

产品描述：KLNE1-F 系列

Product Description: KLNE1-F Series

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1. 更改履历 Change History

序号 No.	版本号 Version No.	更改前描述 Description Before Modification	更改后描述 Description After modification	更改人/日期 Reviser/Date
1	V1.2	产品性能、电气性能要求修改,型号修改		倪荣伟 25/7/9
2	V1.3	添加拉力试验		倪荣伟 25/11/20
3				
4				
5				

2. 适用范围 Scope

本产品规格书适用于浙江瑞辉电气有限公司生产的 PCB 连接器，产品系列名称：KLNE1-F 系列。

This product specification covers the requirement for PCB connector, which are designed and manufactured by ZHEJIANG REWIN ELECTRIC CO.,LTD. P/N: KLNE1-F.

3. 产品命名规则及描述 Product Naming Rules and Description

KLNE 系列产品为 PCB 连接器，产品命名规则及部件描述如下：

The KLNE series connector designed for PCB connector. Naming rules and part description as following form:

产品命名规则 Products Naming Rules

示例 Example:	KLNE01-P-5.00-V-01-GY	系列名称 KLN	应用 E	编号 01	类别 P	间距 5.00	方向 V	极数 01	颜色 GY
系列名称 Series name:	KLN								
应用 Application:	R=轨装式接线端子 Rail-Mount Terminal Blocks C=建筑布线用端子 Installation Terminal Blocks and Connectors E=PCB接线端子 PCB Terminal Blocks								
编号 No.:	01								
类别 Sort:	P=插头 Plug S=插座 Socket A=配件 Accessory								
间距 Pitch:	5.00=5.00 间距 Pitch								
方向 Direction:	H=90度卧式 90°Horizontal V=180度立式 180°Vertical W=270度卧式 270°Horizontal U=通用式 Unicersal L=左侧 Left M=中间 Mid R=右侧 Right								
极数 Pin:	01=1 Pin								
颜色 Color:	BK=黑色Black GY=灰色Gray OL=本色Original RD=红色Red WH=白色White TT=透明Transparent YE=黄色Yellow BU=蓝色Blue OG=橙黄Orange GN=绿色Green OT=其他Other								

塑料件命名规则
Plastic Parts Naming Rules

示例	系列名称	应用	编号	类别	间距	方向	部件	材料编号	颜色	防火等级
Example: KLNE01-P-5.00-V_HO-01-GY-V0	KLN	E	01	P	5.00	V	HO	01	GY	V0
系列名称 Series name:	KLN									
应用 Application:	R=轨装式接线端子 Rail-Mount Terminal Blocks C=建筑布线用端子 Installation Terminal Blocks and Connectors E=PCB接线端子 PCB Terminal Blocks									
编号 No.:	01									
类别 Sort :	P=插头 Plug S=插座 Socket A=配件 Accessory									
间距 Pitch:	5.00=5.00 间距 Pitch									
方向 Direction:	H=90度卧式 90°Horizontal V=180度立式 180°Vertical W=270度卧式 270°Horizontal U=通用式 Unicersal L=左侧 Left M=中间 Mid R=右侧 Right									
部件 Parts:	HO=外壳 Housing CO=盖子 Cover LE=操作杆 Lever LR=锁扣杆 Lock Rod FL=法兰 Flange CL=卡扣 Clip									
材料编号 Material No.:	01=PA66 02=PA66+GR 03=PBT 04=PBT+GR 05=PC 06=POM									
颜色 Color:	BK=黑色Black GY=灰色Gray OL=本色Original RD=红色Red WH=白色White TT=透明Transparent YE=黄色Yellow BU=蓝色Blue OG=橙黄Orange GN=绿色Green OT=其他Other									
防火等级 Flammability:	HB=UL94HB VO=UL94V-0 V1=UL94V-1 V2=UL94V-2									

