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Electric road vehicles — Reference energy consumption and range — Test procedures for passenger cars and light commercial vehicles

Véhicules routiers électriques — Consommation d'énergie de référence et autonomie de référence — Modes opératoires d'essai pour voitures particulières et véhicules utilitaires légers

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8714 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 21, *Electric road vehicles*.

Annexes A, B and C form a normative part of this International Standard.

Electric road vehicles — Reference energy consumption and range — Test procedures for passenger cars and light commercial vehicles

1 Scope

This International Standard specifies test procedures for measuring the reference energy consumption and reference range of purely electrically propelled passenger cars and commercial vehicles of a maximum authorized total mass (in accordance with ISO 1176) of 3 500 kg and a maximum speed of 70 km/h or more.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 1176:1990, *Road vehicles — Masses — Vocabulary and codes*

ISO 8713:2002, *Electric road vehicles — Vocabulary*

ISO 8715:2001, *Electric road vehicles — Road operating characteristics*

ISO 10521:1992, *Motor vehicle road load — Determination under reference atmospheric conditions and reproduction on chassis dynamometer*

IEC 60687:1992, *Alternating current static watt-hour meters for active energy (classes 0,2 S and 0,5 S)*

United Nations Regulation No. 83, *Uniform provisions concerning the approval of vehicles with regard to the emission of pollutants according to engine fuel requirements*

United States Code of Federal Regulations, Title 40, *Protection of the Environment*, Part 86, *Control of air pollution from new and in-use motor vehicles and new and in-use motor vehicle engines: Certification and test procedures*, Appendix I

United States Code of Federal Regulations, Title 40, *Protection of the Environment*, Part 600, *Fuel Economy of Motor Vehicles*, Appendix I

TRIAS 5-3-1996, *Fuel consumption test method of gasoline engine vehicle on 10 · 15 mode driving cycles*

3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

3.1
complete electric vehicle kerb mass
mass of the electric vehicle including traction batteries, without occupants or load, but with fuel, cooling liquid, window-washer fluid, lubricating oil, tools and spare wheel, and on-board charger and portable charger or part of it, if provided as standard equipment by the vehicle manufacturer

[ISO 8713:2002, definition 3.13]

3.2
test mass of an electric vehicle
sum of the complete electric vehicle kerb mass plus an additional mass

[ISO 8713:2002, definition 3.54]

3.3
reference energy consumption
quantity of electrical energy from the mains needed to recharge the traction battery, divided by the distance covered, after the vehicle has been driven through a specified test sequence

[ISO 8713:2002, definition 3.48]

NOTE The reference energy consumption is usually expressed in watt-hours per kilometre (W·h/km).

3.4
reference range
distance covered by an electric vehicle over a designated test sequence on a fully charged traction battery, to the end of the test sequence as defined by the end of test sequence criteria

[ISO 8713:2002, definition 3.49]

See clause 6.

NOTE The reference range is usually expressed in kilometres (km).

4 Test sequence

Choose one of the following annexes of this International Standard for the definition of the test sequence:

— annex A for the European driving cycle;

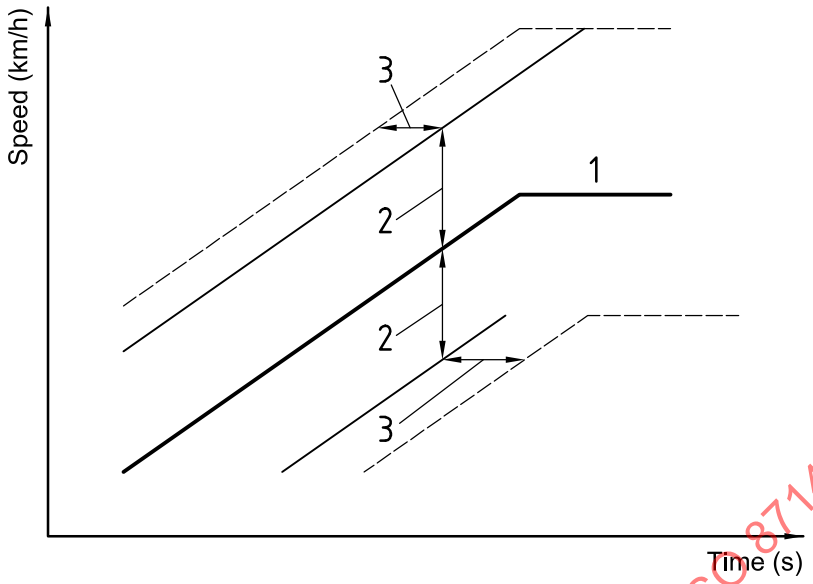
— annex B for the USA driving cycle;

— annex C for the Japanese driving cycle.

The same test sequence shall be used to define energy consumption and range. Every effort shall be made to conduct the tests by following the reference curve within the tolerances given in clause 5.

5 Tolerances

Tolerances on speed and time in the test sequence shall be as shown in Figure 1.



Key

1 Reference curve
2 Tolerance of speed, in kilometres per hour (km/h)
3 Tolerance of time, in seconds (s)

Figure 1 — Reference curve and tolerances

A tolerance on speed of ± 2 km/h and a tolerance on time of ± 1 s shall be geometrically combined at each point as in Figure 1.

One deviation of up to 4 s beyond these tolerances is permitted in any drive cycle. This exception shall not be allowed to delay the determination of the end of the test sequence.

The total time-out of tolerances shall be mentioned in the test report.

6 End of test sequence criterion

The criterion for the end of the test sequence shall be as specified in annex A, B or C, or shall be an indication from the on-board instrumentation, given to the driver, to stop the vehicle.

7 Measurement of range and energy consumption

7.1 General

The following test method permits measurement of the range in kilometres and the electric energy consumption at the mains in watt-hours per kilometre.

7.2 Parameters, units and accuracy of measurements

Table 1 specifies parameters and their units, accuracy and resolution.

Table 1 — Parameters, units and accuracy of measurements

Parameter	Unit	Accuracy	Resolution
Time	s	± 0,1 s	0,1 s
Distance	m	± 0,1 %	1 m
Temperature	°C	± 1 K	1 K
Speed	km/h	± 1 %	0,2 km/h
Mass	kg	± 0,5 %	1 kg
Energy	W·h	According to IEC 60687 class 0,2 S	According to IEC 60687 class 0,2 S

7.3 Test conditions

7.3.1 Vehicle conditions

The vehicle shall be loaded according to specification for each test.

The vehicle tyres shall be inflated to the pressure specified by the vehicle manufacturer according to the test chosen (track or chassis dynamometer) when the tyres are at ambient temperature.

The viscosity of oils used for the lubrication of mechanical moving parts shall conform to the specifications of the vehicle manufacturer.

The lighting and light signalling and auxiliary devices shall be off, except those required for testing and usual day-time operation of the vehicle.

All energy-storage systems available for other than traction purposes (electric, hydraulic, pneumatic, etc.) shall be in the operating range specified by the vehicle manufacturer.

For the traction battery conditioning, the test driver shall follow the procedure recommended by the vehicle manufacturer for keeping the temperature of the battery in the normal operating range.

The vehicle shall be driven at least 300 km before the test with those batteries that are installed in the test vehicle.

The mass of the vehicle used in the test shall be the test mass of an electric vehicle in accordance with ISO 8713.

7.3.2 Ambient temperature conditions

Outdoor test steps shall be carried out at an ambient temperature between 5 °C and 32 °C.

Indoor test steps shall be carried out at room temperature between 20 °C and 30 °C.

7.4 Test procedure

7.4.1 General

The test procedure consists of the following four steps:

a) initial charging of the traction battery (see 7.4.2);

b) application of the appropriate test sequence, and measurement of the reference range and consumption at the mains (see 7.4.3);

c) charging of the traction battery and measurement of the energy consumption at the mains (see 7.4.4);

d) calculation of the reference energy consumption (see 7.4.5).

