

电容触摸屏规格书

Capacitive Touch panel Specification

品名/Product Name : 投射式电容触摸屏
Projective Capacitive touch panel

型号/Product Number : CP-270N038Y

日期/DATE: 2021/03/11

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1.适用范围 Application Scope

本规格书为明确规范公司产品触控面板性能而订定，当本规格书与其它个别规格书内容有抵触情况发生时，仍以本规格书标准为最优先。本规格书内容如有项目不足或内容需变更时，须经由会议讨论后另订之。

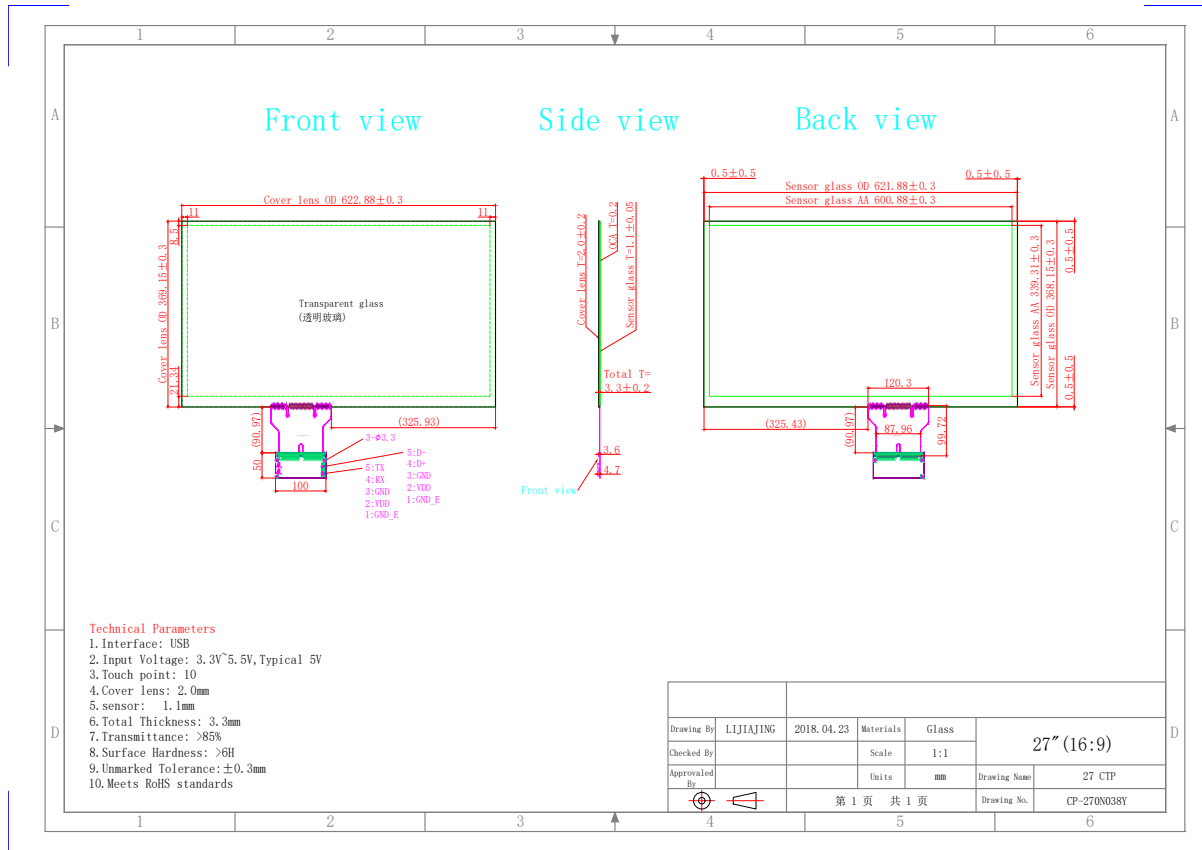
This specification is specified the performance of our company's touch panel products. When there is a conflict between the content of this specification and other individual specifications, the standard of this specification always have the first priority. If the content of this specification is insufficient or the content needs to be changed, it must be specified separately after discussion at the meeting.

