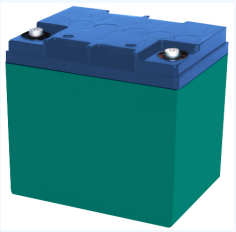
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-115W-X

12V 26Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

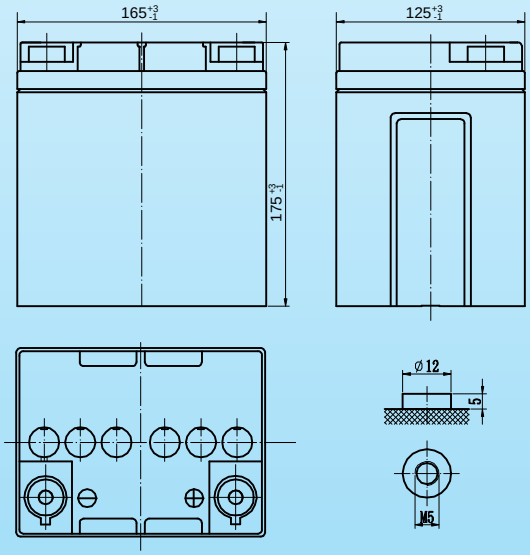
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	165/6.5
Width(mm / inch)	125/4.92
Height(mm / inch)	175/6.89
Total Height(mm / inch)	175/6.89
Approx. Weight(Kg / lbs)	9.6/21.2

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	115W/cell
10 hour rate (2.60A,10.8V)	26 Ah
20 hour rate (1.40A,10.8V)	28 Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤8.0 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	260A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	8.4A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60	168	131	90.2	67.3	56.1	48.1	42.1	31.1	24.7
1.65	158	125	86.2	64.8	54.0	46.3	40.7	30.0	23.9
1.67	154	123	84.6	63.8	53.2	45.6	40.2	29.5	23.5
1.70	148	116	78.5	60.3	50.3	43.1	38.3	28.0	22.5
1.75	139	108	74.2	56.8	47.5	40.1	35.1	26.6	21.3
1.80	127	103	71.1	54.8	45.6	39.4	35.0	25.7	20.8

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60	325	240	157	118	99	85.8	75.2	56.6	45.7
1.65	311	233	153	116	97	83.8	73.4	55.4	44.8
1.67	306	230	152	115	96	83.0	72.7	54.9	44.4
1.70	283	221	147	110	92	80.1	70.3	53.2	43.2
1.75	267	210	140	106	90	77.3	67.8	51.5	41.9
1.80	253	200	134	102	85	74.6	65.4	49.8	40.6

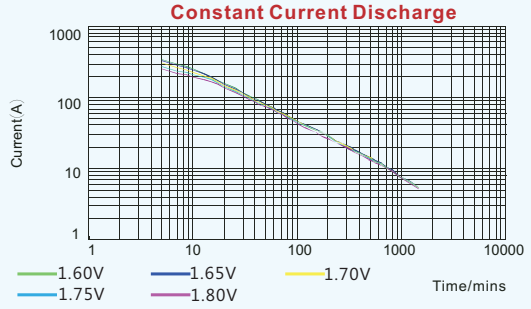
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

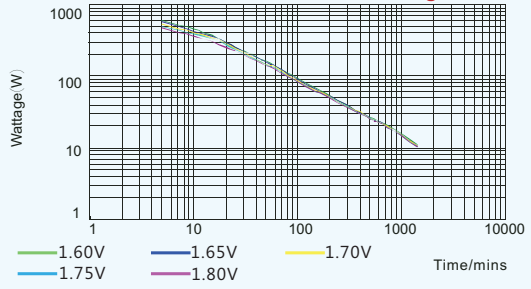
HFS12-115W-X

12V 26Ah

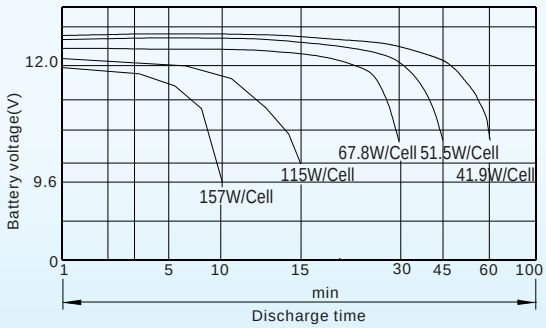
Constant Current Discharge



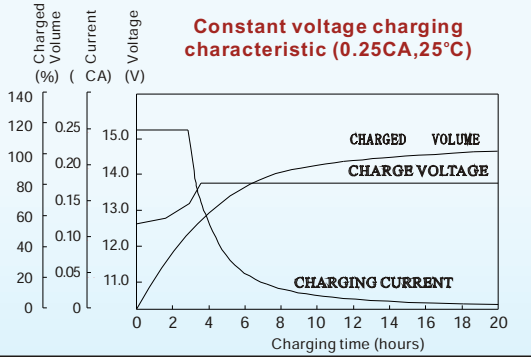
Constant Power Discharge



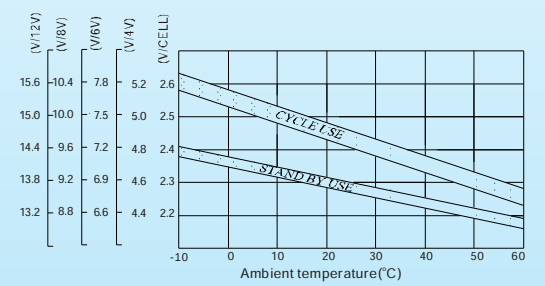
Discharge characteristic (25°C)



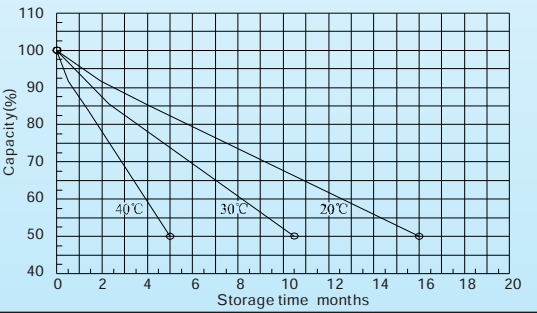
Constant voltage charging characteristic (0.25CA,25°C)



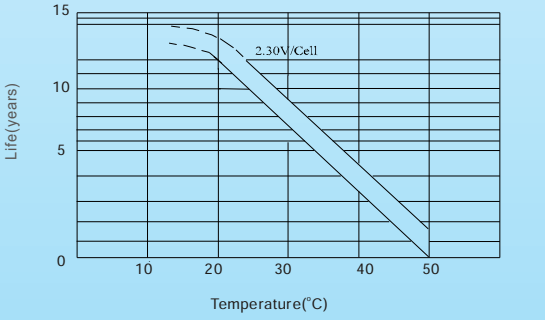
Relationship between charging voltage and temperature



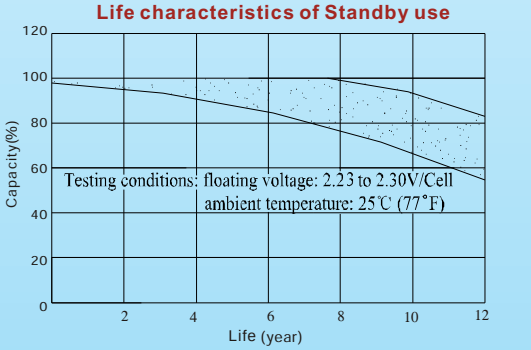
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



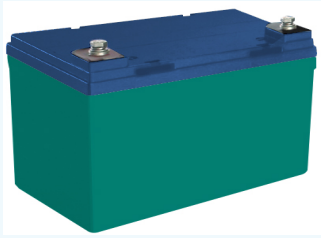
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-150W-X

12V 33Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

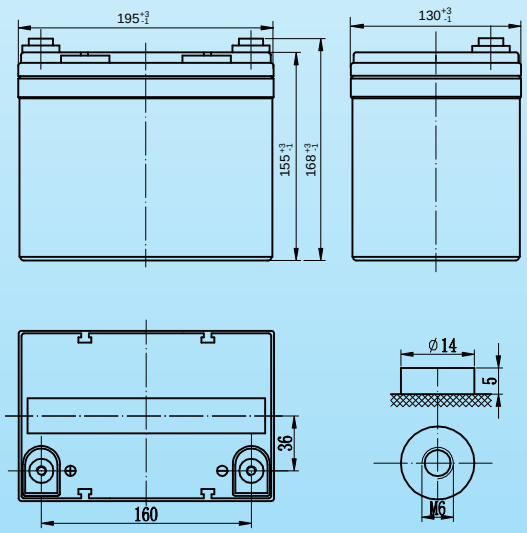
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL,IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	195/7.68
Width(mm / inch)	130/5.12
Height(mm / inch)	155/6.10
Total Height(mm / inch)	168/6.61
Approx. Weight(Kg / lbs)	11.5/25.4

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	150W/cell
10 hour rate (3.30A,10.8V)	33 Ah
20 hour rate (1.75A,10.8V)	35 Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤7.0 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	330A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	10.5A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	234	173	116	87	71.4	61.0	52.9	38.6	30.3
1.65V	216	162	111	83	69.3	59.1	51.3	37.7	30.1
1.67V	209	158	109	82	68.4	58.4	50.6	37.3	30.0
1.70V	194	149	104	80	66.4	57.1	49.9	36.8	29.8
1.75V	175	137	98	76	64.0	54.8	48.0	35.4	29.2
1.80V	158	124	91	71	60.0	51.2	45.0	33.9	28.1

Discharge Constant Power (Watts at 77°F25°C)

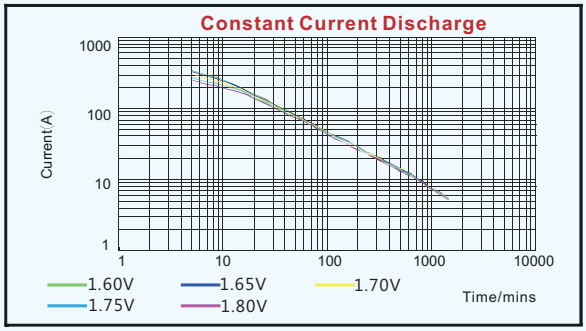
End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	346	267	197	152	131	113	101	74.2	58.5
1.65V	333	261	191	151	129	111	99	73.4	58.4
1.67V	328	259	189	150	128	110	98	73.1	58.3
1.70V	317	248	183	146	126	108	94	71.9	58.1
1.75V	293	234	171	137	119	104	92	70.0	56.7
1.80V	287	224	164	131	115	100	89	67.4	54.7

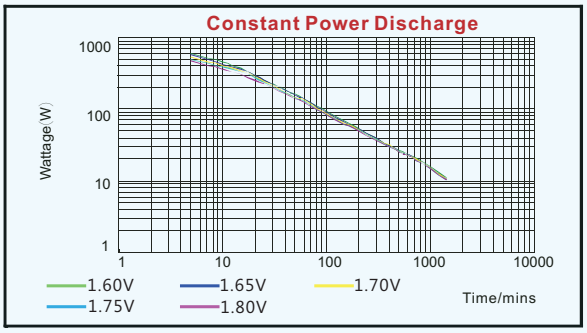
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

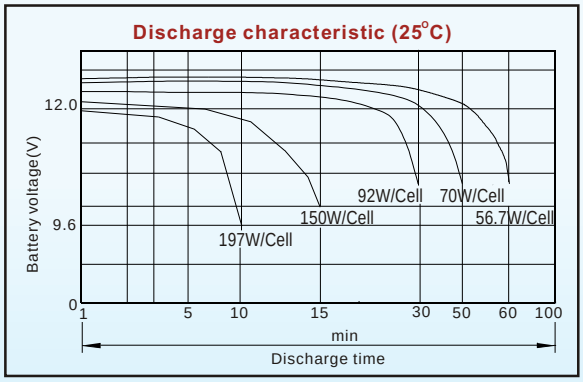
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

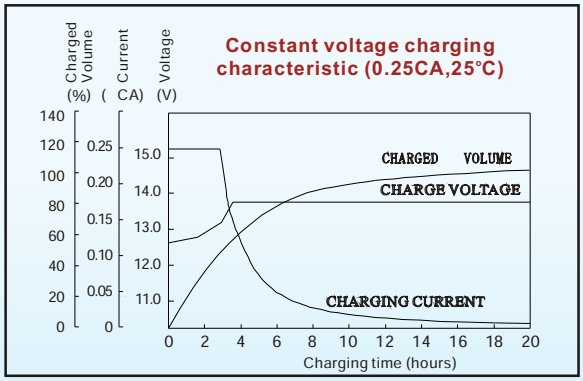
HFS12-150W-X

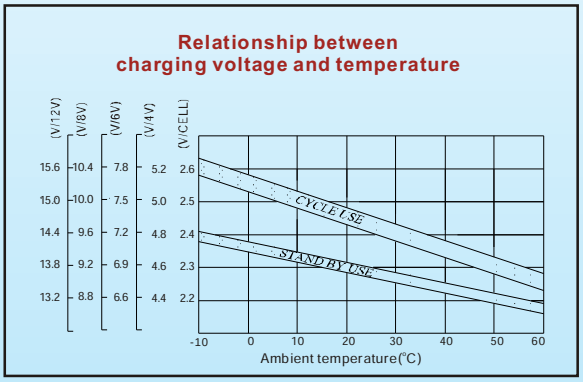
12V 33Ah

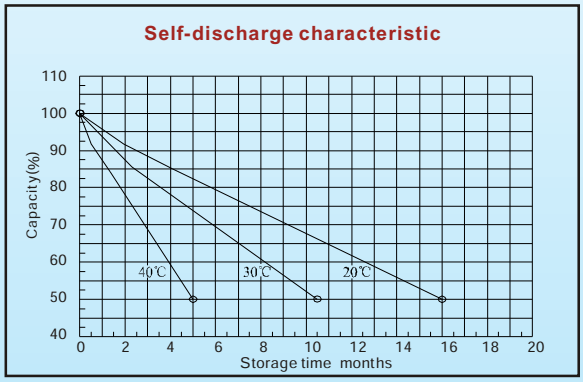


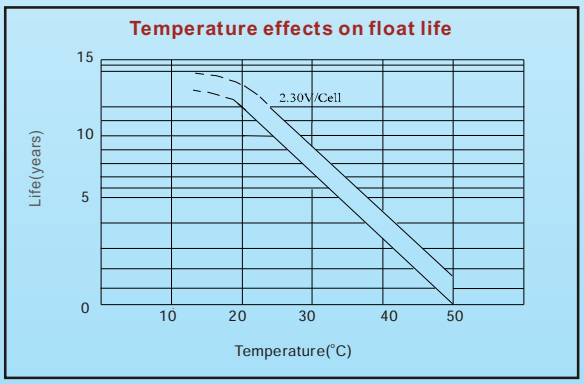


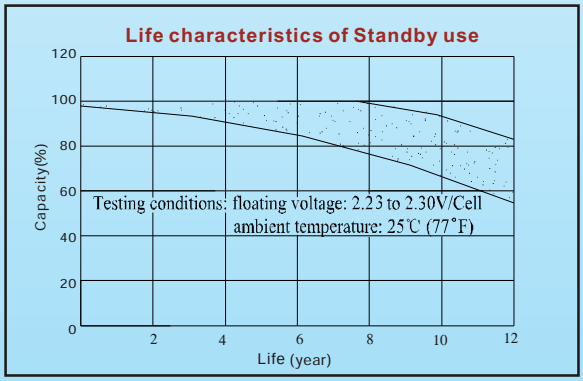












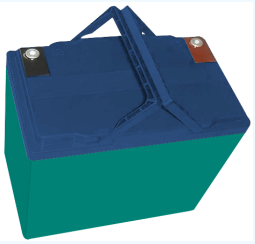
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-200W-X

12V 55Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

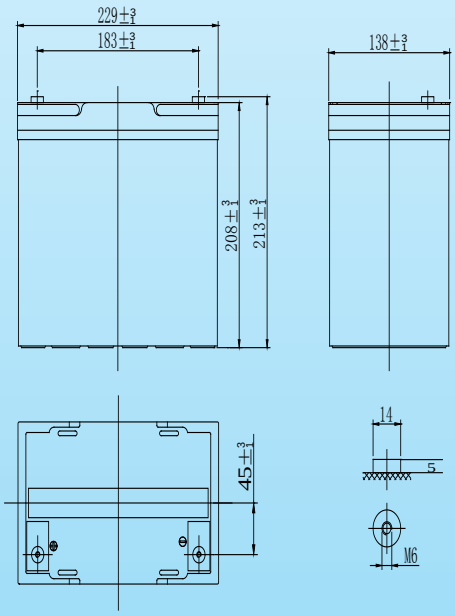
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL,IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply;
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	229/9.02
Width(mm / inch)	138/5.43
Height(mm / inch)	208/8.19
Total Height(mm / inch)	213/8.39
Approx. Weight(Kg / lbs)	17.0/37.5

