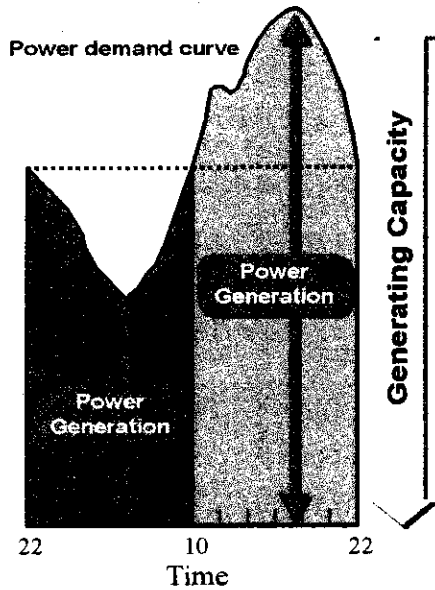
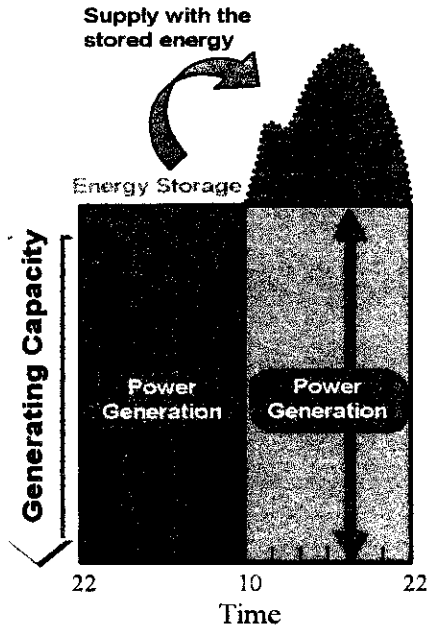