金属件命名规则
 Metal Parts Naming Rules

示例	系列名称	类别	编号	材质	处理工艺	送料方式	
Example:	KLN-SP-01-S-13-P	KLN	SP	01	S	13	P
系列名称							
Series name:	KLN						
类别							
Sort:	SP=弹簧 Spring CM=接触件 Contact Material NU=螺母 Nut SC=螺丝 Screw GA=垫片 Gasket						
编号							
No.:	01						
材质							
Material:	B=黄铜 Brass P=磷铜 Phosphor Bronze S=不锈钢 Stainless Steel N=洋白铜 Nickel Silver Alloy R=紫铜 Red Copper C=镁铜 Copper Magnesium Alloy L=铝 Aluminium A=铍铜 Beryllium Bronze F=铁 Ferrum						
处理工艺							
Processing:	01=无 None 02=镀镍 Nickel Plating 03=镀镍银 Silver-Nickel Plating 04=镀镍金 Gold-Nickel Plating 05=镀镍局部金 Half Gold-Nickel Plating 06=镀亮锡局部金 Half Gold-Tin Plating 07=镀雾锡 Matte Tin Plating 08=镀亮锡 Bright Tin Plating 09=镀镍雾锡 Matte Tin-Nickel Plating 10=镀铅锡 Tin-Lead Plating 11=镀铜锡 Tin-Cu Grinding 12=化学研磨 Chemical Grinding 13=热处理 Heat Treatment						
送料方式							
Feeding Way:	P=散件 Parts T=料带 Tape						

塑料件 Plastic parts		
名称 Name	部件型号 Part Model	备注 Notes
插头外壳 90°立式 Male plug housing 90°vertical	KLNE1-F-5.00-V_HO-1-GY-V0	PA66 UL94VO
插头外壳 0°卧式 Male plug housing 0°horizontal	KLNE1-F-5.00-H_HO-1-GY-V0	PA66 UL94VO
插头盖 90°立式 Male plug cover90°vertical	KLNE1-F-5.0-V_CO-1-GY-V0	PA66 UL94VO
插头盖 0°卧式 Male plug cover 0°horizontal	KLNE1-F-5.0-H_CO-1-GY-V0	PA66 UL94VO
操作杆 Lever	KLNE1-A-5.0-U_LE-2-OG-V0	PA66 25%GF UL94VO
锁扣杆 Lock rod	KLNE1-A-5.0-U_LR-2-GN-V0	PA66 25%GF UL94VO

金属件 Metal parts		
名称 Name	部件型号 Part Model	备注 Notes
弹片 Spring	KLN-SP-1-S-13-P	301S-HV540 Heat treatment
0°卧式导电件 0°horizontal Conductive	KLN-CM-3-P-9-P	T3Y2 - Bright Tin Plating (4-8um)
90°立式导电件 90°vertical Conductive	KLN-CM-5-P-9-P	T3Y2 - Bright Tin Plating (4-8um)

