



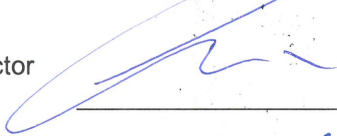
SOLARIS

A CAF GROUP COMPANY

Bolechowo - Osiedle, 4th of March 2022

Confirmation

We, SOLARIS Bus & Coach sp. z o.o., as a manufacturer of buses herewith confirm that following persons are authorized to sign EC certificate of conformity

- | | | |
|-----------------------------------|--|---|
| 1. Mr. Dariusz Michalak, Ph.D.Eng | Deputy CEO
for R&D and Production |  |
| 2. Mr. Marcin Chodor | Market Customization Director |  |
| 3. Mr. Piotr Żakowiecki | Quality Assurance Director |  |
| 4. Mr. Rafał Kłos | Homologation and Testing
Senior Manager |  |

Sincerely

Deputy CEO
for R&D and Production



Phd Eng. Dariusz Michalak

Deputy CEO
for Sales and after Sales

Petros Spinaris

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Sąd Rejonowy Poznań Nowe Miasto i Wilda w Poznaniu; VIII Wydział Gospodarczy Krajowego Rejestru Sądowego, nr KRS 0000856500
Kapitał zakładowy: 160 169 580 PLN



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INFORMATION FOLDER / DOCUMENT:

APPLICATION FOR EXTENSION NO. 4 OF APPROVAL NO.

e8*2018/858*00060

**PURSUANT TO THE REGULATION (EU) No. 2018/858 AS LAST
AMENDED BY COMMISSION REGULATION (EU) No. 2024/1610
RELATING TO THE APPROVAL OF MOTOR VEHICLES AND
THEIR TRAILERS, AND OF SYSTEMS, COMPONENTS AND
SEPARATE TECHNICAL UNITS INTENDED FOR SUCH
VEHICLES**

**FOR THE BUS SOLARIS TYPE
URBINO 12 Hybrid**

Changes to cover:

- new partial approvals,
- introduction of towing device.

Rafał Kłos
Starszy Kierownik
Działu Homologacji i Testów
Solaris Bus & Coach sp. z o.o.

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Total pages: 44



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ANNEXES:

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01	Drawing and photos of representative vehicle	2
11	Statutory plate and VIN code description	3



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Confirmation

We hereby declare that the bus specimen submitted for this approval tests has been manufactured and assembled on conditions of ordinary mass production and that it is compatible with enclosed documentation.

Bolechow-Osiedle, 2024-11-04

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0. General

0.1.	Make	SOLARIS
0.2.	Type	URBINO 12 Hybrid
0.2.1.	Commercial name(s) (if available)	variant a), b) Urbino 12 hybrid or Hybrid H12 variant c), d) Urbino 12 mild hybrid
0.2.3.	Identifiers	n/a
0.3.	Means of identification of type, if marked on the vehicle	positions 4 to 9 of the VIN code ???24116????????? pos.9 does not contain sign "0" nor "E"
0.3.1.	Location of that marking	on the truss in the rear compartment on the right side
0.4.	Category of vehicle	M3
0.4.1.	Classification(s) according to the dangerous goods which the vehicle is intended to transport	n/a
0.5.	Company name and address of manufacturer	SOLARIS Bus & Coach sp. z o.o. ul. Obornicka 46, Bolechowo-Osiedle 62-005 Owińska Poland
0.8.	Name(s) and address(es) of assembly plant(s)	SOLARIS Bus & Coach sp. z o.o. ul. Obornicka 46, Bolechowo-Osiedle 62-005 Owińska Poland
0.9.	Name and address of the manufacturer's representative (if any)	n/a

1. General construction characteristics of the vehicle

1.1.	Photographs and/or drawings of a representative vehicle	see annex 1
1.3.	Number of axles and wheels	2 axles, 4 wheels (6 tyres)
1.3.1.	Number and position of axles with twin wheels	one - axle 2
1.3.2.	Number and position of steered axles	one - axle 1 (front)
1.3.3.	Powered axles (number, position, interconnection)	one - axle 2 - cardan shaft
1.4.	Chassis (if any) (overall drawing)	n/a (see point 9.1)
1.6.	Position and arrangement of the engine	behind the powered axle
1.8.	Hand of drive	left hand



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1.8.1. Vehicle is equipped to be driven in right hand traffic

1.9. Specify if the towing vehicle is intended to tow semi-trailers or other trailers and, if the trailer is a semi-, drawbar-, centre-axle- or rigid drawbar trailer n/a

1.10. Specify if the vehicle is specially designed for the controlled-temperature carriage of goods No

1.11. Specify if the vehicle is non-automated/automated/fully automated non-automated

2. Masses (kg) and dimensions (mm)

2.1. Wheel base(s)

2.1.1. Two-axle vehicles 5 900 mm

2.1.2. Vehicles with three or more axles n/a

2.3.1. Track of each steered axle
f1: 2 089 - 2178mm
f2: 2 126 mm
f3: 2 126 mm
f4: 2 169 mm
f10: 2 151 - 2228 mm
f11: 2085 – 2 174 mm

2.3.2. Track of all other axles 1 882 – 1892 mm

2.4. Range of vehicle dimensions

2.4.1. For chassis without bodywork n/a

2.4.2. For chassis with bodywork

2.4.2.1. Length 12 000 mm +/- 360

2.4.2.1.1. Length of loading area n/a

2.4.2.1.3. Elongated cab complying with Article 9a of Directive 96/53/EC: No

2.4.2.2. Width 2 550 mm

2.4.2.2.1. Thickness of the walls (in the case of vehicles designed for controlled-temperature transport of goods) n/a

2.4.2.3. Height (in running order) 2 850 - 3 350 mm depending on equipment



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2.6.	Mass of the vehicle in running order	10 400 - 13 000 kg
2.6.1.	Distributions of this mass among the axles	
	Axle 1	3 000 - 4 300 kg
	Axle 2	6 800 - 8 800 kg
2.6.2.	Mass of the optional equipment (as defined in point (5) of Article 2 of Commission Regulation (EU) No 1230/2012:	n/a
2.6.4.	Additional mass for alternative propulsion	n/a
2.6.5.	List of equipment to for alternative propulsion (and indication of the mass of the parts)	n/a
2.7.	Minimum mass of the completed vehicles stated by the manufacturer, in the case of an incomplete vehicle	n/a
2.8.	Technically permissible maximum laden mass stated by the manufacturer	19 845 kg – for tires with load indexes 148J (152E) 20 000 kg – for tires with load indexes 150J (154E)
2.8.1.	Distribution of this mass among the axles	
	Axle 1	7 245 kg for tires with load indexes 148J (152E) 7 700 kg for tires with load indexes 150J (154E)
	Axle 2	11 800 - 12 600 kg
2.9.	Technically permissible maximum mass on each axle	
	Axle 1	7 245 kg for tires with load indexes 148J (152E) 7 700 kg for tires with load indexes 150J (154E)
	Axle 2	12 600 kg
2.10.	Technically permissible maximum mass on each axle group	n/a
2.11.	Technically permissible maximum towable mass of the motor vehicle in case of	
2.11.1.	Drawbar trailer	variant c), d) : versions ?3?????: 3 000 kg versions ?5?????: 3 000 kg



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		versions ?6???????: 3 000 kg
2.11.2.	Semi-trailer	n/a
2.11.3.	Centre-axle trailer	variant c), d): versions ?3???????: 3 000 kg versions ?5???????: 3 000 kg versions ?6???????: 3 000 kg
2.11.4.	Technically permissible maximum mass of the combination	variant c), d): versions 03???????: 21 000 kg versions 13???????: 21 000 kg versions 23???????: 21 000 kg versions 33???????: 21 745 kg versions 43???????: 22 000 kg versions 53???????: 22 000 kg versions 63???????: 22 000 kg versions 73???????: 22 000 kg versions 83???????: 22 000 kg versions a3???????: 22 000 kg versions e3???????: 22 000 kg versions f3???????: 22 000 kg versions g3???????: 22 000 kg versions h3???????: 22 000 kg versions 05???????: 21 000 kg versions 15???????: 21 000 kg versions 25???????: 21 000 kg versions 35???????: 21 745 kg versions 45???????: 22 000 kg versions 55???????: 22 000 kg versions 65???????: 22 000 kg versions 75???????: 22 000 kg versions 85???????: 22 000 kg versions a5???????: 22 000 kg versions e5???????: 22 000 kg versions f5???????: 22 000 kg versions g5???????: 22 000 kg versions h5???????: 22 000 kg versions 06???????: 21 000 kg versions 16???????: 21 000 kg versions 26???????: 21 000 kg versions 36???????: 21 745 kg versions 46???????: 22 000 kg versions 56???????: 22 000 kg versions 66???????: 22 000 kg versions 76???????: 22 000 kg versions 86???????: 22 000 kg versions a6???????: 22 000 kg versions e6???????: 22 000 kg versions f6???????: 22 000 kg versions g6???????: 22 000 kg versions h6???????: 22 000 kg



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2.11.5.	Technically permissible maximum laden mass of the combination:	n/a
2.11.6.	Maximum mass of unbraked trailer	variant c), d) : versions ?3??????: 750 kg versions ?5??????: 750 kg versions ?6??????: 750 kg
2.12.	Technically permissible maximum static vertical load/mass on the vehicle's coupling point	variant c), d) : versions ?3??????: 250 kg versions ?5??????: 250 kg versions ?6??????: 250 kg
2.16.	Intended registration/in-service maximum permissible masses	
2.16.1.	Intended registration/in-service maximum permissible laden mass	versions 0??????: 18 000 kg versions 1??????: 18 000 kg versions 2??????: 18 000 kg versions 3??????: 18 745 kg versions 4??????: 19 000 kg versions 5??????: 19 000 kg versions 6??????: 19 500 kg versions 7??????: 19 200 kg versions 8??????: 19 000 kg versions 9??????: 19 500 kg versions a??????: 19 000 kg versions b??????: 19 500 kg versions c??????: 19 845 kg versions d??????: 20 000 kg versions e??????: 18 000 kg versions f??????: 19 000 kg versions g??????: 19 000 kg versions h??????: 19 000 kg versions i??????: 19 500 kg versions j??????: 19 500 kg versions k??????: 20 000 kg
2.16.2.	Intended registration/in-service maximum permissible laden mass on each axle and in the case of semi-trailer or centre-axle trailer, intended load on the coupling point stated by the manufacturer if lower than the technically permissible maximum mass on their coupling point	
	Axle 1	versions 0??????: 7 100 kg versions 1??????: 7 245 kg versions 2??????: 7 700 kg versions 3??????: 7 245 kg versions 4??????: 7 245 kg versions 5??????: 7 245 kg



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versions 6????????: 7 245 kg
versions 7????????: 7 700 kg
versions 8????????: 7 700 kg
versions 9????????: 7 700 kg
versions a????????: 7 700 kg
versions b????????: 7 700 kg
versions c????????: 7 245 kg
versions d????????: 7 700 kg
versions e????????: 7 500 kg
versions f????????: 7 500 kg
versions g????????: 7 500 kg
versions h????????: 7 500 kg
versions i????????: 7 500 kg
versions j????????: 7 500 kg
versions k????????: 7 500 kg

Axle 2

versions 0????????: 11 500 kg
versions 1????????: 11 500 kg
versions 2????????: 11 500 kg
versions 3????????: 11 500 kg
versions 4????????: 12 000 kg
versions 5????????: 12 600 kg
versions 6????????: 12 600 kg
versions 7????????: 11 500 kg
versions 8????????: 12 000 kg
versions 9????????: 12 000 kg
versions a????????: 12 600 kg
versions b????????: 12 600 kg
versions c????????: 12 600 kg
versions d????????: 12 600 kg
versions e????????: 11 500 kg
versions f????????: 11 500 kg
versions g????????: 12 000 kg
versions h????????: 12 600 kg
versions i????????: 12 000 kg
versions j????????: 12 600 kg
versions k????????: 12 600 kg

