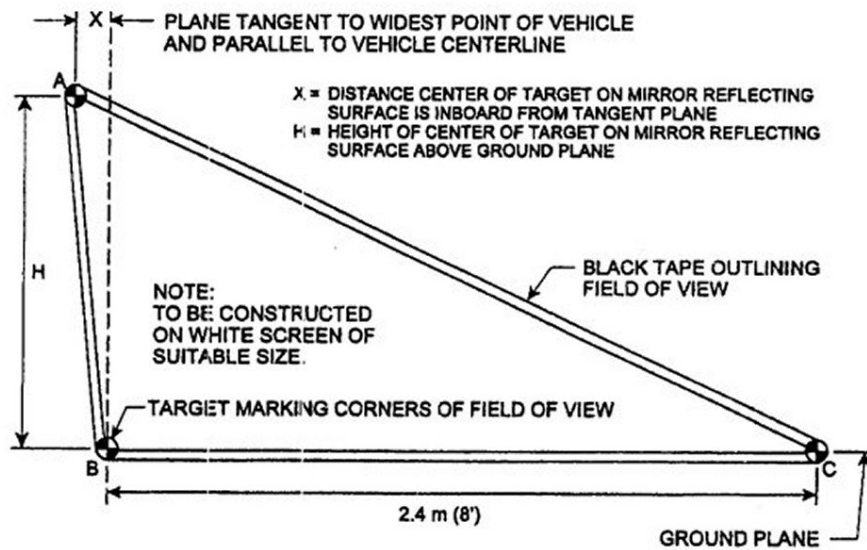


DATA SHEET NO. 3... (Continued)

DRIVER SIDE OUTSIDE MIRROR TARGET DISC LOCATION WITH X AND H DIMENSIONS



DRIVER SIDE OUTSIDE MIRROR REQUIRED FIELD OF VIEW TRIANGLE



**DATA SHEET NO. 4
REFLECTANCE TEST**

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	06/24/09	Temperature:	74°F

DESCRIPTION OF TEST APPARATUS: THE APPARATUS CONSISTS OF AN INCANDESCENT TUNGSTEN FILAMENT LAMP OPERATING AT A NOMINAL COLOR TEMPERATURE OF 2,856 K, COLLIMATING OPTICS, A SAMPLE HOLDER POSITIONED AT 25°, A SILICON PHOTOCCELL, AND A FLUKE 45 DUAL DISPLAY MULTIMETER (CALIBRATION DUE DATE 5-08-10). REFLECTANCE TESTS ARE CONDUCTED IN A 4'X6' WOODEN CABINET PAINTED FLAT BLACK. FOR CONVEX MIRROR A 6" INTEGRATING SPHERE WAS INCORPORATED INTO THE RECEIVER.

MIRROR DESCRIPTION: **INTERIOR DAY/NIGHT REARVIEW MIRROR**

VOLTAGE READING FROM CALIBRATION (Average Value): 275 mV

VOLTAGE READING FROM LIGHT REFLECTED BY DAY MIRROR (Average Value): 265 mV

REFLECTOMETER VOLTAGE READINGS		
	DAY MIRROR	NIGHT MIRROR
TEST NO. 1	265 mV	186 mV
TEST NO. 2	265 mV	186 mV
TEST NO. 3	265 mV	186 mV
TEST NO. 4	265 mV	186 mV
TEST NO. 5	265 mV	186 mV

REFLECTANCE (Day) = Voltage (Refl)/Voltage (Cal) = 0.964 x 100 = 96.4 percent
(Min. Required = 35%)

VOLTAGE READING FROM CALIBRATION (Average Value) = 275 mV

VOLTAGE READING FROM LIGHT REFLECTED BY NIGHT MIRROR (Average Value): 186mV

REFLECTANCE (Night) = Voltage (Refl)/Voltage (Cal) = 0.676 x 100 = 67.6 percent
(Min. Required = 4%)

NOTE: If meter reading directly in percent is used, record only percent

DATA SHEET NO. 4... (Continued)

MIRROR DESCRIPTION: **DRIVER SIDE OUTSIDE MIRROR.**

VOLTAGE READING FROM CALIBRATION (Average Value): 275 mV

VOLTAGE READING FROM LIGHT REFLECTED BY DAY MIRROR (Average Value): 254.4 mV

REFLECTOMETER VOLTAGE READINGS	
TEST NO. 1	254 mV
TEST NO. 2	255 mV
TEST NO. 3	255 mV
TEST NO. 4	254 mV
TEST NO. 5	254 mV

REFLECTANCE (Day) = Voltage (Refl)/Voltage (Cal) = 0. .925 x 100 = 92.5 percent
(Min. Required = 35%)

NOTE: If meter reading directly in percent is used, record only percent

TEST STATUS:	PASSED —	X	FAILED —	
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DATA SHEET NO. 4... (Continued)

MIRROR DESCRIPTION: **PASSENGER SIDE OUTSIDE MIRROR.**

VOLTAGE READING FROM CALIBRATION (Average Value): 342 mV

VOLTAGE READING FROM LIGHT REFLECTED BY DAY MIRROR (Average Value): 342 mV

REFLECTOMETER VOLTAGE READINGS	
TEST NO. 1	342 mV
TEST NO. 2	342 mV
TEST NO. 3	342 mV
TEST NO. 4	342 mV
TEST NO. 5	342 mV

REFLECTANCE (Day) = Voltage (Refl)/Voltage (Cal) = 0. 1.00 x 100 = 100 percent

REFERENCE MIRROR VALUE 93.4 X 100 (reflectance value) = 93.4%
(Min. Required = 35%)

NOTE: If meter reading directly in percent is used, record only percent

TEST STATUS:	PASSED —	X	FAILED —	
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RECORDED BY: JONATHAN WILLIAMS DATE: 07/14/09

APPROVED BY: MICHAEL L. DUNLAP DATE: 07/14/09

DATA SHEET NO. 5
BREAKAWAY TEST - INSIDE REARVIEW MIRROR

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	07/09/09	Temperature:	82°F

MOUNTING OF MIRROR (INSIDE) DESCRIPTION: TAB GLUED TO WINDSHIELD. MIRROR BASE SLIPS OVER BASE AND HELD IN PLACE WITH SPRING CLIP.

(Requirement: the mirror shall deflect, collapse or break away when it is subjected to a force of 400 N or less)

TEST NO.	LOAD DIRECTION VERTICAL/HORIZONTAL	MAXIMUM FORCE (N)	DISPLACEMENT (MM)	PASS	FAIL
1	0-90 DEGREES	335.3	7.4	X	
2	+45/90 DEGREES	71.2	24.7	X	
3	-45/90 DEGREES	167.4	20.8	X	
4	-45/+45 DEGREES	87.2	21.6	X	
5	+45/+45 DEGREES	152.2	21.4	X	
6	+45/-45 DEGREES	189.9	23.2	X	
7	-45/-45 DEGREES	142.0	42.4	X	

REMARKS:

DATA SHEET NO. 5... (Continued)

BREAKAWAY TEST - INSIDE REARVIEW MIRROR FAILURE TYPE – DESCRIPTION:

FAILURE TYPE – DESCRIPTION:

NONE

TEST STATUS:	PASSED —	X	FAILED —	
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REMARKS:

RECORDED BY: **JONATHAN WILLIAMS**

DATE: **07/14/09**

APPROVED BY: **MICHAEL L. DUNLAP**

DATE: **07/14/09**

DATA SHEET NO. 6
UNIT MAGNIFICATION AND CONVEX MIRROR TESTS

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	06/24/09	Temperature:	72°F

DRIVER'S SIDE & INSIDE REARVIEW MIRRORS:

DRIVER SIDE MIRROR	
TEST POSITION	DIAL READINGS
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0

INSIDE MIRROR	
TEST POSITION	DIAL READINGS
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0

All dial indicator readings for unit magnification mirrors must be zero.

DATA SHEET NO. 6... (Continued)
UNIT MAGNIFICATION AND CONVEX MIRROR TESTS

PASSENGER SIDE REARVIEW MIRROR:

CONVERSION TABLE FROM SPHEROMETER DIAL
 READING TO RADIUS OF CURVATURE

TEST POSITION	DIAL READINGS (inches) Passenger	RADIUS OF CURVATURE (mm)	DEVIATION BETWEEN THE AVERAGE RADIUS OF CURVATURE AND THE TEST POSITION RADIUS OF CURVATURE (mm)	PERCENT DEVIATION FROM THE AVERAGE RADIUS OF CURVATURE
1	0.0048	1488.4	27.8	1.8
2	0.0048	1488.4	33.8	2.3
3	0.0047	1537.8	27.8	1.8
4	0.0049	1458.6	33.8	2.3
5	0.0046	1553.6	33.8	2.3
6	0.0048	1488.4	27.8	1.8
7	0.0047	1537.8	27.8	1.8
8	0.0049	1458.6	4.0	0.3
9	0.0050	1428.5	33.8	2.3
10	0.0048	1488.4	27.8	1.8
Average Radius of Curvature		1492.9	Greatest Percent Deviation	2.3

REMARKS:

