Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-11082-01-02 according to DIN EN ISO/IEC 17025:2018

Valid from: **12.12.2023**

Date of issue: 12.12.2023

This annex is a part of the accreditation certificate D-PL-11082-01-00.

Holder of partial accreditation certificate:

APL Automobil-Prüftechnik Landau GmbH
Am Hölzel 11, 76829 Landau

with the locations

APL Automobil-Prüftechnik Landau GmbH
Am Hölzel 11, 76829 Landau

APL Automobil-Prüftechnik Landau GmbH
Am Hölzel 17, 76829 Landau

APL Automobil-Prüftechnik Landau GmbH
Fichtenstraße 36, 76829 Landau

APL Automobil-Prüftechnik Landau GmbH
In der Viehweide 15, 76879 Bornheim

APL Automobil-Prüftechnik Landau GmbH
Robert-Bosch-Straße 12, 74321 Bietigheim-Bissingen

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de.

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the general with the principles of DIN EN ISO 9001.

Tests in the fields:
Function and service life testing of engines, connecting rods, power trains and attached parts; Emission of gaseous and particulate pollutants from compression-ignition engines and gaseous pollutants from positive-ignition engines fuelled with liquefied petroleum gas, natural gas or petrol; measurement of voltage and current on the test bench for vehicle parts and vehicles and the measurement of electric energy consumption at vehicles powered by an electric power train only; Lifetime test on vehicle parts and vehicle using environmental simulation

Within the scope of accreditation marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the following: usage of different versions of standard or equivalent test methods granted here. The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

Location Landau Am Hölzel 17 and Bietigheim-Bissingen Robert-Bosch-Straße 12

1. Function and service life testing of engines, connecting rods, power trains and attached parts *

AA-Dok1-003 2017-12 Instructions for commissioning of test benches

The above test method is characterised by the measurands listed in the table below:

Test type	Measurand	Measuring range	Expanded measurement uncertainty **
Function and service life testing	Torque	- 50 to 50 Nm - 200 to 200 Nm - 1 to 1 kNm - 2 to 2 kNm - 3 to 3 kNm - 5 to 5 kNm - 10 to 10 kNm	0.1% MBU
	Speed	50 to 15,000 rpm in both directions of rotation	0.014 % MBU

** The value indicated is the expanded measurement uncertainty, which results from the standard measurement uncertainty multiplied by the coverage factor k = 2. The value of the measurand lies within the assigned value interval with a probability of 95%.

Test type	Measurand	Measuring range	Expanded measurement uncertainty **
	Temperature	Measuring chain resistance thermometer PT 100 without probe: - 100 to 650 °C Probe PT 100: - 100 to 300 °C Measuring chain thermocouple Ni-CrNi without probe: 0 to 1350 °C Probe Ni-CrNi: - 100 to 1100 °C	Measuring chain resistance thermometer PT 100 Without probe: 0.15 % MBU Probe PT 100: 0.19 + 0.002 |T| Measuring chain thermocouple Ni-CrNi without probe: 0.15 % MBU Probe Ni-CrNi: - 40 to 375 °C: 1.65 |T| 375 to 1000 °C: 0.69 + 0.004|T|
	Pressure	Absolute pressure measurement: 800 to 1200 mbar Relative pressure measurement in the measuring ranges: - 1000 to 0 mbar - 100 to 150 mbar - 100 to 250 mbar - 1,000 to 2,500 mbar 0 to 1,000 mbar 0 to 6 bar 0 to 10 bar 0 to 16 bar 0 to 60 bar 0 to 250 bar 0 to 400 bar	Absolute pressure measurement: 0.4 % MBU Relative pressure measurement in the measuring ranges: 0.4 % MBU
	Humidity	10 to 90% RH	5 % MBU
	Flow (fuel)	discontinuous: 0 to 80 kg/h 0 to 150 kg/h continuous: 0.82 to 82 kg/h 2.5 to 250 kg/h	discontinuous: 0,2% MW continuous: 0,2% MW

** The value indicated is the expanded measurement uncertainty, which results from the standard measurement uncertainty multiplied by the coverage factor k = 2. The value of the measurand lies within the assigned value interval with a probability of 95%.

