

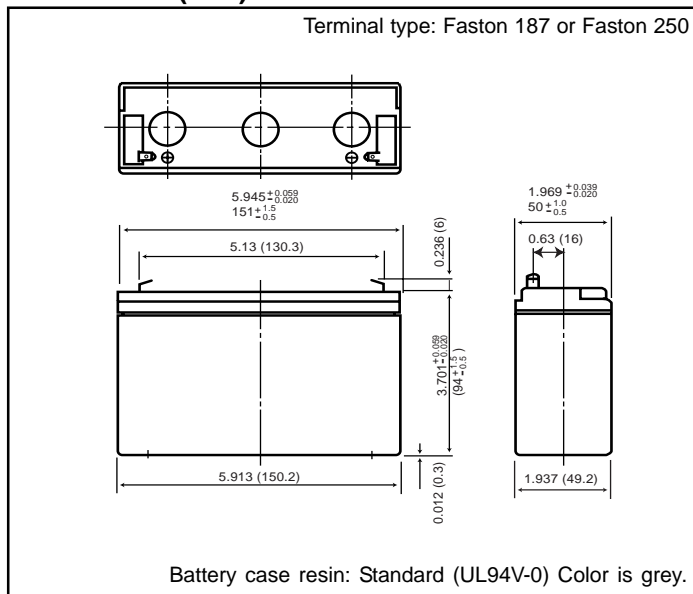
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-P0612P



For standby power supplies. Expected trickle life: Approx. 6 years at 25°C, Approx. 10 years at 20°C.

### Dimensions (mm)



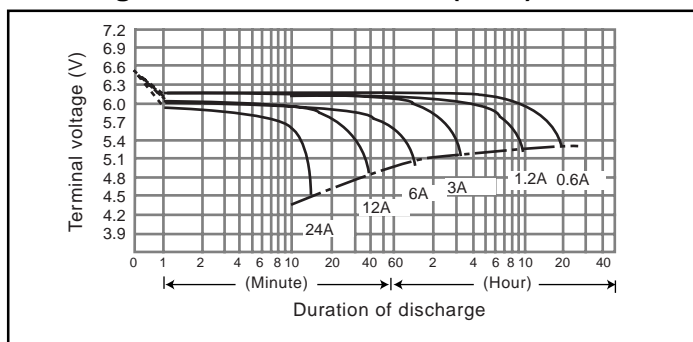
### Specifications

<b>Nominal Voltage</b>		6V
<b>Rated capacity (20 hour rate)</b>		12Ah
<b>Dimensions</b>	<b>Length</b>	5.945 inches (151.0 mm)
	<b>Width</b>	1.969 inches (50.0 mm)
	<b>Height</b>	3.702 inches (94.0 mm)
	<b>Total Height*</b>	3.937 inches (100.0 mm)
<b>Approx. mass</b>		4.41 lbs. (2.0 kg)
<b>Standard Terminals and Resin</b>	UL94V-0 Faston 250	LC-P0612P1
<b>Optional Terminals and Resin</b>	UL94V-0 Faston 187	◆ LC-P0612P

\* The total height with #250 terminal is 101.5mm.

◆ Please contact Panasonic for availability on optional items. Optional items may be subject to minimum order quantities.

### Discharge characteristics 77°F (25°C) (Note)



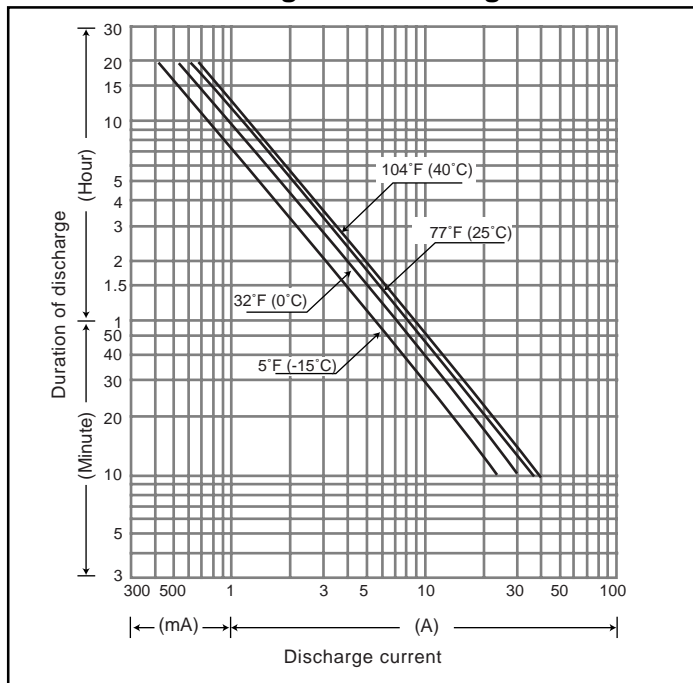
### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (600mA)	12Ah	
	10 hour rate (1130mA)	11.3Ah	
Internal Resistance	5 hour rate (2080mA)	10.4Ah	
	1 hour rate (8100mA)	8.1Ah	
	1.5 hour rate discharge Cut-off voltage 5.25 V	5.8A	
Temperature dependency of capacity (20 hour rate)	Fully charged battery 77°F (25°C)	Approx. 15mΩ	
	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Self discharge 77°F (25°C)	5°F (-15°C)	65%	
	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
Charge Method (Constant Voltage)	Trickle use	Residual capacity after standing 12 months	64%
		Initial current	1.8 A or smaller
		Control voltage	6.8V to 6.9V (per 6V cell 25°C)

(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles are not the minimum values.

(Note) For cycle use of the battery, please contact us in advance.

### Duration of discharge vs. Discharge current (Note)



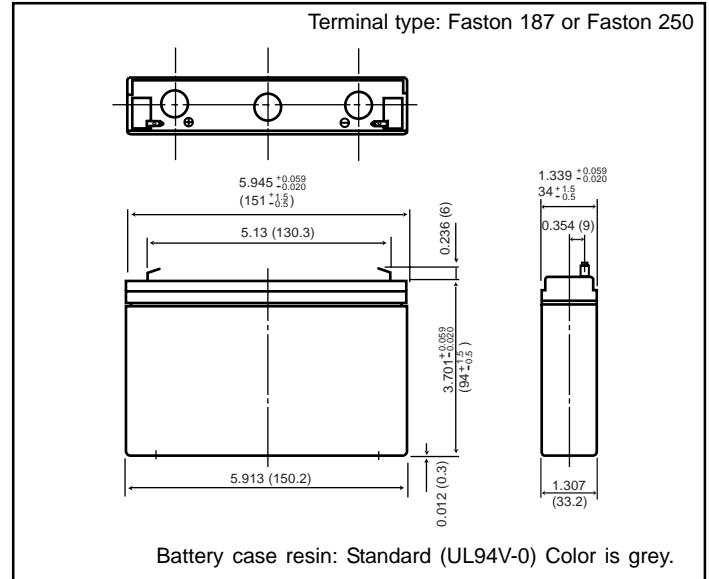
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-P067R2P



For standby power supplies. Expected trickle life: Approx. 6 years at 25°C, Approx. 10 years at 20°C.

### Dimensions (mm)

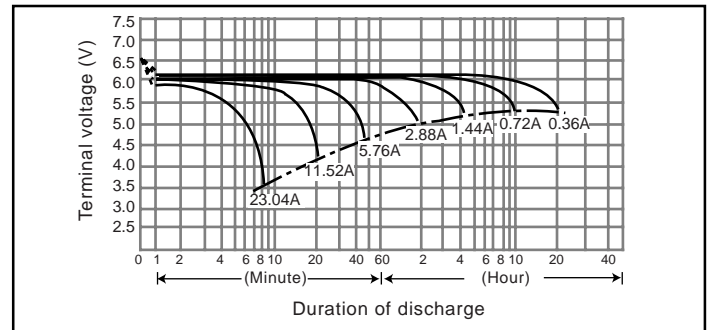


### Specifications

Nominal Voltage		6V
Rated capacity (20 hour rate)		7.2Ah
Dimensions	Length	5.945 inches (151.0 mm)
	Width	1.339 inches (34.0 mm)
	Height	3.702 inches (94.0 mm)
	Total Height*	3.937 inches (100.0 mm)
Approx. mass		2.86 lbs. (1.30 kg)
Standard Terminals and Resin	UL94V-0 Faston 250	LC-P067R2P1
Optional Terminals and Resin	UL94V-0 Faston 187	◆ LC-P067R2P

◆ Please contact Panasonic for availability on optional items. Optional items may be subject to minimum order quantities.

### Discharge characteristics 77°F (25°C) (Note)



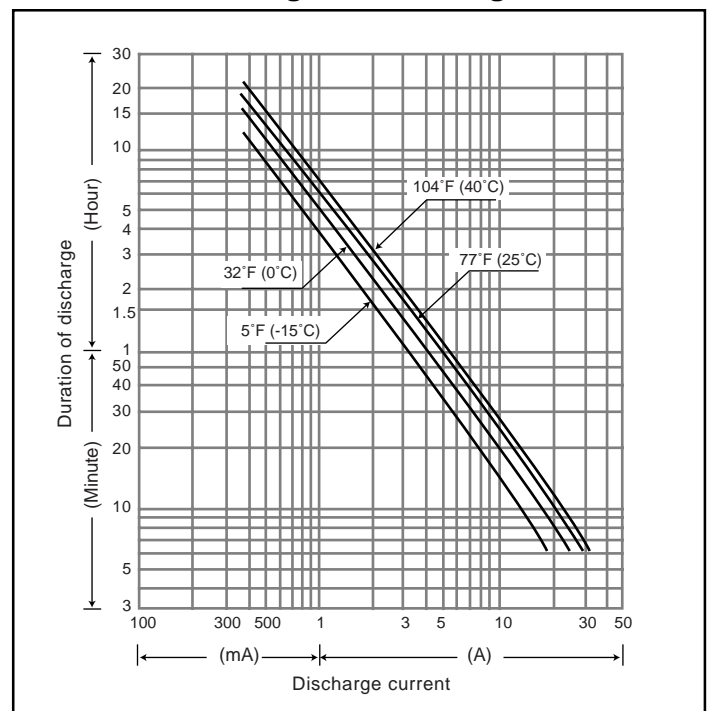
### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (360mA)	7.2Ah
	10 hour rate (680mA)	6.8Ah
	5 hour rate (1260mA)	6.3Ah
	1 hour rate (4900mA)	4.9Ah
	1.5 hour rate discharge Cut-off voltage 5.25 V	3.5A
Internal Resistance	Fully charged battery 77°F (25°C)	Approx. 20mΩ
Temperature dependency of capacity (20 hour rate)	104°F (40°C)	102%
	77°F (25°C)	100%
	32°F (0°C)	85%
	5°F (-15°C)	65%
Self discharge 77°F (25°C)	Residual capacity after standing 3 months	91%
	Residual capacity after standing 6 months	82%
	Residual capacity after standing 12 months	64%
	Charge Method (Constant Voltage)	Trickle use

(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

(Note) For cycle use of the battery, please contact us in advance.

### Duration of discharge vs. Discharge current (Note)



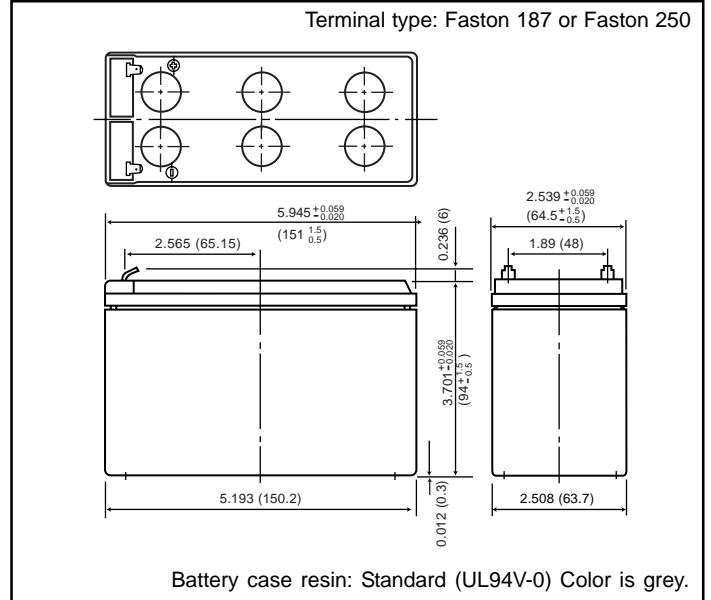
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-P127R2P



For standby power supplies. Expected trickle life: Approx. 6 years at 25°C, Approx. 10 years at 20°C.

