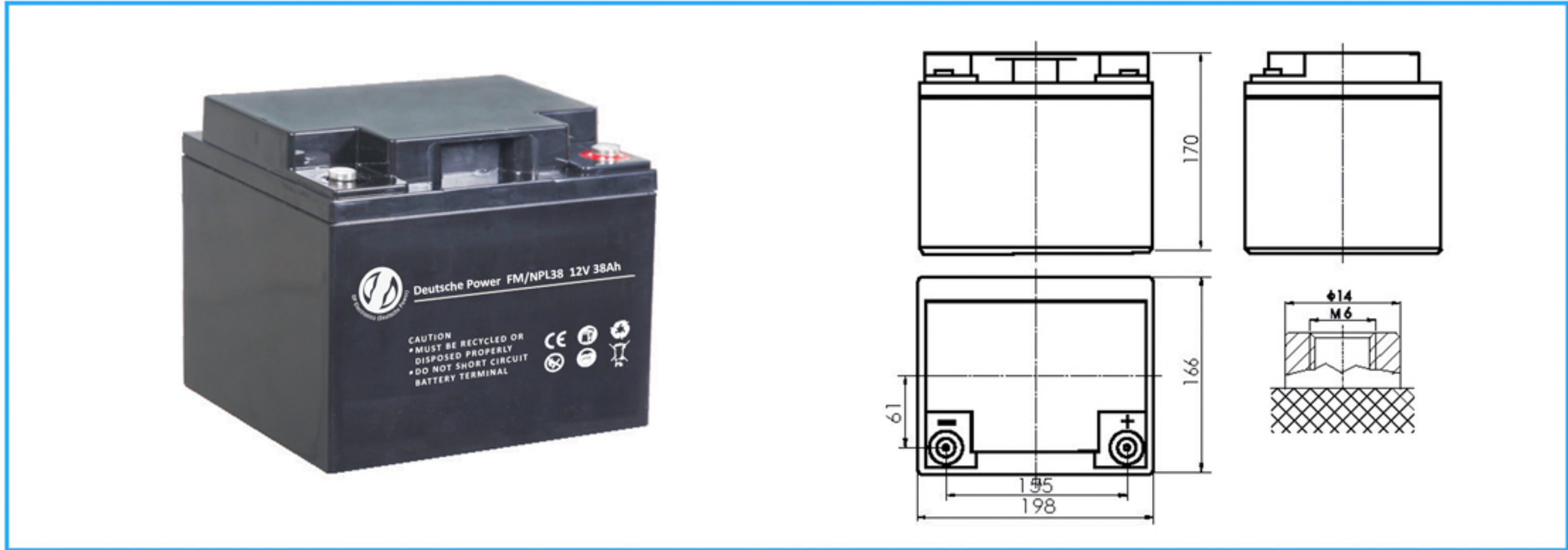


FM/NPL38

FM/NPL Battery Series
Solar Energy (Deep Cycle)