Location Landau Am Hölzel 17 and Bietigheim-Bissingen Robert-Bosch-Straße 12

2. Emissions of gaseous and particulate pollutants from positive-ignition/compression-ignition engines and the measurement of electric energy consumption at vehicles powered by an electric power train only *

Directive 2005/55/EC 2005-09	Directive 2005/55/EC of the European Parliament and of the Council of 13 December 1999 on the approximation of the laws of the Member States relating to measures to be taken against the emission of gaseous and particulate pollutants from compression ignition engines for use in vehicles, and the emission of gaseous pollutants from positive ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles, Directive 2005/55/EC of 28.09.2005, as last amended by Directive 2005/78/EC of 14.11.2005 and Directive 2008/74/EC of 18.07.2008
Commission Regulation No 582 /2011, Regulation No 49 2011-05	COP as per Euro 6, Commission Regulation (EU) No 582/2011 of 25 May 2011 implementing and amending Regulation (EC) No 595/2009 of the European Parliament and of the Council with respect to emissions from heavy duty vehicles (Euro VI) and amending Annexes I and III to Directive 2007/46/EC of the European Parliament and of the Council in conjunction with Regulation ECE R 49, Official Journal of the European Union L 167/1
UN ECE R 49 2013-01	Regulation No 49 of the Economic Commission for Europe of the United Nations (UN/ECE) - Uniform provisions concerning the measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition and positive-ignition engines for use in vehicles
UN ECE R 83 2015-07	Regulation No 83 of the Economic Commission for Europe of the United Nations (UNECE) - Uniform provisions concerning the approval of vehicles with regard to the emission of pollutants according to engine fuel requirements [2015/1038], L 172/1, 03.07.2015 *Note: Without Annex 7 Type IV test*

UN ECE R 101 Rev. 03 2013-01	Regulation No 101 of the Economic Commission for Europe of the United Nations (UN/ECE) - Uniform provisions concerning the approval of passenger cars powered by an internal combustion engine only, or powered by a hybrid electric power train with regard to the measurement of the emission of carbon dioxide and fuel consumption and/or the measurement of electric energy consumption and electric range, and of categories M 1 and N 1 vehicles powered by an electric power train only with regard to the measurement of electric energy consumption and electric range
UN ECE R 154 2021-01	Uniform provisions concerning the approval of light duty passenger and commercial vehicles with regards to criteria emissions, emissions of carbon dioxide and fuel consumption and/or the measurement of electric energy consumption and electric range (WLTP)
NMX-AA-11-1993-SCFI 1993-12	Test Method for the Evaluation of Exhaust Emissions for new Motor Vehicles in Production that use Gasoline as fuel
VO (EU) 2017/1151 2017-06	Commission Regulation (EU) 2017/1151 of 1 June 2017 supplementing Regulation (EC) No 715/2007 of the European Parliament and of the Council on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information, amending Directive 2007/46/EC of the European Parliament and of the Council, Commission Regulation (EC) No 692/2008 and Commission Regulation (EU) No 1230/2012 and repealing Commission Regulation (EC) No 692/2008, L 175/19 *Note: Without Annex VI Type 4 test*
40 CFR Part 1066 2019-02	Vehicle-Testing Procedure *Note:* *Without Subpart J Evaporative Emission Test Procedure and Without §1066.831 SC03 Test Procedure*

40 CFR Part 86 2019-02	Control of emissions from new and in-use highway vehicles and engines, Subpart B *Note:* *Without §86.133/§86.134/§86.138 Evaporative Emission Test Procedure and* *Without §86.146 Fuel Spitback Test Procedure and* *Without §86.150 - §86.157 Refueling Test Procedure and* *Without §86.160 SC03 Test Procedure and* *Without §86.165 Air conditioning idle Test Procedure* *Subpart S*
40 CFR Part 600 2019-02	Fuel economy and greenhouse gas exhaust emissions of motor vehicles
TRIAS 08-001-01 2018-01	Test for fuel consumption rate (JC08-Mode)
TRIAS 08-002-02 2018-03	Test for fuel consumption rate (WLTC-Mode)
TRIAS 08-006-01 2018-01	Test for per-charge range and AC power consumption rate (JC08-Mode)
TRIAS 08-007-01 2018-01	Test for per-charge range and AC power consumption rate (compatible with JC08-Mode, range estimate methode)
TRIAS 08-J042GTR015-01 30.06.2020	Test for fuel consumption rate (Global Technical Regulation No. 15 (WLTC-Mode))
TRIAS 31-J042-(3)-03 2017-04	Test for exhaust emissions of light- and medium-duty motor vehicles (JC08H + JC08C-Mode (compatible with post new long-term regulations))
TRIAS 31-J042-(2)-03 2017-07	Test for exhaust emissions of light- and medium-duty motor vehicles (JC08H + JC08C-Mode)
TRIAS 31-J042-(4)-02 2018-03	Test for exhaust emissions of light- and medium-duty motor vehicles (WLTC-Mode)

