

客户承认书

SPECIFICATION FOR APPROVAL

CUSTOMER/客户: _____

CUSTOMER P. N. /客户物料号: _____

MODEL NO. /产品型号: _____ MSL-T4200IC24.0-100B

MODEL OF CERTIFICATE/认证型号: _____

PRODUCT NO. /产品编号: _____ L0676-NO

SAMPLE DATE/送样日期: _____

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核

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Please return to us one copy of “SPECIFICATION FOR APPROVAL” with your approved signature./客户确认签字，盖章后请回传一份承认书给我司.

ADD: Moso Technology Park, 6F, Sangtai Industrial Park, Guanwai Xiaobaimang
Songbai Road, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
地址: 深圳市南山区西丽镇茂硕科技园

TEL: 0755-27657000 27657555

P. C.: 518108

FAX: 0755-27657908

E-mail: moso@mosopower.com

<http://www.mosopower.com>

拟 制:	审 核:	批 准:
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E. C. LIST/变更履历表

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1. SCOPE/简述

The document detail the electrical, mechanical and environmental specifications of a 100W constant current LED driver. The LED driver shall meet the RoHS requirement.

此份资料详细描述了一款 100W LED 恒流驱动电源的电气性能, 结构性能及环境等要求. 此款电源符合 RoHS 要求.

Description/描述

- | | |
|--|--|
| <input checked="" type="checkbox"/> LED driver (With AL Case)/带铝壳型 | <input type="checkbox"/> LED driver (With Plastic Case)/带胶壳型 |
| <input type="checkbox"/> Open Frame/开放式结构 | <input type="checkbox"/> Others/其他 |

2. Input Characteristics/输入特性

2.1. Input Voltage & Frequency/输入电压与频率

The range of input voltage is from 90 to 264Vac single phase.

输入电压范围: 单相从 90 到 264Vac.

	Minimum/最小	Nominal /额定值	Maximum/最大
Input Voltage/输入电压	90Vac	100-240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

2.2. Input AC Current/输入交流电流

1.5Amax. @ input 100-240Vac & Full Load.

2.3. Inrush Current (cold start)/浪涌电流(冷启动)

40Amax. @ input 240Vac.

2.4. Power Factor/功率因素

0.98 min@ Nominal input 110V&100% Of Full Load/额定输入 110V&100%负载

0.95 min@ Nominal input 220V&100% Of Full Load /额定输入 220V&100%负载

2.5. Efficiency (Normal)/效率(额定输入)

84% min. @ (type87%) input 110Vac& Full Load/在输入 110Vac 与满载时(典型效率 87%);

87% min. @ (type90.0%) input 220Vac& Full Load/在输入 220Vac 与满载时(典型效率 90.0%).

3. Output Characteristics/输出特性

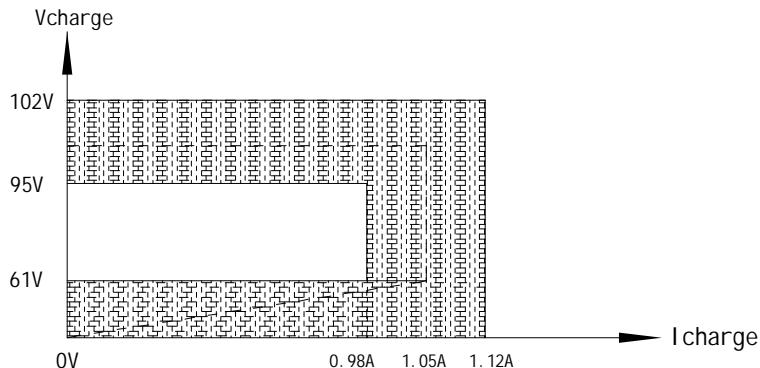
3.1. Static Output Characteristics <Vo & R+N>/静态输出

Output	Load/负载		Output Range	R+N	Remark
Rate	Min. Load	Max. Load	输出电压范围	纹波与噪声	备注
+24.0V	0.0A	3.93A	24-28V	2000mVp-p	CC 模式

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output parallel ed a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (test under the condition of rated input and rated output)

纹波与噪声: 量测时示波器选用 20MHz 带宽限制, 输出端要并联一颗 0.1uF 的陶瓷电容和一颗 10uF 的电解电容. (在额定输入及输出的条件下检测)

3.2. Voltage/Current Curve/恒压/恒流控制曲线



Remark/备注:

Constant Current Output Characteristics/恒流输出特性	Minimum /最小值	Typical /典型值	Maximum /最大值
Output Current Range /输出电流范围	3.93A	4.2A	4.47A
Output Voltage Range/输出电压范围	16V	/	24V

