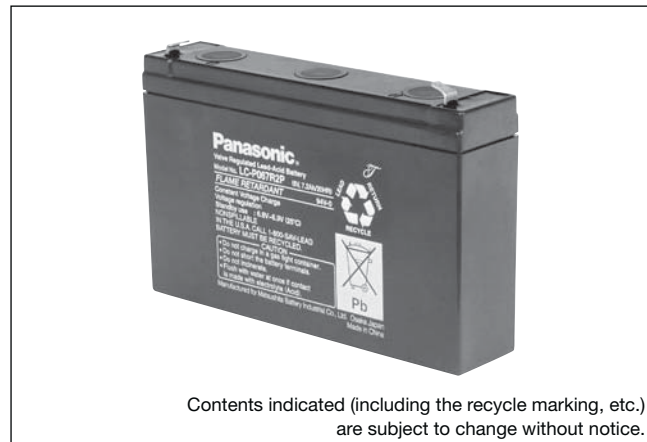


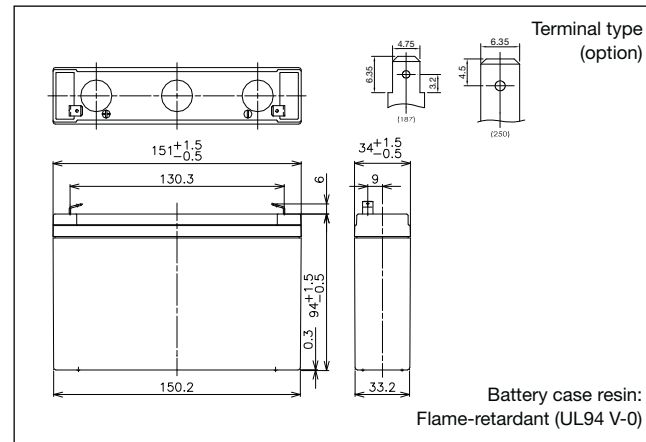
LC-P067R2P



Contents indicated (including the recycle marking, etc.) are subject to change without notice.

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.

Dimensions (mm)



Battery case resin:
Flame-retardant (UL94 V-0)

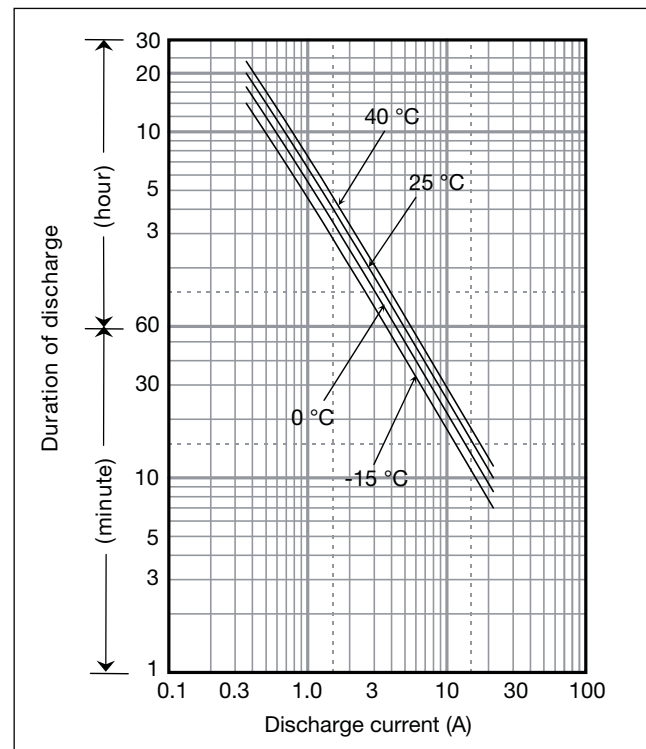
Specifications

Nominal voltage	6V	
Nominal capacity (20 hour rate)	7.2Ah	
Dimensions	Length	151mm
	Width	34mm
	Height	94mm
	Total Height	100mm
Approx. mass	1.30kg	
Terminal	Faston 187 or Faston 250 with hole	

Characteristics

Capacity (25°C)	20 hour rate	7.2Ah
	10 hour rate	6.8Ah
Internal resistance	Fully charged battery (25°C)	11mΩ
	Temperature dependency of capacity (20 hour rate)	40°C: 102% 25°C: 100% 0°C: 85% -15°C: 65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
4.8V	216	171	111	85.1	71.3	53.2	37.6	30.0	20.7	16.0	11.9	9.14	7.55	6.07	4.02	2.18	1.82
4.95V	201	160	109	84.5	70.2	52.7	37.3	30.0	20.3	15.9	11.8	9.08	7.49	6.04	4.00	2.17	1.81
5.1V	185	150	106	82.8	69.0	52.1	37.0	29.5	19.8	15.5	11.7	9.02	7.43	6.00	3.96	2.17	1.81
5.25V	165	134	99	77.1	65.5	50.9	36.4	28.9	19.4	14.9	11.5	8.96	7.37	5.92	3.94	2.16	1.80
5.4V	139	119	88	71.9	63.8	49.1	35.8	28.3	18.9	14.2	11.3	8.84	7.19	5.83	3.90	2.15	1.79

Ampere Table

Cut-off V	(Ampere/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
4.8V	38.9	30.6	19.9	14.8	12.3	9.1	6.4	5.1	3.5	2.7	2.00	1.50	1.26	1.00	0.67	0.36	0.30
4.95V	36.1	28.7	18.5	14.8	12.1	9.0	6.4	5.1	3.4	2.6	2.00	1.50	1.25	1.00	0.67	0.36	0.30
5.1V	33.3	26.9	19.0	14.4	11.9	8.9	6.3	5.0	3.3	2.5	1.95	1.50	1.24	1.00	0.66	0.36	0.30
5.25V	29.6	24.1	17.6	13.4	11.3	8.7	6.2	4.9	3.3	2.5	1.95	1.50	1.23	1.00	0.66	0.36	0.30
5.4V	25.0	21.3	15.7	12.5	11.0	8.4	6.1	4.8	3.2	2.4	1.90	1.50	1.20	1.00	0.65	0.35	0.30

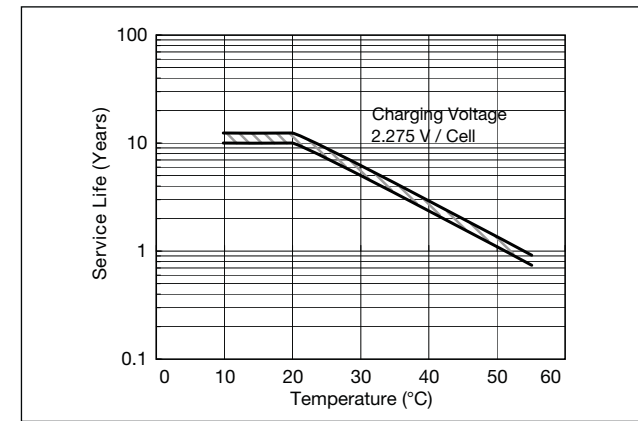
Charging Method

Trickle Use	Control voltage 6.8 - 6.9V; Initial current 1.08A or smaller
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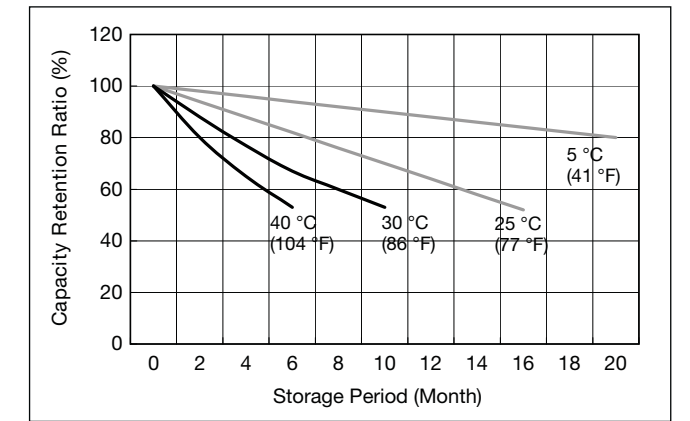
Cut off voltage

Discharge current	0.36A - 1.44A	1.44A - 3.6A	3.6A - 7.2A	7.2A - 14.4A	14.4A - 21.6A
Cut off voltage (V)	5.25	5.1	4.95	4.65	4.35

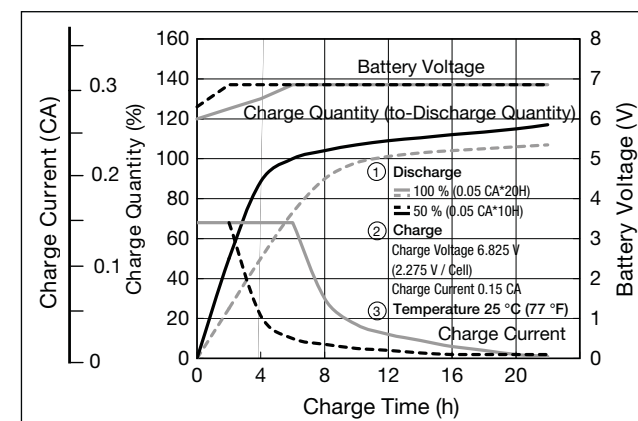
Influence of Temperature on Trickle life



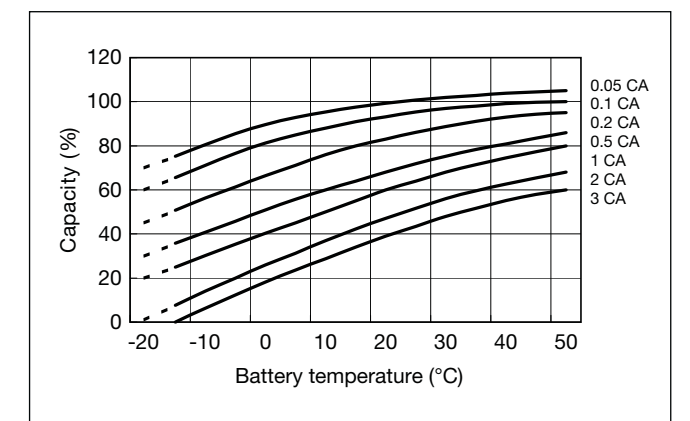
Residual capacity vs storage period



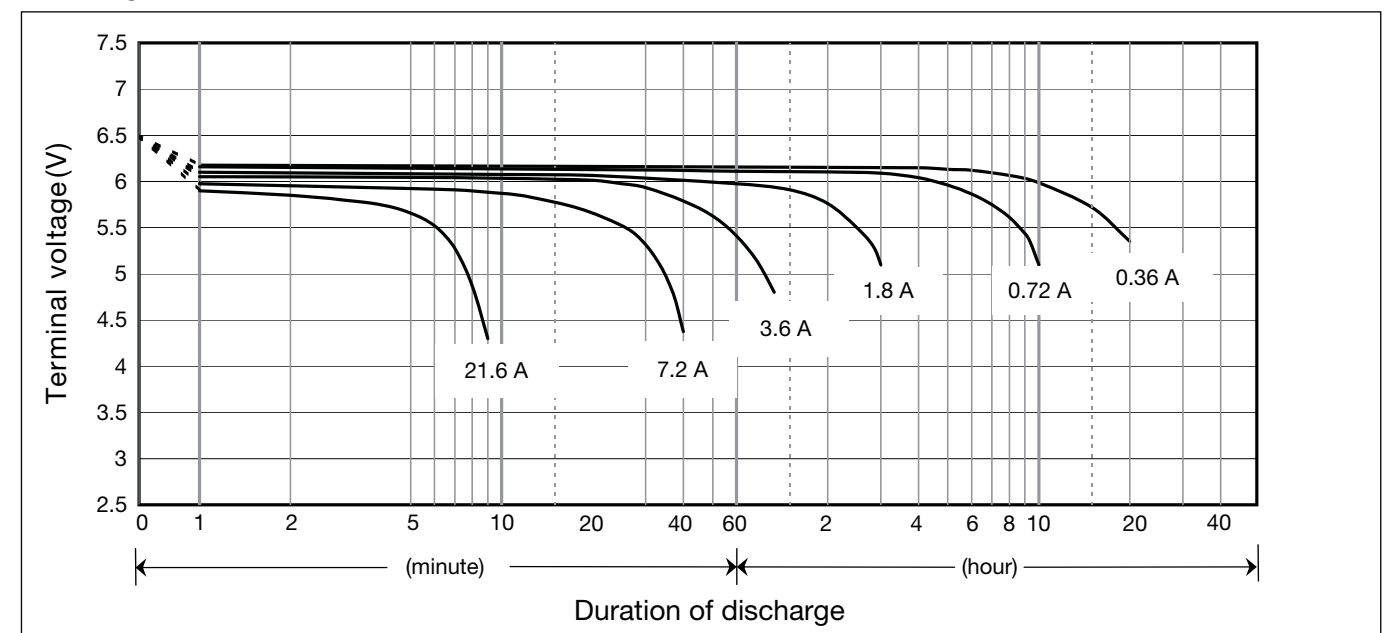
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics



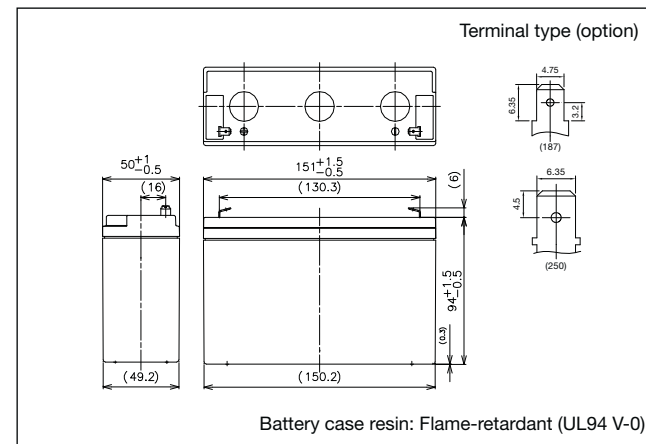
LC-P0612P



Contents indicated (including the recycle marking, etc.) are subject to change without notice.

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.

Dimensions (mm)



Battery case resin: Flame-retardant (UL94 V-0)

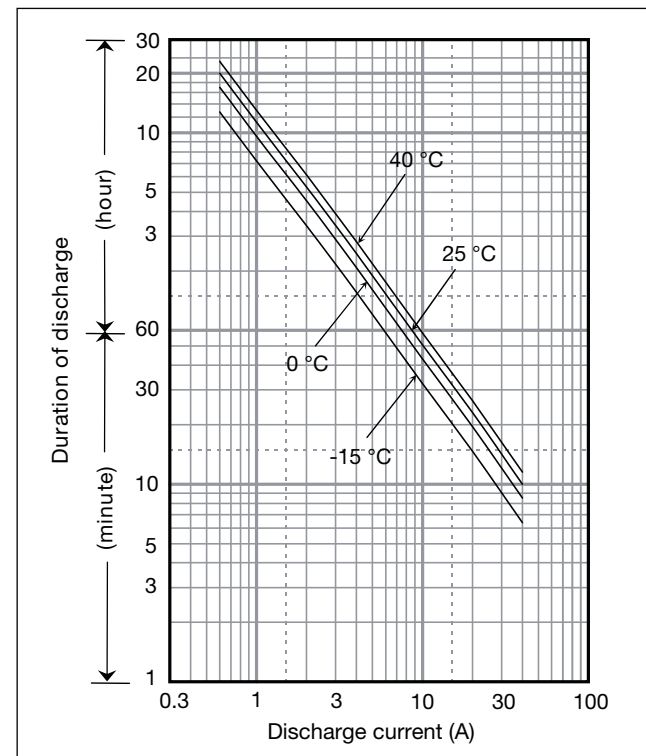
Specifications

Nominal voltage	6V	
Nominal capacity (20 hour rate)	12Ah	
Dimensions	Length	151mm
	Width	50mm
	Height	94mm
	Total Height	100mm
Approx. mass	2kg	
Terminal	Faston 187 or Faston 250 with hole	

Characteristics

Capacity (25°C)	20 hour rate	12.0Ah
	10 hour rate	11.3Ah
	5 hour rate	10.4Ah
	1 hour rate	8.1Ah
Internal resistance	Fully charged battery (25°C)	15mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
4.8V	340	279	192	149	124	91.3	68.7	52.4	35.1	27.2	19.0	14.4	12.0	10.9	6.66	3.61	3.01
4.95V	325	269	186	144	121	88.3	67.5	51.8	35.0	27.1	18.9	14.4	12.0	10.9	6.66	3.61	3.01
5.1V	304	253	181	141	118	88.3	66.9	51.2	34.5	26.9	18.7	14.4	12.0	10.8	6.60	3.61	3.01
5.25V	278	237	171	136	115	86.0	66.3	50.1	34.2	26.6	18.4	14.3	12.0	10.8	6.60	3.60	3.00
5.4V	247	217	161	131	113	83.1	61.6	48.9	33.1	26.0	18.1	14.2	11.9	10.7	6.54	3.59	2.99

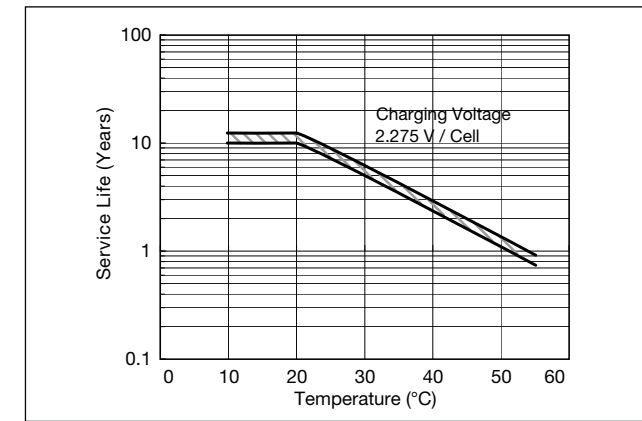
Ampere Table

Cut-off V	(Ampere/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
4.8V	61.1	50.1	34.3	25.9	21.3	15.6	11.7	8.90	5.95	4.60	3.20	2.41	2.01	1.81	1.11	0.602	0.502
4.95V	58.4	48.2	33.3	25.0	20.8	15.1	11.5	8.80	5.92	4.58	3.18	2.41	2.01	1.81	1.11	0.602	0.502
5.1V	54.6	45.4	32.4	24.5	20.3	15.1	11.4	8.70	5.85	4.55	3.15	2.41	2.00	1.80	1.10	0.601	0.501
5.25V	50.0	42.6	30.6	23.6	19.9	14.7	11.3	8.50	5.80	4.50	3.10	2.40	2.00	1.80	1.10	0.600	0.500
5.4V	44.5	38.9	28.7	22.7	19.4	14.2	10.5	8.30	5.60	4.40	3.05	2.38	1.99	1.79	1.09	0.598	0.498

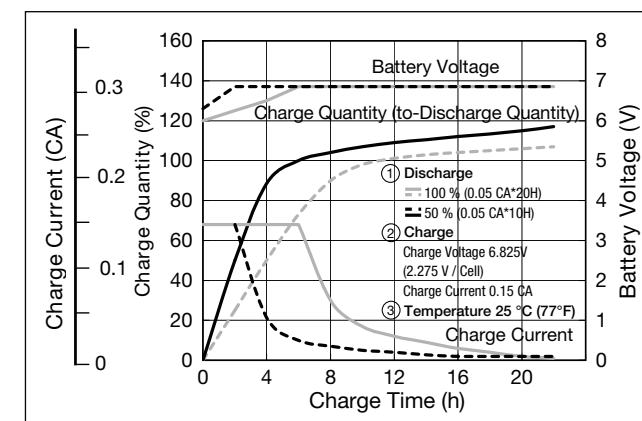
Charging Method

Trickle Use	Control voltage: 6.8 - 6.9V; Initial current: 1.8A or smaller
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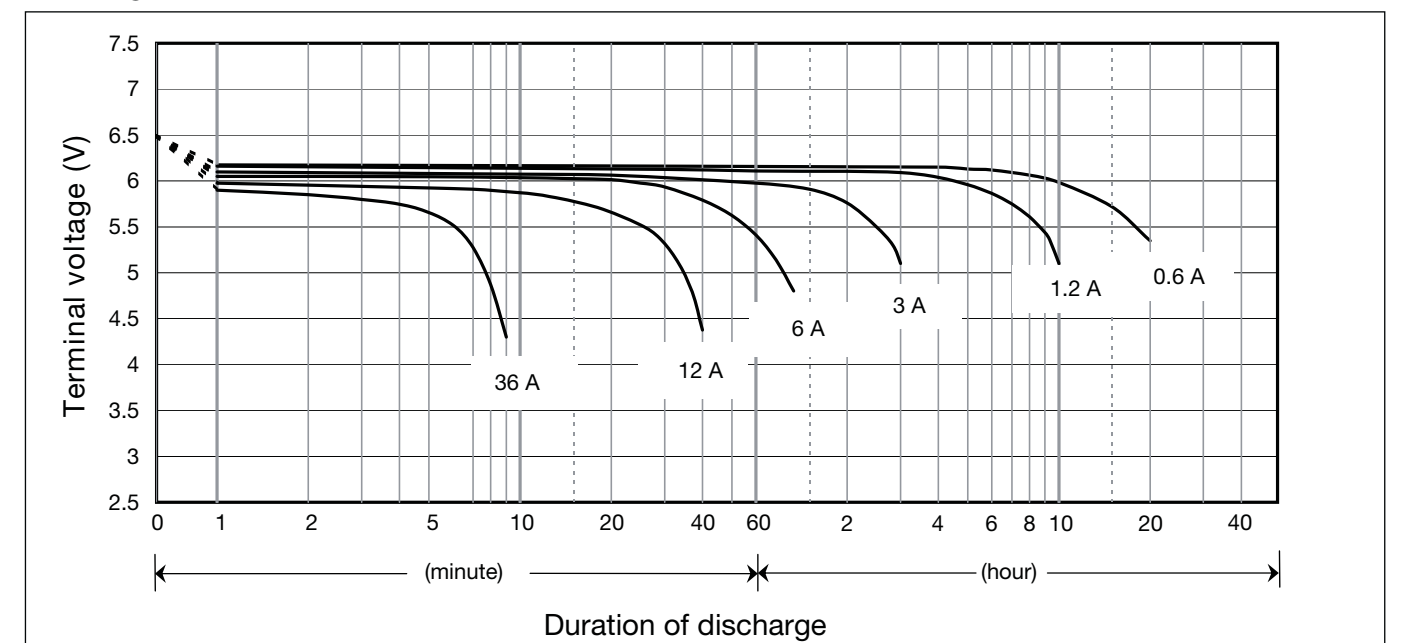
Influence of Temperature on Trickle life



Constant-voltage and constant-current charge characteristics for Trickle use



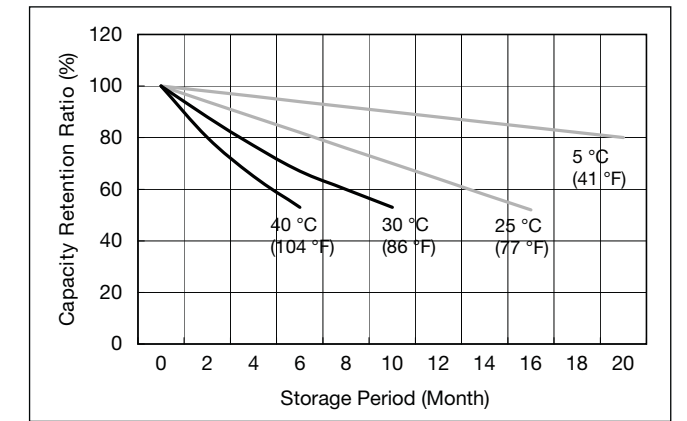
Discharge characteristics



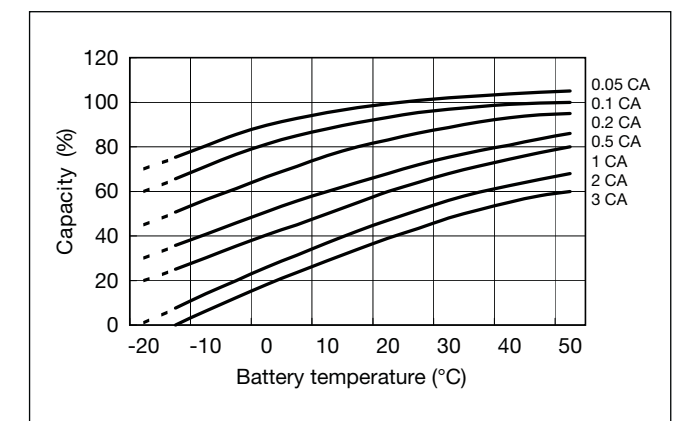
Cut off voltage

Discharge current	0.6A - 2.4A	2.4A - 6A	6A - 12A	12A - 24A	24A - 36A
Cut off voltage (V)	5.25	5.1	4.95	4.65	4.35

Residual capacity vs storage period

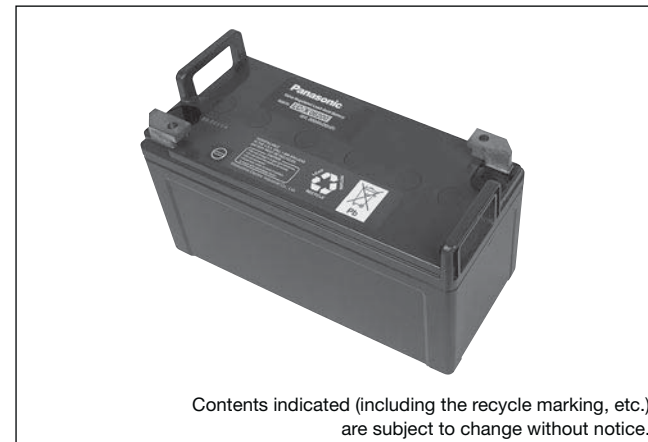


Discharge capacity by temperature and by discharge current

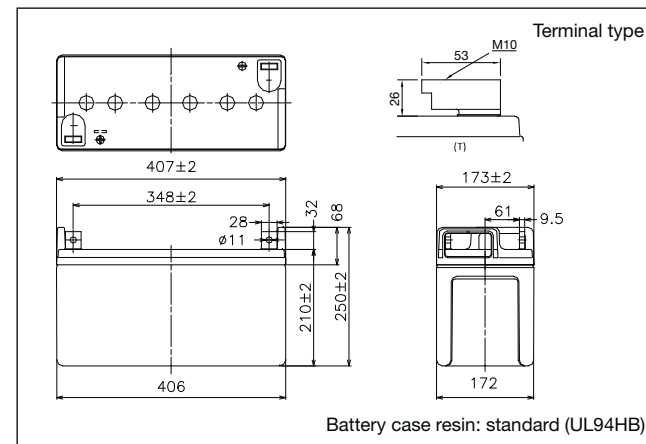


LC-X06200P*1

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.



