

Cylindrical Li-ion Battery

圆柱型锂离子电池

DLG, WE CARE
www.dlgbattery.cn



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德朗能

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因为专注，所以专业
DLG, WE CARE

圆柱型锂离子电池 Cylindrical Li-ion Battery

为了实现差异化的发展战略，德朗能依托强大的研发实力和合作的经营理念，先后批量生产出以钴酸锂、磷酸铁锂和三元做为电池正极材料的圆柱型锂离子电池产品。产品目前被广泛应用于电动车、移动电源、3C 数码产品、照明产品、电动工具等领域。多年来，德朗能的产品以卓越的品质得到了国内外众多知名企业的认可，成为其主力供应商。

Depending on the strong R&D capability and co-operative spirits, DLG successively produced cylindrical Li-ion batteries including ICR, LFP and NCM series. The products are widely used in the fields of EVs, portable power sources, 3C digital products, luminaires, power tools and so on. Relying on the excellent quality for years, DLG has got recognized and approved by numerous famous enterprises both at home and abroad and has become their dominant supplier.



磷酸铁锂系列 LFP Series

产品型号 Model	标称容量(mAh) Nominal Capacity	重量(约 g) Approx. Weight	内阻(mΩ) Internal Resistance	最大连续 放电倍率 Max. Continuous Discharge Rate	标称电压 Nominal Voltage	单体外形尺寸 Single Size	
						直径(mm) Diameter	高度(mm) Height
LFP26650E	3300	85	≤30	3C	3.2V	26.0±0.2	65.0±0.5
LFP26650E	3000	80	≤30	3C	3.2V	26.1±0.2	65.0±0.5
LFP26650P	2300	70	≤20	10C	3.2V	26.1±0.2	65.0±0.5
LFP18650E	1400	41	≤50	3C	3.2V	18.1±0.2	64.5±0.5
LFP18650P	1100	41	≤15	10C	3.2V	18.1±0.2	64.7±0.3
LFP18490E	1000	29	≤40	3C	3.2V	18.1±0.2	48.5±0.5
LFP14430E	400	16	≤80	3C	3.2V	14.1±0.2	42.5±0.5

三元系列 NCM Series

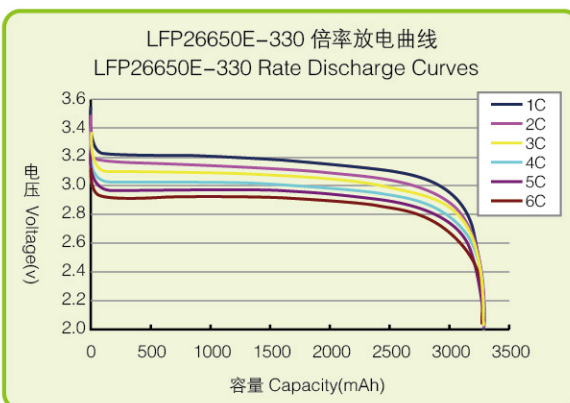
产品型号 Model	标称容量(mAh) Nominal Capacity	重量(约 g) Approx. Weight	内阻(mΩ) Internal Resistance	最大放 电倍率 Max. Discharge Rate	标称电压 Nominal Voltage	单体外形尺寸 Single Size	
						直径(mm) Diameter	高度(mm) Height
NCM18650	2600	45	≤55	2C	3.6V	18.1±0.2	64.7±0.3
NCM18650	2200	45	≤60	2C	3.6V	18.1±0.2	64.7±0.3
NCM18650P	2000	45	≤18	15C	3.6V	18.2±0.2	65.0±0.5
NCM18650P	1500	42	≤18	20C	3.6V	18.3±0.2	65.0±0.5
NCM18650P	1300	42	≤18	20C	3.6V	18.3±0.2	65.0±0.5
NCM18650EB	2150	42	≤30	4.5C	3.6V	18.1±0.2	64.5±0.5
NCM18490	1400	34	≤70	2C	3.6V	18.1±0.2	48.5±0.5
NCM14650	1000	22	≤70	2C	3.6V	14.1±0.2	64.5±0.5
NCM14500	750	20	≤75	2C	3.6V	14.1±0.2	48.5±0.5

