

BATTERY  
**CS3**

## ALL series

### PRODUCT APPLICATION ▼

- Confidence & Creativity
- Service & Sincerity
- Belief & Bravery

# Product Manual





As a world leading manufacturer of Valve Regulated Lead-Acid (VRLA) batteries, CSB's products are utilized in over 52 countries in telecommunications, UPS, emergency lighting, security and more. Founded in 1986, CSB has evolved into an international company providing over 4 million batteries monthly.

CSB's demand for producing high quality batteries is the main reason for its' growth. The wide array of CSB customers have come to know and trust the quality and reliability of its' products and services. CSB is committed to developing next generation VRLA products and growing its' worldwide distribution network.

With over 2500 people, CSB is confident in providing you a better and more reliable solution.

### EVH series



- Characteristics: Increased cycle life up to 122% versus standard lead acid battery.
- Application: For machines that need rechargeable power supplies for intensive use, such as electric vehicle, portable machines, and camera, etc.
- Capacity : 14Ah ~ 39Ah (20h)

### EVX series



- Characteristics: Increased cycle life up to 122% versus standard lead acid battery.
- Application: For machines that need rechargeable power supplies for intensive use, such as electric vehicle, portable machines, and camera, etc.
- Capacity : 7.2Ah ~ 100Ah (20h)

### GP series



- Characteristics: Wide range application provides hundreds to thousands of recharge cycles, up to 5 years.
- Application: UPS, emergency lighting, and security alarm, etc.
- Capacity : 2.2Ah ~ 100Ah (20h)

### GPL series



- Characteristics: Long life, wide range application. (Up to 10 years expected long life under normal float charge)
- Application: UPS, emergency lighting, security alarm, telecommunication system etc.
- Capacity : 7.2Ah~100Ah (20h)

### HC series



- Characteristics: Cassette designed, high rate discharge performance.
- Application: UPS, emergency lighting, and security alarm, etc.
- Capacity : 17W ~ 28W (15min)

## HR series



- Characteristics: high rate discharge.
- Application: UPS, emergency lighting, and security alarm, etc.
- Capacity : 21W ~ 120W (15min)

## HRL series



- Characteristics: Long life, high rate discharge. (Up to 10 years expected long service life under normal float charge)
- Application: UPS, emergency lighting, and security alarm, etc.
- Capacity : 10W~500W (15min)

## MSJ series



- Characteristics: 2V, long life. (Up to 20 years expected service life)
- Application: UPS, emergency lighting, security alarm, telecommunication equipments, electric power receiving or transforming equipment in intelligent buildings, factories, power plants and substations, etc.
- Capacity : 150~1000Ah (10h)

## MSV series



- Characteristics: 2V, long life. (Up to 15 years expected service life)
- Application: Telecommunication equipment, electric power receiving or transforming equipment, intelligent buildings, factories, power plants and substations, etc. and security alarm, etc.
- Capacity : 200Ah ~ 1000Ah (10h)

## MU series



- Characteristics: 2V, long life, large capacity and less space. (Up to 20 years expected service life)
- Application: UPS, emergency lighting, security alarm, telecommunication equipment in intelligent buildings, factories, power plants and substations, etc.
- Capacity: 1000Ah~1500Ah (10h)

## TPL series



- Characteristics: Front access, long life, space saving design.
- Application: UPS, wireless, telecom and transmission.
- Capacity : 80Ah~150Ah (8h)

## UPS series



- Characteristics: Wide range application provides hundreds to thousands of recharge cycles, life expectancy up to 5 years.
- Application: UPS, emergency lighting, and security alarm, etc.
- Capacity : 240W ~ 540W (5min)

## XHRL series



- Characteristics: Long life, extreme high rate discharge. (Up to 10 years expected long life under normal floating charge)
- Application: UPS, emergency lighting, and security alarm, etc.
- Capacity : 360W ~ 620W

## XTV series



- Characteristics: Extreme temperature range. (-20 °C ~ 50 °C)
- Application: Telecommunication equipment, UPS, emergency lighting, and security alarm, etc.
- Capacity : 7.2Ah ~ 95Ah(10h)

