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MEASUREMENTS WITH VARIOUS LOADS ON THREE SIZES OF
ZINC-AIR BATTERIES FOR HEARING AIDS

Björn Hagerman



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ABSTRACT

Batteries of three different sizes (675, 13 and 312), of three manufactures, each one represented by 9 samples, were discharged with various loads and measured on. Voltages during discharge as well as total lifetimes were registered and statistically analysed. It was concluded that hearing aids supplied by 675-batteries and requiring more than 6 mA for high output levels can not be used. The corresponding currents for 13- and 312-batteries are 2.3 mA and 1.1 mA respectively. For battery simulations the resistance values 20, 40 and 50 ohms are suggested rather than the values 3.5, 6.0 and 6.0 ohms recommended by ANSI.

This work was supported by the the Swedish Institute for the Handicapped and by Apoteksbolaget AB. The measurements were performed at the institute of Microelectronics in Kista.

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INTRODUCTION

Zinc-air batteries have been on the market for several years. They are often used for hearing aids and have some advantages compared to mercury batteries. Since mercury is very poisonous, mercury batteries give problems at disposal. For this reason mercury batteries may be prohibited in a future. Then the zinc-air type is the only possible alternative for hearing aids. However, zinc-air batteries may also give problems in certain cases:

Zinc-air batteries need air through the vents. When these vents are opened at the beginning of use, the battery unfortunately starts self-discharging, which shortens the lifetime of the battery. To avoid this drawback the vents are made rather small. However, this vent reduction also reduces the capability of the battery to deliver high currents, which may give problems in high power hearing aids. It also has some implications for measurements of hearing aids using power supplies simulating real batteries.

The present investigation was done primarily to find out the capability of various types of zinc-air batteries to deliver high currents. Batteries of three different sizes (675, 13 and 312), of three manufactures (Activair, Rayovac and Varta), each one represented by 9 samples, were discharged with various loads and measured on.

METHODS

A. Batteries

Zinc-air batteries of three sizes and three manufactures according to Table I were discharged and measured during the discharge. Table 1. Battery types tested.

Activair	675-HPX	IEC	PR44
"	13-HPX	IEC	PR48
"	312-HPX	IEC	PR41

Rayovac	675AE	IEC	PR44	Code	HBK
"	13AE	IEC	PR48	"	HBW
"	312AE	IEC	PR41	"	SBF

Varta	V675HPA	IEC	PR44
"	V13A	IEC	PR48
"	V312A	IEC	PR41

Nine samples of each of the above nine types, i.e. a total of 81 samples, were tested. The batteries were delivered from Apoteksbolaget AB 1990-01-25 to the institute of Microelectronics that performed the tests on the batteries.

B. Test program

The batteries were discharged 12 hours a day, each of them through a constant resistance, R , (nominal load) until a final voltage of 0.9 V was reached. Once a day during work days they were also more heavily loaded for a short time by three consecutive pulses as follows:

Pulse 1. A constant resistance R_a in parallel with R during ten seconds followed by the nominal load R during ten seconds.

Pulse 2. A constant resistance R_b in parallel with R during ten seconds followed by the nominal load R during ten seconds.

Pulse 3. The same as pulse 1.

The resulting resistances during the pulses are shown in table 2. It also shows the approximate current at the various loads.

Table 2. Resulting resistances R , R_1 , R_2 and R_3 of the loads, nominally and for pulse 1, 2 and 3 respectively. The average currents at the various loads are also shown.

Resistance	Battery PR44 (675)	Battery PR48 (13)	Battery PR41 (312)
R	625	1500	2200 ohms
I	2.0	0.8	0.6 mA
R_1	189	530	1100 ohms
I_1	6.1	2.3	1.1 mA
R_2	121	270	519 ohms
I_2	9.1	4.2	2.3 mA
R_3	189	530	1100 ohms
I_3	6.1	2.3	1.1 mA

The pulse load was connected once each day in the middle of the discharge period, i.e. after 6 to 7 hours daily discharge. During the 12 hours discharge the voltage was measured every tenth minute. The voltage at the end of each discharge period was registered as well as the lifetime of

the battery. The lifetime was defined as the time accumulated from the start of the discharge until the moment when the voltage had decreased to 0.9 V. (The 12 hours each day without discharge were not included.) The voltages at the end of the pulses were registered. The test was started 1990-02-01 and was finished 1990-02-26.

C. Calculations

From the test report shown in the Appendix, made by the institute of Microelectronics, statistical analyses were made on the voltages obtained at a time nominally at 50% and 90% of the lifetime of each sample. This was done for the nominal load and for pulse 2 and 3. Pulse 1 and pulse 3 were equal in load, but it was hypothesised that pulse 3 should give lower voltage since it followed pulse 2 with a high current. However, since the voltages at pulse 1 and 3 were very similar (see Appendix), pulse 1 was not analysed. The registrations immediately preceeding 50% and 90% of the lifetime were noted. Since there were registrations only every twelfth hour, the actual registration time of these voltages thus varied between about 42% and 50% or 82% and 90% of the lifetime respectively, depending on sample. The means were 47% and 87%.

Please note that sample number 4 of Rayovac AE is not included in the calculations, since its lifetime was as low as 139 h (see Appendix, p 5).

The capacity of each battery type was calculated as the average lifetime multiplied with the average current at 50% of the lifetime, the latter calculated as the average voltage at nominal load divided by the nominal load.

D. Calculations for battery simulation

A simple model for a battery is an electro-motoric force E , in series with a resistor R_i , representing the internal resistance of the battery. See Figure 1, where R_L represents the load.

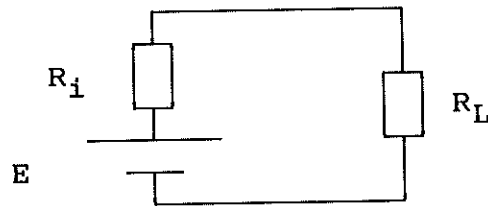


Figure 1. Scheme for battery simulation

For measurements on hearing aids a power supply with a resistance is often used instead of a battery in order to control the voltage appropriately. The question is which supply voltage (E) and which resistance R_i to use. To answer that question a linear regression analysis was performed. This was done separately for each battery type according to the equation (Ohm's law)

$$U_L = E - R_i U_L / R_L$$

with the voltage drop U_L over the load R_L as the independent variable and the current U_L / R_L as the dependent variable. The solution minimises the sum of the error terms $(E - R_i U_L / R_L - U_L)^2$ for each sample.

RESULTS

Table 3 shows some basic statistical data, while Table 4 shows voltages for various loads at 50% and 90% of the total life time. The median voltages from Table 4 are also plotted in Figure 2.

Table 3. Mean lifetime and capacity for the nine battery types. The standard deviation of the lifetime is also shown.

Battery type	Lifetime mean (h)	Lifetime st dev (h)	Capacity (mAh)
Activair 675 HPX	270.8	1.9	550
Rayovac 675 AE	238.5	4.0	477
Varta V675 HPA	144.2	9.8	286
Activair 13 HPX	252.4	18.4	214
Rayovac 13 AE	272.1	5.4	227
Varta V13 HPA	221.6	10.0	186
Activair 312 HPX	174.7	5.2	102
Rayovac 312 AE	196.0	3.0	112
Varta V312 HPA	163.7	4.3	94

Table 4 (at three next pages). Total lifetime, 90% and 50% of the life-time in hours is shown as well as voltages in volts at 90% and 50% of the lifetime for nominal load (V), load at pulse 2 (V2) and load at pulse 3 (V3).

Activair 675 HPX

	N	Average	Median	Minimum	Maximum
Lifetime	9	270.8	270.0	269.0	274.0
90%time	9	243.8	243.0	242.0	247.0
50%time	9	135.3	135.0	134.0	137.0
90%V	9	1.251	1.252	1.246	1.255
90%V2	9	1.075	1.074	1.071	1.082
90%V3	9	1.136	1.136	1.134	1.142
50%V	9	1.268	1.267	1.262	1.272
50%V2	9	1.113	1.116	1.101	1.120
50%V3	9	1.173	1.175	1.165	1.179

Rayovac 675 AE

	N	Average	Median	Minimum	Maximum
Lifetime	8	238.5	238.5	233.0	243.0
90%time	8	214.6	214.5	210.0	219.0
50%time	8	119.2	119.0	117.0	122.0
90%V	8	1.185	1.182	1.172	1.206
90%V2	8	1.094	1.095	1.088	1.098
90%V3	8	1.140	1.140	1.134	1.146
50%V	8	1.254	1.254	1.252	1.257
50%V2	8	1.132	1.132	1.128	1.136
50%V3	8	1.176	1.175	1.172	1.180

Varta V675 HPA

	N	Average	Median	Minimum	Maximum
Lifetime	9	144.2	140.0	132.0	161.0
90%time	9	129.7	126.0	118.0	145.0
50%time	9	72.22	70.00	66.00	81.00
90%V	9	1.221	1.228	1.160	1.234
90%V2	9	1.061	1.090	0.859	1.103
90%V3	9	1.124	1.146	0.964	1.159
50%V	9	1.244	1.254	1.193	1.256
50%V2	9	1.067	1.108	0.890	1.118
50%V3	9	1.132	1.163	0.994	1.169

Table 4 (legend see page 7)

Activair 13 HPX

	N	Average	Median	Minimum	Maximum
Lifetime	9	252.4	256.0	204.0	263.0
90%time	9	227.3	230.0	184.0	237.0
50%time	9	126.3	128.0	102.0	132.0
90%V	9	1.241	1.239	1.232	1.259
90%V2	9	1.050	1.045	1.021	1.092
90%V3	9	1.141	1.137	1.120	1.180
50%V	9	1.271	1.271	1.265	1.278
50%V2	9	1.121	1.118	1.113	1.136
50%V3	9	1.192	1.199	1.120	1.212

Rayovac 13 AE

	N	Average	Median	Minimum	Maximum
Lifetime	9	272.1	273.0	263.0	280.0
90%time	9	244.8	246.0	237.0	252.0
50%time	9	136.0	136.0	131.0	140.0
90%V	9	1.182	1.180	1.178	1.190
90%V2	9	1.029	1.024	1.022	1.057
90%V3	9	1.104	1.099	1.098	1.128
50%V	9	1.250	1.249	1.248	1.254
50%V2	9	1.142	1.146	1.129	1.152
50%V3	9	1.200	1.203	1.190	1.206

Varta V13 A

	N	Average	Median	Minimum	Maximum
Lifetime	9	221.6	223.0	201.0	233.0
90%time	9	199.4	201.0	181.0	210.0
50%time	9	110.8	112.0	101.0	116.0
90%V	9	1.213	1.212	1.189	1.234
90%V2	9	1.075	1.079	1.042	1.092
90%V3	9	1.154	1.156	1.131	1.164
50%V	9	1.258	1.257	1.256	1.261
50%V2	9	1.132	1.132	1.127	1.139
50%V3	9	1.198	1.197	1.195	1.204

Table 4 continued (legend see page 7)

Activair 312 HPX

	N	Average	Median	Minimum	Maximum
Lifetime	9	174.7	174.0	167.0	183.0
90%time	9	157.1	156.0	150.0	165.0
50%time	9	87.33	86.00	84.00	92.00
90%V	9	1.228	1.228	1.195	1.251
90%V2	9	1.085	1.092	1.029	1.123
90%V3	9	1.160	1.161	1.132	1.191
50%V	9	1.276	1.278	1.267	1.281
50%V2	9	1.165	1.169	1.136	1.178
50%V3	9	1.233	1.234	1.219	1.241

Rayovac 312 AE

	N	Average	Median	Minimum	Maximum
Lifetime	9	196.0	196.0	190.0	200.0
90%time	9	176.3	177.0	171.0	180.0
50%time	9	97.89	98.00	95.00	100.0
90%V	9	1.200	1.202	1.190	1.211
90%V2	9	1.091	1.091	1.083	1.106
90%V3	9	1.152	1.151	1.147	1.165
50%V	9	1.260	1.260	1.259	1.262
50%V2	9	1.185	1.184	1.181	1.188
50%V3	9	1.232	1.232	1.230	1.235

Varta V312 A

	N	Average	Median	Minimum	Maximum
Lifetime	9	163.7	163.0	156.0	172.0
90%time	9	147.2	147.0	140.0	155.0
50%time	9	81.78	82.00	78.00	86.00
90%V	9	1.245	1.246	1.229	1.257
90%V2	9	1.156	1.154	1.145	1.170
90%V3	9	1.213	1.211	1.204	1.223
50%V	9	1.271	1.271	1.268	1.274
50%V2	9	1.182	1.184	1.173	1.191
50%V3	9	1.237	1.237	1.231	1.242

Table 4 continued (legend see page 7)