钴酸锂系列 ICR Series

产品型号 Model	标称容量(mAh) Nominal Capacity	重量(约 g) Approx. Weight	内阻(mΩ) Internal Resistance	最大放 电倍率 Max. Discharge Rate	标称电压 Nominal Voltage	单体外形尺寸 Single Size	
						直径(mm) Diameter	高度(mm) Height
ICR18650	2800	48.5	≤60	2C	3.7V	18.2±0.3	64.5±0.5
ICR18650	2600	48	≤55	2C	3.7V	18.1±0.2	64.7±0.3
ICR18490	1400	33	≤70	2C	3.7V	18.1±0.2	48.5±0.5
ICR14650	1000	22	≤70	2C	3.7V	14.1±0.2	64.5±0.5
ICR14500	750	20	≤75	2C	3.7V	14.1±0.2	48.5±0.5
ICR14430	650	17	≤85	2C	3.7V	14.1±0.2	42.5±0.5

LFP26650E-330电性能简介 LFP26650E-330 Characteristics Curves

倍率放电测试 Rate Discharge Test



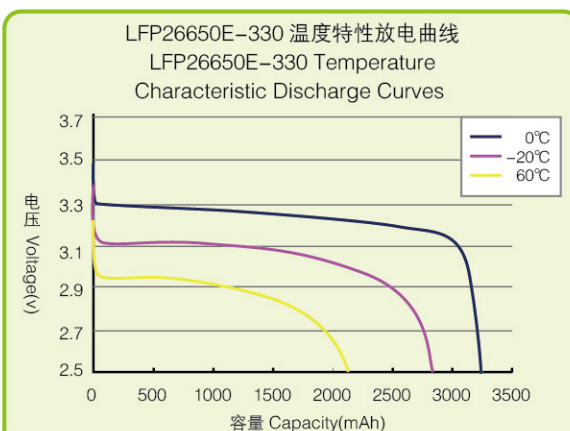
测试条件:

充电: 1C 恒流恒压充电 (终止电压 3.65V, 终止电流 33mA)
休息: 10 分钟
放电: 分别以 1C/2C/3C/4C/5C/6C 不同倍率放电, 终止电压 2.0V
环境温度: $25 \pm 2^\circ\text{C}$

Test Condition:

Charge: 1C Constant-Current / Constant-Voltage charge to 3.65V, 33mA cut off.
Rest: 10 minutes
Discharge: Discharge at 1C/2C/3C/4C/5C/6C constant current, 2.0V cut off.
Ambient Temperature: $25 \pm 2^\circ\text{C}$

温度特性放电曲线 Temperature Characteristic Discharge Test



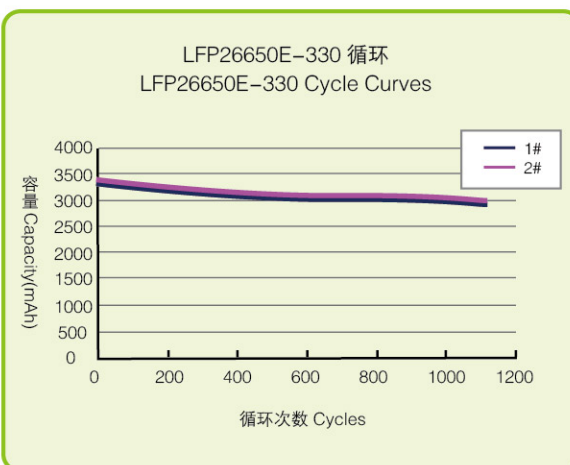
测试条件:

充电: 0.5C 恒流恒压充电 (终止电压 3.65V, 终止电流 33mA)
环境温度: $25 \pm 2^\circ\text{C}$
放电: 在不同温度下放置 4 小时, 然后 0.5C 恒流放电 (-20°C 0.2C), 终止电压 2.50V

Test Condition:

Charge: 0.5C Constant-Current / Constant-Voltage charge to 3.65V, 33mA cut off.
Ambient Temperature: $25 \pm 2^\circ\text{C}$
Discharge: Discharge at 0.5C constant current after 4h storage at different temperatures (-20°C 0.2C), 2.50V cut off.

循环寿命测试 Cycle Life Test



测试条件:

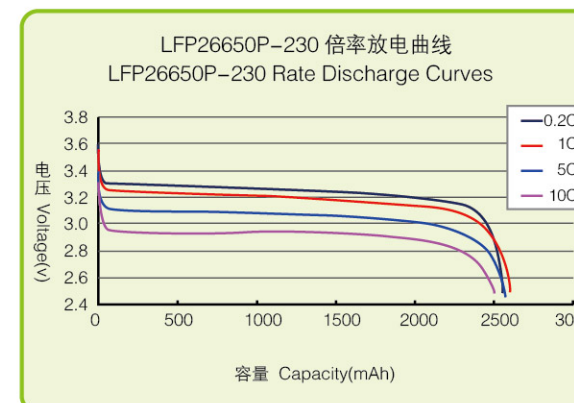
充电: 1C 恒流恒压充电 (终止电压 3.65V, 终止电流 33mA)
休息: 10 分钟
放电: 1C 恒流放电, 终止电压 2.50V
休息: 10 分钟
步骤: 重复 1-4 步, 直到放电容量小于初次容量的 80%, 测试终止
环境温度: $25 \pm 2^\circ\text{C}$