2.16.3. Intended registration/in-service maximum permissible mass on each axle group n/a

2.16.4. Intended registration/in-service maximum permissible towable mass
variant c), d):
versions ?3????????: braked 3 000 kg
versions ?5????????: braked 3 000 kg
versions ?6????????: braked 3 000 kg

2.16.5. Intended registration/in-service maximum permissible mass of the combination
variant c), d):
versions 03????????: 21 000 kg
versions 13????????: 21 000 kg
versions 23????????: 21 000 kg
versions 33????????: 21 745 kg
versions 43????????: 22 000 kg
versions 53????????: 22 000 kg
versions 63????????: 22 000 kg
versions 73????????: 22 000 kg



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versions 83??????? : 22 000 kg
 versions a3??????? : 22 000 kg
 versions e3??????? : 22 000 kg
 versions f3??????? : 22 000 kg
 versions g3??????? : 22 000 kg
 versions h3??????? : 22 000 kg

versions 05??????? : 21 000 kg
 versions 15??????? : 21 000 kg
 versions 25??????? : 21 000 kg
 versions 35??????? : 21 745 kg
 versions 45??????? : 22 000 kg
 versions 55??????? : 22 000 kg
 versions 65??????? : 22 000 kg
 versions 75??????? : 22 000 kg
 versions 85??????? : 22 000 kg
 versions a5??????? : 22 000 kg
 versions e5??????? : 22 000 kg
 versions f5??????? : 22 000 kg
 versions g5??????? : 22 000 kg
 versions h5??????? : 22 000 kg

versions 06??????? : 21 000 kg
 versions 16??????? : 21 000 kg
 versions 26??????? : 21 000 kg
 versions 36??????? : 21 745 kg
 versions 46??????? : 22 000 kg
 versions 56??????? : 22 000 kg
 versions 66??????? : 22 000 kg
 versions 76??????? : 22 000 kg
 versions 86??????? : 22 000 kg
 versions a6??????? : 22 000 kg
 versions e6??????? : 22 000 kg
 versions f6??????? : 22 000 kg
 versions g6??????? : 22 000 kg
 versions h6??????? : 22 000 kg



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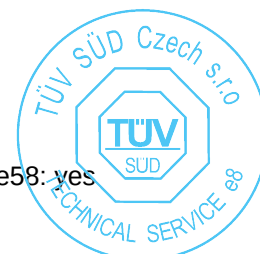
3. Propulsion energy converter

3.1.	Manufacturer of the engine (Make)	e46, e48 – e51, e53: Cummins Limited e23, e68: BAE Systems e56 – e58: DAF / PACCAR e59: Valeo e63: Voith
3.1.1.	Manufacturer's engine code (as marked on the engine or other means of identification)	e23: DDTM 100 (version ???????d) e46: L9NE6E320 e48: B4.5E6E210H e49: B6.7E6E220B e50: B6.7E6E250B e51: B6.7E6E280B e53: B6.7E6E300B e56: MX-11 220 H4 e57: MX-11 250 H4 e58: MX-11 270 H4 e59: iBSG4 (version ???????r) e63: CRU (version ???????v) e68: GPM-10
3.1.2.	Number of the approval certificate (where appropriate), including fuel identification marking	e46: e5*595/2009*2019/1939E*00077*00 - CNG e48: e5*595/2009*2019/1939E*00076*00 - Diesel e49, e50, e51, e53: e5*595/2009*2019/1939E*00075*00- Diesel e56, e57, e58: e4*595/2009*2019/1939E*0147*00 - Diesel e23, e59, e63, e68: n/a
3.2.	Internal combustion engine	e23, e59, e63, e68: n/a
3.2.1.1.	Working principle	e46: positive ignition, four stroke e48, e49, e50, e51, e53, e56, e57, e58: compression ignition, four stroke
3.2.1.2.	Number and arrangement of cylinders	e48: 4 in line e46, e49, e50, e51, e53, e56, e57, e58: 6 in line
3.2.1.3.	Engine capacity	e46: 8 880 cm ³ e48: 4 500 cm ³ e49, e50, e51, e53: 6 700 cm ³ e56, e57, e58: 10 837 cm ³
3.2.1.6.	Normal engine idling speed	e46: 700 – 900 min ⁻¹ e48: 600-800 min ⁻¹ e49, e50, e51, e53: 600 - 800 min ⁻¹ e56, e57, e58: 550 +50/-25 min ⁻¹
3.2.1.8.	Maximum net power	e46: 235 kW / 2000 min ⁻¹ e48: 151 kW / 2300 min ⁻¹ e49: 160 kW / 2100 min ⁻¹ e50: 182 kW / 2100 min ⁻¹ e51: 204 kW / 2100 min ⁻¹ e53: 220 kW / 2100 min ⁻¹ e56: 220 kW / 1675 min ⁻¹ e57: 251 kW / 1675 min ⁻¹ e58: 270 kW / 1600 min ⁻¹



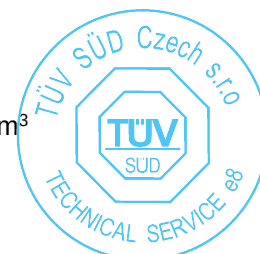
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3.2.1.11.	(Euro VI only) Manufacturer references of the Documentation package required by Articles 5, 7 and 9 of Regulation (EU) No 582/2011 enabling the approval authority to evaluate the emission control strategies and the systems on-board the engine to ensure the correct operation of NOx control measures	e46, e48, e49, e50, e51, e53: referenced in CTR 37430 e56-e58: [formal BES/AES documentation] 7002_51800/20-1244 [extended BES/AES documentation] 7002_51800/20-1245 [OBD Documentation] 7002_51800/19-107
3.2.2.1.	Light-duty vehicles	n/a
3.2.2.2.	Heavy-duty vehicles	e46: NG-H e48, e49, e50, e51, e53, e56, e57, e58: Diesel
3.2.2.2.1.	Euro VI only) Fuels compatible with use by the engine declared by the manufacturer in accordance with point 1.1.2 of Annex I to Regulation (EU) No 582/2011 (as applicable)	e46: NG-H e48, e49, e50, e51, e53: B20 Diesel with up to 20% FAME according to EN 14214, plus EN15940 range of Alternative Fuels e56 – e58: paraffinic diesel according to Standard EN 15940 (GTL, BTL, CTL, HVO) automotive B10 with 10% FAME complying with EN 14214, according to Standard EN 16734 High FAME diesel B20 and B30 with 14% -30% FAME complying with EN 14214, according to Standard EN 16709
3.2.2.4.	Vehicle fuel type	mono fuel
3.2.2.5.	Maximum amount of biofuel acceptable in fuel (manufacturer's declared value)	e46: n/a e48, e49, e50, e51, e53: 20% e56 – e58: 30%
3.2.3.	Fuel tank(s)	
3.2.3.1.	Service fuel tank(s)	
3.2.3.1.1.	Number, capacity, material	t39: 310 (105 + 105 + 70 + 30) dm ³ , steel 1.4003 t40: 300 (6 X 50) dm ³ , steel 1.4003 t46: 200 (100 + 70 + 30) dm ³ , steel 1.4003 t47: 320 (165 + 155) dm ³ , steel 1.4003 t49: 310 (105 + 105 + 70 + 30) dm ³ , PE-LD or PE t52: 200 (105 + 30 + 65) dm ³ , PE-LD or PE
3.2.3.2.	Reserve fuel tank(s)	n/a
3.2.4.	Fuel feed	
3.2.4.1.	By carburettor	No
3.2.4.2.	By fuel injection (compression ignition only)	e46: no e48, e49, e50, e51, e53, e56, e57, e58: yes



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3.2.4.2.2.	Working principle	direct injection
3.2.4.3.	By fuel injection (positive ignition only)	e46: yes e48, e49, e50, e51, e53, e56, e57, e58: no
3.2.7.	Cooling system	Liquid
3.2.8.	Intake system	
3.2.8.1.	Pressure charger	Yes
3.2.8.2.	Intercooler	Yes
3.2.8.3.3.	(Euro VI only) Actual Intake system depression at rated engine speed and at 100 % load on the vehicle:	e46: 2,0 kPa e48: 4,3 kPa e49, e50, e51, e53, : 2,8-6,7 kPa e56 - e58: 1,3 kPa
3.2.9.	Exhaust system	
3.2.9.2.1.	(Euro VI only) Description and/or drawing of the elements of the exhaust system that are not part of the engine system	e46: e8*595/2009*2020/1181E*0039*01 e48: e8*595/2009*2020/1181E*0026*04 e49, e50, e51, e53: e8*595/2009*2020/1181E*0038*01 e56 – e58: e8*595/2009*2020/1181E*0032*02
3.2.9.3.1.	(Euro VI only) Actual exhaust back pressure at rated engine speed and at 100 % load on the vehicle (compression-ignition engines only):	e48: 18,8 kPa e49, e50, e51, e53, 40 kPa e56 - e58: 24 kPa
3.2.9.4.	Type, marking of exhaust silencer	see engine approval e46: e5*595/2009*2019/1939E*00077*00 e48: e5*595/2009*2019/1939E*00076*00 e49, e50, e51, e53: e5*595/2009*2019/1939E*00075*00 e56 – e58: e4*595/2009*2019/1939E*0147*00
	Where relevant for exterior noise, reducing measures in the engine compartment and on the engine	soundproofing materials in the engine compartment
3.2.9.5.	Location of the exhaust outlet	rear part on the left side versions ??e???g?? – top versions ??e???d?? – bottom
3.2.9.7.1.	(Euro VI only) Acceptable Exhaust system volume:	e46: 169,02 – 215,24 dm ³ e48: 72,72-117,2 dm ³ e49, e50, e51, e53: 72,72 - 125,2 dm ³ e56 – e58: 297 - 349 dm ³



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3.2.12.	Measures taken against air pollution	
3.2.12.1.1.	(Euro VI only) Device for recycling crankcase gases:	e46: yes e48: no, in compliance with Annex V of EU Reg 528/2011 e49, e50, e51, e53: open crankcase ventilation e56 – e58: the crankcase gas passes an oil mist separation system to meet Euro VI environmental regulations, decrease oil-consumption and avoid vehicle pollution. The filtered crankcase gas is discharged into the ambient atmosphere in compliance with Annex V of Regulation 582/2011
3.2.12.2.	Additional pollution control devices (if any, and if not covered by another heading)	
3.2.12.2.1.	Catalytic converter	Yes
3.2.12.2.1.11.	Regeneration systems/method of exhaust after-treatment systems, description	in cylinder, post injection only; EGR, VGT, DOC, DPF, SCR
3.2.12.2.1.11.6.	Consumable reagents	Yes
3.2.12.2.1.11.7.	Type and concentration of reagent needed for catalytic action	Adblue according to ISO 22241
3.2.12.2.2.	Oxygen sensor	e46, e48: yes e49, e50, e51, e53, e56, e57,e58: no
3.2.12.2.3.	Air injection	n/a
3.2.12.2.4.	Exhaust gas recirculation	Yes
3.2.12.2.5.	Evaporative emissions control system	No
3.2.12.2.6.	Particulate trap	Yes
3.2.12.2.6.9.	Other systems:	n/a
3.2.12.2.7.	On-board-diagnostic (OBD) system	Yes
3.2.12.2.7.0.1.	(Euro VI only) Number of OBD engine families within the engine family	One
3.2.12.2.7.0.2.	(Euro VI only) List of the OBD engine families (when applicable)	e46: One e48, e49, e50, e51, e53: ESR348077 e56 – e58: MX OBD1
3.2.12.2.7.0.3.	(Euro VI only) Number of the OBD engine family the parent engine / the engine member belongs to:	One