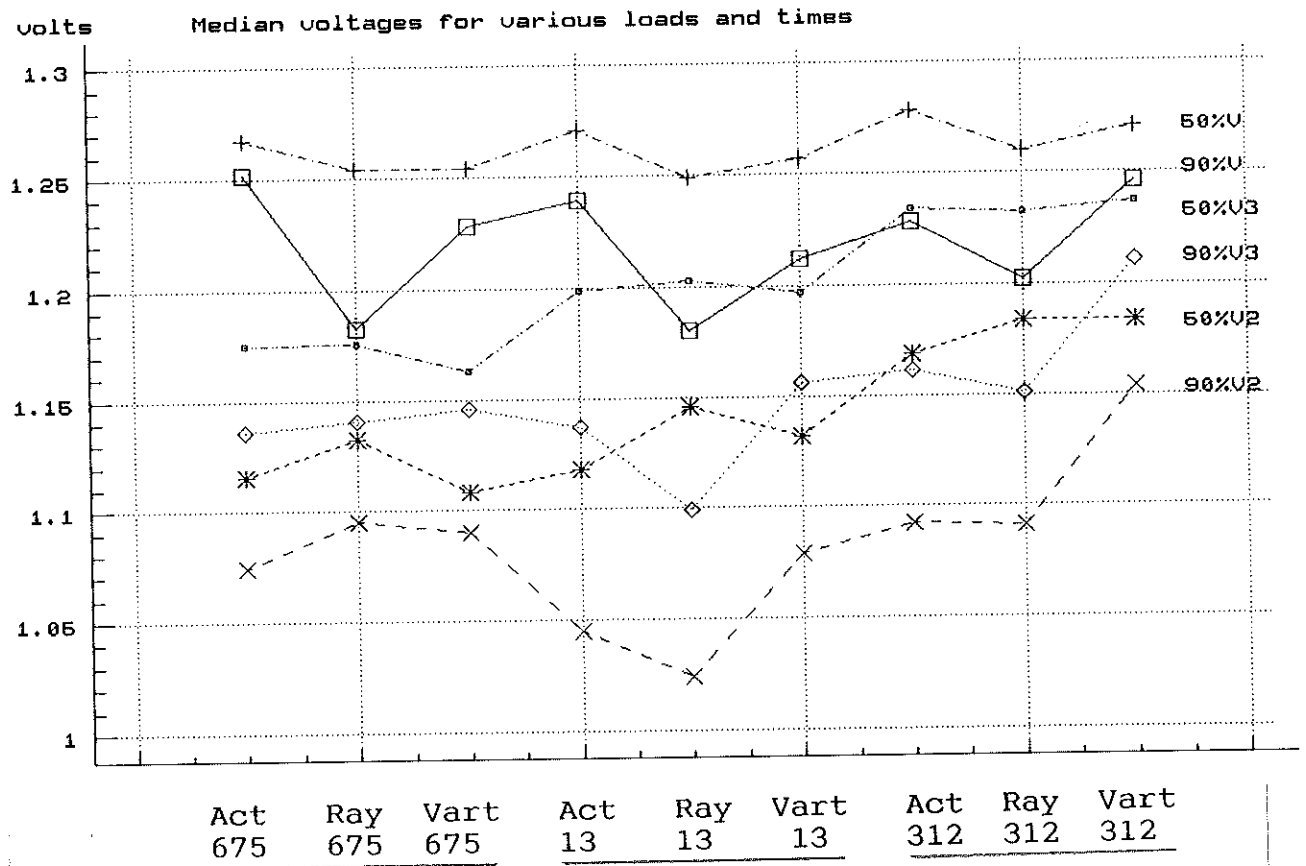


Figure 2. Median voltages for various loads and times (values from Table 4).

Finally, Table 5 shows results of the quantities E and R_i that may be used as a basis for battery simulations according to Figure 1.

Table 5. Solutions of the regression analyses giving the values of E (volts) and R_i (ohms) suitable for battery simulation. Results are shown both for voltages obtained at 50% and at 90% of the lifetime.

Size		Act	Ray	Vart	Act	Ray	Vart
		50%			90%		
675	E	1.310	1.285	1.276	1.299	1.211	1.249
675	R_i	21.69	16.69	22.99	25.77	12.62	20.56
13	E	1.302	1.274	1.287	1.285	1.216	1.248
13	R_i	44.58	31.51	37.32	61.40	50.08	43.46
312	E	1.311	1.283	1.298	1.267	1.232	1.273
312	R_i	65.46	43.58	51.30	88.13	68.15	52.95

DISCUSSION

A. Capacities for various types

From Table 3 it is evident that the capacities of the Varta batteries are lower than those of the other manufactures. This is particularly the case for the 675 type. However, the lower capacity is partly compensated by a lower price.

B. Capability to handle high loads

The capability to handle high loads may be seen in Table 4. At 50% of the lifetime all types except

Varta V675 HPA give voltages exceeding 1.10 V even for the highest load (V2) and even for the sample giving the minimum voltage. However, at 90% of the lifetime only the lower pulse load (V3) gives voltages above 1.10 V, still with the exception of Varta V675 HPA. This means that hearing aids supplied by 675-batteries and requiring more than 6 mA for high output levels can not be used with a zinc-air battery without a risk of distorted sound at the later part of the battery's lifetime. The corresponding currents for 13- and 312-batteries are 2.3 mA and 1.1 mA respectively. It is here assumed that 1.10 V is a critical voltage limit for most hearing aids, although no extensive investigation of this matter has been performed.

Comparing various manufactures of batteries in this respect, one should consider the trade off between the capability to deliver high currents and the self discharge mentioned in the introduction. Thus the battery which can deliver a higher current probably has a shorter lifetime due to self discharge.

C. Battery simulation

The American National Standard ANSI S3.22, Appendix B gives recommended voltage and resistance values to be used in battery simulators. For zinc-air batteries the recommended voltage is 1.3 V and the recommended resistances are 3.5 ohms for 675-types and 6.0 ohms for 13- and 312-types.

The present results (Table 5) indicate that considerably higher resistance values are preferable. Table 6 shows a reasonable compromise based on the values in Table 5.

Table 6. Suggested resistance values in *ohms* for simulation of zinc-air batteries.

Type	675	13	312
Our	20	40	50
ANSI	3.5	6.0	6.0

For hearing aid measurements it may not be evident that a zinc-air battery should be simulated. A mercury battery might as well be simulated. However, for the reasons mentioned in the introduction it seems reasonable to simulate the zinc-air type, if the manufacturer does not explicitly recommend another battery type.

ACKNOWLEDGMENTS

The author wishes to thank Göran Lundberg, Åke Olofsson and Sven Jalmell for their contributions.

This work was supported by the the Swedish Institute for the Handicapped and by Apoteksbolaget AB. The measurements were performed at the institute of Microelectronics in Kista.

APPENDIX



Rapporttitel

PROVNING AV HÖRAPPARATBATTERIER.

Författare

BARBRO HALLGREN

Sammanfattning

Zink-luftbatterier av tre storlekar, IEC PR 44, PR 48 och PR 41 och tre fabrikat, ACTIVAIR, RAYOVAC och VARTA har provats enligt program fastställt av uppdragsgivaren.

Batterierna har urladdats 12 timmar per dag över fast motstånd. Dessutom har de pulsbelastats en gång per dag under arbetsdagar.

Drifttid till slutspänning 0,9 V har bestämts och dessutom har batterispänning under belastningspulserna registrerats.

Provresultaten har sammanställts i tabeller.

Distribution

Björn Hagerman, Karolinska Institutet
Lisbeth Bolin, Apoteksbolaget AB

Uppdragsgivare: Karolinska institutet, Teknisk Audiologi

Uppdrag: Provning av hörapparatbatterier enligt program fastlagt av uppdragsgivaren.

Provföremål: Zink-luftbatterier av tre storlekar och tre fabrikat:

Activair	675-HPA	IEC PR44	Kod --
"	13-HPX	IEC PR48	" --
"	312-HPX	IEC PR41	" --
Rayovac	675AE	IEC PR44	Kod HBK
"	13AE	IEC PR48	" HBW
"	312AE	IEC PR41	" SBF
Varta	V675HPA	IEC PR44	Kod --
"	V13A	IEC PR48	" --
"	V312A	IEC PR41	" --

Batterierna levererades till IM från Apoteksbolaget AB 1990-01-25.

Provprogram: Batterierna urladdas 12 timmar per dygn över konstant motstånd, R, (nominell belastning) till slutspänning 0,9 V.

En gång per dygn under arbetsdagar belastas de dessutom enligt följande:

Puls 1. Konstant motstånd R1 parallellt med R under 10 sek.
Nominell belastning under 10 sek.

Puls 2. Konstant motstånd R2 parallellt med R under 10 sek.
Nominell belastning under 10 sek.

Puls 3. Samma som puls 1.

Motstånd	Batteri PR 44 (675)	Batteri PR 48 (13)	Batteri PR 41 (312)
R	625 ohm	1500 ohm	2200 ohm
R1	270 "	820 "	2200 "
R2	150 "	330 "	680 "

Den totala resistansen i pulserna är:

	Batteri PR 44 (675)	Batteri PR 48 (13)	Batteri PR 41 (312)
Puls 1	189 ohm	530 ohm	1100 ohm
Puls 2	121 "	270 "	519 "
Puls 3	189 "	530 "	1100 "

Pulsbelastningen har gjorts i mitten av urladdningsperioden, dvs efter 6 - 7 timmars daglig urladdning.

Under 12-timmarsurladdningen har spänningen mätts var 10:e minut. Slutspänning varje belastningsperiod har registrerats och drifttid till slutspänning 0,9 V har bestämts.

Under pulserna har spänningen registrerats varannan sekund. Slutspänning i pulsens urladdningsfas anges i resultattabellerna.

Provningen påbörjades 1990-02-01 och var helt avslutad 1990-02-26.

Resultat:

I tabellen på sidan 3 ges medelvärden av drifttid till slutspänning för de provade batterierna.

I tabellerna med början på sidan 4 ges drifttid till slutspänning för samtliga provade batterier samt slutspänning varje 12-timmarsperiod.

I tabellerna med början på sidan 13 ges slutspänning i de olika belastningspulserna för samtliga provade batterier.

Drifttid till slutspänning 0,9 V,
medelvärden:

	Drifttid (h)	Spridning (h)
Activair 675-HPA	270,7	2,0
Rayovac 675 AE	227,5	33,4
Varta V 675 HPA	144,2	9,8
Aktivair 13-HPX	252,3	18,4
Rayovac 13 AE	272,0	5,4
Varta V 13 A	221,6	10,0
Activair 312-HPX	174,6	5,2
Rayovac 312 AE	195,8	2,9
Varta V 312 A	163,7	4,3

IM Batteriteknik


Barbro Hallgren

Godkänd av


Bo Andersson

Authorized by
National Testing Institute

Battery test report

190-4103 Page 1
Appendix

Brand and type: ACTIVAIR 675-HPX

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 625.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dchg 12:00 Rest 12:00 HOURS

Date code : - - - - -
- - - - -

End voltage	1	2	3	4	5	6	7	8	9
0.90	273.3	268.7	274.0	270.7	269.7	268.8	270.3	269.0	271.8

On-load Voltage (V) per sample:		1	2	3	4	5	6	7	8	9
OCV	0:00	1.473	1.479	1.481	1.487	1.487	1.481	1.473	1.478	1.478
	11:59	1.261	1.257	1.256	1.257	1.262	1.260	1.262	1.259	1.262
	24:00	1.272	1.268	1.267	1.270	1.272	1.270	1.273	1.268	1.273
	36:00	1.272	1.270	1.270	1.270	1.273	1.271	1.273	1.270	1.273
	48:00	1.271	1.268	1.268	1.268	1.272	1.270	1.274	1.271	1.273
	60:00	1.272	1.271	1.271	1.270	1.273	1.271	1.276	1.271	1.274
	72:00	1.273	1.271	1.271	1.271	1.273	1.271	1.274	1.271	1.276
	84:00	1.272	1.270	1.271	1.268	1.273	1.268	1.274	1.271	1.274
	96:00	1.274	1.268	1.271	1.268	1.273	1.270	1.276	1.271	1.276
	108:00	1.272	1.266	1.271	1.267	1.272	1.268	1.274	1.270	1.273
	120:00	1.271	1.265	1.270	1.267	1.271	1.267	1.273	1.268	1.274
	132:00	1.271	1.262	1.267	1.265	1.268	1.265	1.272	1.267	1.272
	144:00	1.270	1.263	1.267	1.265	1.270	1.266	1.273	1.266	1.272
	156:00	1.268	1.263	1.266	1.263	1.271	1.265	1.271	1.266	1.270
	168:00	1.267	1.261	1.263	1.263	1.266	1.263	1.268	1.265	1.268
	180:00	1.265	1.260	1.261	1.262	1.265	1.261	1.267	1.262	1.266
	192:00	1.261	1.256	1.259	1.259	1.263	1.259	1.263	1.260	1.262
	204:00	1.259	1.254	1.256	1.256	1.260	1.256	1.260	1.256	1.260
	216:00	1.255	1.250	1.254	1.254	1.257	1.254	1.257	1.252	1.257
	228:00	1.255	1.250	1.254	1.255	1.257	1.254	1.256	1.251	1.256
	240:00	1.254	1.246	1.251	1.251	1.255	1.252	1.254	1.246	1.252
	252:00	1.250	1.243	1.250	1.248	1.251	1.245	1.248	1.237	1.249
	264:00	1.241	1.222	1.239	1.235	1.238	1.224	1.227	1.212	1.235
LIM	268:40	1.222	0.844	1.222	1.196	1.141	0.925	1.167	1.045	1.215
LIM	268:50	1.223		1.221	1.191	1.122	0.765	1.154	0.972	1.213
LIM	269:00	1.223		1.222	1.184	1.102		1.143	0.875	1.212
LIM	269:40	1.222		1.219	1.139	0.841		1.101		1.204
LIM	270:20	1.221		1.216	1.035			0.841		1.172
LIM	270:40	1.218		1.213	0.864					1.138
LIM	271:50	1.194		1.199						0.701
LIM	273:20	0.868		1.106						
LIM	274:00			0.862						

