

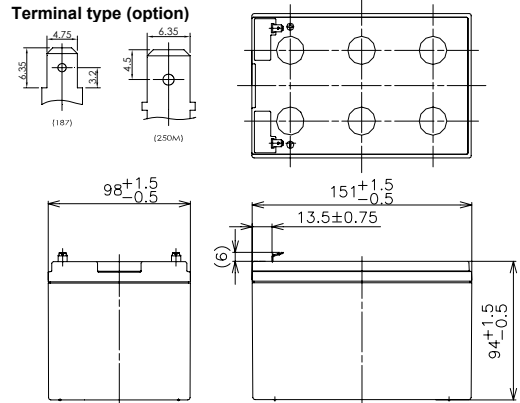
LC-CA1212



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

For main power supplies
Cycle long life type.

■ Dimensions(mm)

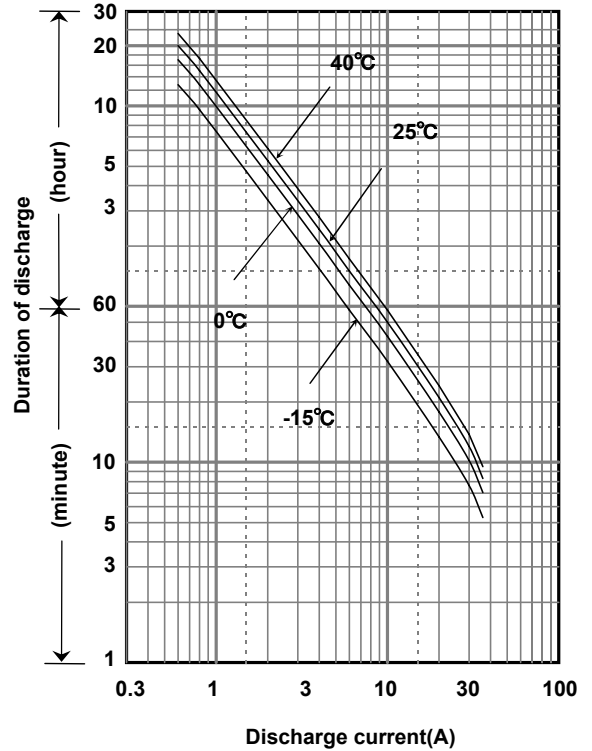


Battery case resin:standard(UL94HB)

■ Specification

Nominal Voltage		12V
Rated Capacity(20HR)		12Ah
Dimensions	Length	151 mm
	Width	98 mm
	Height	94 mm
	Total height	100 mm
Approx. Mass		3.85 kg
Terminal		Faston 187 & 250M

■ Duration of discharge vs. discharge current



■ Characteristics

Capacity (25 °C)	20 hour rate	12Ah
	10 hour rate	11.3Ah
	5 hour rate	10.4Ah
	1 hour rate	8.1Ah
Internal Resistance	Fully charged battery (25 °C)	20 mΩ
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(25°C)

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(25°C)

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	

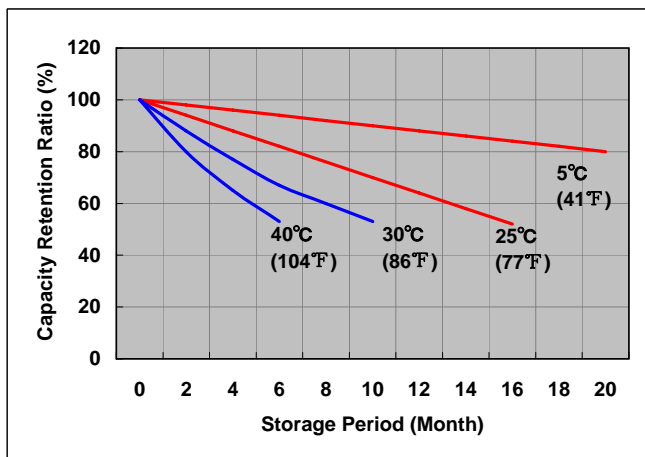
■ Charging Method (25°C)

Cycle use	Control voltage 14.5-14.9V; Initial current 4.8A or smaller
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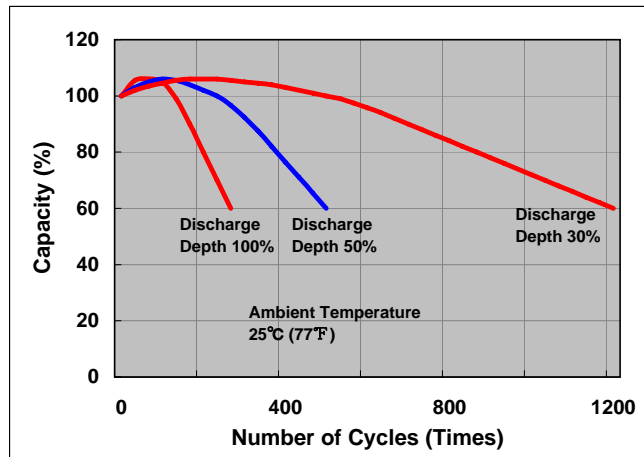
■ Cut off voltage

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

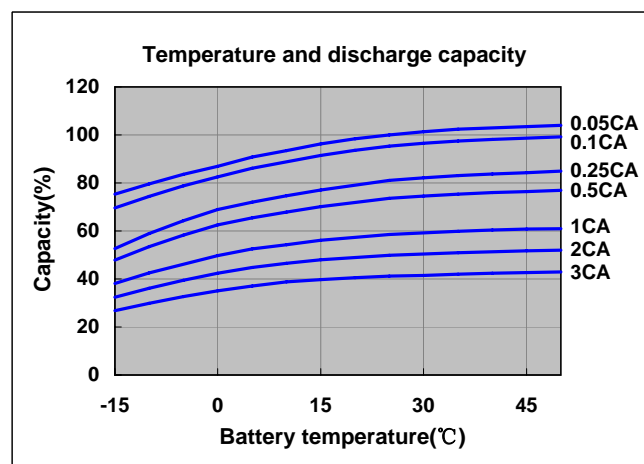
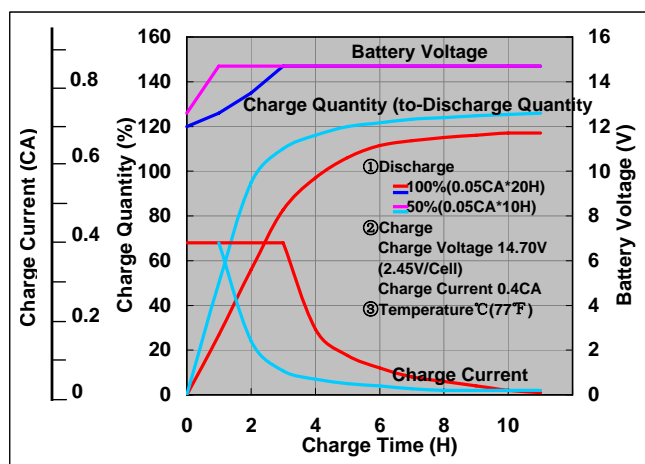
■ Residual capacity test result



