

April 3rd, 2026

PCN No. JW040326

PCN Notice for Multiple Touch Panel Products

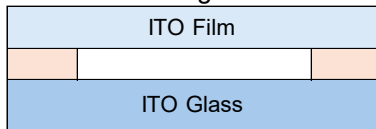
Dear Valued Customer,

We would like to take this opportunity to thank you for the use of our products and long-term partnership.

Due to the sudden discontinuation announcement from the current ITO film provider, FCL will need to approve a new ITO film for the products listed below. We apologize for any inconvenience this sudden notice might cause you.

1) What will change:

- ITO will be changed to a different supplier



← Change to an alternative film

2) Affected Parts List

Current Part Number

NC01111-T081

NC01111-T202

NC01111-T222

NC01111-T242

New Part Number

NC01111-T081-K

NC01111-T202-K

NC01111-T222-K

NC01111-T242-K

3) Technical details of the changes can be found on the subsequent pages.

4) Samples:.

- If samples are required, they will ship from the factory approximately 3 months after the request is submitted. Please submit any requests no later than April 30th, 2026.

5) Production:

- The exact change over date will depend on the consumption of current film. There is a limited amount of the current film remaining and will be used on a first come, first served basis. We recommend placing any last time buy orders immediately because it's possible that we may not be able to support your demand until you've completed your evaluation and approval of the touch panel which uses the new ITO film.

Best Regards,

John G. White

John G. White

Vice President, Marketing CT Products

ITEM(Object)	タッチパネル光学特性データ	Date
	Touch panel optical characteristics data	15-Feb-2026

1. 測定サンプル : 現行ITOフィルム、変更ITOフィルムを使用して製作した代表タッチパネル (7in)
 Test Sample : Representative touch panel (7in) produced using conventional ITO film and modified ITO film.

2. 測定数 : 各20pcs.
 Number : Each 20 pcs.

3. 測定結果
 Result

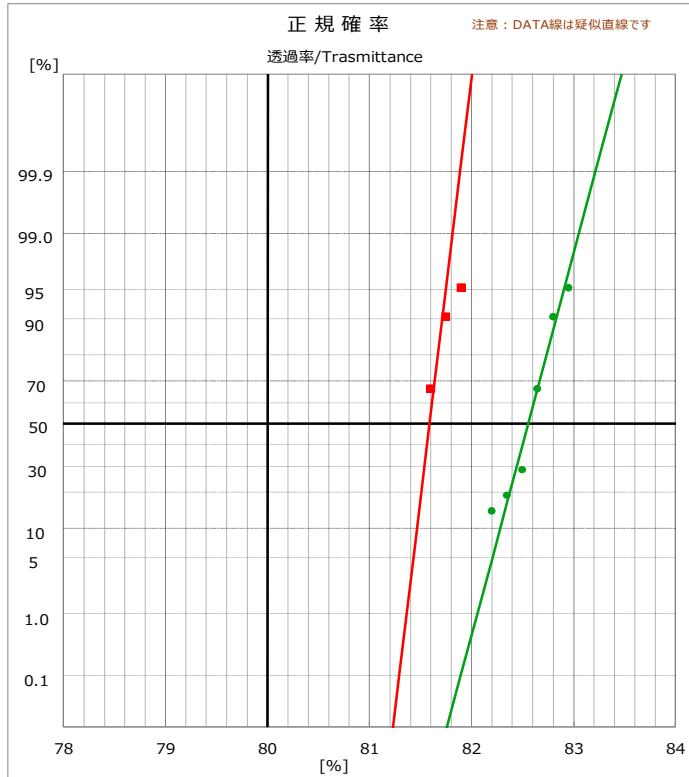
確認項目 Item	Spec	測定結果/Result		判定 judge	Data page	
		現行仕様品 Conventional product	変更仕様品 Modified product			
光学特性 Optical	透過率 Transmittance	80% typ.	81.5~81.8 %	82.1~82.9 %	OK	2
	ヘイズ Haze	6% typ.	5.9~6.1 %	5.8~6.0 %	OK	2

※各項目詳細はデータページ参照
 Refer to the data page for details of each item

4. 結論 Conclusion
 仕様書記載値通りの実力を有すると判断できる。
 It can be judged to have the competence value as per the specifications.

ITEM(Object)	光学特性 Optical characteristics				
Type	Conventional product VS Modified product	Result	All items OK	Tester	Date
Sample Size	N=20 pcs.(each)			K.Hamasuna	15-Feb-2026

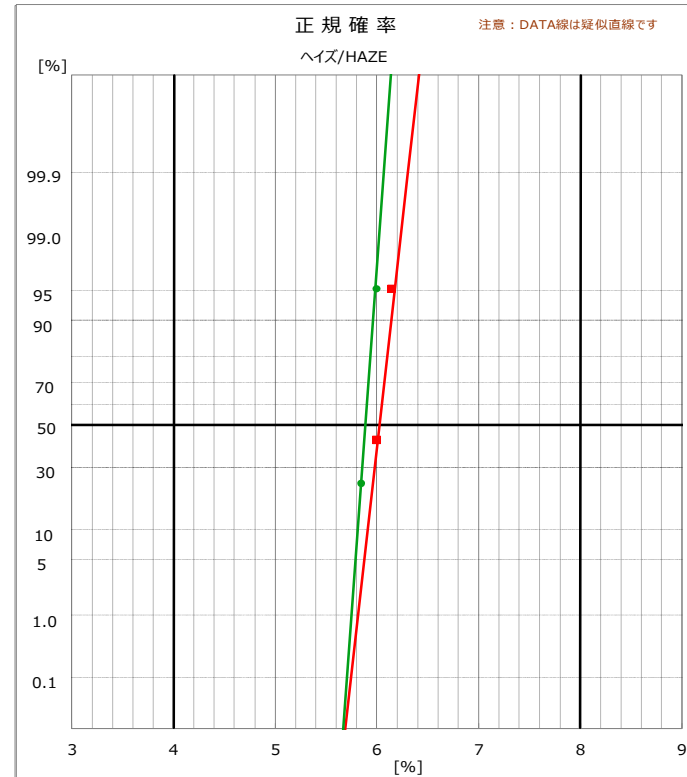
透過率/Transmittance



	現行仕様品	変更仕様品
DATA数	20	20
Xber	81.590	82.555
s(σ)	0.097	0.214
Xber+3s	81.880	83.197
Xber-3s	81.300	81.913
MAX	81.800	82.900
MIN	81.500	82.100
上限規格 (USL)	なし	なし
下限規格 (LSL)	80	80
Cpl	5.476	3.981
Cpk	---	---
規格を外れる確率	0.000%	0.000%

Spec : 80% typ
(80% Min.で定義)

ヘイズ/Haze



	現行仕様品	変更仕様品
DATA数	20	20
Xber	6.025	5.885
s(σ)	0.091	0.059
Xber+3s	6.298	6.061
Xber-3s	5.752	5.709
MAX	6.100	6.000
MIN	5.900	5.800
上限規格 (USL)	8	8
下限規格 (LSL)	4	4
Cp	7.322	11.354
Cpk	7.231	10.702
規格を外れる確率	0.000%	0.000%

Spec : 6% typ
(±2% で定義)

 現行仕様品 Conventional product	 変更仕様品 Modified product
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ITEM(Object)	タッチパネル信頼性試験データ Touch panel reliability data	Date
		15-Feb-2026

1. 試験サンプル : 現行ITOフィルム、変更ITOフィルムを使用して製作した代表タッチパネル (7in)
 Test Sample : Representative touch panel (7in) produced using conventional ITO film and modified ITO film.