### Dimensions (mm)



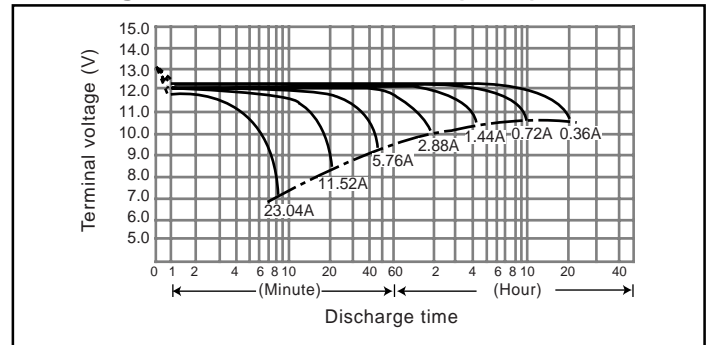
### Specifications

<b>Nominal Voltage</b>		12V
<b>Rated capacity (20 hour rate)</b>		7.2Ah
<b>Dimensions</b>	<b>Length</b>	5.945 inches (151.0 mm)
	<b>Width</b>	2.539 inches (64.5 mm)
	<b>Height</b>	3.702 inches (94.0 mm)
	<b>Total Height*</b>	3.937 inches (100.0 mm)
<b>Approx. mass</b>		5.516 lbs. (2.50 kg)
<b>Standard Terminals and Resin</b>	UL94V-0 Faston 250	LC-P127R2P1
<b>Optional Terminals and Resin</b>	UL94V-0 Faston 187	◆ LC-P127R2P

\* The total height with #250 terminal is 101.5mm.

◆ Please contact Panasonic for availability on optional items. Optional items may be subject to minimum order quantities.

### Discharge characteristics 77°F (25°C) (Note)



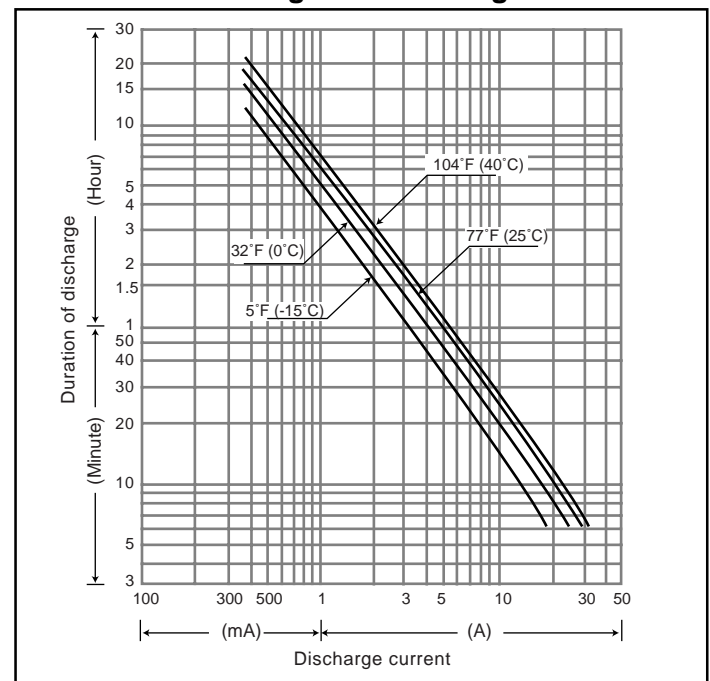
### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (360mA)	7.2Ah	
	10 hour rate (680mA)	6.8Ah	
Internal Resistance	5 hour rate (1260mA)	6.3Ah	
	1 hour rate (4900mA)	4.9Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	3.5A	
Temperature dependency of capacity (20 hour rate)	Fully charged battery 77°F (25°C)	Approx. 40mΩ	
	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Self discharge 77°F (25°C)	5°F (-15°C)	65%	
	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
Charge Method (Constant Voltage)	Trickle use	Residual capacity after standing 12 months	64%
		Initial current	1.08 A or smaller
		Control voltage	13.6V to 13.8V (per 12V cell 25°C)

(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

(Note) For cycle use of the battery, please contact us in advance.

### Duration of discharge vs. Discharge current (Note)



# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R0612P



### Specifications

<b>Nominal Voltage</b>		6V
<b>Rated Capacity (20 hour rate)</b>		12.0Ah
<b>Dimensions</b>	<b>Length</b>	5.945 inches (151.0 mm)
	<b>Width</b>	1.969 inches (50.0 mm)
	<b>Height</b>	3.702 inches (94.0 mm)
	<b>Total Height*</b>	3.937 inches (100.0 mm)
<b>Approx. mass</b>		4.30 lbs. (1.95 kg)
<b>Standard Terminals and Resin</b>	UL94HB Faston 187	LC-R0612P
	UL94HB Faston 250	LC-R0612P1

\* The total height with #250 terminal is 101.5mm.

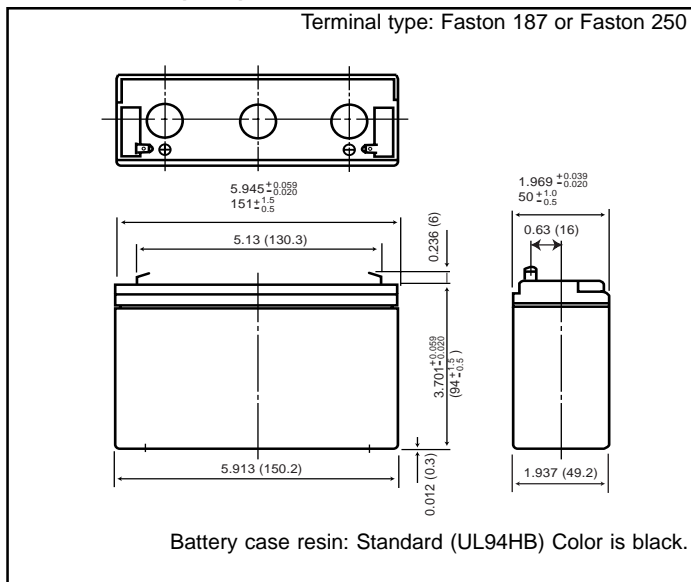
### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (360mA)	12Ah	
	10 hour rate (680mA)	11.3Ah	
	5 hour rate (1260mA)	10.4Ah	
	1 hour rate (4900mA)	8.1Ah	
	1.5 hour rate discharge Cut-off voltage 5.25 V	5.8A	
Internal Resistance	Fully charged battery 77°F (25°C)	Approx. 15mΩ	
Temperature dependency of capacity (20 hour rate)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
	5°F (-15°C)	65%	
Self discharge 77°F (25°C)	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Initial current	4.8 A or smaller
		Control voltage	7.25V to 7.45V (per 6V cell 25°C)
	Trickle use	Initial current	1.8 A or smaller
		Control voltage	6.8V to 6.9V (per 6V cell 25°C)

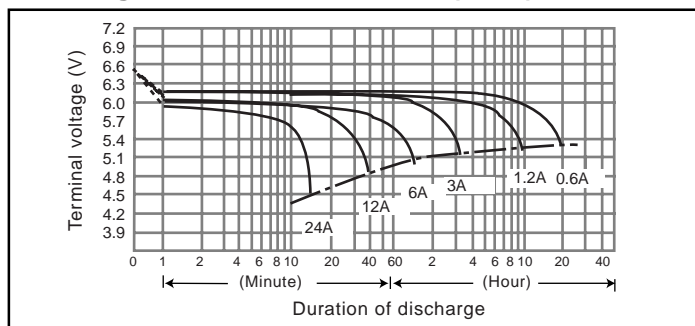
(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

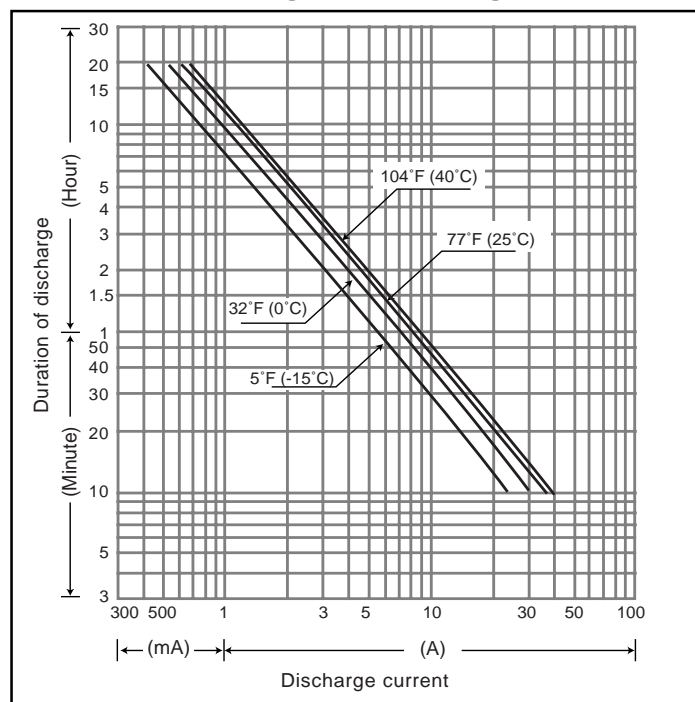
### Dimensions (mm)



### Discharge characteristics 77°F (25°C) (Note)



### Duration of discharge vs. Discharge current (Note)



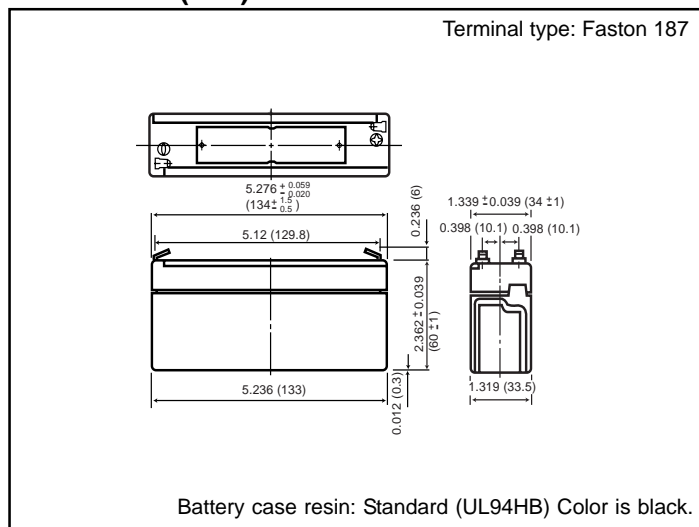
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R063R4P



For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

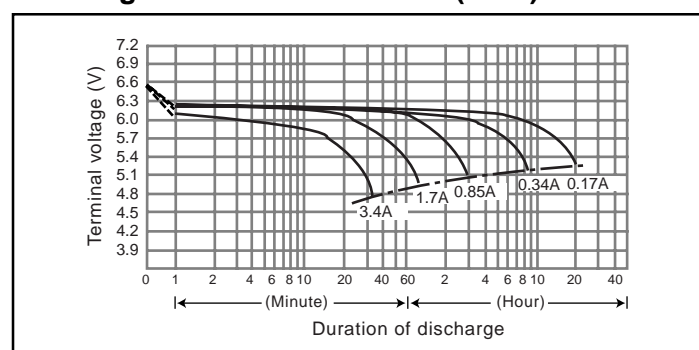
### Dimensions (mm)



### Specifications

Nominal Voltage		6V
Rated Capacity (20 hour rate)		3.4Ah
Dimensions	Length	5.276 inches (134.0 mm)
	Width	1.339 inches (34.0 mm)
	Height	2.362 inches (60.0 mm)
	Total Height	2.598 inches (66.0 mm)
Approx. mass		1.37 lbs. (0.62 kg)
Standard Terminals and Resin	UL94HB Faston 187	LC-R063R4P

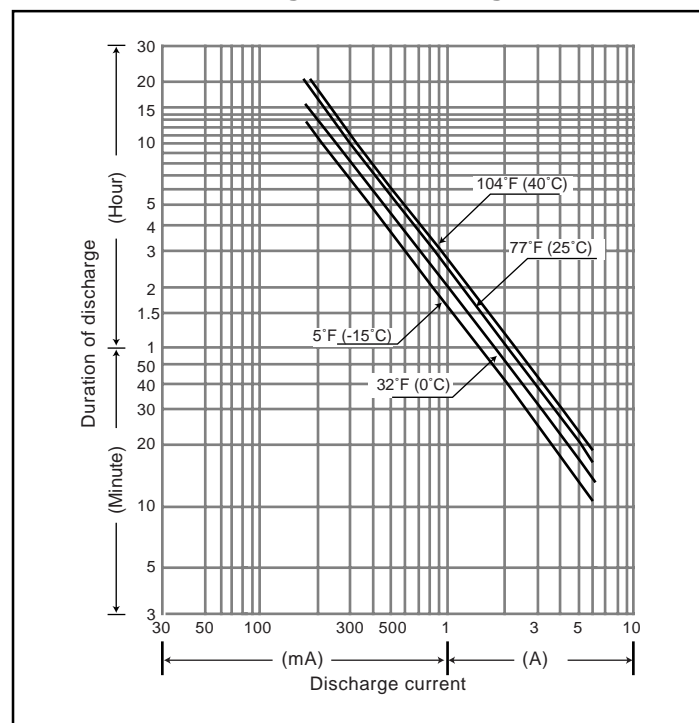
### Discharge characteristics 77°F (25°C) (Note)



### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (170mA)	3.4Ah	
	10 hour rate (300mA)	3Ah	
Internal Resistance	5 hour rate (540mA)	2.7Ah	
	1 hour rate (2100mA)	2.1Ah	
Temperature dependency of capacity (20 hour rate)	1.5 hour rate discharge	1.5A	
	Cut-off voltage 5.25 V		
	Fully charged battery	Approx. 30mΩ	
	77°F (25°C)		
Self discharge 77°F (25°C)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
	5°F (-15°C)	65%	
Charge Method (Constant Voltage)	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
Cycle use (Repeating use)	initial current	1.36 A or smaller	
	Control voltage	7.25V to 7.45V (per 6V cell 25°C)	
	Trickle use	initial current	0.51 A or smaller
		Control voltage	6.8V to 6.9V (per 6V cell 25°C)

### Duration of discharge vs. Discharge current (Note)



(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

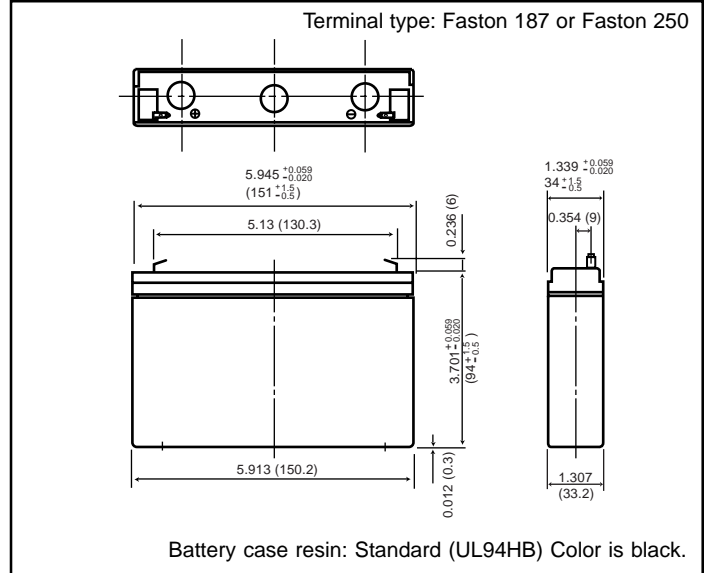
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R067R2P



For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

### Dimensions (mm)

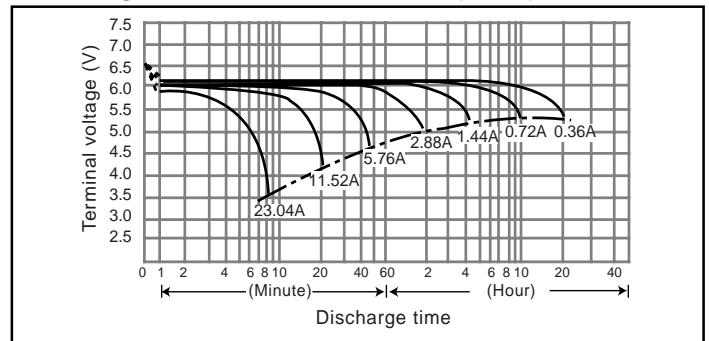


### Specifications

<b>Nominal Voltage</b>		6V
<b>Rated Capacity (20 hour rate)</b>		7.2Ah
<b>Dimensions</b>	<b>Length</b>	5.945 inches (151.0 mm)
	<b>Width</b>	1.339 inches (34.0 mm)
	<b>Height</b>	3.702 inches (94.0 mm)
	<b>Total Height*</b>	3.937 inches (100.0 mm)
<b>Approx. mass</b>		2.78 lbs. (1.26 kg)
<b>Standard Terminals and Resin</b>	UL94HB Faston 187	LC-R067R2P
	UL94HB Faston 250	LC-R067R2P1
<b>Optional Terminals and Resin</b>	UL94HB Faston 187/250	◆ LC-R067R2P2

◆ Please contact Panasonic for availability on optional items. Optional items may be subject to minimum order quantities.

### Discharge characteristics 77°F (25°C) (Note)

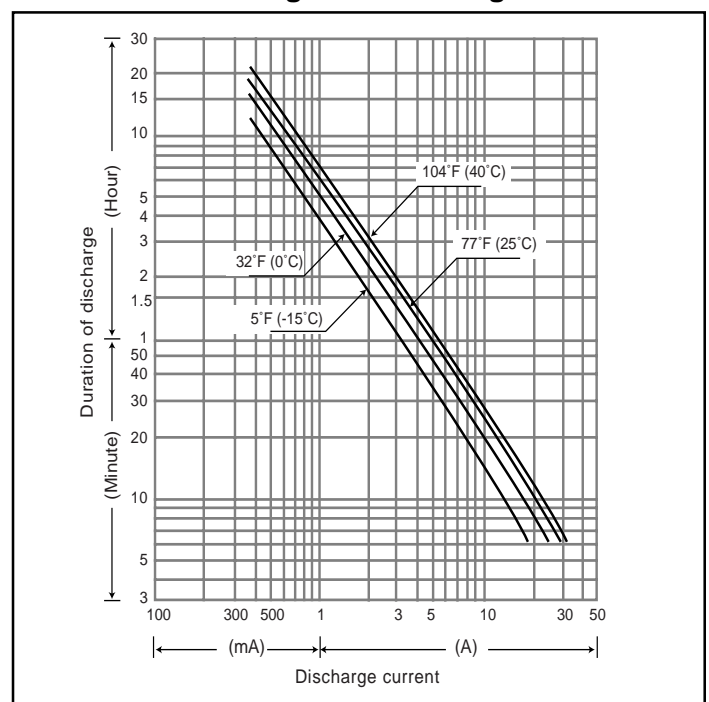


### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (360mA)	7.2Ah	
	10 hour rate (680mA)	6.8Ah	
Internal Resistance	5 hour rate (1260mA)	6.3Ah	
	1 hour rate (4900mA)	4.9Ah	
	1.5 hour rate discharge Cut-off voltage 5.25 V	3.5A	
Temperature dependency of capacity (20 hour rate)	Fully charged battery 77°F (25°C)	Approx. 20mΩ	
	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Self discharge 77°F (25°C)	5°F (-15°C)	65%	
	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Residual capacity after standing 12 months	64%
		Initial current	2.88 A or smaller
	Trickle use	Control voltage	7.25V to 7.45V (per 6V cell 25°C)
		Initial current	1.08 A or smaller
Control voltage		6.8V to 6.9V (per 6V cell 25°C)	

(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

### Duration of discharge vs. Discharge current (Note)



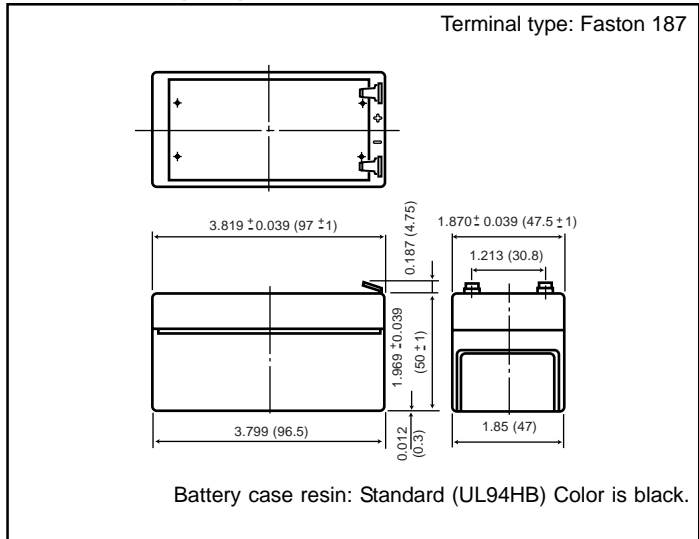
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R121R3P



For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

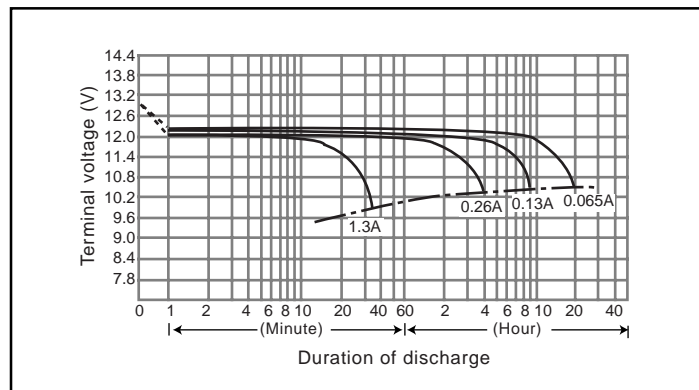
### Dimensions (mm)



### Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		1.3Ah
Dimensions	Length	3.819 inches (97.0 mm)
	Width	1.870 inches (47.5 mm)
	Height	1.969 inches (50.0 mm)
	Total Height	2.165 inches (55.0 mm)
Approx. mass		1.30 lbs. (0.59 kg)
Standard Terminals and Resin	UL94HB Faston 187	LC-R121R3P

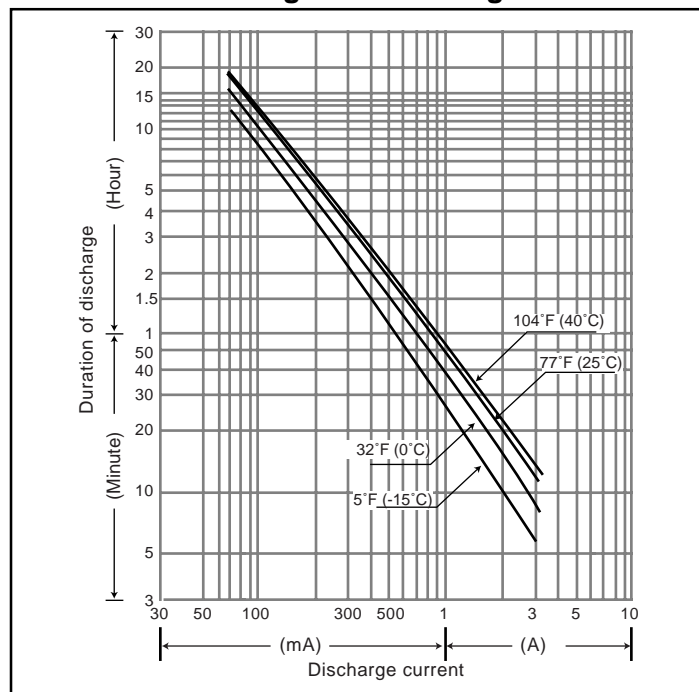
### Discharge characteristics 77°F (25°C) (Note)



### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (65mA)	1.3Ah	
	10 hour rate (120mA)	1.2Ah	
Internal Resistance	5 hour rate (210mA)	1.05Ah	
	1 hour rate (850mA)	0.85Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	0.6A	
Temperature dependency of capacity (20 hour rate)	Fully charged battery 77°F (25°C)	Approx. 90mΩ	
	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Self discharge 77°F (25°C)	5°F (-15°C)	65%	
	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
Charge Method (Constant Voltage)	Residual capacity after standing 12 months	64%	
	Cycle use (Repeating use)	Initial current	0.52 A or smaller
		Control voltage	14.5V to 14.9V (per 12V cell 25°C)
	Trickle use	Initial current	0.195 A or smaller
Control voltage		13.6V to 13.8V (per 12V cell 25°C)	

### Duration of discharge vs. Discharge current (Note)



(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

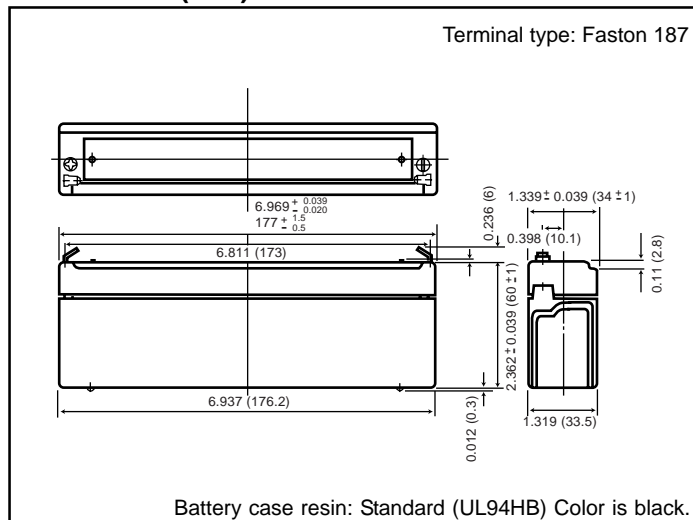
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R122R2P



