



**XHRL series**  
**Extreme High Rate**  
**Long life**

**ENERGY OF INFINITY ▼**

Confidence & Creativity  
Service & Sincerity  
Belief & Bravery

# XHRL

# XHRL series

XHRL-series batteries are specially designed for high-rate discharge applications. With new VRLA technology, the XHRL series features 20% greater power density in the standard footprint.

The XHRL service life is up to 10 years in standby use, or more than 260 cycles at 100% discharge.

As with all CSB batteries, all XHRL series batteries are rechargeable, highly efficient, maintenance free, leakproof, useable in any orientation and ISO/UL recognized.



## Feature and Benefits

- Extreme energy density, small footprint, increased power (15% to 20% above standard high-rate batteries).
- Innovative plate structure greatly increases energy/density ratios.
- New paste formula increases active surface area.
- Proprietary electrolyte additives.
- Thermally bonded casing.
- TIG terminal welds.
- Flame-arresting vents.
- Highly durable safety valve.
- Increased current delivery for high-rate discharge.
- Up to 50% greater resistance to grid growth under optimal temperature.
- Reduced internal resistance for superior performance.
- Uniform plate formation for consistent capacity.
- No-spill design.
- Useable in any orientation.
- Maintenance free.
- Low self-discharge.

## Long service life

- Up to 10 years of expected life under normal float charge at 25°C (77°F).
- Extended shelf life (up to 14 months at 20°C).

## Reliability

- CSB-manufactured batteries are 100% 2-cycle tested by the CCDS system.
- CSB-manufactured batteries are UL-recognized components under UL 924 and UL 1989. CSB file number MH14533.
- ISO9001 and ISO14001 certified.

## Applications

### Standby use

- UPS power supply.
- Workstation UPS.
- Emergency lighting equipment.
- Precision instrumentation.
- Fire alarm and security systems.
- Communications and electrical equipment.
- Office computers, microcomputers and OA equipment.
- Robots, control equipment and other FA equipment.
- Emergency power supply in power plants and substations.

### Cycle use

- Portable measuring equipment.
- Cameras and photographic equipment.
- Various toys and hobby equipment.

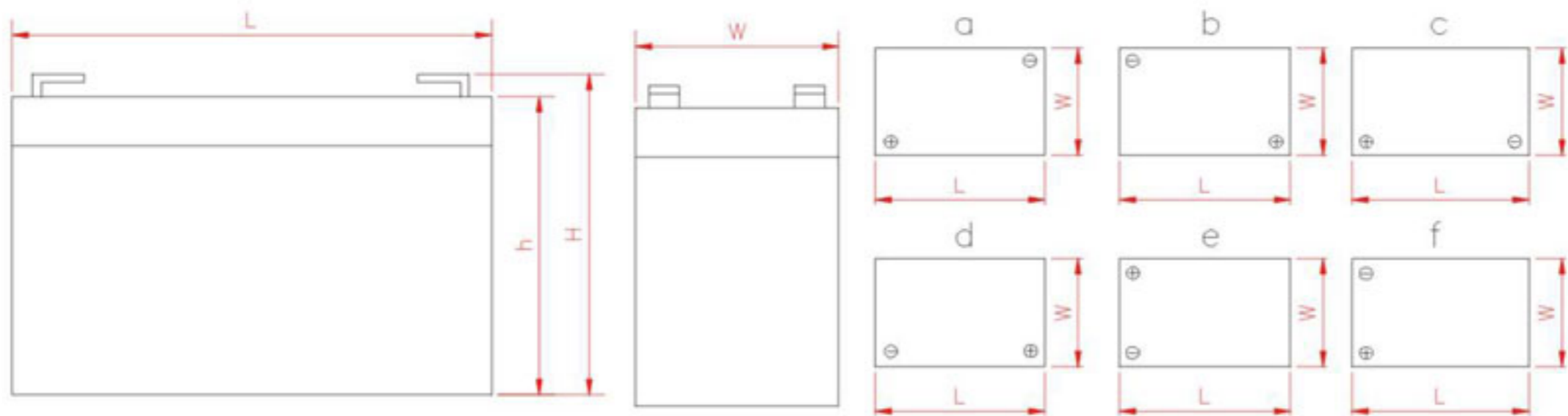
## Specifications

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
XHRL 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
XHRL 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
XHRL 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
XHRL 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

