



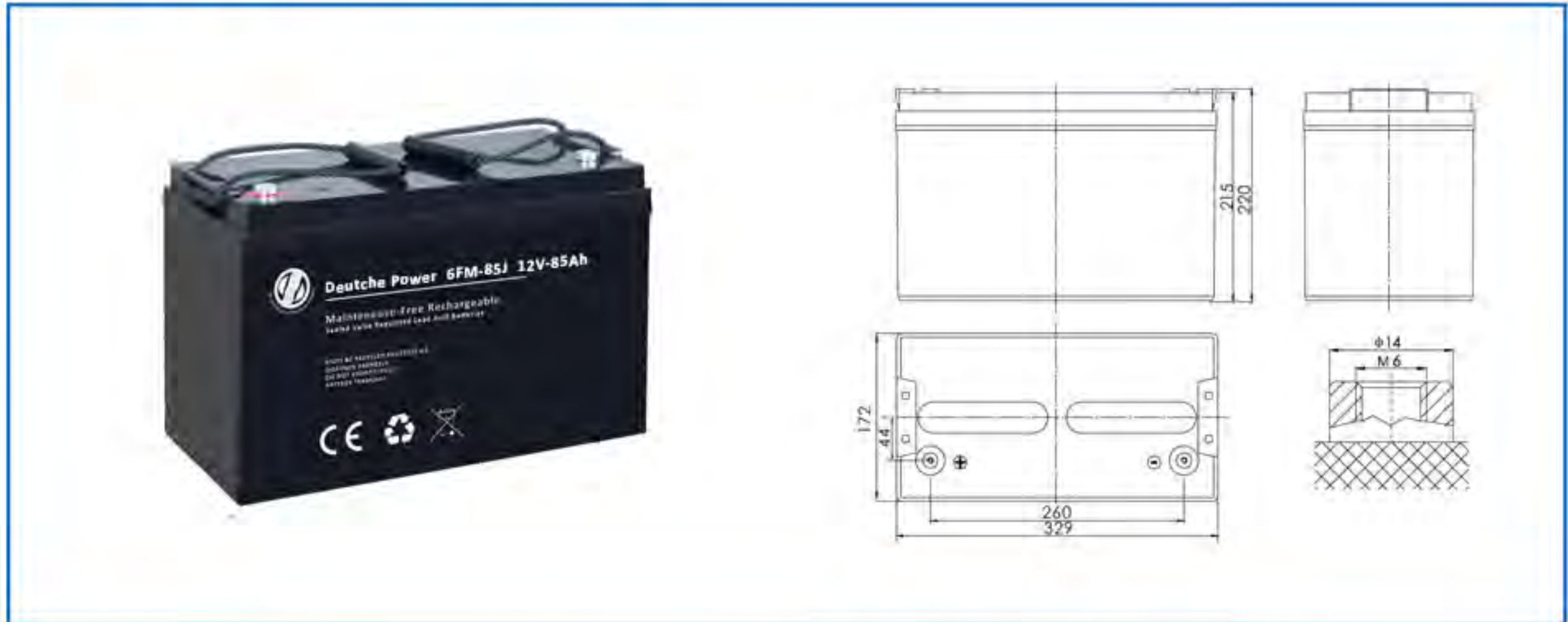
BATTERIES

FM/NPG DEEP CYCLE GEL DESIGN
85Ah~250Ah

**High Efficiency The
Exceptional Leak Proof**

FM/NPG-85

Deep Cycle Gel Design



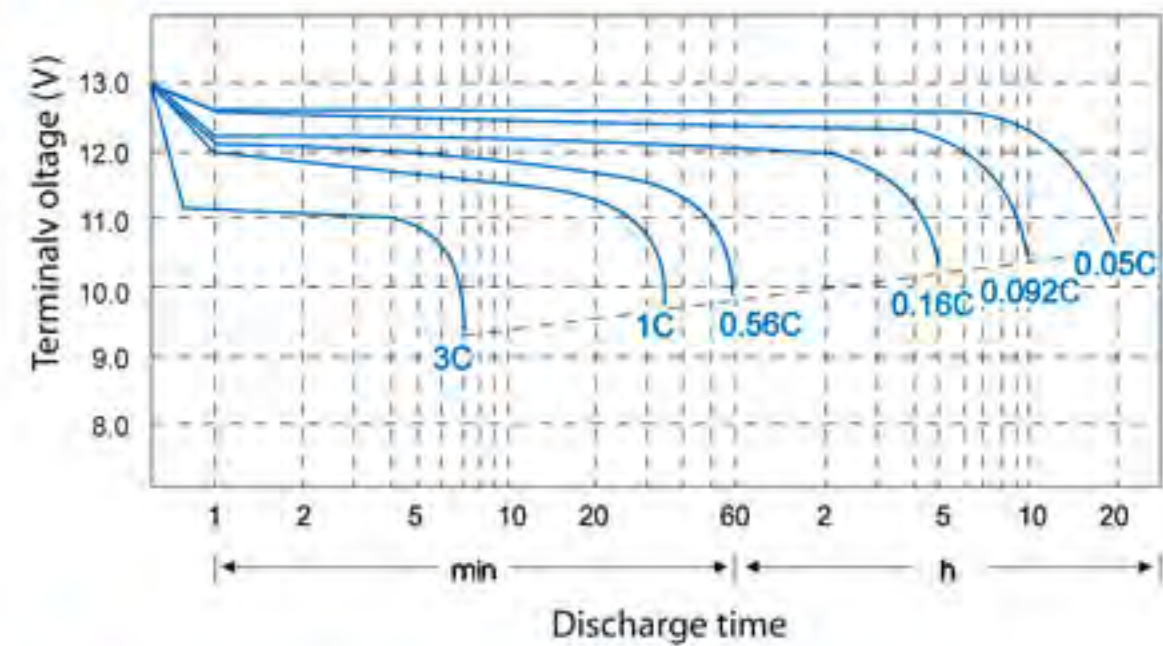
Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		85Ah
Dimensions	Total Height (with terminals)	8.66 inches(220mm)
	Height	8.46 inches(215mm)
	length	12.95 inches(329mm)
	width	6.77 inches(172mm)
Weight		Approx.60.5Pound(27.5kg)

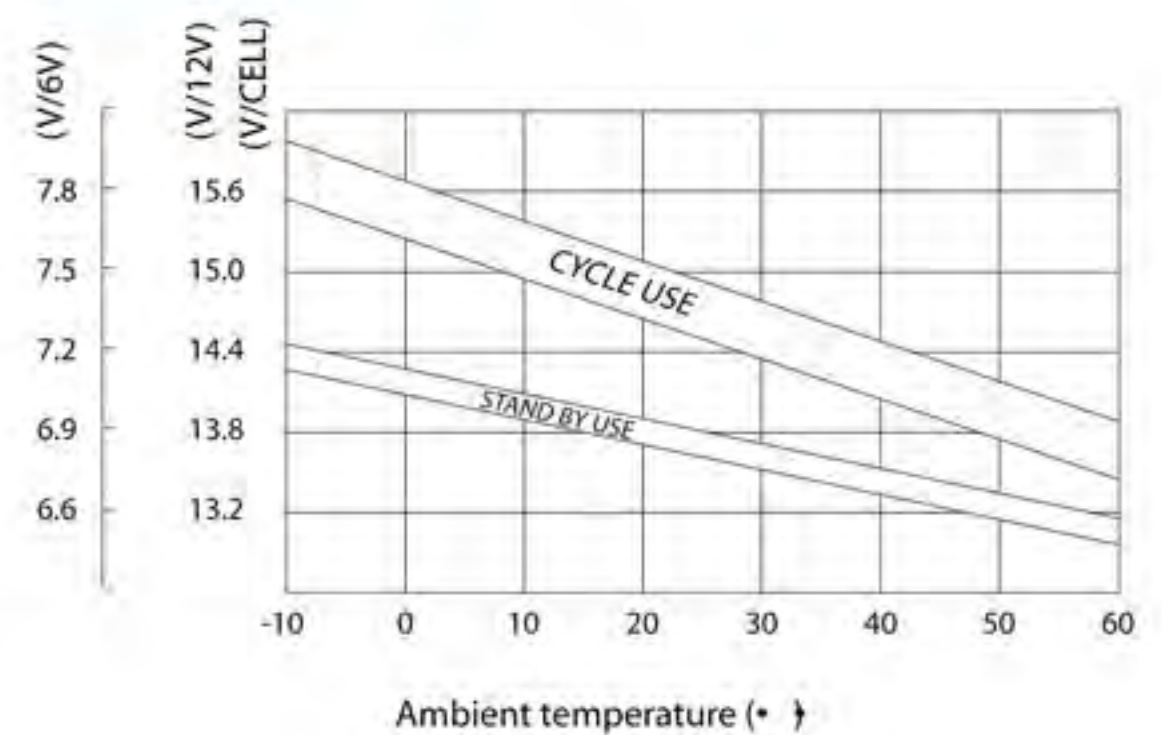
Characteristics

Capacity 77°F (25•)	20 hour rate (4.25A)	85.0Ah
	10 hour rate (7.82A)	78.2Ah
	5 hour rate (13.6A)	68.0Ah
	1 hour rate (51.0A)	51.0Ah
	15 minute Rate (138A)	34.5Ah
Internal Resistance	Full charged Battery 77°F (25•)	5.5mΩ
	104°F (40•)	102%
Capacity affected by Temperature (20hour rate)	77°F (25•)	100%
	32°F (0•)	85%
	5°F (-15•)	65%
Self-Discharge 77°F (25•)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F (25•)	723A(5S)	
Terminal	M1	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 25.5A
		Voltage 14.4~14.7 V / 77°F (25•)
	Float	Voltage 13.5~13.8V / 77°F (25•)

Discharge Curves 77°F(25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

F.V/Time	10Min	15Min	30Min	45Min	1Hour	2Hour	3Hour	5Hour	8Hour	10Hour	12Hour	24Hour
1.65	187.2	144.9	88.0	69.1	46.8	32.6	22.52	15.10	10.70	8.45	7.26	3.74
1.70	176.9	135.5	74.9	65.3	44.8	31.8	21.57	14.58	10.27	8.27	7.04	3.67
1.80	149.3	118.2	67.6	61.7	42.6	30.5	20.36	13.80	9.66	7.94	6.84	3.61

Constant Power Discharge (WATTS PER CELL@25°C)

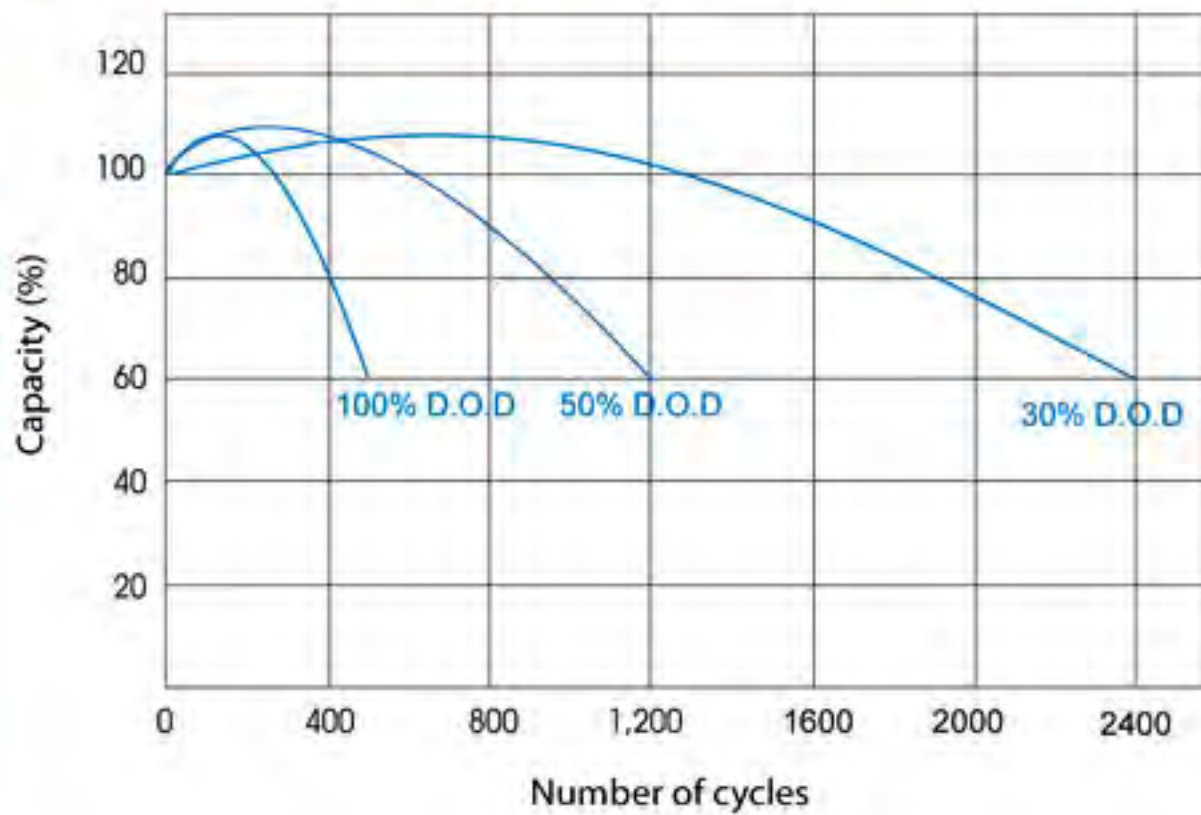
F.V/Time	10Min	15Min	30Min	45Min	1Hour	2Hour	3Hour	5Hour	8Hour	10Hour	12Hour	24H
1.60	338	258	170	126	102.5	60.2	42.1	27.7	18.9	15.63	13.60	7.09
1.65	333	256	165	125	101.5	59.3	41.7	27.5	18.8	15.43	13.50	7.07
1.67	331	253	162	124	100.1	58.7	41.6	27.4	18.6	15.33	13.40	7.05
1.70	327	248	160	123	99.6	58.0	41.4	27.0	18.5	15.02	13.40	7.02
1.75	306	242	148	122	99.4	57.1	40.9	26.6	18.4	14.92	13.40	7.01
1.80	283	225	138	121	98.7	56.3	39.9	26.5	17.9	14.51	12.69	6.96
1.85	235	197	127	109	91.8	55.0	39.5	25.4	17.3	14.41	12.48	6.57

FM/NPG-85

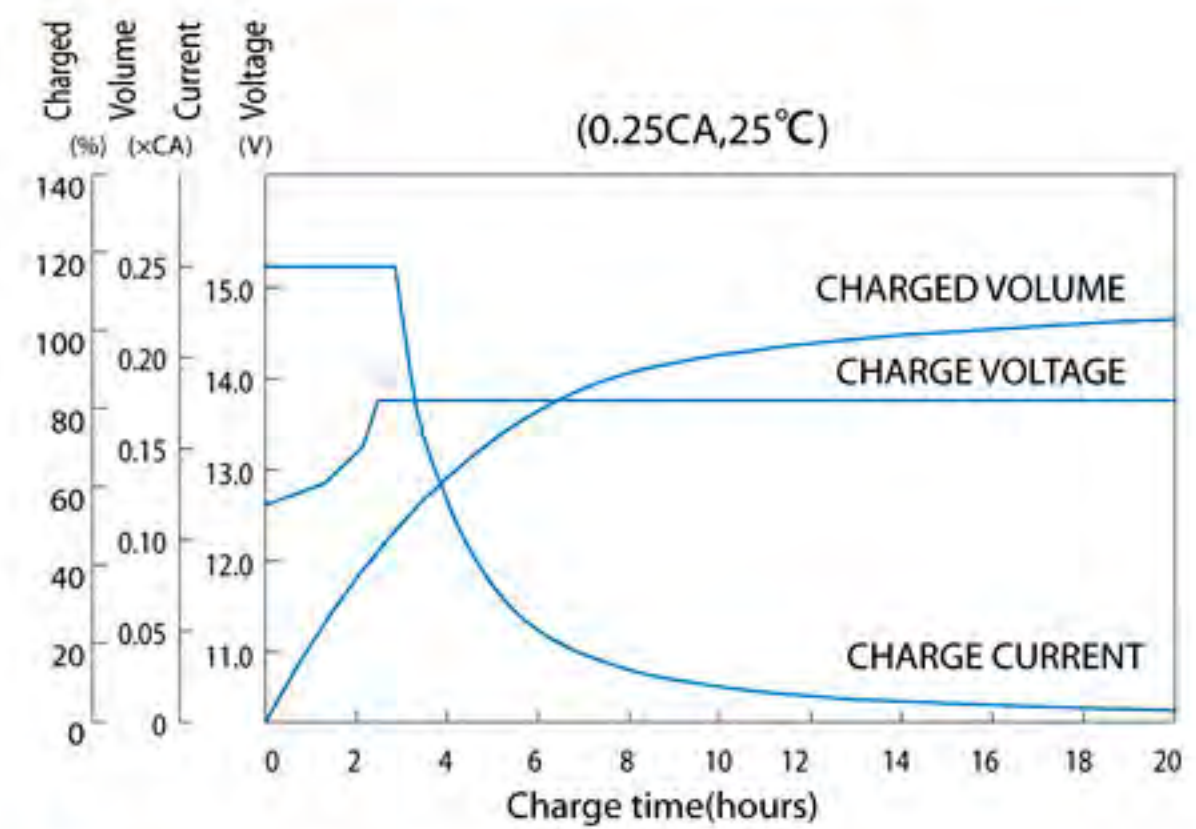
Deep Cycle Gel Design

The operating environment temperature above 40°C should be avoided. After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage.

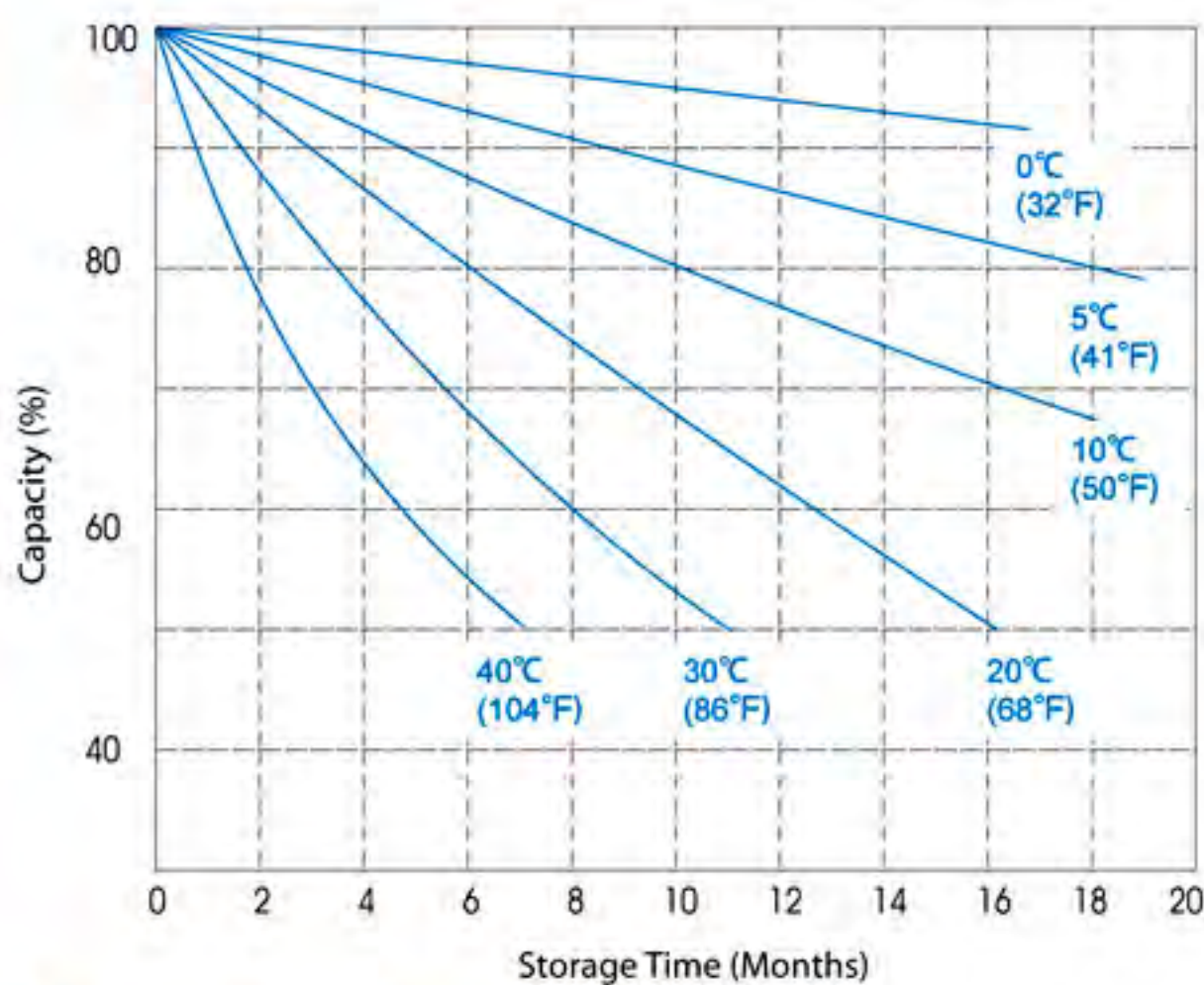
Cycle service life in relation to depth of discharge