2.产品规格 Specification

2.1 产品结构 Product Specification

序号/No.	项目/Item	参数/Specification	单位/Unit
1	型式/Type	投射式电容屏/Projective Capacitive	
2	连接方式/Connection	COB	
3	屏幕寸别/Screen Diagonal	27 [16:9]	Inch
4	产品结构/Structures	G+G	
5	外形尺寸/Outline Dimension	369.15(W)*622.88(L) \pm 0.3	mm
6	可视区/View Area	无/NO	mm
7	动作区/Active Area	339.31(W)*600.88(L) \pm 0.3	mm
8	Sensor 厚度/Sensor Thickness	1.1 \pm 0.05	mm
9	玻璃厚度/Cover Thickness	2.0 \pm 0.2	mm
10	总厚度/Total Thickness	3.3 \pm 0.2	mm
11	玻璃倒角/Chamfer	R8	mm
12	出线长度/Tail Length	99.72	mm
13	Logo	无/NO	
14	丝印颜色/Printing	透明/Transparent glass	
15	特殊设计/Special Design	无/NO	
16			

2.2 产品图纸 Product Drawing



3.特性 Characteristics

3.1 使用、保存环境 Operation and storage environment

序号/No.	项目/Item	规格/Specification	
		温度/Temperature	湿度 [不可结露] Humidity[Non-Condensing]
1	工作条件 Operation Conditions	-40°C~+85°C	20%~90%RH
2	储存条件 Storage Conditions	-40°C~+95°C	20%~70%RH

3.2 电气特性 Electrical characteristics

序号/No.	项目/Item	规格/Specification	
1	操作模式/Input Mode	■Finger/手指触控 ■Active pen/主动笔触控	
2	操作模式/Support Touch Points	1~10	
3	接口/Interface	USB (Other according to controller/其他根据控制板)	
4	工作电压/Supply Voltage	USB 5V	
5	功耗/Power Consumption	< 0.55 W	
6	报点率/Report Rate	> 100 Hz	
7	响应时间/Response Time	< 25 ms	
8	线性度/Linearity	$X \leq 1.0\%$, $Y \leq 1.0\%$	
9	使用寿命 Life Time	点击测试/Knock Test > 50,000,000 times	
10	ESD [Contact/接触]	Specification: 8kv	Result: Pass
11	ESD [Air/空气]	Specification: 15kv	Result: Pass

3.3 机械特性 Mechanical characteristics

项目/Item	厚度/Thickness			
	2mm	3mm	4-6mm	> 6mm
抗冲击力 Impact resistance	IK07	IK08	IK09	IK09/10
表面硬度 surface hardness	≥6H	≥6H	≥6H	≥6H
弯曲度 Warpage	≤0.5mm	≤0.3mm	≤0.3mm	≤0.3mm
表面应力 Surface stress	> 480MPa	> 480MPa	> 480MPa	> 480MPa
油墨着附力 Ink adhesion	≥4B	≥4B	≥4B	≥4B

备注：标红的一列为本规格书对应的机械特性

The column marked in red is the corresponding mechanical characteristics of this specification

3.4 光学的特性 Optical characteristics

普通/AF 钢化玻璃 Ordinary / AF tempered glass

序号/No.	项目/Item	规格/Specification
1	Transmittance/穿透率	>85%

AG 钢化玻璃

	单面细砂					
光泽度 Gloss	40±10	50±10	70±10	80±10	95±10	110±10
粗糙度 Ra	≤0.18	≤0.18	≤0.18	≤0.18	≤0.18	≤0.18
雾度%Haze	12±4	10±4	7±3	5±3	4±3	3±2
透过率 Transmittance	≥85%	≥85%	≥85%	≥85%	≥85%	≥85%
反射率 reflectivity	< 14%	< 14%	< 14%	< 14%	< 14%	< 14%
解析度 Resolution	2:1	3:1	3:1	3:1	3:1	3:1
清晰度 clarity	40	57	79	81	83	91
适用行业 Applications	户外应用（阳光超强的国家和地区） Outdoor applications (countries and regions with strong sunlight)		取款机，广告机，显示屏 ATM, advertising machine, display screen		医疗，收银 机，POS机 Medical,cash register,POS	车载 vehicle