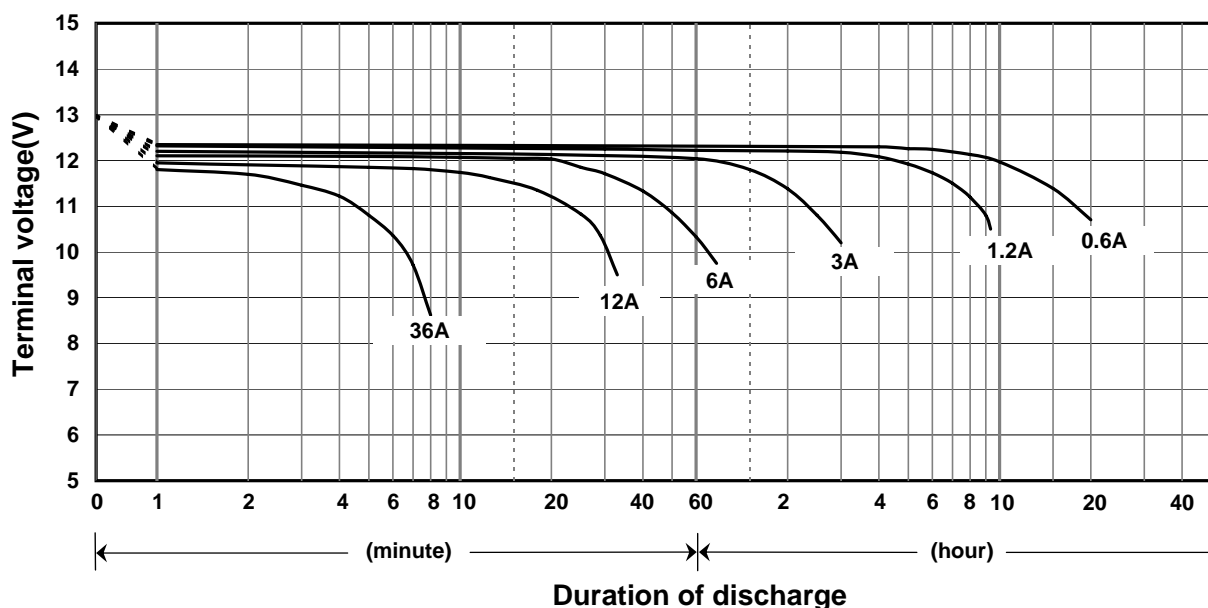
■ Cycle life vs. Depth of discharge



■ Constant-voltage and constant-current charge characteristics ■ Discharge capacity by temperature and by discharge current



■ Discharge characteristics (25°C)

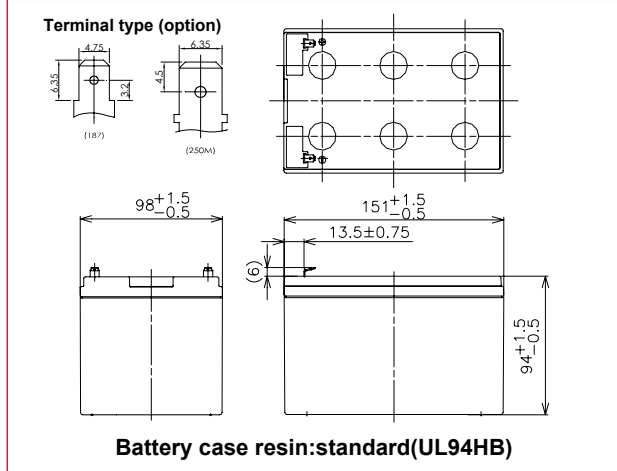


LC-CA1215



For main power supplies
Cycle long life type.

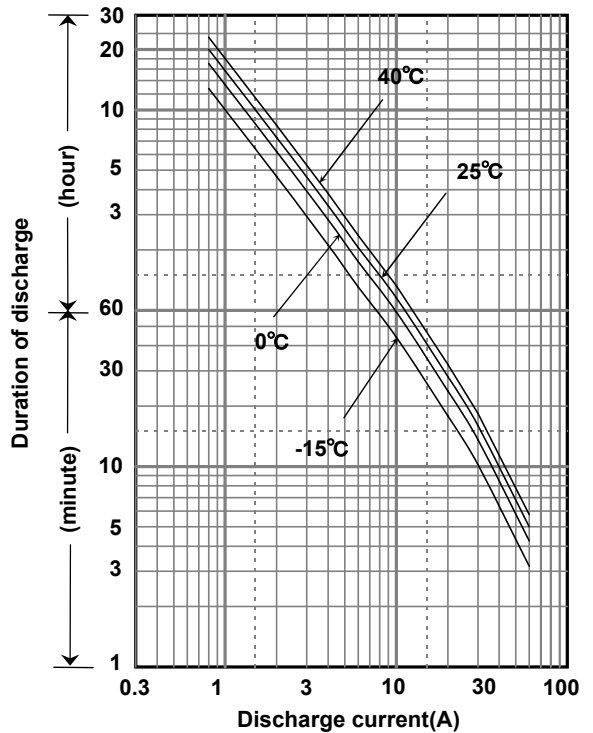
■ Dimensions(mm)



■ Specification

Nominal Voltage		12V
Rated Capacity(20HR)		15Ah
Dimensions	Length	151 mm
	Width	98 mm
	Height	94 mm
	Total height	100 mm
Approx. Mass		4.15 kg
Terminal		Faston 187 & 250M

■ Duration of discharge vs. discharge current



■ Characteristics

Capacity (25 °C)	20 hour rate	15Ah
	10 hour rate	14Ah
	5 hour rate	12.9Ah
	1 hour rate	10Ah
Internal Resistance	Fully charged battery (25 °C)	15 mΩ
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(25°C)

