

# OUTSTANDING QUALITY FOR DEMANDING APPLICATIONS



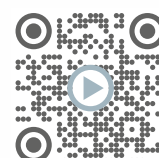
SUITABLE FOR NEARLY EVERY APPLICATION

HIGH QUALITY AND RELIABILITY

GOOD BALANCE IN TERMS OF CAPACITY AND LIFETIME

EXCELLENT DISCHARGE CHARACTERISTICS

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## BATTERY TYPES AND MODEL NUMBERS

Application	Series	Trickle design life (at 20°C)	Category	Standard ABS (UL94 HB)	FR ABS = Flame-retardant ABS (UL94 V-0)
Back-up and main power	LC-R/RA	6 – 9 years	Trickle and cycle standard type	○	
Back-up	LC-P/PA/PB	10 – 12 years	Trickle long-life type		○
	LC-QA	15 years	Trickle super long-life type		○
	LC-V/VA	6 – 9 years	Trickle standard type		○
	LC-X/XD/XB	10 – 12 years	Trickle long-life type	○	
	UP-PW	10 – 12 years	High power long-life type		○
	UP-VW/VWA	6 – 9 years	High power type		○
Main power	LC-CA/XC	-	Cycle long-life type	○	
	LC-T	-	Cycle long-life type for energy storage	○	
Motive and hybrid	EC-FV/HV	-	Cycle long-life type for motive power	*1	*1



## LC SERIES

The Panasonic LC series is a comprehensive range of high quality VRLA batteries serving the majority of VRLA battery applications. From batteries with a trickle design life of 6 – 9 years and 10 – 12 years to batteries of 15 years, the series includes solutions for every requirement. Various models are obtainable with flame-retardant housing and with different terminals.

## FEATURES

- State-of-the-art Absorbed Glass Mat (AGM) technology
- Superior design and low voltage spread
- Enhanced lifespan due to excellent recombination efficiency
- Highest quality control standards
- Almost 50 years of experience in production
- Selected batteries with flame-retardant battery containers according to UL94 V-0
- Various VdS approved batteries

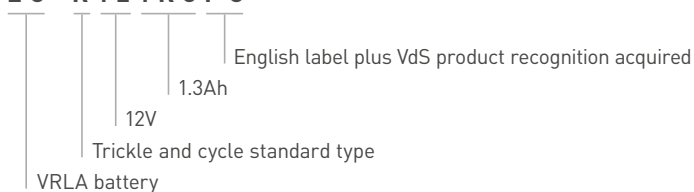
## APPLICATIONS

- UPS
- Energy storage
- Communication infrastructure
- Wind turbines (pitch system)
- Alarm systems
- Medical equipment
- Emergency lights, etc.

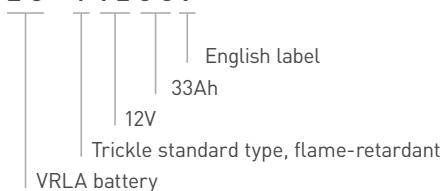
## LC SERIES – TRICKLE DESIGN LIFE 6 – 9 YEARS

