

# JUNIPLIANCE TESTING FOR BS EN 1078:2012+A1:2012 HELMETS USED FOR PEDAL CYCLISTS AND FOR USERS OF SKATEBOARDS AND ROLLER SKATES Brand FOR BS EN 1078:2012+A USED FOR PEDAL CYCLISTS AND FOR OF SKATEBOARDS AND ROLLER SKATES Brand Model Tested Co. written opproved from

**Country of Origin** : China

: 5 and older Age Grading

Children's Product

Prepared For:

# **Leatt Corporation**

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



Issue Date: 19 July 2023

Final Report: 904.14204.006

Tested by:

# 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.: 904.14204

Test File: 006

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu · Cartin full with Test Date: 14 July 2023 in ACT LOB III

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### **HELMET DATA**

Brand:	LEATT	Retention System:	Nx/A
Model:	LT2323- MTB URBAN 2.0	Age Grading:	5 and older
Manufacturer:	DONGGUAN YIYANG SPORTS Co., Ltd.	Test Headform Size:	EN 960 Size 495 (A)
Date of Manufacture:	03/23	Helmet Positioning Index (HPI):	ACT Determined: 41 mm *Measured from the basic plane
Tested Size:	50-54 cm	EPS Bead Color:	Black

Helmet Number:	Weight (g):
1	436
2	441
3	437
4	443
Average:	440

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Conditioned Ter	mperatures
Lab Humidity:	57%
Ambient Lab Temp.:	22°C
High Temperature	50°C
Low Temperature:	-20°C
Artificial Aging:	33°C

- All helmets were received in undamaged condition and were appropriate for testing.
   The accompanying helmet labels were submitted independently from the test samples and thus could not be checked for any characteristics except for the containing information.
   The average helmet weight reported calculated by manufactures complete helmed individual weights listed in the table above for samples 1 4 through 5.6.
   The helmets were received in undamaged condition and were appropriate for testing.
- The helmets were exposed to the high  $(50 \pm 2 \, ^{\circ}\text{C})$  and low  $(-20 \pm 2 \, ^{\circ}\text{C})$  temperatures for not less than 4 hours prior to testing and not exposed more than 6 hours.
- Artificial ageing conducted in accordance to section 5.4.2.3: The outer surface of the protective helmet shall be exposed successively to: ultraviolet irradiation by a 125 W xenon-filled quartz lamp for 48 h at a range of 250 mm; spraying for 4 h to 6 h with water at ambient temperature at the rate of 1
- 6. The sequence of tests performed on each helmet size and the tests performed on the same sample are given in the table below:

Table 2 — Sequence of Test and Tests per Sample

Performance Test	Sequence of Test	Sam	ple Nui	nber
Retention system effectiveness (5.6)	1st	1		
Shock absorbing capacity (5.4)	2nd	1	2	3
Retention system strength (5.5)	3rd		2	3

The fourth sample is reserved as a reference sample, which can be used by the test laboratory in case of doubt about any of the performance requirements.

Reviewed by: John Bogler Contract File No.: 904.14204

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Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu John Hill with Zan Action Ilabilic iment shall not Test Date: 14 July 2023



## **TEST SUMMARY**

	I DO WITH THE	-1013.11
Section	Requirement	Pass/Fail
4.1	Materials: For those parts of the helmet coming into contact with the skin, the material used should be known not to undergo appreciable alteration from contact with sweat or with substances likely to be found in toiletries.  Materials shall not be used which are known to cause skin disorders.	NT NT
4.2	Construction: The helmet normally consists of a means of absorbing impact energy and means of retaining the helmet on the head in an accident. The helmet should be durable and withstand handling. The helmet shall be so designed and shaped that parts of it (visor, rivets, ventilators, edges, fastening device and the like) are not likely to injure the user in normal use.  NOTE: Helmets should:  • have low weight • be ventilating • be easy to put on and take off • be usable with spectacles • not significantly interfere with the ability of the user to hear traffic noise	Pass
4.3	Field of vision: When tested in accordance with 5.7 there shall be no occultation in the field of vision bounded by angles as follows:  • horizontally: min. 105° from the longitudinal vertical median plane to the left and right hand sides  • upwards: min. 25° from the reference plane  • downwards: min. 45° from the basic plane	Pass (Onlitt
4.4	Shock absorbing capacity: The helmet shall give protection to the forehead, rear, sides, temples and crown of the head. When tested in accordance with 5.3 and 5.4 the peak acceleration shall not, for each impact, exceed 250 g for the velocity of 5.42 +0.1, -0 m/s on the flat anvil, and 4.57 +0.1, -0 m/s on the kerbstone anvil.  NOTE: These are theoretically equivalent to 1 497 mm and 1 064 mm drop heights respectively.	Pass
4.5	Durability: After being tested the helmet shall not exhibit damage that could cause significant injury to the wearer (sharp edges, points).	Pass
4.6	Retention system:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass
4.6.1	General:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass
4.6.2	Chin Strap: The chin strap shall not include a chin cup. Any chin strap shall be no less than 15 mm wide. Chin straps may be fitted with means of enhancing comfort for the wearer.	Pass

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4.6.3	Fastening Device: Any retention system shall be fitted with a device to adjust and maintain tension in the system. The device shall be capable of adjustment so that the buckle does not sit on the jaw bone.	Pass
4.6.4	Color: No part of the retention system shall be colored green.	Pass
4.6.5	Strength: When tested in accordance with 5.5, the dynamic extension of the retention system shall not exceed 35 mm and the residual extension shall not exceed 25 mm. For this purpose, extension includes slippage of the fastening device. Damage to the retention system shall be accepted provided that the above requirements are met.	Pass
	<b>NOTE:</b> In this test, slippage of the fastening device can be measured and recorded separately from other contributions to the extension but this is for information only and is not subject to a separate requirement.	
4.6.6	Effectiveness: When tested in accordance with 5.6 the helmet shall not come off the headform.	Pass
4.6.7	Ease of Release: Following the strength test in accordance with 5.5 and with the load still applied, it shall be possible to open the release system with one hand.	Pass
	Marking - Each helmet shall be marked so that the following information is legible and easily visible to the user and is likely to remain legible throughout the life of the helmet:	Pass
	a) Number of the European Standard	Pass
	b) Name or trademark of the manufacturer	Pass
	c) Designation of the model	Pass
	d) Designation, which shall be one or more of the following: Helmet for pedal cyclists, skateboarders or roller skaters	Pass
6	e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	Pass
	f) Weight of the helmet (the average mass in grams determined according to 5.2)	Pass
	g) Year and quarter of manufacture	Pass
	h) The following text:  "Warning! This helmet should not be used by children while climbing or doing other activities when there is a risk of strangulation/hanging if the child gets trapped with the helmet."	Pass
	In addition, if the helmet has components made of material which are known to be adversely affected by contact with hydrocarbons, cleaning fluids, paints, transfers or other extraneous additions, the helmet shall carry an appropriate warning.	Pass
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	If there is a consumer sales packaging, the information specified in a), b), d) and h) shall also be given on that package. The text shall be of minimum font size 12.	Pass Jugar
	1, 10, 10,	187,481
	Information supplied by the manufacturers (including importers): With every helmet, clear information in the language of the country of sale shall be given as follows:	Will
	That the helmet can only protect if it fits well and that the buyer should try different sizes and choose the size which feels secure and comfortable on the head;	Pass
	b) That the helmet should be adjusted to fit the user, e.g. the straps positioned so that they do not cover the ears, the buckle positioned away from the jawbone and the straps and buckle adjusted to be both comfortable and firm;	Pass
7	c) How the helmet should be positioned on the head to ensure the intended protection is provided (e.g. hat it should be placed so as to protect the forehead and not be pushed too far over the back of the head);	Pass
	d) That a helmet cannot always protect against injury;	Pass
	e) That a helmet subjected to a severe impact should be discarded and destroyed;	Pass
	f) A statement of the danger of modifying or removing any of the original component parts of the helmet other than as recommended by the manufacturer, and that helmets should not be adapted for the purpose of fitting accessories in a way not recommended by the manufacturer.	Pass Pass Pass
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# RETENTION SYSTEM EFFECTIVENESS TEST SUMMARY

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RETENT Helmet ID	Condition	Headform Size	ARY Pass/Fail	rhis duced opprovi
904.14204.006-1	Ambient temperature	A	Pass	Wills

# **IMPACT TEST SUMMARY REPORT**

				Anvil	Velocity (m/sec)	Peak Acc. (g)	
Helmet ID	Condition	Headform	Impact		Requirement		Pass/Fail
		Size	Location	KERBSTONE	4.57 m/s		
				FLAT	5.42 m/s	<u>&lt;</u> 250g	
				Tolerance	-0/+0.1 m/s		
004440040004	l link to me a natura	٨	FRONT	KERBSTONE	4.64	120	Pass
904.14204.006-1	High temperature	А	LF SIDE	FLAT	5.44	203	Pass
004440040000		•	REAR	FLAT	5.43	198	Pass
904.14204.006-2	Low temperature	A	CROWN	KERBSTONE	4.58	96	Pass
904.14204.006-3	Artificial aging		LF SIDE	KERBSTONE	4.66	130	Pass
904.14204.006-3	Artiliciai aging	O A	FRONT	FLAT	5.44	156	Pass

# **RETENTION SYSTEM STRENGTH TEST SUMMARY**

Helmet ID	Condition	Headform Size	Dynamic Extension (mm)	Residual Extension (mm)	Pass/Fail
904.14204.006-2	Low temperature	А	25	Lot with Pl	Pass
904.14204.006-3	Artificial aging	А	26 pri si	12 mAC	Pass

## FIELD OF VISION TEST SUMMARY

	Requirements	Test Results
Horizontal	Minimum of 105° to the left and right sides	Pass
Upward	Minimum of 25° from the reference plan	Pass
Downward	Minimum of 45° from the basic plan	Pass

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# HEADFORMS

		- 0 /20 - 1	
ITEM	HEADFORM	HEADFORM MODEL	
Headform	Full Headform	EN960 495 (A)	3167
Headform	Full Headform	EN960 535 (E)	4144
Headform	Full Headform	EN960 575 (J)	4741
Headform	Full Headform	EN960 605 (M)	5600
Headform	Full Headform	EN960 625 (O)	6175

## **IMPACT MEASURING SENSORS**

ITEM	TYPE	MODEL	S/N
Tri-axial Accelerometer	Axis X (10.02 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Y (10.01 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Z (10.04 mV/g)	PCB 356B21	LW345303

# CONDITIONING EQUIPMENT

ITEM	MANUFACTURE	MODEL	S/N	
Oven	BOXUN	92*9240MBE	8285	
Oven	/ <0	DHG-9426	1503338018	
Oven	KENTON	KH-120A	2201-020	,,,,,
Freezer	Haier	DW-25W300	BE062100N00B29578VMO	40co.
Freezer	Haier	DW-50W225	F8LMJ	Wis Cook
UV Ageing Chamber	НОТОТЕСН	HT-6014	12099	11,090,966
Hygrothermograph	Anymetre	TH-602F	3238	repitter.
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904.14204.006 - LT2323-MTB URBAN 2.0 (Green)



904.14204.006 - LT2323-MTB URBAN 2.0 (Green)

Contract File No.: 904.14204

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## 904.14204.006 - LT2323-MTB URBAN 2.0 (Green)



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- NOTICE

  1. 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)).

