



**CERTIFIKAT O ECE-HOMOLOGACIJI**  
**ECE COMPONENT TYPE-APPROVAL CERTIFICATE**

Sporočilo o podeljeni homologaciji za tip vozila glede na tip nadomestnega sistema za dušenje zvoka NORESS ali sestavnega dela v skladu s Pravilnikom št. 92 R, Amandma 01, Dodatek 02

*Communication concerning approval granted of a vehicle type with regard to a type of NORESS or component thereof pursuant to Regulation No. 92 R, Amendment 01, Supplement 02*

Homologacijska št.: **E26 92 R 01/02 8131**  
*Approval No.:*

Razširitev št.: **00 CORR.1**  
*Extension No.:*

1. Blagovno ime ali znamka motocikla:  
*Trade name or mark of the motorcycle:* KTM
2. Tip motocikla:  
*Motorcycle type:* KTM 690 LC4 (e1\*168/2013\*00147\*)  
KTM 690 LC4 (e1\*168/2013\*00146\*)
3. Ime in naslov proizvajalca:  
*Manufacturer's name and address:* KTM AG  
Stallhofnerstraße 3  
AT-5230 Mattighofen  
Austria
4. Če pride v poštev, ime in naslov predstavnika proizvajalca:  
*If applicable, name and address of manufacturer's representative:* /
5. Motor  
*Engine*
- 5.1. Proizvajalec:  
*Manufacturer:* KTM AG
- 5.2. Tip:  
*Type:* glej poročilo o preskusu 19-00017-CM-GBM-00  
*see the test report 19-00017-CM-GBM-00*
- 5.3. Model:  
*Model:* /
- 5.4. Največja nazivna moč:  
*Rated maximum net power:* glej prilogo 2 poročila o preskusu  
*see enclosure 2 of the test report*
- 5.5. Vrsta motorja:  
*Kind of engine:* na prisilni vžig  
*positive-ignition*

---

5.6.	Način delovanja: <i>Cycles:</i>	štiritaktni <i>four-stroke</i>
5.7.	Prostornina valja: <i>Cylinder capacity:</i>	693 cm <sup>3</sup>
6.	Menjalnik <i>Transmission</i>	
6.1.	Vrsta menjalnika: <i>Type of transmission:</i>	ročni menjalnik <i>manual transmission</i>
6.2.	Število prestav: <i>Number of gears:</i>	6 prestav <i>6 gears</i>
7.	Oprema <i>Equipment</i>	
7.1.	Dušilnik zvoka <i>Exhaust silencer</i>	
7.1.1.	Proizvajalec ali pooblaščen zastopnik (če obstaja): <i>Manufacturer or authorized representative (if any):</i>	AKRAPOVIC D.D.
7.1.2.	Model: <i>Model:</i>	/
7.1.3.	Tip: <i>Type:</i>	M-HRAA005
	v skladu s številko risbe: <i>in accordance with drawing No.:</i>	M HSO T76R16 T400/65 S45AA/D22 SM 690 19
7.2.	Dušilnik zvoka na sesalni strani <i>Intake silencer</i>	originalen <i>original</i>
7.2.1.	Proizvajalec ali pooblaščen zastopnik (če obstaja): <i>Manufacturer or authorized representative (if any):</i>	AKRAPOVIC D.D.
7.2.2.	Model: <i>Model:</i>	/
7.2.3.	Tip: <i>Type:</i>	/
	v skladu s številko risbe: <i>in accordance with drawing No.:</i>	/
8.	Uporabljene prestave za izvajanje meritev v vožnji: <i>Gears used for test of motor cycle in motion:</i>	3 <i>3<sup>rd</sup> gear</i>
9.	Končno prestavno razmerje(a): <i>Final drive ratio(s):</i>	2,194 / 3,067

---

10. ECE homologacijska številka pnevmatik(e): <i>ECE type approval number of tyre(s):</i>	ni navedeno <i>no specification</i>
Če ni na voljo, navesti naslednje podatke: <i>If not available, the following information shall be provided:</i>	
10.1. Proizvajalec pnevmatik: <i>Tyre manufacturer:</i>	1. os: Mitas, 2. os: Mitas <i>1<sup>st</sup> axle: Mitas, 2<sup>nd</sup> axle: Mitas</i>
10.2. Trgovska oznaka(e) tipa pnevmatik (po oseh), (npr: tovarniška oznaka, hitrostni razred in razred nosilnosti):  <i>Commercial description(s) of the type of tyre (by axle), (e.g. trade name, speed index, load index):</i>	1. os: Enduro Hitrostni razred: /, Razred nosilnosti: / 2. os: Enduro Hitrostni razred: /, Razred nosilnosti: /  <i>1<sup>st</sup> axle: Enduro Speed index: /, Load index: / 2<sup>nd</sup> axle: Enduro Speed index: /, Load index: /</i>
10.3. Velikost pnevmatik (po oseh):  <i>Tyre size (by axle):</i>	1. os: 90/90-21 2. os: 140/80-18 <i>1<sup>st</sup> axle: 90/90-21 2<sup>nd</sup> axle: 140/80-18</i>
10.4. Druge homologacijske številke (če so na voljo): <i>Other type approval number (if available):</i>	/
11. Mase <i>Masses</i>	
11.1. Največja tehnično dovoljena masa: <i>Maximum permissible gross weight:</i>	350 kg
11.2. Testna masa: <i>Test mass:</i>	235 kg
11.3. Indeks razmerja moči in mase (PMR): <i>Power to mass ratio index (PMR):</i>	234,0
12. Dolžina vozila: <i>Vehicle length:</i>	2,03 m
12.1. Referenčna dolžina $l_{ref}$ : <i>Reference length <math>l_{ref}</math>:</i>	2,03 m
13. Hitrost vozila pri meritvah v prstavi (i) <i>Vehicle speeds of measurements in gear (i)</i>	
13.1. Hitrost vozila na začetku pospeševalnega cikla (povprečje 3 pospeševanj) za prestavo (i): <i>Vehicle speed at the beginning of the period of acceleration (average of 3 runs) for gear (i):</i>	38,1 km/h
13.2. Dolžina pred začetkom pospeševanja za prestavo (i): <i>Pre-acceleration length for gear (i):</i>	0 m

