# 產 品 承 認 書

## SPECIFICATION FOR APPROVAL

客戶(CUSTOMER): 仲琦科技股份有限公司

品名 802.11 b/g/n Antenna
PART NAME:

Lynwave 料號 ALA120-051020-050030

客戶料號:

版本: B

客戶簽核(CSUTOMER APPROVAL)

| | | |
|---|---|---|
| 客戶承認<br>Customer approval | 核准 (Authorized) | 檢驗 (Approved) |
| | | |
| | 日期： 101 年 09 月 21 日 | |

| 內部簽核 (Signature) | | |
|---|---|---|
| Approved by | Checked by | Tested by |
| *Dallas Wu* | *William Song* | *Sophia Ju* |


綠億科技有限公司

LYNwave Technology Ltd.

Taiwan: 新北市樹林區學成路 655 號 5 樓

5F. NO.655, Xuecheng Rd.,Shulin Dist.,New Taipei City 23854, Taiwan

Tel: 02-35018700 Fax: 02-35019833

Email: service@lynwave.com

LYNwave
Wireless Connected World

# ALA120-051020-050030

802.11 b/g/n AP/Router embedded antenna

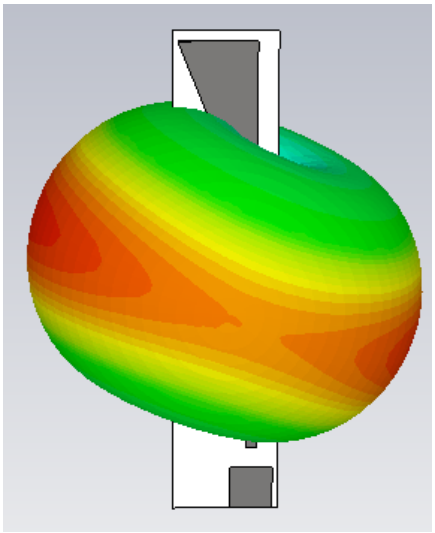
## Features

- IEEE 802.11 b/g/n standard
- On-board mount or case mounting
- High efficiency
- Quick integration
- cable loss excluded

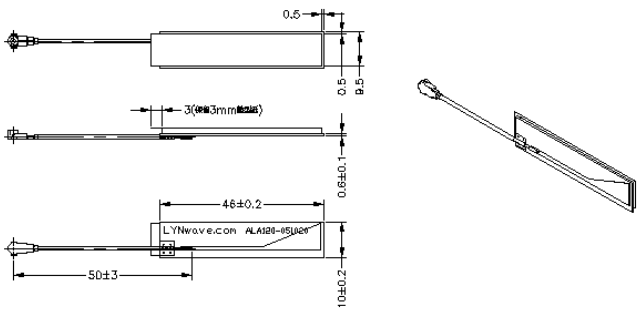
## Specification

| | |
|---|---|
| Frequency (MHz) | 2400 -2500 |
| Peak Gain (dBi) | 2.0 |
| VSWR | 2.0 : 1 |
| Power (Watts) | 1 |
| Impedance (Ohms) | 50 |
| Dimension (mm) | 46 x 10 x 0.6 |
| Weight (g) | 1 |
| Connector | 1.13 Connector |
| Cable length (mm) | 50 |
| Cable color | Black |
| Cable loss(M) | 3.1 dB |

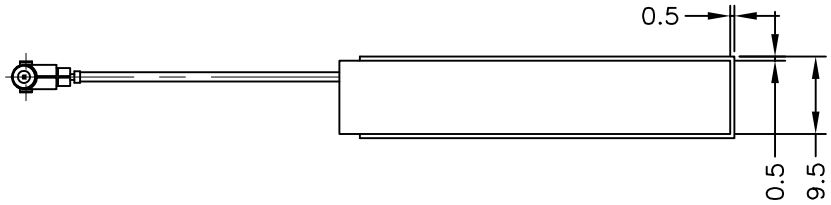
Gain Pattern

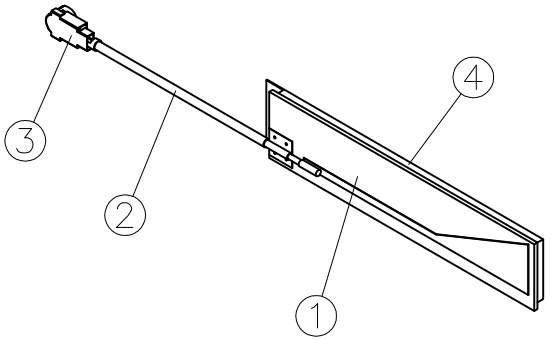


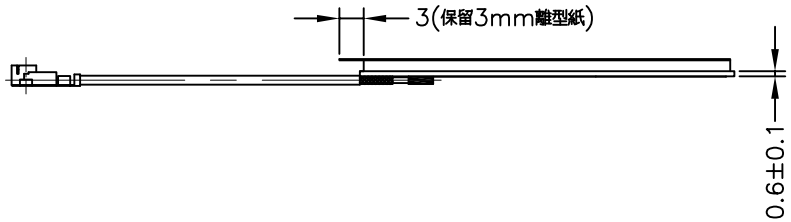
## Mechanical Dimensions

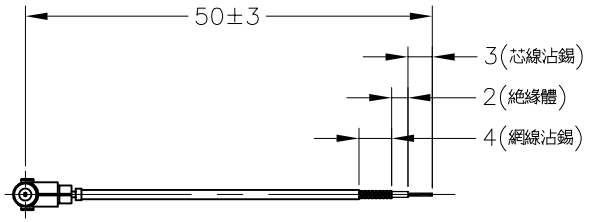


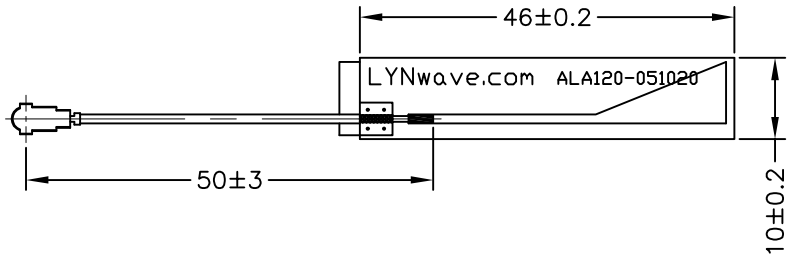
| Rev | Zone | Description | ENG | Approved | Date |
|---|---|---|---|---|---|
| | | | | | |