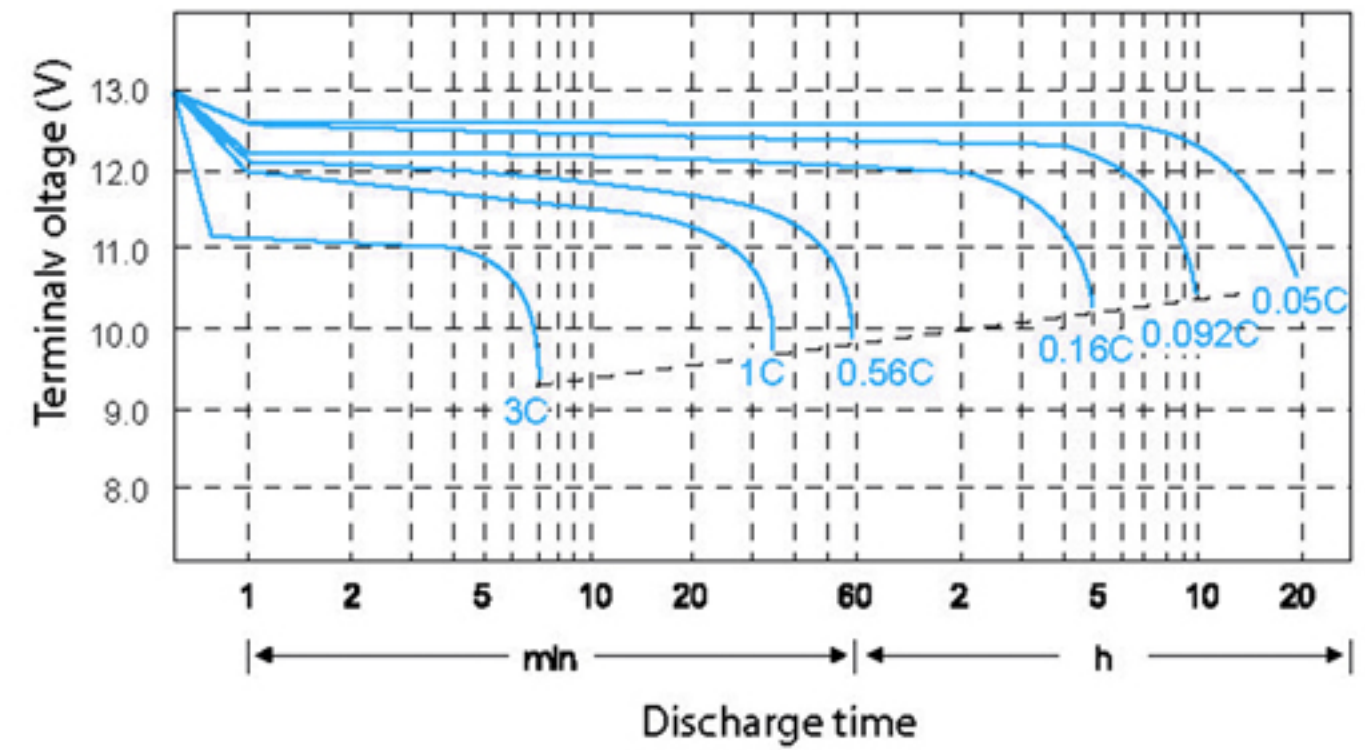
Specifications

Nominal Voltage	12V	
Rated Capacity (20 hour rate)	38Ah	
Dimensions	Total Height (with terminals)	6.70inches (170mm)
	Height	6.70inches (170mm)
	length	7.80inches (198mm)
	width	6.54inches (166mm)
Weight	Approx. 26.4pound(12.0kg)	