13.3. Hitrost vozila $v_{PP}$ (povprečje 3 pospeševanj) za prestavo (i): <i>Vehicle speed <math>v_{PP}</math> (average of 3 runs) for gear (i):</i>	49,8 km/h
13.4. Hitrost vozila $v_{BB}$ (povprečje 3 pospeševanj) za prestavo (i): <i>Vehicle speed <math>v_{BB}</math> (average of 3 runs) for gear (i):</i>	60,4 km/h
14. Hitrosti vozila pri meritvah v prestavi (i+1) (če pride v poštev) <i>Vehicle speeds of measurements in gear (i+1) (if applicable)</i>	
14.1. Hitrost vozila na začetku pospeševalnega cikla (povprečje 3 pospeševanj) za prestavo (i+1): <i>Vehicle speed at the beginning of the period of acceleration (average of 3 runs) for gear (i+1):</i>	ne pride v poštev <i>not applicable</i>
14.2. Dolžina pred začetkom pospeševanja za prestavo (i+1): <i>Pre-acceleration length for gear (i+1):</i>	ne pride v poštev <i>not applicable</i>
14.3. Hitrost vozila $v_{PP}$ (povprečje 3 pospeševanj) za prestavo (i+1): <i>Vehicle speed <math>v_{PP}</math> (average of 3 runs) for gear (i+1):</i>	ne pride v poštev <i>not applicable</i>
14.4. Hitrost vozila $v_{BB}$ (povprečje 3 pospeševanj) za prestavo (i+1): <i>Vehicle speed <math>v_{BB}</math> (average of 3 runs) for gear (i+1):</i>	ne pride v poštev <i>not applicable</i>
15. Pospeški so izračunani med linijami AA' in BB'/PP' in BB' <i>Accelerations are calculated between lines AA' and BB'/PP' and BB'</i>	
15.1. Opis delovanja naprav za stabilizacijo pospeševanja (če pride v poštev): <i>Description of functionality of devices used to stabilize the acceleration (if applicable):</i>	ne pride v poštev <i>not applicable</i>
16. Ravni hrupa v vožnji <i>Noise levels of moving vehicle</i>	
16.1. Rezultati merjenja pri polnem plinu $L_{wot}$ : <i>Wide-open-throttle test result <math>L_{wot}</math>:</i>	81,7 dB(A)
16.2. Rezultati merjenja v vožnji $L_{crs}$ : <i>Constant speed test results <math>L_{crs}</math>:</i>	74,0 dB(A)
16.3. Delni faktor moči $k_p$ : <i>Partial power factor <math>k_p</math>:</i>	0,521
16.4. Končni rezultat merjenja $L_{urban}$ : <i>Final test result <math>L_{urban}</math>:</i>	77,7 dB(A)

17. Raven hrupa v mirovanju  
*Noise level of stationary vehicle*
- 17.1. Pozicija in smer mikrofona  
(skladno z dodatkom 2, Priloga 3,  
pravilnika ECE 41 R, amandma 04):  
*Position and orientation of microphone  
(according to Appendix 2 of Annex 3 of 04  
series of regulation No. 41):*
- 17.2. Rezultat merjenja v mirovanju:  
*Test result for stationary test:*
18. Dodatne določbe za emisije hrupa:  
*Additional sound emission provisions:*
19. Referenčna skladnost podatkov v uporabi  
*In-use compliance reference data*
- 19.1. Za meritev izbrana prestava (i) ali,  
izbrana lega izbirnika prestave,  
pri vozilih z varibalinim menjalnikom:  
*Gear (i) or, for vehicles tested with non-locked  
gear ratios, the position of the gear selector chosen  
for the test:*
- 19.2. Dolžina pred začetkom pospeševanja  $l_{PA}$ :  
*Pre-acceleration length  $l_{PA}$ :*
- 19.3. Hitrost vozila na začetku pospeševalnega cikla  
(povprečje 3 pospeševanj) za prestavo (i):  
*Vehicle speed at the beginning of the period  
of acceleration (average of 3 runs) for gear (i):*
- 19.4. Raven zvočnega tlaka  $L_{wot(i)}$ :  
*Sound pressure level  $L_{wot(i)}$ :*
20. Datum predložitve vozila v postopek homologacije:  
*Date of submission of vehicle for approval:*

glej točko 3.5.3. poročila o preskusu  
19-00017-CM-GBM-00

see point 3.5.3. of the test report  
19-00017-CM-GBM-00

92 dB(A) / 4000 min<sup>-1</sup>

glej točko 3.5.3. poročila o preskusu  
19-00017-CM-GBM-00 in  
priložene risbe  
see point 3.5.3. of the test report  
19-00017-CM-GBM-00 and  
attached drawings

3

3<sup>rd</sup> gear

0 m

38,1 km/h

81,7 dB(A)

25.10.2018

21. Tehnična služba odgovorna za homologacijske preskuse:  
*Technical service responsible for conducting approval tests:* TÜV SÜD Auto Service GmbH  
Westendstraße 199  
D-80686 München  
Germany
22. Datum poročila o preskusu, ki ga je izdala ta služba:  
*Date of test report issued by that Service:* 08.03.2019
23. Številka poročila o preskusu, ki ga je izdala ta služba:  
*Number of test report issued by that Service:* 19-00017-CM-GBM-00
24. Homologacija:  
*Approval:* **podeljena**  
**granted**
25. Mesto homologacijske oznake na vozilu:  
*Position of approval mark on the vehicle:* vgravirano z laserjem / tablica  
pritrjena s kovicami  
*engraved by laser / plate fixed with rivets*
26. Kraj:  
*Place:* 1000 LJUBLJANA
27. Datum:  
*Date:* 08.04.2019
28. Podpis:  
*Signature:*   
mag. Tomaž Svetina, univ. dipl. inž.  
vodja sektorja za vozila
29. Temu sporočilu je priložen seznam dokumentov, ki so deponirani pri homologacijskem organu, ki je odobril to homologacijo in jih je na zahtevo mogoče dobiti:  
**glej kazalo opisne dokumentacije št. E8131 Rev.01**  
*The list of documents deposited with the Administrative Service which has granted approval is annexed to this communication and may be obtained on request:*  
**see index to information package No E8131 Rev.01**



Ta homologacija se uporablja za tip serijsko izdelanih neoriginalnih nadomestnih sistemov za dušenje zvoka (RESS) ali njegovih sestavnih delov pod naslednjimi pogoji:

Posamezni proizvodi iz serijske proizvodnje morajo ustrezati najmanj vsem zahtevam Pravilnika št. 92 R, Amandma 01, Dodatek 02, "Enotni pogoji za homologiranje neoriginalnih nadomestnih sistemov za dušenje zvoka (RESS) za motorna kolesa, mopede in trikolesna vozila".

