



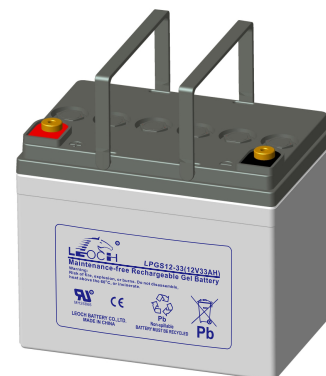
# LPGS Series-Gel Battery

## LPGS12-33(12V33Ah)

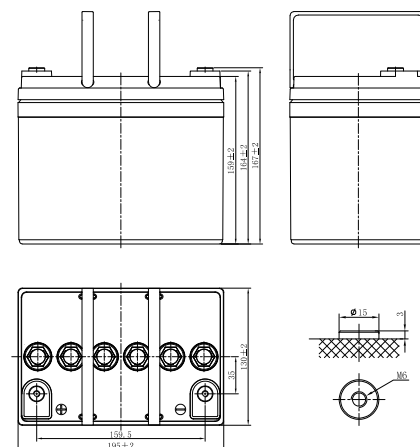


### Specifications

Rated Voltage	12V	
Nominal Capacity	33Ah (C <sub>20</sub> , 1.80V/cell)	
Dimension	Length	195±2mm (7.68 inches)
	Width	130±2mm (5.12 inches)
	Container Height	164±2mm (6.46 inches)
	Total Height	167±2mm (6.57 inches)
Approx Weight	10.5 Kg (23.2 lbs)	
Terminal	M6	
Container Material	ABS	
Rated Capacity (25°C)	33.0 Ah	(20hr, 1.65A, 1.80V/cell)
	30.6 Ah	(10hr, 3.06A, 1.80V/cell)
	27.8 Ah	(5hr, 5.56A, 1.75V/cell)
	24.6 Ah	(3hr, 8.20A, 1.75V/cell)
	19.7 Ah	(1hr, 19.7A, 1.65V/cell)
Max. Discharge Current	330A (5s)	
Internal Resistance (25°C)	Approx 12.0mΩ	
Operating Temp. Range	Discharge : -20 ~ 55°C (-4 ~ 131°F)	
	Charge : -20 ~ 40°C (-4 ~ 104°F)	
	Storage : -20 ~ 50°C (-4 ~ 122°F)	
Nominal Operating Temp. Range	25±3°C (77±5°F)	
Cycle Use	Initial Charging Current less than 8.30A. Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C	
Standby Use	Initial Charging Current less than 8.30A. Voltage 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C	
Effect of temp. to Capacity	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	LPGS series batteries may be stored for 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.	



### Layout



### Constant Current Discharge (Amperes) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	57.9	44.4	36.8	31.8	24.8	18.5	15.6	9.53	7.36	6.04	5.08	4.33	3.47	2.94	1.61
1.80V/cell	76.5	56.0	43.8	37.1	28.5	21.1	17.4	10.36	7.91	6.43	5.38	4.58	3.66	3.06	1.65
1.75V/cell	88.1	62.8	48.9	40.7	30.4	22.3	18.3	10.86	8.20	6.66	5.56	4.72	3.74	3.12	1.68
1.70V/cell	98.1	69.2	52.7	43.3	32.1	23.4	19.2	11.31	8.48	6.85	5.72	4.86	3.82	3.20	1.70
1.65V/cell	107.2	74.0	55.6	45.5	33.6	24.1	19.7	11.55	8.79	7.06	5.84	4.95	3.89	3.25	1.72
1.60V/cell	119.1	80.8	59.8	48.9	35.7	25.5	20.4	12.02	9.10	7.29	6.04	5.07	3.94	3.30	1.74

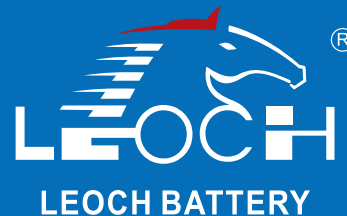
### Constant Power Discharge (Watts/cell) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	109.1	84.0	70.0	60.8	47.7	35.9	30.4	18.6	14.4	11.88	10.02	8.57	6.90	5.86	3.21
1.80V/cell	141.7	104.3	82.1	70.1	54.4	40.6	33.6	20.2	15.4	12.59	10.58	9.05	7.26	6.08	3.29
1.75V/cell	159.8	115.0	90.3	76.0	57.4	42.5	35.4	21.1	16.0	13.00	10.89	9.29	7.41	6.21	3.34
1.70V/cell	174.5	124.6	96.0	79.9	60.2	44.4	36.7	21.8	16.5	13.34	11.17	9.54	7.55	6.35	3.39
1.65V/cell	187.4	131.1	99.7	83.1	62.3	45.4	37.5	22.2	17.0	13.71	11.39	9.69	7.67	6.44	3.42
1.60V/cell	204.1	140.5	105.6	88.3	65.6	47.6	38.7	23.0	17.5	14.11	11.75	9.89	7.75	6.53	3.45



