



KAZALO OPISNE DOKUMENTACIJE e01110
INDEX TO THE INFORMATION PACKAGE e01110

Revision: 00

Homologacijska številka: **e26*134/2014*2018/295F*01110**
Approval number:

Razširitev številka: **00**
Extension number:

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| 00/00 | Odobritev homologacije Granting of type approval | 23.09.2022 | 32 |

Poročilo o preskusu: **22-00021-CM-GBM-00**
Test report:

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Opisni list/Tehnični opis naprave: **P-KAT-097**
Information document/Technical description of the device:

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Drawing(s)¹:

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Navodila za vgradnjo in uporabo:
Mounting and handling instructions:

Število strani:
Number of pages:

datum zadnje spremembe: /
date of latest amendment:

Ostala dokumentacija:
Other documentation:

Število strani: **1**
Number of pages:



¹ kosovnice, slike, sheme in diagrami / ¹ bill of materials, pictures, schematics and diagrams

**SLOVENIAN TRAFFIC SAFETY AGENCY,
KOTNIKOVA ULICA 19a,
1000 LJUBLJANA,
SLOVENIA**

We, Akrapovič d.d., Malo Hudo 8a. 1295 Ivančna Gorica, Slovenia hereby ask STSA to grant approval against **134/2014*2018/295 EC (F)** for the following product:
Exhaust system for Motorcycles – catalytic converter:

Type: **P-KAT-097**

Version:

Manufacturer: **Akrapovič d.d.
Malo Hudo 8a
1295 Ivančna Gorica
Slovenia**

We declare that we have not applied to any other Approval Authority in the EU Member States for this approval.

We have requested **TÜV SÜD Auto Service GmbH**, to carry out all testing required by the directive and/or regulation that the approval is sought against and to present the entire documentation for the approval.

Yours sincerely,


Akrapovič d.d.  d.d.
Uroš Rosa, CEO Malo Hudo 8a, 1295 Ivančna Gorica
Slovenija

Date: 06.07.2022



Information Document P-KAT-097

relating to EU type-approval of a pollution-control device as a STU and

TÜV SÜD Auto Service Technical Report: 22-00021-CM-GBM-00

| Item No. | (Sub) categories | Detailed information |
|----------|------------------------------|---|
| B. | | General information concerning systems, components, or separate technical units |
| 0.7. | L1e — L7e | Make(s) (trade name(s) of manufacturer): AKRAPOVIC Exhaust System Technology |
| 0.8. | L1e — L7e | Type: P-KAT-097 |
| 0.8.1. | L1e — L7e | Commercial name(s) (if available): n.a. |
| 0.8.2. | L1e — L7e | Type-approval number(s) (if available): e26*134/2014*2018/295F*01110*00 |
| 0.8.3. | L1e — L7e | Type-approval(s) issued on (date, if available): n.a. |
| 0.9. | L1e — L7e | Company name and address of manufacturer: Akrapovic d.d. Malo Hudo 8a 1295 Ivančna Gorica |
| 0.9.1. | L1e — L7e | Name(s) and address(es) of assembly plants: n.a. |
| 0.9.2. | L1e — L7e | Name and address of manufacturer's authorised representative, if any: n.a. |
| 0.10. | | Vehicle(s) for which the system/separate technical unit is intended for: |
| 0.10.1. | L1e — L7e | Type: see Technical Report |
| 0.10.2. | L1e — L7e | Variant: see Technical Report |
| 0.10.3. | L1e — L7e | Version: see Technical Report |
| 0.10.4. | L1e — L7e | Commercial name(s) (if available): see Technical Report |
| 0.10.5. | L1e — L7e | Category, subcategory, and sub-subcategory of vehicle: see Technical Report |
| C. | | General information concerning vehicle, systems, components, or separate technical units |
| 0.12. | | Conformity of production |
| 0.12.1. | L1e — L7e | Controlled by ISO 9001:2008 Quality Management System certified by TÜV SÜD Management Service GmbH Registration no.: 12 100 31148 TMS |
| 1. | | GENERAL CONSTRUCTION CHARACTERISTICS |
| 1.8. | | Propulsion unit performance |
| 1.8.1. | L3e, L4e, L5e, L7e-A, L7e-B2 | Declared maximum vehicle speed: km/h see Technical Report |
| 1.8.2. | L1e, L2e, L6e, L7e-B1, L7e-C | Maximum design vehicle speed: and gear in which it is reached: n.a. |
| 1.8.3. | L1e — L7e | Maximum net power combustion engine: . kW at . min ⁻¹ at A/F ratio: see Technical Report |
| 1.8.4. | L1e — L7e | Maximum net torque combustion engine: . Nm at . min ⁻¹ at A/F ratio: see Technical Report |
| 1.8.5. | L1e — L7e | Maximum continuous-rated power electric motor (15/30 minutes power ¹): n.a. |
| 1.8.6. | L1e — L7e | Maximum continuous-rated torque electric motor: Nm at min ⁻¹ n.a. |
| 1.8.7. | L1e — L7e | Maximum continuous total power for propulsion(s): kW. at ... min ⁻¹ at A/F ratio: n.a. |
| 1.8.8. | L1e — L7e | Maximum continuous total torque for propulsion(s): Nm at min ⁻¹ at A/F ratio: n.a. |
| 1.8.9. | L1e — L7e | Maximum peak power for propulsion(s): kW at min ⁻¹ at A/F ratio: n.a. |
| 4. | | GENERAL INFORMATION ON ENVIRONMENTAL AND PROPULSION UNIT PERFORMANCE |
| 4.0 | | General information on environmental and propulsion performance |
| 4.0.1. | L1e — L7e | Environmental step: Euro (4/5) |
| 4.0.2. | L1e — L7e | Fuel consumption: see WVTA |
| 4.0.3. | L1e — L7e | CO ₂ emissions: see WVTA |
| 4.0.4. | L1e — L7e | Energy consumption: n.a. |
| 4.0.5. | L1e — L7e | Electric range: n.a. |