## EVH Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (20Hr)(Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
EVH 12140	12	14	4.20	120.8	40.00	13.00	180	102±1.0	94±1.0	151±2.0	98±1.0	e	F2	4.20	---	---
EVH 12150	12	15	4.50	129.4	40.00	11.00	180	102±1.0	94±1.0	151±2.0	98±1.0	e	F2	4.50	---	---
EVH 12240	12	24	7.55	118.6	38.15	11.00	320	178.8±2.0	176±2.0	181±2.0	76.2±1.0	d	I4	7.20	65/56	6.37
EVH 12390	12	39	11.50	118.9	40.70	8.00	400	178.3±2.0	154.8±2.0	195.6±2.0	130±1.5	c	B5	11.70	127/110	12.45

- Charging(V) :**
- Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C
  - Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

## EVX Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (20Hr)(Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
EVX 1272	12	7.2	2.55	93.6	33.88	26.00	100/130	100±1.0	94±1.0	151±2.0	65±1.0	e	F1/F2	2.16	---	---
EVX 12120	12	12.0	3.83	103.5	37.60	18.50	150/180	100±1.0	94±1.0	151±2.0	98±1.0	e	F1/F2	3.60	---	---
EVX 12170	12	17.0	5.67	89.4	35.98	16.50	230	167±2.0	165.5±2.0	181±2.0	76.2±1.0	d	B1/B3	5.10	65/56	6.37
EVX 12200	12	20.0	6.70	108.8	35.82	14.00	230	167±2.0	160±2.0	181±2.0	76.2±1.0	d	I1	6.00	65/56	6.37
EVX 12260	12	26.0	8.65	88.0	36.07	11.50	350	125±1.5	122±1.5	175±2.0	166±2.0	d	B1/B3/B3B	7.80	65/56	6.37
EVX 12300	12	30.0	10.40	99.1	34.62	9.00	400	175±2.0	175±2.0	166±2.0	125±1.5	c	I1	9.00	65/56	6.37
EVX 12340	12	34.0	10.77	103.7	37.88	8.50	400	178.3±2.0	154.8±2.0	195.6±2.0	130±1.5	c	B5	10.20	127/110	12.45
EVX 12400	12	40.0	12.73	87.6	37.71	10.00	400	170±2.0	168.5±2.0	197±2.0	165±2.0	d	B2	12.00	65/56	6.37
EVX 12520	12	52.0	18.30	90.3	34.10	5.50	500	219.3±2.0	201.3±2.0	248±2.0	138.4±1.5	c	B4	15.60	127/110	12.45
EVX 12650	12	65.0	22.20	78.0	35.14	8.00	500	174±2.0	172.5±2.0	349.4±2.5	166±2.0	d	B4	19.50	127/110	12.45
EVX 12750	12	75.0	27.00	92.0	33.33	4.50	500	233.2±2.5	211.2±2.5	275±2.5	168.5±2.0	c	B6	22.50	286/248	28.05
EVX 121000	12	100.0	35.50	77.6	33.80	8.00	500	174±2.0	172.5±2.0	511.8±2.5	175.2±2.0	f	B4	30.00	127/110	12.45

- Charging(V) :**
- Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C
  - Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

BATTERY  
**CSB**



WAY TO THE  
FUTURE CSB WITH YOU



### GP Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (20hr)(Ah)	Weight (Approx. kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
GP645	6	4.5	0.84	78.8	32.14	19.00	60/90	108±1.5	102±1.5	70±1.0	48±1.0	a	F1/F2	1.35	---	---
GP672	6	7.2	1.22	89.5	35.50	15.50	100/130	100±1.0	94±1.0	151±2.0	34±1.0	c	F1/F2	2.16	---	---
GP6120	6	12.0	1.85	101.5	38.92	8.50	150/180	100±1.0	94±1.0	151±2.0	50±1.0	c	F1/F2	3.60	---	---
GP1222	12	2.2	0.90	72.7	29.33	63.00	40/60	66±1.0	60±1.0	178±0.5	34±0.5	c	F1/F2	0.66	---	---
GP1245	12	4.5	1.66	81.6	32.53	40.50	60/90	108±1.5	102±1.5	92.8±1.0	69.9±1.0	c	F1/F2	1.35	---	---
GP1272	12	7.2	2.40	93.6	36.00	23.00	100/130	100±1.0	94±1.0	151±2.0	65±1.0	e	F1/F2	2.16	---	---
GP12120	12	12.0	3.67	103.5	39.24	16.00	150/180	100±1.0	94±1.0	151±2.0	98±1.0	e	F1/F2	3.60	---	---
GP12170	12	17.0	5.50	89.4	37.09	16.00	230	167±2.0	165.5±2.0	181±2.0	76.2±1.0	d	B1/B3	5.10	65/56	6.37
GP12200	12	20.0	6.40	108.8	37.50	13.00	230	167±2.0	160±2.0	181±2.0	76.2±1.0	d	I1	6.00	65/56	6.37
GP12260	12	26.0	8.45	88.0	36.92	11.00	350	125±1.5	122±1.5	175±2.0	166±2.0	d	B1/B3/B3B	7.80	65/56	6.37
GP12340	12	34.0	10.48	103.7	38.93	8.00	380	178.3±2.0	154.8±2.0	195.6±2.0	130±1.5	c	B5	10.20	127/110	12.45
GP12400	12	40.0	12.63	87.6	38.00	8.10	400	170±2.0	168.5±2.0	197±2.0	165±2.0	d	B2	12.00	65/56	6.37
GP12650	12	65.0	20.00	78.0	39.00	8.00	500	174±2.0	172.5±2.0	349.4±2.5	166±2.0	d	B4	19.50	127/110	12.45
GP121000	12	100.0	31.20	95.9	38.46	4.50	800	217.6±2.5	214.6±2.5	343±2.5	170±2.0	f	I2	30.00	127/110	12.45