2. 試験数 : 各3台または2台
 Number : Each 3 pcs or 2 pcs

3. 試験結果
 Test of Judgment

試験項目 Item	試験条件 Condition		故障数 Failure		Data page	
			変更前 Before	変更後 After		
高温保存 High temp. storage	80℃	500 hour	0/3	0/3	4	
低温保存 Low temp. storage	-40℃	500 hour	0/3	0/3	5	
高温高湿動作 High humid. Bias	60℃ 95%RH at DC5V (DC5V:Glass/GND:Film)		0/3	0/3	6	
熱衝撃 Thermal shock	-40℃(0.5hour)⇔ 85℃(0.5hour)		0/3	0/3	7	
打点試験① Tapping life ①	シリコンゴムで同一箇所を打点する。 Tapping at same points by Silicone rubber. ・ ゴム先端 Shape of rubber end : R8 硬度 Hardness 60° ・ 打点荷重 Load : 2.45N (250gf) ・ 打点サイクル Frequency : 3Hz		1×10 ⁶ times	0/2	0/2	8
打点試験② Tapping life ②	シリコンゴムで同一箇所を打点する。 Tapping at same points by Silicone rubber. ・ ゴム先端 Shape of rubber end : R120 硬度 Hardness 20° ・ 打点荷重 Load : 2.45N (250gf) ・ 打点サイクル Frequency : 3Hz		1×10 ⁷ times	0/2	0/2	9
筆記試験 Durability of Pen writing	動作保証エリア内に10×9mmの筆記エリア設け、このエリア内に7.5×6.75mmの大きさの任意50音カナ文字をランダムな位置に下記のペンで連続筆記する。 The characters are written on the touch panel and the size of a word is 7.5 x 6.75mm, area is 10 x 9mm. The characters are Japanese words and written at random on the area. ・ ペン先端 Shape of Pen tip : R0.8 ・ ペン材料 Material of Pen : ポリアセタール樹脂 Polyacetal resin ・ 筆記荷重 Force : 2.45N (250gf)		1×10 ⁵ times	0/2	0/2	10
※各項目詳細はデータページ参照 Refer to the data page for details of each item			判定 Judgment	合格 OK		

4. 判定基準
 Criteria

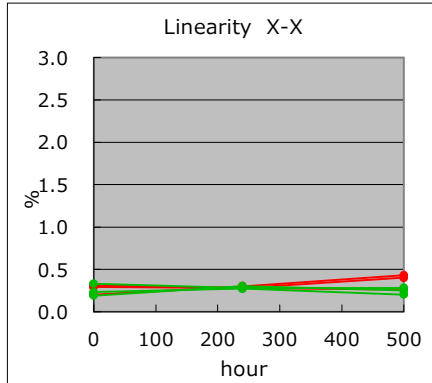
確認項目 Item	判定値		備考 Note
	初期 initial	試験後 after the test	
リニアリティ Linearity	≤ 1.5%	≤ 3.0%	※
電極間抵抗 Electrode Resistance	ガラス側 Glass side	100~600Ω	※
	フィルム側 Film side	300~1300Ω	※
絶縁抵抗 Insulation resistance	≥ 10MΩ (at DC 25V)		※
入力荷重 Operation Force	0.02~ 0.78N	0.02~ 1.47N	※

※試験を実施した代表サンプルの規格値 / Spec of representative samples tested.

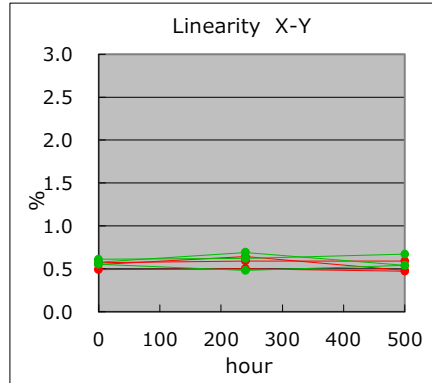
5. 結論 Conclusion

いずれも試験後に性能異常等は無く、スペック範囲内にあるので、問題無しと判断できる。
 Since there were no abnormalities in the performance of either of these products after the test and they were within the specification range, they can be judged to be problem-free.

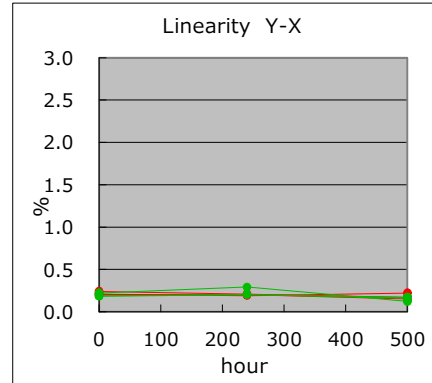
ITEM(Object)	高温保存試験 : 80℃ High temp. storage			
Type	Conventional product VS Modified product	Result	All items OK	
Sample Size	N=3pcs(each)		Tester	Date
			K.Hamasuna	15-Feb-2026



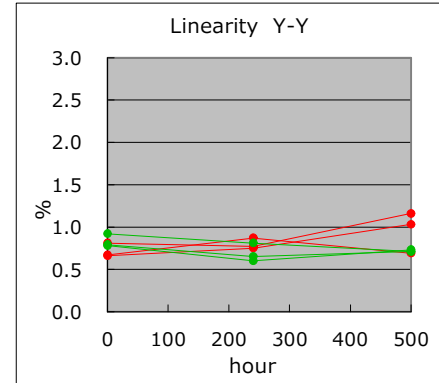
Spec	initial	1.5% max
	after the test	3.0% max



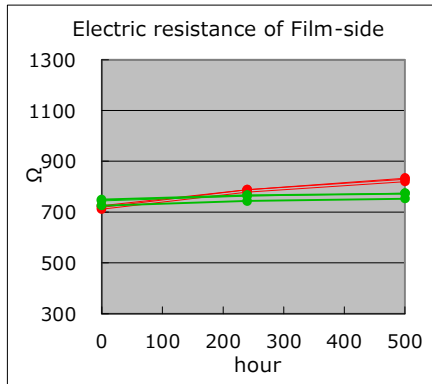
Spec	initial	1.5% max
	after the test	3.0% max