Between each step, if the vehicle moves, it shall be pushed to the next test area (without regenerative recharging).

7.4.2 Initial charging of the traction battery

7.4.2.1 General

Unless otherwise prescribed by the vehicle manufacturer or the traction battery manufacturer, the initial charge of the traction battery shall be performed as follows.

The phrase “initial charging of the traction battery” applies to the first charge up of the traction battery at reception of the vehicle. In the case of several combined tests or measurements carried out consecutively, the first charge up carried out shall be an initial charging of the traction battery, in accordance with the procedure given in 7.4.2.2 and 7.4.2.3, while the following charge ups shall be carried out in accordance with the normal overnight charging procedure specified in 7.1.1 of ISO 8715:2001.

7.4.2.2 Discharging the traction battery

Start the procedure by discharging the traction battery while driving (on a loop track or chassis dynamometer) at a steady speed of 70 % ± 5 % of the maximum thirty-minutes speed of the vehicle (see ISO 8715).

Stop the discharge

— when the vehicle is unable to run at 65 % of the maximum thirty-minutes speed, or

— when an indication to stop the vehicle is given to the driver by the on-board instrumentation fitted as standard by the vehicle manufacturer.

7.4.2.3 Application of a normal charge

Charge the vehicle in accordance with the normal overnight charging procedure (see ISO 8715).

7.4.3 Application of the designated test sequence and distance measuring

The time t_0 at which charging of traction battery is terminated shall be recorded. Starting within 4 h of t_0, the test sequence designated shall be applied. If the test is applied on a chassis dynamometer, the determination of vehicle road load and the reproduction on the chassis dynamometer shall be applied in accordance with ISO 10521.

The test sequence shall continue until the end of test sequence criterion is reached (see clause 6), at which point the vehicle shall be braked until stopped.

Unless otherwise specified in annex A, B or C, up to three interruptions of no longer than 15 min in total are permitted between test sequences, out of respect for human needs.

At the end of the test sequence only, the covered distance, d, in kilometres is taken as the range of the vehicle tested. The value measured shall be rounded to the nearest whole number. It shall be given together with the driving time in hours and minutes.

The average and maximum speeds reached during the test cycle, and the driving time (in hours and minutes), shall be reported.

7.4.4 Charging the traction battery and measuring energy

The vehicle shall be physically reconnected to the mains within 2 h following completion of the appropriate test sequence. The vehicle traction battery shall then be fully charged in accordance with the normal overnight charging procedure (see ISO 8715). The energy-measuring equipment, placed between the mains and the vehicle charger, shall be used to measure the energy, E, in watt-hours, delivered from the mains, as well as the charging duration. The vehicle shall be physically disconnected from the mains after 24 h from the plug-in time.

In the case of a mains power interruption, the 24 h period shall be lengthened according to the duration of the interruption. The validity of the charge shall be agreed between the technical services of the approval laboratory and the vehicle manufacturer.

7.4.5 Calculation of reference energy consumption, C

The reference energy consumption, C, shall be calculated using the formula

$$C = \frac{E}{D}$$

expressed in watt-hours per kilometre (W·h/km), rounded to the nearest whole number.

Annex A
(normative)

European driving cycle and end of test criterion

A.1 General

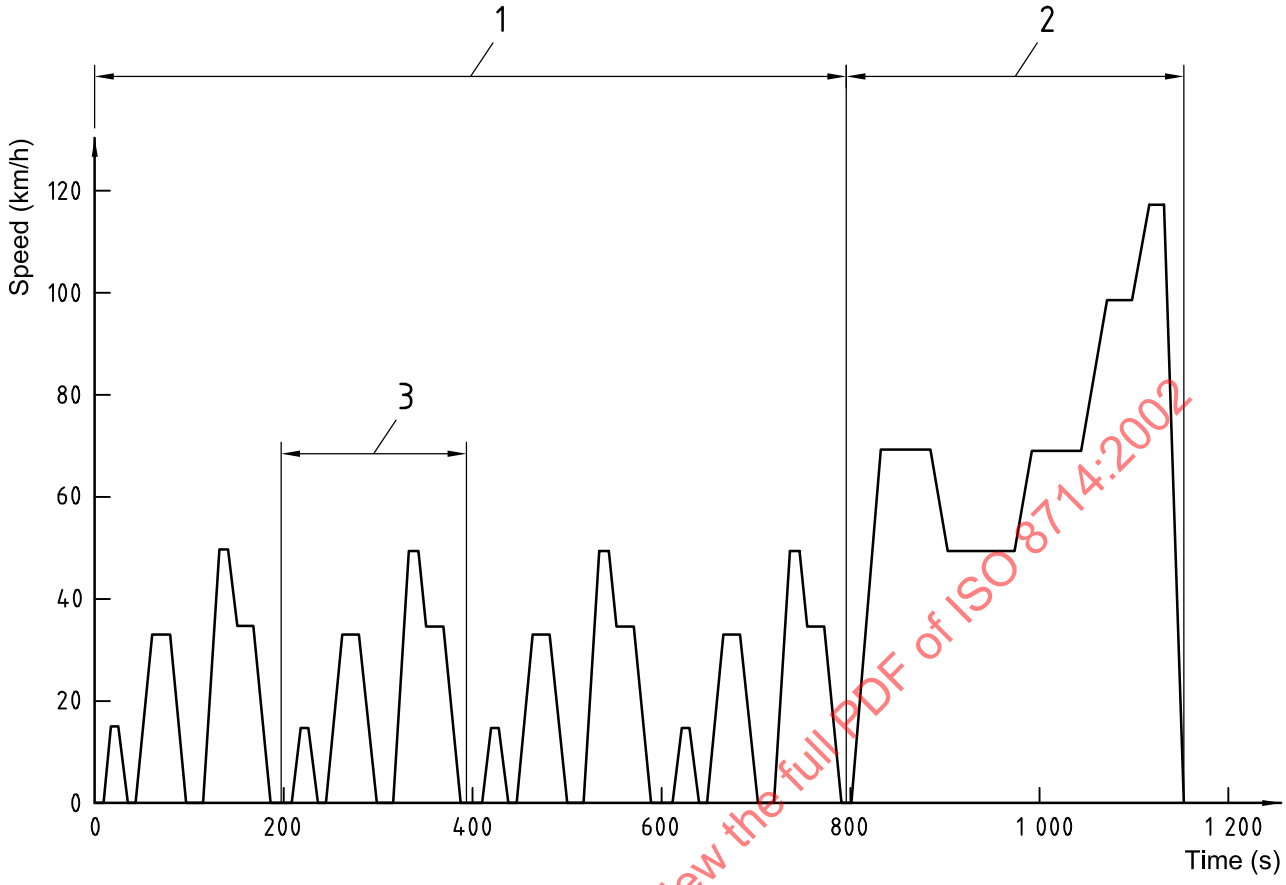
This annex specifies the European driving cycle, thus giving the test sequence to be applied with the reference curve. It is in accordance with UN Regulation No. 83.

A.2 Test sequence

A.2.1 General

The test sequence to be applied shall consist of an urban sequence, consisting of four basic urban cycles, plus an extra-urban sequence, consisting of a single extra-urban cycle, thus leading to a theoretical target test distance of 11,022 km and a duration of 19 min 40 s. Additionally, a test sequence comprising only the urban sequence is allowed.

Figure A.1 shows the composition of the test sequence.