**Charging(V)** : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C  
 • Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

Type	Nominal Voltage(V)	Nominal Capacity (15min)(Wh/cell)	Weight (Approx. kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Charging(V)	
								Height Over Terminal (H)	Container Height (h)	Length (L)	Width (W)				Standby Use	Cycle Use
GP1245 (12V16W)	12	16.0	1.40	37.4	17.14	33.00	60/90	107.7±1.5	101.8±1.5	90.0±1.0	70.0±1.0	c	F1/F2	1.35	2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C	2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C
GP1272 (12V28W)	12	28.7	2.10	45.5	20.00	21.00	100/130	100.0±1.0	94.0±1.0	151.0±2.0	65.0±1.0	e	F1/F2	2.16		

### GPL Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (20hr)(Ah)	Weight (Approx. kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
GPL672	6	7.2	1.37	89.5	31.53	13.50	100/130	100±1.0	94±1.0	151±2.0	34±1.0	c	F1/F2	2.16	---	---
GPL1272	12	7.2	2.60	93.6	33.23	21.00	100/130	100±1.0	94±1.0	151±2.0	65±1.0	e	F1/F2	2.16	---	---
GPL12120	12	12.0	4.10	103.5	35.12	14.00	150/180	100±1.0	94±1.0	151±2.0	98±1.0	e	F1/F2	3.60	---	---
GPL12260	12	26.0	8.30	88.0	37.59	11.00	350	125±1.5	122±1.5	175±2.0	166±2.0	d	B1/B3/B3B	7.80	65/56	6.37
GPL12400	12	40.0	14.50	87.6	33.10	7.00	400	170±2.0	168.5±2.0	197±2.0	165±2.0	d	B2	12.00	65/56	6.37
GPL12520	12	52.0	18.00	94.0	34.67	5.50	500	219.3±2.0	210.3±2.0	228±2.0	138.4±2.0	c	B4	15.60	127/110	12.45
GPL12750	12	75.0	25.60	96.9	35.16	4.50	800	214.2±2.5	211.2±2.5	261±2.5	168.5±2.0	c	I2	22.50	127/110	12.45
GPL12880	12	88.0	29.70	95.8	35.56	4.50	800	214.3±2.5	211.3±2.5	308.7±2.5	169±2.0	c	I2	26.40	127/110	12.45
GPL121000	12	100.0	33.50	95.9	35.82	3.50	800	217.6±2.5	214.6±2.5	343±2.5	170±2.0	c	I2	30.00	127/110	12.45

**Charging(V)** : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C  
 • Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

### HC Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (15min)(Wh/cell)	Weight (Approx. kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Charging(V)	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Standby Use	Cycle Use
HC1217W	12	17	1.64	37.3	15.55	42.00	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C1	1.70	2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C	2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C
HC1217WP	12	17	1.64	37.3	15.55	42.00	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C2	1.70		
HC1221W	12	21	1.79	46.1	17.60	25.00	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C1	2.10		
HC1221WP	12	21	1.79	46.1	17.60	25.00	60	103.5±1.5	102±1.5	139.7±1.5	48±1.0	c	C2	2.10		
HC1225W	12	25	2.25	44.4	16.67	30.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C1	2.50		
HC1225WP	12	25	2.25	44.4	16.67	30.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C2	2.50		
HC1228W	12	28	2.51	49.7	16.73	21.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C1	2.80		
HC1228WP	12	28	2.51	49.7	16.73	21.00	60	127.5±1.5	126±1.5	139.7±1.5	48±1.0	c	C2	2.80		