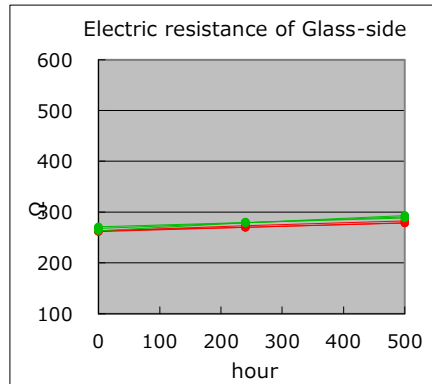
Spec	initial	1.5% max
	after the test	3.0% max



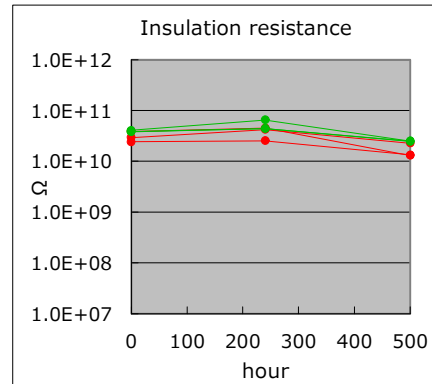
Spec	initial	1.5% max
	after the test	3.0% max



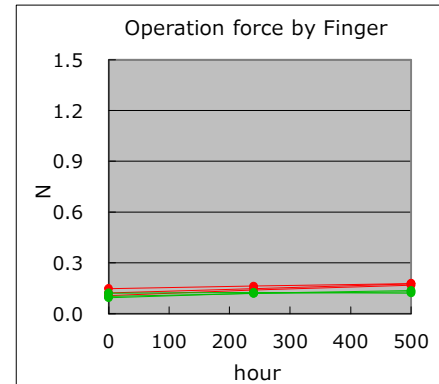
Spec	initial	300~1300Ω
	after the test	



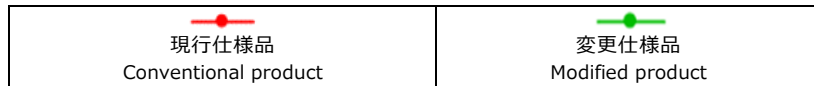
Spec	initial	100~600Ω
	after the test	



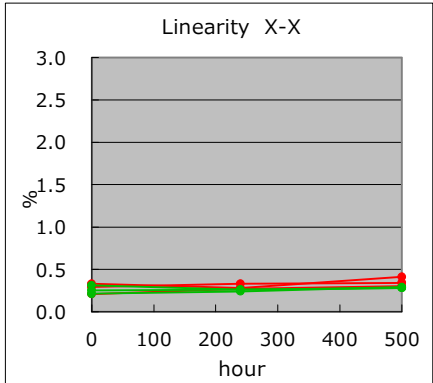
Spec	initial	10MΩ min (1.0E+7Ω min)
	after the test	



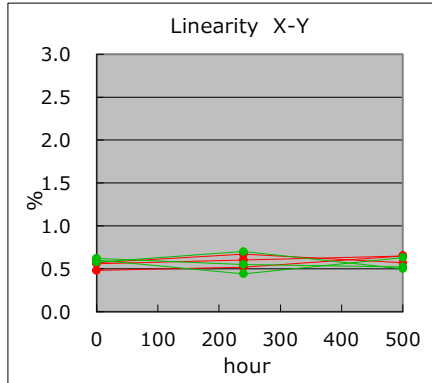
Spec	initial	0.02~0.78N
	after the test	



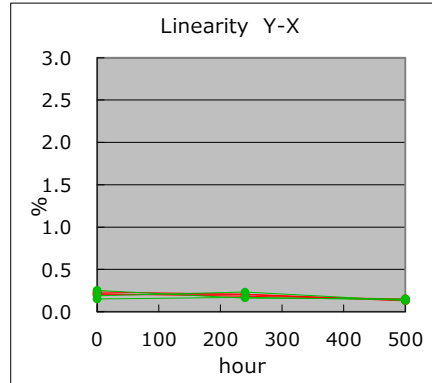
ITEM(Object)		低温保存試験 : -40℃ Low temp. storage			
Type	Conventional product VS Modified product	Result	All items OK	Tester	Date
Sample Size	N=3pcs(each)			K.Hamasuna	15-Feb-2026



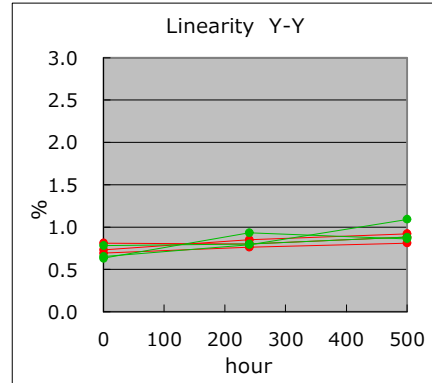
Spec	initial	1.5% max
	after the test	3.0% max



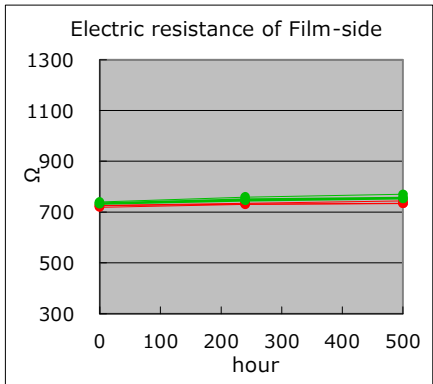
Spec	initial	1.5% max
	after the test	3.0% max



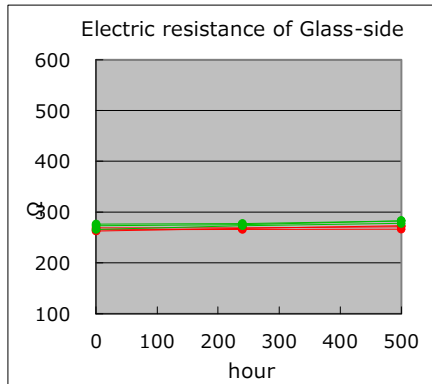
Spec	initial	1.5% max
	after the test	3.0% max



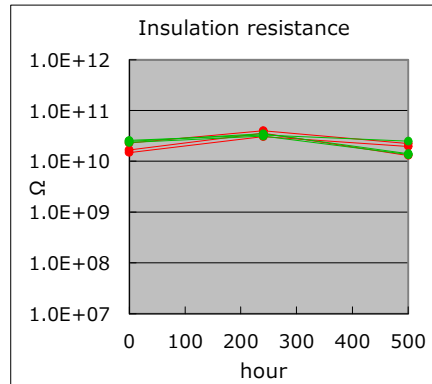
Spec	initial	1.5% max
	after the test	3.0% max