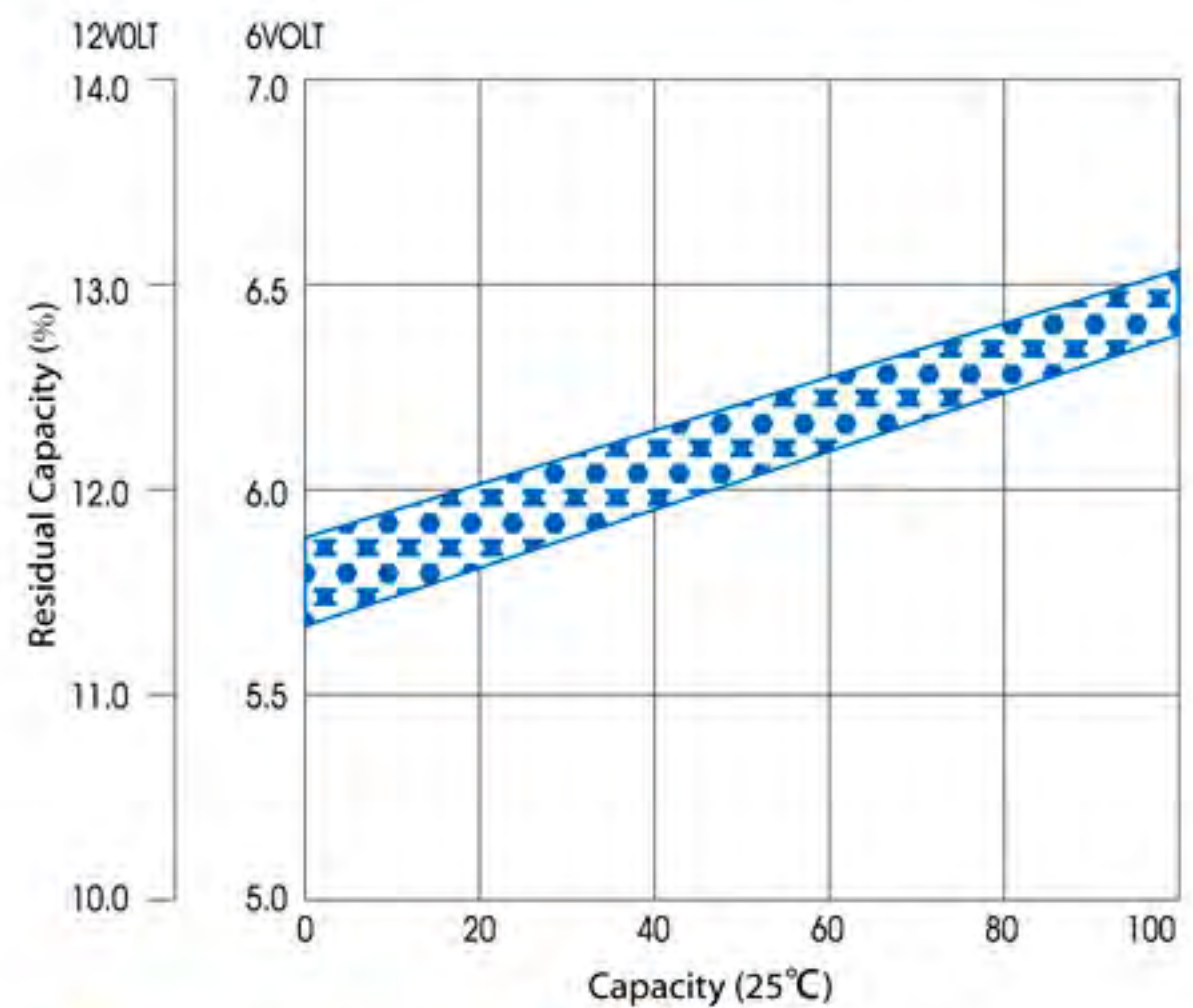
Constant voltage charge characteristic



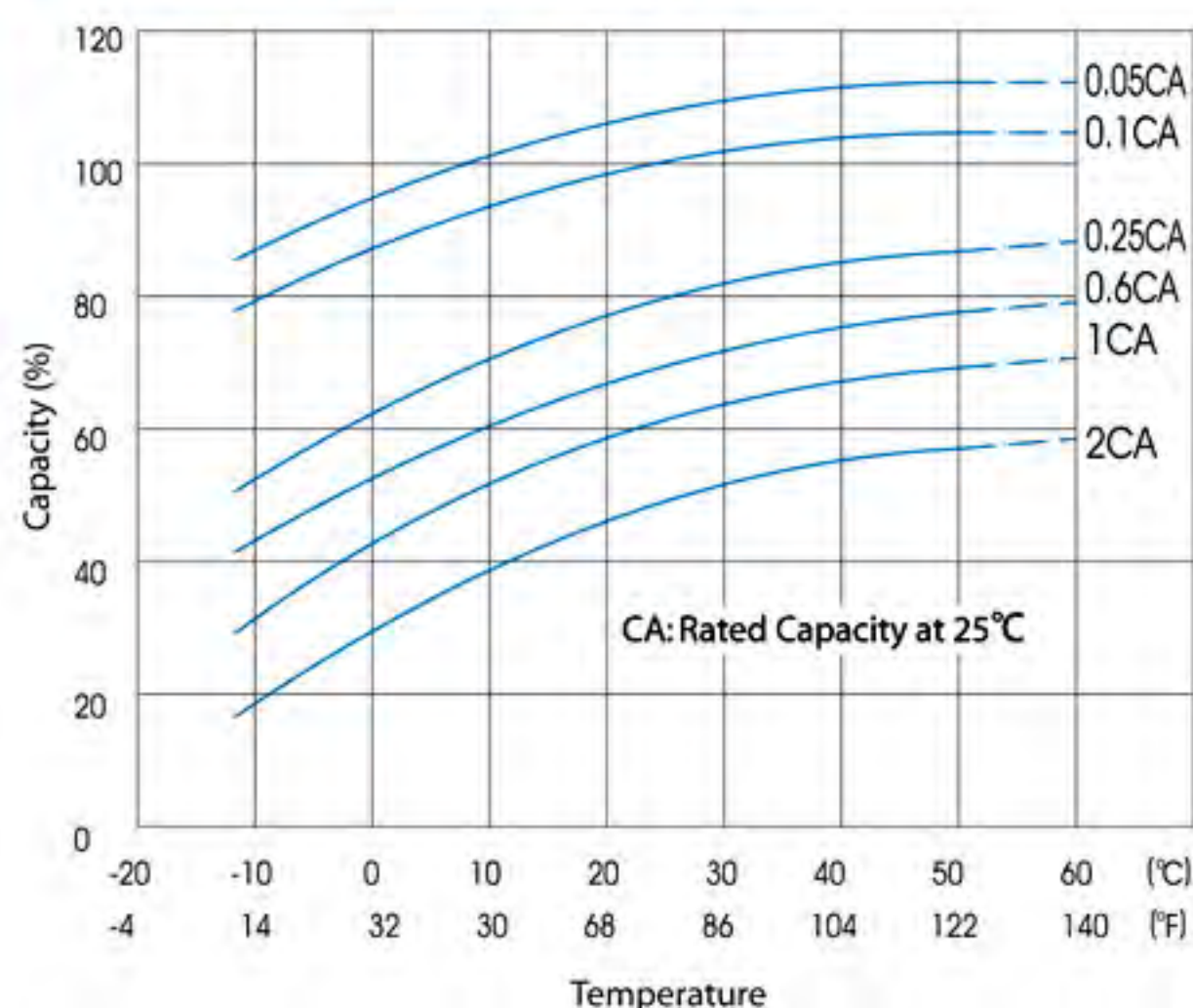
Self-Discharge Characteristics



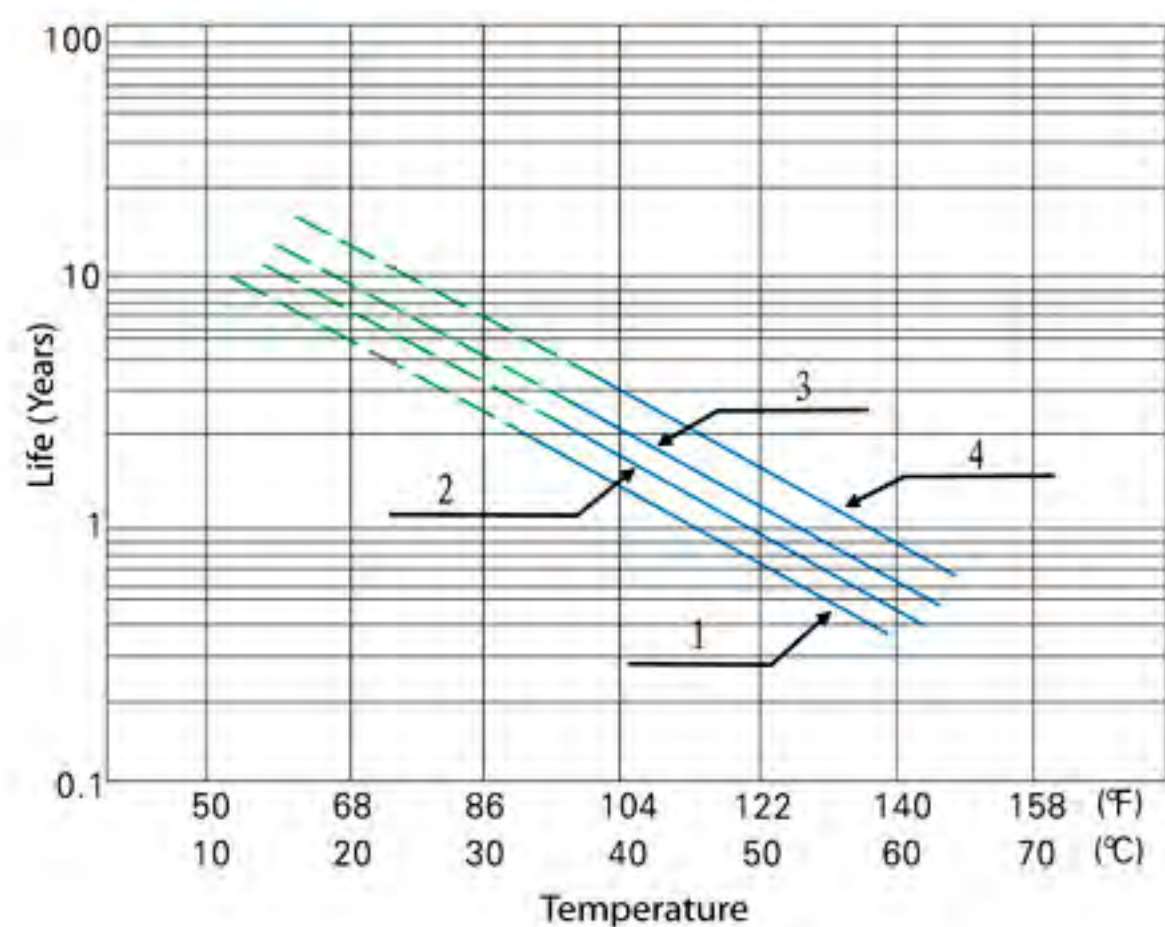
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

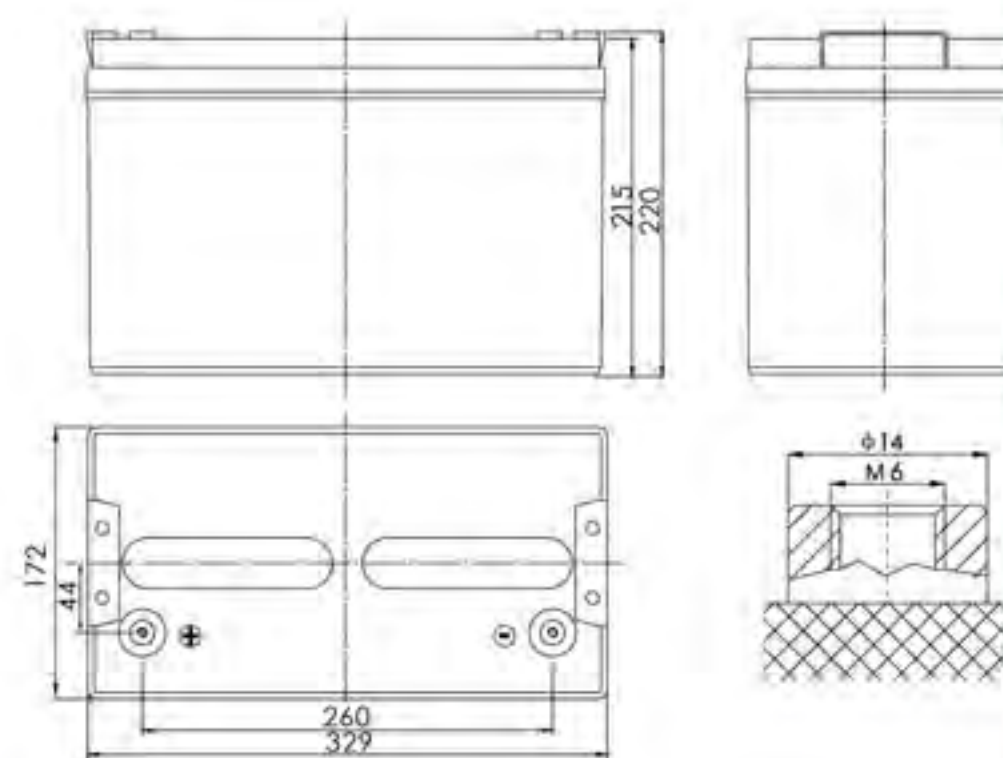


Temperature effects float life



FM/NPG-100

Deep Cycle Gel Design



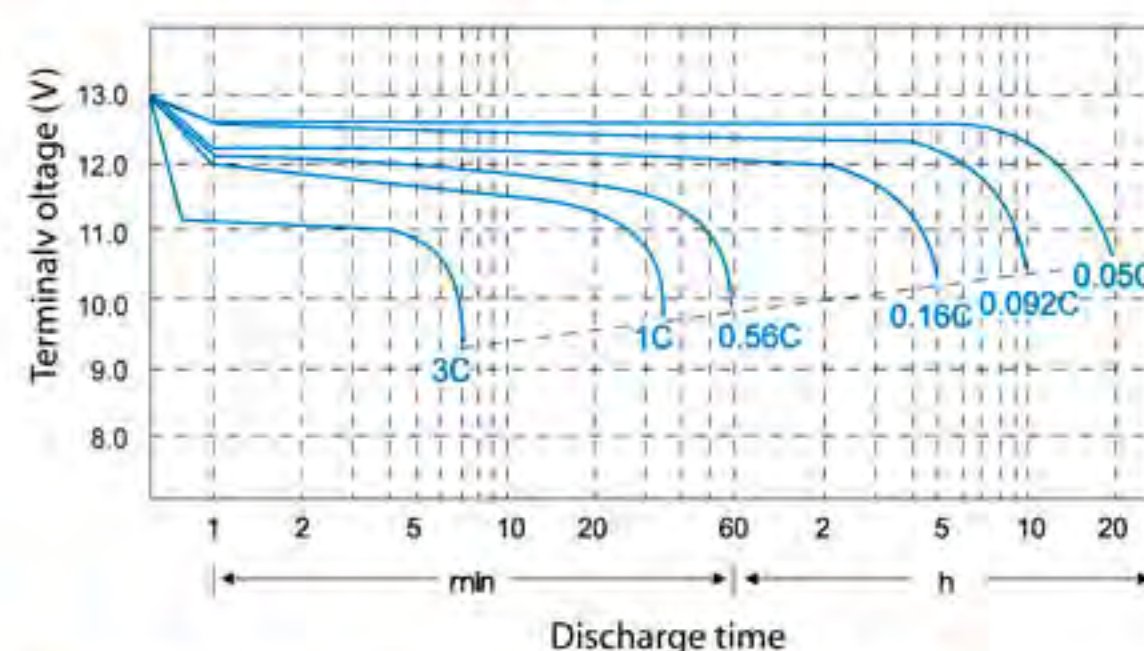
Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		100Ah
Dimensions	Total Height (with terminals)	8.66 inches(220mm)
	Height	8.46 inches(215mm)
	length	12.95 inches(329mm)
	width	6.77 inches(172mm)
Weight		Approx.66.44Pound(30.5kg)

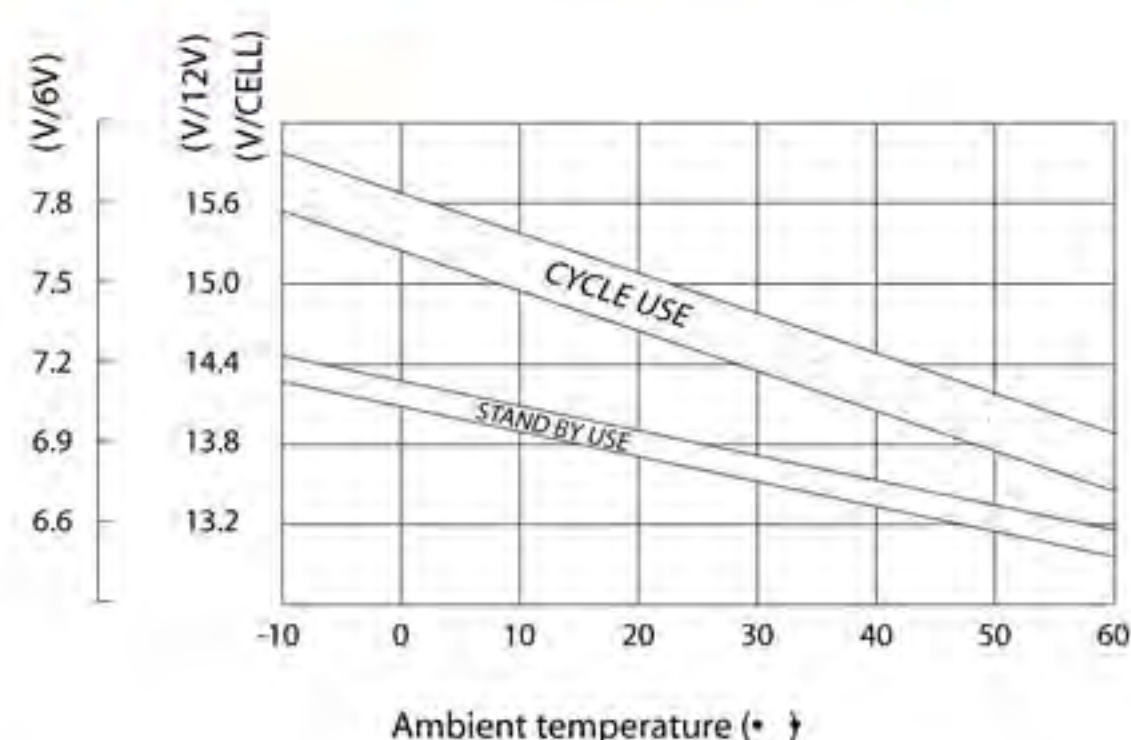
Characteristics

Capacity 77°F(25°)	20 hour rate (5.0A)	100 Ah
	10 hour rate (9.2A)	92 Ah
	5 hour rate (16.0A)	80 Ah
	1 hour rate (60.0A)	60 Ah
	15Minute Rate (164A)	41 Ah
Internal Resistance	Full charged Battery 77°F(25°)	5 M
	104°F(40°)	102%
Capacity affected by Temperature (20hour rate)	77°F(25°)	100%
	32°F(0°)	85%
	5°F(-15°)	65%
Self-Discharge 77°F(25°)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F(25°)	800A(5S)	
Terminal	M2	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 30A Voltage 14.4~14.7V / 77°F(25°)
	Float	Voltage 13.5~13.8V / 77°F(25°)

Discharge Curves 77°F(25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
1.65	311	217	168	102	80.1	54.2	37.8	26.1	17.5	9.80	4.33
1.70	285	205	157	86.8	75.7	51.9	36.9	25.0	16.9	9.59	4.25
1.80	227	173	137	78.4	71.5	49.4	35.3	23.6	16.0	9.20	4.18

Constant Power Discharge (WATTS PER CELL@25°C)

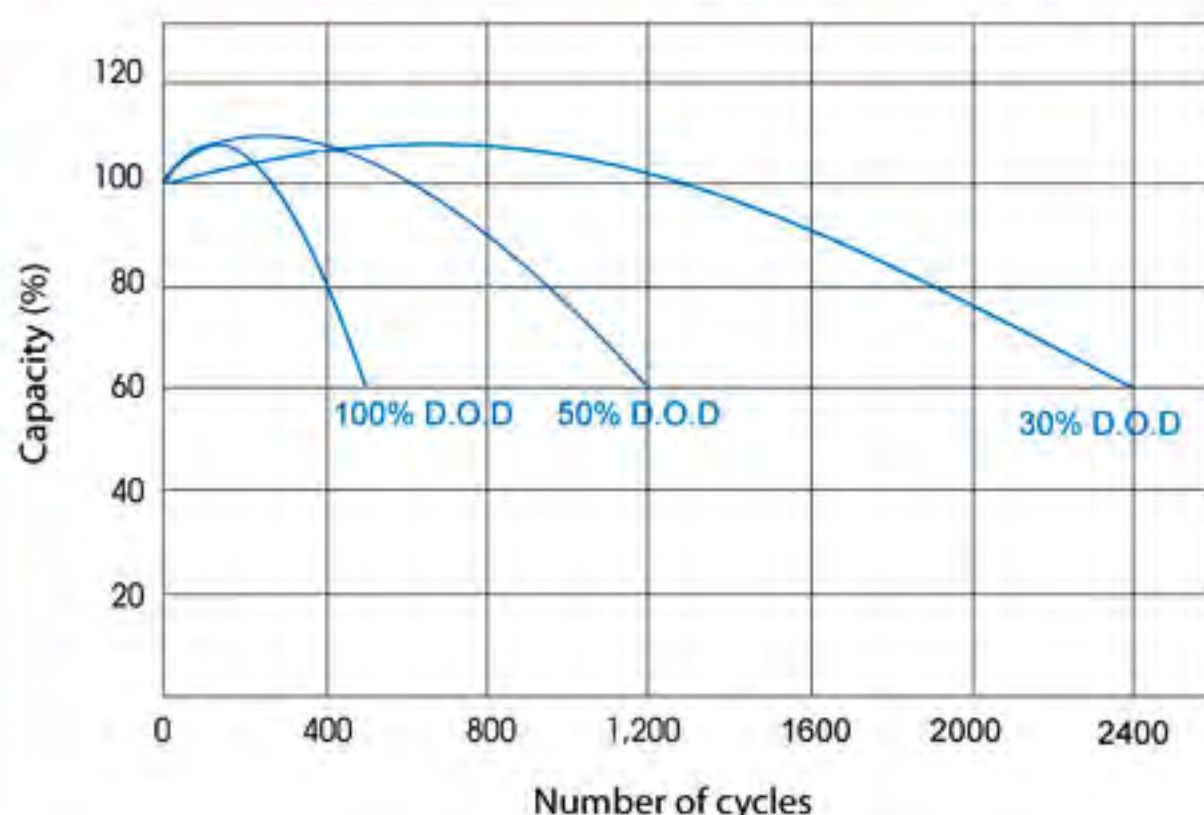
End of voltage (V)	571	394	307	191	148	119	70.0	49.1	32.4	18.3	8.11
1.60	571	394	307	191	148	119	70.0	49.1	32.4	18.3	8.11
1.65	542	389	304	185	146	115	69.1	49.0	32.2	18.2	8.10
1.67	540	386	302	173	144	114	68.8	48.6	31.9	18.2	8.09
1.70	506	379	291	162	142	111	68.4	47.7	31.6	18.1	8.07
1.75	461	346	274	156	141	108	67.9	46.4	31.0	18.0	8.06
1.80	423	330	264	151	138	107	66.6	46.1	30.5	17.7	8.04
1.85	339	273	231	141	127	104	64.2	45.0	29.5	16.9	7.62

FM/NPG-100

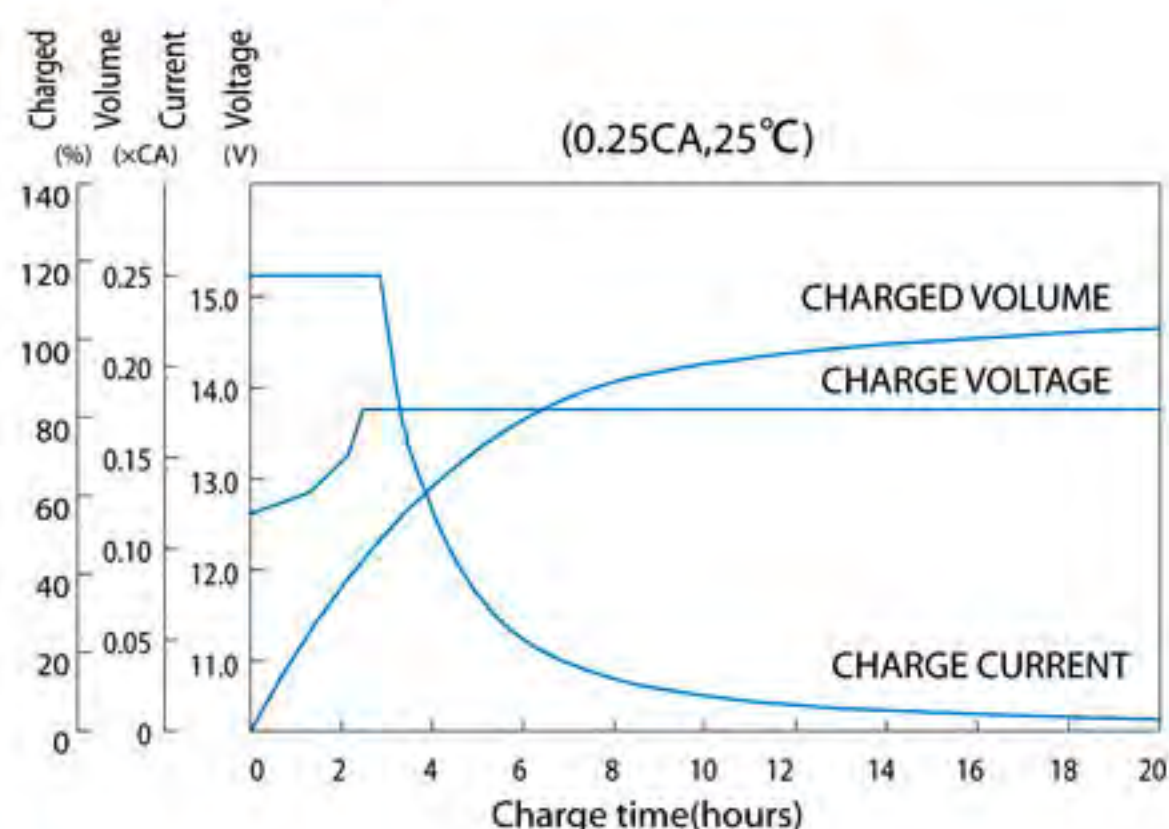
Deep Cycle Gel Design

The operating environment temperature above 40°C should be avoided. After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage.

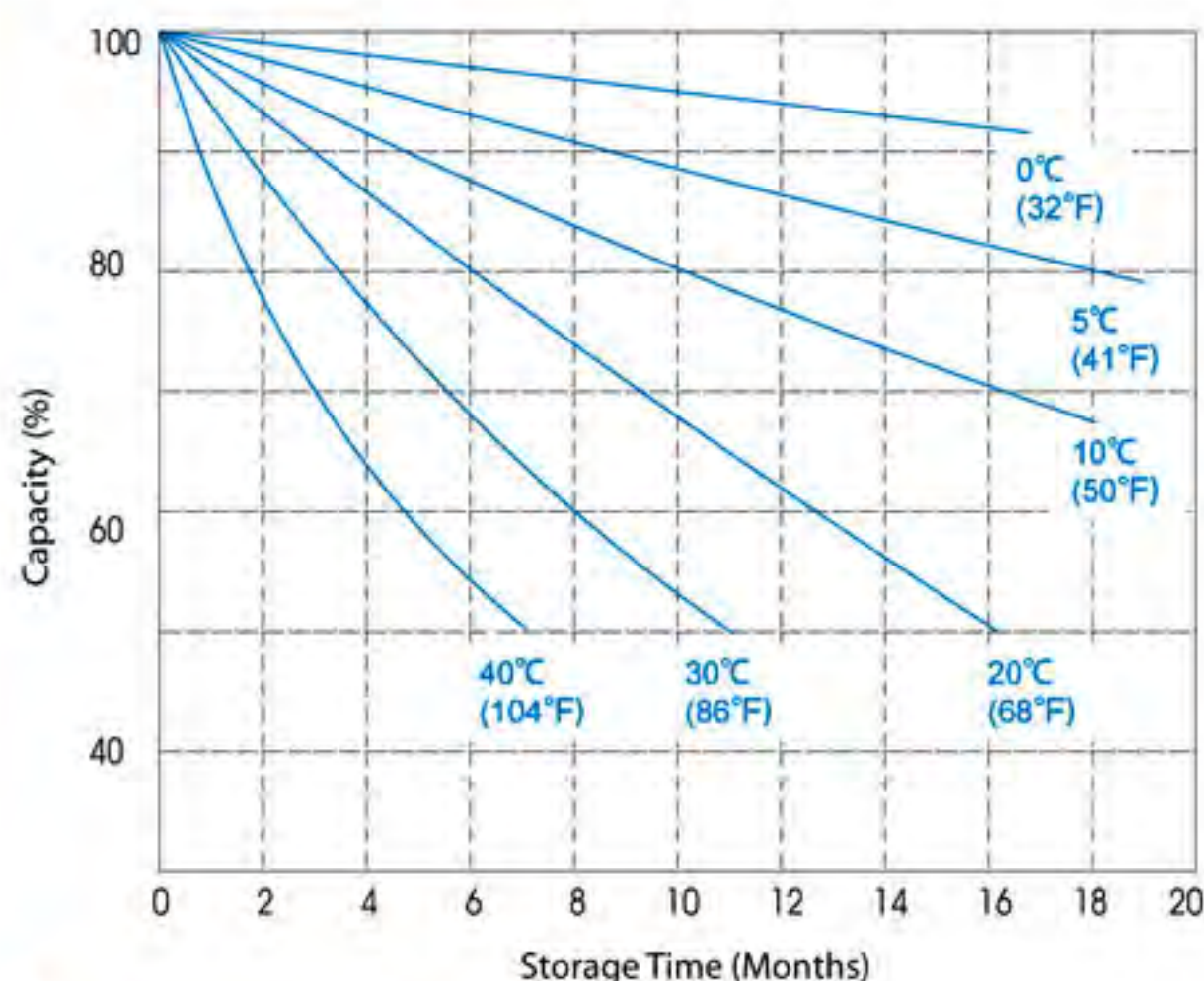
Cycle service life in relation to depth of discharge