Information Document P-KAT-097

relating to EU type-approval of a pollution-control device as a STU and

TÜV SÜD Auto Service Technical Report: 22-00021-CM-GBM-00

| Item No. | (Sub) categories | Detailed information |
|-------------|------------------|---|
| 4.1. | | Tailpipe emission-control system |
| 4.1.1. | L1e — L7e | Brief description and schematic drawing of the tailpipe emission-control system and its control: see assembly drawing, attached |
| 4.1.2. | | Catalytic converter |
| 4.1.2.1. | L1e — L7e | Configuration, number of catalytic converters and elements (information to be provided for each separate unit): see technical drawing, attached |
| 4.1.2.2. | L1e — L7e | Drawing with dimensions, shape and volume of the catalytic converter(s): attached |
| 4.1.2.3. | L1e — L7e | Catalytic reaction: three-way catalytic converter |
| 4.1.2.4. | L1e — L7e | Total charge of precious metals: see technical drawing, attached |
| 4.1.2.5. | L1e — L7e | Relative concentration: see technical drawing, attached |
| 4.1.2.6. | L1e — L7e | Substrate (structure and material): see technical drawing, attached |
| 4.1.2.7. | L1e — L7e | Cell density: see technical drawing, attached |
| 4.1.2.8. | L1e — L7e | Casing for the catalytic converter(s): see technical drawing, attached |
| 4.1.2.9. | L1e — L7e | Location of the catalytic converter(s) (place and reference distance in the exhaust line): see assembly drawing, attached |
| 4.1.2.10. | L1e — L7e | Catalyst heatshield: no |
| 4.1.2.11. | L1e — L7e | Brief description and schematic drawing of the regeneration system/method of exhaust after-treatment systems and its control system: n.a. |
| 4.1.2.11.1. | L1e — L7e | Normal operating temperature range: 673-1073K |
| 4.1.2.11.2. | L1e — L7e | Consumable reagents: no |
| 4.1.2.11.3. | L1e — L7e | Brief description and schematic drawing of the reagent flow (wet) system and its control system: n.a. |
| 4.1.2.11.4. | L1e — L7e | Type and concentration of reagent needed for catalytic action: n.a. |
| 4.1.2.11.5. | L1e — L7e | Normal operational temperature range of reagent: K n.a. |
| 4.1.2.11.6. | L1e — L7e | Frequency of reagent refill: continuous/maintenance: n.a. |
| 4.1.2.12. | L1e — L7e | Identifying part number: see item 0.8. Type |
| 4.1.3. | L1e — L7e | Oxygen sensor(s) |
| 4.1.3.1. | L1e — L7e | Oxygen sensor component(s) drawing(s): n.a. OE part |
| 4.1.3.2. | L1e — L7e | Drawing of exhaust device with oxygen sensor location(s): see assembly drawing, attached |
| 4.1.3.3. | L1e — L7e | Control range(s): n.a. OE part |
| 4.1.3.4. | L1e — L7e | Identifying part number(s): n.a. OE part |
| 4.1.3.5. | L1e — L7e | Description of oxygen sensor heating system and heating strategy: n.a. OE part |
| 4.1.3.6. | L1e — L7e | Oxygen sensor heat shield(s): n.a. OE part |
| 4.1.4. | L1e — L7e | Secondary air-injection (air-inject in exhaust) |
| 4.1.4.1. | L1e — L7e | Brief description and schematic drawing of the secondary air-injection system and its control system: n.a. |
| 4.1.4.2. | L1e — L7e | Configuration (mechanical, pulse air, air pump etc.): n.a. |
| 4.1.4.3. | L1e — L7e | Working principle: n.a. |
| 4.1.5. | | External exhaust gas recirculation (EGR) |
| 4.1.5.1. | L1e — L7e | Brief description and schematic drawing of the EGR system (exhaust flow) and its control system: n.a. |
| 4.1.5.2. | L1e — L7e | Characteristics: n.a. |
| 4.1.6. | | Particulate filter |
| 4.1.6.1. | L1e — L7e | PT component drawing with dimensions, shape, and capacity of the particulate filter: n.a. |
| 4.1.6.2. | L1e — L7e | Design of the particulate filter: n.a. |
| 4.1.6.3. | L1e — L7e | Brief description and schematic drawing of the particulate filter and its control system: n.a. |
| 4.1.6.4. | L1e — L7e | Location (reference distance in the exhaust line): n.a. |
| 4.1.6.5. | L1e — L7e | Method or system of regeneration, description and drawing: n.a. |
| 4.1.7. | | Lean NOx trap |
| 4.1.7.1. | L1e — L7e | Operation principle of lean NOx trap: n.a. |
| 4.1.8. | | Additional tailpipe emission-control devices |
| 4.1.8.1. | L1e — L7e | Working principle: n.a. |



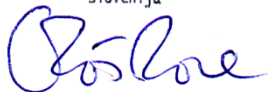
Information Document P-KAT-097

relating to EU type-approval of a pollution-control device as a STU and

TÜV SÜD Auto Service Technical Report: 22-00021-CM-GBM-00

| Anlage / Enclosure | Dokument-Nr. / Document no. | Datum / Date | Seiten / Pages |
|---|-------------------------------------|-----------------|-------------------|
| Zeichnung Gesamtanlage / Drawing exhaust system | KTM 690 / Husqvarna 701 / GasGas | - | 1 |
| Zeichnung(en) d. Bauteile d. zu genehmigenden techn. Einheit / Drawing(s) of parts of the separate techn. unit | 280755 | 03.08.2022 | 1 |


Mało Hudo 8a, 1295 Ivančna Gorica,
Slovenija



Rosa Uroš, Managing Director

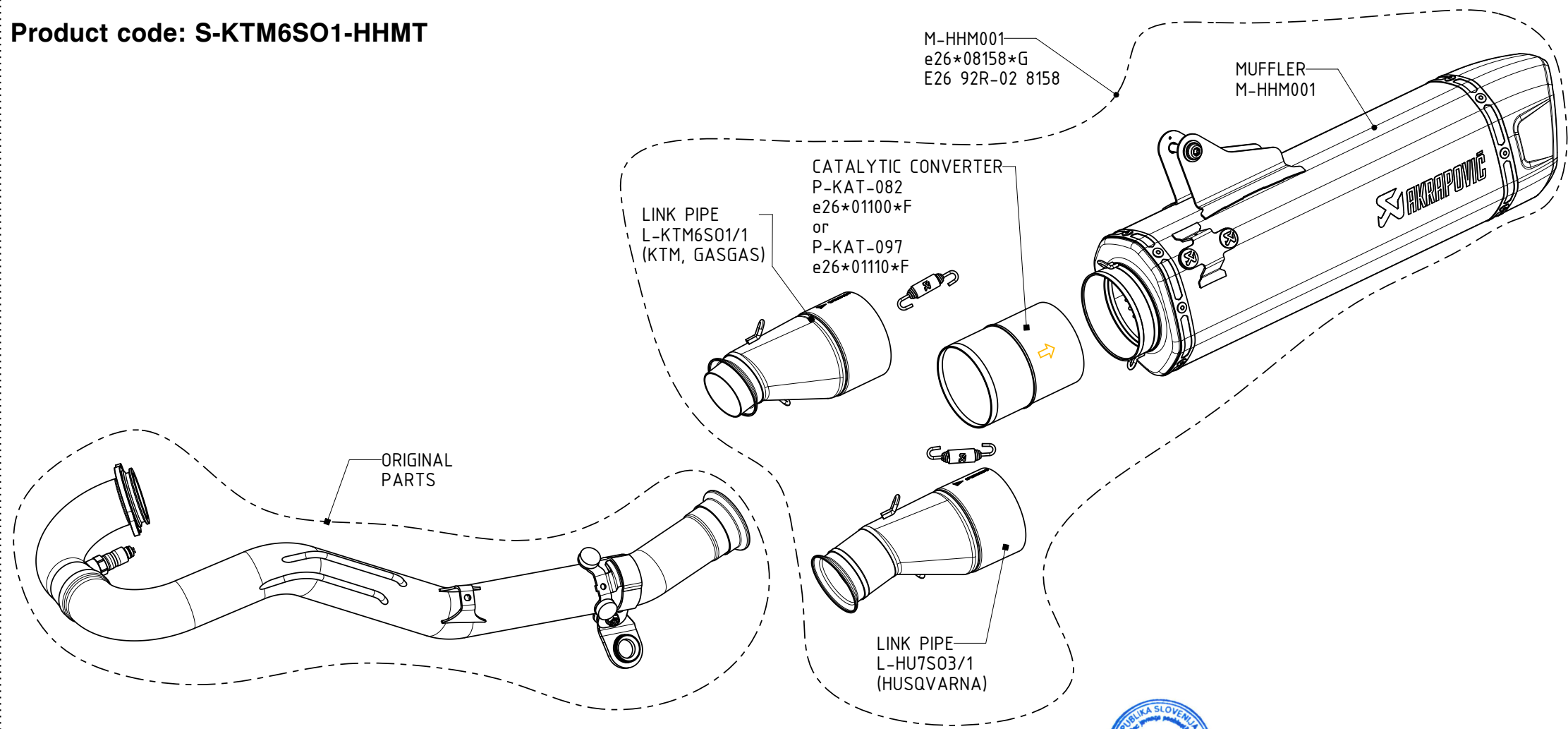
04.08.2022



Partial exhaust system / Slip-ON line / EC / ECE / Type approval

KTM 690 SMC R
KTM 690 ENDURO R
HUSQVARNA 701 Supermoto
HUSQVARNA 701 ENDURO
GASGAS 700

Product code: S-KTM6SO1-HHMT



PRÜFBERICHT TEST REPORT

Nr. / no. 22-00021-CM-GBM-00

über die Prüfung zur Typgenehmigung einer emissionsmindernden Einrichtung
als selbstständige technische Einheit für Krafträder. /

*about type-approval tests of a replacement pollution-control device for L-category
vehicles as a separate technical unit*

Verordnung / Regulation (EU) 134/2014 vom / dated 16.12.2013
zuletzt geändert / last amended (EU) 2018/295 vom / dated 15.12.2017
Kodierung / Codification F

zur Ergänzung der Verordnung (EU) Nr. 168/2013 des Europäischen
Parlaments und des Rates. /
*supplementing Regulation (EU) 168/2013 of the European
Parliament and the Council.*

| Genehmigungsstand / Approval status | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Erteilung einer Typgenehmigung <i>Granting of a type approval</i> e26*134/2014*2018/295F*01110*00 |
| <input type="checkbox"/> | Nachtrag/Änderung zur Typgenehmigung Nr. <i>Extension/correction to type approval no.</i> |