# LPGS Series-Gel Battery

## LPGS12-33(12V33Ah)



### Applications

- Communication power supply
- Engine starting
- Pump systems
- Alarm installations
- Marine and power stations

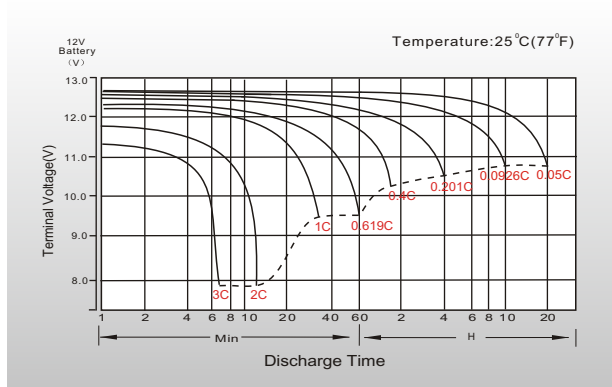
### General Features

- Adopted advantage AGM-GEL technology
- Operation temperature  $-20 \sim 55^{\circ}\text{C}$
- $\leq 3\%$  Self discharge @ $25^{\circ}\text{C}$

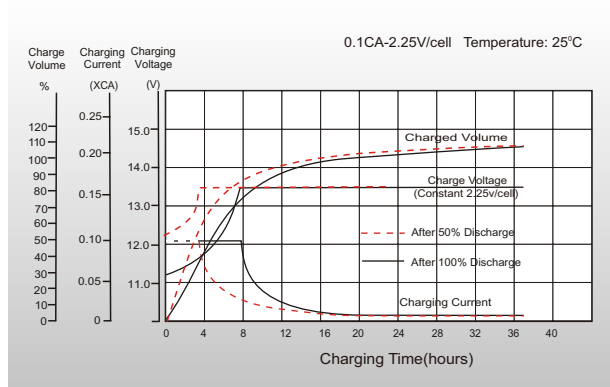
### Standards

- IEC 60896 Certified
- Classified as "General Purpose" according to Eurobat
- UL Certified, CE Certified
- Manufactured in Leoch® IATF16949, ISO 9001, ISO 14001 and ISO 45001 certified production facilities

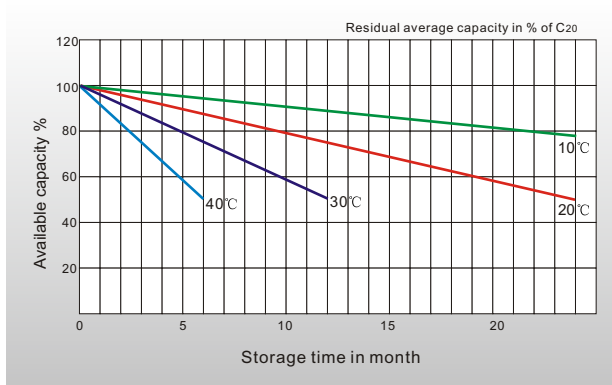
### Discharge Characteristics



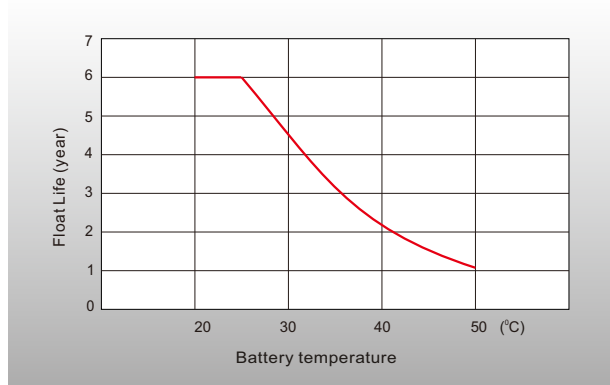
### Float Charging Characteristics



### General Relation of Capacity VS. Storage Time



### Temperature Effects on Long Term Float Life



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