3. 3. Turn - on Delay Time/开机延迟时间

3. 0S max. @ input 100 - 240 Vac & Full load

3. 4. Hold-up Time/关机维持时间

6mS min. @ Full load &115Vac/60Hz input turn off at worst case/在最差情况关机

8. 3mS min. @ Full load &230Vac/50Hz input turn off at worst case/在最差情况关机

3. 5. Rise Time/上升时间

50mS max. @ Rated load

3. 6. Fall Time/下降时间

50mS max. @ Full load

3. 7. Output voltage Overshoot / Undershoot/输出电压过冲/欠冲

10% max. When the power on or off/当电源开/关机最大过冲 10%.

3. 8. Output Load Transient Response/输出负载瞬态响应

output voltage within 24V-28V for load step from 25% to 75%, R/S: 1A/uS,

frequency: 100Hz

输出电压在 24V-28V 之间, 负载变化: 从 25%到 75%, 斜率: 1A/uS, 频率: 100Hz.

4. Protection Requirements/保护要求

4. 1. Short Circuit Protection/短路保护

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed
当输出短路时, 产品输入功率降低且不会损伤, 当短路情况解除后, 产品将会自动恢复正常

4. 2. Over Voltage Protection/过压保护

When the output voltage is over 36V the product is protected such as hiccup or when it is at the highest point of output voltage the product would not be hurted when the fault is excluded or is start working again the power supply is working normally.

当输出电压超过 36V 时, 产品进入保护状态, 如打嗝或钳在某输出最高电压状态, 产品不受损

伤,当故障排除或重新起机时,电源工作正常.

5. Environment Requirements/环境要求

5.1. Operating Temperature and Relative Humidity/操作温/湿度要求

-35°C to +60°C 10%RH to 100%RH

5.2. Storage Temperature and Relative Humidity/存储温/湿度要求

-40°C to +80°C

5% to 100%RH non-condensing @ Sea Level shall be low 10,000 feet/低于 10,000 英尺.

5.3. Vibration/振动

10 to 300Hz sweep at a constant acceleration of 1.0G(Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z.

扫描频率: 10 to 300Hz, 加速度: 1.0G(位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动 1 小时.

5.4. Waterproof grade/防水等级: IP67

6. Reliability Requirements/可靠性要求

6.1. Burn-in/煲机

The power supply shall undergo a minimum of 4 Hours burn-in test at 40°C±5°C under full load condition

产品至少要在 40°C±5°C 的环境及满载条件下煲机 4 小时

6.2. LIFE Time Qualification/寿命时间估算

The Life Time shall be at least 50,000hours at 45°C, Full load and nominal input condition

寿命时间: 在 45°C 环境及额定输入与满载条件下, 至少 50,000 小时.

7. EMI /EMS Standards/EMI /EMS 标准

7.1. EMI Standards/EMI 标准

CISPR15:2005;

EN55015:2006+A1:2009 ;

GB17743-2007 ; EN61547:1995+A1:2000.

7.2. EMS Standards/EMS 标准

EN 61000-3-2	Harmonic current emissions ,class c.
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge(ESD): 8kV air discharge, 4kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 2kV, line to earth 4kV
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61000-6-1	Electromagnetic compatibility (EMC)—Part 6-1:Generic standards-Immunity for residential, commercial and light-industrial environments
EN 61000-6-3	Electromagnetic compatibility (EMC)—Part 6-3:Generic standards-Emission standard for residential, commercial and light-industrial environments

8. Safety Standards/安规标准

8.1 Dielectric Strength(Hi -pot)/介电耐压强度(高压)

Primary to Secondary: 3750Vac 10mA Max / 60second(3second for production)

初级对次级: 3750Vac /10mA Max / 60 秒(生产时高压测试时间: 3 秒)

<半成品/Intermediary goods>

Primary to Secondary: 3750Vac 10mA Max / 60second(3second for production)

初级对次级: 3750Vac /10mA Max / 60 秒(生产时高压测试时间: 3 秒)

<成品/Fi nished goods>

Primary to Earth: 1875Vac 10mA Max / 60second(3second for production)

初级对地: 1875Vac /10mA Max / 60 秒(生产时高压测试时间: 3 秒)

Secondary to Earth: 1875Vac 10mA Max / 60second(3second for production)

次级对地: 1875Vac /10mA Max / 60 秒(生产时高压测试时间: 3 秒)

8.2 Grounded Resistance/接地电阻

< 0.1 Ω , 25A, 1Minute

8.3 Leakage Current/泄漏电流

0.75mA max. at input 240Vac/50Hz.