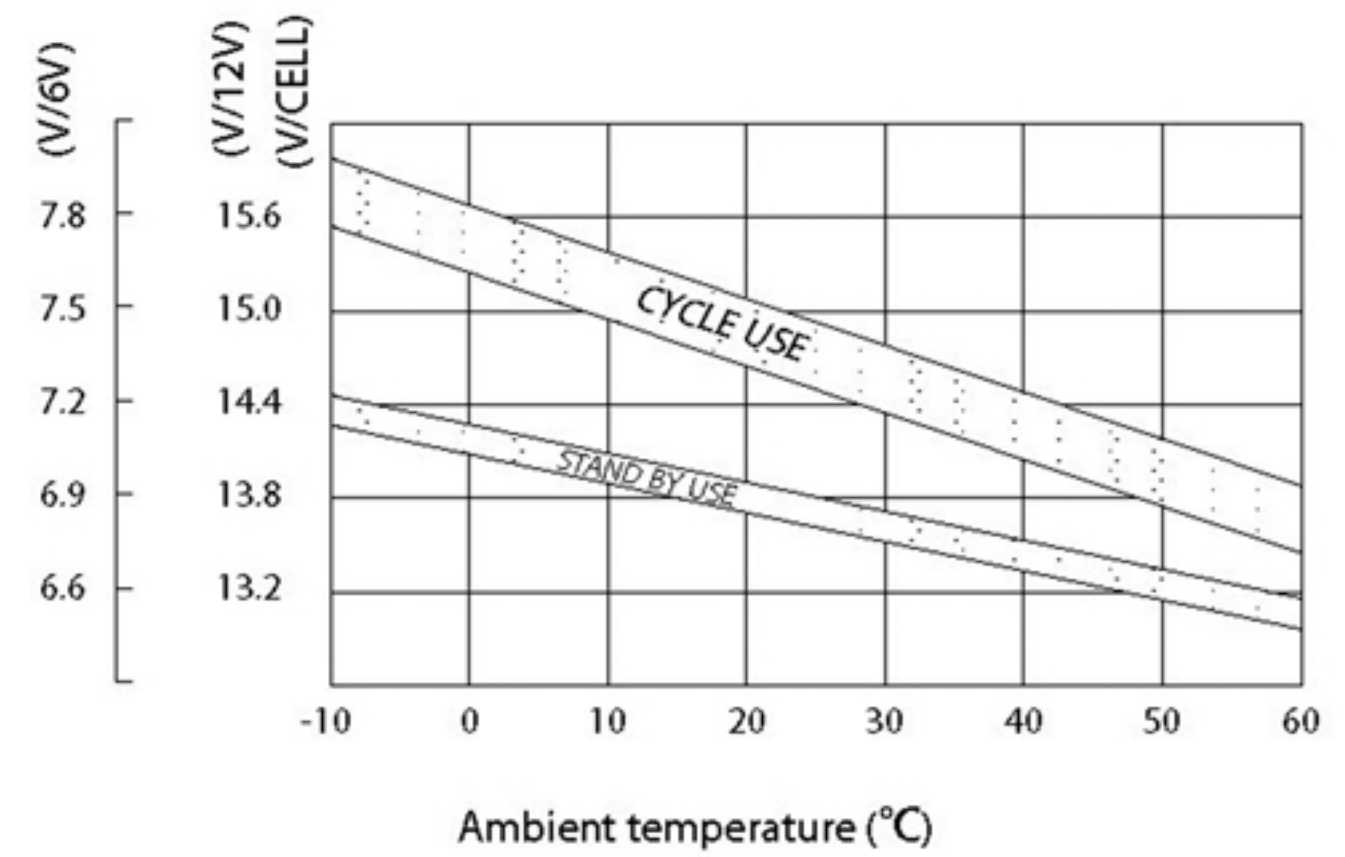
Characteristics

Capacity 77°F (25°C)	20 hour rate (1.90A)	38.0Ah
	10 hour rate (3.42A)	34.2Ah
	5 hour rate (6.08A)	30.4Ah
	1 hour rate (22.8A)	22.8Ah
	15 minute Rate (62.7A)	15.7Ah
Internal Resistance	Full charged Battery 77°F(25°C)	8mΩ
Capacity affected by Temperature (20hour 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 (25°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)	380A(5S)	
Terminal	M1	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 11.4A 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	77.6	60.8	38.3	28.7	22.3	13.4	9.79	6.47	4.31	3.86	3.07	1.76
1.70	73.1	57.3	36.2	26.9	21.3	13.0	9.50	6.21	4.14	3.72	2.95	1.69
1.80	61.2	48.9	33.3	24.8	20.7	12.5	9.03	5.92	3.88	3.50	2.78	1.59