Gründe der Erweiterung / Reasons for extension

Es wird geändert /
It will be changed: ---

Es wird aktualisiert /
It will be updated: ---



0. Allgemeine Angaben / General information

- 0.1. Fabrikmarke / Make: AKRAPOVIČ
- 0.2. Typ / Type: P-KAT-097
- 0.2.1. Ausführungen / Variants
Außenmantel und Matrix /
Sleeve and matrix: Edelstahl / Stainless steel
- 0.3. Name und Anschrift des Herstellers /
Name and address of manufacturer: Akrapovič d.d.
Malo Hudo 8a
SLO-1295 Ivančna Gorica
- 0.4. Name und Anschrift des Beauftragten /
Name and address of authorized agent: entfällt / n.a.
- 0.5. Nr. des Beschreibungsbogens /
No. of information document: P-KAT-097
Ausgabedatum / Date: 04.08.2022
- 1.0. Klasse der Fahrzeuge, für die die
Anlage bestimmt ist /
Class of the vehicles the unit is used for: L3e
- 1.1. Beschreibung der Fahrzeuge, für
die die Einrichtung bestimmt ist /
Description of the vehicles
the unit is used for: siehe Anlage 2 / see enclosure 2

2. Angaben zum Prüfobjekt / Composition of the separate technical unit

- 2.1. Art der Technischen Einheit /
Kind of technical unit: 3-Wege-Katalysator /
3-way-catalytic converter
- 2.2. Ort der Kennzeichnung /
Place of marking: Lasergravur auf Außenmantel /
Engraved by laser on sleeve
- 2.3. Zusammenstellung der techn. Einheit /
Composition of the separate
technical unit: siehe Anlage 1 / see enclosure 1
- 2.4. Lage und Richtung der Auspuffmündung /
Position and direction of the tail pipe: entfällt / not applicable



3. Prüfprotokoll / Test report

Die Prüfungen wurden in 2 Versuchsreihen A und B mit folgenden Fahrzeugen durchgeführt. /

The tests were carried out in 2 series A and B with following vehicles:

Versuchsreihe A / Series A: (lfd. Nr. / no. 12, Messdatum / Date 12.07.2022)

3.1. **Fahrzeug / Vehicle**

| | |
|---|--------------------|
| 3.1.1. Typ / Type: | KTM 690 LC4 |
| 3.1.1.1 Variante / Version / Variant / Version: | B / - |
| 3.1.1.2 Fahrzeugkategorie / Category: | L3e-A3 |
| 3.1.1.3 Handelsbezeichnung / Model: | 690 SMC R |
| 3.1.2. Hersteller / Manufacturer: | KTM (A) |
| 3.1.3. Genehmigungs-Nr. / Homologation no.: | e1*168/2013*00147* |
| 3.1.3.1 Nachtrag bzw. Erweiterung / Extension: | 00 |
| 3.1.4. Fahrzeugidentifizierungsnummer / Vehicle identification no.: | VBKLSV404MM709090 |
| 3.1.5. Baujahr / Year of manufacture: | 2021 |
| 3.1.6. Km-Stand / Kilometers: | 15304 |
| 3.1.7. Zul. Gesamtgewicht / Total weight: | 350 kg |

3.2. **Antriebsmaschine / Engine**

| | |
|---|---------------------------------------|
| 3.2.1. Hersteller / Manufacturer: | KTM |
| 3.2.2. Typ / Type: | 768 |
| 3.2.3. Hubraum / Engine capacity: | 693 cm ³ |
| 3.2.4. Höchstleistung / Max. net power: | 55 kW bei / at 8000 min ⁻¹ |
| 3.2.5. Max. Drehmoment / Max. net torque: | 71 Nm bei / at 6750 min ⁻¹ |

3.3. **Kraftübertragung / Transmission**

| | |
|---|-------------------------|
| 3.3.1. Art der Kraftübertragung / Kind of transmission: | mechanisch / mechanical |
| 3.3.4. Getriebe / Gearbox: | manuell / manual |

3. **Prüfprotokoll** (Fortsetzung) / **Test report** (continuation)

- 3.3.5. Übersetzungsverhältnisse /
Transmission ratios
primär / *primary* / sekundär / *secondary*: 2,194 / 3,067
Höchstgeschwindigkeit / *Top speed*: 200 km/h

3.4. **Zusammenbau der Auspuffanlage / Assembly of the exhaust system** (Teile lfd. Nr. lt. Anlage 1 / *no. of parts acc. enclosure 1*)

Versuchsreihe A / Series A: 1)2a)3a)4a)

Versuchsreihe B/ Series B: (lfd. Nr. / *no. 11*, Messdatum / *Date 07.07.2020*)

3.1. **Fahrzeug / Vehicle**

- 3.1.2. Typ / *Type*: KTM 690 LC4
3.1.1.1 Variante / *Version / Variant / Version*: A / -
3.1.1.2 Fahrzeugkategorie / *Category*: L3e-A3
3.1.1.3 Handelsbezeichnung / *Model*: 690 Enduro R
3.1.2. Hersteller / *Manufacturer*: KTM (A)
3.1.3. Genehmigungs-Nr. / *Homologation no.*: e1*168/2013*00147*
3.1.3.1 Nachtrag bzw. Erweiterung / *Extension*: 01
3.1.4. Fahrzeugidentifizierungsnummer /
Vehicle identification no.: VBKLETP30MM777579
3.1.5. Baujahr / *Year of manufacture*: 2020
3.1.6. Km-Stand / *Kilometers*: 724
3.1.7. Zul. Gesamtgewicht / *Total weight*: 350 kg

3.2. **Antriebsmaschine / Engine**

- 3.2.1. Hersteller / *Manufacturer*: KTM
3.2.2. Typ / *Type*: 768
3.2.3. Hubraum / *Engine capacity*: 693 cm³
3.2.4. Höchstleistung / *Max. net power*: 55 kW bei / *at 8000 min⁻¹*
3.2.5. Max. Drehmoment / *Max. net torque*: 71 Nm bei / *at 6750 min⁻¹*

3. **Prüfprotokoll** (Fortsetzung) / **Test report** (continuation)

3.3. **Kraftübertragung / Transmission**

- 3.3.1. Art der Kraftübertragung /
Kind of transmission: mechanisch / *mechanical*
- 3.3.4 Getriebe / *Gearbox:* manuell / *manual*
- 3.3.5 Übersetzungsverhältnisse /
Transmission ratios
primär / *primary* / sekundär / *secondary:* 2,194 / 3,067
- Höchstgeschwindigkeit / *Top speed:* 180 km/h

3.4. **Zusammenbau der Auspuffanlage / Assembly of the exhaust system** (Teile lfd. Nr. lt. Anlage 1 / *no. of parts acc. enclosure 1*)

Versuchsreihe B / Series B: 1)2a)3a)4a)

3.5. **Messung der Geräuschwerte / Acoustic measurements**

- 3.5.1. Hersteller des Messgerätes /
Manufacturer of test equipment: MÜLLER-BBM
- 3.5.2. Typ des Messgerätes /
Type of the test equipment: PAK MK II Configuration
- 3.5.3. Fahrgeräusch, Standgeräusch /
Drive by noise, stationary noise: nach ECE-R 41.04 /
according ECE-R 41.04
- 3.5.4. Beladungszustand bei der Fahr-
geräuschmessung /
Load condition during drive by test: Leergewicht zuzüglich 75 kg Fahrer /
Unloaded weight plus 75 kg driver
- 3.5.5. Abweichung bei Kalibrierung /
Deviation at calibration: < 0.2 dB(A)

3. **Prüfprotokoll** (Fortsetzung) / **Test report** (continuation)

3.6. **Messung der Leistung / Power measurement**

3.6.1. Messung der Leistungskurve mit Nicht-Originalauspuffanlage / *Testing of max. power with non-original exhaust system:*

Die gemessene Nennleistung und die zugehörige Drehzahl liegen im Toleranzbereich von 5% im Vergleich zu den mit der Originalauspuffanlage gemessenen Werten (siehe Anlage). /

The tested max. power und the engine speed is in the 5% tolerance in comparison with the original exhaust system (see enclosure).