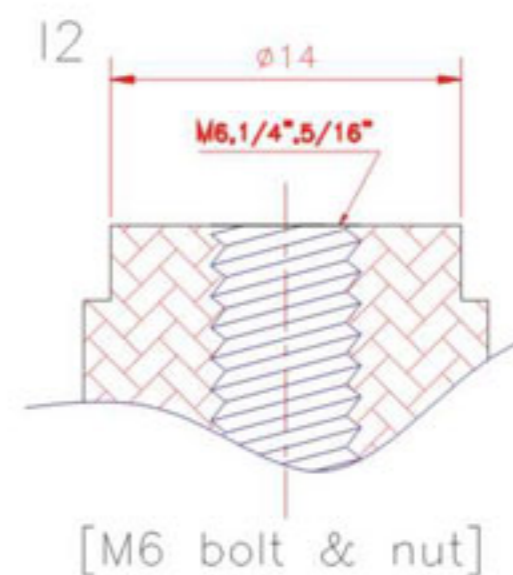
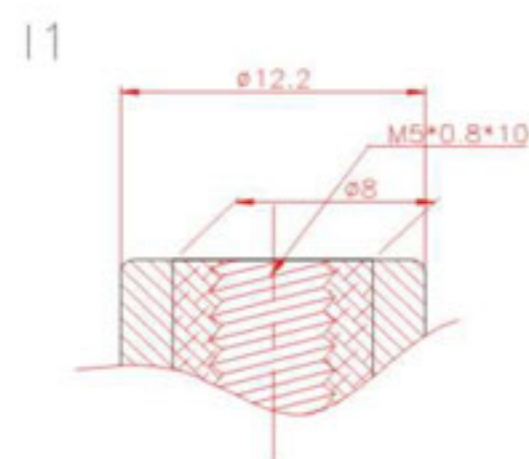
Charging(V) : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C