## MODEL NUMBER (EXAMPLE)

## LC - R 1 2 1 R 3 P G



## LC - V 1 2 3 3 P

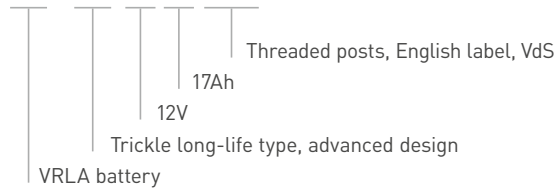


Model number	Nominal voltage (V)	Nominal capacity (Ah) 20 hours rate	Length (mm)	Width (mm)	Total height (mm)	Weight (kg)	VdS number
LC-R061R3P	6	1.3	24.0	97.0	55.0	0.3	-
LC-R063R4P	6	3.4	34.0	134.0	66.0	0.6	-
LC-R064R5P	6	4.5	48.0	70.0	108.0	0.7	-
LC-R067R2P	6	7.2	34.0	151.0	100.0	1.3	-
LC-R0612P	6	12.0	50.0	151.0	100.0	2.0	-
LC-R121R3PG*1	12	1.3	47.5	97.0	55.0	0.6	G196049
LC-R122R2PG*1	12	2.2	34.0	177.0	66.0	0.8	G188151
LC-R123R4PG*1	12	3.4	67.0	134.0	66.0	1.2	G191053
LC-R124R5P*1	12	4.5	70.0	97.0	108.0	1.5	-
LC-R127R2PG/PG1*1	12	7.2	64.5	151.0	100.0	2.5	G193046
LC-RA1212PG/PG1*1	12	12.0	98.0	151.0	100.0	3.8	G100001
LC-RA1215P/P1*1	12	15.0	98.0	151.0	100.0	4.2	-
LC-V1233P	12	33.0	130.0	195.6	180.0	11.1	-

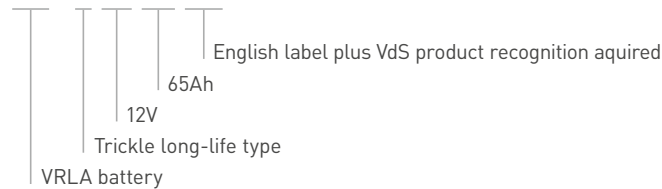
## LC SERIES – TRICKLE DESIGN LIFE 10-12 YEARS

### MODEL NUMBER (EXAMPLE)

#### LC - X D 1 2 1 7 A P G



#### LC - X 1 2 6 5 P G



Model number	Nominal voltage (V)	Nominal capacity (Ah) 20 hours rate	Length (mm)	Width (mm)	Total height (mm)	Weight (kg)	VdS number
LC-P067R2P/P1	6	7.2	34.0	151.0	100.0	1.3	-
LC-P0612P/P1	6	12.0	50.0	151.0	100.0	2.0	-
LC-P06200TA	6	200.0	173.0	407.0	250.0	41.0	-
LC-P122R2P	12	2.2	34.0	177.0	66.0	0.8	-
LC-P123R4P	12	3.4	67.0	134.0	66.0	1.2	-
LC-P127R2P/P1	12	7.2	64.5	151.0	100.0	2.5	-
LC-PA1212P/P1	12	12.0	98.0	151.0	100.0	3.7	-
LC-PA1216P/P1	12	16.0	98.0	151.0	105.0	4.1	-
LC-XD1217PG/APG	12	17.0	76.0	181.0	167.0	5.9	G104101
LC-P1220P/AP	12	20.0	76.0	181.0	167.0	6.6	-
LC-P1224P/APG	12	24.0	125.0	165.0	179.5/175.0	9.0	G198049
LC-P1228P/AP	12	28.0	125.0	165.0	179.5/175.0	11.0	-
LC-P1238PG/APG	12	38.0	165.0	197.0	180.0/175.0	13.0	G100002

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

Model number	Nominal voltage (V)	Nominal capacity (Ah) 20 hours rate	Length (mm)	Width (mm)	Total height (mm)	Weight (kg)	VdS number
LC-P1242P/AP	12	42	165.0	197.0	180.0/175.0	13.5	-
LC-X1265PG	12	65	166.0	350.0	175.0	23.5	G199090
LC-P1265PG	12	65	166.0	350.0	175.0	20.0	G199090
LC-P1275P	12	75	166.0	350.0	175.0	24.0	-
LC-XB12100P	12	100	173.0	407.0	236.0	36.5	-
LC-PB12100P	12	100	173.0	407.0	236.0	36.5	-
LC-P12120P	12	120	173.0	407.0	236.0	34.5	-
LC-P12150BP*1	12	150	183.0	532.0	214.0	43.0	-
LC-P12200BP*1	12	200	237.0	533.0	216.0	57.0	-



## LC CYCLIC SERIES

The Panasonic LC cyclic series is a main power source for electrical devices which require reliable power frequently. Based on our proven technology for stand-by and occasional back-up, this series uses different plate design and other tweaks to achieve long cycle life.