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

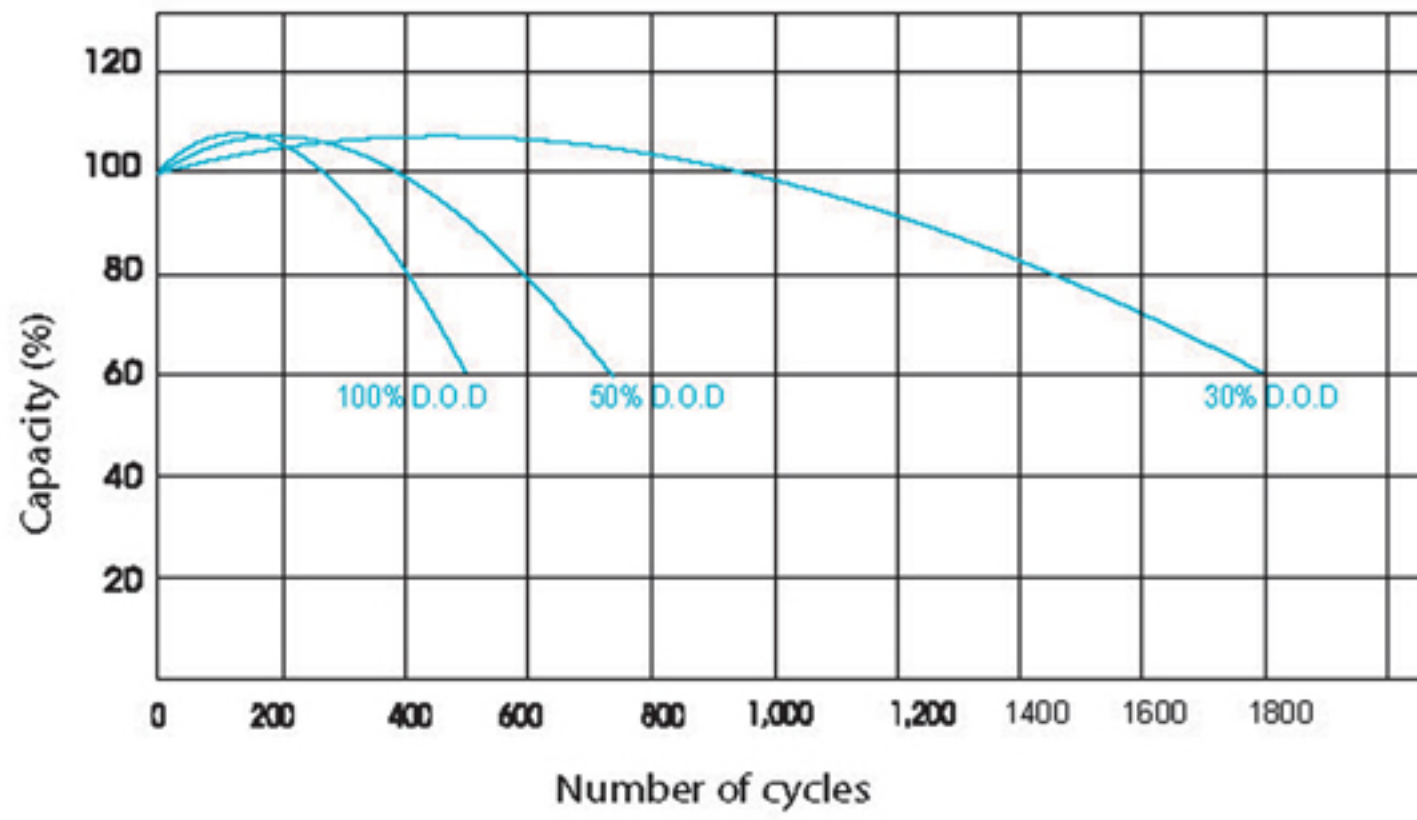
F.V/Time	10Min	15Min	30Min	45Min	1Hour	2Hour	3Hour	5Hour	8Hour	10Hour	12Hour	24Hour
1.60	143	113	70.2	52.7	44.6	25.3	18.0	12.1	8.00	6.76	5.79	2.92
1.65	139	110	69.7	52.3	43.2	24.5	17.8	11.9	7.94	6.70	5.70	2.90
1.67	137	108	68.8	51.3	42.6	24.4	17.7	11.8	7.86	6.62	5.64	2.87
1.70	135	106	67.6	50.4	41.9	24.2	17.5	11.6	7.75	6.56	5.57	2.81
1.75	127	102	67.4	49.6	41.6	24.0	17.4	11.5	7.68	6.50	5.42	2.76
1.80	117	94.1	64.1	47.8	40.9	23.6	17.0	11.3	7.42	6.28	5.32	2.68
1.85	96.9	82.7	58.3	45.4	38.0	22.7	16.5	10.7	7.21	6.00	5.12	2.60
1.90	82.0	73.4	54.0	43.7	35.8	22.1	16.1	9.7	6.73	5.63	4.73	2.64