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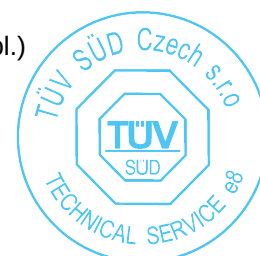
- | | | |
|-----------------|--|--|
| 3.2.12.2.7.0.4. | (Euro VI only) Manufacturer references of the OBD-Documentation required by Article 5(4)(c) and Article 9(4) of Regulation (EU) No 582/2011 and specified in Annex X to that Regulation for the purpose of approving the OBD system | e46: referenced in CTR – 4094630
e48, e49, e50, e51, e53: referenced in CTR 66673 and CTR 66674
e56 – e58: [OBD Documentation] 7002_51800/19-107 |
| 3.2.12.2.7.0.5. | (Euro VI only) When appropriate, manufacturer reference of the Documentation for installing in a vehicle an OBD equipped engine system | e46: referenced in AEB 191.45
e48, e49, e50, e51, e53: referenced in AEB 191.42
e56 – e58: [OBD Documentation] 7002_51800/18-415 |
| 3.2.12.2.7.0.6. | (Euro VI only) When appropriate, manufacturer reference of the documentation package related to the installation on the vehicle of the OBD system of an approved engine | e46: referenced in AEB 191.45
e48, e49, e50, e51, e53: referenced in AEB 191.42
e56 – e58: [OBD Documentation] 7002_51800/18-415 |
| 3.2.12.2.7.0.7. | Written description and/or drawing of the MI | See point 3.1.2. |
| 3.2.12.2.7.0.8. | Written description and/or drawing of the OBD off-board communication interface | See point 3.1.2. |
| 3.2.12.2.7.6.5. | (Euro VI only) OBD Communication protocol standard: | SAE J1939 |
| 3.2.12.2.7.7. | (Euro VI only) Manufacturer reference of the OBD related information required by of Article 5(4)(d) and Article 9(4) of Regulation (EU) No 582/2011 for the purpose of complying with the provisions on access to vehicle OBD and vehicle Repair and Maintenance Information, or | e46: referenced in CTR – 4094630
e48, e49, e50, e51, e53: referenced in CTR 66674
e56 – e58: [OBD Documentation] 7002_51800/19-107 |
| 3.2.12.2.7.7.1. | As an alternative to a manufacturer reference provided in Section 3.2.12.2.7.7 reference of the attachment to the information document set out in Appendix 4 of Annex III to Regulation (EU) No 582/2011 that contains the following table, once completed according to the given example: | e48, e49, e50, e51, e53: n/a
e56 – e58: [OBD Documentation] 7002_51800/19-107 |



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- 3.2.12.2.7.8. (EURO VI only) OBD components on-board the vehicle
- 3.2.12.2.7.8.1. List of OBD components on-board the vehicle MI, OBD off-board communication interface
- 3.2.12.2.7.8.2. Written description and/or drawing of the MI
- 

- 3.2.12.2.7.8.3. Written description and/or drawing of the OBD off-board communication interface SAE J1939
- 3.2.12.2.8. Other systems (description and operation)
- 3.2.12.2.8.1. (Euro VI only) Systems to ensure the correct operation of NO x control measures e48, e49, e50, e51, e53: referenced in CTR 67329
e56 – e58: reagent availability (reagent tank level), reagent quality, reagent consumption, reagent dosing malfunction, impeded EGR valve, failures to the monitoring system of tampering actions
- 3.2.12.2.8.2. Driver inducement system
- 3.2.12.2.8.2.1. (Euro VI only) Engine with permanent deactivation of the driver inducement, for use by the rescue services or in vehicles specified in point (b) of Article 2(2) to Regulation (EU) 2018/858 e46: see AECD for L9NE6DII
e48, e49, e50, e51, e53: yes, controlled and restricted by Cummins DO option
e56 – e58: yes
- 3.2.12.2.8.3. (Euro VI only) Number of OBD engine families within the engine family considered when ensuring the correct operation of NO x control measures One
- 3.2.12.2.8.4. (Euro VI only) List of the OBD engine families (when applicable) See point 3.2.12.2.7.0.2.
- 3.2.12.2.8.5. (Euro VI only) Number of the OBD engine family the parent engine / the engine member belongs to One
- 3.2.12.2.8.6. (Euro VI only) Lowest concentration of the active ingredient present in the reagent that does not activate the warning system (CD min): (% vol.) e46: n/a
e48, e49, e50, e51, e53: 21,5 (% vol.)
e56 – e58: 28.3 (% vol.)



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- 3.2.12.2.8.7. (Euro VI only) When appropriate, manufacturer reference of the Documentation for installing in a vehicle the systems to ensure the correct operation of NO x control measures
e46: Referenced in AEB 21.20
e48, e49, e50, e51, e53: Referenced in AEB 191.42
e56 – e58: 7002_51800/18-415
- 3.2.12.2.8.8. (Euro VI only) Components on-board the vehicle of the systems ensuring the correct operation of NO x control measures
- 3.2.12.2.8.8.1. (Euro VI only) List of components on-board the vehicle of the systems ensuring the correct operation of NOx control measures
n/a
- 3.2.12.2.8.8.2. When appropriate, manufacturer reference of the documentation package related to the installation on the vehicle of the system ensuring the correct operation of NO x control measures of an approved engine
e46: reference in AEB 21.20
e48: see e5*595/2009*2019/1939E*00076*00 and reference in AEB 191.42
e49, e50, e51, e53: see e5*595/2009*2019/1939E*00075*00 and reference in AEB 191.42
e56 – e58: e4*595/2009*2019/1939E*0147*00 and OBD Documentation] 7002_51800/18-415
- 3.2.12.2.8.8.3. Written description and/or drawing of the warning signal


- 3.2.12.2.9. Torque limiter
yes (implemented in engine ECU)
- 3.2.12.2.10. Periodically regenerating system: (provide the information below for each separate unit)
No
- 3.2.12.2.10.1. Method or system of regeneration, description and/or drawing:
n/a
- 3.2.12.2.11.1. Type and concentration of reagent needed:
n/a
- 3.2.13.1. Location of the absorption coefficient symbol (compression ignition engines only)
on the engine type plate
- 3.2.15. LPG fuelling system
No
- 3.2.16. NG fuelling system
No



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3.2.17.8.1.0.1.	(Euro VI only) Self adaptive feature?	n/a
3.2.17.8.1.0.2.	(Euro VI only) Calibration for a specific gas composition NG-H/NG-L/NG-HL (...)	n/a
3.3.	Electric motor	
3.3.1.	Type (winding, excitation)	e23, e68: 3-phase AC asynchronous motor e59: synchronous claw pole rotor e63: synchronous permanent magnet
3.3.1.1.1.	Maximum net Power (manufacturer's declared value)	e23: 170 kW version ???????d, e59: 12 kW version ???????r e63: 35 kW version ???????v e68: 250 kW version ???????n
3.3.1.1.2.	Maximum 30 minutes power (manufacturer's declared value)	e23: 120 kW ???????d, e59: 10 kW version ???????r e63: 25 kW version ???????v e68: 215,5 kW version ???????n
3.3.1.2.	Operating voltage [V]	e23, e68: nominal: 600V, range: 550-750V; e59: 48 V e63: 48 V
3.3.2.	REESS	
3.3.2.4.	Position	on the roof
3.4.	Combinations of propulsion energy converters	
3.4.1.	Hybrid electric vehicle:	Yes
3.4.2.	Category of hybrid electric vehicle	Variant 1CCDHCE, 1CCDMCE, 1CCGMCE: NOVC-HEV (not off-vehicle charging) Variant: 1CCDPCE OVC-HEV (off-vehicle charging)
3.4.3.1.1.	Pure electric	No
3.5.9.	CO2 emissions and fuel consumption certification (for heavy-duty vehicles, as specified in Article 6 of Commission Regulation (EU) 2017/2400)	
3.5.9.1.	Simulation tool licence number:	e8*2017/2400*2022/1379*0002*00
3.5.9.2.	Zero emission heavy-duty vehicle:	no
3.5.9.3.	Vocational vehicle:	no
3.5.10.	Declared maximum RDE values (if applicable)	n/a



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Complete RDE trip: NOx: ...,
Particles (number):
Urban RDE trip: NOx: ...,
Particles (number):

3.6.5. Lubricant temperature min. 233 K, max. 408 K

4. Transmission

4.2. Transmission type variant a), b) n/a - versions ??????0?
variant c), d) mechanical – versions ??????a?

4.5. Gearbox

4.5.1. Type variant a), b) n/a - versions ??????0?

variant c), d) automatic – versions ??????a?
g07: ZF ? AP ???? B?
g15: Voith 8?4.6 or 8?5.8

4.6. Gear ratios

g07i01:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	6,2	21,1
2	1,9		11,8
3	1,4		8,7
4	1,0		6,2
5	0,7		4,3
6	0,6 (option)		3,7
R	4,2		26,0

g07i02:

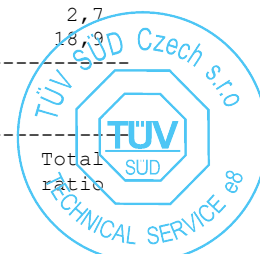
Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	5,1	17,3
2	1,9		9,7
3	1,4		7,1
4	1,0		5,1
5	0,7		3,6
6	0,6 (option)		3,1
R	4,2		21,4

g07i03:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	4,5	15,3
2	1,9		8,6
3	1,4		6,3
4	1,0		4,5
5	0,7		3,2
6	0,6 (option)		2,7
R	4,2		18,9

g07i04:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
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1	3,4	5,4	18,4
2	1,9		10,3
3	1,4		7,6
4	1,0		5,4
5	0,7		3,8
6	0,6 (option)		3,2
R	4,2		22,7

g07i05:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	4,7	16,0
2	1,9		8,9
3	1,4		6,6
4	1,0		4,7
5	0,7		3,3
6	0,6 (option)		2,8
R	4,2		19,7

g07i06:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	5,7	19,4
2	1,9		10,8
3	1,4		8,0
4	1,0		5,7
5	0,7		4,0
6	0,6 (option)		3,4
R	4,2		23,9

g07i08:

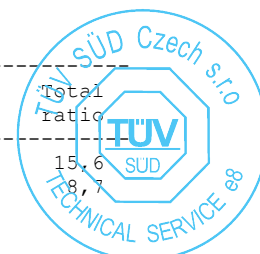
Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	5,2	17,7
2	1,9		9,9
3	1,4		7,3
4	1,0		5,2
5	0,7		3,6
6	0,6 (option)		3,1
R	4,2		21,8

g07i10:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	4,9	16,7
2	1,9		9,3
3	1,4		6,9
4	1,0		4,9
5	0,7		3,4
6	0,6 (option)		2,9
R	4,2		20,6

g07i11:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	4,6	15,6
2	1,9		8,7



3	1,4	6,4
4	1,0	4,6
5	0,7	3,2
6	0,6 (option)	2,8
R	4,2	19,3

g07i12:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	5,3	18,0
2	1,9		10,1
3	1,4		7,4
4	1,0		5,3
5	0,7		3,7
6	0,6 (option)		3,2
R	4,2		22,3

g07i13:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	5,8	19,7
2	1,9		11,0
3	1,4		8,1
4	1,0		5,8
5	0,7		4,1
6	0,6 (option)		3,5
R	4,2		24,4

g07i14:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	3,4	4,3	14,6
2	1,9		8,2
3	1,4		6,0
4	1,0		4,3
5	0,7		3,0
6	0,6 (option)		2,6
R	4,2		18,1

g15i01:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	6,2	29,8-37,8
2	1,4		8,7
3	1,0		6,2
4	0,7		4,3
R	4,2-6,1		26,0-37,8

g15i02:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	5,1	24,5-31,1
2	1,4		7,1
3	1,0		5,1
4	0,7		3,6
R	4,2-6,1		21,4-31,1

g15i03:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	4,5	21,6-27,5
2	1,4		6,3
3	1,0		4,5
4	0,7		3,2
R	4,2-6,1		18,9-27,5

g15i04:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	5,4	25,9-32,9
2	1,4		7,6
3	1,0		5,4
4	0,7		3,8
R	4,2-6,1		22,7-32,9

g15i05:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	4,7	22,6-28,7
2	1,4		6,6
3	1,0		4,7
4	0,7		3,3
R	4,2-6,1		19,7-28,7

g15i06:

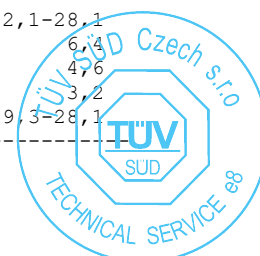
Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	5,7	27,4-34,8
2	1,4		8,0
3	1,0		5,7
4	0,7		4,0
R	4,2-6,1		23,9-34,8

g15i08:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	5,2	25,0-31,7
2	1,4		7,3
3	1,0		5,2
4	0,7		3,6
R	4,2-6,1		21,8-31,7

g15i11:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	4,6	22,1-28,1
2	1,4		6,4
3	1,0		4,6
4	0,7		3,2
R	4,2-6,1		19,3-28,1



g15i12:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	5,3	25,4-32,3
2	1,4		7,4
3	1,0		5,3
4	0,7		3,7
R	4,2-6,1		22,3-32,3

g15i13:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	5,8	27,8-35,4
2	1,4		8,1
3	1,0		5,8
4	0,7		4,1
R	4,2-6,1		24,4-35,4

g15i14:

Gear	Gearbox ratio	Rear axle ratio	Total ratio
1	4,8-6,1	4,3	20,6-26,2
2	1,4		6,0
3	1,0		4,3
4	0,7		3,0
R	4,2-6,1		18,1-26,2

4.7.	Maximum speed	up to 100km/h, electronically limited
4.9.	Tachograph	no (optionally yes – under customer demand or under national law requirement)
4.9.1.	Approval mark:	e1*84 or e5*0002
4.11.	Gear shift indicator (GSI)	
4.11.1.	Acoustic indication available yes/no. If yes, description of sound and sound level at the driver's ear in dB(A). (Acoustic indication always switchable on/off):	n/a
4.11.2.	Information according to point 4.6 of Annex I (manufacturer's declaration value):	n/a

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5. Axles

5.1.	Description of each axle	front axle - steered, rigid or independent rear axle - driven axle, rigid
5.2.	Make	
	Axle 1	ZF or LAF or Voith
	Axle 2	ZF or Voith
5.3.	Type	
	Axle 1	f1: ZF RL 85/A f2: LAF 442 2 7300 ???? f3: ZF RL 75EC f4: Voith IFS TJ 81-225 f10: ZF RL 82EC f11: ZF RL 82 A
	Axle 2	r1: ZF AV 132II r3: Voith BRA 132 r8: ZF AV 133
5.4.	Position of retractable axle(s)	n/a
5.5.	Position of loadable axle(s)	n/a

6. Suspension

6.2.	Tyre and design of the suspension of each axle or group of axles or wheel	axle 1: dependent or independent, air bellows axle 2: dependent, air bellows
6.2.1.	Level adjustment	Yes
6.2.3.	Air-suspension for driving axle(s) (yes/ no)	Yes
6.2.3.1.	Suspension of driving axles equivalent to air suspension	No
6.2.4.	Air-suspension for non-driving axle(s)	Yes
6.2.4.1.	Suspension of non-driving axle(s) equivalent to air-suspension	No
6.6.1.	Tyre/wheel combination(s)	
6.6.1.1.	Axles	



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6.6.1.1.1. Axle 1 275/70 R22,5 (148/145 J or more),
rim 22,5x7,5 ET 160 (optional ET 165) or
rim 22,5x8,25 ET 170
Rolling resistance coefficient (kg/t):
maximum 8,0 (9,0 for snow tyres) for stage 1
maximum 6,5 (7,5 for snow tyres) for stage 2

or
315/60 R22,5 (152/148 K or more),
rim 22,5x9 ET 120
Rolling resistance coefficient (kg/t):
maximum 8,0 (9,0 for snow tyres) for stage 1
maximum 6,5 (7,5 for snow tyres) for stage 2

6.6.1.1.2. Axle 2 275/70 R22,5 (148/145 J or more),
rim 22,5x7,5 ET 160 (optional ET 165) or
rim 22,5x8,25 ET 170
Rolling resistance coefficient (kg/t):
maximum 8,0 (9,0 for snow tyres) for stage 1
maximum 6,5 (7,5 for snow tyres) for stage 2

6.6.1.2. Spare wheel, if any n/a

6.6.2. Upper and lower limits of
rolling radii

6.6.2.1. Axle 1 for tyres 275/70 R22,5: 440 - 480 mm
for tyres 315/60 R22,5: 466 – 515 mm

6.6.2.2. Axle 2 440 - 480 mm

6.7. Tyre pressure monitoring
system (TPMS)

6.7.1. Presence yes

7. Steering

7.2. Transmission and control

7.2.1. Type of steering transmission mechanical with hydraulic assistance; manually-
through the steering gear and parts of steering system
connected to the first axle wheels

7.2.2. Linkage to wheels (including
other than mechanical means;
specify for front and rear, if
applicable) mechanical – front axle wheels

7.2.3. Method of assistance if any hydraulic

7.4. Emergency lane-keeping
system (ELKS)

7.4.1. Presence no

7.5. Lane Departure Warning
System (LDWS)



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7.5.1. Presence no

7.6. Corrective Directional Control Function (CDCF)

7.6.1. Presence no

8. Braking

8.5. Anti-lock braking system Yes

8.9. Brief description of the braking system according to paragraph 12 of Annex 2 to UN Regulation No 13
 service brake system: pneumatic, two independent circuits, disc brakes KNORR on all wheels, with anti-lock system and EBS3 4S/4M Wabco; EBS operates by means of limiting the braking force with the help of electro-pneumatic modulators - the modulators act on all servos; controlled with electronic control unit.
 secondary braking system: Intact circuit of the service braking.
 parking braking system: spring part of combined brake cyl. on the driving axle

8.11. Particulars of the type(s) of endurance braking system(s) endurance braking system: electrodynamic engine and/or engine brake type PACBRAKE C40311

8.12. Advanced emergency braking system (AEBS)

8.12.1. Presence no

9. Bodywork

9.1. Type of bodywork using the codes defined in Part C of Annex I to Regulation (EU) 2018/858 CE Low-floor single deck

9.3. Occupant doors, latches and hinges

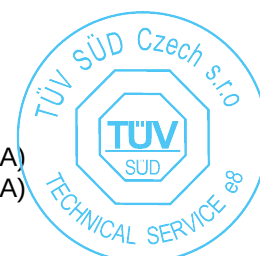
9.3.1. Doors configurations and number of doors 2 or 3 (with 1 or 2 or 3 double doors)

9.9. Devices for indirect vision

9.9.1. Rear-view mirrors, stating, for each rear-view mirror

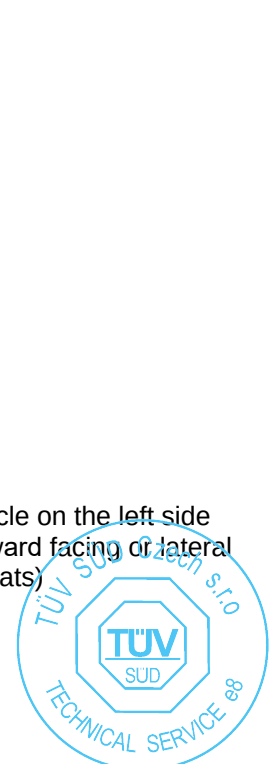
9.9.1.1. Make Mekra, Smat Nord, Wilke, Arcol, Inmesa

9.9.1.2. Type-approval mark
 Mekra:
 E1 II 02 0951 (type: 0.278)
 E1 IV 02 0952 (type: 0.278/1)
 E1 II 02 0915 (type: 0.277)
 Smat Nord:
 E3 II 02 2086 (type: 9025.1)
 E3 II 02 2087 (type: 9026.0)
 E3 II 02 1119 (type: : 9111 or 9111/A)
 E3 II 02 1121 (type: : 9113 or 9113/A)



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		E3 IV 04 1120 (type: 9112 or 9112/A) E3 V 04 1154 (type: 9144 or 9144/A) E3 II 04 1131 (type: 9120 or 9120/A; type: 9120-01 or 9120-01/A) Wilke: E1 020939 (type: 501 325/B) Inmesa E9 II 02 6580 E9 II 02 6582 Arcol: E9 II 02 6010 E9 II 04 6043 ext.01
9.9.1.3.	Variant	n/a
9.9.1.6.	Optional equipment which may affect the rearward field of vision	n/a
9.9.2.	Devices for indirect vision other than mirrors	
9.9.2.1.	Type and characteristics (such as complete description of the device)	camera-monitor system Orlaco (Mirror Eye): II E4 46R04/05 5655 IV E4 46R04/05 5656 or II E4 46R04/06 5854 IV E4 46R04/06 5855 or Smart Vision V2 II E2 46R04/08 17247 IV E2 46R04/08 18158 optionally V E4 46R-04 4913 ext.01 camera-monitor system Arcol (eMirror) II E2*46R04/09*21278*00 IV E2*46R04/09*21279*00 V E2*46R04/09*22213*00
9.10.	Interior arrangement	
9.10.3.	Seats	
9.10.3.1.	Number of seating positions	driver: 1 passengers: see 13.4.
9.10.3.1.1.	Location and arrangement	driver's seat: at the front of the vehicle on the left side passengers' seats: forward or rearward facing or lateral seats (optionally installed folding seats)
9.10.3.2.	Seat(s) designated for use only when the vehicle is stationary	n/a



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9.10.8.	Gas used as refrigerant in the air-conditioning system	R134a or CO ₂ where applicable (A/C as an option)
9.10.8.1.	The air-conditioning system is designed to contain fluorinated greenhouse gases with a global warming potential higher than 150	n/a: where A/C not installed no: where A/C installed with gas CO ₂ yes: where A/C installed with gas R134a
9.12.2.	Nature and position of supplementary restraint systems	no supplementary restraint systems
9.17.	Statutory plates	
9.17.1.	Photographs and/or drawings of the locations of the statutory plate and inscriptions and of the vehicle identification number	see annex 11
9.17.2.	Photographs and/or drawings of the statutory plate and inscriptions (completed example with dimensions)	see annex 11
9.17.3.	Photographs and/or drawings of the vehicle identification number (completed example with dimensions)	see annex 11
9.17.4.1	The meaning of characters in the vehicle descriptor section (VDS) of the vehicle identification number (VIN) and, if applicable, the vehicle indicator section (VIS) thereof, to comply with the requirements of Section 5.3. of ISO Standard 3779:2009 shall be explained:	see annex 11
9.17.4.2.	If characters in the vehicle descriptor second section are used to comply with the requirements of section 5.4 of ISO Standard 3779:2009 these characters shall be indicated	see annex 11
9.22.	Front under-run protection	
9.22.0	Presence	no
9.23.	Pedestrian protection	
9.23.1.	A detailed description, including photographs and/or drawings, of the vehicle with	n/a



	PART I	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 29/39

respect to the structure, the dimensions, the relevant reference lines and the constituent materials of the frontal part of the vehicle (interior and exterior), including detail of any active protection system installed