For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

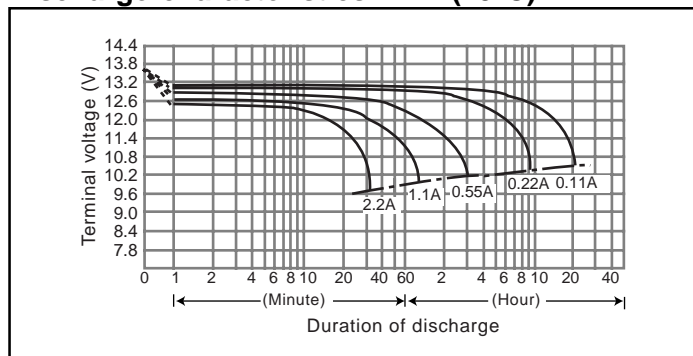
### Dimensions (mm)



### Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		2.2Ah
Dimensions	Length	6.968 inches (177.0 mm)
	Width	1.339 inches (34.0 mm)
	Height	2.362 inches (60.0 mm)
	Total Height	2.598 inches (66.0 mm)
Approx. mass		1.76 lbs. (0.80 kg)
Standard Terminals and Resin	UL94HB Faston 187	LC-R122R2P

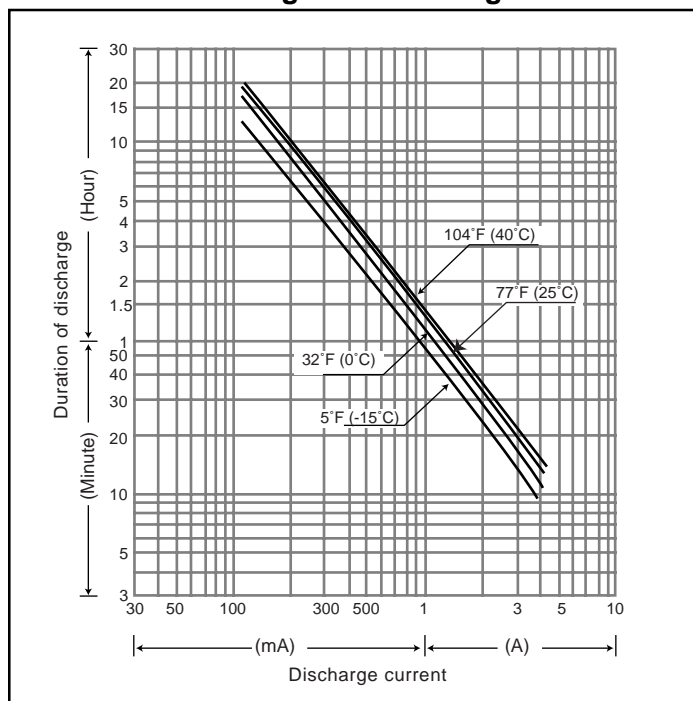
### Discharge characteristics 77°F (25°C) (Note)



### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (110mA)	2.2Ah	
	10 hour rate (200mA)	2Ah	
Internal Resistance	5 hour rate (360mA)	1.8Ah	
	1 hour rate (1300mA)	1.3Ah	
Temperature dependency of capacity (20 hour rate)	1.5 hour rate discharge Cut-off voltage 10.5 V	0.95A	
	Fully charged battery 77°F (25°C)	Approx. 70mΩ	
	104°F (40°C)	102%	
	77°F (25°C)	100%	
Self discharge 77°F (25°C)	32°F (0°C)	85%	
	5°F (-15°C)	65%	
	Residual capacity after standing 3 months	91%	
Charge Method (Constant Voltage)	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
	Cycle use (Repeating use)	Initial current	0.88 A or smaller
Control voltage		14.5V to 14.9V (per 12V cell 25°C)	
Trickle use		Initial current	0.33 A or smaller
		Control voltage	13.6V to 13.8V (per 12V cell 25°C)

### Duration of discharge vs. Discharge current (Note)



(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.



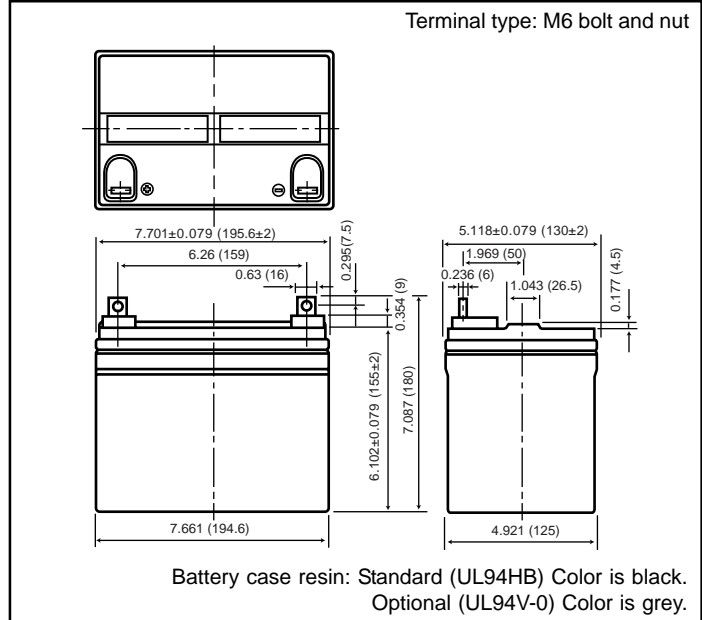
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R1233P



For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

### Dimensions (mm)

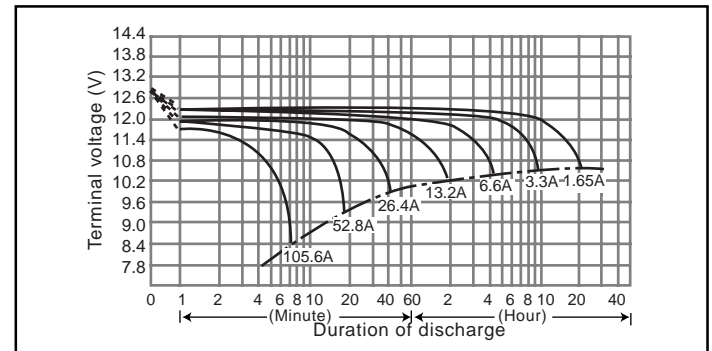


### Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		33Ah
Dimensions	Length	7.701 inches (195.6 mm)
	Width	5.118 inches (130.0 mm)
	Height	6.102 inches (155.0 mm)
	Total Height	7.087 inches (180.0 mm)
Approx. mass (lbs.)		26.5 (12.0 kg)
Standard Terminals and Resin	UL94HB M6 Bolt and Nut	LC-R1233P
	UL94V-0 M6 Bolt and Nut	◆ LC-V1233P

◆ Please contact Panasonic for availability on optional items. Optional items may be subject to minimum order quantities.

### Discharge characteristics 77°F (25°C) (Note)



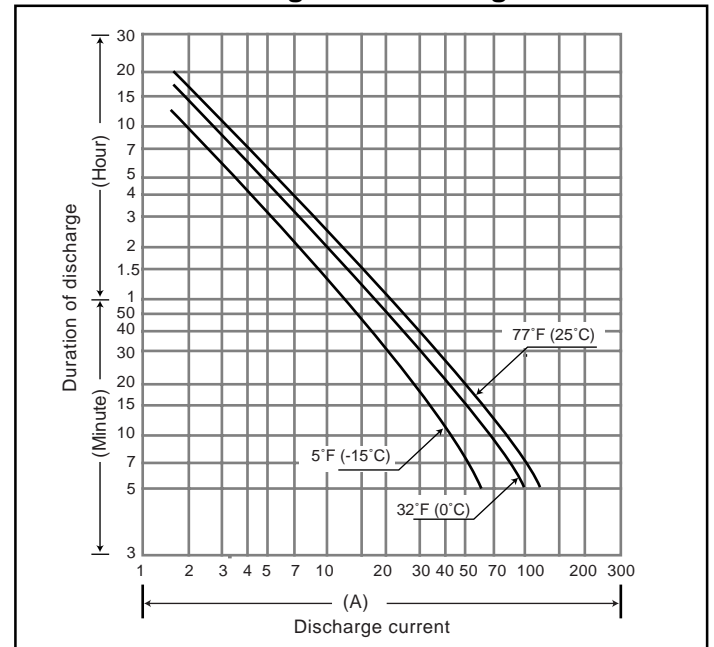
### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (1.65A)	33Ah	
	10 hour rate (3A)	30Ah	
Internal Resistance	5 hour rate (5.4A)	27Ah	
	1 hour rate (20A)	20Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	13.4A	
Temperature dependency of capacity (20 hour rate)	Fully charged battery 77°F (25°C)	Approx. 7mΩ	
	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Self discharge 77°F (25°C)	5°F (-15°C)	65%	
	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Residual capacity after standing 12 months	64%
		Initial current	13.2 A or smaller
	Trickle use	Control voltage	14.5V to 14.9V (per 12V cell 25°C)
		Initial current	4.95 A or smaller
Control voltage	Control voltage	13.6V to 13.8V (per 12V cell 25°C)	

(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

(Note) For cycle use of the battery, please consult us in advance.

### Duration of discharge vs. Discharge current (Note)



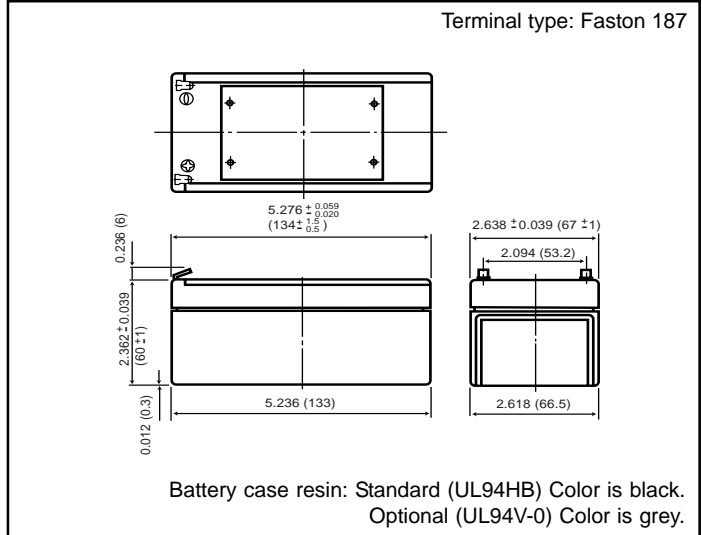
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R123R4P



For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

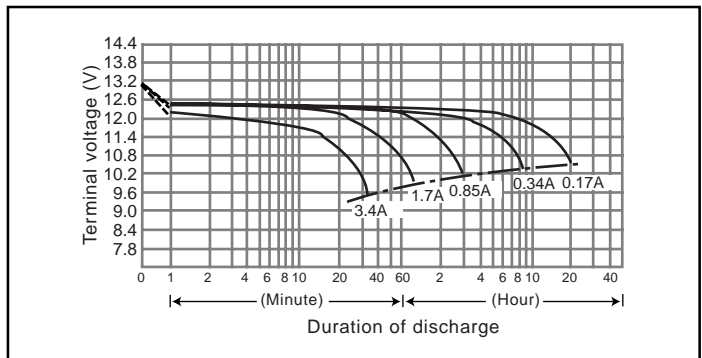
### Dimensions (mm)



### Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		3.4Ah
Dimensions	Length	5.276 inches (134.0 mm)
	Width	2.638 inches (67.0 mm)
	Height	2.362 inches (60.0 mm)
	Total Height	2.598 inches (66.0 mm)
Approx. mass		2.65 lbs. (1.20 kg)
Standard Terminals and Resin	UL94HB Faston 187	LC-R123R4P

### Discharge characteristics 77°F (25°C) (Note)

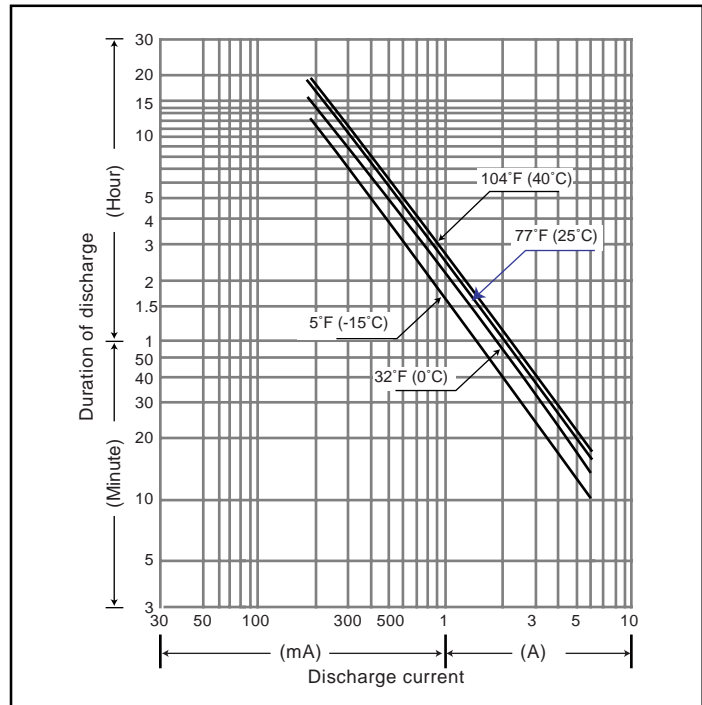


### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (170mA)	3.4Ah	
	10 hour rate (300mA)	3Ah	
	5 hour rate (540mA)	2.7Ah	
	1 hour rate (2100mA)	2.1Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	1.5A	
Internal Resistance	Fully charged battery 77°F (25°C)	Approx. 60mΩ	
Temperature dependency of capacity (20 hour rate)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Self discharge 77°F (25°C)	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Initial current	1.36 A or smaller
		Control voltage	14.5V to 14.9V (per 12V cell 25°C)
	Trickle use	Initial current	0.51 A or smaller
		Control voltage	13.6V to 13.8V (per 12V cell 25°C)

(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

### Duration of discharge vs. Discharge current (Note)



# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-RA1212P



Photo/Label for reference only.