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Appendix

Brand and type: VARTA V675 HFA

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 625.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dchg 12:00 Rest 12:00 HOURS

Date code : - - - - -
- - - - -

End voltage	1	2	3	4	5	6	7	8	9
0.90	135.8	131.5	136.5	151.8	161.3	153.5	139.8	147.2	140.5

On-load time	Voltage (V) per sample:								
	1	2	3	4	5	6	7	8	9
OCV 0:00	1.418	1.414	1.415	1.416	1.412	1.415	1.414	1.406	1.409
11:59	1.248	1.250	1.251	1.218	1.177	1.224	1.248	1.254	1.249
24:00	1.252	1.256	1.256	1.226	1.182	1.229	1.255	1.257	1.254
36:00	1.252	1.256	1.256	1.226	1.183	1.233	1.255	1.257	1.255
48:00	1.251	1.255	1.255	1.224	1.183	1.232	1.254	1.256	1.251
60:00	1.251	1.255	1.256	1.224	1.195	1.239	1.254	1.257	1.254
72:00	1.251	1.255	1.255	1.234	1.193	1.243	1.254	1.256	1.254
84:00	1.249	1.251	1.254	1.233	1.189	1.238	1.251	1.254	1.251
96:00	1.245	1.246	1.251	1.241	1.222	1.239	1.249	1.252	1.248
108:00	1.238	1.240	1.245	1.243	1.206	1.241	1.244	1.249	1.244
120:00	1.219	1.222	1.228	1.239	1.183	1.240	1.232	1.243	1.233
LIM 131:30	1.090	0.786	1.121	1.234	1.199	1.238	1.196	1.228	1.208
132:00	1.047		1.106	1.235	1.199	1.238	1.193	1.228	1.205
LIM 135:50	0.767		1.077	1.233	1.201	1.234	1.172	1.222	1.187
LIM 136:30			0.720	1.233	1.183	1.234	1.157	1.221	1.177
LIM 139:50				1.233	1.161	1.232	0.850	1.208	1.075
LIM 140:30				1.232	1.158	1.229		1.204	0.819
144:00				1.226	1.160	1.221		1.130	
LIM 147:10				1.215	1.154	1.211		0.845	
LIM 151:50				0.839	1.154	1.166			
LIM 153:30					1.163	0.842			
156:00					1.176				
LIM 161:20					0.804				

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Brand and type: ACTIVAIR 13-HPX

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 1500.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dchg 12:00 Rest 12:00 HOURS

Date code : - - - - -

End Time to end voltage (decimal hours)/sample number:

voltage	1	2	3	4	5	6	7	8	9
0.90	255.5	255.0	263.0	255.2	261.7	255.5	262.3	204.2	258.7

On-load time	Voltage (V) per sample:	1	2	3	4	5	6	7	8	9
DCV 0:00	1.517	1.512	1.503	1.497	1.504	1.493	1.497	1.495	1.508	
11:59	1.268	1.265	1.263	1.263	1.262	1.273	1.263	1.261	1.268	
24:00	1.274	1.271	1.271	1.272	1.270	1.279	1.272	1.271	1.274	
36:00	1.272	1.270	1.271	1.271	1.270	1.279	1.271	1.271	1.274	
48:00	1.273	1.270	1.271	1.271	1.270	1.279	1.272	1.271	1.274	
60:00	1.276	1.272	1.273	1.273	1.271	1.282	1.273	1.272	1.276	
72:00	1.276	1.272	1.273	1.274	1.272	1.283	1.274	1.273	1.276	
84:00	1.274	1.272	1.272	1.272	1.272	1.282	1.274	1.272	1.276	
96:00	1.274	1.273	1.272	1.273	1.272	1.282	1.274	1.273	1.276	
108:00	1.272	1.271	1.270	1.271	1.270	1.281	1.274	1.272	1.274	
120:00	1.271	1.268	1.268	1.270	1.268	1.278	1.272	1.271	1.273	
132:00	1.268	1.266	1.265	1.267	1.266	1.276	1.270	1.270	1.271	
144:00	1.268	1.266	1.263	1.265	1.266	1.274	1.268	1.267	1.271	
156:00	1.265	1.262	1.260	1.261	1.263	1.272	1.266	1.265	1.268	
168:00	1.261	1.259	1.255	1.256	1.260	1.267	1.262	1.262	1.265	
180:00	1.259	1.256	1.252	1.252	1.256	1.265	1.260	1.259	1.261	
192:00	1.252	1.250	1.246	1.248	1.250	1.259	1.255	1.252	1.255	
204:00	1.245	1.241	1.238	1.243	1.243	1.251	1.246	1.238	1.248	
LIM 204:10	1.274	1.272	1.268	1.271	1.273	1.281	1.274	0.828	1.277	
216:00	1.241	1.238	1.234	1.240	1.239	1.249	1.243		1.244	
228:00	1.238	1.235	1.232	1.239	1.238	1.246	1.240		1.241	
240:00	1.234	1.230	1.228	1.237	1.237	1.241	1.238		1.239	
252:00	1.219	1.208	1.218	1.215	1.226	1.221	1.230		1.228	
LIM 255:10	1.069		1.154	0.746	1.217	1.034	1.235		1.194	
LIM 255:30	0.898		1.172		1.146	0.741	1.216		1.118	
LIM 258:40			1.196		1.173		1.212		0.829	
LIM 261:40			1.136		0.885		1.097			
LIM 262:20			1.097				0.853			
LIM 263:00			0.863							

Brand and type: RAYOVAC 13AE

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 1500.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dcha 12:00 Rest 12:00 HOURS

Date code : HSW HSW HSW HSW HSW HSW
HSW HSW HSW - - -

End	Time to end voltage (decimal hours)/sample number:								
voltage	1	2	3	4	5	6	7	8	9

0.90	272.8	268.2	271.7	273.8	273.5	262.8	280.0	267.0	278.3
------	-------	-------	-------	-------	-------	-------	-------	-------	-------

On-load Voltage (V) per sample:	1	2	3
time			

[illegible]

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Brand and type: VARTA V13A

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 1500.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dchg 12:00 Rest 12:00 HOURS

Date code : - - - - -
- - - - -

End Time to end voltage (decimal hours)/sample number:

voltage	1	2	3	4	5	6	7	8	9
0.90	223.3	232.3	201.2	211.3	223.5	220.5	223.0	232.8	226.3

On-load Voltage (V) per sample:		1	2	3	4	5	6	7	8	9
time										
OCV	0:00	1.415	1.418	1.416	1.411	1.414	1.415	1.417	1.414	1.412
	11:59	1.254	1.254	1.255	1.250	1.251	1.249	1.255	1.254	1.248
	24:00	1.262	1.262	1.262	1.257	1.259	1.257	1.262	1.262	1.256
	36:00	1.262	1.263	1.262	1.260	1.260	1.260	1.263	1.262	1.259
	48:00	1.262	1.263	1.262	1.260	1.260	1.261	1.265	1.262	1.259
	60:00	1.263	1.265	1.263	1.262	1.261	1.263	1.265	1.263	1.261
	72:00	1.263	1.263	1.262	1.261	1.262	1.262	1.263	1.263	1.262
	84:00	1.261	1.263	1.262	1.260	1.260	1.261	1.263	1.261	1.261
	96:00	1.261	1.262	1.261	1.261	1.261	1.261	1.262	1.261	1.261
	108:00	1.256	1.260	1.257	1.256	1.256	1.257	1.259	1.259	1.257
	120:00	1.255	1.257	1.255	1.255	1.256	1.256	1.257	1.256	1.255
	132:00	1.254	1.257	1.255	1.255	1.255	1.255	1.256	1.255	1.256
	144:00	1.250	1.255	1.252	1.252	1.255	1.254	1.254	1.254	1.255
	156:00	1.244	1.254	1.248	1.249	1.251	1.250	1.249	1.251	1.252
	168:00	1.235	1.248	1.239	1.244	1.248	1.245	1.243	1.246	1.246
	180:00	1.224	1.240	1.229	1.234	1.241	1.238	1.234	1.240	1.239
	192:00	1.207	1.227	1.207	1.216	1.229	1.224	1.221	1.229	1.226
LIM	201:10	1.189	1.213	0.864	1.194	1.216	1.210	1.205	1.217	1.210
	204:00	1.179	1.208		1.174	1.211	1.201	1.195	1.212	1.202
LIM	211:20	1.157	1.194		0.861	1.196	1.179	1.171	1.198	1.188
	216:00	1.104	1.174			1.178	0.966	1.107	1.178	1.167
LIM	220:30	1.102	1.172			1.167	0.861	1.124	1.162	1.163
LIM	223:00	1.008	1.154			1.018		0.892	1.146	1.136
LIM	223:20	0.874	1.151			0.900			1.143	1.129
LIM	223:30		1.150			0.870			1.141	1.127
LIM	226:20		1.100						1.112	0.885
	228:00		1.044						1.072	
LIM	232:20		0.880						1.050	
LIM	232:50								0.897	

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Appendix

Brand and type: ACTIVAIR 312-RPX

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 2200.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dchg 12:00 Rest 12:00 HOURS

Date code : - - - - -

End Time to end voltage (decimal hours)/sample number:
voltage 1 2 3 4 5 6 7 8 9
0.90 180.0 177.2 167.2 170.7 170.2 183.0 177.8 173.5 171.8

On-load Voltage (V) per sample:										
time	1	2	3	4	5	6	7	8	9	
OCV 0:00	1.469	1.493	1.489	1.503	1.497	1.488	1.493	1.493	1.487	
11:59	1.276	1.277	1.276	1.270	1.276	1.279	1.273	1.276	1.265	
24:00	1.278	1.279	1.282	1.273	1.291	1.283	1.278	1.278	1.267	
36:00	1.278	1.278	1.281	1.273	1.281	1.281	1.278	1.277	1.267	
48:00	1.278	1.279	1.282	1.274	1.281	1.283	1.279	1.279	1.268	
60:00	1.279	1.279	1.282	1.274	1.282	1.284	1.281	1.281	1.268	
72:00	1.278	1.277	1.283	1.276	1.283	1.284	1.281	1.281	1.270	
84:00	1.276	1.271	1.279	1.273	1.279	1.281	1.278	1.278	1.267	
96:00	1.271	1.265	1.274	1.268	1.276	1.277	1.274	1.273	1.263	
108:00	1.265	1.256	1.268	1.262	1.270	1.271	1.267	1.266	1.257	
120:00	1.256	1.252	1.256	1.254	1.259	1.261	1.257	1.254	1.250	
132:00	1.250	1.250	1.235	1.237	1.243	1.246	1.234	1.235	1.237	
144:00	1.249	1.252	1.228	1.227	1.239	1.243	1.198	1.239	1.222	
156:00	1.249	1.251	1.201	1.199	1.228	1.238	1.195	1.215	1.211	
LIM 167:10	1.241	1.241	0.847	1.168	1.150	1.202	1.239	1.224	1.156	
168:00	1.243	1.243		1.190	1.155	1.194	1.241	1.228	1.149	
LIM 170:10	1.207	1.219		1.052	0.847	1.155	1.239	1.158	1.089	
LIM 170:40	1.218	1.219		0.859		1.157	1.232	1.159	1.083	
LIM 171:50	1.216	1.213				1.160	1.205	1.152	0.714	
LIM 173:30	1.215	1.193				1.228	1.216	0.763		
LIM 177:10	1.182	0.741				1.241	1.122			
LIM 177:50	1.174					1.243	0.707			
180:00	0.828					1.237				
LIM 183:00						0.673				

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Appendix

Brand and type: RAYOVAC 312AE

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 2200.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dchg 12:00 Rest 12:00 HOURS

Date code	: SBF	SBF	SBF	SBF	SBF	SBF	SBF
	SBF	SBF	SBF	-	-	-	

End Time to end voltage (decimal hours)/sample number:

voltage	1	2	3	4	5	6	7	8	9
0.90	196.7	193.7	199.7	190.0	197.8	198.5	194.2	195.8	196.2

On-load voltage (V) per sample:		1	2	3	4	5	6	7	8	9
time										
OCV	0:00	1.407	1.409	1.409	1.406	1.409	1.406	1.407	1.410	1.409
	11:59	1.259	1.260	1.259	1.260	1.259	1.257	1.260	1.257	1.257
	24:00	1.273	1.276	1.274	1.274	1.276	1.273	1.274	1.274	1.274
	36:00	1.272	1.274	1.273	1.272	1.273	1.273	1.273	1.273	1.272
	48:00	1.271	1.273	1.272	1.272	1.273	1.271	1.272	1.272	1.272
	60:00	1.268	1.272	1.270	1.268	1.271	1.270	1.271	1.270	1.270
	72:00	1.266	1.268	1.267	1.266	1.268	1.267	1.268	1.267	1.267
	84:00	1.262	1.266	1.263	1.262	1.265	1.263	1.266	1.263	1.265
	96:00	1.260	1.262	1.259	1.259	1.261	1.259	1.262	1.260	1.260
	108:00	1.255	1.259	1.256	1.256	1.257	1.256	1.260	1.256	1.256
	120:00	1.252	1.254	1.249	1.250	1.254	1.251	1.254	1.252	1.251
	132:00	1.248	1.248	1.248	1.243	1.249	1.245	1.249	1.246	1.245
	144:00	1.239	1.238	1.238	1.233	1.240	1.238	1.239	1.237	1.238
	156:00	1.228	1.224	1.229	1.219	1.229	1.228	1.227	1.226	1.226
	168:00	1.208	1.202	1.211	1.194	1.211	1.208	1.205	1.202	1.202
	180:00	1.189	1.183	1.190	1.176	1.190	1.190	1.185	1.185	1.188
LIM	190:00	1.172	1.147	1.177	0.884	1.176	1.177	1.155	1.163	1.171
	192:00	1.160	1.071	1.169		1.167	1.168	1.107	1.145	1.157
LIM	193:40	1.130	0.651	1.157		1.149	1.154	1.045	1.104	1.119
LIM	194:10	1.122		1.156		1.145	1.151	0.737	1.091	1.106
LIM	195:50	1.074		1.147		1.116	1.134		0.780	1.033
LIM	196:10	1.055		1.145		1.104	1.127			0.601
LIM	196:40	0.693		1.140		1.085	1.108			
LIM	197:50			1.116		0.747	1.066			
	198:00			1.110			1.058			
LIM	198:30			1.089			0.742			
LIM	199:40			0.786						

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Brand and type: VARTA VS12A

Test ref No.:

Documentation : TEST OF HEARING-AID BATTERIES.