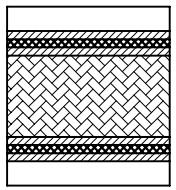


□ 離型紙:0.15mm
▨ 接著劑:0.05mm
▩ 不織布基材:0.05mm
▨ Sponge:1mm±0.5

Sponge示意圖

| No. | Description | Specification | Qty | Notes |
|---|---|---|---|---|
| 4 | Sponge | 45x9x1t(單邊需另外保留3mm離型紙) | 1 | |
| 3 | Connector | 1.13 Connector | 1 | |
| 2 | Cable | RF-1.13(黑色) | 1 | |
| 1 | Antenna | ALA120-051020,雙面PCB,黑漆 | 1 | |

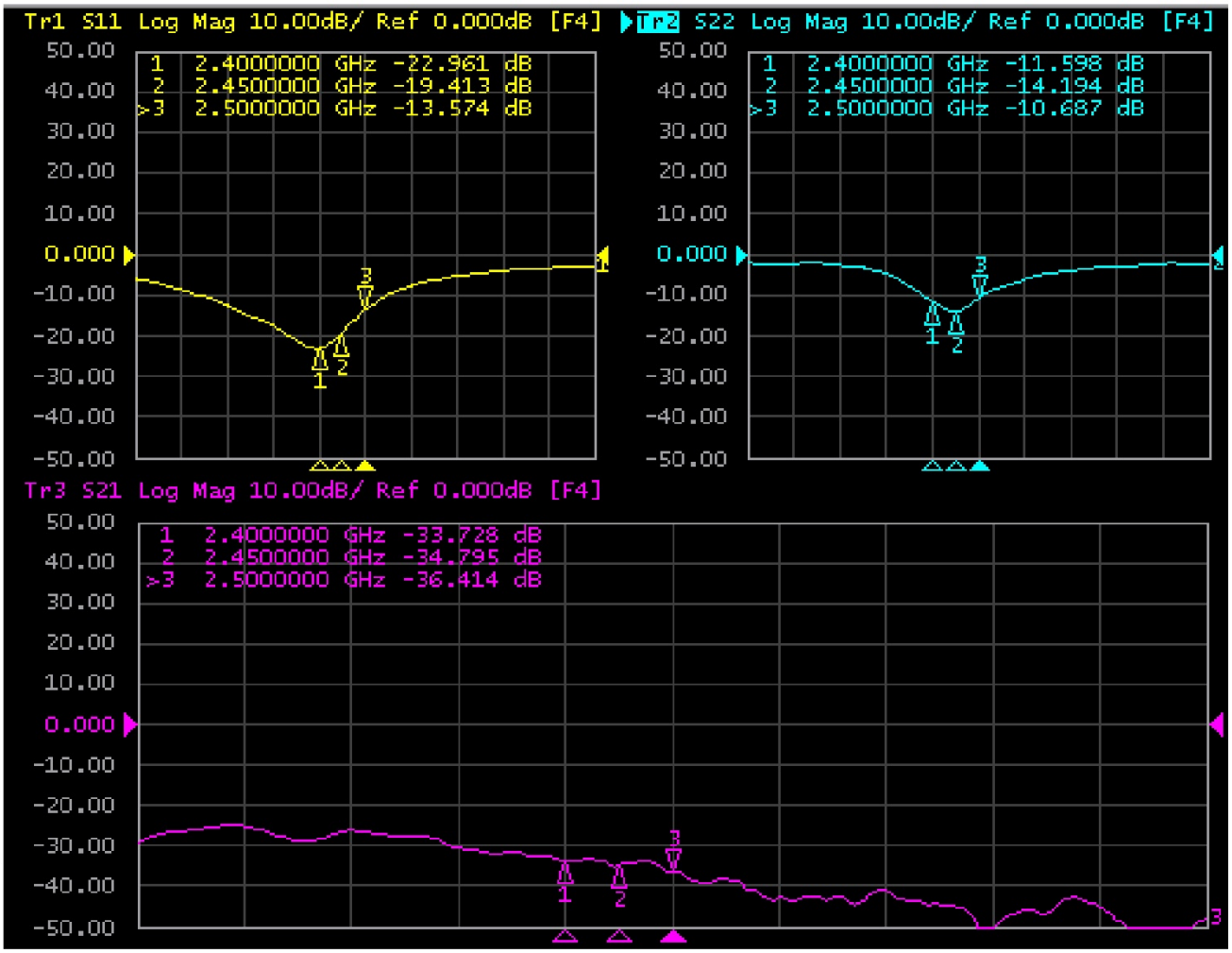
| TOLERANCE | | CUSTOMER | PART NO. | DESCRIPTION: | DWG NO. | REV. |
|---|---|---|---|---|---|---|
| XXX. | ±1.0 | ---- | ---- | Antenna | ALA120-051020-050030 | A0 |

| XX. | ±0.5 | PROJECTION | UNIT | SCALE | SIZE | SHEET |
|---|---|---|---|---|---|---|
| X. | ±0.3 | | mm | 1:1 | A4 | 1/1 |
| .X | ±0.1 | APPROVED: ----- | DESIGNED: ----- | DRAWN: jimmy | | |
| .XX | ±0.05 | | | | | |

LYNwave
www.lynwave.com

# Electrical test

## Rerun Loss(S11)&Isolation(S21)




## - Gain Table

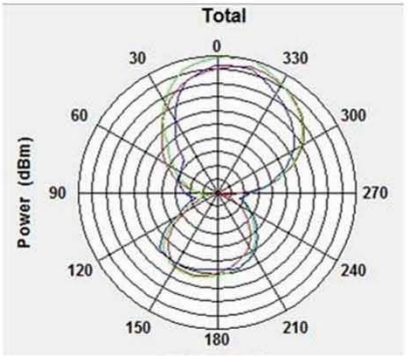
| ANT | | | | |
|---|---|---|---|---|
| | Frequency (MHz) | 2400 | 2450 | 2500 |
| | Average Gain (dB) | -1.97 | -1.66 | -2.11 |
| | Efficiency (%) | 63.46 | 68.28 | 61.56 |
| | Peak Gain (dBi) | 3.11 | 3.51 | 3.34 |