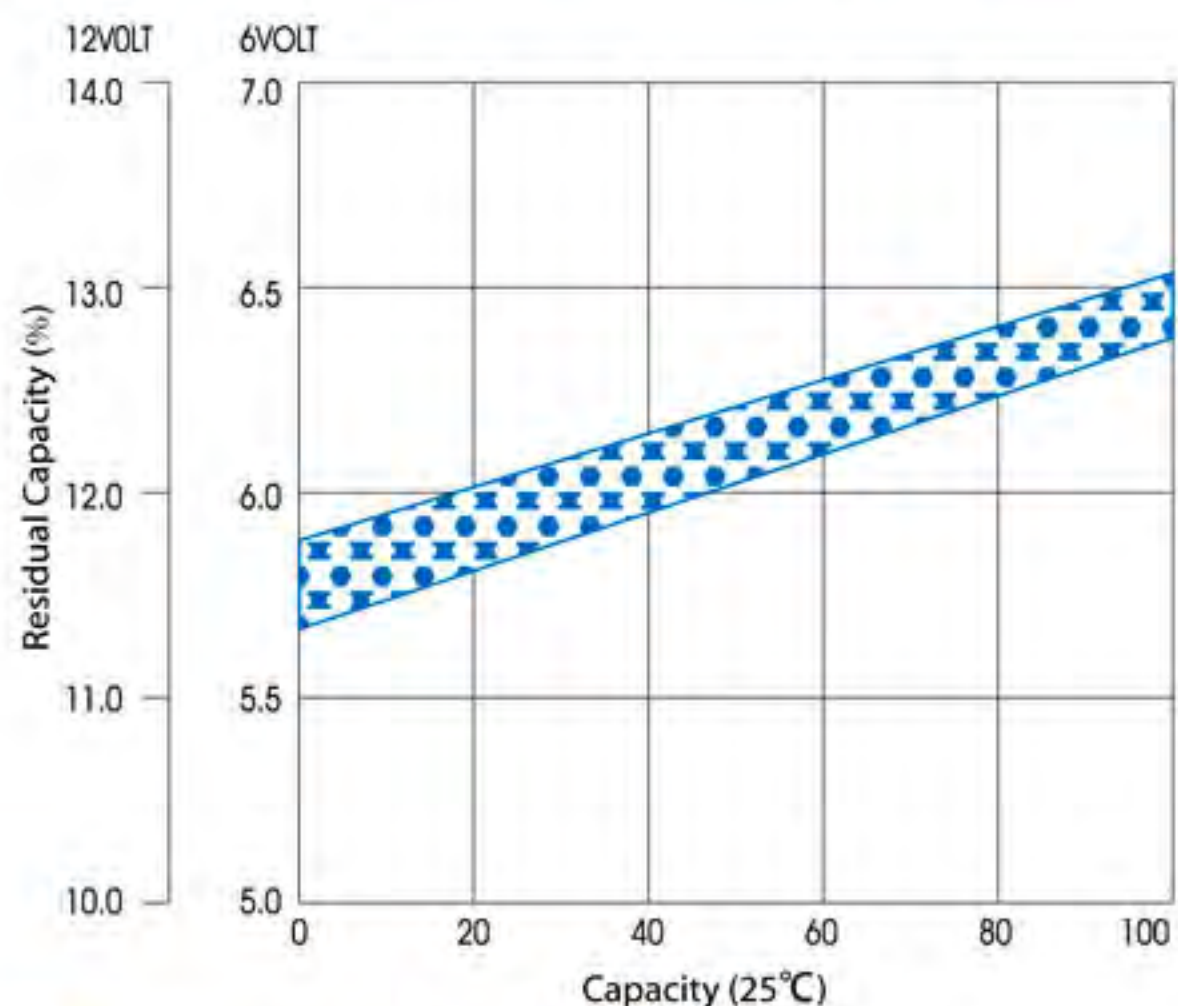
Constant voltage charge characteristic



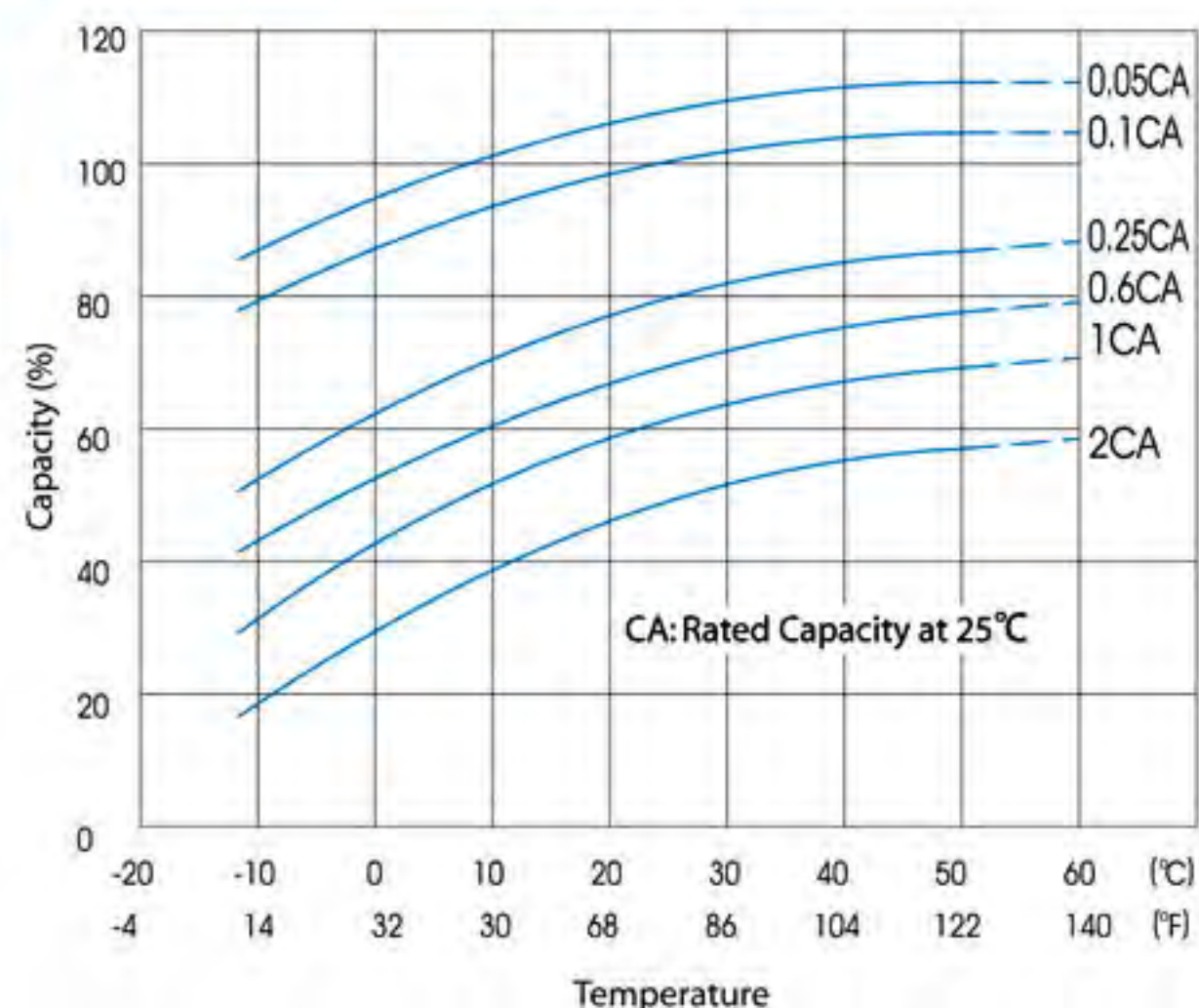
Self-Discharge Characteristics



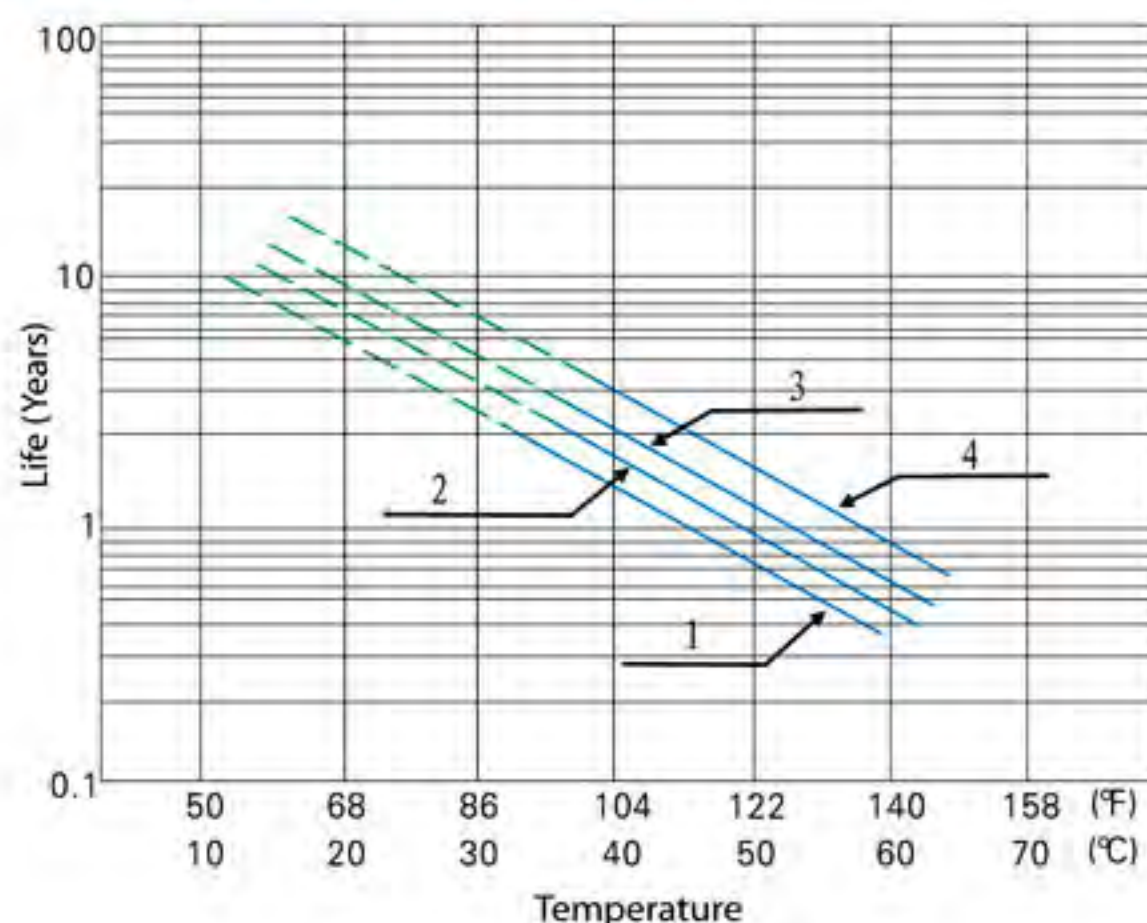
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

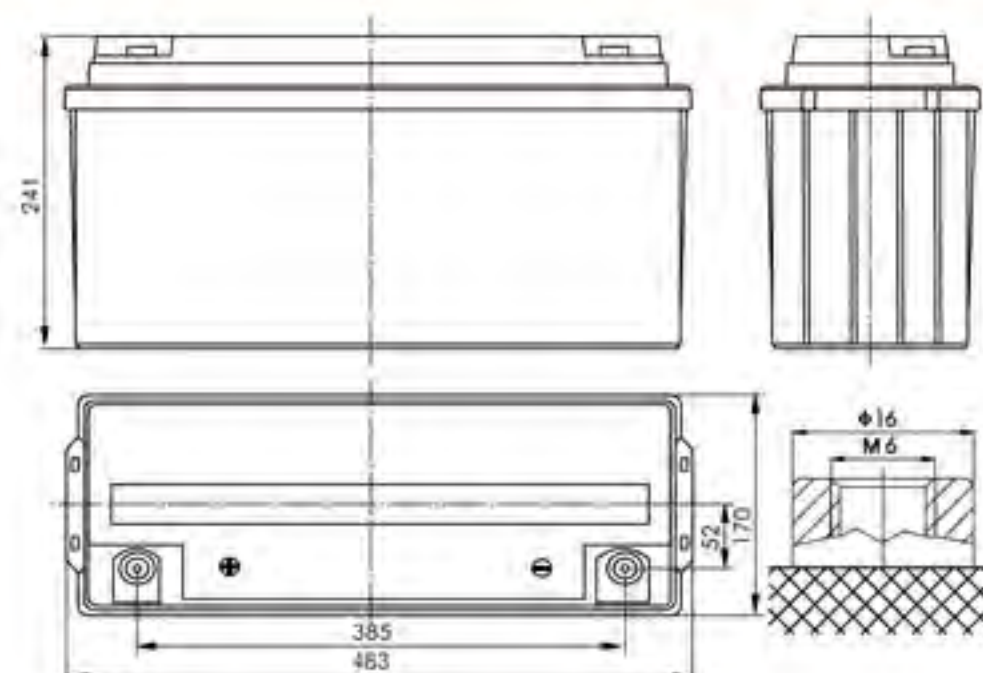


Temperature effects float life



FM/NPG-125

Deep Cycle Gel Design



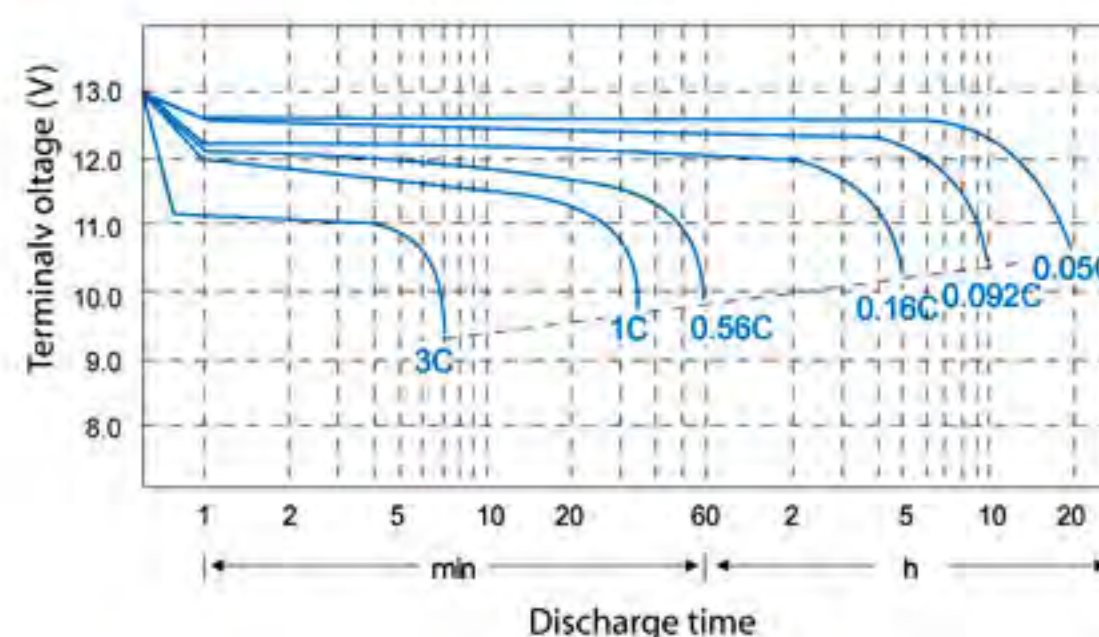
Specifications

Nominal Voltage		12V
Rated Capacity(20 hour rate)		125Ah
Dimensions	Total Height (with terminals)	9.49inches (241mm)
	Height	9.49inches (241mm)
	Length	19.02inches (483mm)
	Width	6.69inches (170mm)
Weight		Approx. 91.3Pound (41.5kg)

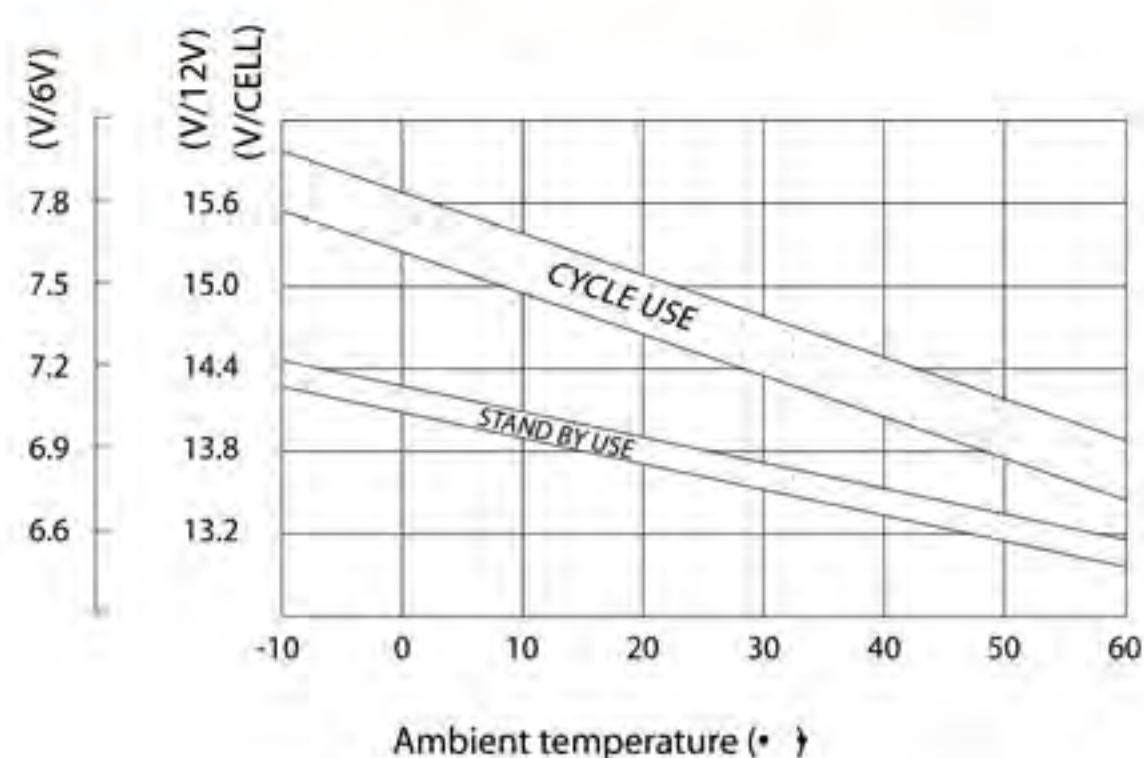
Characteristics

Capacity 77°F(25°C)	20 hour rate (6.25A)	125Ah
	10 hour rate (11.5A)	115Ah
	5 hour rate (20.0A)	100Ah
	1 hour rate (75.0A)	75Ah
	15 minute Rate (205A)	51.2Ah
Internal Resistance	Full charged Battery 77°F(25°C)	3.0mΩ
Capacity affected by Temperature (20 hour rate)	104°F(40°C)	102%
	77°F(25°C)	100%
	32°F(0°C)	85%
	5°F(-15°C)	65%
Self-Discharge 77°F(20°C)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F(25°C)	1000A(5S)	
Terminal	M2	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 37.5A Voltage 14.4~14.7V/77°F(25°C)
	Float	Voltage 13.5~13.8V/77°F(25°C)

Discharge Curves 77°F(25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

F.V/Time	10Min	15Min	30Min	45Min	1Hour	2Hour	3Hour	5Hour	8Hour	10Hour	12Hour	24Hour
1.65	271	210	128	100	67.8	47.3	32.6	21.9	15.5	12.3	10.5	5.42
1.70	256	196	109	94.7	65.0	46.1	31.3	21.1	14.9	12.0	10.2	5.32
1.80	216	171	98.0	89.4	61.8	44.1	29.5	20.0	14.0	11.5	9.92	5.22

Constant Power Discharge (WATTS PER CELL@25°C)

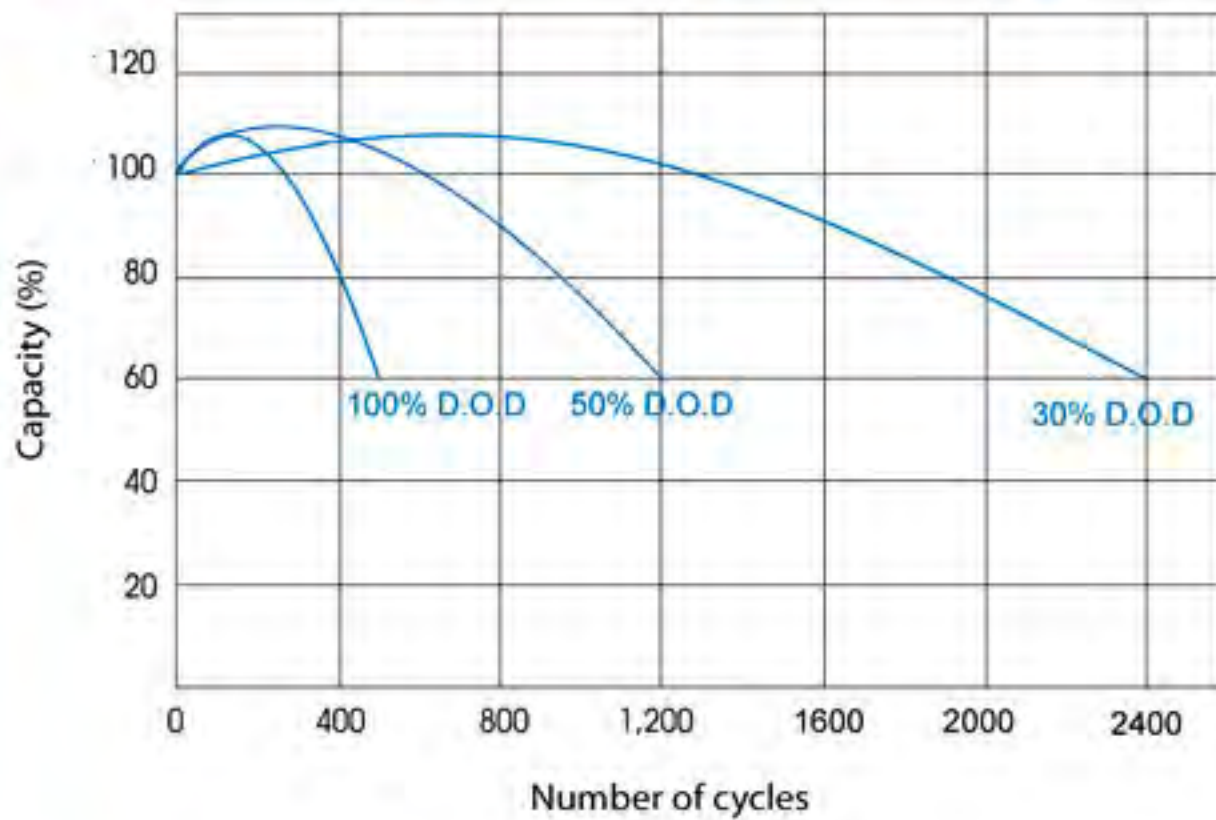
F.V/Time	10Min	15Min	30Min	45Min	1Hour	2Hour	3Hour	5Hour	8Hour	10Hour	12Hour	24Hour
1.60	486	378	238	183	148	88.3	61.4	40.5	27.9	23.2	19.8	10.2
1.65	480	376	235	181	146	86.7	60.0	40.1	27.8	23.0	19.7	10.1
1.67	476	375	230	178	143	85.8	59.4	39.8	27.8	22.9	19.6	10.0
1.70	467	368	206	175	140	85.0	58.7	39.3	27.6	22.7	19.4	9.92
1.75	433	343	195	173	135	84.2	58.0	38.8	27.1	22.5	19.3	9.83
1.80	406	326	178	171	133	83.3	57.25	37.7	27.1	22.1	19.1	9.67
1.85	337	285	173	156	123	79.6	56.5	36.7	24.9	21.0	19.8	9.50

FM/NPG-125

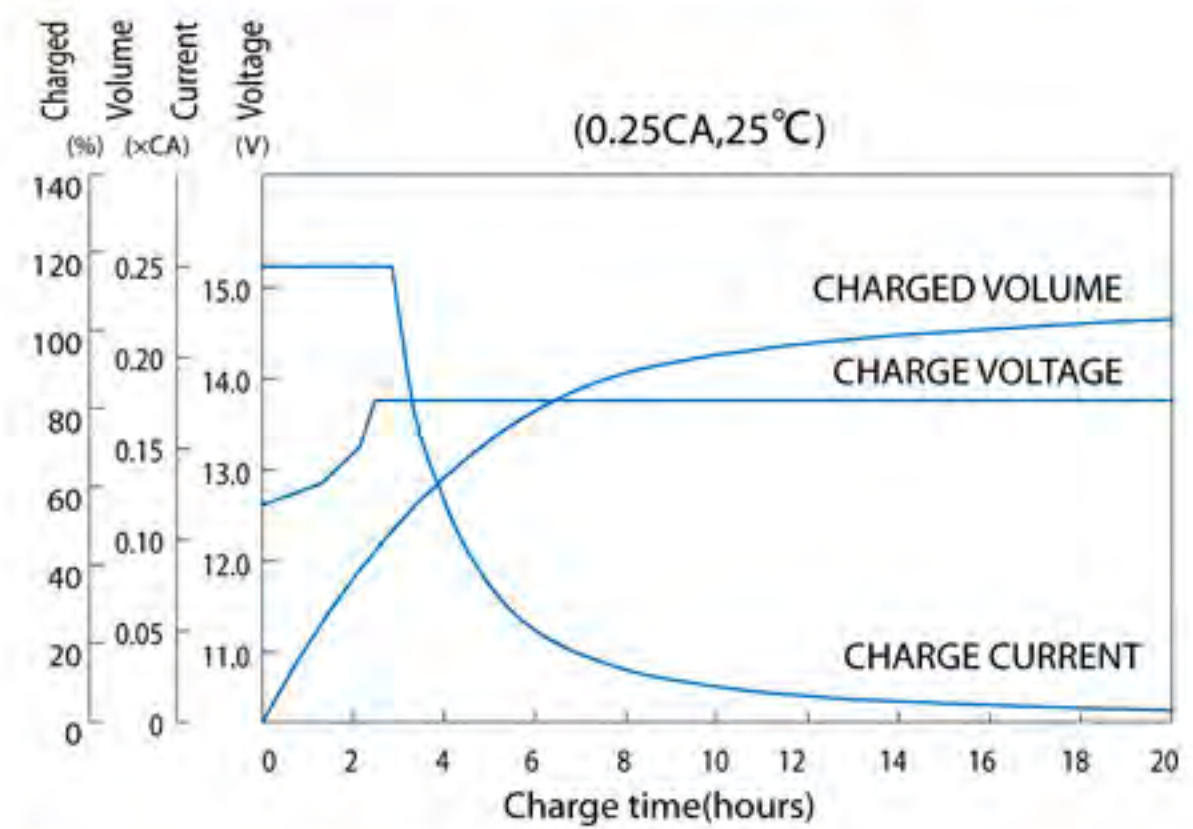
Deep Cycle Gel Design

The operating environment temperature above 40°C should be avoided ,After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage.