  2. The report is not valid if altered.

  3. Claims have to be made in the signature of the person(s) authorizing the report (ACT Lab's authorized signatory is John A. Bogler (President)).

- 4. The results of this test report relate only to the items tested.
- **5.** The results apply to the samples as received.
- 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. The results of this test report apply ASTM E29:2022 Rounding Method, unless otherwise requested or noted within the report.
- 8. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance Lebrognice die Ac with Specification".

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Technician: Terry Liu cant in full with I'mentshall not Test Date: 14 July 2023 om ACT LOB III



# JUNIPLIANCE TESTING FOR BS EN 1078:2012+A1:2012 HELMETS USED FOR PEDAL CYCLISTS AND FOR USERS OF SKATEBOARDS AND ROLLER SKATES Brand FOR BS EN 1078:2012+A USED FOR PEDAL CYCLISTS AND FOR OF SKATEBOARDS AND ROLLER SKATES Brand Model Tested Co. written opproved from

**Country of Origin** : China

: 5 and older Age Grading

Children's Product

Prepared For:

# **Leatt Corporation**

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



Issue Date: 19 July 2023

Final Report: 904.14204.007

Tested by:

# 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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### **HELMET DATA**

Brand:	LEATT	Retention System:	Nx/A
Model:	LT2323- MTB URBAN 2.0	Age Grading:	5 and older
Manufacturer:	DONGGUAN YIYANG SPORTS Co., Ltd.	Test Headform Size:	EN 960 Size 535 (E)
Date of Manufacture:	03/23	Helmet Positioning Index (HPI):	ACT Determined: 43 mm *Measured from the basic plane
Tested Size:	50-54 cm	EPS Bead Color:	Black

Helmet Number:	Weight (g):
1	437
2	436
3	440
4	441
Average:	440

2/1 8 / 12					
Conditioned Temperatures					
Lab Humidity: 57%					
Ambient Lab Temp.:	22°C				
High Temperature	50°C				
Low Temperature:	-20°C				
Artificial Aging:	33°C				

- All helmets were received in undamaged condition and were appropriate for testing.
   The accompanying helmet labels were submitted independently from the test samples and thus could not be checked for any characteristics except for the containing information.
   The average helmet weight reported calculated by manufactures complete helmed individual weights listed in the table above for samples 1 4 through 5.6.
   The helmets were received in undamaged condition and were appropriate for testing.
- The helmets were exposed to the high  $(50 \pm 2 \, ^{\circ}\text{C})$  and low  $(-20 \pm 2 \, ^{\circ}\text{C})$  temperatures for not less than 4 hours prior to testing and not exposed more than 6 hours.
- Artificial ageing conducted in accordance to section 5.4.2.3: The outer surface of the protective helmet shall be exposed successively to: ultraviolet irradiation by a 125 W xenon-filled quartz lamp for 48 h at a range of 250 mm; spraying for 4 h to 6 h with water at ambient temperature at the rate of 1
- 6. The sequence of tests performed on each helmet size and the tests performed on the same sample are given in the table below:

Table 2 — Sequence of Test and Tests per Sample

Performance Test	Sequence of Test	ce of Test Sample Nur		nber
Retention system effectiveness (5.6)	1st	1		
Shock absorbing capacity (5.4)	2nd	1	2	3
Retention system strength (5.5)	3rd		2	3

The fourth sample is reserved as a reference sample, which can be used by the test laboratory in case of doubt about any of the performance requirements.

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Technician: Terry Liu John Hill with Zan Action Ilabilic iment shall not Test Date: 14 July 2023



## **TEST SUMMARY**

	I DO WITH THE	-1013.11
Section	Requirement	Pass/Fail
4.1	Materials: For those parts of the helmet coming into contact with the skin, the material used should be known not to undergo appreciable alteration from contact with sweat or with substances likely to be found in toiletries.  Materials shall not be used which are known to cause skin disorders.	NT NT
4.2	Construction: The helmet normally consists of a means of absorbing impact energy and means of retaining the helmet on the head in an accident. The helmet should be durable and withstand handling. The helmet shall be so designed and shaped that parts of it (visor, rivets, ventilators, edges, fastening device and the like) are not likely to injure the user in normal use.  NOTE: Helmets should:  • have low weight • be ventilating • be easy to put on and take off • be usable with spectacles • not significantly interfere with the ability of the user to hear traffic noise	Pass
4.3	Field of vision: When tested in accordance with 5.7 there shall be no occultation in the field of vision bounded by angles as follows:  • horizontally: min. 105° from the longitudinal vertical median plane to the left and right hand sides  • upwards: min. 25° from the reference plane  • downwards: min. 45° from the basic plane	Pass (Onlitt
4.4	Shock absorbing capacity: The helmet shall give protection to the forehead, rear, sides, temples and crown of the head. When tested in accordance with 5.3 and 5.4 the peak acceleration shall not, for each impact, exceed 250 g for the velocity of 5.42 +0.1, -0 m/s on the flat anvil, and 4.57 +0.1, -0 m/s on the kerbstone anvil.  NOTE: These are theoretically equivalent to 1 497 mm and 1 064 mm drop heights respectively.	Pass
4.5	Durability: After being tested the helmet shall not exhibit damage that could cause significant injury to the wearer (sharp edges, points).	Pass
4.6	Retention system:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass
4.6.1	General:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass
4.6.2	Chin Strap: The chin strap shall not include a chin cup. Any chin strap shall be no less than 15 mm wide. Chin straps may be fitted with means of enhancing comfort for the wearer.	Pass

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4.6.3	Fastening Device: Any retention system shall be fitted with a device to adjust and maintain tension in the system. The device shall be capable of adjustment so that the buckle does not sit on the jaw bone.	Pass
4.6.4	Color: No part of the retention system shall be colored green.	Pass
4.6.5	Strength:  When tested in accordance with 5.5, the dynamic extension of the retention system shall not exceed 35 mm and the residual extension shall not exceed 25 mm. For this purpose, extension includes slippage of the fastening device. Damage to the retention system shall be accepted provided that the above requirements are met.	Pass
	<b>NOTE:</b> In this test, slippage of the fastening device can be measured and recorded separately from other contributions to the extension but this is for information only and is not subject to a separate requirement.	
4.6.6	Effectiveness: When tested in accordance with 5.6 the helmet shall not come off the headform.	Pass
4.6.7	Ease of Release: Following the strength test in accordance with 5.5 and with the load still applied, it shall be possible to open the release system with one hand.	Pass
	Marking - Each helmet shall be marked so that the following information is legible and easily visible to the user and is likely to remain legible throughout the life of the helmet:	Pass
	a) Number of the European Standard	Pass
	b) Name or trademark of the manufacturer	Pass
	c) Designation of the model	Pass
	d) Designation, which shall be one or more of the following: Helmet for pedal cyclists, skateboarders or roller skaters	Pass
6	e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	Pass
	f) Weight of the helmet (the average mass in grams determined according to 5.2)	Pass
	g) Year and quarter of manufacture	Pass
	h) The following text:  "Warning! This helmet should not be used by children while climbing or doing other activities when there is a risk of strangulation/hanging if the child gets trapped with the helmet."	Pass
	In addition, if the helmet has components made of material which are known to be adversely affected by contact with hydrocarbons, cleaning fluids, paints, transfers or other extraneous additions, the helmet shall carry an appropriate warning.	Pass
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	Information supplied by the manufacturers (including importers): With every helmet, clear information in the language of the country of sale shall be given as follows:	Will
	That the helmet can only protect if it fits well and that the buyer should try different sizes and choose the size which feels secure and comfortable on the head;	Pass
	b) That the helmet should be adjusted to fit the user, e.g. the straps positioned so that they do not cover the ears, the buckle positioned away from the jawbone and the straps and buckle adjusted to be both comfortable and firm;	Pass
7	c) How the helmet should be positioned on the head to ensure the intended protection is provided (e.g. hat it should be placed so as to protect the forehead and not be pushed too far over the back of the head);	Pass
	d) That a helmet cannot always protect against injury;	Pass
	e) That a helmet subjected to a severe impact should be discarded and destroyed;	Pass
	f) A statement of the danger of modifying or removing any of the original component parts of the helmet other than as recommended by the manufacturer, and that helmets should not be adapted for the purpose of fitting accessories in a way not recommended by the manufacturer.	Pass Pass Pass
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# RETENTION SYSTEM EFFECTIVENESS TEST SUMMARY

ICT	ACT Lab LLC 3280 East 59th Str	ab.com cuments		
RETENTI	ON SYSTEM EFFECTI	VENESS TEST SUMMA	RY	This duced provon
Helmet ID	Condition	Headform Size	Pass/Fail	(e)itten
904.14204.007-1	Ambient temperature	E	Pass	M