### Specifications

<b>Nominal Voltage</b>		12V
<b>Rated Capacity (20 hour rate)</b>		12Ah
<b>Dimensions</b>	<b>Length</b>	5.945 inches (151.0 mm)
	<b>Width</b>	3.860 inches (98.0 mm)
	<b>Height</b>	3.702 inches (94.0 mm)
	<b>Total Height*</b>	3.937 inches (100.0 mm)
<b>Approx. mass</b>		8.36 lbs. (3.8 kg)
<b>Standard Terminals and Resin</b>	UL94HB Faston 187	LC-RA1212P
	UL94HB Faston 250	LC-RA1212P1

\* The total height with #250 terminal is 101.5mm.

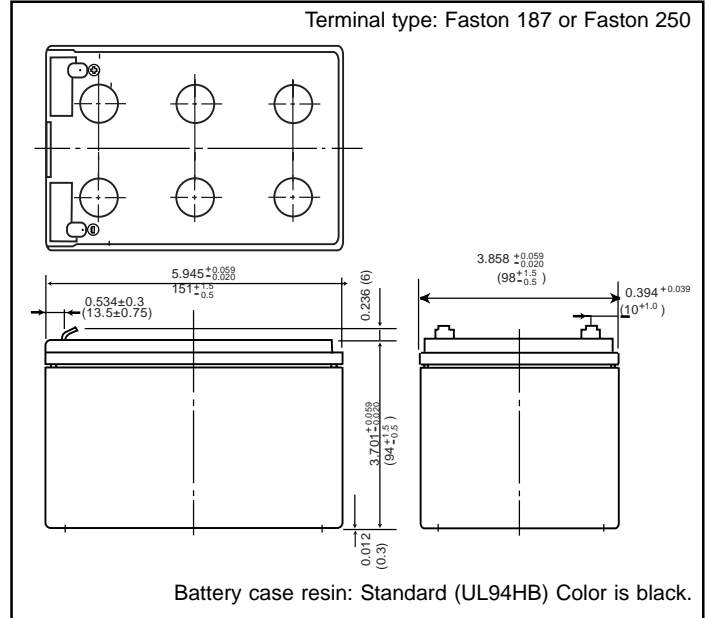
### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (600mA)	12Ah	
	10 hour rate (1130mA)	11.3Ah	
Internal Resistance	5 hour rate (2080mA)	10.4Ah	
	1 hour rate (8100mA)	8.1Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	5.8A	
Temperature dependency of capacity (20 hour rate)	Fully charged battery 77°F (25°C)	Approx. 30mΩ	
	104°F (40°C)	102%	
	77°F (25°C)	100%	
Self discharge 77°F (25°C)	32°F (0°C)	85%	
	5°F (-15°C)	65%	
	Residual capacity after standing 3 months	91%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Residual capacity after standing 6 months	82%
		Residual capacity after standing 12 months	64%
Initial current	Trickle use	Initial current	4.8 A or smaller
		Control voltage	14.5V to 14.9V (per 12V cell 25°C)
	Cycle use (Repeating use)	Initial current	1.8 A or smaller
		Control voltage	13.6V to 13.8V (per 12V cell 25°C)

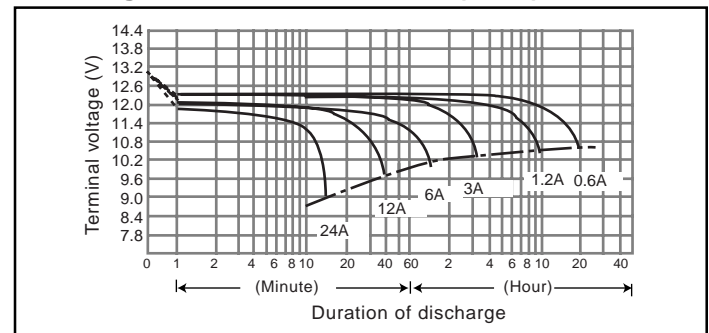
(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

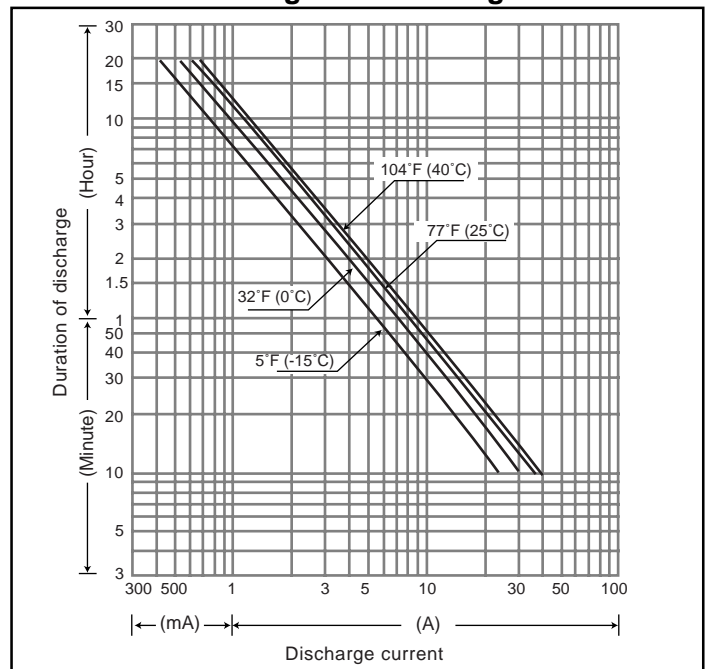
### Dimensions (mm)



### Discharge characteristics 77°F (25°C) (Note)



### Duration of discharge vs. Discharge current (Note)



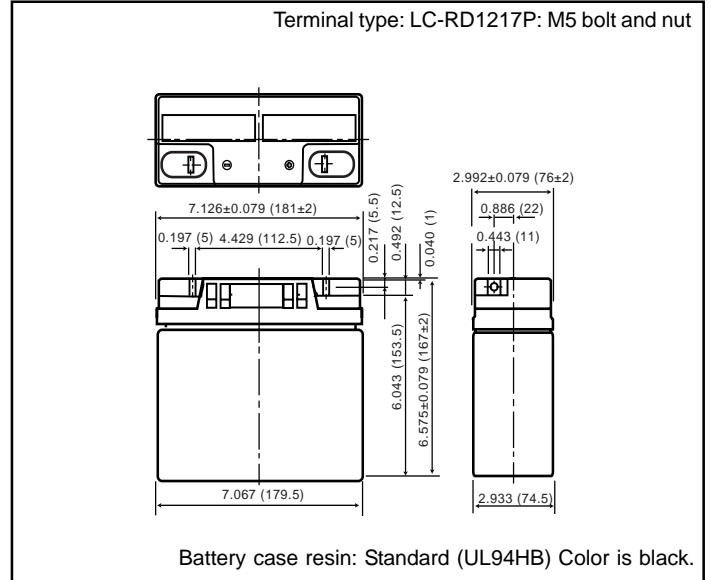
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-RD1217P



For main and standby power supplies. Expected trickle life: Approx 3-5 years at 25°C, Approx. 5 years at 20°C.

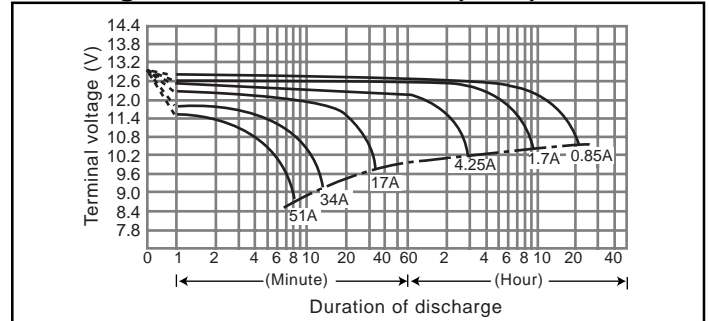
### Dimensions (mm)



### Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		17Ah
Dimensions	Length	7.126 inches (181.0 mm)
	Width	2.992 inches (76.0 mm)
	Height	6.575 inches (167.0 mm)
	Total Height	6.575 inches (167.0 mm)
Approx. mass		14.34 lbs. (6.5 kg)
Standard Terminals and Resin	UL94HB M5 Bolt and Nut	LC-RD1217P

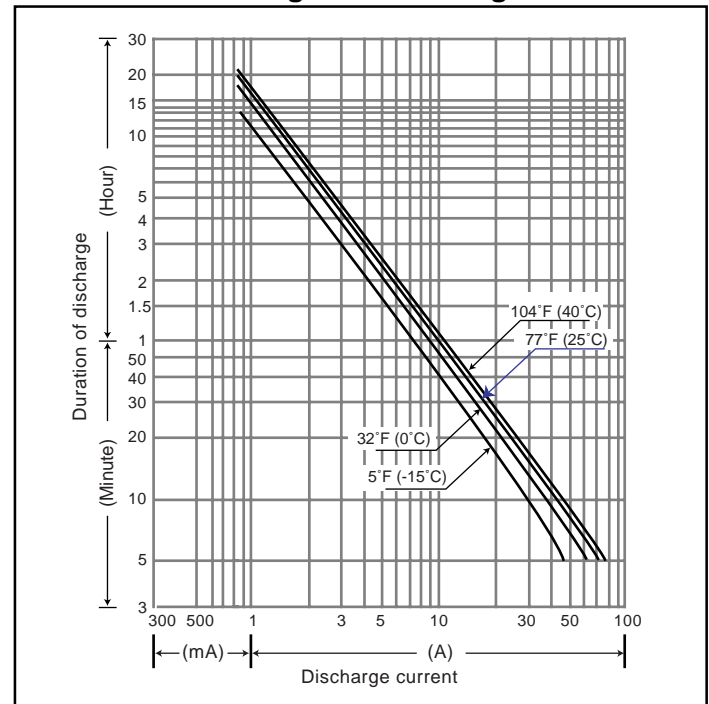
### Discharge characteristics 77°F (25°C) (Note)



### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (850mA)	17Ah	
	10 hour rate (1500mA)	15Ah	
Internal resistance	5 hour rate (2600mA)	13Ah	
	1 hour rate (10000mA)	10Ah	
Temperature dependency of capacity (20 hour rate)	1.5 hour rate discharge Cut-off voltage 10.5 V	7A	
	Fully charged battery 77°F (25°C)	Approx. 12mΩ	
Self discharge 77°F (25°C)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Charge Method (Constant Voltage)	5°F (-15°C)	65%	
	Cycle use (Repeating use)	Residual capacity after standing 3 months	91%
		Residual capacity after standing 6 months	82%
Trickle use	Residual capacity after standing 12 months	64%	
	Initial current	6.8 A or smaller	
Control voltage		14.5V to 14.9V (per 12V cell 25°C)	
	Initial current	2.55 A or smaller	
Control voltage		13.6V to 13.8V (per 12V cell 25°C)	

### Duration of discharge vs. Discharge current (Note)



(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

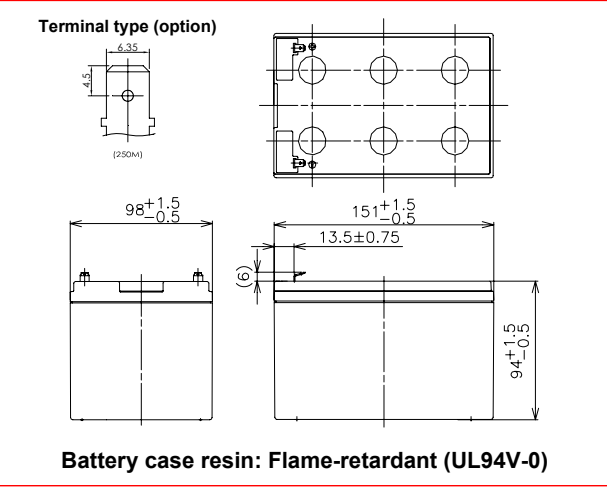
(Note) For cycle use of the battery, please contact us in advance.