# Pattern test

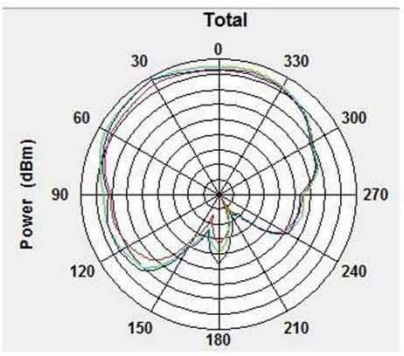
## Antenna test placement


## 2.45GHz GAIN PATTERN

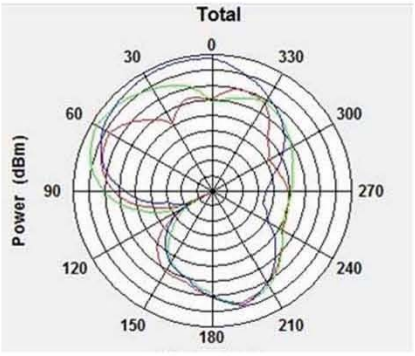
XY-Pattern



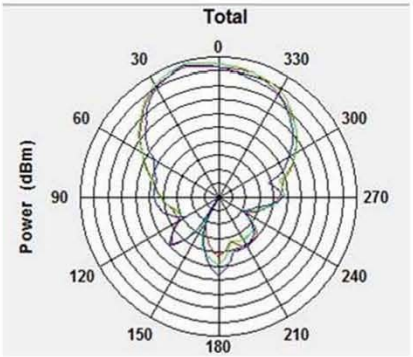

XZ-Pattern



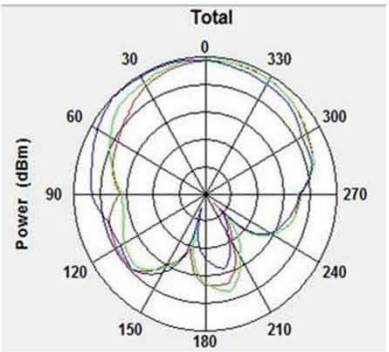

YX-Pattern



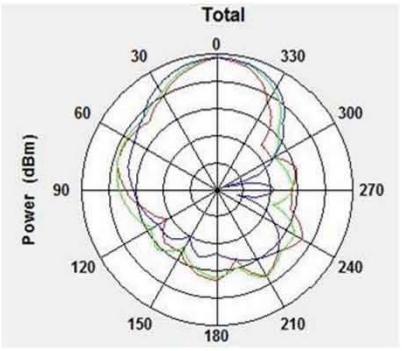

YZ-Pattern




ZX-Pattern




ZY-Pattern



# UL Online Certifications Directory

## QMTS2.E224772

## Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

Enhanced searching capability for this category can be found in UL's iQ Family of Databases.

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## Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

See General Information for Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

**GOLDENMAX INTERNATIONAL TECHNOLOGY LTD** E224772
SONG JIANG AREA
33 BAO SHENG RD
201613 SHANGHAI, CHINA

Industrial laminates:

| | | | Build up | | R.T.I. | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mtl Dsg | ANSI Type | Color | Min Thk (mm) | Flame Class | Elec (° C) | Mech (° C) | HWI | HAI | VTR | CTI | Meets 746E DSR |
| Industrial laminates, furnished as sheets, rods or tubes. | | | | | | | | | | | |
| DL-C3, GEM-C3 | | | | | | | | | | | |
| | CEM-3 | NC(WT) | 0.63 | V-0 | 130 | 140 | 0 | 2 | 4 | - | Yes |
| | | | 1.60 | V-0 | 130 | 140 | 0 | 2 | 4 | 3 | Yes |
| GDM-R1 | FR-4 | NC,YL | 0.38 | V-0 | 130 | 130 | 0 | 0 | 4 | - | Yes |
| | | | 0.64 | V-0 | 130 | 140 | 0 | 0 | 4 | 3 | Yes |
| ILM-R1, GEM-R1## | | | | | | | | | | | |
| | FR-4 | NC, YL | 0.38 | V-0 | 130 | 130 | 0 | 0 | 4 | - | Yes |
| | | | 0.64 | V-0 | 130 | 140 | 0 | 0 | 4 | 3 | Yes |
| Industrial laminates. | | | | | | | | | | | |
| GF11_T6 | No ANSI | NC (YL) | 0.63 | V-0 | 90 | 90 | - | - | - | - | - |
| | | | 1.40 | V-0 | 90 | 90 | - | - | - | 0 | - |
| GF532 | FR-4 | NC(YL) | 0.38 | V-0 | 130 | 130 | 0 | 3 | - | - | Yes |
| | | NC(YL) | 0.63 | V-0 | 130 | 140 | 0 | 3 | - | - | Yes |
| | | NC(YL) | 1.40 | V-0 | 130 | 140 | 0 | 2 | - | 3 | Yes |

Ultrathin build ups:

| Build Up | | | | | Laminate | | | Prepreg | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mtl Dsg | ANSI Type | Min Thk (mm) | TI Elec | TI Mech | Mtl Dsg | Thk (mic) | TI Elec | Mtl Dsg | Thk (mic) | TI Elec |
| Ultrathin industrial laminates and bonding layers, furnished in sheet form, for use in multilayer printed wiring boards where the thickness is built | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| up to the minimum specified. | | | | | | | | | | |
| GDM-U1 | FR-4 | 0.38 | 130 | 130 | GDM-U1 | 100 | 120 | ILM-P1## | 100 | 120 |
| | | 0.64 | 130 | 140 | GDM-U1 | 100 | 120 | ILM-P1## | 100 | 120 |
| GF532 | FR-4 | 0.38 | 130 | 130 | GF532 | 150 | 120 | GF532-PP | 120 | 120 |
| ILM-P1, GDM-P1 | FR-4 | 0.38 | 130 | 130 | ILM-U1## | 100 | 120 | ILM-P1## | 100 | 120 |
| | | 0.64 | 130 | 140 | ILM-U1## | 100 | 120 | ILM-P1## | 100 | 120 |
| ILM-U1, GEM-U1## | | | | | | | | | | |
| | FR-4 | 0.38 | 130 | 130 | ILM-U1, GEM-U1## | 100 | 120 | ILM-P1, GEM-P1 | 100 | 120 |
| | | 0.64 | 130 | 140 | ILM-U1, GEM-U1## | 100 | 120 | ILM-P1, GEM-P1 | 100 | 120 |