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	850	682	455	350	292	217	157	123	83.9	65.0	47.1	36.0	29.9	25.2	16.2	8.75	7.30
9.9V	799	646	444	343	286	213	156	123	82.8	64.6	46.9	35.8	29.7	25.1	16.1	8.74	7.29
10.2V	741	607	433	336	281	211	154	121	81.4	63.4	46.4	35.7	29.5	24.9	15.9	8.72	7.27
10.5V	667	555	404	318	270	206	152	118	80.1	61.9	45.7	35.5	29.4	24.8	15.9	8.70	7.25
10.8V	576	497	368	300	263	199	146	116	77.7	59.6	44.8	35.1	28.9	24.5	15.7	8.66	7.21

■ Ampere Table(25°C)

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	76.5	61.2	40.6	30.4	25.2	18.5	13.4	10.5	7.11	5.49	3.96	3.01	2.49	2.10	1.35	0.73	0.61
9.9V	71.8	58.0	39.7	29.9	24.7	18.2	13.3	10.4	7.01	5.45	3.94	3.00	2.48	2.09	1.34	0.73	0.61
10.2V	66.6	54.5	38.6	29.2	24.2	18.1	13.1	10.3	6.89	5.36	3.90	2.99	2.46	2.08	1.33	0.73	0.61
10.5V	59.9	49.8	36.1	27.6	23.3	17.6	13.0	10.0	6.78	5.22	3.84	2.97	2.45	2.07	1.33	0.72	0.60
10.8V	51.8	44.6	32.9	26.1	22.7	17.0	12.5	9.82	6.58	5.03	3.77	2.94	2.41	2.04	1.31	0.72	0.60

Charging Method

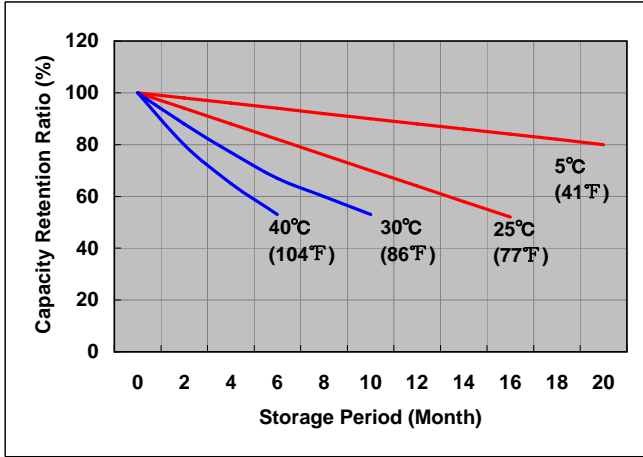
(25°C)

Cycle use	Control voltage 14.5-14.9V; Initial current 6A or smaller
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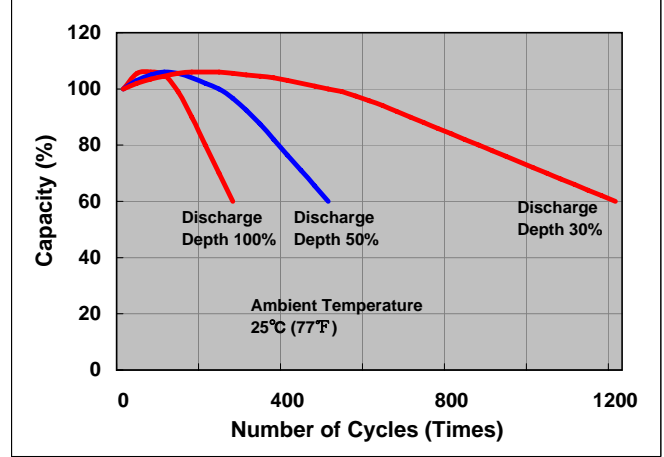
Cut off voltage

Discharge current	0.75A-3A	3A-7.5A	7.5A-15A	15A-30A	30A-45A
Cut off voltage(V)	10.5	10.2	9.9	9.3	8.7

Residual capacity test result

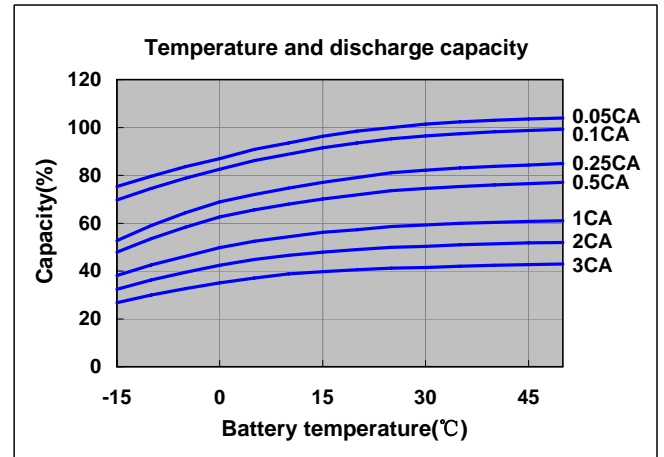
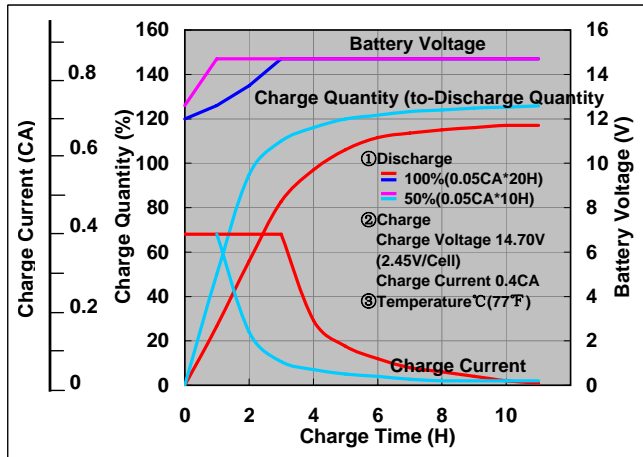