DATA SHEET NO. 6... (Continued)
UNIT MAGNIFICATION AND CONVEX MIRROR TESTS

PASSENGER'S SIDE REARVIEW MIRROR

IF CONVEX, ARE THERE ANY DISCONTINUITIES IN THE SLOPE OF THE MIRROR SURFACE YES _____ NO X

IF CONVEX, ARE THE WORDS, "**OBJECTS IN THE MIRROR ARE CLOSER THAN THEY APPEAR**" PRESENT YES X NO _____

IF CONVEX, MEASURE LETTER HEIGHT OF WORDS _____ **5.0** mm

IF CONVEX, LETTERS ARE NOT < 4.8 mm OR > 6.4 mm HIGH YES X NO _____

IF CONVEX, RADIUS OF CURVATURE NOT < 889 mm OR > 1651 mm YES X NO _____

IF CONVEX, THE GREATEST PERCENT DEVIATION FROM AVERAGE RADIUS OF CURVATURE IS $\pm 12.5\%$ YES X NO _____

IF UNIT MAGNIFICATION, ALL DIAL READINGS ARE ZERO ± 0 . YES X NO _____

NOTE:

TEST STATUS:	PASSED —	X	FAILED —	
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RECORDED BY: JONATHAN WILLIAMS DATE: 07/14/09

APPROVED BY: MICHAEL L. DUNLAP DATE: 07/14/09

**DATA SHEET NO. 7
MIRROR REFLECTIVE SURFACE AREA TEST**

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	06/24/09	Temperature:	70°F

MPVs, TRUCKS & BUSES (OTHER THAN SCHOOL BUSES)

DATA TABLE FOR SURFACE AREA

MIRRORS	AREA (cm ²)	REQUIREMENT		RESULTS	
		GVWR \leq 4536 kg	GVWR \geq 4536 kg	PASS	FAIL
Outside Driver's Side	197 cm²	126 cm ²	323 cm ²	N/A	
Outside Passenger Side	196 cm²	126 cm ²	323 cm ²	N/A	

MIRRORS LOCATED SO AS TO PROVIDE DRIVER A VIEW TO THE REAR:

LEFT SIDE YES X NO _____

RIGHT SIDE YES X NO _____

TEST STATUS:	PASSED —	X	FAILED —	
--------------	----------	----------	----------	--

REMARKS:

RECORDED BY: **JONATHAN WILLIAMS** DATE: **07/14/09**

APPROVED BY: **MICHAEL L. DUNLAP** DATE: **07/14/09**

DATA SHEET NO. 8
TEST SUMMARY-FMVSS 111-REARVIEW MIRRORS

Vehicle Information			
Year:	2009	Make	Nissan
Model:	Rogue S FWD	Body Style	5-Door MPV
NHTSA No:	C95205	VIN	JN8AS58T59W320598
Test Date:	07/14/09	Temperature:	N/A

PASSENGER VEHICLE TESTING:

OUTSIDE DRIVER SIDE MIRROR	PASS	FAIL	COMMENTS
STABLE SUPPORT	X		
DOES NOT PROTRUDE BEYOND VEHICLE BODY	X		
NOT OBSCURED BY UNWIPED PORTION OF WINDSHIELD	X		
ADJUSTABLE BY TILTING	X		
ADJUSTABLE FROM DRIVER SEAT	X		
FREE OF SHARP EDGES	X		
FIELD-OF-VIEW	X		
REFLECTANCE	X		
UNIT MAGNIFICATION	X		

INSIDE REARVIEW MIRROR	PASS	FAIL	COMMENTS
STABLE SUPPORT	X		
ADJUSTABLE BY TILTING	X		
FIELD-OF-VIEW	X		
REFLECTANCE	X		
BREAK AWAY	X		
UNIT MAGNIFICATION	X		

OUTSIDE PASSENGER MIRROR	PASS	FAIL	COMMENTS
STABLE SUPPORT	X		
ADJUSTABLE BY TILTING	X		
FREE OF SHARP EDGES	X		
UNIT OR CONVEX			Convex
LABELING	X		
REFLECTANCE	X		

APPENDIX A
PHOTOGRAPHS



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 1: LEFT FRONT $\frac{3}{4}$ VIEW



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 2: LEFT SIDE VIEW



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 3: RIGHT REAR ¾ VIEW



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 4: RIGHT SIDE VIEW

MFD. BY NISSAN MOTOR CO., LTD.

DATE 7/08

GVWR/PNBV 4233 LBS.

GAWR/PNBE FR. 2241 LBS.

WITH P215/70R16 TIRES,
16X6 1/2 RIMS. AT 33 PSI
COLD SINGLE.

GAWR/PNBE RR. 2008 LBS.

WITH P215/70R16 TIRES,
16X6 1/2 RIMS. AT 33 PSI
COLD SINGLE.

THIS VEHICLE CONFORMS
TO ALL APPLICABLE FED-
ERAL MOTOR VEHICLE SA-
FETY AND THEFT PREVEN-
TION STANDARDS IN EFF-
ECT ON THE DATE OF MA-
NUFACTURE SHOWN ABOVE.

VIN: JN8AS58T59W320598

TYPE: MPV

COLOR	TRIM	TRANS
K51	K	REOF10A
AXLE	ENGINE	
GB61	QR25 (DE)	2488CC

J
N
8
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W
3
2
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5
9
8

2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 5: MANUFACTURER'S LABEL



TIRE AND LOADING INFORMATION
RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

SEATING CAPACITY NOMBRE DE SIÈGES	TOTAL TOTAL	5	FRONT AVANT	2	REAR ARRIÈRE	3
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The combined weight of occupants and cargo should never exceed **408 kg** or **900 lbs.**
 Le poids total des occupants et des marchandises ne doit jamais dépasser **408 kg** ou **900 lb.**

TIRE PNEU	SIZE DIMENSIONS	COLD TIRE PRESSURE PRESSION DES PNEUS À FROID	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS
FRONT AVANT	P215/70R16 99H	230kPa , 33PSI	
REAR ARRIÈRE	P215/70R16 99H	230kPa , 33PSI	
SPARE DE RECHANGE	T155/90D16	420kPa , 60PSI	

ナ

JM01A

FIGURE 6:TIRE PLACARD



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 7: DRIVER SIDE REARVIEW MIRROR AND MOUNTING



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 8: PASSENGER SIDE REARVIEW MIRROR AND MOUNTING



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 9: INSIDE REARVIEW MIRROR AND MOUNTING



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 10:TEST SET-UP



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 11:CAMERA SET-UP FOR PHOTOGRAPHING REFERENCE BOARD



2009 NISSAN ROGUE S NHTSA NO. C95205 FMVSS NO. 111 FIGURE 12: OVERALL SET-UP AND INSTRUMENTATION FOR MIRROR BREAK- AWAY TEST



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 13:CLOSE-UP OF MIRROR BREAK- AWAY TEST



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 14: REFLECTION TEST SET-UP



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 15: MIRROR SET-UP FOR AREA MEASUREMENT



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 16:LEFT EYE FIELD OF VIEW TEST (INSIDE MIRROR)



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 17:REFERENCE BOARD FOR INSIDE MIRROR, LEFT EYE



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 18:RIGHT EYE FIELD OF VIEW TEST (INSIDE MIRROR)



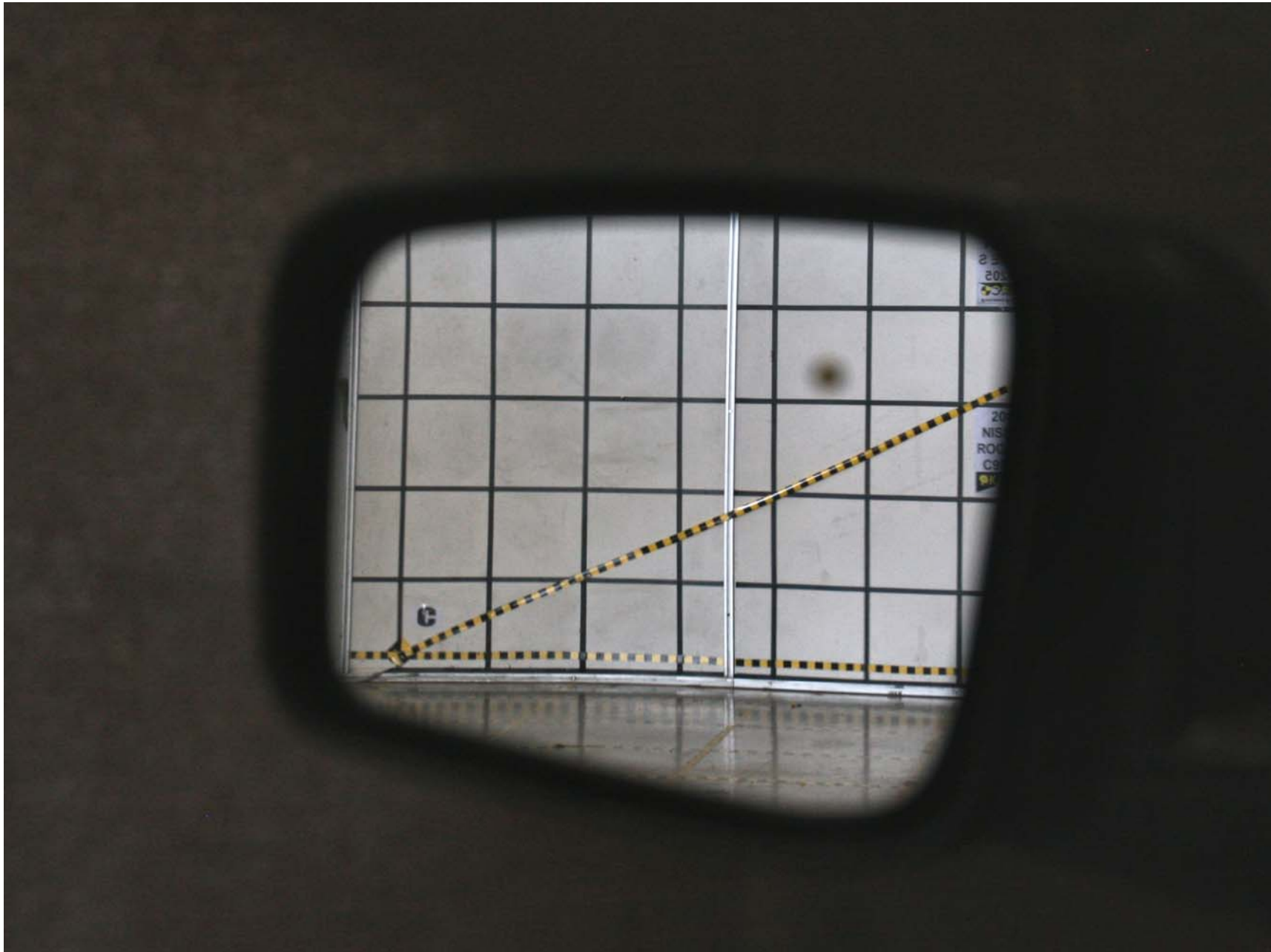
2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 19:REFERENCE BOARD FOR INSIDE MIRROR, RIGHT EYE