4. 相关标准 Related Standards

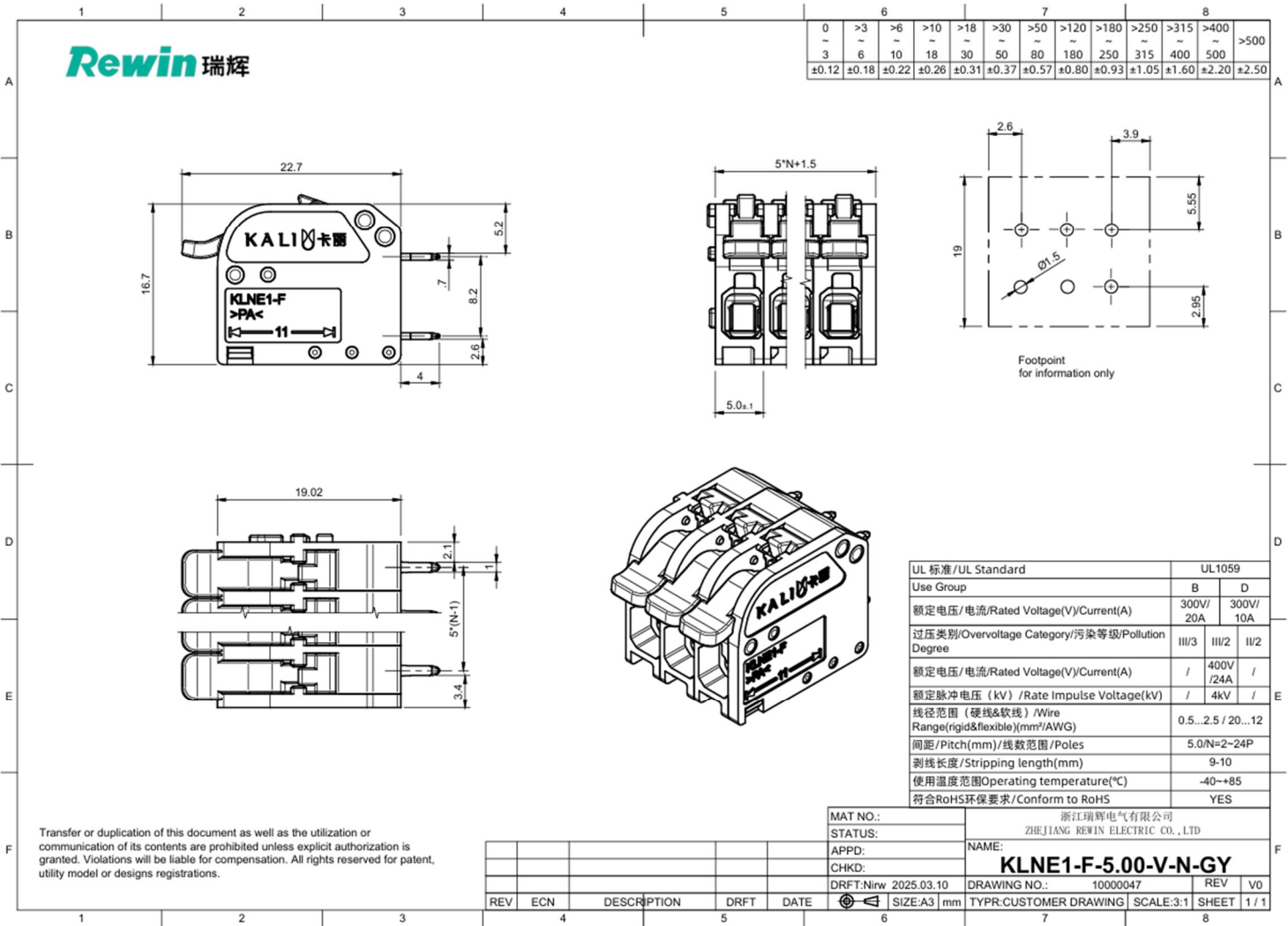
以下参考文件是本规格书的一个组成部份。若本规格书中的要求与产品图纸发生冲突，则产品图中的要求为优先；若本规格书中的要求与参考文件中的要求冲突，则本规格书为优先。