### HR Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (15min) (Wh/cell)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height(H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
HR1221W	12	21	1.80	49.1	17.50	25.00	60/90	106±0.5	101.8±0.5	90±0.5	70±0.5	c	F1/F2	2.10	---	---
HR1224W	12	24	1.95	49.7	18.46	21.00	100/130	98.3±1.0	94±1.0	151±2.0	51±1.0	e	F1/F2	2.40	---	---
HR1227W	12	27	1.97	63.1	20.56	19.00	100/130	106±1.5	101.8±1.5	90±1.0	70±1.0	c	F1/F2	2.70	---	---
HR1234W	12	34	2.50	55.3	20.40	19.00	100/130	100±1.0	94±1.0	151±2.0	65±1.0	e	F1/F2	3.40	---	---
HR1251W	12	51	3.72	55.0	20.56	13.00	150/180	100±1.0	94±1.0	151±2.0	98±1.0	e	F1/F2	5.10	---	---
HR1290W	12	90	6.75	61.2	20.00	9.00	300	167±2.0	160±2.0	181±2.0	76.2±1.0	d	I1	9.00	65/56	6.37
HR12120W	12	120	10.20	52.1	17.65	9.00	400	175±2.0	166.5±2.0	166±2.0	125±1.5	c	I1	12.00	65/56	6.37

**Charging(V) :** • Standby Use : 2.275V±0.025V/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C  
 • Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

### HRL Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (15min) (Wh/cell)	Weight (Approx. kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
HRL634	6	34	1.32	52.8	19.32	10.00	130	98.3±1.0	94±1.0	151±2.0	34±1.0	c	F2	3.40	---	---
HRL1210	12	10	1.10	38.7	13.64	35.00	40	70±1.0	64±1.0	178±2.0	34±1.0	c	F2	1.00	---	---
HRL1223	12	23	2.10	53.8	16.43	19.00	130	106±1.5	101.8±1.5	90±1.0	70±1.0	c	F2	2.30	---	---
HRL1234	12	34	2.70	55.3	18.89	17.00	130	98.3±1.0	94±1.0	151±2.0	65±1.0	e	F2	3.40	---	---
HRL1280	12	80	6.50	54.4	18.46	9.00	300	167±2.0	160±2.0	181±2.0	76.2±1.0	d	I1	8.00	65/56	6.37
HRL12110	12	110	9.90	48.0	16.67	9.00	400	175±2.0	165.5	166±2.0	125±1.5	c	I1	11.00	65/56	6.37
HRL12150	12	150	11.75	59.6	19.15	7.00	225	172±2.0	148.5±2.0	195.6±2.0	130±1.5	c	I2	15.00	127/110	12.45
HRL12200	12	200	17.60	47.0	17.05	5.90	300	207.3±2.5	202.3±2.5	228±2.5	138.4±1.5	c	I2	20.00	127/110	12.45
HRL12280	12	280	25.80	45.2	16.28	4.00	800	214.2±2.5	211.2±2.5	261±2.5	168.5±2.0	c	I2	28.00	127/110	12.45
HRL12330	12	330	29.60	44.9	16.72	4.00	800	214.3±2.5	211.3±2.5	308.7±2.5	169±2.0	c	I2	33.00	127/110	12.45
HRL12390	12	390	33.00	46.9	17.73	4.00	800	217.6±2.5	214.6±2.5	342±2.5	170±2.0	c	I2	39.00	127/110	12.45
HRL12500	12	500	45.70	46.8	16.41	3.70	800	277.7±2.5	274.7±2.5	343±2.5	170±2.0	c	I2	50.00	127/110	12.45

**Charging(V) :** • Standby Use : 2.275V±0.025V/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C  
 • Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

### MU Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (10Hr)(Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)		Kgf-cm / lbf-in	N-m
MU 1000S	2	1000	62.50	79.0	32.00	0.35	6,000	497±3.0	486±3.0	303±3.0	172±3.0	300.00	572/496	56.08
MU 1500S	2	1500	91.50	82.1	32.79	0.35	9,000	497±3.0	486±3.0	437±3.0	172±3.0	450.00	572/496	56.08