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 20:LEFT EYE FIELD OF VIEW TEST (DRIVER SIDE MIRROR)



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

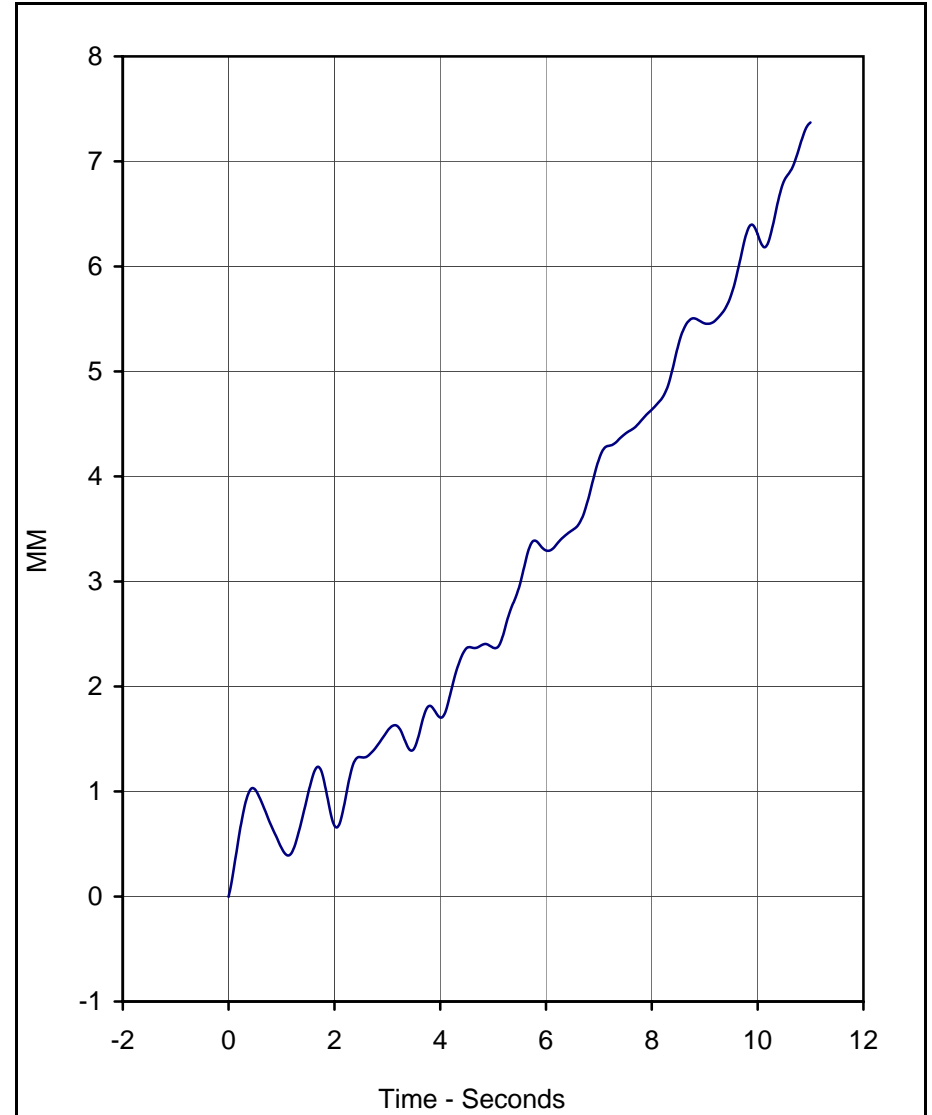
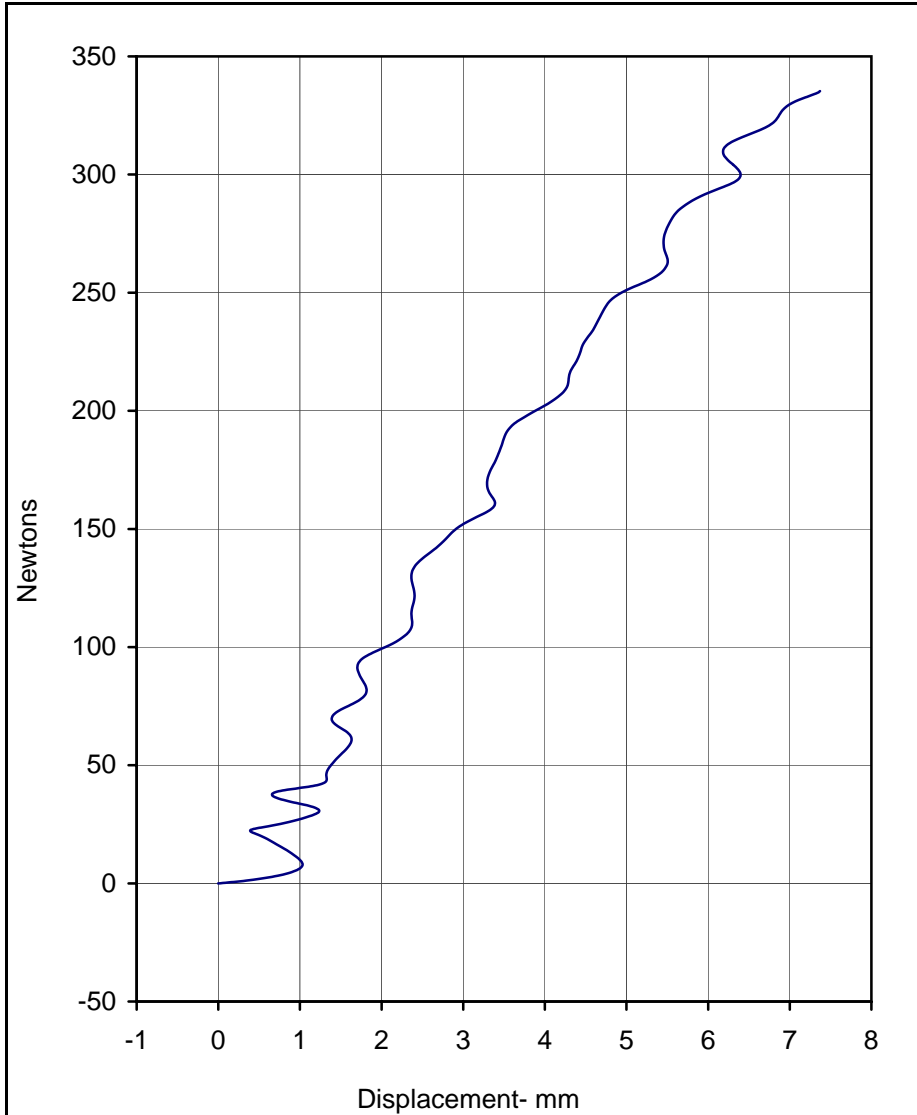
FIGURE 21:RIGHT EYE FIELD OF VIEW TEST (DRIVER SIDE MIRROR)