9.24. Frontal protection systems

9.24.1. General arrangement (drawings or photographs) indicating the position and attachment of the frontal protection systems n/a

9.24.3. Complete details of fittings required and full instructions, including torque requirements, for fitting n/a

11. Connections between towing vehicles and trailers and semi-trailers

11.1. Class and type of the coupling device(s) fitted or to be fitted
versions ?0?????: n/a
versions ?3?????: A 50-X, MVG 3004
versions ?5?????: Rockinger Varioblock
versions ?6?????: preparation

11.3. Instructions for attachment of the coupling type to the vehicle and photographs or drawings of the fixing points at the vehicle as stated by the manufacturer; additional information, if the use of the coupling type is restricted to certain variants or versions of the vehicle type
versions ?0?????: n/a
versions ?3?????: see coupling device approval
versions ?5?????: see coupling device approval
versions ?6?????: preparation

11.4. Information of the fitting of special towing brackets or mounting plates
versions ?0?????: n/a
versions ?3?????: see coupling device approval
versions ?5?????: see coupling device approval
versions ?6?????: preparation

11.5. Type-approval number(s)
versions ?0?????: n/a
versions ?3?????: E4 55R-01 0100 (e4*94/20*0100*00)
versions ?5?????: E4 55R01/04*0044
versions ?6?????: preparation



	PART I	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 30/39

12. Miscellaneous

12.2.4.	Alcohol interlock installation facilitation (AIF)	
12.2.4.1.	Manufacturer's declaration of compliance, in accordance with Annex I to Commission Delegated Regulation (EU) 2021/1243	See approval no. e8*2021/1243*2021/1243*00007*00
12.6.5.	Intelligent speed assistance system (ISA)	
12.6.5.1.	Presence	Yes
12.7.1.	Vehicle equipped with a 24 GHz short-range radar equipment	No
12.8.	eCall system	
12.8.1.	Presence	No
12.9.	Acoustic Vehicle Alerting System (AVAS)	yes optionally
12.9.1	The number of the approval certificate issued on the basis of requirements laid down in UN Regulation No 138 of the Economic Commission for Europe of the United Nations (UNECE)	E8*138R01/02*12511*02 or E8*138R01/02*12430*04
12.11.	Driver drowsiness and attention warning (DDAW) system	
12.11.1.	Presence	Yes, for vehicles with top speed over 70 km/h.
12.12.	Advanced driver distraction warning (ADDW) system	
12.12.1.	Presence	no
12.13.	Blind spot information system (BSIS)	
12.13.1.	Presence	yes
12.16.	Event data recorder (EDR)	
12.16.1.	Presence	No
12.17.	Driver availability monitoring (DAM) system	
12.17.1.	Presence	No



	PART I	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 31/39

13. Special provisions for buses and coaches

13.1.	Class of vehicle	Class I
13.1.2.	Chassis types where the type-approved bodywork can be installed	n/a
13.3.	Number of passengers (seated and standing)	
13.3.1.	Total (N)	up to 107
13.3.2.	Upper deck (Na)	n/a
13.3.3.	Lower deck (Nb)	see 13.3.1.
13.4.	Number of passengers (seated)	
13.4.1.	Total (A)	21 – 41 with foldable seats occupied (if any)
13.4.2.	Upper deck (Aa)	n/a
13.4.3.	Lower deck (Ab)	see 13.4.1.
13.4.4.	Number of wheelchair positions for category M2 and M3 vehicles	1 or 2

16. Access to vehicle repair and maintenance information

16.1.	Address of principal website for access to vehicle repair and maintenance information	www.solarisbus.com
-------	---	--

17. Automated driving system (ADS)

17.1.	Presence	no
-------	----------	----

Note: In this information document several abbreviations preceding the stated value are used. These letters and numbers are used in all SOLARIS Bus & Coach sp. z o.o. information documents where the same abbreviation stands always for the same component. The numbers are ordinal numbers for such a component in our system. Letters are assigned as follows:

e = engine f = front axle r = rear axle t = fuel tank g = gearbox



	PART II	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 32/39

Matrix showing the combinations of the entries listed in Part I within the variants / versions of the vehicle type
Version / Variant Complete Code – description and example:
All combinations of the entries stated in the code-tables of particular variants/versions are possible.

Manufacturer's type designation:	URBINO 12 Hybrid			
Variant:	a	b	c	d
Class of the bus: Class I = 1 Class II = 2	1	1	1	1
Extent of build: Complete vehicle = C Incomplete vehicle = I	C	C	C	C
Producer's code */:	C	C	C	C
Working principle of power plant: Positive ignition = G (CNG) Compression ignition = D (Diesel)	D	D	D	G
Type of hybrid Hybrid system = H Mild hybrid system = M Plug-in hybrid system=P	H	P	M	M
Bodywork:	CE	CE	CE	CE
Versions:	See tables for variant a	See tables for variant b	See tables for variant c	See tables for variant d

*/ Producer's code: means producers designation concerning construction of the vehicle:
C – nUrbino 12

Version Complete Code

	Version Complete Code							
	Masses	Trailer	Power train					
			Engine			*/	Transmission type	Electric motor power output **/
Position	1	2	3	4	5	6	7	8

*/ Exhaust outlet location

**/ Electric motor power output



	PART II	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 33/39

Explanation:

Variant a):

Position 1:

Masses (see item 12.6.1. and 12.6.2.)	Intended registration/in-service maximum permissible laden mass [kg]		
	1st axle	2nd axle	GVW
0	7100 kg	11500 kg	18000 kg
1	7245 kg	11500 kg	18000 kg
2	7700 kg	11500 kg	18000 kg
3	7245 kg	11500 kg	18745 kg
4	7245 kg	12000 kg	19000 kg
5	7245 kg	12600 kg	19000 kg
6	7245 kg	12600 kg	19500 kg
7	7700 kg	11500 kg	19200 kg
8	7700 kg	12000 kg	19000 kg
9	7700 kg	12000 kg	19500 kg
a	7700 kg	12600 kg	19000 kg
b	7700 kg	12600 kg	19500 kg
c	7245 kg	12600 kg	19845 kg
d	7700 kg	12600 kg	20000 kg
e	7500 kg	11500 kg	18000 kg
f	7500 kg	11500 kg	19000 kg
g	7500 kg	12000 kg	19000 kg
h	7500 kg	12600 kg	19000 kg
i	7500 kg	12000 kg	19500 kg
j	7500 kg	12600 kg	19500 kg
k	7500 kg	12600 kg	20000 kg

Position 2:

Subject	Trailer	
	Coupling device class and type	Type approval no.
Item	11.1.	11.5.
0	n/a	n/a

Position 3-8:

Item	Subject	Power train
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e48g
4.2. 4.5.1.	Transmission type	0
3.3.1.	Electric motor power output	d

Item	Subject	Power train
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e48g
4.2. 4.5.1.	Transmission type	0
3.3.1.	Electric motor power output	n



	PART II	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 34/39

Variant b):

Position 1:

Masses (see item 12.6.1. and 12.6.2.)	Intended registration/in-service maximum permissible laden mass [kg]		
	1st axle	2nd axle	GVW
0	7100 kg	11500 kg	18000 kg
1	7245 kg	11500 kg	18000 kg
2	7700 kg	11500 kg	18000 kg
3	7245 kg	11500 kg	18745 kg
4	7245 kg	12000 kg	19000 kg
5	7245 kg	12600 kg	19000 kg
6	7245 kg	12600 kg	19500 kg
7	7700 kg	11500 kg	19200 kg
8	7700 kg	12000 kg	19000 kg
9	7700 kg	12000 kg	19500 kg
a	7700 kg	12600 kg	19000 kg
b	7700 kg	12600 kg	19500 kg
c	7245 kg	12600 kg	19845 kg
d	7700 kg	12600 kg	20000 kg
e	7500 kg	11500 kg	18000 kg
f	7500 kg	11500 kg	19000 kg
g	7500 kg	12000 kg	19000 kg
h	7500 kg	12600 kg	19000 kg
i	7500 kg	12000 kg	19500 kg
j	7500 kg	12600 kg	19500 kg
k	7500 kg	12600 kg	20000 kg

Position 2:

Subject	Trailer	
	Coupling device class and type	Type approval no.
Item	11.1.	11.5.
0	n/a	n/a

Position 3-8:

Item	Subject	Power train
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e48g
4.2. 4.5.1.	Transmission type	0
3.3.1.	Electric motor power output	d



	PART II	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 35/39

Variant c):

Position 1:

Masses (see item 12.6.1. and 12.6.2.)	Intended registration/in-service maximum permissible laden mass [kg]		
	1st axle	2nd axle	GVW
0	7100 kg	11500 kg	18000 kg
1	7245 kg	11500 kg	18000 kg
2	7700 kg	11500 kg	18000 kg
3	7245 kg	11500 kg	18745 kg
4	7245 kg	12000 kg	19000 kg
5	7245 kg	12600 kg	19000 kg
6	7245 kg	12600 kg	19500 kg
7	7700 kg	11500 kg	19200 kg
8	7700 kg	12000 kg	19000 kg
9	7700 kg	12000 kg	19500 kg
a	7700 kg	12600 kg	19000 kg
b	7700 kg	12600 kg	19500 kg
c	7245 kg	12600 kg	19845 kg
d	7700 kg	12600 kg	20000 kg
e	7500 kg	11500 kg	18000 kg
f	7500 kg	11500 kg	19000 kg
g	7500 kg	12000 kg	19000 kg
h	7500 kg	12600 kg	19000 kg
i	7500 kg	12000 kg	19500 kg
j	7500 kg	12600 kg	19500 kg
k	7500 kg	12600 kg	20000 kg

Position 2:

Subject	Trailer	
	Coupling device class and type	Type approval no.
Item	11.1.	11.5.
0	n/a	n/a
3	MVG 3004, F	E4 55R-01 0100 (e4*94/20*0100*00)
5	Rockinger Varioblock	E1*55R01/04*0044*02
6	none	none

Position 3-8:

Item	Subject	Power train			
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e49d	e50d	e51d	e53d
4.2. 4.5.1.	Transmission type	a			
3.3.1.	Electric motor power output	r			



	PART II	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 36/39

Item	Subject	Power train					
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e56g	e57g	e58g	e56d	e57d	e58d
4.2. 4.5.1.	Transmission type	a					
3.3.1.	Electric motor power output	r					

Item	Subject	Power train			
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e49d	e50d	e51d	e53d
4.2. 4.5.1.	Transmission type	a			
3.3.1.	Electric motor power output	v			

Item	Subject	Power train					
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e56g	e57g	e58g	e56d	e57d	e58d
4.2. 4.5.1.	Transmission type	a					
3.3.1.	Electric motor power output	v					



	PART II	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 37/39

Variant d):

Position 1:

Masses (see item 12.6.1. and 12.6.2.)	Intended registration/in-service maximum permissible laden mass [kg]		
	1st axle	2nd axle	GVW
0	7100 kg	11500 kg	18000 kg
1	7245 kg	11500 kg	18000 kg
2	7700 kg	11500 kg	18000 kg
3	7245 kg	11500 kg	18745 kg
4	7245 kg	12000 kg	19000 kg
5	7245 kg	12600 kg	19000 kg
6	7245 kg	12600 kg	19500 kg
7	7700 kg	11500 kg	19200 kg
8	7700 kg	12000 kg	19000 kg
9	7700 kg	12000 kg	19500 kg
a	7700 kg	12600 kg	19000 kg
b	7700 kg	12600 kg	19500 kg
c	7245 kg	12600 kg	19845 kg
d	7700 kg	12600 kg	20000 kg
e	7500 kg	11500 kg	18000 kg
f	7500 kg	11500 kg	19000 kg
g	7500 kg	12000 kg	19000 kg
h	7500 kg	12600 kg	19000 kg
i	7500 kg	12000 kg	19500 kg
j	7500 kg	12600 kg	19500 kg
k	7500 kg	12600 kg	20000 kg

Position 2:

Subject	Trailer	
	Coupling device class and type	Type approval no.
Item	11.1.	11.5.
0	n/a	n/a
3	MVG 3004, F	E4 55R-01 0100 (e4*94/20*0100*00)
5	Rockinger Varioblock	E1*55R01/04*0044*02
6	none	none

Position 3-8:

Item	Subject	Power train
3.1. 3.1.1. 3.2.1.3. 3.2.1.6. 3.2.1.8.	Diesel engine	e46g
4.2. 4.5.1.	Transmission type	a
3.3.1.	Electric motor power output	v



	PART II	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 38/39

Example

Description of type / variant / version:
Type: URBINO 12 Hybrid
Variant: 1CCDHCE
Version: 20e48g0h

	Version Complete Code							
	Masses	Trailer	Power train					
			Engine			*/	Transmission type	Electric motor power output
Position	1	2	3	4	5	6	7	8
	2	0	e	4	8	g	0	h

*/ Exhaust outlet location



	PART III	Type: URBINO 12 Hybrid
		Date: 2024-11-04
		Pages: 39/39

Part III Type-approval numbers

All relevant information including type-approval certificates were submitted in electronic form.
Information on particular type-approval numbers based on this declared information shall be Part of TÜV SÜD Czech s.r.o. technical report.