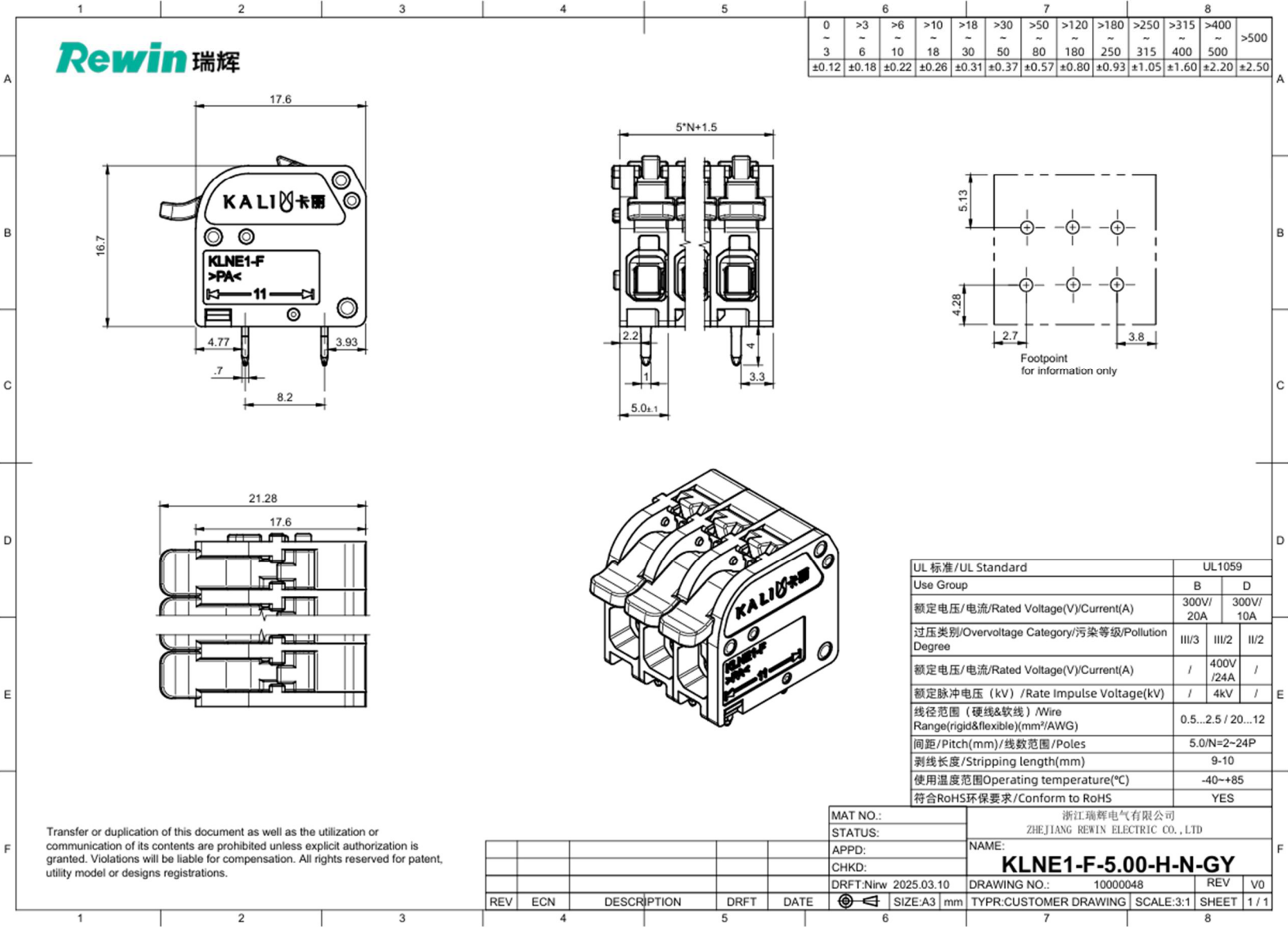
The following documents form a part of this specification. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

《UL 标准: UL1059》

《IEC 标准: IEC 60664 & IEC 61984》

5. 参数范围 Parameter Ratings:





KLNE-F 参数 KLNE Snap-in connector parameter ratings			
UL 标准 UL Standard	UL1059		
Use Group	B	D	
额定电压 / 电流 Rated Voltage(V) / Current(A)	300V/20A	300V/10A	
IEC 标准 IEC Standard	IEC 60668 & IEC 61984		
过压类别 / 污染等级 Overvoltage Category / Pollution Degree	III/3	III/2	II/2
额定电压 / 电流 Rated Voltage(V) / Current(A)	/	400V/24A	/
额定脉冲电压(kV) Rate Impulse Voltage(kV)	/	4kV	/
线径范围（硬线&软线） Wire Range(rigid&flexible)(mm²/AWG)	0.5...2.5/20...12		
间距 / 线数范围 Pitch(mm) / Poles	5.00/N=2~24P		
剥线长度 Stripping Length(mm)	9-10		
使用温度范围 Operating Temperature(℃)	-40~+85℃		
符合 RoHS 环保要求 Conform to RoHS	YES		

