

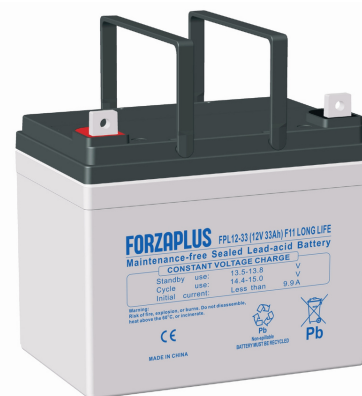


# FPL Series-Long Standby Life FPL12-33(12V33Ah)

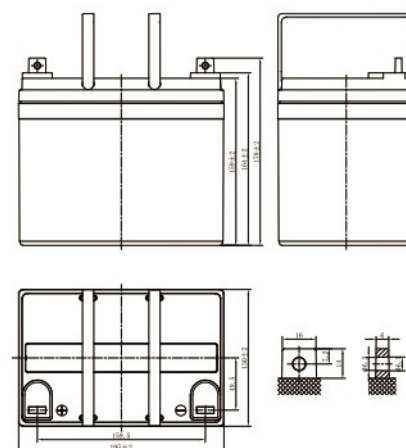
# FORZAPLUS

## Specifications

Rated Voltage	12V	
Nominal Capacity	33.0Ah	(C <sub>20</sub> , 1.75V/cell)
Dimension	Length	195±2mm (7.68 inches)
	Width	130±2mm (5.12 inches)
	Container Height	164±2mm (6.46 inches)
	Total Height	178±2mm (7.01 inches)
Approx Weight	10.15 Kg (22.37 lbs)	
Terminal	T5	
Container Material	ABS	
Rated Capacity (25°C)	33.0Ah	(20hr, 1.65A, 1.75V/cell)
	31.2Ah	(10hr, 3.12A, 1.75V/cell)
	28.4Ah	(5hr, 5.68A, 1.75V/cell)
	25.3Ah	(3hr, 8.42A, 1.75V/cell)
	21.0Ah	(1hr, 21.0A, 1.60V/cell)
Max. Discharge Current	495A (5s)	
Internal Resistance (25°C)	Approx 12mΩ	
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)	
Cycle Use	Initial Charging Current less than 9.9A. Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C	
	Standby Use	
Effect of temp. to Capacity	Initial Charging Current less than 9.9A. Voltage 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C	
	40°C (104°F)	103%
	25°C (77°F)	100%
Self Discharge	0°C (32°F)	86%
	LP 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 (77F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	92.4	63.5	49.8	41.0	30.8	22.9	19.0	14.2	11.3	8.15	6.50	5.53	4.73	3.73	3.05	1.61
1.80V/cell	99.3	67.3	52.2	42.7	31.7	23.5	19.5	14.5	11.5	8.29	6.59	5.61	4.81	3.78	3.09	1.63
1.75V/cell	104.6	70.0	54.0	43.8	32.6	24.0	19.9	14.7	11.7	8.42	6.68	5.68	4.86	3.82	3.12	1.65
1.70V/cell	109.6	72.9	55.8	45.1	33.4	24.5	20.3	15.0	11.9	8.54	6.77	5.76	4.92	3.86	3.15	1.66
1.67V/cell	113.4	74.9	57.1	46.1	34.0	24.9	20.6	15.2	12.0	8.62	6.84	5.81	4.97	3.90	3.18	1.68
1.60V/cell	120.3	78.1	59.1	47.4	34.9	25.5	21.0	15.5	12.3	8.78	6.96	5.90	5.04	3.95	3.22	1.69

