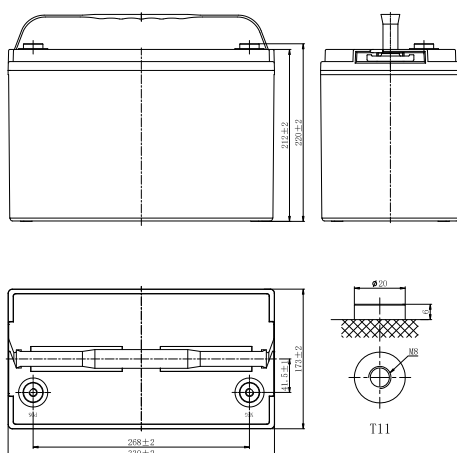


LS 12-90 (12V-90AH) LONG LIFE SERIES



CHARACTERISTICS

Item	Specifications	
Rated Voltage	12V	
Nominal Capacity (25°C)	C ₁₀ , 1.80V/cell	90Ah
Dimension	Length	330mm (13.0inches)
	Width	173mm (6.81inches)
	Container Height	212mm (8.35inches)
	Total Height	220mm (8.66inches)
Approx Weight	29.5kg (65.0lbs)	
Terminal	T11(M8)	
Container Material	ABS (UL94 HB or V-0 optional)	
Short-circuit current	2070A	
Internal Resistance (25°C)	Approx 5.5 mΩ (Fully charged)	
Operating Temp. Range	Discharge	-15~50°C (5~122°F)
	Charge	-20~40°C (-4~104°F)
	Storage	-15~40°C (5~104°F)
Nominal Operating Temp. Range	25±3°C (77±5°F)	
Max.Charging Current (25°C)	0.3C	
Charge voltage (25°C)	Float Charge	Equalization Charge
	2.25-2.30V/cell	2.35-2.40V/cell
Temp. Coefficient	-3mV/cell/°C	-5mV/cell/°C
	40°C (104°F)	103%
Effect of temp. to Capacity	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	≤3% per month at 25°C (77°F). LS series batteries may be stored up to 6 months at 25°C (77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.	

DISCHARGE TABLE

Constant Current Discharge (Amperes) at 25°C (77°F)														
F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	126.5	109.7	90.9	72.1	53.8	46.5	28.9	21.2	16.7	14.5	12.7	9.80	8.60	4.56
1.80V/cell	143.6	124.3	101.4	78.5	57.0	48.2	29.9	23.0	17.8	15.2	13.7	10.3	9.00	4.73
1.75V/cell	155.7	134.5	107.3	80.1	59.1	50.6	31.5	23.5	18.1	15.5	13.8	10.4	9.09	4.77
1.70V/cell	166.0	142.9	112.3	81.7	60.3	51.6	32.1	23.9	18.4	15.7	13.9	10.5	9.18	4.82
1.67V/cell	171.3	147.1	115.0	82.9	61.1	52.4	32.6	24.2	18.7	16.0	14.0	10.7	9.30	4.88
1.60V/cell	177.1	151.6	117.9	84.1	62.0	53.1	33.0	24.4	18.9	16.3	14.1	10.8	9.41	4.94
Constant Power Discharge (Watts/cell) at 25°C (77°F)														
F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	238.0	207.6	172.7	137.7	103.5	90.0	56.3	41.5	32.7	28.5	25.2	19.4	17.1	9.08
1.80V/cell	266.2	232.3	190.5	148.7	108.9	92.7	57.8	44.8	34.7	29.8	26.9	20.4	17.9	9.39
1.75V/cell	284.1	247.9	199.3	150.6	112.2	96.9	60.6	45.6	35.3	30.2	27.1	20.5	18.0	9.48
1.70V/cell	298.7	260.6	206.5	152.3	113.6	98.3	61.6	46.3	35.8	30.6	27.2	20.7	18.2	9.56
1.67V/cell	303.5	264.9	209.2	153.4	114.7	99.2	62.2	46.5	36.2	31.2	27.3	21.0	18.4	9.67
1.60V/cell	307.8	268.6	211.4	154.1	115.2	99.9	62.7	46.7	36.4	31.5	27.4	21.2	18.6	9.77

LS 12-90 (12V-90AH) LONG LIFE SERIES



APPLICATIONS

- UPS and EPS
- Emergency light
- Railway signal and aircraft signal system
- Marine and power stations
- Alarm and security system
- Electronic apparatus and equipment
- Communication power supply, DC power supply

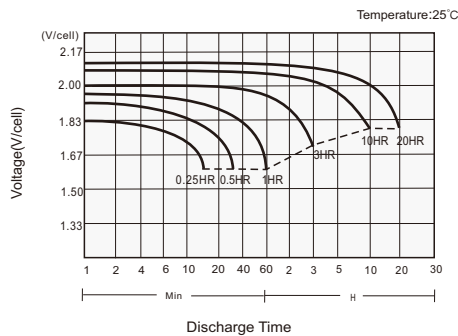
GENERAL FEATURES

- 12 years design life (25°C)
- Lead calcium alloy, sealed design, no watering required
- Puncture resistant micro-porous glass mat separators extend life
- Unique technology optimizes power capacity, cell consistency, and long-term reliability
- Designed for a wide range of applications

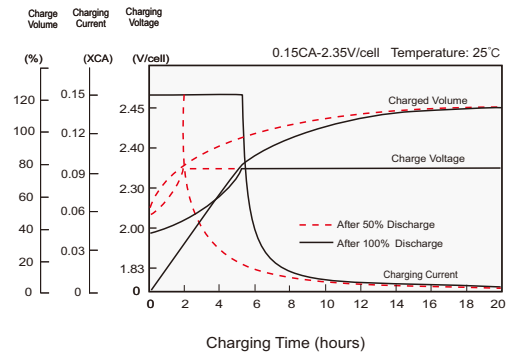
STANDARDS

- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Approved
- Manufactured in DESA, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

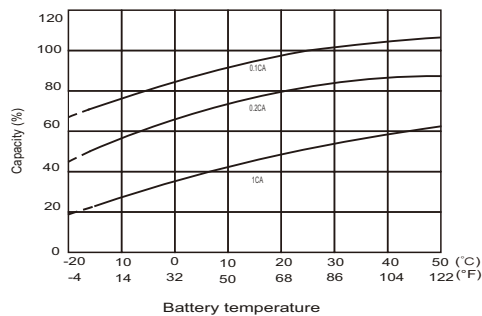
Discharge Characteristics



Charging Characteristics



Effects of Temperature on Capacity



Self Discharge Characteristics