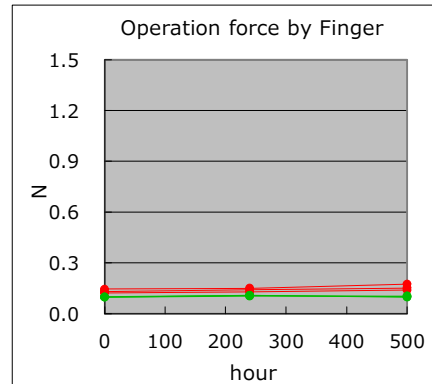
Spec	initial	300~1300Ω
	after the test	



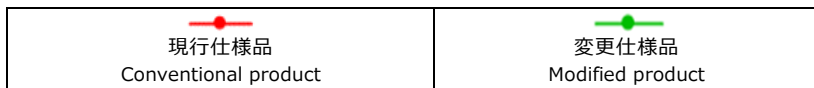
Spec	initial	100~600Ω
	after the test	



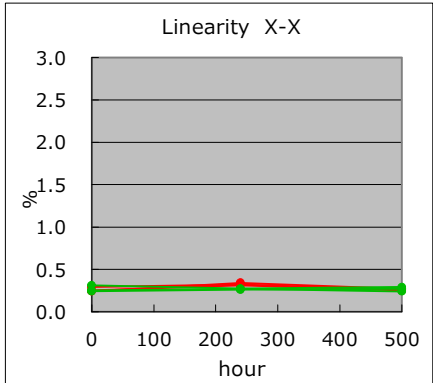
Spec	initial	10MΩ min (1.0E+7Ω min)
	after the test	



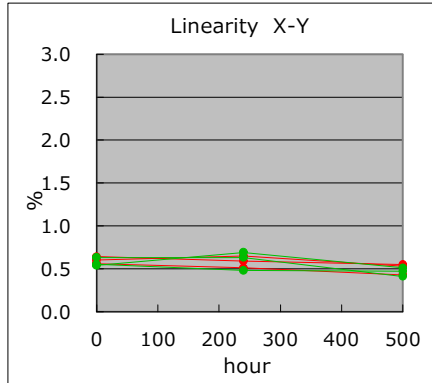
Spec	initial	0.02~0.78N
	after the test	



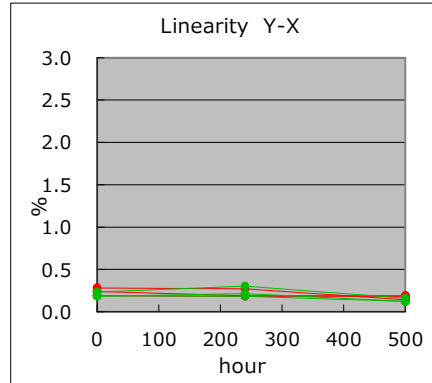
ITEM(Object)	高温高湿動作試験 : 60°C95%RH at DC5V High humid. Bias				
Type	Conventional product VS Modified product	Result	All items OK	Tester K.Hamasuna	Date 15-Feb-2026
Sample Size	N=3pcs(each)				



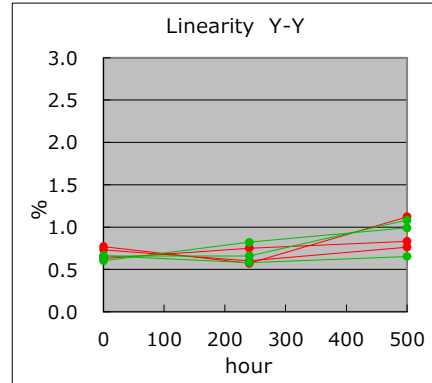
Spec	initial	1.5% max
	after the test	3.0% max



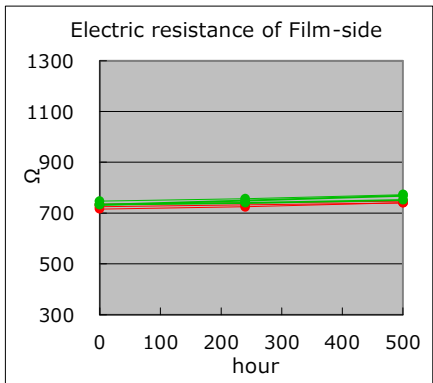
Spec	initial	1.5% max
	after the test	3.0% max



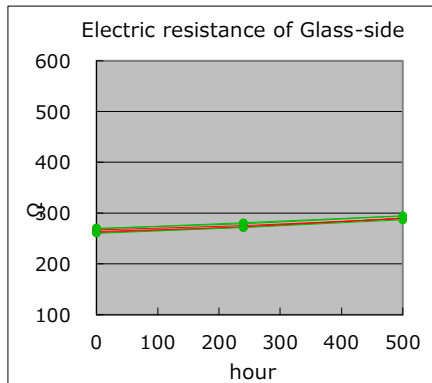
Spec	initial	1.5% max
	after the test	3.0% max



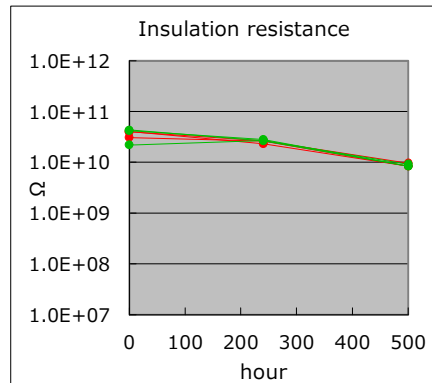
Spec	initial	1.5% max
	after the test	3.0% max



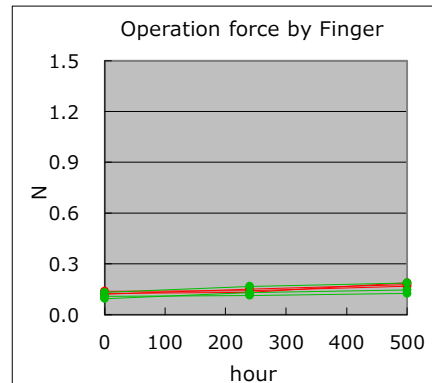
Spec	initial	300~1300Ω
	after the test	



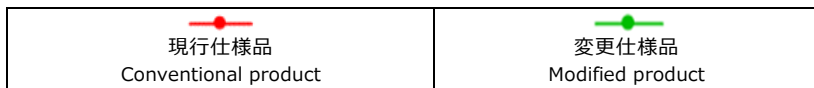
Spec	initial	100~600Ω
	after the test	



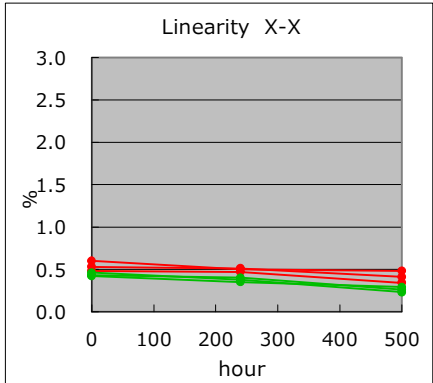
Spec	initial	10MΩ min (1.0E+7Ω min)
	after the test	