Metal clad industrial laminates:

| | | | | Bld up | Clad Cond Thk | | | Max | | Max | Solder Lts | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Metal Clad Dsg | Lam-inate Dsg | Pre-preg Dsg | ANSI Type | Min Thk (mm) | Min Ext (mic) | Max Ext (mic) | Max Int (mic) | Area Dia (mm) | Flame Class | Oper Temp (°C) | Temp (°C) | Time (sec) |
| Metal clad multilayer package (mass laminate) with internal circuitry and solid copper on outside surfaces, furnished as sheets. | | | | | | | | | | | | |
| GDM-U1 | | | | | | | | | | | | |
| | GDM-U1 | ILM-P1## | FR-4 | 0.38 | 17 | 68.1 | - | 50.8 | V-0 | 130 | 288 | 20 |
| ILM-ML1, GEM-ML1## | | | | | | | | | | | | |
| | ILM-ML1, GEM-ML1## | - | FR-4 | 0.38 | 17.0 | 68.1 | 68.1 | 50.8 | V-0 | 130 | 288 | 20 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Metal clad industrial laminates for use in multilayer printed wiring boards with copper on one or both sides, furnished as sheets.** | | | | | | | | | | | | |
| **GF532** | GF532 | GF532-PP | FR-4 | 0.38 | 17 | 102 | 68 | 50.8 | V-0 | 130 | 288 | 20 |
| **ILM-U1, GEM-U1##** | | | | | | | | | | | | |
| | ILM-U1, GEM-U1## | ILM-P1, GEM-P1 | FR-4 | 0.38 | 17.0 | 68.1 | 68.1 | 50.8 | V-0 | 130 | 288 | 20 |
| **Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets.** | | | | | | | | | | | | |
| **DL-C3, GEM-C3** | | | | | | | | | | | | |
| | DL-C3, GEM-C3 | - | CEM-3 | 0.63 | 17 | 68.1 | - | 12.7 | V-0 | 130 | 288 | 10 |
| **ILM-R1, GEM-R1##** | | | | | | | | | | | | |
| | ILM-R1, GEM-R1## | - | FR-4 | 0.38 | 17 | 68.1 | - | 50.8 | V-0 | 130 | 288 | 20 |
| | | | | 0.64 | 17 | 68.1 | - | 50.8 | V-0 | 130 | 288 | 20 |
| **Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides.** | | | | | | | | | | | | |
| **GF11_T6** | | | | | | | | | | | | |
| | GF11_T6 | - | No ANSI | GF11_T6 | 17 | 102 | - | 50.8 | V-0 | 90 | 288 | 20 |
| **GF532** | GF532 | - | FR-4 | 0.38 | 17 | 102 | - | 50.8 | V-0 | 130 | 288 | 20 |

## - May be followed by a suffix.

Marking: Company name or trademark GDM, GEM, ILM and material designation on container or wrapper.

# SPECIFICATION FOR APPROVAL

DOCUMENT: A3132LC001

STYLE： COAXIAL CABLE
105℃ 30V

SIZE: 32AWG×1C
BRAID ：TS

RECOGNIZED:

WONDERFUL HI-TECH CO.,LTD.

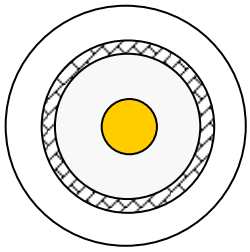
OFFICE：72WU KONG 6TH ROAD,
WU KU IND. DISTRICT
TAIPEI HSIEN,TAIWAN

TEL：(02)22988033
FAX：(02)22988031-2

FACTORY：17 PEI YUAN ROAD,
CHUNG-LI IND. PARK
TAIWAN, R.O.C.

TEL：(03)4527777
FAX：(03)4517214

# WONDERFUL HI-TECH CO., LTD.
# SPECIFICATION

| | | | |
|---|---|---|---|
| STYLE | | DOCUMENT NO : A3132LC001 | |
| SIZE | 32AWG | ESTABLISHED DATE: 2009/01/09 | |
| STANDARD : | | | |
| Conductor | Size | AWG | 32 |
| | Material | ---- | Tinned Copper |
| | Conductors No. | ---- | 7 |
| | Conductors Size | mm | 0.080 |
| | O.D. | mm | 0.240 |
| Insulation | Average Thickness | mm | 0.22 |
| | Diameter | mm | 0.70 ± 0.02 |
| | Material | ---- | FEP |
| | Color | ---- | Clear |
| Braid | Material | ---- | Tinned Copper |
| | Construction | mm | 16 / 4 / 0.050 |
| | Coverage | % | 88 |
| Jacket | Average Thickness | mm | 0.11 |
| | Diameter | mm | 1.13 ±0.05 |
| | Material | ---- | FEP |
| | Color | ---- | According to custom |
| Marking | Non | | |
| Drawing |  | | |


MAKER : C.Y.CHEN CONFIRM :S.N.WONG APPROVAL : W.J.WANG

# WONDERFUL HI-TECH CO., LTD.
# SPECIFICATION

| Electrical & Physical Properties | | | | | | | |
|---|---|---|---|---|---|---|---|
| Item | | | 32AWG | | | | |
| Rating Temp Voltage | | | 105℃ 30V | | | | |
| Conductor Resistance | | | 545 OHM/KM/20℃ MAX. | | | | |
| Insulation Resistance | | | 1000 MEGA OHM/KM MIN. | | | | |
| Dielectric Strength | | | AC 500 V/Minute | | | | |
| Spark Test | | | 2.5 KV | | | | |
| Insulation | Unaged | Tensile Strength | 2500 PSI MIN.( 1.76 Kg / ㎟) | | | | |
| | | Elongation | 200% MIN. | | | | |
| | Aged | Tensile Strength | UNAGED MIN. 75%(168HRS×232℃) | | | | |
| | | Elongation | UNAGED MIN. 75%(168HRS×232℃) | | | | |
| Jacket | Unaged | Tensile Strength | 2500 PSI MIN.( 1.76 Kg / ㎟) | | | | |
| | | Elongation | 200% MIN. | | | | |
| | Aged | Tensile Strength | UNAGED MIN.75%(168HRS×232℃) | | | | |
| | | Elongation | UNAGED MIN.75%(168HRS×232℃) | | | | |
| Nom. Impedance | | | 50 ± 5 Ohms | | | | |
| Nom. Capacitance | | | 96 ± 3 pF/m | | | | |
| Nom. Vel. of Prop. | | | 69% | | | | |
| VSWR Test (0 – 6 GHZ) | | | Less 1.3 | | | | |
| Flame Test | | | VW-1 OK | | | | |
| Attenuation (dB/1m) | 2.0GHZ | | 2.4GHZ | 2.5GHZ | 5.0GHZ | 6.0 GHZ | |
| | 3.05 | | 3.30 | 3.38 | 5.05 | 6.0 | |

UL International Services Ltd.--Taiwan Branch
4th Floor
No. 260 Da-Yeh Road
Pei Tou, Taipei, Taiwan 112
Telephone: 886-2-2896-7790
Fax: 886-2-2891-7644
Email: ul.tw@tw.ul.com

An Affiliate of
Underwriters Laboratories Inc.

