

# SAFETY COMPLIANCE TESTING FOR FMVSS No. 218 MOTORCYCLE HELMETS

**Brand: BELL**

**Model: MX-9 MIPS (MX-9 ADV MIPS)**

**Tested Size: XS (53-54 cm)**

Prepared For:

**Zhejiang Vista Sports Good Co**  
Southeast Industrial Zone, Songmen Town  
Wenling City, Zhejiang, China



**25 March 2016**

**Final Report No.: 540.0013.001**

Tested By:

**Taicang ACT Sporting Goods Testing Co., Ltd.**

No. 35 Zhenghe Road,  
Ludu Town, Taicang City, Suzhou,  
Jiangsu Province, China 215412

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Contract File No.: 540.0013

Test File: 001

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Control Document Rev. 17 July 2013

Technician: Kidman Yu

Test Date: 25 March 2016

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## **PURPOSE OF COMPLIANCE TEST**

### **Purpose:**

**The purpose of this test was to determine if the motorcycle helmets supplied by:**

**Zhejiang Vista Sports Goods Co**

**met the requirements of**

**Federal Motor Vehicle Safety Standard No. 218: Motorcycle Helmets effective May 13, 2013.**

**All samples received were in good condition and appropriate for these tests.**

### **Test Procedure:**

**This test was performed following TP-218-07 and ACT Lab Cadex Helmet Testing Manual 2.3.**

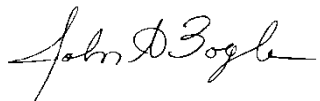
## HELMET DATA

|                                |                                |                       |        |  |                |   |         |
|--------------------------------|--------------------------------|-----------------------|--------|--|----------------|---|---------|
| Helmet Brand Name              | BELL                           |                       |        |  |                |   |         |
| Model Designation              | MX-9 MIPS (MX-9 ADV MIPS)      |                       |        |  |                |   |         |
| Manufacturer                   | Zhejiang Vista Sports Goods Co |                       |        |  |                |   |         |
| Helmet Size Label              | XS (53-54 cm)                  |                       |        |  |                |   |         |
| Test Headform size             | Small                          | X                     | Medium |  | Large          |   |         |
| Helmet Positioning Index (HPI) | 46 mm                          | Manufacturer supplied |        |  | ACT determined |   | X       |
| Helmet Coverage                | Partial                        |                       | Full   |  | Complete       | X | Modular |
| Shell Material                 | ABS+PC                         |                       |        |  |                |   |         |
| Liner Material                 | EPS                            |                       |        |  |                |   |         |
| Comfort Padding                | Resilient Foam                 |                       |        |  |                |   |         |
| Buckle Description             | Double D-Rings                 |                       |        |  |                |   |         |

| HELMET                      | A<br>Ambient | B<br>Low Temp | C<br>High Temp | D<br>Water Immersed | E<br>Spare |
|-----------------------------|--------------|---------------|----------------|---------------------|------------|
| Shell Color/Pattern         | Black        | Black         | Black          | Black               | Black      |
| Weight (grams)              | 1324         | 1324          | 1322           | 1330                | 1406       |
| Month & Year of Manufacture | 03/16        | 03/16         | 03/16          | 03/16               | 03/16      |

|                                  |      |   |           |  |
|----------------------------------|------|---|-----------|--|
| Other Standard Label(s) Present? | None | X | Yes, list |  |
|----------------------------------|------|---|-----------|--|

Reviewed by: John Bogler



### COMMENTS:

1. This MX-9 MIPS XS helmet met all FMVSS 218 requirements.
2. All helmets were received in undamaged condition and were appropriate for testing.
3. Weights listed above for helmets A-D are as tested with visor removed.
4. Weight for helmet E is complete with all components in place.

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## SUMMARY OF TEST RESULTS

INDICATE P - Pass or F - Fail

| HELMET      | A       | B        | C         | D              | COMMENTS |
|-------------|---------|----------|-----------|----------------|----------|
| TEST        | AMBIENT | LOW TEMP | HIGH TEMP | WATER IMMERSED |          |
| IMPACT      | P       | P        | P         | P              |          |
| PENETRATION | P       | P        | P         | P              |          |
| RETENTION   | P       | P        | P         | P              |          |

| TEST              | PASS | FAIL |
|-------------------|------|------|
| PERIPHERAL VISION | P    |      |
| PROJECTIONS       | P    |      |
| LABELING          | P    |      |



## SELECTION OF APPROPRIATE HEADFORM

Paragraph S6.1 - If the helmet size designation falls into more than one of three size ranges, it shall be tested on each appropriate headform.

| HELMET SIZE DESIGNATION   | HEADFORM SIZE |
|---|---------------|
| Less than or equal to 6-3/4<br>(European Size 54)                         | SMALL         |
| Greater than 6-3/4, but less than or equal to 7-1/2<br>(European Size 60) | MEDIUM        |
| Greater than 7-1/2<br>(European 60)                                       | LARGE         |

CONDITIONING FOR TESTING — Paragraph S6.4 — The protective headgear shall be conditioned for not less than 4 hours and no more than 24 hours, in the specified environmental condition shown below, prior to test.

|                    |   |
|--------------------|---|
| Ambient Conditions | 16°C to 26°C (61°F to 79°F); 30% to 70% Relative Humidity |
| Low Temperature    | -15°C to -5°C (5°F to 23°F)                               |
| High Temperature   | 45°C to 55°C (113°F to 131°F)                             |
| Water Immersion    | 16°C to 26°C (61°F to 79°F)                               |

The maximum time during which the protective headgear may be out of the conditioning environment shall not exceed 4 minutes. It must then be returned to the conditioned environment for a minimum of 3 minutes for each minute or portion of a minute in excess of 4 minutes out of the conditioning environment or 12 hours, whichever is less, prior to resumption of testing.

|                     |                   |
|---------------------|-------------------|
| Ambient Temperature | Ambient Humidity: |
| 22°C                | 57%               |