# LC-WTP1212

For pitch backup systems in wind turbines  
 Expected life: 10 years at 20°C, 5 years at 25°C  
 (based on a weekly discharge cycle of max 15 seconds)



### ■ Dimensions(mm)



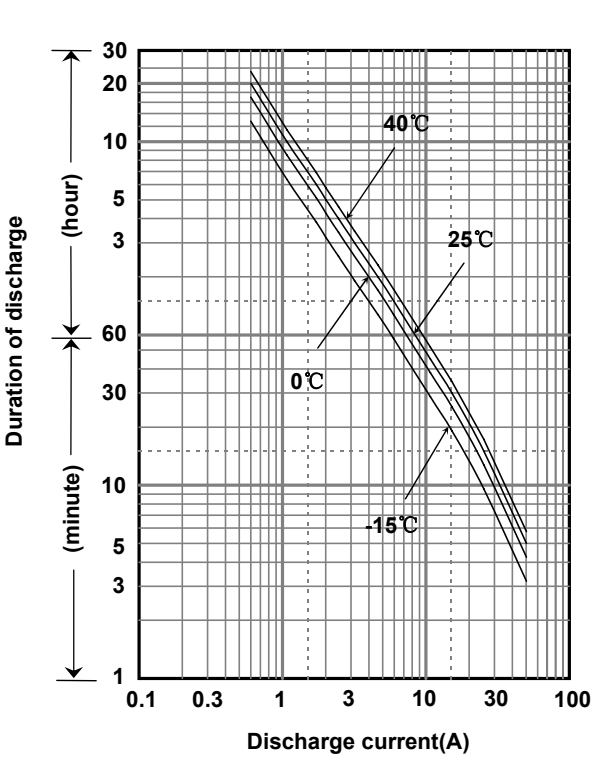
### ■ Specification

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		250M

### ■ Characteristics

Capacity (25 °C)	20 hour rate	12Ah
	10 hour rate	10Ah
	3 hour rate	9.3Ah
	1 hour rate	8.1Ah
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%

### ■ Duration of discharge vs. discharge current



### ■ Large current discharge characteristics(25°C)

Peak current(A for milliseconds)	267	250	233	217	200	187	175	157	143	133	125
Discharge current(A)	240	225	210	195	180	168	158	142	130	120	113
Discharge time(sec)	3	6	10	15	20	25	30	40	50	60	70

Peak current(A for milliseconds)	117	110	103	98	92	87	82	77	73	70	67
Discharge current(A)	105	100	93	88	83	78	73	70	67	63	60
Discharge time(sec)	80	90	100	110	120	130	140	150	160	170	180

The cut off voltage should be more than 8.0V.  
 Battery should be charged after each discharge.

### ■ Charging Method

**\*\*Control voltage: 13.6V~13.8V at 20°C~25°C with temperature compensation, Initial current: 1.80A or smaller**

\*\*Please consult us for the right control voltage if the ambient temperature is different.

### ■ Operating Temperature Range

*Storage	Charge	Discharge
-40°C~ 50°C	-20°C~ 50°C	-20°C~ 50°C

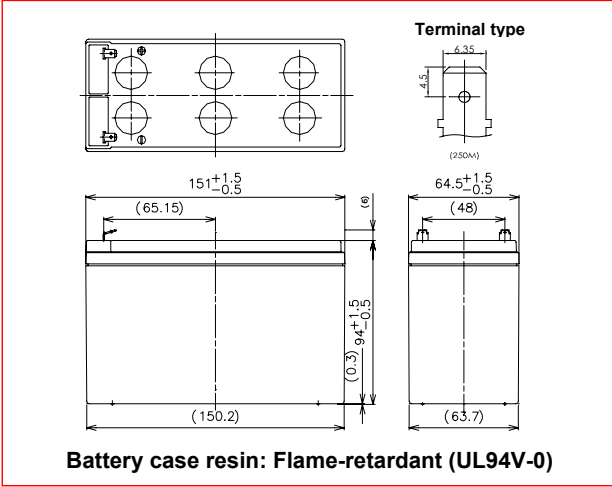
\* For storage, please ensure that battery is fully charged.

# LC-WTP127R2



For pitch backup systems in wind turbines  
 Expected life: 10 years at 20°C, 5 years at 25°C  
 (based on a weekly discharge cycle of max 15 seconds)

### ■ Dimensions(mm)



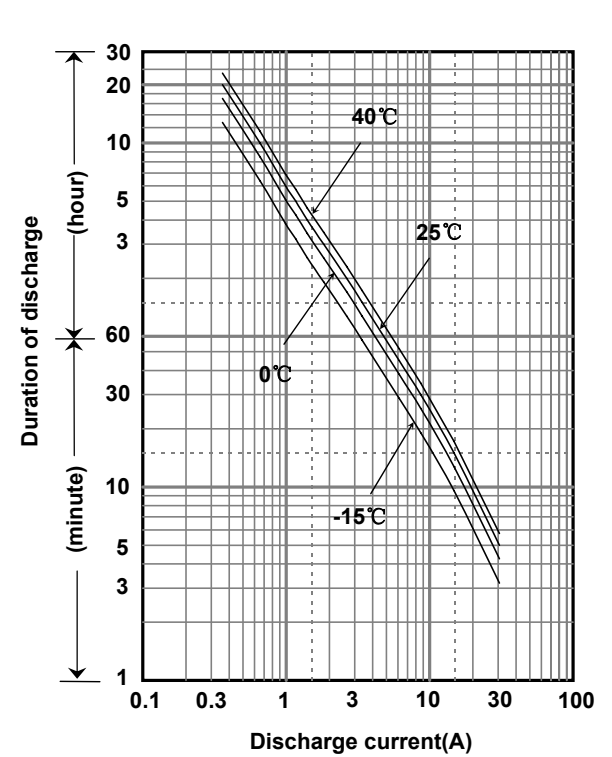
### ■ Specification

Nominal Voltage		12V
Rated Capacity(20HR)		7.2Ah
Dimensions	Length	151 mm
	Width	64.5 mm
	Height	94 mm
	Total height	100 mm
Approx. Mass		2.50 kg
Terminal		250M

### ■ Characteristics

Capacity (25 °C)	20 hour rate	7.2Ah
	10 hour rate	6.5Ah
	3 hour rate	5.8Ah
	1 hour rate	4.9Ah
Internal Resistance	Fully charged battery (25 °C)	21 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%

### ■ Duration of discharge vs. discharge current



### ■ Large current discharge characteristics(25°C)

Peak current(A for milliseconds)	160	150	140	130	120	112	105	94	86	80	75
Discharge current(A)	144	135	126	117	108	101	95	85	78	72	68
Discharge time(sec)	3	6	10	15	20	25	30	40	50	60	70
Peak current(A for milliseconds)	70	66	62	59	55	52	49	46	44	42	40
Discharge current(A)	63	60	56	53	50	47	44	42	40	38	36
Discharge time(sec)	80	90	100	110	120	130	140	150	160	170	180

The cut off voltage should be more than 8.0V.  
 Battery should be charged after each discharge.

### ■ Charging Method

**\*\*Control voltage: 13.6V~13.8V at 20°C~25°C with temperature compensation, Initial current: 1.08A or smaller**  
 \*\*Please consult us for the right control voltage if the ambient temperature is different.

### ■ Operating Temperature Range

*Storage	Charge	Discharge
-40°C~ 50°C	-20°C~ 50°C	-20°C~ 50°C

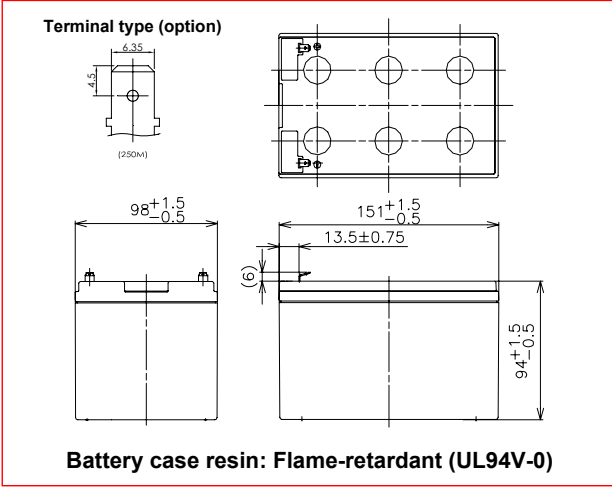
\* For storage, please ensure that battery is fully charged.

# LC-WTV1212



For pitch backup systems in wind turbines  
 Expected life: 5 years at 20°C, 3 years at 25°C  
 (based on a weekly discharge cycle of max 15 seconds)

### ■ Dimensions(mm)



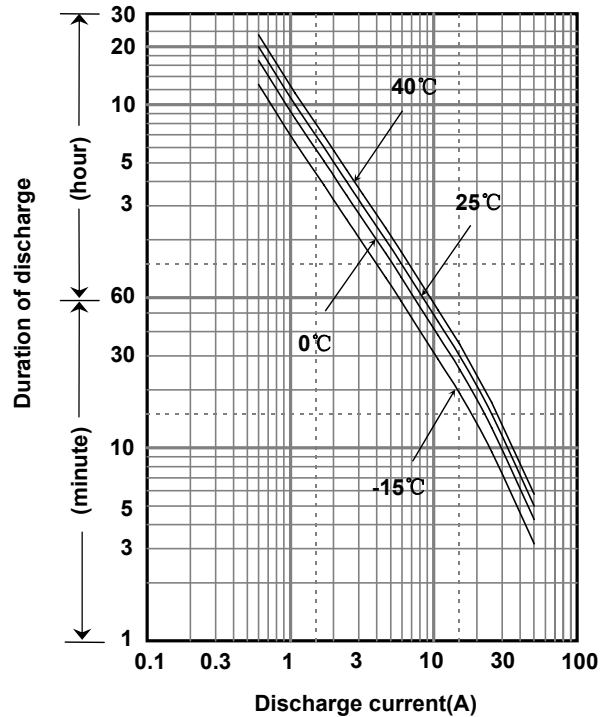
### ■ Specification

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		250M

### ■ Characteristics

Capacity (25 °C)	20 hour rate	12Ah
	10 hour rate	10Ah
	3 hour rate	9.3Ah
	1 hour rate	8.5Ah
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%

### ■ Duration of discharge vs. discharge current



### ■ Large current discharge characteristics(25°C)

Peak current(A for milliseconds)	267	250	233	217	200	187	175	157	143	133	125
Discharge current(A)	240	225	210	195	180	168	158	142	130	120	113
Discharge time(sec)	3	6	10	15	20	25	30	40	50	60	70

Peak current(A for milliseconds)	117	110	103	98	92	87	82	77	73	70	67
Discharge current(A)	105	100	93	88	83	78	73	70	67	63	60
Discharge time(sec)	80	90	100	110	120	130	140	150	160	170	180

The cut off voltage should be more than 8.0V.  
 Battery should be charged after each discharge.

### ■ Charging Method

**\*\*Control voltage: 13.6V~13.8V at 20°C~25°C with temperature compensation, Initial current: 1.80A or smaller**  
 \*\*Please consult us for the right control voltage if the ambient temperature is different.

### ■ Operating Temperature Range

*Storage	Charge	Discharge
-40°C~ 50°C	-20°C~ 50°C	-20°C~ 50°C

\* For storage, please ensure that battery is fully charged.