8.4 Insulation Resistance/绝缘阻抗

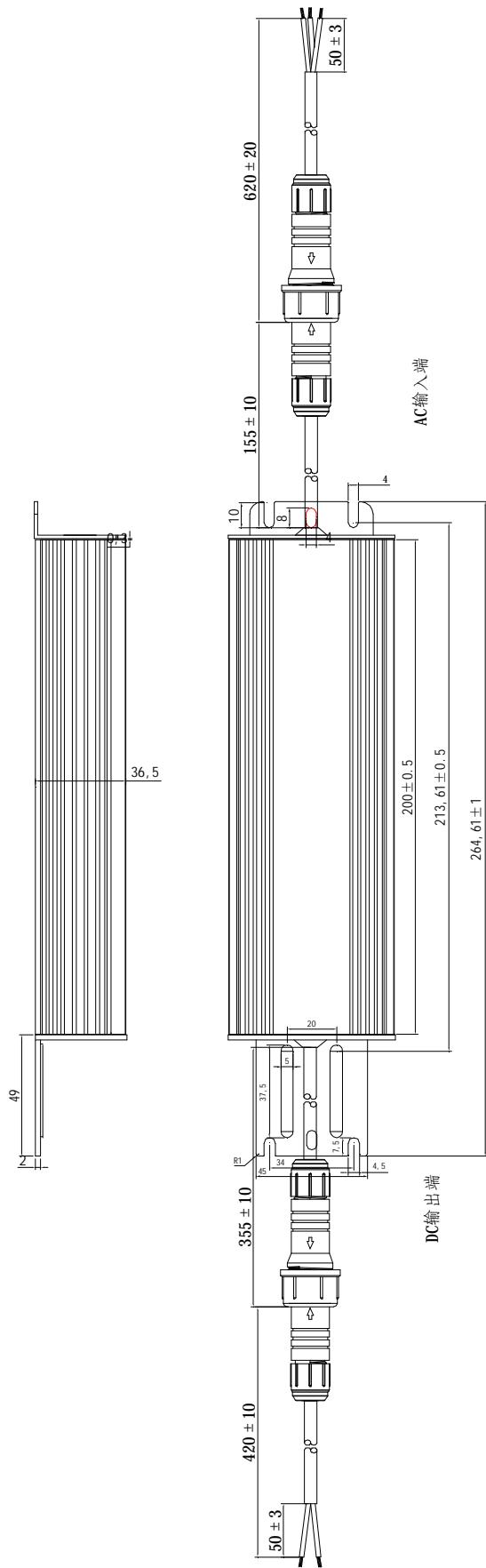
50MΩ min. at primary to secondary add 500Vdc test voltage.

在初级与次级间加 500Vdc 进行绝缘测试, 最小绝缘阻抗 50MΩ .

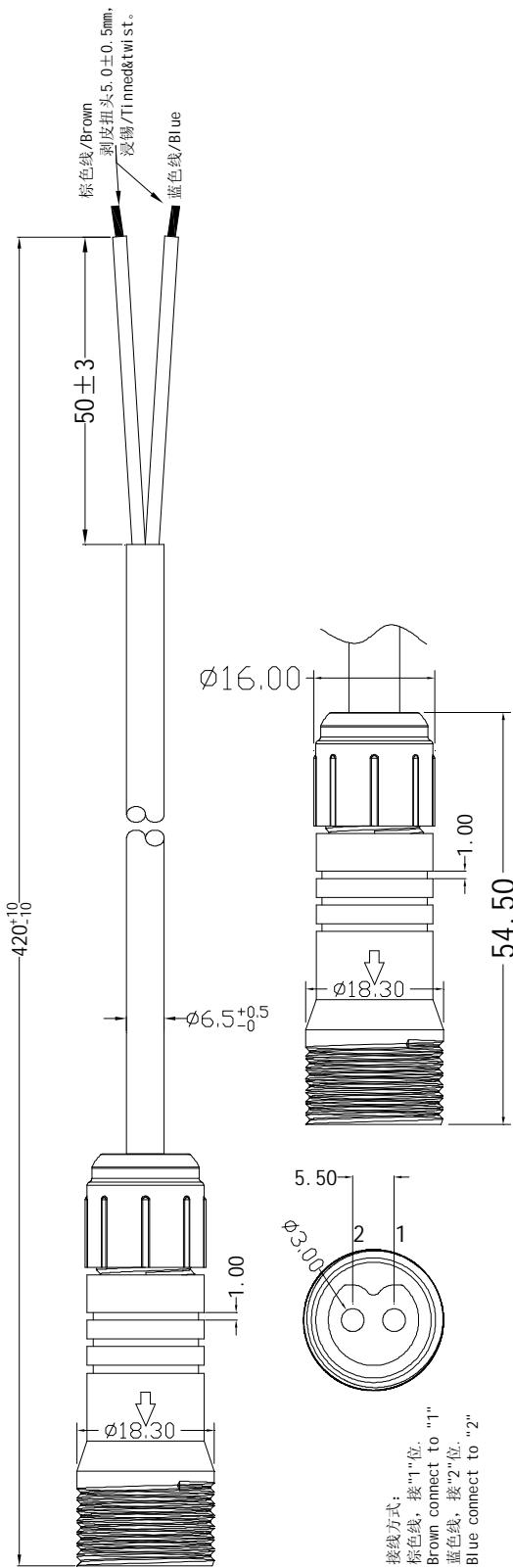
8.5 Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	
CE	Europe	EN 61347-1 EN 61347-2-13	符合(meet)	