Priloženo poročilo o preskusu in risbe so sestavni del te homologacije.

Vsak sestavni del neoriginalnega nadomestnega sistema za dušenje zvoka, vendar ne deli in cevi za vgradnjo, mora biti čitljivo in trajno označen z:

- znamko (tovarniškim imenom ali oznako proizvajalca),
- trgovskim imenom,
- homologacijsko oznako.

Temu tipu proizvoda se dodeli naslednja homologacijska oznaka:

 92 R - 01 8131

Homologacijska oznaka na proizvodu mora po izvedbi in velikosti ustrezati zahtevam Pravilnika št. 92 R.01.

S tem homologacijskim znakom so lahko označeni samo tisti proizvodi, ki v celoti ustrezajo homologacijski dokumentaciji.

Homologacijska oznaka na proizvodu mora biti nameščena na mestu, ki je označeno v homologacijski dokumentaciji. Mesto homologacijske oznake mora biti izbrano tako, da je oznaka jasno čitljiva tudi po vgradnji v vozilo.

Proizvod je lahko označen tudi s tujo homologacijsko ali drugo oznako, če s tem ni motena razpoznavnost in čitljivost homologacijske oznake, ki jo je dodelil slovenski homologacijski organ.

Na proizvodu ne sme biti oznak, ki bi lahko privedle do zamenjave z uradno dodeljeno oznako.

Kakršnekoli spremembe na proizvodu so dovoljene samo na podlagi posebnega dovoljenja homologacijskega organa.

Veljavnost homologacije preneha z vrnitvijo ali z odvzemom. Homologacija se odvzame, če pogoji za podelitev in obstoj homologacije ne obstajajo več, če lastnik homologacije krši obveznosti, povezane s homologacijo, oziroma če se ugotovi, da homologirani proizvod ne ustreza več veljavnim predpisom.

Proizvajalec je dolžan stalno kontrolirati kakovost homologiranega proizvoda in njegovo skladnost s homologacijsko dokumentacijo. O tej kontroli je dolžan voditi evidenco in omogočiti vpogled v zapiske nadzornemu organu, ki ga določi homologacijski organ. V primeru ugotovitve neskladnosti s homologacijsko dokumentacijo je proizvajalec dolžan o tem takoj obvestiti homologacijski organ.

Homologacijski organ lahko kadarkoli preverja pravilno izvajanje pooblastil, dodeljenih s to homologacijo, in v ta namen tudi izbira vzorce za ponovni preskus. Stroške takšnih pregledov in presoj skladnosti proizvodnje, se zaračunajo proizvajalcu.

Vsako spremembo oznake proizvajalca, naslova ali proizvodne tovarne oziroma pri homologaciji imenovane pooblaščen osebe je treba takoj sporočiti homologacijskemu organu.

Pravice, podeljene s to homologacijo, so neprenosljive. Pravice tretjih s to homologacijo niso prizadete.

V primerih, da se proizvodnja ali prodaja proizvoda ne začne v roku enega leta od podelitve homologacije, da se proizvodnja ali prodaja prekine za več kot eno leto oziroma, da se predvideva taka prekinitve, je o tem treba takoj obvestiti homologacijski organ.

O začetku proizvodnje ali začetku prodaje oziroma njihovem ponovnem začetku je treba obvestiti homologacijski organ najkasneje v enem mesecu.

Neupoštevanje zgoraj navedenih določil lahko povzroči odvzem homologacije in se kazensko preganja.

Pravno razlago v zvezi s to homologacijo lahko daje samo homologacijski organ.

08.04.2019



mag. Tomaž Svetina univ.dipl.inž.  
vodja sektorja za vozila



*This Approval shall apply to a type of non-original replacement exhaust silencing systems (RESS) or its components from serial production under the following conditions:*

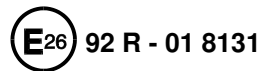
*Individual products from serial production shall comply at least with all requirements set out in the Regulation No. 92 R, Amendment 01, Supplement 02 "Uniform provisions concerning the approval of non-original replacement exhaust silencing systems (RESS) for motorcycles, mopeds and three-wheeled vehicles".*

*The attached test report and drawings shall be a constituent part of this Approval.*

*Each component of the nonoriginal replacement exhaust silencing system, excluding pipes and fitting accessories, shall be marked with a readable and durable:*

- *make (trade name or mark of manufacturer),*
- *commercial name,*
- *approval marking.*

*This type of product shall be allotted the following approval marking:*



*The design and size of the approval marking shall meet the requirements of the Regulation No. 92 R.*

*Only products which fully comply with the approval documentation may bear the allotted approval mark.*

*The approval marking on the product must be attached at the place indicated in the approval documentation. Location of the approval marking shall be selected in such way that the marking is clearly readable even when installed on a vehicle.*

*The product may also be marked with a foreign approval or other marking, provided that the identifiability and readability of the approval marking granted by the Slovenian Type Approval Authority is not affected.*

*The product shall not bear any markings that may lead to confusion with the officially allotted marking.*

*Changes of any kind performed on the product shall be subject to special permission by the Slovenian Type Approval Authority.*

*The Approval will become ineffective when returned or withdrawn. The Approval shall be withdrawn: should the conditions for its granting and existence no longer exist, should the owner of the Approval break his obligations related to the Approval, or when it has been established that the approved product no longer complies with the applicable regulations.*

