

REPORT NUMBER: 111-MGA-05-005

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 111
SCHOOL BUS REARVIEW MIRRORS**

**Blue Bird Corporation
2005 Vision School Bus
NHTSA No. C50901**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105**



Final Report Date: June 20, 2005

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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WASHINGTON, D.C. 20590**

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Prepared by:  Date: June 20, 2005
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FINAL REPORT ACCEPTED BY:

Date of Acceptance

Technical Report Documentation Page

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16. Abstract Compliance tests were conducted on the subject Blue Bird 2005 Vision School Bus, NHTSA No. C50901 in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-111SB-00 for the determination of FMVSS 111 compliance. Test failures were as follows: NONE					
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SECTION 1
PURPOSE OF COMPLIANCE TEST

Tests were conducted on a MY2005 Blue Bird School Bus Model Vision, NHTSA No. C50901, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-111SB-00 to determine compliance to the requirements of Federal Motor Vehicle Safety Standard (FMVSS) 111, "School Bus Rearview Mirrors."

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-02-D-01057.

SECTION 2
TEST DATA SUMMARY

Based on the tests performed, the MY2005 Blue Bird School Bus, Model Vision, NHTSA No. C50901 appears to meet all of the requirements of FMVSS 111. See Test Summary Data Sheets on the following pages.

**FMVSS 1115B, SCHOOL BUS REARVIEW MIRRORS
TEST SUMMARY DATA SHEETS**

Test Vehicle: **2005 Blue Bird Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
 Test Date: **6/1/05**

System A Mirrors

A. Outside Driver Side Mirror #3 - Unit Magnification

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Surface Area	PASS	--
Reflectance	PASS	--
Unit Magnification	PASS	--

B. Outside Passenger Side Mirror #4 - Unit Magnification

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Surface Area	PASS	--
Reflectance	PASS	--
Unit Magnification	PASS	--

C. Outside Driver Side Mirror #5 - Convex

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Reflectance	PASS	--

D. Outside Passenger Side Mirror #6 - Convex

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Reflectance	PASS	--

**FMVSS 111SB, SCHOOL BUS REARVIEW MIRRORS
TEST SUMMARY DATA SHEETS...continued**

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **6/1/05**

System B Mirrors

E. Driver Side Front Mirror #1 - Cross View

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Overlap with System A	PASS	--
Distance to Eye Point	PASS	--
No Surface Discontinuities	PASS	--
Surface Area	PASS	--
If Convex – Radius of Curvature	PASS	--
Radius of Curvature Label	PASS	--
Arc Separation	PASS	--
Reflectance	PASS	--

F. Passenger Side Front Mirror #2 - Cross View

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Overlap with System A	PASS	--
Distance to Eye Point	PASS	--
No Surface Discontinuities	PASS	--
Surface Area	PASS	--
If Convex – Radius of Curvature	PASS	--
Radius of Curvature Label	PASS	--
Arc Separation	PASS	--
Reflectance	PASS	--

SECTION 3
COMPLIANCE TEST DATA

**FMVSS 111SB – DATA SHEET 1
SCHOOL BUS INSPECTION AND IDENTIFICATION**

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

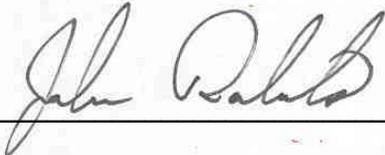
NHTSA No.: **C50901**
Test Date: **6/1/05**

GENERAL VEHICLE IDENTIFICATION

Final Stage Manufacturer	Blue Bird	Date of Mfg.	09/2004
Chassis Manufacturer	Blue Bird	Date of Mfg.	09/2004
Seating Capacity (including driver)	39	GVWR (kg)	13612
VIN No.	1BAKGCKH05F227003	GAWR Front (kg)	4537
		GAWR Rear (kg)	9528

DESCRIPTION OF MIRRORS

Mirror No.	Type			Description	Manufacturer
	Unit Mag	Convex	Cross View		
1			X	Driver Side	Rosco Mirror
2			X	Passenger Side	
3	X			Driver Side	
4	X			Passenger Side	
5		X		Driver Side	
6		X		Passenger Side	

Recorded By: 

Approved By: 