Without load-leveling



With load-leveling



Battery Symposium #97-6, simoon@keri.ac.kr

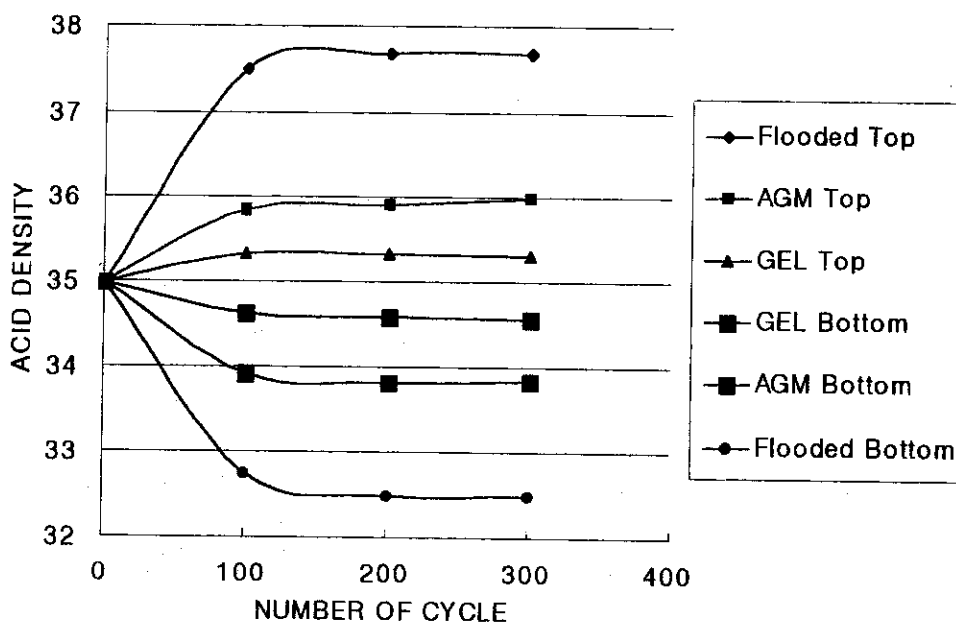
BESS (Load Leveling) 용도

GENERAL CHARACTERISTICS
OF TYPICAL FLOODED BATTERIES Vs VRLA BATTERIES

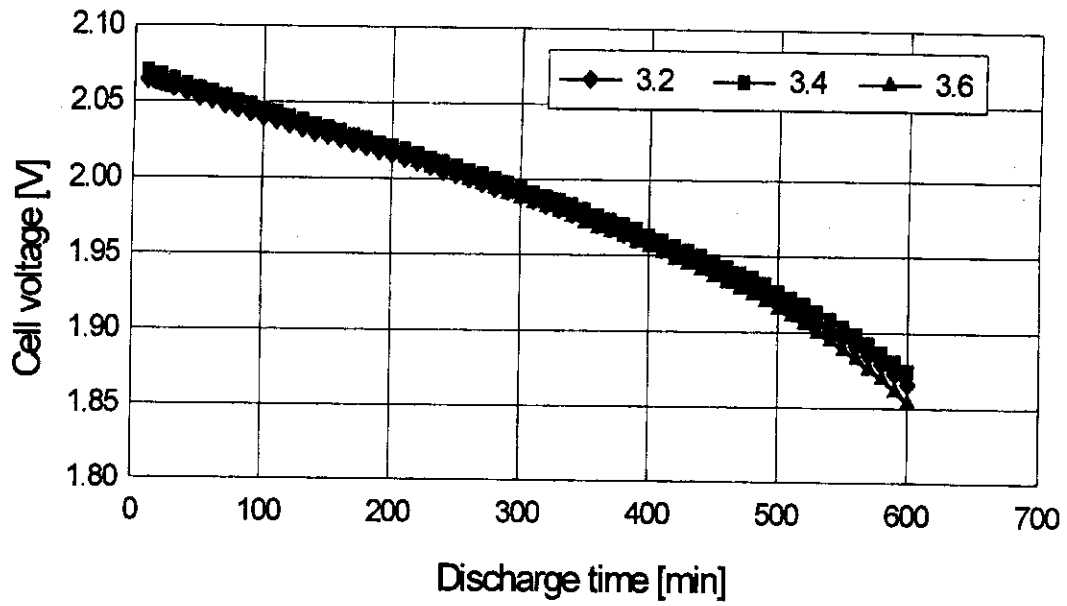
	FLOODED BATTERIES	VRLA BATTERIES
ELECTROLYTE	LIQUID	LIQUID, GEL or SOL
SEPARATOR	FLAT TYPE (WITH/WITHOUT GLASS MAT)	AGM or FLAT TYPE (WITH/WITHOUT GLASS MAT)
VENT CAP	OPEN TYPE	SEALED TYPE
ALLOY FOR GRID	Sb or Ca	Ca
MAINTENANCE	HARD	EASY or NO NEED
CHARGING VOLTAGE	TO 3V/CELL	GENERALLY BELOW 2.4 V/CELL
INSTALLATION	VERTICAL	HORIZONTAL and VERTICAL (POSITION FREE)
SELF-DISCHARGE	HIGH (OVER 3%/MONTH)	LOW (BELOW 3%/MONTH)
STRATIFICATION OF ELECTROLYTE	HIGH	LOW
COST OF CELL	LOWER THAN	HIGHER THAN
TRANSPORT	HARD	EASY
STORAGE WITHOUT RECHARGE	LESS THAN TREE MONTH	MAX. 2 YEARS

GENERAL CHARACTERISTICS VRLA BATTERIES

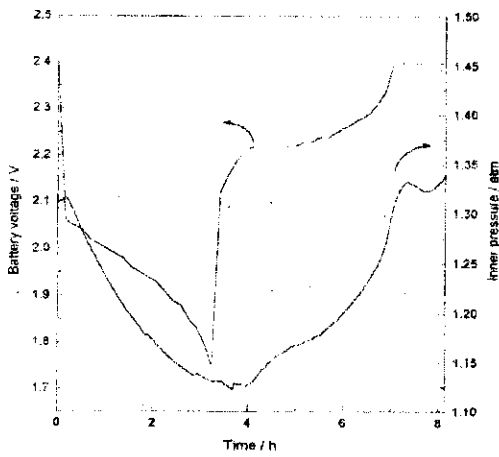
	AGM TYPE	GEL TYPE
ELECTROLYTE	LIQUID or SOL	GEL or SOL
SEPARATOR	ABSORBED GLASS MAT	FLAT TYPE (WITH/WITHOUT GLASS MAT)
MAINTENANCE	HARD	EASY or NO NEED
INSTALLATION	BE RESTRICTED WITHIN	POSITION FREE
SELF-DISCHARGE	HIGH	LOW
STRATIFICATION OF ELECTROLYTE	HIGH	LOW
COST OF CELL	HIGHER THAN	THAN LOWER
STORAGE WITHOUT RECHARGE	MAX. 1 YEAY	MAX. 2 YEARS
AREA FOR INSTALL.	LARGER THAN	SMALLER THAN