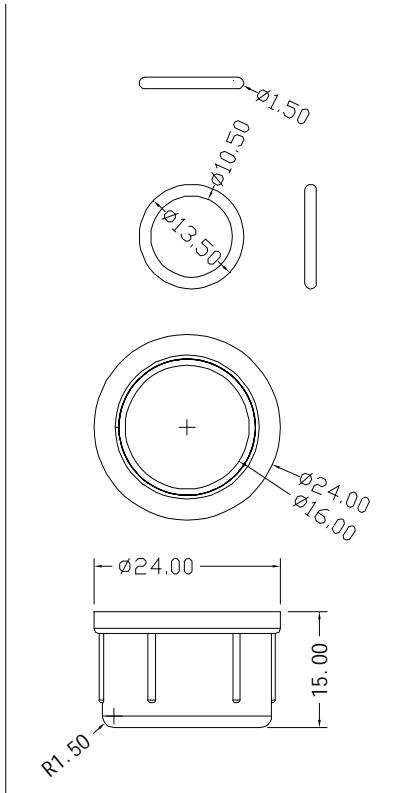
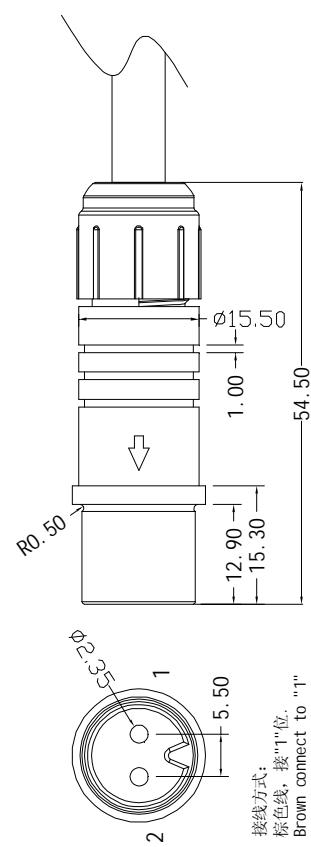
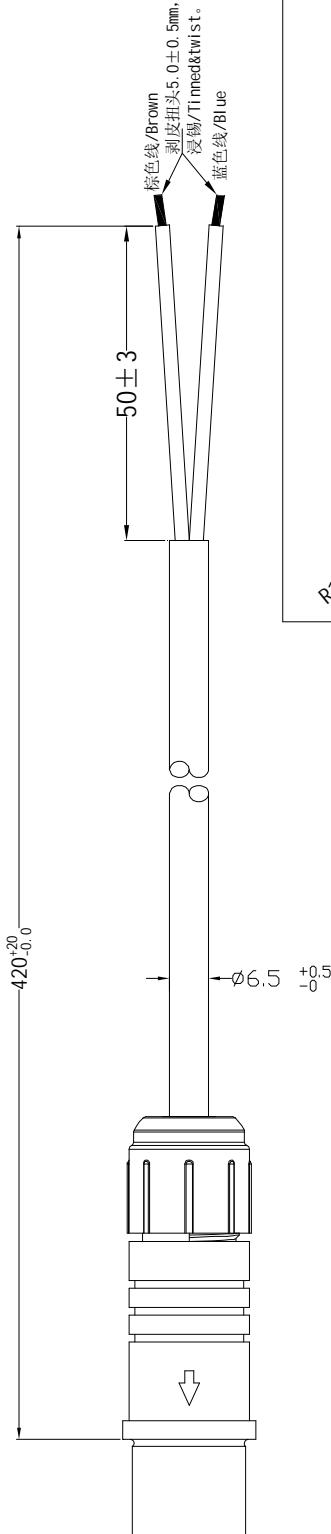
9. Mach. Outline Drawing/外观示意图



