



## PRODUCT SPECIFICATION OF Oupiin

# PRODUCT SPECIFICATION

## 產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
Right Angle Header w/Guide Pin Signal/Power Press Fit Connector	9391-x(Pxx)(Sxx)(Pxx)CxxPxA	9391-D0000-00x
	9391-x(Pxx)(Sxx)(Pxx)CxxPA	9391-D0000-00x
	9391-Ax(Pxx)(Sxx)(Pxx)CxxPxA	9391-D0000-00x
	9391-Ax(Pxx)(Sxx)(Pxx)CxxPA	9391-D0000-00x

PRODUCT NAME 產品名稱	DOCUMENT No.: 文件編號	Rev. 版本	OUPIIN
Right Angle Header w/Guide Pin Signal /Power Press Fit Type Connector	9391spec-P	J	歐品電子
	<b>Approved</b> 核准	<b>Checked</b> 審核	<b>Prepared</b> 制作
	QA. Chief	Joseph Yen	10.31/2017



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## 1. COPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the Right Angle Header w/Guide Pin Signal /Power Press Fit Type Connector which is designed and manufactured by Oupiin Electronic Co., Ltd. This product specification is applicable but not only for those part numbers which be shown in the cover page.

本產品規格書規定了由歐品電子有限公司設計生產的Right Angle Header w/Guide Pin Signal /Power Press Fit Type 型連接器，產品的特性及測試方法。本產品規格書適用於但不局限於封面所顯示的產品料號。

## 2. REFERENCE DOCUMENTS 參考文件

MIL-STD-1344	Test method for electrical connector 電子連接器測試方法
MIL-STD-202	Test method for electrical components 電子零件測試方法
EIA364	Test method for electrical components 電子零件測試方法
JIS C 0051	Test method for electrical components 電子零件測試方法
MIL-G-45204C	Specification for gold plating 鍍金規格
IEC-512-3	IEC standard for current carrying capacity tests IEC電流測試標準
QQ-N-290A	Specification for nickel plating 鍍鎳規格
MIL-P-81728A	Specification for tin/lead plating 鍍錫鉛規格
MIL-T-10727B	Specification for tin plating 鍍錫規格
UL1977	UL standard for safety of attachment plug and receptacle UL安規要求標準
EN/ISO5961	Determination of total lead & cadmium content 總鉛和總鎘含量測定
EN1122	Determination of total lead & cadmium content 總鉛和總鎘含量測定
EN13346	Determination of heavy metals content 重金屬含量測定
EPA3052	Determination of total lead & cadmium content 總鉛和總鎘含量測定

## 3. FEATURE & DIMENSIONS 特征及尺寸

### 3.1. PRODUCT DIMENSION 產品尺寸

These connectors shall have the dimensions as shown in drawing.

本產品的相關尺寸參見圖面。

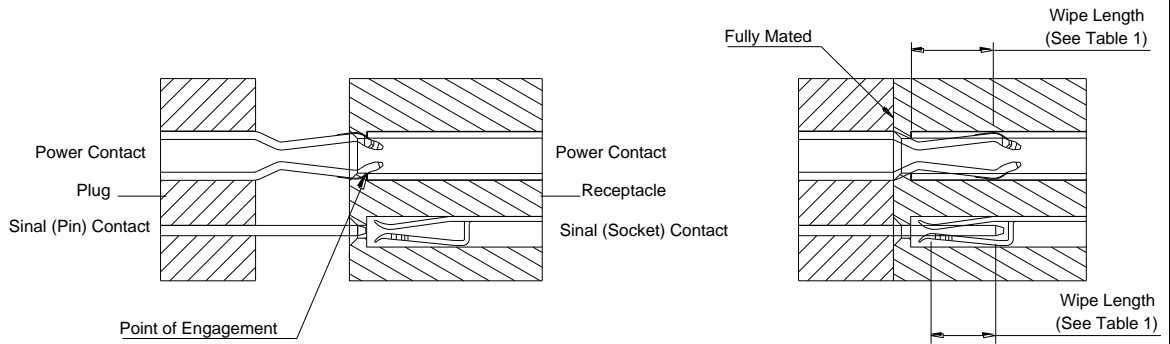
### 3.2.MALE AND FEMALE PRODUCT 公母產品裝配

#### 3.2.1. Capability for products wipe length

產品接觸長度等級



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CONTACT	MATING LEVEL	WIPE LENGTH (Min)
High Power	1	5.14
	2	3.87
Low Power	2	3.87
	3	2.85
Signal	1	6.55
	2	6.36
	3	5.09
	4	3.82

Table 1

### 3.3. PCB/PANEL LAYOUT 印刷電路板佈局

The recommended PCB layout is shown in drawing.