# **IMPACT TEST SUMMARY REPORT**

				Anvil	Velocity (m/sec)	Peak Acc. (g)	
Helmet ID	Condition		Impact		Requirement		Pass/Fail
			Location	KERBSTONE	4.57 m/s	<u>&lt;</u> 250g	
				FLAT	5.42 m/s		
				Tolerance	-0/+0.1 m/s		
004440040074	l link to me a natura	E	FRONT	KERBSTONE	4.62	92	Pass
904.14204.007-1	High temperature	Ц	LF SIDE	FLAT	5.43	195	Pass
004.14204.007.2	204.007-2 Low temperature E	٦	REAR	FLAT	5.52	184	Pass
904.14204.007-2		E	CROWN	KERBSTONE	4.66	121	Pass
201110010070		) E	LF SIDE	KERBSTONE	4.59	126	Pass
904.14204.007-3	Artificial aging	O LL E	FRONT	FLAT	5.43	133	Pass

# **RETENTION SYSTEM STRENGTH TEST SUMMARY**

Helmet ID	Condition	Headform Size	Dynamic Extension (mm)	Residual Extension (mm)	Pass/Fail
904.14204.007-2	Low temperature	E	24	1 10 Lill Will 100 LLO	Pass
904.14204.007-3	Artificial aging	E	22 grit sit	mAC 7	Pass

## FIELD OF VISION TEST SUMMARY

	Requirements	Test Results
Horizontal	Minimum of 105° to the left and right sides	Pass
Upward	Minimum of 25° from the reference plan	Pass
Downward	Minimum of 45° from the basic plan	Pass

Contract File No.: 904.14204

Test File: 007

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

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# HEADFORMS > 0

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ITEM	HEADFORM	MODEL	ASSEMBLY WT., GRAMS
Headform	Full Headform	EN960 495 (A)	3167
Headform	Full Headform	EN960 535 (E)	4144
Headform	Full Headform	EN960 575 (J)	4741
Headform	Full Headform	EN960 605 (M)	5600
Headform	Full Headform	EN960 625 (O)	6175

## **IMPACT MEASURING SENSORS**

ITEM	TYPE	MODEL	S/N
Tri-axial Accelerometer	Axis X (10.02 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Y (10.01 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Z (10.04 mV/g)	PCB 356B21	LW345303

# CONDITIONING EQUIPMENT

ITEM	MANUFACTURE	MODEL	S/N
Oven	BOXUN	92*9240MBE	8285
Oven	1 49	DHG-9426	1503338018
Oven	KENTON	KH-120A	2201-020
Freezer	Haier	DW-25W300	BE062100N00B29578VMO
Freezer	Haier	DW-50W225	F8LMJ
UV Ageing Chamber	НОТОТЕСН	HT-6014	12099
Hygrothermograph	Anymetre	TH-602F	3238

Contract File No.: 904.14204

Test File: 007

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904.14204.007 - LT2323-MTB URBAN 2.0 (Green)



904.14204.007 - LT2323-MTB URBAN 2.0 (Green)

Contract File No.: 904.14204

Test File: 007

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu John Fill with Jenny Mindelle e: 1, mentshall not Test Date: 14 July 2023

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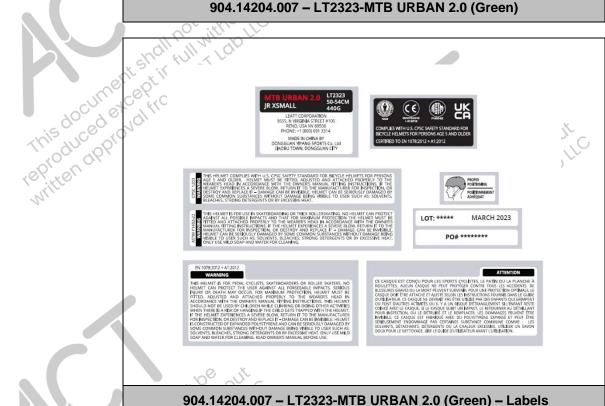
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## 904.14204.007 - LT2323-MTB URBAN 2.0 (Green)



Contract File No.: 904.14204

Test File: 007

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN withon opp

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  2. The report is not valid if altered.

  3. Claims have to be made in the signature of the person(s) authorizing the report (ACT Lab's authorized signatory is John A. Bogler (President)).

- 4. The results of this test report relate only to the items tested.
- **5.** The results apply to the samples as received.
- 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. The results of this test report apply ASTM E29:2022 Rounding Method, unless otherwise requested or noted within the report.
- 8. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance Lebrognice die Ac with Specification".

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Technician: Terry Liu cant in full with I'mentshall not Test Date: 14 July 2023 om ACT LOB III



# JUNIPLIANCE TESTING FOR BS EN 1078:2012+A1:2012 HELMETS USED FOR PEDAL CYCLISTS AND FOR USERS OF SKATEBOARDS AND ROLLER SKATES Brand FOR BS EN 1078:2012+A USED FOR PEDAL CYCLISTS AND FOR OF SKATEBOARDS AND ROLLER SKATES Brand Model Tested Co. written opproved from

**Country of Origin** : China

: 5 and older Age Grading : Not Specified Children's Product

Prepared For:

# **Leatt Corporation**

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



Issue Date: 19 July 2023

Final Report: 904.14204.010

Tested by:

# 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.: 904.14204

Test File: 010

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu Test Date: 14 July 2023 om ACT LOB III

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### **HELMET DATA**

Brand:	LEATT	Retention System:	Nx/A
Model:	LT2323- MTB URBAN 2.0	Age Grading:	5 and older
Manufacturer:	DONGGUAN YIYANG SPORTS Co., Ltd.	Test Headform Size:	EN 960 Size 535 (E)
Date of Manufacture:	03/23	Helmet Positioning Index (HPI):	ACT Determined: 43 mm *Measured from the basic plane
Tested Size:	51-55 cm	EPS Bead Color:	Black

Helmet Number:	Weight (g):
1	440
2	437
3	440
4	436
Average:	440

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Conditioned Temperatures		
Lab Humidity:	57%	
Ambient Lab Temp.:	22°C	
High Temperature	50°C	
Low Temperature:	-20°C	
Artificial Aging:	33°C	

- All helmets were received in undamaged condition and were appropriate for testing.
   The accompanying helmet labels were submitted independently from the test samples and thus could not be checked for any characteristics except for the containing information.
   The average helmet weight reported calculated by manufactures complete helmed individual weights listed in the table above for samples 1 4 through 5.6.
   The helmets were received in undamaged condition and were appropriate for testing.
- The helmets were exposed to the high  $(50 \pm 2 \, ^{\circ}\text{C})$  and low  $(-20 \pm 2 \, ^{\circ}\text{C})$  temperatures for not less than 4 hours prior to testing and not exposed more than 6 hours.
- Artificial ageing conducted in accordance to section 5.4.2.3: The outer surface of the protective helmet shall be exposed successively to: ultraviolet irradiation by a 125 W xenon-filled quartz lamp for 48 h at a range of 250 mm; spraying for 4 h to 6 h with water at ambient temperature at the rate of 1
- 6. The sequence of tests performed on each helmet size and the tests performed on the same sample are given in the table below:

Table 2 — Sequence of Test and Tests per Sample

Performance Test	Sequence of Test	Sample Number		nber
Retention system effectiveness (5.6)	1st	1		
Shock absorbing capacity (5.4)	2nd	1	2	3
Retention system strength (5.5)	3rd		2	3

The fourth sample is reserved as a reference sample, which can be used by the test laboratory in case of doubt about any of the performance requirements.

Reviewed by: John Bogler Contract File No.: 904.14204

Test File: 010

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu John Hill with Zan Action Ilabilic iment shall not Test Date: 14 July 2023



## **TEST SUMMARY**

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A	ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805   Tel 562.470.7215   Web ac	t-lab.com	inent
	TEST SUMMARY	chis doct	bblon hueur
Section	Requirement	Pass/Fail	66
4.1	Materials: For those parts of the helmet coming into contact with the skin, the material used should be known not to undergo appreciable alteration from contact with sweat or with substances likely to be found in toiletries.  Materials shall not be used which are known to cause skin disorders.	NT NT	
4.2	Construction:  The helmet normally consists of a means of absorbing impact energy and means of retaining the helmet on the head in an accident. The helmet should be durable and withstand handling. The helmet shall be so designed and shaped that parts of it (visor, rivets, ventilators, edges, fastening device and the like) are not likely to injure the user in normal use.  **NOTE*: Helmets should:    have low weight	Pass	- Jump
4.3	Field of vision: When tested in accordance with 5.7 there shall be no occultation in the field of vision bounded by angles as follows:  • horizontally: min. 105° from the longitudinal vertical median plane to the left and right hand sides  • upwards: min. 25° from the reference plane  • downwards: min. 45° from the basic plane	Pass	'Gbbl
4.4	Shock absorbing capacity: The helmet shall give protection to the forehead, rear, sides, temples and crown of the head. When tested in accordance with 5.3 and 5.4 the peak acceleration shall not, for each impact, exceed 250 g for the velocity of 5.42 +0.1, -0 m/s on the flat anvil, and 4.57 +0.1, -0 m/s on the kerbstone anvil.  NOTE: These are theoretically equivalent to 1 497 mm and 1 064 mm drop heights respectively.	Pass	
4.5	<b>Durability:</b> After being tested the helmet shall not exhibit damage that could cause significant injury to the wearer (sharp edges, points).	Pass	
4.6	Retention system:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass	
4.6.1	General:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass	in oble
4.6.2	Chin Strap: The chin strap shall not include a chin cup. Any chin strap shall be no less than 15 mm wide. Chin straps may be fitted with means of enhancing comfort for the wearer.	Pass	10/bb