3.6.2. Messung der Höchstgeschwindigkeit mit Nicht-Originalauspuffanlage / *Testing of top speed with non-original exhaust system:*

entfällt, da Fahrzeugklasse /
not applicable, because vehicle class: L3e

3.7. **Messung der Schadstoffemissionen / Pollution Test**

Messung des Abgasverhaltens mit Austauschkatalysator in Verbindung mit Nicht-Originalauspuffanlage gegen die in (EU)168/2013 Anh. VI (A2) Euro 5 genannten Grenzwerte bezogen auf die Fahrzeugklasse des Prüffahrzeugs.

Der Austauschkatalysator P-KAT-097 wird vom Original-Teilelieferanten des Gesamtfahrzeugherstellers, der in Anlage 2 aufgeführten Fahrzeuge, bezogen und entspricht diesen in allen Parametern. Aufbau und Beschichtung sind identisch. Aus diesem Grund wurde auf eine Vorkonditionierung verzichtet. /

Testing of pollution with aftermarket catalytic converter in combination with non-original exhaust system against the limits mentioned in (EU)168/2013 Annex VI (A2) Euro 5 regarding the vehicle category of the test bike.

The aftermarket catalytic converter P-KAT-097 is obtained from the original parts supplier of the entire vehicle manufacturer, listed in enclosure 2, and corresponds to this in all parameters. Structure and coating are identical. For this reason, preconditioning was not performed.

3. **Prüfprotokoll** (Fortsetzung) / **Test report** (continuation)

3.8. **Ergebnisse / Test results**

Die Ergebnisse der Prüfungen hinsichtlich / *The test results of*

- 3.8.1. Geräusche / *Noise testing*
- 3.8.2. Leistung / *Power measurement*
- 3.8.3. Abgasverhalten / *Pollution test*

sind der als Anlage beigefügten Tabellen zu entnehmen. /
are attached in the enclosures.

Aufgrund der Messung mit dem/n o.g. Fahrzeug/en können auch die in Anlage 2 aufgeführten Krafräder, die die gleiche Serien-Auspuffanlage besitzen und gleiche bzw. geringere Motorleistung haben, mit in den Verwendungsbereich aufgenommen werden. /

All motorcycles with the same serial exhaust system and same or less performance mentioned in enclosure 2 can be taken into the field of application due to the measurement with the above-named motorcycle/s.

- 3.8.4. Die beschriebene Nicht-Originalauspuffanlage / Technische Einheit darf an den in der Anlage 2 aufgeführten Kraftfahrzeugen unter den dort genannten Bedingungen verwendet werden. /
The described non-original exhaust system / technical unit is suitable for an application at the vehicles listed in enclosure 2.
- 3.8.5. Die allgemeinen Spezifikationen gemäß (EU)134/2014; Anhang II; Anlage 10; Abschnitt 4.1. werden durch die Technische Einheit erfüllt. /
The general specifications regarding (EU)134/2014; Annex II; Appendix 10; Clause 4.1. are fulfilled by the technical unit.

4. Anlagen / Enclosures

| | |
|--|---------------------|
| Anlage 1, Teile der technischen Einheit <i>Enclosure 1, Composition of the separate technical unit</i> | (1 Seite / Page) |
| Anlage 2, Verwendungsbereich <i>Enclosure 2, Field of application</i> | (2 Seiten / Pages) |
| Anlage 3, Ergebnisse der Geräusch- und Leistungsmessungen <i>Enclosure 3, Results of noise testing and power measurements</i> | (1 Seite / Page) |
| Anlage 4, Ergebnisse der Abgasmessungen <i>Enclosure 4, Results of testing of emission of pollutants</i> | (2 Seiten / Pages) |
| Anlage, Protokoll Geräuschmessung <i>Enclosure, protocol noise test</i> | (10 Seiten / Pages) |
| Anlage, Leistungskurve <i>Enclosure, Performance diagram</i> | (1 Seite / Page) |

5. Schlussbescheinigung / Summary

Die erwähnte Beschreibungsbogen und der darin beschriebene Typ entsprechen der genannten Prüfgrundlage. Der ungünstigste Fall wurde entsprechend der Prozessbeschreibung "Anforderungen an Prüfberichte (AS-PB-T-02)" bestimmt.

Der Prüfbericht darf nur vom Auftraggeber und nur in vollem Wortlaut vervielfältigt und weitergegeben werden. Eine auszugsweise Vervielfältigung und Veröffentlichung des Prüfberichtes sind nur nach schriftlicher Genehmigung zulässig. /

The mentioned information document and the type described therein are in accordance with the test basis mentioned above. The worst-case was selected in accordance with document "Requirements for Test Reports (AS-PB-T-02)".

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5. **Schlussbescheinigung** (Fortsetzung) / **Summary** (continuation)

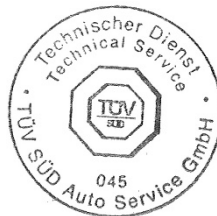
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TÜV SÜD Auto Service GmbH is designated as Technical Service by:

| Genehmigungsbehörde <i>Approval authority</i> | Land <i>Country</i> | Registriernummer <i>Registration number</i> |
|--|---|--|
| Kraftfahrt-Bundesamt (KBA) | Deutschland <i>Germany</i> | KBA-P 00100-10 |
| Vehicle Certification Agency (VCA) | Vereinigtes Königreich <i>United Kingdom</i> | VCA-TS-006 |
| Approval Authority of the Netherlands (RDW) | Niederlande <i>The Netherlands</i> | RDWT-082-xx |
| National Standards Authority of Ireland (NSAI) | Irland <i>Ireland</i> | Technical Service Number: 49 |
| Vehicle Safety Certification Center (VSCC) | Taiwan <i>Taiwan</i> | DE04-06-2 |
| Société Nationale de Certification et d'Homologation s.à r.l. (SNCH) | Luxemburg <i>Luxembourg</i> | 13/B(g) |
| Swedish Transport Agency | Schweden <i>Sweden</i> | TT 0024 |

Dieser Bericht umfasst Seite 1 bis 9. /
This test report contains the pages 1 up to 9.

München, 05.08.2022

Dipl.-Ing. (FH) P. Kallen
Sachverständiger / *Recognized Expert*
fr



P-KAT-097_SLO_295_EC_0.doc



Prüfbericht Nr. / Test report No.: 22-00021-CM-GBM-00
 Hersteller / Manufacturer: Akrapovič, d.d., SLO-1295 Ivančna Gorica
 Typ / Type: P-KAT-097



Auto Service

ANLAGE 1 ENCLOSURE 1

Teile der technischen Einheit / Composition of the separate technical unit

| Lfd. Nr. / No. | Einzelteile, Abmessungen in mm / Components parts, dimensions in mm | Abmessungen des Teiles in mm bzw. Originalteil / Ersatzteil / Dimensions of the part in mm or original part / replacement part | Teilenummer bzw. Genehmigungsnummer / Part no. or homologation no. |
|----------------|--|---|--|
| 1) | Krümmerröhr / Front pipe | Originalteil / Original part | - |
| 2a) | Verbindungsrohr / Link pipe | Ersatzteil / Replacement part | L-KTM6S01/1 (KTM / Gas Gas) |
| 2b) | Verbindungsrohr / Link pipe | Ersatzteil / Replacement part | L-HU7S03/1 (Husqvarna) |
| 3a) | Katalysator / Catalytic converter | Ø 82 x 110 | P-KAT-097 e26*01110*F |
| 4a) | Schalldämpfer / Silencer (Eintrittsrohr / Inlet pipe Ø 50 (2 Austrittsrohre / Outlet pipes Ø 20) | hexagonal 116,9 x 141,4 Länge ohne Endkappen / Length without end caps 400 | M-HHM001 e26*08158*G E26 92R-02 8158 |

P-KAT-097_SLO_295_EC_1.doc



Prüfbericht Nr. / Test report No.: 22-00021-CM-GBM-00
 Hersteller / Manufacturer: Akrapovič, d.d., SLO-1295 Ivančna Gorica
 Typ / Type: P-KAT-097