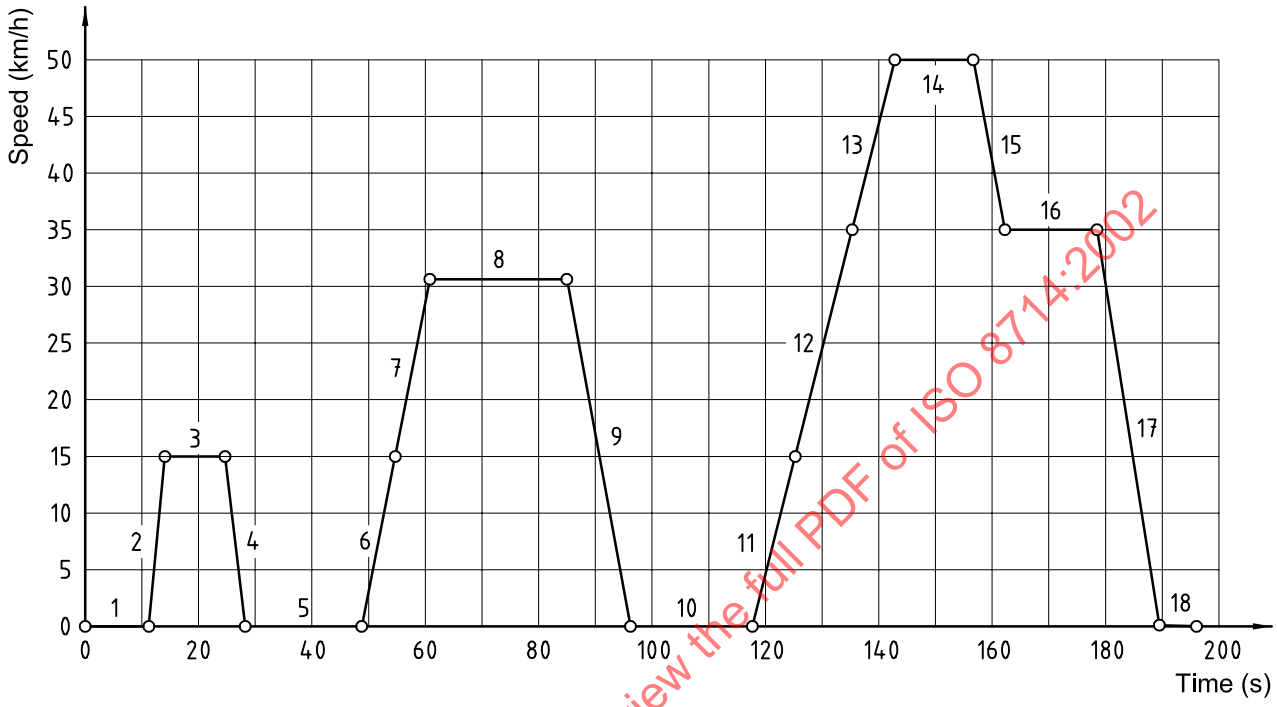
Key

1 Urban sequence
2 Extra-urban sequence cycle
3 Basic urban cycle

Figure A.1 — Test sequence composition

A.2.2 Urban sequence

The urban sequence (see Figure A.1) is composed of four basic urban cycles as shown in Figure A.2 and as given in Table A.1.



NOTE Numbers refer to the operation numbers given in Table A.1.

Figure A.2 — Basic urban cycle

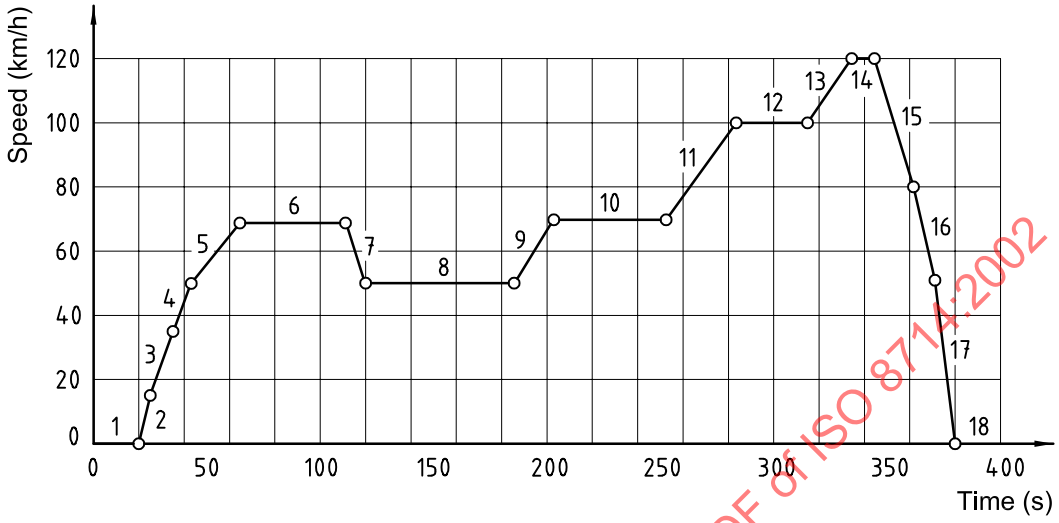
Table A.1 — Basic urban cycle

Operation No.	Operation type	Mode No.	Acceleration m/s^2	Speed km/h	Operation duration s	Mode duration s	Total time s
1	Stop	1	0,00	0	11	11	11
2	Acceleration	2	1,04	0 to 15	4	4	15
3	Constant speed	3	0,00	15	8	8	23
4	Deceleration	4	–0,83	15 to 0	5	5	28
5	Stop	5	0,00	0	21	21	49
6	Acceleration	6	0,69	0 to 15	6	12	55
7	Acceleration		0,79	15 to 32	6		61
8	Constant speed	7	0,00	32	24	24	85
9	Deceleration	8	–0,81	32 to 0	11	11	96
10	Stop	9	0,00	0	21	21	117
11	Acceleration	10	0,69	0 to 15	6	26	123
12	Acceleration		0,51	15 to 35	11		134
13	Acceleration		0,46	35 to 50	9		143
14	Constant speed	11	0,00	50	12	12	155
15	Deceleration	12	–0,52	50 to 35	8	8	163
16	Constant speed	13	0,00	35	15	15	178
17	Deceleration	14	–0,97	35 to 0	10	10	188
18	Stop	15	0,00	0	7	7	195

Generalities	Unit	Value	Percentage (%)
Stop	s	60	30,77
Acceleration	s	42	21,54
Constant speed	s	59	30,26
Deceleration	s	34	17,44
Total duration	s	195	100,00
Average speed	km/h	18,77	—
Working time for one basic urban cycle	s	195	—
Working time for one urban sequence	s	780	—
Theoretical distance for one basic urban cycle	m	1017	—
Theoretical distance for one urban sequence	m	4067	—

A.2.3 Extra-urban sequence

The extra-urban sequence consists of a single extra-urban cycle, as shown in Figure A.3 and given in Table A.2.



NOTE 1 Numbers refer to the operation numbers.

NOTE 2 See clause 5 for the procedure to be adopted when the vehicle fails to meet the speed requirements of this curve.

Figure A.3 — Extra-urban cycle

Table A.2 — Extra-urban cycle

Operation No.	Operation type	Mode No.	Acceleration m/s^2	Speed km/h	Operation duration s	Mode duration s	Total time s
1	Stop	1	0,00	0	20	20	20
2	Acceleration	2	0,69	0 to 15	6	41	26
3	Acceleration		0,51	15 to 35	11		37
4	Acceleration		0,42	35 to 50	10		47
5	Acceleration		0,40	50 to 70	14		61
6	Constant speed	3	0,00	70	50	50	111
7	Deceleration	4	−0,69	70 to 50	8	8	119
8	Constant speed	5	0,00	50	69	69	188
9	Acceleration	6	0,43	50 to 70	13	13	201
10	Constant speed	7	0,00	70	50	50	251
11	Acceleration	8	0,24	70 to 100	35	35	286
12	Constant speed	9	0,00	100	30	30	316
13	Acceleration	10	0,28	100 to 120	20	20	336
14	Constant speed	11	0,00	120	10	10	346
15	Deceleration	12	−0,69	120 to 80	16	34	362
16	Deceleration		−1,04	80 to 50	8		370
17	Deceleration		−1,39	50 to 0	10		380
18	Stop	13	0,00	0	20	20	400

Generalities	Unit	Value	Percentage (%)
Stop	s	40	10,00
Acceleration	s	109	27,25
Constant speed	s	209	52,65
Deceleration	s	42	10,50
Total duration	s	400	100,00
Average speed	km/h	62,60	—
Working time	s	400	—
Theoretical distance	m	6956	—
Average speed over the cycle	km/h	33,6	—

A.2.4 Requirements

In cases where the vehicle is fitted with a manual gear box with several gears, the test driver shall change gear in such a way as to best match the reference curve.