Contract File No.: 904.14204

Test File: 010

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erry Liu 14 July 2023



4.6.3	Fastening Device: Any retention system shall be fitted with a device to adjust and maintain tension in the system. The device shall be capable of adjustment so that the buckle does not sit on the jaw bone.	Pass
4.6.4	Color: No part of the retention system shall be colored green.	Pass
4.6.5	Strength:  When tested in accordance with 5.5, the dynamic extension of the retention system shall not exceed 35 mm and the residual extension shall not exceed 25 mm. For this purpose, extension includes slippage of the fastening device. Damage to the retention system shall be accepted provided that the above requirements are met.	Pass
	<b>NOTE:</b> In this test, slippage of the fastening device can be measured and recorded separately from other contributions to the extension but this is for information only and is not subject to a separate requirement.	
4.6.6	Effectiveness: When tested in accordance with 5.6 the helmet shall not come off the headform.	Pass
4.6.7	Ease of Release: Following the strength test in accordance with 5.5 and with the load still applied, it shall be possible to open the release system with one hand.	Pass
	Marking - Each helmet shall be marked so that the following information is legible and easily visible to the user and is likely to remain legible throughout the life of the helmet:	Pass
	a) Number of the European Standard	Pass
	b) Name or trademark of the manufacturer	Pass
	c) Designation of the model	Pass
	d) Designation, which shall be one or more of the following: Helmet for pedal cyclists, skateboarders or roller skaters	Pass
6	e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	Pass
	f) Weight of the helmet (the average mass in grams determined according to 5.2)	Pass
	g) Year and quarter of manufacture	Pass
	h) The following text:  "Warning! This helmet should not be used by children while climbing or doing other activities when there is a risk of strangulation/hanging if the child gets trapped with the helmet."	Pass
	In addition, if the helmet has components made of material which are known to be adversely affected by contact with hydrocarbons, cleaning fluids, paints, transfers or other extraneous additions, the helmet shall carry an appropriate warning.	Pass
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Contract File No.: 904.14204

Test File: 010

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Technician: Terry Liu Test Date: 14 July 2023

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	If there is a consumer sales packaging, the information specified in a), b), d) and h) shall also be given on that package. The text shall be of minimum font size 12.	Pass Jugar
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	Information supplied by the manufacturers (including importers): With every helmet, clear information in the language of the country of sale shall be given as follows:	Will
	That the helmet can only protect if it fits well and that the buyer should try different sizes and choose the size which feels secure and comfortable on the head;	Pass
	b) That the helmet should be adjusted to fit the user, e.g. the straps positioned so that they do not cover the ears, the buckle positioned away from the jawbone and the straps and buckle adjusted to be both comfortable and firm;	Pass
7	c) How the helmet should be positioned on the head to ensure the intended protection is provided (e.g. hat it should be placed so as to protect the forehead and not be pushed too far over the back of the head);	Pass
	d) That a helmet cannot always protect against injury;	Pass
	e) That a helmet subjected to a severe impact should be discarded and destroyed;	Pass
	f) A statement of the danger of modifying or removing any of the original component parts of the helmet other than as recommended by the manufacturer, and that helmets should not be adapted for the purpose of fitting accessories in a way not recommended by the manufacturer.	Pass Pass Pass
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Contract File No.: 904.14204

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# RETENTION SYSTEM EFFECTIVENESS TEST SUMMARY

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Helmet ID 904:14204.010-1	Condition  Ambient temperature	Headform Size	Pass/Fail Pass	Witter			

# IMPACT TEST SUMMARY REPORT

				Anvil	Velocity (m/sec)	Peak Acc. (g)		
Helmet ID	Condition	Headform	Impact		Requirement		Pass/Fail	
		Size	Location	KERBSTONE	4.57 m/s	s		
				FLAT	5.42 m/s			
				Tolerance	-0/+0.1 m/s			
004 14204 040 4	Lliab town aretura	Г	FRONT	KERBSTONE	4.60	99	Pass	
904.14204.010-1	High temperature	High temperature	E	LF SIDE	FLAT	5.42	202	Pass
904.14204.010-2		E	REAR	FLAT	5.46	186	Pass	
904.14204.010-2	Low temperature	. E	CROWN	KERBSTONE	4.64	124	Pass	
004 44004 040 2	Austral October 20	)\\C_	LF SIDE	KERBSTONE	4.59	134	Pass	
904.14204.010-3	Artificial aging	O LL E	FRONT	FLAT	5.51	121	Pass	

# RETENTION SYSTEM STRENGTH TEST SUMMARY

Helmet ID	Condition	Headform Size	Dynamic Extension (mm)	Residual Extension (mm)	Pass/Fail
904.14204.010-2	Low temperature	E	26	1 10 With 110 LLO	Pass
904.14204.010-3	Artificial aging	E	25 ont st	m AC 10	Pass

# FIELD OF VISION TEST SUMMARY

	Requirements	Test Results
Horizontal	Minimum of 105° to the left and right sides	Pass
Upward	Minimum of 25° from the reference plan	Pass
Downward	Minimum of 45° from the basic plan	Pass

Contract File No.: 904.14204

Test File: 010

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

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	ACTLab	LLC 3280 East 59th Street, Long Beach,	CA 90805 Tel 562.470.7215 Web ac	et-lab.com
	DROP SYSTEM	UIPMENT INFORMATIO  1: CADEX Triaxial Impact Macl  ARE: CADEX Impact Control S	nine - Monorail	This document of the total of t
is doced	ITEM	MODEL	S/N	
This god of b	Test Computer	HP OptiPlex 5040	9HRYJG2	
16 Stiffer C.	Data Acquisition Board	CADEX	13EC16A	
Wille	Time Gate	CADEX	HVTG120120810-1	
	Control Center System	CADEX	CCS120120810-1	
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# HEADFORMS

ITEM	HEADFORM	MODEL	ASSEMBLY WT., GRAMS
Headform	Full Headform	EN960 495 (A)	3167
Headform	Full Headform	EN960 535 (E)	4144
Headform	Full Headform	EN960 575 (J)	4741
Headform	Full Headform	EN960 605 (M)	5600
Headform	Full Headform	EN960 625 (O)	6175

## **IMPACT MEASURING SENSORS**

ITEM	TYPE	MODEL	S/N
Tri-axial Accelerometer	Axis X (10.02 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Y (10.01 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Z (10.04 mV/g)	PCB 356B21	LW345303

# CONDITIONING EQUIPMENT

ITEM	MANUFACTURE	MODEL	S/N	
Oven	BOXUN	92*9240MBE	8285	
Oven	/ <0	DHG-9426	1503338018	
Oven	KENTON	KH-120A	2201-020	,,,,,
Freezer	Haier	DW-25W300	BE062100N00B29578VMO	40co.
Freezer	Haier	DW-50W225	F8LMJ	Wis Cook
UV Ageing Chamber	НОТОТЕСН	HT-6014	12099	11,090,966
Hygrothermograph	Anymetre	TH-602F	3238	repitter.
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904.14204.010 - LT2323-MTB URBAN 2.0 (Green)



904.14204.010 - LT2323-MTB URBAN 2.0 (Green)

Contract File No.: 904.14204

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Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu John Full with Jenny Mindelle s: 1, ment shall not Test Date: 14 July 2023

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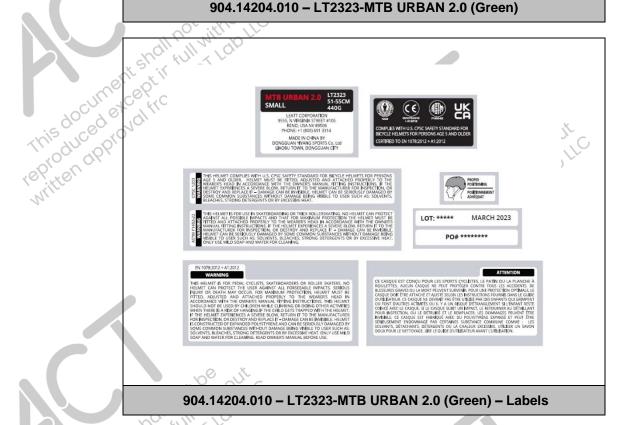
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## 904.14204.010 - LT2323-MTB URBAN 2.0 (Green)



Contract File No.: 904.14204

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  3. Claims have to be made in the signature of the person(s) authorizing the report (ACT Lab's authorized signatory is John A. Bogler (President)).

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- 7. The results of this test report apply ASTM E29:2022 Rounding Method, unless otherwise requested or noted within the report.
- 8. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance with Specification".

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Technician: Terry Liu cant in full with I'mentshall not Test Date: 14 July 2023 om ACT LOB III



# CONTINUE TESTING FOR BS EN 1078:2012+A1:2012 HELMETS USED FOR PEDAL CYCLISTS AND FOR USERS OF SKATEBOARDS AND ROLLER SKATES Brand FOR BS EN 1078:2012+A USED FOR PEDAL CYCLISTS AND FOR OF SKATEBOARDS AND ROLLER SKATES Brand Model Tested Co. written opproved from

**Country of Origin** : China

: 5 and older Age Grading : Not Specified Children's Product

Prepared For:

# **Leatt Corporation**

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



Issue Date: 19 July 2023

Final Report: 904.14204.003

Tested by

# 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.: 904.14204

Test File: 003

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu Test Date: 10 July 2023 om ACT LOB III

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### **HELMET DATA**

Brand:	LEATT	Retention System:	Nx/A
Model:	LT2323- MTB URBAN 2.0	Age Grading:	5 and older
Manufacturer:	DONGGUAN YIYANG SPORTS Co., Ltd.	Test Headform Size:	EN 960 Size 575 (J)
Date of Manufacture:	03/23	Helmet Positioning Index (HPI):	ACT Determined: 44 mm *Measured from the basic plane
Tested Size:	55-59 cm	EPS Bead Color:	Black

Helmet Number:	Weight (g):
1	465
2	465
3	467
4	463
Average:	470

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Conditioned Ter	Conditioned Temperatures				
Lab Humidity: 57%					
Ambient Lab Temp.:	22°C				
High Temperature	50°C				
Low Temperature:	-20°C				
Artificial Aging:	33°C				

- All helmets were received in undamaged condition and were appropriate for testing.
   The accompanying helmet labels were submitted independently from the test samples and thus could not be checked for any characteristics except for the containing information.
   The average helmet weight reported calculated by manufactures complete helmed individual weights listed in the table above for samples 1 4 through 5.6.
   The helmets were received in undamaged condition and were appropriate for testing.
- The helmets were exposed to the high  $(50 \pm 2 \, ^{\circ}\text{C})$  and low  $(-20 \pm 2 \, ^{\circ}\text{C})$  temperatures for not less than 4 hours prior to testing and not exposed more than 6 hours.
- Artificial ageing conducted in accordance to section 5.4.2.3: The outer surface of the protective helmet shall be exposed successively to: ultraviolet irradiation by a 125 W xenon-filled quartz lamp for 48 h at a range of 250 mm; spraying for 4 h to 6 h with water at ambient temperature at the rate of 1
- 6. The sequence of tests performed on each helmet size and the tests performed on the same sample are given in the table below:

Table 2 — Sequence of Test and Tests per Sample

Performance Test	Sequence of Test	Sample Number		nber
Retention system effectiveness (5.6)	1st	1		
Shock absorbing capacity (5.4)	2nd	1	2	3
Retention system strength (5.5)	3rd		2	3

The fourth sample is reserved as a reference sample, which can be used by the test laboratory in case of doubt about any of the performance requirements.