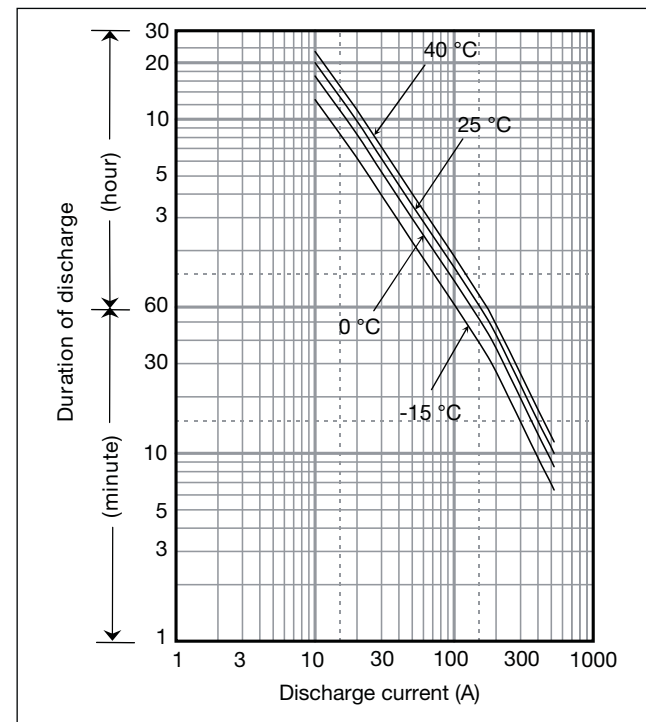
Dimensions (mm)



Specifications

Nominal voltage	6V	
Nominal capacity (20 hour rate)	200Ah	
Dimensions	Length	407mm
	Width	173mm
	Height	210mm
	Total Height	250mm
Approx. mass	41kg	
Terminal	M10 Bolt and Nut type	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate 10 hour rate 5 hour rate 1 hour rate	200Ah 194Ah 184Ah 120Ah
Internal resistance	Fully charged battery (25°C)	2mΩ
Temperature dependency of capacity (20 hour rate)	40°C 25°C 0°C -15°C	102% 100% 85% 65%
Self discharge (25°C)	After 3 months After 6 months After 12 months	91% 82% 64%

Watt Table

Cut-off V	(Wattage/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
4.8V	2306	1834	1592	1206	892	733	582	430	281	226	170	154	88.3	47.0	38.5
4.95V	2254	1790	1554	1177	869	714	567	419	276	221	165	149	85.3	47.0	38.5
5.1V	2204	1726	1498	1139	877	694	551	413	272	216	160	145	84.3	46.5	38.0
5.25V	2134	1705	1487	1130	852	675	536	405	267	213	160	145	83.3	46.5	38.0
5.4V	1947	1624	1479	1094	840	666	528	395	262	208	155	150	82.3	45.5	37.2

Ampere Table

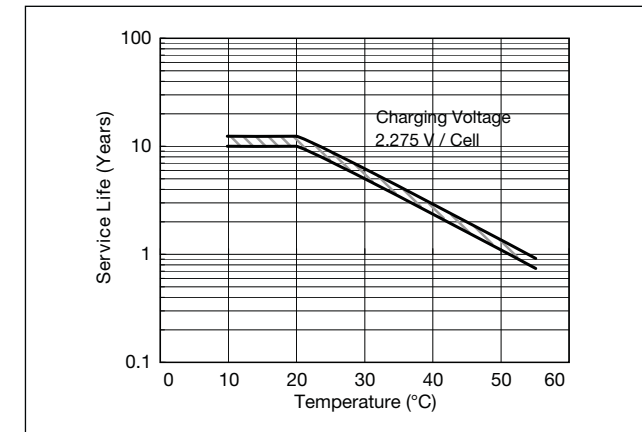
Cut-off V	(Ampere/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
4.8V	530	402	348	260	184	153	104	82.6	55.4	42.8	37.2	31.2	19.8	10.0	8.4
4.95V	524	400	346	258	179	152	102	82.0	54.4	42.4	36.6	31.2	19.8	10.0	8.4
5.1V	522	398	342	254	178	151	101	81.0	54.0	42.0	36.0	31.0	19.6	10.0	8.4
5.25V	476	376	326	250	176	150	100	80.0	54.0	42.0	36.0	31.0	19.6	10.0	8.4
5.4V	452	364	318	246	152	130	90	76.0	51.6	41.0	35.6	30.0	19.4	9.8	8.4

*1 This battery is also available with a flame retardant battery case resin (UL94 V-0).

Charging Method

Trickle use	Control voltage: 6.8 - 6.9V; Initial current 30A or smaller
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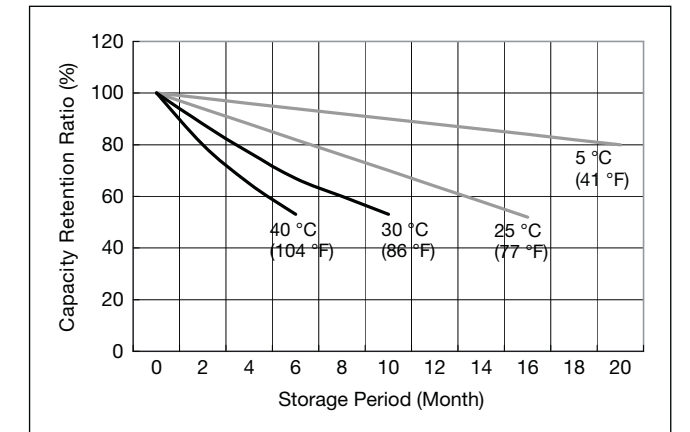
Influence of Temperature on Trickle life



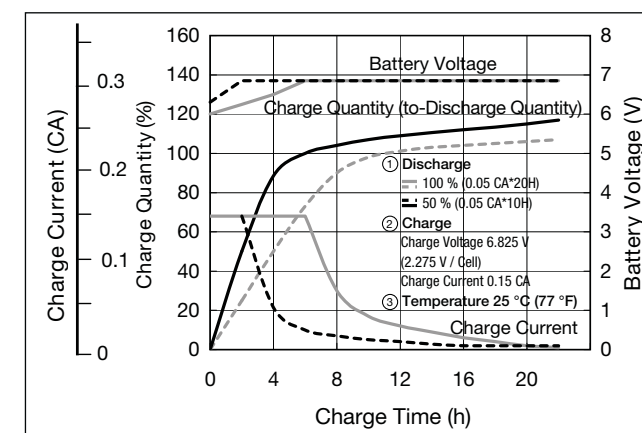
Cut off voltage

Discharge current	10A - 40A	40A - 100A	100A - 200A	200A - 400A	400A - 600A
Cut off voltage (V)	5.25	5.1	4.95	4.65	4.35

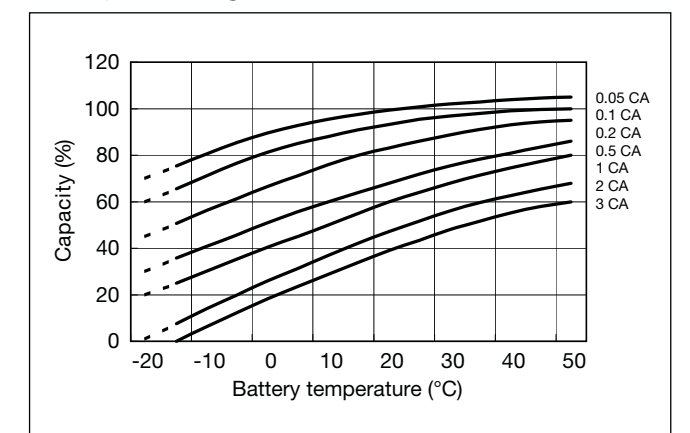
Residual capacity vs storage period



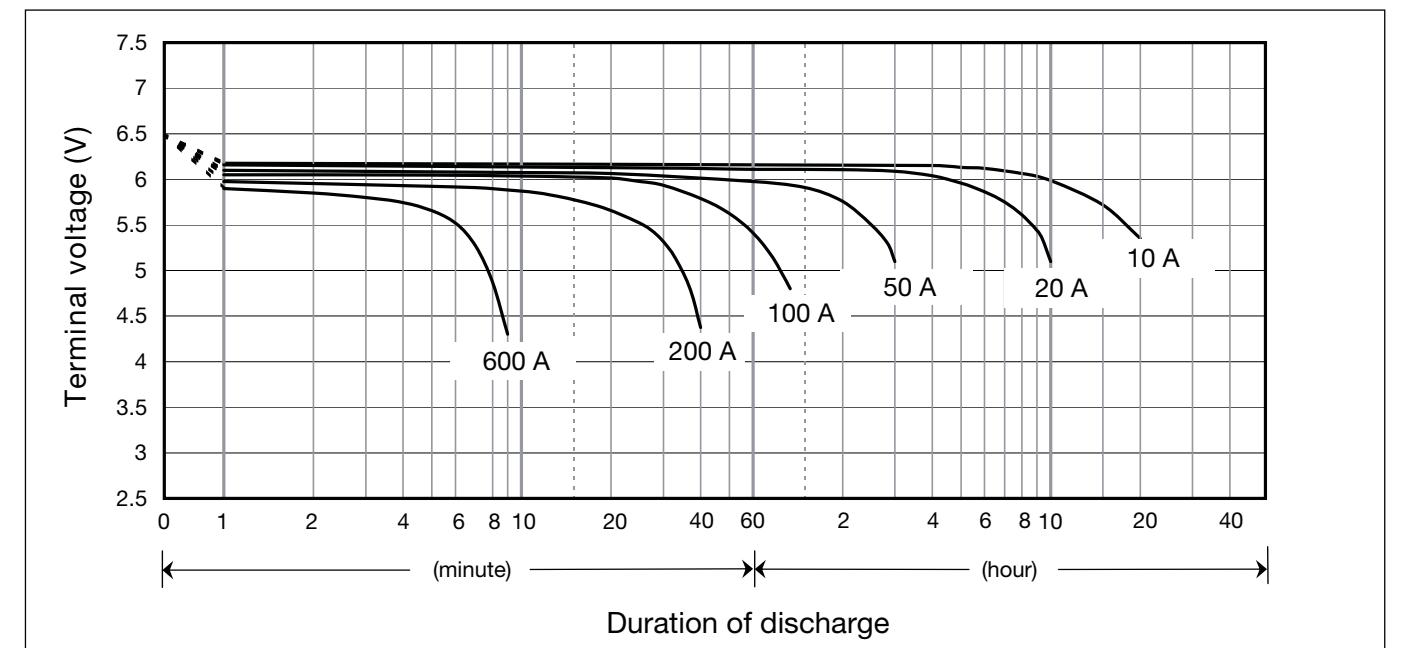
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics

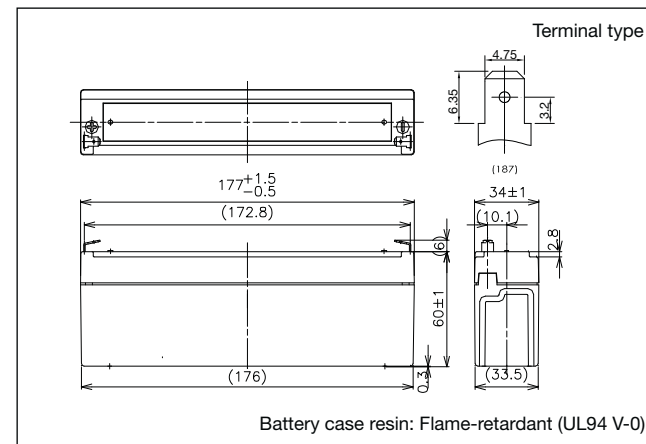


LC-P122R2P



For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.

Dimensions (mm)



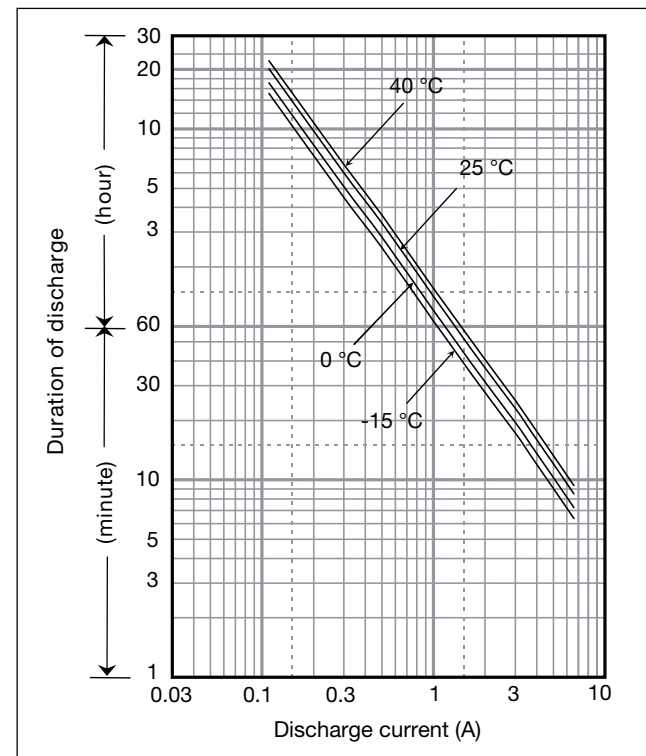
Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	2.2Ah	
Dimensions	Length	177mm
	Width	34mm
	Height	60mm
	Total Height	66mm
Approx. mass	0.8kg	
Terminal	Faston 187	

Characteristics

Capacity (25°C)	20 hour rate	2.2Ah
	10 hour rate	2.0Ah
	5 hour rate	1.8Ah
	1 hour rate	1.3Ah
Internal resistance	Fully charged battery (25°C)	70mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	132	104	68.1	52.0	43.6	32.5	23.0	18.4	12.6	9.77	7.27	5.59	4.61	3.71	2.46	1.33	1.11
9.9V	123	97.8	66.7	51.7	42.9	32.2	22.8	18.4	12.4	9.70	7.24	5.55	4.58	3.69	2.45	1.33	1.11
10.2V	113	91.6	65.0	50.6	42.2	31.8	22.6	18.0	12.1	9.44	7.16	5.51	4.54	3.66	2.42	1.32	1.10
10.5V	101	82.1	60.2	47.1	40.1	31.1	22.2	17.6	11.9	9.12	7.05	5.48	4.50	3.62	2.41	1.32	1.10
10.8V	85	72.6	53.7	43.9	39.0	30.0	21.9	17.3	11.5	8.68	6.91	5.40	4.39	3.56	2.38	1.31	1.09

Ampere Table

Cut-off V	(Ampere/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	11.9	9.35	6.08	4.52	3.76	2.78	1.96	1.56	1.07	0.825	0.611	0.468	0.385	0.309	0.205	0.111	0.0926
9.9V	11.0	8.77	5.96	4.49	3.70	2.75	1.94	1.56	1.05	0.819	0.608	0.464	0.382	0.308	0.204	0.111	0.0923
10.2V	10.2	8.22	5.81	4.40	3.64	2.72	1.93	1.53	1.03	0.798	0.602	0.461	0.379	0.306	0.202	0.110	0.0920
10.5V	9.0	7.36	5.38	4.09	3.45	2.66	1.89	1.50	1.01	0.770	0.593	0.458	0.376	0.302	0.201	0.110	0.0917
10.8V	7.6	6.51	4.80	3.82	3.36	2.57	1.86	1.47	0.98	0.733	0.581	0.452	0.367	0.297	0.199	0.109	0.0911

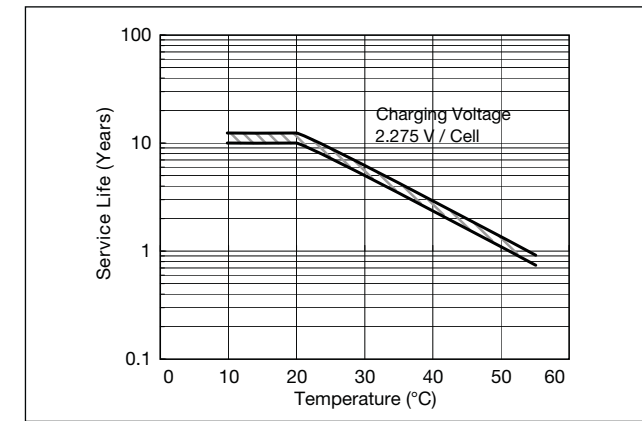
Charging Method

Trickle Use	Control voltage: 13.6 - 13.8V; Initial current: 0.33A or smaller
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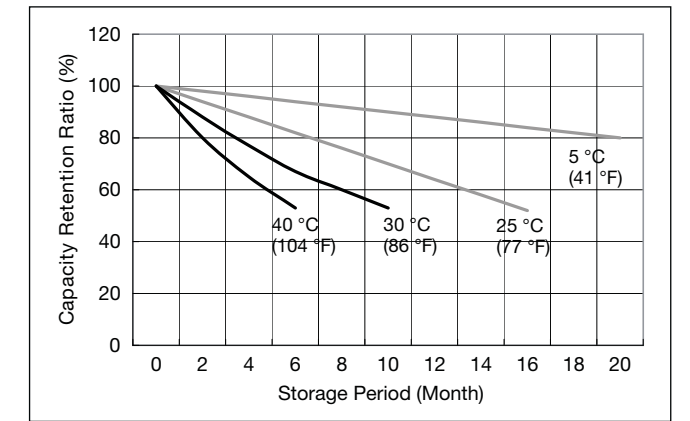
Cut off voltage

Discharge current	0.011A - 0.44A	0.44A - 1.1A	1.1A - 2.2A	2.2A - 4.4A	4.4A - 6.6A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

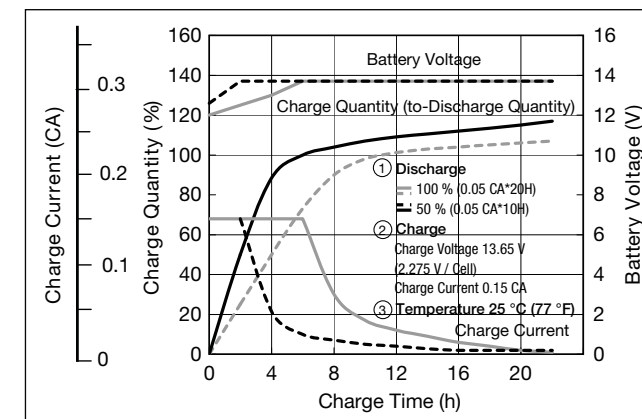
Influence of Temperature on Trickle life



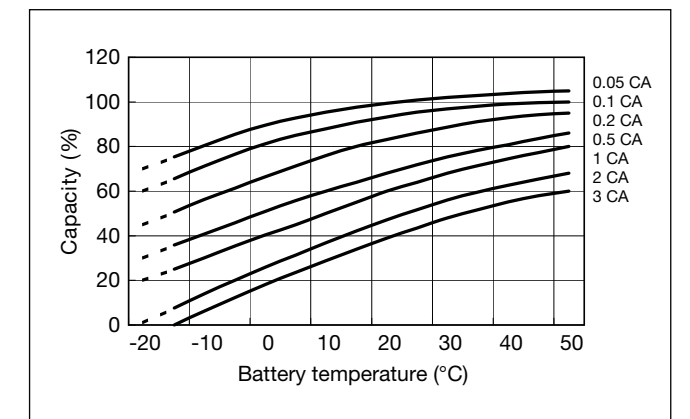
Residual capacity vs storage period



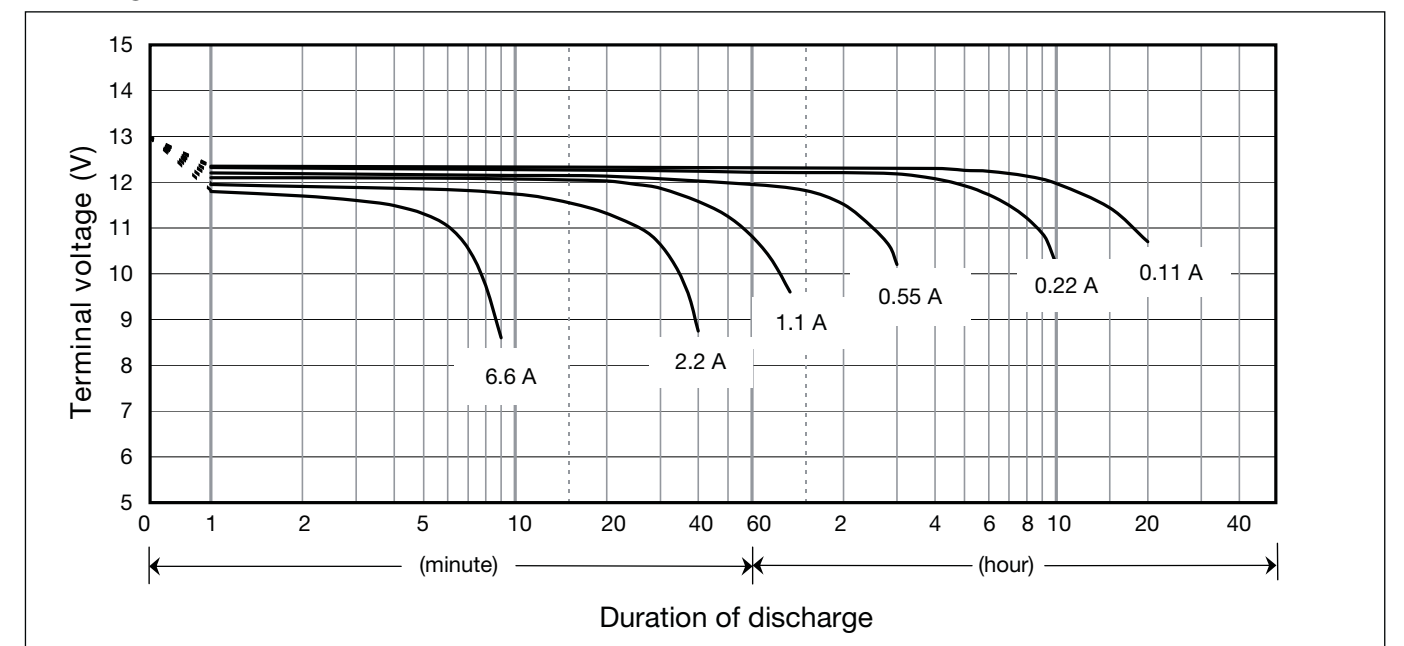
Constant-voltage and constant-current charge characteristics for Trickle use



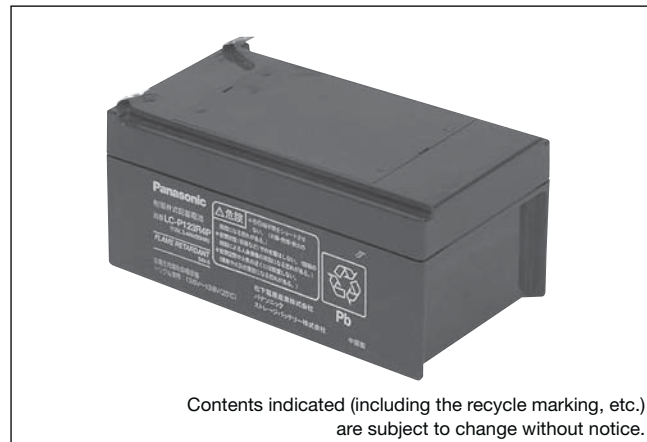
Discharge capacity by temperature and by discharge current



Discharge characteristics

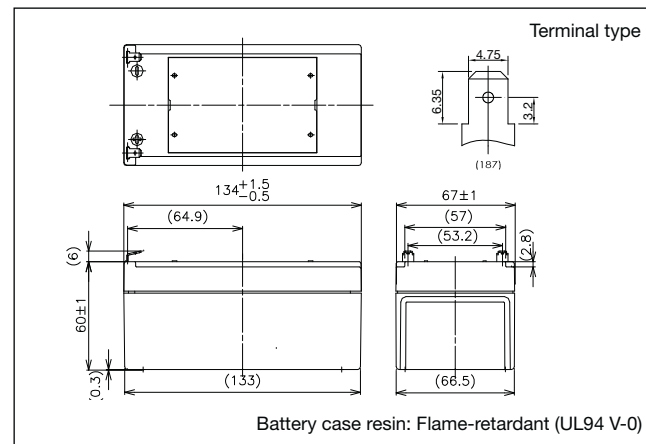


LC-P123R4P



For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.