Auto Service

ANLAGE 2 ENCLOSURE 2

Verwendungsbereich / Field of application

Die Fahrzeuge erfüllen - bezugnehmend auf ihre Fahrzeugtypgenehmigung - die Umweltafordersstufen:
 The vehicles fulfil - regarding their Whole Vehicle Type Approval (WVTA) - the environmental steps:

Euro (4/5)
Euro (4/5)

| Lfd. Nr. | Hersteller | Fabrikmarke | Handelsbezeichnung | Fahrzeugtyp Genehmigung Nr. | Var. / Vers. | Motortyp 4 Takt | Hubraum in cm ³ | Nennleistung kW/min ⁻¹ | Sonstige bestimmende Merkmale | Anordnung entspr. Anl. 1 lfd. Nr. | |
|----------------|--------------|-------------|----------------------------|-------------------------------------|--------------|----------------------|------------------------------------|--|-------------------------------|-----------------------------------|---------|
| No. of vehicle | Manufacturer | Trade mark | Commercial description | Vehicle type no. of homologation | Var. / Vers. | Engine type 4 Stroke | Engine capacity in cm ³ | max. engine power kW/min ⁻¹ | Additional remarks | Composition reg. enclosure no. 1 | |
| 1) | KTM (A) | Husqvarna | Husqvarna 701 | Husqvarna 701 e1*168/2013*00032* | alle / all | 766 | 693 | 55/8000 | mit Kat. / with cat. *) | 1)2b)3a)4a) | |
| 2) | | | Supermoto | | | 768 | | | | | |
| 3) | | | Husqvarna 701 | | | 766 | | | | | |
| 4) | | | Enduro | | | 768 | | | | | |
| 5) | | | Husqvarna 701 Enduro LR | | | 768 | | | | | |
| 6) | | | Husqvarna 701 | Husqvarna 701 e1*168/2013*00034* | | 766 | | | | | 31/5500 |
| 7) | | | Enduro | | | 768 | | | | | 31/7000 |
| 8) | | | Husqvarna 701 | | | 766 | | | | | 31/5500 |
| 9) | | | Supermoto | | | 768 | | | | | 31/7000 |
| 10) | | | Husqvarna 701 Enduro LR | | | 768 | | | | | |



Prüfbericht Nr. / Test report No.: 22-00021-CM-GBM-00
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 Typ / Type: P-KAT-097



Auto Service

ANLAGE 2 ENCLOSURE 2

Verwendungsbereich / Field of application

| Lfd. Nr. | Hersteller | Fabrikmarke | Handelsbezeichnung | Fahrzeugtyp Genehmigung Nr. | Var. / Vers. | Motortyp 4 Takt | Hubraum in cm ³ | Nennleistung kW/min ⁻¹ | Sonstige bestimmende Merkmale | Anordnung entspr. Anl. 1 lfd. Nr. | | |
|------------------------|--------------|---------------|---------------------------|-------------------------------------|-----------------|----------------------------|--|--|-------------------------------------|---|---------|---------|
| No. of ve- hicle | Manufacturer | Trade mark | Commercial description | Vehicle type no. of homologation | Var. / Vers. | Engine type 4 Stroke | Engine capacity in cm ³ | max. engine power kW/min ⁻¹ | Additional remarks | Composition reg. enclosure no. 1 | | |
| 11) | KTM (A) | KTM | 690 Enduro R | KTM 690 LC4 e1*168/2013*00147* | alle / all | 768 | 693 | 55/8000 | mit Kat. / with cat. *) | 1)2a)3a)4a) | | |
| 12) | | | 690 SMC R | | | | | | | | | |
| 13) | | | 690 Enduro R | KTM 690 LC4 e1*168/2013*00146* | | | | | | | | |
| 14) | | | | | | | | | | | | |
| 15) | | | 690 SMC R | | | | | | | | | |
| 16) | | | | | | | | | | | | |
| 17) | | GasGas | GasGas ES 700 | GG LC4 e1*168/2013*00298* | | | | | | | 55/8000 | |
| 18) | | | GasGas SM 700 | | | | | | | | | |
| 19) | | | GasGas ES 700 | GG LC4 e1*168/2013*00307* | | | | | | | | 31/7000 |
| 20) | | | GasGas SM700 | | | | | | | | | |

*) Der serienmäßige Katalysator wird durch einen Austauschkatalysator ersetzt. / The original catalytic converter is replaced by an aftermarket-catalyst.

P-KAT-097_SLO_295_EC_2.doc





ANLAGE 3 ENCLOSURE 3

Ergebnisse der Geräusch- und Leistungsmessungen / Results of noise testing and power measurements

| Lfd. Nr. Fahrzeug / | Leistung Serie kW/min ⁻¹ / | Leistung Austausch kW/min ⁻¹ / | V _{max} Serie km/h / | V _{max} Aus- tausch km/h / | Fahrgeräusch in dB(A) / Sound level driving vehicle in dB(A) | | | | | Standgeräusch in dB(A) / Sound level stationary vehicle in dB(A) | | | |
|------------------------|---|---|--------------------------------------|--|---|--------------------------------|-------------------------------------|--|--------------|---|---------------------------|------------------------------|----------------------------|
| | | | | | gemessen in Gang / | Grenz- wert / **) | Serie gemes- sen / | Austausch gemes- sen / | bei km/h/ | lt. Fzg. BE / | Serie gemes- sen / | Austausch gemes- sen / | bei min ⁻¹ / |
| No. of vehicle | Engine power original kW/min ⁻¹ | Engine power non-original kW/min ⁻¹ | V _{max} original km/h | V _{max} non original km/h | measured in gear ratio | Limit value **) SLEU4 | original mea- sured Lurban | non- original measured Lurban | at km/h | Vehicle type hom. | original mea- sured | non- original measured | at min ⁻¹ |
| 11) B *) | 55/8000 | 55/8000 | - | - | 3 | 77 | 78 | 78 | 50 | 90 | 91 | 91 | 4000 |

*) Versuchsreihe / Test series

***) Grenzwert der Richtlinienfassung, die bei Erteilung der Fahrzeuggenehmigung Gültigkeit hatte. /
Limit value of directive which was valid by vehicle type homologation.

P-KAT-097_SLO_295_EC_3.doc



Prüfbericht Nr. / Test report No.: 22-00021-CM-GBM-00
Hersteller / Manufacturer: Akrapovič, d.d., SLO-1295 Ivančna Gorica
Typ / Type: P-KAT-097



Auto Service

ANLAGE 4 ENCLOSURE 4

Ergebnisse der Abgasmessungen / Results of testing of emission of pollutants

Versuchsreihe A / Series A: (Fahrzeug lfd. Nr. 12 / Vehicle no. 12)

Messung gemäß / Tests regarding: 134/2014 Anh. / Annex II; III; VI
entsprechend Typ / according to Type I; II; V
Vorkonditionierung Katalysator / preconditioning Catalytic entfällt / not applicable, siehe Punkt 3.7 / see item 3.7
Äquivalente Schwungmasse / Equivalent flywheel mass 230 kg

Typ / Type I

WMTC Phase 3 (Kategorie 3-2) / WMTC Stage 3 (Class 3-2)

| Schadstoffkomponenten / Pollutant components | THC [mg/km] | NMHC [mg/km] | CO [mg/km] | NO _x [mg/km] |
|--|----------------|-----------------|---------------|----------------------------|
| Test 1 R ₁ | 23 | 18 | 204 | 20 |
| Test 2 R ₂ | - | - | - | - |
| Test 3 R ₃ | - | - | - | - |
| Mittelwert / Average | 23 | 18 | 204 | 20 |
| Grenzwerte / Limits 168/2013 Annex VI (A2) Euro 5 (Prüfzyklus Teil / Test cycle part 1) | 100 | 68 | 1000 | 60 |



Prüfbericht Nr. / Test report No.: 22-00021-CM-GBM-00
 Hersteller / Manufacturer: Akrapovič, d.d., SLO-1295 Ivančna Gorica
 Typ / Type: P-KAT-097