2009 NISSAN ROGUE S
NHTSA NO. C95205
FMVSS NO. 111

FIGURE 22:REFERENCE BOARD FOR DRIVER SIDE MIRROR

APPENDIX B
DATA PLOTS



Curve Description	CURNO	Type
Force vs. Displacement	001	FIL

Curve Description	CURNO	Type
Displacement vs. Time	002	FIL

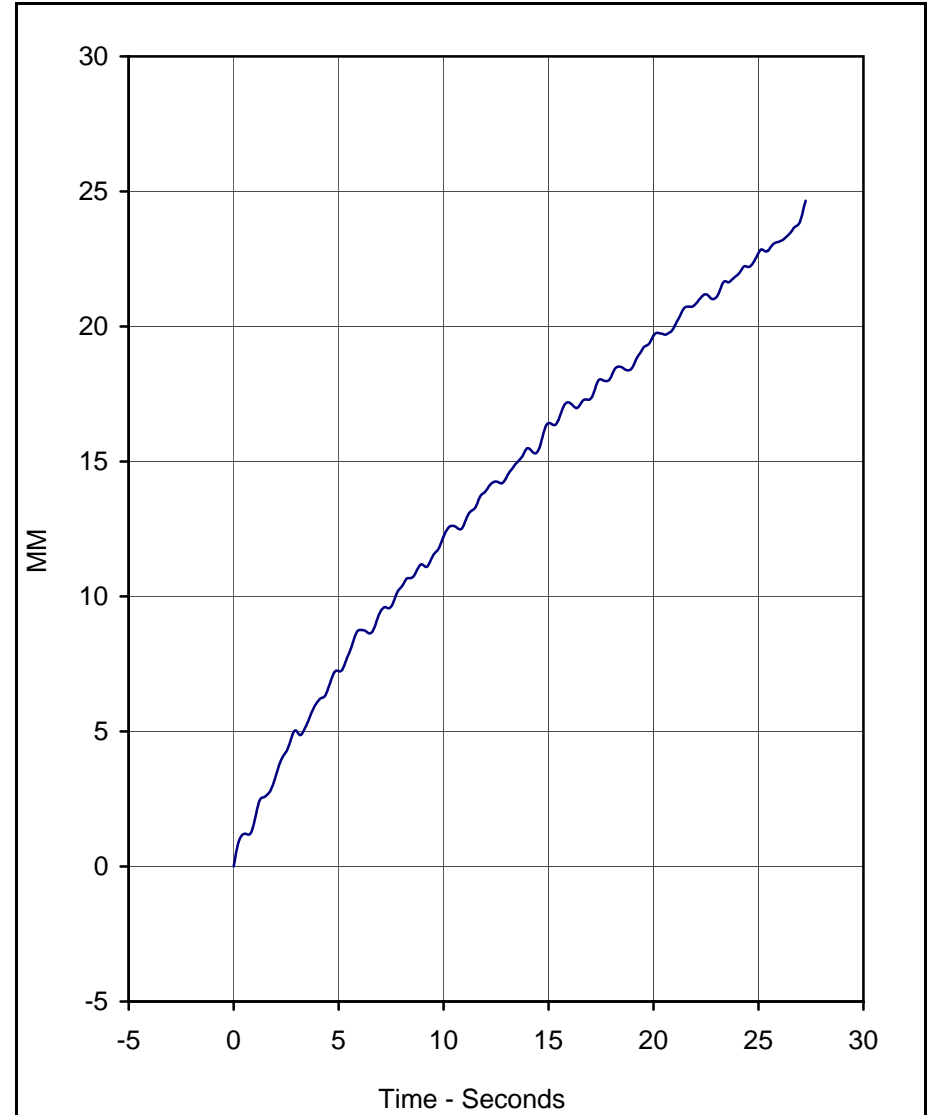
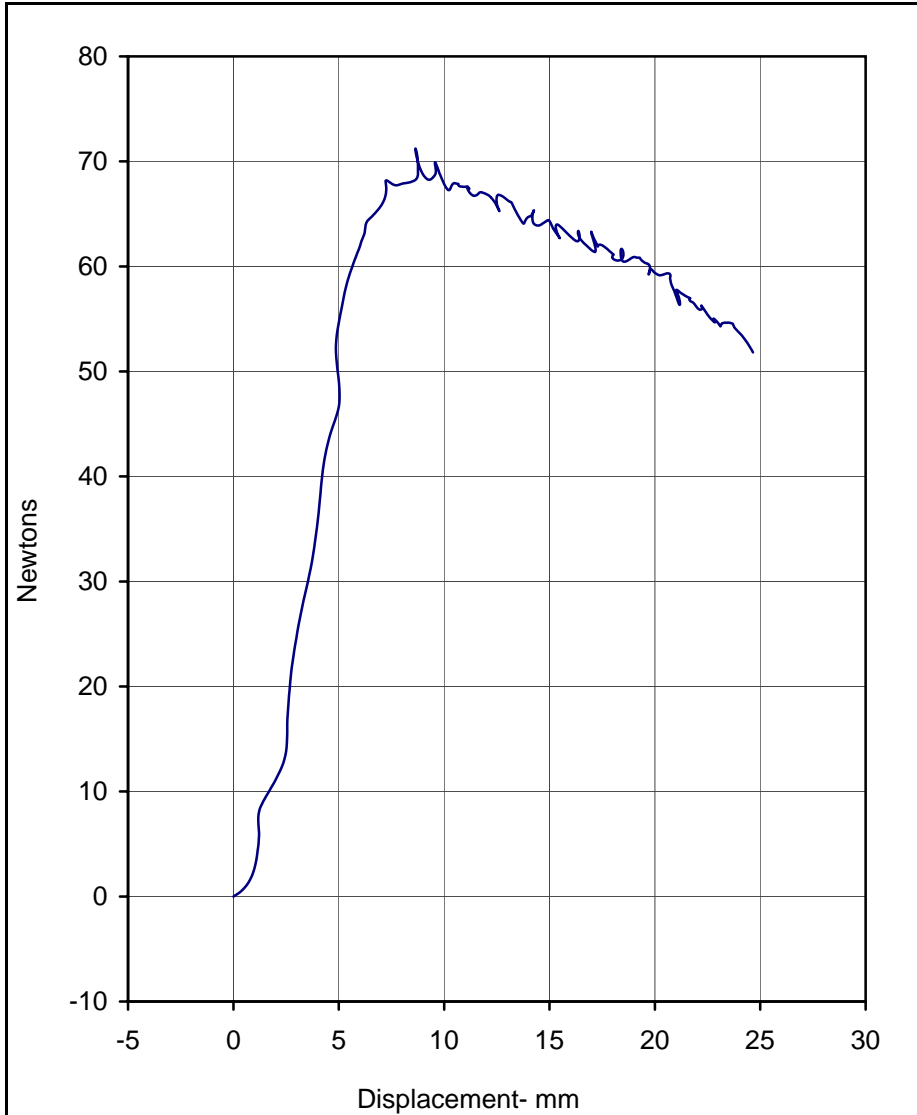
Units	Peak Force	Displacement	Filter (Hz)
Newtons	335.3	7.4	1

Units	Max	Time	Displ. Rate (mm/min.)	Filter (Hz)
MM	7.4	11.0	37.5	1

Test Program: 2009 FMVSS 111 Rearview Mirrors Test No.: 1
 Test Vehicle: 2009 Nissan Rogue S 5-Door MPV No.: C95205