MR S N WONG
WONDERFUL HI-TECH CO LTD
CHUNG LI INDUSTRIAL PARK
17 PEI YUAN RD
CHUNG-LI, FU SHING LEE
TAOYUAN HSIEN TAIWAN

Date: 2003/09/22
Subscriber: 699947002
File No: E77981
Project No: 03CA21293
PD No: 03O15304
Type: L
PO Number: S WONG

Subject: Procedure And/Or Report Material

The following material resulting from the investigation under the above numbers is enclosed.

| Issue Date | Vol | Sec | Pages | Revised Date |
|---|---|---|---|---|
| 1981/04/09 | 1 | 1 | Revised Tble of Authorized Styles H, J | 2003/09/18 |
| 1981/04/09 | 1 | 1 | New Facing Pages 1745, 1979 | 2003/09/18 |

Inspections at your plant will be conducted under the supervision of Mr. Hank Su, Field Supervisor, 4th Fl. 260 Da-Yeh Road, Pei Tou District, Taipei 112 Taiwan, PHONE: 886 2 28938008 ext. 108, FAX: 886 2 28978628.

Marks as needed may be obtained from: UL International Service Ltd., 4th Fl., 260 Da-Yeh Road, Peitou, Taipei City, Taiwan 112, PHONE: 886 2 28967790, FAX: 886 2 28917644, ATTN: Iris Tseng.

Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

Please review this material and report any inaccuracies to LAURA CHANG (886-2-2896-7790), referring to the above Project and/or PD Numbers.

c: TPI File

UL INSPECTION CENTER 408

| | |
|---|---|
| *Style 1979 | PFA, FEP, or ETFE Insulated and Jacketed Cable. |
| Rating | 105°C, 30 V. |
| Conductor | 40-20 AWG. Material not specified. |
| *Insulation | Extruded PFA, FEP, or ETFE, 1.8 mils minimum average, 1.5 mils minimum at any point. |
| Shield | Optional. |
| *Jacket | Extruded PFA, FEP, or ETFE, 1.8 mils minimum average, 1.5 mils minimum at any point. |
| Standard | Appliance Wiring Material UL 758. |
| Instructions to UL Representative | Detailed Examination. |
| UL Counter-Check Program | (4) Detailed Examination.<br>(12) Horizontal Flame Test. |
| Marking | General. |
| Use | Internal Wiring of Class 2 Circuits in Electronic Equipment. |

# UL Online Certifications Directory

## AVLV2.E77981
## Appliance Wiring Material - Component

Page Bottom

## Appliance Wiring Material - Component

See General Information for Appliance Wiring Material - Component

WONDERFUL HI-TECH CO LTD
2ND FL
WU KU INDUSTRIAL DISTRICT
72 WU KONG 6TH RD
TAIPEI HSIEN, 248 TAIWAN

E77981

| Table of Recognized Styles | | | | | | | |
|---|---|---|---|---|---|---|---|
| Single-conductor, thermoplastic insulation. | | | | | | | |
| 1007 | 1023 | 1118 | 1321 | 1354 | 1478 | 1640 | 1953 |
| 1008 | 1024 | 1120 | 1330 | 1365 | 1489 | 1641 | 1973 |
| 1009 | 1025 | 1150 | 1331 | 1375 | 1497 | 1650 | 1979 |
| 1010 | 1026 | 1185 | 1332 | 1381 | 1500 | 1651 | 10231 |
| 1011 | 1027 | 1195 | 1333 | 1408 | 1503 | 1663 | 10254 |
| 1012 | 1028 | 1208 | 1335 | 1409 | 1509 | 1672 | 10272 |
| 1013 | 1029 | 1226 | 1336 | 1410 | 1533 | 1674 | 10368 |
| 1014 | 1030 | 1227 | 1337 | 1411 | 1550 | 1691 | 10369 |
| 1015 | 1031 | 1230 | 1338 | 1412 | 1569 | 1692 | 10439 |
| 1016 | 1032 | 1275 | 1339 | 1413 | 1571 | 1741 | 10444 |
| 1017 | 1033 | 1283 | 1340 | 1414 | 1581 | 1743 | 10515 |
| 1018 | 1061 | 1316 | 1342 | 1429 | 1589 | 1745 | 10602 |
| 1019 | 1071 | 1317 | 1344 | 1430 | 1605 | 1777 | 10627 |
| 1020 | 1095 | 1318 | 1345 | 1431 | 1617 | 1790 | |
| 1021 | 1107 | 1319 | 1346 | 1436 | 1618 | 1792 | |
| 1022 | 1113 | 1320 | 1347 | 1452 | 1631 | 1803 | |
| Multiple-conductor, thermoplastic insulation. | | | | | | | |
| 2084 | 2273 | 2463 | 2549 | 2623 | 2833 | 2961 | 20233 |
| 2092 | 2331 | 2464 | 2550 | 2626 | 2835 | 2969 | 20245 |
| 2093 | 2343 | 2468 | 2552 | 2630 | 2844 | 2970 | 20246 |
| 2094 | 2344 | 2474 | 2562 | 2631 | 2851 | 2990 | 20247 |
| 2095 | 2345 | 2483 | 2569 | 2637 | 2854 | 2991 | 20276 |
| 2096 | 2346 | 2490 | 2570 | 2648 | 2876 | 2992 | 20279 |
| 2097 | 2384 | 2493 | 2571 | 2651 | 2877 | 2993 | 20288 |
| | | | | | | | |