## IMPACT ATTENUATION

| Helmet ID      | Condition | Impact # | Impact Location | Anvil | Drop Height (cm) | Velocity (m/sec) | Duration at 150G (ms) | Duration at 200G (ms) | Peak Acc. (g) | Pass/Fail |
|----------------|-----------|----------|-----------------|-------|------------------|------------------|-----------------------|-----------------------|---------------|-----------|
| 540.0013.001-A | Ambient   | 1        | LF SIDE         | FLAT  | 199.0            | 6.0207           | 2.91                  | 0.00                  | 168.2         | Pass      |
| 540.0013.001-A | Ambient   | 2        | LF SIDE         | FLAT  | 199.0            | 6.0402           | 3.29                  | 0.00                  | 195.8         | Pass      |
| 540.0013.001-A | Ambient   | 3        | REAR            | FLAT  | 199.0            | 6.0407           | 3.63                  | 0.00                  | 166.3         | Pass      |
| 540.0013.001-A | Ambient   | 4        | REAR            | FLAT  | 199.0            | 6.0499           | 3.87                  | 0.00                  | 189.4         | Pass      |
| 540.0013.001-A | Ambient   | 5        | FRONT           | HEMI  | 149.0            | 5.2390           | 0.00                  | 0.00                  | 99.4          | Pass      |
| 540.0013.001-A | Ambient   | 6        | FRONT           | HEMI  | 149.0            | 5.2220           | 0.00                  | 0.00                  | 109.2         | Pass      |
| 540.0013.001-A | Ambient   | 7        | RT SIDE         | HEMI  | 149.0            | 5.2545           | 0.00                  | 0.00                  | 123.0         | Pass      |
| 540.0013.001-A | Ambient   | 8        | RT SIDE         | HEMI  | 149.0            | 5.2436           | 0.00                  | 0.00                  | 135.8         | Pass      |
| 540.0013.001-B | Cold      | 1        | LF SIDE         | FLAT  | 199.0            | 6.0225           | 3.09                  | 0.00                  | 176.1         | Pass      |
| 540.0013.001-B | Cold      | 2        | LF SIDE         | FLAT  | 199.0            | 6.0298           | 3.32                  | 0.56                  | 204.6         | Pass      |
| 540.0013.001-B | Cold      | 3        | REAR            | FLAT  | 199.0            | 6.0623           | 2.58                  | 0.00                  | 176.1         | Pass      |
| 540.0013.001-B | Cold      | 4        | REAR            | FLAT  | 199.0            | 6.0569           | 3.98                  | 0.00                  | 190.9         | Pass      |
| 540.0013.001-B | Cold      | 5        | FRONT           | HEMI  | 149.0            | 5.2466           | 0.00                  | 0.00                  | 96.4          | Pass      |
| 540.0013.001-B | Cold      | 6        | FRONT           | HEMI  | 149.0            | 5.2541           | 0.00                  | 0.00                  | 119.0         | Pass      |
| 540.0013.001-B | Cold      | 7        | RT SIDE         | HEMI  | 149.0            | 5.2414           | 0.00                  | 0.00                  | 125.4         | Pass      |
| 540.0013.001-B | Cold      | 8        | RT SIDE         | HEMI  | 149.0            | 5.2440           | 0.00                  | 0.00                  | 140.7         | Pass      |
| 540.0013.001-C | Hot       | 1        | LF SIDE         | FLAT  | 199.0            | 6.0472           | 2.31                  | 0.00                  | 164.3         | Pass      |
| 540.0013.001-C | Hot       | 2        | LF SIDE         | FLAT  | 199.0            | 6.0372           | 3.00                  | 0.26                  | 202.2         | Pass      |
| 540.0013.001-C | Hot       | 3        | REAR            | FLAT  | 199.0            | 6.0652           | 1.46                  | 0.00                  | 173.2         | Pass      |
| 540.0013.001-C | Hot       | 4        | REAR            | FLAT  | 199.0            | 6.0613           | 3.01                  | 0.00                  | 196.3         | Pass      |
| 540.0013.001-C | Hot       | 5        | FRONT           | HEMI  | 149.0            | 5.2468           | 0.00                  | 0.00                  | 87.1          | Pass      |
| 540.0013.001-C | Hot       | 6        | FRONT           | HEMI  | 149.0            | 5.2194           | 0.00                  | 0.00                  | 96.9          | Pass      |
| 540.0013.001-C | Hot       | 7        | RT SIDE         | HEMI  | 149.0            | 5.2425           | 0.00                  | 0.00                  | 129.9         | Pass      |
| 540.0013.001-C | Hot       | 8        | RT SIDE         | HEMI  | 149.0            | 5.2301           | 0.00                  | 0.00                  | 144.6         | Pass      |
| 540.0013.001-D | Wet       | 1        | LF SIDE         | FLAT  | 199.0            | 6.0670           | 2.09                  | 0.00                  | 165.3         | Pass      |
| 540.0013.001-D | Wet       | 2        | LF SIDE         | FLAT  | 199.0            | 6.0710           | 2.94                  | 0.00                  | 187.4         | Pass      |
| 540.0013.001-D | Wet       | 3        | REAR            | FLAT  | 199.0            | 6.0784           | 2.61                  | 0.00                  | 163.8         | Pass      |
| 540.0013.001-D | Wet       | 4        | REAR            | FLAT  | 199.0            | 6.0821           | 3.28                  | 0.00                  | 177.1         | Pass      |
| 540.0013.001-D | Wet       | 5        | FRONT           | HEMI  | 149.0            | 5.2409           | 0.00                  | 0.00                  | 86.1          | Pass      |
| 540.0013.001-D | Wet       | 6        | FRONT           | HEMI  | 149.0            | 5.2405           | 0.00                  | 0.00                  | 88.1          | Pass      |
| 540.0013.001-D | Wet       | 7        | RT SIDE         | HEMI  | 149.0            | 5.2572           | 0.00                  | 0.00                  | 111.2         | Pass      |
| 540.0013.001-D | Wet       | 8        | RT SIDE         | HEMI  | 149.0            | 5.2562           | 0.00                  | 0.00                  | 128.9         | Pass      |

Contract File No.: 540.0013

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## PENETRATION

Paragraph S5.2 and S7.2

**WEIGHT OF STRIKER:** 2.95 to 3.06 kg (6 pounds, 8 ounces to 6 pounds, 12 ounces)

**POINT OF STRIKER:** Radius =  $0.5 \pm 0.1$  mm ( $0.02 \pm 0.004$  in.), included angle of  $60^\circ \pm 0.5^\circ$ , hardness minimum of 60 Rockwell "C" Scale and a cone height of not less than  $3.8 \pm 0.038$  cm ( $1.5 \pm 0.015$  in.).

**HEIGHT OF FALL:** 300 cm  $\pm 1.5$  cm, measured from the tip of the striker point to the outer surface of the mounted protective headgear.

**FAILURE CRITERION:** When tested, the protective headgear shall be failed if the penetrator has made an indentation in the headform.

| TEST | HELMET | TEST LOCATION | PASS | FAIL | CONDITIONS       |
|------|--------|---------------|------|------|------------------|
| 1    | A      | Crown         | PASS |      | AMBIENT          |
| 2    | A      | Right Rear    | PASS |      | AMBIENT          |
| 3    | B      | Crown         | PASS |      | LOW TEMPERATURE  |
| 4    | B      | Right Rear    | PASS |      | LOW TEMPERATURE  |
| 5    | C      | Crown         | PASS |      | HIGH TEMPERATURE |
| 6    | C      | Right Rear    | PASS |      | HIGH TEMPERATURE |
| 7    | D      | Crown         | PASS |      | IMMERSED         |
| 8    | D      | Right Rear    | PASS |      | IMMERSED         |



## RETENTION SYSTEM

Paragraph S5.3 and S7.3

### REQUIREMENTS:

| READING | APPLIED LOAD  |
|---------|---|
| INITIAL | 22.68 kg, + 4.54 kg, - 0 kg (50.0 Lbs, + 10 Lbs, - 0 Lbs) |
| FINAL   | 136 kg, + 0 kg, - 2.3 kg (300.0 Lbs, + 0 Lbs, - 5 Lbs)    |

ELONGATION NOT TO EXCEED 2.5 cm (1.0 INCH) AFTER LOAD INCREASE

| HELMET | CONDITIONS       | ELONGATION (cm) |
|--------|------------------|-----------------|
| A      | AMBIENT          | 2.1             |
| B      | LOW TEMPERATURE  | 1.5             |
| C      | HIGH TEMPERATURE | 1.8             |
| D      | WATER IMMERSED   | 1.8             |

**PERIPHERAL VISION** - Paragraph S5.4 - Helmet shall provide a minimum peripheral vision of 105° to each side of the midsagittal plane. The brow opening shall be at least 2.54 cm (1 inch) above all points in the basic plane that are within the angles of peripheral vision.

|                             | REQUIREMENTS      | TEST RESULTS          |
|-----------------------------|-------------------|-----------------------|
| DEGREE EACH SIDE M.S. PLANE | > 105°            | Pass: > 105°          |
| BROW OPENING                | > 2.5 cm (1 inch) | Pass: >2.5 cm at 105° |

## PROJECTIONS

Paragraph S5.5

### REQUIREMENTS:

| PROJECTION     | REQUIREMENT                                    |
|----------------|--|
| Internal rigid | None   |
| External rigid | Operational, shall not protrude more than 5 mm |