本產品適用的 PCB layout 參見圖面。

### 3.4. BILL OF MATERIAL 材料清單

Harmful material controlling follows the requirements of RoHS. The bill of material is described in drawing.

有害物質控制符合RoHS指令要求。本產品使用的材料參見圖面。

### 3.5. MECHANICAL & ELECTRICAL CHARACTERISTIC 機械及電氣特性

The connector shall have the mechanical and electrical performance as described in drawing.

本產品的機械及電氣特性參見圖面。

### 3.6. PACKAGING 包裝

Products shall be packaged according to requirements specified in purchase order for safe delivery, connector container and the packaging method are shown in package specification.

產品可依客戶指定要求包裝，包裝材料與包裝方式參見產品包裝規範。

### 3.7. RATING CURRENT AND RATING VOLTAGE 額定電流與額定電壓

Signal Pin rating current: Signal Pin 2.5A、

信號 Pin 額定電流: Signal Pin 2.5A、

Power Pin rating current:

電源 Pin 額定電流:



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Power Contacts				
Module (Power Contact Pitch)	Single Power Contact	2 Adjacent Power Contact	4 Adjacent Power Contact	12 Adjacent Power Contact
200 inch [5.08mm]	50A	45A	36A	30A
250 inch [6.35mm]	50A	45A	38A	30A
300 inch [7.62mm]	50A	45A	42A	30A

rating voltage: Signal Pin:50V DC RMS、Power Pin:200V DC RMS.

額定電壓: Signal Pin 50V DC RMS、Power Pin:200V DC RMS.

## 3.8 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

Temperature range: -40°C~+105°C, including terminal temperature rise for rating current.

溫度範圍: -40°C~+105°C, 包含接觸端子的額定電流溫升。

## 4 PERFORMANCE AND TEST DESCRIPTION 性能及測試

### 4.1. REQUIREMENT 要求

Product is designed to meet electrical, mechanical, and environmental performance requirements specified in **Table I**.

本產品設計符合附表一所述的機械，電氣及環境要求。

### 4.2. TEST CONDITION 測試條件

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

除非特別注明，所有測試在室溫條件下完成。

### 4.3. SAMPLE SELECTION 樣品選擇

Test samples shall be selected at random from current production. No test samples shall be reused.

Samples are pre-conditioned with 10cycles of durability. Each group shall be containing 5 test samples at least.

測試樣品從現生產的產品中隨機抽取，所有測試過的樣品不得重複使用。樣品已預先插拔10次，每組測試至少有5個樣品。



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**Table I: Test Requirements and Methods**