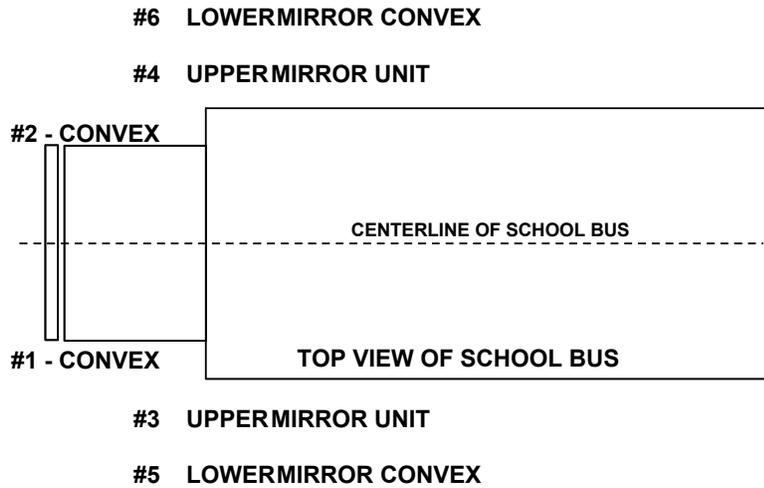
Date: June 1, 2005

**FMVSS 111SB – DATA SHEET 2
MIRROR LOCATION AND FIELD OF VIEW**

Test Vehicle: **2005 Blue Bird Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
 Test Date: **6/1/05**

MIRROR DIAGRAM



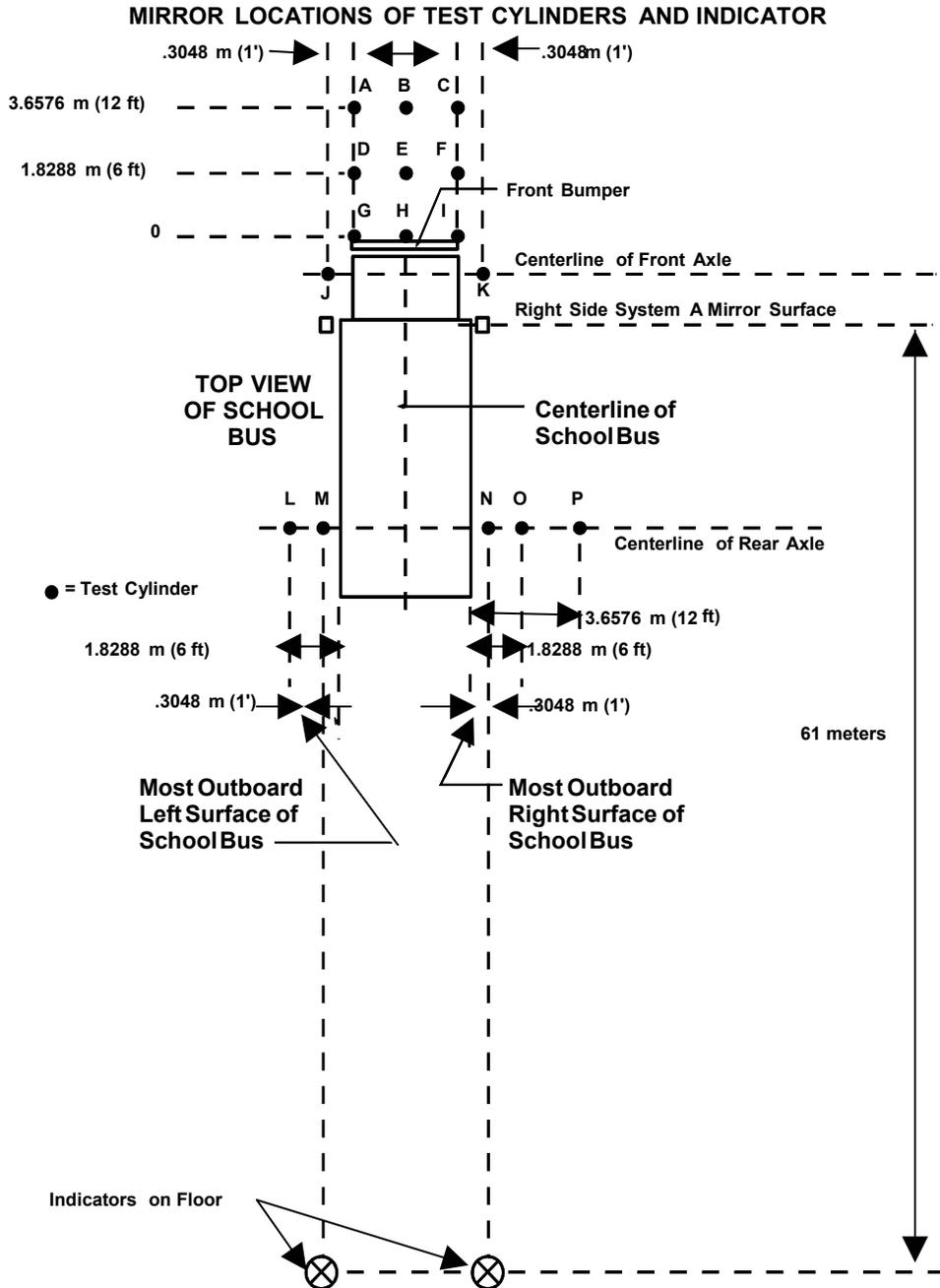
MIRROR NO.	TYPE	MIRROR SYSTEM	CYLINDERS VIEWED (entire top surface)
1	CROSS VIEW/CONVEX	B	B,C,E,F,H,I,J,L,M
2	CROSS VIEW/CONVEX	B	A,D,E,F,G,H,K,N,O,P
3	UNIT MAGNIFICATION	A	61 Meter INDICATOR
4	UNIT MAGNIFICATION	A	61 Meter INDICATOR
5	CONVEX	A	L,M, 61 Meter INDICATOR
6	CONVEX	A	N,O, 61 Meter INDICATOR