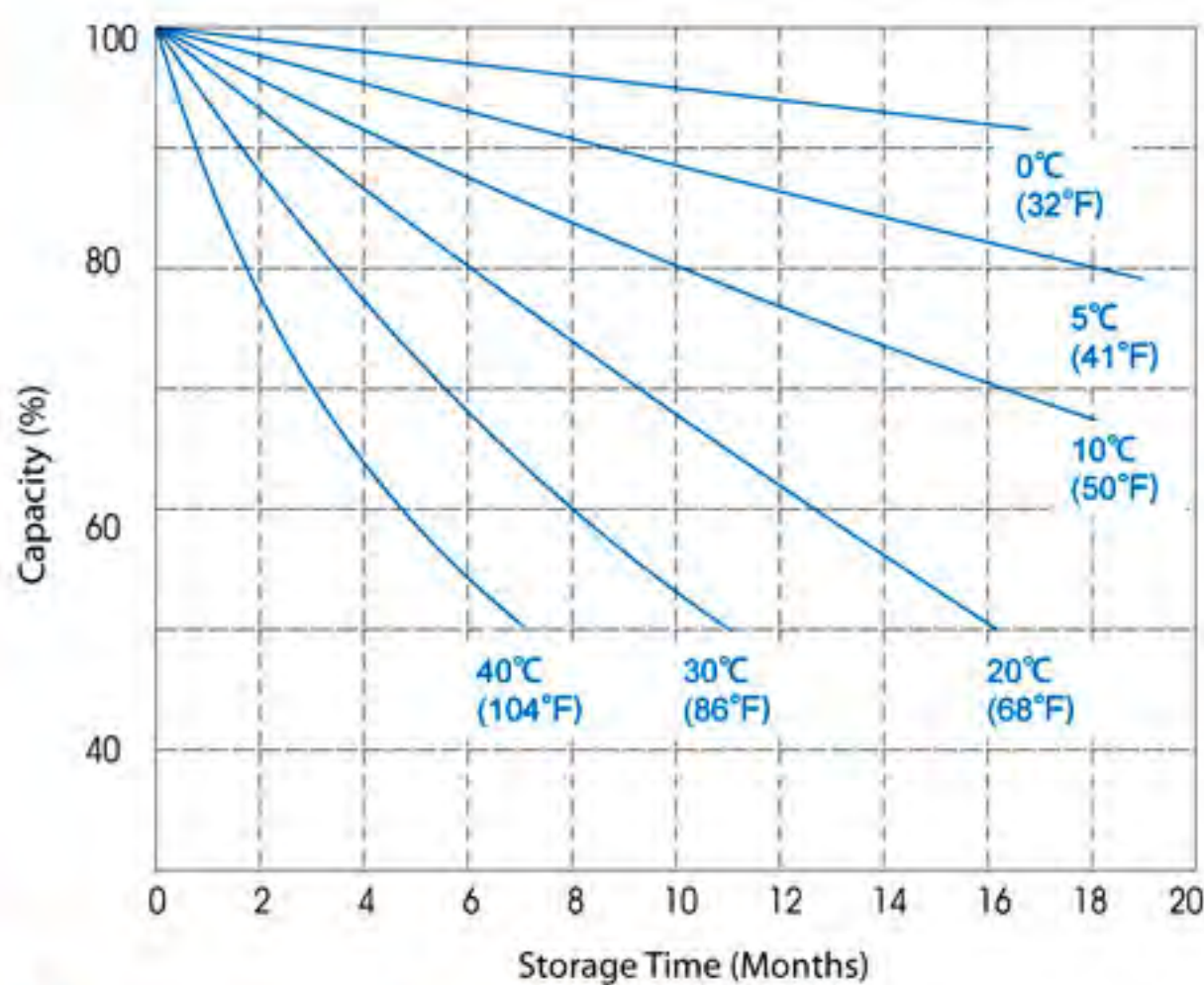
Cycle service life in relation to depth of discharge



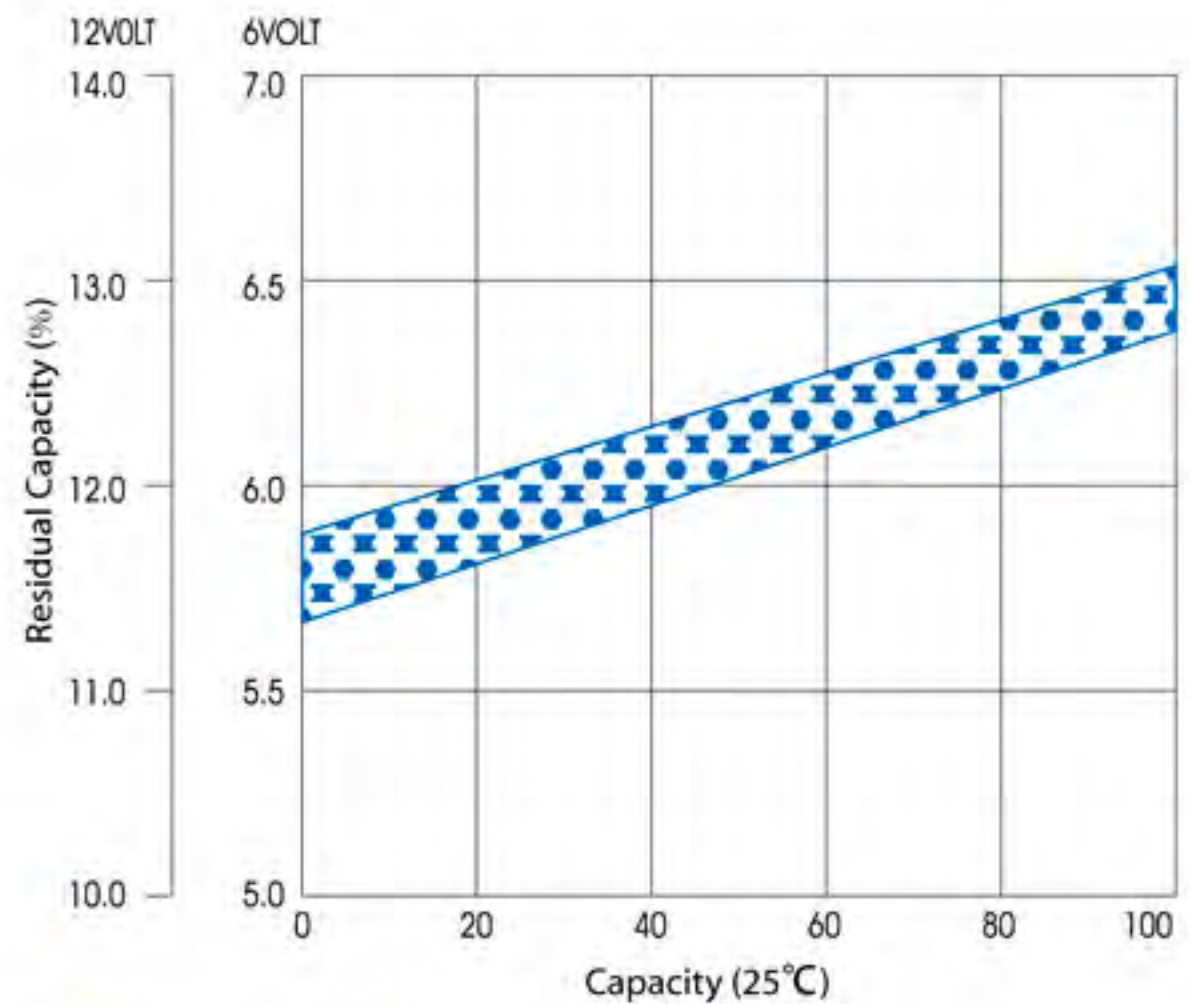
Constant voltage charge characteristic



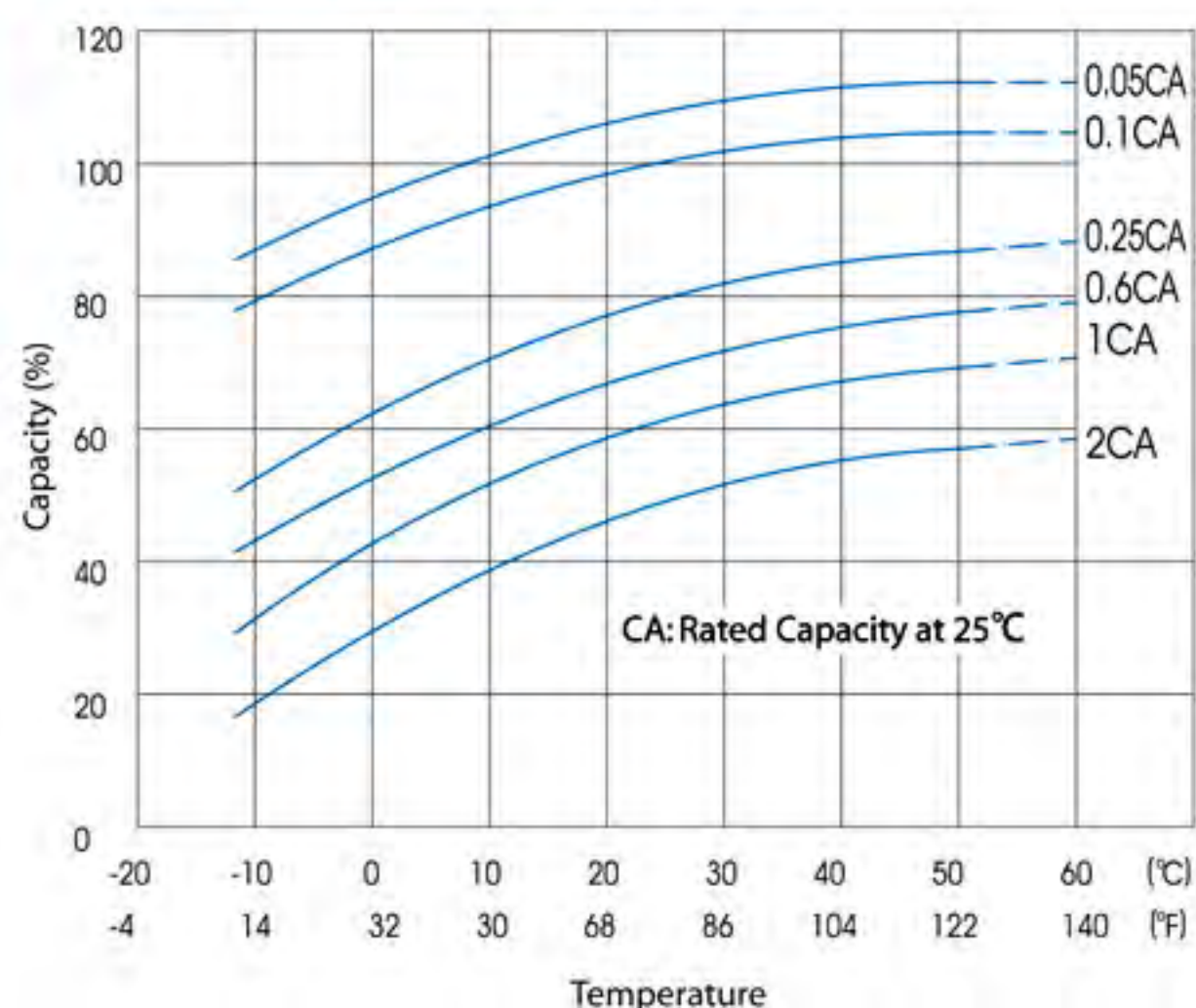
Self-Discharge Characteristics



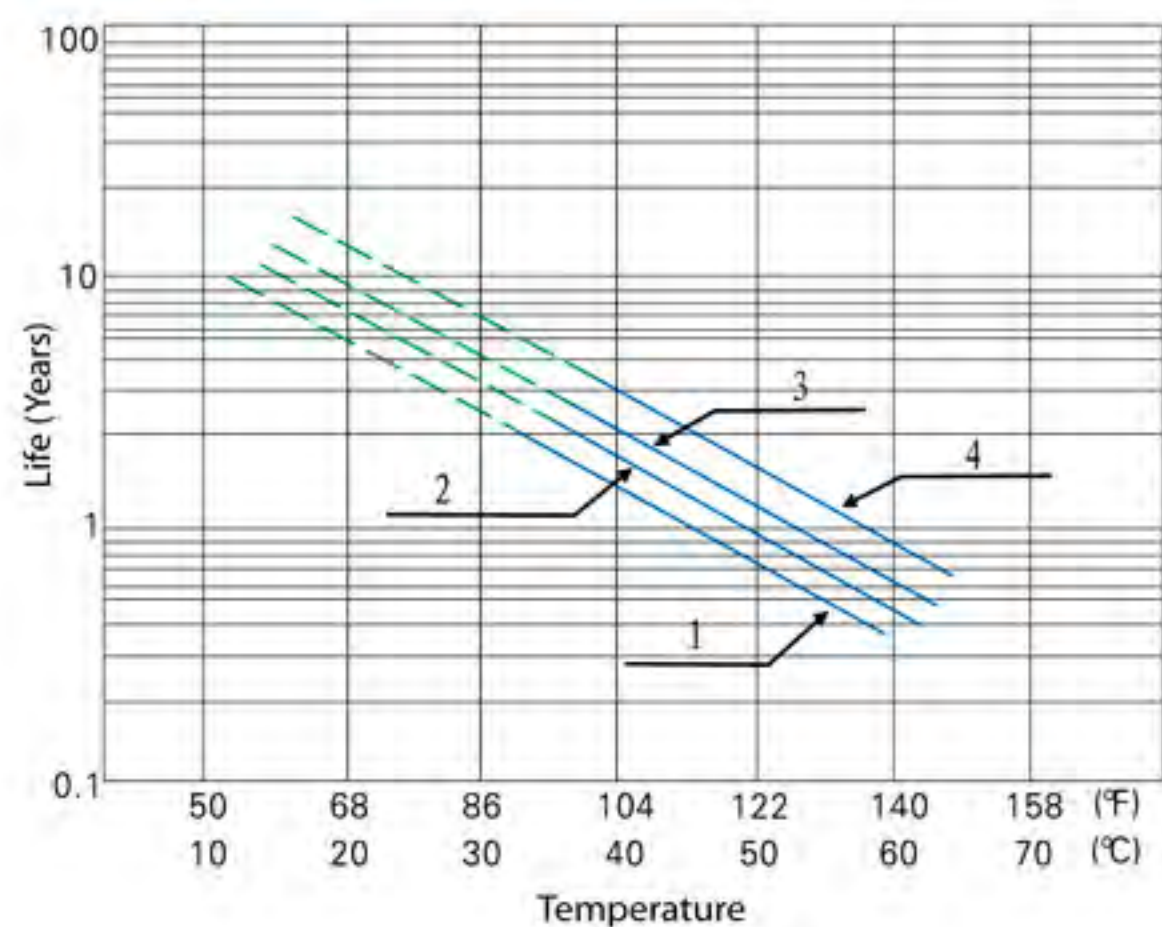
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

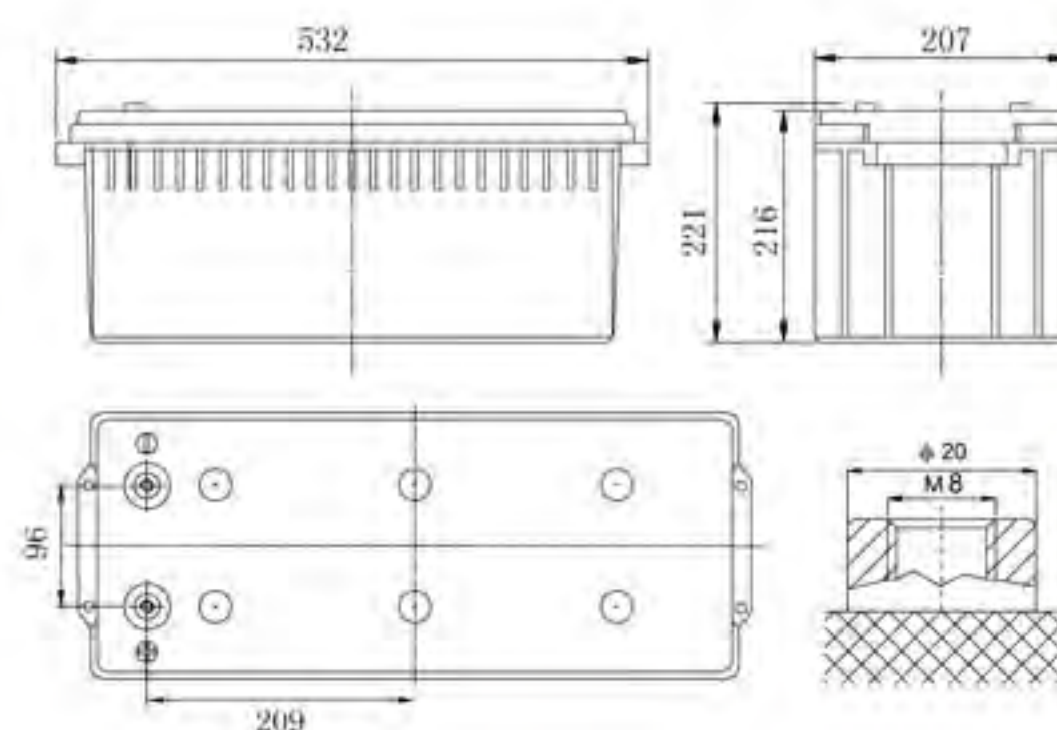


Temperature effects float life



FM/NPG-150

Deep Cycle Gel Design



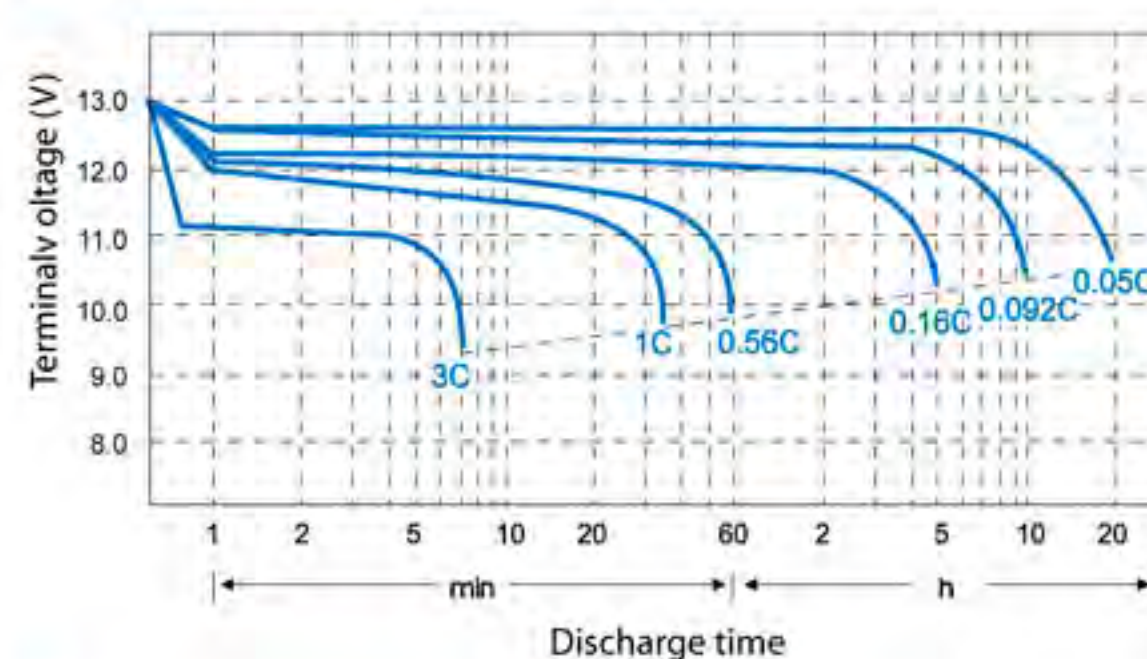
Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		150Ah
Dimensions	Total Height (with terminals)	8.70 inches(221mm)
	Height	8.50 inches(216mm)
	length	20.94 inches(532mm)
	width	8.15 inches(207mm)
Weight		Approx.108.68 Pound(49.4kg)

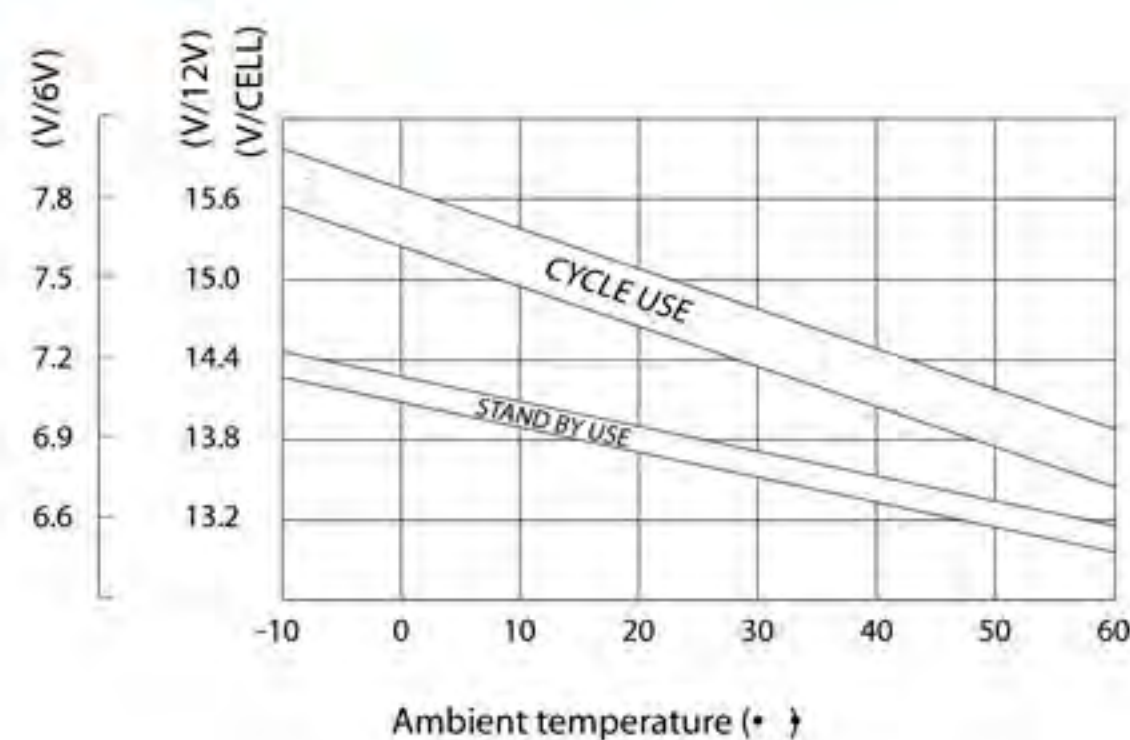
Characteristics

Capacity 77°F (25•)	20 hour rate (7.5A)	150 Ah
	10 hour rate (13.8A)	138 Ah
	5 hour rate (24.0A)	120 Ah
	1 hour rate (90.0A)	90 Ah
	15 Minute Rate (246A)	61.5 Ah
Internal Resistance	Full charged Battery 77°F (25•)	3 M
	104°F (40•)	102%
Capacity affected by Temperature (20hour rate)	77°F (25•)	100%
	32°F (0•)	85%
	5°F (-15•)	65%
Self-Discharge 77°F (25•)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F (25•)	1000A(5S)	
Terminal	M5	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 30A Voltage 14.4~14.7 V / 77°F (25•)
	Float	Voltage 13.5~13.8 V / 77°F (25•)

Discharge Curves 77°F(25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
1.65	461	322	249	155	119	81.7	56.8	38.9	26.1	14.9	6.74
1.70	426	303	239	132	112	77.7	55.0	37.5	25.2	14.5	6.52
1.80	336	255	203	111	106	72.6	53.0	35.8	23.7	13.8	6.28

Constant Power Discharge (WATTS PER CELL@25°C)

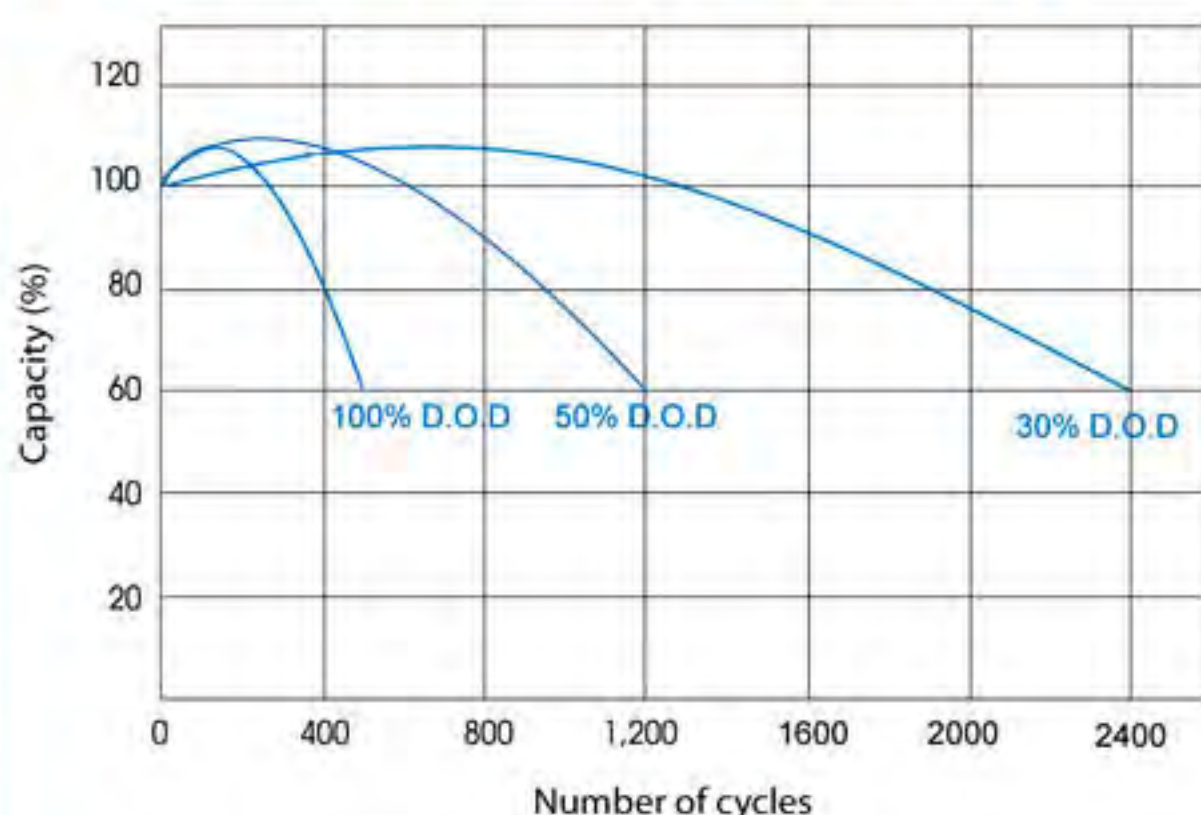
Disch. rate (W/CELL)	5min	10min	15min	30min	45min	1h	2h	3h	5h	10h	24h
1.60	821	583	454	286	219	178	106	73.7	48.6	27.8	12.2
1.65	804	576	451	282	217	175	104	72.0	48.1	27.6	12.1
1.67	801	571	450	276	213	172	103	71.3	47.8	27.5	12.0
1.70	757	560	441	247	210	168	102	70.4	47.1	27.2	11.9
1.75	691	519	411	234	208	162	101	69.6	46.5	27.0	11.8
1.80	626	487	391	214	205	159	100	68.7	45.2	26.5	11.6
1.85	501	404	342	208	188	148	95.5	67.8	44.0	25.2	11.4

FM/NPG-150

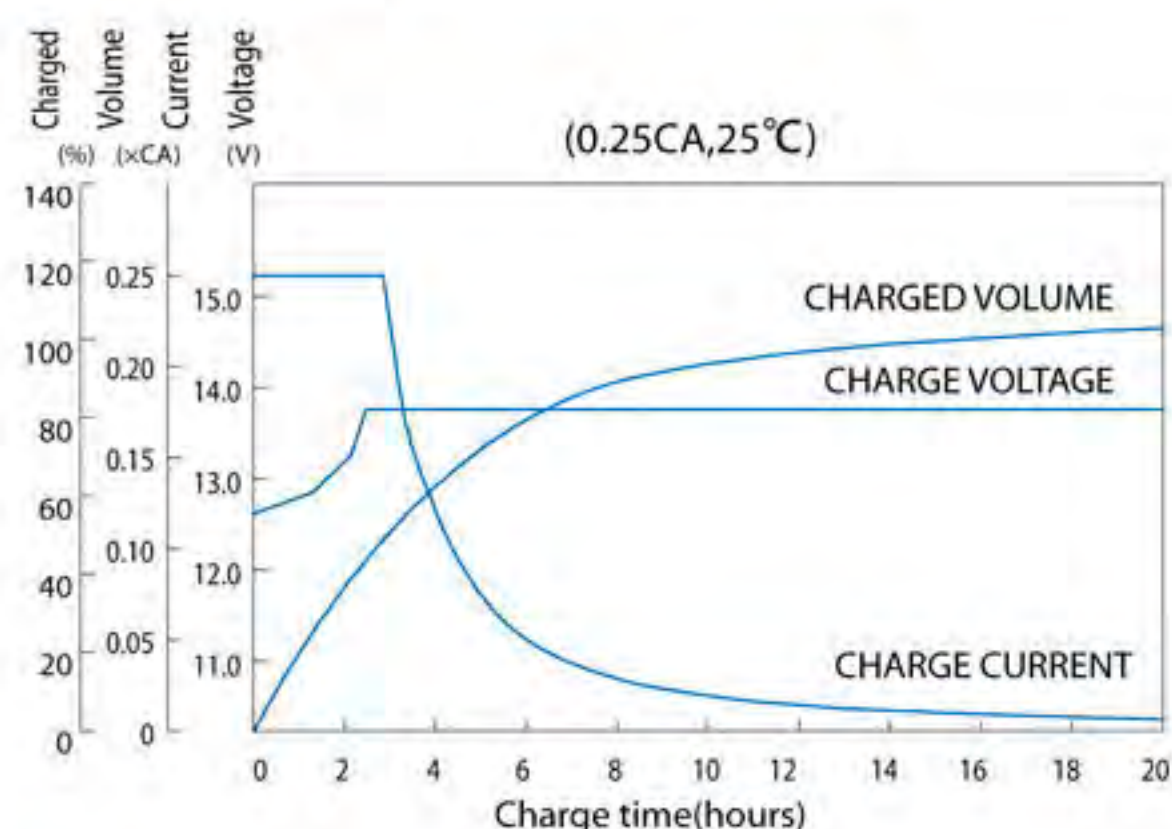
Deep Cycle Gel Design

The operating environment temperature above 40°C should be avoided. After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage.