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

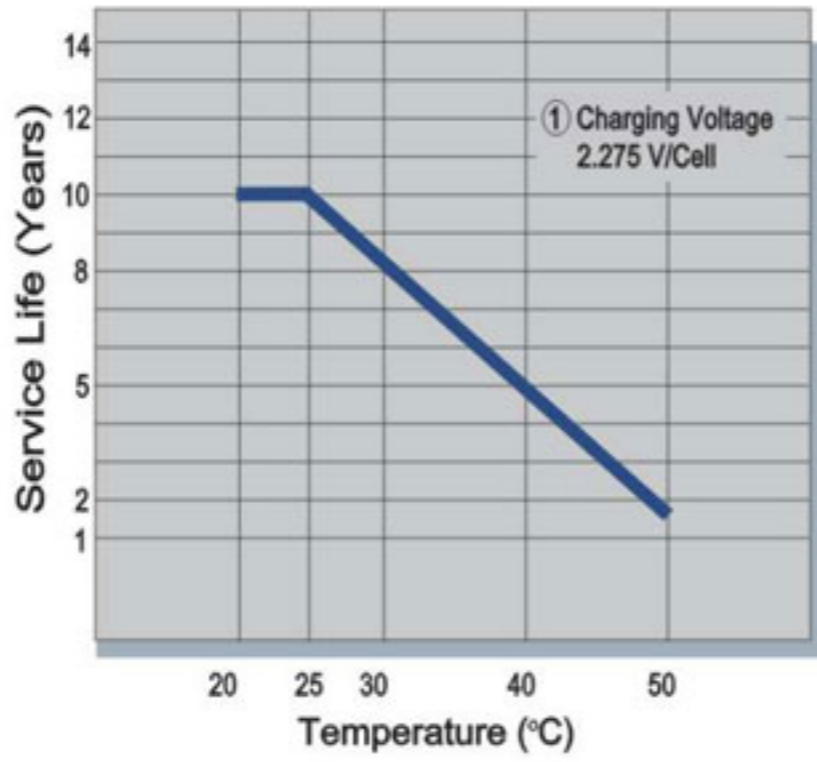
## Terminal Position



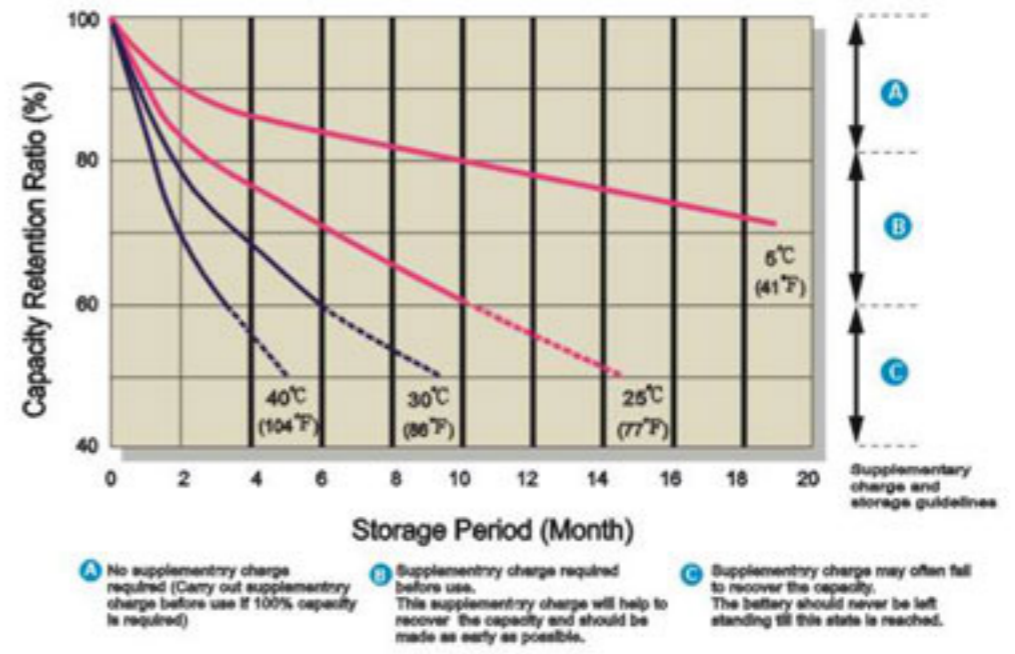
## Terminal Type



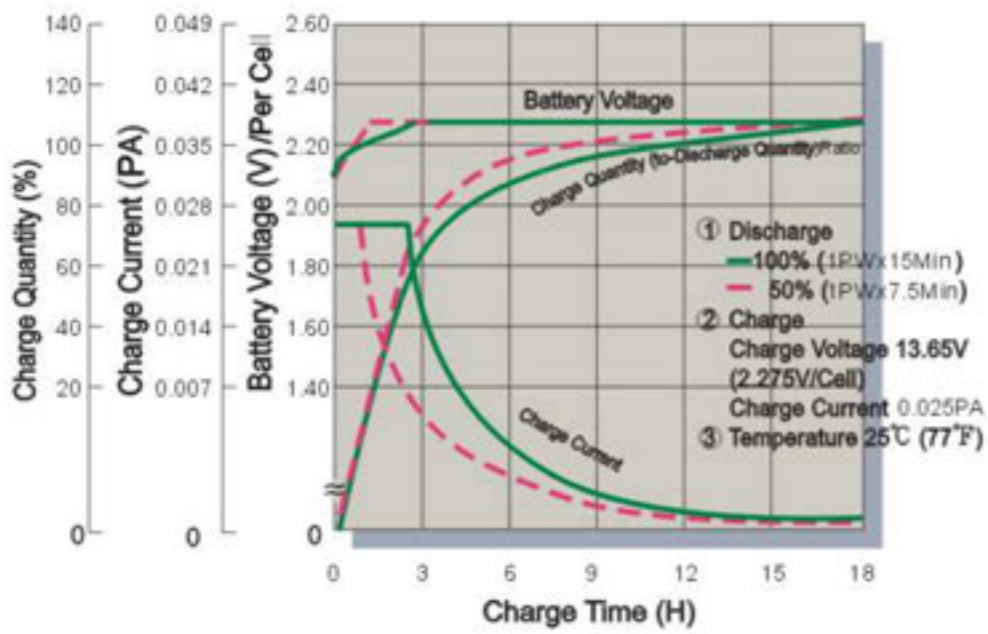
### Trickle (or Float) Service Life



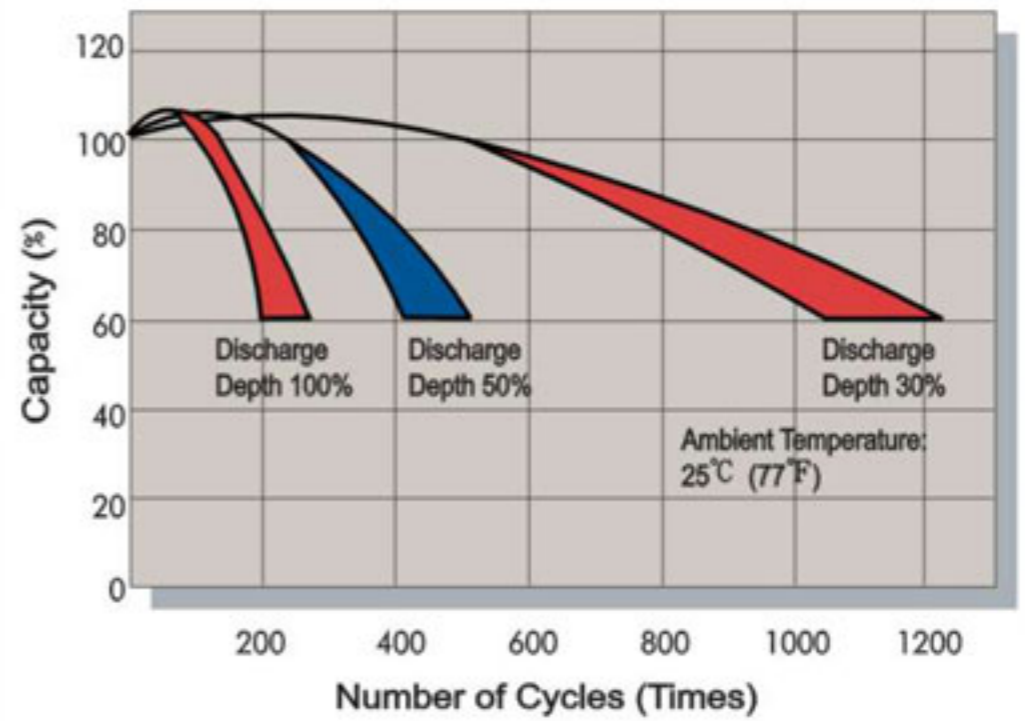
### Capacity Retention Characteristic



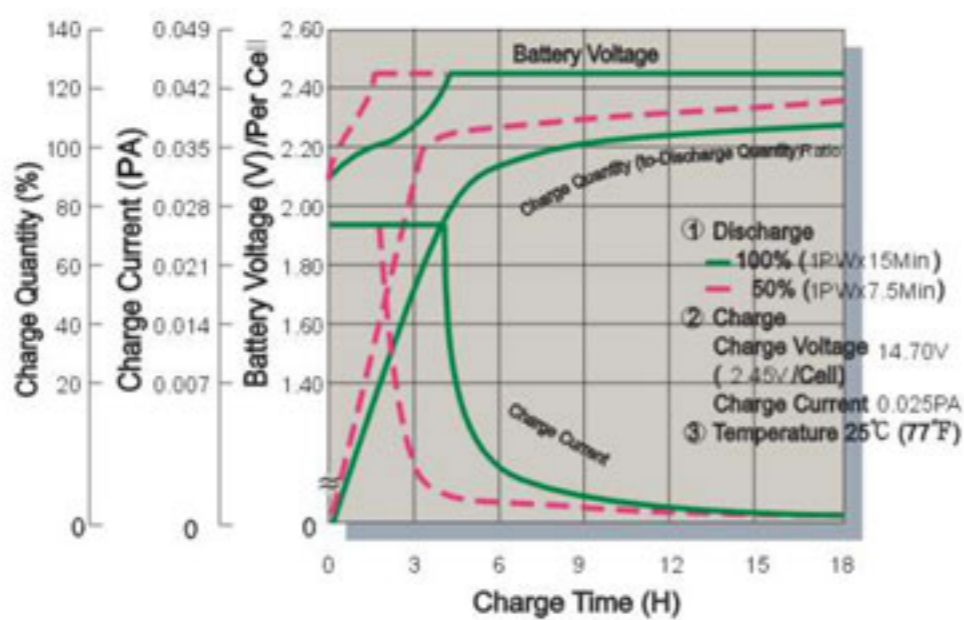
### Battery Voltage and Charge Time for Standby Use



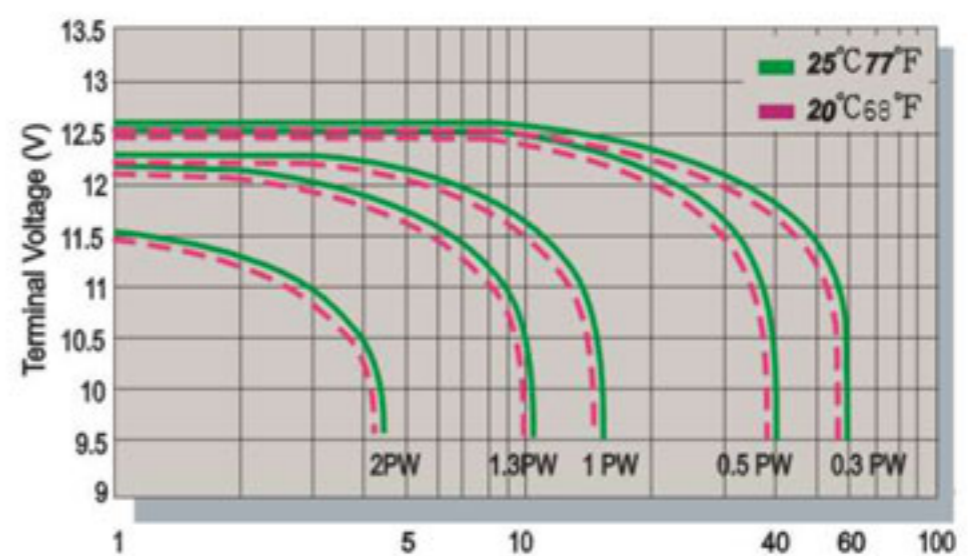
### Cycle Service Life



### Battery Voltage and Charge Time for Cycle Use



### Terminal Voltage (V) and Discharge Time



<b>XHRL12360W</b>										
<b>Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	468	383	319	273	239	182	145	104	57.3	40.4
1.67V	405	352	300	257	228	176	142	102	56.9	40.3
1.70V	373	324	290	252	221	173	139	101	56.5	40.1
1.75V	347	299	267	234	210	165	133	98.4	55.4	39.4
1.80V	319	284	244	214	194	152	125	92.8	54.0	38.5
1.85V	281	238	208	192	174	139	115	86.9	50.3	34.7
<b>Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	4,544	3,982	3,529	3,081	2,758	2,198	1,735	1,232	678	485
1.67V	4,125	3,665	3,339	2,956	2,646	2,160	1,711	1,209	676	480
1.70V	3,850	3,516	3,203	2,830	2,530	2,080	1,664	1,184	668	477
1.75V	3,593	3,327	3,073	2,677	2,400	1,986	1,597	1,160	658	468
1.80V	3,376	3,020	2,777	2,476	2,240	1,858	1,514	1,102	644	459
1.85V	2,750	2,571	2,436	2,232	2,016	1,686	1,365	1,029	598	434