*The manufacturer shall regularly inspect the quality of the approved product as well as its conformity with the approval documentation. He shall keep record of this inspection and allow to the surveillance body appointed by the Slovenian Type Approval Authority access to the records. Should any non-conformities be found with respect to the approval documentation, the manufacturer shall immediately inform thereof the Slovenian Type Approval Authority.*

*Any time, the Slovenian Type Approval Authority may check the correct implementation of the authorizations appointed through this Approval, and for this purpose also select samples for a repeated test. The costs of such checks and conformity of production assessments are charged to the manufacturer.*

*Any changes regarding the manufacturer's marking, the address or the production plant, or the authorized person appointed through this Approval, shall be forthwith notified to the Slovenian Type Approval Authority.*

*The rights granted through this Approval shall be untransferrable. The rights of third persons shall not be affected through this Approval.*

*In the case where the production or sale of the product does not start within one year after the granting of the Approval, or the production or sale is interrupted for a period longer than one year, or such interruption is foreseen, the Slovenian Type Approval Authority shall be immediately notified.*

*The Slovenian Type Approval Authority shall be notified of the start of production or start of sale, or its restart, within a month's time at the latest.*

*Non-compliance with above stated provisions may result in withdrawal of the Approval and will be prosecuted.*

*Legal explanations in relation with this Approval may only be given by the Slovenian Type Approval Authority.*

08.04.2019



Tomaž Svetina, M.Sc.Eng.  
Head of Vehicle department





**KAZALO OPISNE DOKUMENTACIJE E8131**  
**INDEX TO THE INFORMATION PACKAGE E8131**

Revision: 01

Homologacijska številka: **E26 92 R 01/02 8131**  
Approval number:

Razširitev številka: **00 CORR.1**  
Extension number:

Zgodovina homologacije / Opisne dokumentacije:  
Type approval / Information package history:

Razširitev / Revizija: Extension / Revision:	Zadeva: Subject:	Datum izdaje: Date of issue:	Skupno št. strani: Total No. of pages:
00/00	Odobritev homologacije Granting of type approval	21.03.2019	30
00/01	Zamenjava št. Poročila o preskusu Replacement of test report number	08.04.2019	30

Poročilo o preskusu: **19-00017-CM-GBM-00**  
Test report:

Število strani: **15**  
Number of pages:

datum izdaje: **08.03.2019**  
date of issue:

datum zadnje spremembe: /  
date of latest amendment:

Opisni list/Tehnični opis naprave: /  
Information document/Technical description of the device:

Število strani:  
Number of pages:

datum izdaje:  
date of issue:

datum zadnje spremembe: /  
date of latest amendment:

Risba(e)<sup>1</sup>:  
Drawing(s)<sup>1</sup>:

Število strani: **3**  
Number of pages:

datum zadnje spremembe: /  
date of latest amendment:

Navodila za vgradnjo in uporabo:  
Mounting and handling instructions:

Število strani: **11**  
Number of pages:

datum zadnje spremembe: /  
date of latest amendment:

Ostala dokumentacija:  
Other documentation:

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



<sup>1</sup> kosovnice, slike, sheme in diagrami / <sup>1</sup> 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 **ECE-R92 01** for the following product:  
Exhaust system for Motorcycles:

Type: **M-HRAA005**

Version: **M-HRAA005 01TBL (SS / Ti / SS)**  
**M-HRAA005 01SSBL (SS / SS / SS)**  
**M-HRAA005 03SSBL (SS / SS / Ti)**  
**M-HRAA005 03TBL (SS / Ti / Ti)**  
**M-HRAA005 04TBL (Ti / Ti / SS)**  
**M-HRAA005 06TBL (Ti / Ti / Ti)**  
**M-HRAA005 01T (SS / Ti / SS)**  
**M-HRAA005 01SS (SS / SS / SS)**  
**M-HRAA005 03SS (SS / SS / Ti)**  
**M-HRAA005 03T (SS / Ti / Ti)**  
**M-HRAA005 04T (Ti / Ti / SS)**  
**M-HRAA005 06T (Ti / Ti / Ti)**

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.**  
**Uroš Rosa, CEO**

Date: 15.01.2019



Techn.Bericht Nr. / *Techn. Report No.*: 19-00017-CM-GBM-00  
Hersteller / *Manufacturer*: Akrapovic, Malo Hudo 8a, 1295 Ivancna Gorica  
Slovenia  
Typ / *Type*: M-HRAA005

Seite / *Page* 1/7

## PRÜFBERICHT TEST REPORT

Nr. / *no.* 19-00017-CM-GBM-00

über die Prüfung einer Nicht-Originalauspuffanlage oder  
von Einzelteilen hiervon als Technische Einheit für Kraffräder gemäß  
ECE-R 92 Revision 1,  
Ergänzung 2 zur Änderungsserie 01  
Einheitliche Bedingungen für die Genehmigung von nicht- originalen Austausch-  
Schalldämpferanlagen für Kraffräder, Mopeds und Dreiradfahrzeuge

*about a test of a non-original exhaust system or a component  
as a separate technical unit for motorcycles according to  
ECE-R 92 Revision 1,  
Supplement 2 to the 01 series of amendments  
Uniform provisions concerning the approval of non-original replacement exhaust silencing  
systems (RESS) for motorcycles, mopeds and three-wheeled vehicles.*

<b>Genehmigungsstand / <i>Approval status</i></b>		
<input checked="" type="checkbox"/>	Erteilung einer Typgenehmigung <i>Granting of a type approval</i>	<b>E26 92R-01 8131*00</b>
<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:* Akrapovic Exhaust System Technology