AR 玻璃 (减反射玻璃/增透玻璃) AR Glass(Antireflection glass / Increasing transparency glass)

镀膜型号 Coating model	550nm 处透过率 Transmittance at 550nm	550nm 处反射率 Reflectivity at 550nm	L 值 L value	A 值 A value	B 值 B value
单面两层 One side and two layers	≥94%	≤5.5%	28±2	9±1.5	-13±5
双面两层 Two layers on both sides	≥98%	≤2%	11±1.5	38±1.5	-36±7
单面四层 Single side four layer	≥94%	≤5.5%	26.5±1.5	-2.5±1.5	-6±4

4.外观检测 Appearance Inspection

4.1 检查规则 Inspection Criteria

亮度 brightness : 800-1200LUX

检验距离 : 眼睛距产品 25±5cm

Test distance: the distance between eyes and product is 25 ± 5cm

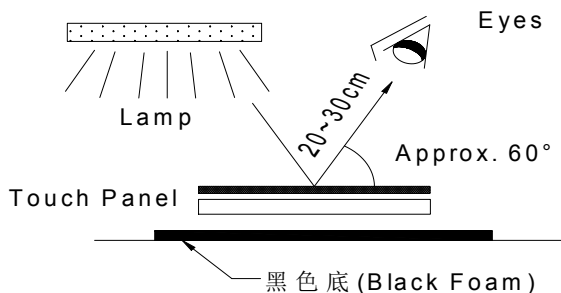
检验角度 : 检视面与桌面成 45-60° , 前后翻转。

Inspection angle: 45-60 ° between the inspection surface and the table top, and turn back and forth

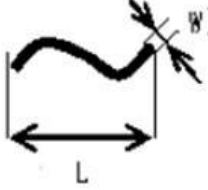
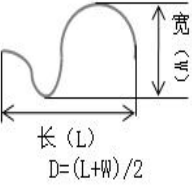
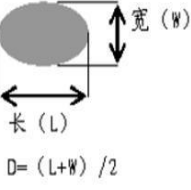
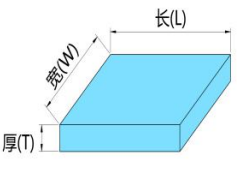
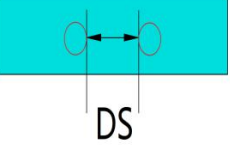
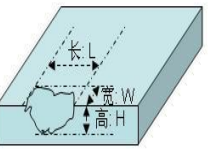
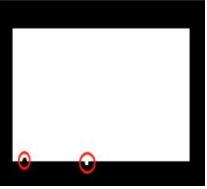

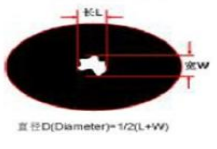

检验方法 : 平光检验 Test method: plain test

检验时间 : 20 S/片 Test time: 20 s / tablet

背景颜色 : 黑、白色 Background color: black, white



4.2 缺陷对照表 Defect comparison table

缺陷代码	N 数量 quantity	W 宽度 width	L 长度 length	$D=(W+L)/2$ 直径 diameter	T 厚度 thickness
图示	无 NO				
缺陷代码	DS 间距 Distance	N/A 缺口, 裂口 Gap, crack	N/A 丝印锯齿 Silk screen saw tooth	N/A 丝印白边 Silk screen white edge	N/A 针孔/透空 Pinhole / air permeability
图示					
缺陷代码	WARP 翘曲度 Warpage				
图示					

