



# 产品规格书

SPECIFICATION FOR APPROVAL

Power Adapter/电源适配器

客户:

CUSTOMER NO. : \_\_\_\_\_

产品描述:

DESCRIPTION: Input:100~240VAC 50/60Hz Output:3.6-13.6VDC 14.0W

机种型号:

MODEL NO. : \_\_\_\_\_ LXCP12X 系列规格书

文件编号:

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客户编号

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CUSTOMER NO. : \_\_\_\_\_

Rev. : V04

产品颜色:

SAMPLE COLOR:  Black  White

深圳市龙星辰电源有限公司

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Shenzhen Longxc Power Supply Co.,LTD

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版本目录/Rev. List

版本/Rev.	日期/Date	描述/ Description	制订/Design
V00	2019-11-21	新版本/New Rev.	尹辉
V01	2020-11-30	1. Update dimension drawing; 2. Add model/1. 更新尺寸图; 2. 添加型号	尹辉
V02	2021-06-03	Increase ripple voltage test conditions: input voltage $\geq 100V$ /增加纹波电压试验条件: 输入电压 $\geq 100V$	尹辉
V03	2021-10-08	1. Change the output voltage range; 2. increase by IEC 62368-1 certification/1. 改变输出电压范围; 2. 通过 IEC 62368-1 认证	尹辉
V04	2023-03-06	升版为中英文/Updated to Chinese and English	覃林英

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## 1. 描述/ DESCRIPTION

本规格书适用于 LXCP12X 系列型号的开关电源。

The purpose of the document is to specify the functional requirements of a LXCP12X series switching power supply.

## 2. 型号命名规则/MODEL NAME RULE

LXCP12X-aaabbbcd

-LXCP= Longxc 医疗适配器/-LXCP= Longxc medical adapter

-12X=系列名称/-12X=Name of the series

-aaa="036"- "168"为输出电压。"036"是 3.6V, "042"是 4.2V, "050"是 5.0V, "060"是 6.0V, "075"是 7.5V, "090"是 9.0V, "100"是 10.0V, "110"是 11.0V, "120"是 12.0V, "135"是 13.5V, "136"是 13.6V, "150"是 150V, "160"是 160V。

-aaa="036"- "168" stands for the output voltage. "036" means 3.6V, "042" means 4.2V, "050" means 5.0V, "060" means 6.0V, "075" means 7.5V, "090" means 9V, "100" means 10.0V, "110" means 11.0V, "120" means 12.0V, "135" means 13.5V, "136" means 13.6V, "150" means 15.0V, "160" means 16.0V.

-bbb=3 位数字, 范围为"001"- "225"步进 1, 表示输出电流, "001"表示 0.01A, "225"表示 2.25A。

-bbb=3 digits with range of "001"- "225" step by 1, which stands for output current. "001" means 0.01A, "225" means 2.25A.

-c="A", "B", "C", "D", "I", "K", "L", "O", "M", "N", "P", "Q", "R", "S", "T"代表插头类型。"A"表示中规插头, "B"表示欧规插头, "C"表示英规插头, "D"表示美规插头, "I"表示日规插头, "K"表示巴西规插头, "L"表示韩规插头, "O"表示澳规插头, "M"表示南非规插头。"N"表示意大利规插头, "P"表示瑞士规插头, "Q"表示以色列规插头, "R"表示丹麦规插头, "S"表示墨西哥插头, "T"表示印度规插头。

-c="A", "B", "C", "D", "I", "K", "L", "O", "M", "N", "P", "Q", "R", "S", "T" stands for the plug type. "A" means CN plug, "B" means EU plug, "C" means UK plug, and "D" means US plug, "I" means JIS plug, "K" means Brazil plug, "L" means Korea plug, "O" means AUS plug, "M" means ZA plug. "N" means IT plug, "P" means CH plug "Q" means IL plug, "R" means DK plug, "S" means Mexico plug, "T" means Indian plug.

-d="G"或"H"表示输出连接器类型。"G"表示 USB 连接器输出, "H"表示固定线连接器输出。

-d="G" or "H" stands for output connector type. "G" means USB connector output. "H" means fixed cord connector output.