6. 产品性能测试 Performance test

序 号 No.	项目 Item	测试条件 Test Condition	规格 Requirement
6.1.1	外观 Appearance	目测 Visual inspection 视力: 1.0 以上 Visual acuity: 1.0 or above 照明: (200 ~ 300) lx Lighting: (200-300) lx 目测距离: (0.3 ~ 0.5) m Visual inspection distance: (0.3-0.5) m	1. 塑料件表面应无明显疤痕、凹陷、开裂及影响使用的变形。 The surface of the plastic parts should be free from obvious scars, dents, cracks, and deformations that affect usability. 2. 金属件表面无锈蚀、氧化、无明显的机械损伤及电镀层脱落等缺陷。 The surface of the metal parts should be free from rust, oxidation, obvious mechanical damage, and defects such as peeling of the plating layer.
6.1.2	跌落试验 Drop Test	将产品从 2 米的高度自由下落, 重复 5 次。 The product shall be dropped freely from a height of 2 meters. This test shall be repeated 5 times.	产品结构正常, 功能良好。 The product shall retain normal structure and proper functionality.
6.1.3	间距检验 Pitch Inspection	视觉检测仪测量产品间距。 The product pitch shall be measured using a vision measuring system.	尺寸在要求范围内, 间距: $5.00 \pm 0.10\text{mm}$ 。 Dimensions shall be within specified limits. Pitch: $5.00 \pm 0.10\text{ mm}$.
6.1.4	拉力试验 Pull force	对每根经受过试验的导线施加拉力 100/30N, 持续 1min。 Apply a pull force of 100/30N to each tested wire for a duration of 1 minute. 硬单芯/细多股 0.5mm^2 (20AWG) ——30N Solid single-core / Fine multi-stranded wire 0.5mm^2 (20AWG) ——30N 硬单芯/细多股 1.5mm^2 (16AWG) ——60N Solid single-core / Fine multi-stranded wire 1.5mm^2 (16AWG) ——60N 硬单芯/细多股 2.5mm^2 (12AWG) ——100N Solid single-core / Fine multi-stranded wire 2.5mm^2 (12AWG) ——100N	试验期间导线不应从端子滑出。 During the test, the tested wire should not slide out from the terminal.

6.2 电气性能测试 Electrical test

序号 No.	项目 Item	测试条件 Test Condition	规格 Requirement
6.2.3	绝缘电压 Insulation voltage	额定绝缘电压 400V , 试验电压 4000V, 频率 50Hz, 1min。 Testing parameters: Rated insulation voltage: 4000V; testing voltage: 4000V; frequency: 50 Hz; duration: 1 minute. 试验期间, 不得出现闪络或击穿。 a.所有连接在一起的夹紧件与无固定装置的连接器件 的本体或所有连接在一起的夹紧件与有固定装置的连 接器件的安装底座上的夹紧件之间; During the test, there should be no occurrence of flashover or breakdown between the clamping parts of all connected components without fixing devices, such as the body of connectors, and between the clamping parts on the mounting base of connectors with fixing devices.	无击穿、闪络和飞弧现象 No breakdown, flashover, or arcing should be observed during the test.
6.2.4	温升 Temperature rise	额定电流(Rated current): 20A; 线径(wire diameter): 2.5mm² 试验力矩(Testing torque): ——N·m	1h 或热稳定后, 温升 ≤45K Temperature rise shall be ≤45K after 1h or after thermal stability is achieved.
6.3.5	盐雾 Salt spray test	把试验样品从试验箱顶悬挂下来, 采用浓度为(5±1)%(质量百分比)的氯化钠溶液, 在(35±2)℃温度下连续雾化 48h;试验后用流动的蒸馏水轻轻洗去表面沉积物。在常温常湿条件下恢复 1~2h。 Suspend the test sample by hanging it from the top of the test chamber. Apply a sodium chloride (NaCl) solution with a concentration of (5±1)% (by mass percentage). Maintain continuous spray for 48 hours at a temperature of (35±2)°C. After the test, gently rinse off the surface deposits using flowing distilled water. Allow 1-2 hours of recovery of the sample under normal temperature and humidity conditions.	外观: 无损伤(五金件应无露出底金属的严重锈蚀;使用预镀好的型材, 其落料面允许有不影响其性能的轻微腐蚀。) Appearance: No damage should be observed (Metal parts should not have severe exposed metal corrosion; pre-plated profiles may have slight corrosion on cut surfaces that does not affect their performance).