### TEST RESULTS:

| PROJECTION | PRESENT?                  | HEIGHT (mm)    |
|------------|---------------------------|----------------|
| Internal   | None                      | Not Applicable |
| External   | Front Vent<br>(Non-rigid) | 4 mm           |

## LABELING

S5.6.1 *Labeling* - Each helmet shall be permanently and legibly labeled, in a manner such that the label(s) can be easily read without removing padding or any other permanent part, with the following:

| Required Information   | Pass/Fail | Permanent |
|--|-----------|-----------|
| Manufacturer's name or identification  | Pass      | Pass      |
| Discrete size  | Pass      | Pass      |
| Month and year of manufacture  | Pass      | Pass      |
| Instructions to the purchaser as follows:  | -----     | -----     |
| "Shell and liner constructed of (identify type(s) of materials)."  | Pass      | Pass      |
| "Helmet can be seriously damaged by some common substances without damage being visible to the user."              | Pass      | Pass      |
| "Apply only the following: (Recommended cleaning agents, paints, adhesives, etc., as appropriate.)"                | Pass      | Pass      |
| "Make no modifications."   | Pass      | Pass      |
| "Fasten helmet securely."  | Pass      | Pass      |
| "If helmet experiences a severe blow, return it to the manufacturer for inspection, or destroy it and replace it." | Pass      | Pass      |

COMMENTS: Labels were determined to be both easily read and permanent based on the TP-218-07, Section 12.5.4.

## LABELING

S5.6.2 Certification. Each helmet shall be labeled permanently and legibly with a label, constituting the manufacturer's certification that the helmet conforms to the applicable Federal motor vehicle safety standards, that is separate from the label(s) used to comply with S5.6.1, and complies with paragraphs (a) through (c) of this section.

(a) Content, format, and appearance. The label required by paragraph S5.6.2 shall have the following content, format, and appearance:

| Required Certification Information   | Pass/Fail | Permanent |
|--|-----------|-----------|
| The symbol "DOT," horizontally centered on the label, in letters not less than 0.38 inch (1.0 cm) high.  | Pass      | Pass      |
| The term "FMVSS No. 218," horizontally centered beneath the symbol DOT, in letters not less than 0.09 inches (0.23 cm) high.   | Pass      |           |
| The word "CERTIFIED," horizontally centered beneath the term "FMVSS No. 218," in letters not less than 0.09 inches (0.23 cm) high.   | Pass      |           |
| The precise model designation horizontally centered above the symbol DOT, in letters and/or numerals not less than 0.09 inch (0.23 cm) high.   | Pass      |           |
| The manufacturer's name and/or brand, horizontally centered above the model designation, in letters and/or numerals not less than 0.09 inch (0.23 cm) high.  | Pass      |           |
| All symbols, letters and numerals shall be in a color that contrasts with the background of the label.   | Pass      |           |
| No information, other than the information specified in subparagraph (a), shall appear on the label.   | Pass      |           |
| The label shall appear on the outer surface of the helmet and be placed so that it is centered laterally with the horizontal centerline of the DOT symbol located a minimum of 1 inch (2.5 cm) and a maximum of 3 inches (7.6 cm) from the bottom edge of the posterior portion of the helmet. | Pass      |           |

COMMENTS: Labels were determined to be both easily read and permanent based on the TP-218-07, Section 12.5.4.

## TEST DATA

Contract File No.: 540.0013

Test File: 001

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Control Document Rev. 17 July 2013

Technician: Kidman Yu

Test Date: 25 March 2016



# Uni-Axial Calibration

Helmet Manufacturer : Vista

Address :

Testing Laboratory : Taicang ACT Lab

Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu Province,  
China 215412

Laboratory Technician name : Edward

M.E.P. Pad Model : 1 MEP

Laboratory Temperature : 22 deg C

Laboratory Humidity : 57 %

Selected Filter Frequency : 1000 Hz

Acc. sensitivity (axis Z) : 9.93 mV/G

Acc. sensitivity (axis X) : 10.33 mV/G

Acc. sensitivity (axis Y) : 10.32 mV/G

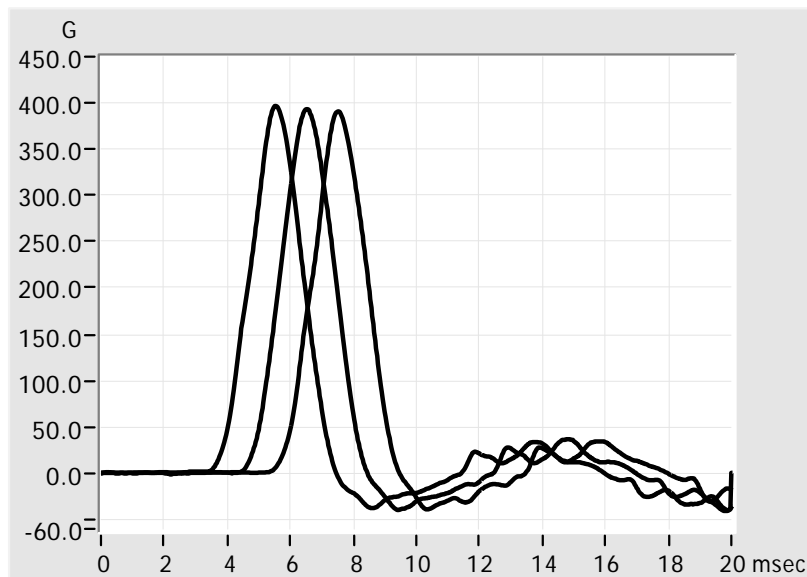
Drop Device : Spherical Impactor (Uni-Axial)