Cycle life vs. Depth of discharge

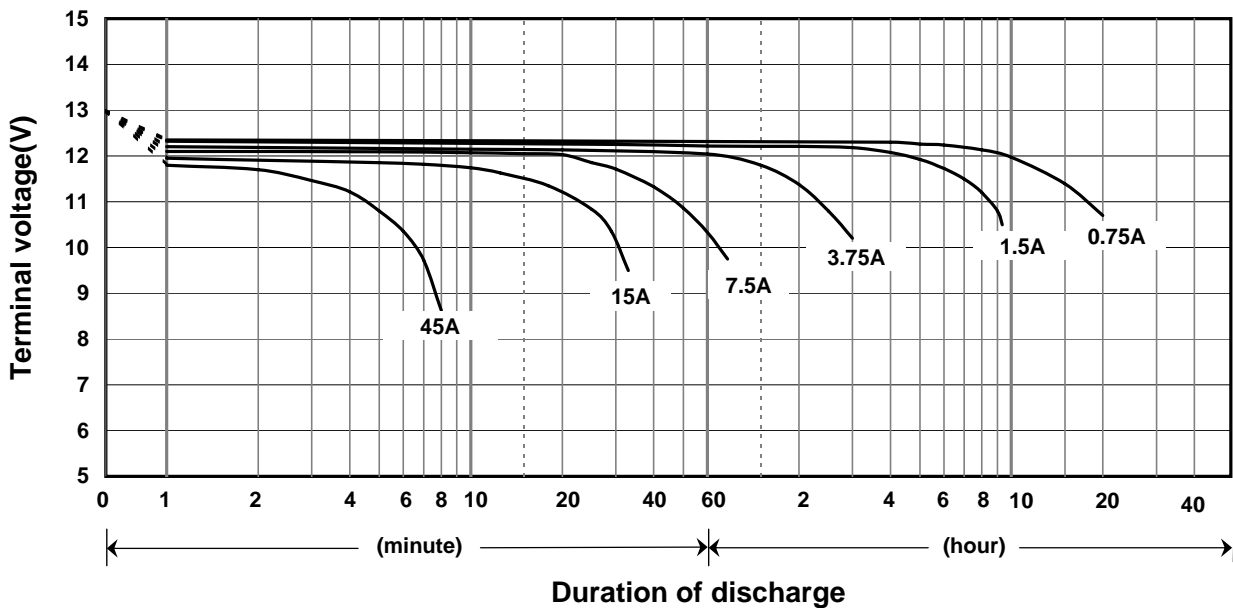


Constant-voltage and constant-current charge characteristics

Discharge capacity by temperature and by discharge current



Discharge characteristics (25°C)

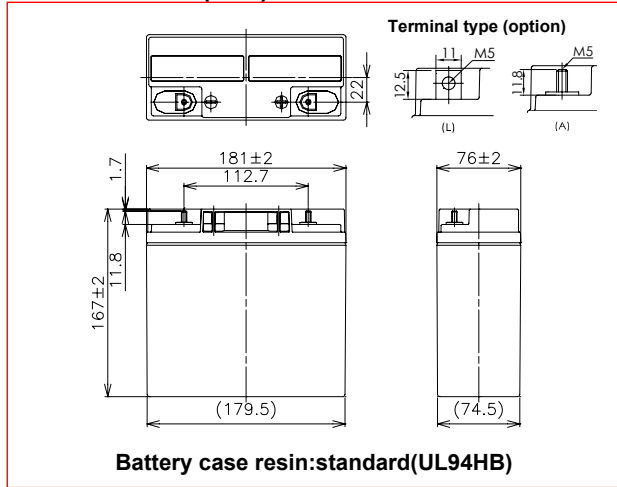


LC-XC1221

For main power supplies
Cycle long life type.



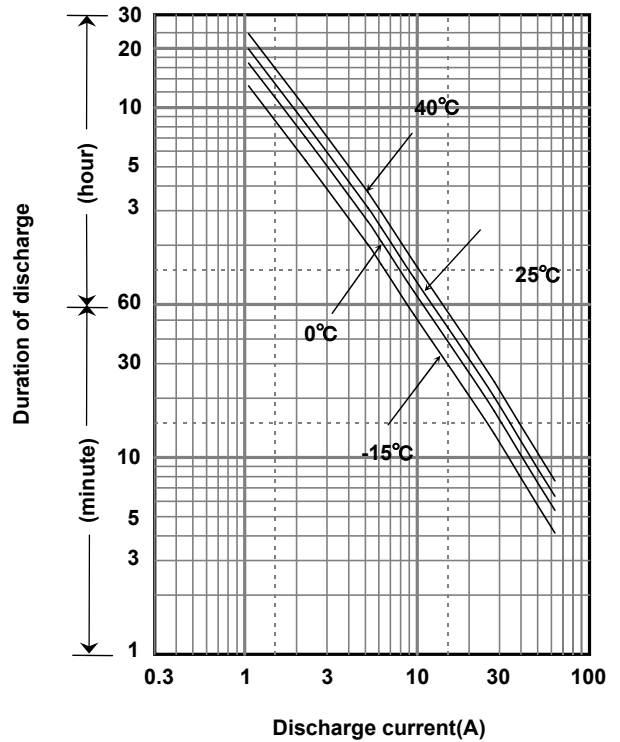
■ Dimensions(mm)



■ Specification

Nominal Voltage		12V
Rated Capacity(20HR)		21Ah
Dimensions	Length	181 mm
	Width	76 mm
	Height	167 mm
	Total height	167 mm
Approx. Mass		6.55kg
Terminal		M5 threaded post Bolt and Nut type

■ Duration of discharge vs. discharge current



■ Characteristics

Capacity (25 °C)	20 hour rate	21Ah
	10 hour rate	18.5Ah
	5 hour rate	17Ah
	1 hour rate	12Ah
Internal Resistance	Fully charged battery (25 °C)	13mΩ
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(25°C)

Cut-off V	(Wattage/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	589	450	377	281	193	154	106	90.3	67.2	51.6	42.6	34.3	22.9	12.4	10.4
9.9V	577	447	371	278	192	154	104	89.6	66.9	51.3	42.3	34.1	22.8	12.4	10.3
10.2V	562	437	365	275	190	151	102	87.3	66.2	51.0	42.0	33.9	22.6	12.4	10.3
10.5V	521	407	346	269	187	148	100	84.3	65.2	50.6	41.6	33.5	22.5	12.3	10.3
10.8V	465	380	337	260	184	145	97.1	80.3	63.9	49.9	40.6	32.9	22.2	12.3	10.2

■ Ampere Table(25°C)