If the vehicle has several driving modes (sport, comfort, economical, etc.) that can be selected by the test driver, the one that best matches the reference curve (see Figure A.1 and Figure 1) shall be selected.

A.3 End of test sequence criterion

The end of test sequence criterion shall be

— an indication given from the on-board instrumentation for the driver to stop the vehicle, or

— that the vehicle is unable to meet the reference curve from the test sequence (see clause A.2) within the tolerances given in clause 5 up to 70 km/h.

Over 70 km/h, it is acceptable to go beyond the tolerances, provided the accelerator pedal is fully depressed.

Annex B
(normative)

USA driving cycle and end of test criterion

B.1 General

This annex specifies the USA driving cycle, thus giving the test sequence to be applied with the reference curve. It is in accordance with the following national regulations.

— Urban test cycle: US Code of Federal Regulations, Title 40, Part 86, Appendix I.

— Highway test cycle: US Code of Federal Regulations, Title 40, Part 600, Appendix I.

B.2 Test sequence

The urban range shall be determined by repeating urban test cycles until the end of test criterion is met. There shall be a 10 min soak with key off between urban cycles. The highway range shall be determined by repeating highway test cycles in pairs until the end of test sequence criterion (see B.3) is met, in accordance with the following:

— cycles in each pair shall be separated by a 15 s key-on pause;

— each pair shall be separated from the next pair by a 10 min key-off soak period.

The urban and highway cycles are given in Tables B.1 and B.2, and graphically represented in Figures B.1 and B.2, respectively.

The urban cycle has a duration of 1 372 s and is 12 km long, with an average speed of 31,5 km/h and a maximum speed of 91,2 km/h.

The highway cycle represents highway driving with a duration of 764 s and a length of 16,4 km. The average speed is 77,8 km/h with a maximum speed of 96,4 km/h.

Table B.1 — Urban driving schedule

Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h
0	0,0	70	39,6	140	0,0	210	75,6	280	89,5	350	17,5
1	0,0	71	39,6	141	0,0	211	75,6	281	90,1	351	22,9
2	0,0	72	40,4	142	0,0	212	75,6	282	90,1	352	27,8
3	0,0	73	41,2	143	0,0	213	75,6	283	89,8	353	32,2
4	0,0	74	41,4	144	0,0	214	76,0	284	88,8	354	36,2
5	0,0	75	40,9	145	0,0	215	76,3	285	87,7	355	38,1
6	0,0	76	40,1	146	0,0	216	77,1	286	86,3	356	40,6
7	0,0	77	40,2	147	0,0	217	78,1	287	84,5	357	42,8
8	0,0	78	40,9	148	0,0	218	79,0	288	82,9	358	45,2
9	0,0	79	41,8	149	0,0	219	79,7	289	82,9	359	48,3
10	0,0	80	41,4	150	0,0	220	80,5	290	82,9	360	49,6
11	0,0	81	42,0	151	0,0	221	81,4	291	82,2	361	50,9
12	0,0	82	43,0	152	0,0	222	82,1	292	80,6	362	51,7
13	0,0	83	44,3	153	0,0	223	82,9	293	80,5	363	52,8
14	0,0	84	46,0	154	0,0	224	84,0	294	80,6	364	54,1
15	0,0	85	47,2	155	0,0	225	85,6	295	80,5	365	55,5
16	0,0	86	48,0	156	0,0	226	87,1	296	79,8	366	55,7
17	0,0	87	48,4	157	0,0	227	87,9	297	79,7	367	56,2
18	0,0	88	48,9	158	0,0	228	88,4	298	79,7	368	56,0
19	0,0	89	49,4	159	0,0	229	88,5	299	79,7	369	55,5
20	0,0	90	49,4	160	0,0	230	88,4	300	79,0	370	55,8
21	4,8	91	49,1	161	0,0	231	87,9	301	78,2	371	57,1
22	9,5	92	48,9	162	0,0	232	87,9	302	77,4	372	57,9
23	13,8	93	48,8	163	0,0	233	88,2	303	76,0	373	57,9
24	18,5	94	48,9	164	5,3	234	88,7	304	74,2	374	57,9
25	23,0	95	49,6	165	10,6	235	89,3	305	72,4	375	57,9
26	27,2	96	48,9	166	15,9	236	89,6	306	70,5	376	57,9
27	27,8	97	48,1	167	21,2	237	90,3	307	68,6	377	57,9
28	29,1	98	47,5	168	26,6	238	90,6	308	66,8	378	58,1
29	33,3	99	48,0	169	31,9	239	91,1	309	64,9	379	58,6
30	34,9	100	48,8	170	35,7	240	91,2	310	62,0	380	58,7
31	36,0	101	49,4	171	39,1	241	91,2	311	59,5	381	58,6
32	36,2	102	49,7	172	41,5	242	90,9	312	56,6	382	57,9
33	35,6	103	49,9	173	42,5	243	90,9	313	54,4	383	56,5
34	34,6	104	49,7	174	41,4	244	90,9	314	52,3	384	54,9
35	33,6	105	48,9	175	40,4	245	90,9	315	50,7	385	53,9
36	32,8	106	48,0	176	39,8	246	90,9	316	49,2	386	50,5
37	31,9	107	48,1	177	40,2	247	90,9	317	49,1	387	46,7
38	27,4	108	48,6	178	40,6	248	90,8	318	48,3	388	41,4
39	24,0	109	49,4	179	40,9	249	90,3	319	46,7	389	37,0
40	24,0	110	50,2	180	41,5	250	89,8	320	44,3	390	32,7
41	24,5	111	51,2	181	43,8	251	88,7	321	39,9	391	28,2
42	24,9	112	51,8	182	42,6	252	87,9	322	34,6	392	23,3
43	25,7	113	52,1	183	38,6	253	87,2	323	32,3	393	19,3
44	27,5	114	51,8	184	36,5	254	86,9	324	30,7	394	14,0
45	30,7	115	51,0	185	31,2	255	86,4	325	29,8	395	8,7
46	34,0	116	46,0	186	28,5	256	86,3	326	27,4	396	3,4
47	36,5	117	40,7	187	27,7	257	86,7	327	24,9	397	0,0
48	36,9	118	35,4	188	29,1	258	86,9	328	20,1	398	0,0
49	36,5	119	30,1	189	29,9	259	87,1	329	17,4	399	0,0
50	36,4	120	24,8	190	32,2	260	87,1	330	12,9	400	0,0
51	34,3	121	19,5	191	35,7	261	86,6	331	7,6	401	0,0
52	30,6	122	14,2	192	39,4	262	85,9	332	2,3	402	0,0
53	27,5	123	8,9	193	43,9	263	85,3	333	0,0	403	4,2
54	25,4	124	3,5	194	49,1	264	84,7	334	0,0	404	9,5
55	25,4	125	0,0	195	53,9	265	83,8	335	0,0	405	14,8
56	28,5	126	0,0	196	58,3	266	84,3	336	0,0	406	20,1
57	31,9	127	0,0	197	60,0	267	83,7	337	0,0	407	25,4
58	34,8	128	0,0	198	63,2	268	83,5	338	0,0	408	30,7
59	37,3	129	0,0	199	65,2	269	83,2	339	0,0	409	36,0
60	38,9	130	0,0	200	67,8	270	82,9	340	0,0	410	40,2
61	39,6	131	0,0	201	70,0	271	83,0	341	0,0	411	41,2
62	40,1	132	0,0	202	72,6	272	83,4	342	0,0	412	44,3
63	40,2	133	0,0	203	74,0	273	83,8	343	0,0	413	46,7
64	39,6	134	0,0	204	75,3	274	84,5	344	0,0	414	48,3
65	39,4	135	0,0	205	76,4	275	85,3	345	0,0	415	48,4
66	39,8	136	0,0	206	76,4	276	86,1	346	0,0	416	48,3
67	39,9	137	0,0	207	76,1	277	86,9	347	1,6	417	47,8
68	39,8	138	0,0	208	76,0	278	88,4	348	6,9	418	47,2
69	39,6	139	0,0	209	75,6	279	89,2	349	12,2	419	46,3