Details refer to the below table:/ 详情见下表:

型号/Model number	输出电流范围/Output current range
LXCP12X-036bbbcd	bbb="010"- "225", 0.1A-2.25A step by 0.01A
LXCP12X-042bbbcd	bbb="010"- "225", 0.1A -2.25A step by 0.01A
LXCP12X-050bbbcd	bbb="010"- "225", 0.1A -2.25A step by 0.01A
LXCP12X-060bbbcd	bbb="010"- "225", 0.1A -2.25A step by 0.01A
LXCP12X-075bbbcd	bbb="010"- "160", 0.1A -1.60A step by 0.01A
LXCP12X-090bbbcd	bbb="010"- "150", 0.1A -1.50A step by 0.01A
LXCP12X-100bbbcd	bbb="010"- "120", 0.1A -1.20A step by 0.01A
LXCP12X-110bbbcd	bbb="010"- "100" 0.1A -1.00A step by 0.01A
LXCP12X-120bbbcd	bbb="010"- "100", 0.1A -1.00A step by 0.01A
LXCP12X-135bbbcd	bbb="010"- "100", 0.1A -1.00A step by 0.01A
LXCP12X-136bbbcd	bbb="010"- "100" 0.1A -1.00A step by 0.01A
LXCP12X-150bbbcd	bbb="010"- "100" 0.1A -1.00A step by 0.01A
LXCP12X-168bbbcd	bbb="010"- "100" 0.1A -0.90A step by 0.01A



### 3. 输入特性/INPUT CHARACTERISTICS

#### 3.1 输入电压/Input Voltage:

额定电压/Nominal voltage:100~240Vac

范围/Range:90~264Vac

#### 3.2 输入频率/Input Frequency:

额定频率/ Nominal frequency: 50/60Hz

范围/Range:47~63Hz

#### 3.3 输入电流/Input Current:

当输入交流电压为额定值的下限电压负载满载时,最大输入交流电流为 0.5A。

0.5Amps max at any input voltage and rated DC output and rated load.

#### 3.4 浪涌电流/Inrush Current:

当输出为额定负载,环境温度为 25°C,输入 264Vac 冷态起机时的最大浪涌电流为 50A。

50Amps max. cold start at 264Vac input, with rated load and 25°C ambient.

#### 3.5 AC 漏电流/ AC Leakage Current:

当输入电压 264Vac 时,正常状态最大漏电流为 0.1mA

Normal 0.1mA Max. at 264Vac input.

当输入电压 264Vac 时,单一故障状态最大漏电流为 0.2mA.

Single fault 0.2mA Max. at 264Vac input.

### 4. 输出特性/OUTPUT CHARACTERISTICS

#### 4.1 输出功率/Power Output:

型号/Model name	输出电压/ Output voltage (V)	输出范围/Output range (V)	输出电流/ Output current (A)	输出功率/Output power (W)
LXCP12X-036	3.6	3.10~4.00	2.25	8.10
LXCP12X-042	4.2	3.70~4.60	2.25	9.45
LXCP12X-050	5.0	4.40~5.60	2.25	11.25
LXCP12X-060	6.0	5.40~6.60	2.25	13.50
LXCP12X-075	7.5	7.00~8.10	1.60	12.00
LXCP12X-090	9.0	8.50~9.70	1.50	13.50
LXCP12X-100	10.0	9.50~10.70	1.20	12.00
LXCP12X-110	11.0	10.30~11.70	1.00	11.00
LXCP12X-120	12.0	11.30~12.70	1.00	12.00
LXCP12X-135	13.5	12.80~14.20	1.00	13.50
LXCP12X-136	13.6	12.90~14.30	1.00	13.60



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LXCP12X-150	15.0	14.30~15.70	1.00	15.00
LXCP12X-168	16.8	16.10~17.50	0.90	15.12
线性调整率/Line regulation		±5%		
负载调整/Load regulation		±8%		

#### 4.2 纹波和噪音 Ripple And Noise:

测试条件:在额定电压及额定负载条件下,使用示波器带宽为 20MHz 连接到充电器的输出端,同时输出端并联一个 10uF 的电解电容和一个 0.1uF 的瓷片电容,最大纹波/最大噪音为 200mVp-p.