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	200W/cell
10 hour rate (15.0A,10.8V)	55 Ah
20 hour rate (2.90 A,10.8V)	58 Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤6.0 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	550A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	17.4 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	315	248	164	119	99	84.1	73.3	54.1	42.6
1.65V	301	238	159	116	97	83.5	72.8	53.6	42.2
1.67V	294	228	154	115	96	83.0	72.3	53.5	41.9
1.70V	283	213	147	113	95	82.2	71.7	53.2	41.6
1.75V	261	195	138	108	92	79.6	69.5	52.0	41.1
1.80V	248	183	125	99	85	72.9	65.1	50.0	39.7

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	497	391	275	204	172	149	131	101	76.4
1.65V	488	389	274	203	171	148	130	100	76.3
1.67V	466	384	270	200	170	144	128	97.7	76.2
1.70V	453	354	258	196	166	142	126	96.4	76.0
1.75V	425	334	240	188	163	141	123	94.3	74.4
1.80V	405	316	222	177	152	132	118	91.4	72.6

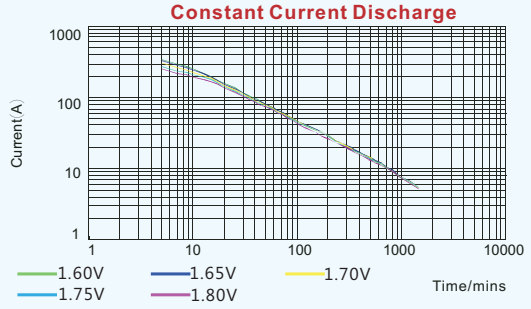
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

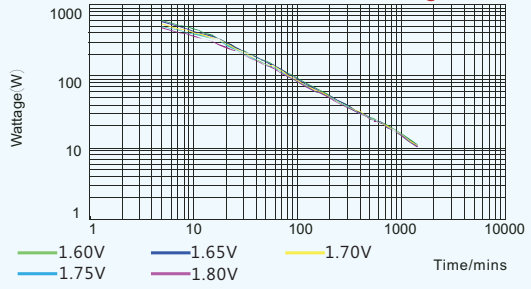
HFS12-200W-X

12V 55Ah

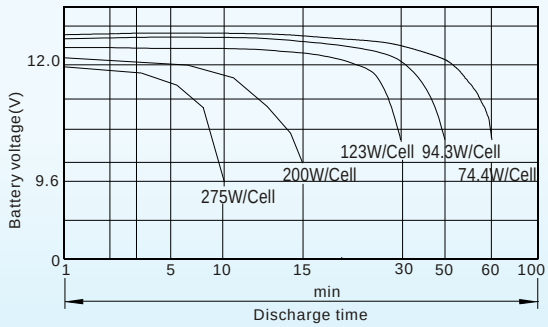
Constant Current Discharge



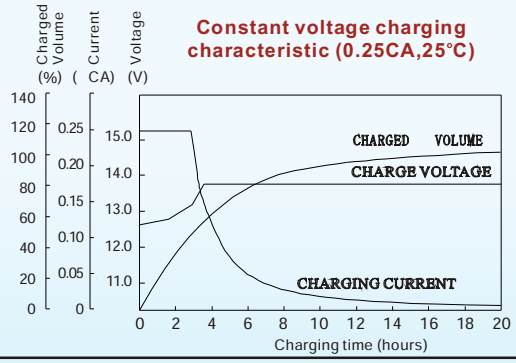
Constant Power Discharge



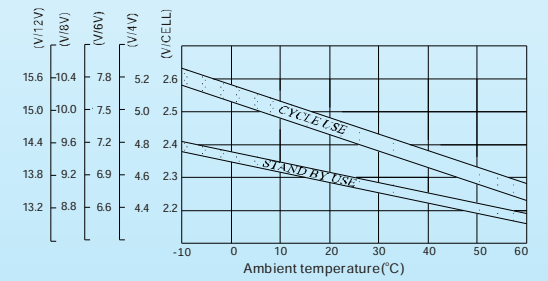
Discharge characteristic (25°C)



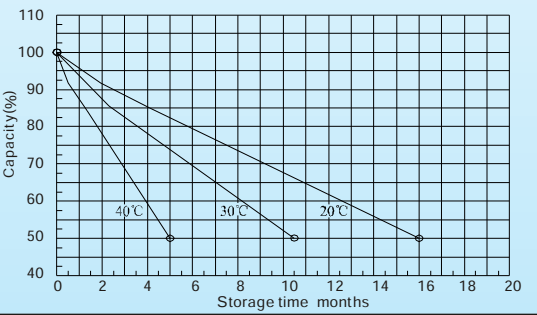
Constant voltage charging characteristic (0.25CA,25°C)



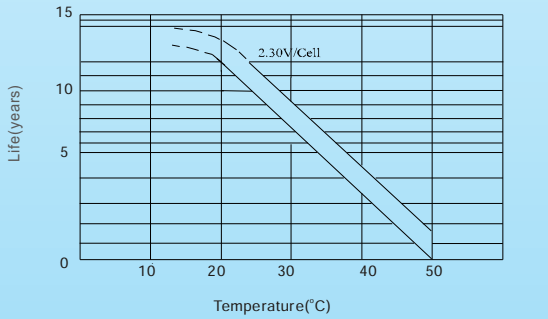
Relationship between charging voltage and temperature



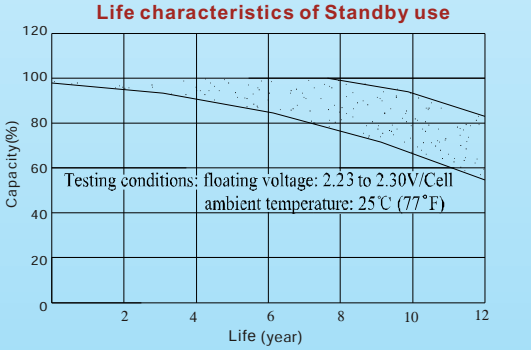
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



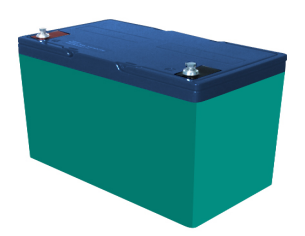
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-320W-X

12V 75Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

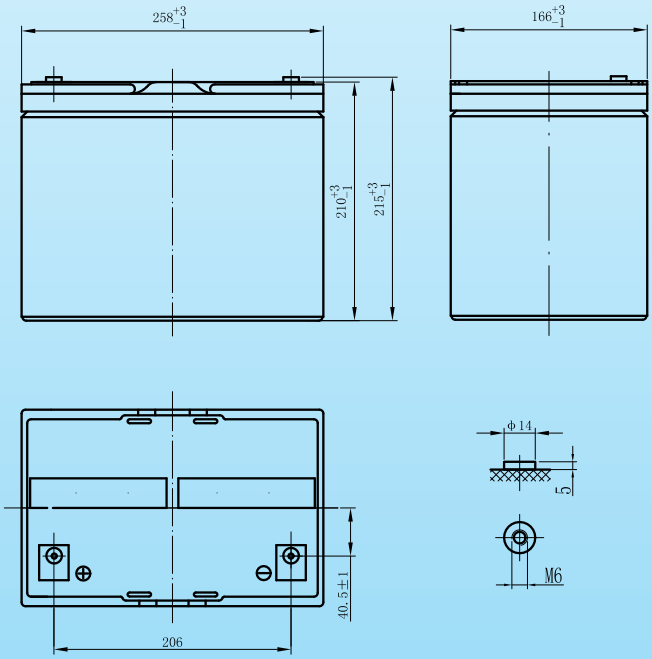
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	258/10.2
Width(mm / inch)	166/6.54
Height(mm / inch)	210/8.27
Total Height(mm / inch)	215/8.46
Approx. Weight(Kg / lbs)	24.5/54.0

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25℃)	
15 min wattage @ 1.67VPC	320W/cell
10 hour rate (7.50A,10.8V)	75 Ah
20 hour rate (4.00 A,10.8V)	80 Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤5.0 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	670A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	24A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60	397	332	242	183	153	130	116	87.8	69.1
1.65	386	319	231	174	148	127	113	85.2	67.3
1.67	382	314	227	170	146	126	112	84.2	66.6
1.70	372	305	216	164	140	122	109	82.2	64.2
1.75	348	272	198	154	131	113	102	79.1	62.2
1.80	318	249	183	144	124	108	98	73.6	57.9

Discharge Constant Power (Watts at 77°F25°C)

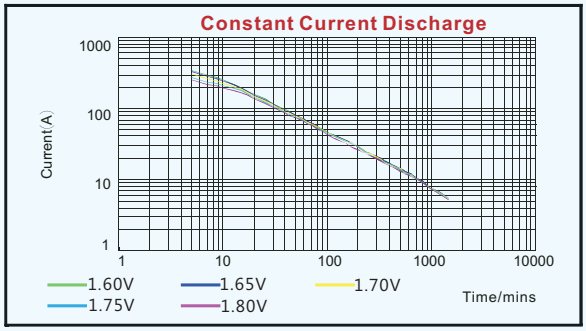
End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60	810	640	432	327	281	241	213	158	124
1.65	754	598	420	322	273	235	209	155	122
1.67	732	581	415	320	270	232	207	154	121
1.70	673	551	386	301	263	228	204	152	119
1.75	643	500	364	288	249	216	196	150	116
1.80	583	465	340	273	238	210	188	142	111

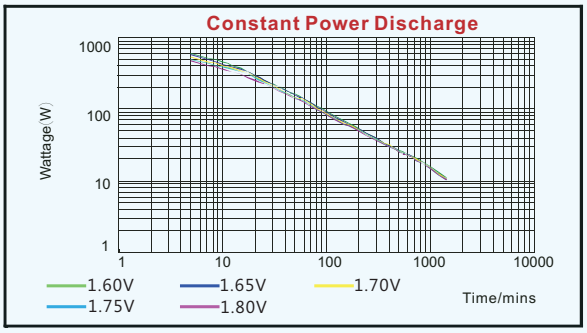
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

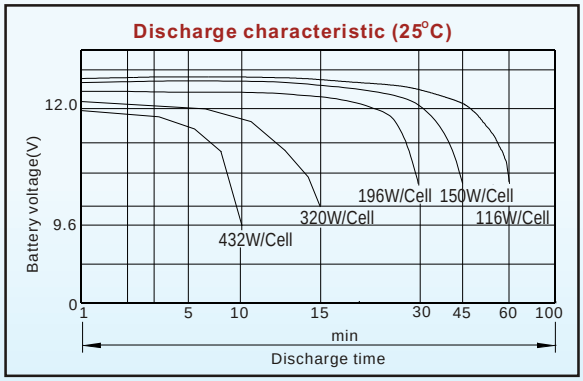
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

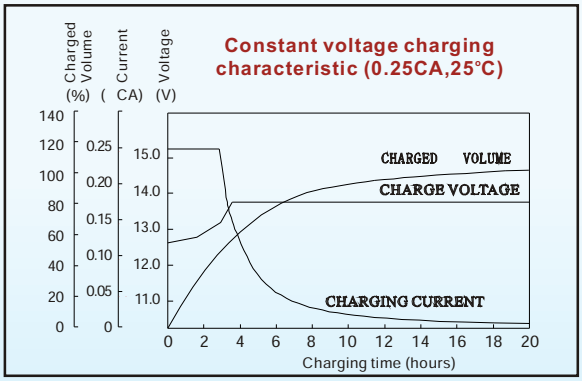
HFS12-320W-X

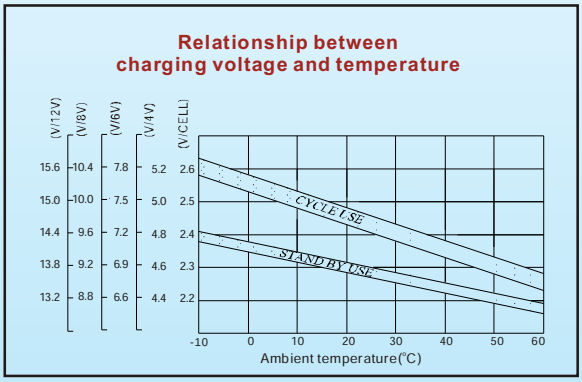
12V 75Ah

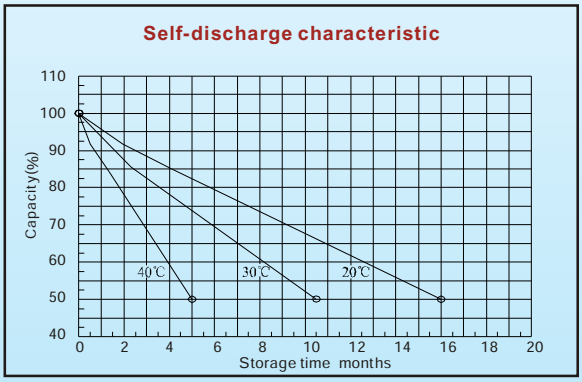


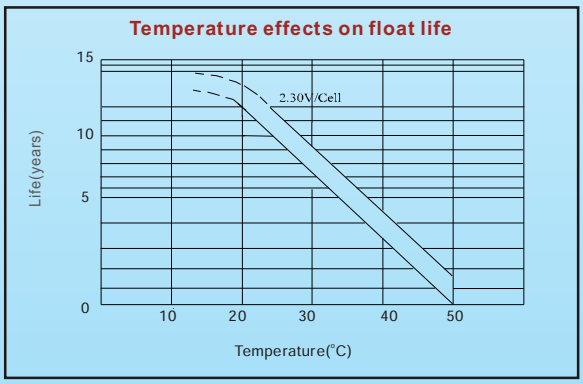


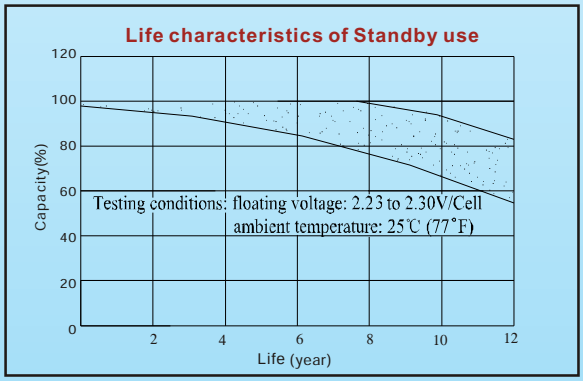












VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-360W-X

12V 85Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

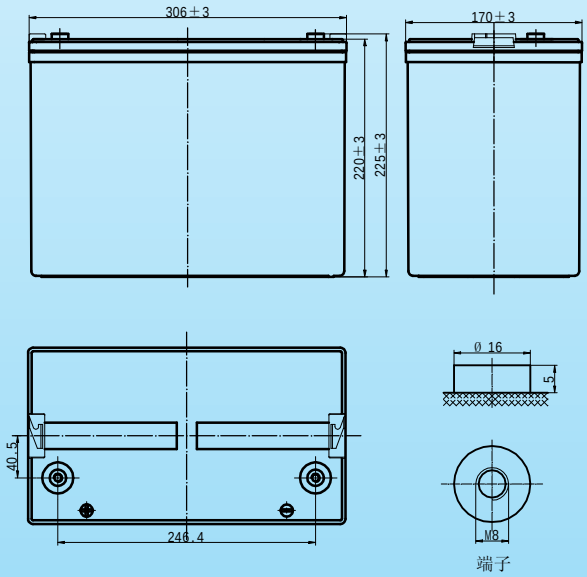
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	306/12.0
Width(mm / inch)	170/6.69
Height(mm / inch)	220/8.66
Total Height(mm / inch)	225/8.86
Approx. Weight(Kg / lbs)	28.1/61.9

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	360W/cell
10 hour rate (8.50A,10.8V)	85 Ah
20 hour rate (4.45A,10.8V)	89 Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤4.4 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	750A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.47VPC
Maximum charging current	25.5A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60	426	345	248	194	167	145	127	89.8	64.1
1.65	418	339	240	190	162	142	124	87.2	61.8
1.67	415	336	237	189	161	141	123	86.1	60.9
1.70	403	317	229	180	154	135	117	77.7	58.3
1.75	392	306	223	175	150	128	112	75.6	57.6
1.80	376	287	213	169	141	124	109	74.0	49.5