SEE FIGURE ON NEXT PAGE

**FMVSS 111SB – DATA SHEET 2...continued
MIRROR LOCATION AND FIELD OF VIEW**

Test Vehicle: **2005 Blue Bird Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
 Test Date: **6/1/05**



- NOTES:
1. The cylinders shall be a color which provides a high contrast with the surface on which the bus is parked (S13.1).
 2. The cylinders are 0.3048 m high and 0.3048 m in diameter, except for cylinder P which is 0.9144 m high and 0.3048 m in diameter.

**FMVSS 111SB DATA SHEET 2...continued
MIRROR LOCATION AND FIELD OF VIEW**

Test Vehicle: **2005 Blue Bird Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
 Test Date: **6/1/05**

SYSTEM A AND DIRECT VISION

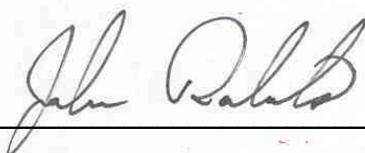
System A Mirrors	Pass/Fail
Entire top surface of cylinder N and the indicator 61 meters (200 feet) rearward of the mirror surface be viewed in the photograph	PASS
Entire top surface of cylinder M and indicator 61 meters (200 feet) rearward of the mirror surface be viewed in the photograph	PASS
Which test cylinders A through P can not be photographed directly from the driver's eye location within the semi-circle viewing area using no mirror system:	D,E,F,G,H, I,J,K,L,M,N,O,P

SYSTEM B ARC'S AND DISTANCE

Mirror Number (from data sheet 2)	Mirror Location	Distance from the Driver's Eye Point to the Center of the Mirror (cm)	3 Minutes of Arc (cm)	9 Minutes of Arc (cm)
#1	Left Front	281	0.245	--
#2	Right Front	314	0.274	0.822

Distance determined in column 3 multiplied by 0.000873 yield 3 minutes of arc, for column 4, for that mirror as viewed from the driver's eye point; the distances determined in column 3 multiplied by 0.002618 yield 9 minutes of arc, for column 5, for that mirror as viewed from the driver's eye point. The minimum distance for any system B mirror between the driver's eye point and the center of the mirror is more than 95 centimeters:

Requirements	Distance	Pass/Fail
Distance between center of System B mirror #1 and driver's eye point	281 cm	PASS
Distance between center of System B mirror #2 and driver's eye point	314 cm	PASS

Recorded By: 

Approved By: 