附表一：測試要求與方法

Items 項目	Requirements 要求	Test Methods 測試方法
1. Confirmation of Product 產品確認	Product shall be conforming to the requirements of applicable product drawing. 產品必須符合相關產品圖面的要求。	Visually, dimensions and functionally inspected per applicable product drawing. 依相關產品圖面，檢查產品的外觀、尺寸及功能。
2. Contact Resistance 接觸阻抗	Signal Pin: 15 mΩ Max. initial. Power Pin: 0.7 mΩ Max. initial. Signal Pin: 初始狀態最大 15 mΩ。 Power Pin: 初始狀態最大 0.7mΩ。	Subject mated contacts assembled in housing to closed circuit of 20mA max. EIA 364 TP06 所述固定在外殼裏的端子連結到一個封閉回路中測試，電流 20 mA。適用：EIA 364 TP06.
3. Insulation Resistance 絕緣阻抗	Signal Pin: 5000 MΩ Min. Power Pin: 20000 MΩ Min. Signal Pin: 最小 5000 MΩ。 Power Pin: 最小 20000 MΩ。	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. EIA 364 TP06 Condition B (500 V DC±10%). 測試產品相鄰端子間以及端子與接地間的電阻，適用：EIA 364 TP21，條件 B (500 V DC±10%)。
4. Dielectric Withstanding Voltage 耐電壓	Signal Pin must withstand test potential of 1000 VAC RMS for 1 minute, current leakage must be 1mA Max. Power Pin must withstand test potential of 2500 VAC RMS for 1 minute, current leakage must be 1mA Max. Signal Pin 必須承受測試電壓 1000 VAC RMS，時間 1 分鐘，漏電流不大於 1 mA。 Power Pin 必須承受測試電壓 2500 VAC RMS，時間 1 分鐘，漏電流不大於 1 mA。	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. EIA 364 TP20 對產品相鄰端子間以及端子與接地間加載電壓，並測試其漏電流。適用：EIA 364 TP20
5. Durability (Repeated Mating/Un-mating) 耐久性	Signal Pin Resistance: 20 mΩ Max. after testing. Power Pin Resistance: 0.7mΩ Max. after testing. Signal Pin 測試後接觸阻抗最大 20 mΩ。	Repeat mate and unmated for connector 200 cycles, at a speed of 25.4mm per minute. 重復進行配合產品 200 次插拔，速度每分鐘 25.4mm。



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	Power Pin 測試後接觸阻抗最大 0.7mΩ。	
6. Contact (lock) Retention Force 端子(耳扣)保持力	Contact : 1.36kg/Pin. Min. Lock:2.5Kg/Pin.Min 1.36Kg/Pin.Min 端子：每支最小 1.36kg 耳扣：每支最小 2.5kg(與 PCB 板孔 同軸方向頂退) 每支最小 1.36Kg(與 PCB 板孔 不同軸方向拔出)	Apply axial pull out (push) force at a speed of 25.4±3 mm/minute on the contact (Lock) assembled in the housing. 以 25.4±3mm/分鐘的速度施加軸向拉（推）力從 塑膠本體上拔出(頂退)端子(耳扣)。
7.1 Mating /Un-mating Force 插入力/拔出力	Mating force Signal Pin:0.102kg/PIN Max. Power Pin:0.709kg/PIN Max Un-mating force: Signal Pin:0.02kg/PIN Min Power Pin:0.227kg/PIN Min 插入力最大 Signal Pin:0.102kg/PIN Max. Power Pin:0.709kg/PIN Max 拔出力最小 Signal Pin:0.02kg/PIN Min Power Pin:0.227kg/PIN Min	At a speed of 25.4±3 mm/minute, apply axial insert the mating part into fully or pull out from the subject product. 以 25.4±3 mm/分鐘的速度，軸向完全插入對配插 件到被測產品中或從被測產品中拔出。
7.2 Connector Pin Press in/Retention Force 單只端子壓入&拔出 PCB 孔的力量	Press in Force Signal Pin:(Male)75N/PIN Max (Female)45N/PIN Max Power Pin: (Male)75N/PIN Max (Female)60N/PIN Max Retention in Force Signal Pin:10N/PIN Min. Power Pin:10N/PIN Min 壓入力最大 Signal Pin: (公端)75N/PIN Max (母端)45N/PIN Max Power Pin: (公端)75N/PIN Max (母端)60N/PIN Max 拉出力最小 Signal Pin:10N/PIN Min. Power Pin:10N/PIN Min	At a speed of 12.7±3 mm/minute, apply axial Press in PCB to Right Prostion or Pull out from PCB. 以 25.4±3 mm/分鐘的速度軸向施加壓力將 Press 部分壓入 PCB 孔適當位置或從 PCB 孔中拉出。
7.3 Every Lock Press in/Retention Force 單只耳扣壓入&拔出 PCB 孔的力量	Press in Force per Pin:1.5Kg/PIN Max Retention in Force per Pin:0.45Kg/PIN Min 壓入力最大：1.5Kg/PIN	At a speed of 25.4±3 mm/minute, apply axial Press in PCB to Right Prostion or Pull out from PCB. 以 25.4±3 mm/分鐘的速度軸向施加壓力將 Press