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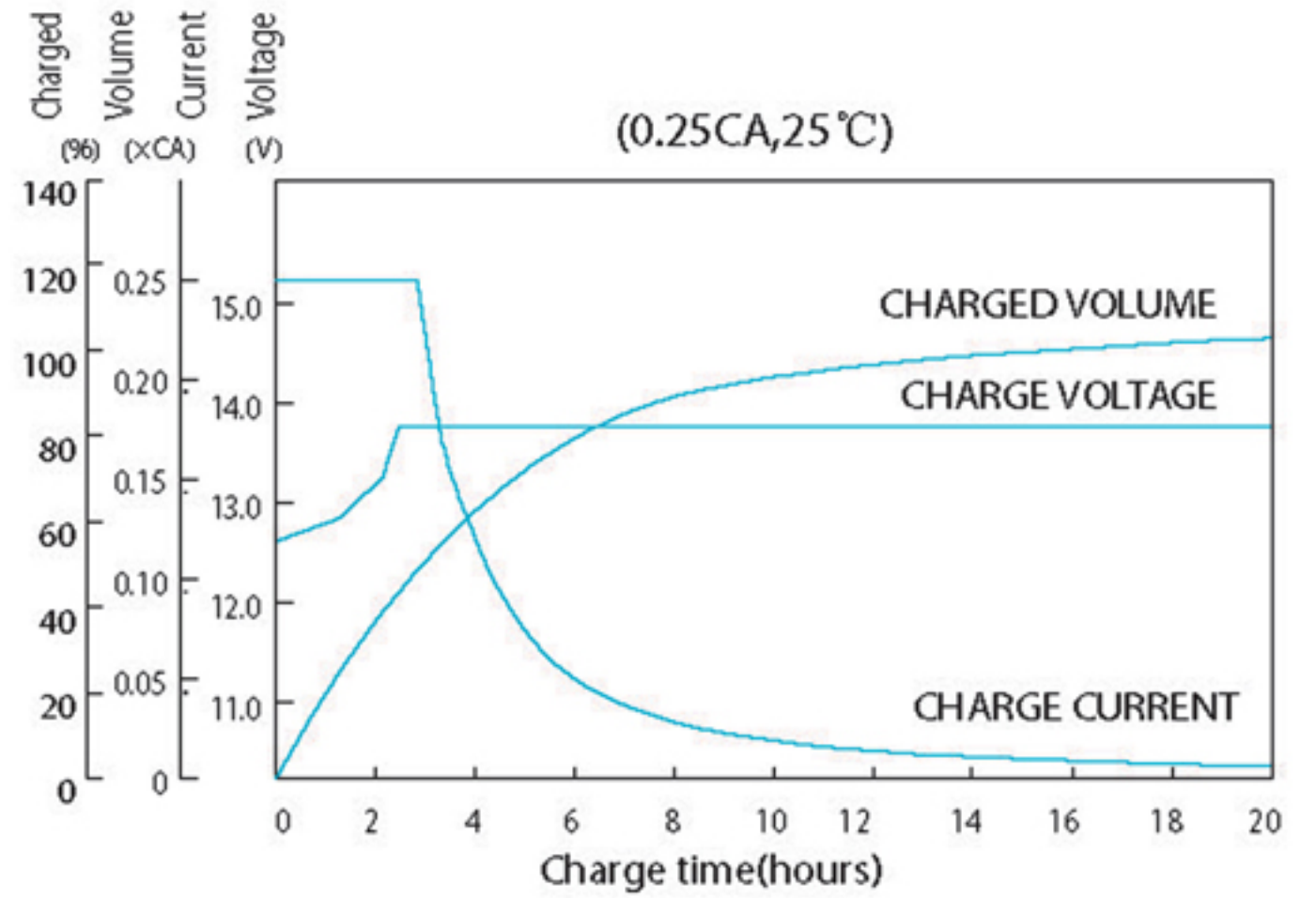
FM/NPL Battery Series Solar Energy (Deep Cycle)

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.