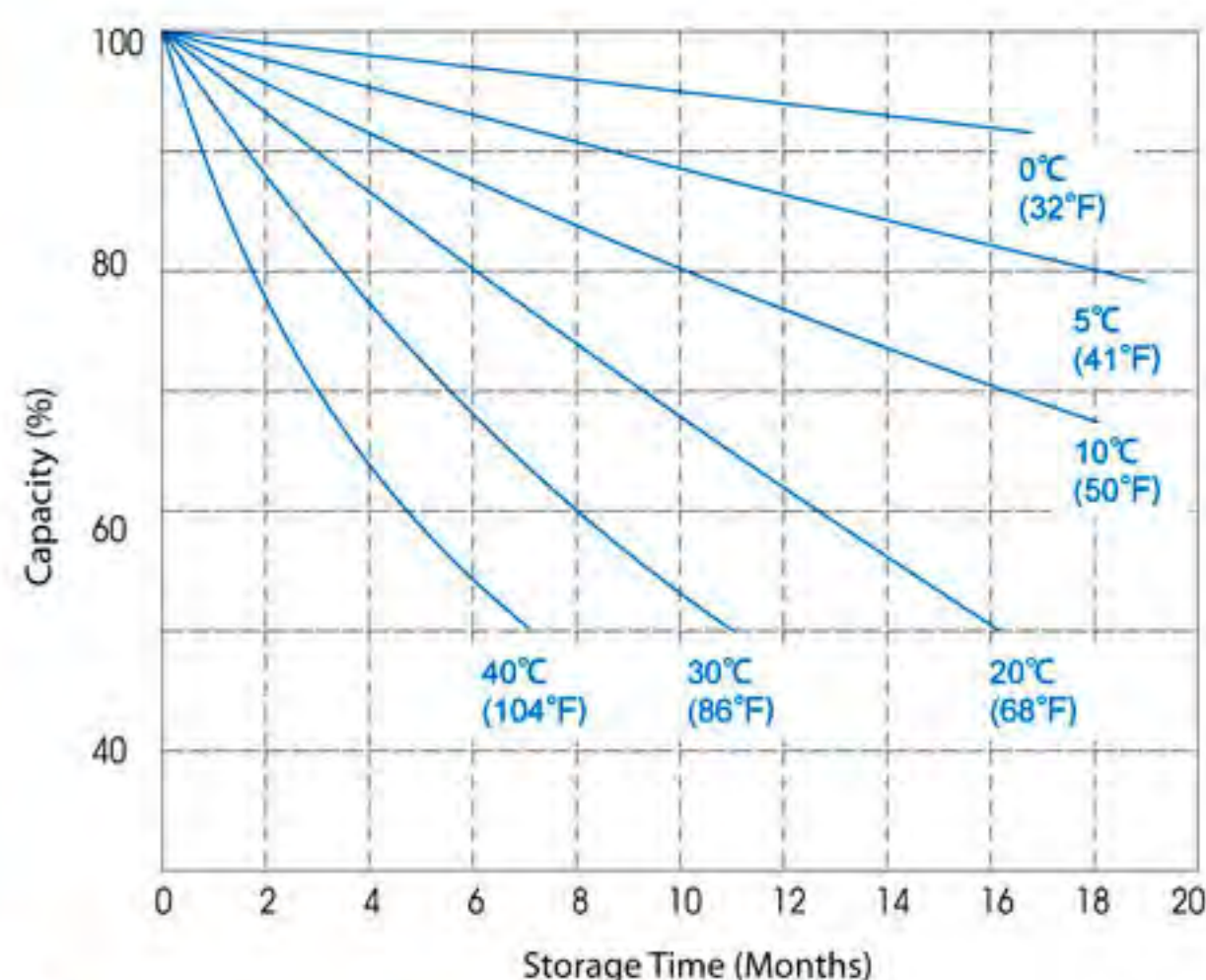
Cycle service life in relation to depth of discharge



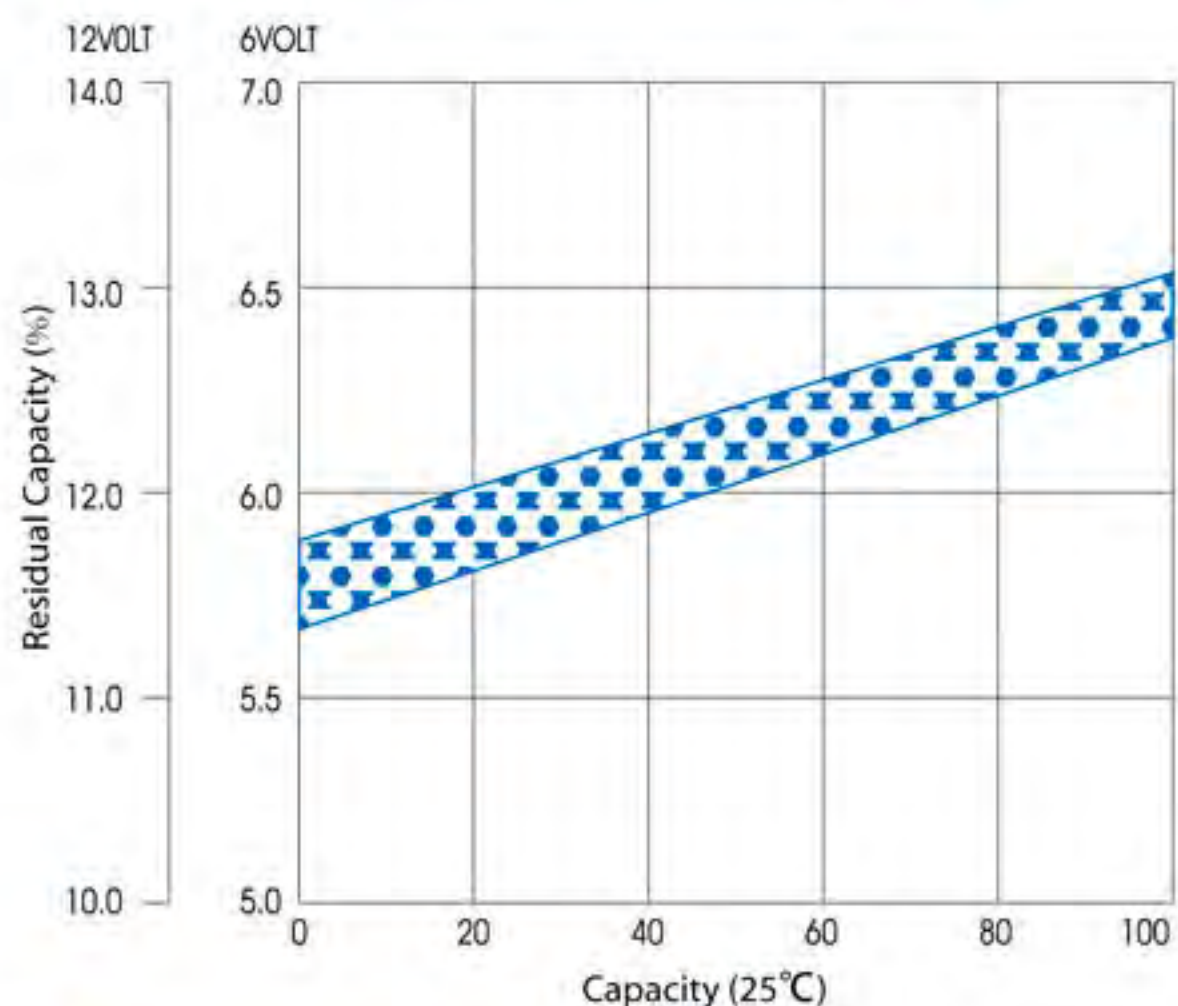
Constant voltage charge characteristic



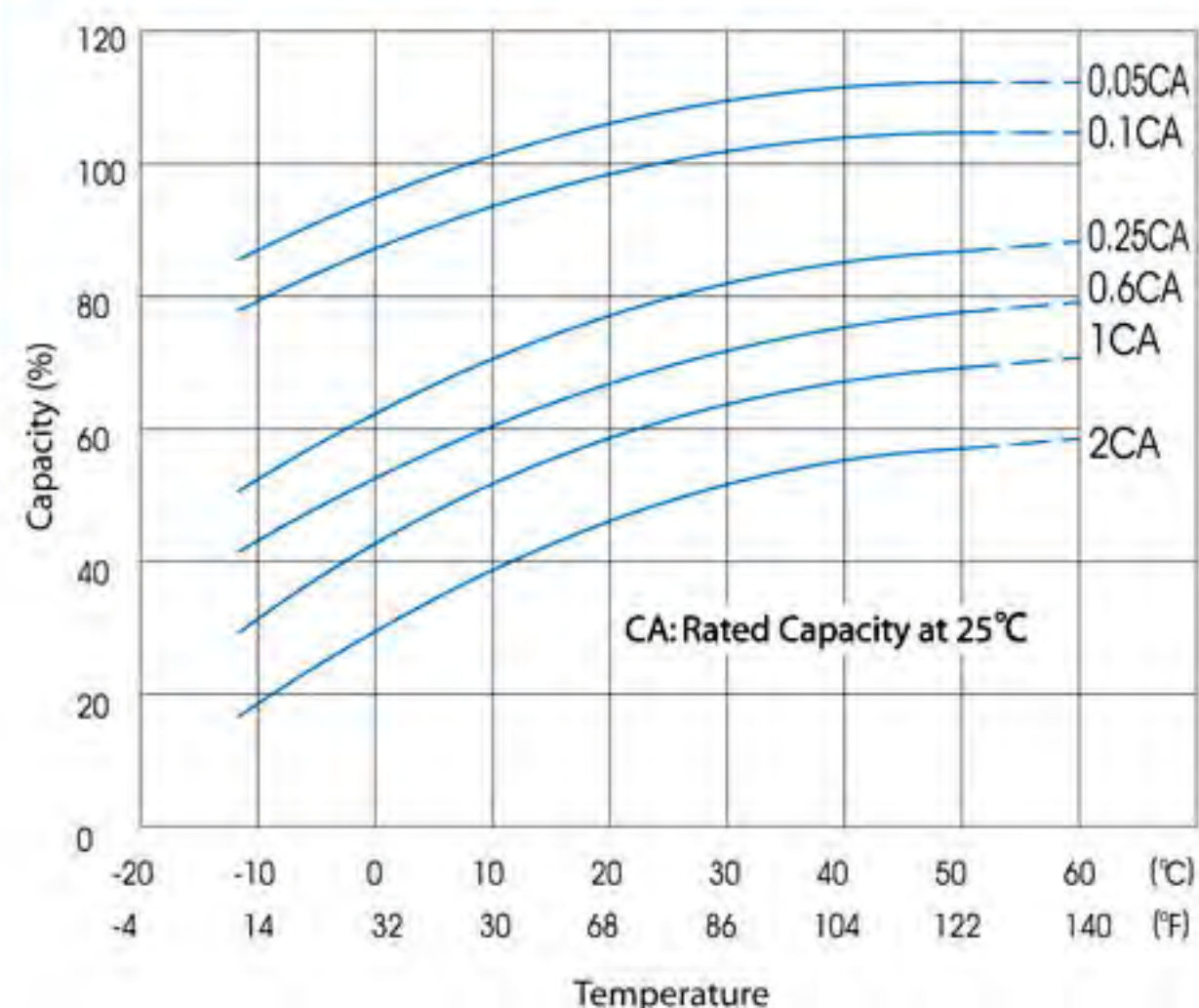
Self-Discharge Characteristics



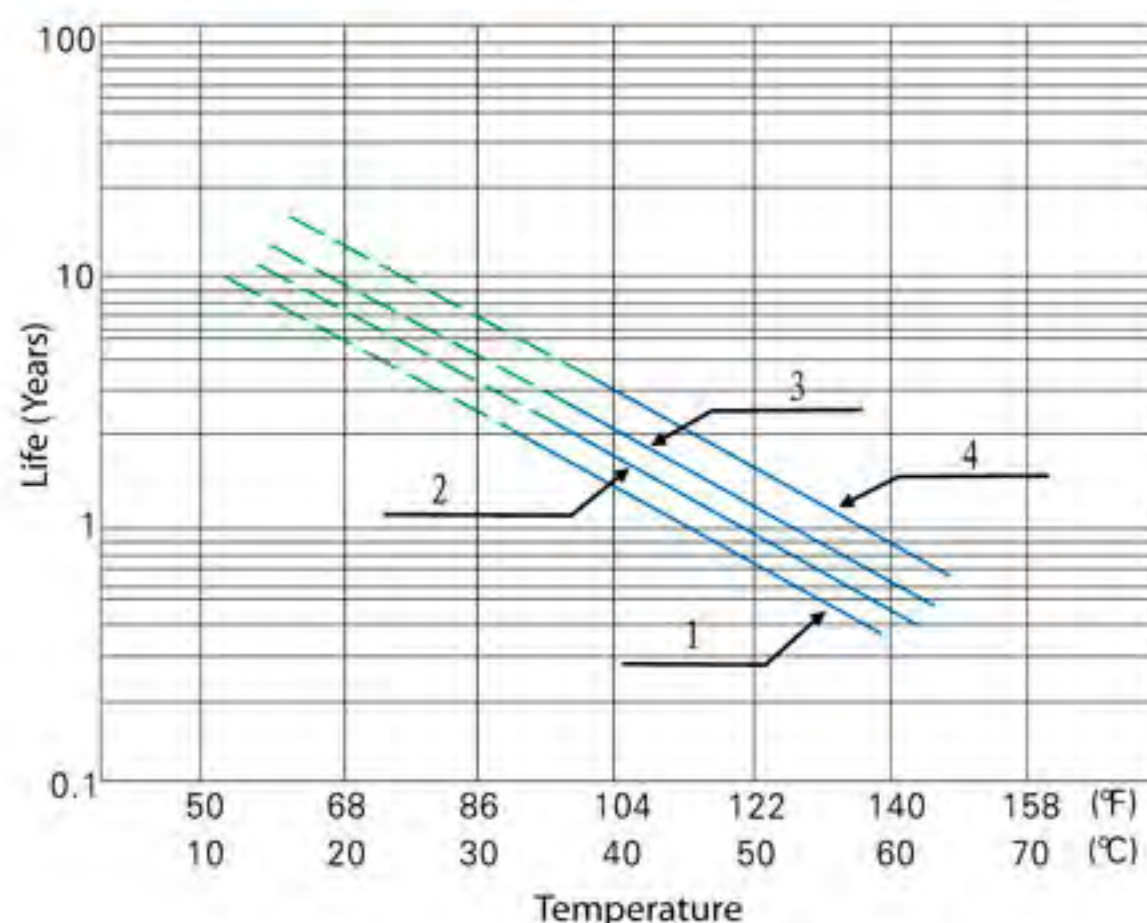
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

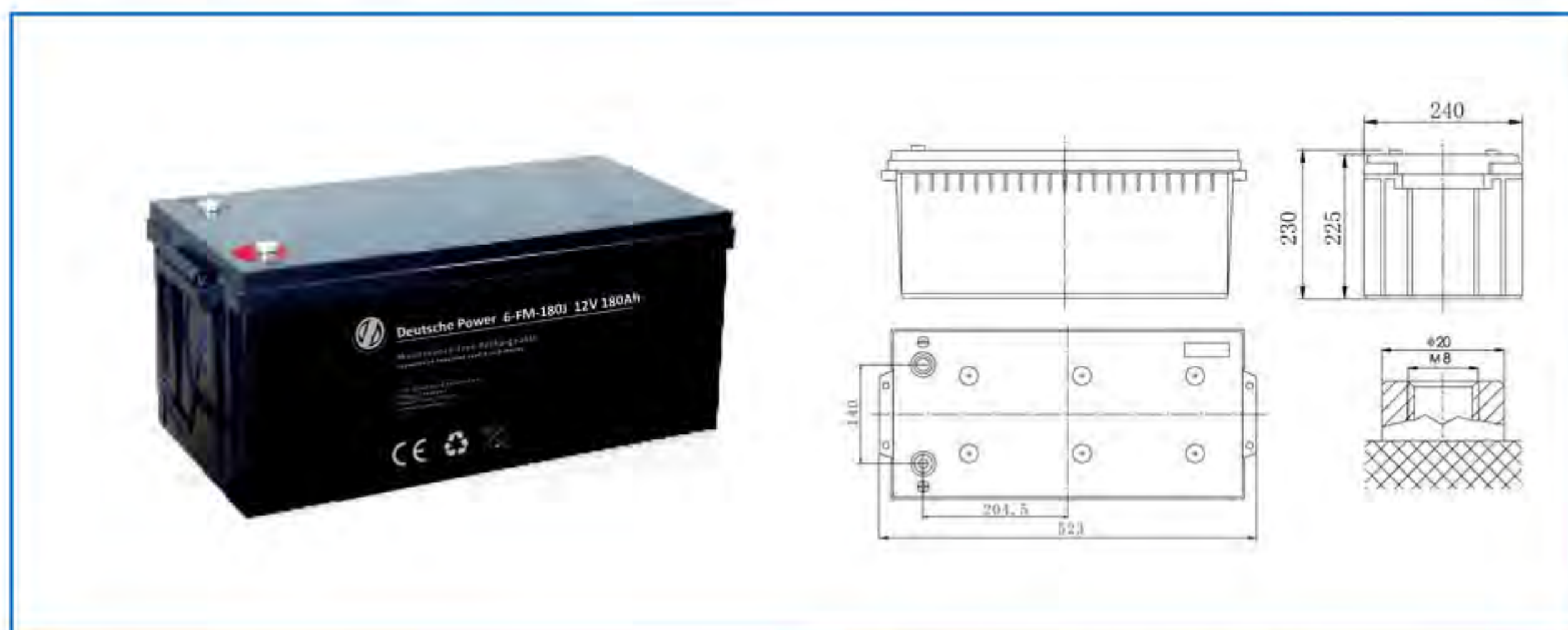


Temperature effects float life



FM/NPG-180

Deep Cycle Gel Design



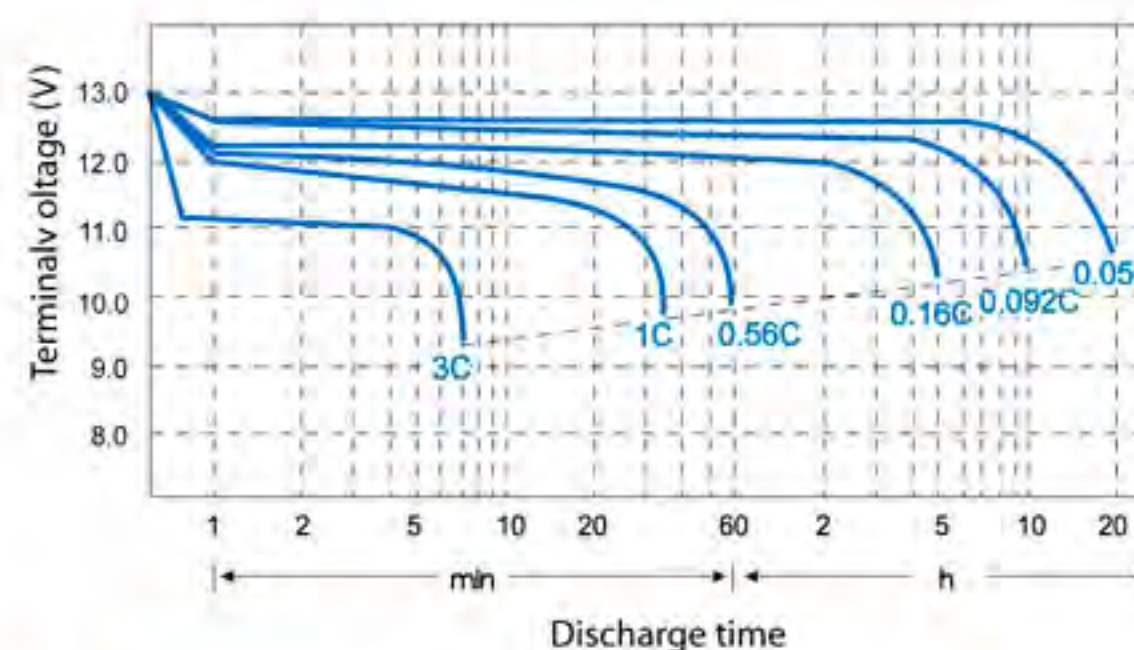
Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		180Ah
Dimensions	Total Height (with terminals)	9.06 inches(230mm)
	Height	8.86 inches(225mm)
	length	20.59 inches(523mm)
	width	9.45 inches(240mm)
Weight		Approx.127.38 Pound(57.9kg)

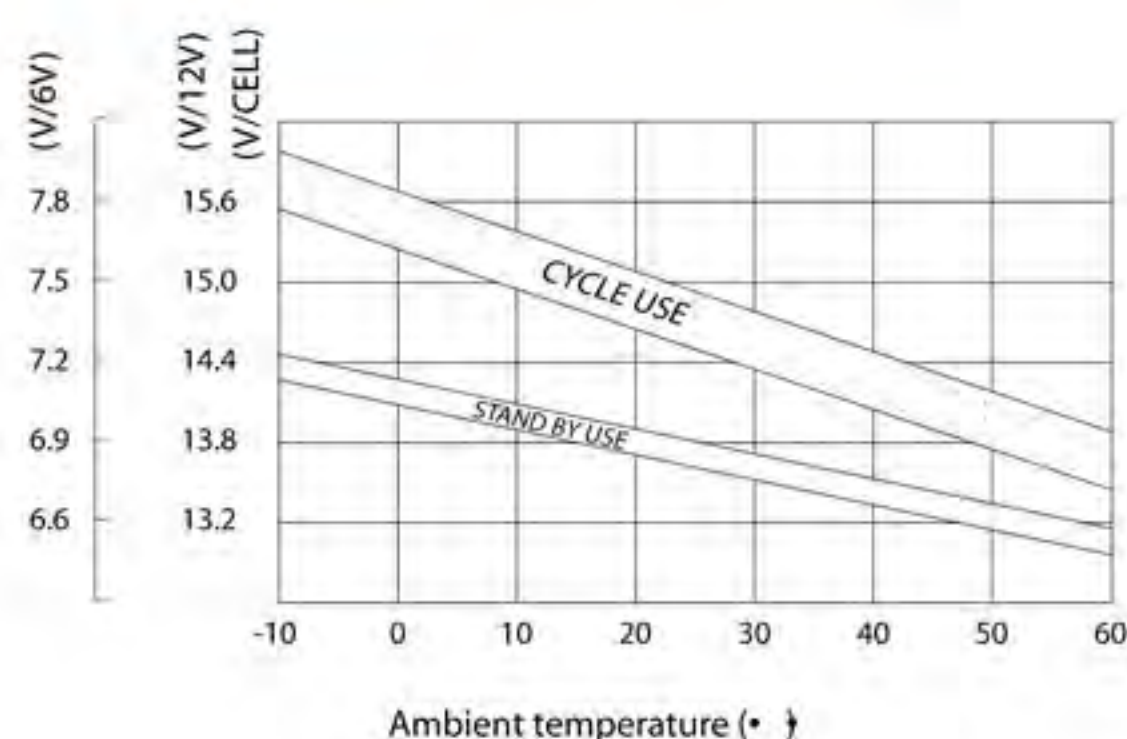
Characteristics

Capacity 77°F (25•)	20 hour rate (9.0A)	180Ah
	10 hour rate (16.6A)	166Ah
	5 hour rate (28.8A)	144Ah
	1 hour rate (108A)	108Ah
	15 Minute Rate (269A)	67.25Ah
Internal Resistance	Full charged Battery 77°F (25•)	3MΩ
	104°F (40•)	102%
Capacity affected by Temperature (20hour rate)	77°F (25•)	100%
	32°F (0•)	85%
	5°F (-15•)	65%
Self-Discharge 77°F (25•)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F (25•)	1333A(5S)	
Terminal	M3	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 60A
		Voltage 14.4~14.7 V / 77°F (25•)
	Float	Voltage 13.5~13.8V / 77°F (25•)

Discharge Curves 77°F(25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
1.65	498	347	269	170	129	98.1	66.9	46.4	30.8	18.3	8.01
1.7	460	328	257	159	121	92.7	65.0	45.0	30.2	17.6	7.78
1.8	363	275	220	131	115	88.2	62.0	43.5	28.9	16.6	7.52

Constant Power Discharge (WATTS PER CELL@25°C)

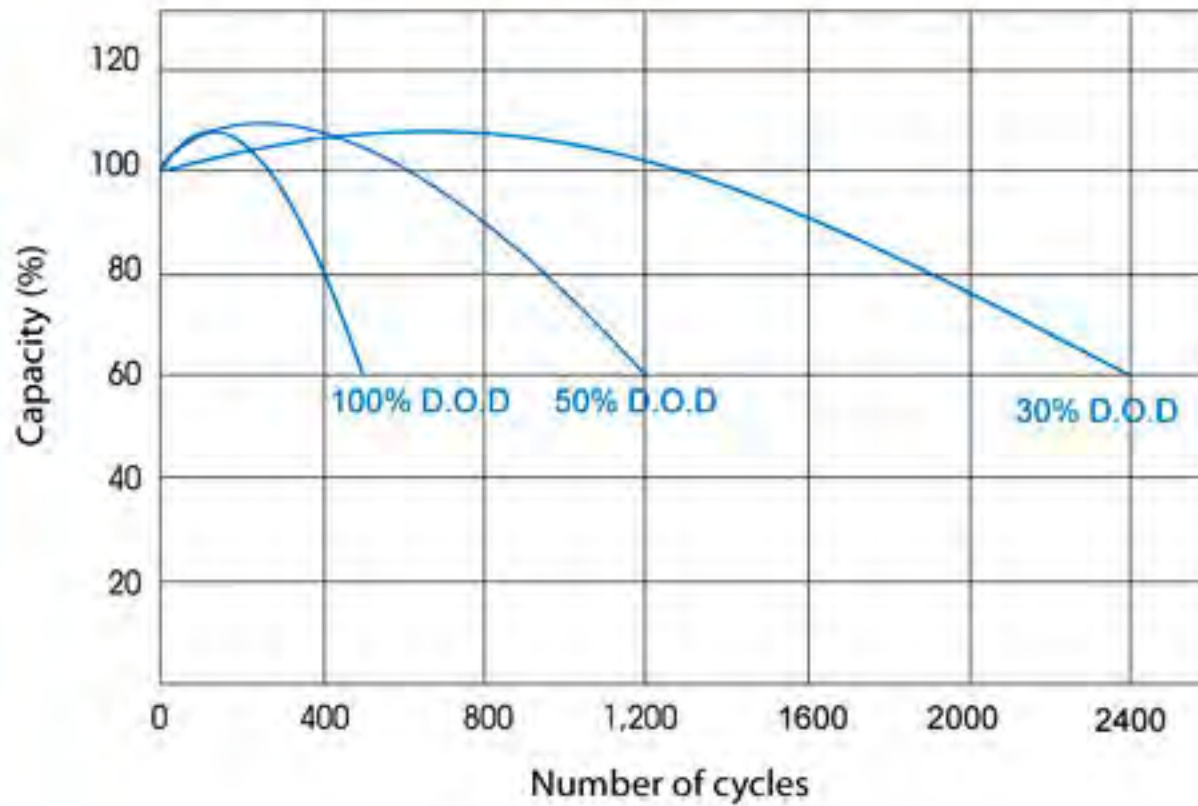
Discharge voltage (V/cell)	5min	10min	15min	30min	45min	1h	2h	3h	5h	10h	24h
1.6	887	627	491	314	237	208	124	86.2	56.9	33.6	14.2
1.65	869	622	487	309	234	205	122	85.1	56.7	33.1	14.0
1.67	865	617	486	304	230	201	122	84.6	56.5	32.6	14.0
1.7	817	605	476	298	227	197	121	83.9	56.3	32.4	13.9
1.75	752	566	449	266	225	194	120	83.5	55.8	31.6	13.8
1.8	676	526	422	253	221	190	117	82.9	55.3	31.0	13.6
1.85	541	437	369	231	203	186	112	80.4	51.5	29.5	13.3

