



## 12LS-4.5

12V 4.5Ah

Design lifetime: 5 years



Q-Batteries 12LS-4.5 is an AGM battery, which is designed for standby applications such as fire-detecting-systems, UPS or burglar-systems.

### Application:

UPS, security- and telecommunicationsystems etc.

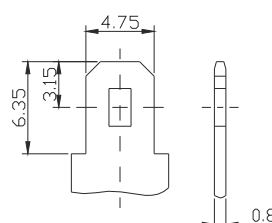
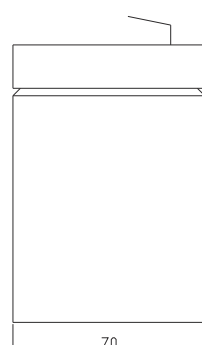
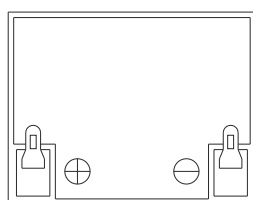
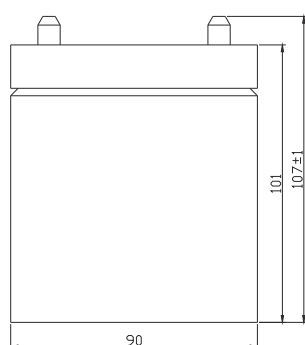


### Specification:

Voltage Per Unit	12 V		
Capacity	4.5 Ah	@20hr-rate to 1.8V per cell	@25°C
Cells Per Unit	6		
Weight	ca. 1,40 kg +/- 3%		
Max. Discharge Current	45 A (5 sec.)		
Internal Resistance	ca. 38m $\Omega$		
Operating Temperature Range Normal	Discharge: - 15°C – 50°C	Charge: -10°C – 50°C	Storage: - 20°C – 50°C
Operating Temperature Range	25°C $\pm$ 5°C		
Self Discharge	Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.		
Terminal	F1 (Fast on Terminal 4.75 mm)		
Container Material	A.B.S. (UL94-HB)		

### Dimensions:

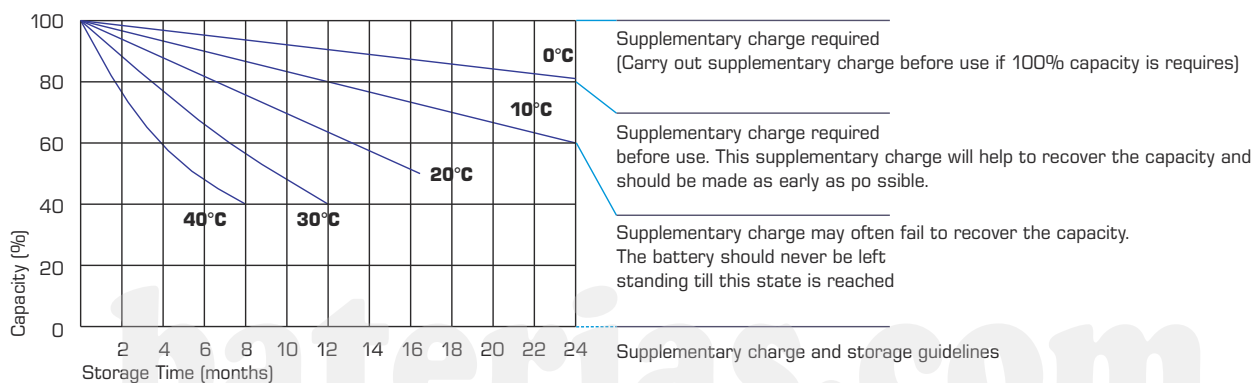
90 Length x 70 Width x 107 mm Height



## Constant current discharge characteristics: A (25°C)

F.V/Time	5 Min.	10 Min.	15 Min.	30 Min.	1 HR	2 HR	3 HR	4 HR	5 HR	8 HR	10 HR	20 HR
9.60V	18.30	12.00	9.404	5.279	3.137	1.806	1.228	0.982	0.816	0.520	0.450	0.252
10.0V	17.64	11.70	9.102	5.211	3.051	1.770	1.205	0.969	0.802	0.518	0.445	0.243
10.2V	16.60	11.12	8.849	5.131	3.022	1.751	1.194	0.959	0.793	0.513	0.438	0.239
10.5V	14.92	10.40	8.347	4.990	2.963	1.728	1.184	0.950	0.784	0.508	0.436	0.232
10.8V	13.37	9.695	7.875	4.825	2.909	1.714	1.170	0.945	0.775	0.506	0.429	0.218
11.1V	11.70	8.888	7.265	4.642	2.831	1.645	1.147	0.937	0.768	0.502	0.422	0.215

## Storage characteristic:



## Capacity Factors with different Temperature:

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V & 12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V & 12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

## Charging Method:

Charge the batteries at least once every six months, if they are stored at 25°C

Constant Voltage (V)	-0.2C x 2h + 2.4-2.45V/Cell x 24h, max. Current 0.3CA
Constant Current (A)	-0.2C x 2h + 0.1CA x 12h
Fast	-0.2C x 2h + 0.3CA x 4.0h