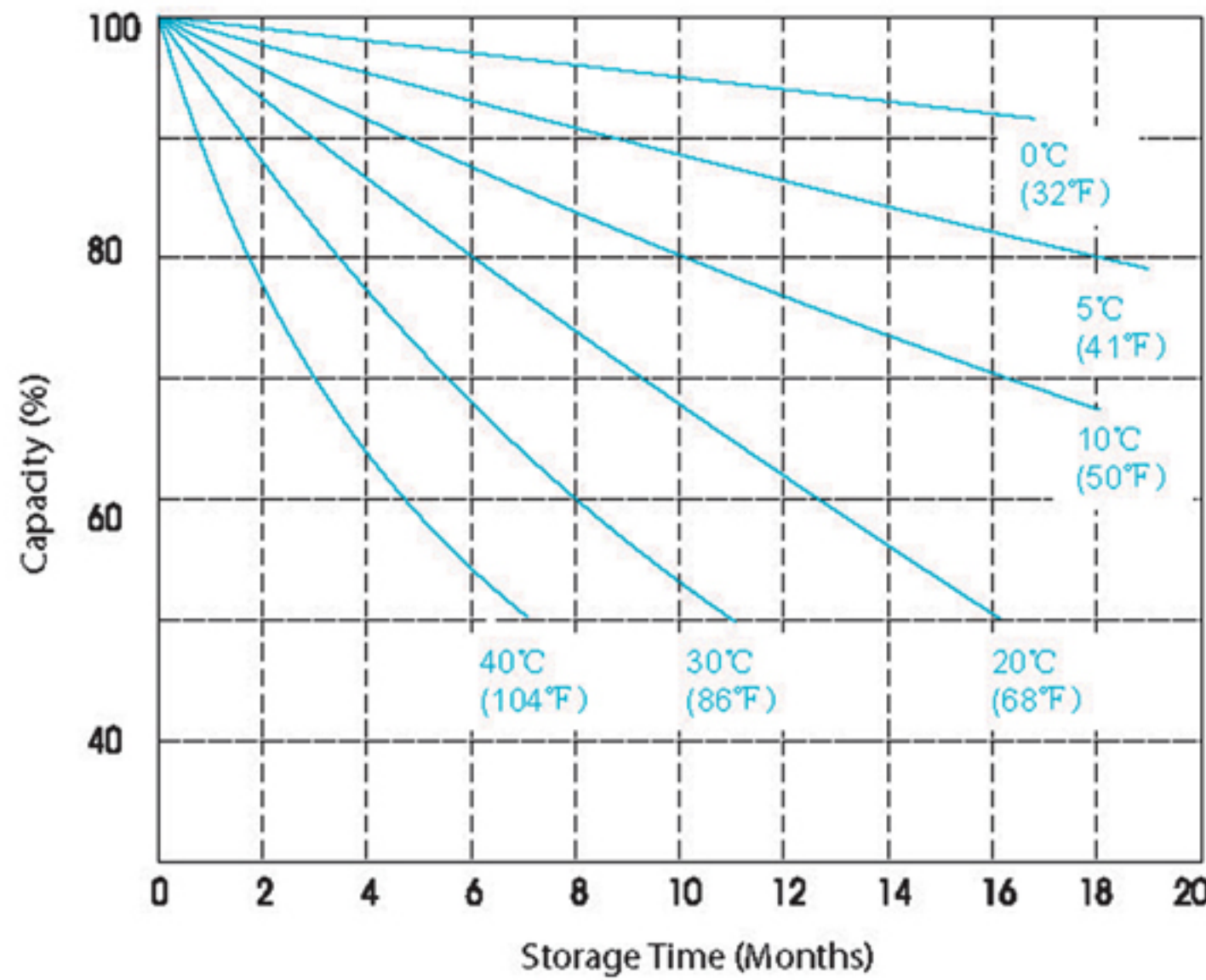
Cycle service life in relation to depth of discharge