Drop mass assembly : 3.500 kg

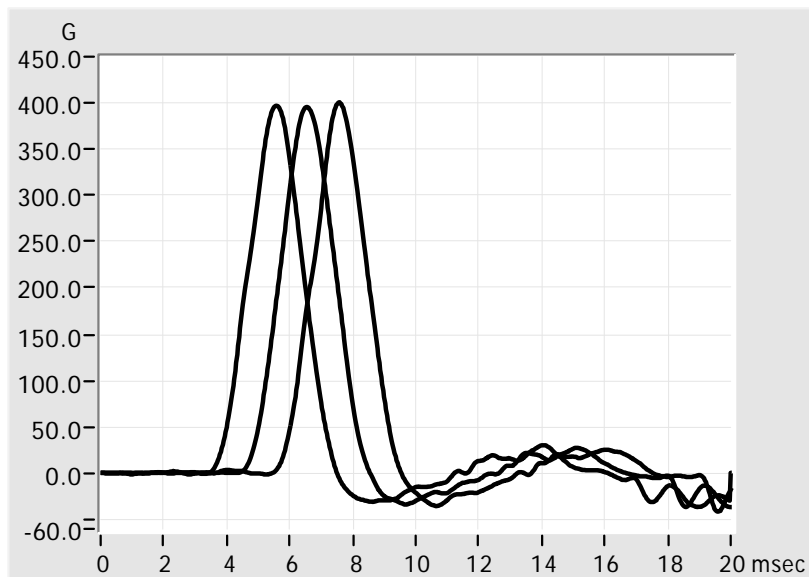
Time gate flag height : 25.60 mm

Calibration peak : 400.0 G +/- 20.00 G

**Pre-Test**



**Post-Test**



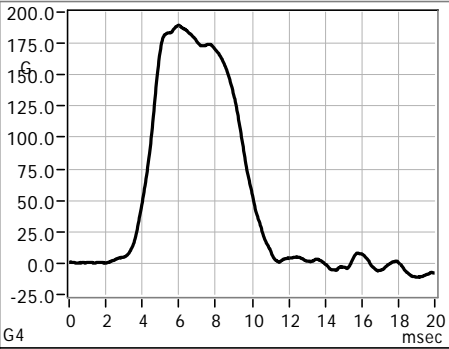
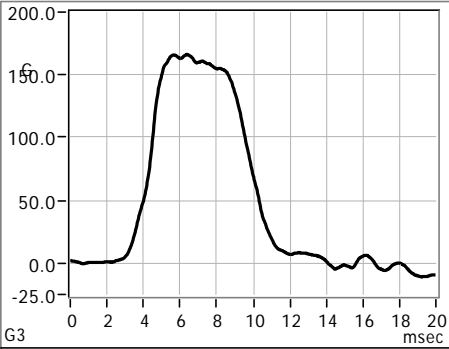
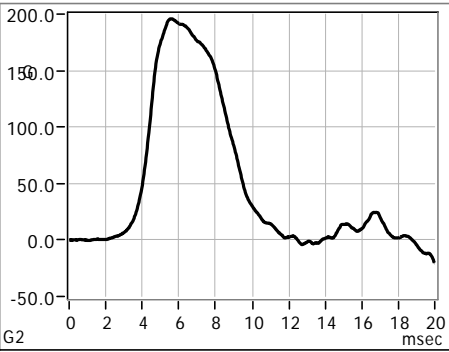
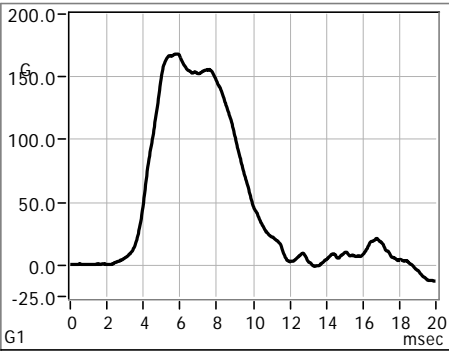
|           | Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|-----------|----------|---------------|---------------------|------------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| Pre-Test  | 1        | 396.5         | 4.2842              | 102.0            | 2.23                | 1.82                | 0/0      | 2016-03-25 | 08:17:57  | 4.2          | Pass         |
|           | 2        | 393.0         | 4.3255              | 102.0            | 2.22                | 1.86                | 0/0      | 2016-03-25 | 08:18:58  | 3.3          | Pass         |
|           | 3        | 390.6         | 4.2853              | 102.0            | 2.24                | 1.85                | 0/0      | 2016-03-25 | 08:19:59  | 4.2          | Pass         |
| Post-Test | 1        | 397.0         | 4.2949              | 102.0            | 2.29                | 1.91                | 0/0      | 2016-03-25 | 10:56:28  | 4.0          | Pass         |
|           | 2        | 395.5         | 4.3001              | 102.0            | 2.26                | 1.90                | 0/0      | 2016-03-25 | 10:57:26  | 3.9          | Pass         |
|           | 3        | 400.4         | 4.2533              | 102.0            | 2.30                | 1.89                | 0/0      | 2016-03-25 | 10:58:28  | 4.9          | Pass         |

Impact Uni-Axial

Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1324.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-A  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Ambient  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93

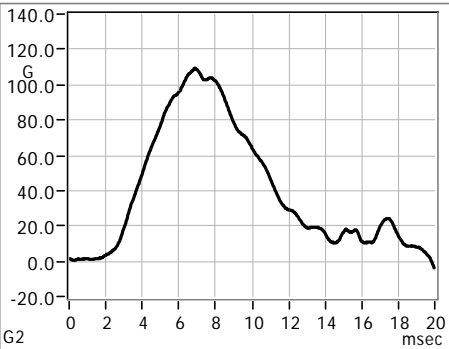
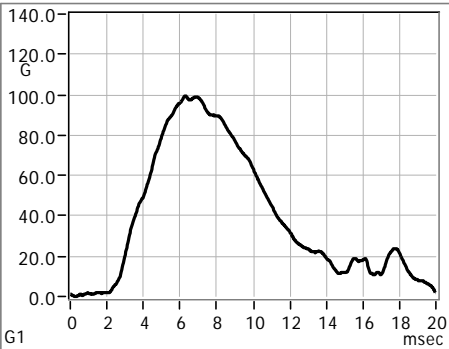
| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 1        | 168.2         | 6.0207              | 199.0            | FLAT       | 2.91                | 0.00                | LF SIDE  | 2016-03-25 | 09:45:59  | 3.6          | Pass         |
| 2        | 195.8         | 6.0402              | 199.0            | FLAT       | 3.29                | 0.00                | LF SIDE  | 2016-03-25 | 09:46:14  | 3.3          | Pass         |
| 3        | 166.3         | 6.0407              | 199.0            | FLAT       | 3.63                | 0.00                | REAR     | 2016-03-25 | 09:52:00  | 3.3          | Pass         |
| 4        | 189.4         | 6.0499              | 199.0            | FLAT       | 3.87                | 0.00                | REAR     | 2016-03-25 | 09:52:09  | 3.2          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |

Impact Uni-Axial

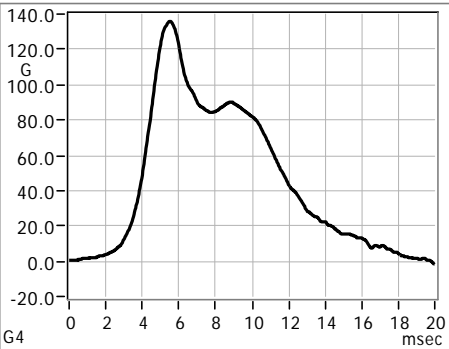
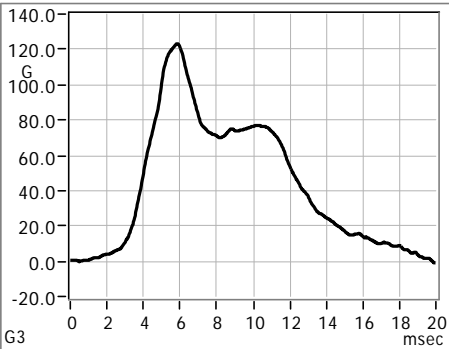
Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1324.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-A  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Ambient  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93



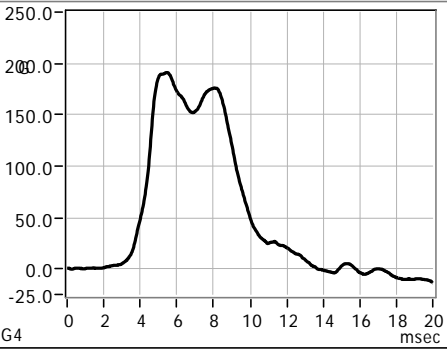
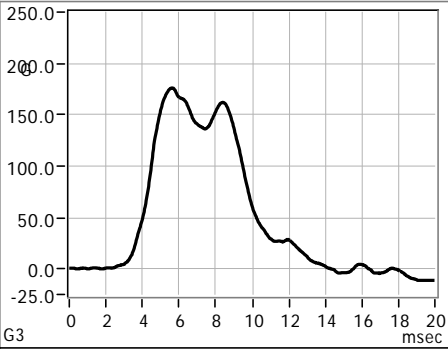
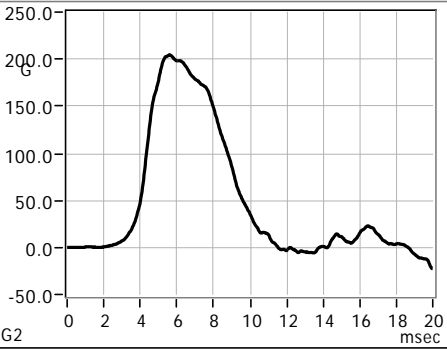
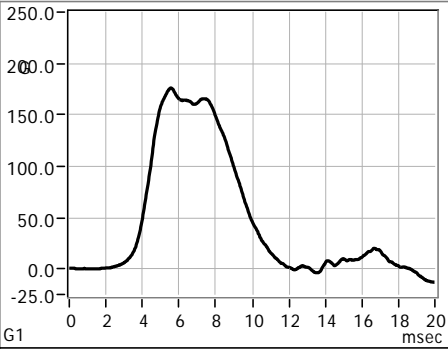
| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 5        | 99.4          | 5.2390              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:56:23  | 3.1          | Pass         |
| 6        | 109.2         | 5.2220              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:56:32  | 3.4          | Pass         |
| 7        | 123.0         | 5.2545              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:00:52  | 2.8          | Pass         |
| 8        | 135.8         | 5.2436              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:01:01  | 3.0          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |

Impact Uni-Axial

Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1324.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-B  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Cold  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93

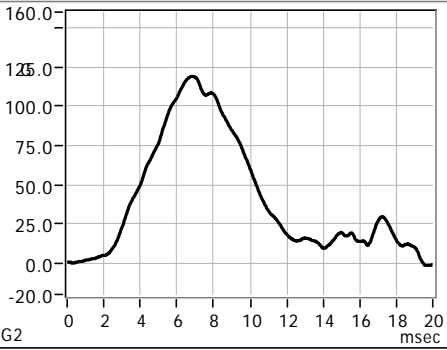
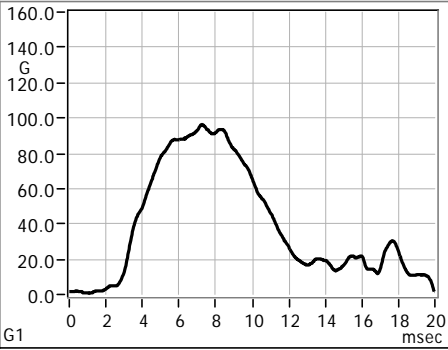
| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 1        | 176.1         | 6.0225              | 199.0            | FLAT       | 3.09                | 0.00                | LF SIDE  | 2016-03-25 | 09:46:50  | 3.6          | Pass         |
| 2        | 204.6         | 6.0298              | 199.0            | FLAT       | 3.32                | 0.56                | LF SIDE  | 2016-03-25 | 09:47:14  | 3.5          | Pass         |
| 3        | 176.1         | 6.0623              | 199.0            | FLAT       | 2.58                | 0.00                | REAR     | 2016-03-25 | 09:53:04  | 3.0          | Pass         |
| 4        | 190.9         | 6.0569              | 199.0            | FLAT       | 3.98                | 0.00                | REAR     | 2016-03-25 | 09:53:13  | 3.0          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |

Impact Uni-Axial

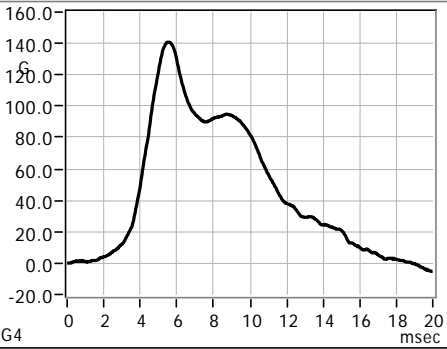
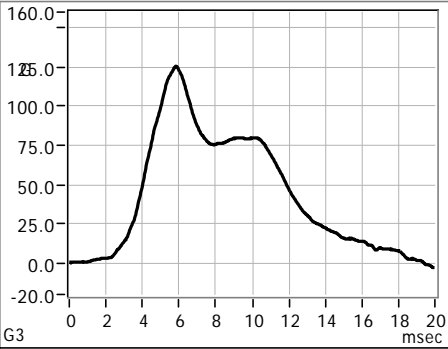
Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1324.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-B  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Cold  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93



| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 5        | 96.4          | 5.2466              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:57:49  | 2.9          | Pass         |
| 6        | 119.0         | 5.2541              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:57:59  | 2.8          | Pass         |
| 7        | 125.4         | 5.2414              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:02:05  | 3.0          | Pass         |
| 8        | 140.7         | 5.2440              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:02:12  | 3.0          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
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|          |               |                     |                  |            |                     |                     |          |            |           |              |              |

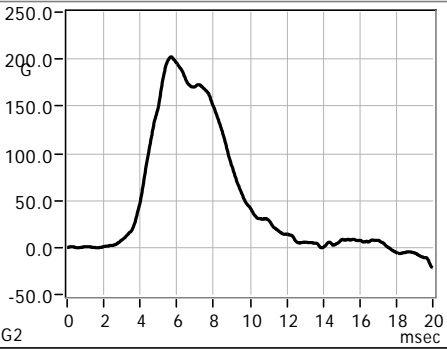
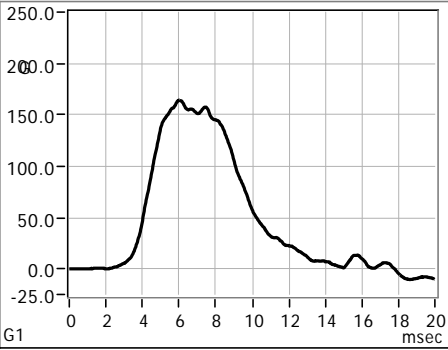


Impact Uni-Axial

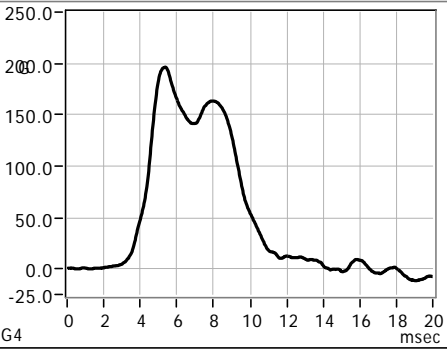
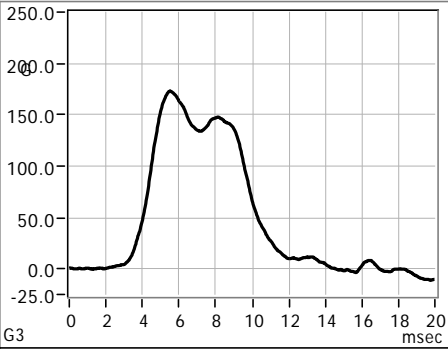
Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1322.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-C  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Hot  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93



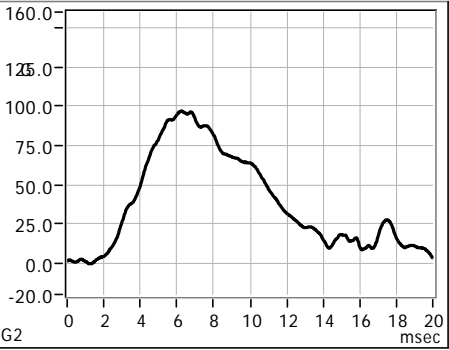
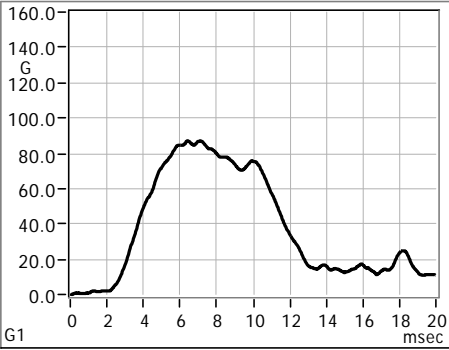
| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 1        | 164.3         | 6.0472              | 199.0            | FLAT       | 2.31                | 0.00                | LF SIDE  | 2016-03-25 | 09:49:20  | 3.2          | Pass         |
| 2        | 202.2         | 6.0372              | 199.0            | FLAT       | 3.00                | 0.26                | LF SIDE  | 2016-03-25 | 09:49:30  | 3.4          | Pass         |
| 3        | 173.2         | 6.0652              | 199.0            | FLAT       | 1.46                | 0.00                | REAR     | 2016-03-25 | 09:53:42  | 2.9          | Pass         |
| 4        | 196.3         | 6.0613              | 199.0            | FLAT       | 3.01                | 0.00                | REAR     | 2016-03-25 | 09:54:01  | 3.0          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
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Impact Uni-Axial