4.3 检验项目及标准

项目 Item	玻璃类型 Glass type	玻璃厚度	
		≤3mm	4mm
点状缺陷 point defect	普通玻璃 Ordinary glass	D≤0.2mm 忽视 Ignore, DS > 20mm; 0.2 < D≤0.45mm, N≤3 DS > 20mm; D > 0.6mm NG	D≤0.2mm 忽视 Ignore, DS > 20mm; 0.5 < D≤0.6mm, N≤4 DS > 20mm; D > 0.6mm NG
	AG 玻璃 AG glass	D≤0.2mm 忽视 Ignore, DS > 20mm; 0.2 < D≤0.45mm, N≤3 DS > 20mm; D > 0.6mm NG	D≤0.2mm 忽视 Ignore, DS > 20mm; 0.5 < D≤0.6mm, N≤4 DS > 20mm; D > 0.6mm NG
	AR 玻璃 AR glass	D≤0.2mm 忽视 Ignore, DS > 20mm; 0.2 < D≤0.45mm, N≤3 DS > 20mm; D > 0.6mm NG	D≤0.2mm 忽视 Ignore, DS > 20mm; 0.5 < D≤0.6mm, N≤4 DS > 20mm; D > 0.6mm NG
线状缺陷 Linear defect	普通玻璃 Ordinary glass	W≤0.08mm, L < 5mm, DS > 20mm 忽视 Ignore; 0.08 < W≤0.2mm, L < 20mm, N≤3, DS > 20mm; W > 0.2mm 或 L > 20mm NG	W≤0.08mm, L < 8mm, DS > 20mm 忽视 Ignore; 0.08 < W≤0.2mm, L < 20mm, N≤4, DS > 20mm; W > 0.2mm 或 L > 20mm NG
	AG 玻璃 AG glass	W≤0.08mm, L < 8mm, DS > 20mm 忽视 Ignore; 0.08 < W≤0.2mm, L < 20mm, N≤4, DS > 20mm; W > 0.2mm 或 L > 20mm NG	W≤0.08mm, L < 8mm, DS > 20mm 忽视 Ignore; 0.08 < W≤0.2mm, L < 20mm, N≤4, DS > 20mm; W > 0.2mm 或 L > 20mm NG
	AR 玻璃 AR glass	W≤0.08mm, L < 8mm, DS > 20mm 忽视 Ignore; 0.08 < W≤0.2mm, L < 20mm, N≤4, DS > 20mm; W > 0.2mm 或 L > 20mm NG	W≤0.08mm, L < 8mm, DS > 20mm 忽视 Ignore; 0.08 < W≤0.2mm, L < 20mm, N≤4, DS > 20mm; W > 0.2mm 或 L > 20mm NG
气泡 Bubble	普通玻璃 Ordinary glass	VA 区 NG 正面丝印区 D≤0.4, N≤3 DS > 25mm 反面丝印区 忽视 Ignore	VA 区 NG 正面丝印区 D≤0.5, N≤3 DS > 25mm 反面丝印区 忽视 Ignore
	AG 玻璃 AG glass	VA 区 NG 正面丝印区 D≤0.4, N≤3 DS > 25mm 反面丝印区 忽视 Ignore	VA 区 NG 正面丝印区 D≤0.5, N≤3 DS > 25mm 反面丝印区 忽视 Ignore
	AR 玻璃 AR glass	VA 区 NG 正面丝印区 D≤0.4, N≤3 DS > 25mm 反面丝印区 忽视 Ignore	VA 区 NG 正面丝印区 D≤0.5, N≤3 DS > 25mm 反面丝印区 忽视 Ignore
丝印锯齿 Silk screen saw tooth	普通玻璃 Ordinary glass	D≤0.1mm, 忽视 Ignore 0.1 < D≤0.2mm, DS > 20mm, N≤2 D > 0.2mm NG	D≤0.1mm, 忽视 Ignore 0.1 < D≤0.2mm, DS > 20mm, N≤2 D > 0.2mm NG
	AG 玻璃 AG glass	D≤0.1mm, 忽视 Ignore 0.1 < D≤0.2mm, DS > 20mm, N≤3 D > 0.2mm NG	D≤0.1mm, 忽视 Ignore 0.1 < D≤0.2mm, DS > 20mm, N≤3 D > 0.2mm NG
	AR 玻璃 AR glass	D≤0.1mm, 忽视 Ignore 0.1 < D≤0.2mm, DS > 20mm, N≤3 D > 0.2mm NG	D≤0.1mm, 忽视 Ignore 0.1 < D≤0.2mm, DS > 20mm, N≤3 D > 0.2mm NG
丝印白边 Silk screen white edge	普通玻璃 Ordinary glass	W≤0.2mm N≤2 忽视 Ignore W > 0.2mm 或 N > 2 NG	W≤0.3mm N≤2 忽视 Ignore W > 0.3mm 或 N > 2 NG
	AG 玻璃 AG glass	W≤0.2mm N≤2 忽视 Ignore W > 0.2mm 或 N > 2 NG	W≤0.3mm N≤2 忽视 Ignore W > 0.3mm 或 N > 2 NG
	AR 玻璃 AR glass	W≤0.2mm N≤2 忽视 Ignore W > 0.2mm 或 N > 2 NG	W≤0.3mm N≤2 忽视 Ignore W > 0.3mm 或 N > 2 NG