Test Condition:

Charge: 1C Constant-Current / Constant-Voltage charge to 3.65V, 33mA cut off.)
Rest: 10 minutes
Discharge: Discharge at 1C constant current, 2.50V cut off.
Rest: 10 minutes
Step: Repeat step 1-4 till the discharge capacity less than 80% of the initial capacity.
Ambient Temperature: $25 \pm 2^\circ\text{C}$

LFP26650P-230电性能简介 LFP26650P-230 Characteristics Curves

倍率放电测试 Rate Discharge Test



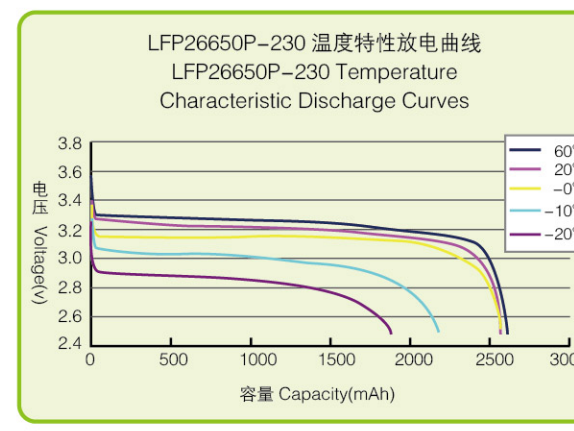
测试条件:

充电: 1C 恒流恒压充电 (终止电压 3.65V, 终止电流 115mA)
休息: 10 分钟
放电: 分别以 0.2C/1C/5C/10C 不同倍率放电, 终止电压 2.50V
环境温度: $23 \pm 2^\circ\text{C}$

Test Condition:

Charge: 1C Constant-Current / Constant-Voltage charge to 3.65V, 115mA cut off.
Rest: 10 minutes
Discharge: Discharge at 0.2C/1C/5C/10C constant current, 2.5V cut off.
Ambient Temperature: $23 \pm 2^\circ\text{C}$

温度特性放电曲线 Temperature Characteristic Discharge Test



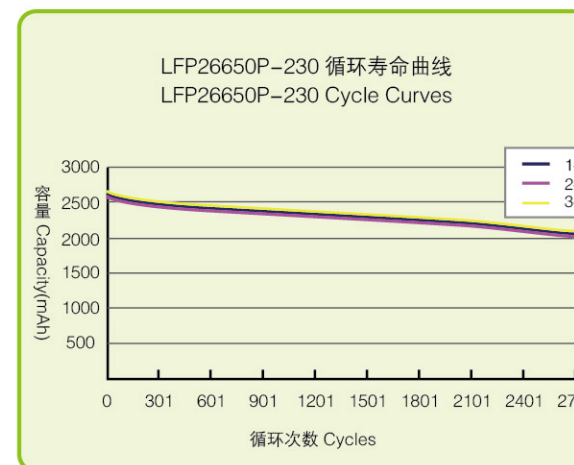
测试条件:

充电: 1C 恒流恒压充电 (终止电压 3.65V, 终止电流 115mA)
环境温度: $23 \pm 2^\circ\text{C}$
放电: 在不同温度下放置 4 小时, 然后 0.5C 恒流放电 (-20°C 0.2C), 终止电压 2.50V

Test Condition:

Charge: 1C Constant-Current / Constant-Voltage charge to 3.65V, 115mA cut off.
Ambient Temperature: $23 \pm 2^\circ\text{C}$
Discharge: Discharge at 0.5C constant current after 4h storage at different temperatures (-20°C 0.2C), 2.50V cut off.

循环寿命测试 Cycle Life Test



测试条件:

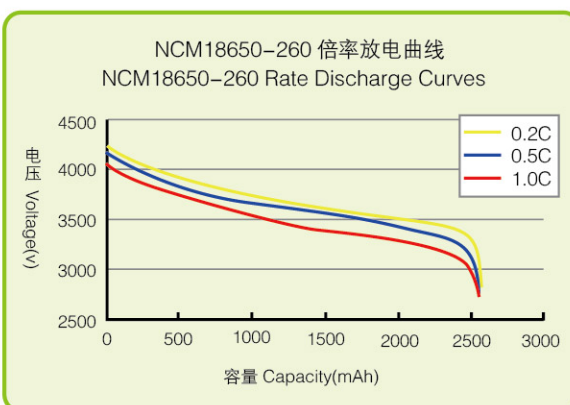
充电: 1C 恒流恒压充电 (终止电压 3.65V, 终止电流 115mA)
休息: 10 分钟
放电: 2C 恒流放电, 终止电压 2.50V
休息: 10 分钟
步骤: 重复 1-4 步, 直到放电容量小于初次容量的 80%, 测试终止
环境温度: $23 \pm 2^\circ\text{C}$