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60	857	648	459	365	311	270	238	168	126
1.65	833	631	451	361	302	261	227	163	124
1.67	824	624	447	360	298	257	223	161	123
1.70	764	586	433	351	287	243	210	153	119
1.75	734	557	402	322	275	235	204	147	112
1.80	687	534	387	310	264	224	198	143	108

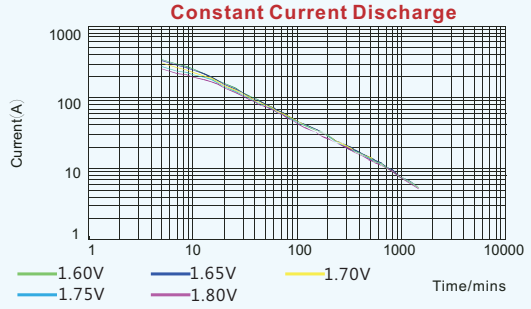
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

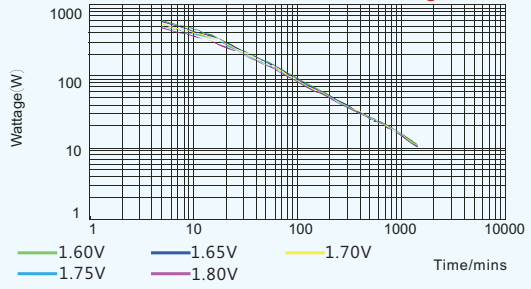
HFS12-360W-X

12V 85Ah

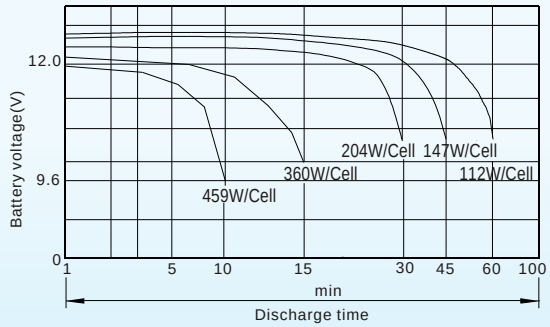
Constant Current Discharge



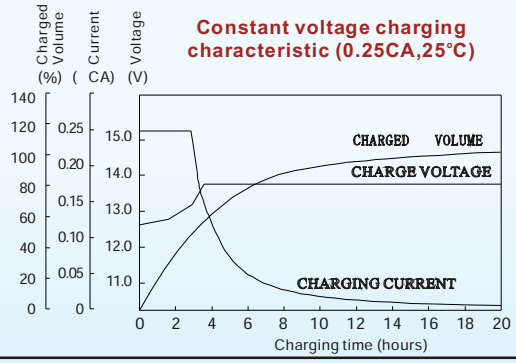
Constant Power Discharge



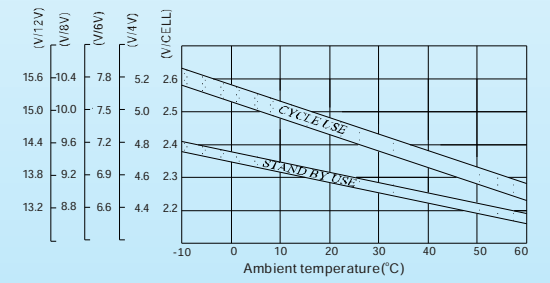
Discharge characteristic (25°C)



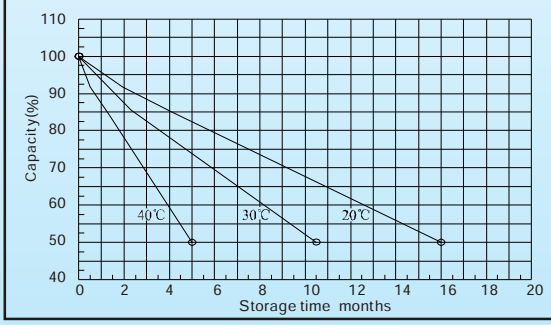
Constant voltage charging characteristic (0.25CA,25°C)



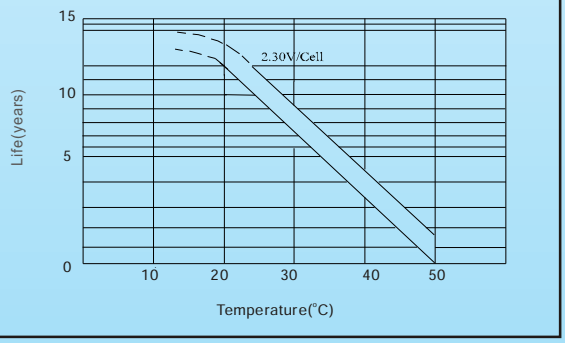
Relationship between charging voltage and temperature



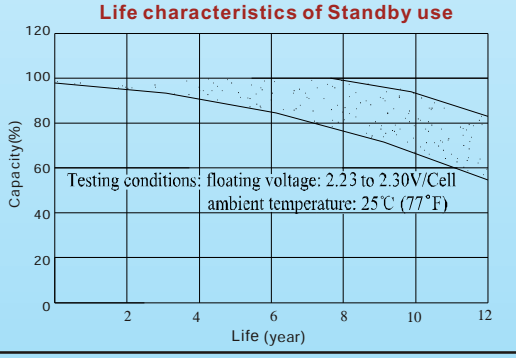
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-400W-X

12V 90Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

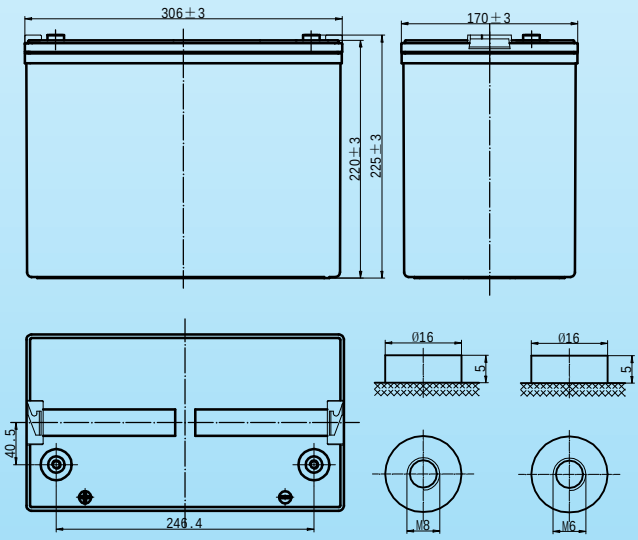
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	306/12.0
Width(mm / inch)	170/6.69
Height(mm / inch)	220/8.66
Total Height(mm / inch)	225/8.86
Approx. Weight(Kg / lbs)	29.2/64.4

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	400W/cell
10 hour rate (9.00A,10.8V)	90 Ah
20 hour rate (4.70 A,10.8V)	94 Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤4.4 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	810A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	28.2 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	446	376	286	215	182	161	145	100	71.2
1.65V	441	366	270	211	180	158	139	99.5	68.7
1.67V	439	362	264	210	179	156	137	99.3	67.7
1.70V	425	352	251	200	171	148	129	86.1	65.1
1.75V	408	339	245	194	167	144	125	84.0	63.2
1.80V	397	318	236	188	156	137	120	82.6	60.5

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	874	719	525	412	349	300	259	187	141
1.65V	860	686	505	403	336	289	249	182	138
1.67V	854	672	497	400	331	284	245	181	137
1.70V	821	642	487	390	321	274	235	170	132
1.75V	764	607	457	358	311	264	226	164	125
1.80V	708	567	427	344	296	258	221	159	121

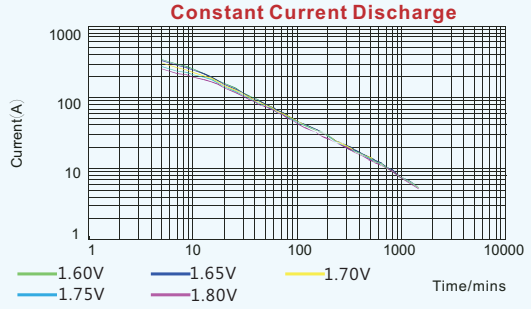
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

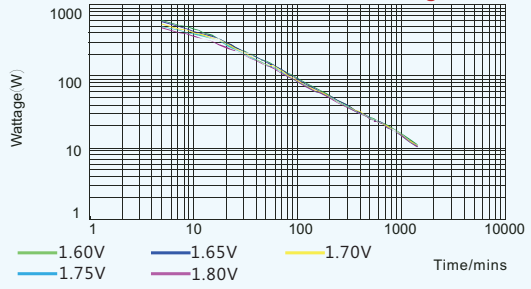
HFS12-400W-X

12V 90Ah

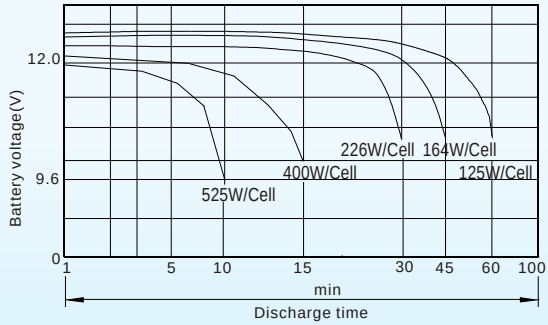
Constant Current Discharge



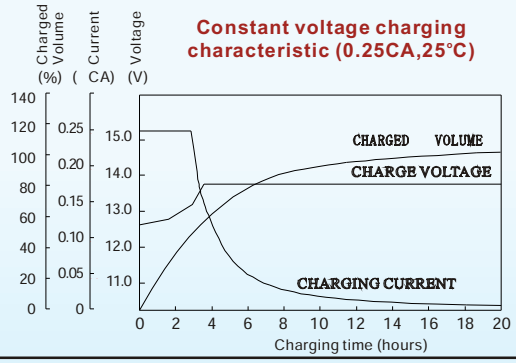
Constant Power Discharge



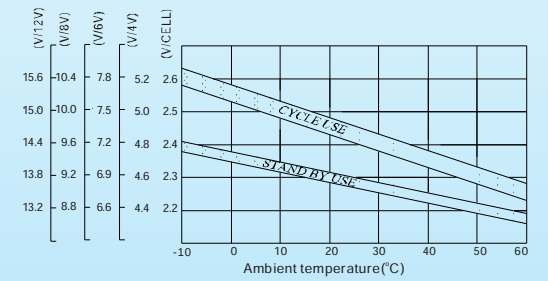
Discharge characteristic (25°C)



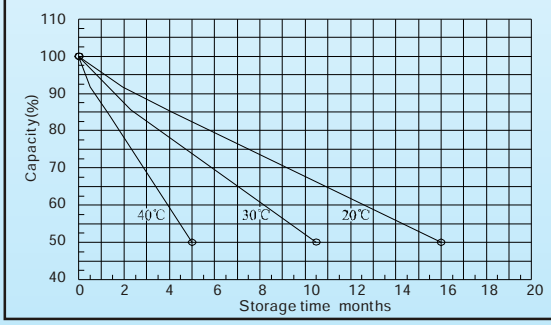
Constant voltage charging characteristic (0.25CA,25°C)



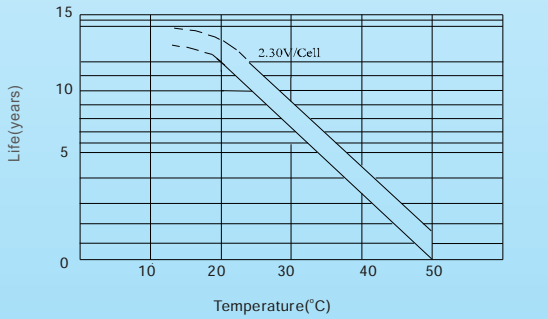
Relationship between charging voltage and temperature



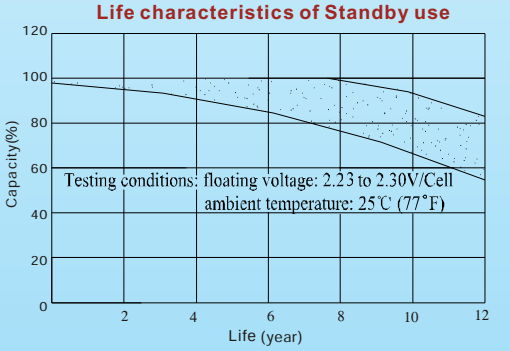
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-400W-X

12V 90Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	306/12.06
Width(mm / inch)	168/6.62
Height(mm / inch)	210/8.27
Total Height(mm / inch)	215/8.47
Approx. Weight(Kg / lbs)	29.2/64.4

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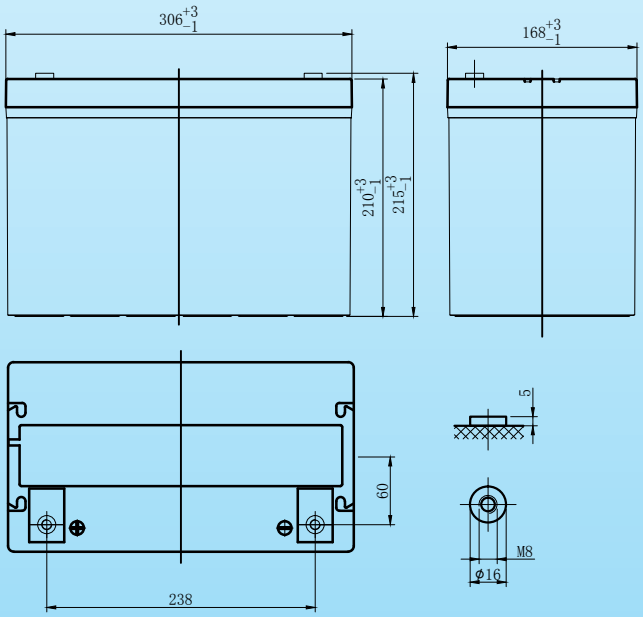


Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	400W/cell
10 hour rate (9.00A,10.8V)	90 Ah
20 hour rate (4.70 A,10.8V)	94 Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤4.4 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	810A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	28.2 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	446	376	286	215	182	161	145	100	71.2
1.65V	441	366	270	211	180	158	139	99.5	68.7
1.67V	439	362	264	210	179	156	137	99.3	67.7
1.70V	425	352	251	200	171	148	129	86.1	65.1
1.75V	408	339	245	194	167	144	125	84.0	63.2
1.80V	397	318	236	188	156	137	120	82.6	60.5

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	874	719	525	412	349	300	259	187	141
1.65V	860	686	505	403	336	289	249	182	138
1.67V	854	672	497	400	331	284	245	181	137
1.70V	821	642	487	390	321	274	235	170	132
1.75V	764	607	457	358	311	264	226	164	125
1.80V	708	567	427	344	296	258	221	159	121

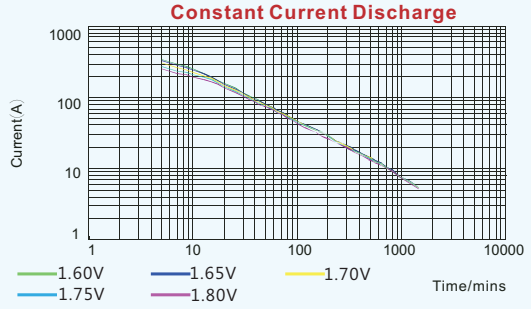
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

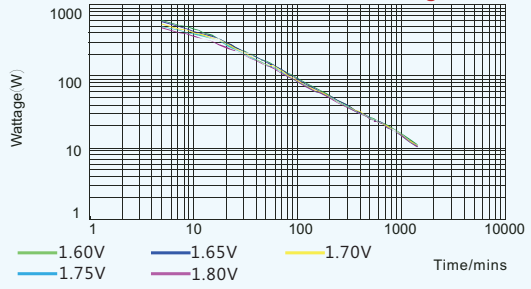
HFS12-400W-X

12V 90Ah

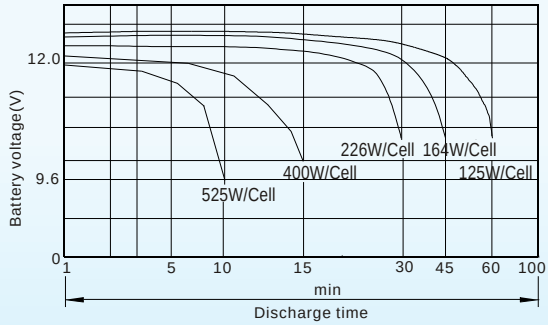
Constant Current Discharge



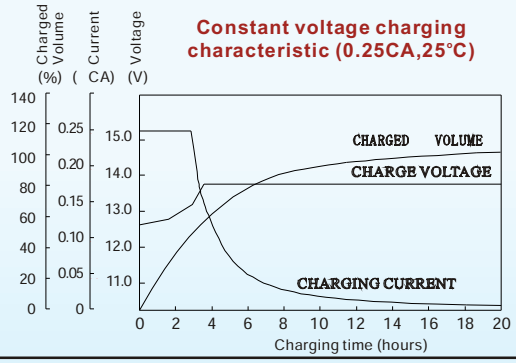
Constant Power Discharge



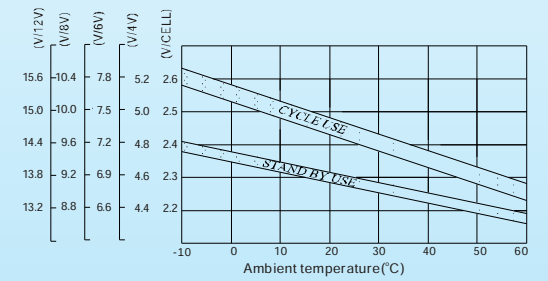
Discharge characteristic (25°C)