项目 Item	玻璃类型 Glass type	玻璃厚度	
		≤3mm	4mm
丝印和 LOGO 颜色 Silk screen printing and logo color	普通玻璃 Ordinary glass	颜色与样品或图纸一致 The color is consistent with the sample or drawing LOGO 的位置、多点、缺点、断字、图案不符不可有 Logo location, multi-point, shortcomings, hyphenation, patterns do not match	颜色与样品或图纸一致 The color is consistent with the sample or drawing LOGO 的位置、多点、缺点、断字、图案不符不可有 Logo location, multi-point, shortcomings, hyphenation, patterns do not match
	AG 玻璃 AG glass	颜色与样品或图纸一致 The color is consistent with the sample or drawing LOGO 的位置、多点、缺点、断字、图案不符不可有 Logo location, multi-point, shortcomings, hyphenation, patterns do not match	颜色与样品或图纸一致 The color is consistent with the sample or drawing LOGO 的位置、多点、缺点、断字、图案不符不可有 Logo location, multi-point, shortcomings, hyphenation, patterns do not match
	AR 玻璃 AR glass	颜色与样品或图纸一致 The color is consistent with the sample or drawing LOGO 的位置、多点、缺点、断字、图案不符不可有 Logo location, multi-point, shortcomings, hyphenation, patterns do not match	颜色与样品或图纸一致 The color is consistent with the sample or drawing LOGO 的位置、多点、缺点、断字、图案不符不可有 Logo location, multi-point, shortcomings, hyphenation, patterns do not match
残胶 Residual glue	普通玻璃 Ordinary glass	W≤0.3mm 忽视 Ignore W > 0.3mm NG	W≤0.3mm 忽视 Ignore W > 0.3mm NG
	AG 玻璃 AG glass	W≤0.3mm 忽视 Ignore W > 0.3mm NG	W≤0.3mm 忽视 Ignore W > 0.3mm NG
	AR 玻璃 AR glass	W≤0.3mm 忽视 Ignore W > 0.3mm NG	W≤0.3mm 忽视 Ignore W > 0.3mm NG
缺口 Gap	普通玻璃 Ordinary glass	玻璃边缘 Glass edge L≤0.5mm, W≤0.4mm, H≤T/3, DS > 20mm 允收 倒角处倒角处 Chamfering L≤0.3mm, W≤0.3mm, H≤T/3, 允收	玻璃边缘 Glass edge L≤0.5mm, W≤0.5mm, H≤T/3, DS > 20mm 允收 倒角处 Chamfering L≤0.3mm, W≤0.3mm, H≤T/3, 允收
	AG 玻璃 AG glass	玻璃边缘 Glass edge L≤0.5mm, W≤0.4mm, H≤T/3, DS > 20mm 允收 倒角处倒角处 Chamfering L≤0.3mm, W≤0.3mm, H≤T/3, 允收	玻璃边缘 Glass edge L≤0.5mm, W≤0.5mm, H≤T/3, DS > 20mm 允收 倒角处 Chamfering L≤0.3mm, W≤0.3mm, H≤T/3, 允收
	AR 玻璃 AR glass	玻璃边缘 Glass edge L≤0.5mm, W≤0.5mm, H≤T/3, DS > 20mm 允收 倒角处倒角处 Chamfering L≤0.3mm, W≤0.3mm, H≤T/3, 允收	玻璃边缘 Glass edge L≤0.5mm, W≤0.5mm, H≤T/3, DS > 20mm 允收 倒角处 Chamfering L≤0.3mm, W≤0.3mm, H≤T/3, 允收
翘曲度 Warpage	普通玻璃 Ordinary glass	WARP≤0.5 mm OK WARP > 0.5mm NG	WARP≤0.5mm OK WARP > 0.5mm NG
	AG 玻璃 AG glass	WARP≤0.5 mm OK WARP > 0.5mm NG	WARP≤0.5mm OK WARP > 0.5mm NG
	AR 玻璃 AR glass	WARP≤0.5 mm OK WARP > 0.5mm NG	WARP≤0.5mm OK WARP > 0.5mm NG
FPC 点状缺陷和折痕 FPC spot defects and creases	普通玻璃 Ordinary glass	凸起和凹陷点, 折痕。不发白或破损 OK Bumps and depressions, creases. No whitening or breakage OK	凸起和凹陷点, 折痕。不发白或破损 OK Bumps and depressions, creases. No whitening or breakage OK
	AG 玻璃 AG glass	凸起和凹陷点, 折痕。不发白或破损 OK Bumps and depressions, creases. No whitening or breakage OK	凸起和凹陷点, 折痕。不发白或破损 OK Bumps and depressions, creases. No whitening or breakage OK
	AR 玻璃 AR glass	凸起和凹陷点, 折痕。不发白或破损 OK Bumps and depressions, creases. No whitening or breakage OK	凸起和凹陷点, 折痕。不发白或破损 OK Bumps and depressions, creases. No whitening or breakage OK

