



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

APTIV
Champion Technical Center
4551 Research Parkway
Warren, OH 44483
Ms. Cindy Cario Phone: 330 306 1041

MECHANICAL

Valid to: March 31, 2020

Certificate Number: 1913.02

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

Test Technology:

Thermal Shock

Temperature Range: (-55 to 155) °C
Air to Air
Max Product Load: up to 120 pounds
Temp Transitions Between Environments: < 30s
Thermal Cycle Transitions: up to 18°C/minute

Temperature Humidity

Temperature Range: (-55 to 155) °C
Max Product Load: up to 120 pounds
Temperature Transition Rate: 8.5 °C/minute max
Humidity Range: (33 to 98) %RH

Vibration

Random, Sine, Sine-on-Random,
Mechanical Shock
Frequency Range: (5 to 2,500) Hz
Force Capabilities: up to 20,000 lb. Force
Displacement: 2-inch Peak-to-Peak
Temperature Range: (-55 to 155) °C
Temperature Transition Rate: 12 °C/minute max
Humidity Range: (33 to 98) %RH
Mechanical Shock: Half Sine up to 50g/11ms
Mechanical Shock Displacement: 2-inch Peak-to-Peak
Multiple Channel Control/Monitoring Transmissibility
Plots, Resonance Search and Dwell

Test Method(s):

SAE/USCAR-2; Q-1000-101;
GM 9123P (1999, *Inactive 2008*¹);
GMW 3191; SAE J2030; TSC-1000G;
USCAR20; USCAR21

SAE/USCAR-2;
Q-1000-105; Q-1000-106;
Q-1000-112; Q-1000-114;
SAE J2030; TSC-1000G;
GMW 3191; USCAR20; USCAR21

SAE/USCAR-2;
Q-1000-209; Q-1000-210;
Q-1000-211;
GM 9123P (1999, *Inactive 2008*¹);
GM 9100P (1996, *Inactive 2008*¹);
SAE J2030;
TSC-1000G; GMW 3191; USCAR20;
ASTM D4728-01 (*Superseded 2006*¹);
GMW 3172

Test Technology:

Mechanical Shock

Waveform: Half-Sine
Maximum g Level: 200g

Thermal Aging

Temperature Range: (-55 to 250) °C

Salt Fog

High Pressure Spray

Insulation Resistance/Isolation Resistance

Performance Specification for Cable to Terminal
Electrical Crimps

Field Correlated Life Test

Dry Circuit Resistance

Voltage Drop Measurements

Current Measurements

Crimp Cross Section

Crimp Tensile Strength (Terminal Pull-Off)

Current Cycling Durability

Accelerated Environmental Exposure
Test/Accelerated Temperature/Humidity Cycle
Conditioning – 24 Hour Cycle

Visual Inspection

Scanning Electron Microscopy
X-Ray Microanalysis
Optical Microscopy

Test Method(s):

SAE/USCAR-2; Q-1000-207;
GM 9123P;
SAE J2030; TSC-1000G;
GMW 3191; GMW3172

SAE/USCAR-2; SAE J2030;
TSC-1000G; GMW 3191; USCAR20

ASTM B117; SAE J2030

TSC-1000G Section 6.2.8; GMW 3191

GMW 3191

USCAR21

USCAR20

USCAR20; USCAR21*

USCAR21*

USCAR21*

USCAR21*

USCAR21*

USCAR21*

USCAR21

USCAR21

Product Evaluation, Failure Analysis,
Competitive Assessment
DPNW-4.4-PE-CSE-01.28

*Also using the above methods and customer supplied test methods directly related to the parameters/capabilities listed above.

¹This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.





Accredited Laboratory

A2LA has accredited

APTIV

Warren, OH

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. 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 11th day of May 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 1913.02
Valid to March 31, 2020

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