Reviewed by: John Bogler Contract File No.: 904.14204

Test File: 003

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s: 10 July Technician: Terry Liu Ziri ku win labili Test Date: 10 July 2023



## **TEST SUMMARY**

	I DO WITH THE	-1013.11
Section	Requirement	Pass/Fail
4.1	Materials: For those parts of the helmet coming into contact with the skin, the material used should be known not to undergo appreciable alteration from contact with sweat or with substances likely to be found in toiletries.  Materials shall not be used which are known to cause skin disorders.	NT NT
4.2	Construction: The helmet normally consists of a means of absorbing impact energy and means of retaining the helmet on the head in an accident. The helmet should be durable and withstand handling. The helmet shall be so designed and shaped that parts of it (visor, rivets, ventilators, edges, fastening device and the like) are not likely to injure the user in normal use.  NOTE: Helmets should:  • have low weight • be ventilating • be easy to put on and take off • be usable with spectacles • not significantly interfere with the ability of the user to hear traffic noise	Pass
4.3	Field of vision: When tested in accordance with 5.7 there shall be no occultation in the field of vision bounded by angles as follows:  • horizontally: min. 105° from the longitudinal vertical median plane to the left and right hand sides  • upwards: min. 25° from the reference plane  • downwards: min. 45° from the basic plane	Pass (Onlitt
4.4	Shock absorbing capacity: The helmet shall give protection to the forehead, rear, sides, temples and crown of the head. When tested in accordance with 5.3 and 5.4 the peak acceleration shall not, for each impact, exceed 250 g for the velocity of 5.42 +0.1, -0 m/s on the flat anvil, and 4.57 +0.1, -0 m/s on the kerbstone anvil.  NOTE: These are theoretically equivalent to 1 497 mm and 1 064 mm drop heights respectively.	Pass
4.5	Durability: After being tested the helmet shall not exhibit damage that could cause significant injury to the wearer (sharp edges, points).	Pass
4.6	Retention system:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass
4.6.1	General:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass
4.6.2	Chin Strap: The chin strap shall not include a chin cup. Any chin strap shall be no less than 15 mm wide. Chin straps may be fitted with means of enhancing comfort for the wearer.	Pass

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Technician: Terry Liu Test Date: 10 July 2023



4.6.3  Fastening Device: Any retention system shall be fitted with a device to adjust and maintain system. The device shall be capable of adjustment so that the buckle of jaw bone.  Color: No part of the retention system shall be colored green.  Strength: When tested in accordance with 5.5, the dynamic extension of the rete shall not exceed 35 mm and the residual extension shall not exceed 25 purpose, extension includes slippage of the fastening device. Damage system shall be accepted provided that the above requirements are managements and the extension but this is for information only and is separate requirement.  Ceffectiveness: When tested in accordance with 5.6 the helmet shall not come off the lease of Release: Following the strength test in accordance with 5.5 and with the load stip be possible to open the release system with one hand.  Marking - Each helmet shall be marked so that the following information is legible to the user and is likely to remain legible throughout the life of the helm a) Number of the European Standard  b) Name or trademark of the manufacturer  c) Designation, which shall be one or more of the following: Helroyclists, skateboarders or roller skaters  e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit of the helmet of the helmet (the average mass in grams determined)	
4.6.5  No part of the retention system shall be colored green.  Strength: When tested in accordance with 5.5, the dynamic extension of the rete shall not exceed 35 mm and the residual extension shall not exceed 25 purpose, extension includes slippage of the fastening device. Damage system shall be accepted provided that the above requirements are m  NOTE: In this test, slippage of the fastening device can be measured and rece from other contributions to the extension but this is for information only and is separate requirement.  Effectiveness: When tested in accordance with 5.6 the helmet shall not come off the lease of Release: Following the strength test in accordance with 5.5 and with the load stip be possible to open the release system with one hand.  Marking - Each helmet shall be marked so that the following information is legible to the user and is likely to remain legible throughout the life of the helm  a) Number of the European Standard  b) Name or trademark of the manufacturer  c) Designation, which shall be one or more of the following: Helr cyclists, skateboarders or roller skaters  e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	Pas
<ul> <li>When tested in accordance with 5.5, the dynamic extension of the rete shall not exceed 35 mm and the residual extension shall not exceed 25 purpose, extension includes slippage of the fastening device. Damage system shall be accepted provided that the above requirements are minor of the contributions to the extension but this is for information only and is separate requirement.</li> <li>Effectiveness: When tested in accordance with 5.6 the helmet shall not come off the line of the line of the extension but this is for information only and is separate requirement.</li> <li>Ease of Release: Following the strength test in accordance with 5.5 and with the load stiple possible to open the release system with one hand.</li> <li>Marking - Each helmet shall be marked so that the following information is legible to the user and is likely to remain legible throughout the life of the helm.  a) Number of the European Standard  b) Name or trademark of the manufacturer  c) Designation of the model  d) Designation, which shall be one or more of the following: Helmed cyclists, skateboarders or roller skaters  e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit.</li> </ul>	
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4.6.6 When tested in accordance with 5.6 the helmet shall not come off the 1.6.7  Ease of Release: Following the strength test in accordance with 5.5 and with the load stippe possible to open the release system with one hand.  Marking - Each helmet shall be marked so that the following information is legible to the user and is likely to remain legible throughout the life of the helm a) Number of the European Standard b) Name or trademark of the manufacturer c) Designation of the model d) Designation, which shall be one or more of the following: Helm cyclists, skateboarders or roller skaters e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	
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b) Name or trademark of the manufacturer  c) Designation of the model  d) Designation, which shall be one or more of the following: Helr cyclists, skateboarders or roller skaters  e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	
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e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	Pas
6 (in centimeters) of the head which the helmet is intended to fit	met for pedal Pas
f) Weight of the helmet (the average mass in grams determined	
	according to 5.2) Pas
g) Year and quarter of manufacture	Pas
h) The following text:  "Warning! This helmet should not be used by children while cli other activities when there is a risk of strangulation/hanging if trapped with the helmet."	
In addition, if the helmet has components made of material who be adversely affected by contact with hydrocarbons, cleaning transfers or other extraneous additions, the helmet shall carry warning.	fluids, paints,

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Technician: Terry Liu Test Date: 10 July 2023

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	If there is a consumer sales packaging, the information specified in a), b), d) and h) shall also be given on that package. The text shall be of minimum font size 12.	Pass July
	arts in C	187,481
	Information supplied by the manufacturers (including importers): With every helmet, clear information in the language of the country of sale shall be given as follows:	Will
	<ul> <li>a) That the helmet can only protect if it fits well and that the buyer should try different sizes and choose the size which feels secure and comfortable on the head;</li> </ul>	Pass
	<ul> <li>b) That the helmet should be adjusted to fit the user, e.g. the straps positioned so that they do not cover the ears, the buckle positioned away from the jawbone and the straps and buckle adjusted to be both comfortable and firm;</li> </ul>	Pass
7	<ul> <li>c) How the helmet should be positioned on the head to ensure the intended protection is provided (e.g. hat it should be placed so as to protect the forehead and not be pushed too far over the back of the head);</li> </ul>	Pass
	d) That a helmet cannot always protect against injury;	Pass
	e) That a helmet subjected to a severe impact should be discarded and destroyed;	Pass
	f) A statement of the danger of modifying or removing any of the original component parts of the helmet other than as recommended by the manufacturer, and that helmets should not be adapted for the purpose of fitting accessories in a way not recommended by the manufacturer.	Pass
s doc	way not recommended by the manufacturer.	Pass Pass do

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# RETENTION SYSTEM EFFECTIVENESS TEST SUMMARY

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RETENT	ION SYSTEM EFFECT	IVENESS TEST SUMMA	ARY	This duced envol
Helmet ID	Condition	Headform Size	Pass/Fail	(Shipping)
904.14204.003-1	Ambient temperature	J	Pass	Me

# **IMPACT TEST SUMMARY REPORT**

				Anvil	Velocity (m/sec)	Peak Acc. (g)	
Helmet ID	Condition	Headform	Impact		Requirement		Pass/Fail
		Size	Location	KERBSTONE	4.57 m/s		
				FLAT	5.42 m/s	<u>&lt;</u> 250g	
				Tolerance	-0/+0.1 m/s		
004 14204 002 1	ligh to man a ratura	_	FRONT	KERBSTONE	4.65	92	Pass
904.14204.003-1	High temperature	J	LF SIDE	FLAT	5.51	200	Pass
904.14204.003-2	Low town aretura		REAR	FLAT	5.48	157	Pass
904.14204.003-2	Low temperature	J K	CROWN	KERBSTONE	4.61	119	Pass
20111001000	Artificiál aging J		LF SIDE	KERBSTONE	4.58	128	Pass
904.14204.003-3		FRONT	FLAT	5.46	122	Pass	

# RETENTION SYSTEM STRENGTH TEST SUMMARY

Helmet ID	Condition	Headform Size	Dynamic Extension (mm)	Residual Extension (mm)	Pass/Fail
904.14204.003-2	Low temperature	J	23	1 Lot Mithe II	Pass
904.14204.003-3	Artificial aging	J	20 ent sit	MAC 7	Pass

# FIELD OF VISION TEST SUMMARY

	Test Results	
Horizontal Minimum of 105° to the left and right sides		Pass
Upward Minimum of 25° from the reference plan		Pass
Downward	Minimum of 45° from the basic plan	Pass

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## EQUIPMENT INFORMATION

ACI	ACT Lab LLC 3280 East 59th St	reet, Long Beach, CA 90805	<b>Tel</b> 562.470.7215 <b>Web</b> act-lab
cument shall not be	EQUIPMENT IN DP SYSTEM: CADEX Triaxia SOFTWARE: CADEX Imp	al Impact Machine - M	
ITEM ITEM	MOD	EL	S/N
Test Compute	er HP OptiPl	ex 5040	9HRYJG2
Data Acquisition Time Gate	Board CAD	<b>X</b>	13EC16A
Time Gate	CAD	X 3/0, 4/	HVTG120120810-1
Control Center S	ystem CAD	X SUL SELL	CCS120120810-1