TRIAS 31-J042GTR015-01 2020-06	Test for exhaust emissions of light- and medium-duty motor vehicles (Global Technical Regulation No.15 (WLTC-Mode))
Announcement that prescribes details of safety regulations for road vehicles Attachment 42 2018-03	Measurement procedures for exhaust emissions of light- and medium-duty motor vehicles Part 1 (JC08-Mode method) und Part 2 (WLTC-Mode method)
GB 18352.5-2013 2013-09	Limits and measurement methods for emissions from light-duty vehicles (China 5) *Note: without Annex F Type IV test*
GB 18352.6-2016 2016-12	Limits and measurement methods for emissions from light-duty vehicles (China 6) *Note: without Annex F Type IV test and without Annex I Type VII test*
GB/T 19233 2020-06	Measurement Methods of Fuel Consumption for Light-duty Vehicles

Location **Landau Am Hölzel 11 und 17, Landau Fichtenstraße 36 und Bornheim In der Viehweide 17, Bietigheim-Bissingen Robert-Bosch-Straße 12**

3. Measurement of voltage AC/DC and current AC/DC on the test bench for vehicle parts and vehicles

VA-KAL-023 Rev. 2.0 2021-08	Alternating current measurement
VA-KAL-024 Rev. 2.0 2021-08	Direct current measurement
VA-KAL-025 Rev. 2.0 2021-08	Alternating current measurement
VA-KAL-026 Rev. 1.0 29.10.2018	Process instruction: direct current measurement
VA-KAL-027 Rev. 2.0 2021-08	Measurement uncertainty voltage and current measurement

Location Landau Am Hölzel 11, Landau Fichtenstraße 36 and Bornheim In der Viehweide 17

4. Lifetime test on vehicle parts and vehicle using environmental simulation *

Low temperature check

DIN EN 60068-2-1 2008-01	Environmental testing - Part 2-1: Tests - Test A: Cold (IEC 60068-2-1:2007); German version EN 60068-2-1:2007

Lifetime tests with temperature and humidity

DIN EN 60068-2-2 2008-05	Environmental testing - Part 2-2: Tests - Test B: Dry heat (IEC 60068-2-2:2007); German version EN 60068-2-2:2007
DIN EN 60068-2-14 2010-04	Environmental testing - Part 2-14: Tests - Test N: Change of temperature (IEC 60068-2-14:2009); German version EN 60068-2-14:2009
DIN EN 60068-2-30 2006-06	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h +12 h) (IEC 60068-2-30:2005); German version EN 60068-2-30:2005
DIN EN 60068-2-38 2010-06	Environmental testing - Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test (IEC 60068-2-38:2009); German version EN 60068-2-38:2009
DIN EN 60068-2-78 2014-02	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state (IEC 60068-2-78:2013); German version EN 60068-2-78:2013

Abbreviations used:

AA	Work instructions of APL Automobil-Prüftechnik Landau GmbH
DIN	Deutsches Institut für Normung e.V. (German Institute for Standardization)
ECE	United Nations Economic Commission for Europe
EN	European standard
GB	GuoBiao Standards, National Standard of the People's Republic of China (Mandantory)
GB/T	GuoBiao Standards, National Standard of the People's Republic of China (Recommended)
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
MBU	Measurement Range Uncertainty
NMX	Norma Mexicana
RH	Relative Humidity
TRIAS	Test Requirements and Instructions for Automobile Standards (Japan)
UN	Regulation of the United Nations Economic Commission for Europe
VA	Procedure instruction (test instruction) of APL Automobil-Prüftechnik Landau GmbH