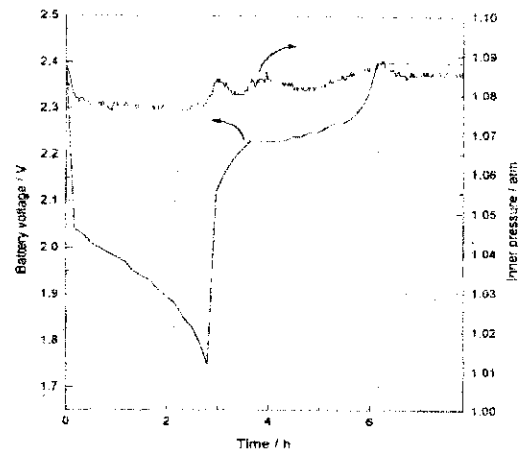
전지별 전해액 농증화 특성



Initial capacity variations at C₁₀ capacity test.

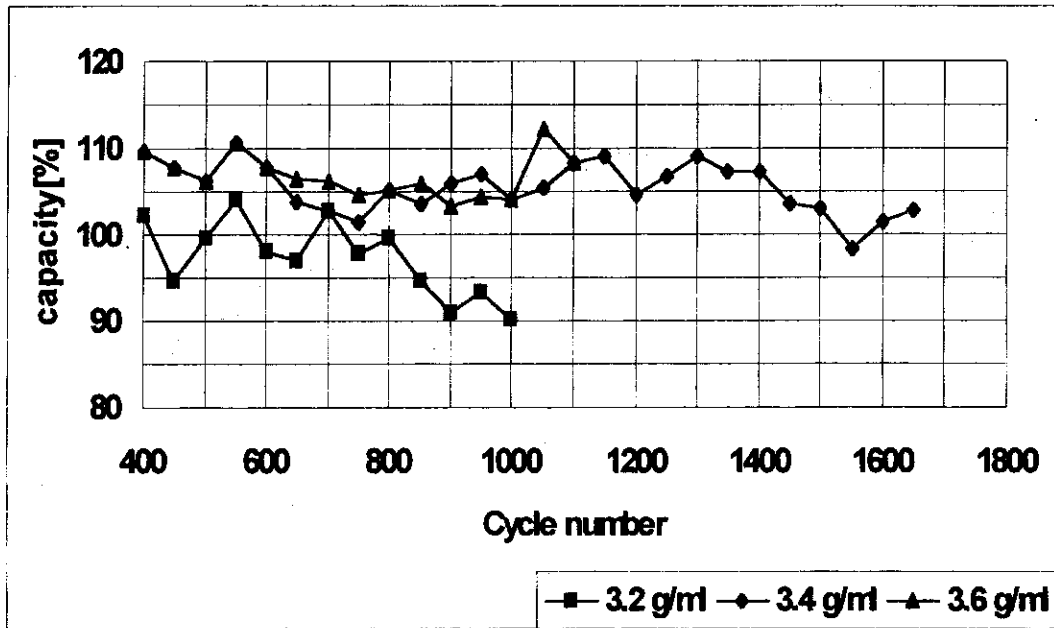


(a) 내압력 2.0atm,

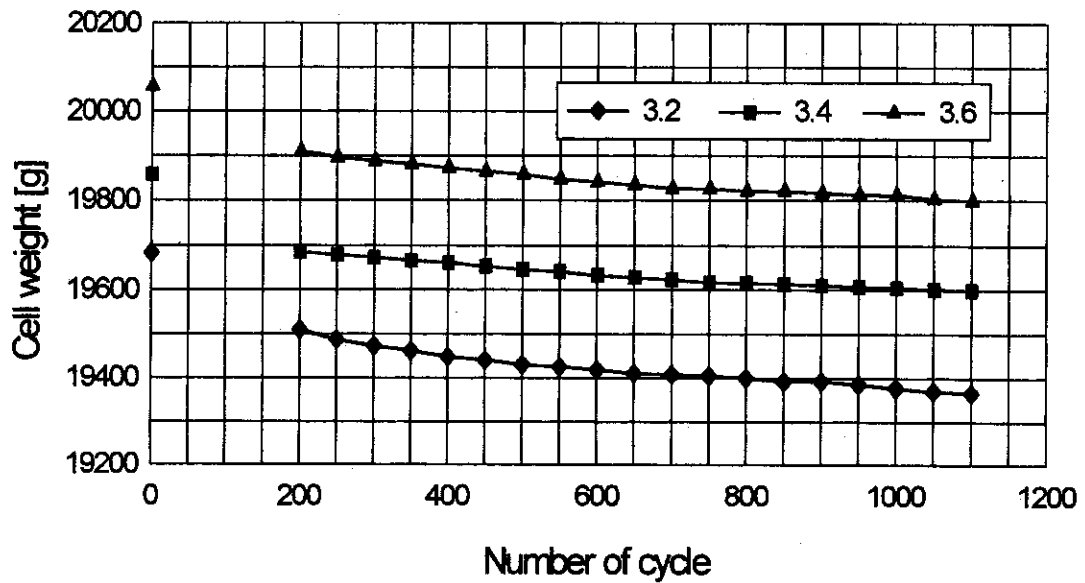


(b) 내압력 1.2atm

고출 수명시험한 전지의 내부 압력 변화

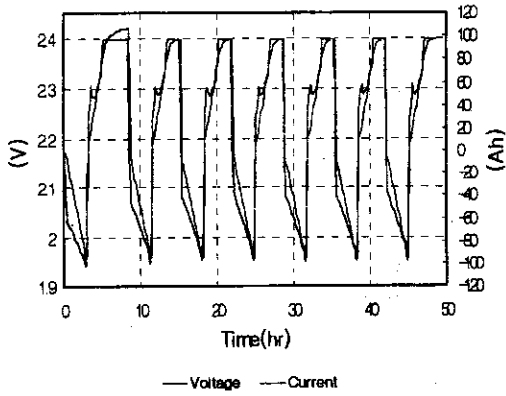


The result of life-cycle test (at dod100%/5HR)

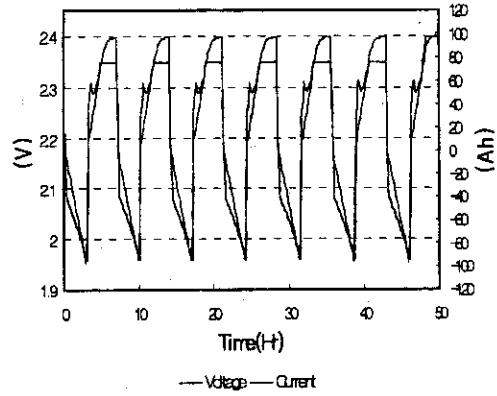


Water-loss during the cycle-life test.

주간 충전전곡선(2.4V)



주간 충전전곡선(2.35V)



충전전압에 따른 용량특성 변화

전지 제원 (BL 4000 - 2V 4000AH ; VRLA type)

Type	Model	Voltage [V]	Capacity [Ah]				spec. Energy (5H.R.)		Dimension (L/W/H) [mm]	Weight [kg]
			C ₁₀	C ₅	C ₃	C ₁	Wh/kg	Wh/l		
2V 4000	DIN	2	4000	3360	2976	1984	26	84	472×212×772	250

Discharge time(h)	10h	5h	3h	1h
Capacity(Ah/25℃)	C ₁₀ 4000	C ₅ 3360	C ₃ 2976	C ₁ 1984
Discharge current(A)	400	672	992	1984
Final discharge voltage(V)	1.80	1.77	1.75	1.67

설치가능장소