Cut-off V	(Ampere/Battery)														
	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	10h	20h	24h
9.6V	57.4	41.5	35.4	25.3	17.8	13.6	9.14	7.05	5.22	3.99	3.29	2.64	1.95	1.06	0.884
9.9V	56.2	41.2	34.9	25.0	17.7	13.6	8.96	7.00	5.20	3.97	3.26	2.63	1.95	1.06	0.881
10.2V	54.8	40.4	34.3	24.7	17.5	13.3	8.77	6.81	5.14	3.94	3.24	2.61	1.93	1.05	0.878
10.5V	50.7	37.6	32.6	24.2	17.2	13.1	8.59	6.58	5.07	3.92	3.21	2.58	1.92	1.05	0.875
10.8V	45.2	35.1	31.7	23.4	17.0	12.8	8.36	6.27	4.96	3.86	3.13	2.54	1.90	1.04	0.869

■ Charging Method

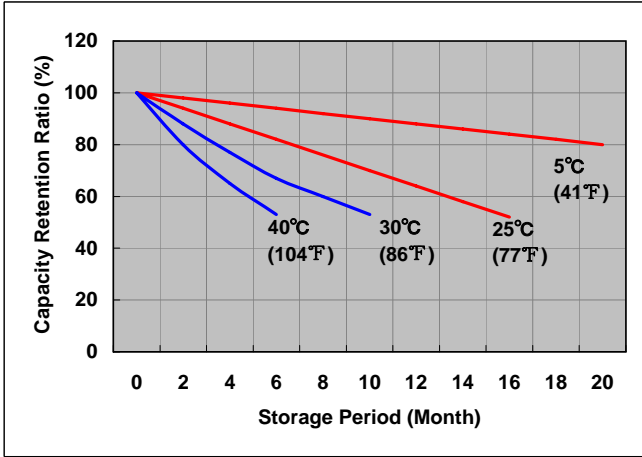
(25°C)

Cycle use	Control voltage 14.5-14.9V; Initial current 8.4A or smaller
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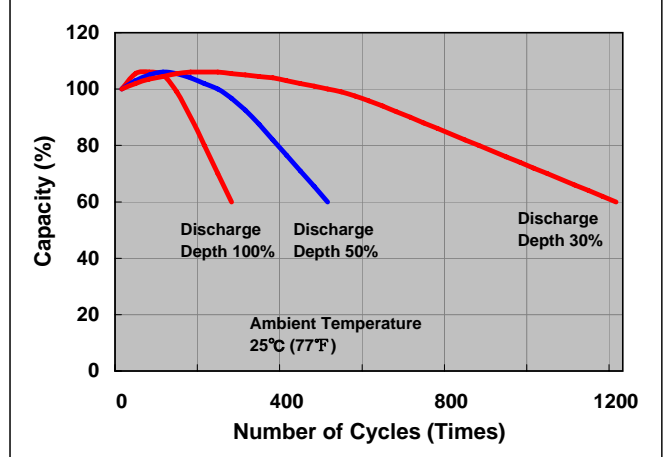
■ Cut off voltage

Discharge current	1.05A-4.2A	4.2A-10.5A	10.5A-21A	21A-42A	42A-63A
Cut off voltage(V)	10.5	10.2	9.9	9.3	8.7

■ Residual capacity test result

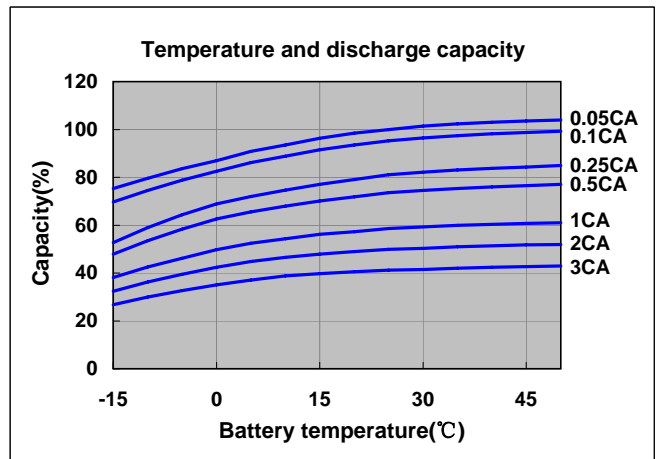
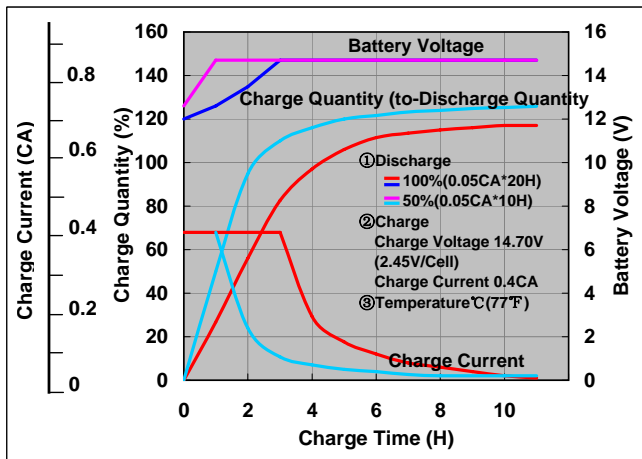