Load Direction: 0 / 90
 Test Date: 7/9/09





Curve Description	CURNO	Type
Force vs. Displacement	001	FIL

Curve Description	CURNO	Type
Displacement vs. Time	002	FIL

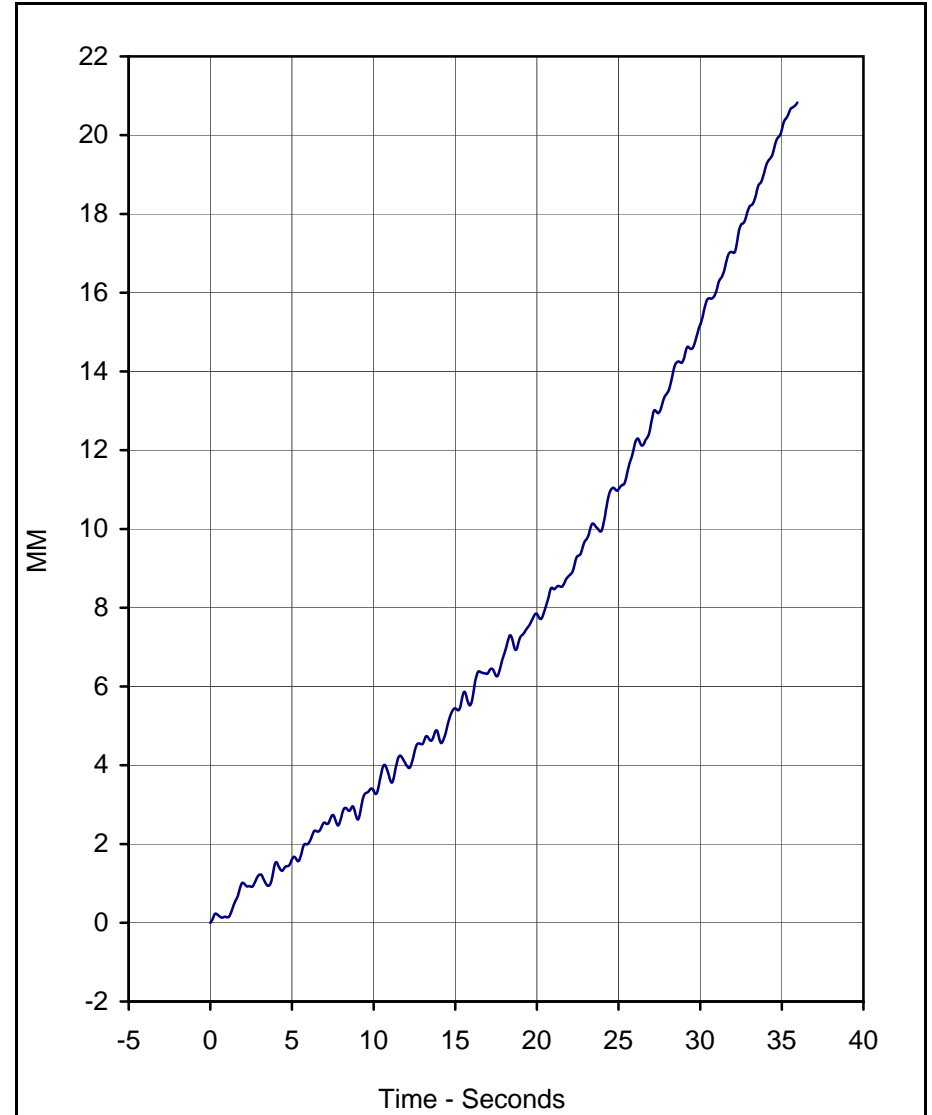
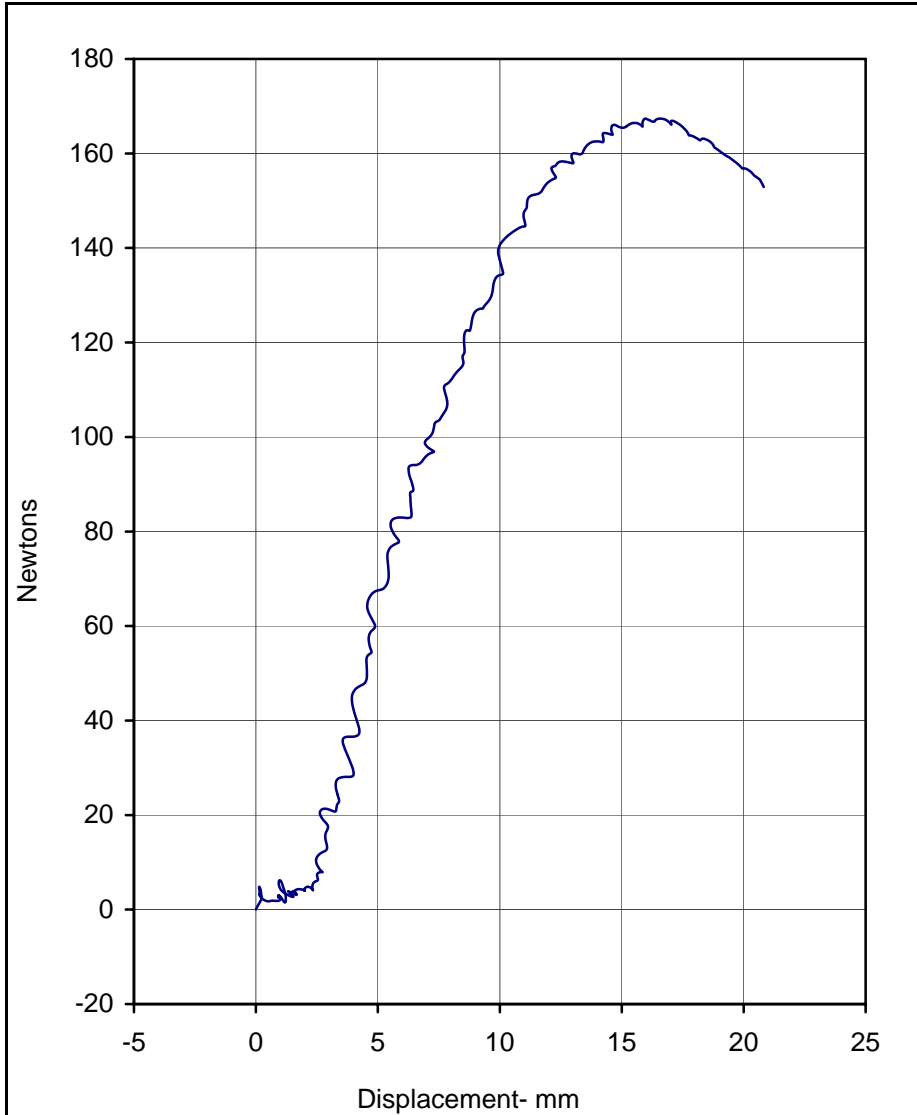
Units	Peak Force	Displacement	Filter (Hz)
Newtons	71.2	8.6	1

Units	Max	Time	Displ. Rate (mm/min.)	Filter (Hz)
MM	24.7	27.3	53.3	1

Test Program: 2009 FMVSS 111 Rearview Mirrors Test No.: 2
 Test Vehicle: 2009 Nissan Rogue S 5-Door MPV No.: C95205

Load Direction: +45 / 90
 Test Date: 7/9/09





Curve Description	CURNO	Type
Force vs. Displacement	001	FIL

Curve Description	CURNO	Type
Displacement vs. Time	002	FIL

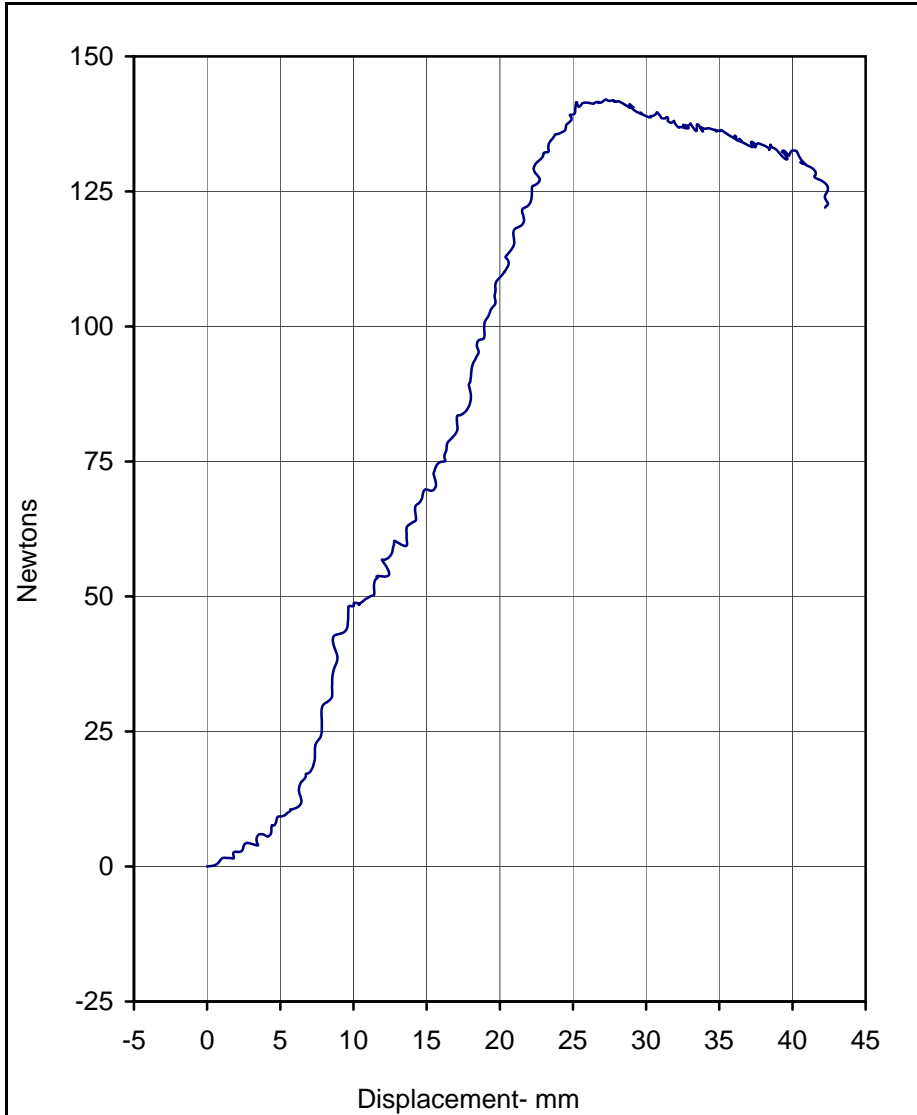
Units	Peak Force	Displacement	Filter (Hz)
Newtons	167.4	16.0	1

Units	Max	Time	Displ. Rate (mm/min.)	Filter (Hz)
MM	20.8	36.0	34.4	1

Test Program: 2009 FMVSS 111 Rearview Mirrors Test No.: 3
 Test Vehicle: 2009 Nissan Rogue S 5-Door MPV No.: C95205