项目 Item	玻璃类型 Glass type	玻璃厚度	
		≤3mm	4mm
脏污 Dirty	普通玻璃 Ordinary glass	触摸屏表面可以使用无尘布加酒精清洁掉的脏污, OK The surface of touch screen can be cleaned with dust-free cloth and alcohol, OK 使用无尘布加酒精无法清洁掉的脏污, 按点状/线状缺陷判定。 If the dust-free cloth is used and alcohol is used, the dirt that cannot be cleaned shall be judged according to the point / line defect.	触摸屏表面可以使用无尘布加酒精清洁掉的脏污, OK The surface of touch screen can be cleaned with dust-free cloth and alcohol, OK 使用无尘布加酒精无法清洁掉的脏污, 按点状/线状缺陷判定。 If the dust-free cloth is used and alcohol is used, the dirt that cannot be cleaned shall be judged according to the point / line defect.
	AG 玻璃 AG glass	触摸屏表面可以使用无尘布加酒精清洁掉的脏污, OK The surface of touch screen can be cleaned with dust-free cloth and alcohol, OK 使用无尘布加酒精无法清洁掉的脏污, 按点状/线状缺陷判定。 If the dust-free cloth is used and alcohol is used, the dirt that cannot be cleaned shall be judged according to the point / line defect.	触摸屏表面可以使用无尘布加酒精清洁掉的脏污, OK The surface of touch screen can be cleaned with dust-free cloth and alcohol, OK 使用无尘布加酒精无法清洁掉的脏污, 按点状/线状缺陷判定。 If the dust-free cloth is used and alcohol is used, the dirt that cannot be cleaned shall be judged according to the point / line defect.
	AR 玻璃 AR glass	触摸屏表面可以使用无尘布加酒精清洁掉的脏污, OK The surface of touch screen can be cleaned with dust-free cloth and alcohol, OK 使用无尘布加酒精无法清洁掉的脏污, 按点状/线状缺陷判定。 If the dust-free cloth is used and alcohol is used, the dirt that cannot be cleaned shall be judged according to the point / line defect.	触摸屏表面可以使用无尘布加酒精清洁掉的脏污, OK The surface of touch screen can be cleaned with dust-free cloth and alcohol, OK 使用无尘布加酒精无法清洁掉的脏污, 按点状/线状缺陷判定。 If the dust-free cloth is used and alcohol is used, the dirt that cannot be cleaned shall be judged according to the point / line defect.
表面反光色 Surface reflective color	普通玻璃 Ordinary glass	不适用 N/A	不适用 N/A
	AG 玻璃 AG glass	不适用 N/A	不适用 N/A
	AR 玻璃 AR glass	同批次一致 Same color in the same batch	同批次一致 Same color in the same batch
AG、AR 不良 AG and Ar are poor	普通玻璃 Ordinary glass	不适用 N/A	不适用 N/A
	AG 玻璃 AG glass	按点状和线状缺陷判定 Judging according to the point and line defects	按点状和线状缺陷判定 Judging according to the point and line defects
	AR 玻璃 AR glass	按点状和线状缺陷判定 Judging according to the point and line defects	按点状和线状缺陷判定 Judging according to the point and line defects
产品标签 product labeling	普通玻璃 Ordinary glass	按公司标准格式或客户需求判定 Determine according to the company standard format or customer requirements	按公司标准格式或客户需求判定 Determine according to the company standard format or customer requirements
	AG 玻璃 AG glass	按公司标准格式或客户需求判定 Determine according to the company standard format or customer requirements	按公司标准格式或客户需求判定 Determine according to the company standard format or customer requirements
	AR 玻璃 AR glass	按公司标准格式或客户需求判定 Determine according to the company standard format or customer requirements	按公司标准格式或客户需求判定 Determine according to the company standard format or customer requirements