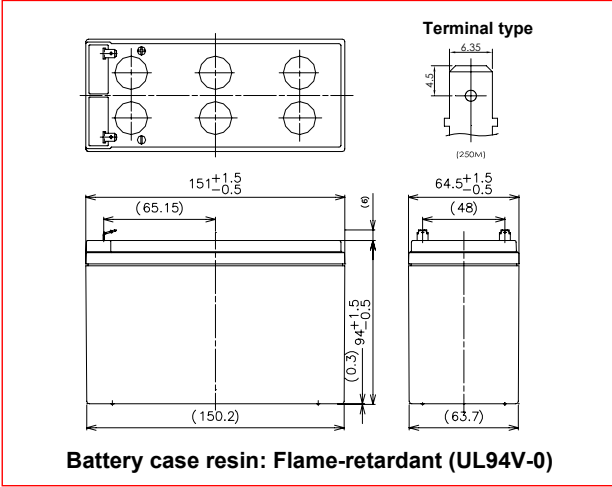
# LC-WTV127R2



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

For pitch backup systems in wind turbines  
 Expected life: 5 years at 20°C, 3 years at 25°C  
 (based on a weekly discharge cycle of max 15 seconds)

### ■ Dimensions(mm)



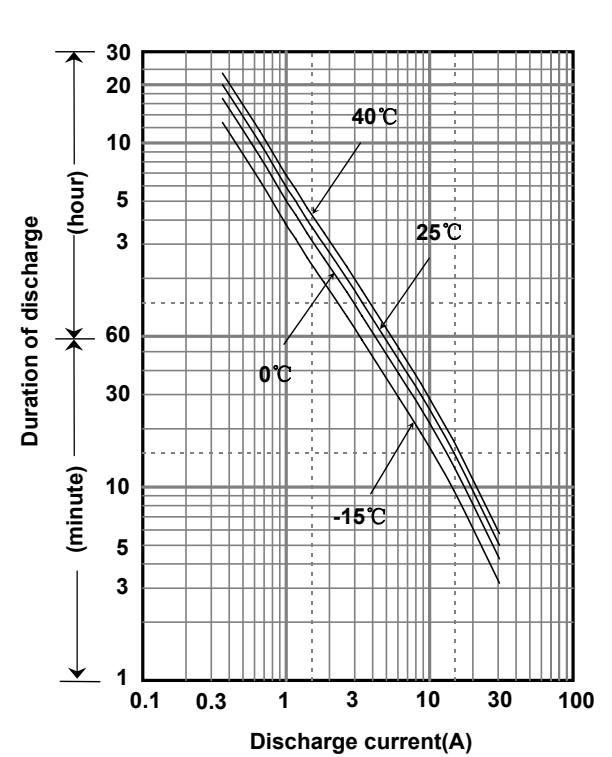
### ■ Specification

Nominal Voltage		12V
Rated Capacity(20HR)		7.2Ah
Dimensions	Length	151 mm
	Width	64.5 mm
	Height	94 mm
	Total height	100 mm
Approx. Mass		2.50 kg
Terminal		250M

### ■ Characteristics

Capacity (25 °C)	20 hour rate	7.2Ah
	10 hour rate	6.5Ah
	3 hour rate	5.8Ah
	1 hour rate	4.9Ah
Internal Resistance	Fully charged battery (25 °C)	21 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%

### ■ Duration of discharge vs. discharge current



### ■ Large current discharge characteristics(25°C)

Peak current(A for milliseconds)	160	150	140	130	120	112	105	94	86	80	75
Discharge current(A)	144	135	126	117	108	101	95	85	78	72	68
Discharge time(sec)	3	6	10	15	20	25	30	40	50	60	70
Peak current(A for milliseconds)	70	66	62	59	55	52	49	46	44	42	40
Discharge current(A)	63	60	56	53	50	47	44	42	40	38	36
Discharge time(sec)	80	90	100	110	120	130	140	150	160	170	180

The cut off voltage should be more than 8.0V.  
 Battery should be charged after each discharge.

### ■ Charging Method

**\*\*Control voltage: 13.6V~13.8V at 20°C~25°C with temperature compensation, Initial current: 1.08A or smaller**  
 \*\*Please consult us for the right control voltage if the ambient temperature is different.

### ■ Operating Temperature Range

*Storage	Charge	Discharge
-40°C~ 50°C	-20°C~ 50°C	-20°C~ 50°C

\* For storage, please ensure that battery is fully charged.



# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-X1220P/LC-X1220AP



Photo/Label for reference only.

(a) The photo and dimensions represent LC-X1220P.

### Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		20Ah
Dimensions	Length	7.126 inches (181.0 mm)
	Width	2.992 inches (76.0 mm)
	Height	6.575 inches (167.0 mm)
	Total Height	6.575 inches (167.0 mm)
Approx. mass		14.56 lbs. (6.6 kg)
Standard Terminals and Resin	UL94HB M5 Bolt and Nut	LC-X1220P
Optional Terminals and Resin	UL94HB M5 Threaded Post	◆ LC-X1220AP

◆ Please contact Panasonic for availability on optional items. Optional items may be subject to minimum order quantities.

### Characteristics

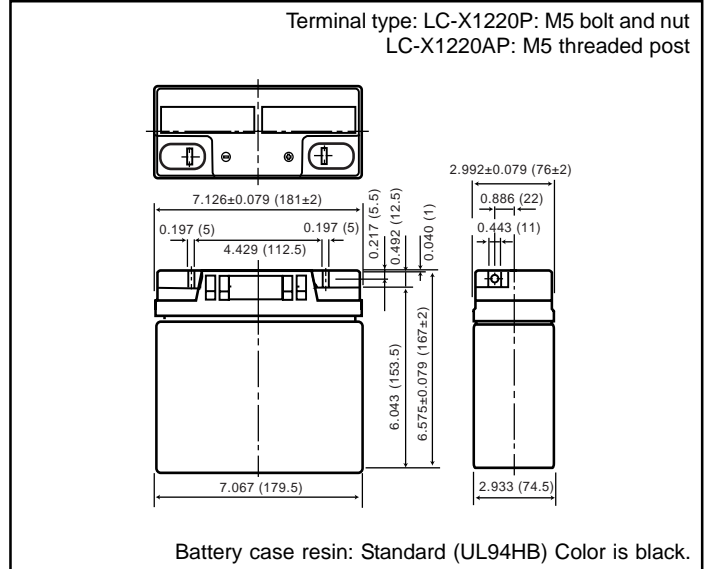
Capacity (note) 77°F (25°C)	20 hour rate (1.2A)	20Ah	
	10 hour rate (2.2A)	18Ah	
	5 hour rate (3.8A)	16Ah	
	1 hour rate (14A)	12Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	9.8A	
Internal Resistance	Fully charged battery 77°F (25°C)	Approx. 11mΩ	
Temperature dependency of capacity (20 hour rate)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
Self discharge 77°F (25°C)	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Initial current	8 A or smaller
		Control voltage	14.5 V to 14.9 V (per 12V cell 25°C)
	Trickle use	Initial current	3 A or smaller
		Control voltage	13.6V to 13.8V (per 12V cell 25°C)

(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

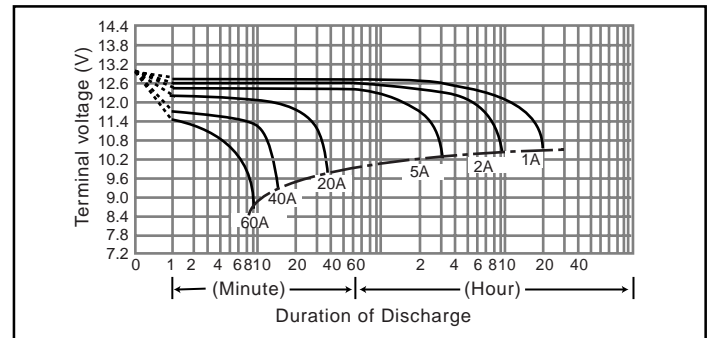
(Note) For cycle use of the battery, please contact us in advance.

For main and standby power supplies. Expected trickle life: Approx. 6 years at 25°C, Approx. 10 years at 20°C.

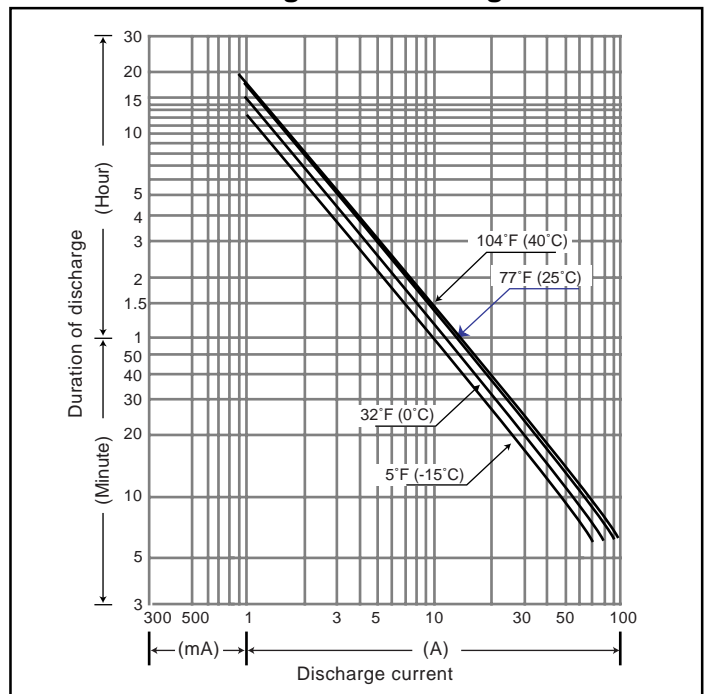
### Dimensions (mm)



### Discharge characteristics 77°F (25°C) (Note)



### Duration of discharge vs. Discharge current (Note)



# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-X1228P/LC-X1228AP



Photo/Label for reference only.

(a) The photo and dimensions represent LC-X1228AP.

### Specifications

<b>Nominal Voltage</b>		12V
<b>Rated Capacity (20 hour rate)</b>		28Ah
<b>Dimensions</b>	<b>Length</b>	6.496 inches (165 mm)
	<b>Width</b>	4.921 inches (125 mm)
	<b>Height</b>	7.07 inches (179.5 mm)
	<b>Total Height</b>	LC-X1228AP 6.890 inches (175 mm) LC-X1228P 7.067 inches (179.5 mm)
<b>Approx. mass</b>		24.34 lbs. (11 kg)
<b>Standard Terminals and Resin</b>	UL94HB M5 Bolt and Nut	LC-X1228P
	UL94HB M5 Threaded Post	LC-X1228AP
<b>Optional Terminals and Resin</b>	UL94V-0 M5 Bolt and Nut	◆ LC-P1228P
	UL94V-0 M5 Threaded Post	◆ LC-P1228AP

◆ Please contact Panasonic for availability on optional items. Optional items may be subject to minimum order quantities.

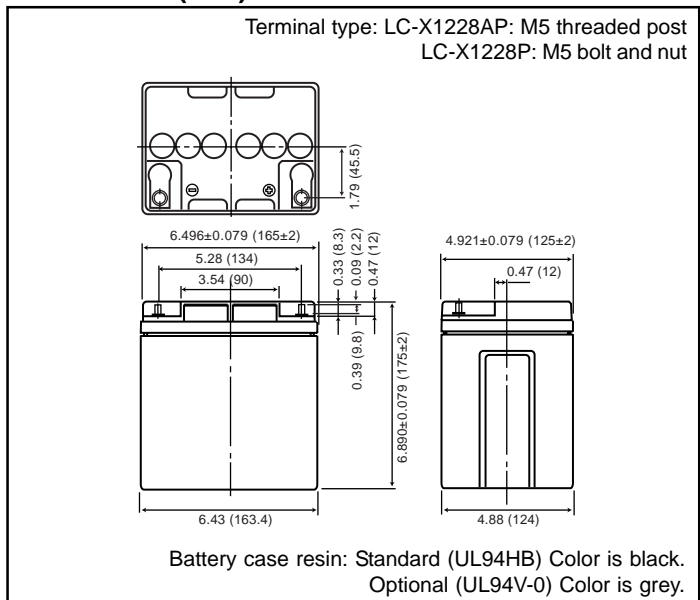
### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (1.40A)	28.0Ah	
	10 hour rate (2.65A)	26.5Ah	
	5 hour rate (5.00A)	25.0Ah	
	1 hour rate (21.0A)	21.0Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	9.80A	
Internal Resistance	Fully charged battery 77°F (25°C)	Approx. 6.0mΩ	
Temperature dependency of capacity (20 hour rate)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
	5°F (-15°C)	65%	
Self discharge 77°F (25°C)	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
Charge Method (Constant Voltage)	Trickle use	Initial current	4.20 A or smaller
		Control voltage	13.6V to 13.8V (per 12V cell 25°C)

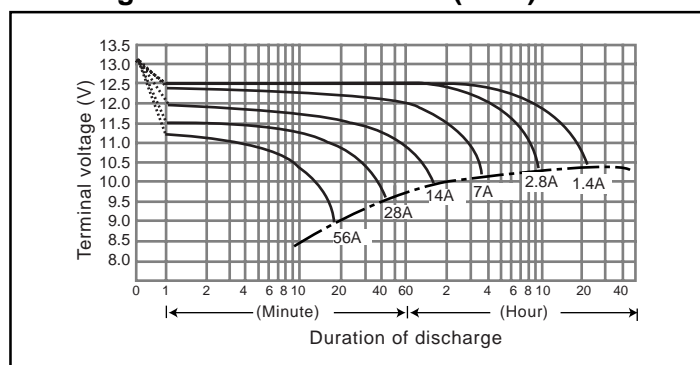
(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

For standby power supplies. Expected trickle life: Approx. 6 years at 25°C, Approx. 10 years at 20°C.