### FEATURES

- State-of-the-art Absorbed Glass Mat (AGM) technology
- Superior design and low voltage spread gives excellent performance
- Enhanced lifespan due to low and stable charge current
- 100% inspection after final assembly and before shipment
- Years of experience in production
- Selected batteries with flame-retardant battery containers according to UL94 V-0
- Various VdS approved batteries

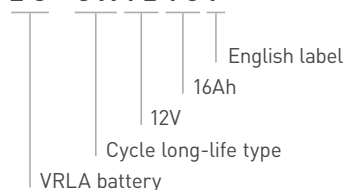
### APPLICATIONS

- Solar street lighting
- Medical equipment
- Lawn mowers
- Automated guided vehicles
- Wheelchairs, etc.

## LC CYCLIC – CYCLE LONG-LIFE AND CYCLE LONG-LIFE FOR ENERGY STORAGE

### MODEL NUMBER (EXAMPLE)

#### LC - CA 12 16 P



Model number	Nominal voltage (V)	Nominal capacity (Ah) 20 hours rate	Length (mm)	Width (mm)	Total height (mm)	Weight (kg)	VdS number
LC-CA1212P/P1	12	12	98.0	151.0	100.0	3.8	-
LC-CA1215P/P1	12	15	98.0	151.0	100.0	4.2	-
LC-CA1216P/P1	12	16	98.0	151.0	105.0	4.7	-
LC-XC1222P/AP	12	22	76.0	181.0	167.0	6.6	-
LC-XC1228P/AP	12	28	125.0	165.0	179.5	10.0	-
LC-XC1238P/AP	12	38	165.0	197.0	179.5	15.0	-
LC-T1270P*2	12	70	166.0	350.0	175.0	24.5	-
LC-T12105P*2	12	105	173.0	407.0	236.0	34.0	-

\*1 This battery is equipped with insert terminals.

\*2 This battery type is designed for energy storage applications.



## LC-QA SERIES – TRICKLE DESIGN LIFE 15 YEARS

The hallmarks of the Panasonic LC-QA battery series are a very long service life of 15 years (at 20°C) and excellent product quality. The latest LC-QA models are the result of a research programme to prolong the service life of lead-acid batteries, which Panasonic started back in 1984.

### FEATURES

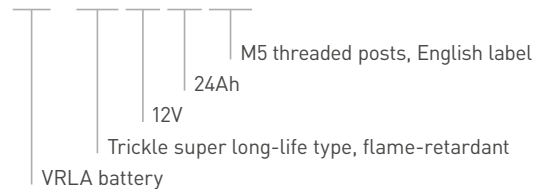
- ☐ Innovative Lead-Calcium-Tin alloy minimises harmful corrosion to the positive electrode
- ☐ Reliable seal thanks to a rubber washer and epoxy resin
- ☐ Flame-retardant housing according to UL 94-V0

### APPLICATIONS

- ☐ Mainly telecommunications industry
- ☐ Emergency light for trains
- ☐ UPS systems
- ☐ Energy distribution, etc.

### MODEL NUMBER (EXAMPLE)

#### LC - QA 12 24 AP



Model number	Nominal voltage (V)	Nominal capacity (Ah) 20 hours rate	Length (mm)	Width (mm)	Total height (mm)	Weight (kg)	VdS number
LC-QA06210TP	6	210	173.0	407.0	250.0	36.5	-
LC-QA1224P/AP	12	24	125.0	165.0	175.0	10.0	-
LC-QA1242P	12	42	165.0	197.0	180.0	13.5	-
LC-QA1270P	12	70	166.0	350.0	175.0	23.5	-
LC-QA12110TP	12	110	173.0	407.0	236.0	36.0	-



## UP-VW / -PW SERIES – TRICKLE DESIGN LIFE 6–9 AND 10–12 YEARS

The Panasonic UP-VW / -PW series offers up to 30% higher energy density compared to conventional VRLA batteries with the same dimensions. The series is ideal for UPS systems which require a short discharge time of about 30 minutes or less.