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	拉出力最小：0.45Kg/PIN	部分壓入 PCB 孔適當位置或從 PCB 孔中拉出。
8. Vibration Sinusoidal 正弦振動	No electrical discontinuity greater than 1 $\mu$ s shall occur, Contact Resistance: Signal Pin:20 m $\Omega$ Max Power Pin:0.7m $\Omega$ Max. 不允許出現超過 1 $\mu$ s 的瞬間斷開， 接觸阻抗: Signal Pin:最大 20 m $\Omega$ 。 Power Pin:最大 0.7m $\Omega$ 。	Subject mated connector to 10-500-10 Hz traversed in 1 minute at 1.5 mm amplitude, 4 hours each of 3 mutually perpendicular plane, 10 mA potential applied. EIA 364 TP28 對測試產品，在頻率變化每分鐘從 10-500-10 Hz, 振幅 1.5 mm 條件下，在互相垂直的三個面上，每個面 4 小時下測量，電流 10 mA。適用：EIA 364 TP28。
9. Thermal Shock 熱衝擊	After testing, no damage, Contact Resistance : Signal Pin:20 m $\Omega$ Max Power Pin:0.7m $\Omega$ Max. 測試後產品無損壞，接觸阻抗: Signal Pin:最大 20 m $\Omega$ 。 Power Pin:最大 0.7m $\Omega$ 。	Temperature range from -20°C to +80°C. Start from -20°C, after 30 minutes, change to +80°C; change time is no more than 5 minutes, total 36 cycles. EIA 364 TP 32. 溫度變化範圍：-20°C~ +80°C。從 -20°C 開始，30 分鐘後換到+80°C，轉換時間不超過 5 分鐘，共 36 個循環。適用：EIA 364 TP 32
10. Mechanical Shock 機械沖擊	Electrical discontinuity less than 1 $\mu$ s. 電流瞬斷時間小於 1 $\mu$ s.	速度 50G; 半正弦波; 持續 11 毫秒; $\pm$ X, $\pm$ Y, $\pm$ Z, 方向各 3 次; Accelerate Velocity: 50G; Waveform:Half-sine shock plus; Duration:11msec; 3drops each to normal and reversed directions of X,Y and Z axes;
11. Humidity (Steady State) 恆溫恆濕	After testing, no damage, Contact Resistance : Signal Pin:20 m $\Omega$ Max Power Pin:0.7 m $\Omega$ Max. 測試後產品無損壞，接觸阻抗: Signal Pin:最大 20 m $\Omega$ 。 Power Pin:最大 0.7m $\Omega$ 。	Temperature: 40 $\pm$ 2°C. Relative Humidity: 90-95%. Duration: 96 Hours. EIA 364 TP 31 溫度：40 $\pm$ 2°C。相對濕度：90-95%。持續時間：96 小時。適用：EIA 364 TP 31
12. Test temperature rise for rating current 溫升測試	30°C maximum temperature rise at specified current. 30°C 最高溫度在指定的電流升高。	EIA-364-70, Method 1.Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C. Test with single energized contact and with all adjacent power contacts energized.



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13.High Temperature Life 高溫老化	After testing, no damage, Contact Resistance ∴ Signal Pin:20 mΩ Max Power Pin: 0.7 mΩ Max. 測試後產品無損壞，接觸阻抗： Signal Pin:最大 20mΩ。 Power Pin:最大 0.7mΩ。	Subject product to 105±3°C for 504 hours continuously. EIA 364 TP 17 產品置於 105±3°C 連續 504 小時。 適用：EIA 364 TP 17。





# PRODUCT SPECIFICATION OF Oupin

Material Housing: 069-LCP(Black)

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)

長春人造樹脂廠股份有限公司

台北市 10477 松江路三 0 一號七樓

CHANG CHUN PLASTICS CO.,LTD.

CABLE ADDRESS :  
LONGLITE TAIPEI  
TLX:22535 LONGLITE

No.301, SONGKIANG ROAD, 7<sup>TH</sup> FL.,  
TAIPEI, 10477 TAIWAN

TEL: (02)2503-8131 (REP)  
FAX: (02)2503-3378

## Technical Data

**LONGLITE®**

### Liquid Crystalline Polymer Compound LCP-270B3G/ LCP-270N3G

LCP-270B(N)3G is liquid crystalline polymer which contains glass fiber filler. LCP-270B(N)3G has advantages of high heat resistance, strength and good flowability.