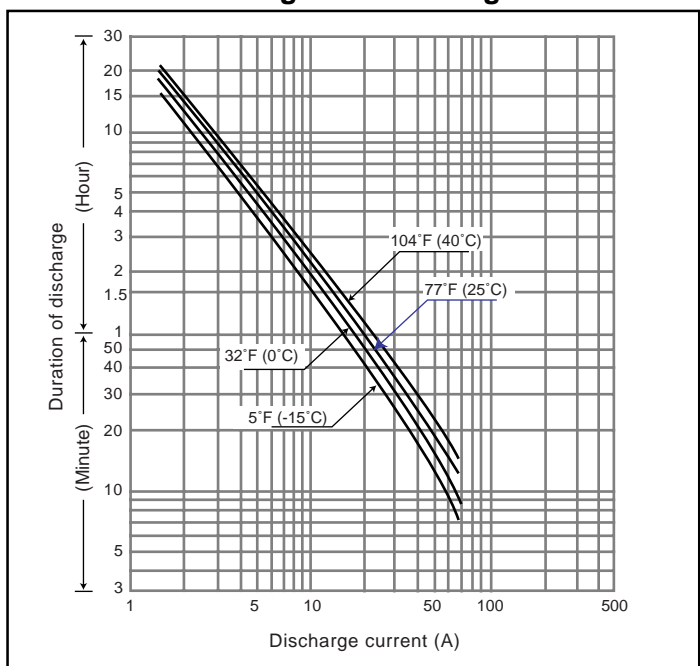
### Dimensions (mm)



### Discharge characteristics 77°F (25°C) (Note)



### Duration of discharge vs. Discharge current (Note)



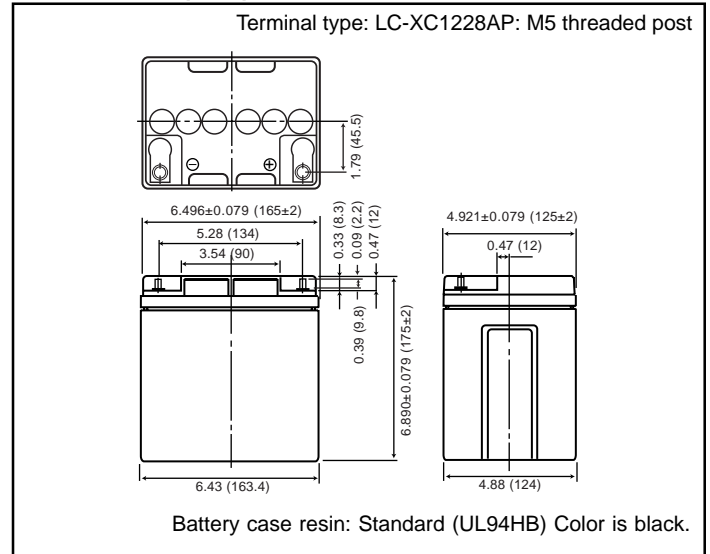
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-XC1228AP



For main power supplies.  
Cycle long life type.

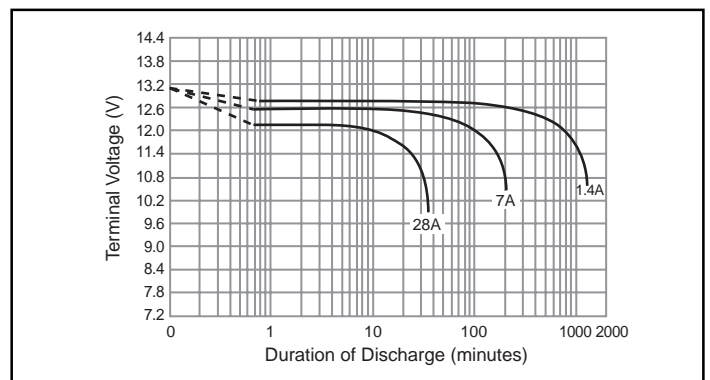
### Dimensions (mm)



### Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		28Ah
Dimensions	Length	6.496 inches (165 mm)
	Width	4.921 inches (125 mm)
	Height	6.890 inches (175 mm)
	Total Height	7.07 inches (179.5 mm)
Approx. mass		24.34 lbs. (11 kg)
Standard Terminals and Resin	UL94HB M5 Threaded Post	LC-XC1228AP

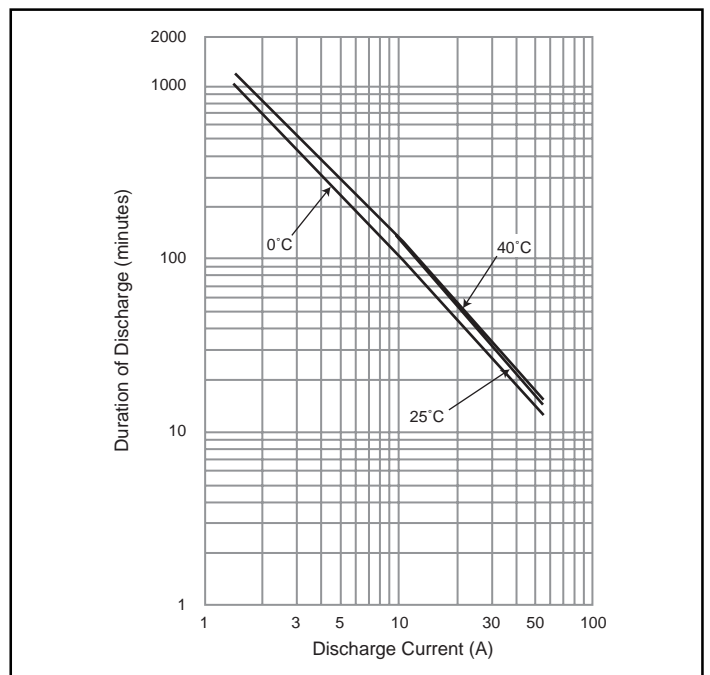
### Discharge characteristics 77°F (25°C) (Note)



### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (1.4A)	28Ah	
	10 hour rate (2.65A)	26.5Ah	
	5 hour rate (4.8A)	24Ah	
	1 hour rate (18A)	18Ah	
	1.5 hour rate discharge Cut-off voltage 10.5 V	14A	
Internal Resistance	Fully charged battery 77°F (25°C)	Approx. 10mΩ	
Temperature dependency of capacity (20 hour rate)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
	5°F (-15°C)	65%	
Self discharge 77°F (25°C)	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	Initial current	11.2 A or smaller
		Control voltage	14.5V to 14.9V (per 12V cell 25°C)

### Duration of discharge vs. Discharge current (Note)



(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

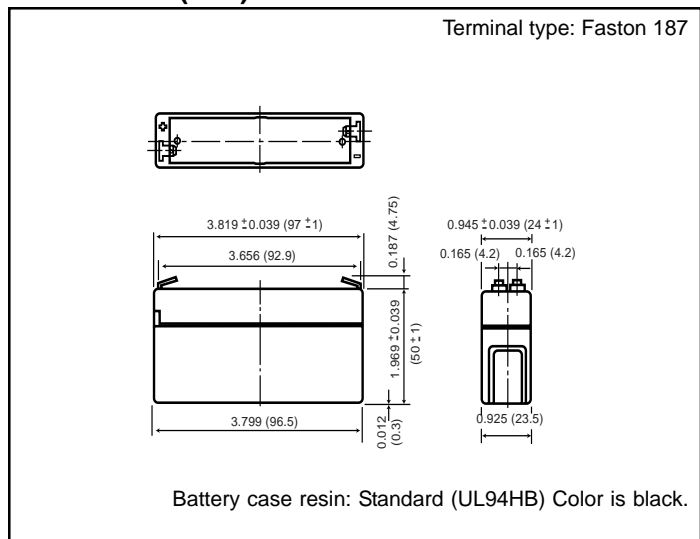
# VALVE-REGULATED LEAD ACID BATTERIES: INDIVIDUAL DATA SHEET

## LC-R061R3P



For main and standby power supplies.  
Expected trickle life: 3-5 years at 25°C, Approx. 5 years at 20°C.

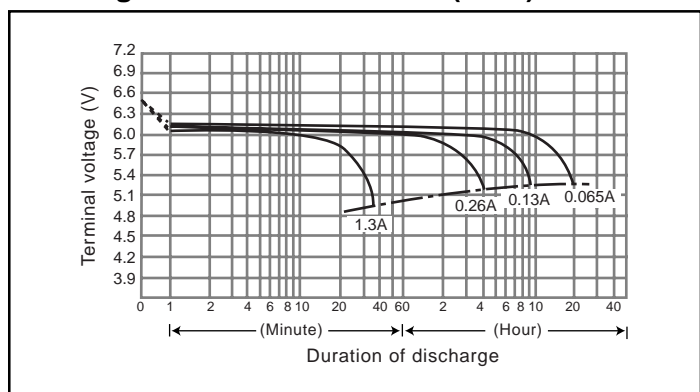
### Dimensions (mm)



### Specifications

Nominal Voltage		6V
Rated Capacity (20 hour rate)		1.3Ah
Dimensions	Length	3.819 inches (97.0 mm)
	Width	0.945 inches (24.0 mm)
	Height	1.969 inches (50.0 mm)
	Total Height	2.165 inches (55.0 mm)
Approx. mass		.661 lbs. (0.30 kg)
Standard Terminals and Resin	UL94HB Faston 187	LC-R061R3P

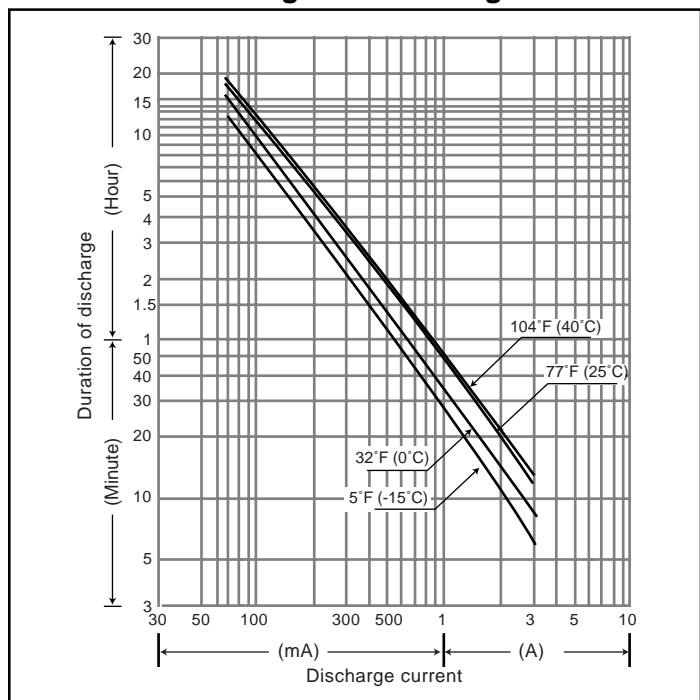
### Discharge characteristics 77°F (25°C) (Note)



### Characteristics

Capacity (note) 77°F (25°C)	20 hour rate (65mA)	1.3Ah	
	10 hour rate (120mA)	1.2Ah	
	5 hour rate (210mA)	1.05Ah	
	1 hour rate (850mA)	0.85Ah	
	1.5 hour rate discharge Cut-off voltage 5.25 V	0.6A	
Internal Resistance	Fully charged battery 77°F (25°C)	Approx. 50mΩ	
Temperature dependency of capacity (20 hour rate)	104°F (40°C)	102%	
	77°F (25°C)	100%	
	32°F (0°C)	85%	
	5°F (-15°C)	65%	
Self discharge 77°F (25°C)	Residual capacity after standing 3 months	91%	
	Residual capacity after standing 6 months	82%	
	Residual capacity after standing 12 months	64%	
Charge Method (Constant Voltage)	Cycle use (Repeating use)	initial current	0.52 A or smaller
		Control voltage	7.25V to 7.45V (per 6V cell 25°C)
	Trickle use	initial current	0.195 A or smaller
		Control voltage	6.8V to 6.9V (per 6V cell 25°C)

### Duration of discharge vs. Discharge current (Note)



(Note) The above characteristics data are average values obtained within three charge/discharge. Cycles not the minimum values.

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