Dimensions (mm)



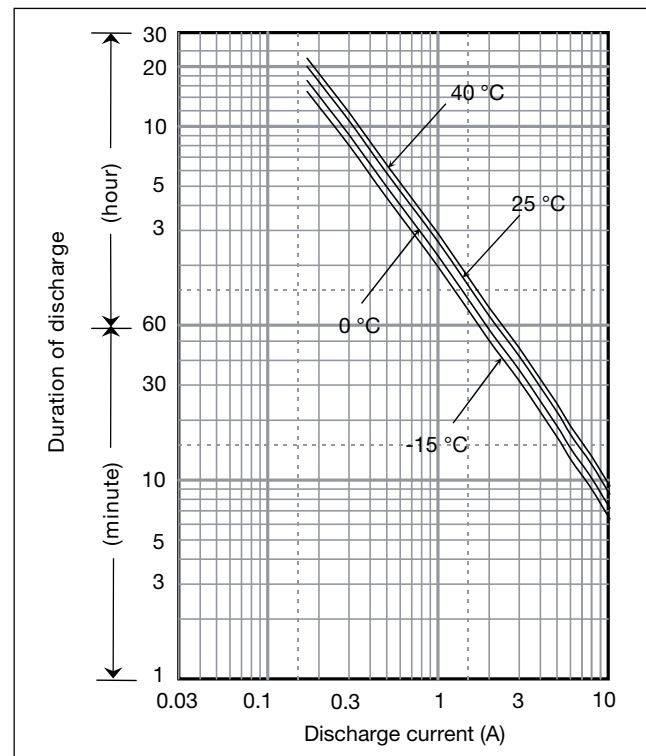
Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	3.4Ah	
Dimensions	Length	134mm
	Width	67mm
	Height	60mm
	Total Height	66mm
Approx. mass	1.2kg	
Terminal	Faston 187	

Characteristics

Capacity (25°C)	20 hour rate	3.4Ah
	10 hour rate	3.0Ah
	5 hour rate	2.7Ah
	1 hour rate	2.1Ah
Internal resistance	Fully charged battery (25°C)	60mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	204	161	105	80.4	67.4	50.3	35.5	28.4	19.6	15.0	11.3	8.63	7.13	5.80	3.81	2.06	1.72
9.9V	190	151	103	79.8	66.3	49.7	35.3	28.4	19.2	14.9	11.2	8.58	7.07	5.78	3.80	2.05	1.71
10.2V	175	142	100	78.2	65.2	49.2	34.9	27.8	18.8	14.5	11.1	8.52	7.01	5.73	3.76	2.05	1.71
10.5V	155	127	93	72.8	61.9	48.1	34.4	27.3	18.4	14.0	11.0	8.46	6.96	5.66	3.74	2.04	1.70
10.8V	131	112	83	67.9	60.3	46.4	33.8	26.7	17.8	13.4	10.7	8.46	6.79	5.66	3.68	1.98	1.70

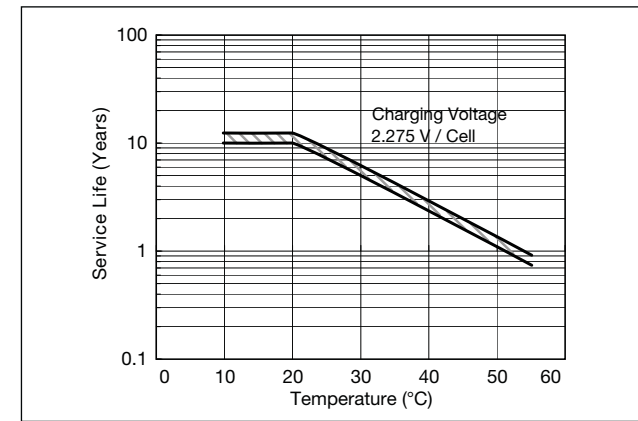
Ampere Table

Cut-off V	(Ampere/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	18.4	14.4	9.40	6.99	5.81	4.30	3.02	2.41	1.66	1.26	0.949	0.722	0.595	0.484	0.318	0.171	0.143
9.9V	17.0	13.6	9.21	6.94	5.71	4.25	3.00	2.41	1.62	1.26	0.945	0.718	0.590	0.482	0.316	0.171	0.143
10.2V	15.7	12.7	8.97	6.80	5.62	4.20	2.97	2.36	1.59	1.22	0.935	0.713	0.586	0.478	0.313	0.170	0.142
10.5V	14.0	11.4	8.31	6.33	5.34	4.11	2.93	2.31	1.56	1.18	0.921	0.708	0.581	0.472	0.312	0.170	0.142
10.8V	11.8	10.1	7.41	5.90	5.19	3.97	2.88	2.27	1.51	1.13	0.897	0.708	0.567	0.472	0.307	0.165	0.142

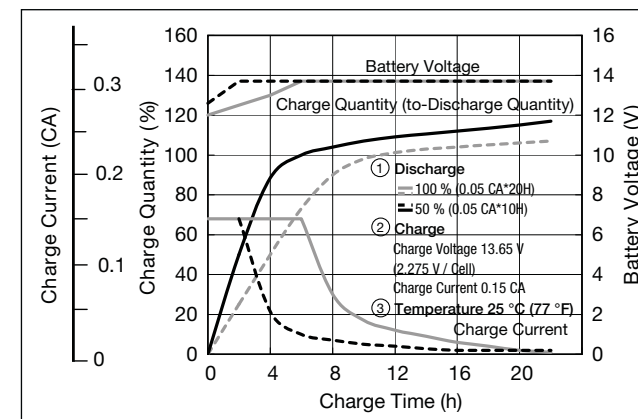
Charging Method

Trickle Use	Control voltage: 13.6 - 13.8V; Initial current: 0.51A or smaller
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Influence of Temperature on Trickle life



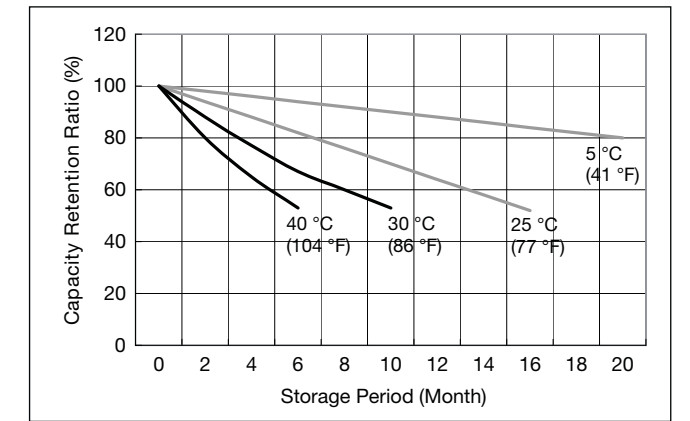
Constant-voltage and constant-current charge characteristics for Trickle use



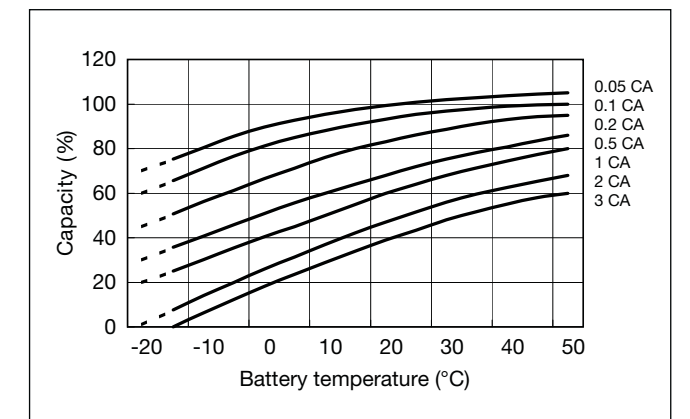
Cut off voltage

Discharge current	0.17A - 0.68A	0.68A - 1.7A	1.7A - 3.4A	3.4A - 6.8A	6.8A - 10.2A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

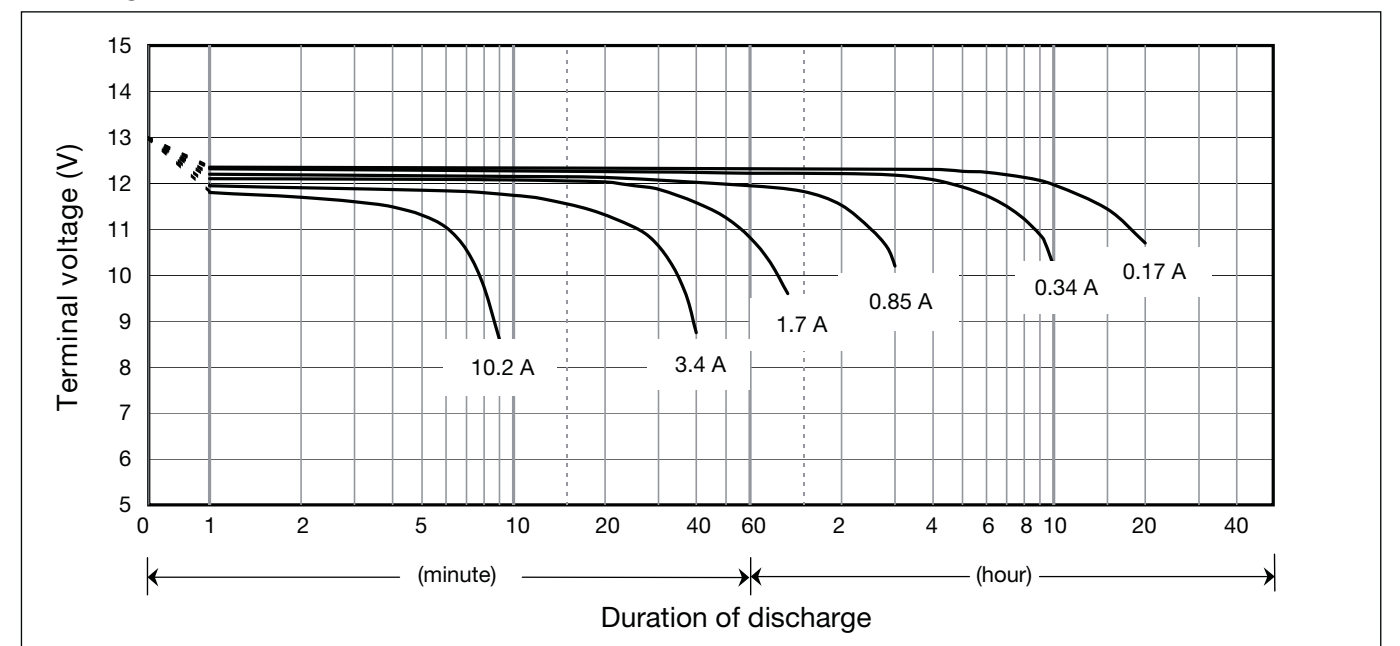
Residual capacity vs storage period



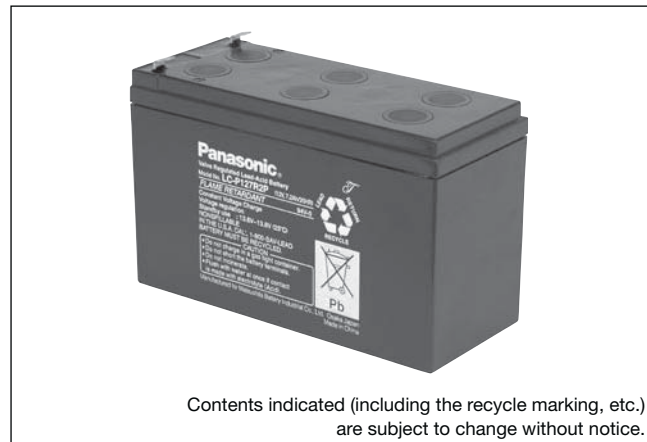
Discharge capacity by temperature and by discharge current



Discharge characteristics



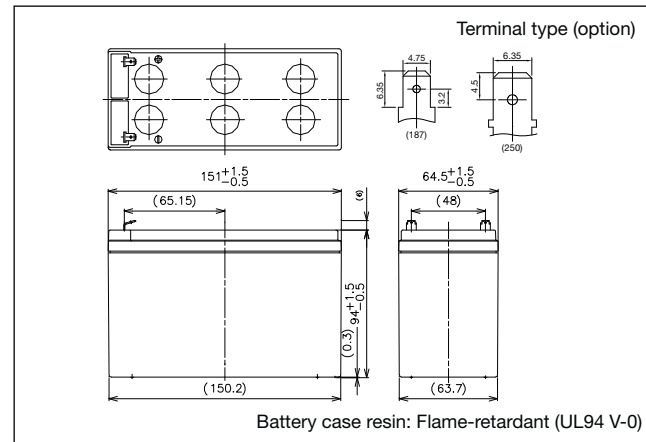
LC-P127R2P



Contents indicated (including the recycle marking, etc.) are subject to change without notice.

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.

Dimensions (mm)



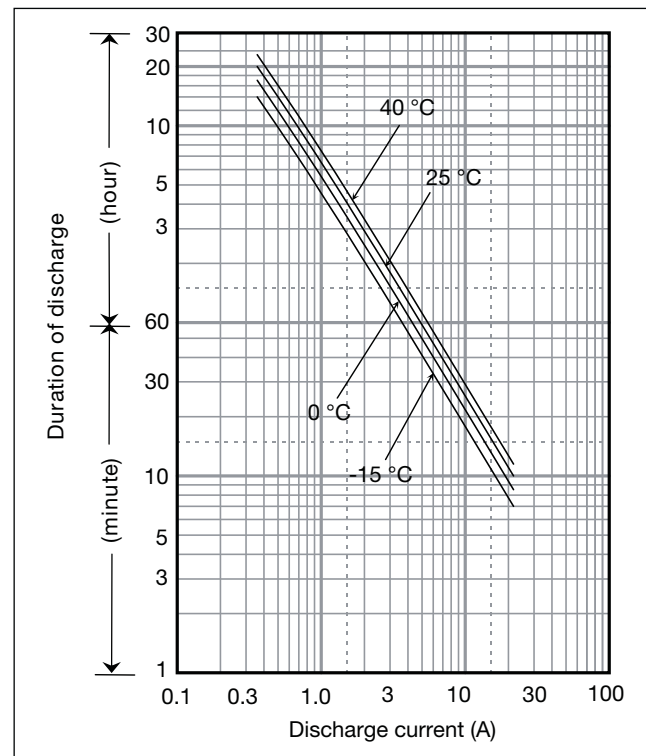
Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	7.2Ah	
Dimensions	Length	151mm
	Width	64.5mm
	Height	94mm
	Total Height	100mm
Approx. mass	2.5kg	
Terminal	Faston 187 or Faston 250 with hole	

Characteristics

Capacity (25°C)	20 hour rate	7.2Ah
	10 hour rate	6.8Ah
	5 hour rate	6.3Ah
	1 hour rate	4.9Ah
Internal resistance	Fully charged battery (25°C)	21mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)																							
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h							
9.6V	433	341	223	170	143	106	75.1	60.1	41.3	32.0	23.8	18.3	15.1	12.1	8.04	4.36	3.64							
9.9V	401	320	218	169	140	105	74.7	60.1	40.5	31.7	23.7	18.2	15.0	12.1	8.00	4.34	3.62							
10.2V	370	300	213	166	138	104	74.0	58.9	39.7	30.9	23.4	18.0	14.9	12.0	7.92	4.33	3.61							
10.5V	329	269	197	154	131	102	72.8	57.7	38.9	29.8	23.1	17.9	14.7	11.8	7.88	4.32	3.60							
10.8V	278	237	176	144	128	98	71.6	56.5	37.8	28.4	22.6	17.7	14.4	11.7	7.80	4.30	3.58							

Ampere Table

Cut-off V	(Ampere/Battery)																							
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h							
9.6V	38.9	30.6	19.9	14.8	12.3	9.1	6.4	5.1	3.50	2.70	2.00	1.53	1.26	1.012	0.670	0.363	0.303							
9.9V	36.1	28.7	19.5	14.7	12.1	9.0	6.4	5.1	3.43	2.68	1.99	1.52	1.25	1.008	0.667	0.362	0.302							
10.2V	33.3	26.9	19.0	14.4	11.9	8.9	6.3	5.0	3.36	2.61	1.97	1.51	1.24	1.000	0.660	0.361	0.301							
10.5V	29.6	24.1	17.6	13.4	11.3	8.7	6.2	4.9	3.29	2.52	1.94	1.50	1.23	0.988	0.657	0.360	0.300							
10.8V	25.0	21.3	15.7	12.5	11.0	8.4	6.1	4.8	3.20	2.40	1.90	1.48	1.20	0.972	0.650	0.358	0.298							

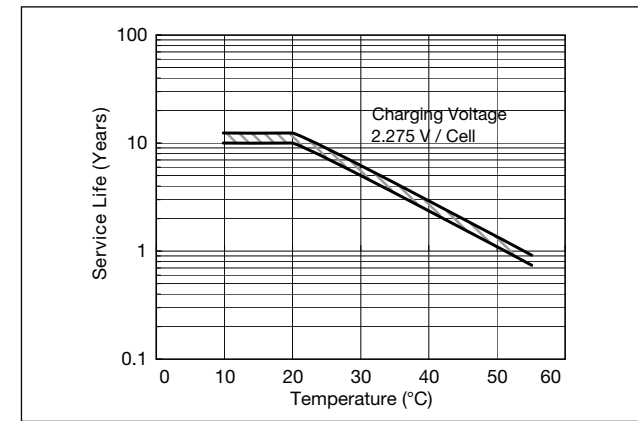
Charging Method

Trickle Use	Control voltage: 13.6 - 13.8V; Initial current: 1.08A or smaller
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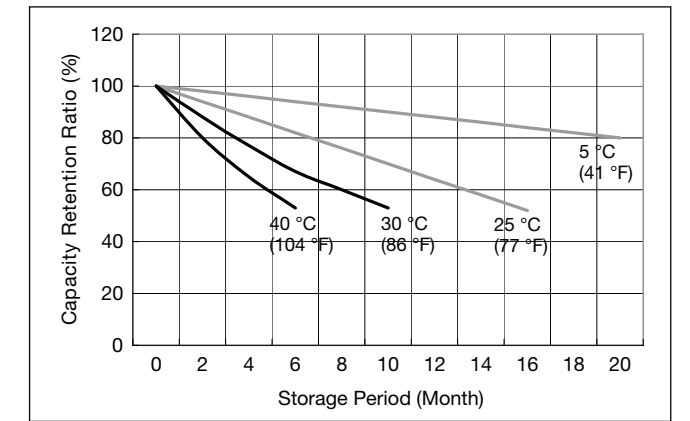
Cut off voltage

Discharge current	0.36A - 1.44A	1.44A - 3.6A	3.6A - 7.2A	7.2A - 14.4A	14.4A - 21.6A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

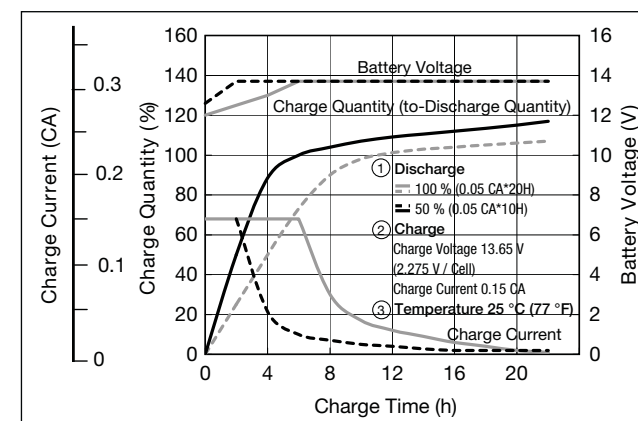
Influence of Temperature on Trickle life



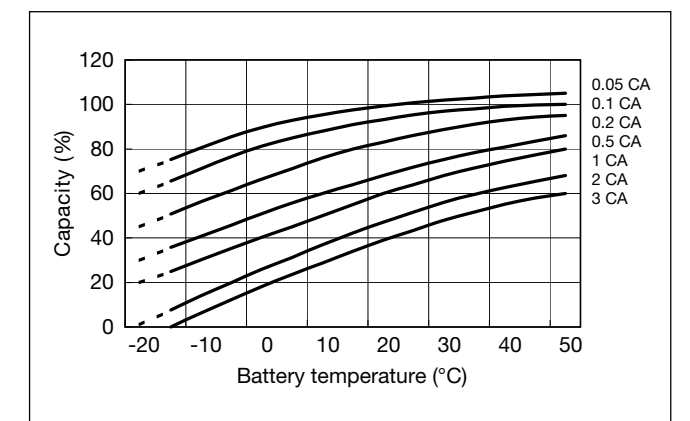
Residual capacity vs storage period



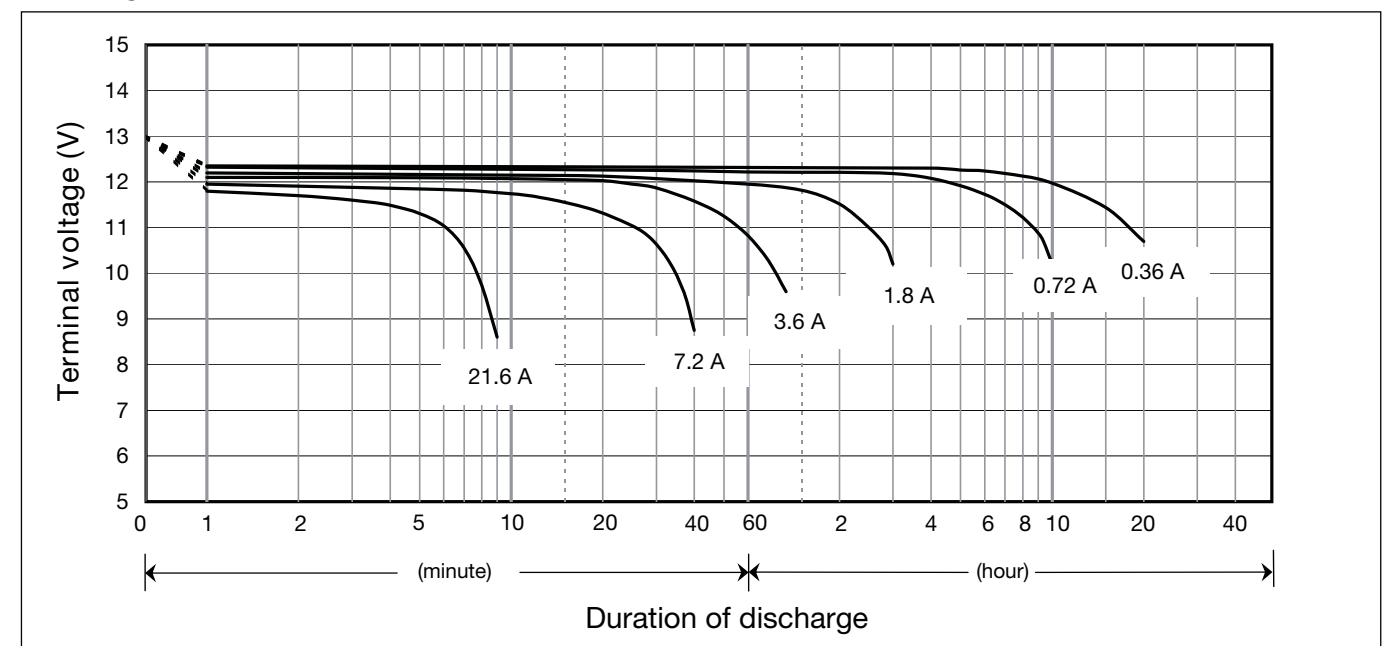
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current

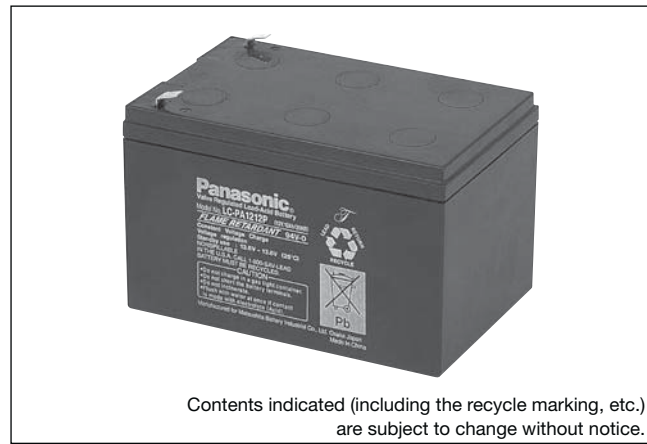


Discharge characteristics

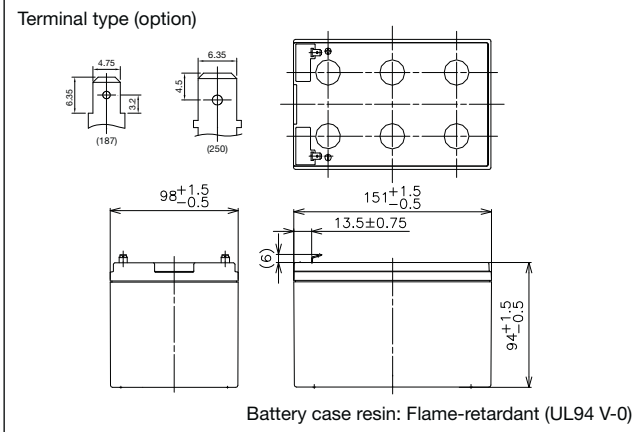


LC-PA1212P

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.



