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# SAFETY COMPLIANCE TESTING FOR **FMVSS No. 218 MOTORCYCLE HELMETS** Lobrogrammer II zing Periodican debendal town we

**Brand: LEATT** Model: MOTO 2.5 Tested Size: XS (53-54 cm)

Leatt Corporation

12 Kiepersol Crescent
s Gardens Rue Atlas Gardens Business Park, Cape Farms, Cape Town, 7550, ZA



Issue Date: 19 September 2022

Final Report: 904.10600.008

Tested By:

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No. 35 Zhenghe Road, Ludu Town, Taicang City, Suzhou, Jiangsu Province, China 215412 www.act-lab.com

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Contract File No.: 904.10600

Test File: 008

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218

Technician: Edward Wang Test Date: 16 August 2022

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# **PURPOSE OF COMPLIANCE TEST**

# This document of the produced exception and providing the produced exception of the produced exc

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

Dongguan Yiyang Sports Co., Ltd.

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 Helmet Cadex Testing Manual 2.3

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#### **HELMET DATA**

HELMET BRAND NAME:	LEATT	,eP,e
HELMET MODEL DESIGNATION:	MOTO 2.5	Will
HELMET MANUFACTURER:	DONGGUAN YIYANG SPORTS CO., LTD.	
HELMET SIZE:	XS (53-54 cm)	
HELMET COVERAGE: Partial: _	Full: Complete:	Х
HELMET POSITIONING INDEX: 53	mm docate of old from	
SHELL MATERIAL: ABS	1/1/9/10/bbig	
LINER MATERIAL: Expanded Polys	styrene	
BUCKLE DESCRIPTION: Double D-	Rings	

HELMET	A Ambient	B Low Temp	C High Temp	D Water Immersed	E Spare
SHELL COLOR/PATTERN	Black	Black	Black	Black	N
WEIGHT (grams)	999	998	1006	1000	
MONTH & YEAR OF MANUFACTURE	04/22	04/22	04/22	04/22	

Reviewed by: John Bogler

COMMENTS:

1. All helmets were received in undamaged condition and were appropriate for testing.

2. Weights listed above for helmets A-D are as tested with visor removed.

3. ACT determined the HPI information prior to testing.

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## **SUMMARY OF TEST RESULTS**

INDICATE	Pass or Fail	SUMMARY	OF TEST RE	SULTS	
Chue	HELMET	А	В	С	D
This dood e	TEST	AMBIENT	LOW TEMP	HIGH TEMP	WATER IMMERSED
reprote of	IMPACT	Pass	Pass	Pass	Pass
	PENETRATION	Pass	Pass	Pass	Pass
	RETENTION	Pass	Pass O	Pass	Pass

#### **INDICATE Pass or Fail**

TEST	PASS/FAIL
PERIPHERAL VISION	Pass
PROJECTIONS	Pass
LABELING	Pass
PROJECTIONS  LABELING	This document shall not be out without a produced exception ACT Lab to written approval from ACT Lab to write written approval from ACT Lab to written approval from ACT Lab to written approval from

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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 (European Size 54)	Ot DE SMALL
Greater than 6-3/4, but less than or equal to 7-1/2 (European Size 60)	dill for MEDIUM
Greater than 7-1/2 (European 60)	LARGE

#### COMMENTS:

The manufacturer marked the helmet with its corresponding discrete size: XS (53-54 cm), Headform Size: DOT SMALL.

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.

5, 0, 0	
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.

AVERAGE LAB TEMPERATURE: \_\_\_22\_\_ °C; AVERAGE LAB HUMIDITY:

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#### **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
904.10600.008-A	Ambient	1	LF SIDE	FLAT	192.0	5.9996	2.51	0.00	196.0	Pass
904.10600.008-A	Ambient	2	LF SIDE	FLAT	192.0	5.9320	3.09	0.53	224.5	Pass
904.10600.008-A	Ambient	3	REAR	FLAT	192.0	6.0066	2.60	0.00	187.7	Pass
904.10600.008-A	Ambient	4	REAR	FLAT	192.0	5.9642	3.37	0.34	206.1	Pass
904.10600.008-A	Ambient	5	FRONT	HEMI	145.0	5.1598	0.00	0.00	76.5	Pass
904.10600.008-A	Ambient	6	FRONT	HEMI	145.0	5.1382	0.00	0.00	93.1	Pass
904.10600.008-A	Ambient	7	RT SIDE	HEMI	145.0	5.2408	0.00	0.00	115.3	Pass
904.10600.008-A	Ambient	8	RT SIDE	НЕМІ	145.0	5.2412	0.00	0.00	146.2	Pass
904.10600.008-B	Cold	1	LF SIDE	FLAT	192.0	6.0121	2.11	0.00	196.0	Pass
904.10600.008-B	Cold	2	LF SIDE	FLAT	192.0	5.9983	3.07	0.59	226.9	Pass
904.10600.008-B	Cold	3	REAR	FLAT	192.0	5.9948	2.22	0.00	186.3	Pass
904.10600.008-B	Cold	4	REAR	FLAT	192.0	6.0344	3.44	0.25	204.3	Pass
904.10600.008-B	Cold	5	FRONT	HEMI	145.0	5.1889	0.00	0.00	73.3	Pass
904.10600.008-B	Cold	6	FRONT	HEMI	145.0	5.1041	0.00	0.00	87.1	Pass
904.10600.008-B	Cold	or "Kho	RT SIDE	HEMI	145.0	5.2348	0.00	0.00	127.3	Pass
904.10600.008-B	Cold	111 18 OL	RT SIDE	HEMI	145.0	5.2171	0.00	0.00	146.2	Pass
904.10600.008-C	Hot N	CI	LF SIDE	FLAT	192.0	5.9664	1.13	0.00	175.2	Pass
904.10600.008-C	Hot	2	LF SIDE	FLAT	192.0	6.0095	2.20	0.00	183.5	Pass
904.10600.008-C	Hot	3	REAR	FLAT	192.0	6.0190	0.56	0.00	168.3	Pass
904.10600.008-C	O Hot	4	REAR	FLAT	192.0	5.9120	2.23	0.00	179.4	Pass
904.10600.008-C	Hot	5	FRONT	HEMI	145.0	5.2149	0.00	0.00	79.3	Pass
904.10600.008-C	Hot	6	FRONT	НЕМІ	145.0	5.2244	0.00	0.00	94.1	Pass
904.10600.008-C	Hot	7	RT SIDE	HEMI	145.0	5.1867	0.00	0.00	117.1	Pass
904.10600.008-C	Hot	8	RT SIDE	HEMI	145.0	5.2164	0.00	0.00	126.3	Pass
904.10600.008-D	Wet	1	LF SIDE	FLAT	192.0	6.0194	1.94	0.00	192.3	Pass
904.10600.008-D	Wet	2	LF SIDE	FLAT	192.0	6.0086	2.99	0.84	228.2	Pass
904.10600.008-D	Wet	3	REAR	FLAT	192.0	5.9608	1.07	0.00	167.8	Pass
904.10600.008-D	Wet	4	REAR	FLAT	192.0	6.0377	2.73	0.00	193.2	Pass
904.10600.008-D	Wet	5	FRONT	HEMI	145.0	5.2032	0.00	0.00	75.2	Pass
904.10600.008-D	Wet	6	FRONT	HEMI	145.0	5.2193	0.00	0.00	97.3	Pass
904.10600.008-D	Wet	. 60 N	RT SIDE	HEMI	145.0	5.2430	0.00	0.00	110.7	Pass
904.10600.008-D	Wet	) '8/V	RT SIDE	HEMI	145.0	5.2425	0.00	0.00	130.5	Pass

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Paragraph S5.2 and S7.2

WEIGHT OF STRIKER:

2.95 to 3.06 kg (6 pounds, 8 ounces to 6 pounds, 12 ounces)

Radius = 0.5 ± 0.1 mm (0.02 ± 0.004 in.), included and 0.5°, hardness minimum of 60 Rockwell "O" height of not less than 3.8 + 0.0° POINT OF STRIKER:

HEIGHT OF FALL: 300 cm ± 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	7
1	А	Crown	X		AMBIENT	
2	Α	Rear Right	Х		AMBIENT	5
3	В	Crown	Х		LOW TEMPERATURE	This
4	B woll	Rear Right	Х		LOW TEMPERATURE	186/16
5	ele stil	Crown	Х		HIGH TEMPERATURE	MI
6	my copyor	Rear Right	Х		HIGH TEMPERATURE	
	solopo,	Crown	Х	7	WATER IMMERSED	
7/8 <sup>dl</sup>	JAN D	Rear Right	X		WATER IMMERSED	

COMMENT: Photographs of penetration test locations are found in Appendix C.

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#### **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 2.54 cm (1.0 INCH) AFTER LOAD INCREASE

0 20, 10						
HELMET	CONDITIONS	ELONGATION cm				
А	AMBIENT	2.23				
В	LOW TEMPERATURE	2.28				
, bec it	HIGH TEMPERATURE	2.26				
o vii Dibili	WATER IMMERSED	2.35				

#### PERIPHERAL VISION

CONFIGURATION - 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
PERIPHERAL VISION	> 105°	Pass
BROW OPENING	> 2.5 cm (1 inch)	Pass

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#### **PROJECTIONS**

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Pa	ragraph S5.5	Y	This duc appro
RE	QUIREMENTS:		Witter
nis	PROJECTION	REQUIREMENT	
,0,0	Internal rigid	None ot ithout C	
Will	External rigid	Operational, shall not protrude more than 5	mm

#### **TEST RESULTS:**

-	0, 0, 10,	,	
PROJECTION	PRESENT	HEIGHT (mm)	
Internal	None	Not Applicable	nent
External	None	Not Applicable	is document
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John ACT LOD Technician: Edward Wang Test Date: 16 August 2022

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ACTLab LLC 3280 East 59th Street, Long But LABELING  5.6.1 Labeling - Each helmet shall be permanently and		nisd
nat the label(s) can be easily read without removing paci rith the following:		manent part,
Required Information	Content/Format	Permanent
Manufacturer's name	Pass	Pass
Discrete size	Pass	Pass
Month and year of manufacture	Pass	Pass
Instructions to the purchaser as follows:	15 10 10 10 1	
"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 Pass
00 -01 -01		

# COMMENT:

This document shall full har written approval from ACT 1. Labels were determined to be both easily read and permanent based on the TP-218-07, Section 12.5.4.

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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 ''

S5.6.1, and complies with paragraphs. appearance. The label required by paragraph S5.6.2 shall have the following content, format, and appearance:

Required Certification Information	Content/ Format	Permanent
The symbol "DOT," horizontally centered on the label, in letters not less than 0.38 inch (1.0 cm) high.	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	This
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	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	

#### COMMENT:

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

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#### **Uni-Axial Calibration**

Helmet Manufacturer YIYANG Address :

Pre-Test

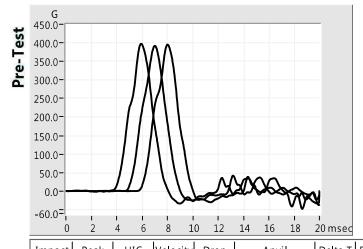
Post-Test

Testing Laboratory :Taicang ACT Lab

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

China 215412

Laboratory Technician name Terry



Labo	ratory Temperat	ur 22	deg C					
L	aboratory Humi	dit 57	%					
Select	ed Filter Frequer	ncy 1000 Hz						
Acc. se	ensitivity (axis Z)	: 10.59	mV/G					
Acc. se	ensitivity (axis X)	10.30	mV/G					
Acc. se	ensitivity (axis Y)	10.30	mV/G					
Dr	op Device : S	pherical Imp	actor (U	ni-Axial)				
D	rop mass assem	bly : 3.543	kg	Time g	ate flag	height:	25.43 n	n m
	Calibration pe	ak 402.5	G +/-	22.50	G	_		
3 3 3	450.0- 400.0- 350.0- 300.0- 250.0- 200.0- 150.0- 100.0- 50.0- 0.0- -60.0=			10 12	14 10	6 18	<b>N</b> 1 20 msec	
Delta T	Position	Test		Test		tion	PASS	1ms

	Impact	Peak	HIC	Velocity	Drop	Anvii	Delta I	Delta I	Position	lest	Test	Friction	PASS
	#	Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
				(m/sec)	(cm)		(msec)	(msec)					FAIL
ĺ	1	397.0	3390	4.6417	113.0	MEP	2.41	2.02	0/0	2022-08-16	09:21:38	1.4	Pass
	2	391.5	3365	4.5949	113.0	MEP	2.43	2.03	0/0	2022-08-16	09:22:46	2.4	Pass
	3	394.7	3384	4.6220	113.0	MEP	2.40	2.02	0/0	2022-08-16	09:23:48	1.8	Pass
	1	390.1	3617	4.6570	113.0	MEP	2.42	2.01	0/0	2022-08-16	11:45:41	1.1	Pass
•	2	390.1	3673	4.6753	113.0	MEP	2.39	2.03	0/0	2022-08-16	11:46:46	0.7	Pass
	3	396.5	3665	4.6056	113.0	MEP	2.44	2.00 of	0/0	2022-08-16	11:47:53	2.1	Pass

M.E.P. Pad Model 1 MEP

250.0-

20.0-

150.0-

100.0-

50.0-

0.0

-50.0

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO 2.5

Size: XS(53-54CM) Weight: 999.00 g

Manufacturing Date: 16 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.008-A

Headform Model: D.O.T. Headform Size: A D.O.T Conditioning: Ambiant

Laboratory Temperature: 22 deg C

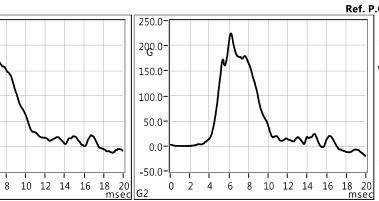
Laboratory Humidity: 57 %

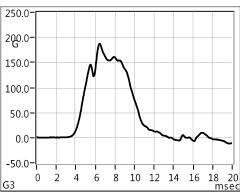
Selected Filter Frequency: 1650 Hz

Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 3.543 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





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	200.0-			Λ							
	150.0-			<b>/</b>	<b>~</b> )						
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	-50.0-	1	1	1	ı		ı	1	ı	1	4
) C	G4 0	2	4	6	8	10	12	14	16	18 m	20 sec

Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
1	196.0	1200	5.9996	192.0	FLAT	2.51	0.00	LF SIDE	2022-08-16	10:12:29	2.2	Pass
2	224.5	1480	5.9320	192.0	FLAT	3.09	0.53	LF SIDE	2022-08-16	10:12:34	3.3	Pass
3	187.7	1238	6.0066	192.0	FLAT	2.60	0.00	REAR	2022-08-16	10:23:24	2.1	Pass
4	206.1	1457	5.9642	192.0	FLAT	3.37	0.34	REAR	2022-08-16	10:23:43	2.8	Pass
				·								

160.0-

125.0

100.0

75.0-

50.0-

25.0-

0.0

-20.0

160.0-

125.0-

100.0-

50.0-

25.0-

0.0

Helmet Manufacturer: YIYANG Address:

Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

**Batch Number:** 

Ref. P.O. Number:



Weight: 999.00 g Manufacturing Date: 16 Aug 2022 Standard Request: FMVSS 218

XS(53-54CM)

Headform Model: D.O.T. Headform Size: A D.O.T

**Conditioning: Ambiant Laboratory Temperature: 22** deg C

Laboratory Humidity: 57 Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

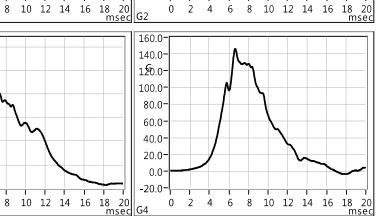
Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 3.543 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59



0.0

-20.0



G3 0	2 4	6 8	10 12	14 16	18 20 msec G4	2 4	6 8	10 12 14 16	18 20 msec			
Impact	Peak	HIC	Velocity	Drop	Anvil	Delta T	Delta T	Position	Test	Test	Friction	PASS
#	Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
5	76.5	294	5.1598	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:30:26	3.2	Pass
6	93.1	355	5.1382	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:30:32	3.7	Pass
7	115.3	406	5.2408	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:39:52	1.7	Pass
8	146.2	613	5.2412	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:39:57	1.7	Pass

250.0-

20.0-

150.0-

100.0-

50.0-

0.0

-50.0

6

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number:

Ref. P.O. Number :

Model: MOTO 2.5 Color: Black Size: XS(53-54CM)

Weight: 998.00 g
Manufacturing Date: 16 Aug 2022
Standard Populate: EMVSS 218

Standard Request: FMVSS 218
Identification Code: 904.10600.008-B

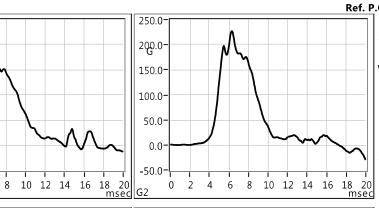
Headform Model: D.O.T. Headform Size: A D.O.T Conditioning: Cold

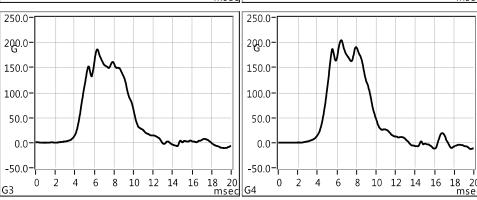
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 3.543 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





Anvil Del	lta T Delta T	Position	Test	Test	Friction	PASS
type 15	50G   200G		Date	Time	(%)	or
(ms	sec) (msec)					FAIL
FLAT 2.	.11 0.00	LF SIDE	2022-08-16	10:17:02	2.0	Pass
FLAT 3.	.07 0.59	LF SIDE	2022-08-16	10:17:12	2.3	Pass
FLAT 2	.22 0.00	REAR	2022-08-16	10:26:31	2.3	Pass
FLAT 3.4	.44 0.25	REAR	2022-08-16	10:26:36	1.7	Pass
	type 15 (m FLAT 2 FLAT 3 FLAT 2	type         150G (msec)         200G (msec)           FLAT         2.11         0.00           FLAT         3.07         0.59           FLAT         2.22         0.00	type         150G (msec)         200G (msec)           FLAT         2.11         0.00         LF SIDE           FLAT         3.07         0.59         LF SIDE           FLAT         2.22         0.00         REAR	type         150G (msec)         200G (msec)         Date           FLAT         2.11         0.00         LF SIDE         2022-08-16           FLAT         3.07         0.59         LF SIDE         2022-08-16           FLAT         2.22         0.00         REAR         2022-08-16	type         150G (msec)         200G (msec)         Date         Time           FLAT         2.11         0.00         LF SIDE         2022-08-16         10:17:02           FLAT         3.07         0.59         LF SIDE         2022-08-16         10:17:12           FLAT         2.22         0.00         REAR         2022-08-16         10:26:31	type         150G (msec)         200G (msec)         Date         Time         (%)           FLAT         2.11         0.00         LF SIDE         2022-08-16         10:17:02         2.0           FLAT         3.07         0.59         LF SIDE         2022-08-16         10:17:12         2.3           FLAT         2.22         0.00         REAR         2022-08-16         10:26:31         2.3

150.0-

125.0

100.0-

75.0

50.0-

25.0-

-10.0

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

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

Taicang City, Suzhou, Jiangsı Province, China 215412

Laboratory Technician name: Terry

Batch Number :

Ref. P.O. Number:



Weight: 998.00 g Manufacturing Date: 16 Aug 2022 Standard Request: FMVSS 218

Identification Code: 904.10600.008-B

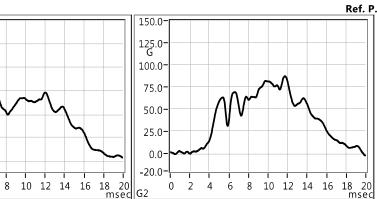
Headform Model: D.O.T. Headform Size: A D.O.T Conditioning: Cold

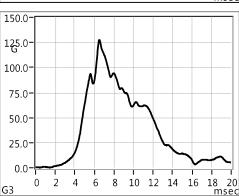
Laboratory Temperature: 22 deg C
Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz

Maximum Peak G's authorized: 400 G

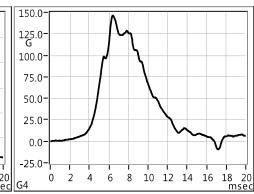
Maximum Peak m/s2 authorized: 3923 m/s2

Drop mass assembly: 3.543 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





6



Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	200G	Position	Test Date	Test Time	Friction (%)	PASS or
-			(m/sec)	(cm)		l (msec)	(msec)				<u>                                     </u>	FAIL
5	73.3	290	5.1889	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:33:27	2.7	Pass
6	87.1	318	5.1041	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:33:32	4.3	Pass
7	127.3	415	5.2348	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:42:44	1.8	Pass
8	146.2	639	5.2171	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:42:50	2.2	Pass

200.0-

175.0-

150.0-

125.0-

100.0-

75.0

50.0-

25.0·

0.0

-25.0-

Helmet Manufacturer: YIYANG Address:

Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

**Batch Number:** 

Ref. P.O. Number: Model: MOTO 2.5

Color: Black Size: XS(53-54CM) Weight: 1006.00 g

Manufacturing Date: 16 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.008-C

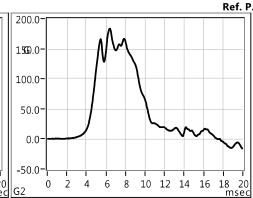
Headform Model: D.O.T. Headform Size: A D.O.T Conditioning: Hot

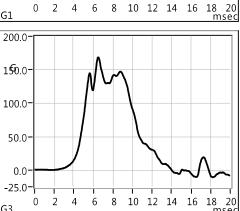
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

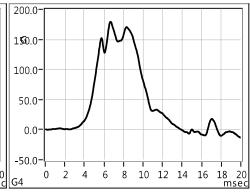
Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 3.543 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





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Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
1	175.2	975	5.9664	192.0	FLAT	1.13	0.00	LF SIDE	2022-08-16	10:18:50	2.8	Pass
2	183.5	1143	6.0095	192.0	FLAT	2.20	0.00	LF SIDE	2022-08-16	10:18:55	2.1	Pass
3	168.3	1030	6.0190	192.0	FLAT	0.56	0.00	REAR	2022-08-16	10:27:28	1.9	Pass
4	179.4	1221	5.9120	192.0	FLAT	2.23	0.00	REAR	2022-08-16	10:27:38	3.7	Pass

