

# 承认书



## SPECIFICATION FOR APPROVAL Switching power Supply/开关电源

客 户:

CUSTOMER: SparkFun

产品描述:

DESCRIPTION: Input:100~240V AC 50/60Hz Output: 9VDC0.65A

机种型号:

OUR MODEL NO: YNQX09L090065UL

样品编号:

日期:

SAMPLE NO: QX201800212

DATE: 2018-03-08

产品颜色:

SAMPLE COLOR: Black  White

符合环保项: ROHS  REACH  PAHS  17P  加州 65

APPROVAL SIGNATURE/客户确认		
核准/APPROVED BY	审核/CHECKED BY	检测/TESTED BY
Manufacturer/制造商		
业务/SALES	核准/APPROVED BY	设计/DESIGNED BY
Nick Lin		

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版本目录/Rev. List

版本/Rev.	日期/Date	描述/Description	制订/Design
A0	2018-03-08	新版本/New Rev.	CM

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## 1、描述/ DESCRIPTION:

本规格书适应于 YNQX09L090065UL 型号的开关电源.

The purpose of the document is to specify the functional requirements of a 5.85W switching power supply.

## 2、输入特性/INPUT CHARACTERISTICS:

### 2.1 输入电压/Input Voltage:

额定电压/Rated Voltage:100~240Vac

调整范围/Variation Range:90-264Vac

### 2.2 输入频率/Input Frequency:

额定频率/ Rated Frequency: 50/60Hz.

调整频率/Variation Frequency:47-63Hz

### 2.3 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 0.3A.

0.3Amps max At any input voltage and rated, DC output rated load.

### 2.4 浪涌电流/Inrush Current:

当输出为额定负载,环境温度为 25℃,输入 240Vac 冷态起机时将不会损坏.

No damage shall be occurred and the input fuse shall not be blown up, Cold start at 240Vac input, with rated load and 25℃ ambient.

### 2.5AC 漏电流/Ac Leakage Current:

当输入电压 240Vac 时,最大漏电流为 0.25mA.

0.25mA Max.At240Vac input.

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### 3、输出特性/OUTPUT CHARACTERISTICS:

#### 3.1 输出功率/Power output (AC:100~240V)

电压 Voltage	最小负载 Min. Load	额定负载 Rated. Load	峰值功率 Peak	输出功率 Output power
9VDC	0.01A	0.65A		5.85W

#### 3.2 负载特性,调整率/Combined Load/Line Regulation (AC:100~240V)

电压 Voltage	最小负载 Min. Load	额定负载 Rated. Load	线性调整 Line Regulation	负载调整 Load Regulation
9VDC	0.01A	0.65A	±2%	±5%

#### 3.3 纹波和噪音 Ripple and Noise:

测试条件:在输入 115/230Vac 25°C和输出最小及最大负载时,使用示波器带宽为 20MHz 连接到适配器的输出端,同时输出端并联一个 47uF 的电容器和一个 0.1uF 的瓷片电容.

At 115/230Vac 25°C input and output Min and Max.Load,the ripple and noise are as follows when measure with Max.Bandwidth of 20MHz and Parallel 47uF/0.1uF,crossed connected at testing point.

电压 Voltage	最大纹波/最大噪音 Ripple and Noise(Max.)
+9VDC	200mV p-p

#### 3.4 启动延迟时间/Turn on delay time:

当输入 115Vac 和输出最大负载时,最大启动时间为 3S.

3Second Max.at 115Vac input and output Max.load.

#### 3.5 上升时间/Rise time:

当输入 115Vac 和输出最大负载时最大时间为 40 mS.

40 mS Max.at 115Vac input and output Max load.

#### 3.6 保持时间/Hold up time:

当输入 115Vac 和输出最大负载时,最小保持时间为 5 mS .

5 mS Min.at 115Vac input and output Max.Load.