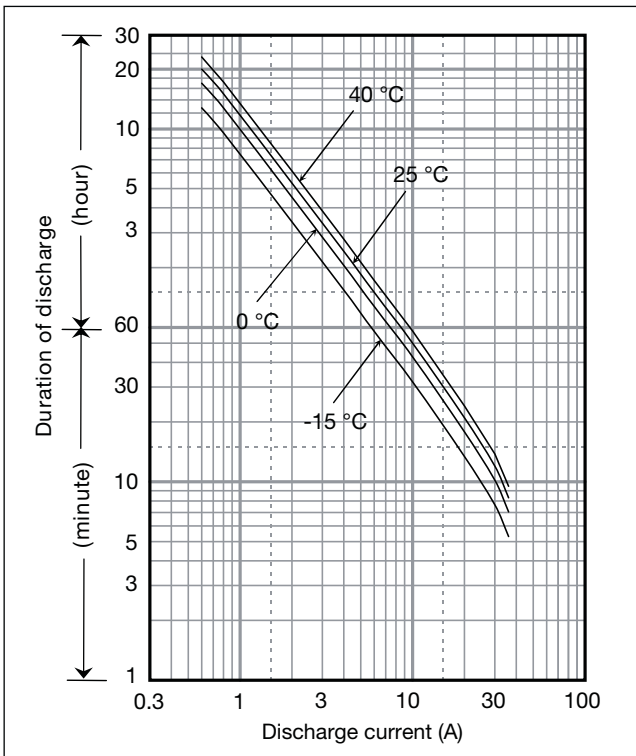
Dimensions (mm)



Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	12Ah	
Dimensions	Length	151mm
	Width	98mm
	Height	94mm
	Total Height	100mm
Approx. mass	3.8kg	
Terminal	Faston 187 or Faston 250 with hole	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate	12.0Ah
	10 hour rate	11.3Ah
	5 hour rate	10.4Ah
	1 hour rate	8.1Ah
Internal resistance	Fully charged battery (25°C)	30mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Watt Table

Cut-off V	(Wattage/Battery)																	
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h	
9.6V	679	559	384	298	247	183	137	105	70.3	54.5	38.1	28.8	24.1	21.7	13.3	7.22	6.02	
9.9V	649	537	373	288	241	177	135	104	69.9	54.2	37.8	28.8	24.1	21.7	13.3	7.22	6.02	
10.2V	607	506	363	282	235	177	134	102	69.1	53.9	37.5	28.8	24.0	21.6	13.2	7.21	6.01	
10.5V	556	475	343	271	231	172	133	100	68.5	53.3	36.9	28.7	24.0	21.6	13.2	7.20	6.00	
10.8V	495	434	321	261	225	166	123	98	66.1	52.1	36.3	28.4	23.8	21.5	13.1	7.18	5.98	

Ampere Table

Cut-off V	(Ampere/Battery)																	
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h	
9.6V	61.1	50.1	34.3	25.9	21.3	15.6	11.7	8.90	5.95	4.60	3.20	2.41	2.01	1.81	1.11	0.602	0.502	
9.9V	58.4	48.2	33.3	25.0	20.8	15.1	11.5	8.80	5.92	4.58	3.18	2.41	2.01	1.81	1.11	0.602	0.502	
10.2V	54.6	45.4	32.4	24.5	20.3	15.1	11.4	8.70	5.85	4.55	3.15	2.41	2.00	1.80	1.10	0.601	0.501	
10.5V	50.0	42.6	30.6	23.6	19.9	14.7	11.3	8.50	5.80	4.50	3.10	2.40	2.00	1.80	1.10	0.600	0.500	
10.8V	44.5	38.9	28.7	22.7	19.4	14.2	10.5	8.30	5.60	4.40	3.05	2.38	1.99	1.79	1.09	0.598	0.498	

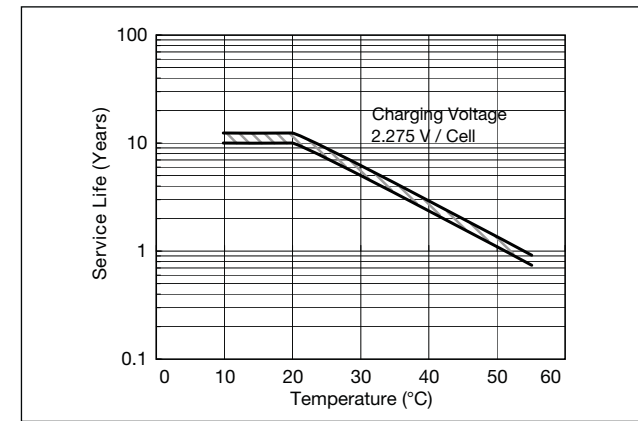
Charging Method

Trickle Use	Control voltage: 13.6 - 13.8V; Initial current: 1.8A or smaller
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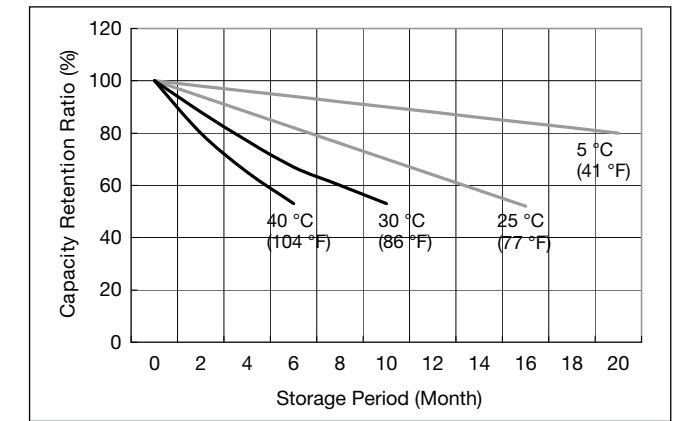
Cut off voltage

Discharge current	0.6A - 2.4A	2.4A - 6A	6A - 12A	12A - 24A	24A - 36A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

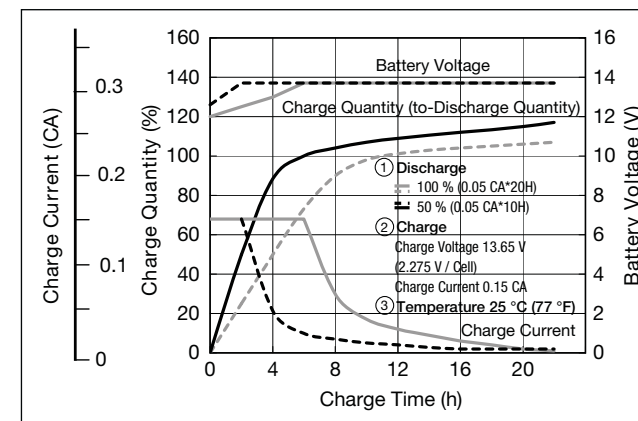
Influence of Temperature on Trickle life



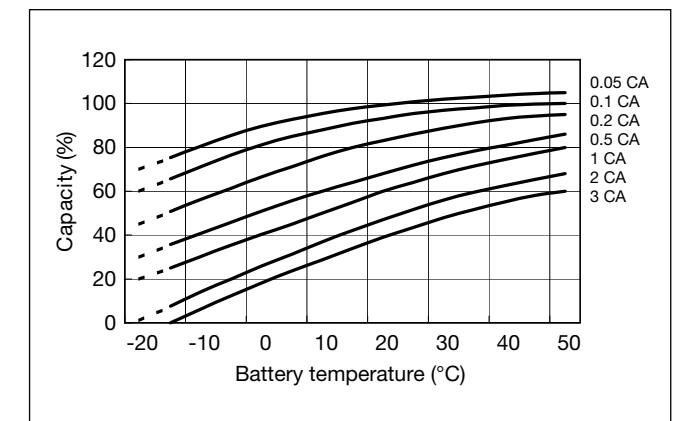
Residual capacity vs storage period



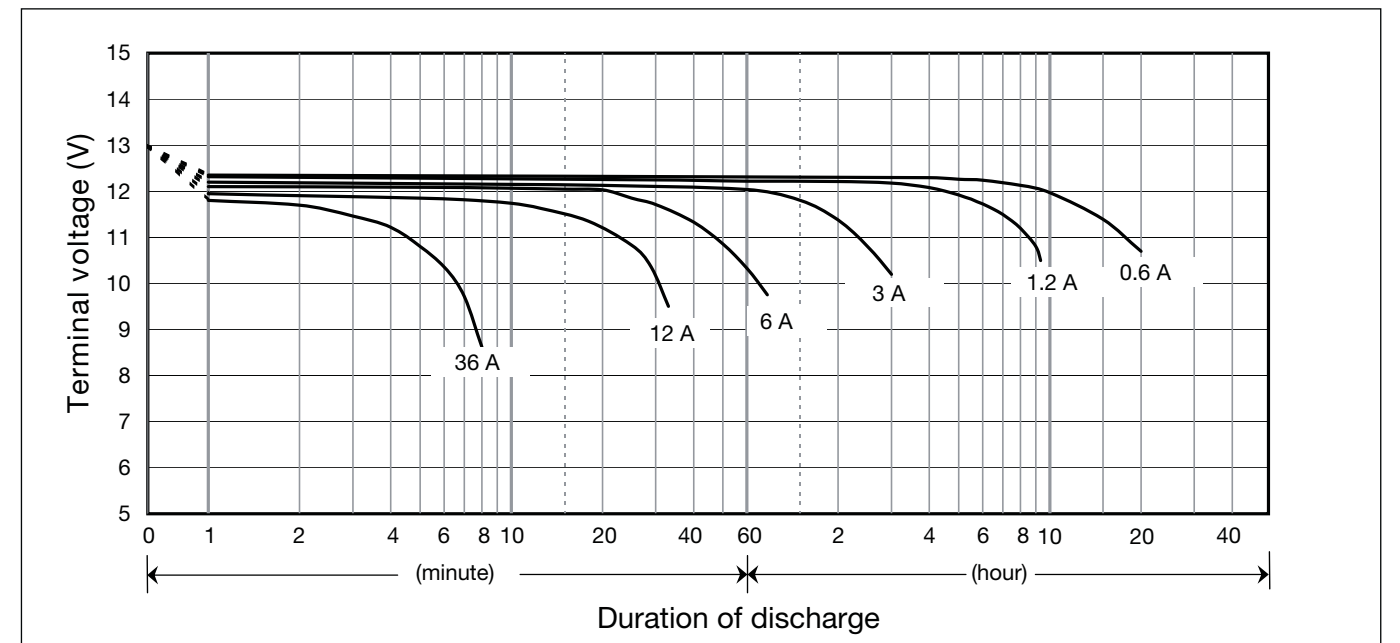
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics



LC-XD1217PG/APG

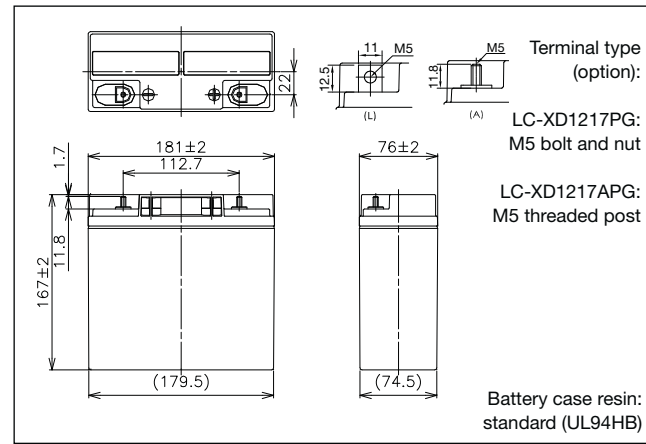
For standby power supplies. Expected trickle design life:
10 – 12 years at 20°C according to Eurobat.

VdS

G104101



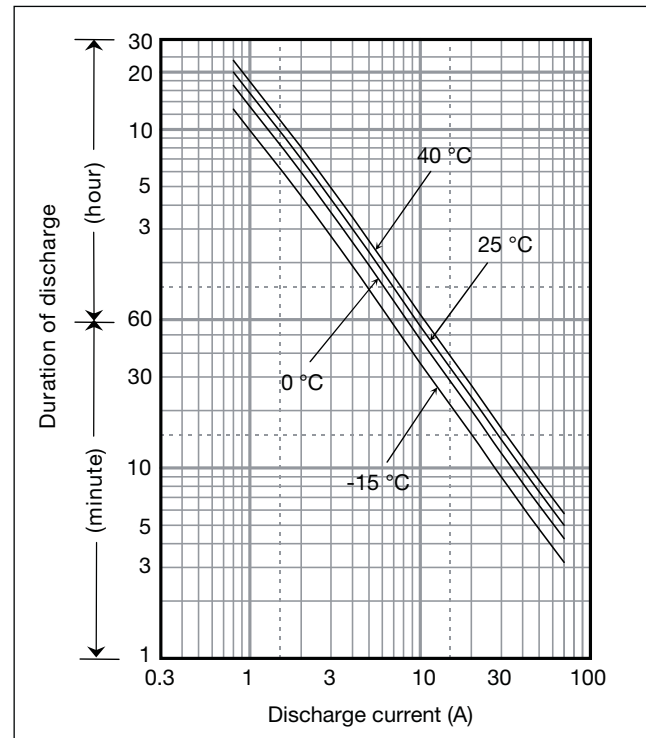
Dimensions (mm)



Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	17Ah	
Dimensions	Length	181mm
	Width	76mm
	Height	167mm
	Total Height	167mm
Approx. mass	6.5kg	
Terminal	M5 Bolt and Nut type/ M5 threaded post	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate	17Ah
	10 hour rate	15Ah
	5 hour rate	13Ah
	1 hour rate	10Ah
Internal resistance	Fully charged battery (25°C)	12mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Watt Table

Cut-off V	(Wattage/Battery)																							
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h							
9.6V	1021	806	526	402	337	251	177	142	97.6	75.5	56.2	43.2	35.6	28.6	19.0	10.3	8.58							
9.9V	948	756	516	399	331	249	176	142	95.6	74.9	55.9	42.9	35.4	28.5	18.9	10.3	8.56							
10.2V	874	708	502	391	326	246	175	139	93.7	73.0	55.4	42.6	35.1	28.3	18.7	10.2	8.53							
10.5V	777	634	465	364	309	240	172	136	91.7	70.4	54.5	42.3	34.8	28.0	18.6	10.2	8.50							
10.8V	656	561	415	339	301	232	169	134	89.2	67.1	53.4	41.8	33.9	27.5	18.4	10.1	8.44							

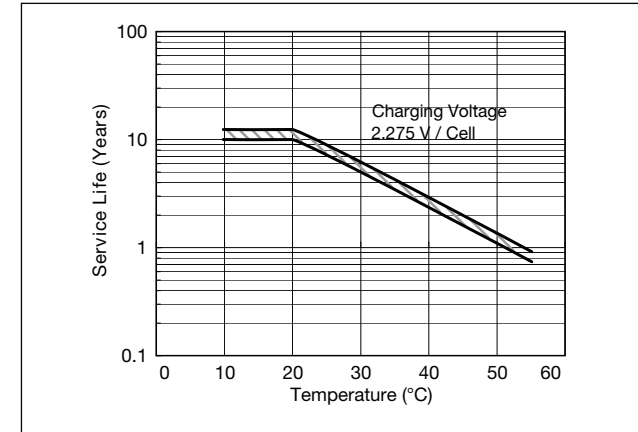
Ampere Table

Cut-off V	(Ampere/Battery)																							
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h							
9.6V	91.8	72.2	47.0	34.9	29.0	21.5	15.1	12.0	8.26	6.37	4.72	3.61	2.97	2.39	1.58	0.86	0.72							
9.9V	85.2	67.8	46.0	34.7	28.6	21.2	15.0	12.0	8.10	6.33	4.70	3.59	2.95	2.38	1.57	0.85	0.71							
10.2V	78.6	63.5	44.9	34.0	28.1	21.0	14.9	11.8	7.93	6.16	4.65	3.57	2.93	2.36	1.56	0.85	0.71							
10.5V	69.9	56.9	41.6	31.6	26.7	20.5	14.6	11.6	7.77	5.95	4.58	3.54	2.90	2.33	1.55	0.85	0.71							
10.8V	59.0	50.3	37.1	29.5	26.0	19.8	14.4	11.3	7.56	5.67	4.49	3.49	2.83	2.29	1.53	0.85	0.70							

Charging Method

Trickle use	Control voltage: 13.6 - 13.8V; Initial current: 2.55A or smaller
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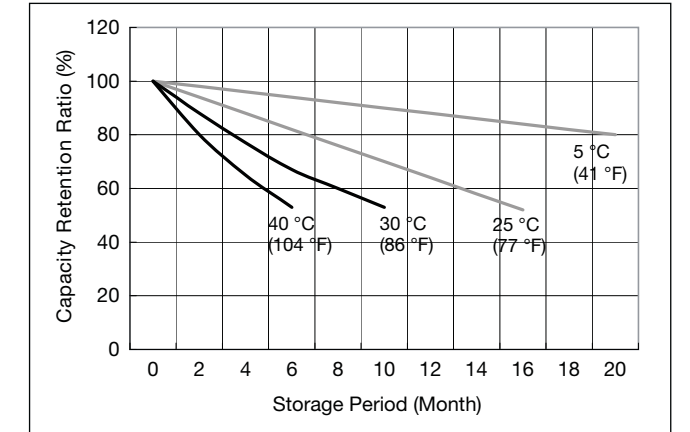
Influence of Temperature on Trickle life



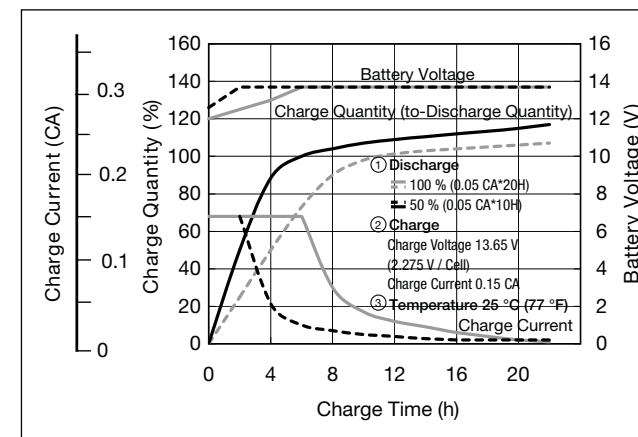
Cut off voltage

Discharge current	0.85A - 3.4A	3.4A - 8.5A	8.5A - 17A	17A - 34A	34A - 51A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

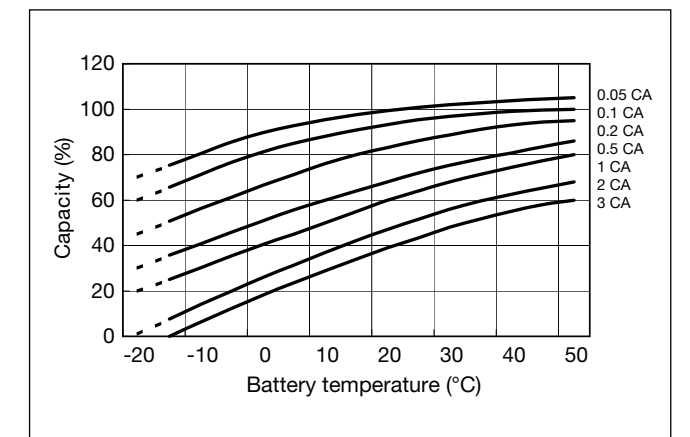
Residual capacity vs storage period



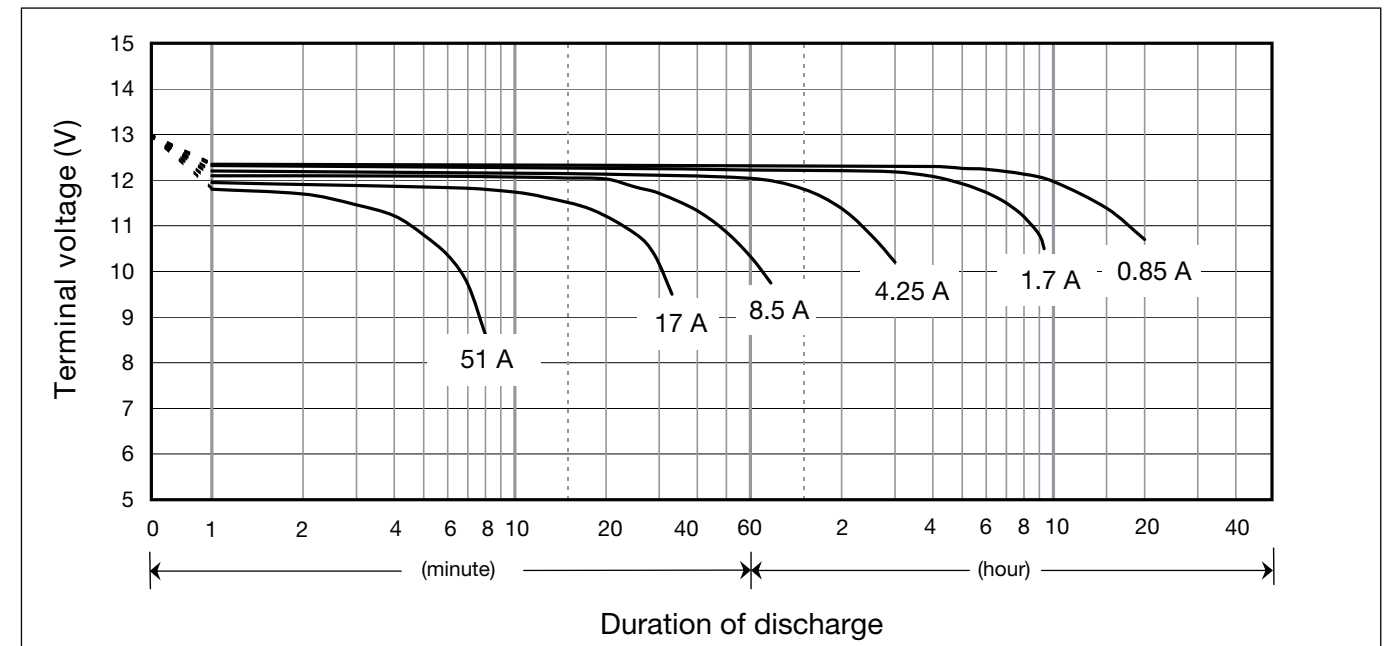
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics

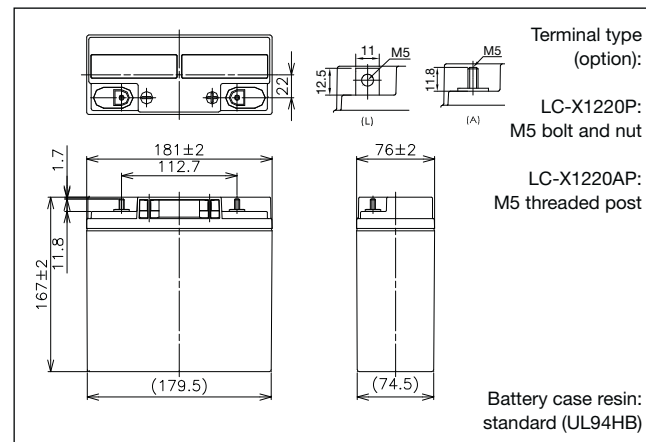


LC-X1220P/AP*1

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.