Test started
1990-02-01 06:00

Load : 2200.0 OHM
Temperature: 20 DEGREES CELSIUS
End voltage: 0.90/ V

Duty cycles: Dchg 12:00 Rest 12:00 HOURS

Date code : - - - - -
- - - - -

End Time to end voltage (decimal hours)/sample number:

voltage 1 2 3 4 5 6 7 8 9

0.90 162.2 162.2 155.7 162.3 164.8 163.0 164.8 172.0 166.0

On-load Voltage (V) per sample:
time 1 2 3 4 5 6 7 8 9

OCV	0:00	1.420	1.418	1.420	1.422	1.421	1.418	1.422	1.418	1.418
	11:59	1.262	1.265	1.266	1.263	1.260	1.266	1.263	1.259	1.262
	24:00	1.271	1.272	1.274	1.271	1.268	1.272	1.271	1.267	1.270
	36:00	1.272	1.272	1.274	1.272	1.270	1.272	1.273	1.271	1.272
	48:00	1.271	1.272	1.276	1.272	1.270	1.272	1.272	1.271	1.273
	60:00	1.271	1.273	1.276	1.273	1.270	1.272	1.272	1.272	1.274
	72:00	1.270	1.272	1.274	1.272	1.268	1.271	1.271	1.271	1.273
	84:00	1.267	1.270	1.272	1.270	1.266	1.268	1.268	1.268	1.271
	96:00	1.266	1.270	1.271	1.268	1.266	1.268	1.268	1.268	1.270
	108:00	1.262	1.267	1.267	1.266	1.261	1.266	1.266	1.266	1.268
	120:00	1.260	1.266	1.263	1.262	1.260	1.260	1.263	1.265	1.266
	132:00	1.256	1.261	1.256	1.255	1.255	1.252	1.259	1.263	1.262
	144:00	1.241	1.250	1.234	1.234	1.240	1.229	1.249	1.257	1.257
LIM	155:40	1.191	1.210	0.887	1.150	1.193	1.147	1.221	1.246	1.233
	156:00	1.185	1.206		1.139	1.189	1.140	1.218	1.246	1.232
LIM	162:10	0.881	0.889		0.912	1.136	0.936	1.176	1.228	1.193
LIM	162:20				0.895	1.130	0.927	1.172	1.229	1.191
LIM	163:00					1.104	0.896	1.155	1.224	1.182
LIM	164:50							0.875	1.212	1.123
LIM	166:00								1.202	0.890
	168:00								1.174	
LIM	172:00								0.841	

Batterier: ACTIVAIR 675-HPX

Slutspänning under urladdning i pulserna 1, 2 respektive 3.
 Mät punkt för mätning gas i kolumnen längst till vänster.
 Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 1: urladdningstid 6 h											
11:55:09	1.1951	1.1906	1.1877	1.1811	1.1890	1.1891	1.1958	1.1879	1.1941	1.1900	0.0046
11:56:29	1.1449	1.1464	1.1385	1.1264	1.1399	1.1403	1.1465	1.1400	1.1443	1.1408	0.0062
11:56:49	1.1958	1.1940	1.1892	1.1823	1.1907	1.1912	1.1959	1.1901	1.1952	1.1916	0.0043
Dag 2: urladdningstid 18 h											
11:55:45	1.1891	1.1829	1.1837	1.1779	1.1873	1.1857	1.1900	1.1848	1.1889	1.1856	0.0038
11:56:05	1.1372	1.1343	1.1328	1.1226	1.1372	1.1355	1.1393	1.1354	1.1380	1.1347	0.0049
11:56:25	1.1891	1.1850	1.1846	1.1785	1.1883	1.1869	1.1905	1.1863	1.1894	1.1865	0.0036
Dag 5: urladdningstid 54 h											
11:41:24	1.1912	1.1872	1.1881	1.1811	1.1905	1.1866	1.1917	1.1861	1.1918	1.1883	0.0035
11:41:44	1.1365	1.1370	1.1348	1.1242	1.1383	1.1338	1.1382	1.1337	1.1384	1.1350	0.0045
11:42:04	1.1900	1.1881	1.1876	1.1807	1.1903	1.1868	1.1911	1.1859	1.1908	1.1879	0.0033
Dag 6: Urladdningstid 66 h											
12:05:15	1.1895	1.1856	1.1867	1.1798	1.1888	1.1850	1.1904	1.1844	1.1903	1.1867	0.0035
12:05:36	1.1342	1.1345	1.1327	1.1220	1.1360	1.1311	1.1360	1.1309	1.1364	1.1326	0.0045
12:06:16	1.1885	1.1862	1.1862	1.1796	1.1889	1.1851	1.1895	1.1844	1.1899	1.1865	0.0032
Dag 7: Urladdningstid 78 h											
12:02:39	1.1876	1.1830	1.1852	1.1777	1.1867	1.1824	1.1885	1.1821	1.1889	1.1847	0.0037
12:02:59	1.1308	1.1301	1.1299	1.1182	1.1321	1.1269	1.1327	1.1270	1.1333	1.1290	0.0046
12:03:19	1.1861	1.1831	1.1844	1.1769	1.1861	1.1820	1.1873	1.1816	1.1877	1.1839	0.0034
Dag 8: Urladdningstid 90 h											
12:03:32	1.1856	1.1795	1.1838	1.1748	1.1839	1.1792	1.1861	1.1792	1.1870	1.1821	0.0041
12:03:52	1.1276	1.1250	1.1276	1.1140	1.1280	1.1221	1.1290	1.1226	1.1304	1.1251	0.0050
12:04:12	1.1841	1.1796	1.1830	1.1740	1.1832	1.1787	1.1848	1.1787	1.1859	1.1813	0.0038
Dag 9: Urladdningstid 102 h											
11:58:43	1.1847	1.1763	1.1833	1.1729	1.1825	1.1772	1.1852	1.1778	1.1864	1.1807	0.0047
11:59:03	1.1256	1.1201	1.1263	1.1108	1.1252	1.1185	1.1271	1.1199	1.1290	1.1225	0.0057
11:59:23	1.1828	1.1760	1.1822	1.1718	1.1815	1.1764	1.1835	1.1770	1.1850	1.1796	0.0044
Dag 12: Urladdningstid 138 h											
11:59:13	1.1805	1.1670	1.1780	1.1676	1.1778	1.1713	1.1810	1.1732	1.1815	1.1753	0.0057
11:59:33	1.1177	1.1045	1.1172	1.1006	1.1159	1.1071	1.1193	1.1110	1.1205	1.1126	0.0071
11:59:53	1.1779	1.1665	1.1754	1.1648	1.1748	1.1686	1.1779	1.1706	1.1786	1.1726	0.0053
Dag 13: Urladdningstid 150 h											
12:06:48	1.1790	1.1668	1.1765	1.1664	1.1763	1.1700	1.1799	1.1725	1.1799	1.1741	0.0054
12:07:08	1.1150	1.1021	1.1138	1.0978	1.1129	1.1040	1.1166	1.1087	1.1176	1.1098	0.0071
12:07:28	1.1747	1.1643	1.1726	1.1627	1.1722	1.1661	1.1757	1.1687	1.1761	1.1703	0.0051

Batteri: ACTIVAIR 675-HPX, forts.

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:01:54	1.1757	1.1660	1.1733	1.1655	1.1739	1.1681	1.1770	1.1703	1.1767	1.1718	0.0045
12:02:14	1.1096	1.0992	1.1085	1.0954	1.1089	1.1005	1.1117	1.1049	1.1121	1.1056	0.0060
12:02:34	1.1704	1.1622	1.1683	1.1605	1.1687	1.1629	1.1717	1.1654	1.1718	1.1669	0.0043
Dag 15: Urladdningstid 174 h											
11:57:10	1.1718	1.1630	1.1694	1.1633	1.1707	1.1654	1.1727	1.1672	1.1722	1.1684	0.0038
11:57:30	1.1037	1.0945	1.1027	1.0923	1.1044	1.0967	1.1054	1.1002	1.1057	1.1006	0.0050
11:57:50	1.1655	1.1584	1.1638	1.1576	1.1646	1.1594	1.1667	1.1617	1.1666	1.1627	0.0035
Dag 16: Urladdningstid 186 h											
11:57:08	1.1583	1.1502	1.1562	1.1510	1.1679	1.1625	1.1692	1.1642	1.1686	1.1653	0.0035
11:57:28	1.0989	1.0910	1.0983	1.0893	1.1012	1.0935	1.1007	1.0965	1.1008	1.0967	0.0044
11:57:48	1.1610	1.1546	1.1596	1.1543	1.1612	1.1559	1.1623	1.1579	1.1621	1.1588	0.0032
Dag 19: Urladdningstid 222 h											
12:02:40	1.1559	1.1481	1.1530	1.1487	1.1544	1.1482	1.1535	1.1483	1.1538	1.1515	0.0032
12:03:00	1.0848	1.0782	1.0836	1.0757	1.0858	1.0772	1.0823	1.0780	1.0836	1.0810	0.0037
12:03:20	1.1471	1.1397	1.1448	1.1403	1.1457	1.1391	1.1443	1.1393	1.1453	1.1428	0.0032
Dag 20: Urladdningstid 234 h											
12:07:45	1.1519	1.1437	1.1496	1.1447	1.1514	1.1442	1.1483	1.1452	1.1489	1.1475	0.0032
12:08:05	1.0798	1.0730	1.0793	1.0712	1.0820	1.0724	1.0756	1.0743	1.0778	1.0762	0.0037
12:08:25	1.1422	1.1339	1.1403	1.1355	1.1418	1.1335	1.1374	1.1352	1.1392	1.1377	0.0033
Dag 21: Urladdningstid 246 h											
12:02:01	1.1469	1.1380	1.1481	1.1381	1.1486	1.1380	1.1415	1.1394	1.1421	1.1423	0.0044
12:02:21	1.0732	1.0658	1.0769	1.0621	1.0785	1.0642	1.0669	1.0670	1.0686	1.0692	0.0057
12:02:41	1.1344	1.1249	1.1372	1.1245	1.1373	1.1232	1.1262	1.1273	1.1278	1.1292	0.0056
Dag 22: Urladdningstid 258 h											
12:02:31	1.1357	1.1308	1.1357	1.1275	1.1329	1.1340	1.1373	1.1236	1.1365	1.1327	0.0046
12:02:51	1.0586	1.0568	1.0612	1.0484	1.0579	1.0600	1.0619	1.0481	1.0616	1.0572	0.0053
12:03:11	1.1151	1.1138	1.1181	1.1054	1.1109	1.1194	1.1208	1.1043	1.1194	1.1141	0.0061
Dag 23: Urladdningstid 270 h											
12:02:27	1.1224	0.3424	1.1198	1.0128	0.4013	0.3798	0.9554	0.4022	1.0959	0.7591	0.3625
12:02:47	1.0434	0.3098	1.0433	0.9350	0.3793	0.3373	0.8895	0.3579	1.0163	0.7013	0.3411
12:03:07	1.0943	0.3425	1.0943	0.9761	0.4262	0.3685	0.9288	0.3917	1.0601	0.7425	0.3465