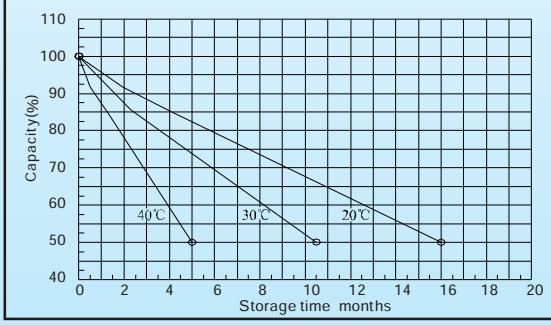
Constant voltage charging characteristic (0.25CA,25°C)



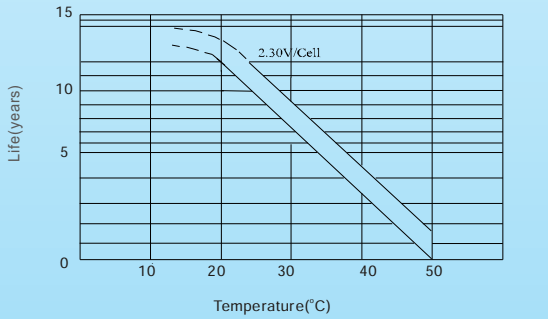
Relationship between charging voltage and temperature



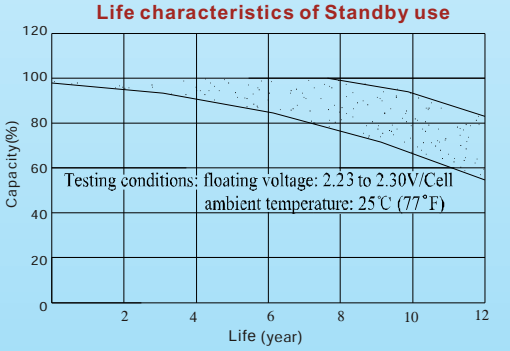
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-420W-X

12V 100Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

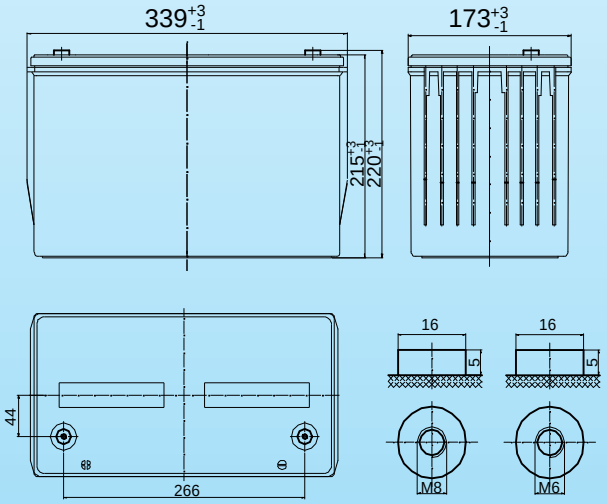
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	339/13.3
Width(mm / inch)	173/6.81
Height(mm / inch)	215/8.46
Total Height(mm / inch)	220/8.66
Approx. Weight(Kg / lbs)	31.5/69.4

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	420W/cell
10 hour rate (10.0A,10.8V)	100Ah
20 hour rate (5.50A,10.8V)	110Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤4.2 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	820A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	33 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	467	388	322	240	208	176	153	103	76.7
1.65V	453	376	314	229	193	164	144	101	74.4
1.67V	448	372	306	225	187	160	141	100	73.5
1.70V	434	358	294	210	175	151	132	93.5	71.4
1.75V	419	342	284	200	170	145	126	88.2	69.3
1.80V	405	328	263	191	164	141	121	86.1	67.2

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	886	746	572	437	365	315	267	191	144
1.65V	870	729	558	425	364	306	256	188	142
1.67V	864	723	553	420	360	302	252	187	141
1.70V	849	697	512	395	339	289	251	182	137
1.75V	832	664	482	372	323	273	238	172	132
1.80V	818	645	465	349	305	261	228	162	125

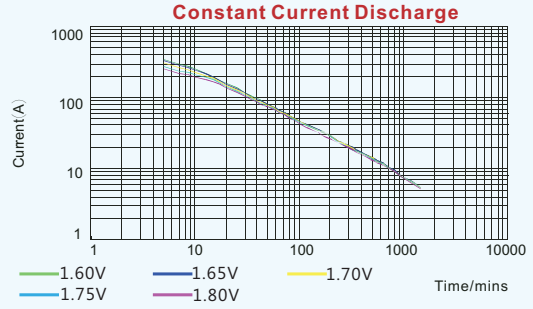
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

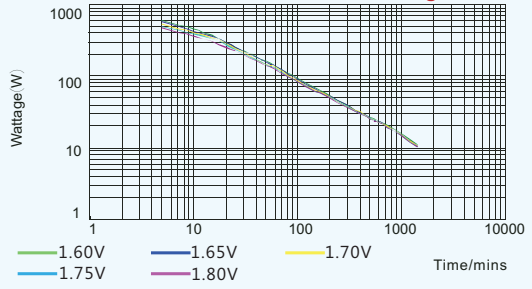
HFS12-420W-X

12V 100 Ah

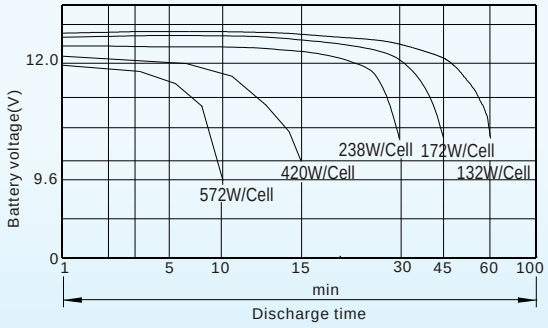
Constant Current Discharge



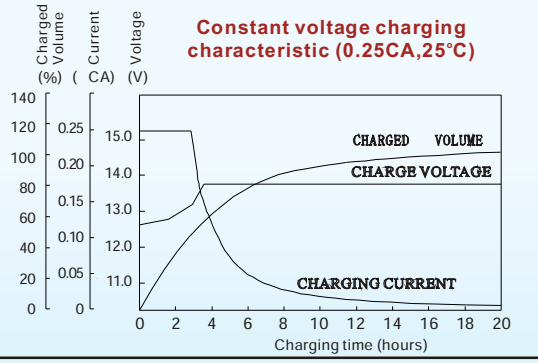
Constant Power Discharge



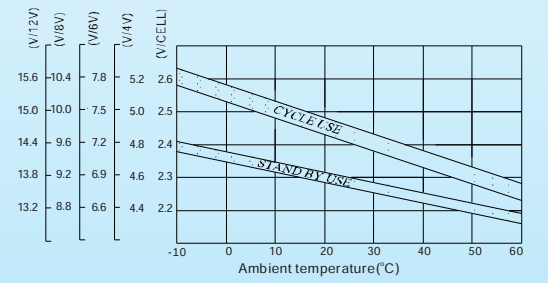
Discharge characteristic (25°C)



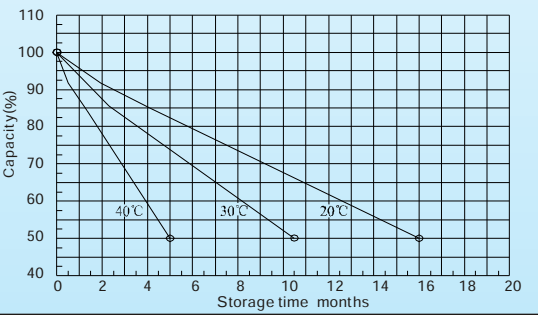
Constant voltage charging characteristic (0.25CA,25°C)



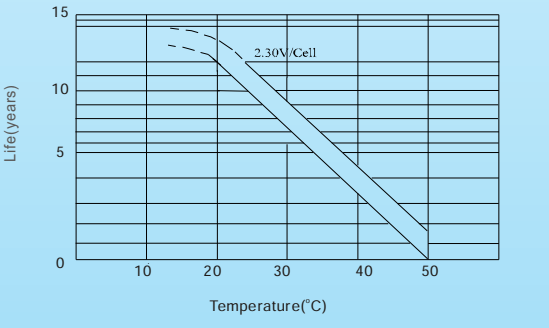
Relationship between charging voltage and temperature



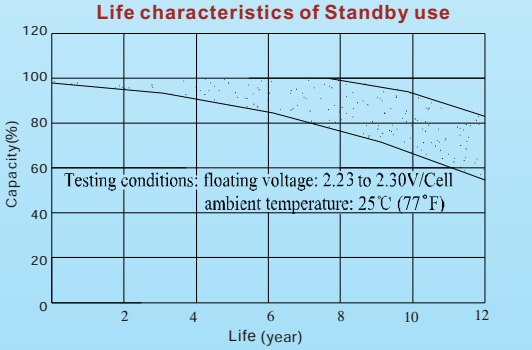
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-420W-X

12V 100Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

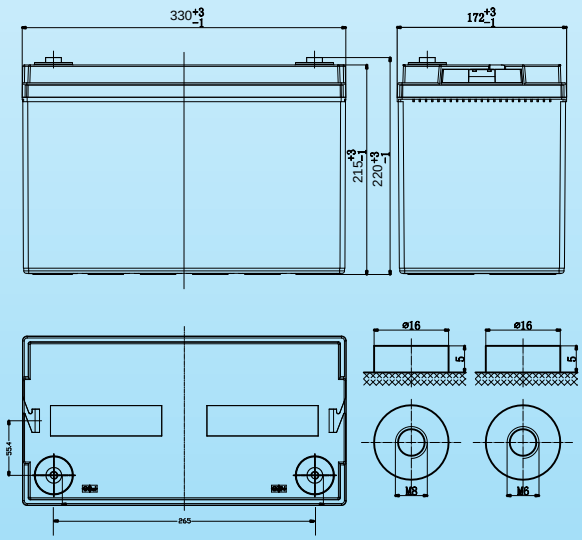
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	330/13.00
Width(mm / inch)	172/6.78
Height(mm / inch)	215/8.46
Total Height(mm / inch)	220/8.67
Approx. Weight(Kg / lbs)	31.5/69.4

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	420W/cell
10 hour rate (10.0A,10.8V)	100Ah
20 hour rate (5.50A,10.8V)	110Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤4.2 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	820A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	33 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	467	388	322	240	208	176	153	103	76.7
1.65V	453	376	314	229	193	164	144	101	74.4
1.67V	448	372	306	225	187	160	141	100	73.5
1.70V	434	358	294	210	175	151	132	93.5	71.4
1.75V	419	342	284	200	170	145	126	88.2	69.3
1.80V	405	328	263	191	164	141	121	86.1	67.2

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	886	746	572	437	365	315	267	191	144
1.65V	870	729	558	425	364	306	256	188	142
1.67V	864	723	553	420	360	302	252	187	141
1.70V	849	697	512	395	339	289	251	182	137
1.75V	832	664	482	372	323	273	238	172	132
1.80V	818	645	465	349	305	261	228	162	125

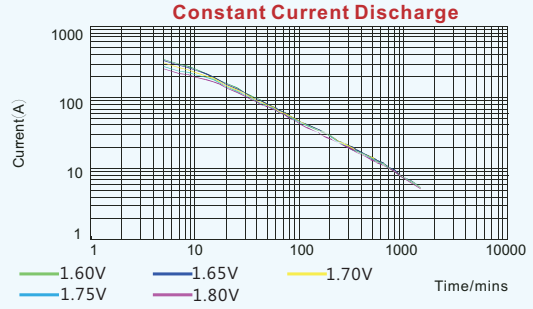
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

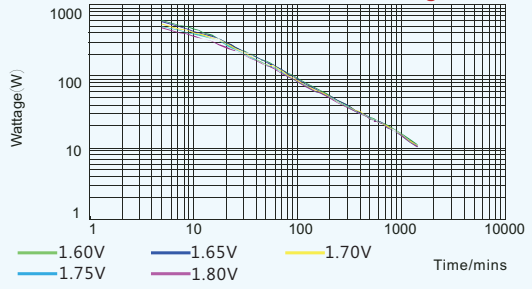
HFS12-420W-X

12V 100 Ah

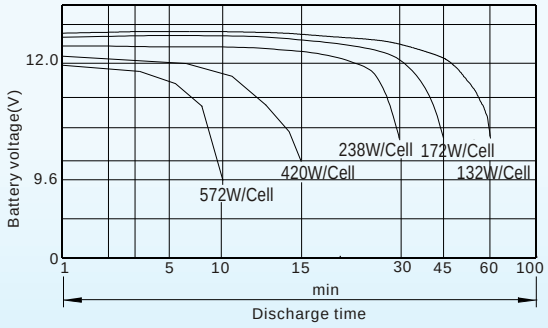
Constant Current Discharge



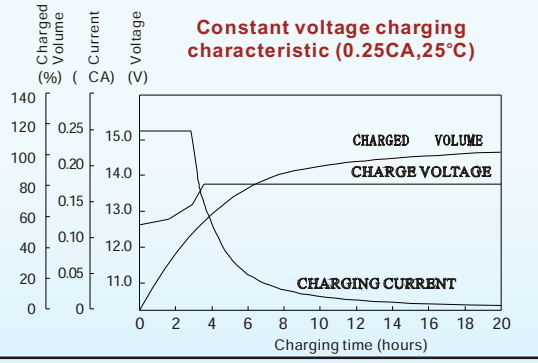
Constant Power Discharge



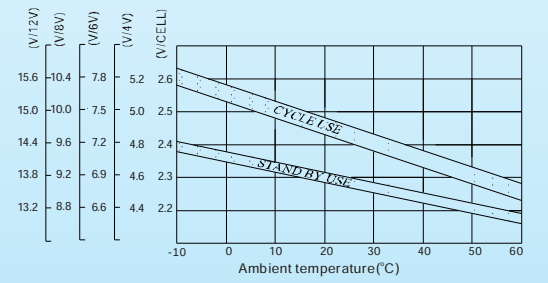
Discharge characteristic (25°C)



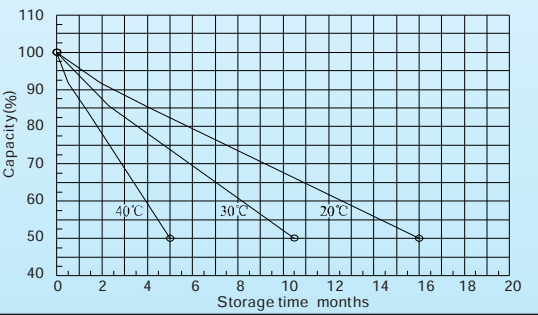
Constant voltage charging characteristic (0.25CA,25°C)



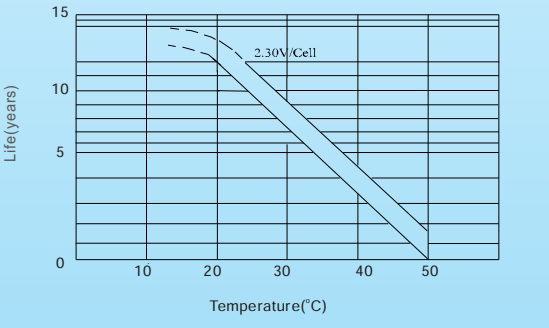
Relationship between charging voltage and temperature



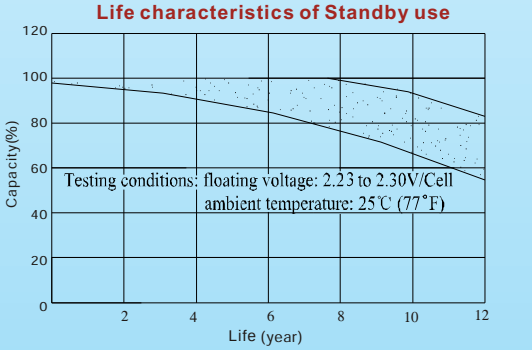
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