## HEADFORMS

		- 0 /20 - 1	
ITEM	HEADFORM	MODEL	ASSEMBLY WT., GRAMS
Headform	Full Headform	EN960 495 (A)	3167
Headform	Full Headform	EN960 535 (E)	4144
Headform	Full Headform	EN960 575 (J)	4741
Headform	Full Headform	EN960 605 (M)	5600
Headform	Full Headform	EN960 625 (O)	6175

#### **IMPACT MEASURING SENSORS**

ITEM	TYPE	MODEL	S/N
Tri-axial Accelerometer	Axis X (10.02 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Y (10.01 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Z (10.04 mV/g)	PCB 356B21	LW345303

#### CONDITIONING EQUIPMENT

ITEM	MANUFACTURE	MODEL	S/N
Oven	BOXUN	92*9240MBE	8285
Oven	1 49	DHG-9426	1503338018
Oven	KENTON	KH-120A	2201-020
Freezer	Haier	DW-25W300	BE062100N00B29578VMO
Freezer	Haier	DW-50W225	F8LMJ
UV Ageing Chamber	НОТОТЕСН	HT-6014	12099
Hygrothermograph	Anymetre	TH-602F	3238

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904.14204.003 - LT2323-MTB URBAN 2.0 (White)



904.14204.003 - LT2323-MTB URBAN 2.0 (White)

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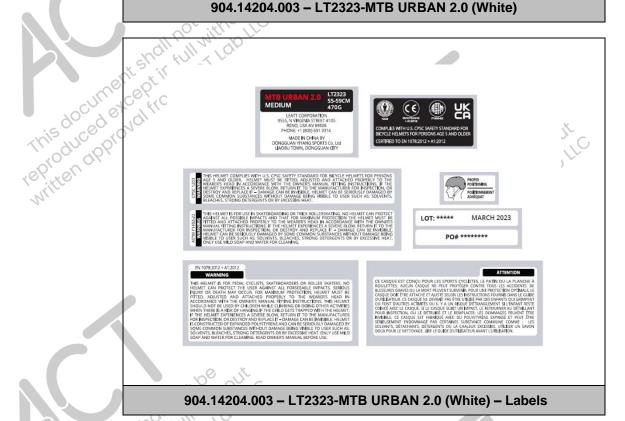
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#### 904.14204.003 - LT2323-MTB URBAN 2.0 (White)



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- NOTICE

  1. 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)).

  2. The report is not valid if altered.

  3. Claims have to be made in the signature of the person(s) authorizing the report (ACT Lab's authorized signatory is John A. Bogler (President)).

- 4. The results of this test report relate only to the items tested.
- **5.** The results apply to the samples as received.
- 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. The results of this test report apply ASTM E29:2022 Rounding Method, unless otherwise requested or noted within the report.
- 8. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance Lebrognice gless with Specification".

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Technician: Terry Liu cant in full with an Imentshall not Test Date: 10 July 2023 in ACT LOB III



# JUNIPLIANCE TESTING FOR BS EN 1078:2012+A1:2012 HELMETS USED FOR PEDAL CYCLISTS AND FOR USERS OF SKATEBOARDS AND ROLLER SKATES Brand FOR BS EN 1078:2012+A USED FOR PEDAL CYCLISTS AND FOR OF SKATEBOARDS AND ROLLER SKATES Brand Model Tested Co. written opproved from

**Country of Origin** : China

: 5 and older Age Grading : Not Specified Children's Product

Prepared For:

### **Leatt Corporation**

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



Issue Date: 19 July 2023

Final Report: 904.14204.013

Tested by:

## 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.

Contract File No.: 904.14204

Test File: 013

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu Test Date: 17 July 2023 in ACT LOB III

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#### **HELMET DATA**

Brand:	LEATT	Retention System:	Nx/A
Model:	LT2323- MTB URBAN 2.0	Age Grading:	5 and older
Manufacturer:	DONGGUAN YIYANG SPORTS Co., Ltd.	Test Headform Size:	EN 960 Size 605 (M)
Date of Manufacture:	03/23	Helmet Positioning Index (HPI):	ACT Determined: 47 mm *Measured from the basic plane
Tested Size:	59-63 cm	EPS Bead Color:	Black

Helmet Number:	Weight (g):
1	506
2	508
3	508
4	507
Average:	510

The Kill De					
Conditioned Temperatures					
Lab Humidity: 57%					
Ambient Lab Temp.:	22°C				
High Temperature	50°C				
Low Temperature:	-20°C				
Artificial Aging:	33°C				

- All helmets were received in undamaged condition and were appropriate for testing.
   The accompanying helmet labels were submitted independently from the test samples and thus could not be checked for any characteristics except for the containing information.
   The average helmet weight reported calculated by manufactures complete helmed individual weights listed in the table above for samples 1 4 through 5.6.
   The helmets were received in undamaged condition and were appropriate for testing.
- The helmets were exposed to the high  $(50 \pm 2 \, ^{\circ}\text{C})$  and low  $(-20 \pm 2 \, ^{\circ}\text{C})$  temperatures for not less than 4 hours prior to testing and not exposed more than 6 hours.
- Artificial ageing conducted in accordance to section 5.4.2.3: The outer surface of the protective helmet shall be exposed successively to: ultraviolet irradiation by a 125 W xenon-filled quartz lamp for 48 h at a range of 250 mm; spraying for 4 h to 6 h with water at ambient temperature at the rate of 1
- 6. The sequence of tests performed on each helmet size and the tests performed on the same sample are given in the table below:

Table 2 — Sequence of Test and Tests per Sample

Performance Test	Sequence of Test	Sample Number		nber
Retention system effectiveness (5.6)	1st	1		
Shock absorbing capacity (5.4)	2nd	1	2	3
Retention system strength (5.5)	3rd		2	3

The fourth sample is reserved as a reference sample, which can be used by the test laboratory in case of doubt about any of the performance requirements.

Reviewed by: John Bogler Contract File No.: 904.14204

Test File: 013

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s: 17 July Technician: Terry Liu Zan Action Ilability Test Date: 17 July 2023



#### **TEST SUMMARY**

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Section	Requirement	Pass/Fail			
4.1	Materials: For those parts of the helmet coming into contact with the skin, the material used should be known not to undergo appreciable alteration from contact with sweat or with substances likely to be found in toiletries.  Materials shall not be used which are known to cause skin disorders.	NT NT			
4.2	Construction: The helmet normally consists of a means of absorbing impact energy and means of retaining the helmet on the head in an accident. The helmet should be durable and withstand handling. The helmet shall be so designed and shaped that parts of it (visor, rivets, ventilators, edges, fastening device and the like) are not likely to injure the user in normal use.  NOTE: Helmets should:  • have low weight • be ventilating • be easy to put on and take off • be usable with spectacles • not significantly interfere with the ability of the user to hear traffic noise	Pass			
4.3	Field of vision: When tested in accordance with 5.7 there shall be no occultation in the field of vision bounded by angles as follows:  • horizontally: min. 105° from the longitudinal vertical median plane to the left and right hand sides  • upwards: min. 25° from the reference plane  • downwards: min. 45° from the basic plane	Pass (Onlitt			
4.4	Shock absorbing capacity: The helmet shall give protection to the forehead, rear, sides, temples and crown of the head. When tested in accordance with 5.3 and 5.4 the peak acceleration shall not, for each impact, exceed 250 g for the velocity of 5.42 +0.1, -0 m/s on the flat anvil, and 4.57 +0.1, -0 m/s on the kerbstone anvil.  NOTE: These are theoretically equivalent to 1 497 mm and 1 064 mm drop heights respectively.	Pass			
4.5	Durability: After being tested the helmet shall not exhibit damage that could cause significant injury to the wearer (sharp edges, points).	Pass			
4.6	Retention system:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass			
4.6.1	General:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass			
4.6.2	Chin Strap: The chin strap shall not include a chin cup. Any chin strap shall be no less than 15 mm wide. Chin straps may be fitted with means of enhancing comfort for the wearer.	Pass			

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Technician: Terry Liu Test Date: 17 July 2023



		_ ,
4.6.3	Fastening Device: Any retention system shall be fitted with a device to adjust and maintain tension in the system. The device shall be capable of adjustment so that the buckle does not sit on the jaw bone.	Pass
4.6.4	Color: No part of the retention system shall be colored green.	Pass
4.6.5	Strength: When tested in accordance with 5.5, the dynamic extension of the retention system shall not exceed 35 mm and the residual extension shall not exceed 25 mm. For this purpose, extension includes slippage of the fastening device. Damage to the retention system shall be accepted provided that the above requirements are met.  NOTE: In this test, slippage of the fastening device can be measured and recorded separately	Pass
	from other contributions to the extension but this is for information only and is not subject to a separate requirement.	
4.6.6	Effectiveness: When tested in accordance with 5.6 the helmet shall not come off the headform.	Pass
4.6.7	Ease of Release: Following the strength test in accordance with 5.5 and with the load still applied, it shall be possible to open the release system with one hand.	Pass
	Marking - Each helmet shall be marked so that the following information is legible and easily visible to the user and is likely to remain legible throughout the life of the helmet:	Pass
	a) Number of the European Standard	Pass
	b) Name or trademark of the manufacturer	Pass
	c) Designation of the model	Pass
	d) Designation, which shall be one or more of the following: Helmet for pedal cyclists, skateboarders or roller skaters	Pass
6	e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	Pass
	f) Weight of the helmet (the average mass in grams determined according to 5.2)	Pass
	g) Year and quarter of manufacture	Pass
	h) The following text:  "Warning! This helmet should not be used by children while climbing or doing other activities when there is a risk of strangulation/hanging if the child gets trapped with the helmet."	Pass
	In addition, if the helmet has components made of material which are known to be adversely affected by contact with hydrocarbons, cleaning fluids, paints, transfers or other extraneous additions, the helmet shall carry an appropriate warning.	Pass
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Technician: Terry Liu Test Date: 17 July 2023