<b>XHRL12410W</b>										
<b>Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	546	447	372	319	279	212	169	121	68.8	48.6
1.67V	472	411	350	300	266	206	166	119	68.4	48.4
1.70V	435	378	339	294	258	202	162	118	67.9	48.1
1.75V	405	348	312	273	245	192	156	115	66.6	47.3
1.80V	373	331	285	249	226	177	146	108	64.9	46.2
1.85V	328	277	243	224	203	162	135	101	60.4	41.7
<b>Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	5,179	4,538	4,022	3,512	3,143	2,505	1,977	1,440	811	580
1.67V	4,702	4,177	3,806	3,369	3,016	2,462	1,950	1,412	809	575
1.70V	4,388	4,008	3,651	3,225	2,884	2,370	1,897	1,383	800	571
1.75V	4,095	3,792	3,503	3,052	2,735	2,264	1,820	1,355	787	560
1.80V	3,848	3,443	3,166	2,822	2,553	2,117	1,726	1,288	771	549
1.85V	3,135	2,930	2,776	2,544	2,298	1,922	1,597	1,202	716	519

<b>XHRL12475W</b>										
<b>Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	694	582	468	401	349	264	214	155	86.0	60.6
1.67V	614	522	431	376	331	254	209	152	84.8	59.4
1.70V	585	490	413	363	320	249	206	150	84.2	59.1
1.75V	549	437	381	334	301	237	199	145	82.3	57.8
1.80V	445	389	338	304	274	218	184	136	78.8	55.9
1.85V	383	327	296	268	240	198	164	124	73.2	52.6
<b>Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	6,951	5,678	4,791	4,197	3,702	2,912	2,373	1,739	991	709
1.67V	6,328	5,324	4,513	4,032	3,560	2,851	2,323	1,716	987	706
1.70V	6,043	5,092	4,400	3,903	3,455	2,805	2,280	1,698	980	704
1.75V	5,511	4,666	4,144	3,627	3,284	2,691	2,193	1,650	966	691
1.80V	4,800	4,245	3,762	3,331	3,058	2,498	2,056	1,571	931	666
1.85V	4,161	3,801	3,315	3,010	2,789	2,208	1,862	1,453	874	625

<b>XHRL12620W</b>										
<b>Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	766	641	571	504	458	349	283	206	116	81.7
1.67V	660	585	511	466	420	326	273	200	114	79.8
1.70V	622	545	486	448	398	315	267	196	113	78.3
1.75V	553	485	449	398	356	293	252	188	110	78.2
1.80V	494	443	383	344	315	270	229	175	106	75.6
1.85V	437	360	322	298	280	239	201	158	97.9	71.1
<b>Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F)</b>										
F.V/Time	2MIN	4MIN	6MIN	8MIN	10MIN	15MIN	20MIN	30MIN	60MIN	90MIN
1.60V	7,070	6,088	5,529	5,280	4,692	3,770	3,108	2,304	1,344	966
1.67V	6,439	5,680	5,432	4,894	4,387	3,720	2,983	2,249	1,329	959
1.70V	6,090	5,494	5,336	4,692	4,262	3,540	2,918	2,222	1,325	957
1.75V	5,579	5,208	4,825	4,311	3,969	3,282	2,742	2,135	1,293	944
1.80V	5,235	4,660	4,246	3,894	3,639	2,956	2,515	2,017	1,247	916
1.85V	4,134	3,765	3,674	3,470	3,120	2,576	2,257	1,864	1,163	867

BATTERY



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