**Charging(V) :** • Float charge : 2.23±0.02/Cell AT 25°C (77°F) Temp. Coefficient -3.3mV/°C (-1.8mV/°F)

### MSJ Series

Battery Type	Nominal Voltage (V)	Nominal Capacity (10Hr)(Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)			Kgf-cm / lbf-in	N-m
MSJ150	2	150	13.56	50.3	22.12	0.91	900	365±3.0	331±3.0	170±3.0	106±3.0	A	45.00	572/496	56.08
MSJ200	2	200	15.30	67.1	26.14	0.90	1,200	365±3.0	331±3.0	170±3.0	106±3.0	A	60.00	572/496	56.08
MSJ260	2	260	17.50	70.5	29.71	0.36	1,560	339±3.0	331±3.0	170±3.0	131±3.0	F	78.00	286/248	28.05
MSJ300	2	300	22.20	71.1	27.03	0.88	1,800	365±3.0	331±3.0	170±3.0	150±3.0	A	90.00	572/496	56.08
MSJ350	2	350	22.30	82.9	31.39	0.87	2,100	365±3.0	331±3.0	170±3.0	150±3.0	A	105.00	572/496	56.08
MSJ400	2	400	28.00	72.2	28.57	0.41	2,400	339±3.0	331±3.0	197±3.0	170±3.0	F	120.00	286/248	28.05
MSJ500	2	500	36.50	73.3	27.40	0.84	3,000	365±3.0	331±3.0	241±3.0	171±3.0	B	150.00	572/496	56.08
MSJ650	2	650	46.60	74.8	27.90	0.81	3,900	365±3.0	331±3.0	307±3.0	171±3.0	B	195.00	572/496	56.08
MSJ800	2	800	57.00	74.5	28.07	0.78	4,800	365±3.0	331±3.0	373±3.0	174±3.0	B	240.00	572/496	56.08
MSJ1000	2	1000	72.75	75.0	27.49	0.74	6,000	365±3.0	331±3.0	471±3.0	171±3.0	C	300.00	572/496	56.08

**Charging(V) :** • Float charge : 2.23±0.02/Cell AT 25°C (77°F) Temp. Coefficient -3.3mV/°C (-1.8mV/°F)

### MSV Series

Battery Type	Nominal Voltage (V)	Nominal Capacity (10Hr)(Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)			Kgf-cm / lbf-in	N-m
MSV200	2	200	13.70	67.1	29.20	0.40	1,200	339±3.0	331±3.0	170±3.0	106±3.0	A	60.00	286/248	28.05
MSV300	2	300	18.40	71.1	32.61	0.40	1,800	339±3.0	331±3.0	170±3.0	150±3.0	A	90.00	286/248	28.05
MSV400	2	400	24.70	72.2	32.39	0.40	2,400	339±3.0	331±3.0	197±3.0	170±3.0	A	120.00	286/248	28.05
MSV500	2	500	32.20	73.3	31.06	0.40	3,000	339±3.0	331±3.0	241±3.0	171±3.0	B	150.00	286/248	28.05
MSV650	2	650	41.40	74.8	31.40	0.40	3,900	339±3.0	331±3.0	307±3.0	171±3.0	B	195.00	286/248	28.05
MSV800	2	800	50.60	74.5	31.62	0.40	4,800	339±3.0	331±3.0	373±3.0	174±3.0	B	240.00	286/248	28.05
MSV1000	2	1000	64.40	75.0	31.06	0.40	6,000	339±3.0	331±3.0	471±3.0	171±3.0	C	300.00	286/248	28.05