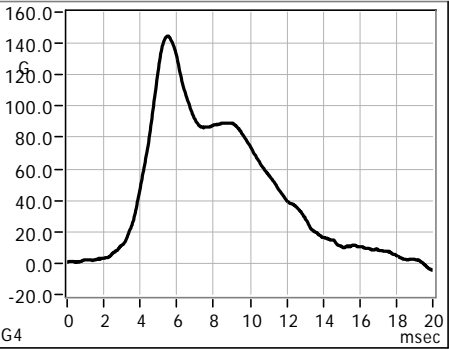
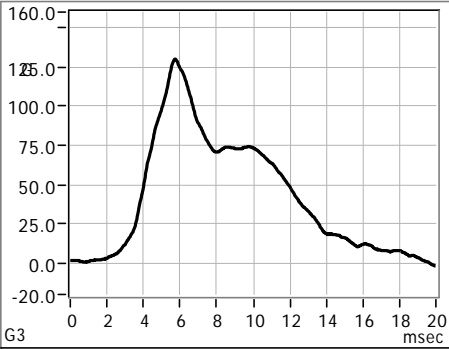
Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1322.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-C  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Hot  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93



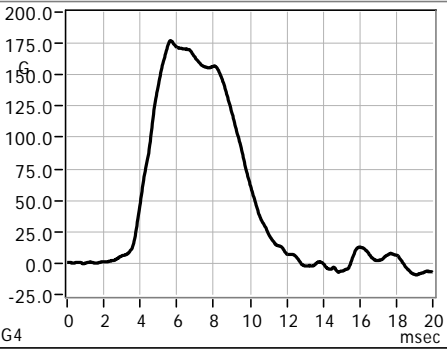
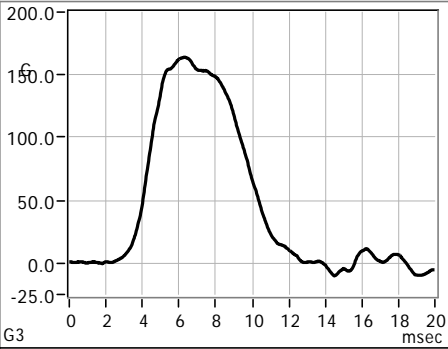
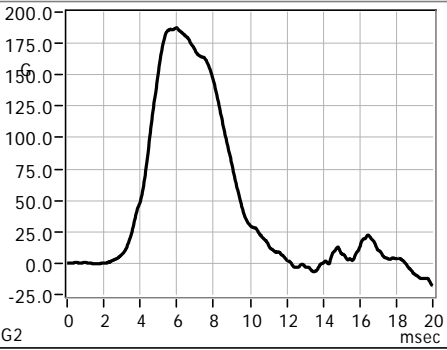
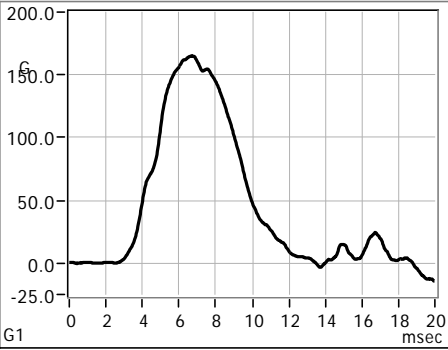
| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 5        | 87.1          | 5.2468              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:58:36  | 2.9          | Pass         |
| 6        | 96.9          | 5.2194              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:58:45  | 3.4          | Pass         |
| 7        | 129.9         | 5.2425              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:02:43  | 3.0          | Pass         |
| 8        | 144.6         | 5.2301              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:02:52  | 3.3          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |

Impact Uni-Axial

Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1330.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-D  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Wet  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93

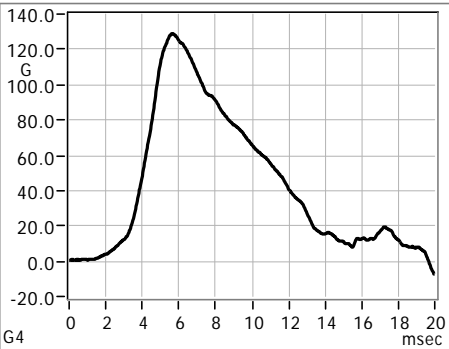
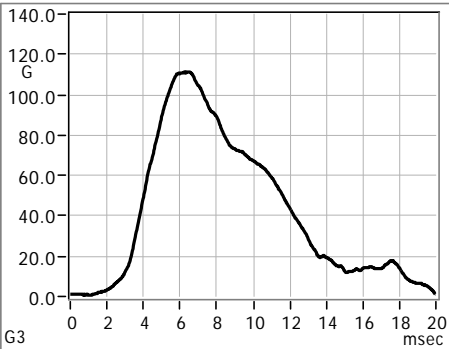
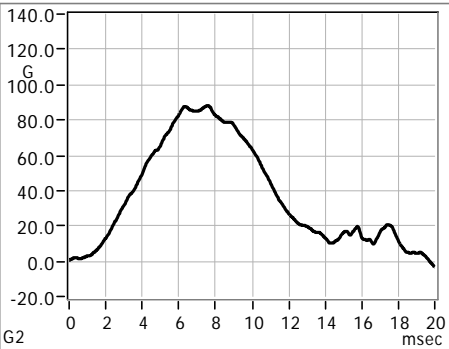
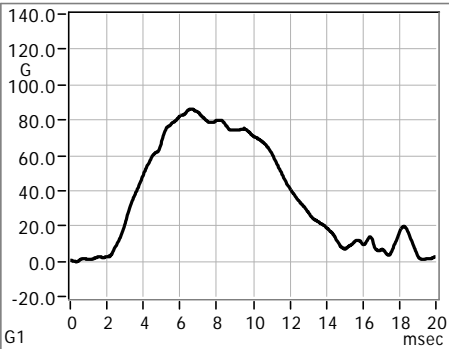
| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 1        | 165.3         | 6.0670              | 199.0            | FLAT       | 2.09                | 0.00                | LF SIDE  | 2016-03-25 | 09:50:17  | 2.9          | Pass         |
| 2        | 187.4         | 6.0710              | 199.0            | FLAT       | 2.94                | 0.00                | LF SIDE  | 2016-03-25 | 09:50:25  | 2.8          | Pass         |
| 3        | 163.8         | 6.0784              | 199.0            | FLAT       | 2.61                | 0.00                | REAR     | 2016-03-25 | 09:52:33  | 2.7          | Pass         |
| 4        | 177.1         | 6.0821              | 199.0            | FLAT       | 3.28                | 0.00                | REAR     | 2016-03-25 | 09:52:42  | 2.6          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |

Impact Uni-Axial

Helmet Manufacturer : Vista  
Address :

Testing Laboratory : Taicang ACT Lab  
Address : No.35 Zhenghe Road, Ludu Town,  
Taicang City, Suzhou, Jiangsu  
Province, China 215412

Laboratory Technician name : Edward  
Batch Number :  
Ref. P.O. Number :