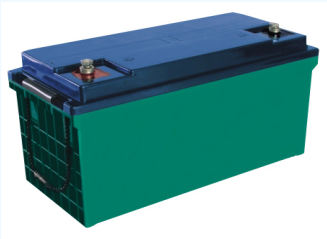
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-450W-X

12V 120Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

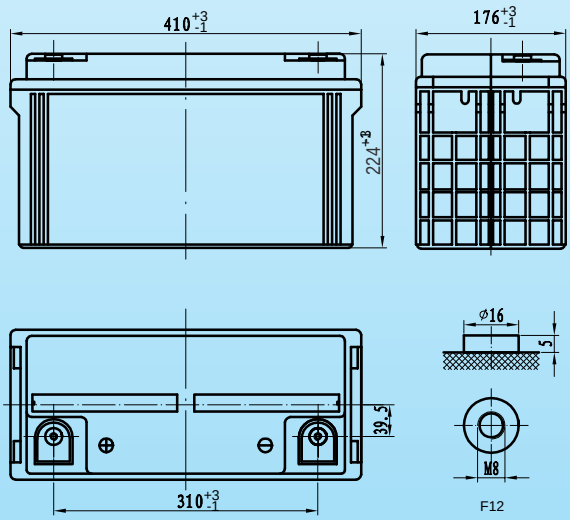
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	410/16.14
Width(mm / inch)	176/6.93
Height(mm / inch)	224/8.82
Total Height(mm / inch)	224/8.82
Approx. Weight(Kg / lbs)	36.5/80.5

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	450W/cell
10 hour rate (12.0A,10.8V)	120Ah
20 hour rate (6.30A,10.8V)	126Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤4.0 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	840A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	37.8A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	487	414	340	266	223	189	160	111	86.1
1.65V	471	405	318	255	211	179	151	105	81.6
1.67V	465	402	309	250	206	175	147	103	79.8
1.70V	446	384	294	244	198	168	143	99.8	77.7
1.75V	427	368	287	234	191	161	135	94.5	74.6
1.80V	406	362	282	223	183	157	131	92.4	72.5

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	904	764	593	475	403	341	294	203	161
1.65V	886	741	575	457	386	324	278	197	156
1.67V	879	732	568	450	379	317	271	194	154
1.70V	856	699	548	440	371	311	269	191	151
1.75V	832	667	538	424	358	301	261	185	147
1.80V	813	643	510	406	338	287	249	180	143

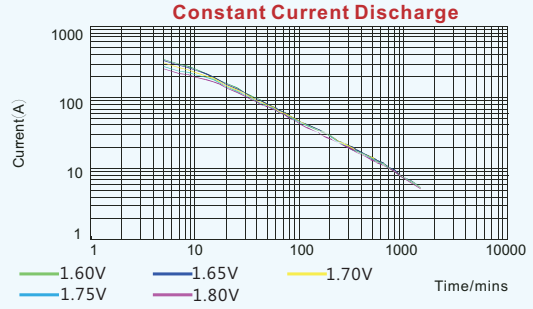
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

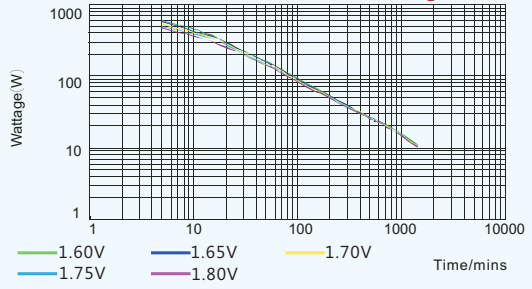
HFS12-450W-X

12V 120Ah

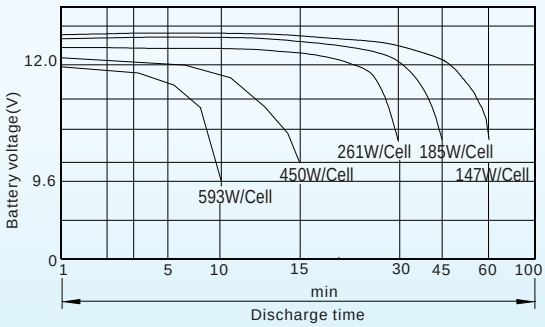
Constant Current Discharge



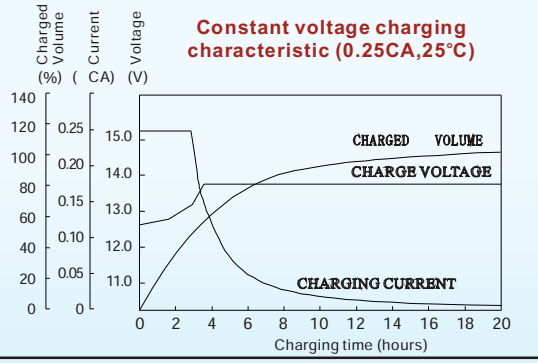
Constant Power Discharge



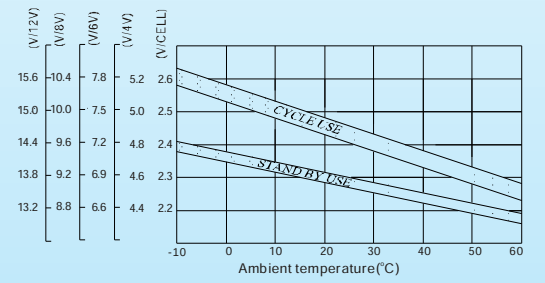
Discharge characteristic (25°C)



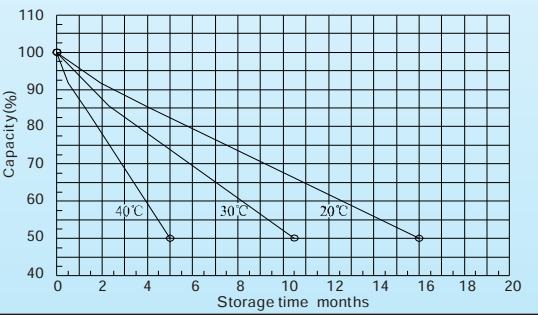
Constant voltage charging characteristic (0.25CA,25°C)



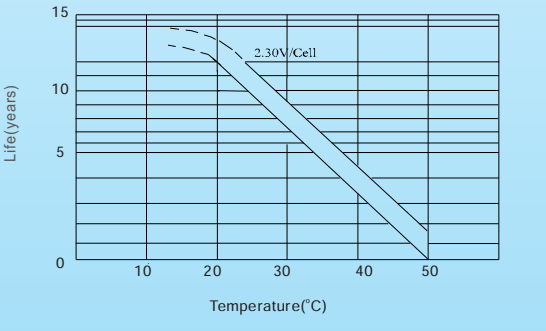
Relationship between charging voltage and temperature



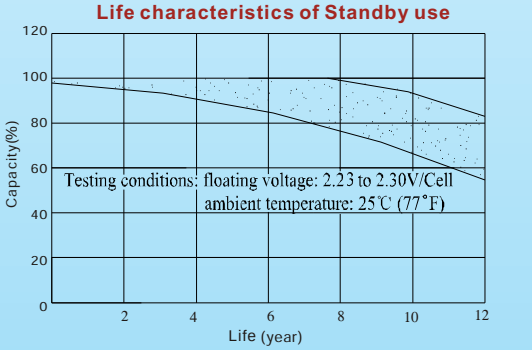
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



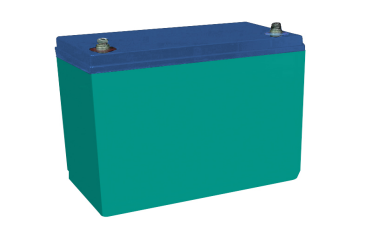
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-500W-X

12V 134Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

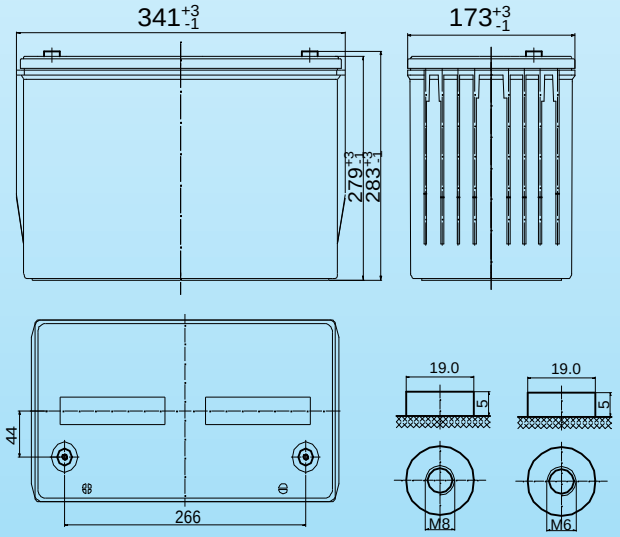
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC, TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	341/13.4
Width(mm / inch)	173/6.81
Height(mm / inch)	279/11.0
Total Height(mm / inch)	283/11.1
Approx. Weight(Kg / lbs)	39.5/87.1

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	500W/cell
10 hour rate (13.4A,10.8V)	134 Ah
20 hour rate (7.00 A,10.8V)	140Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤3.8 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	870A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	42 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	520	441	348	276	238	207	179	121	96.6
1.65V	504	432	327	263	229	198	173	117	92.1
1.67V	498	428	318	258	226	195	171	116	90.3
1.70V	486	412	309	251	214	184	161	110	88.2
1.75V	469	401	298	239	202	176	154	108	85.1
1.80V	456	387	290	229	195	171	149	105	81.9

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1056	834	630	503	424	371	331	246	189
1.65V	1040	818	614	501	419	364	324	240	187
1.67V	1034	812	607	500	417	361	321	238	186
1.70V	1012	783	568	455	391	347	311	231	182
1.75V	973	759	528	438	381	334	297	224	177
1.80V	944	726	521	421	368	321	287	216	173

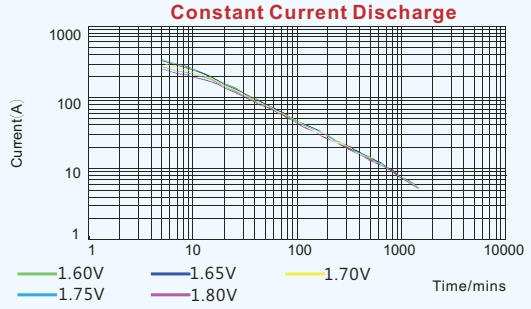
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

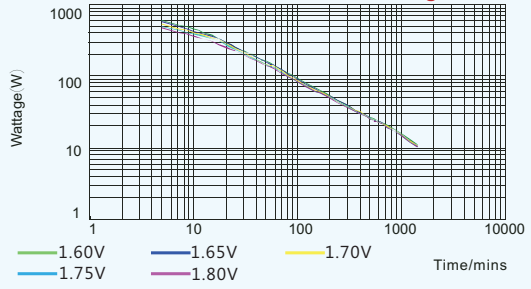
HFS12-500W-X

12V 134Ah

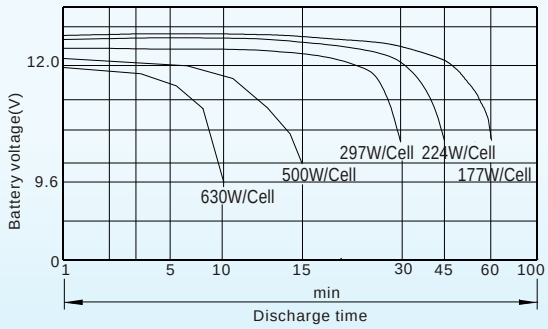
Constant Current Discharge



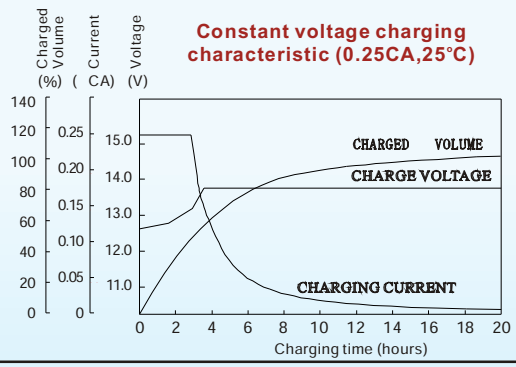
Constant Power Discharge



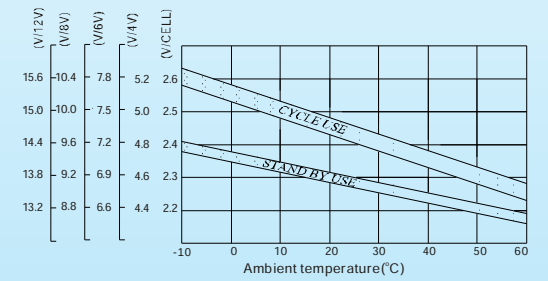
Discharge characteristic (25°C)



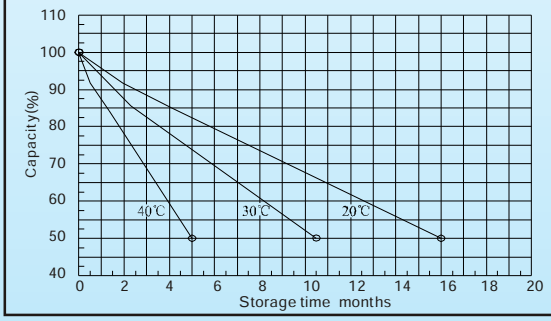
Constant voltage charging characteristic (0.25CA,25°C)



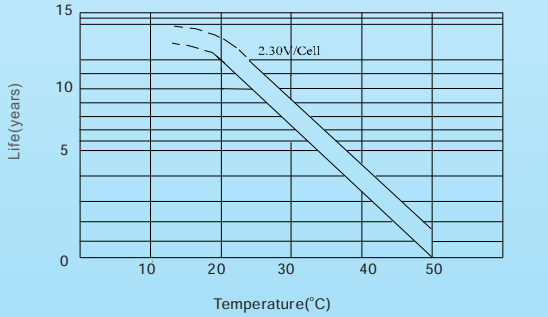
Relationship between charging voltage and temperature



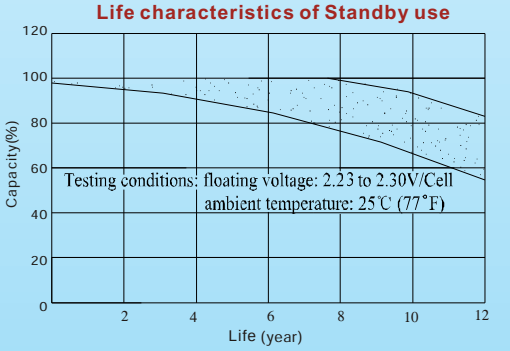
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-500W-X

12V 134Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

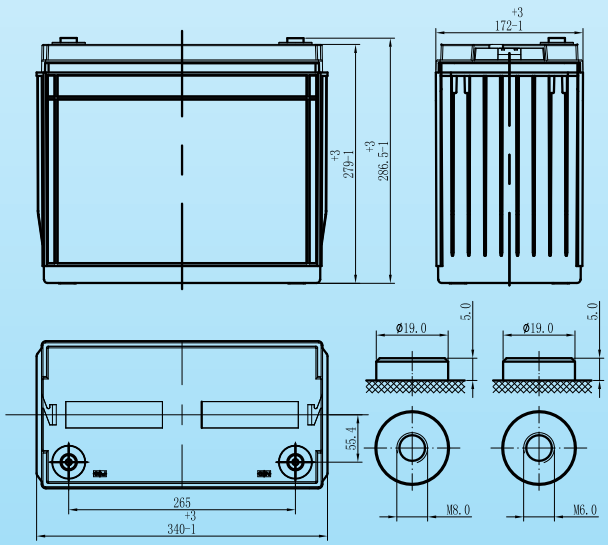
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	340/13.4
Width(mm / inch)	172/6.77
Height(mm / inch)	279/11.0
Total Height(mm / inch)	286.5/11.3
Approx. Weight(Kg / lbs)	40.0/88.2

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	500W/cell
10 hour rate (13.4A,10.8V)	134 Ah
20 hour rate (7.00 A,10.8V)	140Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤3.8 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	870A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	42 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	520	441	348	276	238	207	179	121	96.6
1.65V	504	432	327	263	229	198	173	117	92.1
1.67V	498	428	318	258	226	195	171	116	90.3
1.70V	486	412	309	251	214	184	161	110	88.2
1.75V	469	401	298	239	202	176	154	108	85.1
1.80V	456	387	290	229	195	171	149	105	81.9