FM/NPG-180

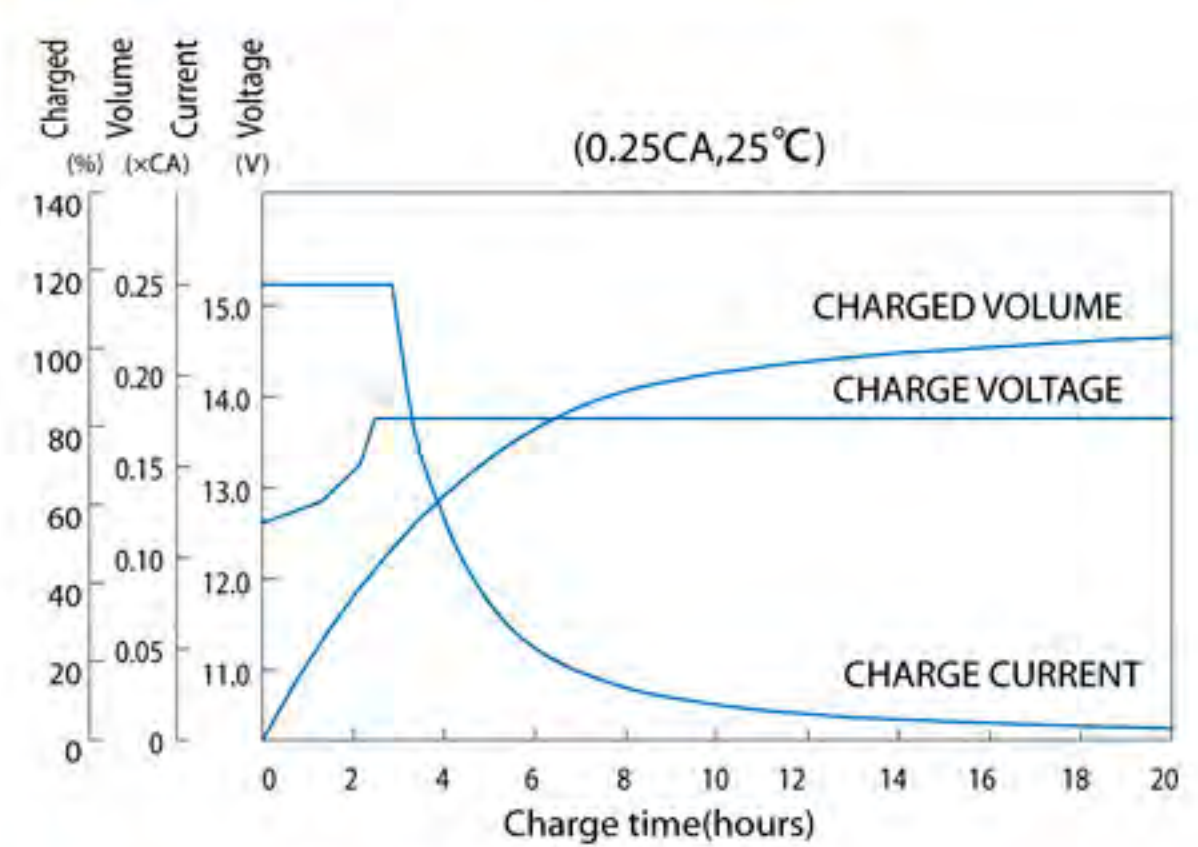
Deep Cycle Gel Design

The operating environment temperature above 40°C should be avoided. After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage.

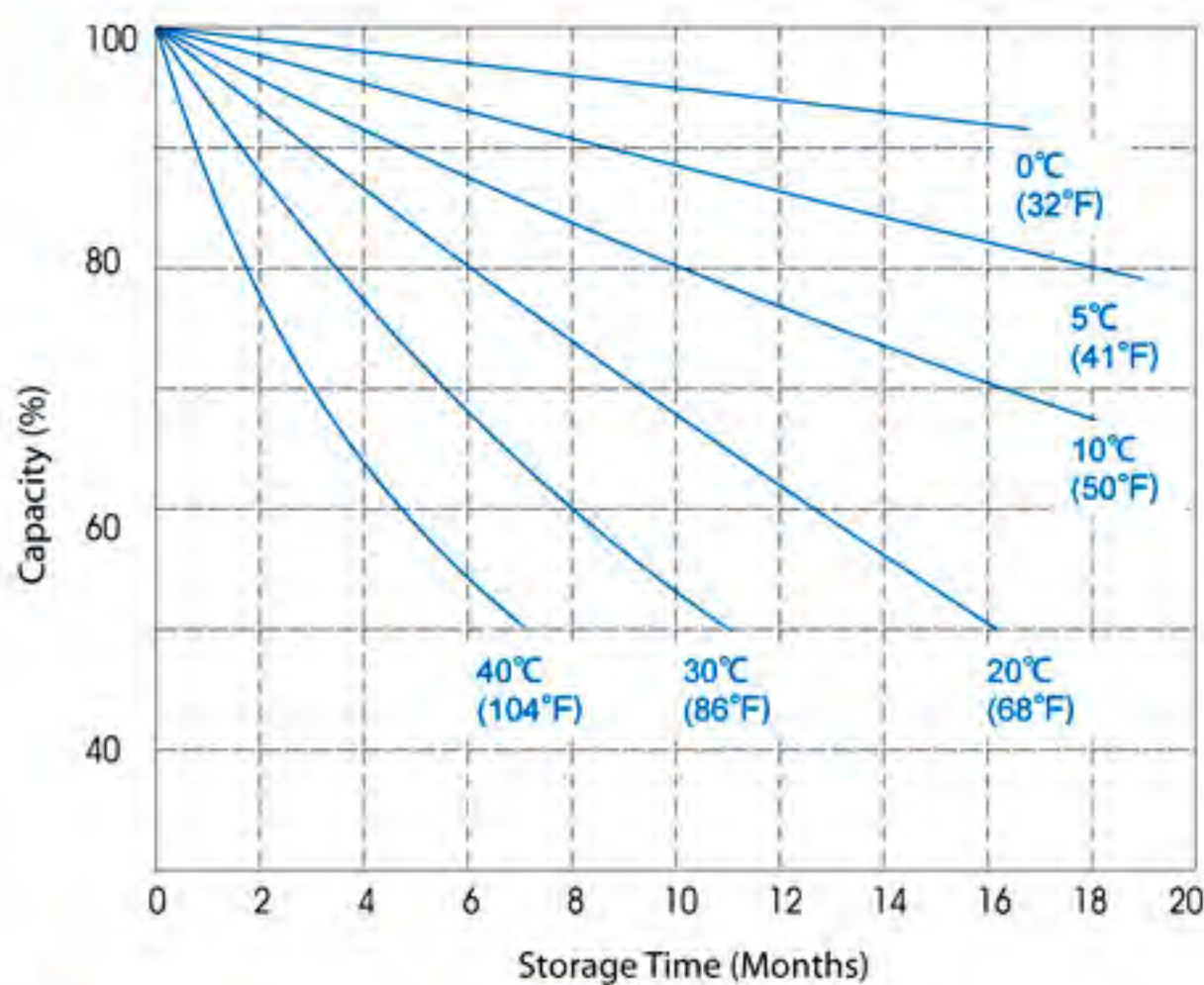
Cycle service life in relation to depth of discharge



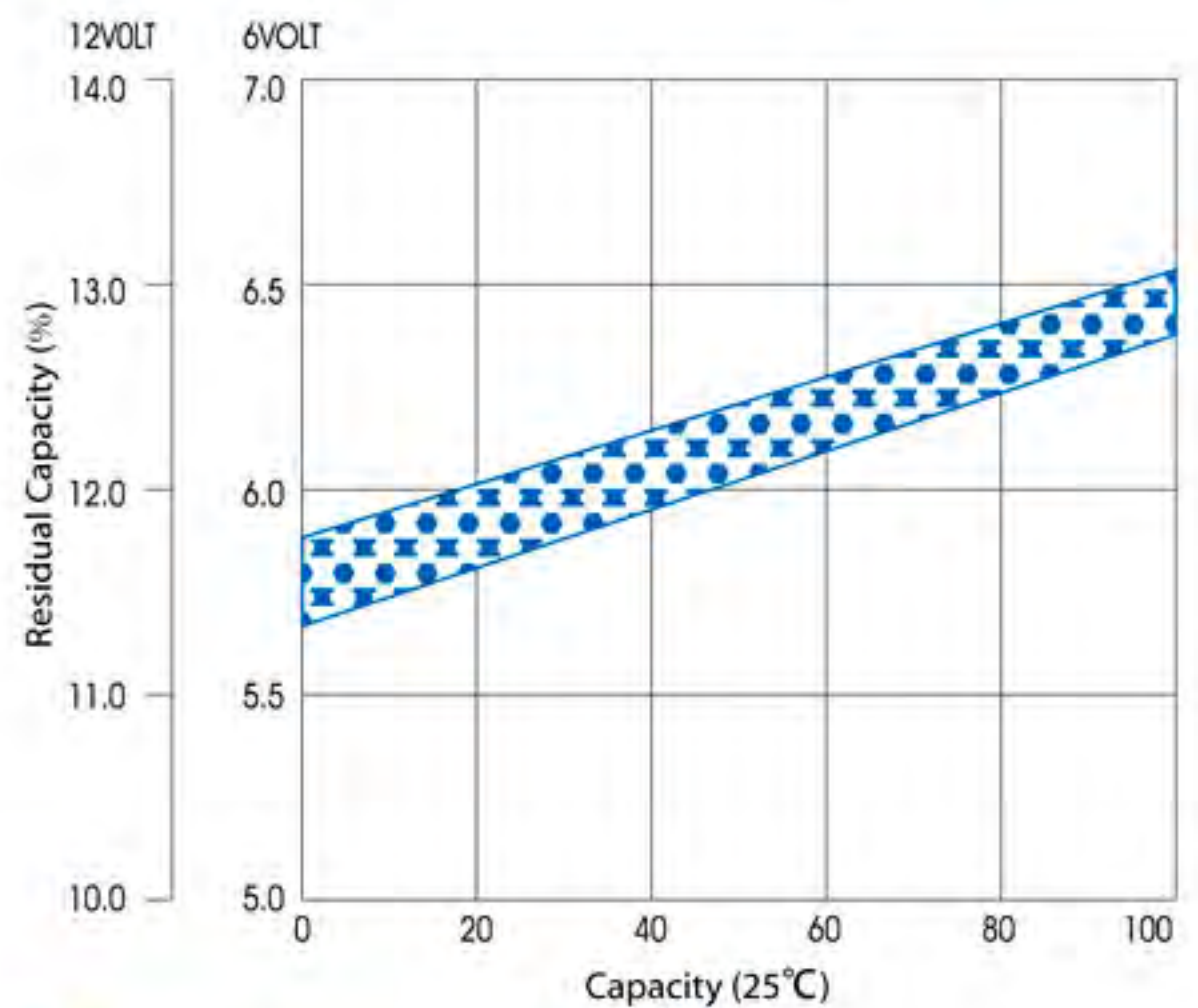
Constant voltage charge characteristic



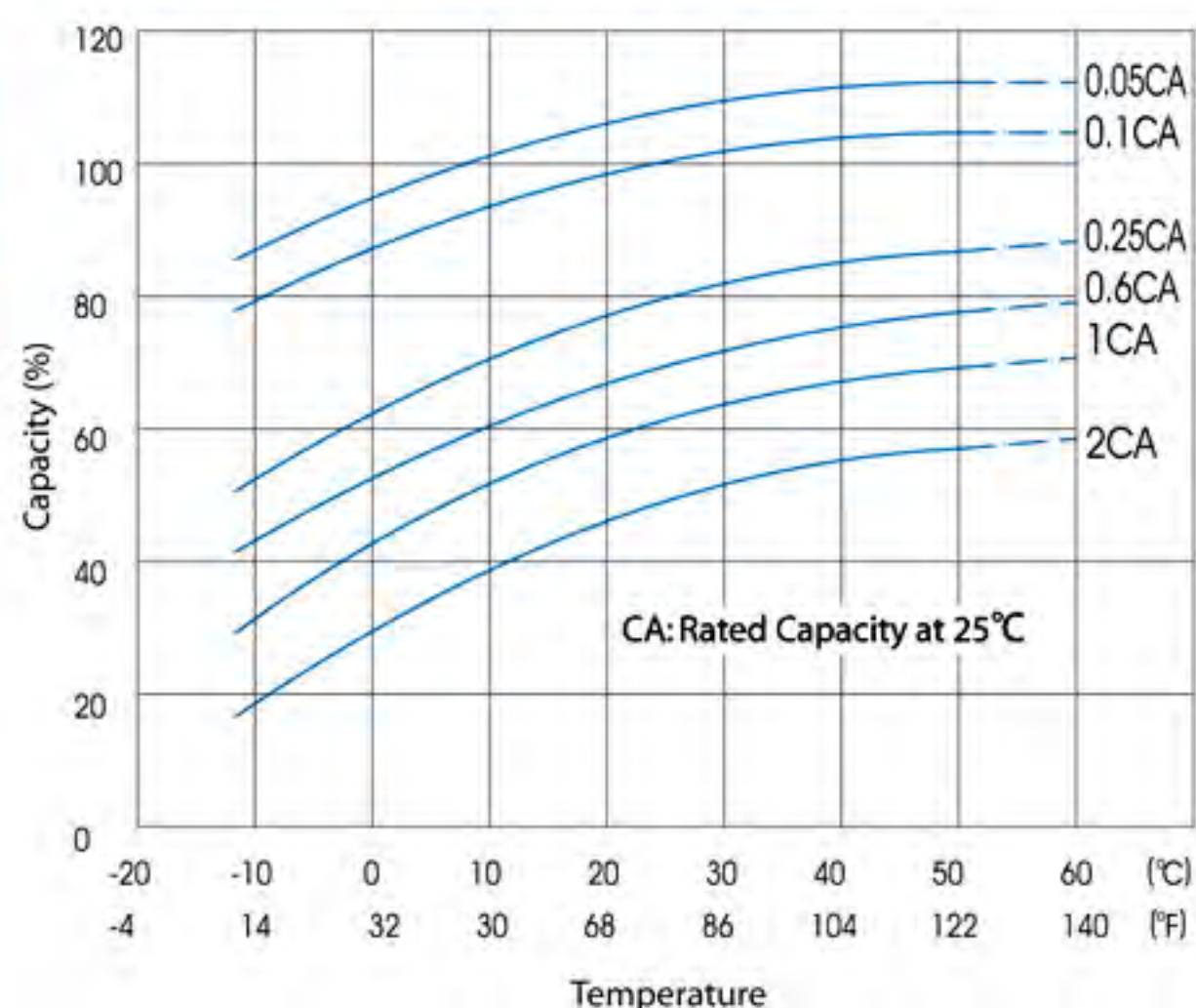
Self-Discharge Characteristics



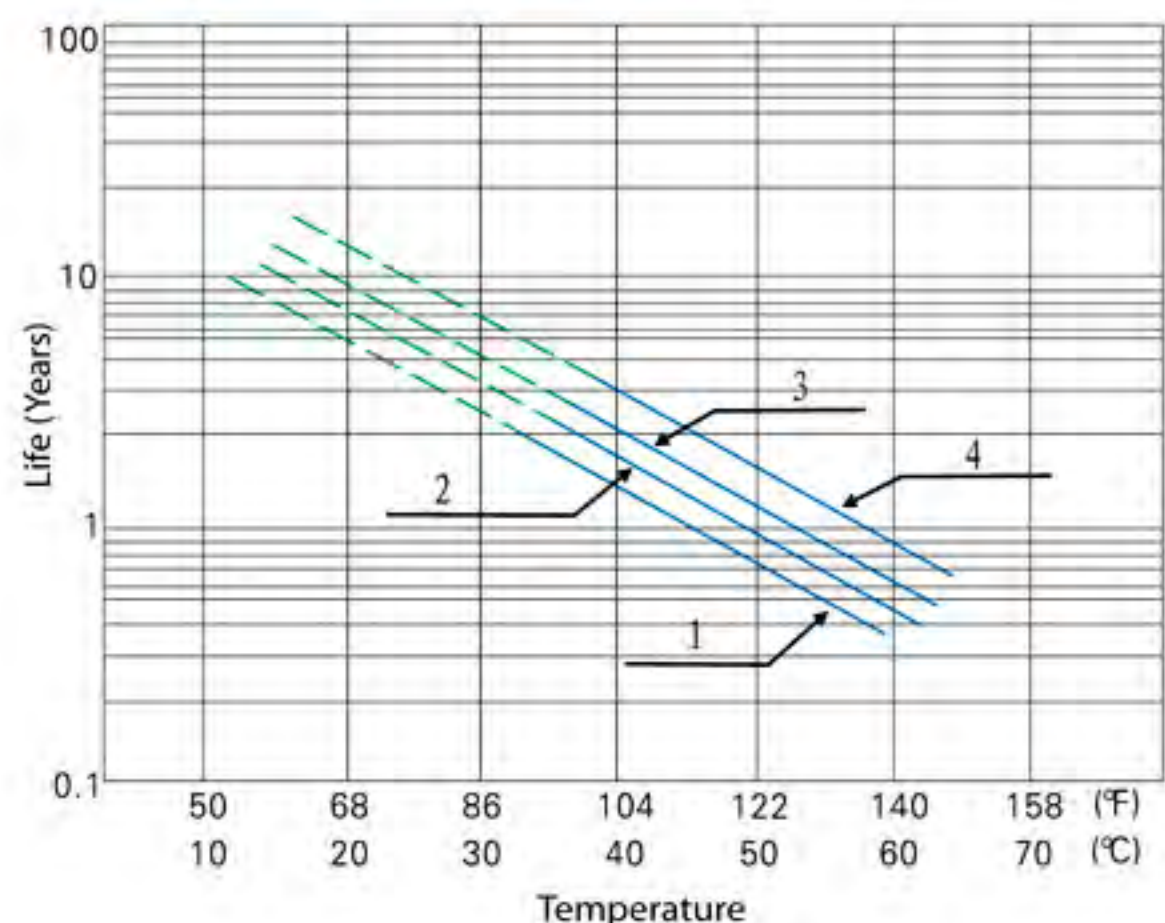
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

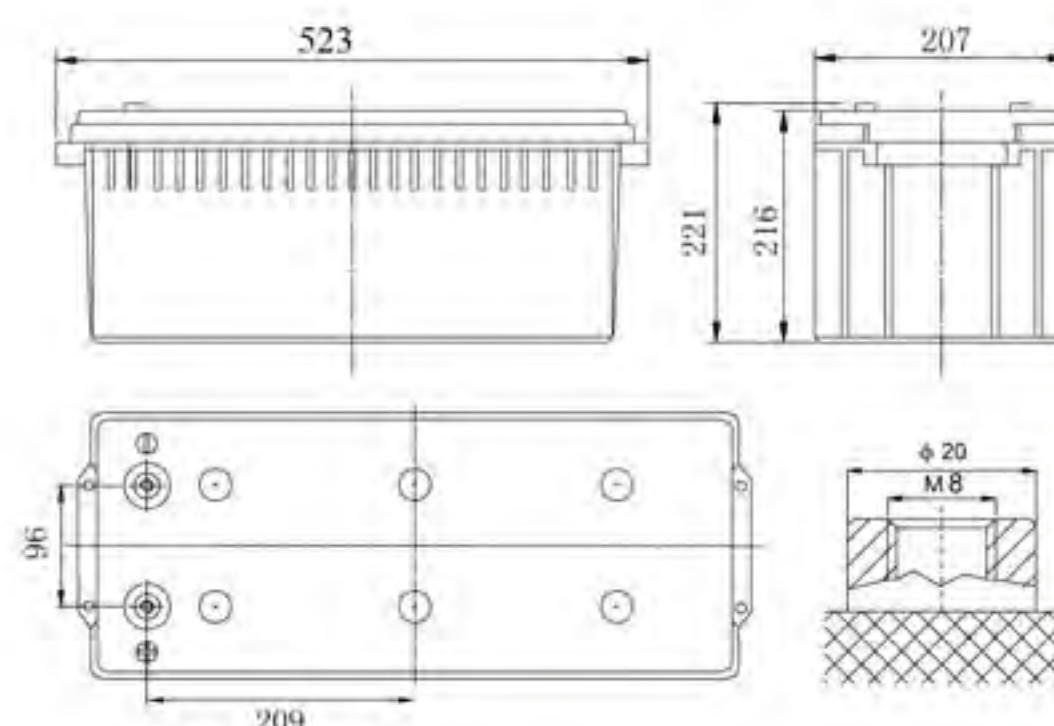


Temperature effects float life



FM/NPG-200

Deep Cycle Gel Design



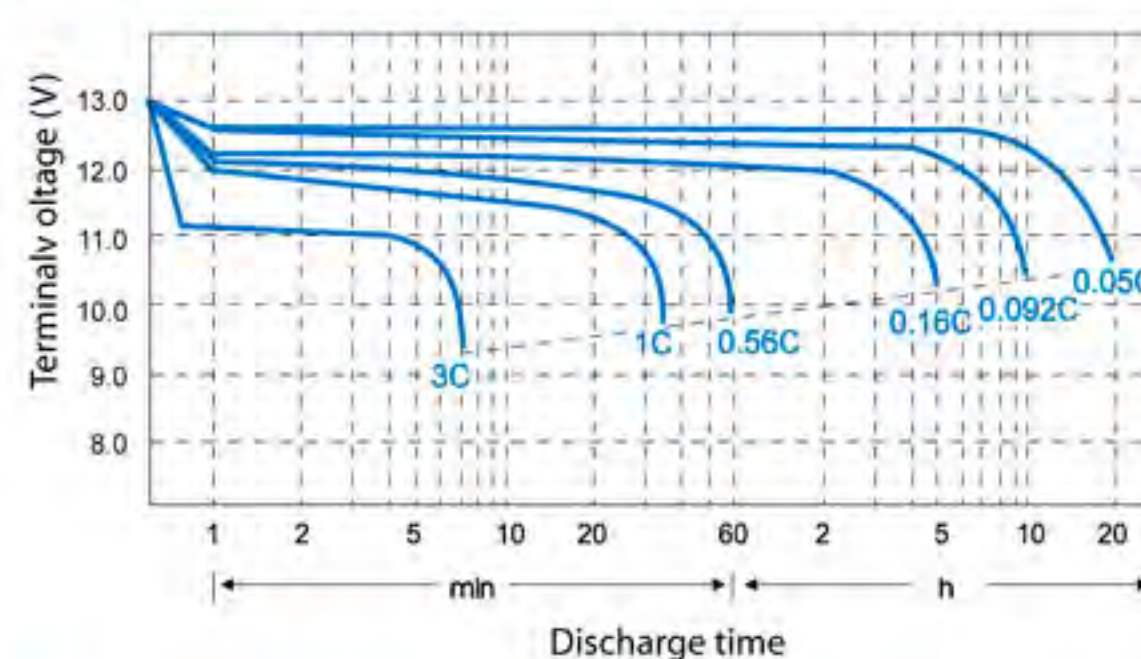
Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		200Ah
Dimensions	Total Height (with terminals)	9.06inches (225mm)
	Height	8.86inches (225mm)
	length	20.59inches (523mm)
	width	9.45inches (240mm)
Weight		Approx. 133.7 Pound (60.7kg)

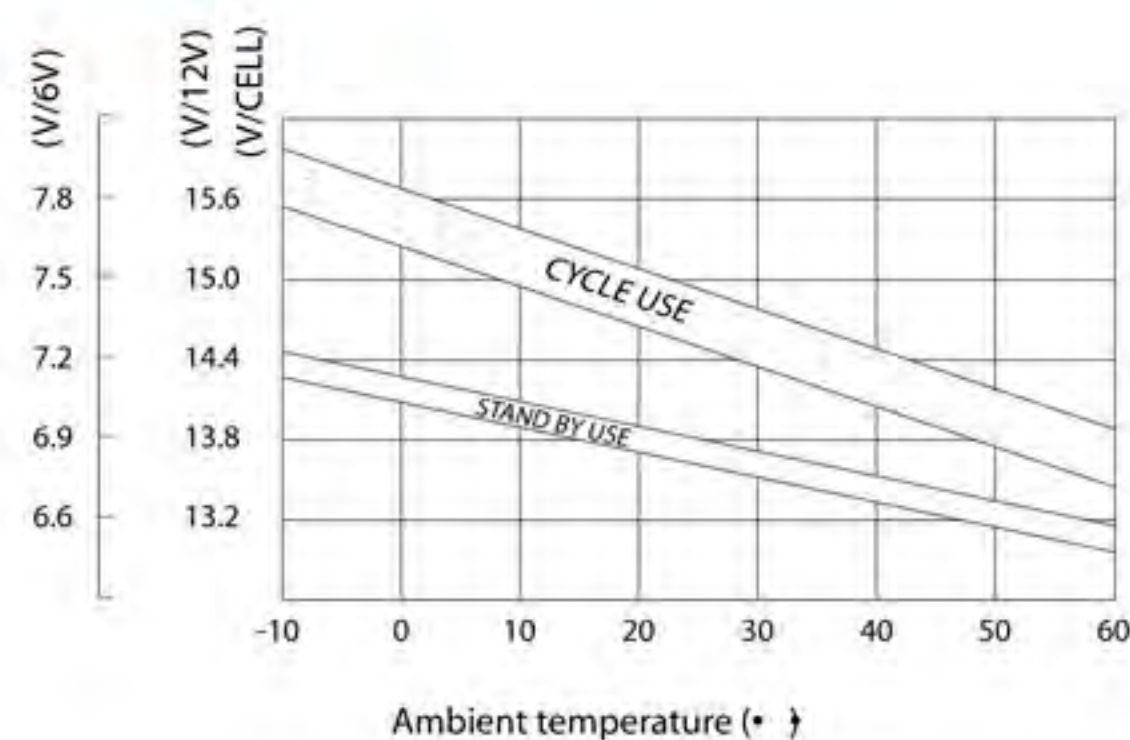
Characteristics

Capacity 77°F (25•)	20 hour rate (7.5A)	200Ah
	10 hour rate (13.8A)	184Ah
	5 hour rate (24.0A)	160Ah
	1 hour rate (90.0A)	120Ah
	15 Minute Rate (246A)	82 0Ah
Internal Resistance	Full charged Battery 77°F (25•)	3 M
	104°F (40•)	102%
Capacity affected by Temperature (20hour rate)	77°F (25•)	100%
	32°F (0•)	85%
	5°F (-15•)	65%
Self-Discharge 77°F (25•)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F (25•)	1333A(5S)	
Terminal	M5	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 30A Voltage 14.4~14.7 V / 77°F (25•)
	Float	Voltage 13.5~13.8V / 77°F (25•)