Signed: Rafał Kłos

Position in company: Homologation and Testing Senior Manager

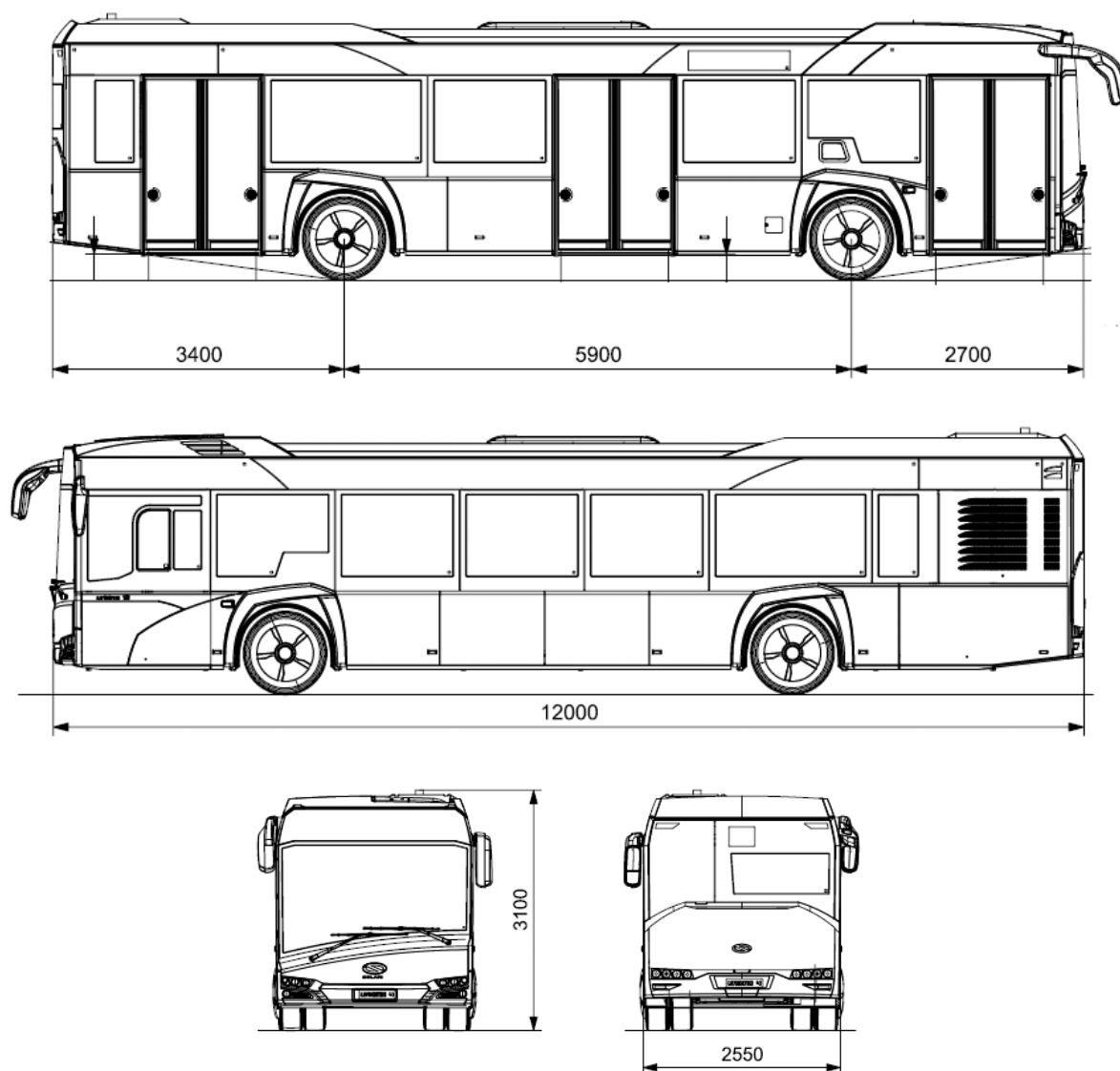
Rafał Kłos
Starszy Kierownik
Działu Homologacji i Testów
Solaris Bus & Coach sp. z o.o.

Solaris Bus & Coach sp. z o. o.
ul. Obornicka 48, Bolechowo-Osiedle, 62-005 Owińska
tel. +48 61 667 2333, fax +48 61 667 2310
NIP PL 5240015630 REGON 010498995

Date: 4th November 2024



	ANNEX 1	Type: URBINO 12 Hybrid
		Pages: 1/2



Drawing 1. Offer drawing of URBINO 12 Hybrid



	ANNEX 1	Type: URBINO 12 Hybrid Pages: 2/2
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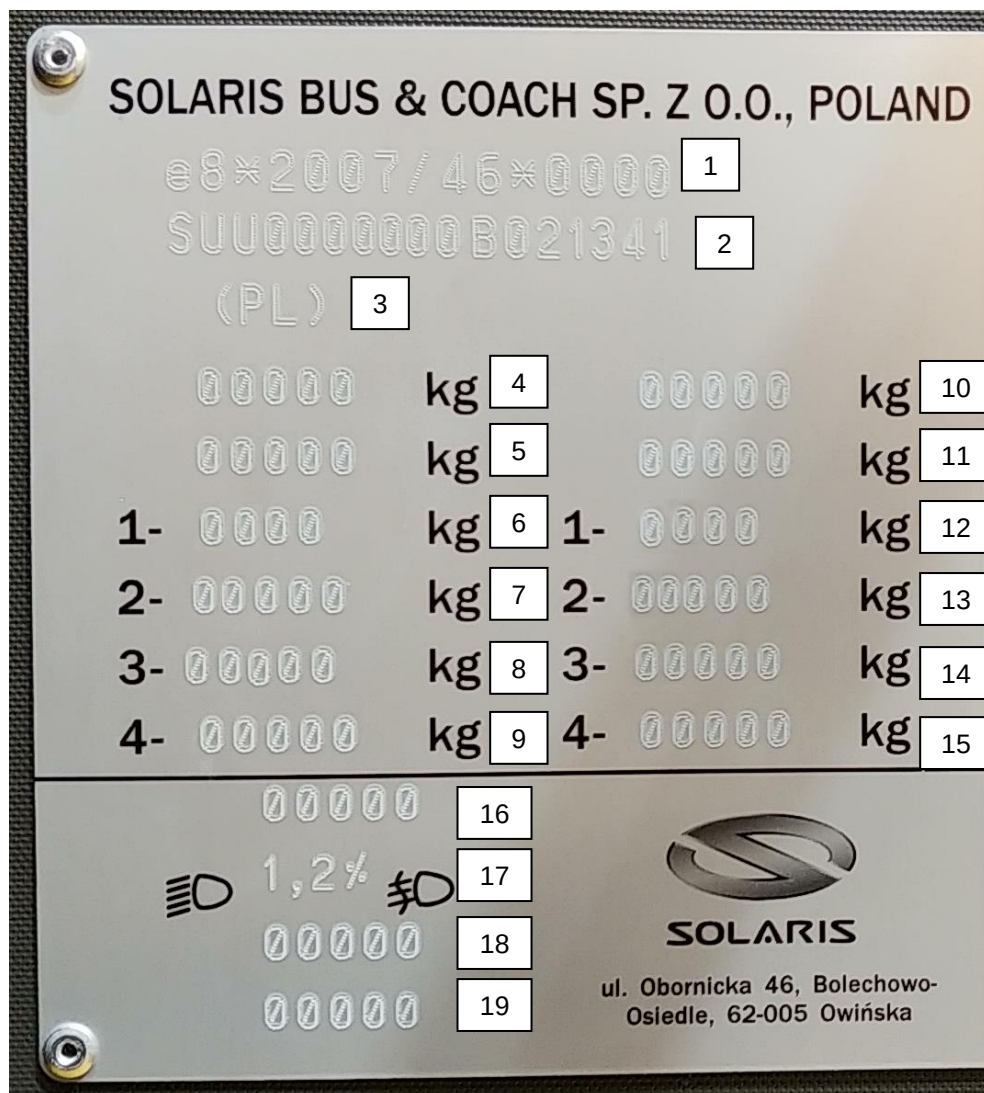
Photo. 1 Photo of bus type representative – front, right side variant c)



Photo. 2 Photo of bus type representative – rear, left side c)



	ANNEX 11	Type: URBINO 12 Hybrid Pages: 2/3
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Drawing 3. Statutory plate.

Nr	Description	height of sign [mm]
1	EEC type-approval number	4
2	Vehicle identification number VIN	4
3	Country of registration code	4
4	Maximum permitted laden weight of the vehicle	4
5	Maximum permitted laden weight of the vehicle with trailer	4
6 – 9	Maximum permitted road weight for each axle	4
10	Technically permitted laden weight of the vehicle	4
11	Technically permitted laden weight of the vehicle with trailer	4
12-15	Technically permitted road weight of each axle	4
16	Value of absorption coefficient (optional)	4
17	Passing beam indication	4
18	Traction voltage (optional)	4
19	Engine serial number (optional)	4

Tab. 1. Description of Statutory plate.



	ANNEX 11	Type: URBINO 12 Hybrid
		Pages: 3/3

Example and explanation:

VIN:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
S	U	U	2	4	1	1	6	1	N	B	0	1	2	3	4	5
Manufacturer's code			number of axles	bus model				engine type	made year	constant unit	bus number					
			identification of bus type													

Combustion engine producer

1 – DAF
3 – Cummins



Technical Report No.:
Regulation:
Manufacturer:
Type:

TÜV SÜD Czech s.r.o.