Test Condition:

Charge: 1C Constant-Current / Constant-Voltage charge to 3.65V, 115mA cut off.)
Rest: 10 minutes
Discharge: Discharge at 2C constant current, 2.50V cut off.
Rest: 10 minutes
Step: Repeat step 1-4 till the discharge capacity less than 80% of the initial capacity.
Ambient Temperature: $23 \pm 2^\circ\text{C}$

NCM18650-260电性能简介 NCM18650-260 Characteristics Curves

倍率放电测试 Rate Discharge Test



测试条件:

充电: 0.5C 恒流恒压充电 (终止电压 4.2V, 终止电流 26mA)

休止: 10 分钟

放电: 分别以 0.2C/0.5C/1C 不同倍率放电, 终止电压 2.75V

环境温度: $25 \pm 2^\circ\text{C}$

Test Condition:

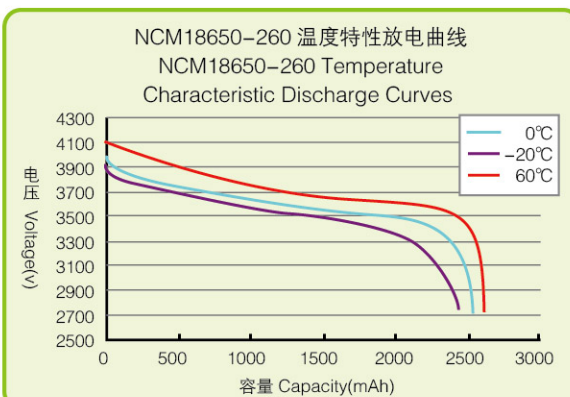
Charge: 0.5C Constant-Current / Constant-Voltage charge to 4.2V, 26mA cut off.

Rest: 10 minutes

Discharge: Discharge at 0.2C/0.5C/1C constant current, 2.75V cut off.

Ambient Temperature: $25 \pm 2^\circ\text{C}$

温度特性放电曲线 Temperature Characteristic Discharge Test



测试条件:

充电: 0.5C 恒流恒压充电 (终止电压 4.2V, 终止电流 26mA)

环境温度: $25 \pm 2^\circ\text{C}$

放电: 在不同温度下放置 4 小时, 然后 0.2C 恒流放电 (-20°C 0.2C), 终止电压 2.75V

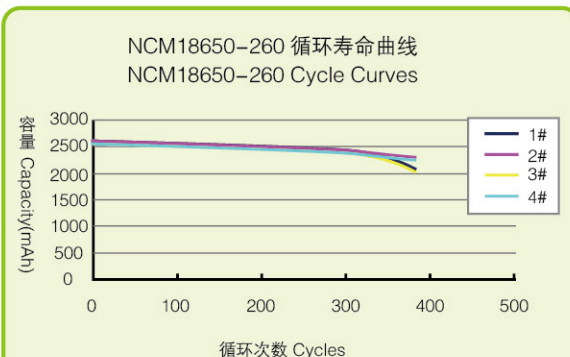
Test Condition:

Charge: 0.5C Constant-Current / Constant-Voltage charge to 4.2V, 26mA cut off.

Ambient Temperature: $25 \pm 2^\circ\text{C}$

Discharge: Discharge at 0.2C constant current after 4h storage at different temperatures (-20°C 0.2C), 2.75V cut off.

循环寿命测试 Cycle Life Test



测试条件:

充电: 0.5C 恒流恒压充电 (终止电压 4.2V, 终止电流 26mA)

休止: 10 分钟

放电: 0.5C 恒流放电, 终止电压 2.75V

休止: 10 分钟

工步: 重复 1-4 步, 直到放电容量小于初次容量的 70%, 测试终止

环境温度: $25 \pm 2^\circ\text{C}$

Test Condition:

Charge: 0.5C Constant-Current / Constant-Voltage charge to 4.2V, 26mA cut off.)

Rest: 10 minutes

Discharge: Discharge at 0.5C constant current, 2.75V cut off.