1. 产品标识及包装规范 Identification and packaging

Rewin 瑞辉		产品标识及包装规范 Identification and Packaging		交付客户		
				Delivery to customer		
				客户编码		
				Customer Code		
				包装图号		
				Package Drawing No.		
				版 本		V1.0
				Version		
系列 SERIES		KLNE 系列接线端子 KLNE series wiring terminals		型 号 MODEL		KLNE
产品标识 Identification	产品标识 & 打标位置 Identification and marking position	印刷工艺 Printing technique	激光打标 Laser marking			
		备注 Remarks: 紫外激光器 Ultraviolet laser emitter				

产品规格书



Product specification

www.rawin.cn

	独立包装袋 Individual packaging bag	产品包装材质 Packaging material		产品包装尺寸（长*宽/mm） Packaging dimensions (L*W/mm)			
		标签尺寸 mm Label dimensions (mm)	无 N/A	数量/包 pcs/box			
		标签材质 pcs/box	无 N/A	中文字体 Chinese font	无 N/A	英文字体 English font	无 N/A

产品规格书



Product specification

www.rawin.cn

内包装盒 & 包装规范 Inner box/Packa ging specs	内包装标签 Inner packing label	内包装材质 Inner packing material		内包装尺寸 (长*宽*高/mm) Packaging dimensions (L*W/mm)			
		标签尺寸 mm Label dimensions		数量/盒 pcs/pack			
		标签材质 Label material		中文字体 Chinese font		英文字体 English font	
	内包装盒 & 标签位置 Inner box/label position						

产品规格书



Product specification

www.rawin.cn

外箱 & 包装规范 Outer carton/pac kaging specs	外箱 & 外箱标签位 置 Outer carton/Cart on label position	包装箱 Packing carton	外箱材质 Outer carton material	☒ BC 五层板（中性包装无印刷） ☒ BC five-layer board (neutral packaging without printings)			
			外尺 (长*宽*高) /mm) Outer dimensions (L*W*H/mm)		装箱数量 Packing quantity		
		标签材质 Label material	☒ 机打标签（不干胶） ☐ 印刷标签 ☒ Computer-printed labels (self-adhesive sticker) ☐ Printed labels		标签尺寸 mm dimensions		
		其它 Others	包装打包带 Packing tape	☐ 井字 Cross-pattern strapping tapes ☐ Parallel tapes ☒ 无需求 No special requirements			
			封口胶带 Sealing tape	☒ 透明无字 Transparent, without words			
		标签印刷工艺 Label printing techniques	印刷标签 Printing labels	中文字体 Chinese font	黑体 Black	英文字体 English font	黑体 Black

产品规格书



Product specification

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技术负责人 Technical head		审核 Reviewed by		批准 Approved by	
客户(简称)确认 Customer (in short name) confirmation			内部签审 Internal signed review		
确 认 者 Confirmed by			批 准 Approved by	年 月 日 YYYY MM DD	
部 门 Dept.			销售代表 Sales representative	年 月 日 YYYY MM DD	
日 期 Date	年 月 日 YYYY MM DD		制 定 Prepared by	年 月 日 YYYY MM DD	
特别注明： 整份文件提交客户确认，客户在末页签字确认。若客户未会签可由销售代表代签，但必须提供相关佐证资料（如包装交付客户检验的合格记录等）。 Special notes: The entire document is to be submitted for customer confirmation, and the customer may choose to sign and confirm on the last page. In case the customer is unable to give the signature, the sales representative may sign on their behalf, but relevant supporting documents (such as records of qualified inspection upon delivery to the customer) must be provided as evidence.					