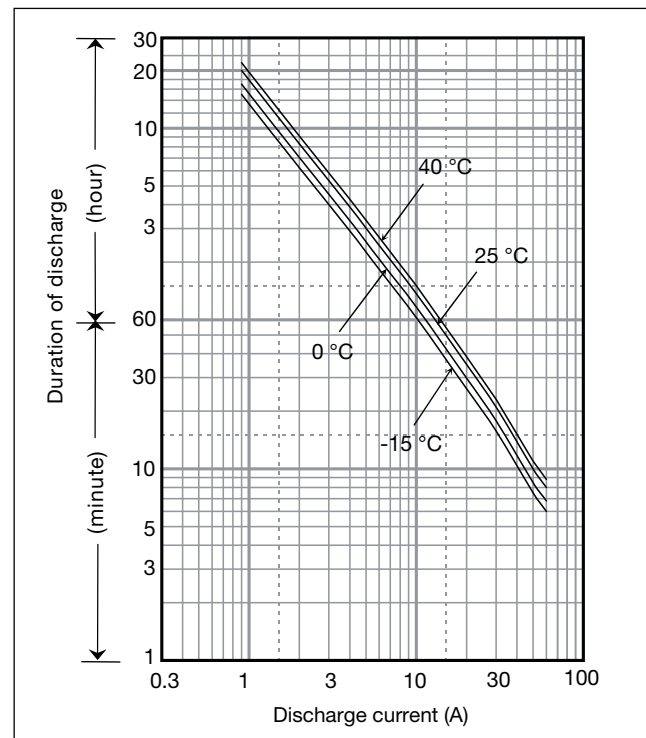
Dimensions (mm)



Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	20Ah	
Dimensions	Length	181mm
	Width	76mm
	Height	167mm
	Total Height	167mm
Approx. mass	6.6kg	
Terminal	M5 Bolt and Nut type/ M5 threaded post	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate	20Ah
	10 hour rate	18Ah
	5 hour rate	16Ah
	1 hour rate	12Ah
Internal resistance	Fully charged battery (25°C)	11mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Watt Table

Cut-off V	(Wattage/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	1202	948	619	473	396	296	209	167	115	88.8	66.1	50.8	41.9	33.7	22.3	12.1	10.1
9.9V	1115	889	607	470	390	293	207	167	113	88.1	65.8	50.5	41.6	33.6	22.2	12.1	10.1
10.2V	1029	833	591	460	383	289	205	164	110	85.8	65.1	50.1	41.3	33.3	22.0	12.0	10.0
10.5V	914	746	548	428	364	283	202	160	108	82.9	64.1	49.8	40.9	32.9	21.9	12.0	10.0
10.8V	772	660	488	399	354	273	199	157	105	78.9	62.8	49.1	39.9	32.4	21.7	11.9	9.93

Ampere Table

Cut-off V	(Ampere/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	108	85.0	55.3	41.1	34.2	25.3	17.8	14.2	9.72	7.50	5.56	4.25	3.50	2.81	1.86	1.01	0.84
9.9V	100	79.7	54.2	40.8	33.6	25.0	17.7	14.2	9.53	7.44	5.53	4.22	3.47	2.80	1.85	1.01	0.84
10.2V	92.5	74.7	52.8	40.0	33.1	24.7	17.5	13.9	9.33	7.25	5.47	4.19	3.44	2.78	1.83	1.00	0.84
10.5V	82.2	66.9	48.9	37.2	31.4	24.2	17.2	13.6	9.14	7.00	5.39	4.17	3.42	2.74	1.83	1.00	0.83
10.8V	69.4	59.2	43.6	34.7	30.6	23.3	16.9	13.3	8.89	6.67	5.28	4.11	3.33	2.70	1.81	0.99	0.83

*1 This battery is also available with a flame retardant battery case resin (UL94 V-0).

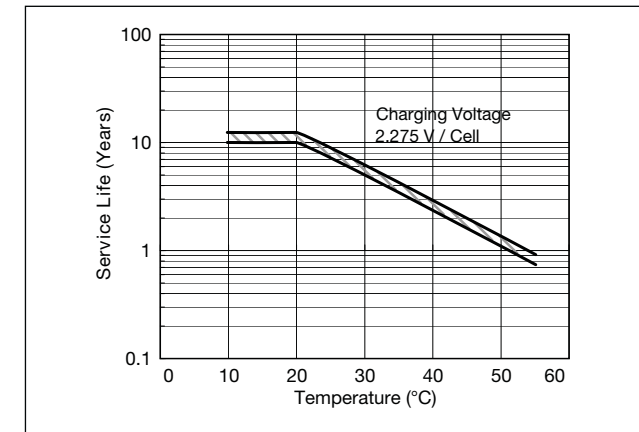
Charging Method

Trickle use Control voltage: 13.6 - 13.8V; Initial current: 3A or smaller

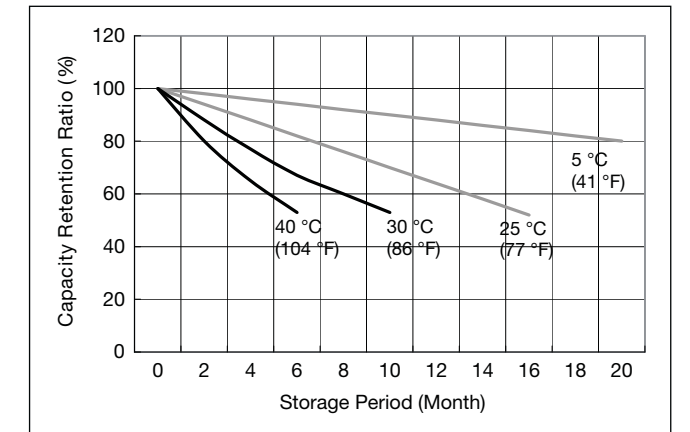
Cut off voltage

Discharge current	1A - 4A	4A - 10A	10A - 20A	20A - 40A	40A - 60A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

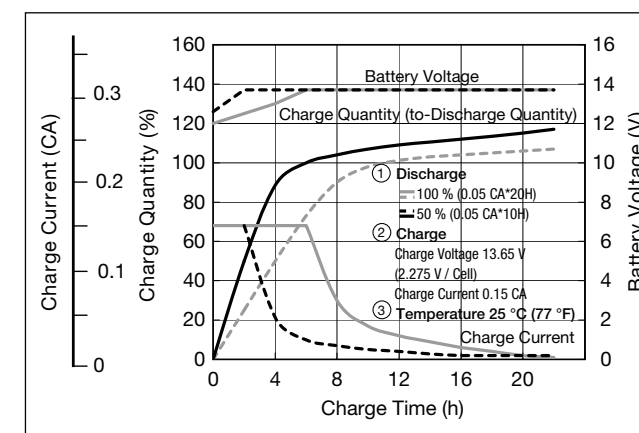
Influence of Temperature on Trickle life



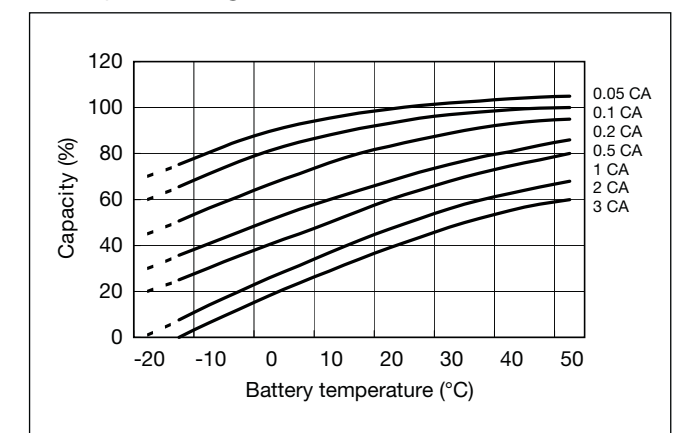
Residual capacity vs storage period



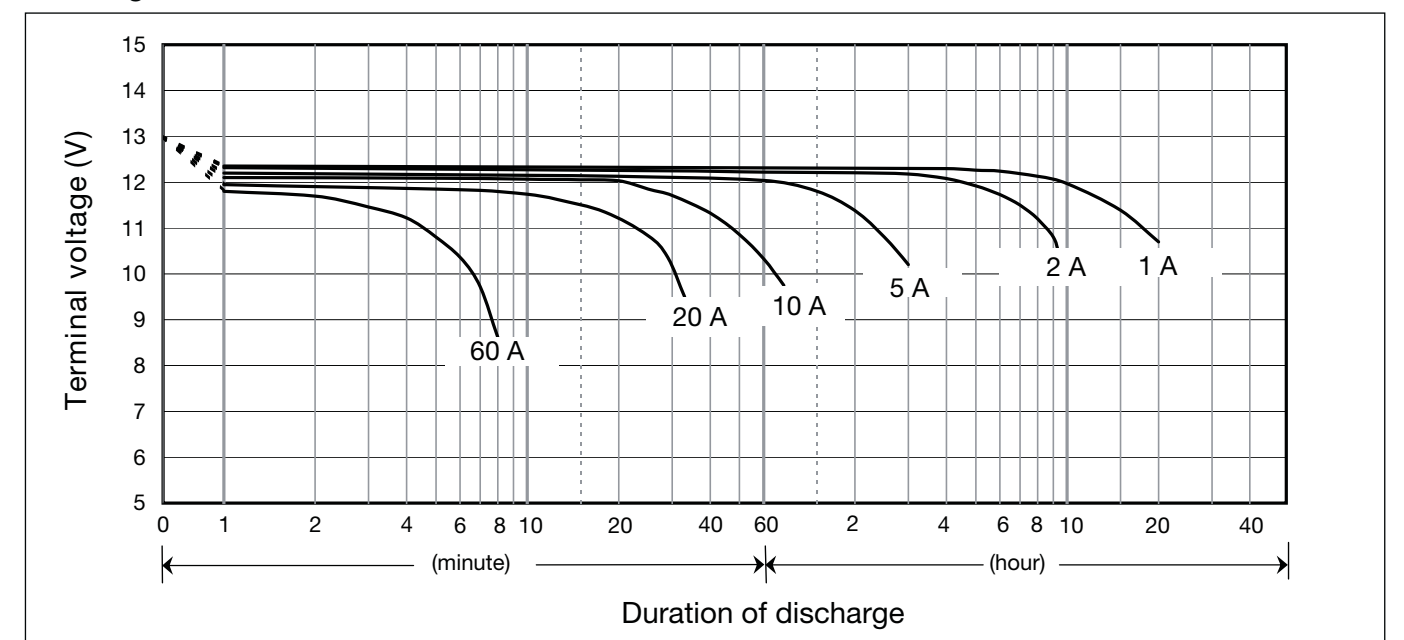
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics

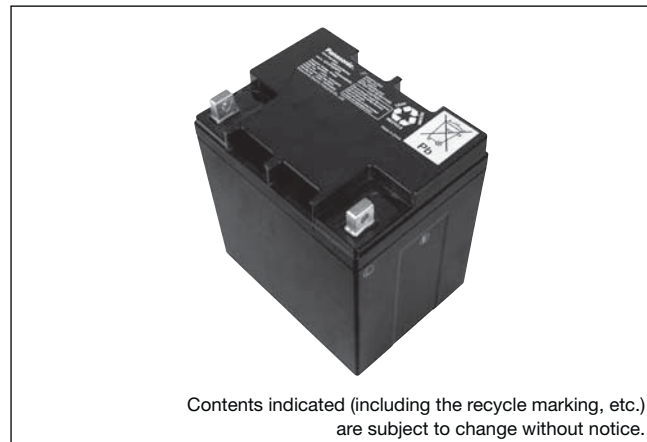


LC-X1224PG/APG

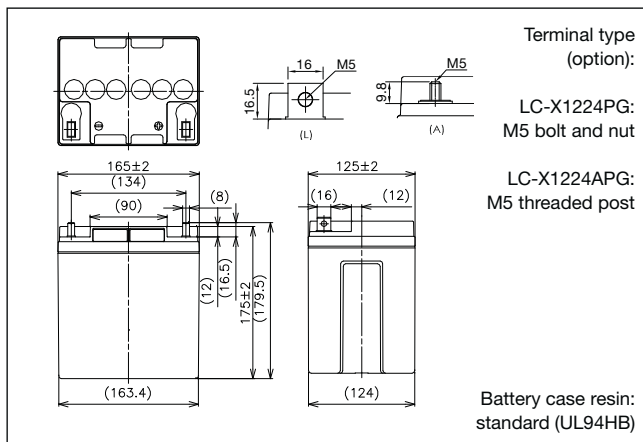
For standby power supplies. Expected trickle design life:
10 – 12 years at 20°C according to Eurobat.

VdS

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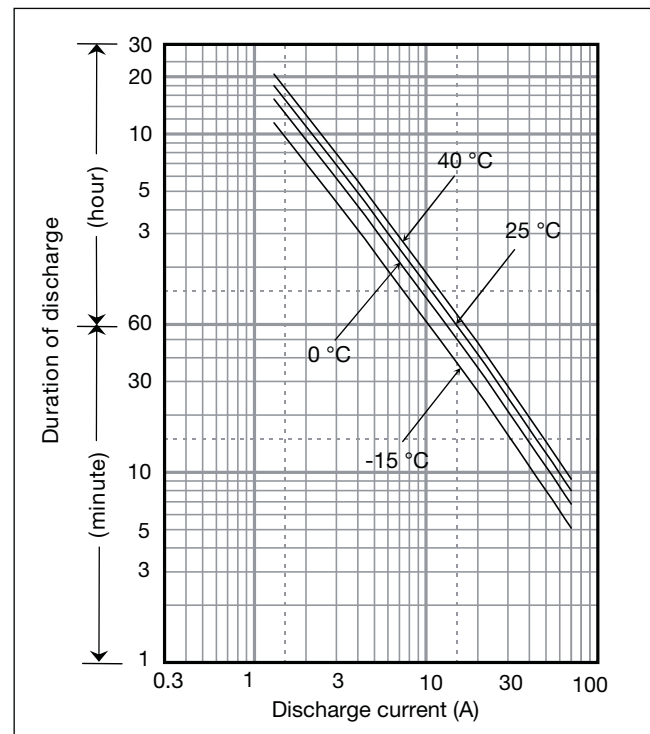
Dimensions (mm)



Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	24Ah	
Dimensions	Length	165mm
	Width	125mm
	Height	175mm
	Total Height	LC-X1224PG: 179.5mm LC-X1224APG: 175mm
Approx. mass	9kg	
Terminal	M5 Bolt and Nut type/ M5 threaded post	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate	24Ah
	10 hour rate	22Ah
	5 hour rate	19Ah
	1 hour rate	14Ah
Internal resistance	Fully charged battery (25°C)	11mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Watt Table

(Wattage/Battery)

Cut-off V	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	1290	992	739	523	441	317	234	183	118	104	73.8	58.6	47.9	40.8	26.4	14.6	12.0
9.9V	1197	931	724	520	434	314	232	183	116	103	73.4	58.2	47.5	40.6	26.3	14.6	12.0
10.2V	1104	872	706	509	426	310	230	179	113	101	72.7	57.8	47.2	40.3	26.0	14.6	11.9
10.5V	982	782	654	474	405	303	226	175	111	97.2	71.6	57.4	46.8	39.8	25.9	14.4	11.9
10.8V	829	691	583	442	394	293	223	172	108	92.6	70.1	56.6	45.6	39.2	25.6	14.3	11.8

Ampere Table

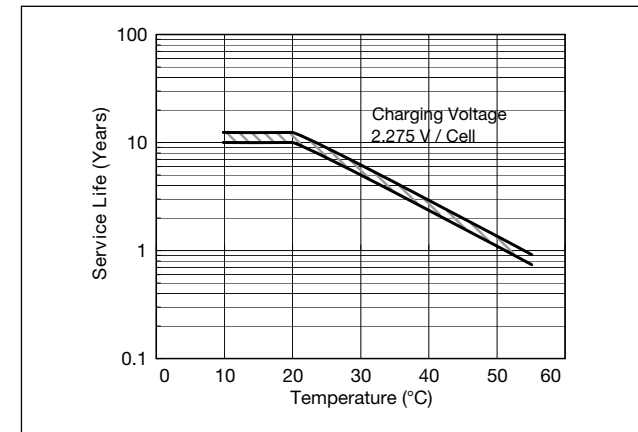
(Ampere/Battery)

Cut-off V	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	116	89.0	66.0	45.5	38.0	27.1	19.9	15.5	10.0	8.80	6.20	4.90	4.00	3.40	2.20	1.22	1.00
9.9V	108	83.5	64.7	45.2	37.4	26.8	19.8	15.5	9.80	8.73	6.17	4.87	3.97	3.39	2.19	1.22	1.00
10.2V	99.3	78.2	63.0	44.3	36.8	26.5	19.6	15.2	9.60	8.51	6.11	4.84	3.94	3.36	2.17	1.21	0.99
10.5V	88.3	70.1	58.4	41.2	34.9	25.9	19.3	14.9	9.40	8.21	6.01	4.80	3.90	3.32	2.16	1.20	0.99
10.8V	74.6	62.0	52.1	38.4	34.0	25.0	19.0	14.6	9.14	7.82	5.89	4.74	3.81	3.27	2.13	1.19	0.98

Charging Method

Trickle use Control voltage: 13.6 - 13.8V; Initial current: 3.6A or smaller

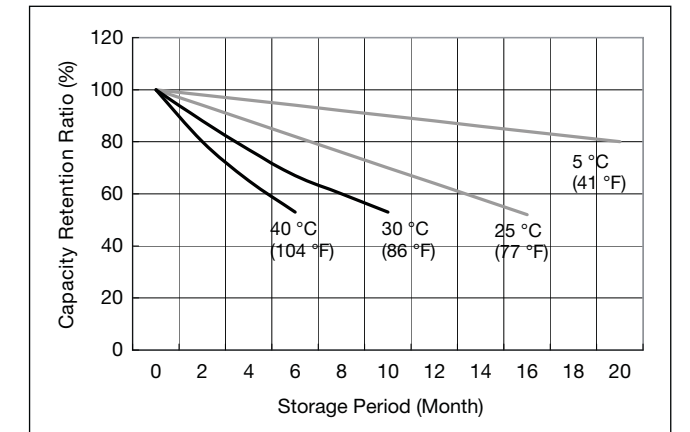
Influence of Temperature on Trickle life



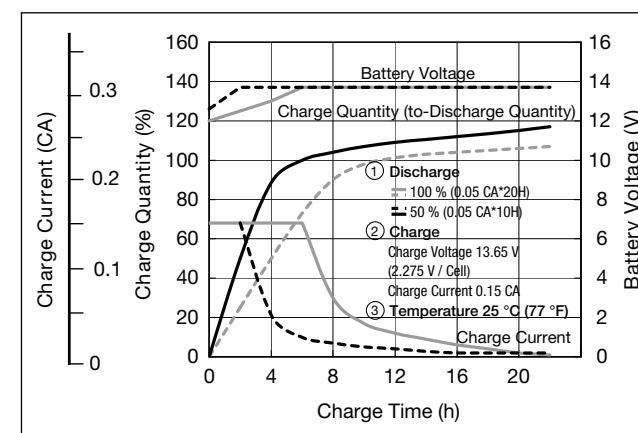
Cut off voltage

Discharge current	1.2A - 4.8A	4.8A - 12A	12A - 24A	24A - 48A	48A - 72A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

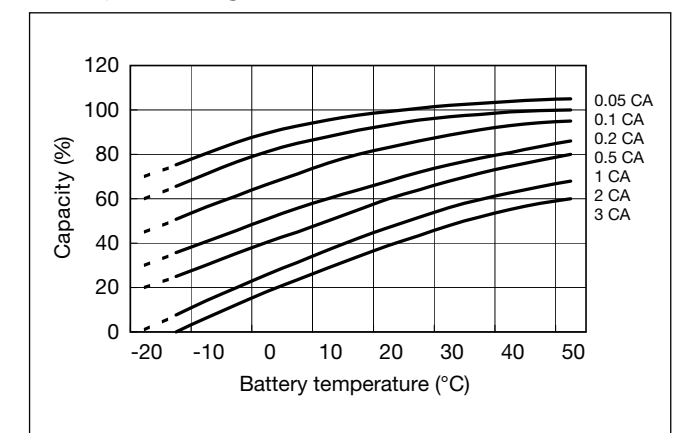
Residual capacity vs storage period



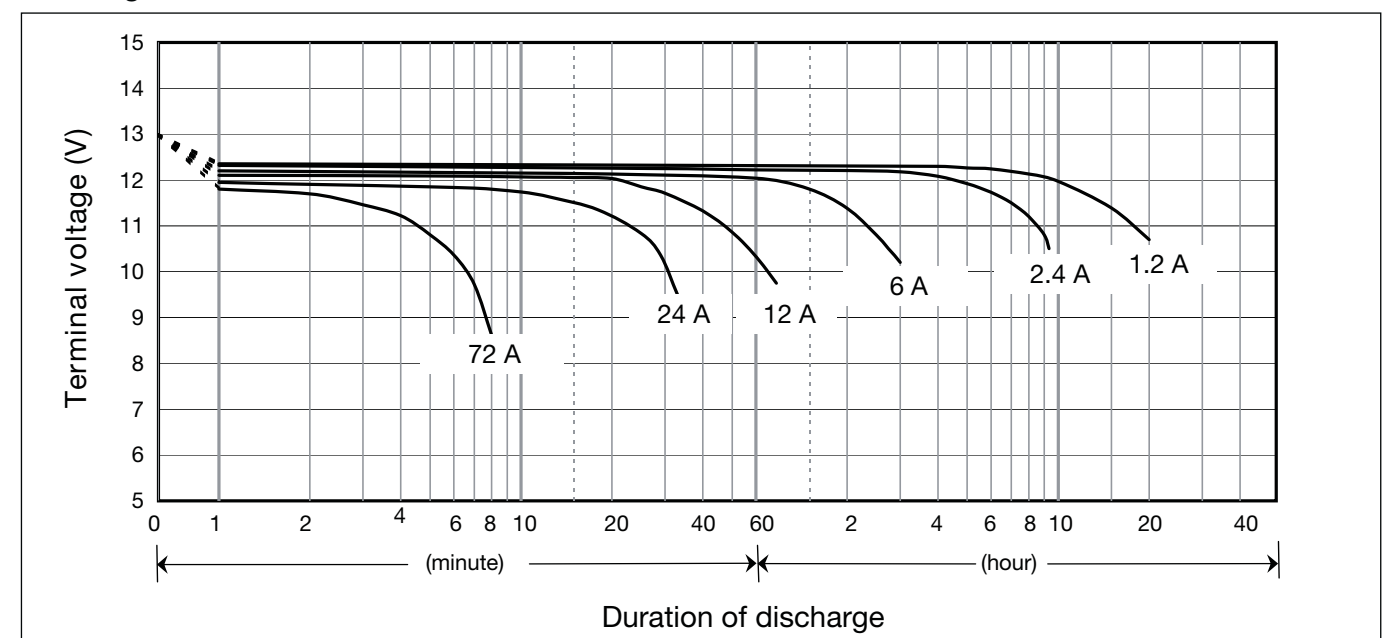
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current

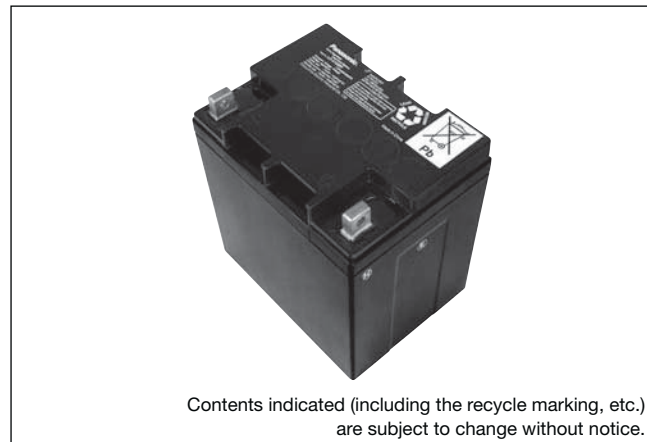


Discharge characteristics

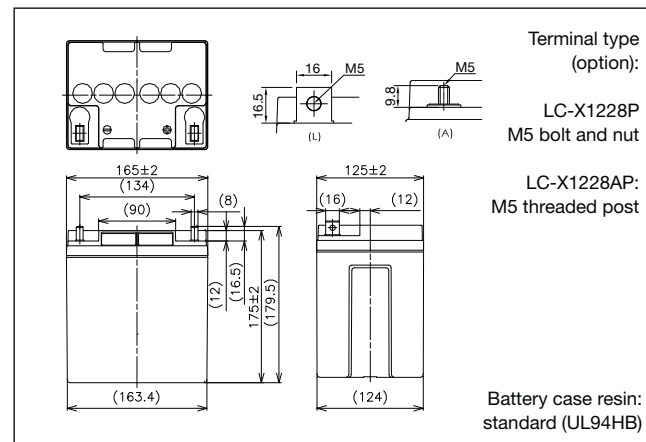


LC-X1228P/AP*1

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.