**Charging(V)** : • Float charge : 2.25±0.02/Cell AT 25°C (77°F) Temp. Coefficient -3.3mV/°C (-1.8mV/°F)

### TPL Series

Battery Type	Nominal Voltage (V)	Nominal Capacity (8Hr) (Ah)	Weight (Approx. Kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)			Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
TPL12800	12	80	36.00	67.1	26.67	4.50	800	256.7±2.5	512±2.5	112.8±1.5	e	I2	24.00	91/79	8.92
TPL12900	12	90	36.00	75.5	30.00	4.50	800	256.7±2.5	512±2.5	112.8±1.5	e	I2	27.00	91/79	8.92
TPL121000	12	100	36.00	83.9	33.33	4.50	800	256.7±2.5	512±2.5	112.8±1.5	e	I2	30.00	91/79	8.92
TPL121250	12	125	47.00	66.3	31.91	4.10	800	323±2.5	558.4±2.5	125.6±1.5	e	I2	37.50	91/79	8.92
TPL121250A	12	125	44.00	66.3	34.09	6.50	800	323±2.5	558.4±2.5	125.6±1.5	e	I2	37.50	91/79	8.92
TPL121350	12	135	56.00	71.6	28.93	4.10	800	323±2.5	558.4±2.5	125.6±1.5	e	I2	40.50	91/79	8.92
TPL121350A	12	135	52.80	71.6	30.68	6.50	800	323±2.5	558.4±2.5	125.6±1.5	e	I2	40.50	91/79	8.92
TPL121500	12	150	56.00	79.5	32.14	4.10	800	323±2.5	558.4±2.5	125.6±1.5	e	I2	45.00	91/79	8.92
TPL121500A	12	150	52.80	79.5	34.09	6.50	800	323±2.5	558.4±2.5	125.6±1.5	e	I2	45.00	91/79	8.92

**Charging(V)** : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C

• Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

### UPS Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (5min) (W/cell)	Weight (Approx. Kg)	Energy Density (wh/L)	Specific Energy (wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Charging(V)	
								Height Over Terminal (H)	Container Height (h)	Length (L)	Width (W)				Standby Use	Cycle Use
UPS122406	12	240	1.45	27.6	13.79	32.00	100/130	98.3±1.0	94±1.0	151±2.0	51±1	e	F1/F2	2.00	2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C	2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C
UPS123606	12	360	1.97	41.4	15.22	22.00	100/130	98.3±1.0	94±1.0	151±2.0	51±1	e	F1/F2	3.00		
UPS123607	12	360	1.97	32.5	15.22	22.00	100/130	98.3±1.0	94±1.0	151±2.0	65±1.0	e	F1/F2	3.00		
UPS12540	12	540	2.75	48.8	16.36	12.50	130	98.3±1.0	94±1.0	151±2.0	65±1.0	e	F2	4.83		

### XTV Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (10Hr) (Ah)	Weight (Approx. kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
XTV1272	12	7.2	2.75	93.6	31.42	21.00	130	100±1.0	94±1.0	151±2.0	65±1.0	e	F2	2.16	---	---
XTV12750	12	75	29.50	81.6	30.51	6.50	800	214.3±2.5	211.3±2.5	308.7±2.5	169±2.0	c	I2	22.50	127/110	12.45
XTV12850	12	85	31.20	81.5	32.69	6.50	800	217.6±2.5	214.6±2.5	343±2.5	170±2.0	c	I2	25.50	127/110	12.45
XTV12950	12	95	32.40	71.2	35.19	6.50	800	277.7±2.5	274.7±2.5	343±2.5	170±2.0	c	I2	28.50	127/110	12.45

**Charging(V)** : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C

• Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

### XHRL Series

Battery Type	Nominal Voltage(V)	Nominal Capacity (15min) (W/cell)	Weight (Approx. kg)	Energy Density (Wh/l)	Specific Energy (Wh/kg)	Internal Resistance Approx. (mΩ)	Max. Discharge Current 5 sec (A)	Dimensions (mm)				Terminal Position	Terminal Type	Max. Charging Current (A)	Max. Screw Torque value	
								Overall Height (H)	Container Height (h)	Length (L)	Width (W)				Kgf-cm / lbf-in	N-m
12360W	12	360	27.50	58.1	19.64	4.00	800	214.2±2.5	211.2±2.5	261±2.5	168.5±2.0	c	I2	36.00	91/79	8.92
12410W	12	410	31.00	55.8	19.84	4.00	800	214.2±2.5	211.3±2.5	308.7±2.5	169±2.0	c	I2	41.00	91/79	8.92
12475W	12	475	35.30	56.9	20.18	3.70	800	217.9±2.5	214.6±2.5	343±2.5	170±2.0	c	I2	47.50	91/79	8.92
12620W	12	620	47.20	58.2	19.70	3.70	800	275.9±2.5	273.9±2.5	343±2.5	170±2.0	c	I2	62.00	91/79	8.92

**Charging(V)** : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C

• Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

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