# UL Online Certifications Directory

## Appliance Wiring Material Search Results

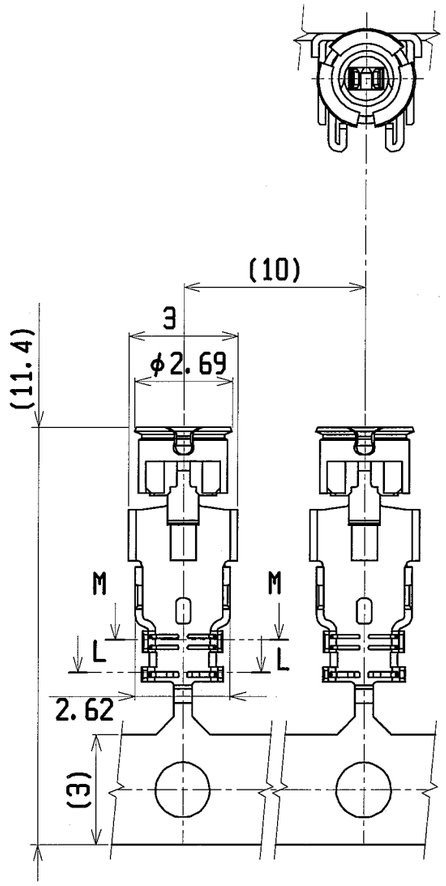
### Style Page 1979

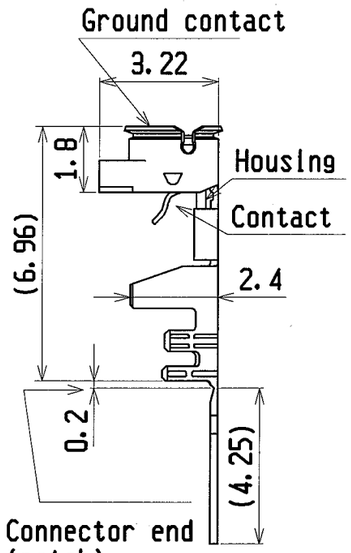
Single Conductor, Thermoplastic - Insulated Wire

Select Style Number to View > 1979

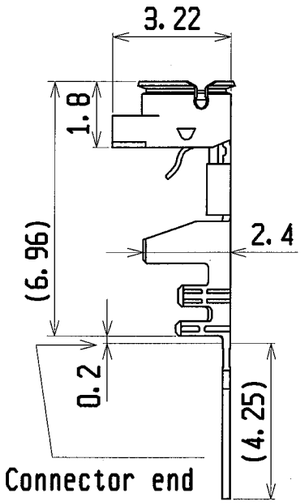
Questions? Notice of Disclaimer Page Top

PART NO.
20278-***R-**



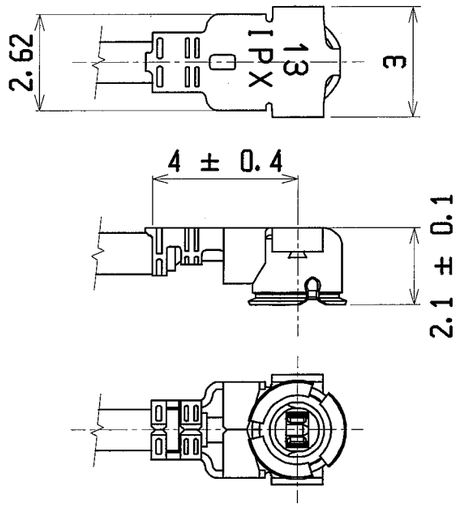




Part No. 20278-101R-08
20278-102R-08
20278-101R-13
20278-102R-13
20278-101R-32
20278-102R-32
For hand tool
(with notch)



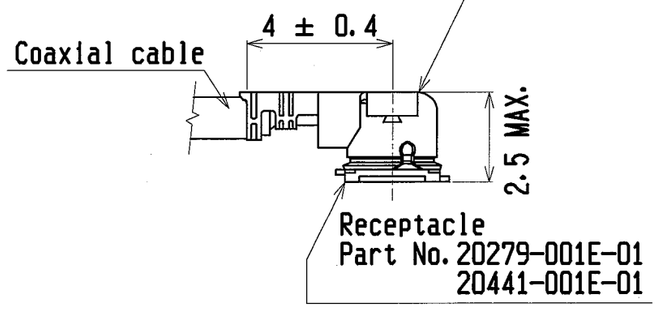

Part No. 20278-111R-08
20278-112R-08
20278-111R-13
20278-112R-13
20278-111R-32
20278-112R-32
For semi auto
termination machine
(without notch)

I-PEX CONNECTOR




Cable Ass'y

Plug
P/N 20278-1**R-08
P/N 20278-1**R-13
P/N 20278-1**R-32




MATING

| GENERAL TOLERANCE | |
|---|---|
| 6 MAX. | ±0.2 |
| 6 OVER MAX. 30 | ±0.3 |
| 30 OVER MAX. 120 | ±0.5 |
| ANGLE | ±2° |

| REV | ECN | BY | DATE | APP |
|---|---|---|---|---|
| 19C | Z08056 | K.O | Feb/04/'08 | EK |
| 18C | Z07346 | K.O | Jul/10/'08 | E.K |
| 17C | Z05233 | K.O | May/18/'05 | T.H |
| 16C | Z05024 | K.O | Jan/20/'05 | T.H |
| 15C | Z04398 | K.O | Nov/12/'04 | T.H |

REV. RECORD
SERIES No. 2814

| | | |
|---|---|---|
| DESIGN'D BY | K.Ohbayashi | DATE JUN/13/01 |
| CHK'D BY | | DATE |
| APP'D BY | K.Katabuchi | DATE JUN/13/01 |

CUSTOMER COPY

PROJECTION

I-PEX Interconnect and Packaging Electronics TOKYO. JAPAN

TITLE
MHF series micro coaxial connector plug vertical (ground contact : gold plating)