■ Cycle life vs. Depth of discharge

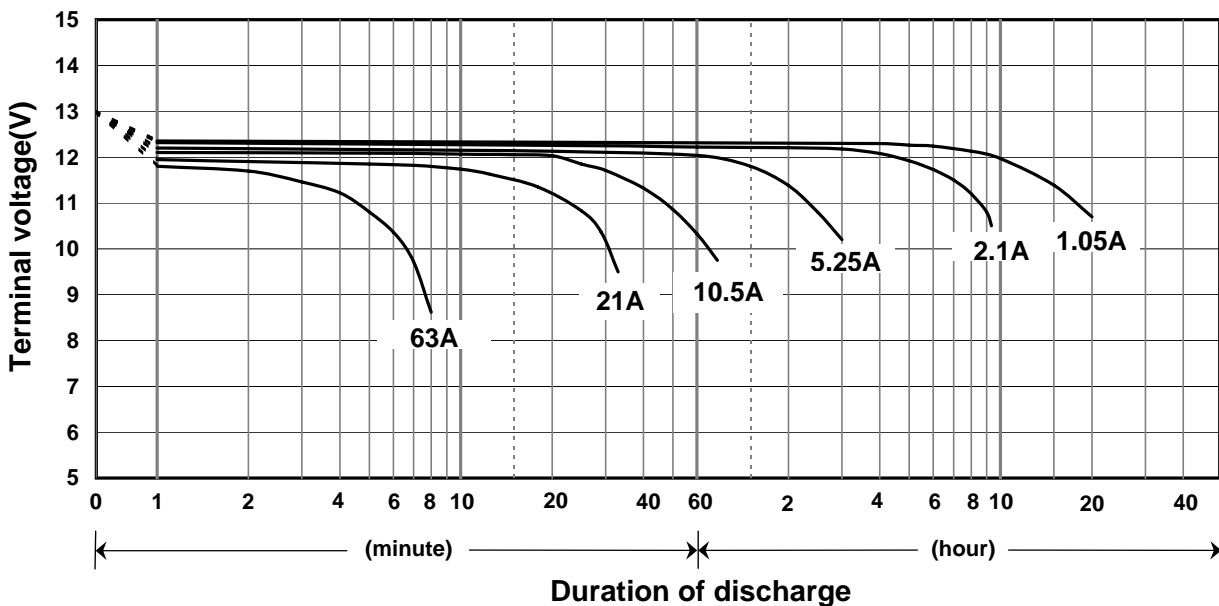


■ Constant-voltage and constant-current charge characteristics

■ Discharge capacity by temperature and by discharge current



■ Discharge characteristics(25°C)

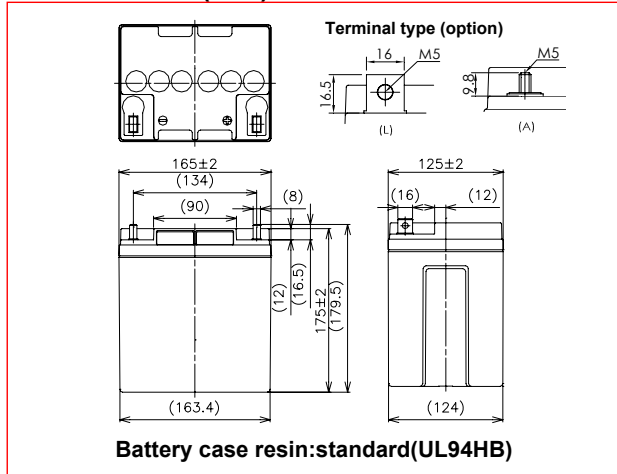


LC-XC1228

For main power supplies
Cycle long life type.



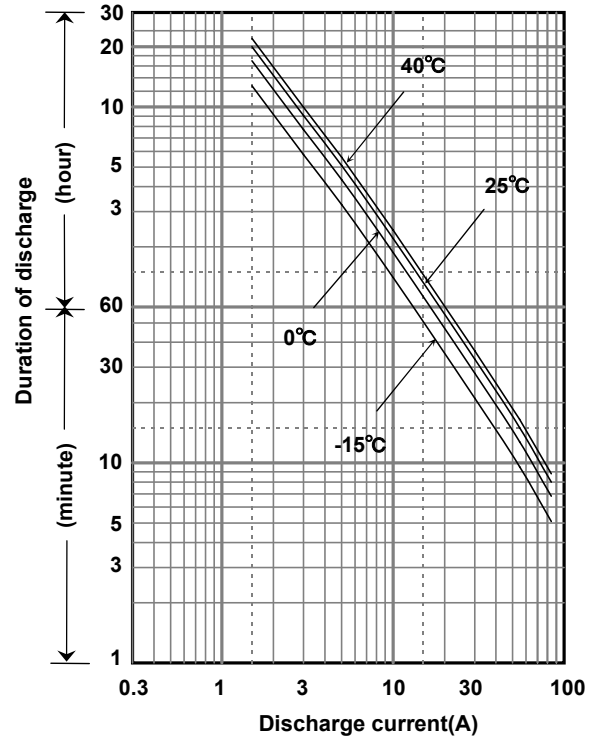
■ Dimensions(mm)



■ Specification

Nominal Voltage		12V
Rated Capacity(20HR)		28Ah
Dimensions	Length	165 mm
	Width	125 mm
	Height	175 mm
	Total height	175 mm/179.5 mm
Approx. Mass		10.5 kg
Terminal		M5 threaded post Bolt and Nut type

■ Duration of discharge vs. discharge current



■ Characteristics

Capacity (25 °C)	20 hour rate	28Ah
	10 hour rate	26.5Ah
	5 hour rate	25Ah
	1 hour rate	21Ah
Internal Resistance	Fully charged battery (25 °C)	8 mΩ
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(25°C)

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	52.8	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(25°C)

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	7.70	6.20	5.10	3.40	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	7.60	6.10	5.00	4.30	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	7.50	6.00	5.00	4.30	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	7.40	6.00	5.00	4.30	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	7.10	5.90	5.00	4.20	2.65	1.40	1.16

■ Charging Method

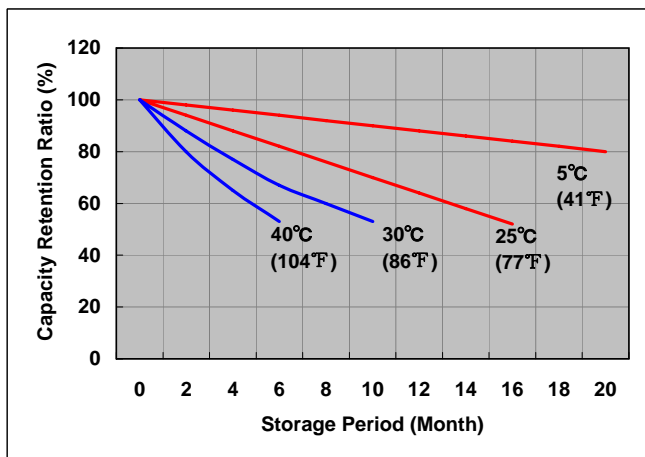
(25°C)

Cycle use	Control voltage 14.5-14.9V; Initial current 11.2A or smaller
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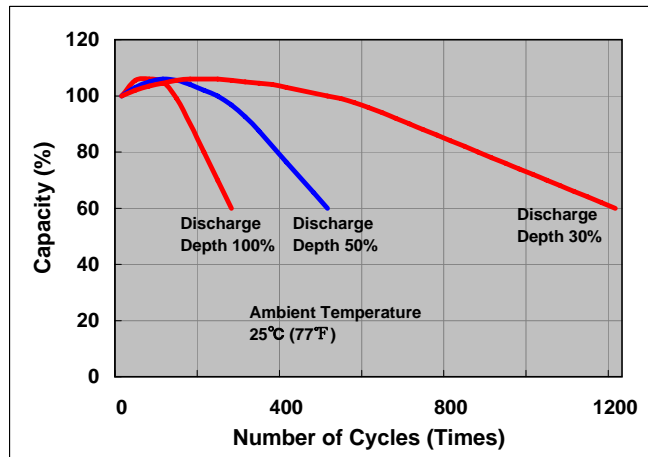
■ Cut off voltage