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	If there is a consumer sales packaging, the information specified in a), b), d) and h) shall also be given on that package. The text shall be of minimum font size 12.	Pass July
	arts in C	187,481
	Information supplied by the manufacturers (including importers): With every helmet, clear information in the language of the country of sale shall be given as follows:	Will
	<ul> <li>a) That the helmet can only protect if it fits well and that the buyer should try different sizes and choose the size which feels secure and comfortable on the head;</li> </ul>	Pass
	<ul> <li>b) That the helmet should be adjusted to fit the user, e.g. the straps positioned so that they do not cover the ears, the buckle positioned away from the jawbone and the straps and buckle adjusted to be both comfortable and firm;</li> </ul>	Pass
7	<ul> <li>c) How the helmet should be positioned on the head to ensure the intended protection is provided (e.g. hat it should be placed so as to protect the forehead and not be pushed too far over the back of the head);</li> </ul>	Pass
	d) That a helmet cannot always protect against injury;	Pass
	e) That a helmet subjected to a severe impact should be discarded and destroyed;	Pass
	f) A statement of the danger of modifying or removing any of the original component parts of the helmet other than as recommended by the manufacturer, and that helmets should not be adapted for the purpose of fitting accessories in a way not recommended by the manufacturer.	Pass
S doc	way not recommended by the manufacturer.	Pass Pass do

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Contract File No.: 904.14204

Test File: 013

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#### RETENTION SYSTEM EFFECTIVENESS TEST SUMMARY

ICT	ACT Lab LLC 3280 East 59th Str	eet, Long Beach, CA 90805   <b>Tel</b> 56	2.470.7215   <b>Web</b> act-l	ab.com Cumented
RETENTION Helmet ID	ON SYSTEM EFFECTI	VENESS TEST SUMMA	RY Pass/Fail	This doed broyd
904.14204.013-1	Ambient temperature	M M	Pass	Witter

#### **IMPACT TEST SUMMARY REPORT**

				Anvil	Velocity (m/sec)	Peak Acc. (g)	
Helmet ID	Condition	Headform	Impact		Requirement		Pass/Fail
		Size	Location	KERBSTONE	4.57 m/s		Pass
				FLAT	5.42 m/s	<u>&lt;</u> 250g	
				Tolerance	-0/+0.1 m/s		
904.14204.013-1	ligh tomporature	М	FRONT	KERBSTONE	4.60	93	Pass
904.14204.013-1	High temperature	IVI	LF SIDE	FLAT	5.45	205	Pass
004 44204 042 2	Low town aretura	М	REAR	FLAT	5.50	212	Pass
904.14204.013-2	Low temperature	IVI	CROWN	KERBSTONE	4.59	108	Pass
004 14204 042 2	A stificial Dogina		LF SIDE	KERBSTONE	4.66	126	Pass
904.14204.013-3	Artificial aging	M	FRONT	FLAT	5.47	152	Pass

#### RETENTION SYSTEM STRENGTH TEST SUMMARY

Helmet ID	Condition	Headform Size	Dynamic Extension (mm)	Residual Extension (mm)	Pass/Fail
904.14204.013-2	Low temperature	М	26	100 vitto IIO	Pass
904.14204.013-3	Artificial aging	М	27 ent si	m AC 11	Pass

#### FIELD OF VISION TEST SUMMARY

	Requirements	Test Results
Horizontal	Minimum of 105° to the left and right sides	Pass
Upward	Minimum of 25° from the reference plan	Pass
Downward	Minimum of 45° from the basic plan	Pass

Contract File No.: 904.14204

Test File: 013

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AC	ACTLabl	.LC 3280 East 59th Street, Long Beach,	CA 90805   <b>Tel</b> 562.470.7215   <b>Web</b> act-lab
cument sh	DROP SYSTEM	UIPMENT INFORMATION  : CADEX Triaxial Impact Mack RE: CADEX Impact Control St	hine - Monorail
1915 100g	ITEM	MODEL	S/N
111,090064	Test Computer	HP OptiPlex 5040	9HRYJG2
reprocessor Da	ata Acquisition Board	CADEX	13EC16A
Wille	Time Gate	CADEX	HVTG120120810-1
Co	ontrol Center System	CADEX	CCS120120810-1

## HEADFORMS

		- 0 /20 - 1	
ITEM	HEADFORM	MODEL	ASSEMBLY WT., GRAMS
Headform	Full Headform	EN960 495 (A)	3167
Headform	Full Headform	EN960 535 (E)	4144
Headform	Full Headform	EN960 575 (J)	4741
Headform	Full Headform	EN960 605 (M)	5600
Headform	Full Headform	EN960 625 (O)	6175

#### **IMPACT MEASURING SENSORS**

ITEM	TYPE	MODEL	S/N
Tri-axial Accelerometer	Axis X (10.02 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Y (10.01 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Z (10.04 mV/g)	PCB 356B21	LW345303

#### CONDITIONING EQUIPMENT

ITEM	MANUFACTURE	MODEL	S/N
Oven	BOXUN	92*9240MBE	8285
Oven	1 49	DHG-9426	1503338018
Oven	KENTON	KH-120A	2201-020
Freezer	Haier	DW-25W300	BE062100N00B29578VMO
Freezer	Haier	DW-50W225	F8LMJ
UV Ageing Chamber	НОТОТЕСН	HT-6014	12099
Hygrothermograph	Anymetre	TH-602F	3238

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904.14204.013 - LT2323-MTB URBAN 2.0 (Green)



904.14204.013 - LT2323-MTB URBAN 2.0 (Green)

Contract File No.: 904.14204

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Technician: Terry Liu Jorgan Full with Jenny Mindelle s:1 Test Date: 17 July 2023

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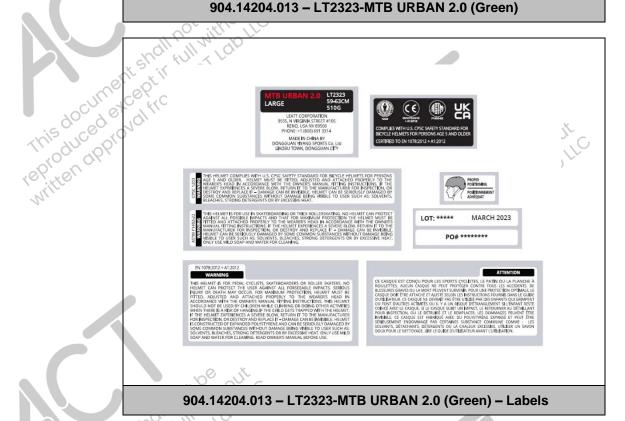
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#### 904.14204.013 - LT2323-MTB URBAN 2.0 (Green)



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  2. The report is not valid if altered.

  3. Claims have to be made in the signature of the person(s) authorizing the report (ACT Lab's authorized signatory is John A. Bogler (President)).

- 4. The results of this test report relate only to the items tested.
- **5.** The results apply to the samples as received.
- 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. The results of this test report apply ASTM E29:2022 Rounding Method, unless otherwise requested or noted within the report.
- 8. Decision rule applied according to "ILAC-G8:09/2019 Guidelines on the Reporting of Compliance Lebrognice gless with Specification".

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Technician: Terry Liu cant in full with imentshall not Test Date: 17 July 2023 om ACT LOB III



# JUNIPLIANCE TESTING FOR BS EN 1078:2012+A1:2012 HELMETS USED FOR PEDAL CYCLISTS AND FOR USERS OF SKATEBOARDS AND ROLLER SKATES Brand FOR BS EN 1078:2012+A USED FOR PEDAL CYCLISTS AND FOR OF SKATEBOARDS AND ROLLER SKATES Brand Model Tested Co. written opproved from

**Country of Origin** : China

: 5 and older Age Grading : Not Specified Children's Product

Prepared For:

### **Leatt Corporation**

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



Final Report: 904.14204.014

## 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.

Contract File No.: 904.14204

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Technician: Terry Liu Test Date: 17 July 2023 in ACT LOB III

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#### **HELMET DATA**

Brand:	LEATT	Retention System:	Nx/A		
Model:	LT2323- MTB URBAN 2.0	Age Grading:	5 and older		
Manufacturer:	DONGGUAN YIYANG SPORTS Co., Ltd.	Test Headform Size:	EN 960 Size 625 (O)		
Date of Manufacture:	03/23	Helmet Positioning Index (HPI):	ACT Determined: 48 mm *Measured from the basic plane		
Tested Size:	59-63 cm	EPS Bead Color:	Black		

Helmet Number:	Weight (g):
1	509
2	505
3	508
4	508
Average:	510

Conditioned Temperatures					
Lab Humidity:	57%				
Ambient Lab Temp.:	22°C				
High Temperature	50°C				
Low Temperature:	-20°C				
Artificial Aging:	33°C				

- All helmets were received in undamaged condition and were appropriate for testing.
   The accompanying helmet labels were submitted independently from the test samples and thus could not be checked for any characteristics except for the containing information.
   The average helmet weight reported calculated by manufactures complete helmer individual weights listed in the table above for samples 1.4.
   The helmets were
- The helmets were exposed to the high  $(50 \pm 2 \, ^{\circ}\text{C})$  and low  $(-20 \pm 2 \, ^{\circ}\text{C})$  temperatures for not less than 4 hours prior to testing and not exposed more than 6 hours.
- Artificial ageing conducted in accordance to section 5.4.2.3: The outer surface of the protective helmet shall be exposed successively to: ultraviolet irradiation by a 125 W xenon-filled quartz lamp for 48 h at a range of 250 mm; spraying for 4 h to 6 h with water at ambient temperature at the rate of 1
- 6. The sequence of tests performed on each helmet size and the tests performed on the same sample are given in the table below:

Table 2 — Sequence of Test and Tests per Sample

Performance Test	Sequence of Test	Sample Number		nber
Retention system effectiveness (5.6)	1st	1		
Shock absorbing capacity (5.4)	2nd	1	2	3
Retention system strength (5.5)	3rd		2	3

The fourth sample is reserved as a reference sample, which can be used by the test laboratory in case of doubt about any of the performance requirements.