140.0

125.0-

G 100.0-

75.0-

50.0-

25.0-

0.0

-20.0

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

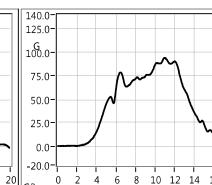
Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

Batch Number:

Ref. P.O. Number :



Model: MOTO 2.5 Color: Black Size: XS(53-54CM)

Weight: 1006.00 g

Manufacturing Date: 16 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.008-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/s2 authorized : 3923 m/s2

Drop mass assembly: 3.543 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59

140.0- 120.0- G 100.0- 80.0- 60.0- 40.0- 20.0- 0.0- 0.0- G G 0	G1	0	2	4	6	8	10	12	14	16	18 ms	20 ec	G2	0		4	6	8	10	12	14	16	18 m	sec
80.0- 60.0- 40.0- 20.0- 0.0- 0.0- 100.0- 80.0- 60.0- 40.0- 20.0- 0.0- 20.0- 0.0-	140.0	$\overline{}$											140.0	-										$\neg$
100.0- 80.0- 60.0- 40.0- 20.0- 0.0- 0.0- 20.0- 0.0- 0.0- 20.0- 0.0- 20.0- 0.0- 20.0- 0.0- 20.0- 0.0- 20.0- 0.0- 20.	120.0	-			Λ													~1						
80.0- 60.0- 40.0- 20.0- 0.0- 0.0- 20.0- 0.0- 20.0-					4	٦						_	100.0				$\mathcal{F}$	١,	<u>ا</u>					
60.0- 40.0- 20.0- 0.0- 20.0- 0.0-	80.0	_			$\perp$	_\	<b>~</b>						80.0	-			Г							
40.0- 20.0- 0.020.0-					لم		٨						60.0	-		$\pm I$			- \-					
20.0-				$\Box I$									40.0	-						1				
0.0-				I				1					20.0	-						Η,				
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G3 0 2 4 6 8 10 12 14 16 18 20 G4 0 2 4 6 8 10 12 14 16 18 20 msed	0.0	•	ا	1	1	1	1	1	+	<u> </u>	<del></del>		l	•	1	+	1	I	1.	1	1	1	1	-
	G3	0	2	4	6	8	10	12	14	16	18 ms	20 ec	G4	0	2	4	6	8	10	12	14	16	18 m	20 sec

Impact		HIC	Velocity		Anvil	Delta T	Delta T	Position	Test	Test	Friction	PASS
#	Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
5	79.3	322	5.2149	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:36:09	2.2	Pass
6	94.1	390	5.2244	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:36:14	2.0	Pass
7	117.1	406	5.1867	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:44:29	2.7	Pass
8	126.3	534	5.2164	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:44:34	2.2	Pass
		•			•	•					·	

0.0 -25.0Helmet Manufacturer: YIYANG Address:

8 10 12 14 16 18

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Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

**Batch Number:** Ref. P.O. Number:

Model: MOTO 2.5 Color: Black Size: XS(53-54CM) Weight: 1000.00 g

Manufacturing Date: 16 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.008-D

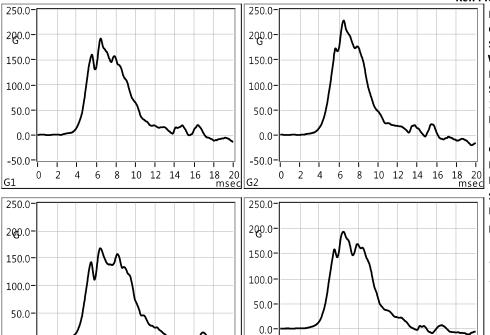
Headform Model: D.O.T. Headform Size: A D.O.T Conditioning: Wet

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 % Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 3.543 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59



-50.0-

20

Peak	HIC	Velocity	Drop	Anvil	Delta T	Delta T	Position	Test	Test	Friction	PASS
Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
		(m/sec)	(cm)		(msec)	(msec)					FAIL
192.3	1092	6.0194	192.0	FLAT	1.94	0.00	LF SIDE	2022-08-16	10:15:25	1.9	Pass
228.2	1489	6.0086	192.0	FLAT	2.99	0.84	LF SIDE	2022-08-16	10:15:30	2.1	Pass
167.8	1030	5.9608	192.0	FLAT	1.07	0.00	REAR	2022-08-16	10:25:05	2.9	Pass
193.2	1292	6.0377	192.0	FLAT	2.73	0.00	REAR	2022-08-16	10:25:13	1.6	Pass
	192.3 228.2 167.8	192.3 1092 228.2 1489 167.8 1030	Acc.(G) IN (m/sec)  192.3 1092 6.0194  228.2 1489 6.0086  167.8 1030 5.9608	Acc.(G)     IN (m/sec)     Height (cm)       192.3     1092     6.0194     192.0       228.2     1489     6.0086     192.0       167.8     1030     5.9608     192.0	Acc.(G)         IN (m/sec)         Height (cm)         type           192.3         1092         6.0194         192.0         FLAT           228.2         1489         6.0086         192.0         FLAT           167.8         1030         5.9608         192.0         FLAT	Acc.(G)         IN (m/sec)         Height (cm)         type         150G (msec)           192.3         1092         6.0194         192.0         FLAT         1.94           228.2         1489         6.0086         192.0         FLAT         2.99           167.8         1030         5.9608         192.0         FLAT         1.07	Acc.(G)         IN (m/sec)         Height (cm)         type         150G (msec)         200G (msec)           192.3         1092         6.0194         192.0         FLAT         1.94         0.00           228.2         1489         6.0086         192.0         FLAT         2.99         0.84           167.8         1030         5.9608         192.0         FLAT         1.07         0.00	Acc.(G)         IN (m/sec)         Height (cm)         type         150G (msec)         200G (msec)           192.3         1092         6.0194         192.0         FLAT         1.94         0.00         LF SIDE           228.2         1489         6.0086         192.0         FLAT         2.99         0.84         LF SIDE           167.8         1030         5.9608         192.0         FLAT         1.07         0.00         REAR	Acc.(G)         IN (m/sec)         Height (m/sec)         type         150G (msec)         200G (msec)         Date           192.3         1092         6.0194         192.0         FLAT         1.94         0.00         LF SIDE         2022-08-16           228.2         1489         6.0086         192.0         FLAT         2.99         0.84         LF SIDE         2022-08-16           167.8         1030         5.9608         192.0         FLAT         1.07         0.00         REAR         2022-08-16	Acc.(G)         IN (m/sec)         Height (cm)         type         150G (msec)         200G (msec)         Date         Time           192.3         1092         6.0194         192.0         FLAT         1.94         0.00         LF SIDE         2022-08-16         10:15:25           228.2         1489         6.0086         192.0         FLAT         2.99         0.84         LF SIDE         2022-08-16         10:15:30           167.8         1030         5.9608         192.0         FLAT         1.07         0.00         REAR         2022-08-16         10:25:05	Acc.(G)         IN (m/sec)         Height (cm)         type         150G (msec)         200G (msec)         Date         Time         (%)           192.3         1092         6.0194         192.0         FLAT         1.94         0.00         LF SIDE         2022-08-16         10:15:25         1.9           228.2         1489         6.0086         192.0         FLAT         2.99         0.84         LF SIDE         2022-08-16         10:15:30         2.1           167.8         1030         5.9608         192.0         FLAT         1.07         0.00         REAR         2022-08-16         10:25:05         2.9

6

8 10 12 14 16 18

140.0

120.0<sup>-</sup>

100.0

60.0

40.0

20.0

0.0

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO 2.5

Size: XS(53-54CM) Weight: 1000.00 g

Manufacturing Date : 16 Aug 2022 Standard Request : FMVSS 218 Identification Code : 904.10600.008-D

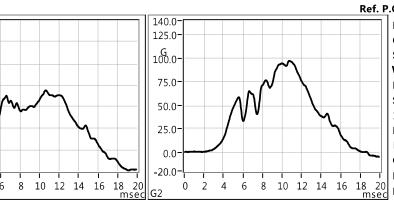
Headform Model: D.O.T. Headform Size: A D.O.T Conditioning: Wet

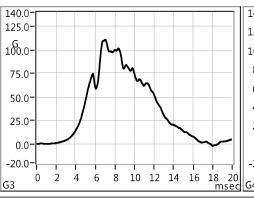
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 3.543 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59

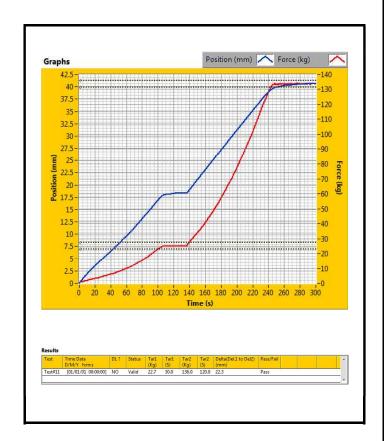




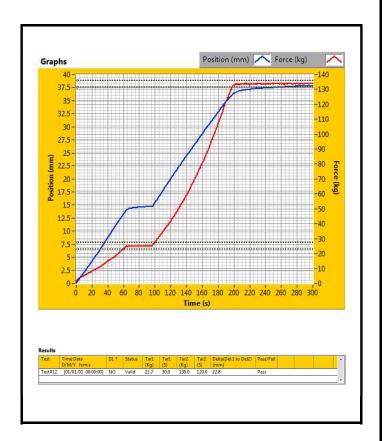
	140.0-		T									$\neg$
l	120.0-		+		$\dashv$	$\sim \!\! $			-			-
l	G 100.0-				+		\_					-
	80.0-		+		N		$\perp$					$-\ $
	60.0-			+	-		-1					-
l	40.0-		+	1				$\setminus$	-	+		-
l	20.0-							1				
l	0.0-		_							$\bigcap$	$\checkmark$	<b>~</b>
l	-20.0-	_	+	1	1	+		1	1	1	-	
) C	G4	0	2	4	6	8	10	12	14	16	18 m	20 sec

Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)				<u> </u>	FAIL
5	75.2	282	5.2032	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:32:00	2.4	Pass
6	97.3	342	5.2193	145.0	HEMI	0.00	0.00	FRONT	2022-08-16	10:32:06	2.1	Pass
7	110.7	389	5.2430	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:41:20	1.7	Pass
8	130.5	561	5.2425	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-16	10:41:25	1.7	Pass
	·											

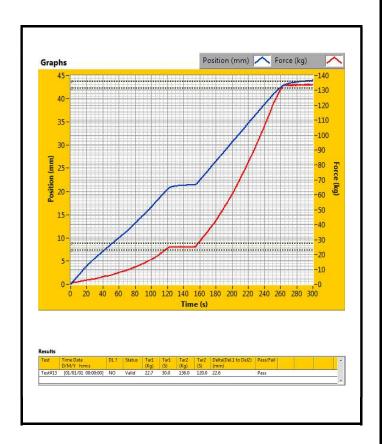
Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
	Model	MOTO 2.5
	Color	BLACK
	Size	XS(53-54CM)
	Weight	999
	Manufacturer	YIYANG
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.008-A



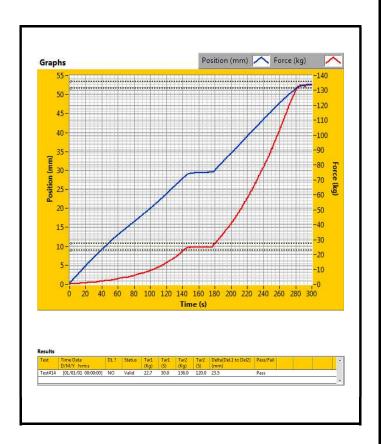
Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
l '	Model	MOTO 2.5
	Color	BLACK
	Size	XS(53-54CM)
	Weight	998
	Manufacturer	YIYANG
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.008-B



Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
l '	Model	MOTO 2.5
	Color	BLACK
	Size	XS(53-54CM)
	Weight	1006
	Manufacturer	YIYANG
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.008-C



Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
	Model	MOTO 2.5
	Color	BLACK
	Size	XS(53-54CM)
	Weight	1000
	Manufacturer	YIYANG
	Manuf. Date	04/22
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	Standard	FMVSS No.218
	Comment	904.10600.008-D



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APPENDIX A

INTERPRETATIONS OR DEVIATIONS FROM FMVSS 218

1. S6.4 Conditioning: Excess water on the water immersed sample was allowed to drip off before testing to prevent water damage to test equipment reproduced exception activition, written droporty of the produced exception activities and the produced exce reproduced except in full without Lob Lic testing to prevent water damage to test equipment. Witter

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Technician: Edward Wang Test Date: 16 August 2022

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Ge	neral Information	II PO WITH	11.
Drop Software: Ca	o System: Monorail idex Impact Softwar	x 3, "U, C,	
Item	Model O	S/N	
Computer	VD200PA#AB2	CNG9211DB1	
Data Acquisition Board	187570H-01	13EC16A	
Time Gate	Cadex	HVTG12009033-1	
Control Box	PC4300	CCS120090331-1	

#### Headforms

	Item	Size	Model	Assembly Wt., grams
	Uni-Axial	Headform Size DOT SMALL	Cadex	3573
, X	Uni-Axial	Headform Size DOT MEDIUM	Cadex	5060
S.C.	Uni-Axial	Headform Size DOT LARGE	Cadex	6185
This document	31, 110	<u>Sensors</u>		ot be out
184.481	Item		del 💮	/// S/NO
repliter of	Uni-Axial	Accelerometer PCB 3	53B18 5	86079
N,		لابع	ueverby !!	, AC

#### **Sensors**

Item		Model S/N
Uni-Axial	Accelerometer	PCB 353B18 86079
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# **EQUIPMENT LIST AND CALIBRATION SCHEDULES**

Asset Tag	Location Helmet Room	Description of part	Model Number	Serial Number	Verification Interval	Next Verification
H1001		Instrument	Yellow tower - 1000 00 MIMAT	NA	NA	
H1002	Helmet Room	Instrument	Green tower - Series 2000	NA	NA	NA NA
H1010	Helmet Room	Instrument	Control Center System - Pc4300	CCS120090331-1	NA	NA
H1011	Helmet Room	Instrument	Impact Machine System - DX3000	NA	NA	NA
H1013	Helmet Room	Instrument	Charge Amplifier - ATA2001	J72863	NA	NA NA
H1015	Helmet Room	Instrument	Positional Stability CPSC/ASTM	NA NA	1 year	4/11/2022
H1017	Helmet Room	Instrument	Retention Machine DOT - SB033	NA NA	NA NA	NA NA
H1019	Helmet Room	Instrument	Chin Bar Deflection ASTM/SNELL	NA TI TVOKO	NA NA	NA NA
H1026	Helmet Room	Instrument	Laser table - SB005	TLTV2KB-	NA	NA 2/44/2024
H1027 H1034	Helmet Room Helmet Room	Instrument Environmental	Fixture-Vision scale Water Container	NA NA	3 year NA	3/11/2024 NA
H1043	Helmet Room	Headform	Impact ISO A	4272	1 year	10/19/2022
H1043	Helmet Room	Headform	Impact ASTM F2220 C	6938	1 year	10/19/2022
H1045	Helmet Room	Headform	Impact ASTW1 2220 C	4146	1 year	10/19/2022
H1046	Helmet Room	Headform	Impact ISO J	4148	1 year	10/19/2022
H1047	Helmet Room	Headform	Impact ISO M	4131	1 year	10/19/2022
H1048	Helmet Room	Headform	Impact ISO O	4151	1 year	10/19/2022
H1049	Helmet Room	Headform	Impact DOT Small	5178	1 year	10/19/2022
H1050	Helmet Room	Headform	Impact DOT Medium	5179	1 year	10/19/2022
H1051	Helmet Room	Headform	Impact DOT Large	5190	1 year	10/19/2022
H1052	Helmet Room	Anvil	System Check Spherical Impactor	NA	1 year	10/19/2022
H1053	Helmet Room	System Check	MEP Pad - 345 08 MP60	30051201	1 year	2021 yearly report
H1054	Helmet Room	Anvil	Chin Bar	NA	1 year	10/19/2022
H1055	Helmet Room	Anvil	Curb	NA	1 year	12/12/2021
H1056	Helmet Room	Anvil	Cylinder	NA	1 year	12/12/2021
H1059	Helmet Room	Anvil	Hazard	NA	1 year	12/12/2021
H1060	Helmet Room	Anvil	Hemispherical yellow tower	NA	1 year	12/12/2021
H1062	Helmet Room	Anvil	Flat yellow tower	NA	1 year	12/12/2021
H1064	Helmet Room	Instrument	Control Center System yellow tower -	CCS120120810-1	NA	NA O
H1066	Helmet Room	Instrument	Penetration striker DOT	NA	1 year	9/10/2022
H1091	Helmet Room	Angle Measure	40°Block	NA NA	3 year	6/4/2023
H1092	Helmet Room	Fixture	Clamp - 119g	NA	1 year	10/19/2022
H1093	Helmet Room	Fixture	Clamp - 210g	NA	1 year	10/19/2022
H1094	Helmet Room	Fixture	Clamp - 378g	NA	1 year	10/19/2022
H1095	Helmet Room	Fixture	Clamp - 451g	NA	1 year	10/19/2022
H1096	Helmet Room	Fixture	Clamp - 505g	NA	1 year	10/19/2022
H1097	Helmet Room	Fixture	Clamp - 598g	NA O	1 year	10/19/2022
H1098	Helmet Room	Fixture	Clamp - 1160g	NA NA	1 year	10/19/2022
H1099	Helmet Room	Anvil	Flat Green Tower	NA	1 year	12/12/2021
H1100	Helmet Room	Anvil	Hemispherical Green Tower	NA NA	1 year	12/12/2021
H1101 H1102	Helmet Room Helmet Room	Headform Headform	DOT Retention Strength Small DOT Retention Strength Medium	NA NA	NA NA	NA NA
H1102	Helmet Room	Headform	DOT Retention Strength Large	NA	NA NA	NA NA
H1105	Helmet Room	Drop Mass	Aluminum Ball Stem Green tower	NA NA	1 year	10/19/2022
H1106	Helmet Room	Drop Mass	Steel Ball Stem	C KONA	1 year	10/19/2022
H1107	Helmet Room	Drop Mass	Magnesium Ball Arm	NA NA	1 year	10/19/2022
H1117	Helmet Room	Instrument	Helmet Internal circumference measure	NA NA	NA NA	NA NA
H1123	Helmet Room	Fixture	Roll Off Headform fasten fixture	NA NA	NA NA	NA NA
H1126	Helmet Room	Drop Mass	Complete Pistol Grip Green tower	NA NA	1 year	10/19/2022
H1127	Helmet Room	Headform	Setup ASTM F2220 C	6947	1 year	12/12/2021
H1128	Helmet Room	Headform	DOT Penetration Small	NA	ŇA	NA
H1129	Helmet Room	Headform	DOT Penetration Medium	NA	NA	NA
H1130	Helmet Room	Headform	DOT Penetration Large	NA	NA	NA
H1143	Helmet Room	Height Measure	DOT Opening Block	NA	3 year	10/9/2023
H1144	Helmet Room	Fixture	Laser table headform base	NA	NA	NA NO
H1145	Helmet Room	Fixture	Penetration headform base	NA	NA	NA O
H1146	Helmet Room	Fixture	Penetration height measure	NA	NA	NA C
H1149	Helmet Room	Preload mass	NA NA	NA	1 year	10/9/2022
H1150	Helmet Room	10kg block	NA	NA	1 year	10/9/2022
H1175	Helmet Room	Headform	DOT Penetration Large	NA	NA	ONA O
H1178	Helmet Room Helmet Room	Drop Mass Drop Mass	Complete Pistol Grip	NA	1 year	10/19/2022
H1179			Aluminum Ball Stem	NA	1 year	10/19/2022

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Asset Tag	Description of part	Model Number	Measuring Range	Accuracy	Serial Number	Last Calibrated On	Calibration Due On
H1003	Instrument	Velocity gate Yellow tower	(0-7.5)m/s	0.0001m/s	HVTG120120810-1	10/4/2021	10/3/2022
H1004	Instrument	Velocity gate Green tower	(0-6.4)m/s	0.0001m/s	HVTG120090331-1	2/17/2021	2/16/2022
H1007	Instrument	Uni-axial Accelerometer green tower - 353B18	≥1000g	≥1°0° (e)	86079	10/8/2021	10/7/2022
H1009	Height Measure	Digital tape yellow tower - 16'	(0-5.5)m	0.1cm	5027526	11/2/2021	11/1/2022
H1012	Instrument	Displacement sensor - C20101007753	2 inch	0.1mm	J72863	11/1/2021	10/31/2022
H1014	Instrument	Displacement sensor - LWE- 200	(0-100)mm	0.1mm	2002572	11/1/2021	10/31/2022
H1025	Weight Measure	Electronic scale - BT-6	(40-6000)g	0.1g	12230126	7/8/2021	7/7/2022
H1027	Angle Measure	Vision scale - 7°,25°,45°,105°	7°,25°,45°,105°		H-002	11/1/2021	10/31/2024
H1030	Environmental Chamber	Oven #1 - 92*9240MBE	(0-200)℃	1℃	8285	7/8/2021	7/7/2022
H1031	Environmental Chamber	Oven #2 - DHG-9426	(0-200)℃	0.1℃	1503338018	11/1/2021	10/31/2022
H1032	Environmental Chamber	Freezer #1 - DW-25W300	(-30~-10)℃	0.1℃	BE062100N00B29578VMO	7/8/2021	7/7/2022
H1033	Environmental Chamber	Freezer #2 - DW-50W225	(-30~-10)℃	0.1℃	F8LMJ	11/1/2021	10/31/2022
H1036	Environmental Measure	Temperature and humidity #1 - TH-602F	(-30~60)℃,(0- 100)%	2℃	3238	7/9/2021	7/8/2022
H1057	Anvil	Edge	NÁ	NA	NA	10/27/2020	10/26/2023
H1058	Anvil	Equestrian	NA	NA	NA	10/27/2020	10/26/2023
H1061	Anvil	Blade	NA	NA	NA	10/27/2020	10/26/2023
H1063	Height Measure	Digital tape - 5m	(0-5)m	0.1mm	78223	11/2/2021	11/1/2022
H1070	Instrument	Load cell - 9363-B10-300- 20T1	(0-136)kg	0.1kg	80310843	7/8/2021	7/7/2022
H1071	Environmental Measure	Temperature and humidity #3 - TH600B	(-20~100)℃,(0- 100)%	1℃	Q/MDS001-2017-1	7/8/2021	7/7/2022
H1072	Environmental Measure	Temperature and humidity #4 - TH600B	(-20~100)℃,(0- 100)%	1°C 3	Q/MDS001-2017-2	7/8/2021	7/7/2022
H1073	Height Measure	Height Gauge	(0-500)mm	0.01mm	8811213838273610	11/1/2021	10/31/2022
H1074	Distance Measure	Vernier caliper - SJ-455615	(0-150)mm	0.01mm	455615	11/1/2021	10/31/2022
H1076	Environmental Measure	Calorifier - CN-111	18-35℃	20.1℃ ° .d	NA	11/2/2021	11/1/2022
H1077	Distance Measure	Tape	0-1.5m	S 1mm	NA	11/2/2021	11/1/2022
H1172	Height Measure	Height Rod #6	600±5mm	///mm/Q	032216-02	4/13/2021	4/12/2022
H1174	System Check	MEP PAD	NA	NA NA	021921-01	3/5/2021	3/4/2022
H1180	Instrument	LVDT & Sensor Box	2 inch	0.1mm	04140748-001	11/1/2021	10/31/2022
H1184	Instrument	Uni-axial Accelerometer yellow tower - 353B18	± 500 g	≤ 1%	LW226664	8/24/2021	8/23/2022
st File: ntrol Docu	iment: Official ACT FMVSS N	o.218 Report Template TP-07 CN 1 ing/ReportTemplates/Helmets/FM	/SS No.218		n: Edward Wang : 16 August 2022	8/24/2021	u abbion

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**APPENDIX C** 

**PHOTOGRAPHS** 

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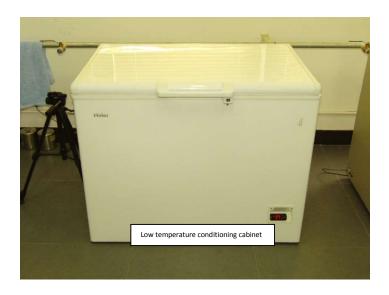
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#### **NOTICE**

- The report is not effective without the signature of the person(s) authorizing the report (ACT Lab's authorized signatory is John A. Bogler (President)).
- The report is not valid if altered.