10. Output Cord/ 输出线



- 一、拉力试验要求: 1、整条线拉力 $\geq 15KG$ (1分钟无断芯和延伸率 \leq 总长的8%)；
 Strain test requirements: 1, apply more than 15KG strain to cable for 1 minute without break up for inner-core wires and the elongation rate no more than 8% of the cable's over-all length;
- 二、摇摆测试要求: SR头端: 500g, 120° (左右各60°), 45次/分钟, 最少2000次;
 Sway test requirements:
 For SR side: 500g, 120° (Angle is 60 degree during test for each side),
 For AC side: 500g, 120° (Angle is 60 degree during test for each side),
 AC头端: 500g, 120° (左右各60°), 45次/分钟, 最少2000次;
 For AC side: 500g, 120° (Angle is 60 degree during test for each side),
 For AC side: 500g, 120° (Angle is 60 degree during test for each side),
 45 time for 1 minutes, the total test not less than 2000;
- 三、外观要求: 1、线材外皮, 每米不能超过3个小凸点;
 Appearance requirements: 1, for cable sheaten, if more than three scratch were found within 1m distance is not permit;
 2、线材表面不能有破损、压伤、脏污等外观不良;
- 四、耐温要求: 热变形温度 $\geq 105^{\circ}\text{C}$, 无变形、开裂等不良;
 Temperature requirement: Heat deflection temperature (HDT) $\geq 105^{\circ}\text{C}$, any distortion, crack on cable body are not permit;
- 五、线材规格: VDE+3C认证 2x1.0MM², INSULATION: 45P Rubber
 Cable spec: VDE and 3C mark, 2x1.0MM², INSULATION: 45P Rubber
- 六、印字要求: VDE+3C认证 2x1.0MM²(YZN) 有相关的认证符号和认证公司名称;
 Printing requirement: VDE and 3C mark, 2x1.0MM² (YZN) including the safety mark and company name.
- 七、材质要求: 线外皮SOP 傻胶 黑色, 防水头材质尼龙料
 Materials: cable sheath must be 50P rubber, black, waterproof connector must be nylon.
- 八、颜色要求: 黑色 (1101M)
 Color requirements: Black (1101M)
- 九、要求线材与防水头组装后防水等级IP68级, 防紫外线, 耐温高低温-45度至125度, 防火94-V0, 防水头能通过球压试验;
 The IP grade meet IP68 after cable and waterproof connector connected, anti-UV, can work well under -45°C to 125°C, meet UL94-V0, waterproof connector can pass Ball press test also are requested.
- 十、环保要求: 过ROHS标准;
 Environmental protection requirements: meets RoHS requirements
- 十一、线材料号: 480-020001-080
 P. N. 480-020001-080



技术要求:

一、拉力试验要求: 1、整条线拉力 $\geq 15\text{kg}$ (1分钟无断芯和延伸率 \leq 总长的8%); Strain test requirements: 1、apply more than 15kg strain to cable for 1 minute without break up for inner core wires and the elongation rate no more than 8% of the cable's over-all length;

二、摇摆测试要求: SRA头端: 500g, 120° (左右各60°), 45次/分钟; 最少2000次; Sway test requirements:

For SP side: 500g, 120° (Angle is 60 degree during test for each side), 45 times for 1 minutes, the total test not less than 2000;

AC头端: 500g, 120° (左右各60°), 45次/分钟, 最少2000次;

Sway test requirements:

For AC side: 500g, 120° (Angle is 60 degree during test for each side), 45 time for 1 minutes, the total test not less than 2000;

三、外观要求: 1、线材外皮, 每米不能超过3个小凸点; Appearance requirements: 1、for cable sheath, if more than three scratch were found within 1m distance is not permit;

2、线材表面不能有破损、压伤、脏污等外观不良;

Any appearance issue such as damage, crush, smudge on cable surface are not permit.

四、耐温要求: 热变形温度 $\geq 105^\circ\text{C}$, 无变形、开裂等不良; Temperature requirement: Heat deflection temperature (HDT) $\geq 105^\circ\text{C}$, any distortion, crack on cable body are not permit;

五、线材规格: H05RN-F VDE+3C认证 2x1.0MM², INSULATION: 45P 橡胶
Cable Spec: H05RN-F with VDE and 3C mark, 2x1.0MM², INSULATION: 45P Rubber
六、印字要求: H05RN-F VDE+3C认证 2x1.0MM² EC57 (YZW) 有相关的认证符号和认证公司名称;
Printing requirement: H05RN-F with VDE and 3C mark, 2x1.0MM² EC57 (YZW)
including the safety mark and company name.