122310 – 24 – TAC
EC/EU 2018/858
SOLARIS Bus & Coach sp. z o.o., Poland
URBINO 12 Hybrid



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EU Technical Service No. e8 and e27

**TECHNICAL REPORT
No. 122310 – 24 – TAC**

Test according to Regulation EC/EU 2018/858

**the approval of motor vehicles and their trailers, and of systems, components and
separate technical units intended for such vehicles**

Regulation (EU) 2018/858 of 2018-05-30
including all amendments up to and including:
Regulation (EU) 2024/1610 of 2024-05-14
implemented by
Regulation (EU) 2020/683 of 2020-04-15
including all amendments up to and including:
Regulation (EU) 2022/1362 of 2022-08-01

Objectives: Document for issue of extension No. 04 of approval No. e8*2018/858*00060*03

0. Reasons of extension

- new partial approvals
- introduction of towing device

I. Technical data

- 0.1. Make (trade name of manufacturer): SOLARIS
- 0.2. Type: URBINO 12 Hybrid
- 0.2.1. Commercial name: Urbino 12 hybrid or Hybrid H12
Urbino 12 mild hybrid
- 0.3. Means of identification of type: Positions 4 to 9 of the VIN
- 0.3.1. Location of that marking: On the truss in the rear compartment
on the right side
- 0.4. Category of vehicle: M3
- 0.5. Name and address of manufacturer: SOLARIS Bus & Coach sp. z o.o.
ul. Obornicka 46, Bolechowo-Osiedle
62-005 Owińska
Poland
- 0.8. Address of assembly plant: SOLARIS Bus & Coach sp. z o.o.
ul. Obornicka 46, Bolechowo-Osiedle
62-005 Owińska
Poland

Technical Report No.:
Regulation:
Manufacturer:
Type:

TÜV SÜD Czech s.r.o.

122310 – 24 – TAC
EC/EU 2018/858
SOLARIS Bus & Coach sp. z o.o., Poland
URBINO 12 Hybrid



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II. Test report

1. Test conditions

- 1.1. Test vehicle: URBINO 12 Hybrid
- 1.1.1. Technical data from the manufacturer: Specified for all particular Technical Reports or particulars Type approvals stated in Attachment No. 1
- 1.2. Test procedures used: Review of the manufacturers' information folder and Technical Reports assigned to the Type Approvals mentioned in Attachment No. 1.
- 1.3. Measuring and test equipment: The test equipment, facilities and test site in all the Technical Reports assigned to the Type Approvals mentioned in Attachment No. 1. fulfilled requirements of the applicable legislation.
- 1.4. Worst case evaluation: For all partial approvals/tests have been determined the worst cases.
This paragraph is required by the Type Approval Authority.
- 1.5. Testing conditions: Specified in Technical Reports assigned to the Type Approvals mentioned in Attachment No. 1.
- 1.6. Test track or site: TÜV SÜD Czech s.r.o., Czech Republic

2. Test results

- 2.1. Verification that the approvals of separate Directives cover the vehicle type according to Annex III, para. 2a) The approvals (or Technical Reports) mentioned in the list of approval numbers to separate regulatory acts spread over the vehicle type which is to be approved and are in compliance with the relevant appropriate standards.
- 2.2. Verifications according to Annex III, para. 2b) All the vehicle specifications and data contained in Part I of information document are included in the data in the information packages and/or the approval certificates of the relevant separate Directive and Regulation approvals (or Technical Reports).



2.3.	Verifications according to Annex III, para. 2c)	The tested vehicle type complies with the relevant data in the information documents concerning the approvals for the individual regulatory acts acc. to Part III of the information document.
2.4.	Verifications according to Annex III, para. 2d)	Not applicable.
2.5.	Verifications according to Annex III, para. 2e)	Installation checks in respect of separate technical units have been carried out.
2.6.	Verifications according to Annex III, para. 2f)	Installation checks in respect of the presence of the devices provided for in footnotes (1) and (2) of Part I of Annex II have been carried out.
2.7.	Verifications according to Annex III, para. 2g)	Not applicable. (Vehicle is subject to system approval acc. to Annex II)
2.8.	Verifications according to Annex III, para. 3	Inspection have been carried out to ensure the proper control of the various combinations of engines, gearboxes, axles (powered, steered), body styles, numbers of doors, hand of drive, number of seats and level of equipment.
3.	<u>Specimen submitted to test on:</u>	2024-11-14
4.	<u>Date of test:</u>	2024-11-14
III.	<u>Manufacturer's information folder</u>	No. URBINO 12 Hybrid, Issue 04 44 pages total of 2024-11-04

IV. Other documentation

No other documentation

V. Attachments

Attachment No. 1: List of approval certificates

No. of pages: 6

Attachment No. 2: Test results (Annex VI of 2020/683)

No. of pages: 3

The results presented above relate to the tested items only and to the sample as provided by the customer.

Measuring and test equipment and test site meet the requirements of the applicable legislation.

This report shall never be reproduced incomplete and without a written permission of the testing laboratory. TÜV SÜD Czech confidentiality degree: confidential.

A decision rule (in the section Final assessment) without consideration of measurement uncertainties is used for statement of conformity.

VI. Final assessment

The described vehicle type

complies

with the requirements of Regulation (EU) 2018/858 as last amended by
Regulation (EU) 2024/1610 implemented by
Regulation (EU) 2020/683 as last amended by
Regulation (EU) 2022/1362

for issue of extension of approval.

This technical report consists of pages No. 1 to 4 and 9 pages of attachments.

Test report approved by



Pavol Bors

Officially recognized expert



Vít Bursík

Business Unit Manager
of Certification and Regulatory Compliance

Prague, 2024-11-14

End of the technical report

Technical Report No.:
Regulation:
Manufacturer:
Type:

TÜV SÜD Czech s.r.o.

122310 – 24 – TAC
EC/EU 2018/858
SOLARIS Bus & Coach sp. z o.o., Poland
URBINO 12 Hybrid



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Attachments:

Attachment No. 1: List of approval certificates

Item	Subject	Type-approval number	Date of issue/ extension	Applicable to variants/versions
A	RESTRAINT SYSTEMS, CRASH TESTING FUEL SYSTEM INTEGRITY AND HIGH VOLTAGE ELECTRICAL SAFETY			
A1	Interior fittings	N/A for M ₃		
A2	Seats and head restraints	E8*17R08/04*7477*07	2022-01-17	???????? / ?????????
A3	Bus seats	E8*80R03/03*8455*04	2022-12-14	???????? / ????????? (optional)
A4	Safety-belt anchorages	E8*14R07/08*8453*04	2022-12-14	???????? / ????????? (optional)
A5	Safety-belts and restraint systems	E8*16R08/02*8454*05	2022-12-14	???????? / ????????? (optional)
A6	Safety-belt reminders	See item A5		
A7	Partitioning systems	N/A for M ₃		
A8	Child restraint anchorages	See item A4		
A9	Child restraint systems (IF)	Not fitted on the vehicle		
A10	Enhanced child restraint systems (IF)	Not fitted on the vehicle		
A11	Front underrun protection	N/A for M ₃		
A12	Rear underrun protection	E8*58R03/02*7469*06	2022-01-17	???????? / ?????????
A13	Lateral protection	N/A for M ₃		
A14	Fuel tank safety (IF)	E8*34R03/02*7551*05	2020-03-27	???????? / ?????????
		E8*34R03/02*7552*03	2020-03-26	???????? / ?????????
		E8*34R03/02*8969*02	2020-03-26	???????? / ?????????
A15	Liquified petroleum gas safety (IF)	Not fitted on the vehicle		
A16	Compressed and liquified natural gas safety (IF)	Not fitted on the vehicle		
A17	Hydrogen safety (IF)	Not fitted on the vehicle		
A18	Hydrogen system material qualification (IF)	Not fitted on the vehicle		
A19	In-use electric safety (IF)	E8*100R02/04*8745*07	2023-07-24	???????? / ?????????
A20	Frontal off-set impact	N/A for M ₃		
A21	Frontal full-width impact	N/A for M ₃		
A22	Protective steering	N/A for M ₃		
A23	Replacement airbag	N/A for M ₃		
A24	Cab impact	N/A for M ₃		
A25	Side impact	N/A for M ₃		
A26	Pole side impact	N/A for M ₃		
A27	Rear impact	N/A for M ₃		
A28	112-based eCall in-vehicles system	N/A for M ₃		

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B	VULNERABLE ROAD USERS, VISION AND VISIBILITY			
B1	Pedestrian leg and head protection	N/A for M3		
B2	Enlarged head impact zone	N/A for M3		
B3	Frontal protection system	N/A for M3		
B4	Advanced emergency braking for pedestrians and cyclist ahead	N/A for M3		
B5	Pedestrian and cyclist collision warning	E8*159R00/02*15064*00	2024-05-13	???????? / ?????????
		E8*159R00/02*15087*00	2024-05-17	???????? / ?????????
B6	Blind spot information system	E8*151R00/04*15065*00	2024-05-13	???????? / ?????????
		E8*151R00/04*15090*00	2024-05-17	???????? / ?????????
B7	Reversing detection	E8*158R00/02*14970*00	2024-03-28	???????? / ?????????
B8	Forward vision	N/A for M3		
B9	Heavy-duty vehicles direct vision	Not fitted on the vehicle		
B10	Safety glazing	E8*43R01/09*3771*23	2023-07-20	???????? / ?????????
B11	Defrost/demist	N/A for M3 ¹⁾		
B12	Wash/wipe	N/A for M3 ¹⁾		
B13	Indirect vision devices	E8*46R04/09*7892*11	2023-02-23	???????? / ?????????
		E8*46R04/09*11506*12	2024-09-13	???????? / ?????????
B14	Acoustic Vehicle Alerting Systems	E8*138R01/02*12511*02	2024-02-28	???DH??, ???DP?? / ?????????
		E8*138R01/02*12430*04	2024-02-28	???DH??, ???DP?? / ?????????
C	VEHICLE CHASSIS, BRAKING, TYRES AND STEERING			
C1	Steering equipment	E8*79R04/00*3376*33	2023-05-29	???????? / ?????????
C2	Lane departure warning	N/D for M3, class I and II		
C3	Emergency lane keeping	N/A for M3		
C4	Braking	E8*13R11/20*7964*15	2024-04-08	???????? / ?????????
C5	Replacement braking parts	Not fitted on the vehicle		
C6	Brake assist	N/A for M3		
C7	Stability control	See item C4		
C8	Advanced emergency braking on heavy-duty vehicles	N/D for M3, class I and II		
C9	Advanced emergency braking on light-duty vehicles	N/A for M3		
C10	Tyre safety and environmental performance	See item C15		
C11	Spare wheels and run-flat systems (IF)	Not fitted on the vehicle		
C12	Retreaded tyres	Not fitted on the vehicle		

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C13	Tyre pressure monitoring for light-duty vehicles	N/A for M3		
C14	Tyre pressure monitoring for heavy-duty vehicles	E8*141R01/02*15164*00	2024-06-20	???????? / ?????????
C15	Tyre installation	E8*142R01/01*14256*00	2023-08-09	???????? / ?????????
C16	Replacement wheels	N/A for M3		
D	ON-BOARD INSTRUMENTS, ELECTRICAL SYSTEM, VEHICLE LIGHTING AND PROTECTION AGAINST UNAUTHORISED USE, INCLUDING CYBERATTACKS			
D1	Audible warning	E8*28R00/06*12402*02	2022-11-08	???????? / ?????????
D2	Radio interference (electromagnetic compatibility)	E8*10R05/01*5517*12	2023-07-24	????H?? / ?????????
		E8*10R06/01*12679*01	2022-06-01	????M?? / ?????????
D3	Protection against unauthorised use, immobiliser and alarm systems	E8 97RI-01 5514 ext.04	2017-13-01	???????? / ????????? (optional)
D4	Protection of vehicle against cyberattacks	E8*155R00/02*15177*00	2024-06-25	???????? / ?????????
D5	Speedometer	E8*39R01/01*4045*15	2022-06-01	???????? / ?????????
		E8*39R01/02*4182*15	2024-11-12	
		E8*39R01/01*4235*11	2022-06-01	
		E8*39R01/01*5649*11	2021-11-09	
		E8*39R01/01*8322*02	2022-06-01	
D6	Odometer	See item D5		
D7	Speed limitation devices	E8*89R00/03*8818*03	2023-08-09	????H?? / ?????????
		E8*89R00/03*7034*05	2021-11-16	???DM?? / ??e49???, ??e50???, ??e51???, ??e53???
		E8 89R-00 9897 ext.01	2018-04-06	???DM??? / ??e56???, ??e57???, ??e58???
		E8*89R00/03*5603*05	2019-12-05	???GM?? / ??e46???,
D8	Intelligent speed assistance	e8*2021/1958*2021/1958*00017*00	2024-06-21	???????? / ?????????
		e8*2021/1958*2021/1958*00015*00	2024-06-25	???????? / ?????????
D9	Identification of controls, tell-tales and indicators	E8*121R00/10*7460*07	2021-11-24	???????? / ?????????
		E8*121R00/10*7323*06	2021-11-24	
		E8 121R-00 8307 ext.01	2016-11-09	
		E8*121R00/10*8308*05	2021-11-24	
		E8*121R00/10*8893*04	2021-11-24	
D10	Heating systems	E8*122R00/03*7461*04	2019-11-08	???????? / ?????????
D11	Light signalling devices	See item D15		
D12	Road illumination devices	See item D15		