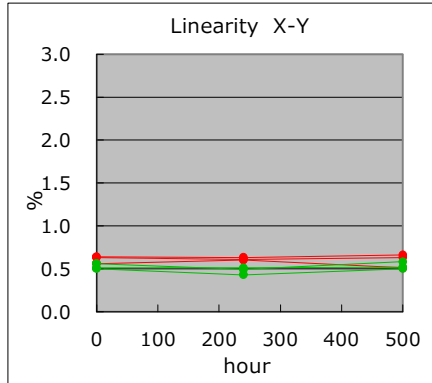
Spec	initial	0.02~0.78N
	after the test	



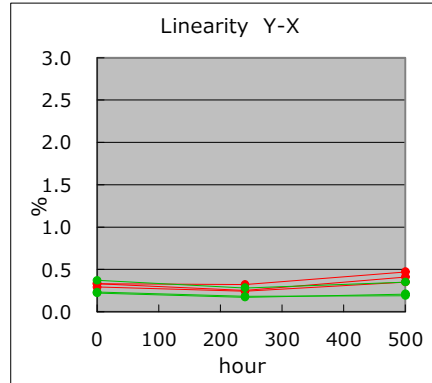
ITEM(Object)		熱衝擊試験：-40℃(0.5hour)⇔ 85℃(0.5hour) Thermal shock			
Type	Conventional product VS Modified product	Result	All items OK	Tester	Date
Sample Size	N=3pcs(each)			K.Hamasuna	15-Feb-2026



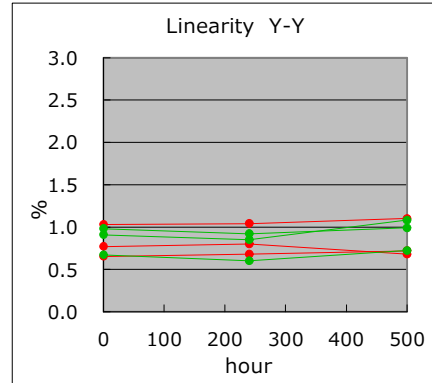
Spec	initial	1.5% max
	after the test	3.0% max



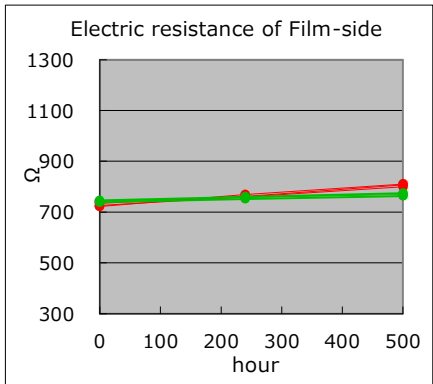
Spec	initial	1.5% max
	after the test	3.0% max



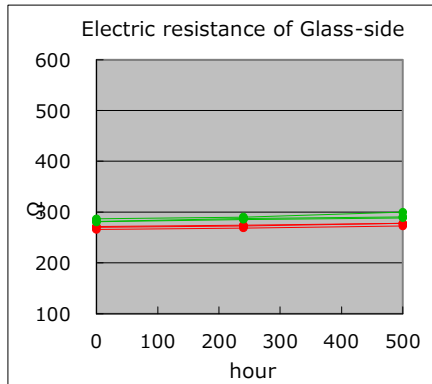
Spec	initial	1.5% max
	after the test	3.0% max



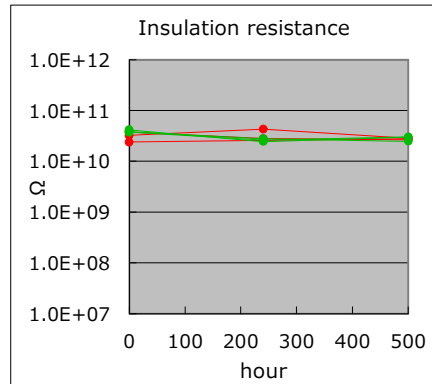
Spec	initial	1.5% max
	after the test	3.0% max



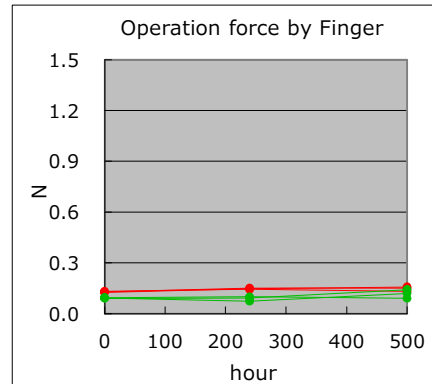
Spec	initial	300~1300Ω
	after the test	



Spec	initial	100~600Ω
	after the test	



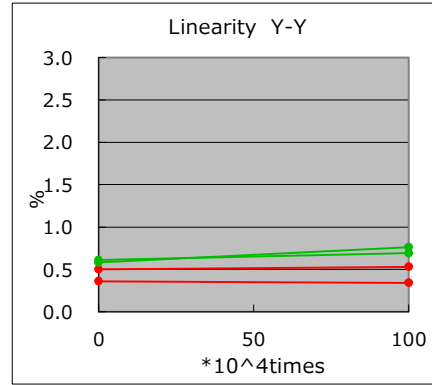
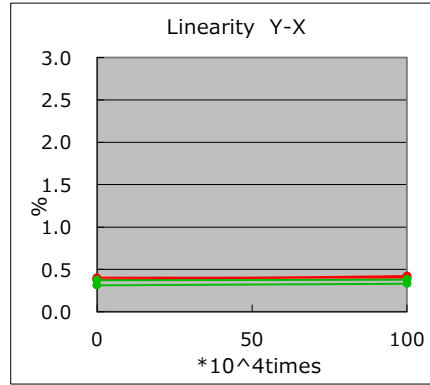
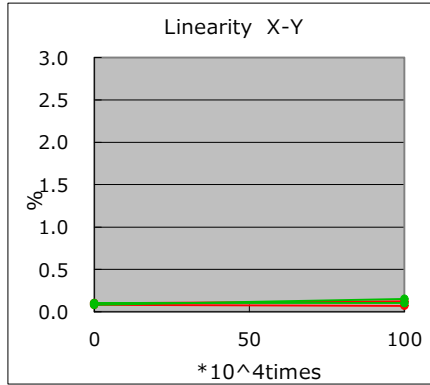
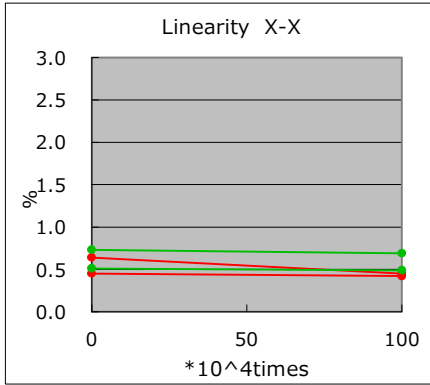
Spec	initial	10MΩ min (1.0E+7Ω min)
	after the test	