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- Claims have to be made within 15 days after receipt of this report.
- The results of this test report relate only to the items tested.
- The results apply to the samples as received.
- 6. For reports that contain results from external test service providers: Results from external test service providers are supplied by the customer and can affect validity of results.
- 7. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance with Specification".

**END OF REPORT** 

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# SAFETY COMPLIANCE TESTING FOR **FMVSS No. 218 MOTORCYCLE HELMETS** Lobrogrammer II zing Periodican debendal town we

**Brand: LEATT** Model: MOTO 2.5 Tested Size: S (55-56 cm)

Leatt Corporation

12 Kiepersol Crescent
s Gardens Birch
ape F Atlas Gardens Business Park, Cape Farms, Cape Town, 7550, ZA



Issue Date: 19 September 2022

Final Report: 904.10600.009 in full

Tested By:

# Teproduced except in tuli without Taicang ACT Sporting Goods Testing Co., Ltd.

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This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated April 2017.) The Joint Communiqué is available on publications and resources page of the ILAC website at http://www.ilac.org. Accreditation listing and certificate can be found at http://www.iasonline.org.

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John Calan Technician: Edward Wang Test Date: 17 August 2022

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# PURPOSE OF COMPLIANCE TEST

# This document of the produced exception and providing the produced exception of the produced exc

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

Dongguan Yiyang Sports Co., Ltd.

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.

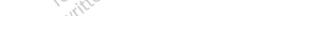
# **Test Procedure:**

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

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#### **HELMET DATA**

HELMET BRAND NAME:	LEATT	eg les
HELMET MODEL DESIGNATION:	MOTO 2.5	Milita
HELMET MANUFACTURER: DON	IGGUAN YIYANG SPORTS CO., LTD.	
HELMET SIZE:	S (55-56 cm)	
HELMET COVERAGE: Partial:	Full: Complete:	Х
HELMET POSITIONING INDEX: 60 mm	good exception	
SHELL MATERIAL: ABS	ini du dippre	
LINER MATERIAL: Expanded Polystyrene	evitte.	
BUCKLE DESCRIPTION: _Double D-Rings	5	

HELMET	A Ambient	B Low Temp	C High Temp	D Water Immersed	E Spare
SHELL COLOR/PATTERN	Black	Black	Black	Black	
WEIGHT (grams)	999	994	1002	998	
MONTH & YEAR OF MANUFACTURE	04/22	04/22	04/22	04/22	

Reviewed by: John Bogler

COMMENTS:

1. All helmets were received in undamaged condition and were appropriate for testing.

2. Weights listed above for helmets A-D are as tested with visor removed.

3. ACT determined the HPI information prior to testing.

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## **SUMMARY OF TEST RESULTS**

INDICATE	Pass or Fail	SUMMARY	OF TEST RE	SULTS	
Chue	HELMET	А	В	С	D
This dood e	TEST	AMBIENT	LOW TEMP	HIGH TEMP	WATER IMMERSED
reprote of	IMPACT	Pass	Pass	Pass	Pass
	PENETRATION	Pass	Pass	Pass	Pass
	RETENTION	Pass	Pass O	Pass	Pass

#### **INDICATE Pass or Fail**

TEST	PASS/FAIL
PERIPHERAL VISION	Pass
PROJECTIONS	Pass
LABELING	Pass
PROJECTIONS  LABELING	This document shall not be out without a produced exception ACT Lab to written approval from ACT Lab to write written approval from ACT Lab to written approval from ACT Lab to written approval from

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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 (European Size 54)	OT DE SMALL
Greater than 6-3/4, but less than or equal to 7-1/2 (European Size 60)	dill for MEDIUM
Greater than 7-1/2 (European 60)	LARGE

#### COMMENTS:

11/1/3

The manufacturer marked the helmet with its corresponding discrete size: S (55-56 cm), Headform Size: DOT MEDIUM.

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.

AVERAGE LAB TEMPERATURE: \_\_\_22\_\_ °C; AVERAGE LAB HUMIDITY:

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#### **IMPACT ATTENUATION**

Lighter ID	Condition	Nitro I	Impact	Amuil	Drop	Velocity	Duration	Duration	Peak	(Liegoco
Helmet ID	Condition	Impact #	Location	Anvil	Height (cm)	(m/sec)	at 150G (ms)	at 200G (ms)	Acc.	Pass/Fail
904.10600.009-A	Ambient	1	LF SIDE	FLAT	192.0	6.0636	2.08	0.00	163.7	Pass
904.10600.009-A	Ambient	2	LF SIDE	FLAT	192.0	6.0509	2.82	0.00	197.3	Pass
904.10600.009-A	Ambient	3	REAR	FLAT	192.0	6.0899	0.53	0.00	151.7	Pass
904.10600.009-A	Ambient	4	REAR	FLAT	192.0	6.0727	2.87	0.00	175.7	Pass
904.10600.009-A	Ambient	5	FRONT	НЕМІ	145.0	5.2436	0.00	0.00	76.5	Pass
904.10600.009-A	Ambient	6	FRONT	HEMI	145.0	5.2446	0.00	0.00	108.4	Pass
904.10600.009-A	Ambient	7	RT SIDE	НЕМІ	145.0	5.2572	0.00	0.00	91.3	Pass
904.10600.009-A	Ambient	8	RT SIDE	НЕМІ	145.0	5.2467	0.00	0.00	124.0	Pass
904.10600.009-B	Cold	1	LF SIDE	FLAT	192.0	6.0309	2.21	0.00	162.3	Pass
904.10600.009-B	Cold	2	LF SIDE	FLAT	192.0	6.0374	3.14	0.24	206.1	Pass
904.10600.009-B	Cold	3	REAR	FLAT	192.0	6.0872	1.26	0.00	155.8	Pass
904.10600.009-B	Cold	4	REAR	FLAT	192.0	6.0859	2.72	0.00	181.2	Pass
904.10600.009-B	Cold	5	FRONT	HEMI	145.0	5.2467	0.00	0.00	75.2	Pass
904.10600.009-B	Cold	6	FRONT	HEMI	145.0	5.2347	0.00	0.00	110.2	Pass
904.10600.009-B	Cold	O'C TOO	RT SIDE	HEMI	145.0	5.2441	0.00	0.00	87.6	Pass
904.10600.009-B	Cold	111 18 910	RT SIDE	HEMI	145.0	5.2598	0.00	0.00	126.3	Pass
904.10600.009-C	Hot	CI	LF SIDE	FLAT	192.0	6.0276	0.19	0.00	152.6	Pass
904.10600.009-C	Hot	2	LF SIDE	FLAT	192.0	6.0462	2.68	0.00	187.7	Pass
904.10600.009-C	Hot	3	REAR	FLAT	192.0	6.0693	0.00	0.00	147.5	Pass
904.10600.009-C	O Hot	4	REAR	FLAT	192.0	6.0468	2.71	0.00	172.9	Pass
904.10600.009-C	Hot	5	FRONT	HEMI	145.0	5.1806	0.00	0.00	73.3	Pass
904.10600.009-C	Hot	6	FRONT	НЕМІ	145.0	5.2299	0.00	0.00	96.4	Pass
904.10600.009-C	Hot	7	RT SIDE	HEMI	145.0	5.2545	0.00	0.00	87.1	Pass
904.10600.009-C	Hot	8	RT SIDE	HEMI	145.0	5.2404	0.00	0.00	119.4	Pass
904.10600.009-D	Wet	1	LF SIDE	FLAT	192.0	6.0470	0.76	0.00	155.8	Pass
904.10600.009-D	Wet	2	LF SIDE	FLAT	192.0	6.0396	2.73	0.00	186.3	Pass
904.10600.009-D	Wet	3	REAR	FLAT	192.0	6.0402	0.00	0.00	148.5	Pass
904.10600.009-D	Wet	4	REAR	FLAT	192.0	6.0981	2.69	0.00	168.3	Pass
904.10600.009-D	Wet	5	FRONT	HEMI	145.0	5.2184	0.00	0.00	70.5	Pass
904.10600.009-D	Wet	6	FRONT	HEMI	145.0	5.1894	0.00	0.00	104.2	Pass
904.10600.009-D	Wet	100 N	RT SIDE	HEMI	145.0	5.2534	0.00	0.00	90.8	Pass
904.10600.009-D	Wet	0, 38,	RT SIDE	HEMI	145.0	5.2430	0.00	0.00	121.7	Pass

Contract File No.: 904.10600

Test File: 009

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 7 of 42



Paragraph S5.2 and S7.2

WEIGHT OF STRIKER:

2.95 to 3.06 kg (6 pounds, 8 ounces to 6 pounds, 12 ounces)

Radius =  $0.5 \pm 0.1$  mm ( $0.02 \pm 0.004$  in ) include  $0.5^{\circ}$ , hardness minimum of  $0.5^{\circ}$ POINT OF STRIKER:

height of not less than  $3.8 \pm 0.038$  cm  $(1.5 \pm 0.015$  in.).

MEIGHT OF FALL: 300 cm ± 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.

				7		
TEST	HELMET	TEST LOCATION	PASS	FAIL	CONDITIONS	
1	А	Crown	XW		AMBIENT	
2	Α	Rear Right	Х		AMBIENT	5
3	В	Crown	X		LOW TEMPERATURE	This
4	B well	Rear Right	Х		LOW TEMPERATURE	166/16
5	C STIN	Crown	X		HIGH TEMPERATURE	Me
6	nus to Ho	Rear Right	X		HIGH TEMPERATURE	
,,i <sup>z</sup> do	so o	Crown	Х		WATER IMMERSED	
7/18dC	Noby D	Rear Right	X		WATER IMMERSED	
10110					ALC CLL A A	

COMMENT: Photographs of penetration test locations are found in Appendix C.

Contract File No.: 904.10600

Test File: 009

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#### **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 2.54 cm (1.0 INCH) AFTER LOAD INCREASE

8, 8, 10,							
HELMET	CONDITIONS Cm						
А	AMBIENT	1.53					
В	LOW TEMPERATURE	1.54					
" vec vit	HIGH TEMPERATURE	1.75					
O villa	WATER IMMERSED	1.60					

#### PERIPHERAL VISION

CONFIGURATION - 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.

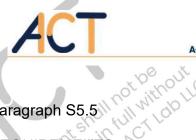
	REQUIREMENTS	TEST RESULTS
PERIPHERAL VISION	> 105°	Pass
BROW OPENING	> 2.5 cm (1 inch)	Pass

Contract File No.: 904.10600

Test File: 009

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#### **PROJECTIONS**

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	or be nout	PROJECTIONS	e doch exch
Pa	ragraph S5.5	Y	This duc appro
RE	QUIREMENTS:		Witter
nis	PROJECTION	REQUIREMENT	
,0,0	Internal rigid	None ot ithout C	
Will	External rigid	Operational, shall not protrude more than 5	mm

#### **TEST RESULTS:**

Militia	External rigid	Operational, shall not protrude more than 5 mm								
TES	T RESULTS:	docule scelling	om ve							
	PROJECTION	PRESENT	HEIGHT (mm)							
	Internal	None	Not Applicable	The second						
	External	None	Not Applicable	is document						
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ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805 Tel 562470.72  LABELING	
5.6.1 <i>Labeling</i> - Each helmet shall be permanently and legibly labeled, in a at the label(s) can be easily read without removing padding or any other peth the following:	ermanent part,
Required Information Content/Format	Permanent
Manufacturer's name Pass	Pass
Discrete size Pass	Pass
Month and year of manufacture Pass	Pass
nstructions to the purchaser as follows:	
"Shell and liner constructed of (identify type(s) of materials)."	Pass
"Helmet can be seriously damaged by some common substances without damage being Pass visible to the user."	Pass
"Apply only the following: (Recommended cleaning agents, paints, adhesives, etc., as appropriate."	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 Pass

# COMMENT:

This document shall full with the produced exception ACT written approval from ACT written approval from ACT 1. Labels were determined to be both easily read and permanent based on the TP-218-07, Section 12.5.4.

Contract File No.: 904.10600

Test File: 009

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 11 of 42



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 "

S5.6.1, and complies with paragraphs." appearance. The label required by paragraph S5.6.2 shall have the following content, format, and appearance:

Required Certification Information	Content/ Format	Permanent
The symbol "DOT," horizontally centered on the label, in letters not less than 0.38 inch (1.0 cm) high.	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	This
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	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	

#### COMMENT:

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

Contract File No.: 904.10600

Test File: 009

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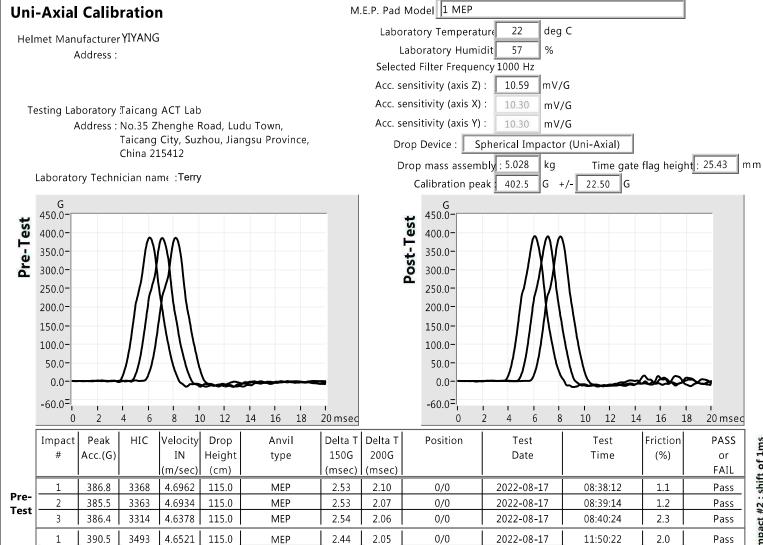
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2022-08-17

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11:52:28

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150.0-

100.0-

50.0-

0.0

-25.0-

6

Helmet Manufacturer: YIYANG Address:

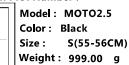
Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

**Batch Number:** Ref. P.O. Number:



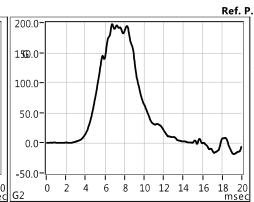
Manufacturing Date: 17 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.009-A

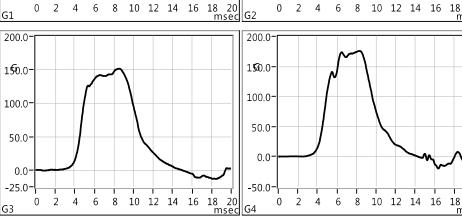
Headform Model: D.O.T. Headform Size: C D.O.T **Conditioning: Ambiant** 

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 % Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2





Impact	Peak	HIC	Velocity	' '	Anvil	Delta T	Delta T	Position	Test	Test	Friction	PASS
#	Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
1	163.7	1052	6.0636	192.0	FLAT	2.08	0.00	LF SIDE	2022-08-17	13:53:47	1.2	Pass
2	197.3	1404	6.0509	192.0	FLAT	2.82	0.00	LF SIDE	2022-08-17	13:53:50	1.4	Pass
3	151.7	1086	6.0899	192.0	FLAT	0.53	0.00	REAR	2022-08-17	13:57:12	0.8	Pass
4	175.7	1362	6.0727	192.0	FLAT	2.87	0.00	REAR	2022-08-17	13:57:16	1.0	Pass

140.0

125.0-

G 100.0-

75.0-

50.0-

25.0-

0.0

-20.0

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO2.5 Color: Black Size: S(55-56CM) Weight: 999.00 g

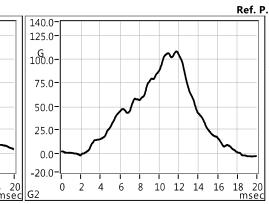
Manufacturing Date: 17 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.009-A

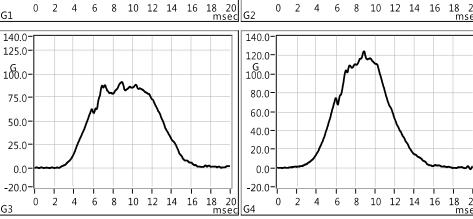
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Ambiant

Laboratory Temperature : 22 deg C
Laboratory Humidity : 57 %
Selected Filter Frequency : 1650 Hz

Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized: 3923 m/s2





Impact #	Peak Acc.(G)	HIC	Velocity IN (m/sec)	Height	Anvil type	Delta T 150G (msec)	Delta T 200G (msec)	Position	Test Date	Test Time	Friction (%)	PASS or FAIL
5	76.5	289	5.2436	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:01:01	1.7	Pass
6	108.4	385	5.2446	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:01:55	1.7	Pass
7	91.3	399	5.2572	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:05:19	1.4	Pass
8	124.0	564	5.2467	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:05:23	1.6	Pass

250.0-

260.0-

150.0-

100.0-

50.0-

0.0

-25.0-

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

Batch Number : Ref. P.O. Number :

Model: MOTO2.5 Color: Black Size: S(55-56CM) Weight: 994.00 g

Manufacturing Date: 17 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.009-B

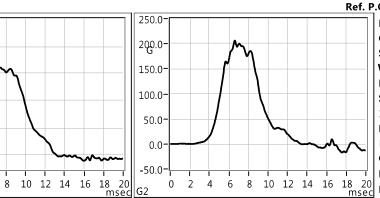
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Cold

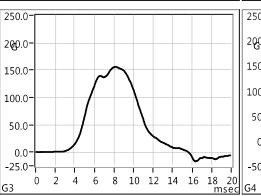
Laboratory Temperature : 22 deg C Laboratory Humidity : 57 %

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

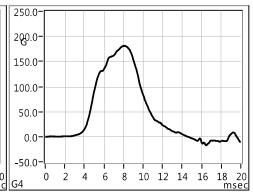
Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 5.028 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





6



Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or FAIL
			(m/sec)			i i	(msec)				1	
1	162.3	1092	6.0309	192.0	FLAT	2.21	0.00	LF SIDE	2022-08-17	13:54:57	1.7	Pass
2	206.1	1516	6.0374	192.0	FLAT	3.14	0.24	LF SIDE	2022-08-17	13:55:00	1.6	Pass
3	155.8	1049	6.0872	192.0	FLAT	1.26	0.00	REAR	2022-08-17	13:58:07	0.8	Pass
4	181.2	1321	6.0859	192.0	FLAT	2.72	0.00	REAR	2022-08-17	13:58:11	0.8	Pass

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO2.5 Color: Black Size: S(55-56CM) Weight: 994.00 g

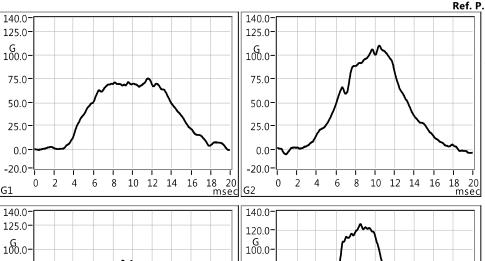
Manufacturing Date : 17 Aug 2022 Standard Request : FMVSS 218 Identification Code : 904.10600.009-B

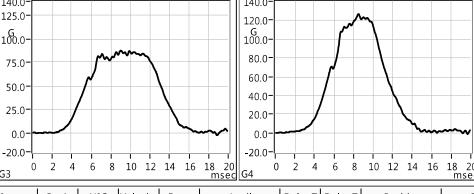
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Cold

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized: 3923 m/s2





Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
5	75.2	299	5.2467	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:03:00	1.6	Pass
6	110.2	472	5.2347	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:03:05	1.8	Pass
7	87.6	398	5.2441	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:06:15	1.7	Pass
8	126.3	618	5.2598	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:06:19	1.4	Pass

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry
Batch Number :

Ref. P.O. Number:

Model: MOTO2.5
Color: Black
Size: S(55-56CM)
Weight: 1002.00 g

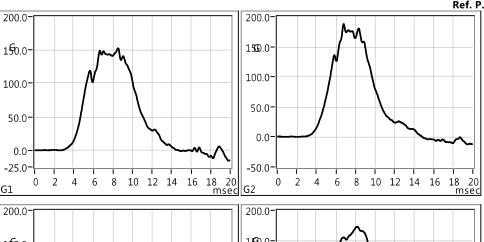
Manufacturing Date: 17 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.009-C