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

F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	174.7	120.9	95.3	79.0	59.5	44.4	37.0	27.6	22.1	16.0	12.8	10.9	9.37	7.39	6.06	3.23
1.80V/cell	186.1	127.3	99.4	81.7	61.1	45.4	37.8	28.1	22.5	16.3	13.0	11.1	9.50	7.49	6.14	3.26
1.75V/cell	193.9	131.5	102.1	83.6	62.4	46.2	38.4	28.6	22.8	16.5	13.1	11.2	9.60	7.57	6.19	3.30
1.70V/cell	201.1	135.8	104.8	85.5	63.7	47.1	39.0	29.0	23.1	16.7	13.3	11.3	9.70	7.64	6.25	3.33
1.67V/cell	206.4	138.8	107.1	87.1	64.7	47.7	39.5	29.3	23.3	16.8	13.4	11.4	9.78	7.70	6.29	3.35
1.60V/cell	214.7	142.9	110.0	89.2	66.1	48.6	40.2	29.8	23.7	17.1	13.6	11.6	9.89	7.80	6.37	3.39



# FPL Series-Long Standby Life

## FPL12-33(12V33Ah)

# FORZAPLUS

### Applications

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Alarm and security system
- Communication power supply
- DC power supply
- Auto control system

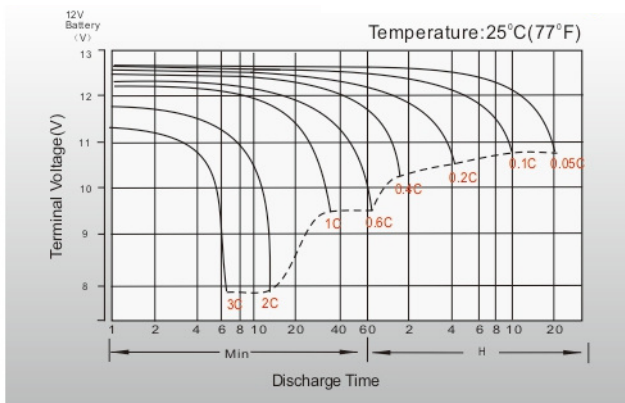
### General features

- 5 years design life(25°C)
- Special exhaust structure and sealing technology, safe and reliable, flexible installation, convenient maintenance
- PbCaSn alloy for plate grids: less gassing, less self-discharging
- High quality AGM separator: extend cycle life and prevent micro short circuit
- High purity raw material: ensure low self discharge rate

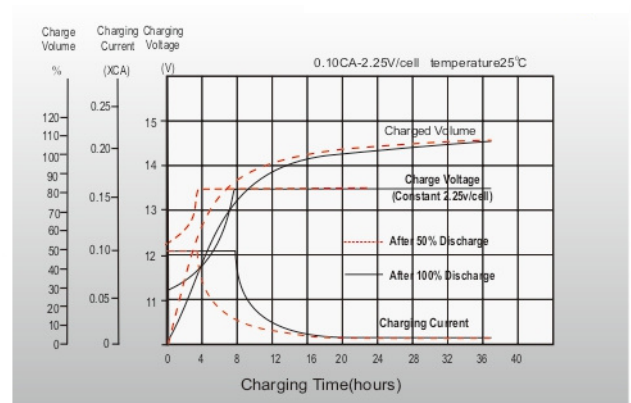
### Standards

- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Certified
- Manufactured in Leoch@IATF16949, ISO45001,ISO 9001 and ISO 14001 certified production facilities

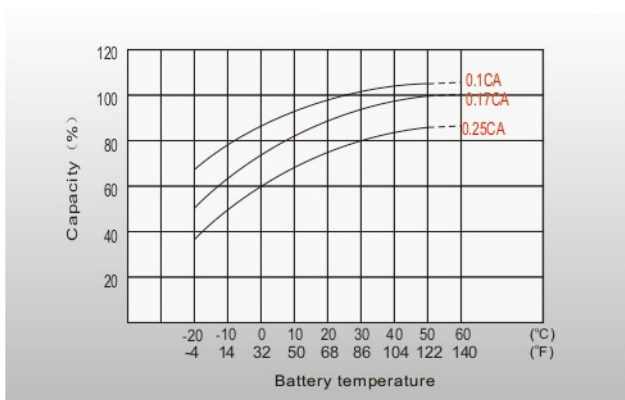
### Discharge Characteristics



### Float Charging Characteristics



### Temperature Effects in Relation to Battery Capacity



### Effect of Temperature on Long Term Float Life