Discharge Curves 77°F(25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (AMPERES @25°C)

F.V Time	5Min	10Min	15Min	30Min	45Min	1Hour	2Hour	3Hour	5Hour	10Hour	24Hour
1.65	553	386	299	189	143	109	74.3	51.5	34.2	20.3	8.90
1.70	511	364	286	177	134	103	72.2	50.0	33.5	19.5	8.64
1.80	403	305	244	146	128	98	68.9	48.3	32.1	18.4	8.35

Constant Power Discharge (WATTS PER CELL@25°C)

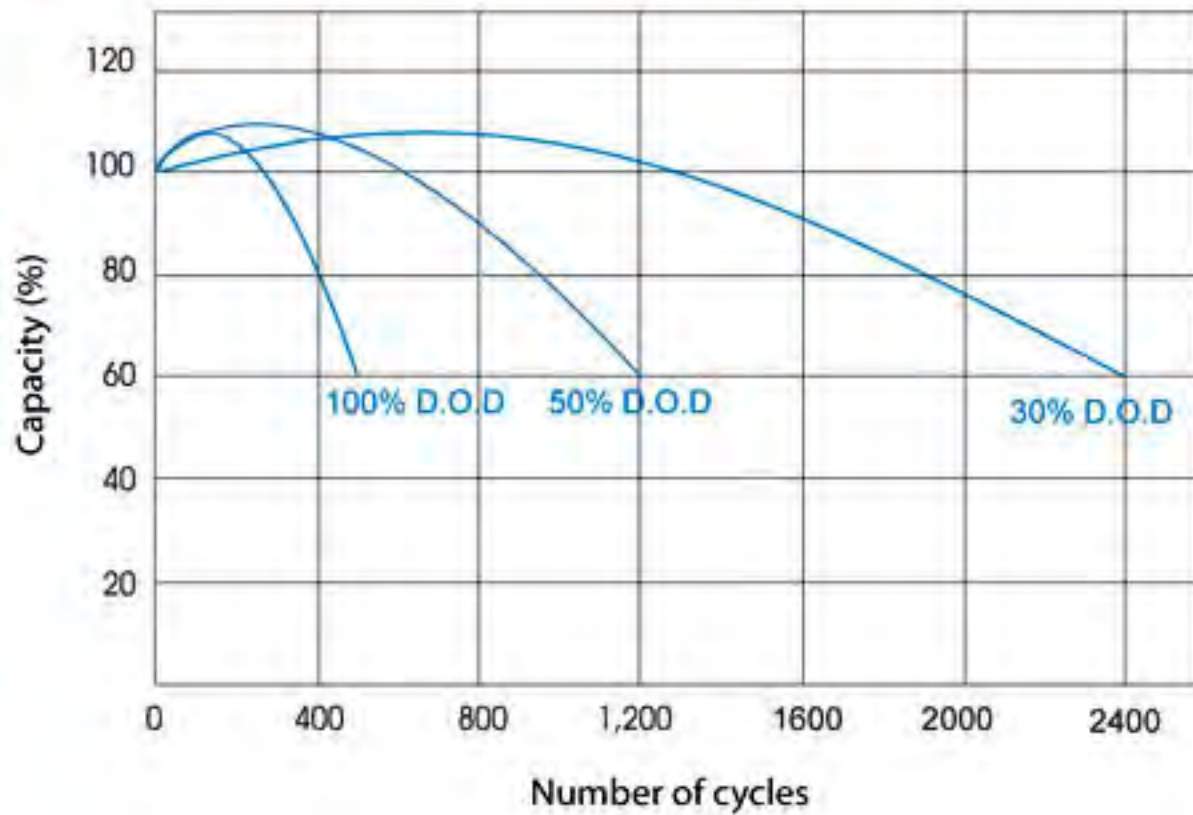
Out off voltage V/cell	5min	10min	15min	30min	45min	1h	2h	3h	5h	10h	24h
1.60	985	697	545	349	263	231	138.0	95.8	63.2	37.3	15.8
1.65	965	691	541	343	260	228	136.0	94.6	63.0	36.8	15.6
1.67	961	685	540	338	256	223	135.0	94.0	62.8	36.2	15.5
1.70	908	672	529	331	252	219	134.0	93.2	62.6	36.0	15.4
1.75	836	629	499	296	250	216	133.0	92.8	62.0	35.1	15.3
1.80	751	584	469	281	246	211	130.0	92.1	61.4	34.4	15.1
1.85	601	485	410	257	226	207	124.0	89.3	57.2	32.8	14.8

FM/NPG-200

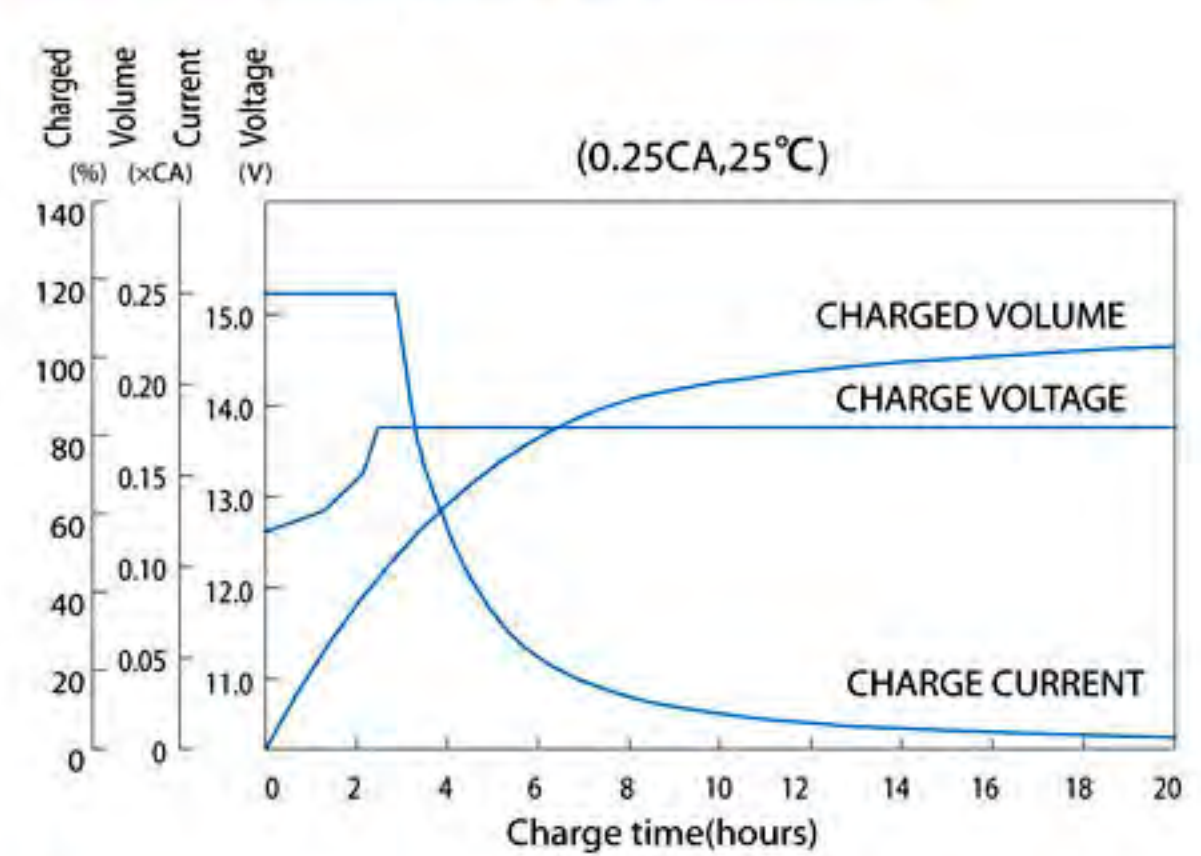
Deep Cycle Gel Design

The operating environment temperature above 40°C should be avoided. After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage.

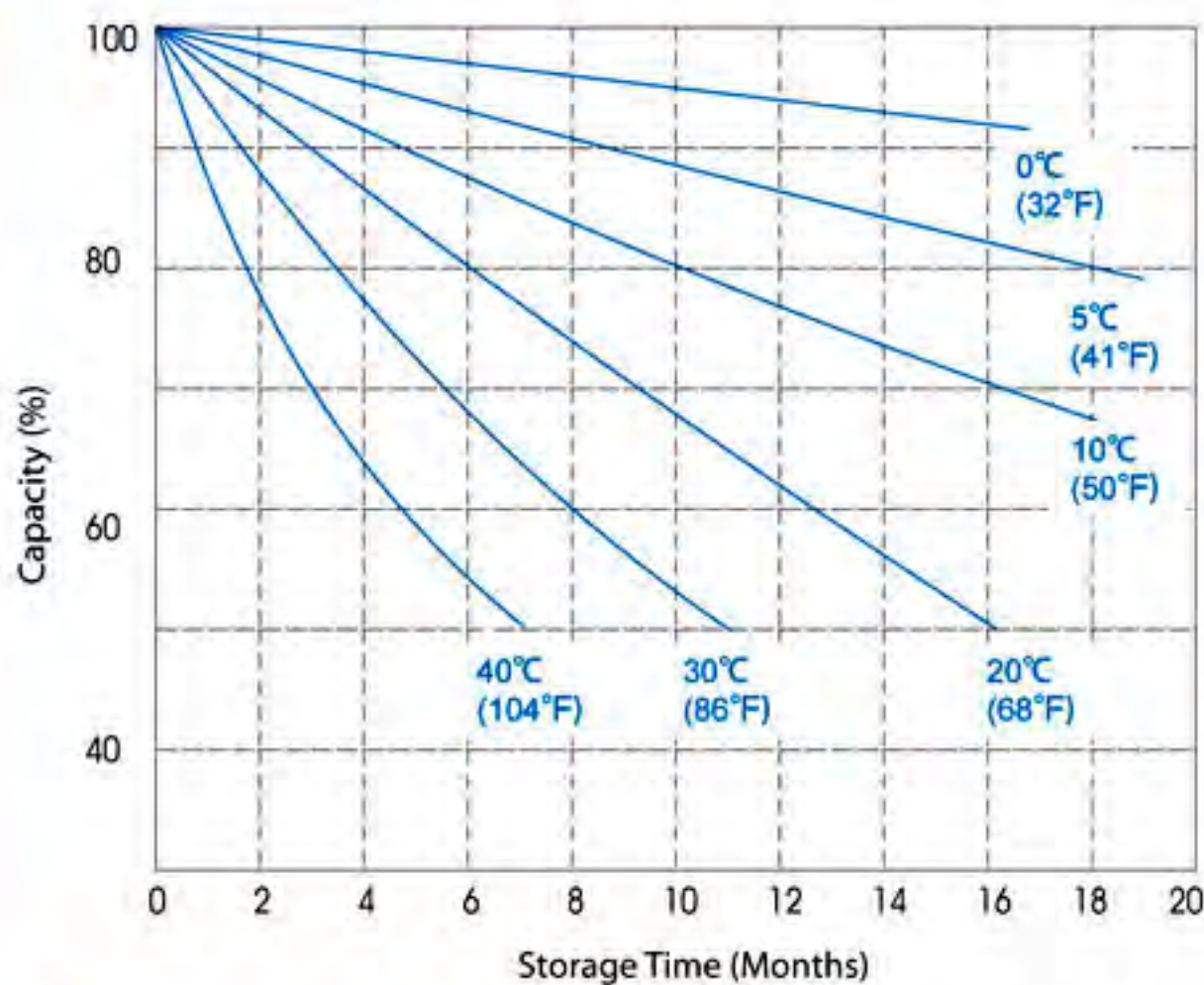
Cycle service life in relation to depth of discharge



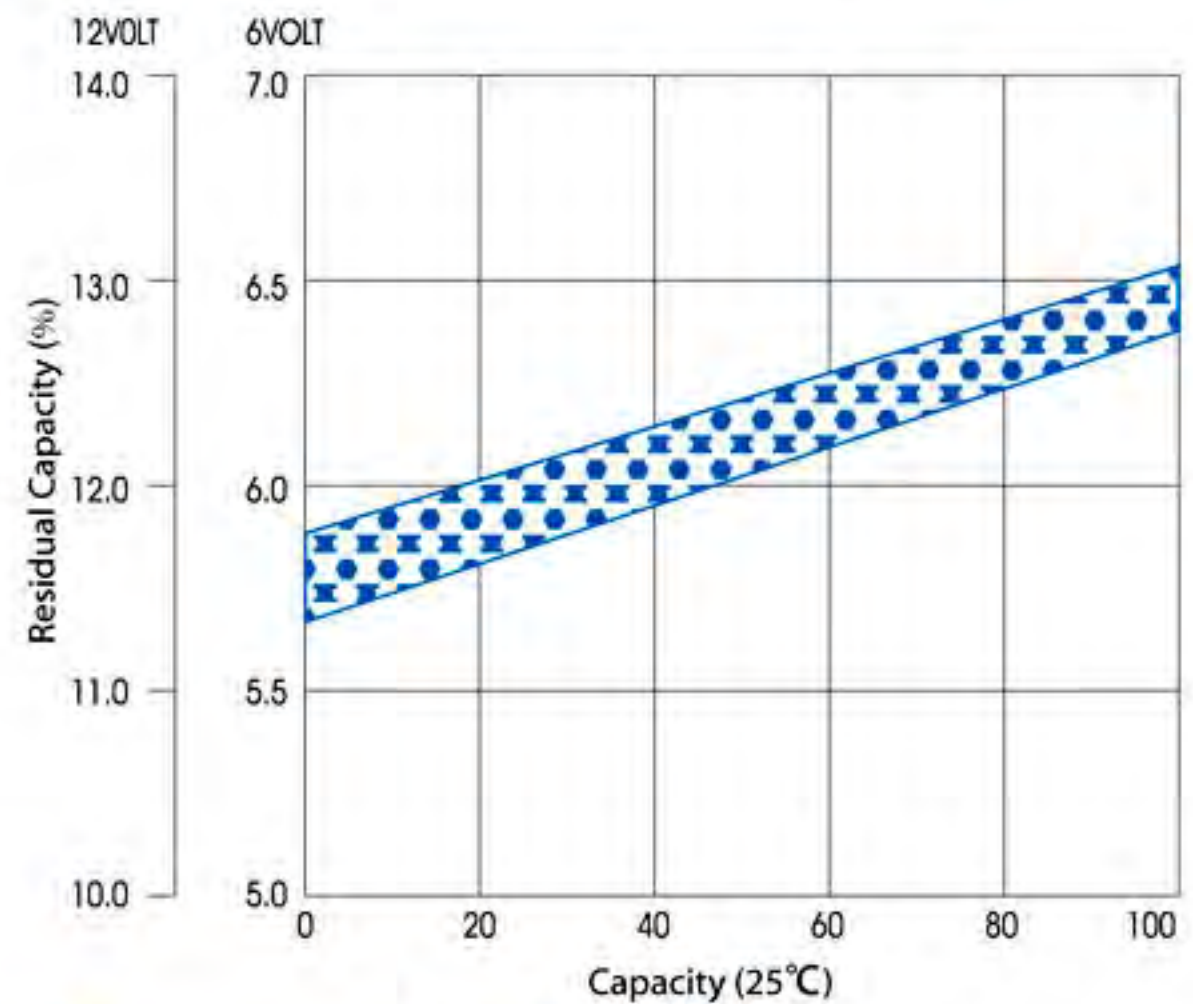
Constant voltage charge characteristic



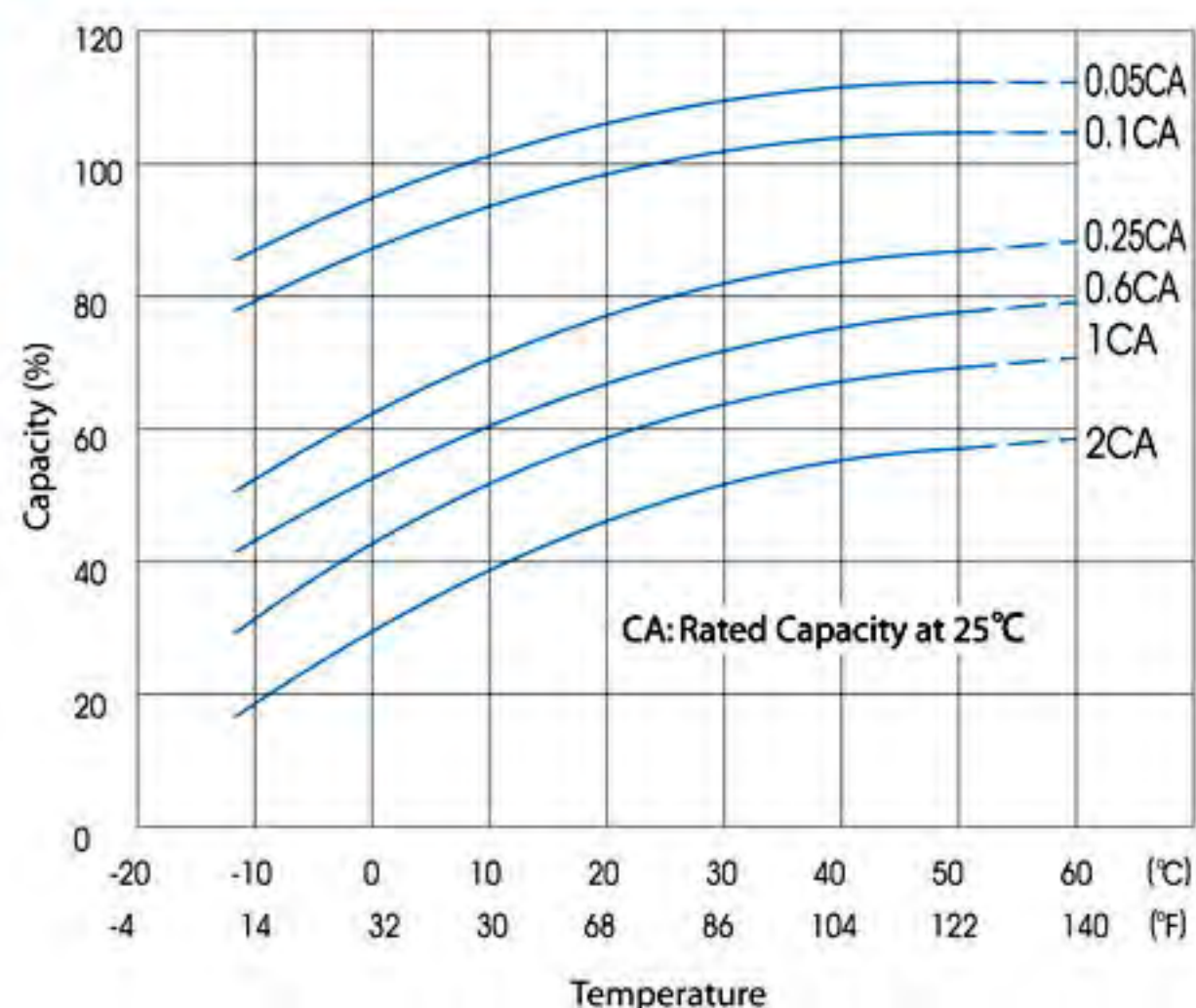
Self-Discharge Characteristics



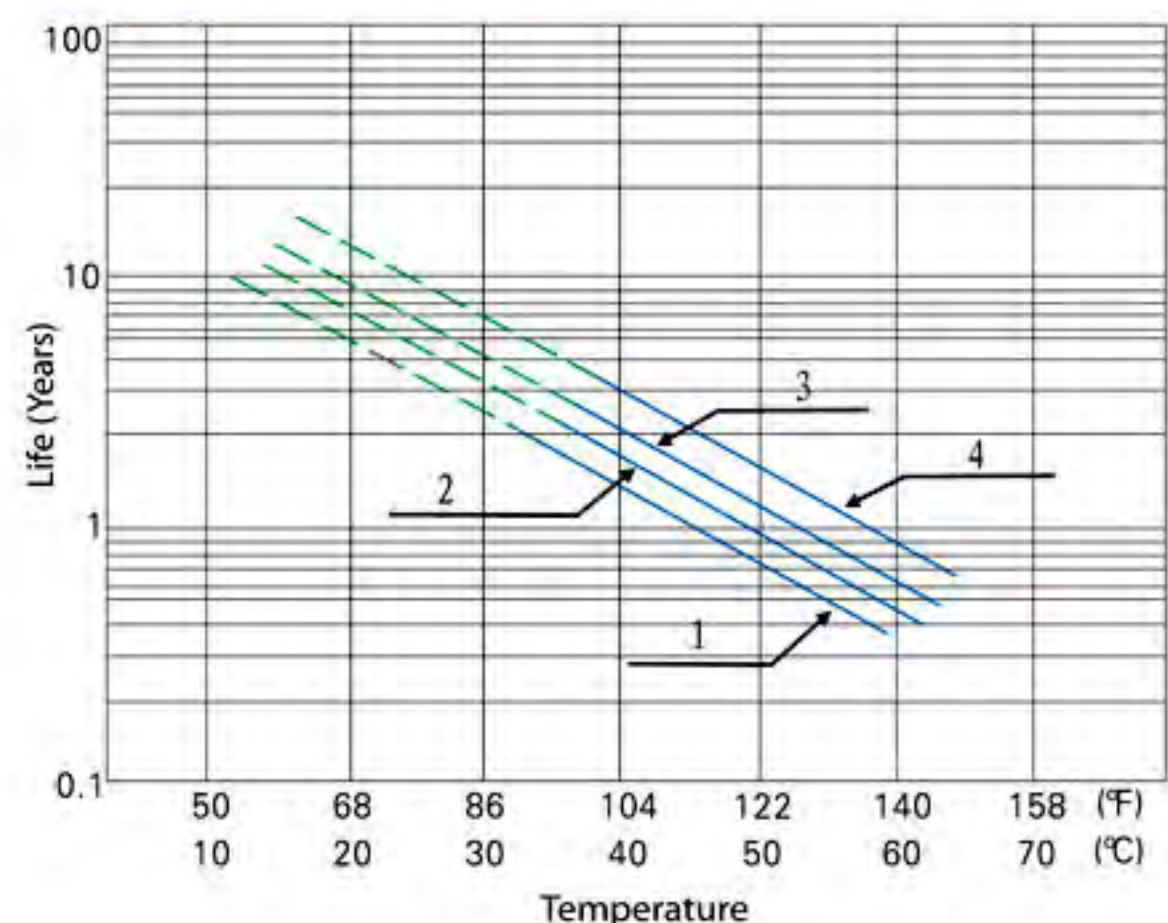
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity

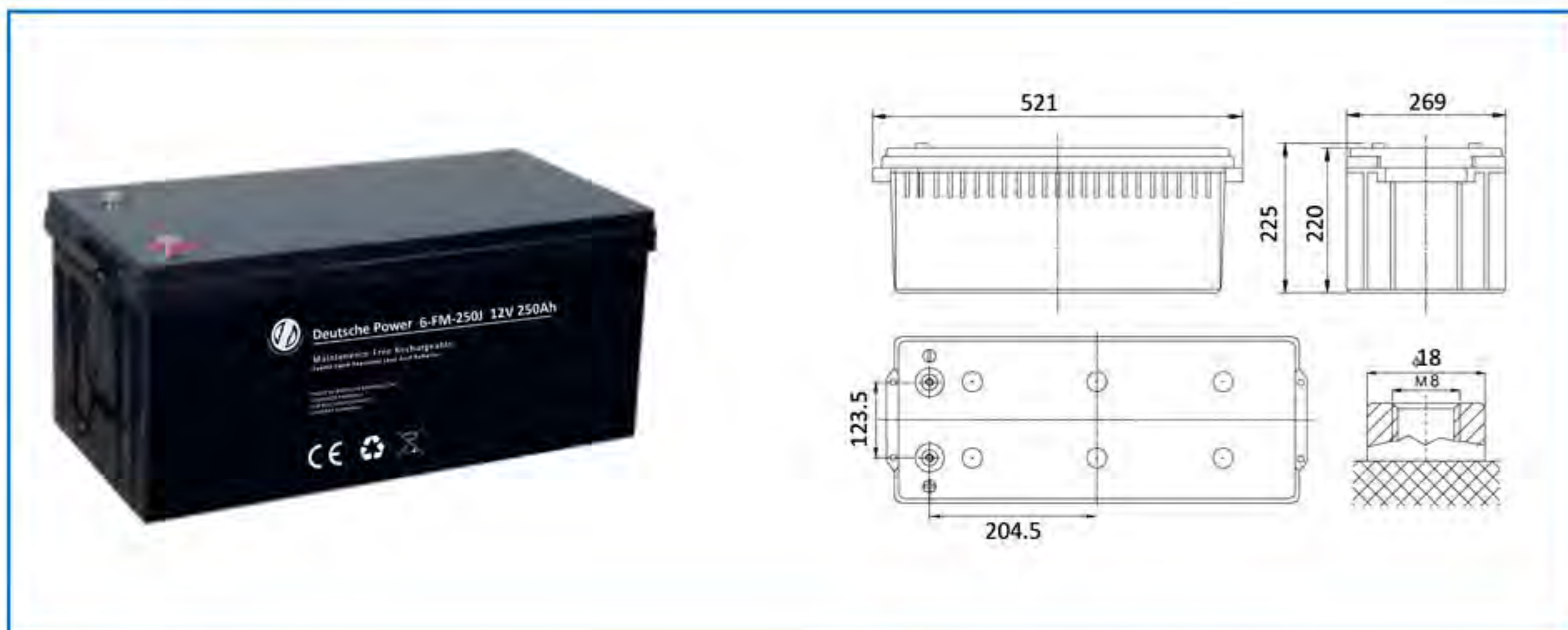


Temperature effects float life



FM/NPG-250

Deep Cycle Gel Design



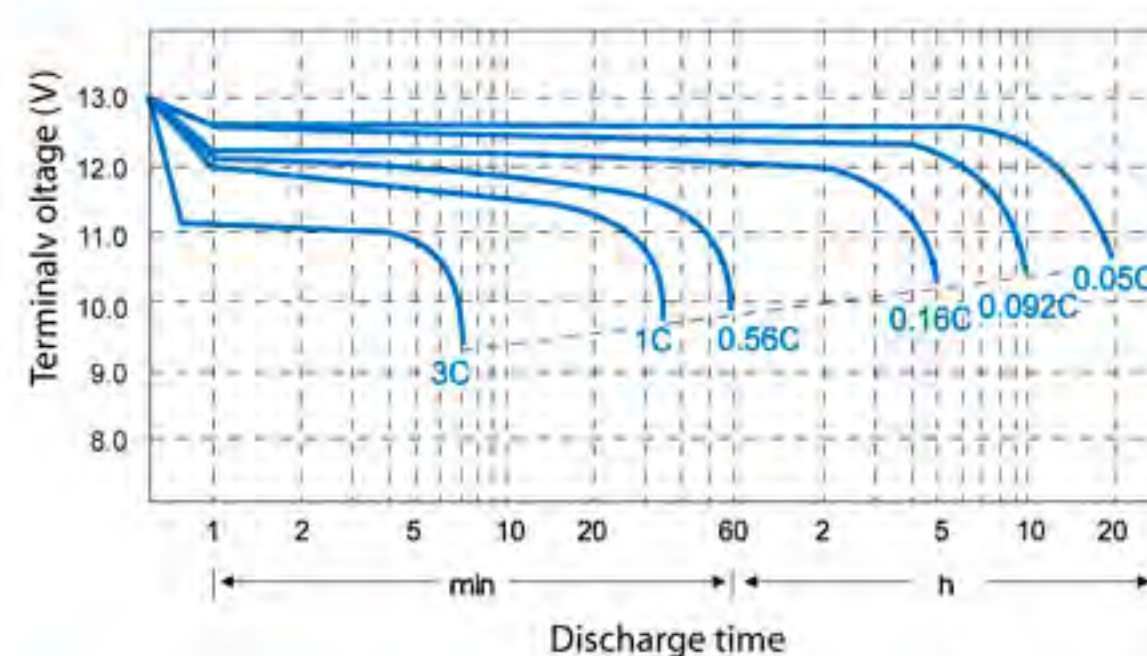
Specifications

Nominal Voltage		12V
Rated Capacity (20 hour rate)		250Ah
Dimensions	Total Height (with terminals)	8.86 inches (220mm)
	Height	8.66 inches (220mm)
	length	20.47 inches (520mm)
	width	10.59 inches (269mm)
Weight		Approx.158.59Pound (72kg)