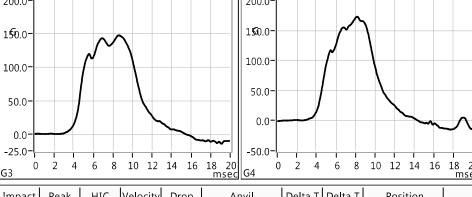
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Hot

Laboratory Temperature : 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2





Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		l (msec)	(msec)					FAIL
1	152.6	962	6.0276	192.0	FLAT	0.19	0.00	LF SIDE	2022-08-17	13:55:33	1.8	Pass
2	187.7	1239	6.0462	192.0	FLAT	2.68	0.00	LF SIDE	2022-08-17	13:55:36	1.5	Pass
3	147.5	999	6.0693	192.0	FLAT	0.00	0.00	REAR	2022-08-17	13:58:33	1.1	Pass
4	172.9	1218	6.0468	192.0	FLAT	2.71	0.00	REAR	2022-08-17	13:58:38	1.5	Pass

120.0

100.0

80.0

60.0

40.0

20.0

-10.0

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO2.5 Color: Black Size: S(55-56CM) Weight: 1002.00 g

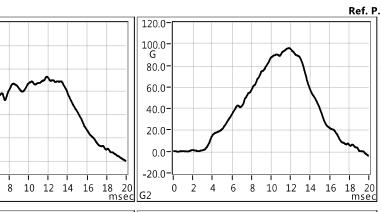
Manufacturing Date: 17 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.009-C

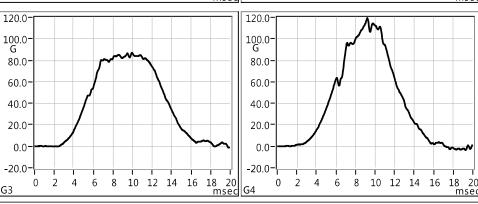
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Hot

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2





Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
5	73.3	275	5.1806	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:03:32	2.9	Pass
6	96.4	377	5.2299	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:03:38	1.9	Pass
7	87.1	380	5.2545	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:06:41	1.5	Pass
8	119.4	519	5.2404	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:06:46	1.7	Pass

200.0-

150.0-

100.0-

50.0-

0.0

-25.0-

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry
Batch Number :

Ref. P.O. Number :

Model: MOTO2.5
Color: Black
Size: S(55-56CM)
Weight: 998.00 g

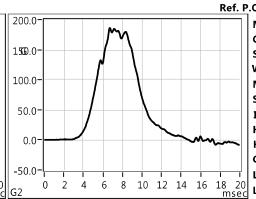
Manufacturing Date : 17 Aug 2022 Standard Request : FMVSS 218 Identification Code : 904.10600.009-D

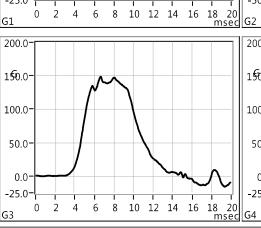
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Wet

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2





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0 2 C	G4	0	2	4	6	8	10	12	14	16	18 m	20 sec

Impact #	Peak Acc.(G)	HIC	Velocity IN (m/sec)	Height	Anvil type	Delta T 150G	Delta T 200G (msec)	Position	Test Date	Test Time	Friction (%)	PASS or FAIL
1	155.8	973	6.0470	192.0	FLAT	0.76	0.00	LF SIDE	2022-08-17	13:54:23	1.5	Pass
2	186.3	1277	6.0396	192.0	FLAT	2.73	0.00	LF SIDE	2022-08-17	13:54:26	1.6	Pass
3	148.5	1003	6.0402	192.0	FLAT	0.00	0.00	REAR	2022-08-17	13:57:37	1.6	Pass
4	168.3	1231	6.0981	192.0	FLAT	2.69	0.00	REAR	2022-08-17	13:57:41	0.6	Pass

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO2.5 Color: Black Size: S(55-56CM) Weight: 998.00 g

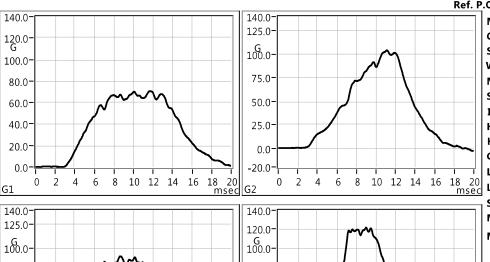
Manufacturing Date : 17 Aug 2022 Standard Request : FMVSS 218 Identification Code : 904.10600.009-D

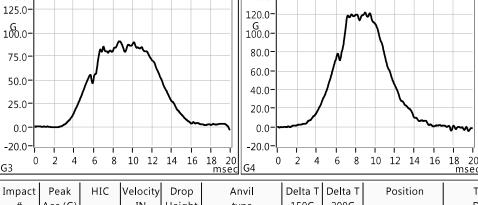
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Wet

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

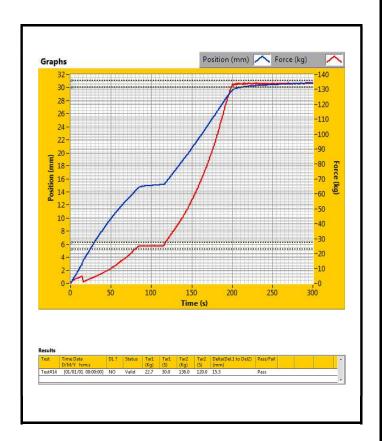
Maximum Peak m/s2 authorized: 3923 m/s2



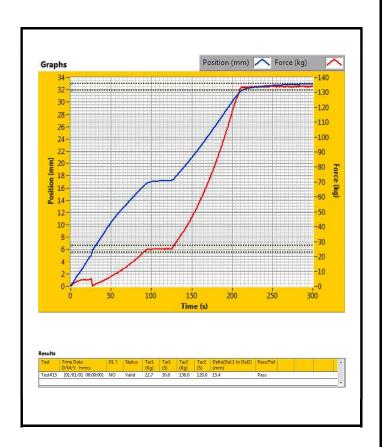


Impact #	Peak Acc.(G)	HIC	Velocity IN (m/sec)	Drop Height (cm)	Anvil type	Delta T 150G	Delta T 200G (msec)	Position	Test Date	Test Time	Friction (%)	PASS or FAIL
5	70.5	269	5.2184	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:02:27	2.1	Pass
6	104.2	414	5.1894	145.0	HEMI	0.00	0.00	FRONT	2022-08-17	14:02:32	2.7	Pass
7	90.8	383	5.2534	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:05:47	1.5	Pass
8	121.7	572	5.2430	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-17	14:05:51	1.7	Pass

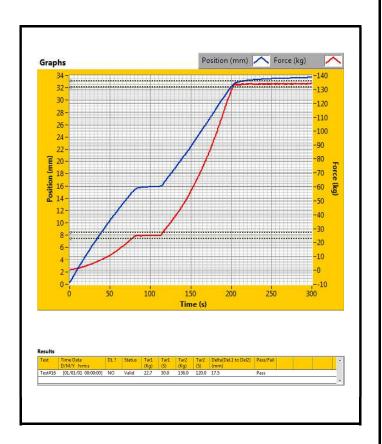
Γ		
Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
	Model	MOTO 2.5
	Color	BLACK
	Size	S(55-56CM)
	Weight	999
	Manufacturer	YIYANG
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.009-A
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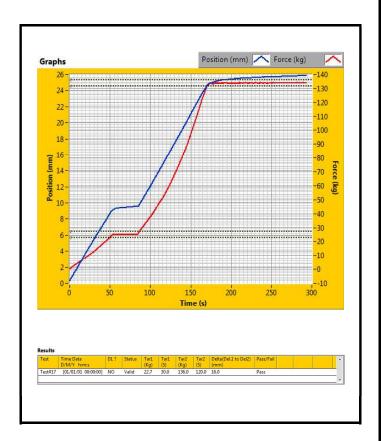
Laboratory		
Laboratory	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
'	Model	MOTO 2.5
	Color	BLACK
	Size	S(55-56CM)
	Weight	994
	Manufacturer	YIYANG
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.009-B



Γ		
Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
	Model	MOTO 2.5
	Color	BLACK
	Size	S(55-56CM)
	Weight	1002
	Manufacturer	YIYANG
İ	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.009-C
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T .		
Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
	Temperature	21
	Humidity	57
Sample		
	Model	MOTO 2.5
	Color	BLACK
	Size	S(55-56CM)
	Weight	998
	Manufacturer	YIYANG
İ	Manuf. Date	04/22
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APPENDIX A

INTERPRETATIONS OR DEVIATIONS FROM FMVSS 218

1. S6.4 Conditioning: Excess water on the water immersed sample was allowed to drip off before testing to prevent water damage to test equipment reproduced exception activition, written droporty of the produced exception activities and the produced exce reproduced except in full without Lob Lic testing to prevent water damage to test equipment. Witter

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Ge	neral Information	II PO WITH	11.						
Drop Software: Ca	Drop System: Monorail Software: Cadex Impact Software v 6.4f								
Item	Model O	S/N							
Computer	VD200PA#AB2	CNG9211DB1							
Data Acquisition Board 187570H-01 13EC16A									
Time Gate Cadex HVTG12009033-1									
Control Box	PC4300	CCS120090331-1							

#### Headforms

	Item	Size	Model	Assembly Wt., grams
	Uni-Axial	Headform Size DOT SMALL	Cadex	3573
×	Uni-Axial	Headform Size DOT MEDIUM	Cadex	5060
- Bill	Uni-Axial	Headform Size DOT LARGE	Cadex	6185
This docky about	31 110	<u>Sensors</u>		ot pe out
16/ x6/,	Item		del \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	/// S/NO
repliter	Uni-Axial	Accelerometer PCB 3	53B18 5	86079
N,		کن ج	ueverby "	, AC

#### **Sensors**

Item	•	Model S/N
Uni-Axial	Accelerometer	PCB 353B18 86079
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Technician: Edward Wang

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## **EQUIPMENT LIST AND CALIBRATION SCHEDULES**

			EQUIPMENT LIST			
Asset Tag	Location	Description of part	Model Number	Serial Number	Verification Interval	Next Verification
H1001	Helmet Room	Instrument	Yellow tower - 1000 00 MIMAT	NA	NA	NA
H1002	Helmet Room	Instrument	Green tower - Series 2000	NA	NA	NA NA
H1010	Helmet Room	Instrument	Control Center System - Pc4300	CCS120090331-1	NA	NA
H1011	Helmet Room	Instrument	Impact Machine System - DX3000	NA	NA	NA
H1013. C.	Helmet Room	Instrument	Charge Amplifier - ATA2001	J72863	NA	NA
H1015	Helmet Room	Instrument	Positional Stability CPSC/ASTM	NA G	x 1 year	4/11/2022
H1017	Helmet Room	Instrument	Retention Machine DOT - SB033	NA.	NA NA	NA
H1019	Helmet Room	Instrument	Chin Bar Deflection ASTM/SNELL	NA .x/	NA NA	NA
H1026	Helmet Room	Instrument	Laser table - SB005	TLTV2KB-	NA	NA
H1027	Helmet Room	Instrument	Fixture-Vision scale	ON NAN O	3 year	3/11/2024
H1034	Helmet Room	Environmental	Water Container	SI NA	NA	NA
H1043	Helmet Room	Headform	Impact ISO A	4272	1 year	10/19/2022
H1044	Helmet Room	Headform	Impact ASTM F2220 C	6938	1 year	10/19/2022
H1045	Helmet Room	Headform	Impact ISO E	4146	1 year	10/19/2022
H1046	Helmet Room	Headform	Impact ISO J	4148	1 year	10/19/2022
H1047	Helmet Room	Headform	Impact ISO M	4131	1 year	10/19/2022
H1047	Helmet Room	Headform	Impact ISO 0	4151	1 year	10/19/2022
H1048		Headform	Impact ISO 0	5178		
	Helmet Room				1 year	10/19/2022
H1050	Helmet Room	Headform	Impact DOT Medium	5179	1 year	10/19/2022
H1051	Helmet Room	Headform	Impact DOT Large	5190	1 year	10/19/2022
H1052	Helmet Room	Anvil	System Check Spherical Impactor	NA	1 year	10/19/2022
H1053	Helmet Room	System Check	MEP Pad - 345 08 MP60	30051201	1 year	2021 yearly report
H1054	Helmet Room	Anvil	Chin Bar	NA	1 year	10/19/2022
H1055	Helmet Room	Anvil	Curb	NA	1 year	12/12/2021
H1056	Helmet Room	Anvil	Cylinder	NA	1 year	12/12/2021
H1059	Helmet Room	Anvil	Hazard	NA	1 year	12/12/2021
H1060	Helmet Room	Anvil	Hemispherical vellow tower	NA	1 year	12/12/2021
H1062	Helmet Room	Anvil	Flat yellow tower	NA	1 year	12/12/2021
H1064	Helmet Room	Instrument	Control Center System yellow tower -	CCS120120810-1	NA NA	NA O
H1066	Helmet Room	Instrument	Penetration striker DOT	NA	1 year	9/10/2022
H1091	Helmet Room	Angle Measure	40°Block	NA NA	3 year	6/4/2023
H1092	Helmet Room	Fixture	Clamp - 119g	NA NA	1 year	10/19/2022
H1092	Helmet Room	Fixture	Clamp - 119g Clamp - 210g	NA NA	1 year	10/19/2022
				NA NA		
H1094	Helmet Room	Fixture	Clamp - 378g		1 year	10/19/2022
H1095	Helmet Room	Fixture	Clamp - 451g	NA NA	1 year	10/19/2022
H1096	Helmet Room	Fixture	Clamp - 505g	NA	1 year	10/19/2022
H1097	Helmet Room	Fixture	Clamp - 598g	NA O	1 year	10/19/2022
H1098	Helmet Room	Fixture	Clamp - 1160g	NA	1 year	10/19/2022
H1099	Helmet Room	Anvil	Flat Green Tower	NA COL	1 year	12/12/2021
H1100 🦽	Helmet Room	Anvil	Hemispherical Green Tower	ANA, N	1 year	12/12/2021
H1101	Helmet Room	Headform	DOT Retention Strength Small	NA) L	NA	NA
H1102	Helmet Room	Headform	DOT Retention Strength Medium	× S' NA	NA	NA NA
H1103	Helmet Room	Headform	DOT Retention Strength Large	NA	NA	NA
H1105	Helmet Room	Drop Mass	Aluminum Ball Stem Green tower	NA NA	1 year	10/19/2022
H1106	Helmet Room	Drop Mass	Steel Ball Stem	O SCONA	1 year	10/19/2022
H1107	Helmet Room	Drop Mass	Magnesium Ball Arm	NA	1 year	10/19/2022
H1117	Helmet Room	Instrument	Helmet Internal circumference measure	NA NA	NA NA	NA NA
H1123	Helmet Room	Fixture	Roll Off Headform fasten fixture	NA NA	NA NA	NA NA
H1126	Helmet Room	Drop Mass	Complete Pistol Grip Green tower	NA NA	1 year	10/19/2022
H1127	Helmet Room	Headform	Setup ASTM F2220 C	6947	1 year	12/12/2021
						NA
H1128	Helmet Room	Headform	DOT Penetration Small	NA NA	NA NA	
H1129	Helmet Room	Headform	DOT Penetration Medium	NA NA	NA NA	NA NA
H1130	Helmet Room	Headform	DOT Penetration Large	NA NA	NA	NA 10/0/0000
H1143	Helmet Room	Height Measure	DOT Opening Block	NA NA	3 year	10/9/2023
H1144	Helmet Room	Fixture	Laser table headform base	NA	NA	NA NO
H1145	Helmet Room	Fixture	Penetration headform base	NA	NA	NA O
	Helmet Room	Fixture	Penetration height measure	NA	NA	NA C
H1146		Drolond mann	NA NA	NA	1 year	10/9/2022
	Helmet Room	Preload mass				
H1146 H1149 H1150		10kg block	NA NA	NA		10/9/2022
H1149 H1150	Helmet Room	10kg block	NA	NA	1 year	
H1149						-1.1.

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Asset Tag	Description of part	Model Number	Measuring Range	Accuracy	Serial Number	Last Calibrated On	Calibration Due
H1003	Instrument	Velocity gate Yellow tower	(0-7.5)m/s	0.0001m/s	HVTG120120810-1	10/4/2021	10/3/2022
H1004	Instrument	Velocity gate Green tower	(0-6.4)m/s	0.0001m/s	HVTG120090331-1	2/17/2021	2/16/2022
H1007	Instrument	Uni-axial Accelerometer green tower - 353B18	≥1000g	≥1°0° C81	86079	10/8/2021	10/7/2022
H1009	Height Measure	Digital tape yellow tower - 16'	(0-5.5)m	0.1cm	5027526	11/2/2021	11/1/2022
H1012	Instrument	Displacement sensor - C20101007753	2 inch	0.1mm	J72863	11/1/2021	10/31/2022
H1014	Instrument	Displacement sensor - LWE- 200	(0-100)mm	0.1mm	2002572	11/1/2021	10/31/2022
H1025	Weight Measure	Electronic scale - BT-6	(40-6000)g	0.1g	12230126	7/8/2021	7/7/2022
H1027	Angle Measure	Vision scale - 7°,25°,45°,105°	7°,25°,45°,105°		H-002	11/1/2021	10/31/2024
H1030	Environmental Chamber	Oven #1 - 92*9240MBE	(0-200)℃	1℃	8285	7/8/2021	7/7/2022
H1031	Environmental Chamber	Oven #2 - DHG-9426	(0-200)℃	0.1℃	1503338018	11/1/2021	10/31/2022
H1032	Environmental Chamber	Freezer #1 - DW-25W300	(-30~-10)℃	0.1℃	BE062100N00B29578VMO	7/8/2021	7/7/2022
H1033	Environmental Chamber	Freezer #2 - DW-50W225	(-30~-10)℃	0.1℃	F8LMJ	11/1/2021	10/31/2022
H1036	Environmental Measure	Temperature and humidity #1 - TH-602F	(-30~60)℃,(0- 100)%	2℃	3238	7/9/2021	7/8/2022
H1057	Anvil	Edge	NA	NA	NA	10/27/2020	10/26/2023
H1058	Anvil	Equestrian	NA	NA	NA	10/27/2020	10/26/2023
H1061	Anvil	Blade	NA	NA	NA	10/27/2020	10/26/2023
H1063	Height Measure	Digital tape - 5m	(0-5)m	0.1mm	78223	11/2/2021	11/1/2022
H1070	Instrument	Load cell - 9363-B10-300- 20T1	(0-136)kg	0.1kg	80310843	7/8/2021	7/7/2022
H1071	Environmental Measure	Temperature and humidity #3 - TH600B	(-20~100)℃,(0- 100)%	1℃	Q/MDS001-2017-1	7/8/2021	7/7/2022
H1072	Environmental Measure	Temperature and humidity #4 - TH600B	(-20~100)℃,(0- 100)%	1°C 3	Q/MDS001-2017-2	7/8/2021	7/7/2022
H1073	Height Measure	Height Gauge	(0-500)mm	0.01mm	8811213838273610	11/1/2021	10/31/2022
H1074	Distance Measure	Vernier caliper - SJ-455615	(0-150)mm	0.01mm	455615	11/1/2021	10/31/2022
H1076	Environmental Measure	Calorifier - CN-111	18-35℃	20.1℃	NA	11/2/2021	11/1/2022
H1077	Distance Measure	Tape	0-1.5m	S 1mm	NA	11/2/2021	11/1/2022
11172	Height Measure	Height Rod #6	600±5mm	///mm	032216-02	4/13/2021	4/12/2022
H1174	System Check	MEP PAD	NA	NA NA	021921-01	3/5/2021	3/4/2022
H1180	Instrument	LVDT & Sensor Box	2 inch	0.1mm	04140748-001	11/1/2021	10/31/2022
H1184	Instrument	Uni-axial Accelerometer yellow tower - 353B18	± 500 g	≤ 1%	LW226664	8/24/2021	8/23/2022
st File: trol Docu	iment: Official ACT FMVSS N	p.218 Report Template TP-07 CN 1 ing/ReportTemplates/Helmets/FM	/SS No.218		n: Edward Wang : 17 August 2022	This d	8/23/2022

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**APPENDIX C** 

**PHOTOGRAPHS** 

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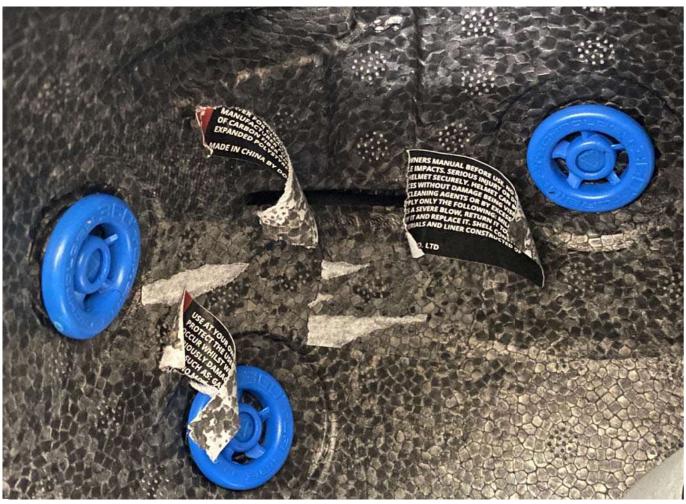




















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- The report is not valid if altered.

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- Claims have to be made within 15 days after receipt of this report.
- The results of this test report relate only to the items tested.
- The results apply to the samples as received.
- 6. For reports that contain results from external test service providers: Results from external test service providers are supplied by the customer and can affect validity of results.
- 7. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance with Specification".

**END OF REPORT** 

Contract File No.: 904.10600

Test File: 009

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# SAFETY COMPLIANCE TESTING FOR **FMVSS No. 218 MOTORCYCLE HELMETS** Keblogner of the Still of the state of the s

**Brand: LEATT** Model: MOTO 2.5 Tested Size: L (59-60 cm)

written opproved from A To also include size M (57-58 cm) with same shell and EPS liner size.