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1056	834	630	503	424	371	331	246	189
1.65V	1040	818	614	501	419	364	324	240	187
1.67V	1034	812	607	500	417	361	321	238	186
1.70V	1012	783	568	455	391	347	311	231	182
1.75V	973	759	528	438	381	334	297	224	177
1.80V	944	726	521	421	368	321	287	216	173

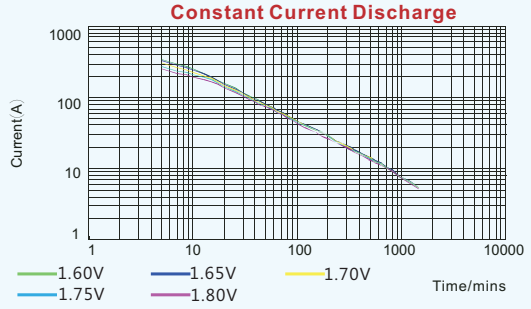
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

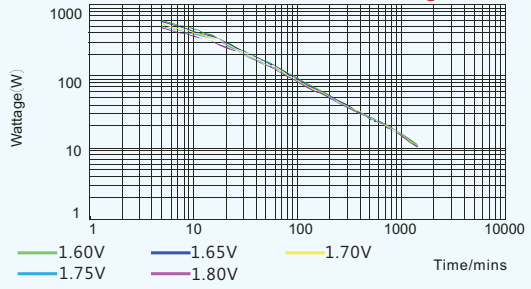
HFS12-500W-X

12V 134Ah

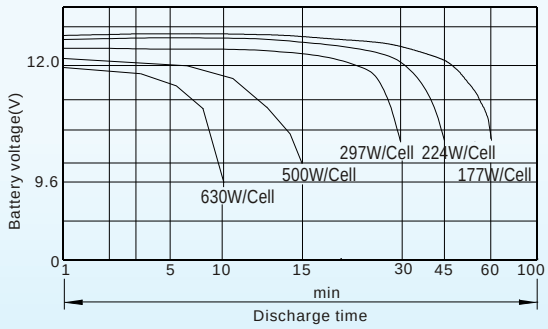
Constant Current Discharge



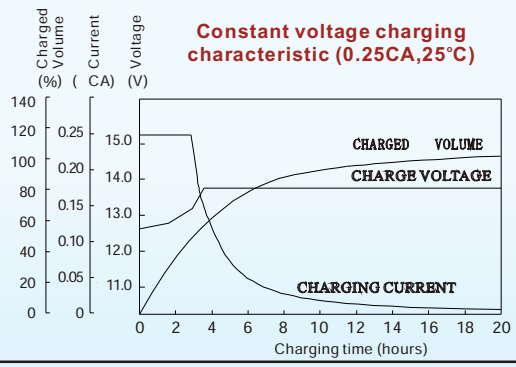
Constant Power Discharge



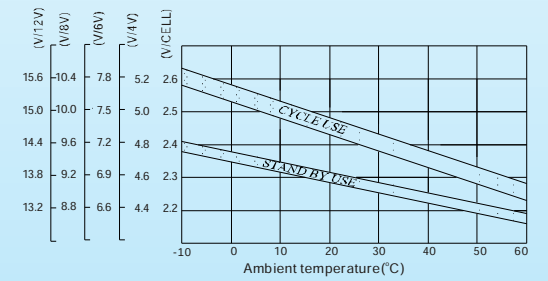
Discharge characteristic (25°C)



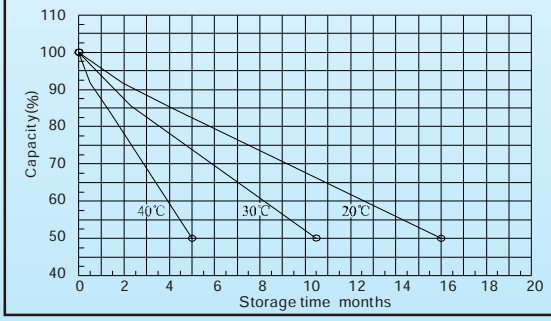
Constant voltage charging characteristic (0.25CA,25°C)



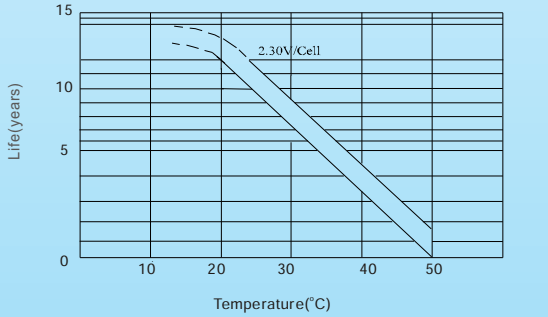
Relationship between charging voltage and temperature



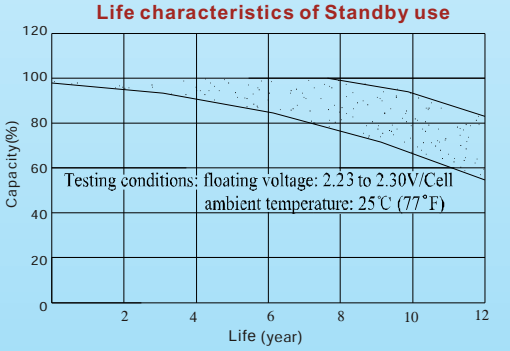
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



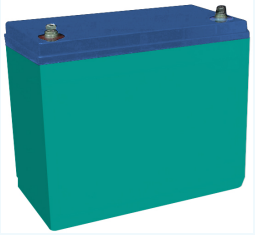
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-540W-X

12V 140Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

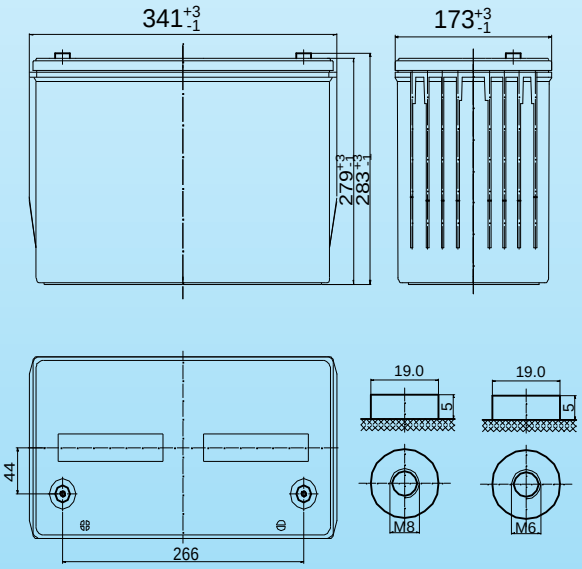
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	341/13.4
Width(mm / inch)	173/6.81
Height(mm / inch)	279/11.0
Total Height(mm / inch)	283/11.2
Approx. Weight(Kg / lbs)	41.0/90.4

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	540W/cell
10 hour rate (14.0A,10.8V)	140Ah
20 hour rate (7.50A,10.8V)	150Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤3.6 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	910A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	45A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	568	469	358	292	253	217	196	134	103
1.65V	552	456	337	281	246	212	188	130	101
1.67V	546	450	328	276	244	210	185	128	100
1.70V	523	433	318	259	228	198	175	125	99
1.75V	509	416	302	245	215	190	169	122	96
1.80V	492	403	293	235	206	183	161	119	94

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1104	887	680	564	468	400	358	260	201
1.65V	1078	857	662	547	459	396	350	255	198
1.67V	1067	844	655	540	456	394	347	253	197
1.70V	1035	790	601	491	427	374	331	245	192
1.75V	1004	766	568	473	412	360	323	237	188
1.80V	976	744	534	455	397	347	311	229	184

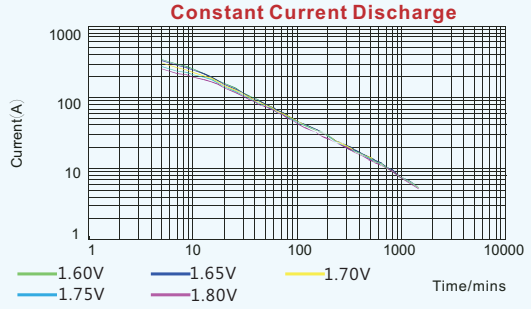
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

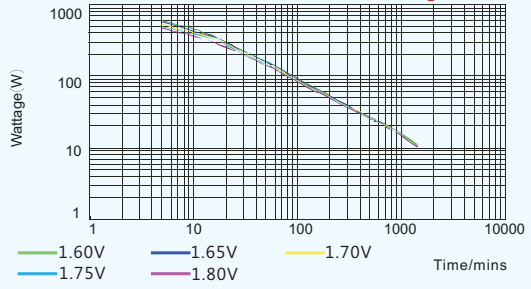
HFS12-540W-X

12V 140Ah

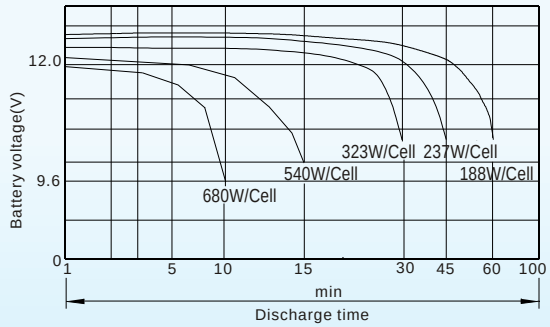
Constant Current Discharge



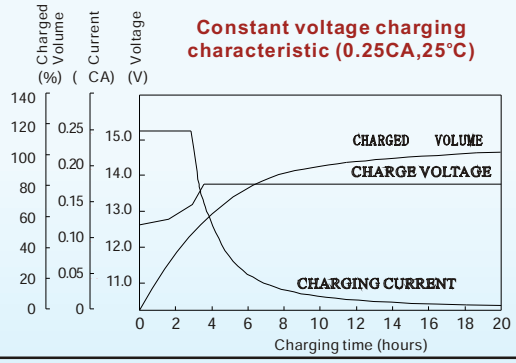
Constant Power Discharge



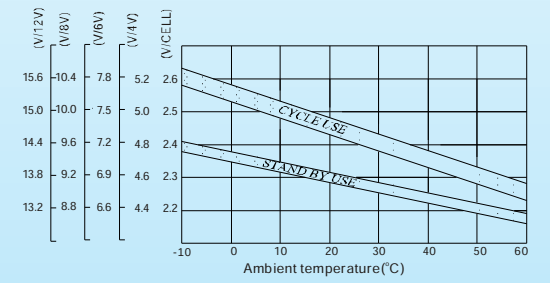
Discharge characteristic (25°C)



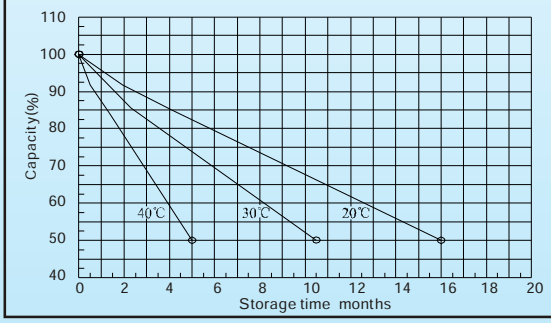
Constant voltage charging characteristic (0.25CA,25°C)



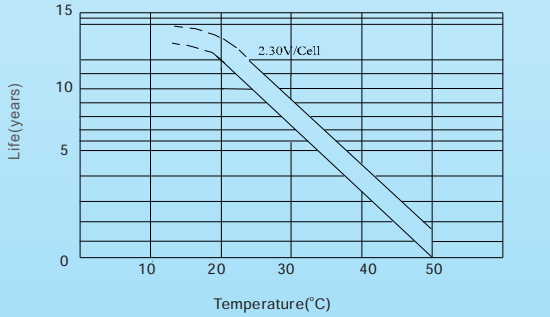
Relationship between charging voltage and temperature



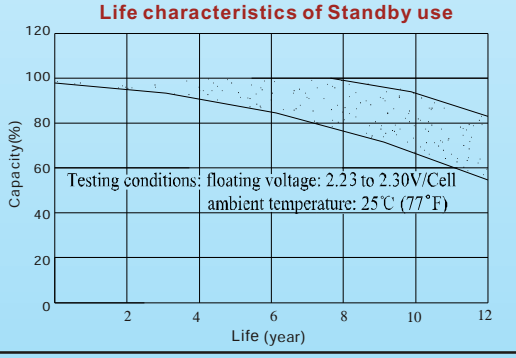
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-540W-X

12V 140Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

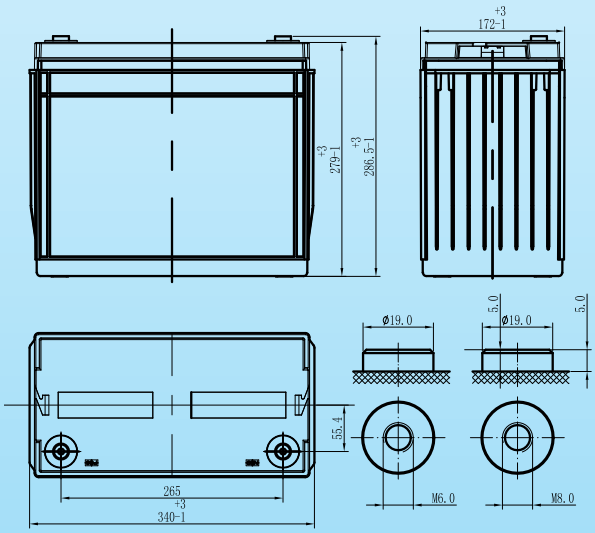
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	340/13.4
Width(mm / inch)	172/6.78
Height(mm / inch)	279/11.0
Total Height(mm / inch)	286.5/11.3
Approx. Weight(Kg / lbs)	41.5/91.5

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25℃)	
15 min wattage @ 1.67VPC	540W/cell
10 hour rate (14.0A,10.8V)	140Ah
20 hour rate (7.50A,10.8V)	150Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤3.6 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25℃)	910A(5s)
Charge Methods: Constant Voltage Charge 77°F(25℃)	
Cycle use	2.40-2.45VPC
Maximum charging current	45A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	568	469	358	292	253	217	196	134	103
1.65V	552	456	337	281	246	212	188	130	101
1.67V	546	450	328	276	244	210	185	128	100
1.70V	523	433	318	259	228	198	175	125	99
1.75V	509	416	302	245	215	190	169	122	96
1.80V	492	403	293	235	206	183	161	119	94

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1104	887	680	564	468	400	358	260	201
1.65V	1078	857	662	547	459	396	350	255	198
1.67V	1067	844	655	540	456	394	347	253	197
1.70V	1035	790	601	491	427	374	331	245	192
1.75V	1004	766	568	473	412	360	323	237	188
1.80V	976	744	534	455	397	347	311	229	184

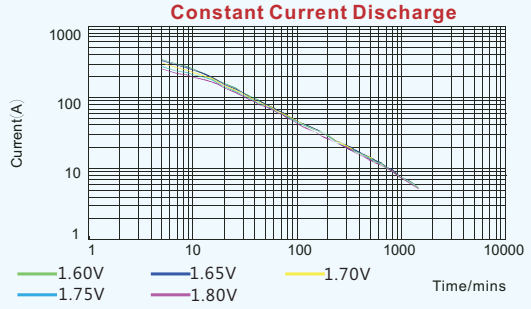
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