#### Physical Properties :

Items	Unit	Test Method	LCP-270B3G* LCP-270N3G
Features	heat resistance/low warpage		
Filler	%	---	Glass Fiber
Filler Content		ASTM	30
Specific Gravity	---	D792	1.62
Water Absorption	%	D570	0.042
Shrinkage	MD	%	CCP
	TD	%	method
Tensile Strength(RT)	MPa	D638	130
Tensile Elongation(RT)	%		2.0
Flexural Strength (RT)	MPa	D790	185
Flexural Modulus (RT)	GPa		14.5
Izod Impact (3.0t/w notched)	J/m	D256	110
HDT (264 psi)	°C	D648	270
Dielectric Strength	KV/mm	D149	19
Arc Resistance	sec	D495	150
UL-94(NC, BK)	Rating	UL94	V-0
Tracking Resistance (CTI)	V	D257	125

\* Typical data : Not to be constructed as specification

LCP-270B(N)3G B : Black N : Natural color



# PRODUCT SPECIFICATION OF Dupin

## Material Housing :UL

UL iQ™ for Plastics

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Component - Plastics

E59481

**CHANG CHUN PLASTICS CO LTD**  
7TH FL, 301 SONGKIANG RD, TAIPEI 104 TW

**270(X1)3G**

Liquid Crystal Polymer (LCP), "LONGLITE", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI		RTI		RTI Str
			HWI	HAI	Elec	Imp	
BK	0.3	V-0	4	0	130	130	130
	1.0	V-0	2	0	130	130	130
	3.0	V-0	0	0	130	130	130

Comparative Tracking Index (CTI): **4**

Inclined Plane Tracking (IPT): -

Dielectric Strength (kV/mm): -

Volume Resistivity (10<sup>9</sup> ohm-cm) : -

High-Voltage Arc Tracking Rate  
(HVTR): **2**

High Volt, Low Current Arc Resis (D495): **5**

Dimensional Stability (%): -

(X1) - Maybe replace by one letter N representing Natural color or B representing Black color

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 2013-07-12  
Last Revised: 2013-07-12

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### IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness	
			Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.3	V-0 (BK)
			1.0	V-0 (BK)
			3.0	V-0 (BK)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

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# PRODUCT SPECIFICATION OF Oupin

Signal Pin (Male) Material Contact: Copper Alloy (Brass)

[SGS Test Report Click here](#)

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## REPORT OF MATERIAL TEST 材料測試報告

ISO 9001  
ISO/TS 16949  
IECQ QC080000  
ISO 14001  
OHSAS 18001 & TOSHMS

No.: 372106

DATE: JUL.30,2014

Customer 顧客名稱: 歐品電子有限公司  
Commodity 商品名稱: C 2630 R BRASS STRIP ( H )  
Applied Standard 引用標準: JIS H 3100 Copper and Copper alloy sheets, plates and strips

Manufacture No.	銅帶卷號	37A100B	
(Specification)	產品規格	Standard	
Thickness (mm)	產品厚度		0.640
Width (mm)	產品寬度		305.000
Length (mm)	產品長度		
(Chemical Analysis Test)	化性測試		
Cu(%)	銅	64.000-68.000	65.039
Fe(%)	鐵	max. 0.050	0.012
Pb(%)	鉛	max. 0.0500	0.0009
Zn(%)	鋅	REM.	REM.
(Mechanical & Physical Test)	物性測試		
Thickness Test (mm)	厚度測試	-0.015 +0.010	0.635
Width Test (mm)	寬度測試	-0.10 +0.00	GOOD
Tensile Strength (kgf/mm <sup>2</sup> )	抗拉強度	42.00 - 55.00	45.80
Elongation (%)	伸長率	-	29.46
Hardness Test (Hv)	硬度	140.0 - 160.0	145.0 - 146.0
Grain Size (mm)	結晶粒徑	-	-
Electric Conductivity (%)	導電率	-	26.40
(Other Information)	其他資訊		
Delivery No.	出貨單號		37A110
Customer Purchase Order	採購單號		PO.E2A14071038