0.2. Typ / *Type:* M-HRAA005

0.2.1 Ausführungen / *Variants*

Ausführungen / <i>Variants</i>	Material / <i>Material</i>		
	Rohre / <i>Tubes</i>	Außenmantel / <i>Sleeve</i>	Endkappe / <i>End cap</i>
M-HRAA005 01TBL	VA / <i>Stainless steel</i>	Titan / <i>Titanium</i>	VA / <i>Stainless steel</i>
M-HRAA005 01SSBL	VA / <i>Stainless steel</i>	VA / <i>Stainless steel</i>	VA / <i>Stainless steel</i>
M-HRAA005 03SSBL	VA / <i>Stainless steel</i>	VA / <i>Stainless steel</i>	Titan / <i>Titanium</i>
M-HRAA005 03TBL	VA / <i>Stainless steel</i>	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>
M-HRAA005 04TBL	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>	VA / <i>Stainless steel</i>
M-HRAA005 06TBL	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>
M-HRAA005 01T	VA / <i>Stainless steel</i>	Titan / <i>Titanium</i>	VA / <i>Stainless steel</i>
M-HRAA005 01SS	VA / <i>Stainless steel</i>	VA / <i>Stainless steel</i>	VA / <i>Stainless steel</i>
M-HRAA005 03SS	VA / <i>Stainless steel</i>	VA / <i>Stainless steel</i>	Titan / <i>Titanium</i>
M-HRAA005 03T	VA / <i>Stainless steel</i>	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>
M-HRAA005 04T	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>	VA / <i>Stainless steel</i>
M-HRAA005 06T	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>	Titan / <i>Titanium</i>

Die Ausführungen unterscheiden sich in der Verwendung verschiedener Werkstoffe. Der konstruktive Aufbau ist gleich. Das akustische Verhalten ist gleichwertig.

*The variants vary because different materials are used. The basic construction remains the same. The acoustic behaviour is similar.*



---

Techn.Bericht Nr. / *Techn. Report No.*: 19-00017-CM-GBM-00  
Hersteller / *Manufacturer*: Akrapovic, Malo Hudo 8a, 1295 Ivancna Gorica  
Slovenia  
Typ / *Type*: M-HRAA005

---

Seite / *Page* 3/7

- 0.3. Name und Anschrift des Herstellers /  
*Name and address of manufacturer*: Akrapovic d.d.  
Malo Hudo 8a  
1295 Ivancna Gorica  
Slovenia
- 0.4. Name und Anschrift des Beauftragten /  
*Name and address of authorised agent*: entfällt / *not applicable*
- 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 / *notice enclosure 2*
- 2. Angaben zum Prüfobjekt / *Composition of the separate technical unit***
- 2.1. Art der Technischen Einheit:  
*Kind of technical unit*: Siehe Anlage Technische Dokumentation  
*See Enclosure, Technical documentation*
- 2.2. Ort der Kennzeichnung/  
*Place of marking*: Lasergravur auf Endkappe / Typschild aufgenietet  
*Engraved by laser / plate fixed with rivets*
- 2.3. Zusammenstellung der technischen Einheit /  
*Composition of the separate  
technical unit*: siehe Anlage 1 / *notice enclosure 1*
- 2.4. Lage und Richtung der Auspuffmündung:  
*Position and direction of the tail pipe*: rechts seitlich nach hinten  
*at the right side to the rear*
- 2.5. Prüfmuster eingegangen am:  
*Test samples submitted for testing at*: 25.10.2018

Techn.Bericht Nr. / *Techn. Report No.*: 19-00017-CM-GBM-00  
Hersteller / *Manufacturer*: Akrapovic, Malo Hudo 8a, 1295 Ivancna Gorica  
Slovenia  
Typ / *Type*: M-HRAA005

Seite / *Page* 4/7

### 3. Prüfprotokoll / *Test report*

Versuchsreihe A / *Tests series A*

#### 3.1. Fahrzeug lfd. Nr. 1) / *Vehicle no. 1)*

3.1.1. 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*: KTM 690 Enduro R  
3.1.2. Hersteller / *Manufacturer*: KTM AG  
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.*: VBKLETP31KM733992  
3.1.5. Baujahr / *Year of manufacture*: 2018  
3.1.6. km-Stand / *Kilometers*: 1501  
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<sup>3</sup>  
3.2.4. Höchstleistung / *engine net power*: 55 kW bei / *at* 8000 min<sup>-1</sup>  
3.2.5. max. Drehmoment / *net torque*: 70 Nm bei / *at* 7000 min<sup>-1</sup>

#### 3.3. Kraftübertragung / *Transmission*

3.3.1. Art der Kraftübertragung /  
*Kind of transmission*: mechanisch / *mechanical*  
3.3.4. Getriebe / *Gearbox*: manuel / *manual*  
3.3.5. Übersetzungsverhältnisse /  
*Transmission ratios*:  
primär / *primary* / sekundär / *secondary* 2,194 / 3,067  
Höchstgeschwindigkeit / *Top speed*: 190 km/h  
Reifen / *Tires*:  
vorne / *front* Mitas Enduro 90/90-21 (M/C) 54T TT  
hinten / *rear* 140/80-18 (M/C) 70T TT

#### 3.4. Zusammenbau der Auspuffanlage / *Assembly of the exhaust system*

(Teile lfd. Nr. lt. Anl. 1 /  
*no. of parts, enclosure 1)*  
Versuchsreihe A / *Tests series A*: 1)2)3)4)



Techn.Bericht Nr. / *Techn. Report No.:* 19-00017-CM-GBM-00  
Hersteller / *Manufacturer:* Akrapovic, Malo Hudo 8a, 1295 Ivančna Gorica  
Slovenia  
Typ / *Type:* M-HRAA005

Seite / *Page* 5/7

### 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 Fahrgeräuschmessung /  
*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)

### 3.6. 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  $\pm 5\%$  im Vergleich zu den mit der Originalauspuffanlage gemessenen Werten. (siehe Anlage) /  
*The tested max. power and the engine speed are in the  $\pm 5\%$  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: L3e  
*Not applicable, because vehicle category: L3e*

### 3.7. Konditionierung der Auspuffschalldämpferanlage / *Conditioning*

durch Druckschwingungen / *by pulsation*



### **3.8. Messung der Schadstoffemissionen / *Pollution Test***

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

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

### **3.9. Ergebnisse / *Test results***

Die Ergebnisse der Prüfungen hinsichtlich / *The results of*

#### **3.9.1. Geräusche / *Sound testing***

#### **3.9.2. Leistung / *Power measurement***

#### **3.9.3. Höchstgeschwindigkeit / *Top speed***

#### **3.9.4. Abgasverhalten / *Pollution test***

sind der als Anlage 3 und 4 beigefügten Tabellen zu entnehmen /  
*are attached in the enclosure 3 and 4.*