Batteri: RAYOVAC 675 AE

Slutsänkning under urladdning i pulserna 1, 2 resp 3.
Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Spri- dning
Dag 1: Urladdningstid 6 h											
11:58:25	1.2039	1.2010	1.2016	1.2040	1.2032	1.2011	1.2020	1.2015	1.2032	1.2024	0.0012
11:58:45	1.1694	1.1657	1.1662	1.1672	1.1679	1.1642	1.1654	1.1657	1.1674	1.1666	0.0016
11:59:05	1.2028	1.1998	1.2006	1.2026	1.2023	1.2003	1.2009	1.2007	1.2020	1.2013	0.0011
Dag 2: Urladdningstid 18 h											
11:57:56	1.2045	1.2025	1.2017	1.1605	1.2028	1.2007	1.2022	1.2021	1.2040	1.1979	0.0141
11:58:16	1.1694	1.1669	1.1655	1.1009	1.1665	1.1627	1.1652	1.1653	1.1679	1.1589	0.0218
11:58:36	1.2038	1.2019	1.2012	1.1593	1.2024	1.2003	1.2014	1.2014	1.2033	1.1972	0.0143
Dag 5: Urladdningstid 54 h											
11:43:25	1.2067	1.2045	1.2042	1.1956	1.2082	1.2075	1.2050	1.2055	1.2063	1.2048	0.0037
11:43:45	1.1713	1.1682	1.1674	1.1543	1.1725	1.1706	1.1677	1.1686	1.1697	1.1678	0.0054
11:44:05	1.2057	1.2033	1.2031	1.1945	1.2074	1.2067	1.2038	1.2045	1.2053	1.2038	0.0038
Dag 6: Urladdningstid 66 h											
12:07:26	1.2042	1.2018	1.2016	1.1855	1.2059	1.2055	1.2026	1.2029	1.2036	1.2015	0.0062
12:07:46	1.1680	1.1649	1.1642	1.1422	1.1694	1.1678	1.1647	1.1655	1.1663	1.1637	0.0082
12:08:06	1.2031	1.2008	1.2007	1.1851	1.2053	1.2047	1.2015	1.2021	1.2029	1.2007	0.0061
Dag 7: Urladdningstid 78 h											
12:04:12	1.2006	1.1979	1.1979	1.1720	1.2025	1.2022	1.1989	1.1995	1.2001	1.1968	0.0095
12:04:32	1.1634	1.1599	1.1593	1.1270	1.1649	1.1635	1.1600	1.1609	1.1615	1.1578	0.0117
12:04:52	1.1997	1.1970	1.1969	1.1710	1.2018	1.2016	1.1979	1.1985	1.1991	1.1959	0.0095
Dag 8: Urladdningstid 90 h											
12:05:03	1.1965	1.1937	1.1937	1.1562	1.1987	1.1985	1.1948	1.1955	1.1960	1.1915	0.0134
12:05:23	1.1585	1.1547	1.1541	1.1101	1.1603	1.1590	1.1551	1.1561	1.1566	1.1516	0.0157
12:05:43	1.1958	1.1929	1.1928	1.1550	1.1980	1.1980	1.1940	1.1946	1.1951	1.1907	0.0135
Dag 9: Urladdningstid 102 h											
12:01:57	1.1921	1.1889	1.1896	1.1372	1.1942	1.1951	1.1910	1.1917	1.1929	1.1859	0.0184
12:02:17	1.1524	1.1481	1.1484	1.0893	1.1540	1.1542	1.1498	1.1508	1.1523	1.1444	0.0208
12:02:37	1.1910	1.1877	1.1885	1.1357	1.1933	1.1942	1.1899	1.1906	1.1918	1.1847	0.0185
Dag 12: Urladdningstid 138 h											
12:02:01	1.1767	1.1727	1.1748	0.9762	1.1786	1.1809	1.1752	1.1764	1.1782	1.1544	0.0669
12:02:21	1.1334	1.1284	1.1303	0.9356	1.1349	1.1365	1.1306	1.1320	1.1343	1.1107	0.0657
12:02:41	1.1756	1.1715	1.1736	0.9758	1.1778	1.1800	1.1741	1.1753	1.1770	1.1534	0.0667
Dag 13: Urladdningstid 150 h											
12:08:14	1.1711	1.1669	1.1697	0.0143	1.1725	1.1756	1.1699	1.1716	1.1731	1.0427	0.3857
12:08:34	1.1269	1.1218	1.1244	0.0185	1.1279	1.1303	1.1245	1.1266	1.1287	1.0033	0.3693
12:08:54	1.1700	1.1657	1.1683	0.0143	1.1716	1.1746	1.1687	1.1703	1.1718	1.0417	0.3853

Batteri: RAYOVAC 675 AE (forts)

Slutspänning under urladdning i pulserna 1, 2 resp 3.
 (Tidpunkt för mätning ges i kolumnen längst till vänster.
 Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:03:22	1.1638	1.1593	1.1613	0.0108	1.1642	1.1683	1.1626	1.1645	1.1644	1.0355	0.3843
12:03:42	1.1188	1.1136	1.1151	0.0154	1.1186	1.1222	1.1166	1.1186	1.1190	0.9953	0.3675
12:04:02	1.1625	1.1579	1.1598	0.0108	1.1630	1.1673	1.1612	1.1629	1.1628	1.0342	0.3838
Dag 15: Urladdningstid 174 h											
11:58:59	1.1543	1.1492	1.1507	0.0053	1.1536	1.1584	1.1539	1.1553	1.1547	1.0262	0.3828
11:59:19	1.1082	1.1019	1.1033	0.0124	1.1065	1.1111	1.1071	1.1089	1.1082	0.9853	0.3649
11:59:39	1.1526	1.1472	1.1490	0.0053	1.1523	1.1572	1.1522	1.1537	1.1528	1.0247	0.3823
Dag 16: Urladdningstid 186 h											
11:58:40	1.1438	1.1368	1.1381	0.0037	1.1412	1.1473	1.1435	1.1449	1.1431	1.0158	0.3796
11:59:00	1.0958	1.0875	1.0888	0.0117	1.0924	1.0983	1.0949	1.0965	1.0948	0.9734	0.3606
11:59:20	1.1415	1.1345	1.1358	0.0037	1.1398	1.1458	1.1409	1.1423	1.1405	1.0139	0.3788
Dag 19: Urladdningstid 222 h											
12:04:13	1.0689	1.0628	1.0616	0.0032	1.0639	1.0687	1.0689	1.0668	1.0691	0.9482	0.3544
12:04:33	1.0122	1.0077	1.0051	0.0107	1.0061	1.0102	1.0134	1.0101	1.0153	0.8990	0.3331
12:04:53	1.0666	1.0632	1.0612	0.0032	1.0627	1.0669	1.0680	1.0652	1.0692	0.9474	0.3541
Dag 20: Urladdningstid 234 h											
12:09:19	1.0593	0.9869	0.6957	0.0028	0.7163	1.0334	1.0554	1.0527	1.0377	0.8488	0.3489
12:09:39	1.0018	0.9491	0.5922	0.0094	0.6130	0.9693	0.9963	0.9924	0.9711	0.7883	0.3351
12:09:59	1.0577	0.9841	0.6430	0.0028	0.6668	1.0232	1.0535	1.0503	1.0285	0.8344	0.3529
Dag 21: Urladdningstid 246 h											
12:03:42	0.6592	0.3205	0.1322	0.0012	0.1295	0.3253	0.6235	0.6329	0.3361	0.3512	0.2423
12:04:02	0.5576	0.2944	0.1104	0.0032	0.1095	0.3014	0.5292	0.5369	0.2929	0.3040	0.2047
12:04:22	0.6048	0.3121	0.1174	0.0008	0.1167	0.3192	0.5702	0.5797	0.3199	0.3268	0.2222

Batteri: VARTA V 675 HPA

Slutspänning under urladdning i pulserna 1, 2 resp 3.
 (Tidpunkt för mätning ges i kolumnen längst till vänster.
 Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Spri- ding
Dag 1: Urladdningstid 6 h											
12:00:14	1.1553	1.1621	1.1582	1.0772	0.9776	1.0804	1.1518	1.1612	1.1520	1.1195	0.0631
12:00:34	1.1054	1.1132	1.1045	0.9963	0.8737	0.9992	1.0986	1.1078	1.0969	1.0551	0.0823
12:00:54	1.1570	1.1633	1.1575	1.0784	0.9772	1.0820	1.1530	1.1605	1.1519	1.1201	0.0632
Dag 2: Urladdningstid 18 h											
12:00:58	1.1673	1.1746	1.1711	1.0881	0.9847	1.0948	1.1653	1.1752	1.1656	1.1319	0.0649
12:01:18	1.1181	1.1263	1.1187	1.0064	0.8806	1.0132	1.1126	1.1227	1.1117	1.0678	0.0846
12:01:38	1.1681	1.1747	1.1701	1.0884	0.9840	1.0950	1.1653	1.1740	1.1649	1.1316	0.0649
Dag 5: Urladdningstid 54 h											
11:45:12	1.1654	1.1721	1.1690	1.0848	0.9941	1.1049	1.1643	1.1721	1.1615	1.1320	0.0608
11:45:32	1.1136	1.1211	1.1131	1.0007	0.8908	1.0252	1.1097	1.1174	1.1049	1.0663	0.0792
11:45:52	1.1655	1.1716	1.1676	1.0846	0.9936	1.1045	1.1638	1.1708	1.1605	1.1314	0.0607
Dag 6: Urladdningstid 66 h											
12:09:00	1.1640	1.1703	1.1690	1.0779	1.0041	1.1201	1.1636	1.1708	1.1601	1.1333	0.0576
12:09:20	1.1101	1.1177	1.1124	0.9918	0.9014	1.0450	1.1076	1.1150	1.1021	1.0670	0.0752
12:09:40	1.1634	1.1694	1.1672	1.0777	1.0032	1.1192	1.1627	1.1693	1.1587	1.1323	0.0574
Dag 7: Urladdningstid 78 h											
12:05:43	1.1614	1.1664	1.1667	1.1098	0.9936	1.1270	1.1608	1.1681	1.1577	1.1346	0.0566
12:06:03	1.1068	1.1128	1.1097	1.0337	0.8901	1.0549	1.1041	1.1117	1.0991	1.0692	0.0728
12:06:23	1.1607	1.1654	1.1650	1.1094	0.9935	1.1259	1.1600	1.1668	1.1564	1.1337	0.0563
Dag 8: Urladdningstid 90 h											
12:06:36	1.1569	1.1610	1.1627	1.1209	1.0029	1.1294	1.1572	1.1652	1.1537	1.1344	0.0517
12:06:56	1.1008	1.1059	1.1048	1.0494	0.9029	1.0587	1.0994	1.1081	1.0939	1.0693	0.0660
12:07:16	1.1557	1.1595	1.1607	1.1202	1.0054	1.1282	1.1560	1.1637	1.1521	1.1335	0.0504
Dag 9: Urladdningstid 102 h											
12:03:32	1.1485	1.1519	1.1557	1.1392	0.9827	1.1322	1.1504	1.1615	1.1475	1.1300	0.0559
12:03:52	1.0899	1.0939	1.0959	1.0750	0.8773	1.0631	1.0904	1.1031	1.0858	1.0638	0.0709
12:04:12	1.1463	1.1492	1.1528	1.1379	0.9820	1.1308	1.1482	1.1593	1.1451	1.1280	0.0553
Dag 12: Urladdningstid 138 h											
12:03:28	0.1670	0.1493	0.3135	1.1296	0.9661	1.1296	0.9954	1.1104	1.0005	0.7735	0.4292
12:03:48	0.1363	0.1215	0.2734	1.0649	0.8593	1.0632	0.9038	1.0393	0.9075	0.7077	0.4068
12:04:08	0.1579	0.1382	0.2952	1.1272	0.9640	1.1260	0.9577	1.1010	0.9632	0.7589	0.4290
Dag 13: Urladdningstid 150 h											
12:09:47	0.1385	0.1353	0.1401	1.0672	0.9779	1.0762	0.1405	0.1339	0.3008	0.4567	0.4418
12:10:07	0.1145	0.1136	0.1140	0.9854	0.8792	0.9945	0.1169	0.1086	0.2639	0.4101	0.4114
12:10:27	0.1283	0.1269	0.1270	1.0484	0.9818	1.0605	0.1299	0.1239	0.2910	0.4464	0.4415

Batteri: VARTA V 675 HPA (forts)

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:04:48	0.1100	0.1240	0.1029	0.0997	0.3313	0.1099	0.1126	0.1167	0.1100	0.1352	0.0739
12:05:08	0.0913	0.1051	0.0871	0.0836	0.2751	0.0920	0.0949	0.0969	0.0926	0.1132	0.0610
12:05:28	0.1039	0.1176	0.0982	0.0953	0.3190	0.1039	0.1067	0.1090	0.1039	0.1286	0.0717