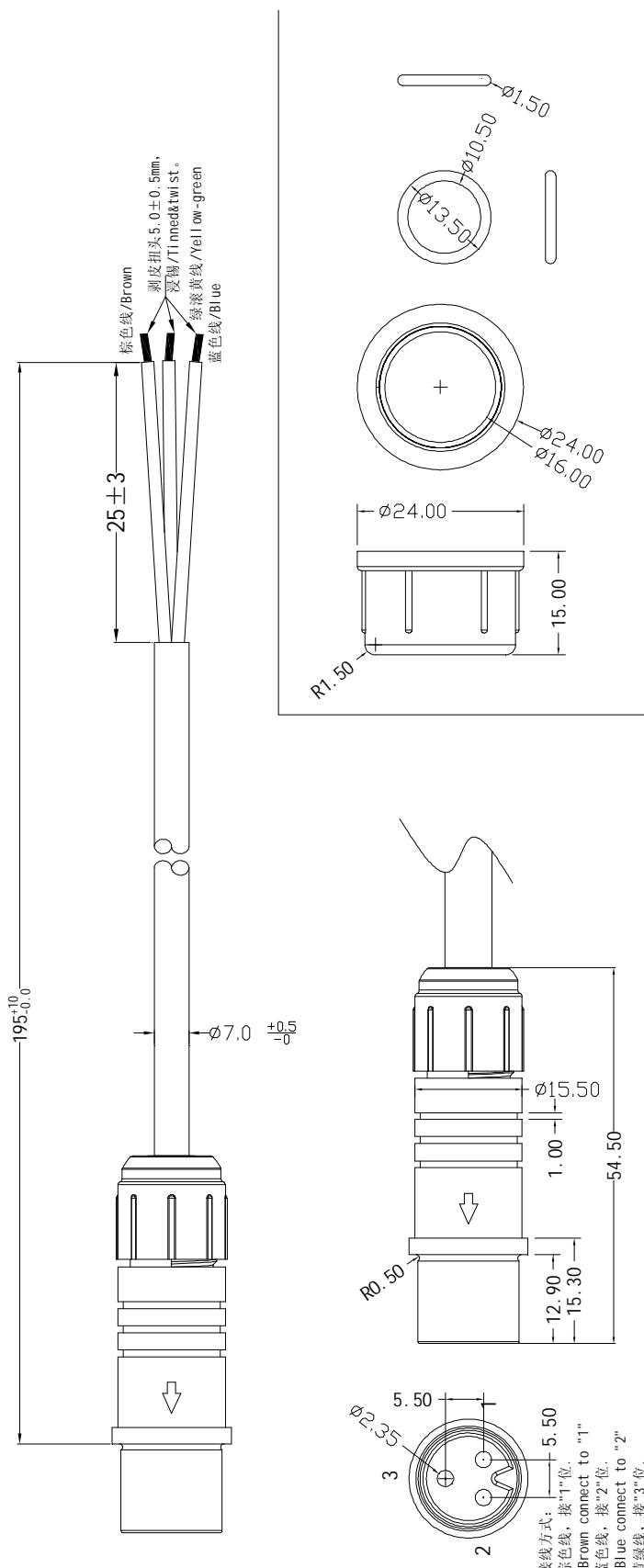
七、材质要求: 线身波50P 橡胶 黑色, 防水尖嘴尼龙料
Material: cable sheath must be 50P rubber, black, waterproof
connector must be tylon.

八、颜色要求: 黑色 (110M)
Color requirement: Black (110M)
要求线材与防水头组装后防水等级达IP68级, 防紫外线, 耐温高底温-45度至125度, 防火94-V0,
防水头能通过压测试;

The IP grade meet IP68 after cable and waterproof connector connected, anti-UV, can work well under -45°C to 125°C, meet UL94-V0, waterproof connector can pass Bal I press test also are requested.