Test condition:Under nominal voltage and rated load, the ripple and noise are as follows when measure with max. bandwidth of 20MHz and Parallel 10uF/0.1uF, crossed connected at testing point. Ripple and noise(max.) less than 200mVp-p.

#### 4.3 启动延迟时间/Turn On Delay Time:

最大启动时间为 3s,测试条件输入 220Vac 和输出额定负载时.

3 second max. at 220Vac input and output rated load.

#### 4.4 上升时间/Rise Time:

最大时间为 50ms,测试条件输入 115Vac 和输出额定负载时.

50ms max. at 115Vac input and output rated load.

#### 4.5 保持时间/Hold Up Time:

当输入 115Vac 和输出额定负载时,最小保持时间为 10ms.

10ms min. at 115Vac input and output rated Load.

#### 4.6 效率/Efficiency:

最小 70%,测试条件 115/230Vac 输入电压,额定输出负载.

70% min, at 115/230Vac input voltage, rated load.

### 5. 保护功能/PROTECTION FUNCTION

#### 5.1 短路测试/Short Circuit Test:

该电源供给器在短路解除时能恢复正常工作。

The power supply will be auto recovering when short circuit faults removed.

#### 5.2 过流保护/Over Current Protection:

当输出电流达到额定电流的 110%~200%时,电源将被保护,过流故障排除后,电源将自动恢复正常工作。

When the output current reaches 110%~200% of the rated current, the power supply will be protected. After the over current fault is removed, the power supply will be automatically recovering.

#### 5.3 过压保护/Over Voltage Protection:

当输出电压触发到过压保护点时电源将被保护,故障排除后能恢复正常工作.电源过压保护功能在 PWM 芯片内部建立。

The power supply shall be stop when output voltage reaches its over-voltage condition trigger point. When the



fault condition is removed the power supply shall be self-recovering. The over voltage protection function is built-in the PWM IC of the power supply.

#### 5.4 过温保护/ Over TEMP Protection:

当集成电路温度超过其触发点时，电源进入停止模式，当集成电路温度低于规定值时，电源自动恢复。

The power supply shall go into stop mode when the IC's temperature is over its trigger point and when IC temperature is lower than regulation value, the power supply shall be self-recovering.

### 6. 环境要求/ENVIRONMENTAL

#### 6.1 认证温度/The power Certification Temperature:

0°C-40°C, 满载, 正常工作。

0°C to 40°C, Rated load, Normal operation.

#### 6.2 工作温度/Operating Temperature:

0°C-40°C, 满载, 正常工作。

0°C to 40°C, Rated load, Normal operation.

#### 6.3 储藏温度/Storage Temperature:

-20°C to 80°C

带外壳/With package

#### 6.4 储藏湿度/ Storage Humidity:

10%~90%

带外壳/With package

#### 6.5 工作湿度/Relative Humidity:

5%(0°C) ~90%(40°C), 72 小时, 满载, 正常工作。

5%(0°C) ~90%(40°C), 72Hrs, Rated load, Normal operating.

#### 6.6 大气压力/ Atmospheric Pressure:

54-106KPa, 正常工作。

54-106KPa, Normal.

#### 6.7 海拔高度/ Altitude:

5000 米, 超过 5000 米以上, 海拔高度每升高 500 米工作温度降低 1°C.

5000M, work temp descend 1°C every 500m over 5000m.

#### 6.8 振动/Vibration:

1. 测试标准: IEC60068-2-6 GB2423. 10

Operating: IEC60068-2-6 GB2423. 10

5~9Hz, A=1.5mm

9~200Hz, 加速度: 5m/s<sup>2</sup>

9~200Hz, Acceleration 5m/s<sup>2</sup>



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## 2. 运输/Transportation:

5-9Hz, A:3.5mm

9~200Hz, 加速度:  $5m/s^2$

9~200Hz, Acceleration:  $5m/s^2$

200~500Hz, 加速度:  $15m/s^2$

200~500Hz, Acceleration:  $15m/s^2$

## 3. 轴向振动/Axial Vibration:

每轴 10 个周期。

Axes, 10 cycles per axis.