Auto Service

ANLAGE 4 ENCLOSURE 4

Ergebnisse der Abgasmessungen / Results of testing of emission of pollutants

Typ / Type II

| Betriebsbedingung / Running condition | CO [Vol %] | Motordrehzahl / Engine rpm [min ⁻¹] | Motoröltemperatur / Engine oil temperature [°C] |
|--|---------------|---|---|
| Normale Leerlaufdrehzahl / Nominal idle speed | 0,00 | 1650 | 90 |
| Hohe Leerlaufdrehzahl / Exceeded idle speed | 0,00 | 2500 | 90 |

Typ / Type V

Mathematisches Dauerhaltbarkeitsverfahren / Mathematical durability procedure

| Schadstoffkomponenten / Pollutant components | THC [mg/km] | NMHC [mg/km] | CO [mg/km] | NO _x [mg/km] |
|--|----------------|-----------------|---------------|----------------------------|
| Verschlechterungsfaktor / Deterioration Factor (DF) | 1,3 | 1,3 | 1,3 | 1,3 |
| Test 1 R ₁ x DF | 30 | 23 | 265 | 26 |
| Test 2 R ₂ x DF | - | - | - | - |
| Test 3 R ₃ x DF | - | - | - | - |
| Mittelwert / Average | 30 | 23 | 265 | 26 |
| Grenzwerte / Limits 168/2013 Annex VI (A2) Euro 5 (Prüfzyklus Teil / test cycle part 1) | 100 | 68 | 1000 | 60 |



P-KAT-097_SLO_295_EC_4.doc

Laboratory Report

V00

Test standard:

UN-R 041

Level of amendment:

series of amendments 04, supplement 07

Title:

Noise of motor cycles

Manufacturer:
Akrapovič d.d.

Type:
M-HHM001

Subject of testing:
Component

0 General

| | | |
|-------|---|--|
| 0.1 | Make (trade name of manufacturer): | Akrapovič |
| 0.2 | Type: | M-HHM001 |
| 0.2.1 | Commercial description: | M-HHM001 |
| 0.3 | Means of identification of type, if marked on the vehicle: | M-HHM001 |
| 0.3.1 | Location of that marking: | On exhaust |
| 0.4 | Category of vehicle: | L3e |
| 0.5 | Manufacturer's name and address: | Akrapovič d.d. Malo Hudo 8a 1295 Ivančna Gorica (SI) |
| 0.8 | Name and address of assembly plant: | Akrapovič d.d., PE Crnomelj Ulica heroja Stariha 24 8340 Crnomelj (SI) |
| 0.9 | Name and address of representative: | n.a. |

1 Test conditions

Tests are carried out in compliance with the given requirements of the standard mentioned above.

fulfilled
 not fulfilled



2 Attachments

| | | | |
|-----|--------------|----------------|-------------|
| 2.1 | Test report: | No.: | R2M70002-00 |
| | | Date of issue: | 14.07.2020 |
| 2.2 | Test report: | No.: | R2M70003-00 |
| | | Date of issue: | 14.07.2020 |

3 Statement of conformity

The devices under test are in compliance with the test standard mentioned above.
 With regard to the required level of performance to be achieved, the test specimens were representative for the type.

The tests were carried out in accordance to the relevant requirements of the

EN ISO/IEC 17025:2005 EN ISO/IEC 17020:2012

Test Laboratory
SGS-TÜV Saar GmbH

notified by

Kraftfahrt-Bundesamt (KBA),
Federal Republic of Germany

National Standards
Authority of Ireland (NSAI)

Rijksdienst voor het Wegverkeer
(RDW),
The Netherlands

No. KBA - P 00084 – 10

No. 101

No. 99050064 00

Responsible expert

Signature

Christoph Wibmer

Jul 14, 2020



Conformity check

Signature

Efrossina Daltcheva



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 To assess the conformity, the laboratory refers to the "scope classification" of the Kraftfahrt-Bundesamt (KBA) – Federal Motor Transport Authority (in its valid version at the time of testing) and the specified consideration of the measurement uncertainty for the related test procedure.
 In case the measurement uncertainty does not need to be considered according to the scope classification, the laboratory considers the result conform if its measured value is within the specification.
 In case the measurement uncertainty does need to be considered according to the scope classification, the laboratory considers the result conform if its value incl. its measurement uncertainty is within the specification.

1. **Vehicle**

1.1 Manufacturer: KTM AG
 1.2 Vehicle Ident. Number: VBKLETP30MM777579
 1.3 Commercial name / Type: KTM 690 Enduro R
 1.4 Type: KTM 690 LC4
 1.5 Variant: A
 1.6 Version: ---
 1.7 Class: L3e-A3
 1.8 Type approval number: without (Prototype)
 1.9 Vehicle kerb weight (m_{kerb}) [kg]: 160,0
 1.10 Mass of the vehicle in running order (m_{ro}) [kg]: 235,0
 1.11 Vehicle test mass (m_t) [kg]: 235,0
 1.12 Technically permissible max. laden mass (M) [kg]: 350,0
 1.13 Power to mass ratio index (PMR): 234,0
 1.14 Vehicle length [m]: 2,1
 1.15 Milage [km]: 724

2. **Engine**

2.1 Manufacturer / engine code: KTM AG
 2.2 Model: M-757*12920*
 2.3 Cycles: four stroke two stroke n.a.
 2.4 Number and arrangement of cylinders: 1 / Single
 2.5 Working principle: positive ignition compression ignition electrical hybrid
 2.6 Rated power [kW / min⁻¹]: 55 / 8000
 2.7 Idle engine speed [min⁻¹]: 1600
 2.8 Cylinder capacity [cm³]: 693

3. **Transmission**

3.1 Type: manual gearbox automatic gearbox Type: without
 3.2 No. of gears: 6
 3.3 Ratio (Prime : Secondary): 15 : 46
 3.4 Driving mode(s): without



4. Equipment

| | | | | | | |
|-----|---|-----|---|-----|---|-------------------|
| 4.1 | Pre Catalyst(s) Make / type (left/right): | --- | / | --- | / | --- |
| 4.2 | Catalyst(s) Make / type (left/right): | KTM | / | --- | / | 63605091000 |
| 4.5 | Front exhaust silencer(s) Make / type (left/right): | --- | / | --- | / | --- |
| 4.6 | Middle exhaust silencer(s) Make / type (left/right): | --- | / | --- | / | --- |
| 4.7 | Rear exhaust silencer(s) Make / type (left/right): | KTM | / | --- | / | KTM 761 ED LC4-01 |
| 4.8 | Tail pipe(s) Make / type (left/right): | --- | / | --- | / | --- |
| 4.9 | Exhaust Flap(s) Make / type (left/right): | --- | / | --- | / | --- |

4.13 Tyres

| | | |
|------------------------|---------------|----------------|
| Manufacturer: | Mitas | Mitas |
| Type: | E-07 | E-07 |
| Size: | 90/90 -21 54T | 140/80 -18 70T |
| Tyre pressure [bar]: | --- | --- |
| Tyre tread depth [mm]: | > 4 | > 4 |

5. Measurements

5.1 Conditions

| Passby Parameter | |
|--|------|
| Reference acceleration $a_{wot\ ref}$ [m/s ²]: | 3,73 |
| -10% Reference acc. $a_{wot\ ref\ min}$ [m/s ²]: | 3,36 |
| +10% Reference acc. $a_{wot\ ref\ max}$ [m/s ²]: | 4,10 |
| Target acceleration a_{urban} [m/s ²]: | 1,84 |
| Gear weighting factor k_g : | n.a. |
| Partial power factor k_p : | 0,48 |
| Test speed v_{test} at PP' (± 1) [km/h]: | 50,0 |

| Driving conditions | | i | i+1 |
|--|--|---------|-----|
| Gear: | | 3 | --- |
| test acceleration $a_{wot\ test}$ [m/s ²]: | | 3,53 | --- |
| aver. vehicle velocity when ref. point at AA' | | 39,7 | --- |
| aver. vehicle velocity when ref. point at PP' | | 50,5 | --- |
| aver. vehicle velocity when ref. point at BB' | | 60,0 | --- |
| Operating mode: | | without | |
| Gearbox: | | Locked | |

| Calculation of the acceleration/factors | |
|---|--|
| $a_{wot\ ref} = 3.33 * \log(PMR) - 4.16$ | |
| $k = n.a.$ | |
| $k_p = (1 - (a_{urban}/a_{wot\ test}))$ | |
| $a_{wot\ i} = ((v_{BB}/3.6)^2 - (v_{AA}/3.6)^2) / (2 * (20 + i))$ | |
| $a_{wot\ i+1} = n.a.$ | |
| $a_{urban} = 1.28 * \log(PMR) - 1.19$ | |
| Evaluation $a_{wot\ test}$: AA'-BB' | |