九、环保要求: 过RoHS标准;
Environmental protection requirements: meets RoHS requirements
十、一、材料料号: 480-020002-080
P. N. 480-020002-080

11. Input Cord/输入线



技术要求/Technical requirements:

一、 拉力试验要求：1. 整条线拉力 $\geq 15KG$ (1分钟无断芯和延伸率 \leq 总长的8%)；

Strain test requirements: 1. apply more than 15KG strain to cable for 1 minute without break up for inner-core wires and the elongation rate no more than 8% of the cable's over-all length;

二、 插拔测试要求：S5头端：500g, 120° (左右各60°), 45次/分钟，最少2000次；

For SR side: 500g, 120° (Angle is 60 degree during test for each side), 45 times for 1 minutes, the total test not less than 2000;

AC端：500g, 120° (左右各60°), 45次/分钟，最少2000次；

For AC side: 500g, 120° (Angle is 60 degree during test for each side), 45 times for 1 minutes, the total test not less than 2000;

三、 外观要求：1. 线材外皮，每米不能超过3个凸点；

Appearance requirements: 1. for cable sheathen, if more than three scratch were found

within 1m distance is not permit.

2. 线材表面不能有破损、压伤、脏污等外观不良；

Any appearance issue such as damage, crush, smudge on cable surface are not permit.

四、 耐温要求：热变形温度 $\geq 105^{\circ}\text{C}$ ，无变形、开裂等不良；

Temperature requirement: Heat deflection temperature (HDT) $\geq 105^{\circ}\text{C}$, any distortion, crack on cable body are not permit;

五、线材规格: H05RN-F VDE-3C认证 3x1.0MM², INSULATION: 4SP 橡胶
Cable spec: H05RN-F with VDE and 3C mark, 3x1.0MM², INSULATION: 4SP Rubber
六、印字要求: 3x1.0MM² IEC57 (YZW) 有相关的认证符号和认证公司名称；
Printing requirement: H05RN-F with VDE and 3C mark 3x1.0MM² IEC57 (YZW)

七、材质要求：线身外皮50P 像胶 黑色，防水头材质尼龙料

Material: cable sheath must be 50P rubber, black, waterproof
connector must be nylon.

八、颜色要求：黑色 (110M)

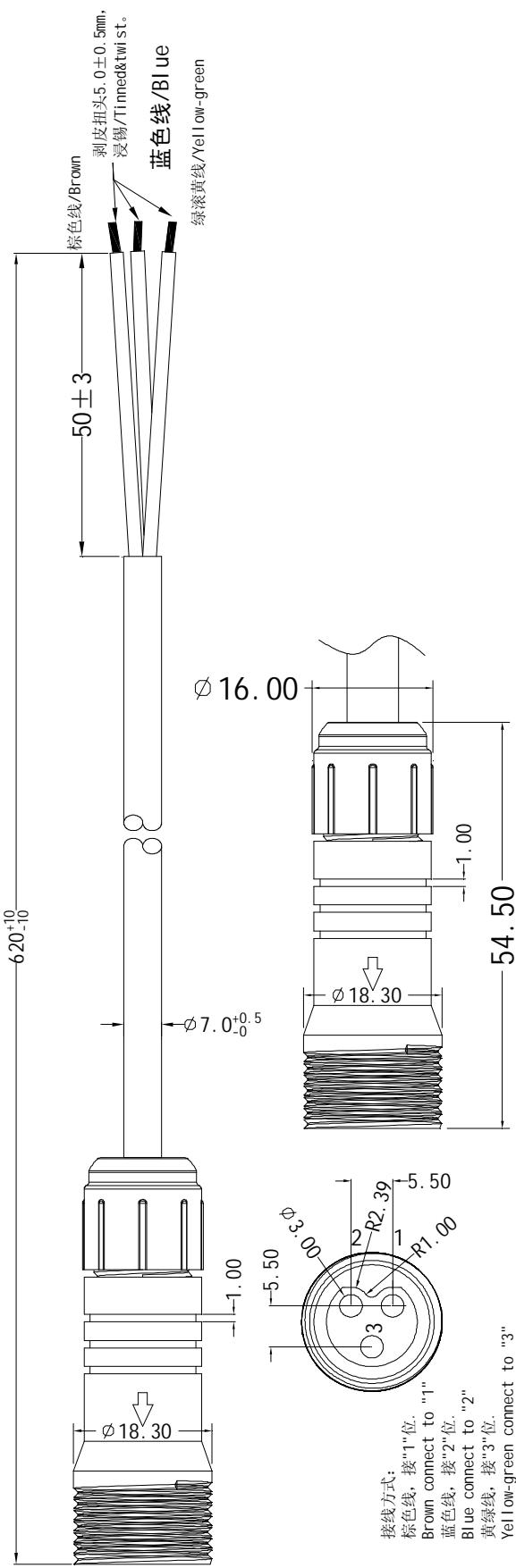
Color requirements: Black (110M)

九、要求线材与防水头组装后防水等级IP66级，防紫外线，耐温高低温 -45度至125度，防火94-V0，
防水头能通过球压测试；
The IP grade meet IP68 after cable and waterproof connector connected, anti-UV, can work well under -45°C to 125°C, meet UL94-W0, waterproof connector can pass Ball press test also are requested.