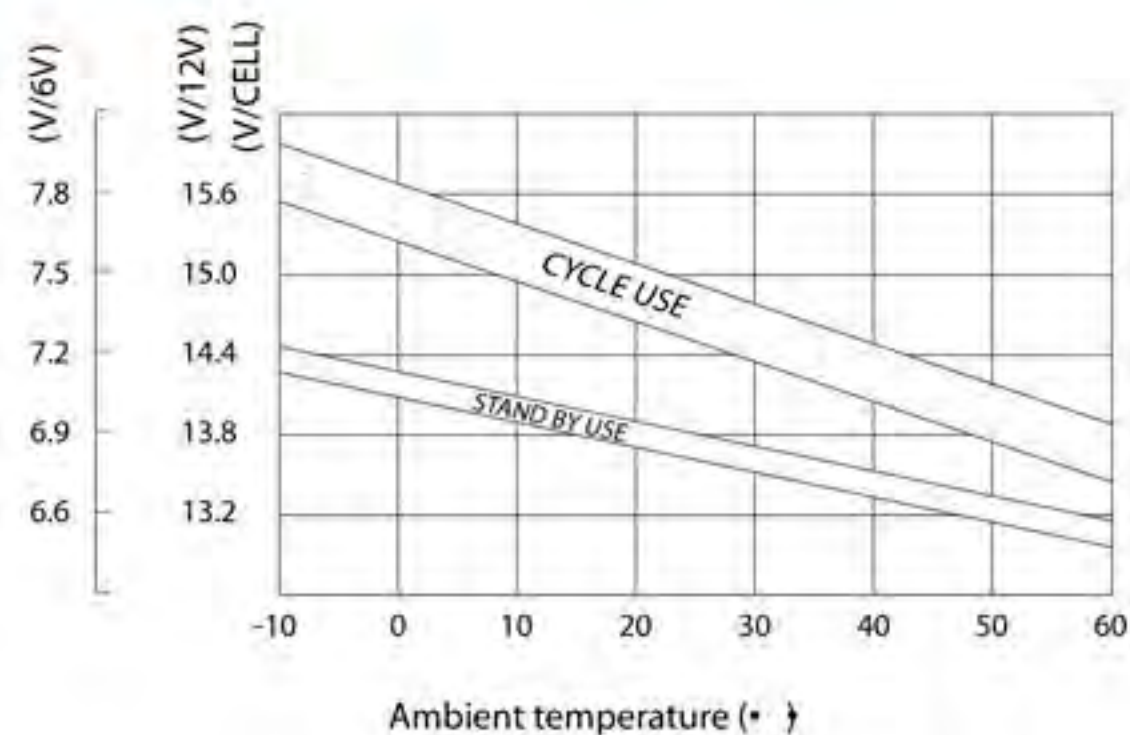
Characteristics

Capacity 77°F (25•)	20 hour rate (7.5A)	250 Ah
	10 hour rate (13.8A)	230 Ah
	5 hour rate (24.0A)	200 Ah
	1 hour rate (90.0A)	150 Ah
	15 Minute Rate (246A)	102.5 Ah
Internal Resistance	Full charged Battery 77°F (25•)	2.5 M
	104°F (40•)	102%
Capacity affected by Temperature (20hour rate)	77°F (25•)	100%
	32°F (0•)	85%
	5°F (-15•)	65%
Self-Discharge 77°F (25•)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F (25•)	1666A(5S)	
Terminal	M5	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 30A
		Voltage 14.4~14.7 V / 77°F (25•)
	Float	Voltage 13.5~13.8V / 77°F (25•)

Discharge Curves 77°F(25°C)



Relationship between charge voltage and temperature



Constant Power Discharge (WATTS PER CELL@25°C)

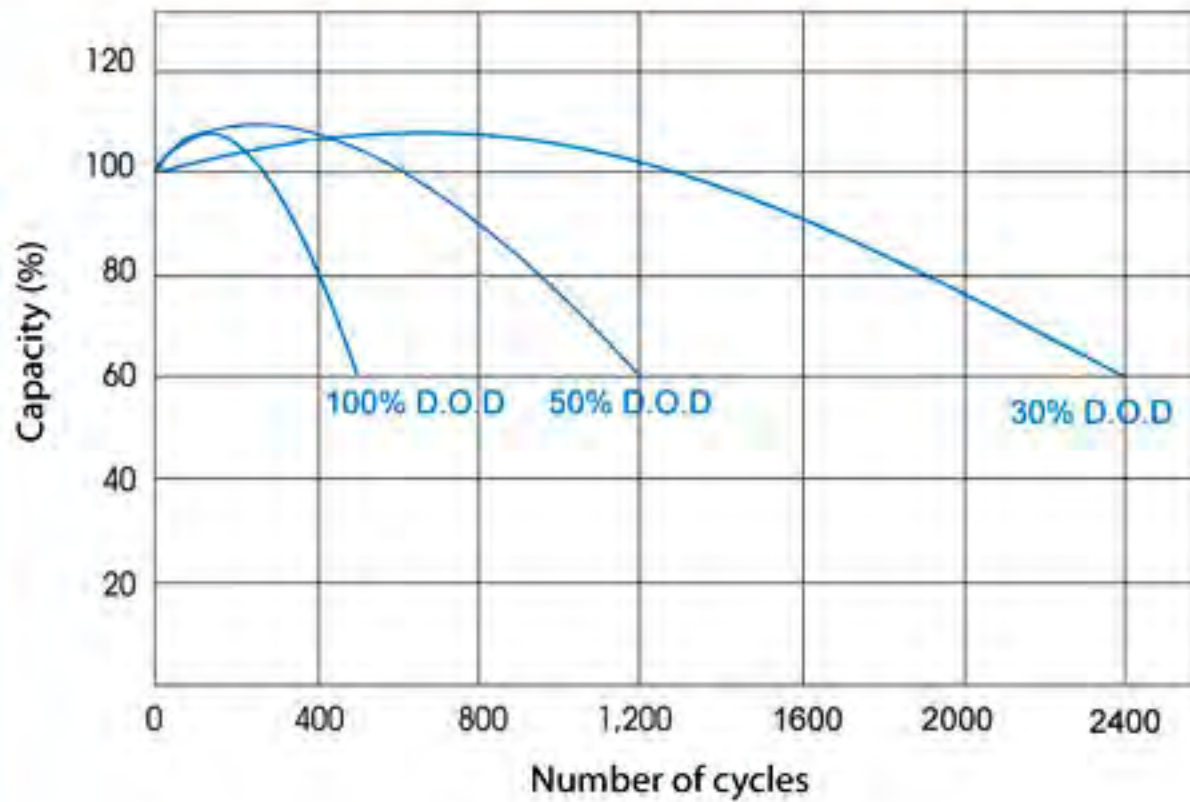
Cut-off voltage (V/cell)	10min	15min	30min	45min	1h	2h	3h	5h	10h	15h	24h
1.60	871	681	436	329	289	173	120	79.0	46.6	38.5	19.8
1.65	864	676	429	325	285	170	118	78.8	46.0	38.3	19.5
1.67	856	675	432	320	279	169	118	78.5	45.3	38.1	19.4
1.70	840	661	414	315	274	168	117	78.3	45.0	37.9	19.3
1.75	786	624	370	313	270	166	116	77.5	43.9	37.5	19.1
1.80	730	586	351	308	264	163	115	76.8	43.0	37.3	18.9
1.85	606	513	321	283	259	155	112	71.5	41.0	34.8	18.5

FM/NPG-250

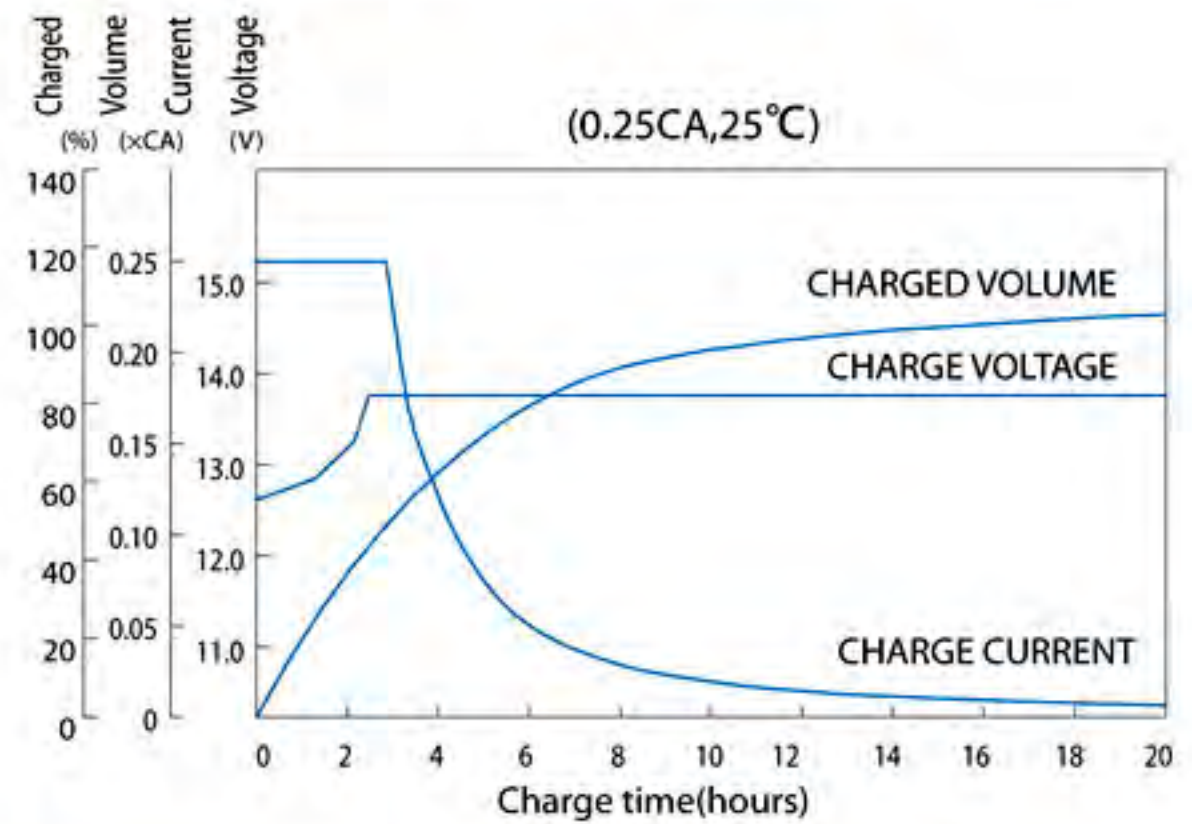
Deep Cycle Gel Design

The operating environment temperature above 40°C should be avoided. After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, Deutsche Power battery should be fully charged before storage.

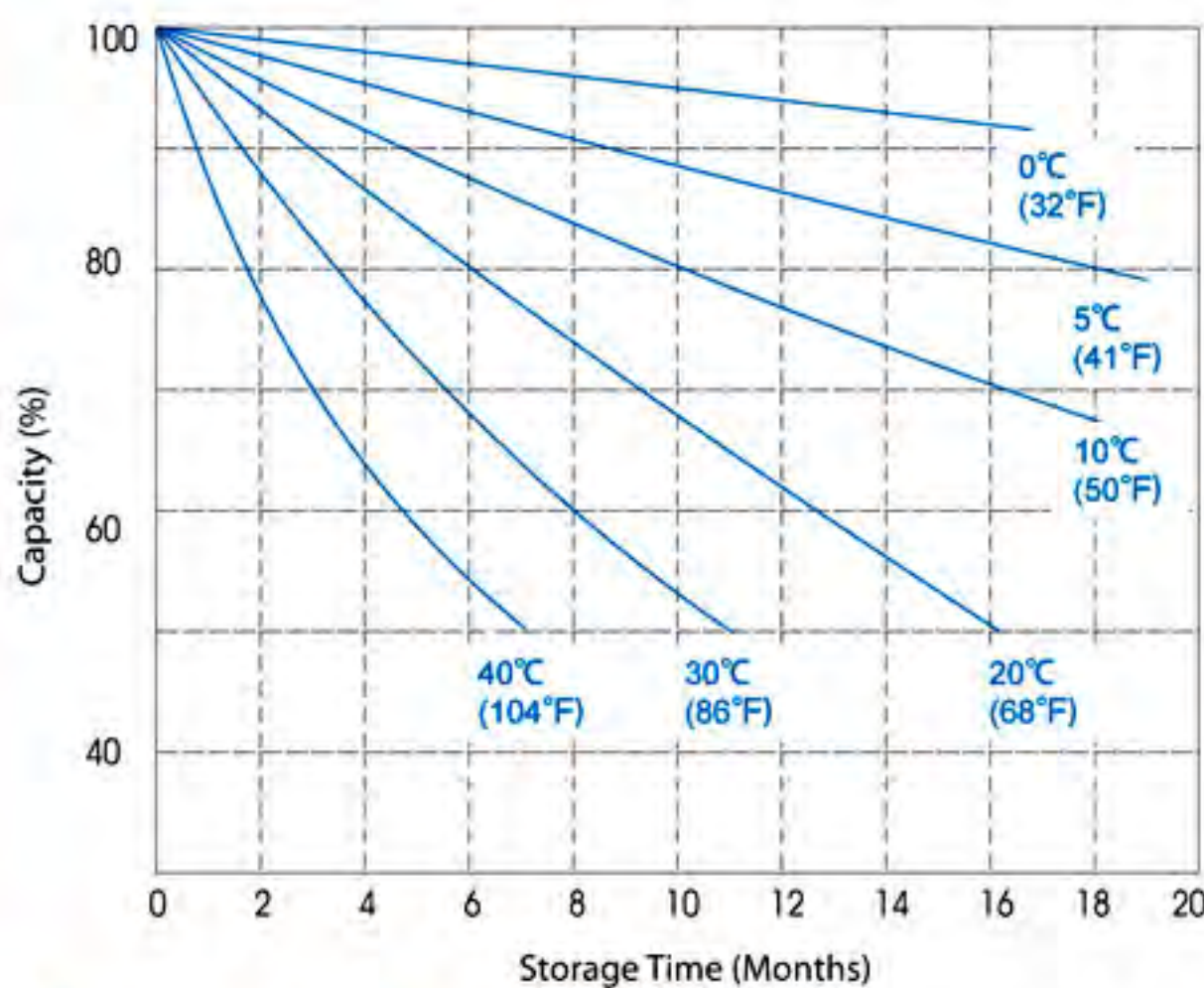
Cycle service life in relation to depth of discharge



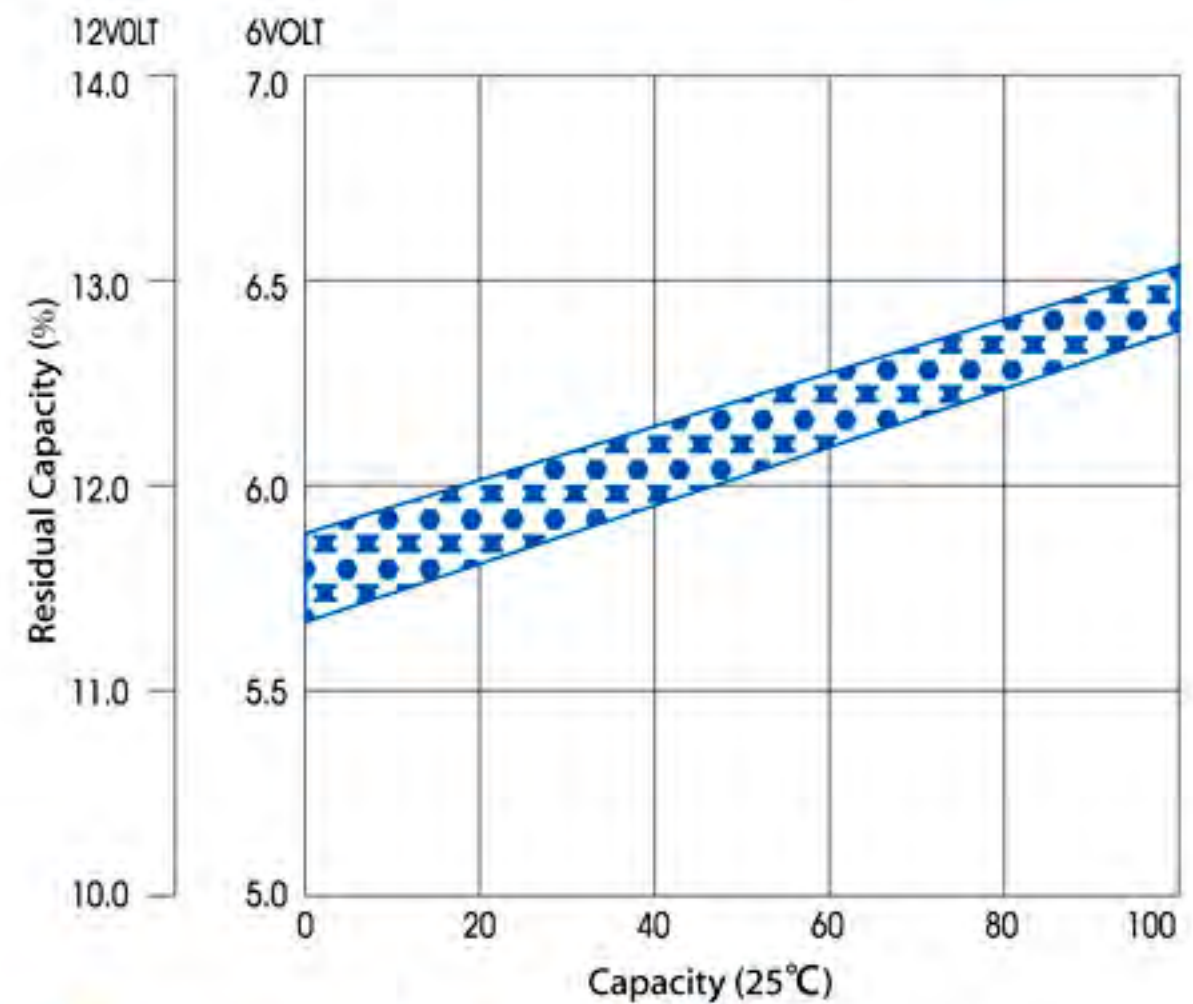
Constant voltage charge characteristic



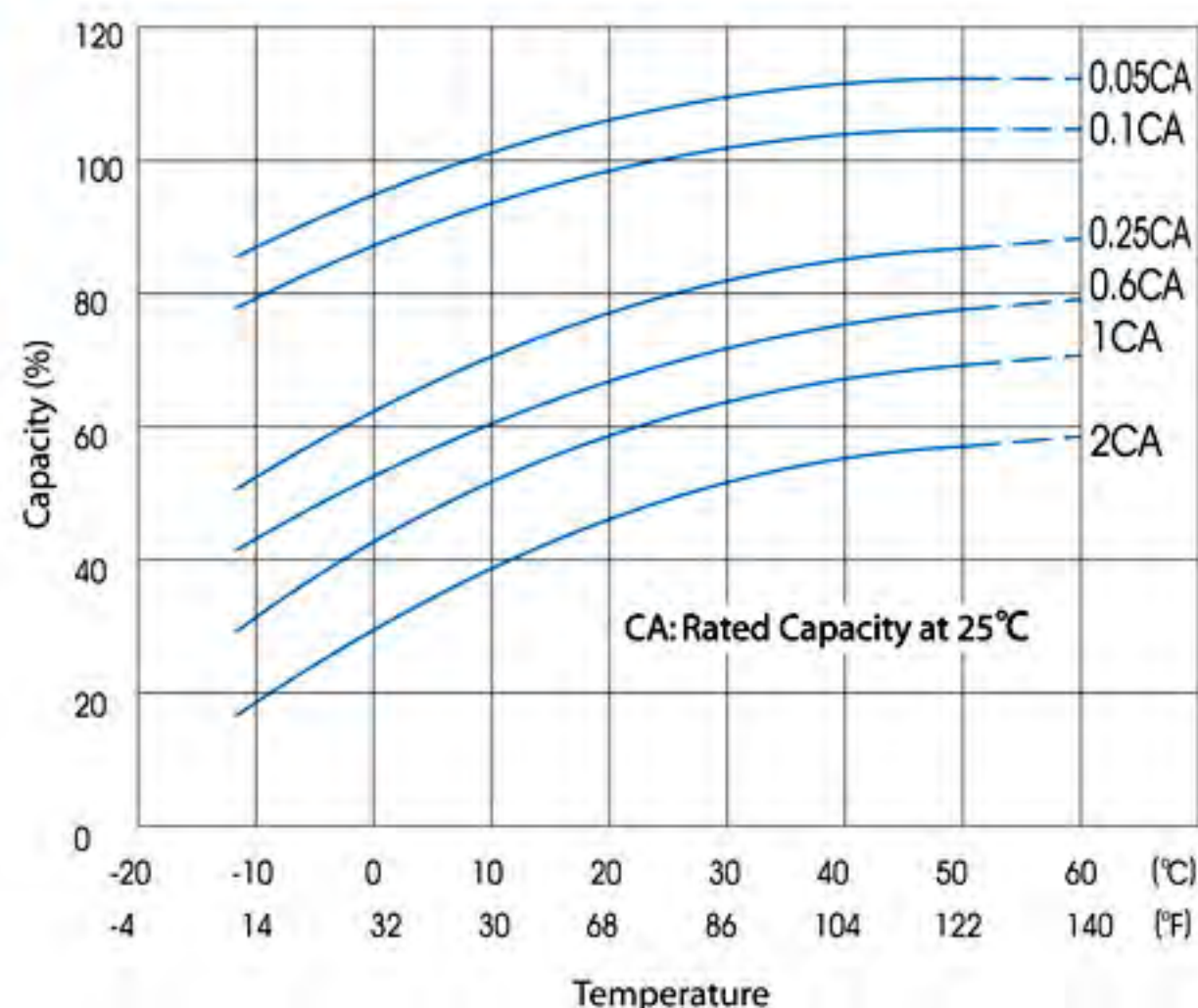
Self-Discharge Characteristics



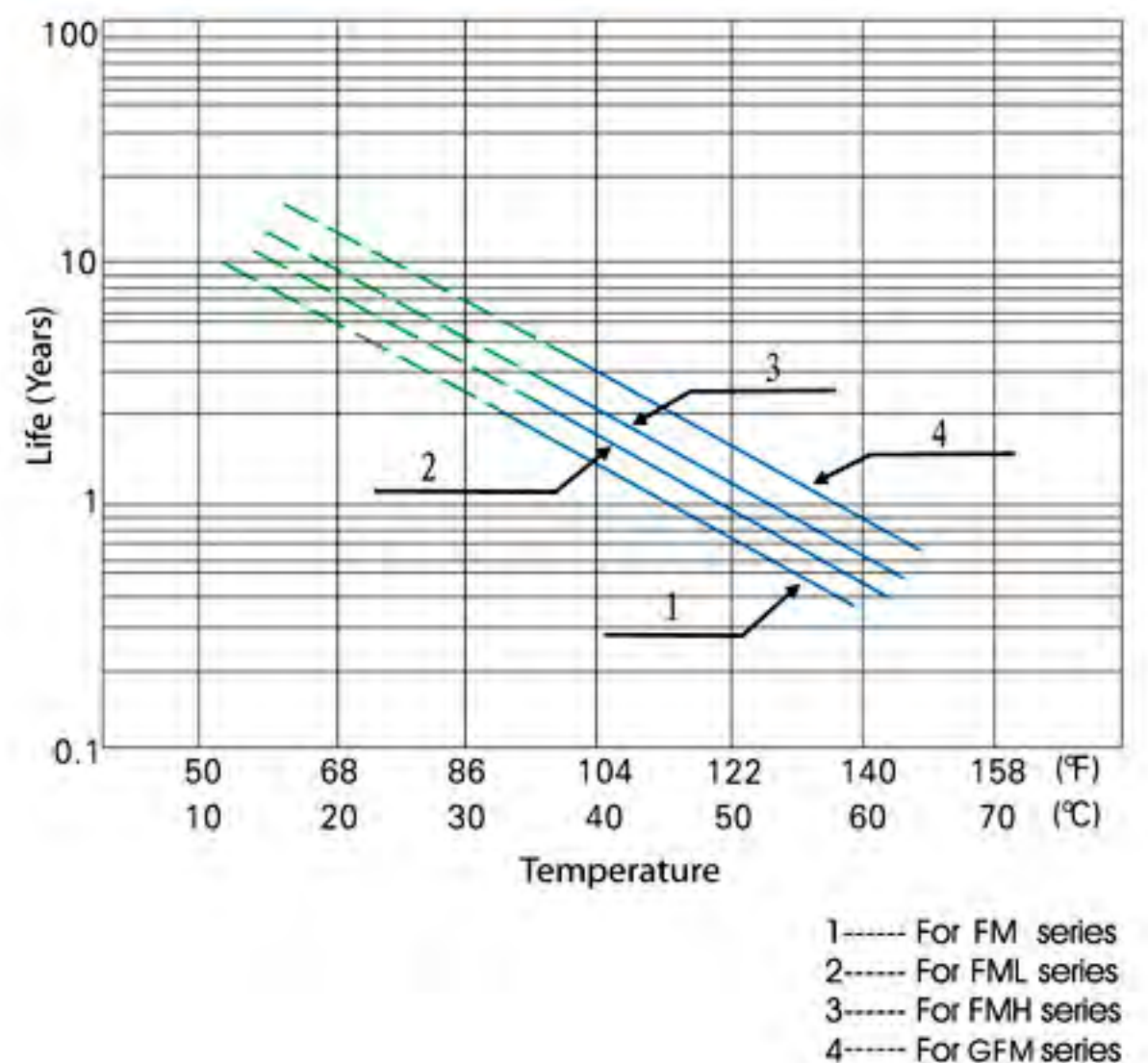
Relationship of OCV and Residual Capacity % (25°C)



Temperature effects on capacity



Temperature effects float life





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