5.2 Measurement results pass by noise

| Gear used | Run | Mode | acc. point ⁽¹⁾ [m] | A-A' | | P-P' | | B-B' | | $a_{wot\ test}$ [m/s ²] | Sound level L ⁽²⁾ | | L ⁽³⁾ | |
|-----------|-----|--------------------|-------------------------------|----------|---------|----------|---------|----------|---------|-------------------------------------|------------------------------|---------------|------------------|------------|
| | | | | v [km/h] | n [rpm] | v [km/h] | n [rpm] | v [km/h] | n [rpm] | | left [dB(A)] | right [dB(A)] | li [dB(A)] | re [dB(A)] |
| 3 | 7 | wot ₍₃₎ | 0,0 | 39,5 | 3039 | 50,1 | 3739 | 59,2 | 4436 | 3,39 | 82,2 | 81,5 | 82,3 | 81,7 |
| | 9 | | | 39,7 | 3078 | 50,6 | 3791 | 59,8 | 4465 | 3,49 | 82,1 | 81,5 | | |
| | 10 | | | 39,9 | 3089 | 50,9 | 3813 | 60,9 | 4550 | 3,70 | 82,6 | 82,0 | | |
| | 11 | crs ₍₃₎ | | 50,3 | 3687 | 50,2 | 3652 | 50,3 | 3659 | | 73,5 | 72,6 | 73,9 | 72,8 |
| | 12 | | | 50,1 | 3645 | 50,3 | 3657 | 50,8 | 3661 | | 74,1 | 72,7 | | |
| | 13 | | | 49,6 | 3623 | 50,0 | 3651 | 50,2 | 3649 | | 74,0 | 73,0 | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | --- | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| | --- | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| | --- | --- | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | --- | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| | --- | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |

1) Acceleration point according Line A-A'; 2) values reduced by 1 dB(A); Numbers written in italics a corrected acc. to Annex3, Pt. 2.1; 3) Intermediate Results of each side of the vehicle

$[L_{wot\ rep} = L_{wot\ (i+1)} + k * (L_{wot\ (i)} - L_{wot\ (i+1)})]$; [In the case of a single gear ratio test the values are the test result of each test; PMR > 25]
 $[L_{crs\ rep} = L_{crs\ (i+1)} + k * (L_{crs\ (i)} - L_{crs\ (i+1)})]$; [In the case of a single gear ratio test the values are the test result of each test; PMR > 25]

5.3 Results

| | Gear | | L_{rep} | L_{crs} | $L_{wot\ max\ limit}$ | Test result L_{urban} |
|-----------|-----------|-------------|-----------|-----------|-----------------------|-------------------------|
| | i [dB(A)] | i+1 [dB(A)] | | | | |
| L_{wot} | 82,3 | --- | 82,3 | 73,9 | 82,0 | 78,3 |
| L_{crs} | 73,9 | --- | | | | |

| Calculation of L_{urban} (PMR > 25) | |
|--|--|
| $[L_{urban} = L_{wot\ rep} - k_p * (L_{wot\ rep} - L_{crs\ rep})]$ | |
| $[L_{urban} = 82,3 - 0,48 * (82,3 - 73,9)]$ | |

5.4 Limits

| Category | Power-to-mass ratio index (PMR) | Limit value for L_{urban} [dB(A)] | applicable Limit value |
|-----------------|---------------------------------|-------------------------------------|------------------------|
| First category | PMR ≤ 25 | 73 | |
| Second category | 25 < PMR ≤ 50 | 74 | |
| Third category | PMR > 50 | 77 ^(a) | X |

(a) For motorcycles tested in second gear only in Annex 3, the limit value is increased by 1dB(A) until the date in Paragraph 12.7. Data for affected vehicles shall be studied, and discussions shall be made in case of further extension.



5.5 Sound level of stationary vehicle

Operation mode: without

| Measuring results | left | right |
|---------------------|---------|---------|
| | [dB(A)] | [dB(A)] |
| 1 st Run | --- | 91,2 |
| 2 nd Run | --- | 91,3 |
| 3 rd Run | --- | 91,1 |
| 4 th Run | --- | --- |
| average Value | --- | 91,2 |

| Engine speed [rpm] | Target engine speed | |
|--------------------|---------------------|----------------------------|
| | 4000 | --- |
| | X | n = 50% S (S > 5000 min-1) |

| | |
|-----------------------|-----------|
| Result [dB(A)] | 91 |
|-----------------------|-----------|

5.5.1 Sound level of stationary vehicle in different operation modes

| Operation mode | Result [dB(A)] |
|----------------|----------------|
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |

| Engine speed [rpm] | Target engine speed | |
|--------------------|---------------------|----------------------------|
| | --- | --- |
| | --- | n = 50% S (S > 5000 min-1) |

6. **Weather conditions**

| | |
|---------------------------|-------|
| Air temperature [°C]: | 22,6 |
| Surface temperature [°C]: | 45,8 |
| Air pressure [mbar]: | 998,2 |

| | |
|---------------------|------|
| Air humidity [%]: | 45,6 |
| Wind speed [m/s]: | 4,3 |
| Wind direction [°]: | 76 |

7. **General Requirements**

| | |
|-----------------------------|------|
| Ambient noise level | |
| before Measurement [dB(A)]: | 40,4 |
| after Measurement [dB(A)]: | 40,4 |

| | |
|-------------------------------------|------|
| Calibration level (Target) [dB(A)]: | 94,0 |
| Calibration level Micro 1 [dB(A)]: | 94,0 |
| Calibration level Micro 2 [dB(A)]: | 94,0 |

8. **Test Standard:** UN ECE-R 41.04, Supp. 7
9. **Expert:** Wibmer Chr.
10. **Date / place of test:** 07.07.2020 / Akrapovic d.d., Precna (SI)
10. **Date of issue:** 14.07.2020
11. **Remarks:** ---



1. Vehicle

1.1 Manufacturer: KTM AG
 1.2 Vehicle Ident. Number: VBKLETP30MM777579
 1.3 Commercial name / Type: KTM 690 Enduro R
 1.4 Type: KTM 690 LC4
 1.5 Variant: A
 1.6 Version: ---
 1.7 Class: L3e-A3
 1.8 Type approval number: without (Prototype)
 1.9 Vehicle kerb weight (m_{kerb}) [kg]: 160,0
 1.10 Mass of the vehicle in running order (m_{ro}) [kg]: 235,0
 1.11 Vehicle test mass (m_t) [kg]: 235,0
 1.12 Technically permissible max. laden mass (M) [kg]: 350,0
 1.13 Power to mass ratio index (PMR): 234,0
 1.14 Vehicle length [m]: 2,1
 1.15 Milage [km]: 724

2. Engine

2.1 Manufacturer / engine code: KTM AG
 2.2 Model: M-757*12920*
 2.3 Cycles: four stroke two stroke n.a.
 2.4 Number and arrangement of cylinders: 1 / Single
 2.5 Working principle: positive ignition compression ignition electrical hybrid
 2.6 Rated power [kW / min⁻¹]: 55 / 8000
 2.7 Idle engine speed [min⁻¹]: 1600
 2.8 Cylinder capacity [cm³]: 693

3. Transmission

3.1 Type: manual gearbox automatic gearbox Type: without
 3.2 No. of gears: 6
 3.3 Ratio (Prime : Secondary) 15 : 46
 3.4 Driving mode(s): without