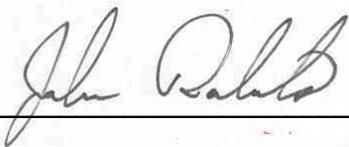
Date: June 1, 2005

**FMVSS 111SB DATA SHEET 3
FIELD OF VIEW TEST – PHOTOGRAPHS System B**

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **6/1/05**

Requirements		Pass/Fail
All test cylinders with entire top surface not directly visible from the driver's semi-circle eye location are able to be viewed with System B mirrors from the driver's semi-circle location:		PASS
All test cylinders with entire top surface not directly visible from the driver's semi-circle eye location but the image can be viewed with System B mirrors. The image is separated from the edge of the effective mirror surface of the mirror providing that image by a distance of not less than 3 minutes of arc:		PASS
If the entire top surface of test cylinder P is not directly visible from the driver's semi-circle eye location, the image can be viewed with System B mirrors from the driver's semi-circle eye location, where the angular size of the shortest dimension of that cylinder's image is not less than 3 minutes of arc, and the angular size of the longest dimension of that cylinder's image is not less than 9 minutes of arc:		PASS
Shortest arc length dimension	.274 cm	
Longest arc length dimension	.822 cm	
For each of the test cylinders whose entire top surface is not directly visible from the driver's eye location, System B provides a view of the ground that overlaps with the view of the ground provided by System A.		PASS

Recorded By: 

Approved By: 

Date: June 1, 2005

**FMVSS 111SB DATA SHEET 4
MOUNTING ADEQUACY TEST**

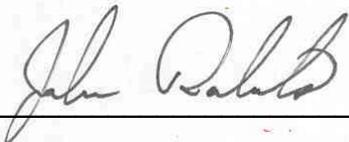
Test Vehicle: **2005 Blue Bird Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
 Test Date: **6/1/05**

MOUNTING SUPPORT OF ALL MIRRORS

Mirror No. (from data sheet 2)	Type	System	Stable Support
			Yes/No
1	Cross View/Convex	B	Yes
2	Cross View/Convex	B	Yes
3	Unit Magnification	A	Yes
4	Unit Magnification	A	Yes
5	Convex	A	Yes
6	Convex	A	Yes

Requirements	Pass/Fail
Outside mirrors free of sharp points or edges that could contribute to pedestrian injury	PASS
System B mirrors have no discontinuities in the slope of the surface of the mirror	PASS

Recorded By: 

Approved By: 

Date: June 1, 2005

**FMVSS 111SB DATA SHEET 5
REFLECTANCE TEST – ALL MIRRORS**

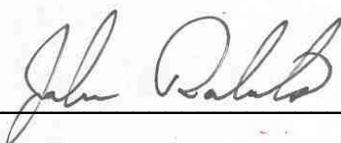
Test Vehicle: **2005 Blue Bird Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
 Test Date: **6/1/05**

Mirror No.	Type	Light meter reading from calibration (FC)	Light meter reading from light reflected by mirror (FC)	Pass/Fail	Observations
1	Crossview/Convex	117	82	PASS	
2	Crossview/Convex	111	84	PASS	
3	Unit	106	72	PASS	
4	Unit	110	74	PASS	
5	Convex	120	85	PASS	
6	Convex	110	72	PASS	

Note: Reflectance% = [(Reflected Reading) / (Cal Reading)] x 100
 Minimum Requirement = 35 percent

Mirror No.	Type	Reflectance	Requirement
1	Crossview/Convex	70%	>35%
2	Crossview/Convex	76%	>35%
3	Unit	68%	>35%
4	Unit	67%	>35%
5	Convex	71%	>35%
6	Convex	65%	>35%

Recorded By: 

Approved By: 

Date: June 1, 2005

**FMVSS 111SB DATA SHEET 6
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS**

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **6/1/05**

**CONVERSION DATA TABLE FROM SPHEROMETER DIAL
READING TO RADIUS OF CURVATURE**

MIRROR NO. 1 (CONVEX)

Test Position	Dial Reading (inches)	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	0.05185	138.4	44.8	24.4%
2	0.03600	198.9	-15.7	-8.6%
3	0.02470	289.5	-106.3	-58.0%
4	0.05260	136.5	46.7	25.5%
5	0.05140	139.6	43.6	23.8%
6	0.03590	199.4	-16.2	-8.9%
7	0.05350	134.2	49.0	26.7%
8	0.02770	258.2	-75.0	-41.0%
9	0.05275	136.1	47.1	25.7%
10	0.03560	201.1	-17.9	-9.8%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 <u>183.2</u>			Greatest Percent Deviation from the Average Radius of Curvature <u>58.0%</u>	

MIRROR NO. 2 (CONVEX)