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 test result

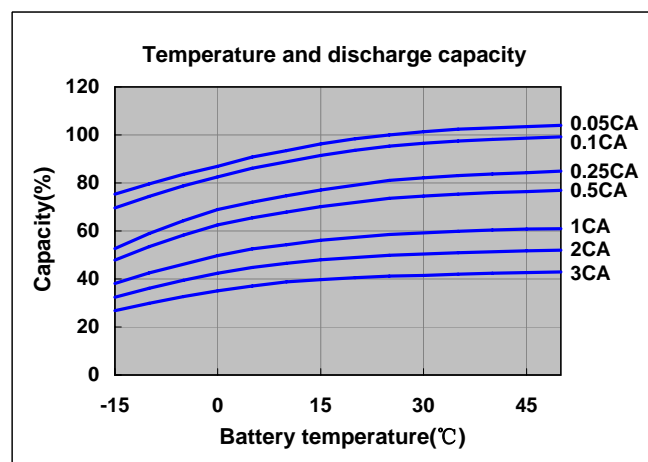
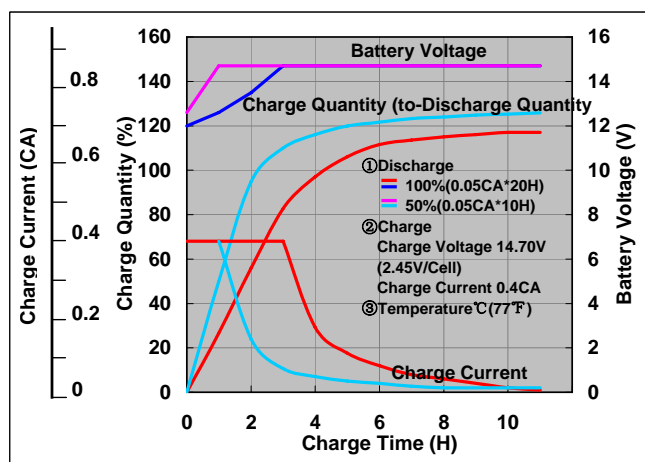


■ Cycle life vs. Depth of discharge

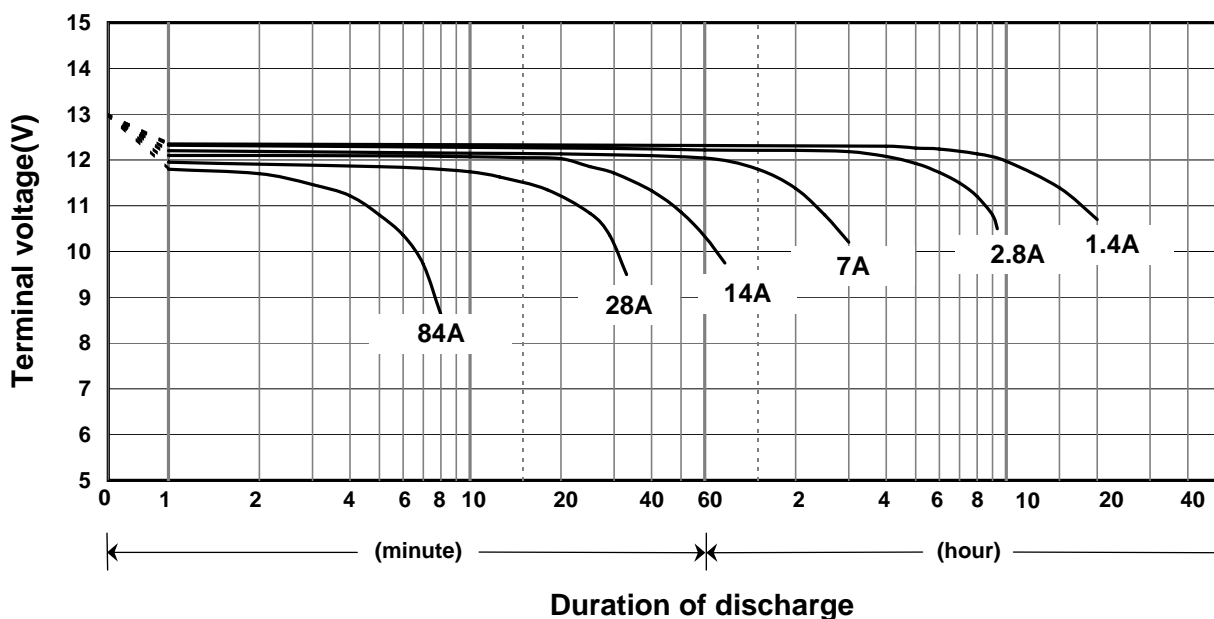


■ Constant-voltage and constant-current charge characteristics

■ Discharge capacity by temperature and by discharge current



■ Discharge characteristics(25°C)

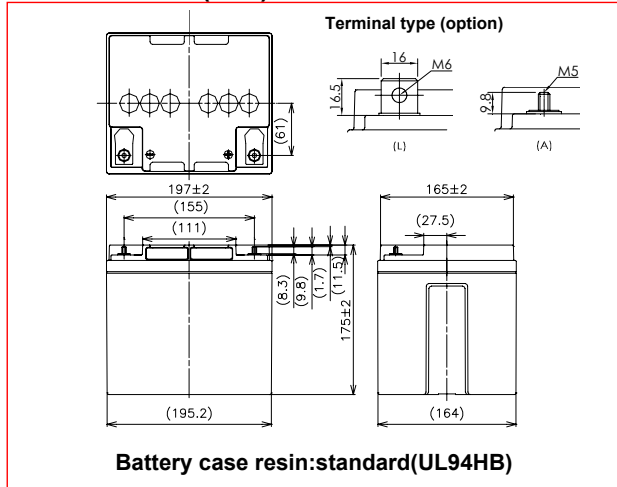


LC-XC1238

For main power supplies
Cycle long life type.