Table B.1 — *(continued)*

Time	Speed	Time	Speed	Time	Speed	Time	Speed	Time	Speed	Time	Speed
s	km/h	s	km/h	s	km/h	s	km/h	s	km/h	s	km/h
420	45,1	490	55,7	560	0,0	630	0,0	700	21,7	770	20,8
421	40,2	491	55,5	561	0,0	631	0,0	701	23,5	771	25,4
422	34,9	492	53,9	562	0,0	632	0,0	702	26,4	772	28,2
423	29,6	493	51,5	563	0,0	633	0,0	703	26,9	773	29,6
424	24,3	494	48,4	564	0,0	634	0,0	704	26,6	774	31,4
425	19,0	495	45,1	565	0,0	635	0,0	705	26,6	775	33,3
426	13,7	496	41,0	566	0,0	636	0,0	706	29,3	776	35,4
427	8,4	497	36,2	567	0,0	637	0,0	707	30,9	777	37,3
428	3,1	498	31,9	568	0,0	638	0,0	708	32,3	778	40,2
429	0,0	499	26,6	569	5,3	639	0,0	709	34,6	779	42,6
430	0,0	500	21,2	570	10,6	640	0,0	710	36,2	780	44,3
431	0,0	501	16,6	571	15,9	641	0,0	711	36,2	781	45,1
432	0,0	502	11,6	572	20,9	642	0,0	712	35,6	782	45,5
433	0,0	503	6,4	573	23,5	643	0,0	713	36,5	783	46,5
434	0,0	504	1,6	574	25,7	644	0,0	714	37,5	784	46,5
435	0,0	505	0,0	575	27,4	645	0,0	715	37,8	785	46,5
436	0,0	506	0,0	576	27,4	646	3,2	716	36,2	786	46,3
437	0,0	507	0,0	577	27,4	647	7,2	717	34,8	787	45,9
438	0,0	508	0,0	578	28,2	648	12,6	718	33,0	788	45,5
439	0,0	509	0,0	579	28,5	649	16,4	719	29,0	789	45,5
440	0,0	510	0,0	580	28,5	650	20,1	720	24,1	790	45,5
441	0,0	511	1,9	581	28,2	651	22,5	721	19,3	791	45,4
442	0,0	512	5,6	582	27,4	652	24,6	722	14,5	792	44,4
443	0,0	513	8,9	583	27,2	653	28,2	723	10,0	793	44,3
444	0,0	514	10,5	584	26,7	654	31,5	724	7,2	794	44,3
445	0,0	515	13,7	585	27,4	655	33,8	725	4,8	795	44,3
446	0,0	516	15,4	586	27,5	656	35,7	726	3,4	796	44,3
447	0,0	517	16,9	587	27,4	657	37,5	727	0,8	797	44,3
448	5,3	518	19,2	588	26,7	658	39,4	728	0,8	798	44,3
449	10,6	519	22,5	589	26,6	659	40,7	729	5,1	799	44,4
450	15,9	520	25,7	590	26,6	660	41,2	730	10,5	800	45,1
451	21,2	521	28,5	591	26,7	661	41,8	731	15,4	801	45,9
452	26,6	522	30,6	592	27,4	662	42,0	732	20,1	802	48,3
453	31,9	523	32,3	593	28,3	663	42,2	733	22,5	803	49,9
454	37,2	524	33,8	594	29,8	664	42,2	734	25,7	804	51,5
455	42,5	525	35,4	595	30,9	665	42,5	735	29,0	805	53,1
456	44,7	526	37,0	596	32,5	666	42,6	736	31,5	806	53,1
457	46,8	527	38,3	597	33,8	667	42,6	737	34,6	807	54,1
458	50,7	528	39,4	598	34,0	668	41,8	738	37,2	808	54,7
459	53,1	529	40,1	599	34,1	669	41,0	739	39,4	809	55,2
460	54,1	530	40,2	600	34,8	670	38,0	740	41,0	810	55,0
461	56,0	531	40,2	601	35,4	671	34,4	741	42,6	811	54,7
462	56,5	532	40,2	602	36,0	672	29,8	742	43,6	812	54,7
463	57,3	533	40,2	603	36,2	673	26,4	743	44,4	813	54,6
464	58,1	534	40,2	604	36,2	674	23,3	744	44,9	814	54,1
465	57,9	535	40,2	605	36,2	675	18,7	745	45,5	815	53,3
466	58,1	536	41,2	606	36,5	676	14,0	746	46,0	816	53,1
467	58,3	537	41,5	607	38,1	677	9,3	747	46,0	817	52,3
468	57,9	538	41,8	608	40,4	678	5,6	748	45,5	818	51,5
469	57,5	539	41,2	609	41,8	679	3,2	749	45,4	819	51,3
470	57,9	540	40,6	610	42,6	680	0,0	750	45,1	820	50,9
471	57,9	541	40,2	611	43,5	681	0,0	751	44,3	821	50,7
472	57,3	542	40,2	612	42,0	682	0,0	752	43,1	822	49,2
473	57,1	543	40,2	613	36,7	683	0,0	753	41,0	823	48,3
474	57,0	544	39,3	614	31,4	684	0,0	754	37,8	824	48,1
475	56,6	545	37,2	615	26,1	685	0,0	755	34,6	825	48,1
476	56,6	546	31,9	616	20,8	686	0,0	756	30,6	826	48,1
477	56,6	547	26,6	617	15,4	687	0,0	757	26,6	827	48,1
478	56,6	548	21,2	618	10,1	688	0,0	758	24,0	828	47,6
479	56,6	549	15,9	619	4,8	689	0,0	759	20,1	829	47,5
480	56,6	550	10,6	620	0,0	690	0,0	760	15,1	830	47,5
481	56,3	551	5,3	621	0,0	691	0,0	761	10,0	831	47,2
482	56,5	552	0,0	622	0,0	692	0,0	762	4,8	832	46,5
483	56,6	553	0,0	623	0,0	693	0,0	763	2,4	833	45,4
484	57,1	554	0,0	624	0,0	694	2,3	764	2,4	834	44,6
485	56,6	555	0,0	625	0,0	695	5,3	765	0,8	835	43,5
486	56,3	556	0,0	626	0,0	696	7,1	766	0,0	836	41,0
487	56,3	557	0,0	627	0,0	697	10,5	767	4,8	837	38,1
488	56,3	558	0,0	628	0,0	698	14,8	768	10,1	838	35,4
489	56,0	559	0,0	629	0,0	699	18,2	769	15,4	839	33,0