Dimensions (mm)



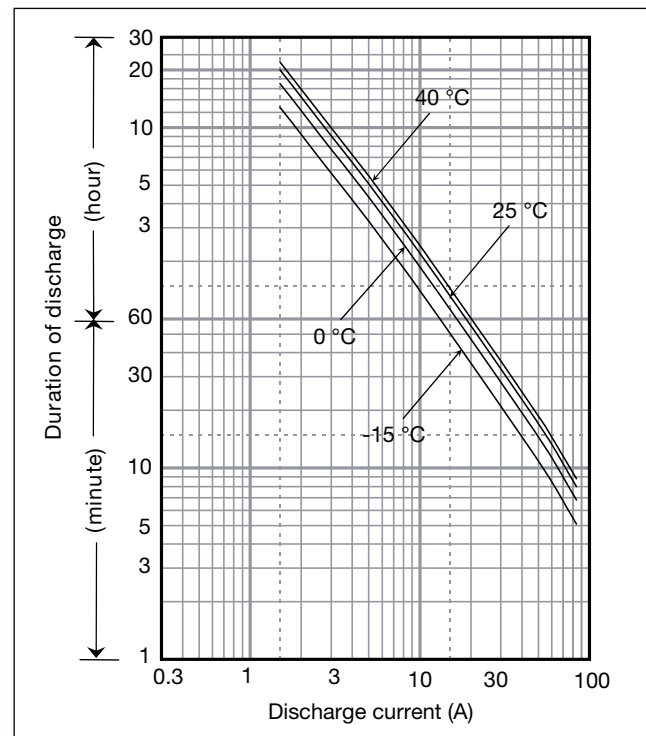
Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	28Ah	
Dimensions	Length	165mm
	Width	125mm
	Height	175mm
	Total Height	LC-X1228P: 179.5mm LC-X1228AP: 175mm
Approx. mass	11kg	
Terminal	M5 Bolt and Nut type/ M5 threaded post	

Characteristics

Capacity (25°C)	20 hour rate	28.0Ah
	10 hour rate	26.5Ah
	5 hour rate	25.0Ah
	1 hour rate	21.0Ah
Internal resistance	Fully charged battery (25°C)	8mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	1423	1160	865	664	585	410	304	260	159	129	91.6	74.1	61.1	40.8	31.8	16.8	14.0
9.9V	1357	1093	849	654	579	404	294	254	156	128	90.4	72.9	59.9	51.6	31.8	16.8	14.0
10.2V	1301	1026	818	643	567	397	294	251	155	127	89.3	71.7	59.9	51.6	31.8	16.8	14.0
10.5V	1201	976	784	621	545	386	282	247	154	126	88.1	71.7	59.9	51.6	31.8	16.8	14.0
10.8V	1052	903	773	610	539	374	255	218	149	118	84.5	70.5	59.9	50.4	31.8	16.8	13.9

Ampere Table

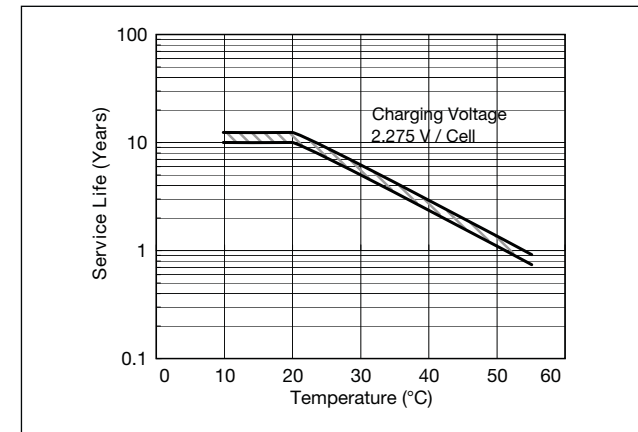
Cut-off V	(Ampere/Battery)																
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	128	104	77.2	57.7	50.4	35.0	25.9	22.1	13.5	10.9	7.7	6.2	5.1	3.4	2.65	1.40	1.17
9.9V	122	98.0	75.8	56.9	49.9	34.5	25.0	21.6	13.2	10.8	7.6	6.1	5.0	4.3	2.65	1.40	1.17
10.2V	117	92.0	73.0	55.9	48.9	33.9	25.0	21.3	13.1	10.7	7.5	6.0	5.0	4.3	2.65	1.40	1.17
10.5V	108	87.5	70.0	54.0	47.0	33.0	24.0	21.0	13.0	10.6	7.4	6.0	5.0	4.3	2.70	1.40	1.17
10.8V	94.6	81.0	69.0	53.0	46.5	32.0	21.7	18.5	12.6	10.0	7.1	5.9	5.0	4.2	2.65	1.40	1.16

*1 This battery is also available with a flame retardant battery case resin (UL94 V-0).

Charging Method

Trickle use	Control voltage: 13.6 - 13.8V; Initial current: 4.2A or smaller
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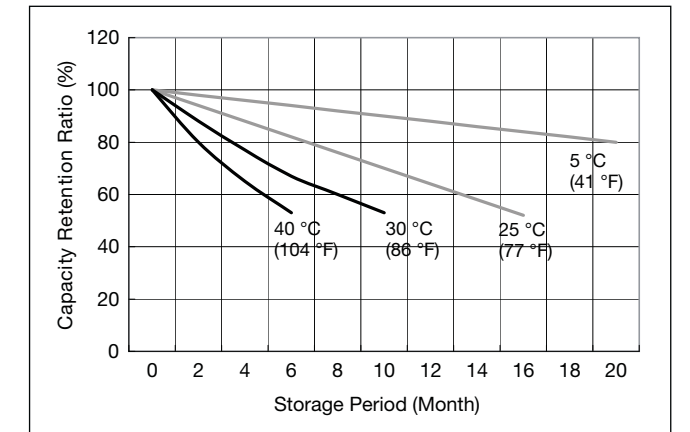
Influence of Temperature on Trickle life



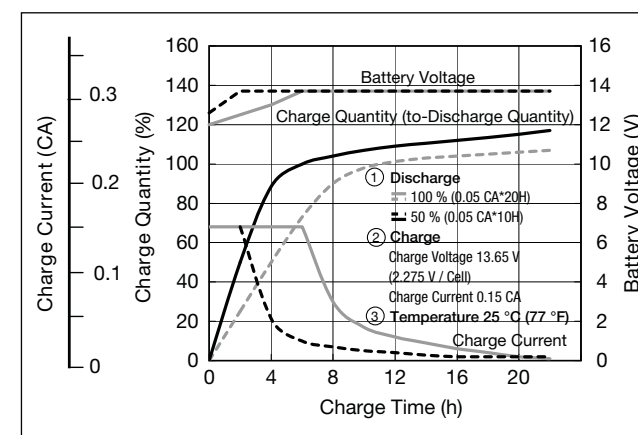
Cut off voltage

Discharge current	1.4A - 5.6A	5.6A - 14A	14A - 28A	28A - 56A	56A - 84A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

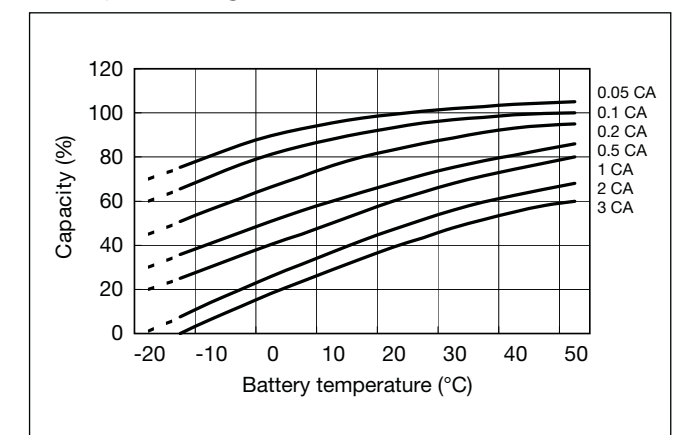
Residual capacity vs storage period



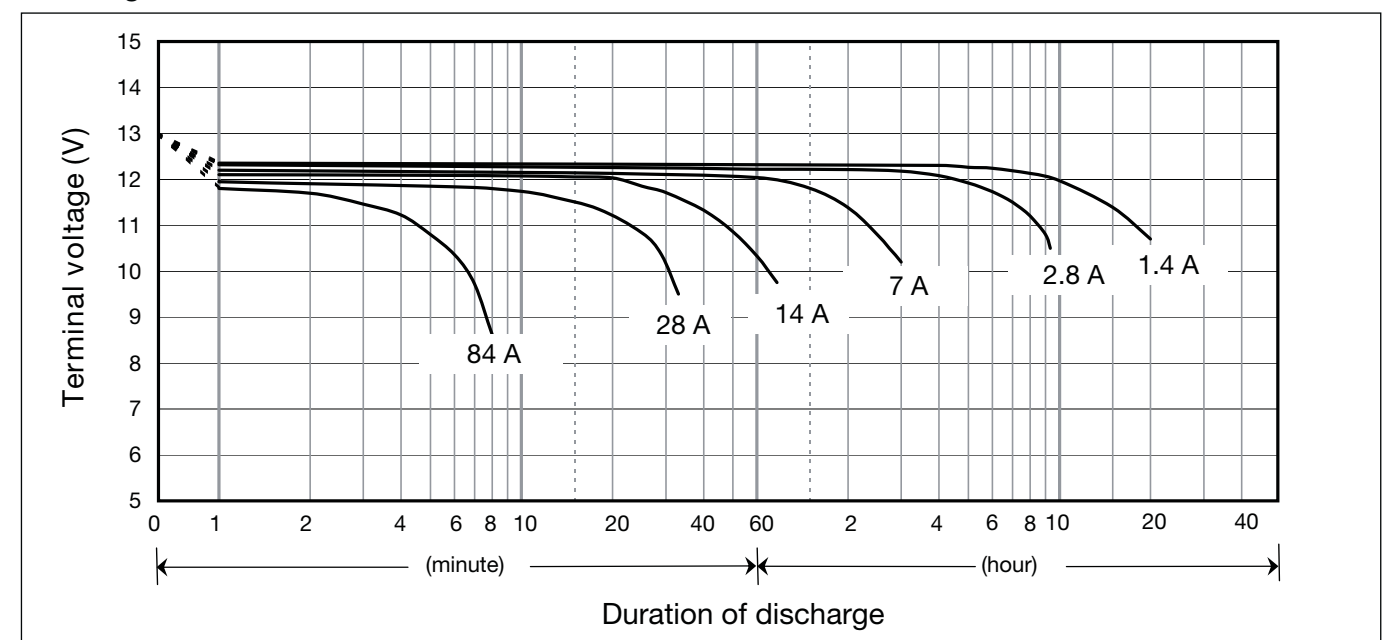
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics



LC-X1238PG/APG

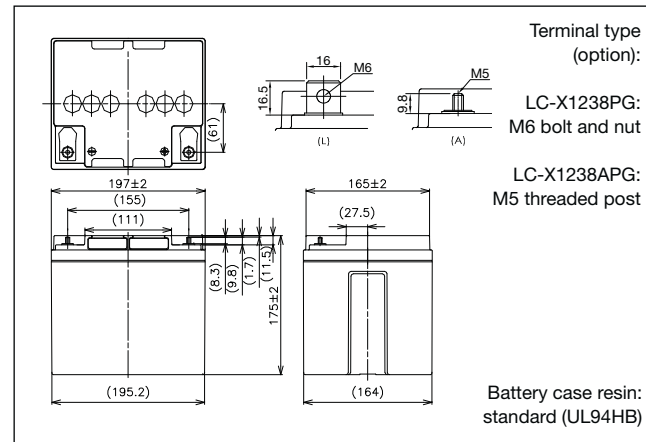
For standby power supplies. Expected trickle design life:
10 – 12 years at 20°C according to Eurobat.

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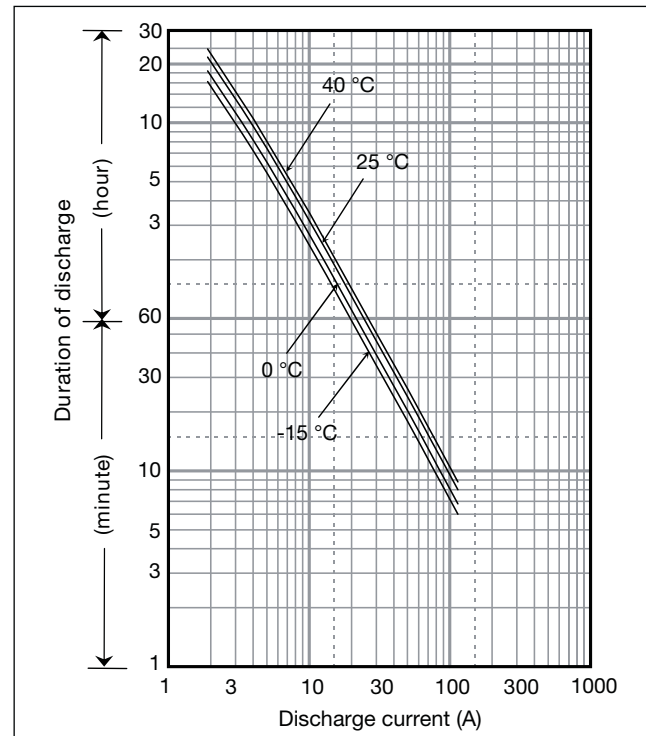
Dimensions (mm)



Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	38Ah	
Dimensions	Length	197mm
	Width	165mm
	Height	175mm
	Total Height	LC-X1238PG: 180mm LC-X1238APG: 175mm
Approx. mass	13kg	
Terminal	M6 Bolt and Nut type/ M5 threaded post	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate	38.0Ah
	10 hour rate	35.0Ah
	5 hour rate	31.5Ah
	1 hour rate	22.5Ah
Internal resistance	Fully charged battery (25°C)	8mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Watt Table

Cut-off V	(Wattage/Battery)																							
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h							
9.6V	1668	1349	1030	800	686	505	351	276	214	169	123	99.2	77.9	68.3	42.0	22.8	19.0							
9.9V	1535	1271	1008	788	682	500	350	269	209	168	120	98.0	76.7	68.3	42.0	22.8	19.0							
10.2V	1457	1204	980	768	672	489	349	267	185	167	119	96.8	75.5	68.3	42.0	22.8	19.0							
10.5V	1446	1126	952	748	661	480	346	265	183	166	119	96.8	75.5	68.3	42.0	22.8	19.0							
10.8V	1311	1098	874	716	640	468	308	247	175	155	114	94.4	74.3	67.1	42.0	22.8	18.7							

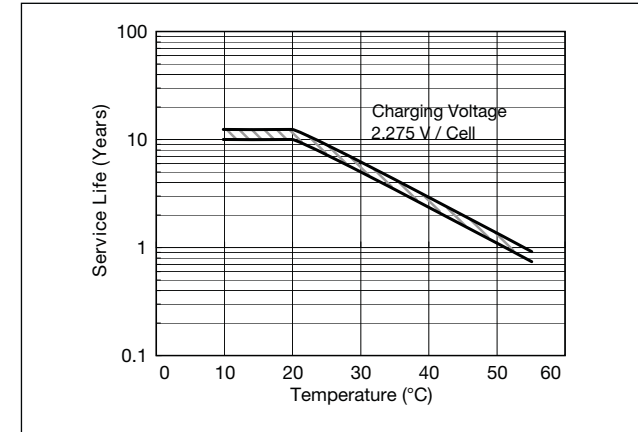
Ampere Table

Cut-off V	(Ampere/Battery)																							
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h							
9.6V	150	121	92.0	69.6	59.1	43.2	29.9	23.4	18.1	14.3	10.3	8.3	6.5	5.7	3.50	1.90	1.58							
9.9V	138	114	90.0	68.5	58.8	42.7	29.8	22.8	17.7	14.2	10.1	8.2	6.4	5.7	3.50	1.90	1.58							
10.2V	131	108	87.5	66.8	57.9	41.8	29.7	22.7	15.7	14.1	10.0	8.1	6.3	5.7	3.50	1.90	1.58							
10.5V	130	101	85.0	65.0	57.0	41.0	29.5	22.5	15.5	14.0	10.0	8.1	6.3	5.7	3.50	1.90	1.58							
10.8V	118	98.5	78.0	62.3	55.2	40.0	26.2	21.0	14.8	13.1	9.6	7.9	6.2	5.6	3.50	1.90	1.56							

Charging Method

Trickle use Control voltage: 13.6 - 13.8V; Initial current: 5.7A or smaller

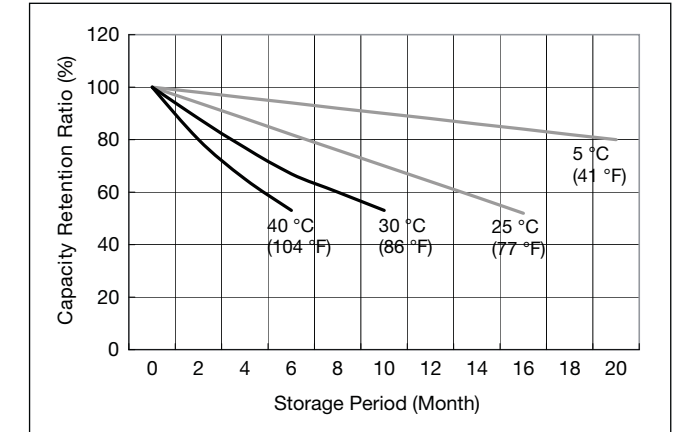
Influence of Temperature on Trickle life



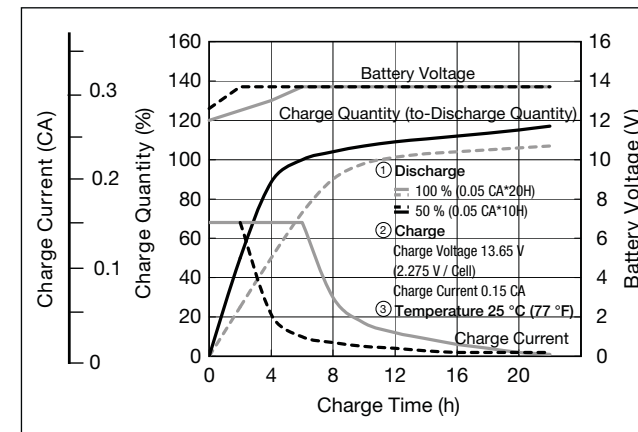
Cut off voltage

Discharge current	1.9A - 7.6A	7.6A - 19A	19A - 38A	38A - 76A	76A - 114A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

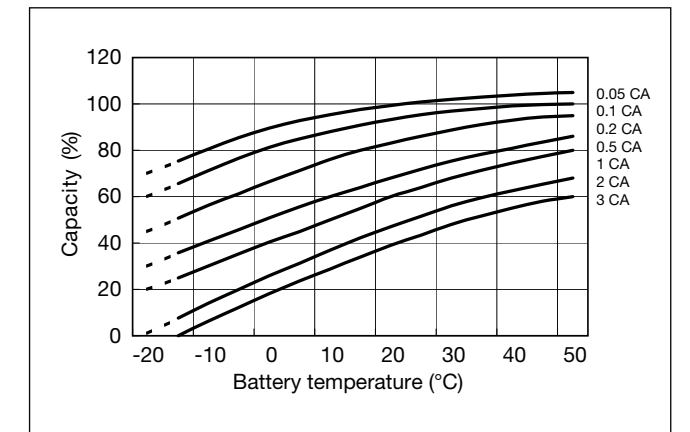
Residual capacity vs storage period



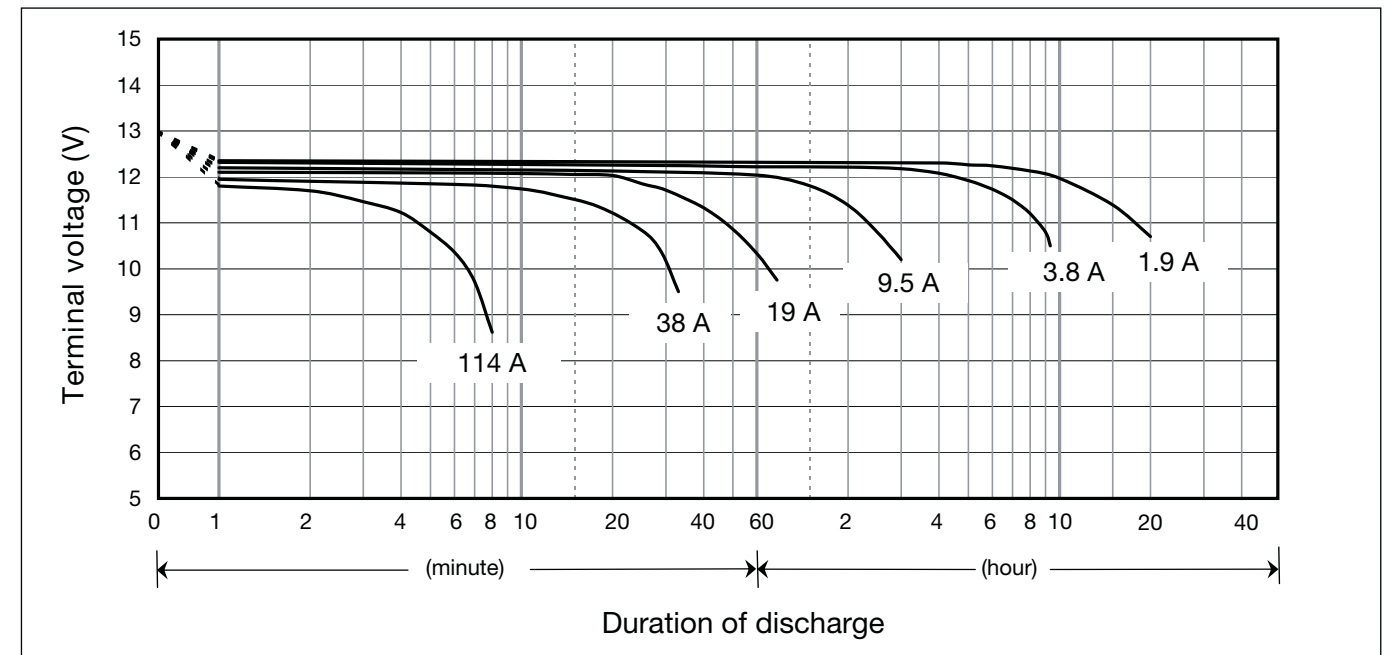
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current

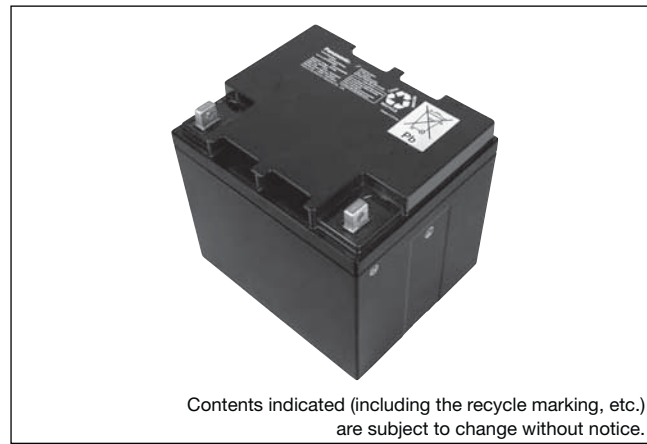


Discharge characteristics

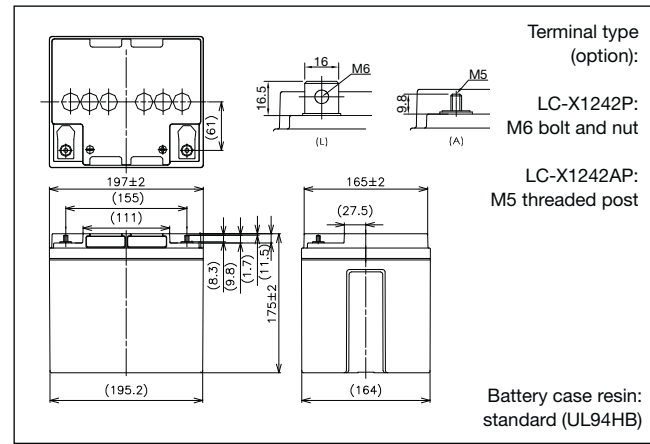


LC-X1242P/AP*1

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.