Spec	initial	0.02~0.78N
	after the test	



ITEM(Object)	打点試験① Tapping life by Finger ①			Tester	Date
Type	Conventional product VS Modified product	Result	All items OK	K.Hamasuna	15-Feb-2026
Sample Size	N=2pcs(each)				

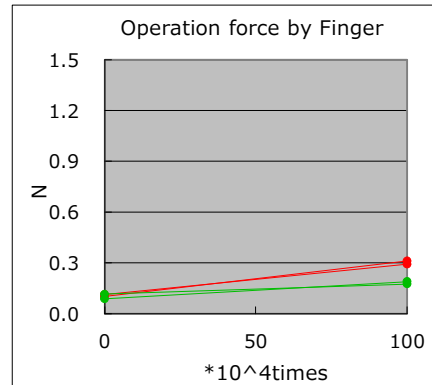
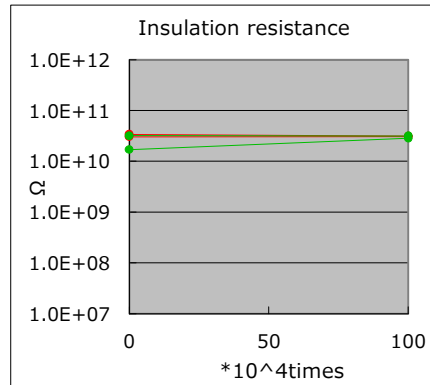
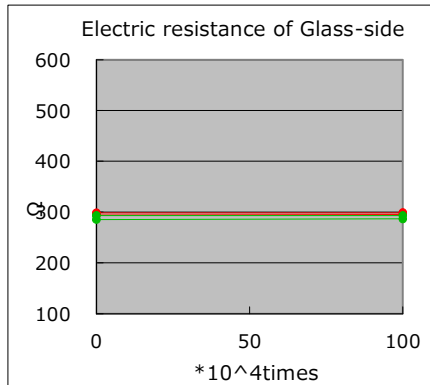
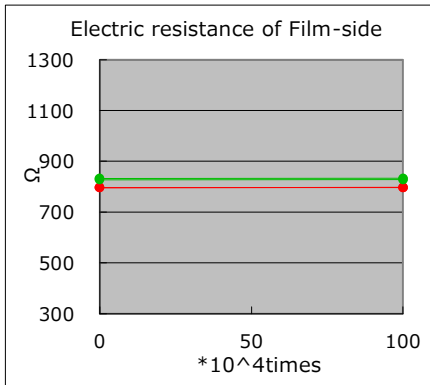


Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max



Spec	initial	300~1300Ω
	after the test	

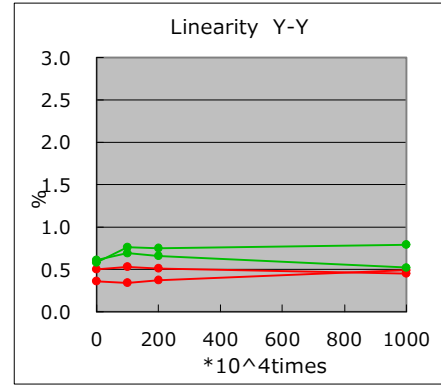
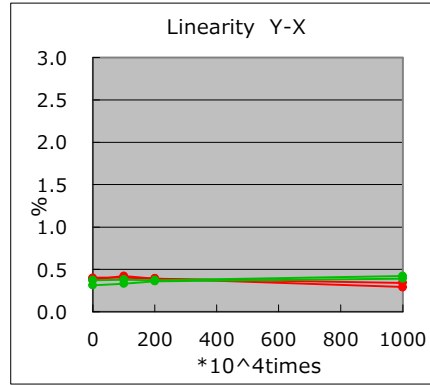
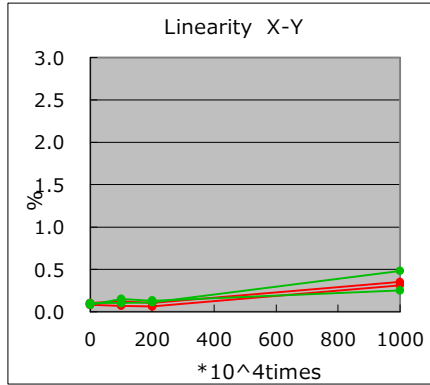
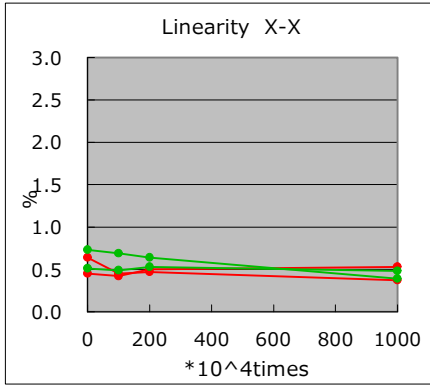
Spec	initial	100~600Ω
	after the test	

Spec	initial	10MΩ min (1.0E+7Ω min)
	after the test	

Spec	initial	0.02~0.78N
	after the test	

 現行仕様品 Conventional product	 変更仕様品 Modified product
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ITEM(Object)	打点試験② Tapping life by Finger ②			Tester	Date
Type	Conventional product VS Modified product	Result	All items OK	K.Hamasuna	15-Feb-2026
Sample Size	N=2pcs(each)				