Table B.1 — *(continued)*

Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h
840	30,9	910	41,2	980	44,3	1 050	0,0	1 120	38,3	1 190	0,0
841	30,9	911	41,7	981	43,8	1 051	0,0	1 121	39,4	1 191	0,0
842	32,3	912	41,5	982	43,1	1 052	0,0	1 122	40,2	1 192	0,0
843	33,6	913	41,0	983	42,6	1 053	1,9	1 123	40,1	1 193	0,0
844	34,4	914	39,6	984	41,8	1 054	6,4	1 124	39,9	1 194	0,0
845	35,4	915	37,8	985	41,4	1 055	11,7	1 125	40,2	1 195	0,0
846	36,4	916	35,7	986	40,6	1 056	17,1	1 126	40,9	1 196	0,0
847	37,3	917	34,8	987	38,6	1 057	22,4	1 127	41,5	1 197	0,3
848	38,6	918	34,8	988	35,4	1 058	27,4	1 128	41,8	1 198	2,4
849	40,2	919	34,9	989	34,6	1 059	29,8	1 129	42,5	1 199	5,6
850	41,8	920	36,4	990	34,6	1 060	32,2	1 130	42,8	1 200	10,5
851	42,8	921	37,7	991	35,1	1 061	35,1	1 131	43,3	1 201	15,8
852	42,8	922	38,6	992	36,2	1 062	37,0	1 132	43,5	1 202	19,3
853	43,1	923	38,9	993	37,0	1 063	38,6	1 133	43,5	1 203	20,8
854	43,5	924	39,3	994	36,7	1 064	39,9	1 134	43,5	1 204	20,9
855	43,8	925	40,1	995	36,7	1 065	41,2	1 135	43,3	1 205	20,3
856	44,7	926	40,4	996	37,0	1 066	42,6	1 136	43,1	1 206	20,6
857	45,2	927	40,6	997	36,5	1 067	43,1	1 137	43,1	1 207	21,1
858	46,3	928	40,7	998	36,5	1 068	44,1	1 138	42,6	1 208	21,1
859	46,5	929	41,0	999	36,5	1 069	44,9	1 139	42,5	1 209	22,5
860	46,7	930	40,6	1 000	37,8	1070	45,5	1 140	41,8	1 210	24,9
861	46,8	931	40,2	1 001	38,6	1 071	45,1	1 141	41,0	1 211	27,4
862	46,7	932	40,2	1 002	39,6	1 072	44,3	1 142	39,6	1 212	29,9
863	45,2	933	40,2	1 003	39,9	1 073	43,5	1 143	37,8	1 213	31,7
864	44,3	934	39,8	1 004	40,4	1 074	43,5	1 144	34,6	1 214	33,8
865	43,5	935	39,4	1 005	41,0	1 075	42,3	1 145	32,2	1 215	34,6
866	41,5	936	39,1	1 006	41,2	1 076	39,4	1 146	28,2	1 216	35,1
867	40,2	937	39,1	1 007	41,0	1 077	36,2	1 147	25,7	1 217	35,1
868	39,4	938	39,4	1 008	40,2	1 078	34,6	1 148	22,5	1 218	34,6
869	39,9	939	40,2	1 009	38,8	1 079	33,2	1 149	17,2	1 219	34,1
870	40,4	940	40,2	1 010	38,1	1 080	29,0	1 150	11,9	1 220	34,6
871	41,0	941	39,6	1 011	37,3	1 081	24,1	1 151	6,6	1 221	35,1
872	41,4	942	39,6	1 012	36,9	1 082	19,8	1 152	1,3	1 222	35,4
873	42,2	943	38,8	1 013	36,2	1 083	17,9	1 153	0,0	1 223	35,2
874	43,3	944	39,4	1 014	35,4	1 084	17,1	1 154	0,0	1 224	34,9
875	44,3	945	40,4	1 015	34,8	1 085	16,1	1 155	0,0	1 225	34,6
876	44,7	946	41,2	1 016	33,0	1 086	15,3	1 156	0,0	1 226	34,6
877	45,7	947	40,4	1 017	28,2	1 087	14,6	1 157	0,0	1 227	34,4
878	46,7	948	38,6	1 018	22,9	1 088	14,0	1 158	0,0	1 228	32,3
879	47,0	949	35,4	1 019	17,5	1 089	13,8	1 159	0,0	1 229	31,4
880	46,8	950	32,3	1 020	12,2	1 090	14,2	1 160	0,0	1 230	30,9
881	46,7	951	27,2	1 021	6,9	1 091	14,5	1 161	0,0	1 231	31,5
882	46,5	952	21,9	1 022	1,6	1 092	14,0	1 162	0,0	1 232	31,9
883	45,9	953	16,6	1 023	0,0	1 093	13,8	1 163	0,0	1 233	32,2
884	45,2	954	11,3	1 024	0,0	1 094	12,9	1 164	0,0	1 234	31,4
885	45,1	955	6,0	1 025	0,0	1 095	11,3	1 165	0,0	1 235	28,2
886	45,1	956	0,6	1 026	0,0	1 096	8,0	1 166	0,0	1 236	24,9
887	44,4	957	0,0	1 027	0,0	1 097	6,8	1 167	0,0	1 237	20,9
888	43,8	958	0,0	1 028	0,0	1 098	4,2	1 168	0,0	1 238	16,1
889	42,8	959	0,0	1 029	0,0	1 099	1,6	1 169	3,4	1 239	12,9
890	43,5	960	3,2	1 030	0,0	1 100	0,0	1 170	8,7	1 240	9,7
891	44,3	961	8,5	1 031	0,0	1 101	0,2	1 171	14,0	1 241	6,4
892	44,7	962	13,8	1 032	0,0	1 102	1,0	1 172	19,3	1 242	4,0
893	45,1	963	19,2	1 033	0,0	1 103	2,6	1 173	24,6	1 243	1,1
894	44,7	964	24,5	1 034	0,0	1 104	5,8	1 174	29,9	1 244	0,0
895	45,1	965	28,2	1 035	0,0	1 105	11,1	1 175	34,0	1 245	0,0
896	45,1	966	29,9	1 036	0,0	1 106	16,1	1 176	37,0	1 246	0,0
897	45,1	967	32,2	1 037	0,0	1 107	20,6	1 177	37,8	1 247	0,0
898	44,6	968	34,0	1 038	0,0	1 108	22,5	1 178	37,0	1 248	0,0
899	44,1	969	35,4	1 039	0,0	1 109	23,3	1 179	36,2	1 249	0,0
900	43,3	970	37,0	1 040	0,0	1 110	25,7	1 180	32,2	1 250	0,0
901	42,8	971	39,4	1 041	0,0	1 111	29,1	1 181	26,9	1 251	0,0
902	42,6	972	42,3	1 042	0,0	1 112	32,2	1 182	21,6	1 252	1,6
903	42,6	973	44,3	1 043	0,0	1 113	33,8	1 183	16,3	1 253	1,6
904	42,6	974	45,2	1 044	0,0	1 114	34,1	1 184	10,9	1 254	1,6
905	42,3	975	45,7	1 045	0,0	1 115	34,3	1 185	5,6	1 255	1,6
906	42,2	976	45,9	1 046	0,0	1 116	34,4	1 186	0,3	1 256	1,6
907	42,2	977	45,9	1 047	0,0	1 117	34,9	1 187	0,0	1 257	2,6
908	41,7	978	45,9	1 048	0,0	1 118	36,2	1 188	0,0	1 258	4,8
909	41,2	979	44,6	1 049	0,0	1 119	37,0	1 189	0,0	1 259	6,4

Table B.1 — *(continued)*

Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h
1 260	8,0	1 279	39,4	1 298	43,5	1 317	0,0	1 336	0,0	1 355	33,0
1 261	10,1	1 280	39,4	1 299	44,7	1 318	0,0	1 337	0,0	1 356	32,2
1 262	12,9	1 281	38,6	1 300	45,5	1 319	0,0	1 338	2,4	1 357	31,5
1 263	16,1	1 282	37,8	1 301	46,7	1 320	0,0	1 339	7,7	1 358	29,8
1 264	16,9	1 283	37,8	1 302	46,8	1 321	0,0	1 340	13,0	1 359	28,2
1 265	15,3	1 284	37,8	1 303	46,7	1 322	0,0	1 341	18,3	1 360	26,6
1 266	13,7	1 285	37,8	1 304	45,1	1 323	0,0	1 342	21,2	1 361	24,9
1 267	12,2	1 286	37,8	1 305	39,8	1 324	0,0	1 343	24,3	1 362	22,5
1 268	14,2	1 287	37,8	1 306	34,4	1 325	0,0	1 344	27,0	1 363	17,7
1 269	17,7	1 288	38,6	1 307	29,1	1 326	0,0	1 345	29,5	1 364	12,9
1 270	22,5	1 289	38,8	1 308	23,8	1 327	0,0	1 346	31,4	1 365	8,4
1 271	27,4	1 290	39,4	1 309	18,5	1 328	0,0	1 347	32,7	1 366	4,0
1 272	31,4	1 291	39,8	1 310	13,2	1 329	0,0	1 348	34,3	1 367	0,0
1 273	33,8	1 292	40,2	1 311	7,9	1 330	0,0	1 349	35,2	1 368	0,0
1 274	35,1	1 293	40,9	1 312	2,6	1 331	0,0	1 350	35,6	1 369	0,0
1 275	35,7	1 294	41,2	1 313	0,0	1 332	0,0	1 351	36,0	1 370	0,0
1 276	37,0	1 295	41,4	1 314	0,0	1 333	0,0	1 352	35,4	1 371	0,0
1 277	38,0	1 296	41,8	1 315	0,0	1 334	0,0	1 353	34,8	1 372	0,0
1 278	38,8	1 297	42,2	1 316	0,0	1 335	0,0	1 354	34,0		