Prepared For:

#### **Leatt Corporation**

12 Kiepersol Crescent, Atlas Gardens Business Park, Cape Farms, Cape Town, 7550, ZA



Issue Date: 19 September 2022

Final Report: 904.10600.007

Tested By:

# Ishing abbroad town W. Taicang ACT Sporting Goods Testing Co., Ltd.

No. 35 Zhenghe Road, Ludu Town, Taicang City, Suzhou, Jiangsu Province, China 215412 www.act-lab.com

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Contract File No.: 904.10600

Test File: 007

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218

Technician: Edward Wang Test Date: 02 August 2022

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Jan. Date: 0 Technician: Edward Wang Test Date: 02 August 2022

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## PURPOSE OF COMPLIANCE TEST

# This document of the produced exception and providing the produced exception of the produced exc

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

Dongguan Yiyang Sports Co., Ltd.

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 Helmet Cadex Testing Manual 2.3

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## HELMET DATA

ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805 | Tel 562.470.7215 | Web act-lab.com

HELMET BRAND NAME:	LEATT	,e <sup>2</sup> /,e <sup>1</sup>
HELMET MODEL DESIGNATION: _	MOTO 2.5	Wille
HELMET MANUFACTURER:	DONGGUAN YIYANG SPORTS CO., LTD.	
HELMET SIZE:	L (59-60 cm) with but	
HELMET COVERAGE: Partial:	Full:	X
HELMET POSITIONING INDEX: _5	7 mm docult rolling	
SHELL MATERIAL: ABS	This duce appro	
LINER MATERIAL: Expanded Poly	styrene	
BLICKLE DESCRIPTION: Double D	•	

-0'	. 1. 1.				.0`
HELMET CHOTTEN	A Ambient	B Low Temp	C High Temp	D Water Immersed	E Spare
SHELL COLOR/PATTERN	Black	Black	Black	Black	
WEIGHT (grams)	1105	1106	1100	1109	
MONTH & YEAR OF MANUFACTURE	09/22	09/22	09/22	09/22	

Reviewed by: John Bogler

COMMENTS:

1. All helmets were received in undamaged condition and were appropriate for testing.

2. Weights listed above for helmets A-D are as tested with visor removed.

3. ACT determined the HPI information prior to testing.

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#### **SUMMARY OF TEST RESULTS**

INDICATE	Pass or Fail	SUMMARY	OF TEST RE	SULTS	
Chue	HELMET	А	В	С	D
This dood e	TEST	AMBIENT	LOW TEMP	HIGH TEMP	WATER IMMERSED
reprote of	IMPACT	Pass	Pass	Pass	Pass
	PENETRATION	Pass	Pass	Pass	Pass
	RETENTION	Pass	Pass O	Pass	Pass

#### **INDICATE Pass or Fail**

	TEST	PASS/FAIL
	PERIPHERAL VISION	Pass
	PROJECTIONS	Pass
mentsh	LABELING	Pass
Gocny, scot	,01	-0 1
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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 (European Size 54)	SMALL
Greater than 6-3/4, but less than or equal to 7-1/2 (European Size 60)	dill for MEDIUM
Greater than 7-1/2 (European 60)	LARGE

#### COMMENTS:

11/1/3

The manufacturer marked the helmet with its corresponding discrete size: L (59-60 cm), Headform Size: DOT MEDIUM.

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.

AVERAGE LAB TEMPERATURE: \_\_\_22\_\_ °C; AVERAGE LAB HUMIDITY:

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#### **IMPACT ATTENUATION**

	0	1,00/1:	9							:5 08
Helmet ID	Condition	Împact #	Impact Location	Anvil	Drop Height (cm)	Velocity (m/sec)	Duration at 150G (ms)	Duration at 200G (ms)	Peak Acc. (g)	Pass/Fail
904.10600.007-A	Ambient	1	LF SIDE	FLAT	192.0	6.0246	3.09	0.00	188.6	Pass
904.10600.007-A	Ambient	2	LF SIDE	FLAT	192.0	6.0568	2.87	0.90	214.9	Pass
904.10600.007-A	Ambient	3	REAR	FLAT	192.0	6.0036	2.69	0.00	176.6	Pass
904.10600.007-A	Ambient	4	REAR	FLAT	192.0	5.9947	3.49	0.00	199.6	Pass
904.10600.007-A	Ambient	5	FRONT	НЕМІ	145.0	5.2700	0.00	0.00	79.8	Pass
904.10600.007-A	Ambient	6	FRONT	HEMI	145.0	5.2670	0,00	0.00	98.7	Pass
904.10600.007-A	Ambient	7	RT SIDE	НЕМІ	145.0	5.2625	0.00	0.00	117.6	Pass
904.10600.007-A	Ambient	8	RT SIDE	НЕМІ	145.0	5.2633	0.00	0.00	140.2	Pass
904.10600.007-B	Cold	1	LF SIDE	FLAT	192.0	6.0233	2.24	0.00	184.0	Pass
904.10600.007-B	Cold	2	LF SIDE	FLAT	192.0	6.0265	2.73	0.00	199.6	Pass
904.10600.007-B	Cold	3	REAR	FLAT	192.0	6.0443	3.54	0.00	189.0	Pass
904.10600.007-B	Cold	4	REAR	FLAT	192.0	6.0343	3.47	1.10	210.3	Pass
904.10600.007-B	Cold	5	FRONT	HEMI	145.0	5.2474	0.00	0.00	75.6	Pass
904.10600.007-B	Cold	6	FRONT	HEMI	145.0	5.2651	0.00	0.00	87.6	Pass
904.10600.007-B	Cold	O'L THO	RT SIDE	HEMI	145.0	5.2740	0.00	0.00	118.5	Pass
904.10600.007-B	Cold	11 18 010	RT SIDE	НЕМІ	145.0	5.2476	0.14	0.00	151.7	Pass
904.10600.007-C	Hot	CI	LF SIDE	FLAT	192.0	6.0453	2.54	0.00	193.7	Pass
904.10600.007-C	Hot K	2	LF SIDE	FLAT	192.0	6.0435	2.64	1.33	225.5	Pass
904.10600.007-C	Hot	3	REAR	FLAT	192.0	6.0506	2.71	0.00	170.6	Pass
904.10600.007-C	O Hot	4	REAR	FLAT	192.0	6.0405	3.48	0.37	209.3	Pass
904.10600.007-C	Hot	5	FRONT	HEMI	145.0	5.2566	0.00	0.00	77.9	Pass
904.10600.007-C	Hot	6	FRONT	НЕМІ	145.0	5.2188	0.00	0.00	94.5	Pass
904.10600.007-C	Hot	7	RT SIDE	НЕМІ	145.0	5.2397	0.00	0.00	114.8	Pass
904.10600.007-C	Hot	8	RT SIDE	НЕМІ	145.0	5.2666	0.00	0.00	124.5	Pass
904.10600.007-D	Wet	1	LF SIDE	FLAT	192.0	6.0227	2.40	0.00	175.7	Pass
904.10600.007-D	Wet	2	LF SIDE	FLAT	192.0	6.0489	2.65	0.68	204.7	Pass
904.10600.007-D	Wet	3	REAR	FLAT	192.0	5.9793	0.99	0.00	167.4	Pass
904.10600.007-D	Wet	4	REAR	FLAT	192.0	6.0353	2.75	0.00	193.7	Pass
904.10600.007-D	Wet	5	FRONT	HEMI	145.0	5.2385	0.00	0.00	77.5	Pass
904.10600.007-D	Wet	6	FRONT	HEMI	145.0	5.2374	0.00	0.00	91.3	Pass
904.10600.007-D	Wet	. 60 N	RT SIDE	HEMI	145.0	5.2326	0.00	0.00	141.1	Pass
904.10600.007-D	Wet	D 18/10	RT SIDE	HEMI	145.0	5.2570	0.99	0.00	155.4	Pass

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Paragraph S5.2 and S7.2

WEIGHT OF STRIKER:

2.95 to 3.06 kg (6 pounds, 8 ounces to 6 pounds, 12 ounces)

Radius =  $0.5 \pm 0.1$  mm ( $0.02 \pm 0.004$  in ) incl.

0.5°, hardness minimum of the height of POINT OF STRIKER:

height of not less than  $3.8 \pm 0.038$  cm  $(1.5 \pm 0.015$  in.).

MEIGHT OF FALL: 300 cm ± 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	7
1	А	Crown	X		AMBIENT	
2	А	Rear Right	Х		AMBIENT	5
3	В	Crown	Х		LOW TEMPERATURE	This
4	B wall	Rear Right	Х		LOW TEMPERATURE	186/1/6
5	ele still	Crown	Х		HIGH TEMPERATURE	Mi
6	my copyor	Rear Right	Х		HIGH TEMPERATURE	
	SQ CDQ	Crown	Х	7	WATER IMMERSED	
718 do	No D	Rear Right	X		WATER IMMERSED	

COMMENT: Photographs of penetration test locations are found in Appendix C.

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#### **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 2.54 cm (1.0 INCH) AFTER LOAD INCREASE

	0, 00, 10						
HELMET	CONDITIONS	ELONGATION cm					
А	AMBIENT	2.49					
В	LOW TEMPERATURE	2.33					
* vec vi	HIGH TEMPERATURE	2.31					
o villa	WATER IMMERSED	1.93					

#### PERIPHERAL VISION

CONFIGURATION - 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
PERIPHERAL VISION	> 105°	Pass
BROW OPENING	> 2.5 cm (1 inch)	Pass

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#### **PROJECTIONS**

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	ot be out	PROJECTIONS	e doch exch
Parag	graph S5.5		THIS duc oppro
REQI	UIREMENTS:		Witter
his no	PROJECTION	REQUIREMENT	
,010 or	Internal rigid	None ot ithoulie	
Will	External rigid	Operational, shall not protrude more than 5	mm

#### **TEST RESULTS:**

External rigid	, 5,	Operational, shall not protrude more than 5 mm								
TEST RESULTS:	dochue Kebt	owy								
PROJECTION	PRESENT	HEIGHT (mm)								
Internal	None	Not Applicable	- Ook							
External	None	Not Applicable	his document							
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ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805 Tel 562470.72  LABELING	
5.6.1 <i>Labeling</i> - Each helmet shall be permanently and legibly labeled, in a at the label(s) can be easily read without removing padding or any other peth the following:	ermanent part,
Required Information Content/Format	Permanent
Manufacturer's name Pass	Pass
Discrete size Pass	Pass
Month and year of manufacture Pass	Pass
nstructions to the purchaser as follows:	
"Shell and liner constructed of (identify type(s) of materials)."	Pass
"Helmet can be seriously damaged by some common substances without damage being Pass visible to the user."	Pass
"Apply only the following: (Recommended cleaning agents, paints, adhesives, etc., as appropriate."	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 Pass

# COMMENT:

This document shall fully reproduced exception ACT 1. Labels were determined to be both easily read and permanent based on the TP-218-07, Section 12.5.4.

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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 S5.6.1, and complies with parasite appearance. The label required by paragraph S5.6.2 shall have the following content, format, and appearance:

Required Certification Information	Content/ Format	Permanent
The symbol "DOT," horizontally centered on the label, in letters not less than 0.38 inch (1.0 cm) high.	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	This
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	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	

#### COMMENT:

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

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Technician: Edward Wang Test Date: 02 August 2022

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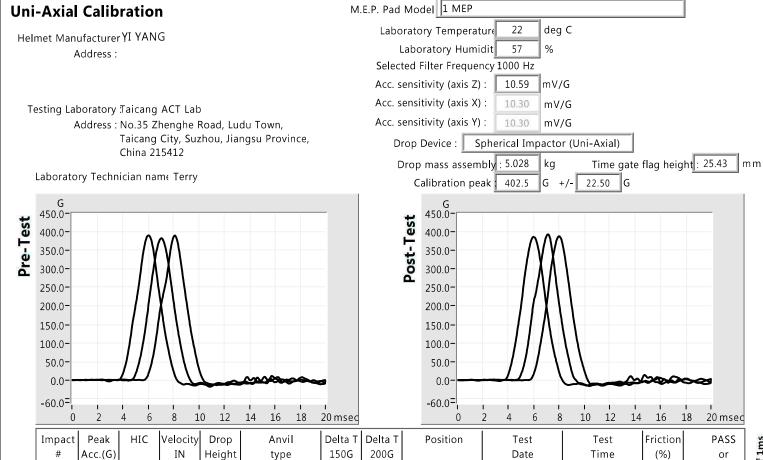
Pass

Pass

Pass

Pass

Pass



(msec)

2.48

2.45

2.51

2.43

2.48

2.43

(msec)

2.01

2.04

2.07

2.00

2.08

1.99 14 of 0/0

0/0

0/0

0/0

0/0

0/0

2022-08-02

2022-08-02

2022-08-02

2022-08-02

2022-08-02

2022-08-02

09:01:25

09:02:30

09:03:33

12:56:53

12:58:00

12:59:10

0.1

-0.8

-0.4

0.2

0.2

0.0

(m/sec)

4.7454

<u>4.78</u>92

4.7697

4.7418

4.7388

4.7471

390.1

382.2

389.6

386.4

392.8

387.8

Pre-

Test

Post-

Test

3487

3497

3340

3546

3462

3524

(cm)

115.0

115.0

115.0

115.0

115.0

115.0

MEP

MEP

MEP

MEP

MEP

MEP

250.0-

20.0-

150.0-

100.0-

50.0-

0.0

-50.0

Helmet Manufacturer : YIYANG Address:

Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

**Batch Number:** 

Model: MOTO 2.5 Color: Black Size: L(59-60CM) Weight: 1105.00 g

Manufacturing Date: 01 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.007-A

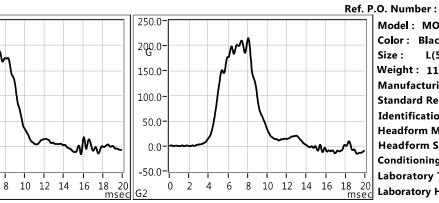
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Ambiant

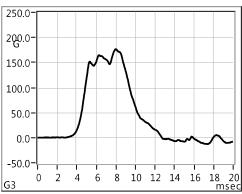
Laboratory Temperature: 22 deg C Laboratory Humidity: 57 %

Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

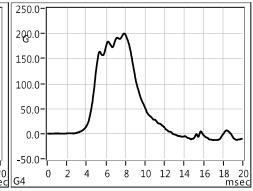
Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 5.028 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





6



Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
	. /		(m/sec)		71		(msec)				` ′	FAIL
1	188.6	1352	6.0246	192.0	FLAT	3.09	0.00	LF SIDE	2022-08-02	11:23:46	1.8	Pass
2	214.9	1593	6.0568	192.0	FLAT	2.87	0.90	LF SIDE	2022-08-02	11:24:05	1.3	Pass
3	176.6	1241	6.0036	192.0	FLAT	2.69	0.00	REAR	2022-08-02	11:37:24	2.2	Pass
4	199.6	1564	5.9947	192.0	FLAT	3.49	0.00	REAR	2022-08-02	11:37:40	2.3	Pass

160.0-

125.0

100.0-

75.0-

50.0-

25.0-

0.0

-20.0

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number :

Ref. P.O. Number : MoTO 2.5

Color: Black Size: L(59-60CM) Weight: 1105.00 g

Manufacturing Date : 01 Aug 2022 Standard Request : FMVSS 218 Identification Code : 904.10600.007-A

Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Ambiant

Laboratory Temperature : 22 deg C Laboratory Humidity : 57 %

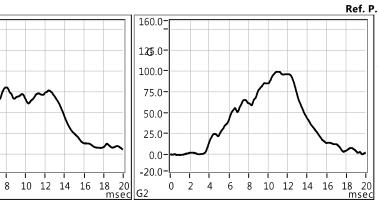
Laboratory Humidity: 57 %

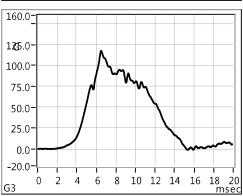
Selected Filter Frequency: 1650 Hz

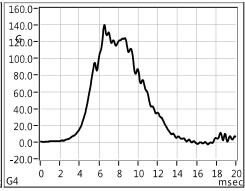
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 5.028 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59







Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)			(msec)					1 1	FAIL
5	79.8	315	5.2700	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	11:55:04	1.2	Pass
6	98.7	378	5.2670	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	11:55:23	1.2	Pass
7	117.6	455	5.2625	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-02	12:34:22	1.3	Pass
8	140.2	641	5.2633	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-02	12:34:40	1.3	Pass

250.0-

20.0-

150.0-

100.0-

50.0-

0.0

-50.0

Helmet Manufacturer : YIYANG
Address :

Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO 2.5 Color: Black Size: L(59-60CM) Weight: 1106.00 g

Manufacturing Date: 01 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.007-B

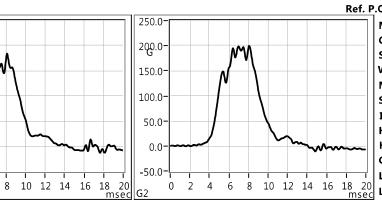
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Cold

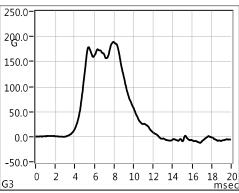
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

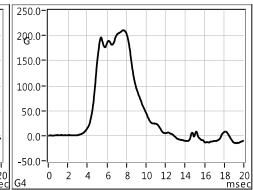
Maximum Peak m/s2 authorized: 3923 m/s2

Drop mass assembly: 5.028 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





6



Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
1	184.0	1144	6.0233	192.0	FLAT	2.24	0.00	LF SIDE	2022-08-02	11:25:44	1.8	Pass
2	199.6	1440	6.0265	192.0	FLAT	2.73	0.00	LF SIDE	2022-08-02	11:26:00	1.8	Pass
3	189.0	1431	6.0443	192.0	FLAT	3.54	0.00	REAR	2022-08-02	11:44:27	1.5	Pass
4	210.3	1762	6.0343	192.0	FLAT	3.47	1.10	REAR	2022-08-02	11:44:42	1.7	Pass

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

Batch Number : Ref. P.O. Number :

Model: MOTO 2.5 Color: Black

Size: L(59-60CM) Weight: 1106.00 g

Manufacturing Date: 01 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.007-B

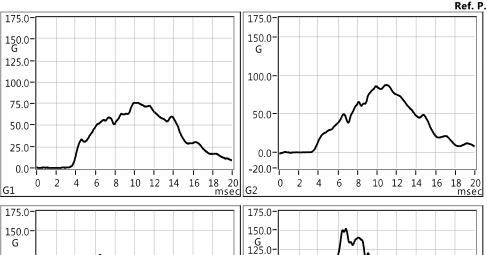
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Cold

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 5.028 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59



50.0-			hy		100.0- 75.0- 50.0- 25.0-				
0.0- -20.0- G3	1 1 2 4	1 1 6 8	10 12	14 16	0.0- -25.0- 18 20 msec G4	1 1 2 4	6 8	10 12 14 16	18 20 msec
Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	Delta T 200G	Position	T <sub>1</sub>
_		0=0	(m/sec)			i i	(msec)		
5	75.6 87.6	259	5.2474	145.0	HEMI	0.00	0.00	FRONT	2022
i h	1 ×/6 I	ı zux	1 5 7657 1	1 1/15()	. ⊢⊦\/!	1 (1(1()	1 (1(1)(1)	1 FR()[/]	1 /11//

Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	200G	Position	Test Date	Test Time	Friction (%)	PASS or
-			(m/sec)	(cm)		l (msec)	(msec)				<u> </u>	FAIL
5	75.6	259	5.2474	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	12:28:02	1.6	Pass
6	87.6	298	5.2651	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	12:28:19	1.3	Pass
7	118.5	500	5.2740	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-02	12:42:48	1.1	Pass
8	151.7	744	5.2476	145.0	HEMI	0.14	0.00	RT SIDE	2022-08-02	12:43:03	1.6	Pass

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO 2.5 Color: Black Size: L(59-60CM) Weight: 1100.00 g

Manufacturing Date: 01 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.007-C

Headform Model: D.O.T. Headform Size: C 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/s2 authorized : 3923 m/s2

Friction (%)

1.5

1.5

1.4

1.6

PASS

or FAIL

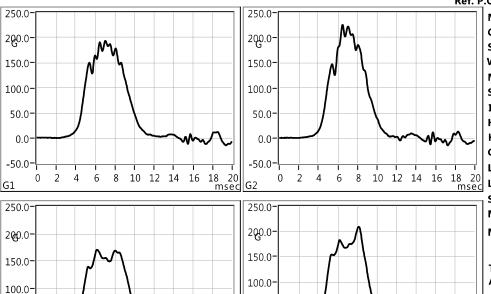
Pass

Pass

Pass

Pass

Drop mass assembly: 5.028 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59



50.0

50.0- 0.0- -25.0- G3	2 4	6 8	10 12	14 16	0.0- -50.0- msec G4	2 4	6 8	10 12 14 16	18 20 msec	
Impact	Peak	HIC	Velocity	Drop	Anvil	Delta T	Delta T	Position	Test	Test
#	Acc.(G)		IN	Height	type	150G	200G		Date	Time
			(m/sec)	(cm)		(msec)	(msec)			
1	193.7	1339	6.0453	192.0	FLAT	2.54	0.00	LF SIDE	2022-08-02	11:27:54
2	225.5	1599	6.0435	192.0	FLAT	2.64	1.33	LF SIDE	2022-08-02	11:28:12
3	170.6	1233	6.0506	192.0	FLAT	2.71	0.00	REAR	2022-08-02	11:46:03
4	209.3	1503	6.0405	192.0	FLAT	3.48	0.37	REAR	2022-08-02	11:46:18

140.0

125.0-

G 100.0-

75.0-

50.0-

25.0-

0.0

-20.0

Helmet Manufacturer : YIYANG Address:

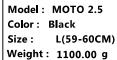
Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

**Batch Number:** 



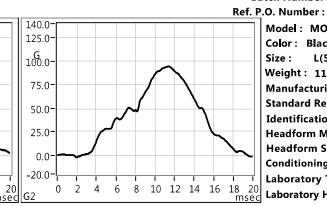
Manufacturing Date: 01 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.007-C

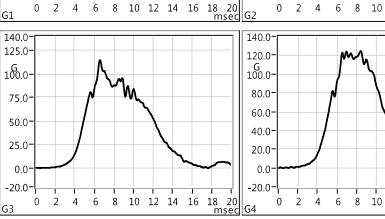
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Hot

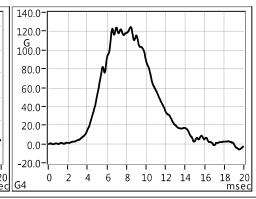
Laboratory Temperature: 22 deg C Laboratory Humidity: 57 Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 5.028 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59







Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
5	77.9	277	5.2566	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	12:29:55	1.4	Pass
6	94.5	345	5.2188	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	12:30:09	2.1	Pass
7	114.8	426	5.2397	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-02	12:44:24	1.7	Pass
8	124.5	590	5.2666	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-02	12:44:38	1.2	Pass

250.0-

260.0-

150.0-

100.0-

50.0-

0.0

6

-25.0-

Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name : Terry

Batch Number : Ref. P.O. Number :

Model: MOTO 2.5 Color: Black Size: L(59-60CM) Weight: 1109.00 g

Manufacturing Date : 01 Aug 2022 Standard Request : FMVSS 218 Identification Code : 904.10600.007-D

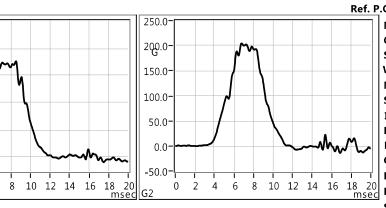
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Wet

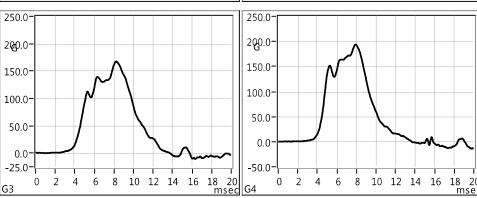
Laboratory Temperature : 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 5.028 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





Impact #	Peak Acc.(G)	HIC	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	175.7	1153	6.0227	192.0	FLAT	2.40	0.00	LF SIDE	2022-08-02	11:31:09	1.9	Pass
2	204.7	1412	6.0489	192.0	FLAT	2.65	0.68	LF SIDE	2022-08-02	11:32:18	1.4	Pass
3	167.4	983	5.9793	192.0	FLAT	0.99	0.00	REAR	2022-08-02	11:40:25	2.6	Pass
4	193.7	1322	6.0353	192.0	FLAT	2.75	0.00	REAR	2022-08-02	11:40:50	1.7	Pass
									·			

Helmet Manufacturer : YIYANG Address:

Testing Laboratory: Taicang ACT Lab

Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province, China 215412

Laboratory Technician name: Terry

**Batch Number:** Ref. P.O. Number:

> Model: MOTO 2.5 Color: Black Size: L(59-60CM)

Weight: 1109.00 g

Manufacturing Date: 01 Aug 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.007-D

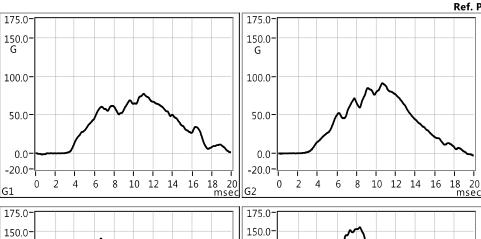
Headform Model: D.O.T. Headform Size: C D.O.T Conditioning: Wet

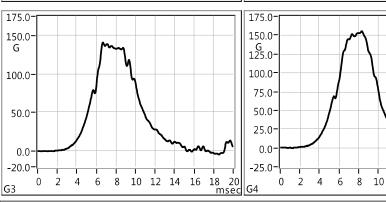
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 % Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 5.028 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59



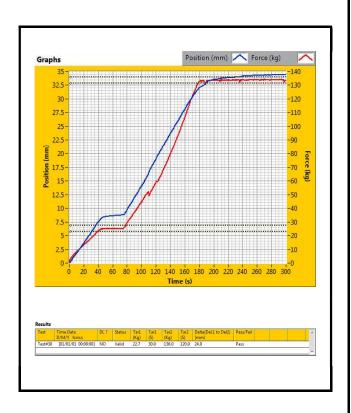


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	75.0-		_/_	+					
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	150.0-		<b>—</b>	~					
1	1, 3.0								11

Impact	Peak	HIC	Velocity	'	Anvil	Delta T	Delta T	Position	Test	Test	Friction	PASS
#	Acc.(G)		IN (m/sec)	Height (cm)	type	150G (msec)	200G (msec)		Date	Time	(%)	or FAIL
5	77.5	250	5.2385	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	11:57:55	1.8	Pass
6	91.3	314	5.2374	145.0	HEMI	0.00	0.00	FRONT	2022-08-02	11:58:14	1.8	Pass
7	141.1	680	5.2326	145.0	HEMI	0.00	0.00	RT SIDE	2022-08-02	12:37:07	1.8	Pass
8	155.4	797	5.2570	145.0	HEMI	0.99	0.00	RT SIDE	2022-08-02	12:39:52	1.4	Pass
				·								
	·	·		·								
		·										

# **DOT Auto – Test results**

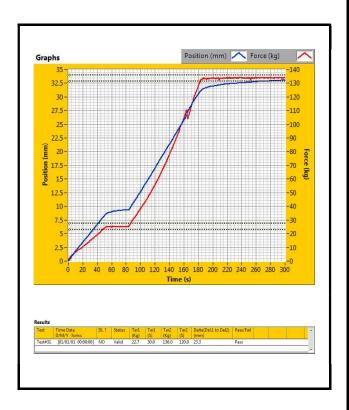
Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
1	Temperature	21
1	Humidity	57
ĺ		
Sample		
1	Model	MOTO2.5
1	Color	BLACK
	Size	L(59-60CM)
1	Weight	1105
1	Manufacturer	YIYANG
İ	Manuf. Date	09/22
İ		
Infos		
	Standard	FMVSS No.218
l	Comment	904.10600.007-A
İ		



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# **DOT Auto – Test results**

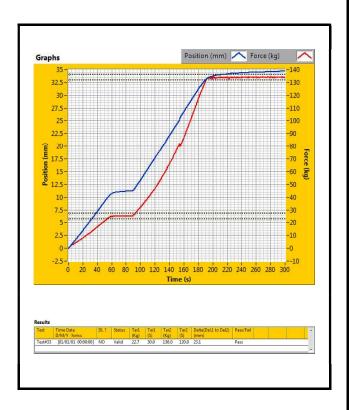
_		
Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
1	Temperature	21
	Humidity	57
Sample		
	Model	MOTO2.5
l	Color	BLACK
	Size	L(59-60CM)
	Weight	1106
1	Manufacturer	YIYANG
	Manuf. Date	09/22
Infos		
İ	Standard	FMVSS No.218
l	Comment	904.10600.007-B



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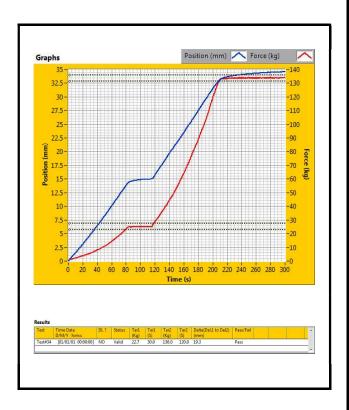
# **DOT Auto – Test results**

Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
1	Temperature	21
	Humidity	57
Sample		
i .	Model	MOTO2.5
ĺ	Color	BLACK
1	Size	L(59-60CM)
1	Weight	1100
1	Manufacturer	YIYANG
1	Manuf. Date	09/22
İ		
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.007-C
1		



# **DOT Auto – Test results**

Laboratory		
	Laboratory	ACT Lab
	Technician	Terry
1	Temperature	21
	Humidity	57
ĺ		
Sample		
1	Model	MOTO2.5
l	Color	BLACK
	Size	L(59-60CM)
1	Weight	1109
1	Manufacturer	YIYANG
İ	Manuf. Date	09/22
İ		
Infos		
	Standard	FMVSS No.218
l	Comment	904.10600.007-D
İ		



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APPENDIX A

INTERPRETATIONS OR DEVIATIONS FROM FMVSS 218

1. S6.4 Conditioning: Excess water on the water immersed sample was allowed to drip off before testing to prevent water damage to test equipment reproduced exception activition, written droporty of the produced exception activities and the produced exce reproduced except in full without Lob Lic testing to prevent water damage to test equipment. Witter

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Test File: 007

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Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 27 of 41

Technician: Edward Wang Test Date: 02 August 2022

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EQUIPM	IENT INFORMAT	ION POOL	jč.		
General Information					
Drop Software: Ca	Drop System: Monorail Software: Cadex Impact Software v 6.4f				
Item	Model O	S/N			
Computer	VD200PA#AB2	CNG9211DB1			
Data Acquisition Board	187570H-01	13EC16A			
Time Gate	Cadex	HVTG12009033-1			
Control Box	PC4300	CCS120090331-1			

#### Headforms

	Item	Size	Model	Assembly Wt., grams
	Uni-Axial	Headform Size DOT SMALL	Cadex	3573
Y.	Uni-Axial	Headform Size DOT MEDIUM	Cadex	5060
ein	Uni-Axial	Headform Size DOT LARGE	Cadex	6185
This dock about	71 1	<u>Sensors</u>		ot pe out
184.481	Item		del	N S/NO
"ilite	Uni-Axial	Accelerometer PCB 3	353B18 5	86079
N,		c.V	were by w	P

#### **Sensors**

		, 110 K
	Model	S/NO
Accelerometer	PCB 353B18	86079
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Test File: 007
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Jan. Date: 0 Technician: Edward Wang Test Date: 02 August 2022

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ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805 Tel 562.470.7215 Web act-lab.com

# **EQUIPMENT LIST AND CALIBRATION SCHEDULES**

	EQUIPMENT LIST					
Asset Tag	Location	Description of part	Model Number	Serial Number	Verification Interval	Next Verification
H1001	Helmet Room	Instrument	Yellow tower - 1000 00 MIMAT	NA	NA	NA
H1002	Helmet Room	Instrument	Green tower - Series 2000	NA	NA	NA NA
H1010	Helmet Room	Instrument	Control Center System - Pc4300	CCS120090331-1	NA	NA
H1011	Helmet Room	Instrument	Impact Machine System - DX3000	NA	NA	NA NA
H1013	Helmet Room	Instrument	Charge Amplifier - ATA2001	J72863	NA	NA NA
H1015	Helmet Room	Instrument	Positional Stability CPSC/ASTM	NA NA	1 year	4/11/2022
H1017	Helmet Room	Instrument	Retention Machine DOT - SB033	NA NA	NA NA	NA NA
H1019	Helmet Room	Instrument	Chin Bar Deflection ASTM/SNELL	NA TI TVOKO	NA NA	NA NA
H1026	Helmet Room	Instrument	Laser table - SB005	TLTV2KB-	NA	NA 2/44/2024
H1027 H1034	Helmet Room Helmet Room	Instrument Environmental	Fixture-Vision scale Water Container	NA NA	3 year NA	3/11/2024 NA
H1043	Helmet Room	Headform	Impact ISO A	4272	1 year	10/19/2022
H1043	Helmet Room	Headform	Impact ASTM F2220 C	6938	1 year	10/19/2022
H1045	Helmet Room	Headform	Impact ASTW1 2220 C	4146	1 year	10/19/2022
H1046	Helmet Room	Headform	Impact ISO J	4148	1 year	10/19/2022
H1047	Helmet Room	Headform	Impact ISO M	4131	1 year	10/19/2022
H1048	Helmet Room	Headform	Impact ISO O	4151	1 year	10/19/2022
H1049	Helmet Room	Headform	Impact DOT Small	5178	1 year	10/19/2022
H1050	Helmet Room	Headform	Impact DOT Medium	5179	1 year	10/19/2022
H1051	Helmet Room	Headform	Impact DOT Large	5190	1 year	10/19/2022
H1052	Helmet Room	Anvil	System Check Spherical Impactor	NA	1 year	10/19/2022
H1053	Helmet Room	System Check	MEP Pad - 345 08 MP60	30051201	1 year	2021 yearly report
H1054	Helmet Room	Anvil	Chin Bar	NA	1 year	10/19/2022
H1055	Helmet Room	Anvil	Curb	NA	1 year	12/12/2021
H1056	Helmet Room	Anvil	Cylinder	NA	1 year	12/12/2021
H1059	Helmet Room	Anvil	Hazard	NA	1 year	12/12/2021
H1060	Helmet Room	Anvil	Hemispherical yellow tower	NA	1 year	12/12/2021
H1062	Helmet Room	Anvil	Flat yellow tower	NA	1 year	12/12/2021
H1064	Helmet Room	Instrument	Control Center System yellow tower -	CCS120120810-1	NA	NA O
H1066	Helmet Room	Instrument	Penetration striker DOT	NA	1 year	9/10/2022
H1091	Helmet Room	Angle Measure	40°Block	NA NA	3 year	6/4/2023
H1092	Helmet Room	Fixture	Clamp - 119g	NA	1 year	10/19/2022
H1093	Helmet Room	Fixture	Clamp - 210g	NA	1 year	10/19/2022
H1094	Helmet Room	Fixture	Clamp - 378g	NA	1 year	10/19/2022
H1095	Helmet Room	Fixture	Clamp - 451g	NA	1 year	10/19/2022
H1096	Helmet Room	Fixture	Clamp - 505g	NA	1 year	10/19/2022
H1097	Helmet Room	Fixture	Clamp - 598g	NA O	1 year	10/19/2022
H1098	Helmet Room	Fixture	Clamp - 1160g	NA NA	1 year	10/19/2022
H1099	Helmet Room	Anvil	Flat Green Tower	NA	1 year	12/12/2021
H1100	Helmet Room	Anvil	Hemispherical Green Tower	NA NA	1 year	12/12/2021
H1101 H1102	Helmet Room Helmet Room	Headform Headform	DOT Retention Strength Small DOT Retention Strength Medium	NA NA	NA NA	NA NA
H1102	Helmet Room	Headform	DOT Retention Strength Large	NA	NA NA	NA NA
H1105	Helmet Room	Drop Mass	Aluminum Ball Stem Green tower	NA NA	1 year	10/19/2022
H1106	Helmet Room	Drop Mass	Steel Ball Stem	CONA	1 year	10/19/2022
H1107	Helmet Room	Drop Mass	Magnesium Ball Arm	NA NA	1 year	10/19/2022
H1117	Helmet Room	Instrument	Helmet Internal circumference measure	NA NA	NA NA	NA NA
H1123	Helmet Room	Fixture	Roll Off Headform fasten fixture	NA NA	NA NA	NA NA
H1126	Helmet Room	Drop Mass	Complete Pistol Grip Green tower	NA	1 year	10/19/2022
H1127	Helmet Room	Headform	Setup ASTM F2220 C	6947	1 year	12/12/2021
H1128	Helmet Room	Headform	DOT Penetration Small	NA	ŇA	NA
H1129	Helmet Room	Headform	DOT Penetration Medium	NA	NA	NA
H1130	Helmet Room	Headform	DOT Penetration Large	NA	NA	NA
H1143	Helmet Room	Height Measure	DOT Opening Block	NA	3 year	10/9/2023
H1144	Helmet Room	Fixture	Laser table headform base	NA	NA	NA NO
H1145	Helmet Room	Fixture	Penetration headform base	NA	NA	NA O
H1146	Helmet Room	Fixture	Penetration height measure	NA	NA	NA
H1149	Helmet Room	Preload mass	NA NA	NA	1 year	10/9/2022
H1150	Helmet Room	10kg block	NA	NA	1 year	10/9/2022
H1175	Helmet Room	Headform	DOT Penetration Large	NA	NA	ONA O
H1178	Helmet Room Helmet Room	Drop Mass Drop Mass	Complete Pistol Grip	NA	1 year	10/19/2022
H1179			Aluminum Ball Stem	NA	1 year	10/19/2022

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Asset Tag	Description of part	Model Number	Measuring Range	Accuracy	Serial Number	Last Calibrated On	Calibration Due On
H1003	Instrument	Velocity gate Yellow tower	(0-7.5)m/s	0.0001m/s	HVTG120120810-1	10/4/2021	10/3/2022
H1004	Instrument	Velocity gate Green tower	(0-6.4)m/s	0.0001m/s	HVTG120090331-1	2/17/2021	2/16/2022
H1007	Instrument	Uni-axial Accelerometer green tower - 353B18	≥1000g	≥1°0° (e)	86079	10/8/2021	10/7/2022
H1009	Height Measure	Digital tape yellow tower - 16'	(0-5.5)m	0.1cm	5027526	11/2/2021	11/1/2022
H1012	Instrument	Displacement sensor - C20101007753	2 inch	0.1mm	J72863	11/1/2021	10/31/2022
H1014	Instrument	Displacement sensor - LWE- 200	(0-100)mm	0.1mm	2002572	11/1/2021	10/31/2022
H1025	Weight Measure	Electronic scale - BT-6	(40-6000)g	0.1g	12230126	7/8/2021	7/7/2022
H1027	Angle Measure	Vision scale - 7°,25°,45°,105°	7°,25°,45°,105°		H-002	11/1/2021	10/31/2024
H1030	Environmental Chamber	Oven #1 - 92*9240MBE	(0-200)℃	1℃	8285	7/8/2021	7/7/2022
H1031	Environmental Chamber	Oven #2 - DHG-9426	(0-200)℃	0.1℃	1503338018	11/1/2021	10/31/2022
H1032	Environmental Chamber	Freezer #1 - DW-25W300	(-30~-10)℃	0.1℃	BE062100N00B29578VMO	7/8/2021	7/7/2022
H1033	Environmental Chamber	Freezer #2 - DW-50W225	(-30~-10)℃	0.1℃	F8LMJ	11/1/2021	10/31/2022
H1036	Environmental Measure	Temperature and humidity #1 - TH-602F	(-30~60)℃,(0- 100)%	2℃	3238	7/9/2021	7/8/2022
H1057	Anvil	Edge	NÁ	NA	NA	10/27/2020	10/26/2023
H1058	Anvil	Equestrian	NA	NA	NA	10/27/2020	10/26/2023
H1061	Anvil	Blade	NA	NA	NA	10/27/2020	10/26/2023
H1063	Height Measure	Digital tape - 5m	(0-5)m	0.1mm	78223	11/2/2021	11/1/2022
H1070	Instrument	Load cell - 9363-B10-300- 20T1	(0-136)kg	0.1kg	80310843	7/8/2021	7/7/2022
H1071	Environmental Measure	Temperature and humidity #3 - TH600B	(-20~100)℃,(0- 100)%	1℃	Q/MDS001-2017-1	7/8/2021	7/7/2022
H1072	Environmental Measure	Temperature and humidity #4 - TH600B	(-20~100)°C,(0- 100)%	1°C 3	Q/MDS001-2017-2	7/8/2021	7/7/2022
H1073	Height Measure	Height Gauge	(0-500)mm	0.01mm	8811213838273610	11/1/2021	10/31/2022
H1074	Distance Measure	Vernier caliper - SJ-455615	(0-150)mm	0.01mm	455615	11/1/2021	10/31/2022
H1076	Environmental Measure	Calorifier - CN-111	18-35℃	20.1℃ d	NA	11/2/2021	11/1/2022
H1077	Distance Measure	Tape	0-1.5m	S 1mm	NA	11/2/2021	11/1/2022
H1172	Height Measure	Height Rod #6	600±5mm	/\/Imm\(\)	032216-02	4/13/2021	4/12/2022
H1174	System Check	MEP PAD	NA	NA NA	021921-01	3/5/2021	3/4/2022
H1180	Instrument	LVDT & Sensor Box	2 inch	0.1mm	04140748-001	11/1/2021	10/31/2022
H1184	Instrument	Uni-axial Accelerometer yellow tower - 353B18	± 500 g	≤ 1%	LW226664	8/24/2021	8/23/2022
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**APPENDIX C** 

**PHOTOGRAPHS** 

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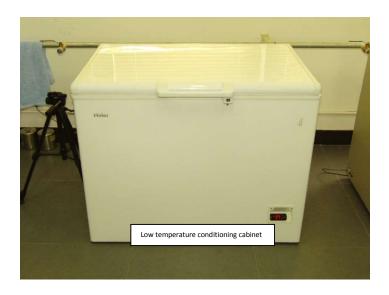
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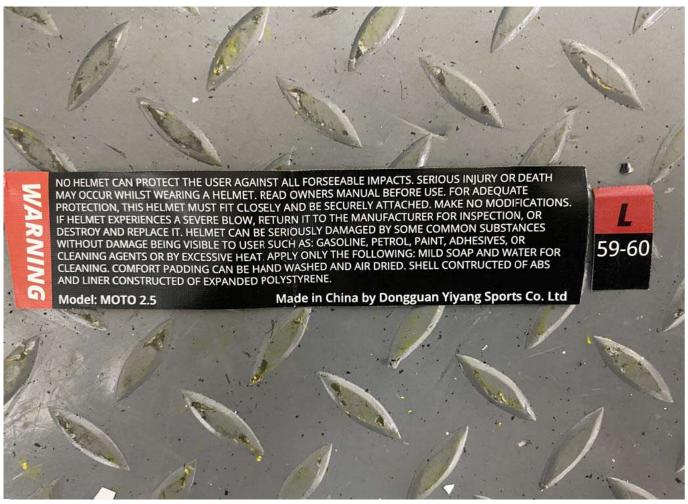














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#### **NOTICE**

- The report is not effective without the signature of the person(s) authorizing the report (ACT Lab's authorized signatory is John A. Bogler (President)).
- The report is not valid if altered.

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- Claims have to be made within 15 days after receipt of this report.
- The results of this test report relate only to the items tested.
- The results apply to the samples as received.
- 6. For reports that contain results from external test service providers: Results from external test service providers are supplied by the customer and can affect validity of results.
- 7. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance with Specification".

**END OF REPORT** 

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# SAFETY COMPLIANCE TESTING FOR **FMVSS No. 218 MOTORCYCLE HELMETS** Keblogner of the Still of the state of the s

**Brand: LEATT** Model: MOTO 2.5 Tested Size: XL (61-62 cm)

written opproved from A To also include size XXL (63-64 cm) with same shell and EPS liner size.

Prepared For:

## **Leatt Corporation**

12 Kiepersol Crescent, Atlas Gardens Business Park, Cape Farms, Cape Town, 7550, ZA



Issue Date: 19 September 2022

Final Report: 904.10600.003

Tested By:

# Ishing abbroad town W. Taicang ACT Sporting Goods Testing Co., Ltd.

No. 35 Zhenghe Road, Ludu Town, Taicang City, Suzhou, Jiangsu Province, China 215412 www.act-lab.com

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This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated April 2017.) The Joint Communiqué is available on publications and resources page of the ILAC website at http://www.ilac.org. Accreditation listing and certificate can be found at http://www.iasonline.org.

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# PURPOSE OF COMPLIANCE TEST

# This document of the produced exception and providing the produced exception of the produced exc

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

Dongguan Yiyang Sports Co., Ltd.