Model : MX-9 MIPS  
Color : Black  
Size : XS  
Weight : 1330.00 g  
Manufacturing Date : 24 Mar 2016  
Standard Request : FMVSS218  
Identification Code : 540.0013.001-D  
Headform Model : D.O.T.  
Headform Size : A D.O.T  
Conditioning : Wet  
Laboratory Temperature : 22 deg C  
Laboratory Humidity : 57 %  
Selected Filter Frequency : 1650 Hz  
Maximum Peak G's authorized : 400 G  
Maximum Peak m/s<sup>2</sup> authorized : 3923 m/s<sup>2</sup>  
Drop mass assembly : 3.500 kg  
Time gate flag height : 25.60 mm  
Acc. sensibility (axis Z) : 9.93

| Impact # | Peak Acc. (G) | Velocity IN (m/sec) | Drop Height (cm) | Anvil type | Delta T 150G (msec) | Delta T 200G (msec) | Position | Test Date  | Test Time | Friction (%) | PASS or FAIL |
|----------|---------------|---------------------|------------------|------------|---------------------|---------------------|----------|------------|-----------|--------------|--------------|
| 5        | 86.1          | 5.2409              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:57:06  | 3.1          | Pass         |
| 6        | 88.1          | 5.2405              | 149.0            | HEMI       | 0.00                | 0.00                | FRONT    | 2016-03-25 | 09:57:15  | 3.1          | Pass         |
| 7        | 111.2         | 5.2572              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:01:29  | 2.8          | Pass         |
| 8        | 128.9         | 5.2562              | 149.0            | HEMI       | 0.00                | 0.00                | RT SIDE  | 2016-03-25 | 10:01:37  | 2.8          | Pass         |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |
|          |               |                     |                  |            |                     |                     |          |            |           |              |              |

## DOT Auto – Test results

### Laboratory

Laboratory ACT Lab  
 Technician Carry  
 Temperature 22°C  
 Humidity 57%

### Sample

Model MX-9 MIPS  
 Color Black  
 Size XS  
 Weight 1324  
 Manufacturer Vista  
 Manuf. Date 03/16

### Infos

Standard FMVSS No.218  
 Comment 540.0013.001-A



### Results

| Test    | Time Data<br>D/M/Y h:ms | DL ? | Status | Tar1<br>(Kg) | Tar1<br>(S) | Tar2<br>(Kg) | Tar2<br>(S) | Delta(Del1 to Del2)<br>(mm) | Pass/Fail |  |  |  |
|---------|-------------------------|------|--------|--------------|-------------|--------------|-------------|-----------------------------|-----------|--|--|--|
| Test#45 | [25/03/16 15:05:31]     | NO   | Valid  | 22.7         | 30.0        | 136.1        | 120.0       | 21.1                        | Pass      |  |  |  |



## DOT Auto – Test results

### Laboratory

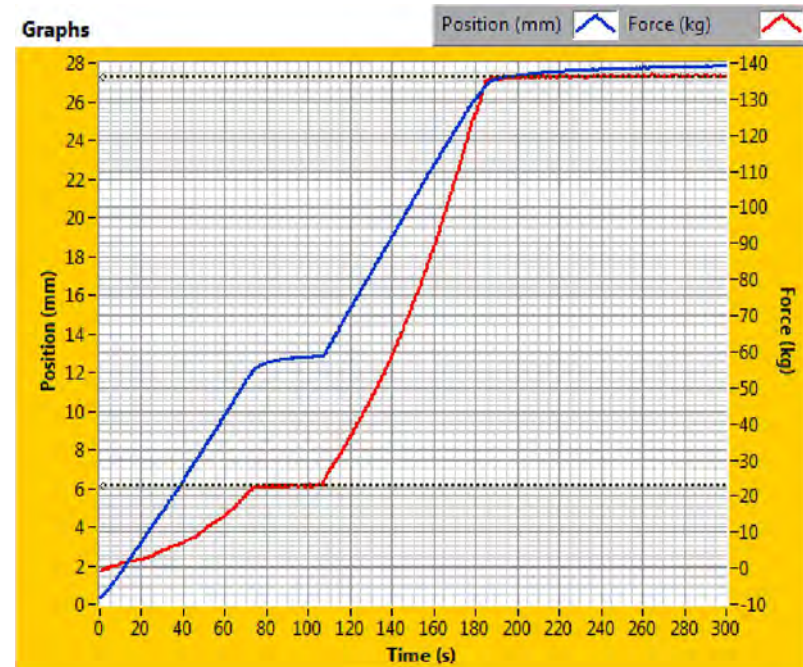
Laboratory ACT Lab  
 Technician Carry  
 Temperature 22°C  
 Humidity 57%

### Sample

Model MX-9 MIPS  
 Color Black  
 Size XS  
 Weight 1324  
 Manufacturer Vista  
 Manuf. Date 03/16

### Infos

Standard FMVSS No.218  
 Comment 540.0013.001-B



### Results

| Test    | Time Data<br>D/M/Y h:ms | DL ? | Status | Tar1<br>(Kg) | Tar1<br>(S) | Tar2<br>(Kg) | Tar2<br>(S) | Delta(Del1 to Del2)<br>(mm) | Pass/Fail |  |  |  |
|---------|-------------------------|------|--------|--------------|-------------|--------------|-------------|-----------------------------|-----------|--|--|--|
| Test#46 | [25/03/16 15:14:22]     | NO   | Valid  | 22.7         | 30.0        | 136.1        | 120.0       | 14.9                        | Pass      |  |  |  |

## DOT Auto – Test results

### Laboratory

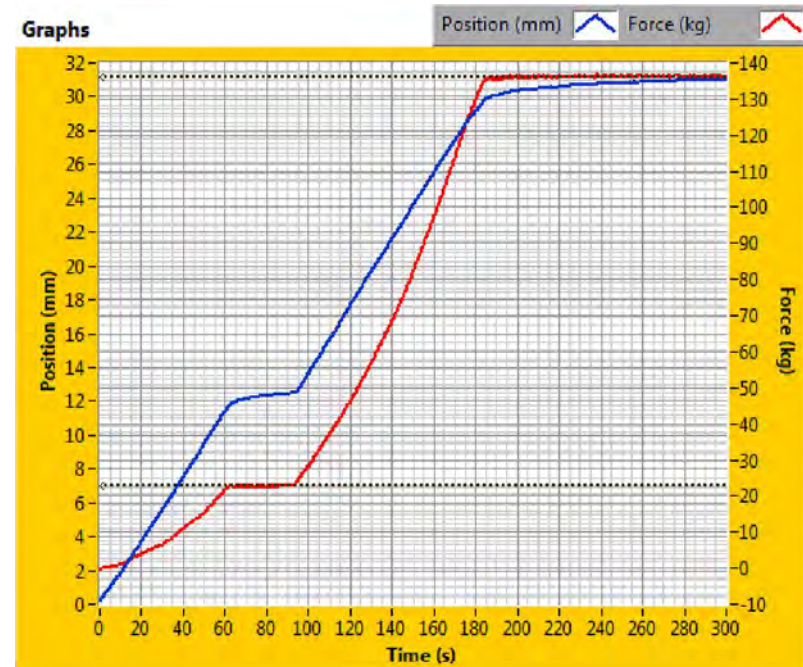
Laboratory ACT Lab  
 Technician Carry  
 Temperature 22°C  
 Humidity 57%

### Sample

Model MX-9 MIPS  
 Color Black  
 Size XS  
 Weight 1322  
 Manufacturer Vista  
 Manuf. Date 03/16

### Infos

Standard FMVSS No.218  
 Comment 540.0013.001-C



### Results

| Test    | Time Data<br>D/M/Y h:ms | DL ? | Status | Tar1<br>(Kg) | Tar1<br>(S) | Tar2<br>(Kg) | Tar2<br>(S) | Delta(Del1 to Del2)<br>(mm) | Pass/Fail |  |  |  |
|---------|-------------------------|------|--------|--------------|-------------|--------------|-------------|-----------------------------|-----------|--|--|--|
| Test#47 | [25/03/16 15:20:59]     | NO   | Valid  | 22.7         | 30.0        | 136.1        | 120.0       | 18.4                        | Pass      |  |  |  |