在测试过程中不能出现永久性的损坏。

No permanent damage may occur during testing.

在电源开启和关闭后, 电源能够恢复到最初条件。

The power supply can be recovery to normal after power off/on.

## 6.9 跌落试验/Dropping Packed:

插墙式跌落高度为 1 米、桌面式跌落高度为 760mm;

1M for wall mount type and 760mm for desktop type as above described.

测试台面是厚 13mm 的夹木板, 离地面高 19~20mm。

The horizontal surface consists of hardwood at least 13mm thick, mounted on two layers of plywood and away from land 19mm ~ 20mm.

## 7. MTBF

$\geq 100,000$  hours  $25^{\circ}C$ , 满载, 220Vac。

The power supply shall have a minimum predicted MTBF(MIL-STD-217F) of 100000 hours at normal operation condition and normal use.

## 8. EMC 特性/ELECTROMAGNETIC COMPATIBILITY

Number / 序号	Item/项目	Specifications/标准 (或测试条件)	Class/判定标准	Standards/备注
1	传导干扰(CE)	Class B	/	IEC/EN60601-1-2; YY0505 GB4824; EN55011; FCC Part 18
2	辐射干扰(RE)	Class B	/	IEC/EN60601-1-2; YY0505 GB4824; EN55011; FCC Part 18
3	浪涌(SURGE)	线线 $\pm 1KV$ /Line to line $\pm 1KV$	A	IEC/EN60601-1-2; YY0505 IEC/EN61000-4-5; GB17626.5
		线地 $\pm 2KV$ /Line to GND $\pm 2KV$	/	
4	静电抗扰(ESD)	空气放电 $\pm 15KV$ Air discharge $\pm 15KV$	A	IEC/EN60601-1-2; YY0505 IEC/EN61000-4-2; GB17626.2
		接触放电 $\pm 8KV$ /Contact discharge $\pm 8KV$	A	



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5	快速瞬变脉冲群 (EFT/B)	± 2KV (Burst frequency = 100KHz)	A	IEC/EN60601-1-2; YY0505 IEC/EN61000-4-4; GB17626. 4
6	电压跌落和短时间中断 (DIP)	跌落到 0%Ut, 持续时间 5000ms (250 个周期) / Dropped to 0%Ut, last 5000ms (250cycle)	B	IEC/EN60601-1-2; YY0505 IEC/EN61000-4-11; GB17626. 11
		跌落到 30%Ut, 持续时间 500ms (25 个周期) / Dropped to 30%Ut, last 500ms (25 cycle)	B	
		跌落到 0%Ut, 持续时间 20ms (1 个周期) / Dropped to 0%Ut, last 20ms (1 cycle)	B	
		跌落到 0%Ut, 持续时间 10ms (0.5 个周期) / Dropped to 0%Ut, last 10ms (0.5 cycle)	A	
7	辐射抗扰 (RS)	试验频率: 80MHz~2700MHz; / Test frequency: 80MHz~2700MHz; 场强: 10V/m; /Field intensity: 10V/m; 幅度调制: 80%AM (1KHz) Amplitude modulation: 80%AM (1KHz)	A	IEC/EN60601-1-2; YY0505 IEC/EN61000-4-3; GB17626. 3
8	传导抗扰 (CS)	试验频率: 0.15MHz~80MHz; / Test frequency: 0.15MHz~80MHz; 场强: 6Vrms; /Field intensity: 6Vrms; 幅度调制: 80%AM (1KHz) / Amplitude modulation: 80%AM (1KHz)	A	IEC/EN60601-1-2; YY0505 IEC/EN61000-4-6; GB17626. 6
9	电流谐波 (THD)	满足 Class A (配合系统测试) / Class A (in system)	/	IEC/EN60601-1-2; YY0505 IEC/EN61000-3-2; GB17625. 1
10	电压波动和闪烁/Voltage fluctuation and flicker	Pst 值不大于 1.0; Plt 值不大于 0.65; 相对稳态电压变化 dc 不超过 3.3%; 最大相对电压变化 Dmax 不超过 4% 相对电压变化持续时间 > 500mS 时 ≤ 4% / Pst ≤ 1.0; Plt ≤ 0.65; Relative steady-state voltage variation dc under 3.3%; Maximum relative voltage variation (Dmax) under 4%	/	IEC/EN60601-1-2; YY0505 IEC/EN61000-3-3; GB17625. 2
11	工频磁场 / Power frequency magnetic field	30A/m	A	IEC/EN60601-1-2; YY0505 IEC/EN61000-4-8; GB17626. 8