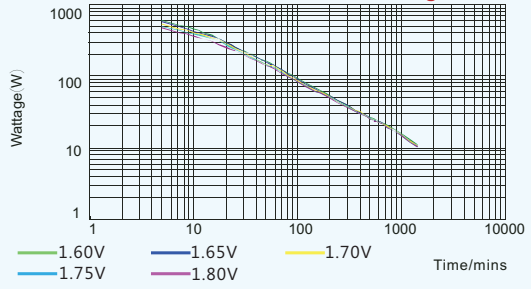
HFS12-540W-X

12V 140Ah

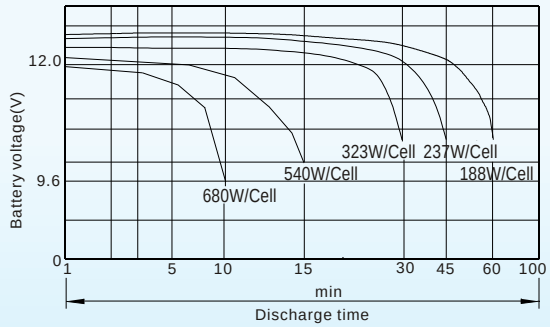
Constant Current Discharge



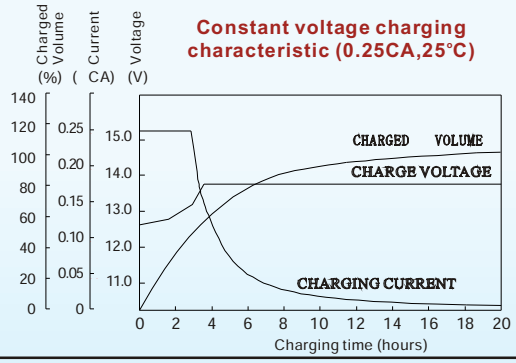
Constant Power Discharge



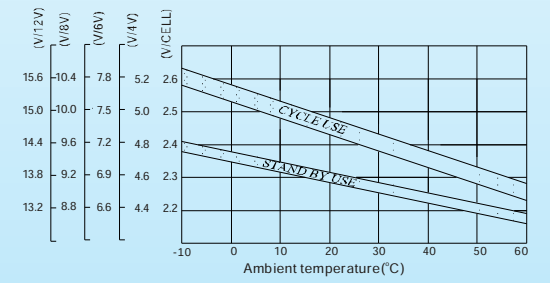
Discharge characteristic (25°C)



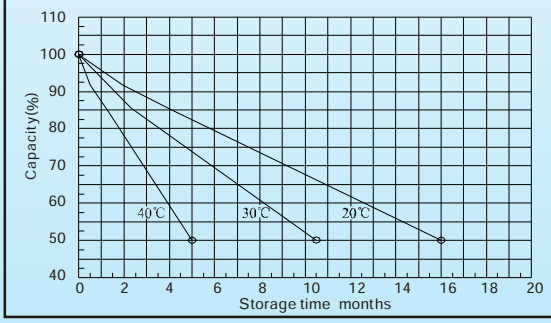
Constant voltage charging characteristic (0.25CA,25°C)



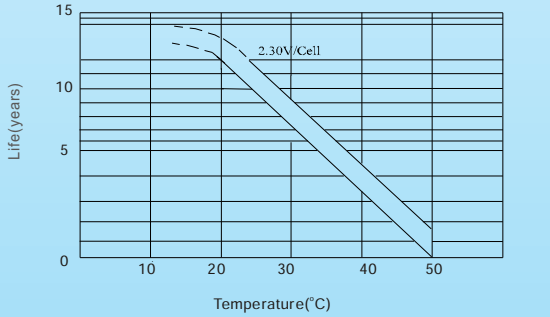
Relationship between charging voltage and temperature



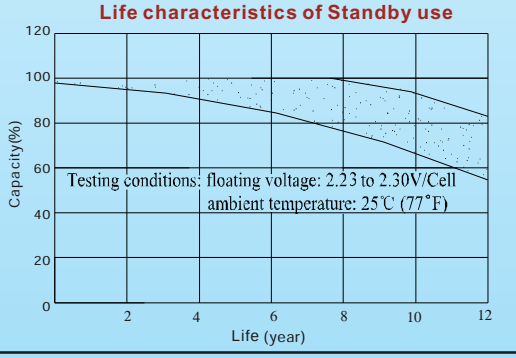
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-560W-X

12V 150Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

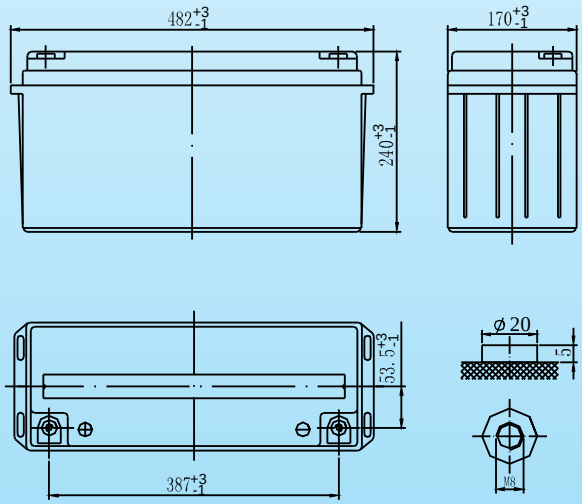
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	482/18.9
Width(mm / inch)	170/6.69
Height(mm / inch)	240/9.40
Total Height(mm / inch)	240/9.40
Approx. Weight(Kg / lbs)	45.0/99.2

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	560W/cell
10 hour rate (15.0A,10.8V)	150Ah
20 hour rate (7.80A,10.8V)	156Ah
Internal Resistance	
Fully Charged battery 77℉(25℃)	≤3.5 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	970A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	46.8A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	597	501	411	332	284	245	208	139	107
1.65V	586	484	392	318	271	237	205	135	105
1.67V	582	477	387	312	266	234	204	133	104
1.70V	561	454	366	301	258	221	191	130	102
1.75V	543	444	354	291	252	218	186	127	101
1.80V	518	436	342	277	242	208	176	124	98

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1147	915	722	600	502	431	370	267	210
1.65V	1130	892	684	571	483	416	362	258	204
1.67V	1123	883	668	560	476	410	359	255	202
1.70V	1103	864	654	550	463	401	347	250	200
1.75V	1076	844	615	527	450	386	333	242	193
1.80V	1047	806	601	502	432	372	320	234	190

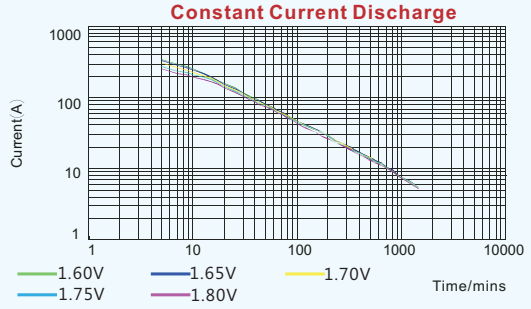
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

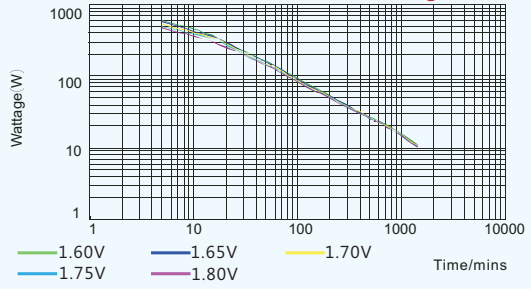
HFS12-560W-X

12V 150Ah

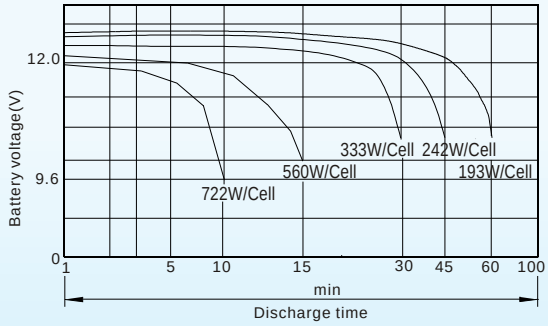
Constant Current Discharge



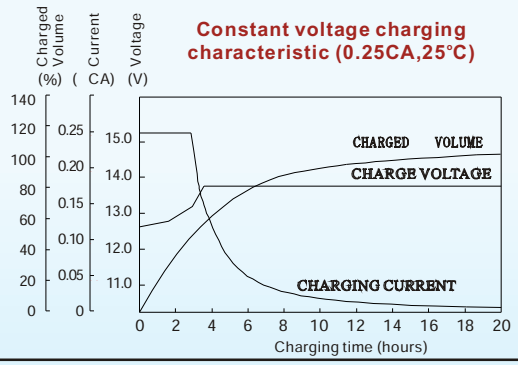
Constant Power Discharge



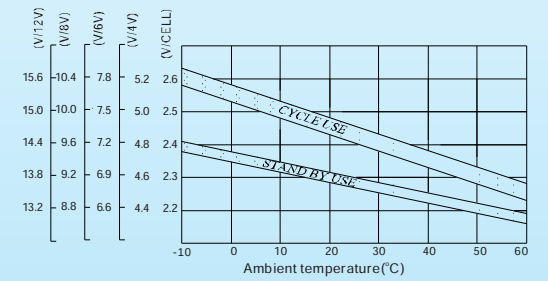
Discharge characteristic (25°C)



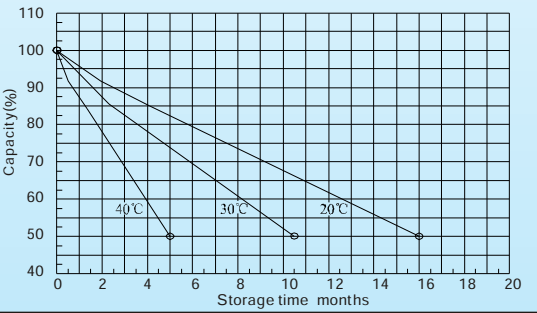
Constant voltage charging characteristic (0.25CA,25°C)



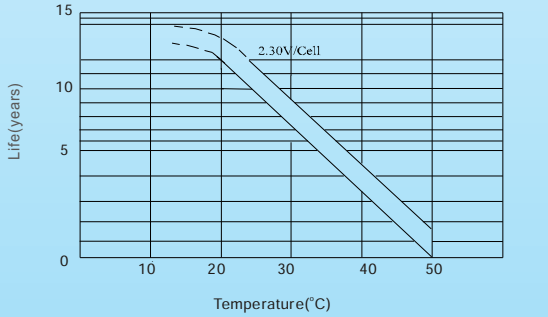
Relationship between charging voltage and temperature



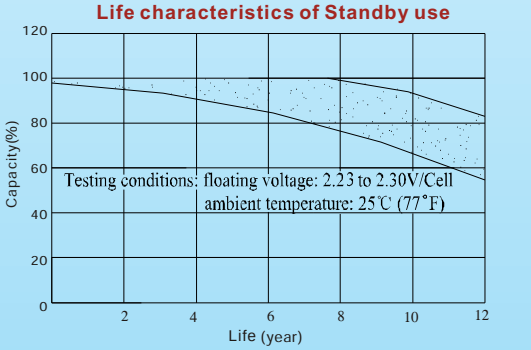
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-710W-X

12V 192Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

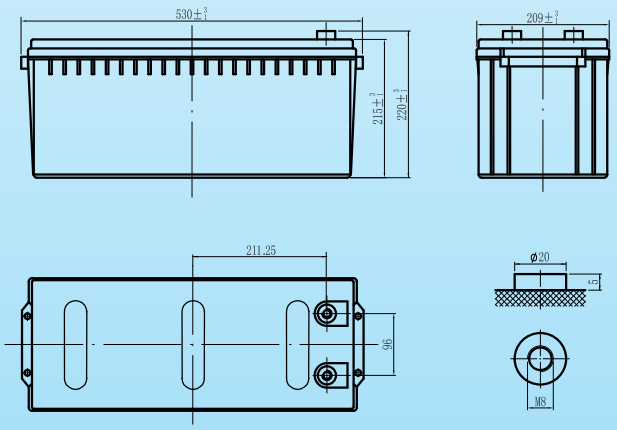
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	530/20.8
Width(mm / inch)	209/8.2
Height(mm / inch)	215/8.5
Total Height(mm / inch)	220/8.7
Approx. Weight(Kg / lbs)	57.0/126

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	710W/cell
10 hour rate (19.2A,10.8V)	192Ah
20 hour rate (10.0A,10.8V)	200Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤3.0 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	1000A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	60 A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	943	714	492	362	330	294	265	207	162
1.65V	939	711	489	360	329	293	263	205	160
1.67V	929	702	483	356	327	290	259	198	155
1.70V	913	687	464	350	320	281	254	192	150
1.75V	899	669	454	342	314	277	248	184	143
1.80V	884	655	434	334	304	268	240	176	138

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1356	1134	864	730	620	545	485	355	277
1.65V	1341	1115	852	716	608	535	472	344	270
1.67V	1335	1107	847	710	604	531	466	340	267
1.70V	1304	994	817	700	584	513	447	329	257
1.75V	1264	976	804	678	559	491	431	315	247
1.80V	1227	956	789	643	544	479	412	302	236

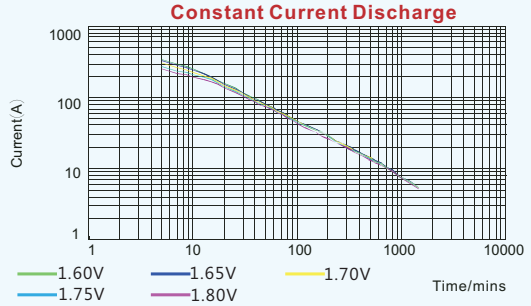
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

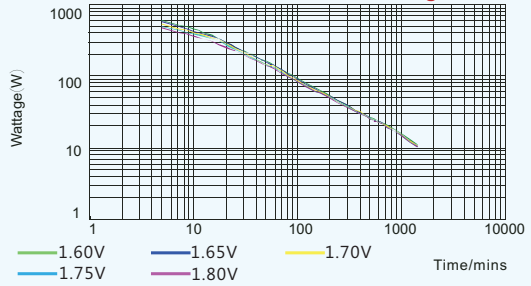
HFS12-710W-X

12V 192Ah

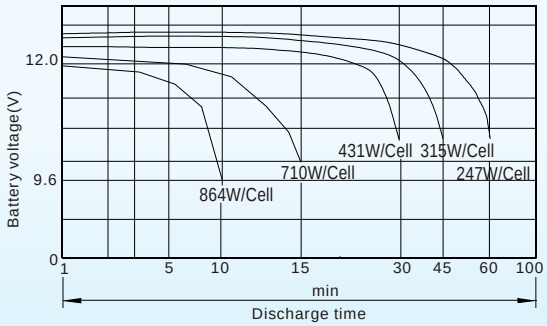
Constant Current Discharge



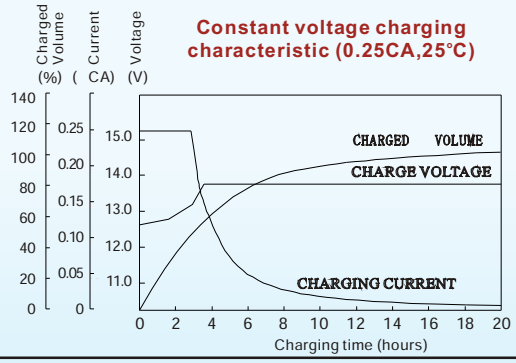
Constant Power Discharge



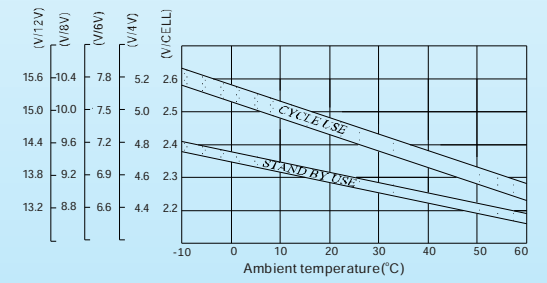
Discharge characteristic (25°C)



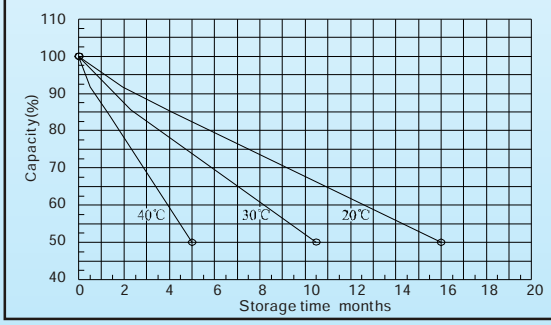
Constant voltage charging characteristic (0.25CA,25°C)



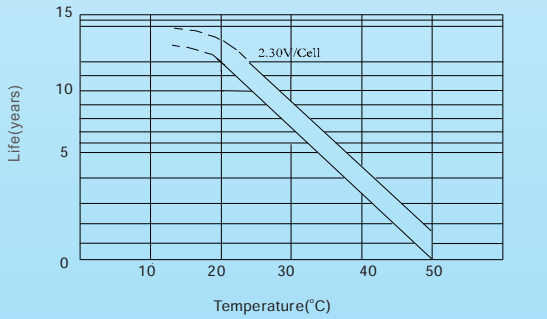
Relationship between charging voltage and temperature