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D13	Retro-reflective devices	See item D15		
D14	Light sources	See item D15		
D15	Installation of light signalling, road illumination and retro-reflective devices	E8*48R07/05*7965*06	2024-06-26	???????? / ?????????
D16	Emergency stop signal	See item D15		
D17	Headlamp cleaners (IF)	Not fitted on the vehicle		
D18	Gear shift indicator	N/A for M3		
E	DRIVER AND SYSTEM BEHAVIOUR			
E1	Alcohol interlock installation facilitation	e8*2021/1243*2021/1243*00007*00	2024-05-20	???????? / ?????????
E2	Driver drowsiness and attention warning	e8*2021/1341*2021/1341*00014*00	2024-06-17	???????? / ?????????
		e8*2021/1341*2021/1341*00013*00	2024-06-17	???????? / ?????????
E3	Advanced driver distraction warning	Not fitted on the vehicle		
E4	Driver availability monitoring system (in case of automated vehicles)	Not fitted on the vehicle		
E5	Event data recorder	Not fitted on the vehicle		
E6	Systems to replace driver’s control (in case of automated vehicles)	Not fitted on the vehicle		
E7	Systems to provide the vehicle with information on state of vehicle and surrounding area (in case of automated vehicles)	Not fitted on the vehicle		
E8	Platooning (IF)	Not fitted on the vehicle		
E9	Systems to provide safety information to other road users (in case of automated vehicles)	Not fitted on the vehicle		
F	GENERAL VEHICLE CONSTRUCTION AND FEATURES			
F1	Registration plate space	e8*1003/2010*2015/166*0003*06	2022-02-18	???????? / ?????????
		e8*1003/2010*2015/166*0004*05	2022-02-18	???????? / ?????????
F2	Reversing motion	Vehicle complies with Reg. (EU) 2021/535/XI		
F3	Door latches and hinges	N/A for M3		
F4	Door entry steps, handholds and running boards	N/A for M3		
F5	External projections	N/A for M3		
F6	External projections of commercial vehicle cabs	N/A for M3		
F7	Statutory plate and vehicle identification number	e8*19/2011*249/2012*0005*05	2021-06-28	???????? / ?????????
F8	Towing devices	e8*1005/2010*1005/2010*0010*06	2021-11-08	???????? / ?????????
F9	Wheel guards	N/A for M3		

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F10	Spray suppression systems	N/A for M3		
F11	Masses and dimensions	e8*1230/2012*2017/1151*0069*01	2020-06-01	????H?? / ????????
		e8*1230/2012*2017/1151*0050*03	2020-05-05	????M?? / ????????
F12	Mechanical couplings	not equipped		?????? / ?0??????
		E8*55R01/06*10057*01	2019-08-08	?????? / ?3?????? ?????? / ?5?????? (optional)
F13	Vehicles intended for the transportation of dangerous goods (IF)	N/A for M3		
F14	General bus construction	E8*107R09/00*11909*01	2024-06-17	????H?? / ????????
		E8*107R09/00*12225*01	2024-06-17	????M?? / ????????
F15	Bus strength of superstructure	E8*66R02/00*8136*05	2024-10-14	?????? / ????????
F16	Flammability in buses	E8 118RI-01 5591 ext.06	2017-10-13	?????? / ???????? (optional)
		E8*118R03/02*11233*06	2024-10-17	?????? / ???????? (optional)
G	ENVIRONMENTAL PERFORMANCE AND EMISSIONS			
G1	Sound level	E8*51R03/06*13365*00	2022-05-09	???DH??, ???DP?? / ?????g0d
		E8*51R03/07*13852*00	2023-02-02	???DH??, ???DP?? / ?????g0n
		E8*51R03/04*11232*00	2019-10-02	???GM?? /??e46gav
		E8 51R-03 8719	2016-09-16	???DM?? /??e49da?, ??e50da?, ??e51da?
		E8 51R-03 9954	2018-04-06	???DM?? /, ??e53da?
		E8 51R-03 9930	2018-03-22	???DM??/ ??e56da?, ??e57da?
		E8 51R-03 9929	2018-03-22	???DM?? / ??e56ga?, ??e57ga?
		E8 51R-03 10175	2018-07-10	???DM?? / ??e58ga?
		E8 51R-03 10176	2018-07-10	???DM?? / ??e58da?
G2	Tailpipe emission of vehicle in lab	N/A for M3		
G2a	Determination of specific CO ₂ emission and fuel consumption of vehicle and device for monitoring on board the vehicle the consumption of fuel and/or electric energy	N/A for M3		

G3	Tailpipe emissions of engine in lab	e5*595/2009*2019/1939E*00077*00	2021-02-10	???GM?? / ??e46???
		e5*595/2009*2019/1939E*00076*00	2021-02-08	????H?? / ??e48???
		e5*595/2009*2019/1939E*00075*00	2021-02-05	???DM?? / ??e49???, ??e50???, ??e51???, ??e53???
		e4*595/2009*2019/1939E*0147*00	2021-04-02	???DM??? / ??e56???, ??e57???, ??e58???
		e8*595/2009*2020/1181E*0039*01	2021-11-10	???GM?? / ??e46???
		e8*595/2009*2020/1181E*0026*04	2021-11-10	????H?? / ??e48???
		e8*595/2009*2020/1181E*0038*01	2021-11-10	???DM?? / ??e49???, ??e50???, ??e51???, ??e53???
		e8*595/2009*2020/1181E*0034*02	2021-11-10	???DM??? / ??e56???, ??e57???, ??e58???
G3a	Determination of specific CO ₂ emission and fuel consumption of vehicle	e8*2017/2400*2022/1379*0002*00	2024-01-05	???????? / ?????????
G3b	Determination of specific energy efficiency performance of trailer	N/A for M3		
G4	Tailpipe emissions on the road	Not fitted on the vehicle		
G5	Durability of tailpipe emissions	Not fitted on the vehicle		
G6	Crankcase emissions	Not fitted on the vehicle		
G7	Evaporative emissions	N/A for M3		
G8	Low-temperature tailpipe emissions in lab	N/A for M3		
G9	On-board diagnostics	System fitted on the vehicle		
G10	Absence of defeat device	Not fitted on the vehicle		
G11	Auxiliary emission strategies	Not fitted on the vehicle		
G12	Anti-tampering	Not fitted on the vehicle		
G13	Recyclability	N/A for M3		
G14	Air-conditioning systems	N/A for M3		
H	ACCESS TO VEHICLE INFORMATION AND SOFTWARE UPDATE			
H1	Access to vehicle OBD information and vehicle repair and maintenance information	See manufacturer´s information folder		
H2	Software update	E8*156R00/00*15178*00	2024-06-25	???????? / ?????????

¹⁾ Vehicle is sufficiently equipped

The vehicle type as described in manufacturer's information folder conforms to all type-approvals as listed above and complies with respective regulatory acts.

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Attachment No. 2.: Test results (Annex VI of 2020/683)

1. Results of the sound level tests

Number of the base regulatory act and latest amending regulatory act applicable to the approval. In case of a regulatory act with two or more implementation stages, indicate also the implementation stage:

UN ECE Regulation 51.03

Variant:	version /*:	Moving (dB(A)):	Stationary (dB(A)):	at (min ⁻¹):
??GM??	??e46gav	74	80,3	1500
??DH?? ??DP??	??e48g0d	73	69	Idle
??DH??	??e48g0n	73	73	800
??DM??	??e49d?? ??e50d?? ??e51d??	71,7	86,5	1575
??DM??	??e53d??	76	85,6	1575
??DM??	??e56d?? ??e57d??	76	88,7	1260
??DM??	??e56g?? ??e57g??	76	80,0	1260
??DM??	??e58g??	75	78,6	1200
??DM??	??e58d??	77	86,2	1200

2. Results of the exhaust emission tests

2.1. Emissions from motor vehicles tested under the test procedure for light-duty vehicles: n/a

2.2. Emissions from engines tested under the test procedure for heavy-duty vehicles.

Indicate the latest amending regulatory act applicable to the approval. In case the regulatory act has two or more implementation stages, indicate also the implementation stage:

Regulation (EC) No. 595/2009*2019/1939E, 595/2009*2020/1181E
Fuel(s): Diesel, Bio Diesel, Paraffinic Diesel, NG-H

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2.2.1. Results of the WHSC test

Variant:	???GM??		???DH?? ???DP??	???DM??	???DM??	???DM??	???DM??
Version: (??eXX???)	e46 (G _R)	e46 (G23)	e48	e49 e50 e51 e53	e56 – e58 (Diesel B7)	e56 – e58 (EN 16709 Bio Diesel B30)	e56 – e58 (EN 15940 GTL)
CO [mg/kWh]:	n/a	n/a	34,98	23,40	82,79	90,46	86,96
THC [mg/kWh]:	n/a	n/a	0,00	57,20	9,11	9,86	9,18
NO _x [mg/kWh]:	n/a	n/a	67,78	62,10	60,94	99,85	177,98
NH ₃ [ppm]	n/a	n/a	0,10	0,28	0,62	1,42	0,83
PM mass [mg/kWh]	n/a	n/a	0,00	3,05	2,64	2,02	1,5
PM number [#kWh]	n/a	n/a	1,903E+11	3,822E+11	6,7E+10	6,2E+10	8,4E+10

2.2.2. Result of the ELR test: n/a

2.2.3. Result of the WHTC test

Variant:	???GM??		???DH?? ???DP??	???DM??	???DM??	???DM??	???DM??
Version: (??eXX???)	e46 (G _R)	e46 (G23)	e48	e49 e50 e51 e53	e56 – e58 (Diesel B7)	e56 – e58 (EN 16709 Bio Diesel B30)	e56 – e58 (EN 15940 GTL)
CO [mg/kWh]:	90,19	52,33	33,66	50,68	122,24	107,82	110,92
THC [mg/kWh]	n/a	n/a	41,78	6,81	13,79	13,91	15,15
NMHC [mg/kWh]:	25,74	9,34	–	–	n/a	n/a	n/a
CH ₄ [mg/kWh]:	110,73	170,69	–	–	n/a	n/a	n/a
NO _x [mg/kWh]:	64,34	76,73	351,55	359,93	192,72	141,81	138,50
NH ₃ [ppm]	3,89	0,73	0,11	0,49	2,39	2,12	2,10
PM mass [mg/kWh]	0,55	0,1	0,29	4,81	1,7	2,65	2,01
PM number [#/kWh]:	4,62E+11	2,59E+11	2,17E+11	2,45E+11	2,1E+11	1,8E+11	2,6E+11

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2.2.4. Idle test: n/a

2.3. Diesel smoke: n/a

3. Results of the CO₂ emission, fuel/electric energy consumption, and electric range tests: n/a

4. Results of the tests for vehicles fitted with eco-innovation(s): n/a