注: / Note:

性能判据 A: 试验中 EUT 在规范极限值内性能正常;

性能判据 B: 试验中 EUT 功能或性能暂时降低或丧失, 但能自行恢复;

性能判据 C: 试验中 EUT 功能或性能暂时降低或丧失, 但需操作者干预或系统重调(或复位);

性能判据 D: 试验中 EUT 因装置(或元件)损坏而不可恢复的功能降低或丧失。

Performance criterion A: Normal performance within limits in this specification.

Performance criterion B: Temporary loss of some functions or degradation of performance. The recovering performance of which without operator intervention.

Performance criterion C: Temporary loss of function or degradation of performance. The recovering performance





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of which requires operator intervention.

Performance criterion D: Loss of function or degradation of performance which is not recoverable .Owing to damage of hardware software, or loss of data.

## 9. 安全要求/SAFETY

### 9.1 安全:符合标准./ Safety: Accord With.

电源设计用于室内, 满足 IEC 60601-1/UL60601-1N 和 60601-1 标准和以下安全规定。

The power supply is designed for indoor use to meet IEC 60601-1 and EN 60601-1standards and for the following safety regulations.

	Item	Country	Standard
<input type="checkbox"/>	UL	USA	UL60950-1/UL60601-1
<input checked="" type="checkbox"/>	CE	Europe	EN60950-1/EN60601-1
<input checked="" type="checkbox"/>	CB	Worldwide	IEC60601-1
<input type="checkbox"/>	TUV	Germany	IEC60601-1
<input checked="" type="checkbox"/>	NRTL	CUSA	IEC60601-1/UL60601-1
<input type="checkbox"/>	GS	Germany	EN60601-1
<input type="checkbox"/>	BS	England	EN60601-1
<input type="checkbox"/>	SAA	Australia	AS/NZS6-1

### 9.2 高压/Dielectric Strength Hi-Pot:

初级对次级/The primary to secondary: 4000Vac 5mA for 60 seconds.

## 10. 结构参数/MECHANICAL

电源产品图片, 如下图(外壳表面:哑光)/Picture of power product, as shown below(Case surface: Matte):



注意:图中只是列举了部分图片/Note: Only a few images are listed



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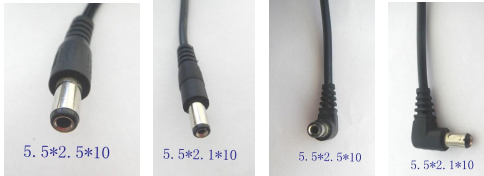
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## 11. 线材/DC CABLE DIAMETER

11.1 可选直流插头图/ Optional DC Plug :