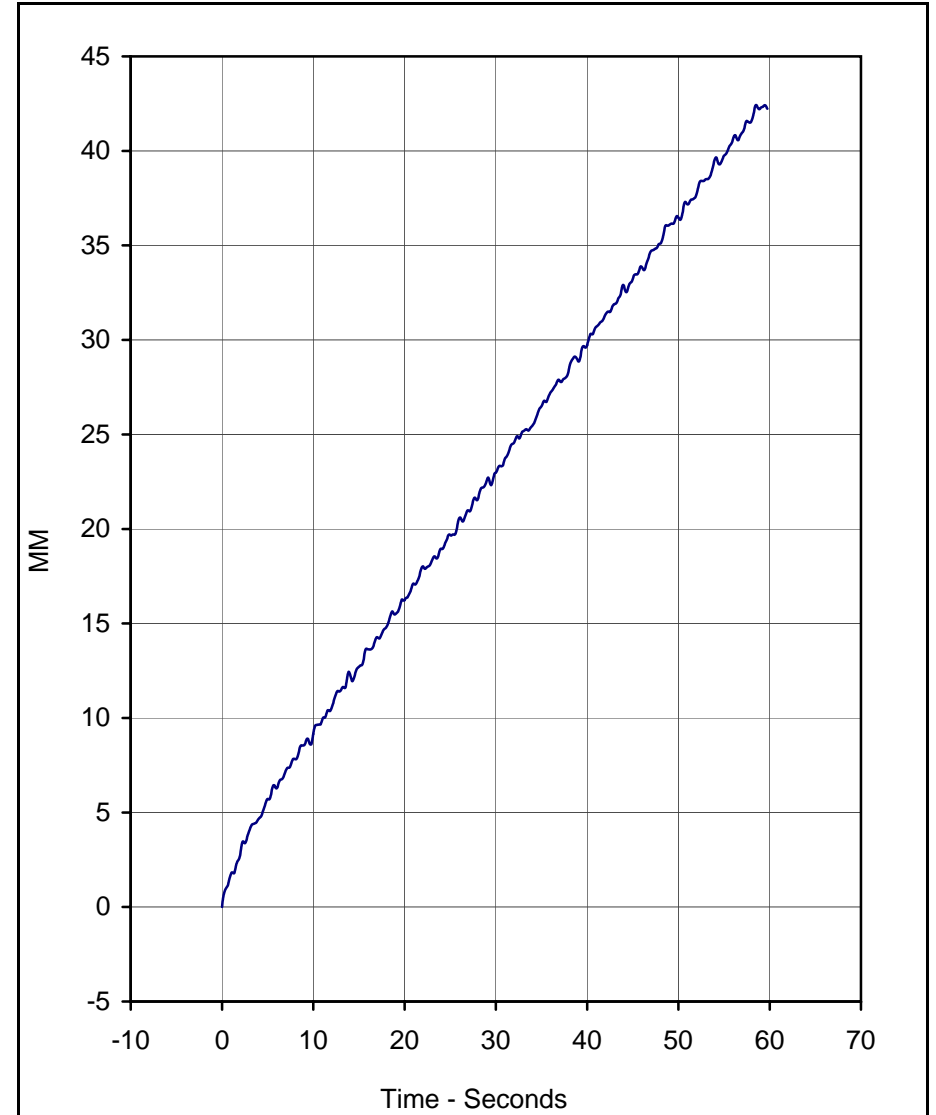
Load Direction: -45 / 90
 Test Date: 7/8/09





Curve Description	CURNO	Type
Force vs. Displacement	001	FIL

Units	Peak Force	Displacement	Filter (Hz)
Newtons	142.0	27.3	1



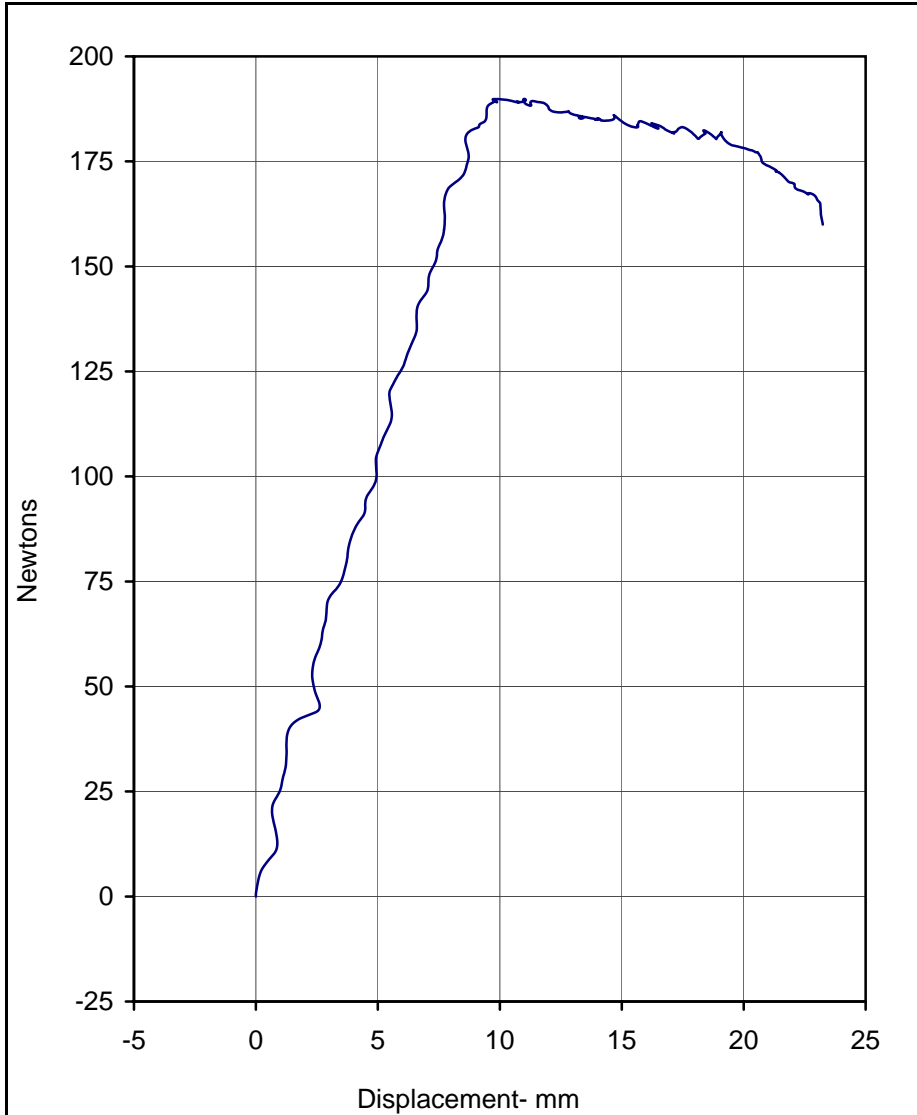
Curve Description	CURNO	Type
Displacement vs. Time	002	FIL

Units	Max	Time	Displ. Rate (mm/min.)	Filter (Hz)
MM	42.4	58.5	43.3	1

Test Program: 2009 FMVSS 111 Rearview Mirrors Test No.: 4
 Test Vehicle: 2009 Nissan Rogue S 5-Door MPV No.: C95205

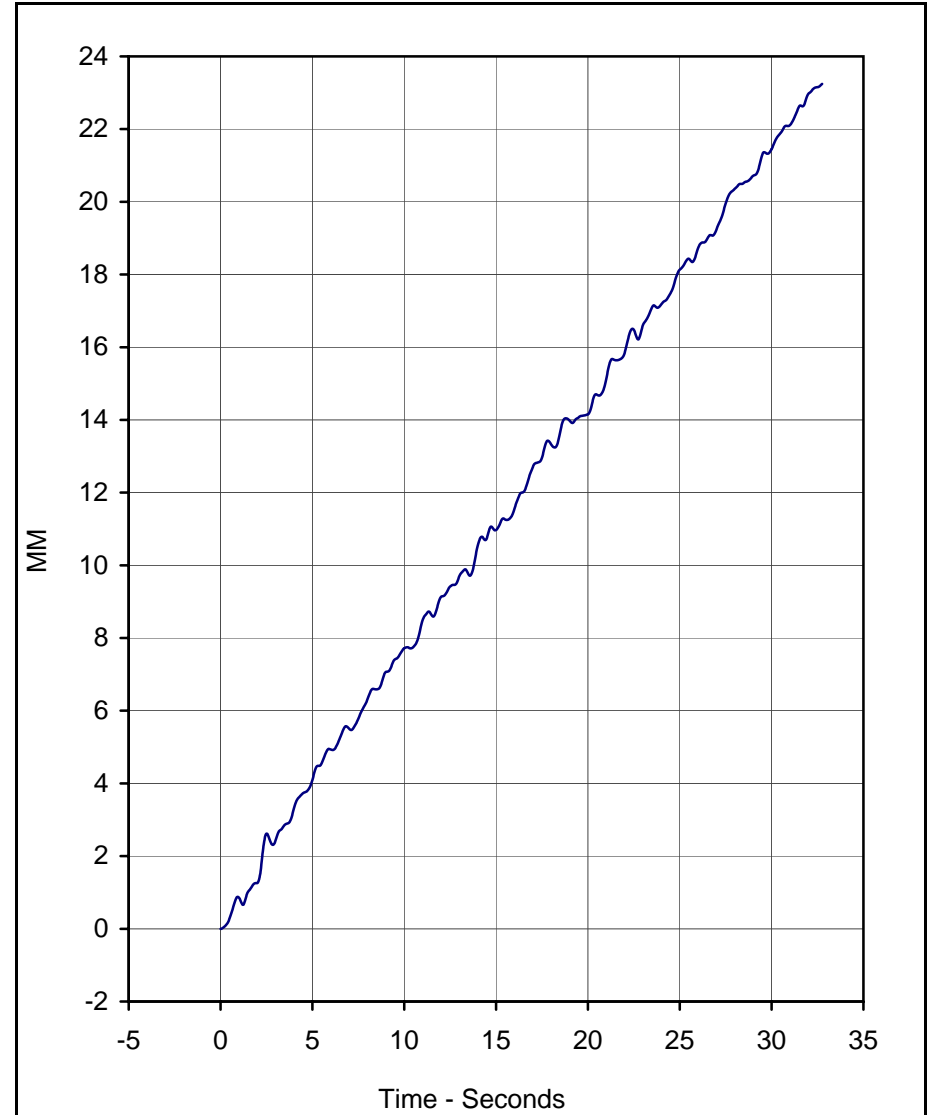
Load Direction: -45 / +45
 Test Date: 7/9/09