Batteri: ACTIVAIR 13-HPX

Elutsladdning under urladdning i pulserna 1, 2 respektive 3.
Måtpunkt för mätning ges i kolumnen längst till vänster.
(Batterier laddas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Spri- dning
Dag 1: Urladdningstid 6 h											
12:05:22	1.2155	1.2025	1.1985	1.1984	1.1961	1.2118	1.1979	1.1971	1.2067	1.2027	0.0070
12:05:42	1.1514	1.1344	1.1310	1.1294	1.1256	1.1450	1.1244	1.1272	1.1371	1.1339	0.0092
12:05:52	1.2156	1.2054	1.2020	1.2015	1.1997	1.2130	1.1998	1.1998	1.2088	1.2051	0.0061
Dag 2: Urladdningstid 18 h											
12:03:32	1.2110	1.2036	1.2011	1.2007	1.1991	1.2142	1.2001	1.2000	1.2075	1.2041	0.0055
12:03:52	1.1433	1.1316	1.1295	1.1281	1.1248	1.1444	1.1236	1.1271	1.1345	1.1319	0.0075
12:04:12	1.2111	1.2046	1.2024	1.2019	1.2002	1.2142	1.2006	1.2011	1.2079	1.2049	0.0051
Dag 5: Urladdningstid 54 h											
11:47:39	1.2104	1.2052	1.2029	1.2029	1.2023	1.2167	1.2038	1.2039	1.2094	1.2064	0.0048
11:47:49	1.1375	1.1283	1.1265	1.1254	1.1241	1.1430	1.1240	1.1274	1.1324	1.1298	0.0066
11:48:09	1.2096	1.2047	1.2027	1.2023	1.2019	1.2156	1.2031	1.2034	1.2084	1.2057	0.0046
Dag 6: Urladdningstid 66 h											
12:12:17	1.2103	1.2054	1.2032	1.2030	1.2032	1.2173	1.2048	1.2045	1.2096	1.2068	0.0048
12:12:47	1.1367	1.1280	1.1260	1.1252	1.1244	1.1432	1.1243	1.1278	1.1321	1.1297	0.0065
12:13:37	1.2091	1.2046	1.2023	1.2022	1.2022	1.2159	1.2036	1.2038	1.2082	1.2058	0.0046
Dag 7: Urladdningstid 78 h											
12:07:43	1.2092	1.2041	1.2019	1.2020	1.2024	1.2167	1.2041	1.2041	1.2086	1.2059	0.0048
12:08:03	1.1341	1.1255	1.1230	1.1228	1.1223	1.1418	1.1227	1.1265	1.1297	1.1276	0.0066
12:08:23	1.2077	1.2030	1.2009	1.2010	1.2011	1.2150	1.2028	1.2033	1.2069	1.2046	0.0046
Dag 8: Urladdningstid 90 h											
12:02:42	1.2078	1.2026	1.1996	1.2003	1.2010	1.2154	1.2028	1.2031	1.2072	1.2044	0.0050
12:03:02	1.1312	1.1221	1.1185	1.1194	1.1192	1.1394	1.1201	1.1244	1.1268	1.1246	0.0070
12:03:12	1.2062	1.2011	1.1984	1.1992	1.1996	1.2136	1.2013	1.2022	1.2055	1.2030	0.0048
Dag 9: Urladdningstid 102 h											
12:05:37	1.2056	1.2001	1.1967	1.1981	1.1991	1.2135	1.2012	1.2016	1.2055	1.2024	0.0052
12:05:57	1.1272	1.1179	1.1134	1.1153	1.1158	1.1362	1.1172	1.1218	1.1237	1.1209	0.0072
12:06:17	1.2039	1.1985	1.1952	1.1967	1.1976	1.2116	1.1995	1.2004	1.2035	1.2008	0.0050
Dag 10: Urladdningstid 138 h											
12:05:05	1.1977	1.1919	1.1865	1.1894	1.1923	1.2059	1.1946	1.1959	1.1986	1.1948	0.0057
12:05:45	1.1125	1.1023	1.0954	1.0994	1.1025	1.1232	1.1054	1.1123	1.1107	1.1071	0.0085
12:06:05	1.1946	1.1897	1.1834	1.1865	1.1891	1.2024	1.1916	1.1933	1.1950	1.1916	0.0056
Dag 13: Urladdningstid 150 h											
12:11:58	1.1945	1.1890	1.1823	1.1859	1.1898	1.2029	1.1920	1.1938	1.1963	1.1918	0.0060
12:12:18	1.1058	1.0958	1.0868	1.0924	1.0972	1.1173	1.1000	1.1078	1.1056	1.1010	0.0092
12:12:38	1.1904	1.1850	1.1781	1.1818	1.1857	1.1984	1.1880	1.1904	1.1917	1.1877	0.0060

Batteri: ACTIVAIR 13-HPX (forts)

Blutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:06:50	1.1901	1.1845	1.1766	1.1805	1.1854	1.1980	1.1880	1.1896	1.1922	1.1872	0.0064
12:07:10	1.0983	1.0880	1.0776	1.0834	1.0900	1.1094	1.0932	1.1007	1.0988	1.0933	0.0097
12:07:30	1.1855	1.1799	1.1719	1.1758	1.1807	1.1928	1.1834	1.1855	1.1870	1.1825	0.0062
Dag 15: Urladdningstid 174 h											
12:02:03	1.1854	1.1794	1.1718	1.1742	1.1800	1.1919	1.1831	1.1846	1.1862	1.1818	0.0062
12:02:23	1.0906	1.0798	1.0703	1.0739	1.0814	1.1001	1.0853	1.0925	1.0894	1.0848	0.0094
12:02:43	1.1795	1.1739	1.1663	1.1683	1.1741	1.1857	1.1776	1.1795	1.1798	1.1761	0.0061
Dag 16: Urladdningstid 186 h											
12:06:03	1.1784	1.1726	1.1641	1.1666	1.1723	1.1837	1.1762	1.1775	1.1786	1.1744	0.0062
12:06:23	1.0804	1.0700	1.0591	1.0635	1.0704	1.0883	1.0754	1.0819	1.0779	1.0741	0.0093
12:06:43	1.1712	1.1659	1.1567	1.1585	1.1650	1.1760	1.1697	1.1712	1.1705	1.1672	0.0063
Dag 19: Urladdningstid 222 h											
12:06:14	1.1580	1.1506	1.1407	1.1511	1.1531	1.1644	1.1568	0.6355	1.1586	1.0965	0.1730
12:06:34	1.0550	1.0417	1.0282	1.0450	1.0462	1.0636	1.0510	0.5348	1.0525	0.9909	0.1713
12:06:54	1.1423	1.1343	1.1250	1.1375	1.1382	1.1495	1.1430	0.5617	1.1433	1.0750	0.1926
Dag 20: Urladdningstid 234 h											
12:12:19	1.1526	1.1467	1.1355	1.1454	1.1493	1.1607	1.1521	0.8914	1.1525	1.1207	0.0863
12:12:39	1.0483	1.0367	1.0208	1.0377	1.0414	1.0588	1.0453	0.7324	1.0447	1.0073	0.1036
12:12:59	1.1350	1.1291	1.1197	1.1273	1.1331	1.1446	1.1374	0.7637	1.1344	1.0916	0.1232
Dag 21: Urladdningstid 246 h											
12:06:36	1.1448	1.1369	1.1286	1.1415	1.1449	1.1510	1.1474	0.8443	1.1487	1.1098	0.0998
12:06:56	1.0390	1.0242	1.0120	1.0334	1.0363	1.0469	1.0392	0.6887	1.0401	0.9955	0.1155
12:07:16	1.1220	1.1099	1.1093	1.1214	1.1253	1.1285	1.1290	0.7137	1.1289	1.0764	0.1362
Dag 22: Urladdningstid 258 h											
12:04:45	0.3349	0.1871	1.1067	0.1872	1.1047	0.2566	1.1311	0.0793	1.0386	0.6029	0.4725
12:05:05	0.2922	0.1475	0.9905	0.1471	0.9943	0.1900	1.0208	0.0655	0.9338	0.5313	0.4348
12:05:25	0.3329	0.1765	1.0739	0.1764	1.0678	0.2228	1.0989	0.0681	1.0005	0.5798	0.4616

Blutspänning under urladdning i pulserna 1, 2 resp 3.
Tidpunkt för mätning ges i kolumnen längst till vänster.
(Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 1: Urladdningstid 6 h											
12:07:46	1.2128	1.2177	1.2145	1.2156	1.2156	1.2150	1.2155	1.2173	0.2786	1.1115	0.3123
12:08:06	1.1635	1.1714	1.1660	1.1672	1.1668	1.1683	1.1639	1.1708	0.2571	1.0661	0.3034
12:08:26	1.2118	1.2165	1.2132	1.2144	1.2144	1.2148	1.2142	1.2162	0.2635	1.1088	0.3170
Dag 2: Urladdningstid 18 h											
12:05:21	1.2144	1.2183	1.2156	1.2151	1.2148	1.2153	1.2161	1.2179	1.2158	1.2159	0.0013
12:05:41	1.1630	1.1692	1.1647	1.1633	1.1625	1.1640	1.1617	1.1683	1.1653	1.1647	0.0026
12:06:01	1.2134	1.2173	1.2146	1.2141	1.2139	1.2144	1.2149	1.2169	1.2147	1.2149	0.0013
Dag 5: Urladdningstid 54 h											
11:49:10	1.2172	1.2199	1.2175	1.2195	1.2170	1.2180	1.2187	1.2203	1.2213	1.2187	0.0015
11:49:30	1.1655	1.1683	1.1640	1.1658	1.1639	1.1667	1.1635	1.1701	1.1690	1.1663	0.0024
11:49:50	1.2164	1.2191	1.2166	1.2179	1.2162	1.2151	1.2176	1.2195	1.2204	1.2176	0.0017
Dag 6: Urladdningstid 66 h											
12:14:06	1.2153	1.2178	1.2155	1.2166	1.2150	1.2158	1.2170	1.2181	1.2198	1.2168	0.0016
12:14:26	1.1629	1.1672	1.1628	1.1643	1.1613	1.1636	1.1612	1.1667	1.1665	1.1641	0.0023
12:14:46	1.2147	1.2173	1.2147	1.2160	1.2144	1.2152	1.2162	1.2174	1.2189	1.2161	0.0015
Dag 7: Urladdningstid 78 h											
12:09:16	1.2123	1.2148	1.2124	1.2138	1.2122	1.2126	1.2144	1.2149	1.2175	1.2139	0.0017
12:09:36	1.1585	1.1624	1.1583	1.1600	1.1567	1.1587	1.1570	1.1621	1.1629	1.1596	0.0023
12:09:56	1.2117	1.2142	1.2117	1.2131	1.2114	1.2119	1.2135	1.2143	1.2167	1.2132	0.0017
Dag 8: Urladdningstid 90 h											
12:11:59	1.2085	1.2113	1.2086	1.2101	1.2083	1.2087	1.2111	1.2111	1.2146	1.2103	0.0020
12:12:19	1.1532	1.1575	1.1530	1.1549	1.1515	1.1533	1.1522	1.1570	1.1586	1.1546	0.0025
12:12:39	1.2077	1.2103	1.2077	1.2092	1.2076	1.2078	1.2099	1.2102	1.2136	1.2093	0.0020
Dag 9: Urladdningstid 102 h											
12:07:14	1.2033	1.2070	1.2044	1.2065	1.2046	1.2043	1.2077	1.2069	1.2116	1.2063	0.0025
12:07:34	1.1462	1.1519	1.1474	1.1504	1.1467	1.1476	1.1478	1.1514	1.1547	1.1493	0.0029
12:07:54	1.2026	1.2063	1.2036	1.2058	1.2039	1.2035	1.2068	1.2063	1.2109	1.2055	0.0025
Dag 12: Urladdningstid 138 h											
12:06:59	1.1905	1.1931	1.1910	1.1919	1.1907	1.1902	1.1966	1.1935	1.1997	1.1930	0.0032
12:07:19	1.1288	1.1324	1.1294	1.1310	1.1287	1.1286	1.1339	1.1334	1.1389	1.1317	0.0034
12:07:39	1.1898	1.1921	1.1901	1.1912	1.1898	1.1892	1.1955	1.1926	1.1988	1.1921	0.0032
Dag 13: Urladdningstid 150 h											
12:13:51	1.1873	1.1895	1.1874	1.1879	1.1869	1.1862	1.1940	1.1902	1.1965	1.1895	0.0035
12:14:11	1.1241	1.1272	1.1245	1.1252	1.1233	1.1229	1.1297	1.1285	1.1344	1.1266	0.0037
12:14:31	1.1867	1.1887	1.1866	1.1872	1.1860	1.1852	1.1929	1.1894	1.1957	1.1887	0.0035

Batteri: RAYOVAC 13 AE (forts)

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:08:26	1.1829	1.1846	1.1828	1.1827	1.1823	1.1806	1.1903	1.1853	1.1928	1.1849	0.0040
12:08:46	1.1186	1.1209	1.1186	1.1187	1.1174	1.1162	1.1246	1.1221	1.1294	1.1207	0.0041
12:09:06	1.1822	1.1837	1.1819	1.1818	1.1812	1.1797	1.1893	1.1843	1.1918	1.1840	0.0040
Dag 15: Urladdningstid 174 h											
12:03:47	1.1778	1.1789	1.1775	1.1769	1.1768	1.1747	1.1956	1.1796	1.1887	1.1796	0.0046
12:04:07	1.1125	1.1140	1.1122	1.1117	1.1105	1.1089	1.1184	1.1152	1.1240	1.1142	0.0046
12:04:27	1.1770	1.1779	1.1763	1.1759	1.1755	1.1736	1.1842	1.1783	1.1875	1.1785	0.0045
Dag 16: Urladdningstid 186 h											
12:07:33	1.1717	1.1723	1.1710	1.1702	1.1698	1.1669	1.1796	1.1726	1.1840	1.1731	0.0053
12:07:53	1.1052	1.1058	1.1041	1.1035	1.1018	1.0993	1.1113	1.1067	1.1180	1.1062	0.0055
12:08:13	1.1709	1.1714	1.1700	1.1693	1.1685	1.1659	1.1785	1.1716	1.1830	1.1721	0.0053
Dag 19: Urladdningstid 222 h											
12:07:40	1.1442	1.1403	1.1423	1.1414	1.1402	1.1282	1.1532	1.1411	1.1628	1.1437	0.0096
12:08:00	1.0735	1.0693	1.0706	1.0701	1.0660	1.0517	1.0813	1.0701	1.0931	1.0717	0.0112
12:08:20	1.1423	1.1375	1.1401	1.1392	1.1376	1.1231	1.1515	1.1388	1.1614	1.1413	0.0105
Dag 20: Urladdningstid 234 h											
12:13:51	1.1212	1.1075	1.1161	1.1176	1.1126	1.0984	1.1351	1.1103	1.1491	1.1187	0.0152
12:14:11	1.0434	1.0279	1.0355	1.0375	1.0308	1.0234	1.0615	1.0311	1.0789	1.0411	0.0180
12:14:31	1.1156	1.1031	1.1096	1.1117	1.1072	1.0988	1.1333	1.1052	1.1485	1.1148	0.0160
Dag 21: Urladdningstid 246 h											
12:08:12	1.0987	1.0991	1.0986	1.0996	1.0986	1.0936	1.1067	1.0971	1.1326	1.1027	0.0117
12:08:32	1.0239	1.0264	1.0235	1.0241	1.0221	1.0198	1.0259	1.0217	1.0574	1.0272	0.0115
12:08:52	1.0986	1.1002	1.0984	1.0992	1.0985	1.0956	1.1028	1.0970	1.1283	1.1021	0.0100
Dag 22: Urladdningstid 258 h											
12:06:17	1.0918	1.0879	1.0907	1.0926	1.0921	1.0661	1.1009	1.0816	1.1057	1.0899	0.0113
12:06:37	1.0173	1.0128	1.0161	1.0177	1.0165	0.9794	1.0234	1.0020	1.0265	1.0124	0.0141
12:06:57	1.0937	1.0899	1.0926	1.0944	1.0939	1.0645	1.1011	1.0826	1.1028	1.0906	0.0114
Dag 23: Urladdningstid 270 h											
12:04:43	1.0449	0.5132	1.0102	1.0549	1.0503	0.1886	1.0900	0.3922	1.0992	0.8271	0.3573
12:05:03	0.9529	0.4163	0.9135	0.9651	0.9567	0.1384	1.0117	0.3552	1.0229	0.7481	0.3430
12:05:23	1.0389	0.4854	1.0107	1.0507	1.0454	0.1698	1.0918	0.4121	1.1000	0.8228	0.3608