备注：以上内容未尽之检验项目，须与客户沟通确认，以沟通结果或签样为准判定！

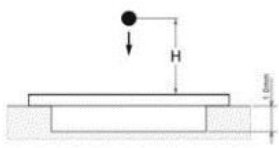
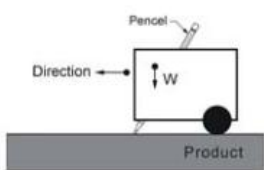
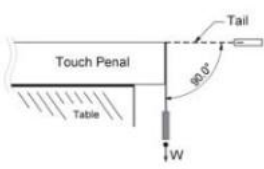
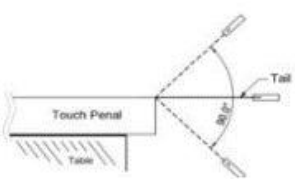
Note: the inspection items not covered in the above contents shall be confirmed through communication with customers, and the communication results or signed samples shall prevail!

5.可靠性测试 Reliability Test

5.1 使用、保存环境 Operation and storage environment

序号/No.	项目/Item	条件/Condition	规格 Specification
1	Constant Temperature/Humidity [恒温恒湿测试]	60°CX90%RH 240 hrs. and normalized for 4 hrs. [60°CX90%RH 240 小时， 恢复常温 4 小时后开始测试]	Satisfy- 3.2Electrical Characteristics 满足- [3.2 电子特性]
2	Heat Cycle [高温测试]	85°C/240 hrs. and test during constant temperature normalized for 4 hrs. [85°C/240 小时，恒温过程中需测 试，恢复常温 4 小时后再测试]	
3	Cold Cycle [低温测试]	-40°C/240 hrs. and test during constant temperature normalized for 4 hrs. [-40°C/240 小时，恒温过程中需测 试，恢复常温 4 小时后再测试]	
4	Thermal Cycle [冷热冲击测试]	-40°C~85°C [60 min./cycle] *10 cycles and normalized for 4 hrs. [-40°C~85°C，每循环 60 分钟， 共 10 次循环， 恢复常温 4 小时后开始测试]	