Aufgrund der durchgeführten Messungen mit Original- und Nicht-Original-Auspuffanlage können die Punkte 6.2 bis 6.5 der ECE-R 92 als erfüllt betrachtet werden. /

*The results of the tests with the original and not original exhaust systems show that item 6.2 to 6.5 of the Directive ECE-R 92 are fulfilled.*

#### **3.9.5. 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 on the vehicles listed in enclosure 2.*

#### **3.9.6. Die allgemeinen Spezifikationen gemäß Punkt 6.1 der ECE-R 92 wurden überprüft und werden durch die Nicht-Originalauspuffanlage / Technische Einheit erfüllt. / *The general specifications concerning item 6.1 of the Directive ECE-R 92 were checked and fulfilled.***

### **4. Anlagen / *Enclosures***

Anlage 1, Teile der Nicht-Originalauspuffanlage

*Enclosure 1, Composition of the non original exhaust system*

Anlage 2, Verwendungsbereich

*Enclosure 2, Field of application*

Anlage 3, Ergebnis der Prüfungen

*Enclosure 3, Test results*

Anlage 4, Ergebnis der Prüfungen hinsichtlich Abgasverhalten

*Enclosure 4, Test results according pollution*

Anlage, Leistungskurve

*Enclosure, Performance diagram*

Anlage, Protokoll Geräuschmessung

*Enclosure, protocol noise test*



Techn.Bericht Nr. / *Techn. Report No.*: 19-00017-CM-GBM-00  
 Hersteller / *Manufacturer*: Akrapovic, Malo Hudo 8a, 1295 Ivancna Gorica  
 Slovenia  
 Typ / *Type*: M-HRAA005

Seite / *Page* 7/7

Anlage <i>Enclosure</i>	Zeichnung Nr. <i>Drawing no.</i>	Datum <i>Date</i>	Seiten <i>Pages</i>
Zeichnung Schalldämpfer <i>Drawing silencer</i>	M HSO T76R16 T400/65 S45AA/D22 SM 690 19	29.11.2018	1
Stückliste <i>Part list</i>	M-HRAA005	-	1
Zusammenstellungszeichnung <i>Assembly drawing</i>	KTM 690 SMC R KTM 690 Enduro R	-	1
Montageanleitung <i>Installation instructions</i>	769.05.979.000 KTM 690 Enduro R KTM 690 SMC R	02/2019	10
ASEP Bestätigung <i>Statement of compliance ASEP</i>		07.03.2019	1

## 5. Schlussbescheinigung / *Summary*

Der angegebene Beschreibungsbogen und der darin beschriebene Typ entsprechen der genannten Prüfgrundlage. Der ungünstigste Fall wurde entsprechend Prozessbeschreibung „Erstellung von Gutachten“ bestimmt.

Der Prüfbericht darf nur vom Auftraggeber und nur in vollem Wortlaut vervielfältigt und weitergegeben werden. Eine auszugsweise Vervielfältigung und Veröffentlichung des Prüfberichtes ist nur nach schriftlicher Genehmigung des Prüflaboratoriums zulässig  
*The information folder and the type described therein are in compliance with the test specification mentioned above. The worst-case was selected in accordance with document "Preparation of Test Reports".*

*The test report may be reproduced and published in full and by the client only. It can be reproduced partially with the written permission of the test laboratory only.*

München, 08.03.2019



Dipl.-Ing. (FH) Max Höhler  
Prüfingenieur / *The Expert*



Y:\KRAD KOMPONENTEN\Auspuffanlage\Akrapovic\2019\KTM 690 Enduro SMC (M-HRAA005 P-KAT\_060)\ECE\M-HRAA005\_SLO\_ECE.docx

**ANLAGE 1**  
**ENCLOSURE 1**

zum Prüfbericht Nr. / *to test report no.*  
Typ / *Type:*  
Hersteller / *Manufacturer:*

19-00017-CM-GBM-00  
M-HRAA005  
Akrapovic, Malo Hudo 8a  
1295 Ivancna Gorica, Slovenia

**Teile der Nicht-Originalauspuffanlage + Originalteile/**  
**Composition of the original exhaust system + original parts**

Seite / *Page* 1/1

Lfd. Nr. / No.	Einzelteile, Abmessungen in mm / <i>Components parts, dimensions in mm</i>	Abmessungen des Teiles in mm bzw. Originalteil / Ersatzteil / <i>Dimensions of the part in mm or original part / replacement part</i>	Teilenummer bzw. Genehmigungsnummer / <i>Part no. or homologation no.</i>
1)	Krümmerrrohr / <i>header pipe</i>	Originalteile / <i>original parts</i>	-
2)	Verbindungsrohr / <i>link pipe</i>	-	L-KTMSO22
3)	Katalysator / <i>catalytic converter</i>	Ø72 x 100	P-KAT-060 e26*01081*F
4)	Schalldämpfer / <i>silencer</i> (Austrittsrohr / <i>outlet pipe</i> 2 x Ø 22)	konisch hexagonal / <i>conical hexagonal</i> 131,8 x 171,8 Länge ohne Endkappen / <i>length without endcaps</i> 400	M-HRAA005 e26*08131*G E26 92R-01 8131

**ANLAGE 2**  
**ENCLOSURE 2**

**zum Prüfbericht Nr. / to test report no.**  
**Typ / Type:**  
**Hersteller / Manufacturer:**

**19-00017-CM-GBM-00**  
**M-HRAA005**  
**Akrapovic, Malo Hudo 8a**  
**1295 Ivančna Gorica, Slovenia**

**Verwendungsbereich (Fahrzeugdaten) / Field of application**

Seite / Page 1/1

Lfd. Nr.	Hersteller	Fabrikmarke	Handelsbezeichnung	Fahrzeugtyp Genehmigung Nr.	Var. Vers.	Motortyp 4 Takt	Hubraum in cm <sup>3</sup>	Nennleistung kW/min <sup>-1</sup>	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 <sup>3</sup>	max. engine power kW/min <sup>-1</sup>	Additional remarks *)	Composition reg. enclosure no. 1
1)	KTM AG	KTM	690 Enduro R	KTM 690 LC4 e1*168/2013*00147*	alle all	768	693	55/8000	mit Kat. / with cat.	1)2)3)4)
2)			690 SMC R					55/8000		
3)			690 Enduro R	KTM 690 LC4 e1*168/2013*00146*		768	693	32/5500		
4)			690 SMC R					32/5500		