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 Helmet Cadex Testing Manual 2.3

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#### **HELMET DATA**

HELMET BRAND NAME:	LEATT	19, Ps.
HELMET MODEL DESIGNATION:	MOTO 2.5	Wille
HELMET MANUFACTURER:	DONGGUAN YIYANG SPORTS CO., LTD.	
HELMET SIZE:	XL (61-62 cm)	
HELMET COVERAGE: Partial: _	Full: Complete:	Х
HELMET POSITIONING INDEX: 67	mm doch exolitio	
SHELL MATERIAL: ABS	This dip by	
LINER MATERIAL: Expanded Polys	tyrene	
BUCKLE DESCRIPTION: Double D-I	Rings	

-0	1100110				40
HELMET	Michal	В	С	D	E.eP.
The for	Ambient	Low Temp	High Temp	Water Immersed	Spare
SHELL COLOR/PATTERN	Blue	Blue	Blue	Blue	Blue
WEIGHT (grams)	1199	1173	1190	1206	1278
MONTH & YEAR OF MANUFACTURE	04/22	04/22	04/22	04/22	04/22

Reviewed by: John Bogler

**COMMENTS:** 

1. All helmets were received in undamaged condition and were appropriate for testing.

2. Weights listed above for helmets A-D are as tested with visor removed.

3. Weight for helmet E is complete with all components in place.

4. ACT determined the HPI information prior to testing.

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## **SUMMARY OF TEST RESULTS**

SUMMARY OF TEST RESULTS INDICATE Pass or Fail						
Chue	HELMET	А	В	С	D	
This dood e	TEST	AMBIENT	LOW TEMP	HIGH TEMP	WATER IMMERSED	
reprote of	IMPACT	Pass	Pass	Pass	Pass	
	PENETRATION	Pass	Pass	Pass	Pass	
	RETENTION	Pass	Pass O	Pass	Pass	

#### **INDICATE Pass or Fail**

TEST	PASS/FAIL
PERIPHERAL VISION	Pass
PROJECTIONS	Pass
LABELING	Pass
PROJECTIONS  LABELING	This document shall not be out without a produced exception ACT Lab to written approval from ACT Lab to write written approval from ACT Lab to written approval from ACT Lab to written approval from

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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 (European Size 54)	OT DE SMALL
Greater than 6-3/4, but less than or equal to 7-1/2 (European Size 60)	dill for MEDIUM
Greater than 7-1/2 (European 60)	LARGE

#### COMMENTS:

11/1/3

The manufacturer marked the helmet with its corresponding discrete size: XL (61-62 cm), Headform Size: DOT 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.

AVERAGE LAB TEMPERATURE: \_\_\_22\_\_ °C; AVERAGE LAB HUMIDITY:

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#### **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
904.10600.003-A	Ambient	1	LF SIDE	FLAT	192.0	6.0292	0.00	0.00	145.2	Pass
904.10600.003-A	Ambient	2	LF SIDE	FLAT	192.0	6.0254	2.65	0.00	178.4	Pass
904.10600.003-A	Ambient	3	REAR	FLAT	192.0	5.9977	0.00	0.00	142.9	Pass
904.10600.003-A	Ambient	4	REAR	FLAT	192.0	6.0052	0.58	0.00	167.8	Pass
904.10600.003-A	Ambient	5	FRONT	НЕМІ	145.0	5.2657	0.00	0.00	62.2	Pass
904.10600.003-A	Ambient	6	FRONT	HEMI	145.0	5.2811	0.00	0.00	53.5	Pass
904.10600.003-A	Ambient	7	RT SIDE	HEMI	145.0	5.2361	0.00	0.00	78.4	Pass
904.10600.003-A	Ambient	8	RT SIDE	НЕМІ	145.0	5.2313	0.00	0.00	99.1	Pass
904.10600.003-B	Cold	1	LF SIDE	FLAT	192.0	6.0313	0.00	0.00	141.6	Pass
904.10600.003-B	Cold	2	LF SIDE	FLAT	192.0	6.0329	2.82	0.00	175.7	Pass
904.10600.003-B	Cold	3	REAR	FLAT	192.0	6.0042	0.00	0.00	143.4	Pass
904.10600.003-B	Cold	4	REAR	FLAT	192.0	6.0023	2.46	0.00	169.7	Pass
904.10600.003-B	Cold	5	FRONT	HEMI	145.0	5.3055	0.00	0.00	65.9	Pass
904.10600.003-B	Cold	6	FRONT	HEMI	145.0	5.2148	0.00	0.00	66.4	Pass
904.10600.003-B	Cold	O'L L'ILLO	RT SIDE	HEMI	145.0	5.2441	0.00	0.00	79.8	Pass
904.10600.003-B	Cold	11 18 96	RT SIDE	HEMI	145.0	5.2547	0.00	0.00	100.5	Pass
904.10600.003-C	Hot	CI	LF SIDE	FLAT	192.0	6.0455	0.00	0.00	135.1	Pass
904.10600.003-C	Alot V	2	LF SIDE	FLAT	192.0	6.0259	2.49	0.00	167.4	Pass
904.10600.003-C	Hot	3	REAR	FLAT	192.0	6.0094	0.00	0.00	136.0	Pass
904.10600.003-C	O Hot	4	REAR	FLAT	192.0	6.0107	0.95	0.00	154.9	Pass
904.10600.003-C	Hot	5	FRONT	HEMI	145.0	5.2662	0.00	0.00	65.0	Pass
904.10600.003-C	Hot	6	FRONT	НЕМІ	145.0	5.2789	0.00	0.00	83.9	Pass
904.10600.003-C	Hot	7	RT SIDE	HEMI	145.0	5.2671	0.00	0.00	81.6	Pass
904.10600.003-C	Hot	8	RT SIDE	НЕМІ	145.0	5.2847	0.00	0.00	95.0	Pass
904.10600.003-D	Wet	1	LF SIDE	FLAT	192.0	6.0365	0.00	0.00	136.5	Pass
904.10600.003-D	Wet	2	LF SIDE	FLAT	192.0	6.0402	2.44	0.00	163.2	Pass
904.10600.003-D	Wet	3	REAR	FLAT	192.0	6.0182	0.00	0.00	143.4	Pass
904.10600.003-D	Wet	4	REAR	FLAT	192.0	6.0098	2.26	0.00	164.1	Pass
904.10600.003-D	Wet	5	FRONT	HEMI	145.0	5.2531	0.00	0.00	64.1	Pass
904.10600.003-D	Wet	6	FRONT	HEMI	145.0	5.2625	0.00	0.00	80.7	Pass
904.10600.003-D	Wet	100 N	RT SIDE	HEMI	145.0	5.2763	0.00	0.00	80.2	Pass
904.10600.003-D	Wet	2, 8/10	RT SIDE	HEMI	145.0	5.2893	0.00	0.00	96.8	Pass

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Paragraph S5.2 and S7.2

WEIGHT OF STRIKER:

2.95 to 3.06 kg (6 pounds, 8 ounces to 6 pounds, 12 ounces)

Radius =  $0.5 \pm 0.1$  mm ( $0.02 \pm 0.004$  in ) include  $0.5^{\circ}$ , hardness minimum of  $0.5^{\circ}$ POINT OF STRIKER:

height of not less than  $3.8 \pm 0.038$  cm  $(1.5 \pm 0.015$  in.).

MEIGHT OF FALL: 300 cm ± 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.

			, ,	70,7		
TEST	HELMET	TEST LOCATION	PASS	FAIL	CONDITIONS	
1	А	Crown	X		AMBIENT	
2	Α	Rear Right	Х		AMBIENT	
3	В	Crown	Х		LOW TEMPERATURE	This
4	B woll	Rear Right	Х		LOW TEMPERATURE	186,46
5	C Still	Crown	Х		HIGH TEMPERATURE	Me
6	nus Copyo	Rear Right	Х		HIGH TEMPERATURE	
1/13 do	so opon	Crown	Х	7	WATER IMMERSED	
0/800	7,66, D	Rear Right	X		WATER IMMERSED	

COMMENT: Photographs of penetration test locations are found in Appendix C.

Contract File No.: 904.10600

Test File: 003

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 8 of 42



#### **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 2.54 cm (1.0 INCH) AFTER LOAD INCREASE

	V 0	
HELMET	CONDITIONS	ELONGATION cm
А	AMBIENT	1.54
В	LOW TEMPERATURE	1.61
, bec it	HIGH TEMPERATURE	1.79
o villa	WATER IMMERSED	1.61

#### PERIPHERAL VISION

CONFIGURATION - 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.

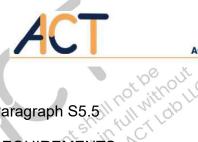
	REQUIREMENTS	TEST RESULTS
PERIPHERAL VISION	> 105°	Pass
BROW OPENING	> 2.5 cm (1 inch)	Pass

Contract File No.: 904.10600

Test File: 003

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 9 of 42

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#### **PROJECTIONS**

4		ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805   Tel 562.470.7215	Web act-lab.com
	or be nout	PROJECTIONS	e doch exch
Pa	ragraph S5.5	Y	This duc appro
RE	QUIREMENTS:		Witter
nis	PROJECTION	REQUIREMENT	
,0,0	Internal rigid	None ot ithout C	
Will	External rigid	Operational, shall not protrude more than 5	mm

#### **TEST RESULTS:**

Wille	External rigid	Operational, shall not pro		
TES	T RESULTS:	document of the	Stu Ve	
	PROJECTION	PRESENT	HEIGHT (mm)	
	Internal	None	Not Applicable	P
	External	None	Not Applicable	is document
This repro	External  Accument shall full without to the shall full without to the shall full without to the shall form Acritical to the shall form Acriti	ocument sh	all not be nout con action lice	This docume The produced by th

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Contract File No.: 904.10600
Test File: 003
Control Document: Official ACT
SharePoint/GlobalResource Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 10 of 42 Witten

Jan. Date: 3 Technician: Edward Wang Test Date: 31 May 2022

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ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805 Tel 562470.72  LABELING	
5.6.1 <i>Labeling</i> - Each helmet shall be permanently and legibly labeled, in a at the label(s) can be easily read without removing padding or any other peth the following:	ermanent part,
Required Information Content/Format	Permanent
Manufacturer's name Pass	Pass
Discrete size Pass	Pass
Month and year of manufacture Pass	Pass
nstructions to the purchaser as follows:	
"Shell and liner constructed of (identify type(s) of materials)."	Pass
"Helmet can be seriously damaged by some common substances without damage being Pass visible to the user."	Pass
"Apply only the following: (Recommended cleaning agents, paints, adhesives, etc., as appropriate."	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 Pass

# COMMENT:

This document shall tull and the reproduced exception ACT written approval from ACT written approval from ACT 1. Labels were determined to be both easily read and permanent based on the TP-218-07, Section 12.5.4.

Contract File No.: 904.10600

Test File: 003

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 11 of 42



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 ''

S5.6.1, and complies with paragraphs. appearance. The label required by paragraph S5.6.2 shall have the following content, format, and appearance:

00 40	~ 6 00 C	
Required Certification Information	Content/ Format	Permanent
The symbol "DOT," horizontally centered on the label, in letters not less than 0.38 inch (1.0 cm) high.	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	This
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	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	

#### COMMENT:

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

Contract File No.: 904.10600

Test File: 003

Control Document: Official ACT FMVSS No.218 Report Template TP-07 CN 18 April 2022 Rev.19 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/FMVSS No.218 12 of 42



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**TEST DATA** 

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13 of 42

Jan. Date: 3 Technician: Edward Wang Test Date: 31 May 2022

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# Uni-Axial Calibration Helmet Manufacturer YIYANG Address:

Pre-Test

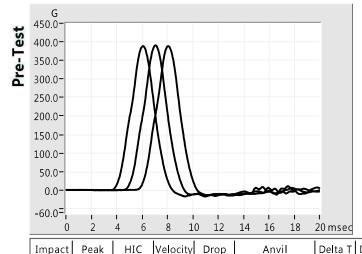
Post-Test

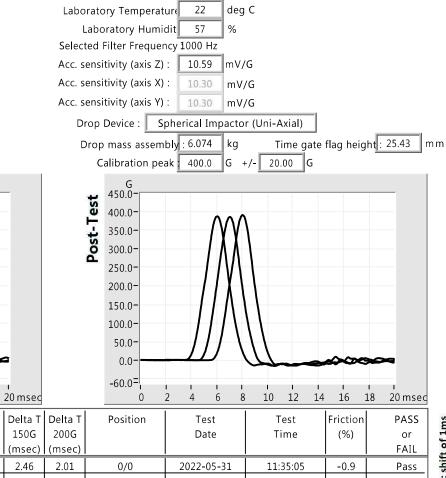
Testing Laboratory Taicang ACT Lab
Address: No.35 Zhenghe Road, Ludu Town,

Taicang City, Suzhou, Jiangsu Province,

China 215412

Laboratory Technician name Edward





	#	Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
ļ				(m/sec)	(cm)		(msec)	(msec)					FAIL
	1	388.2	3494	4.8563	118.0	MEP	2.46	2.01	0/0	2022-05-31	11:35:05	-0.9	Pass
-	2	390.1	3511	4.8963	118.0	MEP	2.45	1.99	0/0	2022-05-31	11:36:04	-1.8	Pass
ו	3	388.2	3482	4.8774	118.0	MEP	2.46	2.00	0/0	2022-05-31	11:37:08	-1.4	Pass
	1	387.8	3494	4.8912	118.0	MEP	2.45	2.00	0/0	2022-05-31	13:45:48	-1.7	Pass
-	2	385.9	3535	4.9039	118.0	MEP	2.43	2.01	0/0	2022-05-31	13:47:12	-1.9	Pass
	3	391.0	3551	4.8706	118.0	MEP	2.44	2.01 14 of	0/0	2022-05-31	13:48:23	-1.2	Pass
						<u> </u>			<u> </u>	<u> </u>			

M.E.P. Pad Model 1 MEP

200.0-

150.0-

100.0-

50.0-

0.0

-25.0-

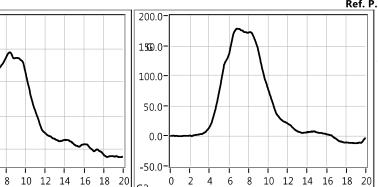
Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

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: MOTO 2.5 Color: Blue

Size: XL(61-62CM) Weight: 1199.00 g

Manufacturing Date: 31 May 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.003-A

Headform Model: D.O.T. Headform Size: D D.O.T Conditioning: Ambiant

Laboratory Temperature : 22 deg C

Laboratory Humidity: 57 %

Selected Filter Frequency: 1650 Hz

Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 6.074 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59

G1 msec	G2 msec
200.0-	200.0-
150.0-	150.0-
100.0-	100.0-
50.0-	50.0-
0.0-	0.0-
G3 0 2 4 6 8 10 12 14 16 18 20 msec	

Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		l (msec)	(msec)				<u> </u>	FAIL
1	145.2	924	6.0292	192.0	FLAT	0.00	0.00	LF SIDE	2022-05-31	11:40:30	1.8	Pass
2	178.4	1245	6.0254	192.0	FLAT	2.65	0.00	LF SIDE	2022-05-31	11:40:39	1.8	Pass
3	142.9	973	5.9977	192.0	FLAT	0.00	0.00	REAR	2022-05-31	11:45:11	2.3	Pass
4	167.8	1235	6.0052	192.0	FLAT	2.58	0.00	REAR	2022-05-31	11:45:20	2.1	Pass

100.0

**&**0.0

60.0

40.0-

20.0-

0.0

**Helmet Manufacturer: YIYANG** Address:

Testing Laboratory: Taicang ACT Lab

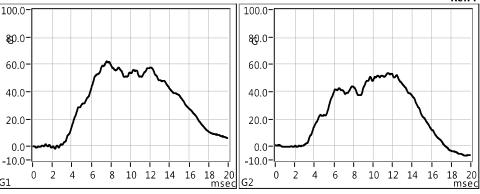
Address: No.35 Zhenghe Road, Ludu Town, Taicang City, Suzhou, Jiangsu

Province, China 215412

Laboratory Technician name: Edward

Batch Number :





Color: Blue Size: XL(61-62CM) Weight: 1199.00 g

Manufacturing Date: 31 May 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.003-A

Headform Model: D.O.T. Headform Size: D D.O.T Conditioning: Ambiant

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 % Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized: 3923 m/s2

Drop mass assembly: 6.074 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59

GI										<u>m</u>	sec	G2										<u>m</u>	sec
100.0	)-[										$\neg$	100.0					_	<u></u>					$\overline{}$
80.C	)-				_	. ^					-	80.0	-			_	/^		ackslash				
60.0	)-			$\sqrt{}$	^^	V						60.0	╢			/			+				
40.0	)-		-1	1				$\bigvee$			-	40.0	-		1	V			_/				
20.0	)-		$\int$						\	-		20.0	-		$\mathcal{F}$					1	$\overline{}$		
0.0	)- -	مسد									كم	0.0	-		/							\~	Д
-20.0	)- -	+	1	1	-		1	1	1	1		-20.0		_	1	1	1	-	ı	1	ı	_	4
G3	0	2	4	6	8	10	12	14	16	18 m	20 sec	G4	0	2	4	6	8	10	12	14	16	18 m	20 sec

Impact	Peak	HIC	Velocity	Drop	Anvil	Delta T	Delta T	Position	Test	Test	Friction	PASS
#	Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
5	62.2	181	5.2657	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:49:44	1.3	Pass
6	53.5	117	5.2811	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:49:55	1.0	Pass
7	78.4	282	5.2361	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:54:22	1.8	Pass
8	99.1	384	5.2313	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:54:33	1.9	Pass

200.0-

150.0-

100.0-

50.0-

0.0

-25.0-

**Helmet Manufacturer: YIYANG** 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: MOTO 2.5

> Color: Blue XL(61-62CM) Size:

Manufacturing Date: 31 May 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.003-B

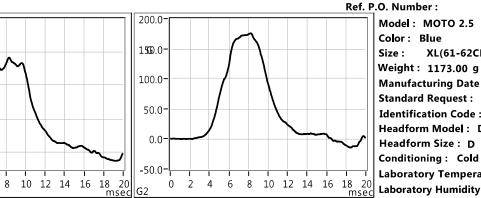
Headform Model: D.O.T. Headform Size: D D.O.T Conditioning: Cold

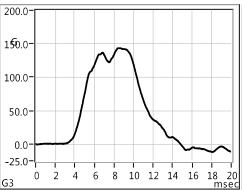
Laboratory Temperature: 22 deg C

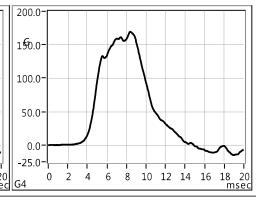
Laboratory Humidity: 57 Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 6.074 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59







Impact #	Peak Acc.(G)	HIC	Velocity IN	Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)			i i	(msec)				1	FAIL
1	141.6	897	6.0313	192.0	FLAT	0.00	0.00	LF SIDE	2022-05-31	11:41:16	1.7	Pass
2	175.7	1231	6.0329	192.0	FLAT	2.82	0.00	LF SIDE	2022-05-31	11:41:25	1.7	Pass
3	143.4	973	6.0042	192.0	FLAT	0.00	0.00	REAR	2022-05-31	11:46:49	2.2	Pass
4	169.7	1238	6.0023	192.0	FLAT	2.46	0.00	REAR	2022-05-31	11:46:57	2.2	Pass

120.0

100.0-

80.0

60.0-

40.0

20.0-

-10.0

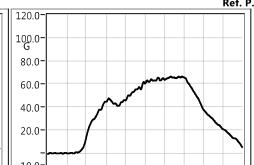
Helmet Manufacturer : YIYANG Address : Testing Laboratory: Taicang ACT Lab

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: MOTO 2.5 Color: Blue Size: XL(61-62CM)

Weight: 1173.00 g

Manufacturing Date : 31 May 2022 Standard Request : FMVSS 218 Identification Code : 904.10600.003-B

Headform Model: D.O.T. Headform Size: D 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/s2 authorized : 3923 m/s2

Drop mass assembly: 6.074 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59

G1	0	2	4	6	8	10	12	14	16	18 m:	20 sec	G2	0	2	4	6	8	10	12	14	16	18 m	20 sec
120.0	)-[									$\overline{}$	$\neg$	120.0	$\overline{}$										$\neg$
100.0 G	)-										_	100.0	-					Λ.					
80.0					لہر	M					-	80.0	-				/~		$\downarrow$				
60.0	)-			1	<b>/</b>		$\setminus$				-	60.0	-			1			$\mathbf{A}$				
40.0	)- -		1	~			+ '	Υ,	+	-	-	40.0	+		1	$\sqrt{}$			<b> </b>				
20.0	)-		$\int$						1		_	20.0	+								eg		
0.0	)- -	مــــــــــــــــــــــــــــــــــــــ						+	+	$\sim$		0.0	-	_	_					+	+	$\checkmark$	<b>∧</b> ∐
-20.0	•	1		1	1		+	+	1	-	$\dashv$	-20.0			1	1	1		1		1	1	-
G3	0	2	4	6	8	10	12	14	16	18 m:	20 sec	G4	0	2	4	6	8	10	12	14	16	18 m	20 sec
							-				_												

Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)	J.,	(msec)	(msec)					FAIL
5	65.9	214	5.3055	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:51:26	0.5	Pass
6	66.4	242	5.2148	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:51:48	2.2	Pass
7	79.8	266	5.2441	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:55:51	1.7	Pass
8	100.5	384	5.2547	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:56:04	1.5	Pass

175.0

150.0

100.0-

50.0-

0.0

0

-20.0-

Helmet Manufacturer : YIYANG 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: MOTO 2.5 Color: Blue

Size: XL(61-62CM) Weight: 1190.00 g

Manufacturing Date: 31 May 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.003-C

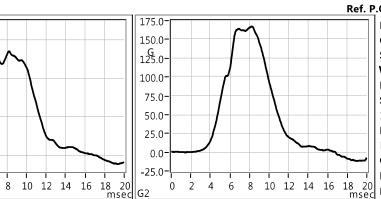
Headform Model: D.O.T. Headform Size: D D.O.T Conditioning: Hot

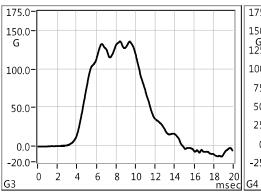
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 %
Selected Filter Frequency: 1650 Hz
Maximum Peak G's authorized: 400 G