Batteri: VARTA V 13 A

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 1: Urladdningstid 6 h											
12:14:37	1.1981	1.2040	1.1993	1.1898	1.1925	1.1890	1.1997	1.1988	1.1863	1.1953	0.0060
12:14:57	1.1315	1.1403	1.1347	1.1225	1.1261	1.1221	1.1326	1.1333	1.1160	1.1288	0.0076
12:15:17	1.1971	1.2030	1.1983	1.1901	1.1931	1.1895	1.1985	1.1982	1.1868	1.1950	0.0053
Dag 2: Urladdningstid 18 h											
12:07:15	1.2009	1.1984	1.1999	1.1911	1.1923	1.1893	1.1988	1.1980	1.1865	1.1950	0.0053
12:07:35	1.1355	1.1314	1.1355	1.1253	1.1257	1.1226	1.1319	1.1322	1.1166	1.1285	0.0064
12:07:55	1.1997	1.1972	1.1988	1.1915	1.1924	1.1897	1.1976	1.1972	1.1870	1.1946	0.0045
Dag 3: Urladdningstid 54 h											
11:52:31	1.2086	1.2078	1.2051	1.2001	1.2008	1.2017	1.2110	1.2030	1.1987	1.2041	0.0043
11:52:51	1.1436	1.1420	1.1401	1.1344	1.1352	1.1360	1.1470	1.1350	1.1303	1.1382	0.0053
11:53:11	1.2068	1.2062	1.2037	1.1994	1.2001	1.2008	1.2092	1.2017	1.1980	1.2029	0.0038
Dag 6: Urladdningstid 66 h											
12:15:37	1.2074	1.2086	1.2051	1.2013	1.2015	1.2033	1.2109	1.2028	1.2004	1.2046	0.0037
12:15:57	1.1415	1.1429	1.1402	1.1362	1.1355	1.1370	1.1464	1.1343	1.1318	1.1384	0.0046
12:16:17	1.2054	1.2067	1.2035	1.2004	1.2004	1.2020	1.2090	1.2011	1.1991	1.2031	0.0033
Dag 7: Urladdningstid 78 h											
12:11:43	1.2053	1.2084	1.2042	1.2010	1.2006	1.2019	1.2089	1.2017	1.1992	1.2035	0.0035
12:12:03	1.1393	1.1423	1.1393	1.1359	1.1343	1.1345	1.1434	1.1329	1.1302	1.1368	0.0044
12:12:23	1.2034	1.2066	1.2028	1.2001	1.1996	1.2006	1.2071	1.2002	1.1981	1.2021	0.0032
Dag 8: Urladdningstid 90 h											
12:13:29	1.2032	1.2073	1.2029	1.1999	1.1996	1.1996	1.2068	1.2012	1.1987	1.2021	0.0032
12:13:49	1.1357	1.1411	1.1378	1.1347	1.1331	1.1312	1.1403	1.1326	1.1297	1.1351	0.0040
12:14:09	1.2013	1.2054	1.2014	1.1999	1.1985	1.1982	1.2048	1.1995	1.1974	1.2006	0.0029
Dag 9: Urladdningstid 102 h											
12:08:46	1.2005	1.2057	1.2002	1.1980	1.1980	1.1969	1.2041	1.1993	1.1971	1.2000	0.0031
12:09:06	1.1317	1.1390	1.1336	1.1320	1.1307	1.1272	1.1363	1.1297	1.1273	1.1319	0.0039
12:09:26	1.1981	1.2036	1.1982	1.1965	1.1963	1.1952	1.2017	1.1972	1.1953	1.1980	0.0029
Dag 12: Urladdningstid 138 h											
12:08:24	1.1916	1.1999	1.1930	1.1929	1.1958	1.1915	1.1957	1.1941	1.1938	1.1943	0.0026
12:08:44	1.1195	1.1308	1.1236	1.1248	1.1275	1.1197	1.1241	1.1229	1.1232	1.1240	0.0035
12:09:04	1.1892	1.1971	1.1902	1.1908	1.1935	1.1890	1.1925	1.1914	1.1915	1.1916	0.0026
Dag 13: Urladdningstid 150 h											
12:15:38	1.1861	1.1966	1.1890	1.1899	1.1943	1.1892	1.1909	1.1919	1.1914	1.1910	0.0031
12:15:58	1.1116	1.1262	1.1181	1.1200	1.1253	1.1169	1.1173	1.1199	1.1198	1.1195	0.0044
12:16:18	1.1818	1.1934	1.1856	1.1871	1.1916	1.1864	1.1871	1.1888	1.1886	1.1878	0.0034

Batteri: VARTA V 13 A (forts)

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 19.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:12:12	1.1763	1.1909	1.1817	1.1844	1.1906	1.1851	1.1837	1.1869	1.1873	1.1852	0.0045
12:12:32	1.0967	1.1180	1.1072	1.1118	1.1200	1.1115	1.1063	1.1125	1.1139	1.1109	0.0069
12:12:52	1.1700	1.1866	1.1767	1.1803	1.1869	1.1814	1.1783	1.1828	1.1835	1.1807	0.0053
Dag 15: Urladdningstid 174 h											
12:05:43	1.1618	1.1817	1.1691	1.1745	1.1839	1.1775	1.1727	1.1790	1.1793	1.1755	0.0069
12:06:03	1.0736	1.1045	1.0871	1.0970	1.1104	1.1004	1.0892	1.1012	1.1023	1.0962	0.0111
12:06:23	1.1534	1.1763	1.1617	1.1686	1.1791	1.1725	1.1657	1.1740	1.1741	1.1695	0.0081
Dag 16: Urladdningstid 186 h											
12:08:59	1.1414	1.1669	1.1482	1.1571	1.1717	1.1633	1.1563	1.1668	1.1643	1.1596	0.0098
12:09:19	1.0420	1.0814	1.0533	1.0682	1.0915	1.0782	1.0631	1.0824	1.0786	1.0710	0.0158
12:09:39	1.1306	1.1590	1.1376	1.1478	1.1645	1.1555	1.1469	1.1595	1.1564	1.1509	0.0111
Dag 19: Urladdningstid 222 h											
12:09:11	0.9888	1.0746	0.1727	0.7776	1.0390	0.3459	0.9965	1.0605	1.0633	0.8354	0.3415
12:09:31	0.8772	0.9592	0.1405	0.6742	0.9258	0.3105	0.8843	0.9459	0.9500	0.7408	0.3076
12:09:51	0.9453	1.0432	0.1579	0.7259	1.0011	0.3489	0.9512	1.0234	1.0346	0.8035	0.3297
Dag 20: Urladdningstid 234 h											
12:15:23	0.3429	0.3457	0.1520	0.3362	0.3130	0.1692	0.2948	0.3807	0.3484	0.2981	0.0816
12:15:43	0.2915	0.3074	0.1270	0.2935	0.2645	0.1382	0.2371	0.3264	0.3138	0.2555	0.0746
12:16:03	0.3349	0.3454	0.1418	0.3289	0.2984	0.1534	0.2738	0.3618	0.3517	0.2878	0.0840

Batteri: ACTIVAIR 312-HPX

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Spri- dning
Dag 1: Urladdningstid 6 h											
12:17:28	1.2328	1.2336	1.2338	1.2223	1.2323	1.2375	1.2306	1.2307	1.2106	1.2294	0.0081
12:17:48	1.1747	1.1726	1.1735	1.1581	1.1705	1.1796	1.1715	1.1702	1.1310	1.1669	0.0146
12:18:08	1.2335	1.2339	1.2349	1.2237	1.2330	1.2379	1.2319	1.2318	1.2113	1.2302	0.0081
Dag 2: Urladdningstid 18 h											
12:10:50	1.2388	1.2394	1.2408	1.2305	1.2400	1.2441	1.2377	1.2380	1.2173	1.2363	0.0080
12:11:10	1.1810	1.1779	1.1805	1.1678	1.1790	1.1857	1.1792	1.1779	1.1368	1.1740	0.0147
12:11:30	1.2400	1.2400	1.2414	1.2319	1.2408	1.2446	1.2389	1.2389	1.2179	1.2372	0.0080
Dag 5: Urladdningstid 54 h											
11:54:43	1.2429	1.2403	1.2437	1.2339	1.2436	1.2472	1.2417	1.2421	1.2208	1.2396	0.0079
11:55:03	1.1841	1.1753	1.1824	1.1704	1.1823	1.1883	1.1822	1.1809	1.1391	1.1761	0.0148
11:55:23	1.2431	1.2402	1.2440	1.2349	1.2444	1.2475	1.2425	1.2425	1.2207	1.2400	0.0080
Dag 6: Urladdningstid 66 h											
12:17:50	1.2418	1.2375	1.2442	1.2339	1.2445	1.2482	1.2426	1.2428	1.2214	1.2397	0.0080
12:18:10	1.1800	1.1693	1.1822	1.1694	1.1826	1.1889	1.1823	1.1812	1.1394	1.1750	0.0148
12:18:30	1.2410	1.2366	1.2440	1.2347	1.2444	1.2477	1.2426	1.2425	1.2212	1.2394	0.0079
Dag 7: Urladdningstid 78 h											
12:13:39	1.2377	1.2305	1.2411	1.2312	1.2415	1.2450	1.2394	1.2397	1.2188	1.2361	0.0080
12:13:59	1.1737	1.1576	1.1771	1.1647	1.1782	1.1841	1.1774	1.1763	1.1355	1.1694	0.0150
12:14:19	1.2372	1.2298	1.2409	1.2317	1.2414	1.2446	1.2397	1.2395	1.2186	1.2359	0.0080
Dag 8: Urladdningstid 90 h											
12:15:34	1.2321	1.2315	1.2360	1.2265	1.2369	1.2397	1.2342	1.2342	1.2139	1.2306	0.0084
12:15:54	1.1640	1.1428	1.1682	1.1568	1.1704	1.1748	1.1686	1.1669	1.1273	1.1600	0.0154
12:16:14	1.2316	1.2208	1.2355	1.2268	1.2366	1.2392	1.2344	1.2340	1.2137	1.2303	0.0083
Dag 9: Urladdningstid 102 h											
12:11:53	1.2240	1.2111	1.2279	1.2198	1.2300	1.2321	1.2268	1.2258	1.2068	1.2227	0.0086
12:12:13	1.1510	1.1275	1.1557	1.1464	1.1594	1.1627	1.1570	1.1543	1.1160	1.1478	0.0157
12:12:33	1.2235	1.2102	1.2274	1.2199	1.2296	1.2318	1.2270	1.2259	1.2065	1.2224	0.0087
Dag 12: Urladdningstid 138 h											
12:10:14	1.2015	1.2041	1.1670	1.1808	1.1846	1.1959	1.1618	1.1797	1.1691	1.1827	0.0153
12:10:34	1.1153	1.1123	1.0698	1.0909	1.0956	1.1100	1.0695	1.0872	1.0639	1.0905	0.0196
12:10:54	1.1914	1.1965	1.1555	1.1728	1.1744	1.1873	1.1535	1.1662	1.1659	1.1737	0.0153
Dag 13: Urladdningstid 150 h											
12:17:40	1.2035	1.2066	1.1785	1.1885	1.1971	1.1982	1.1614	1.1860	1.1462	1.1851	0.0201
12:18:00	1.1178	1.1231	1.0714	1.0954	1.1060	1.1092	1.0581	1.0920	1.0294	1.0892	0.0307
12:18:20	1.1881	1.1911	1.1550	1.1720	1.1806	1.1799	1.1323	1.1611	1.1326	1.1659	0.0222

Batteri: ACTIVAIR 312-HPX (forts)