Table B.2 — Highway driving schedule

Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time km/h	Speed km/h
0	0,0	40	59,4	80	75,5	120	77,4	160	75,3	200	69,8
1	0,0	41	59,5	81	75,5	121	76,8	161	75,5	201	69,5
2	0,0	42	59,5	82	75,6	122	76,3	162	75,6	202	69,5
3	3,2	43	59,5	83	75,8	123	76,1	163	75,8	203	69,4
4	7,9	44	59,5	84	75,8	124	76,4	164	76,6	204	69,2
5	13,0	45	59,5	85	76,0	125	76,9	165	77,1	205	69,2
6	18,2	46	59,5	86	75,8	126	77,1	166	77,2	206	69,4
7	23,3	47	59,7	87	75,6	127	77,2	167	77,2	207	69,8
8	27,8	48	60,0	88	75,5	128	77,1	168	77,1	208	70,7
9	31,5	49	60,8	89	74,8	129	77,1	169	76,9	209	70,8
10	35,1	50	62,1	90	74,5	130	77,1	170	76,1	210	70,0
11	38,6	51	63,2	91	74,4	131	77,2	171	75,2	211	68,6
12	41,5	52	64,4	92	74,5	132	77,2	172	74,4	212	66,8
13	43,6	53	65,5	93	74,8	133	77,2	173	73,9	213	65,5
14	45,1	54	66,6	94	75,5	134	77,1	174	73,5	214	64,4
15	46,7	55	67,9	95	75,8	135	76,1	175	73,2	215	64,4
16	48,3	56	69,0	96	76,3	136	74,0	176	73,1	216	64,9
17	49,4	57	70,0	97	76,8	137	69,7	177	72,9	217	66,0
18	50,7	58	70,8	98	77,2	138	66,3	178	72,4	218	67,6
19	51,8	59	71,3	99	77,6	139	63,6	179	70,8	219	68,7
20	52,9	60	71,6	100	78,1	140	63,1	180	69,4	220	69,4
21	53,9	61	72,1	101	78,5	141	62,8	181	67,9	221	69,5
22	54,9	62	72,3	102	79,0	142	62,8	182	66,8	222	69,8
23	55,7	63	72,4	103	79,2	143	62,9	183	66,8	223	70,7
24	56,2	64	72,6	104	79,0	144	63,6	184	67,8	224	71,3
25	56,5	65	73,1	105	79,0	145	64,5	185	69,0	225	71,9
26	57,5	66	73,5	106	78,9	146	66,0	186	70,0	226	72,6
27	57,8	67	74,0	107	78,9	147	67,6	187	70,7	227	73,1
28	57,6	68	74,5	108	79,0	148	69,4	188	70,2	228	73,7
29	56,8	69	74,8	109	79,2	149	70,3	189	69,7	229	74,8
30	56,2	70	75,3	110	79,3	150	71,0	190	69,2	230	75,5
31	55,5	71	75,5	111	79,5	151	71,3	191	69,4	231	76,0
32	55,7	72	75,6	112	79,7	152	71,5	192	69,8	232	76,3
33	56,0	73	75,8	113	79,7	153	71,8	193	70,7	233	76,1
34	56,5	74	76,0	114	79,7	154	71,9	194	71,3	234	76,1
35	57,5	75	76,1	115	79,5	155	72,3	195	71,8	235	76,0
36	58,1	76	76,0	116	79,0	156	72,7	196	72,3	236	76,0
37	58,3	77	75,8	117	78,7	157	73,5	197	72,1	237	76,0
38	58,7	78	75,6	118	78,2	158	73,9	198	71,5	238	75,8
39	59,1	79	75,5	119	77,9	159	74,5	199	70,7	239	75,6