Curve Description	CURNO	Type
Force vs. Displacement	001	FIL

Units	Peak Force	Displacement	Filter (Hz)
Newtons	189.9	11.0	1



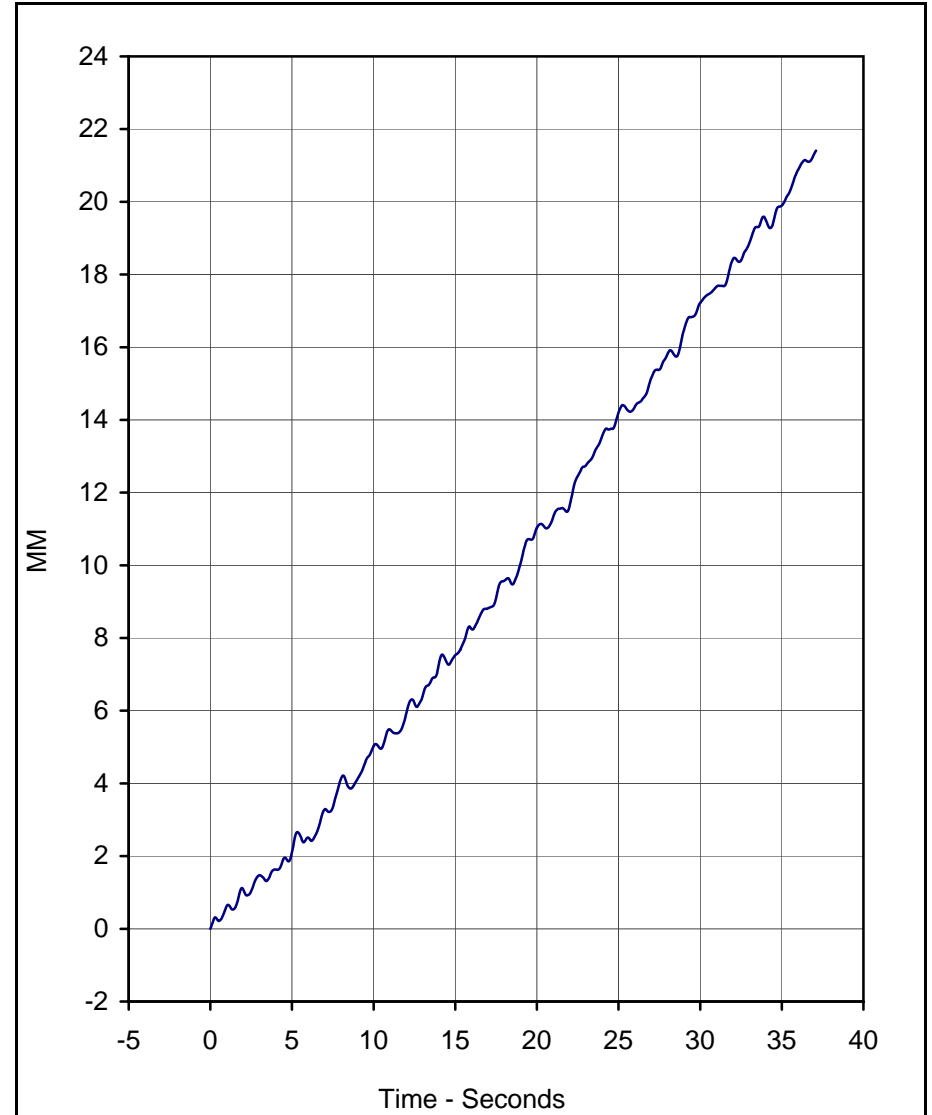
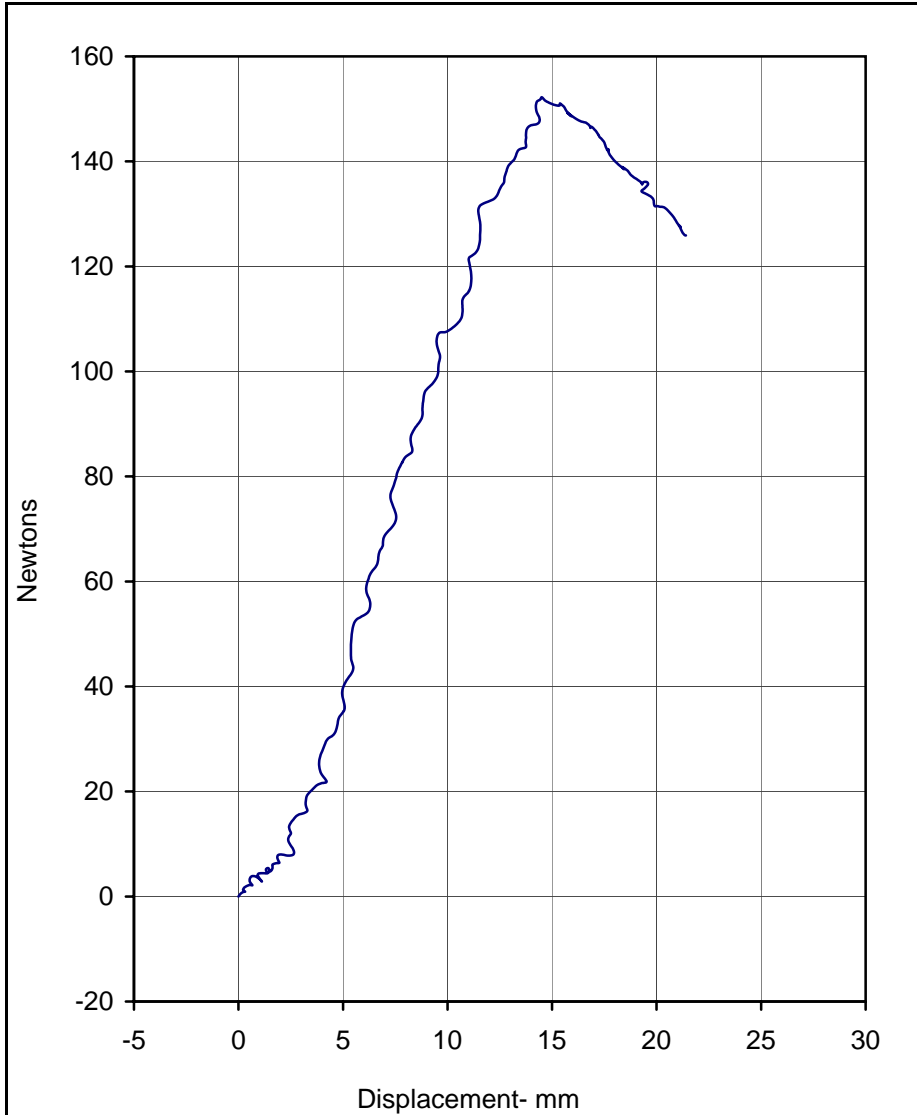
Curve Description	CURNO	Type
Displacement vs. Time	002	FIL

Units	Max	Time	Displ. Rate (mm/min.)	Filter (Hz)
MM	23.2	32.8	43.1	1

Test Program: 2009 FMVSS 111 Rearview Mirrors Test No.: 5
 Test Vehicle: 2009 Nissan Rogue S 5-Door MPV No.: C95205