### FEATURES

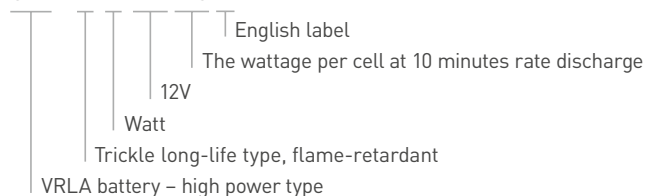
- ☐ 30% higher energy density compared to conventional VRLA batteries
- ☐ Superior quality
- ☐ 100% inspection after final assembly and before shipment
- ☐ Years of experience in production
- ☐ Batteries with flame-retardant battery container according to UL94 V-0

### APPLICATIONS

- ☐ UPS systems
- ☐ Servers, etc.

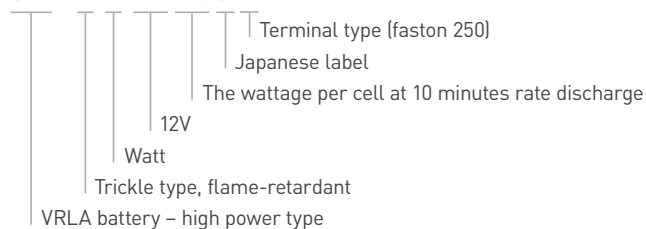
### MODEL NUMBER (EXAMPLE)

#### UP - PW 12 45 P



## VALVE-REGULATED-LEAD-ACID (VRLA)

### UP - VW 1220J1



Model number	Nominal voltage (V)	Rated power (W) 10 minutes rate	Length (mm)	Width (mm)	Total height (mm)	Weight (kg)	VdS number
UP-VW0645P1	6	135	34.0	151.0	100.0	1.3	-
UP-VW1220P1	12	120	38.5	140.0	100.0	1.4	-
UP-VWA1232P1/P2	12	192	51.0	151.0	100.0	2.0	-
UP-VW1228P1	12	200	64.5	151.0	100.0	1.9	-
UP-VW1236P1	12	224	64.5	151.0	100.0	2.1	-
UP-VW1245P1	12	270	64.5	151.0	100.0	2.6	-
UP-PW1245P1	12	270	64.5	151.0	100.0	2.6	-



## EV SERIES – CYCLE VERY LONG-LIFE FOR MOTIVE POWER

The Panasonic EV series is designed specifically for electric vehicles and long-term cyclic applications. In both cases, the high cycle stability is a particular highlight, achieved in a recommended 5-step charging procedure.

### FEATURES

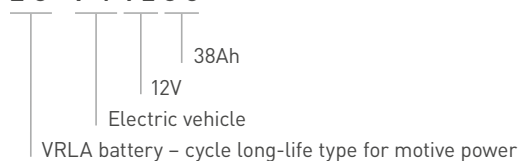
- ☐ High capacity
- ☐ Designed for deep discharges
- ☐ Extraordinary cycle stability
- ☐ Excellent discharge characteristics at low temperatures and high currents

### APPLICATIONS

- ☐ Golf buggies
- ☐ Mobile floor sweepers
- ☐ Solar or wind powered street lighting and advertising displays, etc.