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

**ANLAGE 3  
ENCLOSURE 3**

**zum Prüfbericht Nr. / to test report no.**  
**Typ / Type:**  
**Hersteller / Manufacturer:**

**19-00017-CM-GBM-00**  
**M-HRAA005**  
**Akrapovic d.d.,**  
**1295 Ivančna Gorica, Slovenia**

**Ergebnis der Prüfungen / Test results**

Seite / Page 1/1

Lfd.Nr.	Leistung Fahr- zeug / Serie kW/min <sup>-1</sup>	Leistung Austausch kW/min <sup>-1</sup>	Vmax Serie km/h	Vmax Aus- tausch km/h	Fahrgeräusche in dB(A) / Sound levels driving vehicle in dB(A)					Standgeräusche in dB(A) / Sound levels stationary vehicle in dB(A)			
					gemes- sen in Gang	Grenz- wert **)	Serie gemes- sen	Austausch gemessen	bei km/h	lt. Fzg. BE	Serie gemes- sen /	Austausch gemessen	bei min <sup>-1</sup>
No. of vehicle	Engine power original kW/min <sup>-1</sup>	Engine power non original kW/min <sup>-1</sup>	Vmax original km/h	Vmax non original km /h	measured in gear ratio	Limit Value **) SLEU4	Original mea- sured L <sub>urban</sub>	Non original measured L <sub>urban</sub>	at km/h	Vehicle type hom.	Original mea- sured	Non original measured	at min <sup>-1</sup>
1) A*	55/8000	56/8000	-	-	3	77	78	78	50	91	92	92	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

**ANLAGE 4** zum Prüfbericht Nr. / *to test report no.* **19-00017-CM-GBM-00**  
**ENCLOSURE 4** Typ / *Type:* **M-HRAA005**  
Hersteller / *Manufacturer:* **Akrapovic d.d.,**  
**1295 Ivančna Gorica, Slovenia**

**Ergebnis der Prüfungen hinsichtlich Abgasverhalten /**  
**Test results according pollution**

Seite / *Page* 1/1

**Versuchsreihe / Series A: (Fahrzeug lfd. Nr. / Vehicle no. 1)**

Messung gemäß / *Tests regarding:*  
entsprechend Typ / *according to Type*

134/2014 Anh. / *Annex* II; III; VI  
I; II; V

**Typ / Type I**

Äquivalente Schwungmasse / <i>Equivalent flywheel mass</i>	230 kg
---	--------

WMTC Phase 2 <i>WMTC Stage 2</i>	Kategorie 3-2 <i>Class 3-2</i>	CO [mg/km]	THC [mg/km]	NO <sub>x</sub> [mg/km]
Test 1	R <sub>1</sub>	337	40	38
Test 2	R <sub>2</sub>			
Test 3	R <sub>3</sub>			
Mittelwert / <i>Average</i>		<b>337</b>	<b>40</b>	<b>38</b>
Grenzwerte / <i>Limits</i> 168/2013 Annex VI (A1) Euro 4 (v <sub>max</sub> ≥ 130 km/h)		1140	170	90

**Typ / Type II**

Betriebsbedingung / <i>Running condition</i>	CO [Vol %]	Motordrehzahl / <i>Engine rpm</i> [min -1]	Motoröltemperatur / <i>Engine oil temperature</i> [°C]
Normale Leerlaufdrehzahl / <i>Nominal idle speed</i>	0,00	1600	91° C
Hohe Leerlaufdrehzahl / <i>Exceeded idle speed</i>	0,00	2500	92° C

**Typ / Type V**

Mathematisches Dauerhaltbarkeitsverfahren / *Mathematical durability procedure*

Verschlechterungsfaktor / <i>Deterioration Factor (DF)</i>	1,3	1,2	1,2
Test 1 R <sub>1</sub> x DF	438	48	45
Test 2 R <sub>2</sub> x DF			
Test 3 R <sub>3</sub> x DF			
Mittelwert / <i>Average</i>	<b>438</b>	<b>48</b>	<b>45</b>
Grenzwerte / <i>Limits</i> 168/2013 Annex VI (A1) Euro 4 (v <sub>max</sub> ≥ 130 km/h)	1140	170	90

**1. Vehicle**

1.1 Manufacturer: KTM  
 1.2 Vehicle Ident. Number: VBKLETP31KM733992  
 1.3 Commercial name / Type: KTM 690 Enduro R  
 1.4 Type: 690 Enduro-R  
 1.5 Variant: ---  
 1.6 Version: ---  
 1.7 Class: L3e-A3  
 1.8 Type approval number: e1\*168/2013\*00147\*00  
 1.9 Vehicle kerb weight ( $m_{kerb}$ ) [kg]: 160  
 1.10 Mass of the vehicle in running order ( $m_{ro}$ ) [kg]: 235  
 1.11 Vehicle test mass ( $m_t$ ) [kg]: 235  
 1.12 Technically permissible max. laden mass (M) [kg]: 350  
 1.13 Power to mass ratio index (PMR): 234,0  
 1.14 Vehicle length [m]: 2,03  
 1.15 Milage [km]: 1501

**2. Engine**

2.1 Manufacturer / engine code: KTM  
 2.2 Model: 8-768\*00005\*  
 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<sup>-1</sup>]: 55 / 8000  
 2.7 Idle engine speed [min<sup>-1</sup>]: 1650  
 2.8 Cylinder capacity [cm<sup>3</sup>]: 693