MINCHALI METAL INDUSTRY CO., LTD.  
名佳利金屬工業股份有限公司  
11, Pei Yuan Road, Chung Li City, Taiwan, R.O.C.  
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QA Supervisor: 周建偉

A990701 G3700229AH



# PRODUCT SPECIFICATION OF Oupin

Signal Pin (Female) Material Contact & Lock: Copper Alloy (Phosphor Bronze)

[SGS Test Report Click here](#)

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## REPORT OF MATERIAL TEST 材料測試報告

ISO 9001  
ISO/TS 16949  
IECQ QC080000  
ISO 14001  
OHSAS 18001 & TOSHMS

No.: 372169

DATE: JUL.30,2014

Customer 顧客名稱: 歐品電子有限公司  
Commodity 商品名稱: C 5191 R PHOSPHOR BRONZE STRIP ( H )  
Applied Standard 引用標準: JIS H 3110 Phosphor bronze sheets, plates and strips

Manufacture No.	銅帶製號	36C065D	
(Specification)	產品規格	Standard	
Thickness (mm)	產品厚度	0.300	
Width (mm)	產品寬度	305.000	
Length (mm)	產品長度		
(Chemical Analysis Test)	化性測試		
P(%)	磷	0.030 - 0.350	0.148
Sn(%)	錫	5.500 - 7.000	6.022
Cu+Sn+P(%)	銅錫磷	min. 99.500	99.945
(Mechanical & Physical Test)	物性測試		
Thickness Test (mm)	厚度測試	-	0.299
Width Test (mm)	寬度測試	-0.10 +0.00	GOOD
Tensile Strength (kgf/mm2)	抗拉強度	58.00 - 65.00	60.76
Elongation (%)	伸長率	min. 10.00	25.16
Hardness Test (Hv)	硬度	180.0 - 210.0	189.0 - 191.0
Grain Size (mm)	結晶粒度	-	0.010
Electric Conductivity (%)	導電率	-	14.40
(Other Information)	其他資訊		
Delivery No.	出貨單號	37A110	
Customer Purchase Order	採購單號	PO.B02A14051301	



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名佳利金屬工業股份有限公司  
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QA Supervisor: 周建偉

A980301 G3500318CH



# PRODUCT SPECIFICATION OF Dupin

Power Pin (Male & Female) Material Contact : Copper Alloy (C1921)

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## REPORT OF MATERIAL TEST 材料測試報告

ISO 9001  
ISO/TS 16949  
IECQ QC080000  
ISO 14001  
OHSAS 18001 & TOSHMS

No.: 410497

DATE: JAN.12, 2015

Customer 顧客名稱 : 弘振企業股份有限公司  
Commodity 商品名稱 : C 1921R LEAD FRAME CU-FE METAL ( H )  
Applied Standard 引用標準 : JIS H 3100 Copper and Copper alloy sheets, plates and strips

Manufacture No.	銅牌號	39#077A
(Specification)	產品規格	Standard
Thickness (mm)	產品厚度	0.500
Width (mm)	產品寬度	20.000
Length (mm)	產品長度	
(Chemical Analysis Test)	化性測試	
Cu(%)	銅	99.878
Pb(%)	鉛	0.0000
Fe(%)	鐵	0.050 - 0.150
Zn(%)	鋅	0.000
P(%)	磷	0.015 - 0.050
(Mechanical & Physical Test)	物性測試	
Thickness Test (mm)	厚度測試	-0.008 +0.008 0.500
Width Test (mm)	寬度測試	-0.10 +0.00 20.000
Tensile Strength (kgf/mm2)	抗拉強度	34.00 - 42.00 36.56
Elongation (%)	伸長率	min. 5.00 10.66
Hardness Test (Hv)	硬度	- 113.0 - 115.0
Grain Size (mm)	結晶粒度	- 0.025
Electric Conductivity (%)	導電率	min. 85.00 86.40
(Other Information)	其他資訊	
Delivery No.	出貨單號	410240



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