4. Equipment

| | | | | | | |
|-----|---|-----------|---|-----|---|----------------|
| 4.1 | Pre Catalyst(s) Make / type (left/right): | --- | / | --- | / | --- |
| 4.2 | Catalyst(s) Make / type (left/right): | Akrapovic | / | --- | / | --- |
| 4.5 | Front exhaust silencer(s) Make / type (left/right): | --- | / | --- | / | --- |
| 4.6 | Middle exhaust silencer(s) Make / type (left/right): | --- | / | --- | / | --- |
| 4.7 | Rear exhaust silencer(s) Make / type (left/right): | Akrapovic | / | --- | / | M-HHM001 |
| 4.8 | Tail pipe(s) Make / type (left/right): | Akrapovic | / | --- | / | 2x D=20/D=25mm |
| 4.9 | Exhaust Flap(s) Make / type (left/right): | --- | / | --- | / | --- |

4.13 Tyres

| | | |
|------------------------|---------------|----------------|
| Manufacturer: | Mitas | Mitas |
| Type: | E-07 | E-07 |
| Size: | 90/90 -21 54T | 140/80 -18 70T |
| Tyre pressure [bar]: | --- | --- |
| Tyre tread depth [mm]: | > 4 | > 4 |

5. Measurements

5.1 Conditions

| Passby Parameter | | Driving conditions | | | Calculation of the acceleration/factors | |
|--|------|--|---------|-----|---|---|
| Reference acceleration $a_{wot\ ref}$ [m/s ²]: | 3,73 | Gear: | 3 | i | 3 | $a_{wot\ test} = 3.33 * \log(PMR) - 4.16$ |
| -10% Reference acc. $a_{wot\ ref\ min}$ [m/s ²]: | 3,36 | test acceleration $a_{wot\ test}$ [m/s ²]: | 3,62 | i+1 | --- | $k = n.a.$ |
| +10% Reference acc. $a_{wot\ ref\ max}$ [m/s ²]: | 4,10 | aver. vehicle velocity when ref. point at AA' | 39,1 | | --- | $k_p = (1 - (a_{urban}/a_{wot\ test}))$ |
| Target acceleration a_{urban} [m/s ²]: | 1,84 | aver. vehicle velocity when ref. point at PP' | 50,4 | | --- | $a_{wot\ i} = ((v_{BB}/3.6)^2 - (v_{AA}/3.6)^2) / (2 * (20 + i))$ |
| Gear weighting factor k_g : | n.a. | aver. vehicle velocity when ref. point at BB' | 60,0 | | --- | $a_{wot\ i+1} = n.a.$ |
| Partial power factor k_p : | 0,49 | Operating mode: | without | | | $a_{urban} = 1.28 * \log(PMR) - 1.19$ |
| Test speed v_{test} at PP' (± 1) [km/h]: | 50,0 | Gearbox: | Locked | | | Evaluation $a_{wot\ test}$: AA'-BB' |

5.2 Measurement results pass by noise

| Gear used | Run | Mode | acc. point ⁽¹⁾ [m] | A-A' | | P-P' | | B-B' | | $a_{wot\ test}$ [m/s ²] | Sound level L ⁽²⁾ | | L ⁽³⁾ | |
|-----------|-----|--------------------|-------------------------------|----------|---------|----------|---------|----------|---------|-------------------------------------|------------------------------|---------------|------------------|------------|
| | | | | v [km/h] | n [rpm] | v [km/h] | n [rpm] | v [km/h] | n [rpm] | | left [dB(A)] | right [dB(A)] | li [dB(A)] | re [dB(A)] |
| 3 | 1 | wot ₍₃₎ | 0,0 | 38,1 | 2884 | 49,5 | 3683 | 59,0 | 4420 | 3,54 | 81,5 | 80,7 | 81,8 | 80,9 |
| | 2 | | | 39,8 | 3113 | 51,0 | 3827 | 60,6 | 4530 | 3,65 | 81,8 | 80,8 | | |
| | 4 | | | 39,4 | 3090 | 50,7 | 3782 | 60,4 | 4519 | 3,66 | 82,0 | 81,1 | | |
| | 9 | crs ₍₃₎ | | 50,3 | 3670 | 50,5 | 3664 | 50,6 | 3675 | | 73,9 | 73,2 | 73,8 | 73,0 |
| | 11 | | | 49,9 | 3650 | 50,1 | 3669 | 49,8 | 3602 | | 73,6 | 72,8 | | |
| | 13 | | | 49,9 | 3594 | 49,1 | 3593 | 49,7 | 3603 | | 73,9 | 73,0 | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |

1) Acceleration point according Line A-A'; 2) values reduced by 1 dB(A); Numbers written in italics a corrected acc. to Annex3, Pt. 2.1; 3) Intermediate Results of each side of the vehicle

$[L_{wot\ rep} = L_{wot\ (i+1)} + k * (L_{wot\ (i)} - L_{wot\ (i+1)})]$; [In the case of a single gear ratio test the values are the test result of each test; PMR > 25]
 $[L_{crs\ rep} = L_{crs\ (i+1)} + k * (L_{crs\ (i)} - L_{crs\ (i+1)})]$; [In the case of a single gear ratio test the values are the test result of each test; PMR > 25]

5.3 Results

| | Gear | | L_{rep} | $L_{wot\ max}$ | Test result L_{urban} |
|-----------|-----------|-------------|-----------|----------------|-------------------------|
| | i [dB(A)] | i+1 [dB(A)] | | | |
| L_{wot} | 81,8 | --- | 81,8 | 82,0 | 77,9 |
| L_{crs} | 73,8 | --- | | | |

Calculation of L_{urban} (PMR > 25)
 $[L_{urban} = L_{wot\ rep} - k_p * (L_{wot\ rep} - L_{crs\ rep})]$
 $[L_{urban} = 81,8 - 0,49 * (81,8 - 73,8)]$

5.4 Limits

| Category | Power-to-mass ratio index (PMR) | Limit value for L_{urban} [dB(A)] | applicable Limit value |
|-----------------|---------------------------------|-------------------------------------|------------------------|
| First category | PMR ≤ 25 | 73 | |
| Second category | 25 < PMR ≤ 50 | 74 | |
| Third category | PMR > 50 | 77 ^(a) | X |

(a) For motorcycles tested in second gear only in Annex 3, the limit value is increased by 1dB(A) until the date in Paragraph 12.7. Data for affected vehicles shall be studied, and discussions shall be made in case of further extension.



5.5 Sound level of stationary vehicle

Operation mode: without

| Measuring results | left | right |
|---------------------|---------|---------|
| | [dB(A)] | [dB(A)] |
| 1 st Run | --- | 91,0 |
| 2 nd Run | --- | 90,9 |
| 3 rd Run | --- | 90,9 |
| 4 th Run | --- | --- |
| average Value | --- | 90,9 |

| Engine speed [rpm] | Target engine speed | |
|--------------------|---------------------|----------------------------|
| | 4000 | --- |
| | X | n = 50% S (S > 5000 min-1) |

| | |
|-----------------------|-----------|
| Result [dB(A)] | 91 |
|-----------------------|-----------|

5.5.1 Sound level of stationary vehicle in different operation modes

| Operation mode | Result [dB(A)] |
|----------------|----------------|
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |
| --- | --- |

| Engine speed [rpm] | Target engine speed | |
|--------------------|---------------------|----------------------------|
| | --- | --- |
| | --- | n = 50% S (S > 5000 min-1) |

6. **Weather conditions**

| | |
|---------------------------|------|
| Air temperature [°C]: | 23,6 |
| Surface temperature [°C]: | 48,2 |
| Air pressure [mbar]: | 998 |

| | |
|---------------------|-------|
| Air humidity [%]: | 46,5 |
| Wind speed [m/s]: | 2,4 |
| Wind direction [°]: | 112,2 |

7. **General Requirements**

| | |
|-----------------------------|------|
| Ambient noise level | |
| before Measurement [dB(A)]: | 46,1 |
| after Measurement [dB(A)]: | 46,1 |

| | |
|-------------------------------------|------|
| Calibration level (Target) [dB(A)]: | 94,0 |
| Calibration level Micro 1 [dB(A)]: | 94,0 |
| Calibration level Micro 2 [dB(A)]: | 94,0 |

- 8. **Test Standard:** UN ECE-R 41.04, Supp. 7
- 9. **Expert:** Wibmer Chr.
- 10. **Date / place of test:** 07.07.2020 / Akrapovic d.d., Precna (SI)
- 10. **Date of issue:** 14.07.2020
- 11. **Remarks:** Slip on system with catalytic converter
2x Insert tube in the tube D=20mm/D=25mm