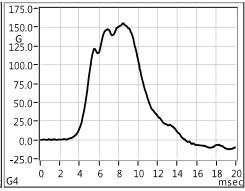
Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 6.074 kg Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





6



Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
1	135.1	859	6.0455	192.0	FLAT	0.00	0.00	LF SIDE	2022-05-31	11:42:08	1.5	Pass
2	167.4	1104	6.0259	192.0	FLAT	2.49	0.00	LF SIDE	2022-05-31	11:42:17	1.8	Pass
3	136.0	896	6.0094	192.0	FLAT	0.00	0.00	REAR	2022-05-31	11:47:35	2.1	Pass
4	154.9	1069	6.0107	192.0	FLAT	0.95	0.00	REAR	2022-05-31	11:47:44	2.1	Pass

**Helmet Manufacturer: YIYANG** 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: MOTO 2.5 Color: Blue

Size: XL(61-62CM) Weight: 1190.00 g

Manufacturing Date: 31 May 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.003-C

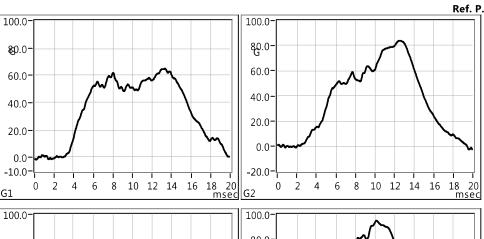
Headform Model: D.O.T. Headform Size: D D.O.T Conditioning: Hot

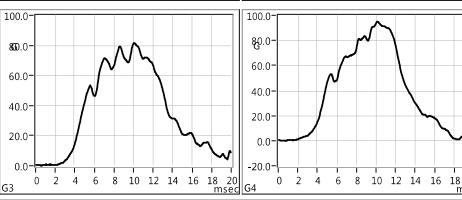
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 % Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 6.074 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
			(m/sec)	(cm)	<b>5</b> 1	(msec)	(msec)					FAIL
5	65.0	229	5.2662	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:52:41	1.3	Pass
6	83.9	298	5.2789	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:52:50	1.0	Pass
7	81.6	286	5.2671	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:56:39	1.2	Pass
8	95.0	363	5.2847	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:56:53	0.9	Pass

## **Impact Uni-Axial**

175.0

150.0<sup>-</sup> G

100.0-

50.0-

0.0

0

-20.0-

**Helmet Manufacturer: YIYANG** 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: MOTO 2.5 Color: Blue

Size: XL(61-62CM) Weight: 1206.00 g

Manufacturing Date: 31 May 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.003-D

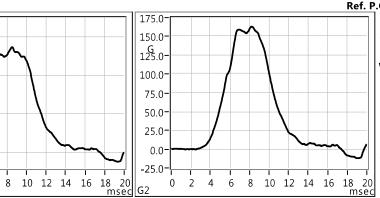
Headform Model: D.O.T. Headform Size: D D.O.T Conditioning: Wet

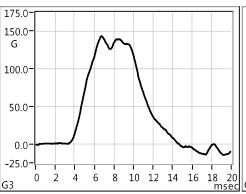
Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 % Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 6.074 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59





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Impact #	Peak Acc.(G)	HIC	Velocity IN	Drop Height	Anvil type	Delta T 150G	Delta T 200G	Position	Test Date	Test Time	Friction (%)	PASS or
	` 1		(m/sec)		, , ,	(msec)	(msec)				` ´	FAIL
1	136.5	823	6.0365	192.0	FLAT	0.00	0.00	LF SIDE	2022-05-31	11:43:17	1.6	Pass
2	163.2	1038	6.0402	192.0	FLAT	2.44	0.00	LF SIDE	2022-05-31	11:43:27	1.6	Pass
3	143.4	947	6.0182	192.0	FLAT	0.00	0.00	REAR	2022-05-31	11:45:54	1.9	Pass
4	164.1	1173	6.0098	192.0	FLAT	2.26	0.00	REAR	2022-05-31	11:46:03	2.1	Pass

## **Impact Uni-Axial**

0.0-

G3

0

Helmet Manufacturer: YIYANG Address:

8 10 12 14 16 18

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: MOTO 2.5 Color: Blue

Size: XL(61-62CM) Weight: 1206.00 g

Manufacturing Date: 31 May 2022 Standard Request: FMVSS 218 Identification Code: 904.10600.003-D

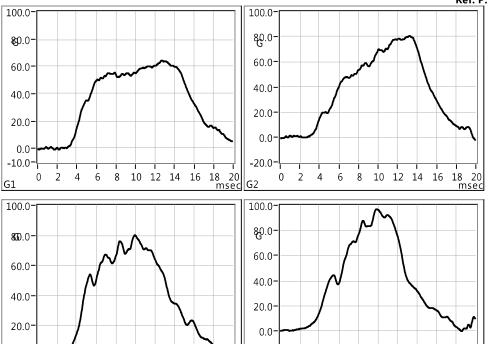
Headform Model: D.O.T. Headform Size: D D.O.T Conditioning: Wet

Laboratory Temperature: 22 deg C

Laboratory Humidity: 57 % Selected Filter Frequency: 1650 Hz Maximum Peak G's authorized: 400 G

Maximum Peak m/s2 authorized : 3923 m/s2

Drop mass assembly: 6.074 Time gate flag height: 25.43 mm Acc. sensibility (axis Z): 10.59



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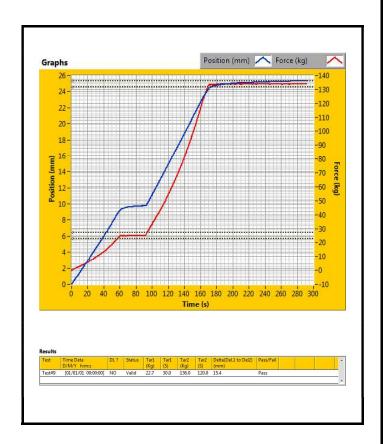
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Impact	Peak	HIC	Velocity		Anvil	Delta T		Position	Test	Test	Friction	PASS
#	Acc.(G)		IN	Height	type	150G	200G		Date	Time	(%)	or
			(m/sec)	(cm)		(msec)	(msec)					FAIL
5	64.1	233	5.2531	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:50:35	1.5	Pass
6	80.7	290	5.2625	145.0	HEMI	0.00	0.00	FRONT	2022-05-31	11:50:44	1.3	Pass
7	80.2	279	5.2763	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:55:05	1.1	Pass
8	96.8	353	5.2893	145.0	HEMI	0.00	0.00	RT SIDE	2022-05-31	11:55:14	0.8	Pass

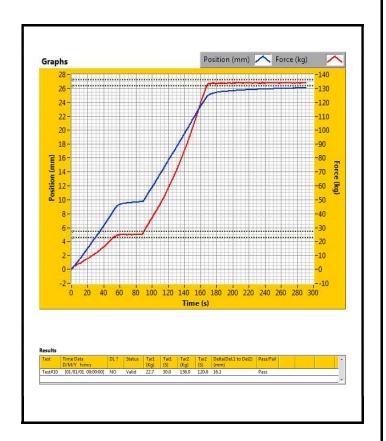
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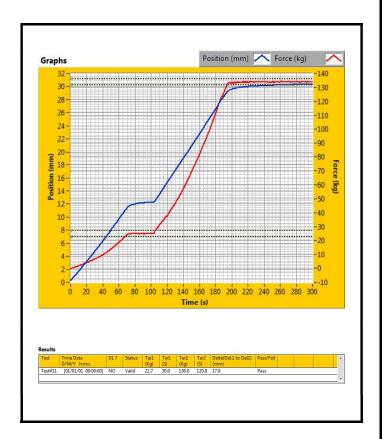
Laboratory		
	Laboratory	ACT Lab
	Technician	Carry
	Temperature	22
	Humidity	57%
Sample		
	Model	MOTO 2.5
	Color	Blue
	Size	XL
	Weight	1199
	Manufacturer	Yiyang
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.003-A



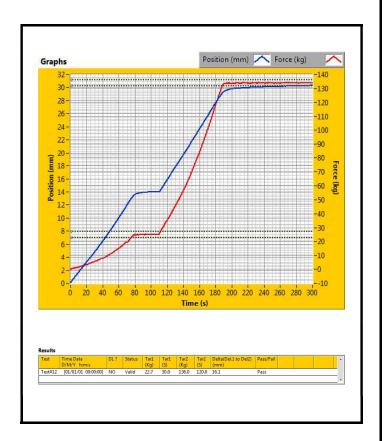
Laboratory		
	Laboratory	ACT Lab
	Technician	Carry
	Temperature	22
	Humidity	57%
Sample		
	Model	MOTO 2.5
	Color	Blue
	Size	XL
	Weight	1173
	Manufacturer	Yiyang
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.003-B



Laboratory		
	Laboratory	ACT Lab
	Technician	Carry
	Temperature	22
	Humidity	57%
Sample		
	Model	MOTO 2.5
	Color	Blue
	Size	XL
	Weight	1190
	Manufacturer	Yiyang
	Manuf. Date	04/22
Infos		
	Standard	FMVSS No.218
	Comment	904.10600.003-C
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Laboratory		
	Laboratory	ACT Lab
	Technician	Carry
	Temperature	22
	Humidity	57%
Sample		
	Model	MOTO 2.5
	Color	Blue
	Size	XL
	Weight	1206
	Manufacturer	Yiyang
	Manuf. Date	04/22
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	Standard	FMVSS No.218
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APPENDIX A

INTERPRETATIONS OR DEVIATIONS FROM FMVSS 218

1. S6.4 Conditioning: Excess water on the water immersed sample was allowed to drip off before testing to prevent water damage to test equipment reproduced exception activition, written droporty of the produced exception activities and the produced exce reproduced except in full without Lob Lic testing to prevent water damage to test equipment. Witter

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EQUIPM	IENT INFORMAT	ION POOL	jč.					
Ge	General Information							
Drop Software: Ca	o System: Monorail idex Impact Softwar	x 3, "U, C,						
Item	Model O	S/N						
Computer	VD200PA#AB2	CNG9211DB1						
Data Acquisition Board 187570H-01 13EC16A								
Time Gate Cadex HVTG12009033-1								
Control Box	PC4300	CCS120090331-1						

## Headforms

	Item	Size	Model	Assembly Wt., grams
	Uni-Axial	Headform Size DOT SMALL	Cadex	3573
, X	Uni-Axial	Headform Size DOT MEDIUM	Cadex	5060
S.C.	Uni-Axial	Headform Size DOT LARGE	Cadex	6185
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184.481	Item		del 💮	/// S/NO
repliter of	Uni-Axial	Accelerometer PCB 3	53B18 5	86079
N,		لابع	ueverby !!	, AC

## **Sensors**

Item		Model S/N
Uni-Axial	Accelerometer	PCB 353B18 86079
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Date: 3 Technician: Edward Wang Test Date: 31 May 2022

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## **EQUIPMENT LIST AND CALIBRATION SCHEDULES**

			EQUIPMENT LIST			
Asset Tag	Location	Description of part	Model Number	Serial Number	Verification Interval	Next Verification
H1001	Helmet Room	Instrument	Yellow tower - 1000 00 MIMAT	NA	NA	NA
H1002	Helmet Room	Instrument	Green tower - Series 2000	NA	NA	NA NA
H1010	Helmet Room	Instrument	Control Center System - Pc4300	CCS120090331-1	NA	NA
H1011	Helmet Room	Instrument	Impact Machine System - DX3000	NA	NA	NA NA
H1013	Helmet Room	Instrument	Charge Amplifier - ATA2001	J72863	NA	NA NA
H1015	Helmet Room	Instrument	Positional Stability CPSC/ASTM	NA NA	1 year	4/11/2022
H1017	Helmet Room	Instrument	Retention Machine DOT - SB033	NA NA	NA NA	NA NA
H1019	Helmet Room	Instrument	Chin Bar Deflection ASTM/SNELL	NA TI TVOKO	NA NA	NA NA
H1026	Helmet Room	Instrument	Laser table - SB005	TLTV2KB-	NA	NA 2/44/2024
H1027 H1034	Helmet Room Helmet Room	Instrument Environmental	Fixture-Vision scale Water Container	NA NA	3 year NA	3/11/2024 NA
H1043	Helmet Room	Headform	Impact ISO A	4272	1 year	10/19/2022
H1043	Helmet Room	Headform	Impact ASTM F2220 C	6938	1 year	10/19/2022
H1045	Helmet Room	Headform	Impact ASTW1 2220 C	4146	1 year	10/19/2022
H1046	Helmet Room	Headform	Impact ISO J	4148	1 year	10/19/2022
H1047	Helmet Room	Headform	Impact ISO M	4131	1 year	10/19/2022
H1048	Helmet Room	Headform	Impact ISO O	4151	1 year	10/19/2022
H1049	Helmet Room	Headform	Impact DOT Small	5178	1 year	10/19/2022
H1050	Helmet Room	Headform	Impact DOT Medium	5179	1 year	10/19/2022
H1051	Helmet Room	Headform	Impact DOT Large	5190	1 year	10/19/2022
H1052	Helmet Room	Anvil	System Check Spherical Impactor	NA	1 year	10/19/2022
H1053	Helmet Room	System Check	MEP Pad - 345 08 MP60	30051201	1 year	2021 yearly report
H1054	Helmet Room	Anvil	Chin Bar	NA	1 year	10/19/2022
H1055	Helmet Room	Anvil	Curb	NA	1 year	12/12/2021
H1056	Helmet Room	Anvil	Cylinder	NA	1 year	12/12/2021
H1059	Helmet Room	Anvil	Hazard	NA	1 year	12/12/2021
H1060	Helmet Room	Anvil	Hemispherical yellow tower	NA	1 year	12/12/2021
H1062	Helmet Room	Anvil	Flat yellow tower	NA	1 year	12/12/2021
H1064	Helmet Room	Instrument	Control Center System yellow tower -	CCS120120810-1	NA	NA O
H1066	Helmet Room	Instrument	Penetration striker DOT	NA	1 year	9/10/2022
H1091	Helmet Room	Angle Measure	40°Block	NA NA	3 year	6/4/2023
H1092	Helmet Room	Fixture	Clamp - 119g	NA	1 year	10/19/2022
H1093	Helmet Room	Fixture	Clamp - 210g	NA	1 year	10/19/2022
H1094	Helmet Room	Fixture	Clamp - 378g	NA	1 year	10/19/2022
H1095	Helmet Room	Fixture	Clamp - 451g	NA	1 year	10/19/2022
H1096	Helmet Room	Fixture	Clamp - 505g	NA	1 year	10/19/2022
H1097	Helmet Room	Fixture	Clamp - 598g	NA O	1 year	10/19/2022
H1098	Helmet Room	Fixture	Clamp - 1160g	NA NA	1 year	10/19/2022
H1099	Helmet Room	Anvil	Flat Green Tower	NA	1 year	12/12/2021
H1100	Helmet Room	Anvil	Hemispherical Green Tower	NA NA	1 year	12/12/2021
H1101 H1102	Helmet Room Helmet Room	Headform Headform	DOT Retention Strength Small DOT Retention Strength Medium	NA NA	NA NA	NA NA
H1102	Helmet Room	Headform	DOT Retention Strength Large	NA	NA NA	NA NA
H1105	Helmet Room	Drop Mass	Aluminum Ball Stem Green tower	NA NA	1 year	10/19/2022
H1106	Helmet Room	Drop Mass	Steel Ball Stem	CONA	1 year	10/19/2022
H1107	Helmet Room	Drop Mass	Magnesium Ball Arm	NA NA	1 year	10/19/2022
H1117	Helmet Room	Instrument	Helmet Internal circumference measure	NA NA	NA NA	NA NA
H1123	Helmet Room	Fixture	Roll Off Headform fasten fixture	NA NA	NA NA	NA NA
H1126	Helmet Room	Drop Mass	Complete Pistol Grip Green tower	NA	1 year	10/19/2022
H1127	Helmet Room	Headform	Setup ASTM F2220 C	6947	1 year	12/12/2021
H1128	Helmet Room	Headform	DOT Penetration Small	NA	NA	NA
H1129	Helmet Room	Headform	DOT Penetration Medium	NA	NA	NA
H1130	Helmet Room	Headform	DOT Penetration Large	NA	NA	NA
H1143	Helmet Room	Height Measure	DOT Opening Block	NA	3 year	10/9/2023
H1144	Helmet Room	Fixture	Laser table headform base	NA	NA	NA NO
H1145	Helmet Room	Fixture	Penetration headform base	NA	NA	NA O
H1146	Helmet Room	Fixture	Penetration height measure	NA	NA	NA
H1149	Helmet Room	Preload mass	NA NA	NA	1 year	10/9/2022
H1150	Helmet Room	10kg block	NA	NA	1 year	10/9/2022
H1175	Helmet Room	Headform	DOT Penetration Large	NA	NA	ONA O
H1178	Helmet Room Helmet Room	Drop Mass Drop Mass	Complete Pistol Grip	NA	1 year	10/19/2022
H1179			Aluminum Ball Stem	NA	1 year	10/19/2022

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Asset Tag	Description of part	Model Number	Measuring Range	Accuracy	Serial Number	Last Calibrated On	Calibration Due On
H1003	Instrument	Velocity gate Yellow tower	(0-7.5)m/s	0.0001m/s	HVTG120120810-1	10/4/2021	10/3/2022
H1004	Instrument	Velocity gate Green tower	(0-6.4)m/s	0.0001m/s	HVTG120090331-1	2/17/2021	2/16/2022
H1007	Instrument	Uni-axial Accelerometer green tower - 353B18	≥1000g	≥1°00€	86079	10/8/2021	10/7/2022
H1009	Height Measure	Digital tape yellow tower - 16'	(0-5.5)m	0.1cm	5027526	11/2/2021	11/1/2022
H1012	Instrument	Displacement sensor - C20101007753	2 inch	0.1mm	J72863	11/1/2021	10/31/2022
H1014	Instrument	Displacement sensor - LWE- 200	(0-100)mm	0.1mm	2002572	11/1/2021	10/31/2022
H1025	Weight Measure	Electronic scale - BT-6	(40-6000)g	0.1g	12230126	7/8/2021	7/7/2022
H1027	Angle Measure	Vision scale - 7°,25°,45°,105°	7°,25°,45°,105°		H-002	11/1/2021	10/31/2024
H1030	Environmental Chamber	Oven #1 - 92*9240MBE	(0-200)℃	1℃	8285	7/8/2021	7/7/2022
H1031	Environmental Chamber	Oven #2 - DHG-9426	(0-200)℃	0.1℃	1503338018	11/1/2021	10/31/2022
H1032	Environmental Chamber	Freezer #1 - DW-25W300	(-30~-10)℃	0.1℃	BE062100N00B29578VMO	7/8/2021	7/7/2022
H1033	Environmental Chamber	Freezer #2 - DW-50W225	(-30~-10)℃	0.1℃	F8LMJ	11/1/2021	10/31/2022
H1036	Environmental Measure	Temperature and humidity #1 - TH-602F	(-30~60)℃,(0- 100)%	2℃	3238	7/9/2021	7/8/2022
H1057	Anvil	Edge	NA	NA	NA	10/27/2020	10/26/2023
H1058	Anvil	Equestrian	NA	NA	NA	10/27/2020	10/26/2023
H1061	Anvil	Blade	NA	NA	NA	10/27/2020	10/26/2023
H1063	Height Measure	Digital tape - 5m	(0-5)m	0.1mm	78223	11/2/2021	11/1/2022
H1070	Instrument	Load cell - 9363-B10-300- 20T1	(0-136)kg	0.1kg	80310843	7/8/2021	7/7/2022
H1071	Environmental Measure	Temperature and humidity #3 - TH600B	(-20~100)℃,(0- 100)%	1°C	Q/MDS001-2017-1	7/8/2021	7/7/2022
H1072	Environmental Measure	Temperature and humidity #4 - TH600B	(-20~100)℃,(0- 100)%	1°C 3	Q/MDS001-2017-2	7/8/2021	7/7/2022
H1073	Height Measure	Height Gauge	(0-500)mm	0.01mm	8811213838273610	11/1/2021	10/31/2022
H1074	Distance Measure	Vernier caliper - SJ-455615	(0-150)mm	0.01mm	455615	11/1/2021	10/31/2022
H1076	Environmental Measure	Calorifier - CN-111	18-35℃	20.1°C ° . c	NA NA	11/2/2021	11/1/2022
H1077	Distance Measure	Tape	0-1.5m	S 1mm	NA	11/2/2021	11/1/2022
H1172	Height Measure	Height Rod #6	600±5mm	// //mm	032216-02	4/13/2021	4/12/2022
H1174	System Check	MEP PAD	NA	NA NA	021921-01	3/5/2021	3/4/2022
H1180	Instrument	LVDT & Sensor Box	2 inch	0.1mm	04140748-001	11/1/2021	10/31/2022
H1184	Instrument	Uni-axial Accelerometer yellow tower - 353B18	± 500 g	≤ 1%	LW226664	8/24/2021	8/23/2022
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**APPENDIX C** 

**PHOTOGRAPHS** 

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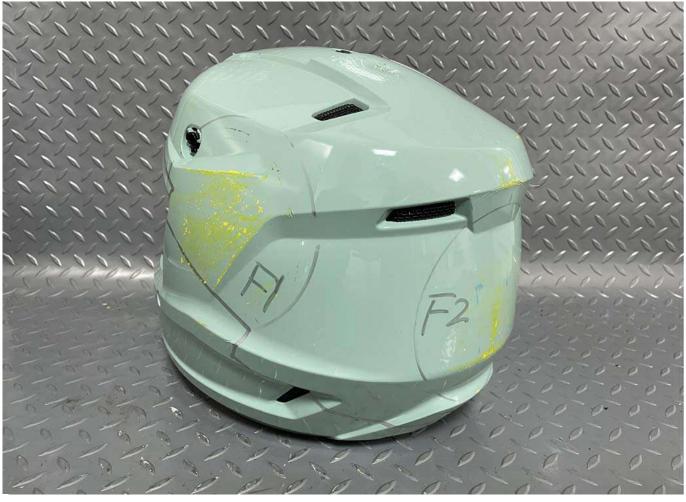


































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- The report is not valid if altered.

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- Claims have to be made within 15 days after receipt of this report.
- The results of this test report relate only to the items tested.
- The results apply to the samples as received.
- 6. For reports that contain results from external test service providers: Results from external test service providers are supplied by the customer and can affect validity of results.
- 7. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance with Specification".

**END OF REPORT** 

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Test File: 003

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