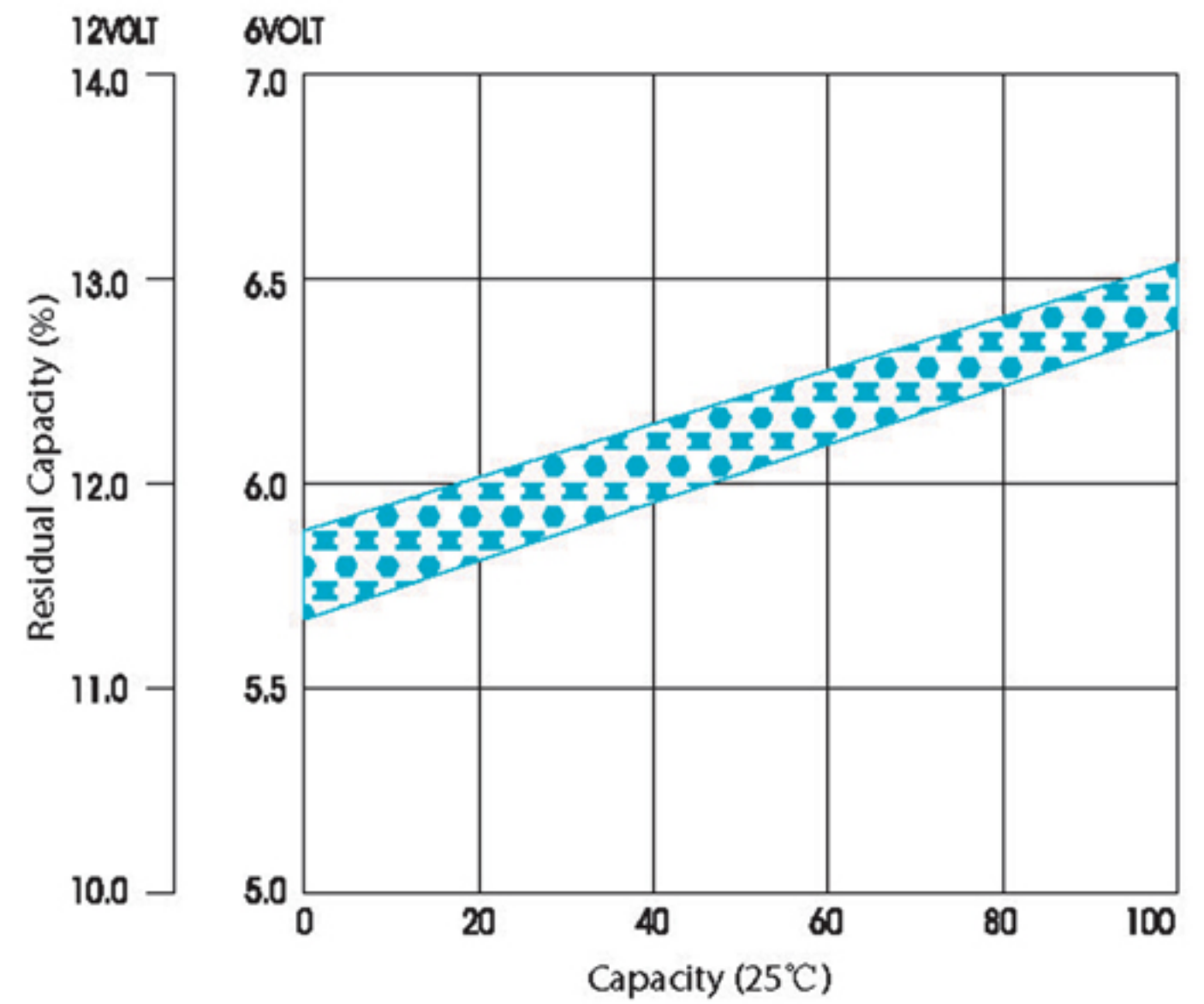
Constant voltage charge characteristic



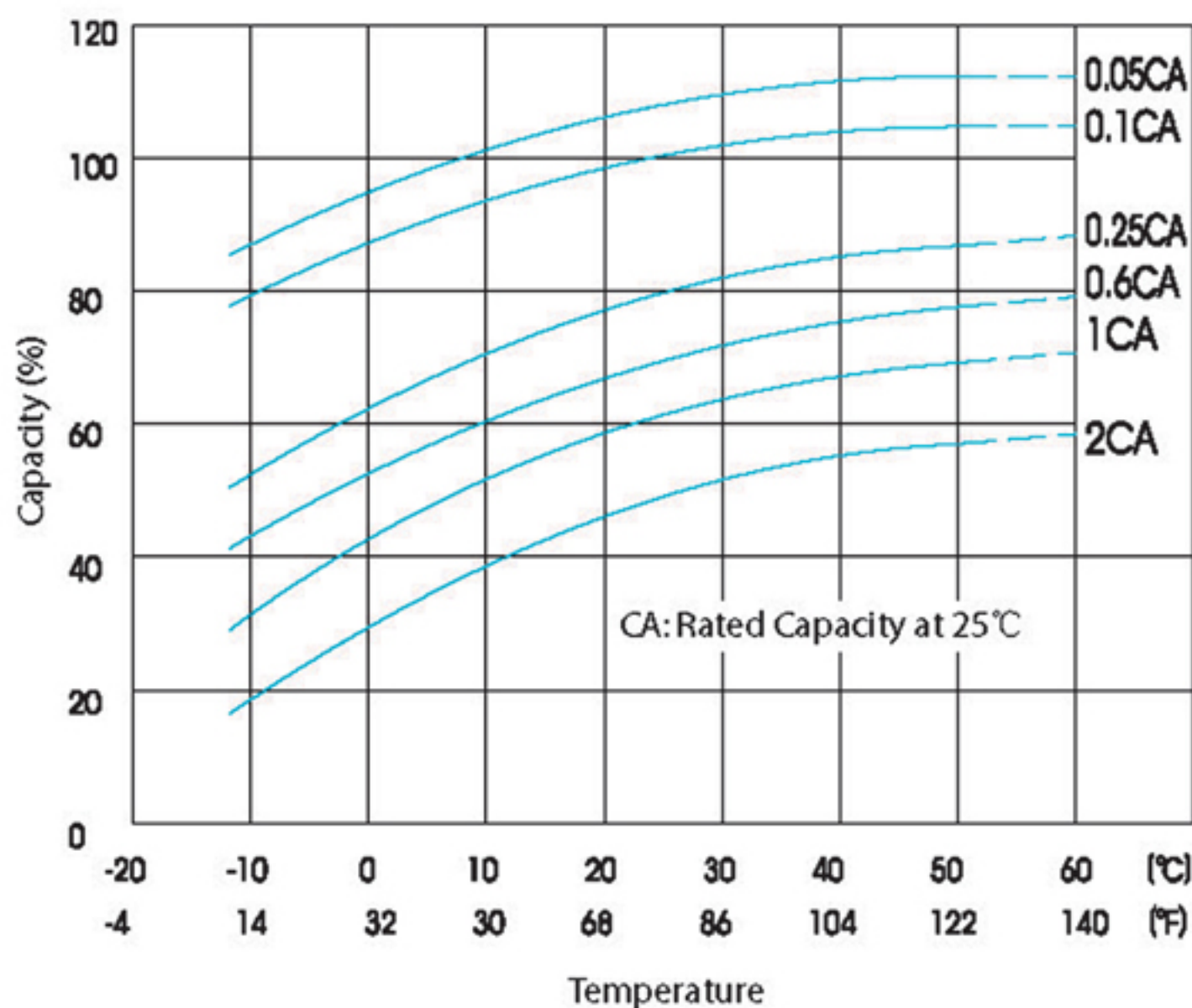
Self-Discharge Characteristics



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



Temperature effects on capacity



Temperature effects float life