**3. Transmisson**

3.1 Type:  manual gearbox     automatic gearbox    Type: ---  
 3.2 No. of gears: 6  
 3.3 Ratio (Prime : Secondary) --- : ---





#### 4. Equipment

4.1	Pre Catalyst(s) Make / type (left/right):	---	/	---	/	---
4.2	Catalyst(s) Make / type (left/right):	Akrapovic	/	n.a.	/	---
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-HRAA005	/	
4.8	Tail pipe(s) Make / type (left/right):	Akrapovic	/	2x D= 22mm	/	---
4.9	Exhaust Flap(s) Make / type (left/right):	---	/	---	/	---
4.13	Tyres	Axle 1		Axle 2		
	Manufacturer:	Mitas		Mitas		
	Type:	Enduro		Enduro		
	Size:	90/90-21		140/80-18		
	Tyre pressure [bar]:	---		---		
	Tyre tread depth [mm]:	---		---		

#### 5. Measurements

##### 5.1 Conditions

Passby Parameter		Driving conditions			Calculation of the acceleration/factors	
Reference acceleration $a_{wot\ ref}$ [m/s <sup>2</sup> ]:	3,73	Gear	i	i+1	$a_{wot\ ref} = 3.33 * \log(PMR) - 4.16$	
-10% Reference acc. $a_{wot\ ref\ min}$ [m/s <sup>2</sup> ]:	3,36	test acceleration $a_{wot\ test}$ [m/s <sup>2</sup> ]:	3,85	---	$k = n.a.$	
+10% Reference acc. $a_{wot\ ref\ max}$ [m/s <sup>2</sup> ]:	4,10	aver. vehicle velocity when ref. point at AA'	38,1	---	$k_p = (1 - (a_{urban}/a_{wot\ test}))$	
Target acceleration $a_{urban}$ [m/s <sup>2</sup> ]:	1,84	aver. vehicle velocity when ref. point at PP'	49,8	---	$a_{wot\ i} = ((v_{BB}/3.6)^2 - (v_{AA}/3.6)^2) / (2 * (20 + l))$	
Gear weighting factor k:	n.a.	aver. vehicle velocity when ref. point at BB'	60,4	---	$a_{wot\ i+1} = n.a.$	
Partial power factor $k_p$	0,521	Operating mode:	n.a.	Gearbox: Locked	$a_{urban} = 1.28 * \log(PMR) - 1.19$	

##### 5.2 Measurement results pass by noise

Gear used	Run	Mode	acc. point <sup>(2)</sup> [m]	A-A'		P-P'		B-B'		$a_{wot\ test}$ [m/s <sup>2</sup> ]	Sound level L <sup>(3)</sup>		L <sup>aver</sup> <sup>(4)</sup>	
				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	5	wot <sub>(3)</sub>	-5,0	38,7	3006	49,1	3724	60,3	4508	3,75	81,7	80,8	81,7	81,0
	10			38,3	3050	49,9	3773	60,8	4562	3,91	81,6	81,1		
	13			37,3	3030	50,4	3732	60,1	4210	3,89	81,7	81,0		
	24	crs <sub>(3)</sub>		50,0	3650	49,5	3653	50,2	3665		74,0	73,6	74,0	73,3
	25			50,2	3620	49,5	3641	50,8	3680		74,1	73,1		
	30			49,7	3595	49,6	3626	50,3	3646		74,0	73,2		
-	---	---	---	---	---	---	---	---	---	---	---	---	---	
	---			---	---	---	---	---	---	---	---	---	---	
	---			---	---	---	---	---	---	---	---	---	---	---
	---	---		---	---	---	---	---	---	---	---	---	---	---
	---			---	---	---	---	---	---	---	---	---	---	---
	---			---	---	---	---	---	---	---	---	---	---	---

2) Acceleration point according Line A-A'; 3) values reduced by 1 dB(A); Numbers written in italics a corrected acc. to Annex3, Pt. 2.1; 4) 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 <sub>rep</sub>		L <sub>wot max</sub> [dB(A)]	Test result L <sub>urban</sub> [dB(A)]
	i [dB(A)]	i+1 [dB(A)]	wot [dB(A)]	crs [dB(A)]		
L <sub>wot</sub>	81,7	---	81,7	74,0	82,0	77,7
L <sub>crs</sub>	74,0	---				

Calculation L <sub>urban</sub> (PMR > 25)
$[L_{urban} = L_{wot\ rep} - k_p * (L_{wot\ rep} - L_{crs\ rep})]$
$[L_{urban} = 81,7 - 0,521 * (81,7 - 74)]$

3

##### 5.4 Limits

Category	Power-to-mass ratio index (PMR)	Limit value for L <sub>urban</sub> [dB(A)]
First category	PMR ≤ 25	73
Second category	25 < PMR ≤ 50	74
Third category	PMR > 50	77 <sup>(a)</sup>



(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

Measuring results	left	right
	[dB(A)]	[dB(A)]
1 <sup>st</sup> Run	91,3	---
2 <sup>nd</sup> Run	91,9	---
3 <sup>rd</sup> Run	91,8	---
4 <sup>th</sup> Run	---	---
max. meas. Value	91,9	---

Engine speed [rpm]	Target engine speed	
4000		n = 75% S (S ≤ 5000 min-1)
	X	n = 50% S (S > 5000 min-1)

<b>Result [dB(A)]</b>	<b>92</b>
-----------------------	-----------

5.5.1 Sound level of stationary vehicle in different

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

6. **Weather conditions**

Air temperature [°C]:	20,7
Surface temperature [°C]:	24,3
Air pressure [mbar]:	989

Air humidity [%]	52
Wind speed [m/s]:	0,6
Wind direction [°]:	223,6

7. **General Requirements**

Ambient noise level	
before Measurement [dB(A)]:	46,8
after Measurement [dB(A)]:	46,8

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

8. **Date / place of test:** 25.10.2018 / Akrapovic d.d., Precna (SI)

9. **Expert:** Wibmer Chr.

10. **Remarks:** 2 Tail pipes with Insert D=22mm



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

KTM 690 SMC R  
KTM 690 Enduro R

Product code: S-KTMSO51-HRAATBL