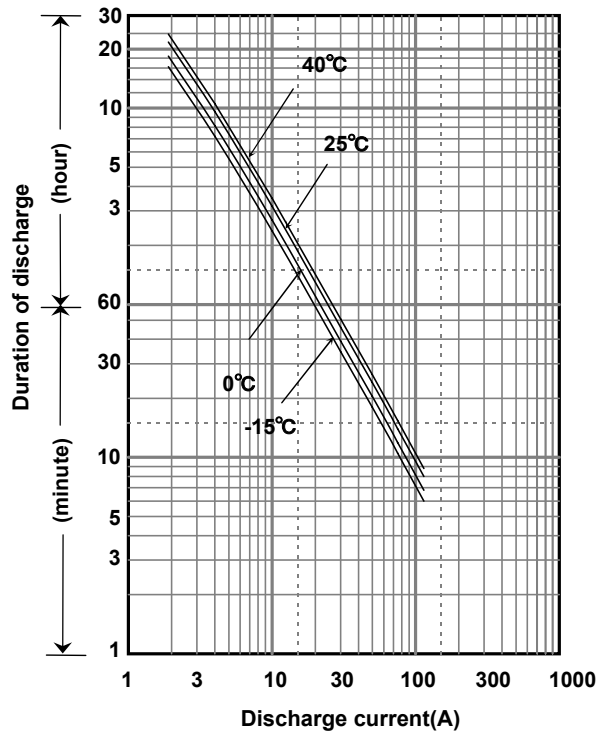
■ Dimensions(mm)



■ Specification

Nominal Voltage	12V	
Rated Capacity(20HR)	38Ah	
Dimensions	Length	197 mm
	Width	165 mm
	Height	175 mm
	Total height	175 mm/180 mm
Approx. Mass	15.0 kg	
Terminal	M5 threaded post Bolt and Nut type	

■ Duration of discharge vs. discharge current



■ Characteristics

Capacity (25 °C)	20 hour rate	38Ah
	10 hour rate	36Ah
	5 hour rate	35Ah
	1 hour rate	23Ah
Internal Resistance	Fully charged battery (25 °C)	9 mΩ
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(25°C)

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(25°C)

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	8.30	6.50	5.70	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	8.20	6.40	5.70	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	8.10	6.30	5.70	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	8.10	6.30	5.70	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	9.60	7.90	6.20	5.60	3.50	1.90	1.56

Charging Method

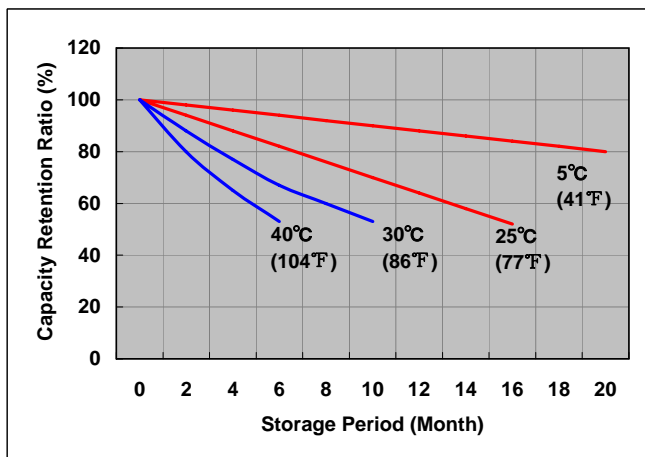
(25°C)

Cycle use	Control voltage 14.5-14.9V; Initial current 15.2A or smaller
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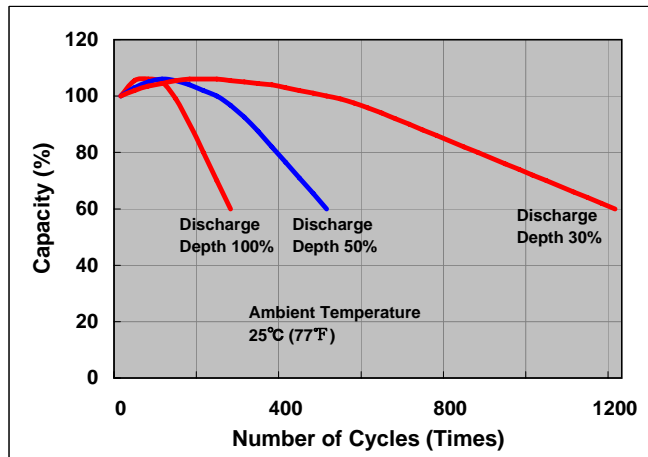
Cut off voltage

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

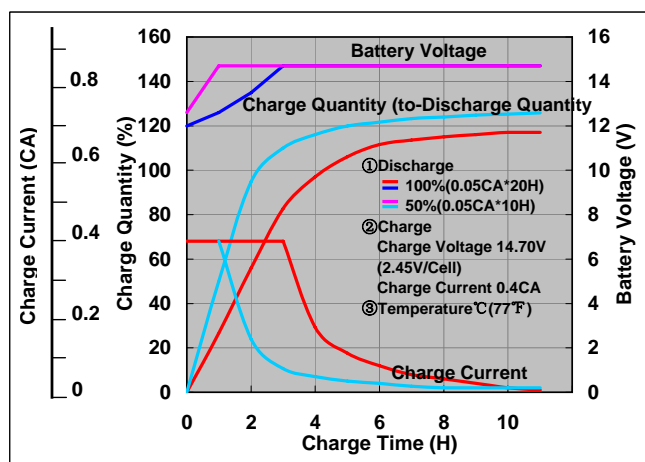
Residual capacity test result



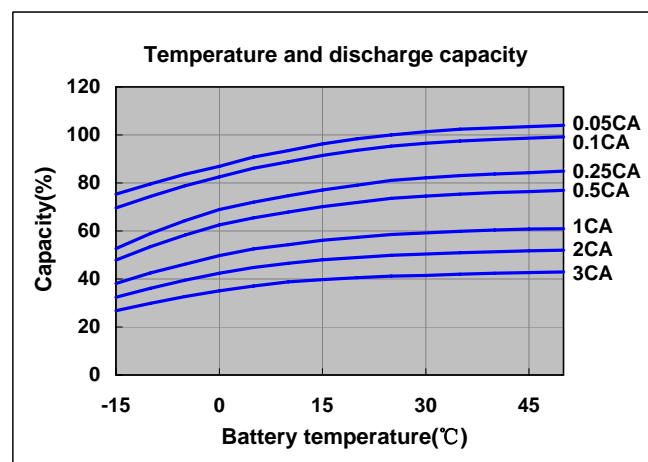
Cycle life vs. Depth of discharge



Constant-voltage and constant-current charge characteristics



Discharge capacity by temperature and by discharge current



Discharge characteristics(25°C)