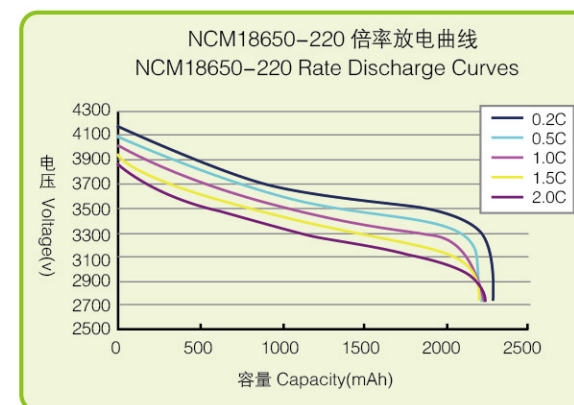
Rest: 10 minutes

Step: Repeat step 1-4 till the discharge capacity less than 70% of the initial capacity.

Ambient Temperature: $25 \pm 2^\circ\text{C}$

NCM18650-220电性能简介 NCM18650-220 Characteristics Curves

倍率放电测试 Rate Discharge Test



测试条件:

充电: 0.5C 恒流恒压充电 (终止电压 4.2V, 终止电流 22mA)

休止: 10 分钟

放电: 分别以 0.2C/0.5C/1C/2C 不同倍率放电, 终止电压 2.75V

环境温度: $25 \pm 2^\circ\text{C}$

Test Condition:

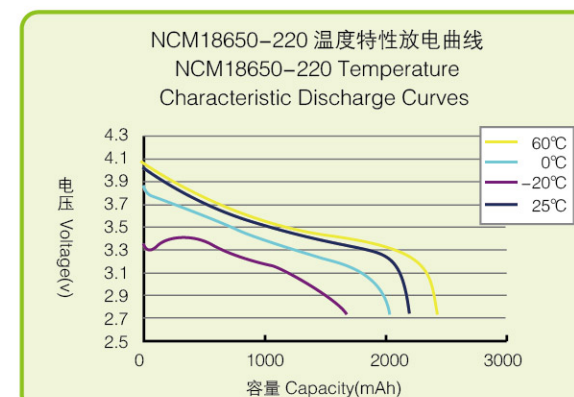
Charge: 0.5C Constant-Current / Constant-Voltage charge to 3.65V, 22mA cut off.

Rest: 10 minutes

Discharge: Discharge at 0.2C/0.5C/1C/2C constant current, 2.75V cut off.

Ambient Temperature: $25 \pm 2^\circ\text{C}$

温度特性放电曲线 Temperature Characteristic Discharge Test



测试条件:

充电: 0.5C 恒流恒压充电 (终止电压 4.2V, 终止电流 22mA)

环境温度: $25 \pm 2^\circ\text{C}$

放电: 在不同温度下放置 4 小时, 然后 0.5C 恒流放电 (-20°C 0.2C), 终止电压 2.75V

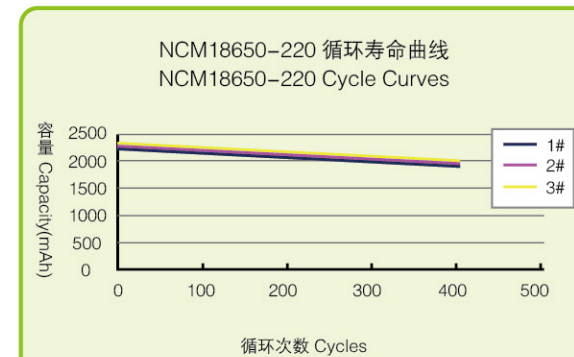
Test Condition:

Charge: 0.5C Constant-Current / Constant-Voltage charge to 4.2V, 22mA cut off.

Ambient Temperature: $25 \pm 2^\circ\text{C}$

Discharge: Discharge at 0.5C constant current after 4h storage at different temperatures (-20°C 0.2C), 2.75V cut off.

循环寿命测试 Cycle Life Test



测试条件:

充电: 0.5C 恒流恒压充电 (终止电压 4.2V, 终止电流 22mA)

休止: 10 分钟

放电: 0.5C 恒流放电, 终止电压 2.75V

休止: 10 分钟

工步: 重复 1-4 步, 直到放电容量小于初次容量的 80%, 测试终止

环境温度: $25 \pm 2^\circ\text{C}$

Test Condition:

Charge: 0.5C Constant-Current / Constant-Voltage charge to 4.2V, 22mA cut off.)

Rest: 10 minutes

Discharge: Discharge at 0.5C constant current, 2.75V cut off.

Rest: 10 minutes

Step: Repeat step 1-4 till the discharge capacity less than 80% of the initial capacity.

Ambient Temperature: $25 \pm 2^\circ\text{C}$