5.2 机械特性测试 Mechanical characteristics Test

序号/No.	项目/Item	条件/Condition	规格 Specification
1	Operating Force [操作力度]	Finger \leq 10g [手指触摸 \leq 10g]	
2	Impact [撞击测试]	Steel Ball/200g Height=150cm/1 time, Impact at center area [200g 不锈钢球；高度=150cm/中央 区域撞击 1 次] 	
3	Hardness [硬度测试]	6H pencil, pressure 750g/45° [6H 铅笔，压力 750g/45° (ASTM D3363)] 	
4	Tail Peeling [剥离测试]	800gf/cm by vertical 90°for 30sec [800gf/cm 垂直 90°静置 30 秒] 	
5	Tail Bending [折弯测试]	90° 10 times left & right [90°角,左右来回 10 次] 	

5.3 盐雾测试

序号/No.	项目/Item	条件/Condition	规格 Specification
1	盐雾测试 Salt mist	压力桶温度 47°C±2°C The temperature of pressure barrel is 47 °C± 2 °C	Satisfy- 3. Characteristics 满足- 3.特性
		压力 1kg/cm ² Pressure 1kg / cm ²	
		氯化钠密度 46-46g/L Sodium chloride density 46-46g / L	
		喷雾量 1.0-2.0mL/80cm/h , 连续喷雾 12 小时 Spray volume 1.0-2.0mL/80cm/h, continuous spray for 12 hours.	
		取出后在常温常湿下存放 24 小时进行测试 After removal, store it in normal temperature and humidity for 24 hours for testing	

6.注意事项 Notice

6.1 我司出货产品采用纸箱或木箱内嵌泡棉方式包装

Our products are packed in cartons or wooden cases with foam inside

6.2 由于电容式触摸屏是由玻璃所制，请勿强力撞击，或高处落下；

Due to the structure of capacitive touch screen is made of glass, please do not strong impact, Or fall from height;

6.3 产品不可长时间曝露于阳光直接照射的地方；

The product should not be exposed to direct sunlight for a long time;

6.4 保存时请勿重叠放置，或重物叠压；

Please do not stack up or under weight.

6.5 电容式触摸屏本身或 FPC 具有导电性，避免与金属物质直接接触；

Due to PCAP' s Conductivity, Please do not put the capacitive touch screen itself or FPC direct contact with metal material;

6.6 安装时请勿折弯或强力拉扯 FPC，避免造成折伤；

When assembling, please do not bend or stretch FPC, Avoid causing the injured;

6.7 安装时请勿用硬物接触电容式触摸屏背后的油墨，避免造成刮伤；

When assembling, please do not touch silkscreen area with hard material of TP, Avoid scratches;

6.8 为了保持产品的透明清晰度，请在接触产品之前带上指套或者手套，请注意玻璃边角部位；

In order to maintain the transparency and clarity of the product, please put on fingertips or gloves before contacting the product, and pay attention to the glass corners

6.9 安装时请勿接触可视区,如果触摸造成脏污，建议使用去渍油清洁，不能使用化学溶剂或酸碱液进行清洁；

When assembling, please do not contact the visual area, if have dirty in VA, Recommend the use of Cleaning Naphtha to clean, prevent using any kind of chemical solvent, acidic or alkali solution;

6.10 操作电容式触摸屏时，请采用手指或导电性笔触摸；注意预防高压和静电。

Operation of the capacitive touch screen, Use finger or conductive touch pen, please; must avoid high voltage and static electricity.