Reviewed by: John Bogler Contract File No.: 904.14204

Test File: 014

Control Document: Official ACT BS EN 1078 Report Template CN 08 June 2023 Rev.9 SharePoint/GlobalResourceLibrary/Reporting/ReportTemplates/Helmets/EN

Technician: Terry Liu John Hill with Zan Action Ilability iment shall not Test Date: 17 July 2023



#### **TEST SUMMARY**

	A Witte		
A	ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805   Tel 562.470.7215   Web ac	t-lab.com	ment
	TEST SUMMARY	wis doc	ineur
Section	Requirement	Pass/Fail	66
4.1	Materials: For those parts of the helmet coming into contact with the skin, the material used should be known not to undergo appreciable alteration from contact with sweat or with substances likely to be found in toiletries.  Materials shall not be used which are known to cause skin disorders.	NT NT	
4.2	Construction:  The helmet normally consists of a means of absorbing impact energy and means of retaining the helmet on the head in an accident. The helmet should be durable and withstand handling. The helmet shall be so designed and shaped that parts of it (visor, rivets, ventilators, edges, fastening device and the like) are not likely to injure the user in normal use.  **NOTE*: Helmets should:    have low weight	Pass	Sume
4.3	Field of vision: When tested in accordance with 5.7 there shall be no occultation in the field of vision bounded by angles as follows:  • horizontally: min. 105° from the longitudinal vertical median plane to the left and right hand sides  • upwards: min. 25° from the reference plane  • downwards: min. 45° from the basic plane	Pass	ced by
4.4	Shock absorbing capacity: The helmet shall give protection to the forehead, rear, sides, temples and crown of the head. When tested in accordance with 5.3 and 5.4 the peak acceleration shall not, for each impact, exceed 250 g for the velocity of 5.42 +0.1, -0 m/s on the flat anvil, and 4.57 +0.1, -0 m/s on the kerbstone anvil.  NOTE: These are theoretically equivalent to 1 497 mm and 1 064 mm drop heights respectively.	Pass	
4.5	<b>Durability:</b> After being tested the helmet shall not exhibit damage that could cause significant injury to the wearer (sharp edges, points).	Pass	
4.6	Retention system:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass	
4.6.1	General:  Means shall be provided for retaining the helmet on the wearer's head. All parts of the retention system shall be securely attached to the helmet.	Pass	in abby
4.6.2	Chin Strap: The chin strap shall not include a chin cup. Any chin strap shall be no less than 15 mm wide. Chin straps may be fitted with means of enhancing comfort for the wearer.	Pass	U OIP PI

Contract File No.: 904.14204

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4.6.3	Fastening Device: Any retention system shall be fitted with a device to adjust and maintain tension in the system. The device shall be capable of adjustment so that the buckle does not sit on the jaw bone.				
4.6.4	Color: No part of the retention system shall be colored green.	Pass			
4.6.5	shall not exceed 35 mm and the residual extension shall not exceed 25 mm. For this purpose, extension includes slippage of the fastening device. Damage to the retention system shall be accepted provided that the above requirements are met.				
	<b>NOTE:</b> In this test, slippage of the fastening device can be measured and recorded separately from other contributions to the extension but this is for information only and is not subject to a separate requirement.				
4.6.6	Effectiveness: When tested in accordance with 5.6 the helmet shall not come off the headform.	Pass			
4.6.7	Ease of Release: Following the strength test in accordance with 5.5 and with the load still applied, it shall be possible to open the release system with one hand.				
	Marking - Each helmet shall be marked so that the following information is legible and easily visible to the user and is likely to remain legible throughout the life of the helmet:	Pass			
	a) Number of the European Standard	Pass			
	b) Name or trademark of the manufacturer	Pass			
	c) Designation of the model	Pass			
	d) Designation, which shall be one or more of the following: Helmet for pedal cyclists, skateboarders or roller skaters	Pass			
6	e) Size or size range of the helmet, quoted as the circumference (in centimeters) of the head which the helmet is intended to fit	Pass			
	f) Weight of the helmet (the average mass in grams determined according to 5.2)	Pass			
	g) Year and quarter of manufacture	Pass			
	h) The following text:  "Warning! This helmet should not be used by children while climbing or doing other activities when there is a risk of strangulation/hanging if the child gets trapped with the helmet."	Pass			
	In addition, if the helmet has components made of material which are known to be adversely affected by contact with hydrocarbons, cleaning fluids, paints, transfers or other extraneous additions, the helmet shall carry an appropriate warning.	Pass			
		(0)			

Contract File No.: 904.14204

Test File: 014

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	If there is a consumer sales packaging, the information specified in a), b), d) and h) shall also be given on that package. The text shall be of minimum font size 12.	Pass July
	arts in C	187,481
	Information supplied by the manufacturers (including importers): With every helmet, clear information in the language of the country of sale shall be given as follows:	Will
	<ul> <li>a) That the helmet can only protect if it fits well and that the buyer should try different sizes and choose the size which feels secure and comfortable on the head;</li> </ul>	Pass
	<ul> <li>b) That the helmet should be adjusted to fit the user, e.g. the straps positioned so that they do not cover the ears, the buckle positioned away from the jawbone and the straps and buckle adjusted to be both comfortable and firm;</li> </ul>	Pass
7	<ul> <li>c) How the helmet should be positioned on the head to ensure the intended protection is provided (e.g. hat it should be placed so as to protect the forehead and not be pushed too far over the back of the head);</li> </ul>	Pass
	d) That a helmet cannot always protect against injury;	Pass
	e) That a helmet subjected to a severe impact should be discarded and destroyed;	Pass
	f) A statement of the danger of modifying or removing any of the original component parts of the helmet other than as recommended by the manufacturer, and that helmets should not be adapted for the purpose of fitting accessories in a way not recommended by the manufacturer.	Pass
s doc	way not recommended by the manufacturer.	Pass Pass do

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#### RETENTION SYSTEM EFFECTIVENESS TEST SUMMARY

ACT Lab LLC 3280 East 59th Street, Long Beach, CA 90805   Tel 562.470.7215   Web act-lab.com								
RETENT	ION SYSTEM EFFECT	VENESS TEST SUMMA	ARY	This duced provo.				
Helmet ID	Condition	Headform Size	Pass/Fail	(e) itien				
904.14204.014-1	Ambient temperature	0	Pass	M,				

#### **IMPACT TEST SUMMARY REPORT**

				Anvil	Velocity (m/sec)	Peak Acc. (g)	
Helmet ID	Condition		Impact Location KERBSTONE FLAT	Requirement			Pass/Fail
				KERBSTONE	4.57 m/s		
				5.42 m/s	<u>&lt;</u> 250g		
				Tolerance	-0/+0.1 m/s		
004440040444	l link to me a natura	0	FRONT	KERBSTONE	4.59	126	Pass
904.14204.014-1	High temperature	0	LF SIDE	FLAT	5.45	195	Pass
904.14204.014-2		0	REAR	FLAT	5.47	156	Pass
904.14204.014-2	Low temperature	0	CROWN	KERBSTONE	4.63	119	Pass
004 44204 044 2	A stificial Dogina	20,00	LF SIDE	KERBSTONE	4.58	121	Pass
904.14204.014-3	Artificial aging	OLLO	FRONT	FLAT	5.51	126	Pass

#### RETENTION SYSTEM STRENGTH TEST SUMMARY

Helmet ID	Condition	Headform Size	Dynamic Extension (mm)	Residual Extension (mm)	Pass/Fail
904.14204.014-2	Low temperature	0	25	1 POL WITH 130 LLO	Pass
904.14204.014-3	Artificial aging	0	27 ent st	13	Pass

#### FIELD OF VISION TEST SUMMARY

	Requirements	Test Results
Horizontal	Minimum of 105° to the left and right sides	Pass
Upward	Minimum of 25° from the reference plan	Pass
Downward	Minimum of 45° from the basic plan	Pass

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	DROP SYSTEM	: CADEX Triaxial Impact Mach	nine - Monorail	19.19.9
· Me	SOFTWA	RE: CADEX Impact Control Se	oftware	Wille
nis docume	SOFTWAI	RE: CADEX Impact Control Something Model	oftware S/N	Wilte
This docume	SOFTWAI	RE: CADEX Impact Control S	oftware	Wilte
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This docume	ITEM  Test Computer	RE: CADEX Impact Control Sometimes Model  HP OptiPlex 5040	oftware S/N 9HRYJG2	Writte

## HEADFORMS

		- 0 /20 - 1	
ITEM	HEADFORM	MODEL	ASSEMBLY WT., GRAMS
Headform	Full Headform	EN960 495 (A)	3167
Headform	Full Headform	EN960 535 (E)	4144
Headform	Full Headform	EN960 575 (J)	4741
Headform	Full Headform	EN960 605 (M)	5600
Headform	Full Headform	EN960 625 (O)	6175

#### **IMPACT MEASURING SENSORS**

ITEM	TYPE	MODEL	S/N
Tri-axial Accelerometer	Axis X (10.02 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Y (10.01 mV/g)	PCB 356B21	LW345303
Tri-axial Accelerometer	Axis Z (10.04 mV/g)	PCB 356B21	LW345303

#### CONDITIONING EQUIPMENT

ITEM	MANUFACTURE	MODEL	S/N
Oven	BOXUN	92*9240MBE	8285
Oven	1 49	DHG-9426	1503338018
Oven	KENTON	KH-120A	2201-020
Freezer	Haier	DW-25W300	BE062100N00B29578VMO
Freezer	Haier	DW-50W225	F8LMJ
UV Ageing Chamber	НОТОТЕСН	HT-6014	12099
Hygrothermograph	Anymetre	TH-602F	3238

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904.14204.014 - LT2323-MTB URBAN 2.0 (Green)



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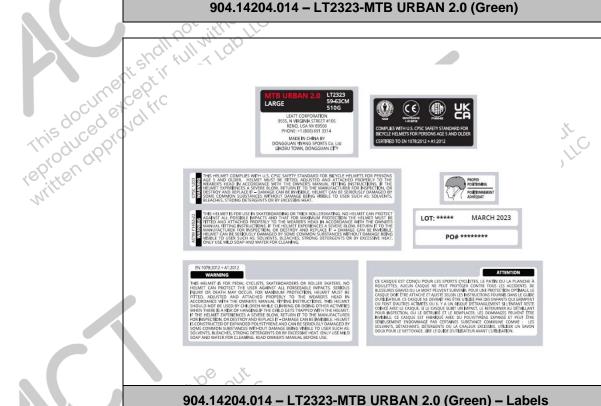
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