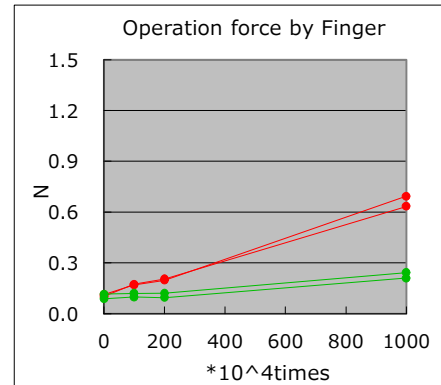
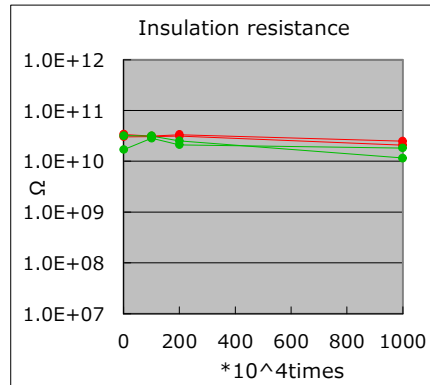
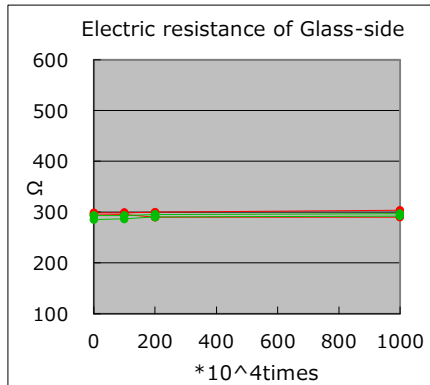
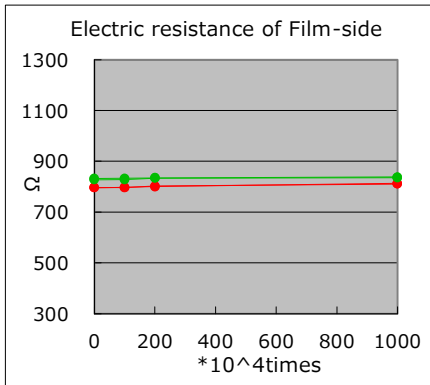


Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max



Spec	initial	300~1300Ω
	after the test	

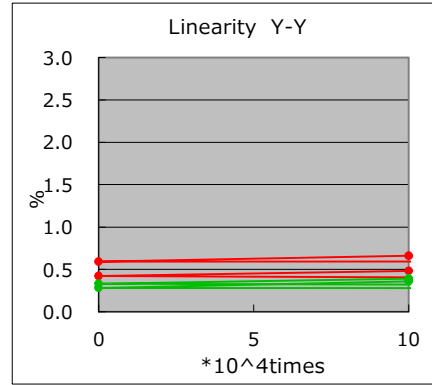
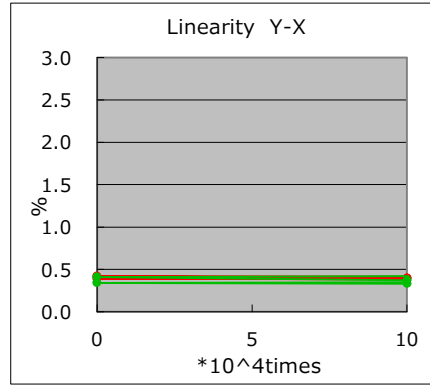
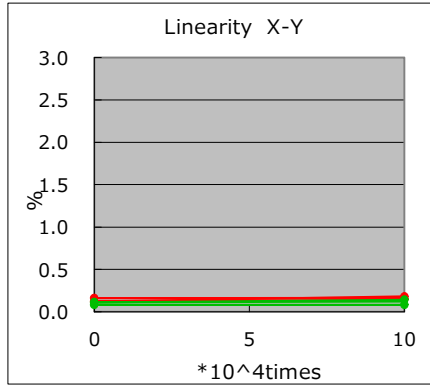
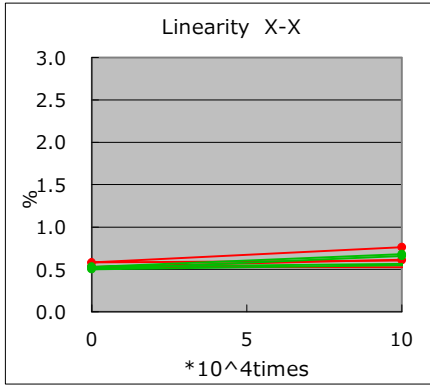
Spec	initial	100~600Ω
	after the test	

Spec	initial	10MΩ min (1.0E+7Ω min)
	after the test	

Spec	initial	0.02~0.78N
	after the test	

 現行仕様品 Conventional product	 変更仕様品 Modified product
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ITEM(Object)	筆記試験 Durability of Pen writing			Tester	Date
Type	Conventional product VS Modified product	Result	All items OK	K.Hamasuna	15-Feb-2026
Sample Size	N=2pcs(each)				

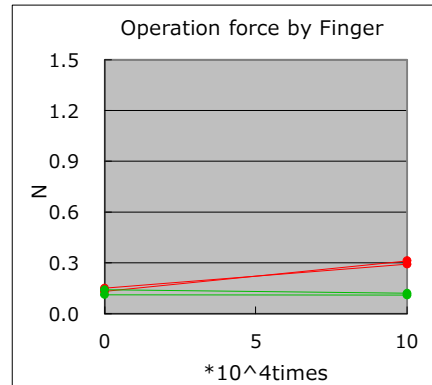
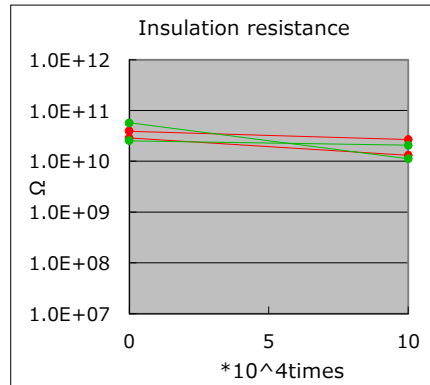
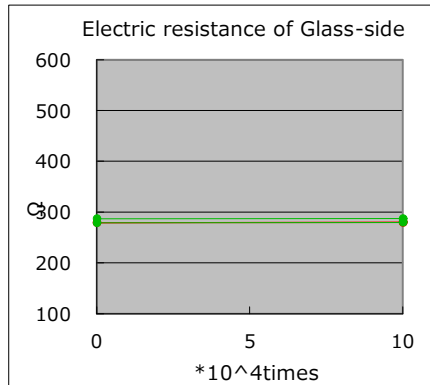
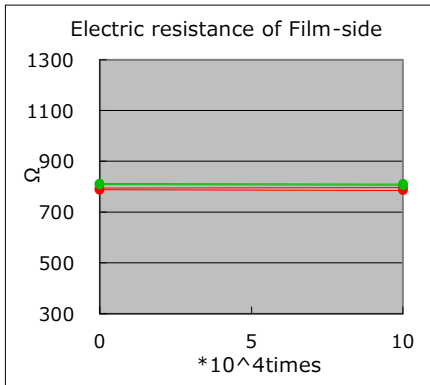


Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max

Spec	initial	1.5% max
	after the test	3.0% max



Spec	initial	300~1300Ω
	after the test	

Spec	initial	100~600Ω
	after the test	

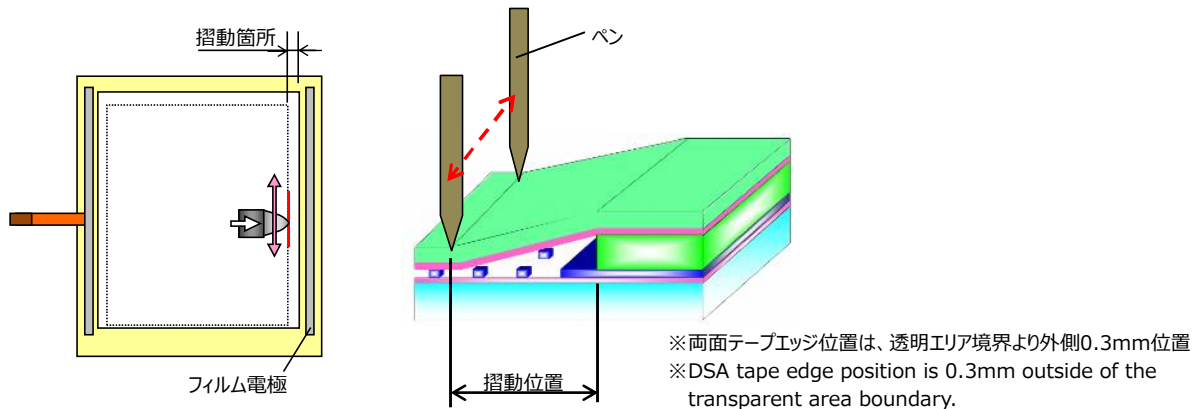
Spec	initial	10MΩ min (1.0E+7Ω min)
	after the test	

Spec	initial	0.02~0.78N
	after the test	

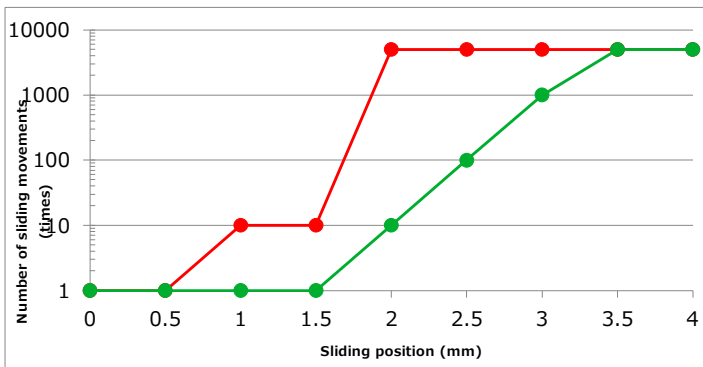


ITEM(Object)	エッジ摺動試験	Date
	Area edge sliding test	

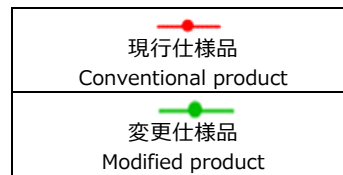
- 試験サンプル : 現行ITOフィルム、変更ITOフィルムを使用して製作した代表タッチパネル (7in)
 Test Sample : Representative touch panel (7in) produced using conventional ITO film and modified ITO film.
- 試験数 : 各1台
 Number : Each 1 pcs
- 試験条件 : 摺動箇所・・・両面テープエッジから0.5mmずつ変更した位置
 Test Conditions: Sliding point ... Position changed by 0.5 mm from the edge of the DSA tape
 摺動条件・・・荷重 2.5N (250gf) , 摺動距離 30mm
 Sliding conditions ... Load 2.5N (250gf), Sliding distance 30mm
 ペン先仕様・・・材質 ポリアセタール , 先端形状 R0.8mm
 Pen specifications ... Material Polyacetal , Tip shape R0.8mm
 評価項目・・・リニアリティ (3%を超えてNG判定となった時点の摺動回数を記録)
 Evaluation item ... Record the number of sliding times when NG judgment is made after exceeding 3%.



- 試験結果 :
 Test of Judgment :



※摺動回数5000往復時点でOK判定のものは、その時点で試験終了。
 ※If the test result is OK at the point of 5,000 sliding cycles, the test is terminated at that point.



現行仕様品は両面テープより内側2.0mm以上の摺動位置で悪化が見られなくなるのに対し、変更仕様品は3.0~3.5mm以上の実力となる。

While the current product will not deteriorate at sliding positions of 2.0 mm or more inside the double-sided tape, the new specification product will have the ability to show no deterioration at sliding positions of 3.0 to 3.5 mm or more.

- 結論 : 実使用環境におけるケース際のゴミの除去や清掃等を想定した試験となります。
 Conclusion : As shown in the above results, the durability of the modified product is slightly lower than that of the conventional product when subjected to irregular operations such as removing debris from the edge of the guaranteed operation area. Therefore, please consider design modification such as case modification if necessary. if you use a protective sheet or other film on the surface of our touch panel (film side), the performance will be better than above, so please evaluate as necessary. Although this test is outside of the warranty, it is presented here as reference data because of the possible effects described above.

ITEM(Object)	ITOフィルム変更に伴う変化点 Changes due to ITO film change	Date
		15-Feb-2026

■仕様書変更点 Specification Changes

今回の変更により、当社図番が変更となります。そのため、既存の仕様書の改版ではなく、新規図番の仕様書として作成・発行させていただきます。

また、社名を「FCLコンポーネント株式会社」に変更し、一部注記も最新の内容に更新させていただきます。

Due to this change, our drawing number will be updated. Therefore, instead of revising the existing specification, we will prepare and issue a new specification under a new drawing number.

We will also change the company name to "FCL Components Limited." and update certain notes to reflect the latest information.

【当社図番 P/No.】

現行仕様 Conventional product	変更仕様 Modified product
例 Example	例 Example
N010-****-T***	N010-****-T***-K
NC0****-T***	NC0****-T***-K
FID-****-***-A**	FID-****-***-A**-K

変更仕様は現行図番の末尾に"-K"を付与。

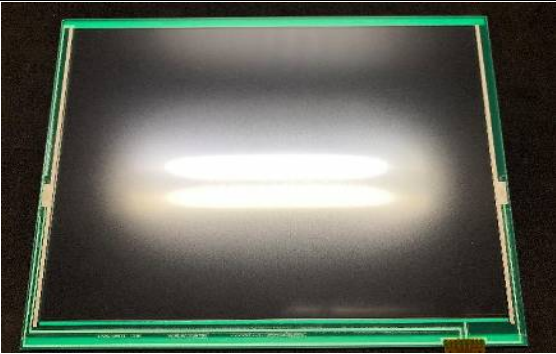

The modified specification will be identified by appending "-K" to the end of the current part number.

【特性 Characteristics】

納入仕様書記載内容に変更無し。

No change in specifications.

■外観比較 Appearance Comparison

現行仕様 Conventional product	変更仕様 Modified product
	

※代表サンプルによる外観写真比較

Photographic comparison of appearance by representative samples.