### MODEL NUMBER (EXAMPLE)

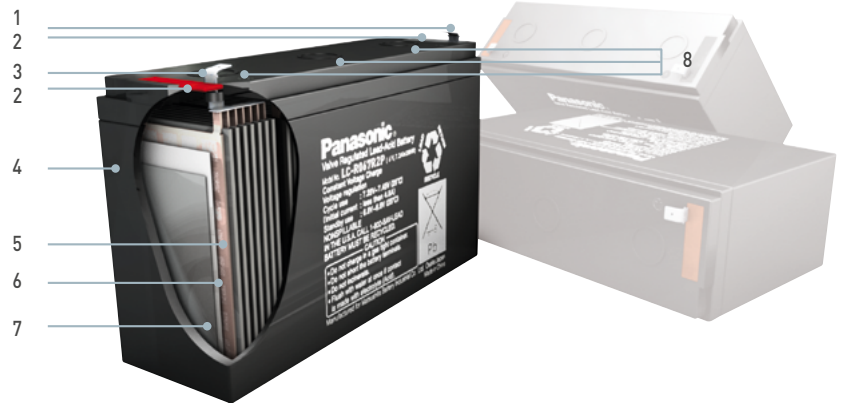
#### EC - FV 1238



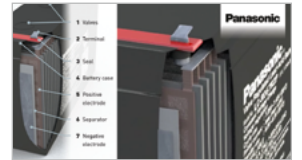
Model number	Nominal voltage (V)	Nominal capacity (Ah) 20 hours rate	Length (mm)	Width (mm)	Total height (mm)	Weight (kg)	VdS number
EC-FV0890B1E	8	90	116.0	388.0	175.0	22.0	-
EC-FV1238	12	38	116.0	261.0	175.0	14.0	-
EC-HV1255	12	55	116.0	388.0	175.0	22.0	-
EC-FV1260	12	60	116.0	388.0	175.0	21.0	-

### 3D ILLUSTRATION<sup>\*1</sup>

- 1 Negative plate terminal
- 2 Seals
- 3 Positive plate terminal
- 4 Battery case
- 5 Positive electrode
- 6 Separator
- 7 Negative electrode
- 8 Valve



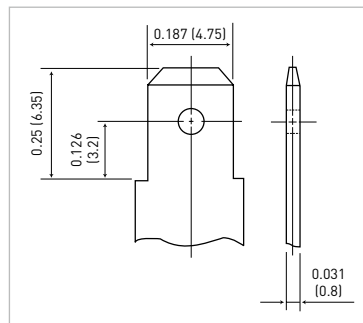
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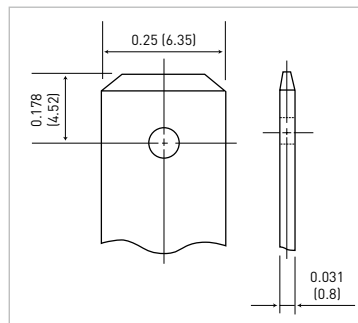
### TERMINAL TYPES

Panasonic offers the appropriate terminal type for each VRLA battery depending on the technical prerequisites. Additionally, some battery types are available with different terminal alternatives.

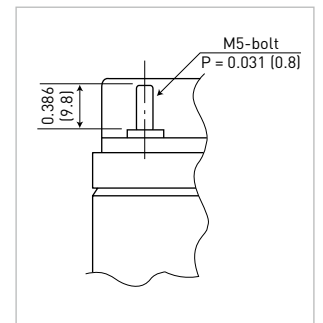
#### FASTON TAB TYPE 187 (P)



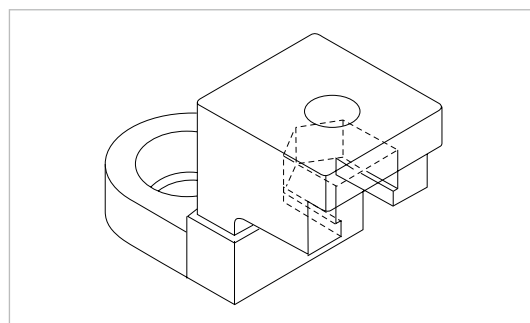
#### FASTON TAB TYPE 250 (P1)



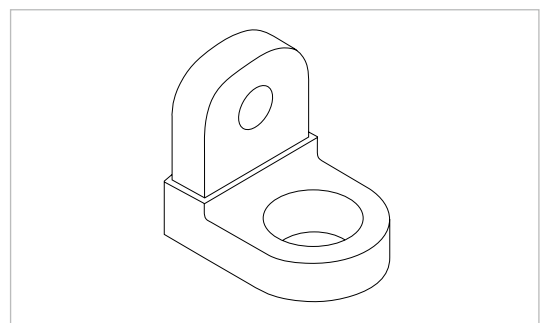
#### M5 THREADED POST TYPE (AP)



#### T-SHAPE TERMINAL (M10) (T)



#### L-SHAPE TERMINAL (M5, 6, 8) (BOLT & NUT) (P)



Unit: inch (mm)

<sup>\*1</sup> The illustration shows only one example of VRLA battery structure.