Test Position	Dial Reading (inches)	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	0.05145	139.5	44.1	24.0%
2	0.03615	198.1	-14.5	-7.9%
3	0.02385	299.8	-116.2	-63.3%
4	0.05205	137.9	45.7	24.9%
5	0.05145	139.5	44.1	24.0%
6	0.03605	198.6	-15.0	-8.2%
7	0.05235	137.1	46.5	25.3%
8	0.02885	248.0	-64.4	-35.1%
9	0.05185	138.4	45.2	24.6%
10	0.03595	199.2	-15.6	-8.5%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 <u>183.6</u>			Greatest Percent Deviation from the Average Radius of Curvature <u>63.3%</u>	

**FMVSS 111SB DATA SHEET 6...continued
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS**

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **6/1/05**

**CONVERSION DATA TABLE FROM SPHEROMETER DIAL
READING TO RADIUS OF CURVATURE**

MIRROR NO. 3 (UNIT MAGNIFICATION)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.00000	N/A	N/A	N/A
2	0.00000	N/A	N/A	N/A
3	0.00000	N/A	N/A	N/A
4	0.00000	N/A	N/A	N/A
5	0.00000	N/A	N/A	N/A
6	0.00000	N/A	N/A	N/A
7	0.00000	N/A	N/A	N/A
8	0.00000	N/A	N/A	N/A
9	0.00000	N/A	N/A	N/A
10	0.00000	N/A	N/A	N/A
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 0.00000			Greatest Percent Deviation from the Average Radius of Curvature 0%	

MIRROR NO. 4 (UNIT MAGNIFICATION)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.00000	N/A	N/A	N/A
2	0.00000	N/A	N/A	N/A
3	0.00000	N/A	N/A	N/A
4	0.00000	N/A	N/A	N/A
5	0.00000	N/A	N/A	N/A
6	0.00000	N/A	N/A	N/A
7	0.00000	N/A	N/A	N/A
8	0.00000	N/A	N/A	N/A
9	0.00000	N/A	N/A	N/A
10	0.00000	N/A	N/A	N/A
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 0.00000			Greatest Percent Deviation from the Average Radius of Curvature 0%	

FMVSS 111SB DATA SHEET 6...continued
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS

Test Vehicle: **2005 Blue Bird Vision School Bus**
 Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
 Test Date: **6/1/05**

**CONVERSION DATA TABLE FROM SPHEROMETER DIAL
 READING TO RADIUS OF CURVATURE**

MIRROR NO. 5 (CONVEX)

Test Position	Dial Reading (inches)	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	0.00670	1066.3	-11.8	-1.1%
2	0.00695	1028.0	26.6	2.5%
3	0.00690	1035.4	19.1	1.8%
4	0.00660	1082.5	-27.9	-2.7%
5	0.00690	1035.4	19.1	1.8%
6	0.00695	1028.0	26.6	2.5%
7	0.00705	1013.4	41.1	3.9%
8	0.00665	1074.3	-19.8	-1.9%
9	0.00645	1107.6	-53.1	-5.0%
10	0.00665	1074.3	-19.8	-1.9%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 1054.5			Greatest Percent Deviation from the Average Radius of Curvature 5.0%	

MIRROR NO. 6 (CONVEX)

Test Position	Dial Reading (inches)	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	0.00650	1099.1	-24.1	-2.2%
2	0.00665	1074.3	0.7	0.1%
3	0.00675	1058.4	16.6	1.5%
4	0.00655	1090.7	-15.7	-1.5%
5	0.00675	1058.4	16.6	1.5%
6	0.00680	1050.6	24.3	2.3%
7	0.00690	1035.4	39.6	3.7%
8	0.00670	1066.3	8.7	0.8%
9	0.00630	1134.0	-59.0	-5.5%
10	0.00660	1082.5	-7.5	-0.7%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 1075.0			Greatest Percent Deviation from the Average Radius of Curvature 5.5%	

**FMVSS 111SB DATA SHEET 6...continued
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS**

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **6/1/05**

UNIT MAGNIFICATION IN SYSTEM A

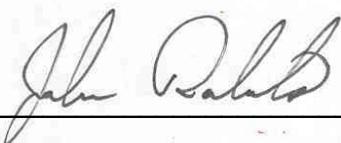
Requirements	Pass/Fail
At least one System A Mirror on the left and right sides of the bus is unit magnification -0 Radius of Curvature	PASS