#### 3.7 过冲/Overshoot:

在电源开启或关闭的时候,最大 15%.

15% Max.When power supply at turn on or turn off.

#### 3.8 效率/Efficiency:

当 115/230Vac 输入电压时, 1/4, 1/2, 3/4 和满载计算平均效率, 最小 78.72%.

78.72% Min,At 115/230Vac input voltage,1/4, 1/2, 3/4 and full load calculation average efficiency.

适配器满足能效 VI.

Adapter meet efficiency level VI.

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### 3.9 待机功耗/Standby Power:

当输入 115Vac 60Hz 时 0.1W 最大 .

0.1W Max. at 115Vac 60Hz Io=0 input.

### 4、保护功能/PROTECTION FUNCTION:

#### 4.1 短路电路保护/Short circuit protection:

该电源供给器在短路解除时能正常工作恢复.

The power supply will be auto recovered when short circuit faults remove.

#### 4.2 过流保护/Over current Protection:

过流故障排除后,电源将自动恢复正常工作.

The power supply will be auto recovered when over current faults remove.

### 5、环境要求/ENVIRONMENTAL REQUIREMET:

#### 5.1 工作温度/Operating Temperature:

0°C-40°C,满载,正常工作.

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

#### 5.2 储藏温度/Storage Temperature:-20°C to 60°C

带外壳/With package

#### 5.3 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)RH,72Hrs,Full load, Normal operating.

#### 5.4 振动/Vibration:

##### 1. 测试标准:国际电工电子委员会

Operating: IEC 721-3-3 3M3

5~9Hz,A=1.5mm

加速度(9~200Hz,Acceleration 5m/S<sup>2</sup>)

##### 2. 运输/Transportation:

IEC 721-3-2 2M2

5-9Hz,A=3.5mm

9~200Hz,加速度 Acceleration=5m/S<sup>2</sup>

200~500Hz,加速度 Acceleration=15m/S<sup>2</sup>

##### 3. 轴向振动/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,样机能够恢复到最初条件.

The SAMPLE has to restore to its original situation after power off/on.

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**5.5 跌落试验/Dropping Packed:**

跌落高度为 1000mm;

Drop the height is 1000mm.

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 each 19mm to 20mm thick,all supported on a concrete or equivalent non-resilient floor.

**6、安全及 EMC 要求/SAFETY AND EMC REQUIREMENT:**

**6.1 安全: 符合标准 UL60950**

Safety:accord standard with UL60950

**6.2 高压/DIELECTRIC STRENGTH Hi-Pot:**

初级对次级/Primary to secondary: 4242Vdc/5mA/60S for type test.

**6.3 绝缘阻抗/Insulation resistance:**

初级对次级/Primary to secondary:20M $\Omega$  min at 500V DC.

**6.4 EMI 标准/EMI STANDARD**

Meets the Limits of/测试符合

<1>.Fcc part15 class B rules

<2>.EN55032 class B rules

<3>. GB17625.1-2012

<4>.AS/NZS CISPR32:2015.

<5>.IEC61000-4-5

<6>.IEC61000-4-2

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7、结构参数/MECHANICAL REQUIREMENT:

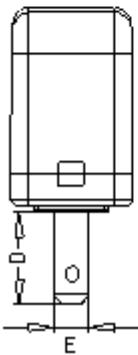
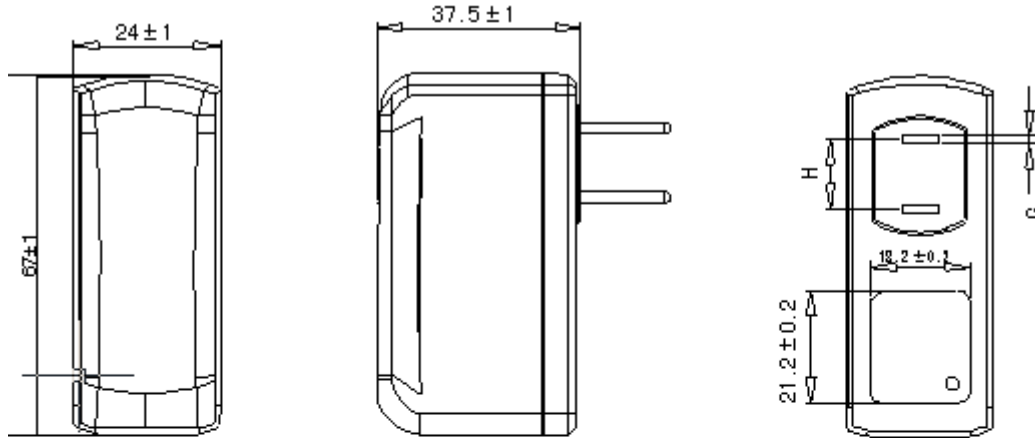
7.1 外壳/Enclosure:

外壳尺寸: L67 x W24 x H37.5mm;

The power supply size: L67x W24 x H37.5mm;

7.2 输入线/Input Connector:

2 Pin US 插脚/Two pin input plug of US.



符号 / No.	公差值/Standard deviation (mm)
D	16-18 (1.7)
E	6.09-6.60 (6.35)
G	1.40-1.65 (1.50)
H	12.6-12.8 (12.7)

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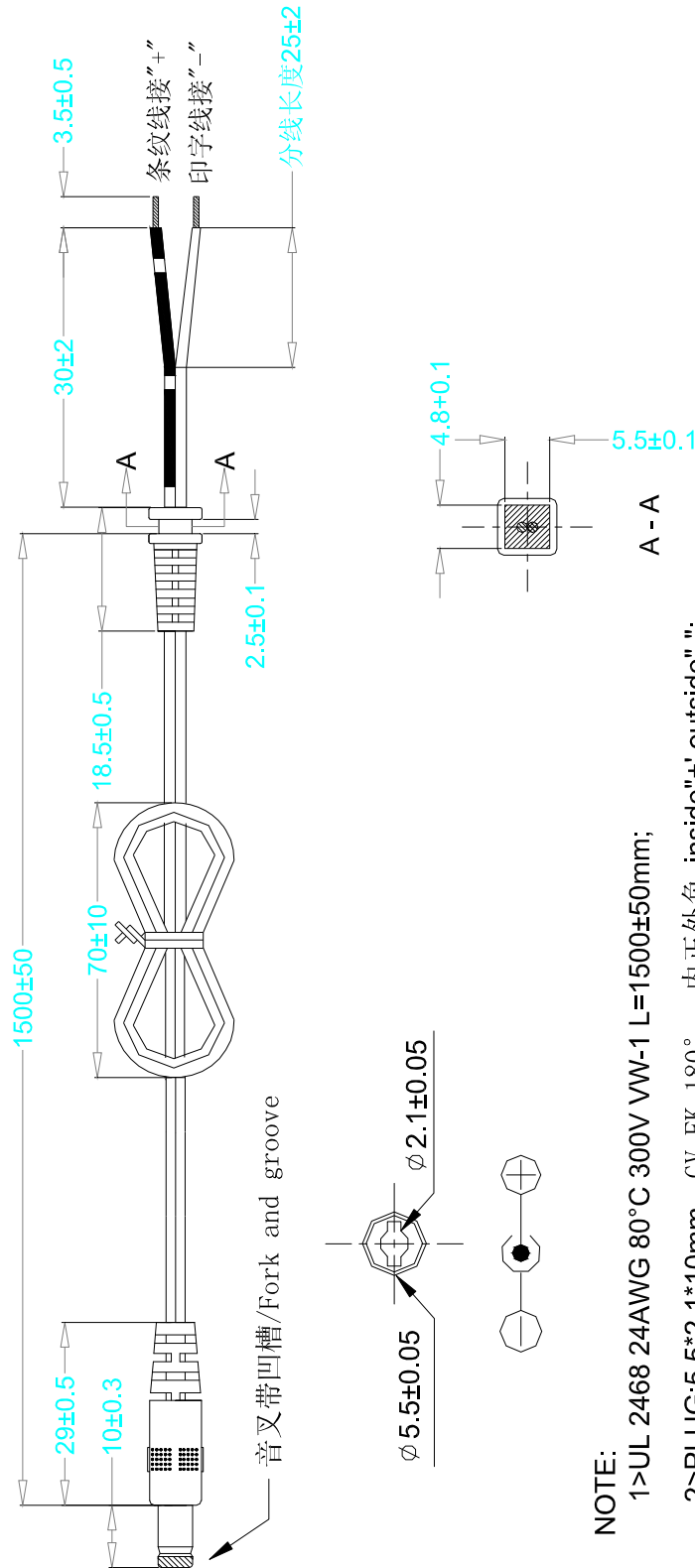
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8、线材/CORD:



NOTE:

- 1>UL 2468 24AWG 80°C 300V VW-1 L=1500±50mm;
- 2>PLUG:5.5\*2.1\*10mm, GV FK 180°, 内正外负, inside"+", outside"-";
- 3>Color:Black;
- 4>RoHS2.0REACH(PAHS\17P\加州65.
- 5>Material:线皮: PVC.线芯: 铜.



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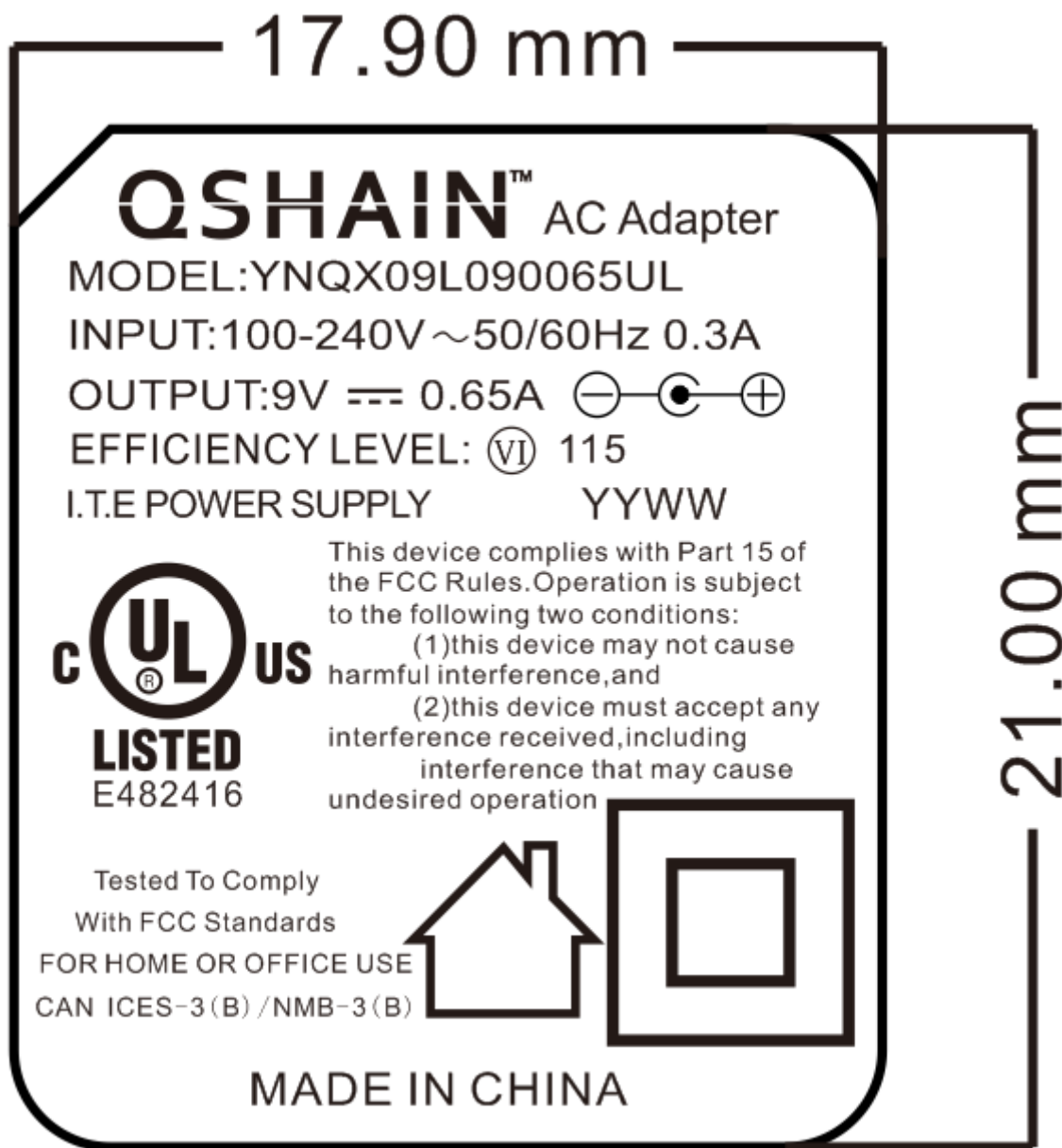
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9、铭牌/LABEL:



NOTE:

- 1.颜色/Color:黑底白字/ Black ground white
- 2.材质/Material:PET+雾面/fog surface
- 3.厚度/Thickness:0.25mm
- 4.误差/Toilerance:+0/-0.2mm
- 5.环保/RoHS
- 6.YYWW,YY 表示年份,WW 表示周数
- 7.此铭牌是按业务要求制作

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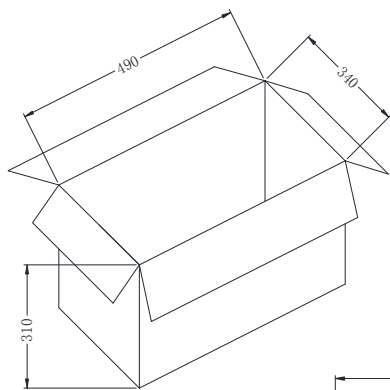
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客户/Customer: SparkFun

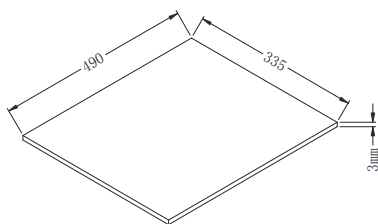
日期/Date: 2018-03-08

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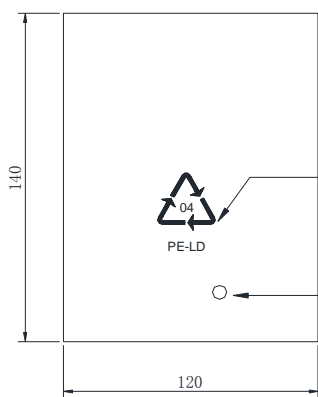
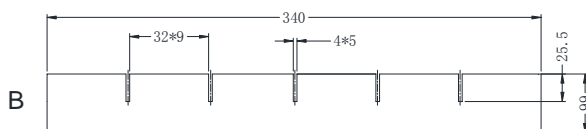
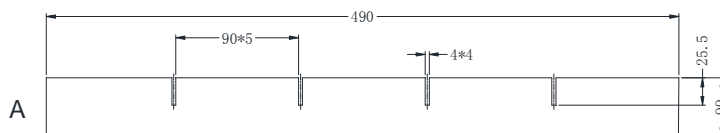
10、包装说明/PACKING:



外箱/Carton



平板/Slab



胶袋/Pe bag

绿色字体/  
Green lettering

透气孔  
Breathe freely os

包材/Packing:

A:L490\*W99mm

B:L340\*W99mm

外箱内尺寸/Carton inside size :L490\*W340\*H310mm

平板/Slab:L490\*W335\*T3mm

胶袋/Pe bag:L140\*W120\*T0.03mm

数量/Quantity: 135PCS/CTN

备注：此包装材料仅供参考。

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11、测试报告/ELECTRICAL TEST REPORT:

No 序号	Test item 测试项目	Test condition 测试条件	Standard spec 标准规格	Test data 测试数据					Unit 单位	Judge 判定
				1	2	3	4	5		
1	Output Voltage 输出电压	Vin100Vac 60Hz Io=0 输入 100Vac 空载	9VDC±5%	8.80	8.78				V	Pass
2	Output Voltage 输出电压	Vin100Vac 60Hz Io=Rated Current 输入 100Vac 60Hz 负载	9VDC±5%	8.70	8.71				V	Pass
3	Average Efficiency 平均效率	Vin 115Vac 60Hz 输入 115Vac 60Hz	78.72%	78.95	78.89				%	Pass
4	Ripple&Noise mVp-p 纹波&杂讯	Vin100Vac 60Hz Full load 输入 100Vac 60Hz 满载	200mVp-p	73	73				mVp-p	Pass
5	Line Regulation 线性调整率	Vin=100V~240V Io=Rated Current 额定电流	±2%	OK	OK				/	Pass
6	Standby Power 待机功耗	Vin 115Vac 60Hz Io=0 输入 115Vac 60Hz	0.3W max	0.04	0.04				W	Pass
7	Short circuit test 短路测试	Vin100Vac 60Hz 输入 100Vac 空载	No odor smoke fire plastic deformation and excessive heat happen. 无冒烟,起火,外壳变 形及过热现象	OK	OK				/	Pass
8	OCP 过电流保护	Vin100Vac 60Hz 输入 100Vac	AMax	0.76	0.76				A	
9	Output Voltage 输出电压		9VDC±5%	8.80	8.78				V	Pass
10	Output Voltage 输出电压	Vin240Vac 50Hz Io=Rated Current 输入 240Vac 60Hz 负载	9VDC±5%	8.70	8.71				V	Pass
11	Average Efficiency 平均效率	Vin230Vac 50Hz 输入 230Vac 50Hz	78.72%	78.90	78.98				%	Pass
12	Ripple & Noise mVp-p 纹波&杂讯	Vin240Vac 50Hz Full load 输入 240Vac 50Hz 额定电流	200mVp-p	70	70				mVp-p	Pass
13	Line Regulation 线性调整率	Vin=100V~240V Io=Rated Current 输入 100V~240V	±2%	OK	OK				/	Pass
14	Standby Power 待机功耗	Vin230Vac 50Hz Io=0 输入 230V 50Hz	/	/	/				W	Pass
15	Short circuit test 短路测试	Vin240Vac 50Hz 输入 240Vac 50Hz	No odor smoke fire plastic deformation and excessive heat happen. 无冒烟,起火,外壳变 形及过热现象	OK	OK				/	Pass
16	OCP 过电流保护	Vin230Vac 50Hz 输入 230Vac 50Hz	AMax	0.76	0.76				A	
17	Hi-pot test 高压测试	高压/DIELECTRIC STRENGTH Hi-Pot 初级对次级 /Primary to secondary:4242Vdc/5mA/60S for type test		OK	OK				/	Pass
18	Burn in 老化	Input:220Vac/50Hz Full Load 4hrs 输入 220Vac/50Hz 满载 4 小时		OK	OK				/	Pass
19	Drop test 跌落	Heigh: 1m Three*faces(once on each plane) 高 1 米,3 个面,每面 1 次.		OK	OK				/	Pass
REMARK 备注										

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