Load Direction: +45 / +45
 Test Date: 7/9/09





Curve Description	CURNO	Type
Force vs. Displacement	001	FIL

Curve Description	CURNO	Type
Displacement vs. Time	002	FIL

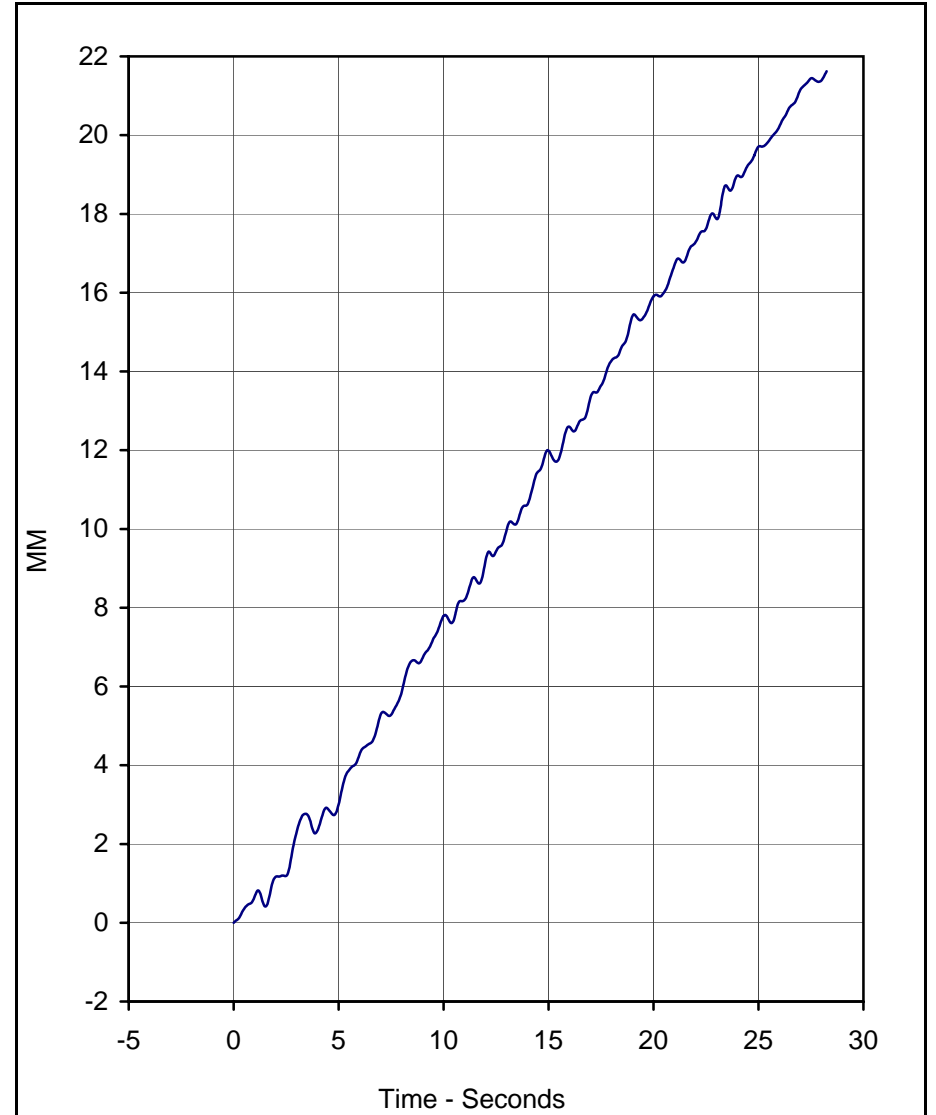
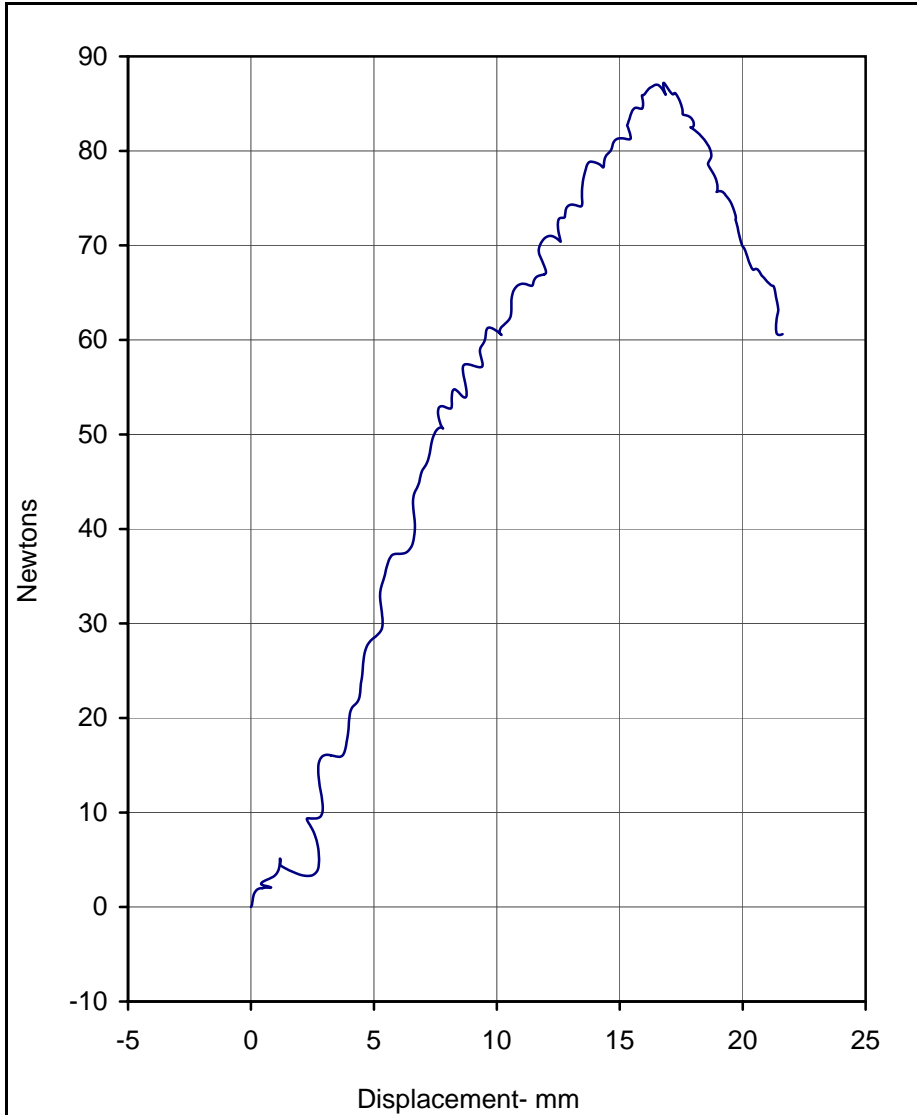
Units	Peak Force	Displacement	Filter (Hz)
Newtons	152.2	14.5	1

Units	Max	Time	Displ. Rate (mm/min.)	Filter (Hz)
MM	21.4	37.1	34.1	1

Test Program: 2009 FMVSS 111 Rearview Mirrors Test No.: 6
 Test Vehicle: 2009 Nissan Rogue S 5-Door MPV No.: C95205

Load Direction: +45 / -45
 Test Date: 7/9/09





Curve Description	CURNO	Type
Force vs. Displacement	001	FIL

Curve Description	CURNO	Type
Displacement vs. Time	002	FIL

Units	Peak Force	Displacement	Filter (Hz)
Newtons	87.2	16.8	1

Units	Max	Time	Displ. Rate (mm/min.)	Filter (Hz)
MM	21.6	28.3	46.7	1

Test Program: 2009 FMVSS 111 Rearview Mirrors Test No.: 7
 Test Vehicle: 2009 Nissan Rogue S 5-Door MPV No.: C95205

Load Direction: -45 / -45
 Test Date: 7/9/09



APPENDIX C

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

**2009 FMVSS 111 Rearview Mirrors
Test Equipment List
7/9/09
2009 Nissan Rogue S 5-Door MPV**

Description	Manufacturer	Model No.	Serial No.	Limit	Accuracy	Cal. Date	Due Cal.
Hydraulic Pump	Lincoln	T-3825-C	2460952	8 gpm @ 2700 psi	N/A	N/A	N/A
Computer	Panasonic	CF-71	8IMAA01852	N/A	N/A	N/A	N/A
TDAS	DTS	TDAS	DM0100	N/A	SAE J211	11/28/08	11/28/09
Load Cell	Interface	1500ASK-300	230965A	1334 N	± 1.0%	4/20/09	4/20/10
Displacement Xdcr.	Celesco	PTX101-0030	J0654652	76 CM	± 1.0%	5/5/09	5/5/10



APPENDIX D
EYELIPSE LOCATIONS SUPPLIED BY MANUFACTURER

VEHICLE INFORMATION / TEST SPECIFICATIONS

FMVSS No. 111

Vehicle Make/Model/Year: NISSAN/ROUGE/2009

Driver's Eye Reference Points:

Coordinate System:

X = Longitudinal Dimension

Y = Lateral Dimension

Z = Vertical Dimension

Positive Values are as follows:

X = Forward of Reference Point

Y = Outboard of Reference Point (to driver's side)

Z = Above Reference Point

Provide Reference/Body Fiducial Point that dimensions below are measured from.

Point must be easily accessible and usable by test laboratory personnel, i.e. seat track mounting bolt, seat belt anchorage bolt, door latch at B pillar striker. (Provide sketch of reference point if necessary.)

Reference point – Driver's Seat Front Outboard Seat Adjuster Anchorage

Coordinates - X=998.5, Y=-585.0, Z=106.3

COORDINATES	LEFT SIDE MIRROR		INSIDE MIRROR (NON-dazzie manual)		RIGHT SIDE MIRROR*	
	LE1 (left eye)	RE1 (right eye)	LE2	RE2	LE3	RE3
X	-393.1	-328.7	-393.4	-331.8	-	-
Y	1374.4	1365.8	1367.1	1387.8	-	-
Z	1048.1	1048.1	1043.1	1043.1	-	-
Mirror Mfr., Model Part No.	Ichikoh Industries 96302 JM000 96302 JM200		Ichikoh 96321 9Y000		Ichikoh Industries 96301 JM000 96301 JM200	

Reference point – Driver’s Seat Front Outboard Seat Adjuster Anchorage

Coordinates - X=998.5, Y=-585.0, Z=106.3

COORDINATES	LEFT SIDE MIRROR		INSIDE MIRROR (NON-dazzie Auto, w/compass,w/UGDO)		RIGHT SIDE MIRROR*	
	LE1 (left eye)	RE1 (right eye)	LE2	RE2	LE3	RE3
X	-393.1	-328.7	-415.8	-331.2	-	-
Y	1374.4	1365.8	1370.4	1388.4	-	-
Z	1048.1	1048.1	1043.5	1043.5	-	-
Mirror Mfr., Model Part No.	Ichikoh Industries 96302 JM000 96302 JM200		GENTEX 96321 CB000		Ichikoh Industries 96301 JM000 96301 JM200	

*PLEASE NOTE: Right side mirror information was not available at the time of submission but will be submitted when it becomes available.