**AVERAGE RADIUS OF CURVATURE
OF CONVEX MIRRORS USED IN SYSTEM B**

Mirror No.	Radius of Curvature	If needed, wording printed properly* Pass/Fail
1	183.2 mm	PASS
2	183.6 mm	PASS

* If any of the Convex Mirrors in System B have an average radius of curvature less than 889 mm, then the following words must be printed on a label in type face and color that are clear and conspicuous to the driver:

“USE CROSS VIEW MIRRORS TO VIEW PEDESTRIANS WHILE BUS IS STOPPED. DO NOT USE THESE MIRRORS TO VIEW TRAFFIC WHILE BUS IS MOVING, IMAGES IN SUCH MIRRORS DO NOT ACCURATELY SHOW ANOTHER VEHICLE’S LOCATION.”

Recorded By: 

Approved By: 

Date: June 1, 2005

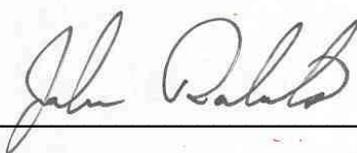
**FMVSS 111SB DATA SHEET 7
MIRROR REFLECTIVE SURFACE AREA TEST
SYSTEM A & B**

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **6/1/05**

DATA TABLE FOR SURFACE AREA

System A Mirrors Mirror No.	Area	Requirement Min. 323 cm ²	Pass/Fail
3	462 cm ²	323 cm ²	PASS
4	462 cm ²	323 cm ²	PASS
System B Mirrors Mirror No.	Area	Requirement Min. 258 cm ²	Pass/Fail
1	570 cm ²	258 cm ²	PASS
2	570 cm ²	258 cm ²	PASS

Recorded By: 

Approved By: 

Date: June 1, 2005

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: **2005 Blue Bird Vision School Bus**
Test Lab: **MGA Research-Wisconsin Operations**

NHTSA No.: **C50901**
Test Date: **6/1/05**

	Digital Caliper	Light Meter	Tape Measure	Spherometer
Make	Mitutoyo	AEMC	Stanley	MGA
Model	CD6"CS	CA813	Powerlock	001
Serial # (s)	0441288	04L1017Y	SN232	001
Range	0 to 150 mm	2000fc, 2000lux	0-8 m	2.25×10^{13} $(\text{cm} * \text{Hz}^{1/2}) \div W$
Accuracy	0.01 mm	0.0 fc or 0.01 lux	1 mm	1.1×10^{-13} $W/H^{1/2}$
Cal. Date	4/1/05	9/27/04	2/3/05	Daily when used
Cal. Due Date	10/1/05	9/27/05	8/3/05	N/A

SECTION 5
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Three-Quarter Left Front View of School Bus

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Three-Quarter Left Rear View of School Bus

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 111

NHTSA No.: C50901

MANUFACTURED BY
BLUE BIRD BODY COMPANY

DATE OF MFR. 09/04

SUITABLE TIRE - RIM CHOICE

GVWR : 13612 KG (30000 LB)

GAWR : FRONT 4537 KG (10000 LB) WITH 11RX22.5G TIRES

7.50X22.5 RIMS. AT 723 KPA (105 PSI) COLD SINGLE

GAWR : REAR 9528 KG (21000 LB) WITH 11RX22.5G TIRES

7.50X22.5 RIMS. AT 723 KPA (105 PSI) COLD DUAL

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S.
FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN
EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE

V.I.N. 1BAKGCKH05F227003 TYPE CLASSIFICATION SCHOOL BUS

Close-up View of Certification Label

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Right Front Cross View Mirror and Mounting

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Passenger Side Rearview Mirror and Mounting

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Left Front Cross View Mirror and Mounting

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Driver Side Rearview Mirror and Mounting

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Field of View Instrument Setup

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



View of Cylinders using no Mirror System

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Mirror #1 System B Field of View

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Mirror #2 System B Field of View

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Mirror #4 and #6 System A Field of View

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Mirror #3 and #5 System A Field of View

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



View of Cone Setup from Front

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Three-Quarter Left Front View of Cone Setup

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Three-Quarter Right Front View of Cone Setup

Test Vehicle: 2005 Blue Bird Vision School Bus
Procedure: FMVSS 111

NHTSA No.: C50901



Label for Cross View Mirror Warning

Test Vehicle: **2005 Blue Bird Vision School Bus**
Procedure: **FMVSS 111**

NHTSA No.: **C50901**



Reflectance Test Setup