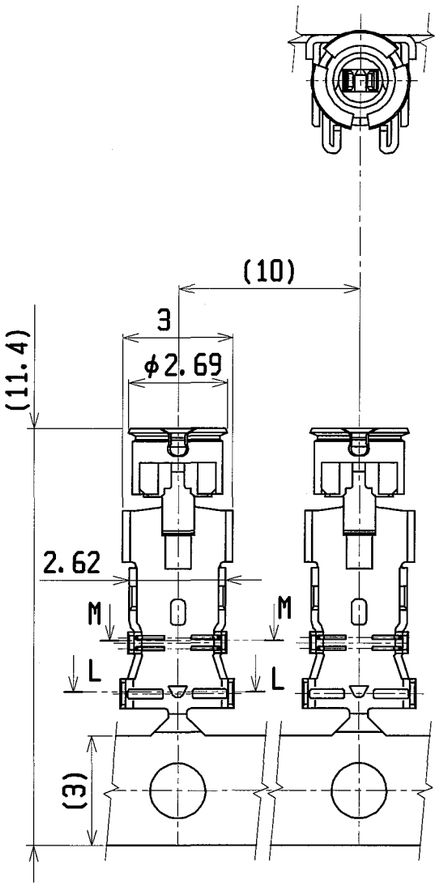
General

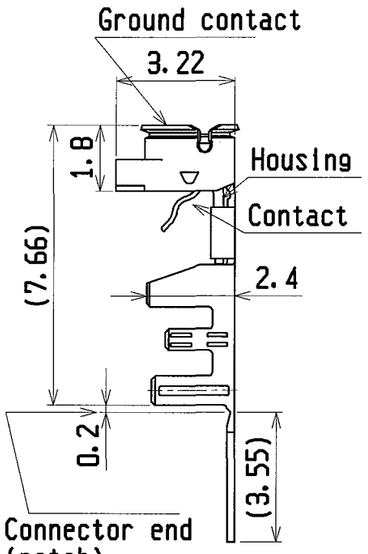
| SCALE | UNIT | DWG. No. | SHEET | REV. |
|---|---|---|---|---|
| 6/1 | mm | 20278 | 1/4 | 19C |

FORM REV. 4

WAS T

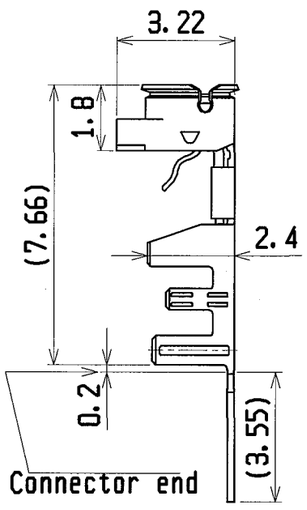
PART NO.
20278-***R-**



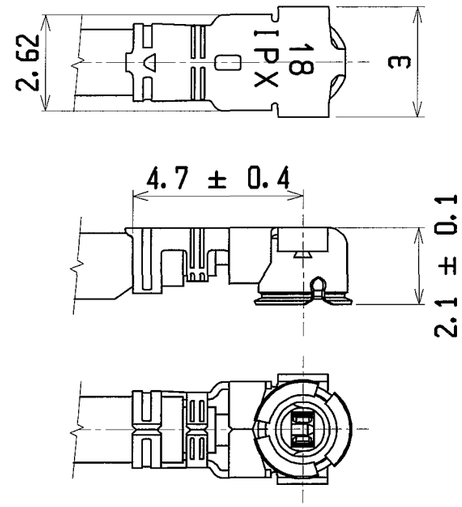

Connector end
(notch)

Part No. 20278-101R-18
20278-102R-18
For hand tool
(with notch)



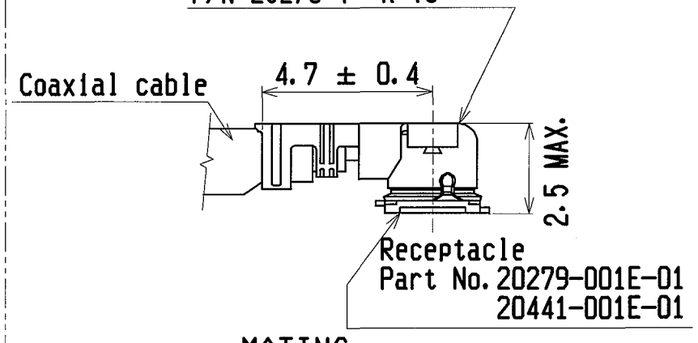

Connector end

Part No. 20278-111R-18
20278-112R-18
For semi auto
termination machine
(without notch)




Cable Ass'y

Plug
P/N 20278-1**R-18




MATING

| GENERAL TOLERANCE | |
|---|---|
| 6 MAX. | ±0.2 |
| 6 OVER MAX. 30 | ±0.3 |
| 30 OVER MAX. 120 | ±0.5 |
| ANGLE | ±2° |

| REV | ECN | BY | DATE | APP |
|---|---|---|---|---|
| | | | | |

REV. RECORD
SERIES No. 2814

DESIGN'D BY DATE
CHK'D BY DATE
APP'D BY DATE

CUSTOMER COPY

PROJECTION

I-PEX Interconnect and Packaging Electronics TOKYO, JAPAN

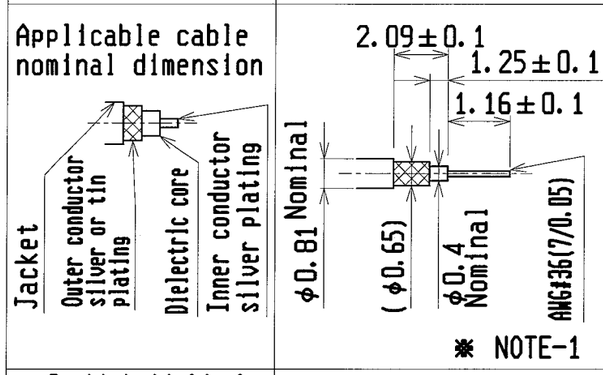
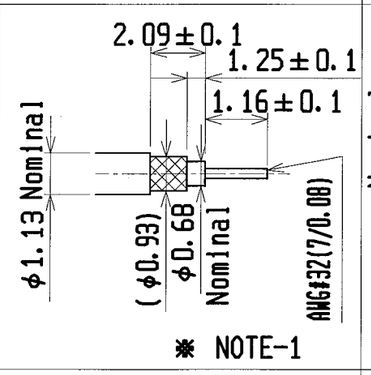
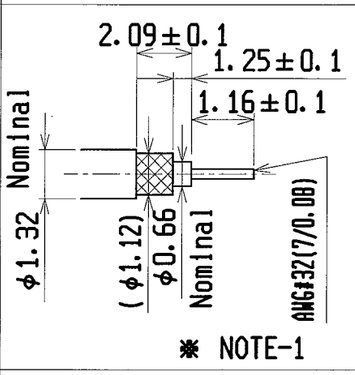
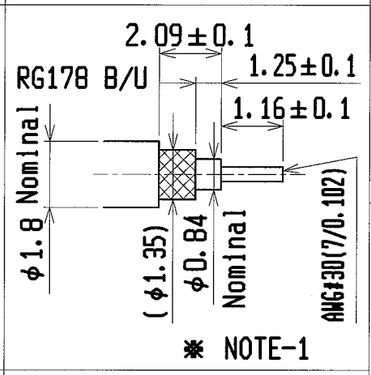
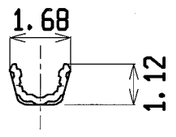
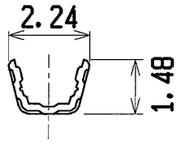
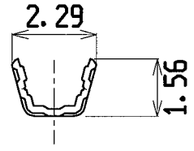
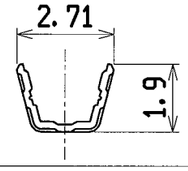
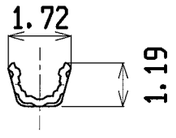
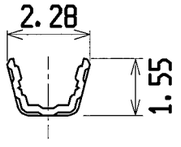
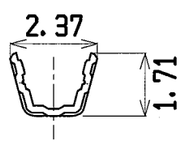
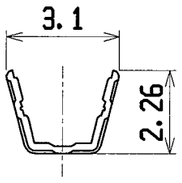
TITLE
MHF series micro coaxial connector plug vertical (ground contact : gold plating)