Table B.2 — *(continued)*

Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time km/h	Speed km/h
240	75,6	310	70,5	380	90,4	450	93,7	520	88,2	590	77,4
241	75,5	311	71,3	381	90,1	451	93,5	521	88,4	591	77,9
242	75,3	312	71,9	382	90,1	452	93,3	522	88,5	592	78,7
243	75,5	313	72,4	383	90,1	453	93,3	523	88,7	593	78,9
244	75,6	314	72,7	384	90,3	454	93,3	524	88,8	594	79,0
245	76,0	315	73,1	385	90,8	455	93,3	525	88,8	595	79,0
246	76,4	316	73,2	386	91,2	456	93,3	526	89,0	596	78,9
247	77,1	317	73,7	387	91,6	457	93,3	527	89,2	597	78,9
248	77,2	318	74,0	388	91,9	458	93,2	528	89,3	598	78,7
249	77,2	319	74,2	389	92,2	459	93,2	529	89,5	599	78,2
250	77,2	320	74,8	390	92,4	460	93,3	530	89,6	600	77,7
251	77,2	321	75,3	391	92,4	461	93,5	531	89,8	601	77,2
252	77,2	322	75,8	392	92,1	462	93,5	532	90,0	602	77,1
253	77,4	323	76,8	393	91,7	463	93,7	533	90,1	603	76,9
254	77,6	324	77,7	394	91,6	464	93,8	534	90,1	604	76,8
255	77,6	325	78,9	395	91,1	465	93,8	535	90,1	605	77,1
256	77,4	326	80,0	396	90,6	466	93,8	536	90,1	606	77,7
257	78,2	327	81,0	397	90,3	467	93,7	537	90,1	607	78,9
258	78,7	328	82,1	398	90,8	468	93,5	538	90,1	608	79,0
259	79,0	329	83,2	399	91,2	469	93,3	539	90,1	609	78,9
260	79,0	330	84,3	400	91,9	470	93,0	540	90,1	610	78,7
261	79,0	331	85,5	401	92,5	471	92,5	541	90,1	611	77,2
262	79,0	332	86,6	402	93,0	472	91,9	542	90,1	612	75,8
263	79,0	333	87,7	403	93,3	473	91,7	543	90,1	613	74,4
264	78,9	334	88,8	404	93,3	474	91,1	544	90,1	614	74,2
265	78,7	335	89,8	405	93,3	475	90,3	545	90,1	615	74,2
266	77,6	336	90,8	406	93,3	476	90,1	546	90,1	616	74,4
267	76,8	337	91,6	407	93,3	477	89,8	547	90,0	617	75,5
268	76,4	338	91,7	408	93,3	478	89,3	548	90,0	618	76,9
269	76,0	339	91,9	409	93,2	479	88,8	549	90,0	619	78,9
270	75,2	340	92,2	410	93,0	480	88,7	550	89,8	620	80,0
271	74,4	341	92,7	411	92,9	481	88,5	551	89,5	621	81,4
272	74,0	342	93,0	412	92,9	482	88,4	552	89,2	622	82,9
273	73,7	343	93,3	413	93,0	483	88,4	553	88,8	623	84,0
274	73,4	344	93,5	414	93,2	484	88,4	554	88,7	624	84,8
275	73,1	345	94,0	415	93,3	486	88,4	555	88,5	625	85,3
276	72,7	346	94,5	416	93,5	486	88,4	556	88,4	626	86,3
277	72,4	347	94,6	417	94,0	487	88,4	557	87,9	627	86,9
278	71,9	348	94,8	418	94,8	488	88,5	558	87,5	628	87,1
279	71,6	349	95,0	419	95,1	489	88,5	559	87,2	629	87,5
280	71,1	350	95,0	420	95,6	490	88,5	560	87,1	630	88,0
281	70,0	351	94,8	421	96,2	491	88,5	561	86,6	631	88,7
282	68,9	352	94,6	422	96,4	492	88,5	562	85,9	632	89,2
283	67,6	353	94,3	423	96,4	493	88,5	563	85,8	633	89,2
284	64,5	354	94,0	424	96,2	494	88,7	564	85,5	634	88,5
285	62,1	355	93,7	425	95,9	495	88,7	565	85,1	635	87,7
286	60,4	356	93,5	426	95,6	496	88,5	566	84,7	636	86,3
287	57,6	357	93,3	427	95,3	497	88,4	567	84,3	637	84,5
288	55,8	358	93,2	428	95,1	498	88,4	568	84,0	638	80,8
289	54,7	359	92,7	429	95,0	499	88,2	569	83,8	639	77,6
290	53,6	360	92,4	430	94,8	500	88,0	570	83,7	640	74,8
291	52,3	361	92,1	431	94,5	501	87,9	571	83,7	641	74,4
292	51,0	362	91,9	432	94,3	502	87,5	572	83,7	642	74,0
293	49,2	363	91,7	433	94,1	503	87,4	573	83,7	643	74,0
294	47,6	364	91,7	434	94,0	504	87,4	574	83,8	644	74,5
295	46,3	365	91,6	435	94,0	505	87,2	575	83,7	645	75,3
296	45,7	366	91,6	436	93,8	506	87,1	576	83,7	646	76,4
297	46,0	367	91,6	437	93,7	507	87,1	577	83,5	647	77,6
298	47,5	368	91,7	438	93,5	508	87,1	578	83,0	648	78,5
299	50,5	369	91,7	439	93,3	509	86,9	579	82,7	649	79,7
300	53,8	370	91,7	440	93,2	510	86,9	580	82,2	650	80,8
301	57,3	371	91,7	441	93,2	511	86,9	581	81,6	651	81,6
302	60,4	372	91,7	442	93,2	512	86,9	582	81,0	652	82,2
303	62,9	373	91,7	443	93,2	513	86,9	583	80,1	653	83,2
304	64,7	374	91,7	444	93,2	514	86,9	584	79,3	654	84,0
305	66,1	375	91,7	445	93,3	515	86,9	585	78,4	655	84,5
306	67,3	376	91,7	446	93,5	516	86,9	586	77,6	656	83,8
307	68,2	377	91,6	447	93,5	517	87,1	587	77,4	657	83,0
308	68,9	378	91,4	448	93,7	518	87,2	588	77,2	658	82,2
309	69,7	379	90,9	449	93,7	519	87,7	589	77,2	659	82,1

Table B.2 — *(continued)*

Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time s	Speed km/h	Time S	Speed km/h	Time km/h	Speed km/h
660	82,1	680	81,3	700	87,2	720	94,6	740	78,1	760	5,3
661	82,2	681	80,6	701	87,7	721	94,1	741	76,6	761	3,2
662	82,7	682	80,1	702	88,2	722	93,5	742	75,3	762	1,1
663	83,2	683	80,0	703	88,5	723	92,9	743	73,4	763	0,0
664	83,7	684	79,8	704	89,3	724	92,2	744	71,1	764	0,0
665	84,0	685	79,7	705	90,0	725	91,9	745	68,4	765	0,0
666	84,5	686	79,7	706	90,3	726	91,4	746	63,1		
667	85,0	687	80,0	707	90,6	727	90,9	747	57,8		
668	84,8	688	80,5	708	90,8	728	90,4	748	52,5		
669	84,7	689	80,8	709	90,9	729	89,3	749	47,2		
670	84,2	690	81,4	710	91,2	730	87,9	750	43,1		
671	84,2	691	82,2	711	91,6	731	87,1	751	39,4		
672	84,3	692	83,0	712	91,7	732	86,4	752	34,6		
673	84,5	693	83,5	713	92,2	733	85,6	753	31,4		
674	84,8	694	83,7	714	92,9	734	85,1	754	28,0		
675	84,8	695	83,8	715	93,7	735	84,5	755	24,3		
676	84,3	696	84,3	716	94,6	736	83,7	756	20,0		
677	83,8	697	85,1	717	95,1	737	82,6	757	15,6		
678	83,2	698	85,8	718	95,3	738	81,3	758	11,3		
679	82,2	699	86,4	719	95,1	739	79,7	759	8,0		

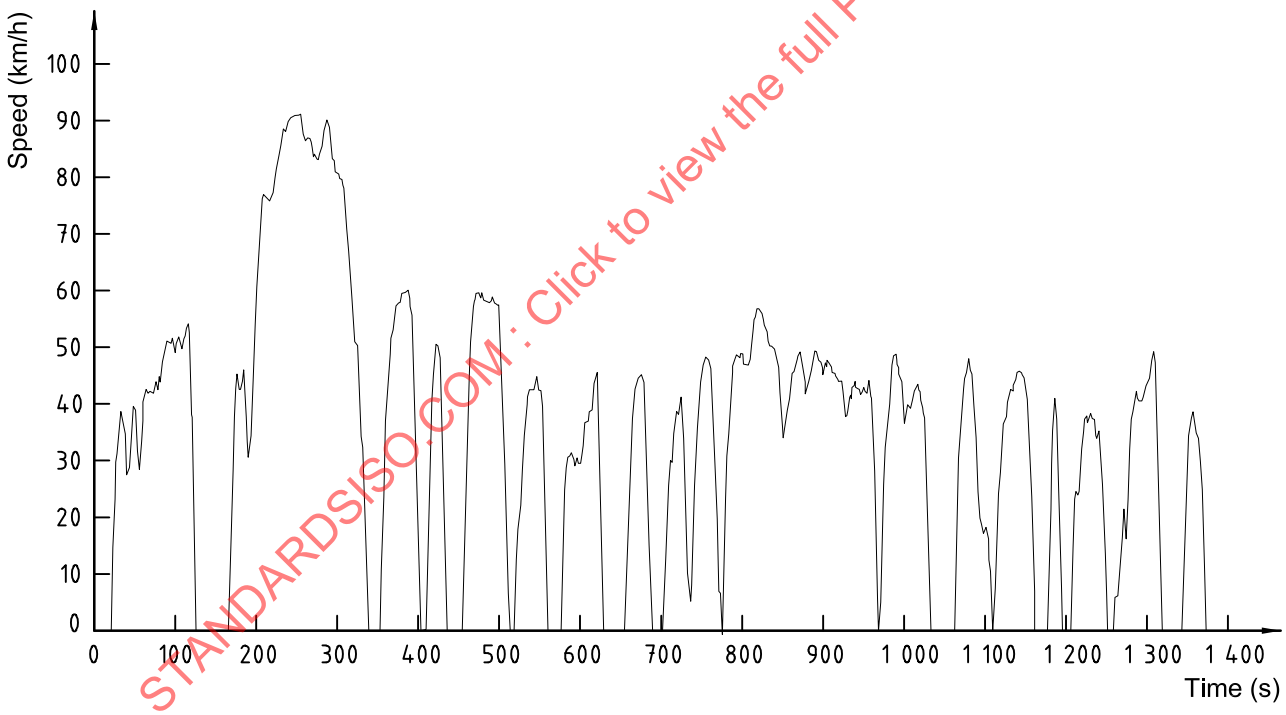


Figure B.1 — Urban test cycle