



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

HUMANETICS INNOVATIVE SOLUTIONS, INC
900 Denton Drive
Huron, OH 44839
Joshua Yingling Phone: 248 778 3153

MECHANICAL

Valid To: January 31, 2021

Certificate Number: 2421.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Crash Test Dummy tests:

Test Type	Parameter(s)	Range	Test Method(s)
Head Drop	Resultant Acceleration Lateral Acceleration Unimodal Oscillation Temperature Humidity	300 g ± 15 g (0 to 17) % (18 to 26) °C (10 to 70) % RH	49 CFR, Part 572 Subpart: <ul style="list-style-type: none">• E (H3-50)• N (H3-6YO)• O (H3-5)• P (H3-3)• R (Crabi-12)• T (H3-10)• U (ESID2-RE)• V (SID2s) EC3 94: Regulation 95 (ESID2) SAE J2860 (H3-95) ISO 15830-2 (WorldSID 50 th)

Test Type	Parameter(s)	Range	Test Method(s)
Neck Pendulum	Velocity Acceleration Rotation Moment Displacement Temperature Humidity	(2.40 to 7.77) m/s (0 to 30) g (45 to 114) deg (12.0 to 130) Nm (-20 to 168) mm (18 to 26) °C (10 to 70) % RH	49 CFR, Part 572 Subpart: <ul style="list-style-type: none"> • E (H3-50) • M (SID H3) • N (H3-6YO) • O (H3-5) • P (H3-3) • R (Crabi-12) • T (H3-10) • U (ESID2-RE) • V (SID2s) EC3 94: Regulation 95 (ESID2) SAE J2860 (H3-95) ISO 15830-2 (WorldSID 50 th)
Thorax Impact	Velocity Displacement Hysteresis Acceleration Force Temperature Humidity	(2.94 to 6.83) m/s (0 to 76.0) mm (50 to 85) % (14 to 70) g (1 to 11.1) kN (18 to 26) °C (10 to 70) % RH	49 CFR, Part 572 Subpart: <ul style="list-style-type: none"> • E (H3-50) • M (SID H3) • N (H3-6YO) • O (H3-5) • P (H3-3) • R (Crabi-12) • T (H3-10) • U (ESID2-RE) • V (SID2s) SAE J2779 (H3-50 L\S) SAE J2860 (H3-95) SAE J2878 (H3-5 L\S) ISO 15830-2 (WorldSID 50 th) EC3 94: Regulation 95 (ESID2)



Test Type	Parameter(s)	Range	Test Method(s)
Torso Flexion	Velocity	(0.5 to 1.5) °/s	49 CFR, Part 572 Subpart: <ul style="list-style-type: none"> • N (H3-6YO) • O (H3-5) • P (H3-3) • T (H3-10)
	Force	(130 to 550) N	
	Angle	(0 to 50) °	
	Temperature	(18.9 to 25.6) °C	SAE J2860 (H3-95)
	Humidity	(10 to 70) % RH	
Hip Flexion	Velocity	(5 to 10) °/s	49 CFR, Part 572 Subpart: <ul style="list-style-type: none"> • E (H3-50)
	Angle	(0 to 50) °	
	Torque	(0 to 203) Nm	SAE J2862 (H3-5)
	Temperature	(18 to 26) °C	
	Humidity	(10 to 70) % RH	
Rib Module	Velocity	(1 to 10) m/s	49 CFR, Part 572 Subpart: <ul style="list-style-type: none"> • U (ESID2-RE) EC3 94: Regulation 95 (ESID2)
	Displacement	(10 to 51.0) mm	
	Temperature	(18 to 26) °C	
	Humidity	(10 to 70) % RH	
Knee Impact	Velocity	(2 to 3) m/s	49 CFR, Part 572 Subpart: <ul style="list-style-type: none"> • E (H3-50) • N (H3-6YO) • O (H3-5) • T (H3-10)
	Force	(2.0 to 7.3) kN	
	Temperature	(18 to 26) °C	
	Humidity	(10 to 70) % RH	SAE J2862 (H3-5) SAE J2860 (H3-95)

Test Type	Parameter(s)	Range	Test Method(s)
Knee Slider Impact	Velocity	(1.5 to 3) m/s	SAE J2856 (H3-50)
	Displacement	(9.3 to 18.3) mm	SAE J2860 (H3-95)
	Force	(1.26 to 3.10) kN	SAE J2862 (H3-5)
	Temperature	(18 to 26) °C	SAE J2876 (H3-50 Low Speed)
	Humidity	(10 to 70) % RH	
Foot Impact	Velocity	(4.3 to 6.8) m/s	ECE Regulation 94: Addendum 93: Annex 10 (ESID2)
	Force	(2.8 to 3.8) kN	
	Moment	(95 to 145) Nm	
	Acceleration	(245 to 345) g	
	Temperature	(19 to 25) °C	
	Humidity	(10 to 70) % RH	

CALIBRATION

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1,4}:

I. Mechanical

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
Rotary Displacement Transducer	+/- 75	0.2 % F.S.	TL-WI-00003H CL-PR-00025C
Linear Displacement Transducers	(0 to 72) mm	0.2 % F.S.	TL-WI-00034H CL-WI-00001C

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
Chest Potentiometer Assemblies	(0 to 90) mm	0.5 % F.S.	SAE J2517:2016

¹ This laboratory offers commercial calibration service.

² Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMC's represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ The "Rounded % Full Scale" is chosen to be conservative and larger than the determined "CMC".

⁴ This scope meets A2LA's *P112 Flexible Scope Policy*.



Accredited Laboratory

A2LA has accredited

HUMANETICS INNOVATIVE SOLUTIONS, INC

Huron, OH

for technical competence in the field of

Mechanical Testing & Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSLI Z540-1-1994 and R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 20th day of December 2018.

A blue ink signature of the Senior Director of Accreditation Services.

Senior Director, Accreditation Services
For the Accreditation Council
Certificate Number 2421.01
Valid to January 31, 2021
Revised December 10, 2020

For the tests and calibrations to which this accreditation applies, please refer to the laboratory's Scope of Accreditation.