Dimensions (mm)



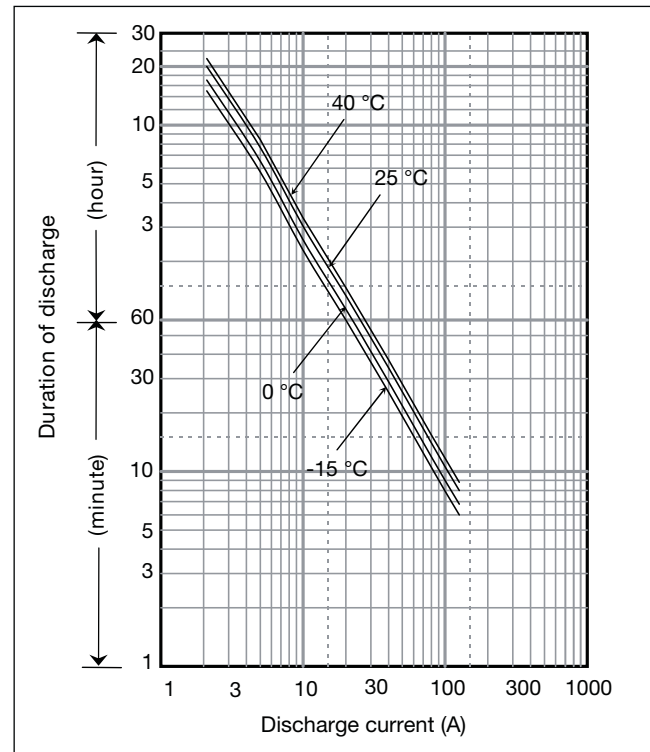
Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	42Ah	
Dimensions	Length	197mm
	Width	165mm
	Height	175mm
	Total Height	LC-X1242P: 180mm LC-X1242AP: 175mm
Approx. mass	16kg	
Terminal	M6 Bolt and Nut type/ M5 threaded post	

Characteristics

Capacity (25°C)	20 hour rate	42Ah
	10 hour rate	40Ah
	5 hour rate	37Ah
	1 hour rate	26Ah
Internal resistance	Fully charged battery (25°C)	8mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)																	
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h	
9.6V	1846	1483	1254	966	835	625	410	312	241	187	132	110	89.9	79.1	48.0	25.2	21.0	
9.9V	1701	1405	1232	966	824	607	407	310	234	186	130	109	88.7	79.1	48.0	25.2	21.0	
10.2V	1612	1327	1210	943	812	596	406	307	217	184	127	108	88.7	77.9	48.0	25.2	21.0	
10.5V	1590	1249	1176	920	800	585	405	306	211	184	126	108	88.7	77.9	48.0	25.2	21.0	
10.8V	1449	1215	1086	886	777	573	390	295	201	173	121	105	87.5	75.5	48.0	25.2	20.8	

Ampere Table

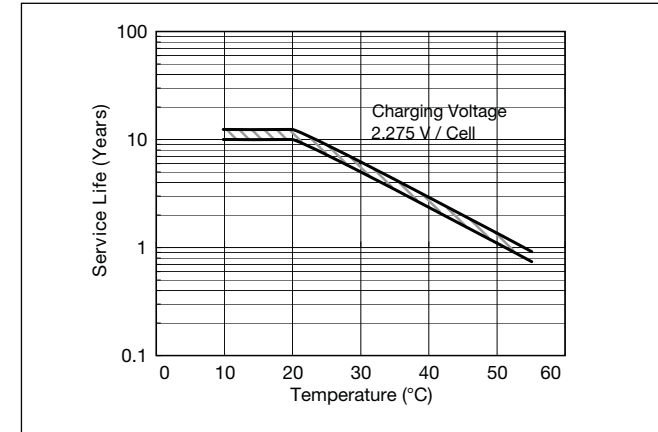
Cut-off V	(Ampere/Battery)																	
	3min	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h	
9.6V	166	133	112	84	72	53.4	34.9	26.5	20.4	15.8	11.1	9.2	7.5	6.6	4.0	2.1	1.75	
9.9V	153	126	110	84	71	51.9	34.7	26.3	19.8	15.7	10.9	9.1	7.4	6.6	4.0	2.1	1.75	
10.2V	145	119	108	82	70	50.9	34.6	26.1	18.4	15.5	10.7	9.0	7.4	6.5	4.0	2.1	1.75	
10.5V	143	112	105	80	69	50.0	34.5	26.0	17.9	15.5	10.6	9.0	7.4	6.5	4.0	2.1	1.75	
10.8V	130	109	97	77	67	49.0	33.2	25.0	17.0	14.6	10.2	8.8	7.3	6.3	4.0	2.1	1.73	

*1 This battery is also available with a flame retardant battery case resin (UL94 V-0).

Charging Method

Trickle use	Control voltage: 13.6 - 13.8V; Initial current: 6.3A or smaller
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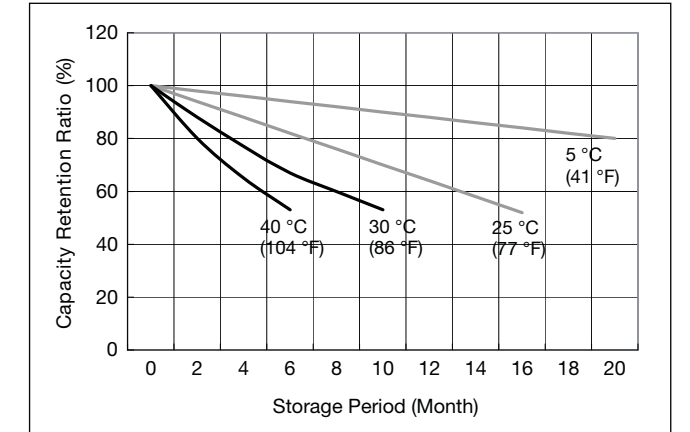
Influence of Temperature on Trickle life



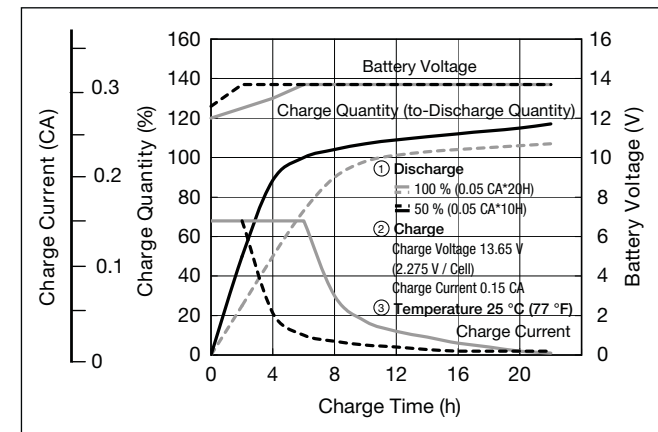
Cut off voltage

Discharge current	2.1A - 8.4A	8.4A - 21A	21A - 42A	42A - 84A	84A - 126A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

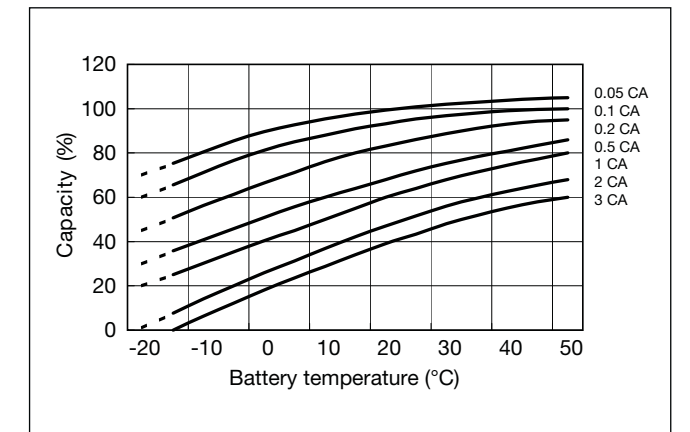
Residual capacity vs storage period



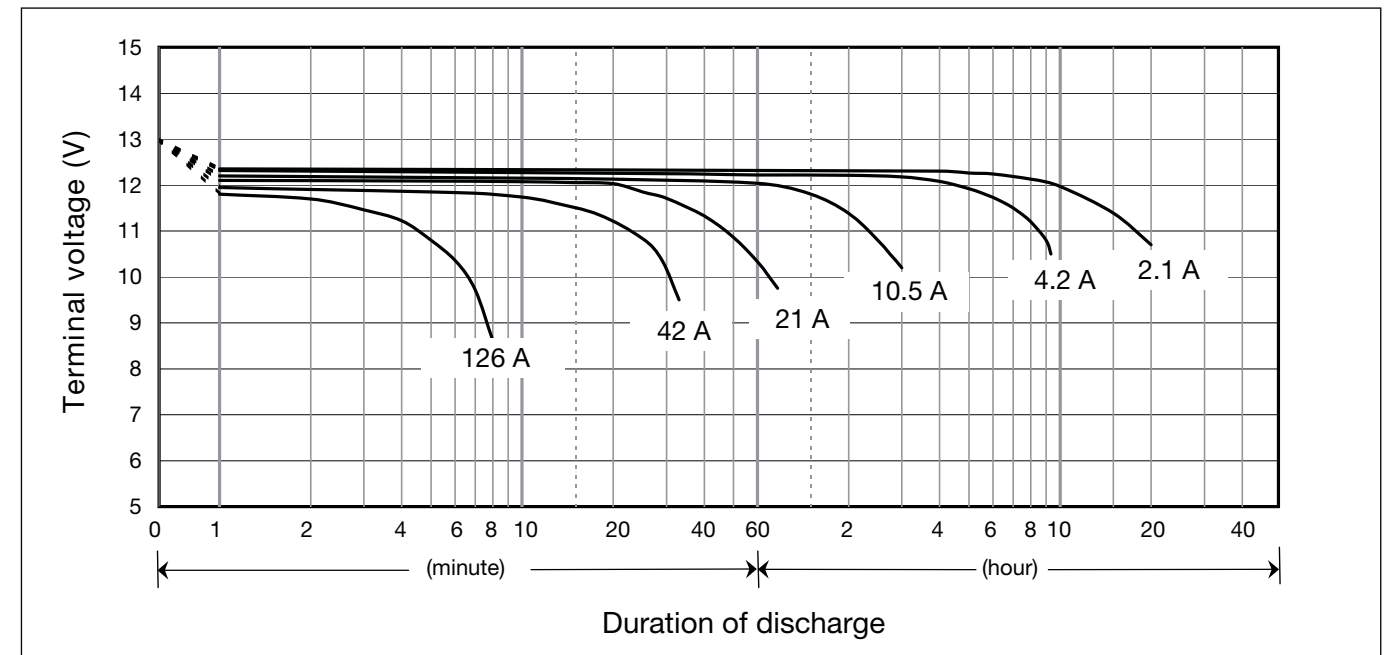
Constant-voltage and constant-current charge characteristics for Trickle use



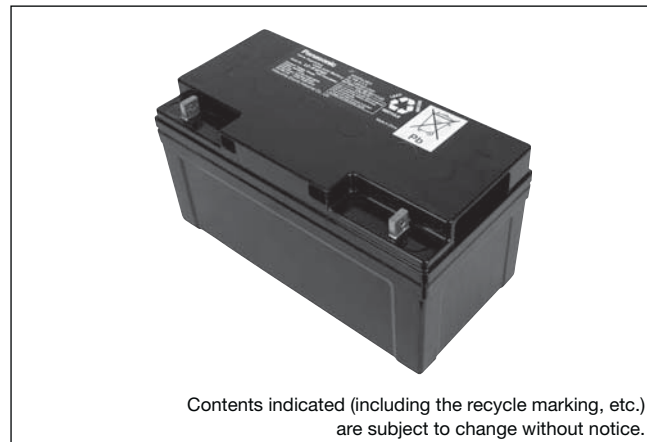
Discharge capacity by temperature and by discharge current



Discharge characteristics

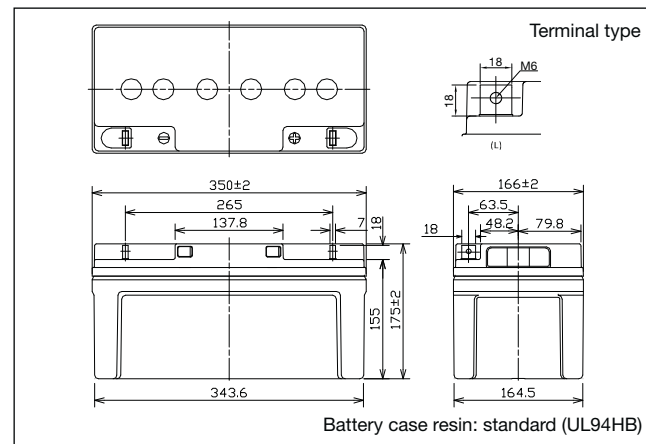


LC-X1275P*1



For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.

Dimensions (mm)



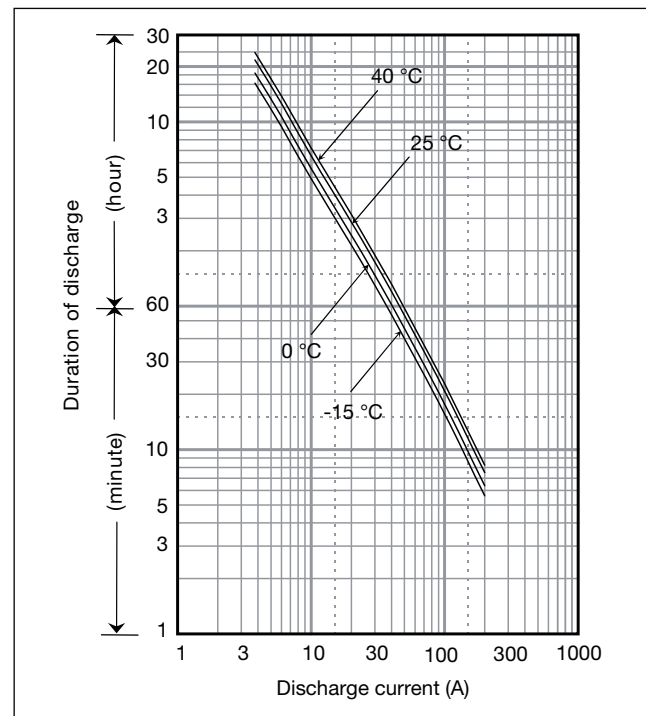
Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	75Ah	
Dimensions	Length	350mm
	Width	166mm
	Height	175mm
	Total Height	175mm
Approx. mass	24kg	
Terminal	M6 Bolt and Nut type	

Characteristics

Capacity (25°C)	20 hour rate	75Ah
	10 hour rate	68Ah
Internal resistance	5 hour rate	61Ah
	1 hour rate	45Ah
	Fully charged battery (25°C)	5mΩ
Temperature dependency of capacity (20 hour rate)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self discharge (25°C)	After 3 months	91%
	After 6 months	82%
	After 12 months	64%

Duration of discharge vs Discharge current



Watt Table

Cut-off V	(Wattage/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	1985	1546	1350	1017	722	601	411	327	220	171	149	125	79.5	45.0	37.2
9.9V	1962	1538	1342	1009	703	599	403	325	216	169	147	125	79.5	45.0	37.2
10.2V	1955	1531	1327	994	699	595	400	321	215	168	144	124	78.6	45.0	37.2
10.5V	1783	1446	1265	978	691	591	395	317	215	168	144	124	78.6	45.0	37.2
10.8V	1693	1400	1234	962	597	512	355	301	205	164	143	120	77.8	44.1	37.2

Ampere Table

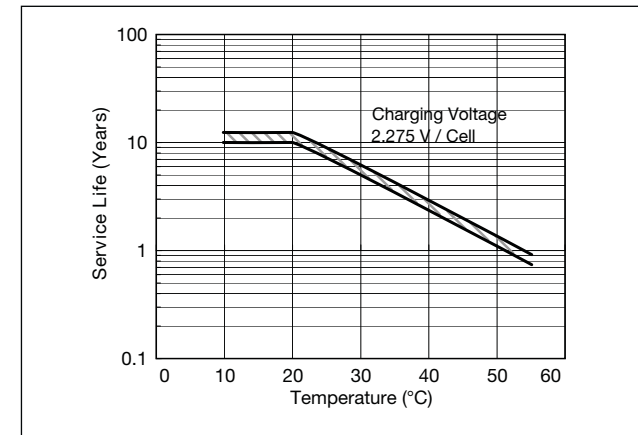
Cut-off V	(Ampere/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	177	134	116	86.9	61.5	51.0	34.8	27.6	18.5	14.3	12.4	10.4	6.62	3.75	3.10
9.9V	175	134	116	86.3	59.9	50.8	34.1	27.4	18.2	14.2	12.2	10.4	6.62	3.75	3.10
10.2V	175	133	114	84.9	59.5	50.5	33.8	27.1	18.1	14.0	12.0	10.4	6.55	3.75	3.10
10.5V	159	126	109	83.6	58.9	50.2	33.4	26.8	18.1	14.0	12.0	10.4	6.55	3.75	3.10
10.8V	151	122	106	82.3	50.8	43.5	30.1	25.4	17.3	13.7	11.9	10.0	6.49	3.68	3.10

*1 This battery is also available with a flame retardant battery case resin (UL94 V-0).

Charging Method

Trickle use	Control voltage: 13.6 - 13.8V; Initial current: 11.25A or smaller
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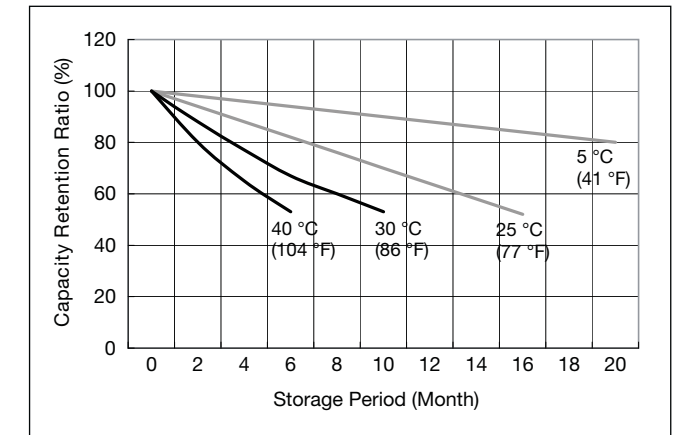
Influence of Temperature on Trickle life



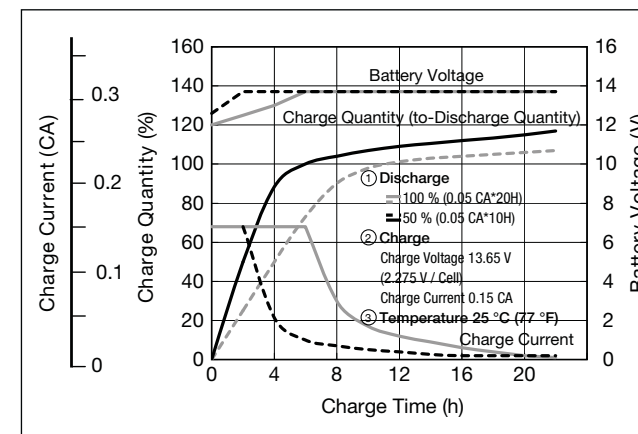
Cut off voltage

Discharge current	3.75A - 15A	15A - 37.5A	37.5A - 75A	75A - 150A	150A - 225A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

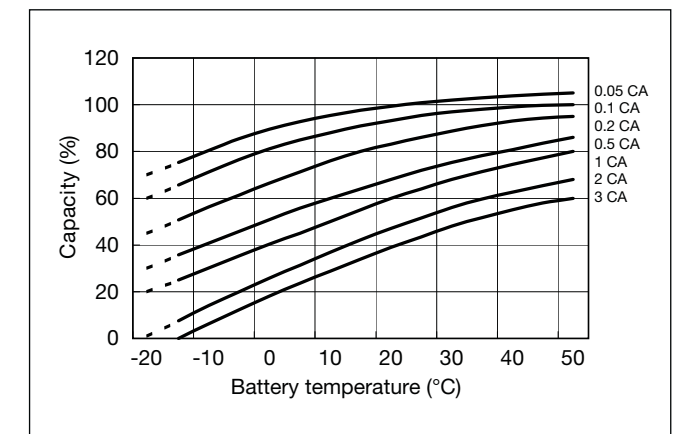
Residual capacity vs storage period



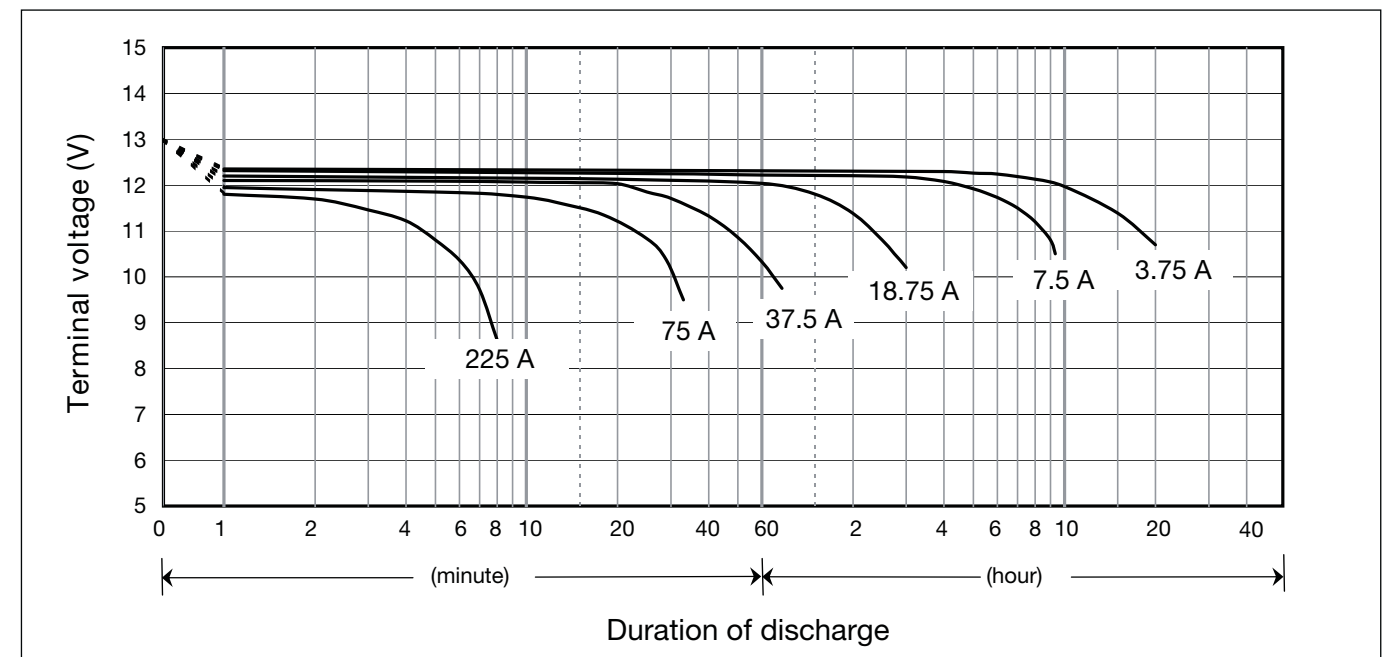
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics

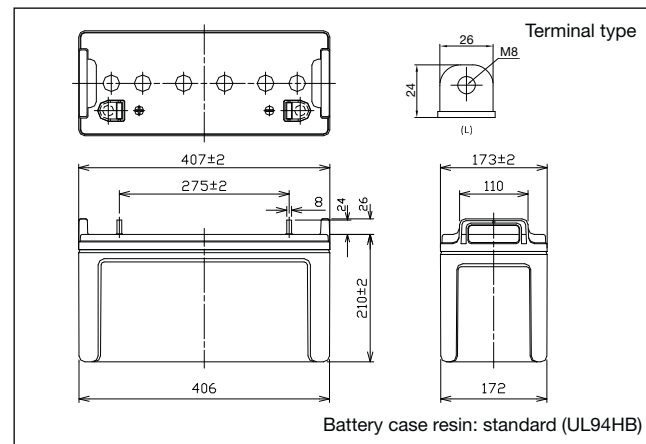


LC-XB12100P*1

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.