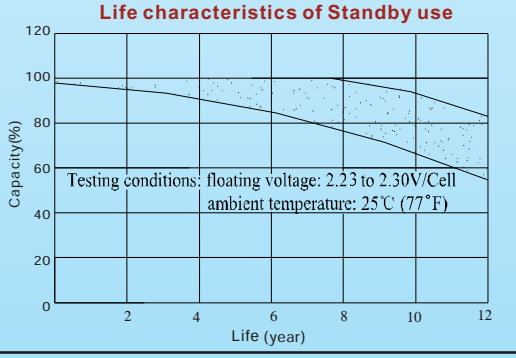
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



VISION雄韬

HFS12-820WS-X

12V 220Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

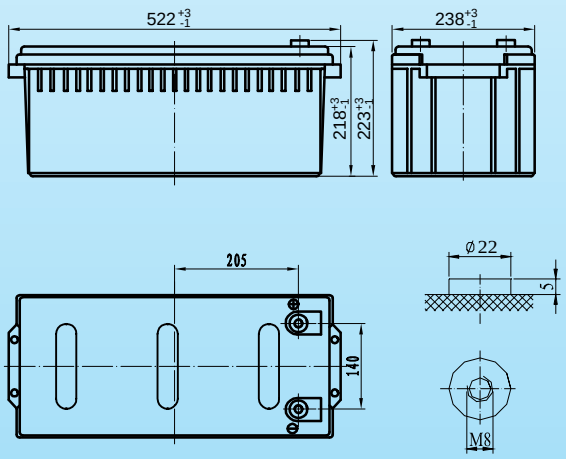
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	522/20.5
Width(mm / inch)	238/9.37
Height(mm / inch)	218/8.6
Total Height(mm / inch)	223/8.8
Approx. Weight(Kg / lbs)	68.5/151.1

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	820W/cell
10 hour rate (21.0A,10.8V)	210Ah
20 hour rate (11.0A,10.8V)	220Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤2.2 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	1100A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	63A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	712	565	447	370	325	289	211	163
1.65V	686	544	433	358	315	280	205	159
1.67V	677	539	428	354	312	277	202	157
1.70V	643	514	409	338	297	266	194	151
1.75V	608	488	390	321	282	254	185	144
1.80V	574	463	381	305	268	242	176	138

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1260	1010	827	650	572	509	375	290
1.65V	1215	975	822	631	554	498	367	284
1.67V	1201	965	820	625	550	494	365	283
1.70V	1143	920	780	600	528	480	355	275
1.75V	1084	875	752	575	506	465	345	268
1.80V	1025	830	680	550	484	450	335	260

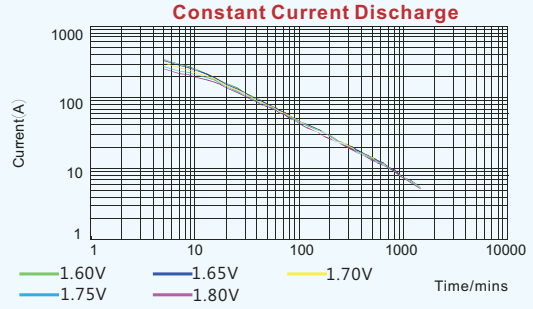
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION雄韬

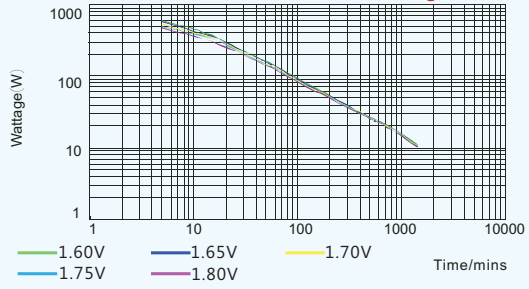
HFS12-820WS-X

12V 220Ah

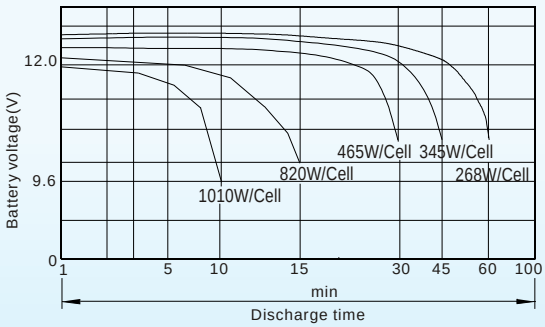
Constant Current Discharge



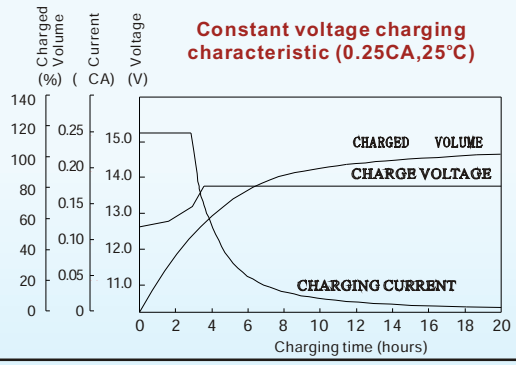
Constant Power Discharge



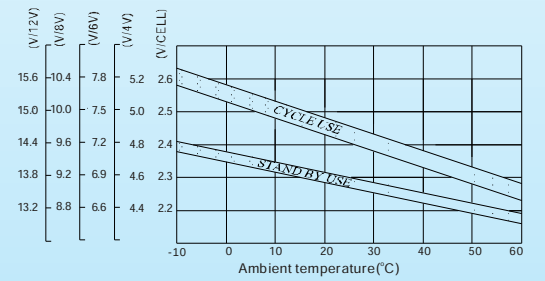
Discharge characteristic (25°C)



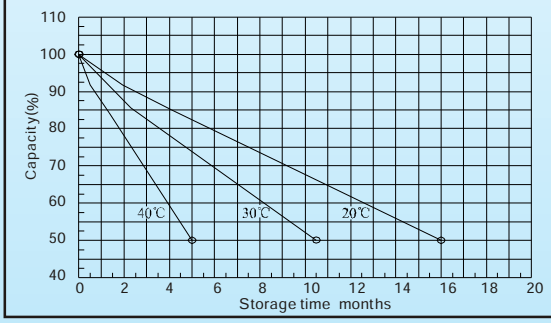
Constant voltage charging characteristic (0.25CA,25°C)



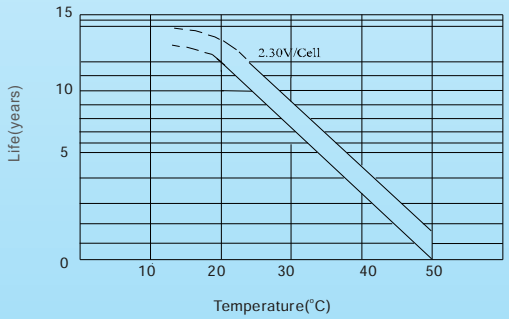
Relationship between charging voltage and temperature



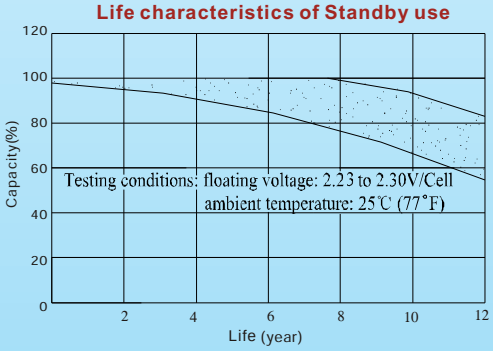
Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use



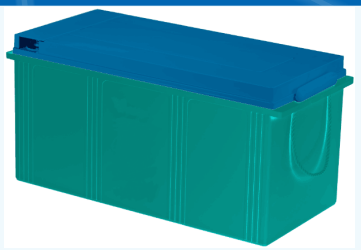
VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

HFS12-850W-X

12V 220Ah

Overview

The new VISION HFS series batteries are designed for UPS Standby Power Aplications requiring high power output. Computer designed grids and optimized plate paste formula produce high energy density and long lasting uninterrupted power for critical systems.



Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

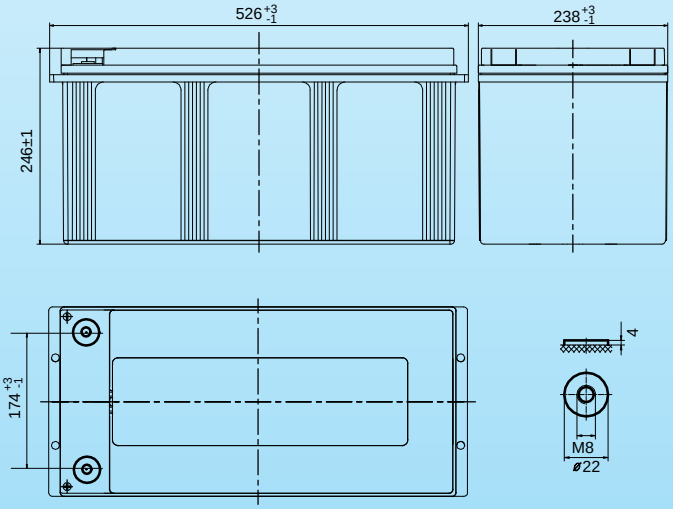
General Features

- Positive and negative plates in lead-calcium-tin alloy;
- Superior energy density;
- Operate at a low internal pressure;
- Gas recombination;
- Special separator technology;
- A recognized component of UL, IEC,TLC.etc;
- Flame retardant ABS(UL 94-FV0);
- Very hight power output for 5 to 15 minutes supply
- A covered range from 90W to 850W per cell for 15min @ 1.67Vpc;
- Six months shelf life at 20 ℃;
- Design life :12+years at 20 ℃;
- Recommended loading 1h and below;

Dimensions and Weight

Length(mm / inch)	526/20.7
Width(mm / inch)	238/9.37
Height(mm / inch)	246/9.7
Total Height(mm / inch)	246/9.7
Approx. Weight(Kg / lbs)	69.0/152.2

* Weight deviation: ± 5%



Battery Specification

Performance Characteristics	
Nominal Voltage	12V
Number of cell	6
Design Life	12 years
Nominal Capacity 77°F(25°C)	
15 min wattage @ 1.67VPC	850W/cell
10 hour rate (22.0A,10.8V)	220 Ah
20 hour rate (11.5 A,10.8V)	230Ah
Internal Resistance	
Fully Charged battery 77°F(25℃)	≤1.7 mOhms
Self-Discharge	
3% of capacity declined per month at 20℃(average)	
Operating Temperature Range	
Discharge	-20~60℃
Charge	-10~60℃
Storage	-20~60℃
Max. Discharge Current 77°F(25°C)	1100A(5s)
Charge Methods: Constant Voltage Charge 77°F(25°C)	
Cycle use	2.40-2.45VPC
Maximum charging current	69A
Temperature compensation	-30mV/℃
Standby use	2.23-2.30VPC
Temperature compensation	-20mV/℃

Discharge Constant Current (Amperes at 77°F25°C)

End Voltage Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	957	777	594	460	395	346	305	224	173
1.65V	947	750	583	446	386	337	299	217	169
1.67V	943	739	576	440	382	334	296	214	167
1.70V	928	714	554	420	365	318	284	206	161
1.75V	915	694	532	400	342	302	269	196	153
1.80V	897	678	516	392	331	289	254	187	147

Discharge Constant Power (Watts at 77°F25°C)

End Point Volts/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1654	1386	1059	860	716	613	546	399	310
1.65V	1633	1341	1034	853	702	604	534	392	303
1.67V	1624	1323	1016	850	697	601	529	389	300
1.70V	1587	1290	976	805	667	578	515	376	292
1.75V	1543	1268	946	780	645	557	486	365	284
1.80V	1516	1174	873	700	597	520	467	355	276

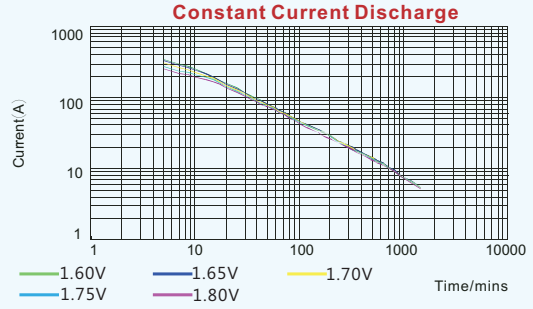
(Note)The above characteristics data are average values obtained within three charge/discharge cycles not the mimimum values.All data shall be changed without notice,Vision reserves the right to explain and update the information contained hereinto.

VISION GROUP
Shenzhen Center Power Tech.Co.Ltd,.

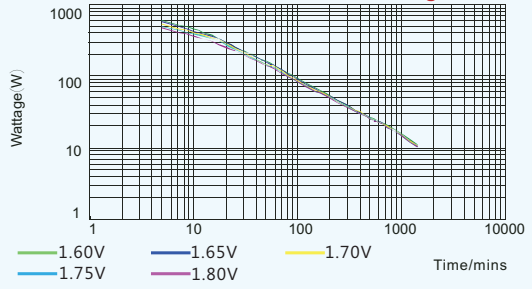
HFS12-820W-X

12V 220Ah

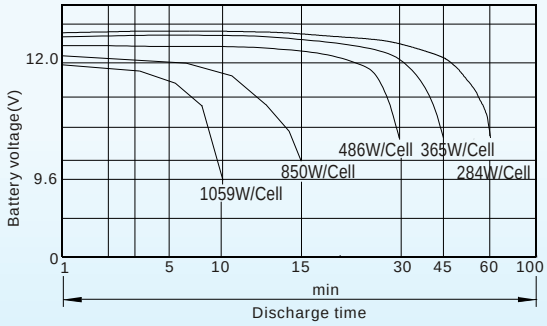
Constant Current Discharge



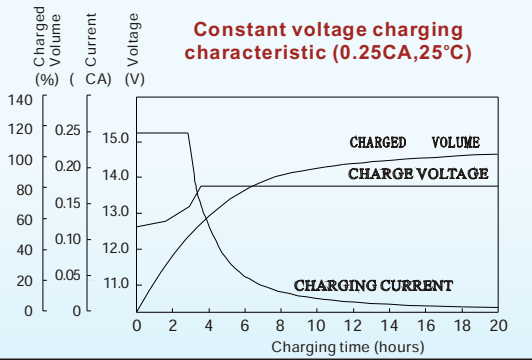
Constant Power Discharge



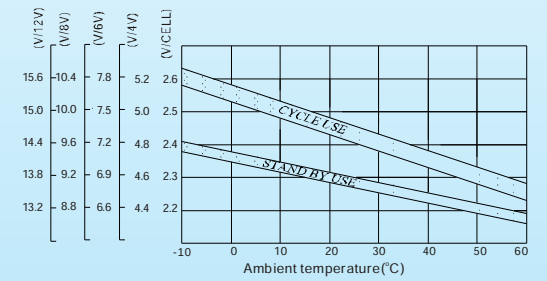
Discharge characteristic (25°C)



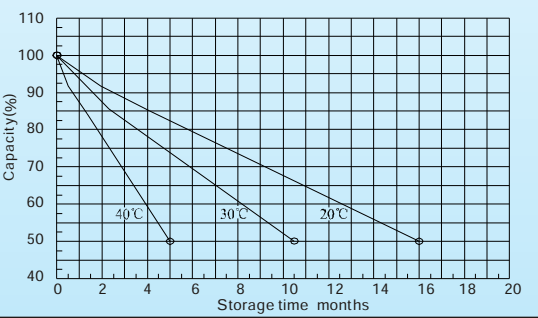
Constant voltage charging characteristic (0.25CA,25°C)



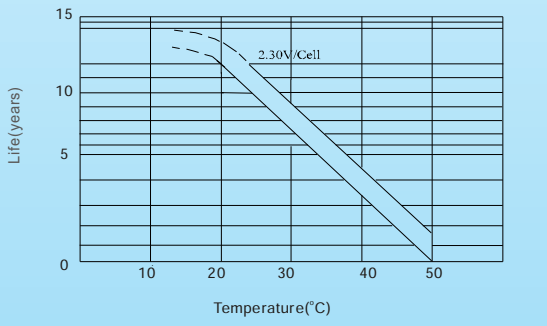
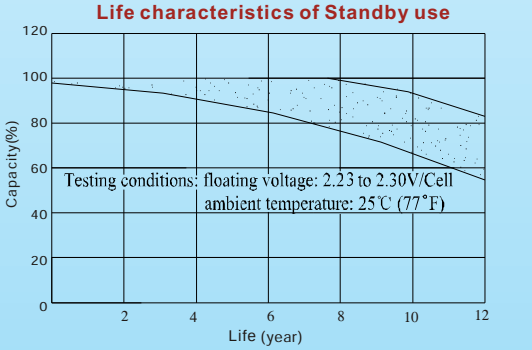
Relationship between charging voltage and temperature



Self-discharge characteristic



Temperature effects on float life



Life characteristics of Standby use