Slutspänning under urladdning i pulserna 1, 2 resp 3.
 (Tidpunkt för mätning ges i kolumnen längst till vänster.
 Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:14:06	1.2001	1.2033	1.1252	1.1349	1.1471	1.1689	1.1242	1.1688	1.1164	1.1543	0.0327
12:14:26	1.1156	1.1219	1.0211	1.0392	1.0562	1.0766	1.0262	1.0728	0.9974	1.0586	0.0424
12:14:46	1.1312	1.1872	1.0937	1.1078	1.1227	1.1367	1.0793	1.1333	1.0967	1.1265	0.0377
Dag 15: Urladdningstid 174 h											
12:07:50	1.1726	1.1397	0.1654	0.1913	0.1877	1.1893	1.1587	0.3415	0.3348	0.6534	0.4894
12:08:10	1.0860	1.0546	0.1342	0.1507	0.1503	1.1002	1.0654	0.2679	0.2761	0.5873	0.4670
12:08:30	1.1417	1.1086	0.1576	0.1792	0.1766	1.1518	1.1135	0.3162	0.3378	0.6315	0.4760
Dag 16: Urladdningstid 186 h											
12:18:44	0.1497	0.1371	0.1462	0.1410	0.1307	0.1753	0.1164	0.0447	0.1420	0.1315	0.0362
12:19:04	0.1227	0.1115	0.1113	0.1120	0.0991	0.1417	0.0845	0.0237	0.1128	0.1021	0.0332
12:19:24	0.1438	0.1332	0.1406	0.1366	0.1237	0.1663	0.1098	0.0404	0.1358	0.1255	0.0354

Batteri: RAYOVAC 312 AE

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 1: Urladdningstid 6 h											
12:21:17	1.2302	1.2329	1.2308	1.2311	1.2333	1.2308	1.2318	1.2312	1.2329	1.2317	0.0011
12:21:37	1.1862	1.1913	1.1876	1.1889	1.1907	1.1869	1.1888	1.1871	1.1902	1.1886	0.0018
12:21:57	1.2278	1.2313	1.2291	1.2294	1.2311	1.2286	1.2300	1.2294	1.2307	1.2297	0.0012
Dag 2: Urladdningstid 18 h											
12:13:51	1.2490	1.2514	1.2488	1.2505	1.2500	1.2490	1.2497	1.2478	1.2489	1.2495	0.0011
12:13:11	1.2082	1.2124	1.2086	1.2117	1.2095	1.2081	1.2090	1.2063	1.2082	1.2091	0.0019
12:13:31	1.2467	1.2497	1.2472	1.2490	1.2480	1.2471	1.2477	1.2461	1.2471	1.2476	0.0011
Dag 5: Urladdningstid 54 h											
11:55:41	1.2472	1.2499	1.2483	1.2475	1.2491	1.2474	1.2490	1.2471	1.2485	1.2482	0.0010
11:57:01	1.2039	1.2080	1.2057	1.2048	1.2063	1.2036	1.2061	1.2029	1.2049	1.2051	0.0016
11:57:21	1.2451	1.2484	1.2466	1.2459	1.2472	1.2455	1.2471	1.2454	1.2465	1.2464	0.0011
Dag 6: Urladdningstid 66 h											
12:19:27	1.2439	1.2464	1.2445	1.2434	1.2456	1.2438	1.2457	1.2430	1.2448	1.2446	0.0012
12:19:47	1.1989	1.2023	1.1996	1.1986	1.2005	1.1981	1.2008	1.1966	1.1994	1.1994	0.0017
12:20:07	1.2418	1.2446	1.2429	1.2417	1.2437	1.2415	1.2438	1.2413	1.2427	1.2427	0.0012
Dag 7: Urladdningstid 78 h											
12:15:14	1.2386	1.2409	1.2389	1.2375	1.2406	1.2387	1.2413	1.2375	1.2396	1.2393	0.0014
12:15:34	1.1914	1.1948	1.1919	1.1902	1.1935	1.1911	1.1947	1.1891	1.1922	1.1921	0.0019
12:15:54	1.2367	1.2393	1.2374	1.2360	1.2387	1.2368	1.2394	1.2360	1.2377	1.2376	0.0013
Dag 8: Urladdningstid 90 h											
12:17:04	1.2351	1.2362	1.2334	1.2324	1.2354	1.2330	1.2368	1.2317	1.2340	1.2340	0.0018
12:17:24	1.1839	1.1880	1.1843	1.1833	1.1868	1.1833	1.1884	1.1811	1.1848	1.1849	0.0024
12:17:44	1.2310	1.2345	1.2317	1.2307	1.2334	1.2310	1.2348	1.2299	1.2319	1.2321	0.0017
Dag 9: Urladdningstid 102 h											
12:13:23	1.2289	1.2335	1.2292	1.2293	1.2310	1.2289	1.2333	1.2284	1.2298	1.2303	0.0019
12:13:43	1.1786	1.1841	1.1796	1.1786	1.1806	1.1784	1.1842	1.1771	1.1798	1.1801	0.0025
12:14:03	1.2268	1.2318	1.2281	1.2276	1.2291	1.2269	1.2314	1.2267	1.2276	1.2284	0.0019
Dag 12: Urladdningstid 138 h											
12:16:59	1.2117	1.2112	1.2113	1.2053	1.2126	1.2108	1.2133	1.2097	1.2104	1.2107	0.0023
12:16:19	1.1567	1.1571	1.1562	1.1495	1.1579	1.1555	1.1591	1.1534	1.1556	1.1557	0.0028
12:16:39	1.2088	1.2087	1.2088	1.2028	1.2099	1.2078	1.2104	1.2070	1.2074	1.2080	0.0022
Dag 13: Urladdningstid 150 h											
12:19:20	1.2011	1.1990	1.2009	1.1925	1.2028	1.2008	1.2017	1.1981	1.2000	1.1997	0.0030
12:19:40	1.1447	1.1428	1.1441	1.1340	1.1468	1.1441	1.1457	1.1399	1.1435	1.1428	0.0038
12:20:00	1.1981	1.1960	1.1980	1.1894	1.1996	1.1977	1.1984	1.1949	1.1966	1.1965	0.0030

Batteri: RAYOVAC 312 AE (forts)

Slutspänning under urladdning i pulserna 1, 2 resp 3.
 (Tidpunkt för mätning ges i kolumnen längst till vänster.
 Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:15:32	1.1845	1.1797	1.1854	1.1700	1.1868	1.1850	1.1827	1.1791	1.1817	1.1817	0.0051
12:15:52	1.1252	1.1196	1.1260	1.1062	1.1278	1.1254	1.1230	1.1172	1.1217	1.1213	0.0066
12:16:12	1.1910	1.1756	1.1823	1.1648	1.1831	1.1812	1.1784	1.1753	1.1774	1.1777	0.0056
Dag 15: Urladdningstid 174 h											
12:09:21	1.1568	1.1521	1.1579	1.1449	1.1586	1.1578	1.1553	1.1513	1.1552	1.1544	0.0044
12:09:41	1.0907	1.0860	1.0917	1.0768	1.0924	1.0920	1.0891	1.0833	1.0898	1.0880	0.0052
12:10:01	1.1514	1.1479	1.1525	1.1414	1.1535	1.1531	1.1504	1.1471	1.1511	1.1498	0.0038
Dag 16: Urladdningstid 186 h											
12:20:07	1.1379	1.1286	1.1403	1.1043	1.1410	1.1417	1.1324	1.1321	1.1381	1.1329	0.0117
12:20:27	1.0678	1.0556	1.0707	1.0213	1.0718	1.0724	1.0594	1.0593	1.0678	1.0607	0.0160
12:20:47	1.1356	1.1249	1.1381	1.0950	1.1384	1.1389	1.1285	1.1293	1.1352	1.1293	0.0138

Batteri: VARTA V 312 A

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 1: Urladdningstid 6 h											
12:23:31	1.2233	1.2254	1.2278	1.2248	1.2178	1.2275	1.2198	1.2124	1.2263	1.2228	0.0052
12:23:51	1.1669	1.1686	1.1739	1.1674	1.1569	1.1732	1.1594	1.1470	1.1711	1.1649	0.0089
12:24:11	1.2228	1.2243	1.2268	1.2239	1.2171	1.2262	1.2194	1.2114	1.2249	1.2219	0.0050
Dag 2: Urladdningstid 18 h											
12:15:16	1.2349	1.2363	1.2413	1.2353	1.2301	1.2392	1.2351	1.2286	1.2358	1.2352	0.0039
12:15:36	1.1815	1.1829	1.1916	1.1809	1.1721	1.1876	1.1793	1.1683	1.1832	1.1808	0.0071
12:15:56	1.2340	1.2348	1.2401	1.2343	1.2289	1.2377	1.2337	1.2269	1.2343	1.2339	0.0040
Dag 5: Urladdningstid 54 h											
11:58:24	1.2380	1.2412	1.2464	1.2416	1.2340	1.2410	1.2390	1.2390	1.2436	1.2404	0.0035
11:58:44	1.1827	1.1867	1.1950	1.1867	1.1734	1.1865	1.1816	1.1808	1.1910	1.1849	0.0063
11:59:04	1.2364	1.2394	1.2446	1.2398	1.2322	1.2392	1.2371	1.2363	1.2413	1.2385	0.0035
Dag 6: Urladdningstid 66 h											
12:21:50	1.2368	1.2407	1.2450	1.2402	1.2331	1.2402	1.2381	1.2364	1.2424	1.2392	0.0035
12:22:10	1.1805	1.1859	1.1930	1.1843	1.1721	1.1854	1.1800	1.1769	1.1888	1.1830	0.0063
12:22:30	1.2351	1.2389	1.2433	1.2384	1.2313	1.2384	1.2361	1.2339	1.2403	1.2373	0.0036
Dag 7: Urladdningstid 78 h											
12:16:40	1.2353	1.2399	1.2433	1.2389	1.2327	1.2392	1.2376	1.2354	1.2408	1.2381	0.0032
12:17:00	1.1794	1.1856	1.1914	1.1838	1.1730	1.1853	1.1803	1.1762	1.1871	1.1825	0.0057
12:17:20	1.2338	1.2381	1.2417	1.2372	1.2310	1.2375	1.2356	1.2330	1.2386	1.2363	0.0033
Dag 8: Urladdningstid 90 h											
12:18:32	1.2343	1.2398	1.2421	1.2379	1.2323	1.2384	1.2368	1.2356	1.2399	1.2375	0.0031
12:18:52	1.1785	1.1860	1.1899	1.1830	1.1733	1.1848	1.1800	1.1770	1.1860	1.1821	0.0052
12:19:12	1.2325	1.2378	1.2402	1.2360	1.2303	1.2365	1.2347	1.2329	1.2374	1.2354	0.0031
Dag 9: Urladdningstid 102 h											
12:15:10	1.2315	1.2384	1.2391	1.2353	1.2298	1.2360	1.2347	1.2346	1.2386	1.2353	0.0032
12:15:30	1.1749	1.1846	1.1858	1.1797	1.1705	1.1818	1.1774	1.1761	1.1846	1.1795	0.0052
12:15:50	1.2296	1.2362	1.2370	1.2333	1.2276	1.2339	1.2323	1.2317	1.2361	1.2331	0.0032
Dag 12: Urladdningstid 138 h											
12:17:30	1.2148	1.2267	1.2154	1.2145	1.2134	1.2094	1.2219	1.2288	1.2320	1.2197	0.0079
12:17:50	1.1534	1.1696	1.1535	1.1521	1.1500	1.1446	1.1614	1.1699	1.1764	1.1590	0.0108
12:18:10	1.2111	1.2227	1.2106	1.2099	1.2093	1.2043	1.2179	1.2246	1.2281	1.2154	0.0082
Dag 13: Urladdningstid 150 h											
12:21:59	1.1980	1.2015	1.1535	1.1712	1.1847	1.1605	1.2030	1.2212	1.2180	1.1891	0.0241
12:22:19	1.1132	1.1323	1.0635	1.0868	1.1064	1.0719	1.1338	1.1598	1.1569	1.1138	0.0350
12:22:39	1.1810	1.1941	1.1396	1.1619	1.1772	1.1497	1.1964	1.2158	1.2120	1.1809	0.0266

Batteri: VARTA V 312 A (forts)

Slutspänning under urladdning i pulserna 1, 2 resp 3.
(Tidpunkt för mätning ges i kolumnen längst till vänster.
Batterierna urladdas mellan 06.00 och 18.00 varje dag)

	1	2	3	4	5	6	7	8	9	Medel- värde	Sprid- ning
Dag 14: Urladdningstid 162 h											
12:17:10	0.8239	0.8241	0.1721	0.8593	1.0834	0.8883	1.1249	1.1883	1.1461	0.9012	0.3105
12:17:30	0.7305	0.7314	0.1348	0.7673	0.9840	0.7963	1.0273	1.1102	1.0535	0.8150	0.2952
12:17:50	0.7884	0.7837	0.1547	0.8323	1.0608	0.8617	1.1025	1.1783	1.1278	0.8767	0.3120
Dag 15: Urladdningstid 174 h											
12:12:14	0.1448	0.1530	0.1261	0.1398	0.1543	0.1419	0.1554	0.2799	0.1704	0.1628	0.0456
12:12:34	0.1168	0.1284	0.1013	0.1120	0.1223	0.1132	0.1275	0.2166	0.1423	0.1312	0.0341
12:12:54	0.1333	0.1426	0.1180	0.1290	0.1408	0.1303	0.1439	0.2505	0.1572	0.1495	0.0395