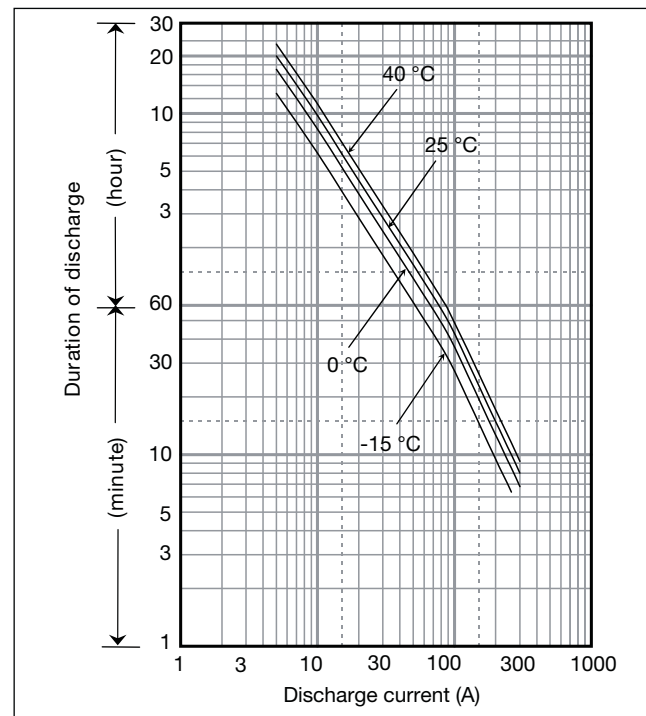
Dimensions (mm)



Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	100Ah	
Dimensions	Length	407mm
	Width	173mm
	Height	210mm
	Total Height	236mm
Approx. mass	36.5kg	
Terminal	M8 Bolt and Nut type	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate 10 hour rate 5 hour rate 1 hour rate	100Ah 98Ah 90Ah 70Ah
Internal resistance	Fully charged battery (25°C)	4.5mΩ
Temperature dependency of capacity (20 hour rate)	40°C 25°C 0°C -15°C	102% 100% 85% 65%
Self discharge (25°C)	After 3 months After 6 months After 12 months	91% 82% 64%

Watt Table

Cut-off V	(Wattage/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	2306	1834	1592	1206	892	733	582	430	281	226	170	154	88.3	47.0	38.5
9.9V	2254	1790	1554	1177	869	714	567	419	276	221	165	149	85.3	47.0	38.5
10.2V	2204	1726	1498	1139	877	694	551	413	272	216	160	145	84.3	46.5	38.0
10.5V	2134	1705	1487	1130	852	675	536	405	267	213	160	145	83.3	46.5	38.0
10.8V	1947	1624	1479	1094	840	666	528	395	262	208	155	150	82.3	45.5	37.2

Ampere Table

Cut-off V	(Ampere/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	265	201	174	130	92.0	76.3	52.0	41.3	27.7	21.4	18.6	15.6	9.9	5.0	4.2
9.9V	262	200	173	129	89.5	76.0	51.0	41.0	27.2	21.2	18.3	15.6	9.9	5.0	4.2
10.2V	261	199	171	127	89.0	75.5	50.6	40.5	27.0	21.0	18.0	15.5	9.8	5.0	4.2
10.5V	238	188	163	125	88.0	75.0	50.0	40.0	27.0	21.0	18.0	15.5	9.8	5.0	4.2
10.8V	226	182	159	123	76.0	65.0	45.0	38.0	25.8	20.5	17.8	15.0	9.7	4.9	4.2

*1 This battery is also available with a flame retardant battery case resin (UL94 V-0).

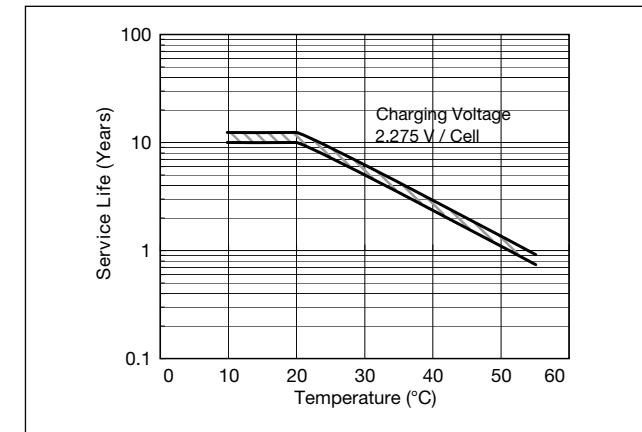
Charging Method

Trickle use	Control voltage: 13.6 - 13.8V; Initial current 15A or smaller
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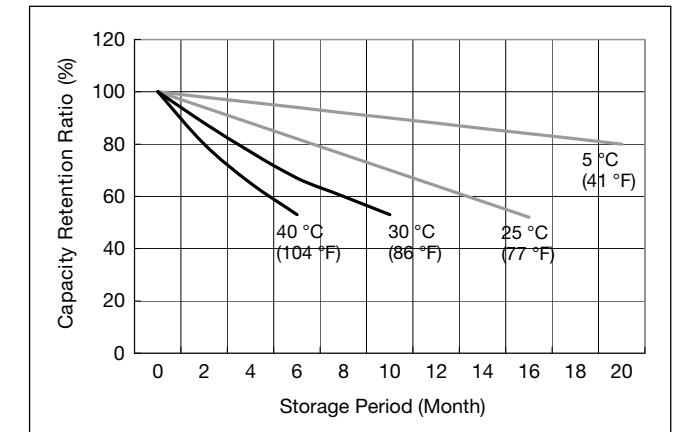
Cut off voltage

Discharge current	5A - 20A	20A - 50A	50A - 100A	100A - 200A	200A - 300A
Cut off voltage (V)	10.5	10.2	9.9	9.3	8.7

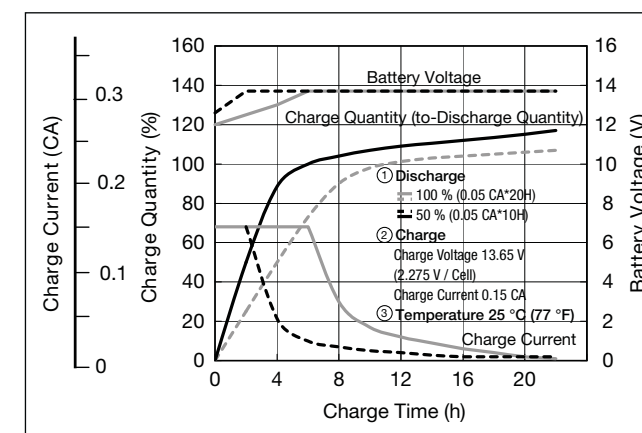
Influence of Temperature on Trickle life



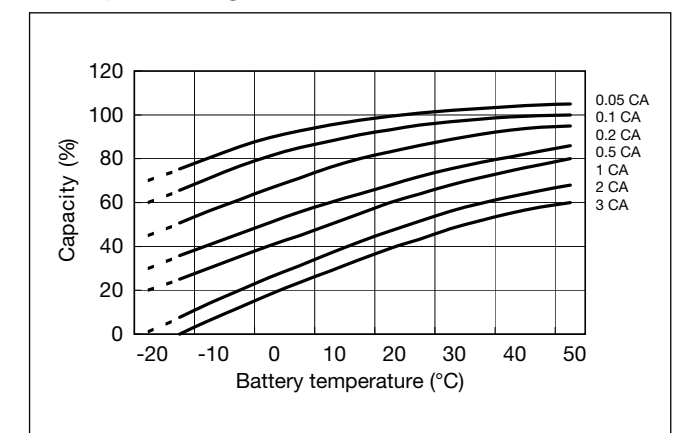
Residual capacity vs storage period



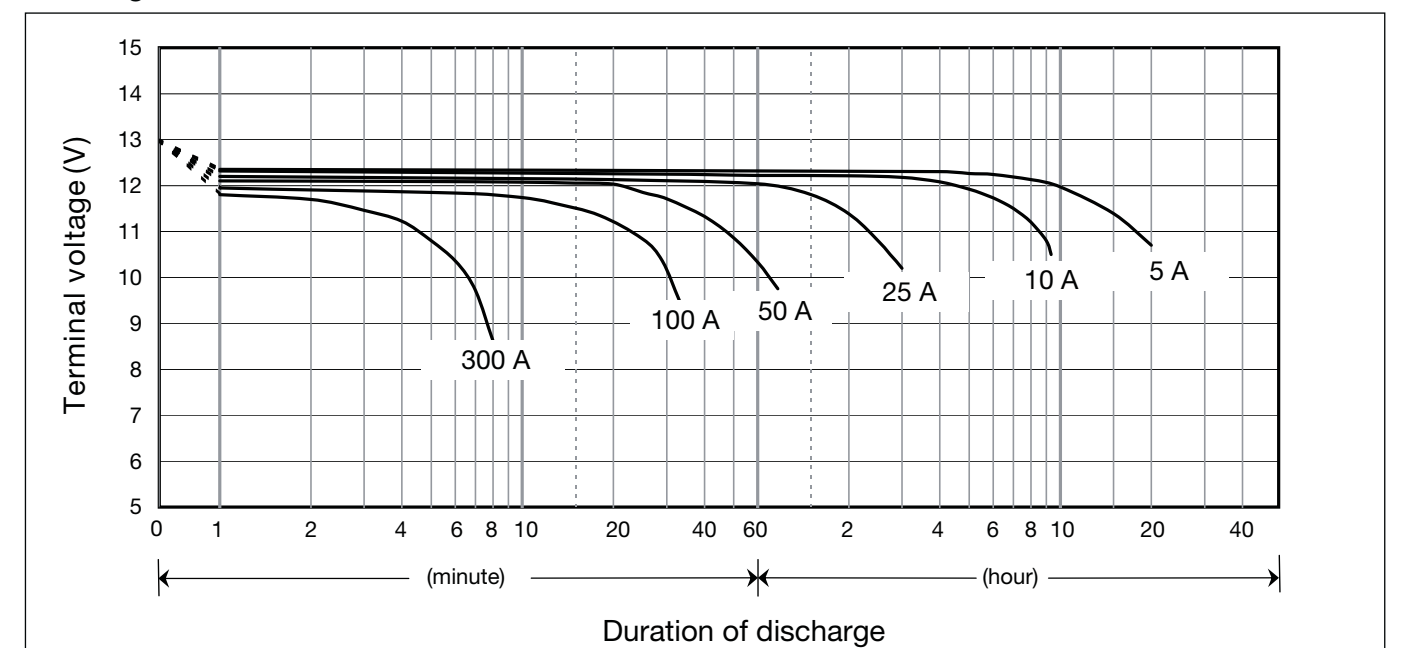
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics

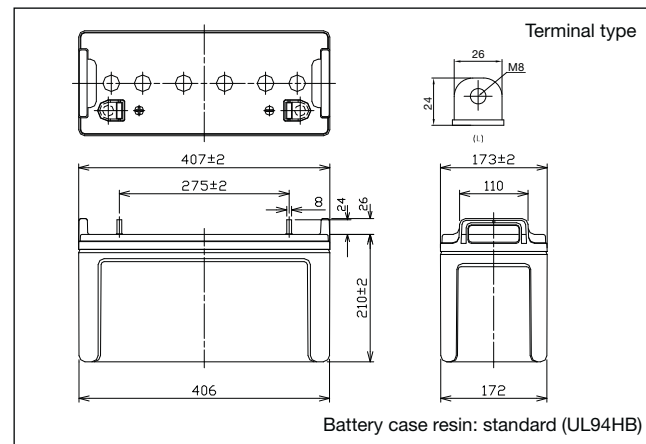


LC-X12120P*1

For standby power supplies.
Expected trickle design life: 10 – 12 years at 20°C according to Eurobat.



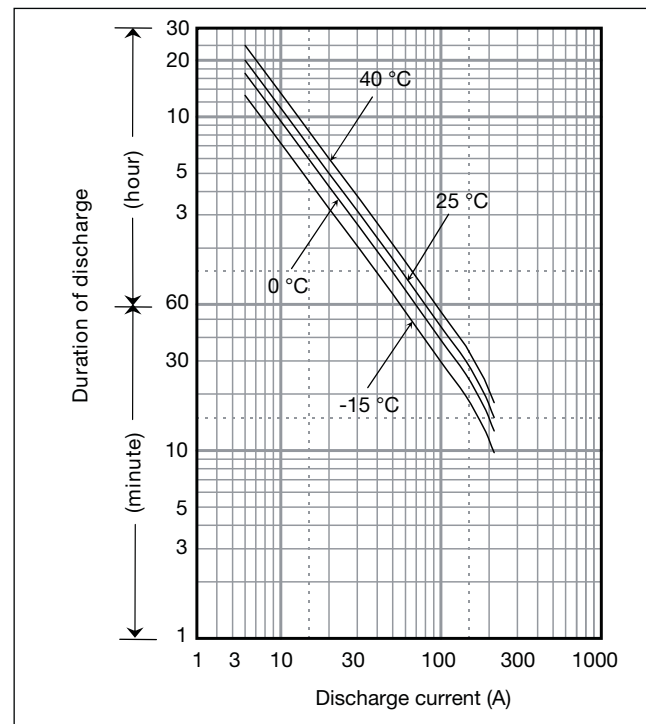
Dimensions (mm)



Specifications

Nominal voltage	12V	
Nominal capacity (20 hour rate)	120Ah	
Dimensions	Length	407mm
	Width	173mm
	Height	210mm
	Total Height	236mm
Approx. mass	35.5kg	
Terminal	M8 Bolt and Nut type	

Duration of discharge vs Discharge current



Characteristics

Capacity (25°C)	20 hour rate 10 hour rate 5 hour rate 1 hour rate	120Ah 109Ah 99Ah 74Ah
Internal resistance	Fully charged battery (25°C)	3.5mΩ
Temperature dependency of capacity (20 hour rate)	40°C 25°C 0°C -15°C	102% 100% 85% 65%
Self discharge (25°C)	After 3 months After 6 months After 12 months	91% 82% 64%

Watt Table

Cut-off V	(Wattage/Battery)													
	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	1920	1677	1409	1095	835	663	499	326	261	197	179	104	60.2	46.8
9.9V	1910	1667	1370	1062	820	662	486	322	255	191	177	103	60.1	46.8
10.2V	1901	1648	1322	1040	805	642	479	315	249	185	168	101	60.0	46.7
10.5V	1796	1571	1316	1025	764	629	470	310	246	184	166	101	60.0	46.6
10.8V	1739	1532	1281	980	672	559	458	306	240	180	163	100	59.9	46.6

Ampere Table

Cut-off V	(Ampere/Battery)													
	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	229	198	149	105	86.9	59.3	47.9	32.1	23.7	20.6	17.4	11.1	6.00	5.04
9.9V	228	197	148	102	86.6	58.1	47.5	31.5	23.4	20.4	17.4	11.1	6.00	5.04
10.2V	227	195	146	102	85.9	57.7	46.9	31.2	23.2	20.0	17.3	11.0	6.00	5.04
10.5V	215	186	143	101	85.4	56.9	46.3	31.3	23.2	20.0	17.3	11.0	6.00	5.04
10.8V	208	181	141	87	74.0	51.2	44.0	29.9	22.7	19.8	16.7	10.9	5.88	5.00

*1 This battery is also available with a flame retardant battery case resin (UL94 V-0).

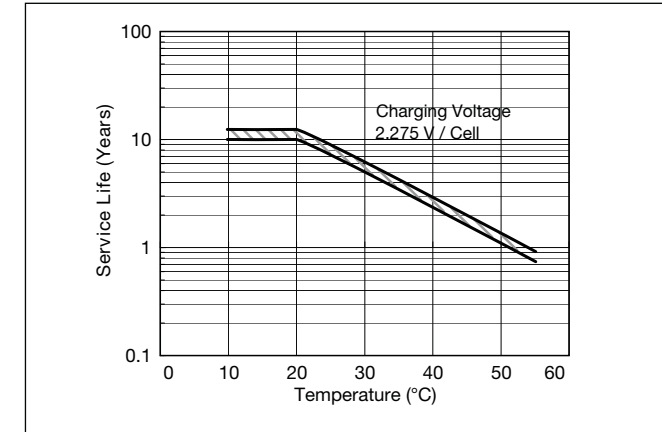
Charging Method

Trickle use	Control voltage: 13.6 - 13.8V; Initial current 18A or smaller
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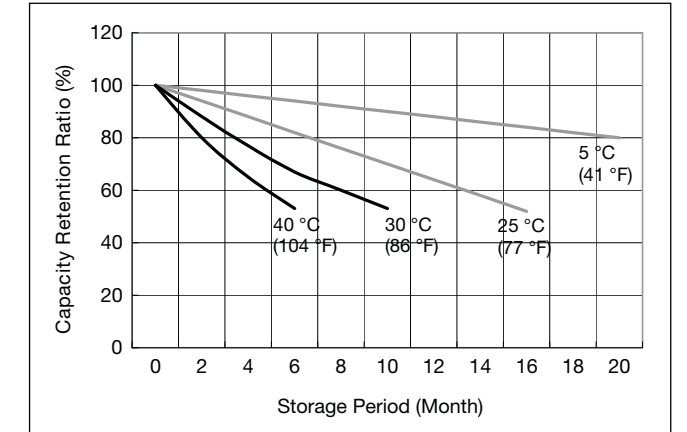
Cut off voltage

Discharge current	6A - 24A	24A - 60A	60A - 120A	120A - 240A
Cut off voltage (V)	10.5	10.2	9.9	9.3

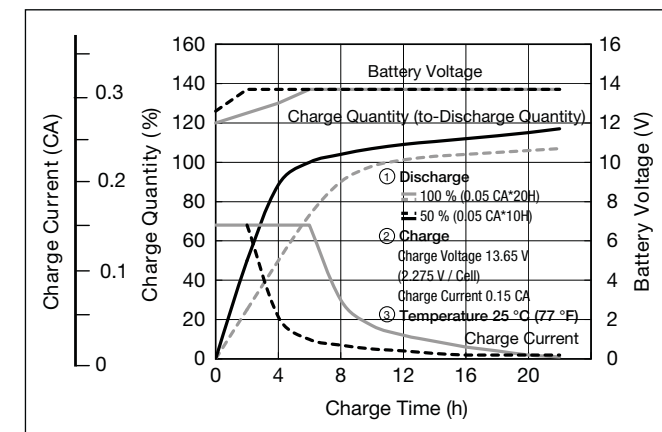
Influence of Temperature on Trickle life



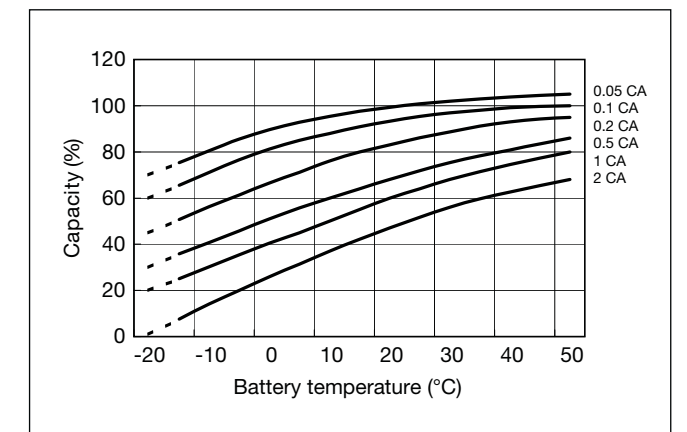
Residual capacity vs storage period



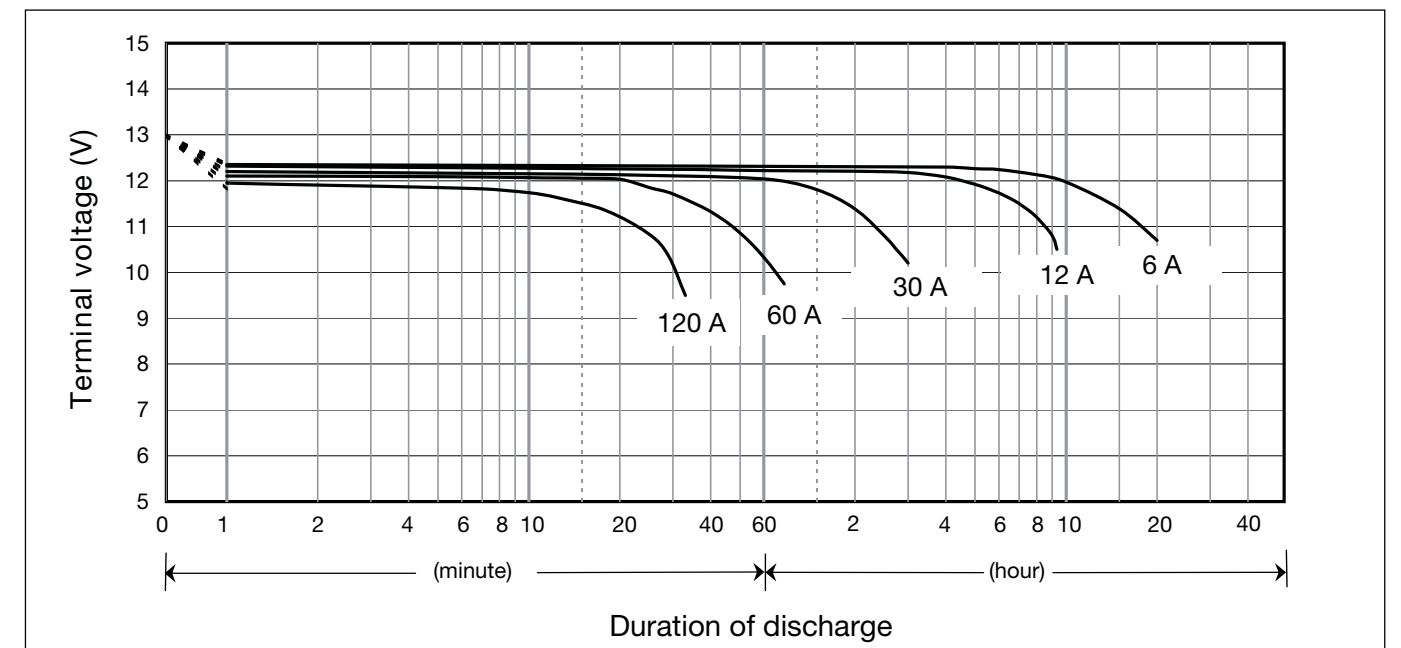
Constant-voltage and constant-current charge characteristics for Trickle use



Discharge capacity by temperature and by discharge current



Discharge characteristics



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