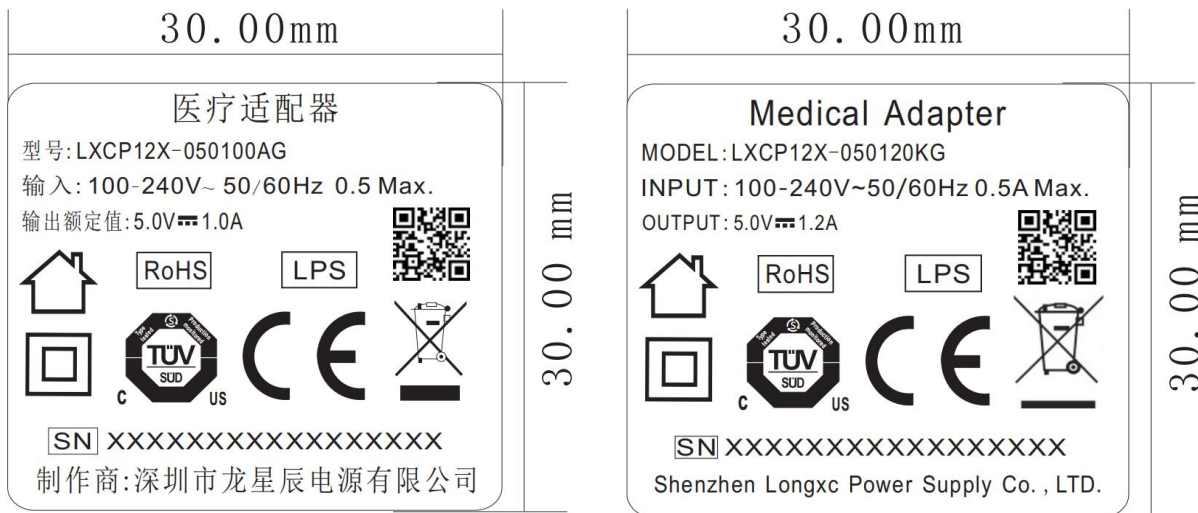


注意:图中只是列举了部分插头图, 详细信息从LXC\_线材统计表工作簿 xlsx 文件中选择。

Note: The figure only lists part of the optional DC plug diagram, the details are selected from the LXC\_cable statistics workbook xlsx file.

## 12. 铭牌/ NAMEPLATE

电源的标签示例, 请见下图/See the following figure for an example of a power supply label



铭牌符号说明 :/ Symbol explanation on nameplate:

- :环保标志/ RoHS mark
- :CE标志/ CE mark
- : 直流标志/Direct current
- :输出极性标志/ DC Cable
- : 室内使用/In-door use only
- :限功率电源/Limited power source
- : 二维码/Two-dimensional code
- : 保护环境 —— 废弃电器产品应统一回收处理, 不能随意丢弃/ Environment protection- waste electrical products should not be disposed of with household waste. Please follow the local government guidelines

- SN: 代表序列号/SN: Serials number
- X 代表 RoHS (1位) : RoHS 区分 0 为 RoHS, 1 为非 RoHS; /1bit:0=RoHS, 1=No RoHS
- XX 代表 生产批次 (2位) : 如第一批为 01……以此类推; /2bit:batch
- XX 代表 电源型号 (2位) : LXCP12X 系列为 12; /2bit:model no
- X 代表 生产加工商 (1位) : LXC 为 1; /1bit: manufacturer

型号/Model: LXCP12X 系列

版本/Rev.:

日期/Date: 2023-03-06

文件编号/ Document No.: LXC/RD-Spec. -106



XX 代表 PCB 版本 (2 位) : 01 为 01, 02 代表 02 号……以此类推; /2bit: PCB versions  
 XX 代表 生产年份 (2 位) :2020 为 20, 2021 代表 21……以此类推; /2bit:year  
 XX 代表 生产周期 (2 位) : 第 1 周为 01, 02 周为 02……52 周代表 52; /2bit:wee  
 XXXX 代表 订单数量 (5 位) : 如订单量为 10000 个, 标识为 00001-10000。/5bit: number

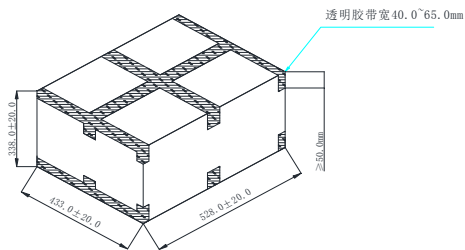
### 13. 包装说明/PACKING

- 电源重量:约 120g
- The weight of the power supply shall be about 120g.
- 包装方式:120pcs/箱(尺寸:528.0\*423.0\*338.0mm);
- Packing Q'ty 120pcs/CTN (Size: 528.0\*423.0\*338.0mm)。

纸箱: 528.0 × 433.0 × 338.0mm

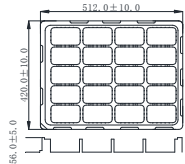
重量: 约14kg/箱

外箱丝印:

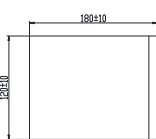


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吸塑托盘



LDPE 袋