## DOT Auto – Test results

### Laboratory

Laboratory ACT Lab  
 Technician Carry  
 Temperature 22°C  
 Humidity 57%

### Sample

Model MX-9 MIPS  
 Color Black  
 Size XS  
 Weight 1330  
 Manufacturer Vista  
 Manuf. Date 03/16

### Infos

Standard FMVSS No.218  
 Comment 540.0013.001-D



### Results

| Test    | Time Data<br>D/M/Y h:ms | DL ? | Status | Tar1<br>(Kg) | Tar1<br>(S) | Tar2<br>(Kg) | Tar2<br>(S) | Delta(Del1 to Del2)<br>(mm) | Pass/Fail |  |  |  |
|---------|-------------------------|------|--------|--------------|-------------|--------------|-------------|-----------------------------|-----------|--|--|--|
| Test#48 | [25/03/16 15:27:45]     | NO   | Valid  | 22.7         | 30.0        | 136.1        | 120.0       | 18.4                        | Pass      |  |  |  |

## APPENDIX A

### INTERPRETATIONS OR DEVIATIONS FROM FMVSS 218

None

## APPENDIX B

### EQUIPMENT LIST AND CALIBRATION SCHEDULES

#### EQUIPMENT INFORMATION

##### General Information

Drop System: Monorail  
Software: Cadex Impact Software v 6.4f

| Item                   | Model       | S/N            |
|------------------------|-------------|----------------|
| Computer               | VD200PA#AB2 | CNG9211DB1     |
| Data Acquisition Board | 187570H-01  | 13EC16A        |
| Time Gate              | Cadex       | HVTG12009033-1 |
| Control Box            | PC4300      | CCS120090331-1 |

##### Headforms

| Item      |                            | Model | Assembly Wt., grams |
|-----------|----------------------------|-------|---------------------|
| Uni-Axial | Headform Size A DOT SMALL  | Cadex | 3454                |
| Uni-Axial | Headform Size C DOT MEDIUM | Cadex | 4941                |
| Uni-Axial | Headform Size D DOT LARGE  | Cadex | 6071                |

##### Sensors

| Item      |   | Model      | S/N    |
|-----------|---|------------|--------|
| Uni-Axial | Accelerometer - axis Z<br>(9.9260 mV/G) | 2262A-1000 | L14909 |



## EQUIPMENT LIST AND CALIBRATION SCHEDULES

| DOT Fixtures |                              |               |             |                          |                   |             |
|--------------|------------------------------|---------------|-------------|--------------------------|-------------------|-------------|
| Label        | Description                  | Manufacture   | Model       | S/N                      | Dimensional Check | Next        |
|              | Monorail                     | CadexInc      | None        | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Penetrator Tube              | ACT Lab       | None        | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Penetrator Dart              | CadexInc      | ONE 7-10-7  | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | DOT Small Headform           | CadexInc      | None        | 5178                     | 13 Sep 2015       | 13 Sep 2016 |
|              | DOT Medium Headform          | CadexInc      | None        | 5179                     | 13 Sep 2015       | 13 Sep 2016 |
|              | DOT Large Headform           | CadexInc      | None        | 5199                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Reference Headform           | CadexInc      | None        | 5181                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Reference Headform           | CadexInc      | None        | 5182                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Reference Headform           | CadexInc      | None        | 5183                     | 13 Sep 2015       | 13 Sep 2016 |
|              | MEP Pad                      | CadexInc      | None        | 981220                   | 13 Sep 2015       | 13 Sep 2016 |
|              | Anvil                        | CadexInc      | Flat        | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Anvil                        | CadexInc      | Hemi        | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | High temp Cabinet            | Shanghai Boxn | GZX-9240MBE | 8285                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Low temp Cabinet             | Haier         | DW-25W300   | BR062100NO<br>OB29578VMO | 13 Sep 2015       | 13 Sep 2016 |
|              | Water conditioning Container | None          | None        | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Retention Strength Tester    | CadexInc      | None        | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Laser Level                  | CadexInc      | None        | None                     | 13 Sep 2015       | 13 Sep 2016 |
|              | Computer                     | HP            | DX2040      | CNG9211DB1               | 13 Sep 2015       | 13 Sep 2016 |

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Test File: 001

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Technician: Kidman Yu

Test Date: 25 March 2016



### DOT Calibrated Measurement Equipment

| Description                 | Manufacture   | Model              | S/N                 | Range       | Accuracy from Cal Certs | Calibration |             |          | Maintenance |             |
|-----------------------------|---------------|--------------------|---------------------|-------------|-------------------------|-------------|-------------|----------|-------------|-------------|
|                             |               |                    |                     |             |                         | Last        | Next        | by       | Last        | Next        |
| Velocity Gate Flag          | CadexInc      | None               | None                | 25.6 mm     | 1.00 mm                 | 13 Sep 2015 | 13 Sep 2016 | ACT      | 13 Sep 2015 | 13 Sep 2016 |
| Accelerometer               | PCB           | 353B18             | 131607              | 2000 g      |                         | 13 Sep 2015 | 13 Sep 2016 | KSFY     | 13 Sep 2015 | 13 Sep 2016 |
| Power Supply                | Santak        | MT100              | None                | -           | 2.71%                   | -           | -           | -        | -           | -           |
| Charge Amplifier            | Schaevitz     | ATA2001            | None                | -           |                         | 25 Nov 2015 | 25 Nov 2016 | NIM      | 25 Nov 2015 | 25 Nov 2016 |
| Control Center System       | Cadex         | Pc4300             | None                | -           |                         | -           | -           | -        | -           | -           |
| Velocity Gate               | CadexInc      | None               | HVTG120090<br>331-1 | -           | 0.16 ms                 | 31 Mar 2015 | NA          | CadexInc | 31 Mar 2015 | NA          |
| Environmental Monitoring    | Taiwan Taishi | 1360A              | 090602605           | -40 to +95C | 2                       | 13 Sep 2015 | NA          | KSFY     | 13 Sep 2015 | NA          |
| Scale                       | Henxin        | ACS-6              | 0118223             | 0-6000 g    | 0.050 g                 | 12 May 2015 | 12 May 2016 | KSFY     | 12 May 2015 | 12 May 2016 |
| Loadcell                    | CadexInc      | 9363-b10-300-20T1R | None                | 300 lbs.    | 0.1                     | 8 Sep 2015  | 8 Sep 2016  | KSFY     | 8 Sep 2015  | 8 Sep 2016  |
| LVDT                        | Volfa         | LWE-200            | 20028265            | 2.5 inch    | 0.01                    | 8 Sep 2015  | 8 Sep 2016  | KSFY     | 19 Sep 2015 | 19 Sep 2016 |
| Peripheral Vision Apparatus | Ludufactory   | None               | None                | 105 degree  | 0.7 degree              | 8 Sep 2015  | 8 Sep 2016  | ACT      | 14 Sep 2015 | 14 Sep 2016 |
| Digital Caliper             | JS            | 150X0.01           | 300065              | 0-150 mm    | 0.01 mm                 | 3 May 2015  | 3 May 2016  | KSFY     | 3 May 2015  | 3 May 2016  |
| Height Gauge                | Shanghai LR   | None               | 9090053             | 0-500 mm    | 0.01 mm                 | 8 Sep 2015  | 8 Sep 2016  | KSFY     | 8 Sep 2015  | 8 Sep 2016  |

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Test File: 001

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## APPENDIX C

### PHOTOGRAPHS





