十、环境要求：达RoHS标准；
Environmental protection requiments: meets RoHS requirements

十一、线材料号: 322060146

P. N: 322060146



技术要求：

一、拉力试验要求：1、整条线拉力≥15KG(1分钟无断芯和延伸率≤总长的8%);
Strain test requirements: 1, apply more than 15KG strain to cable for 1 minute without break up for inner-core wires and the elongation rate no more than 8% of the cable's over-all length;

二、摇摆测试要求：SR头端: 500g, 120° (左右各60°), 45次/分钟, 最少2000次;
Sway test requirements:
For SR side: 500g, 120° (Angle is 60 degree during test for each side),
45 times for 1 minutes, the total test not less than 2000;

AC头端: 500g, 120° (左右各60°), 45次/分钟, 最少2000次;
For AC side: 500g, 120° (Angle is 60 degree during test for each side),
45 time for 1 minutes, the total test not less than 200;

三、外观要求：1、线材外皮，每米不能超过3个小凸点;
Appearance requirements: 1, for cable sheathen, if more than three scratch were found within 1m distance is not permit;
2、线材表面不能有破埙、压伤、脏污等外观不良；
Any appearance issue such as damage, crush, smudge on cable surface are not permit.

四、耐温要求：热变形温度≥105°C，无变形、开裂等不良：
Temperature requirement: Heat deflection temperature (HDT) ≥105°C, any distortion, crack on cable body are not permit;

五、线材规格：H05RN-F VDE+3C认证 3x1.0MM², INSULATION: 45P 绝缘
Cable spec: H05RN-F with VDE and 3C mark, 3x1.0MM², INSULATION: 45P Rubber
六、印字要求：H05RN-F VDE+3C认证 3x1.0MM² EC57(YZN) 有相关的认证符号和认证公司名称;
Printing requirement: H05RN-F with VDE and 3C mark, 3x1.0MM² EC57(YZN)
including the safety mark and company name.

七、材质要求：线身外皮50P 橡胶 黑色，防水头材质尼龙料
Materials: cable sheath must be 50P rubber, black, waterproof
connector must be nylon.

八、颜色要求：黑色 (1101M)

Color requirements: Black (1101M)

九、要求线材与防水头组装后防水等级达IP68级，防紫外线，耐温高低温-45度至125度，防火94-V0，
The IP grade meet IP68 after cable and waterproof connector connected, anti-UV can work well under -45°C to 125°C, meet
UL94-V0, waterproof connector can pass Ball press test also are requested.

十、环保要求：过RoHS标准;

Environmental protection on requirements: meets RoHS requirements
十一、物料编码: 491-030002-130
P.N: 491-030002-130

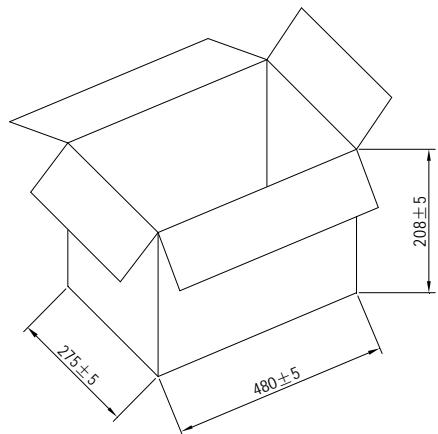
12. I/O Marking Drawing/铭牌示意图



13. BOX/彩盒

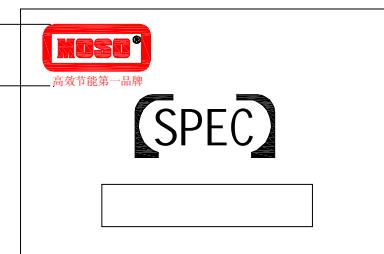


14. Package Drawing/包装示意图

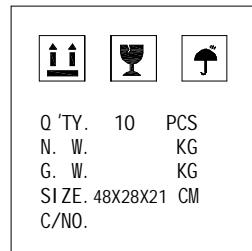


彩色印刷MOSO
LOGO, 其中R及
小圆圈用黑色

正唛: (两边一样)



侧唛: (两边一样)



技术要求:

- 1、纸箱;
- 2、外箱外度尺寸: L480*W275*H208mm, K=A加强型,
只允许有一个装钉口;
- 3、环保要求: 过ROHS标准;
- 4、外观要求: 无破损、无脏污、切口无毛边、印字清晰;
- 5、每箱装10台