General

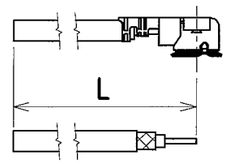
| SCALE | UNIT | DWG. No. | SHEET | REV. |
|---|---|---|---|---|
| 6/1 | mm | 20278 | 2/4 | 19C |

FORM REV. 4

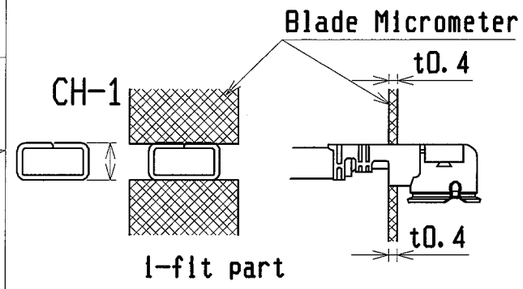
WAS T

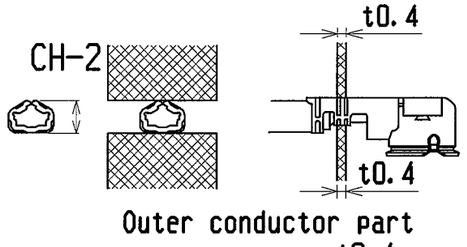
| | | | | |
|---|---|---|---|---|
| Part No. of non halogen free type | 20278-101R-08 / 20278-111R-08 | 20278-101R-13 / 20278-111R-13 | 20278-101R-32 / 20278-111R-32 | 20278-101R-18 / 20278-111R-18 |
| Part No. of halogen free type | 20278-102R-08 / 20278-112R-08 | 20278-102R-13 / 20278-112R-13 | 20278-102R-32 / 20278-112R-32 | 20278-102R-18 / 20278-112R-18 |
| Housing color | White | Black | Black | White |
| Applicable cable nominal dimension |   ※ NOTE-1 |   ※ NOTE-1 |   ※ NOTE-1 |   ※ NOTE-1 |
| Braided shield of Outer conductor 外部導体の編組 | Single / 1重編組 | Single / 1重編組 | Double / 2重編組 | Single / 1重編組 |
| P/N of hand Tool / P/N of semi auto termination machine | 90187-008C / 90213-008C | 90187-013C / 90213-013C | 90187-032C / 90213-032C | 90233-018 / 90232-018 |
| Sect. M-M |   |   |   |   |
| Sect. L-L |   |   |   |   |
| Crimp Height CH-1 | 1.34～1.40 | 1.34～1.40 | 1.34～1.40 | 1.34～1.40 |
| Crimp Height CH-2 | 0.76～0.84 | 1.06～1.14 | 1.20～1.30 | 1.41～1.49 |
| Crimp Height CH-3 | 0.85～0.97 | 1.15～1.35 | 1.26～1.46 | 1.70～1.80 |

## Cable cut length




## Crimp Height




NOTE-1
中心導体，外部導体への半田ｺｰﾃｨﾝｸﾞは不可
Must not use solder coated
inner conductor and outer conductor.

| REV | ECN | BY | DATE | APP |
|---|---|---|---|---|
| REV. RECORD | | | | |
| SERIES No. | 2814 | | | |

DESIGN'D BY DATE
CHK'D BY DATE
APP'D BY DATE

CUSTOMER COPY

PROJECTION

I-PEX Interconnect and Packaging Electronics TOKYO, JAPAN

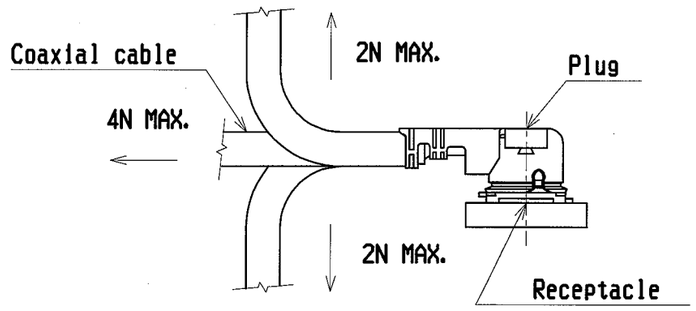
TITLE: MHF series micro coaxial connector plug vertical (ground contact : gold plating)

General

| SCALE | UNIT | DWG. No. | SHEET | REV. |
|---|---|---|---|---|
| -/- | mm | 20278 | 3/4 | 19C |

Notes

1. Material
 (1) Housing : PBT , UL94V-0
 (2) Contact
  phosphor bronze
  gold plating 0.1μm MIN.
  over nickel 1.27μm MIN.
 (3) Ground contact
  phosphor bronze
  gold plating 0.05μm MIN.
  over nickel 1.27μm MIN.
2. Packing : reel
3. Mating partner part No.
 : 20279-001E-01, 20441-001E-01
4. Permissible load of cable at mating




1. 材 料
(1) ハウジング：PBT, UL94V-0
(2) コンタクト
  りん青銅
  金メッキ0.1μm MIN.
  下地 ニッケル1.27μm MIN.
(3) グランドコンタクト
  りん青銅
  金メッキ0.05μm MIN.
  下地 ニッケル1.27μm MIN.
2. 梱包 : リール
3. かん合相手 part No.
 : 20279-001E-01, 20441-001E-01
4. コネクタかん合後のケーブルに対する荷重

5. Suggestions for mating & unmating operation.

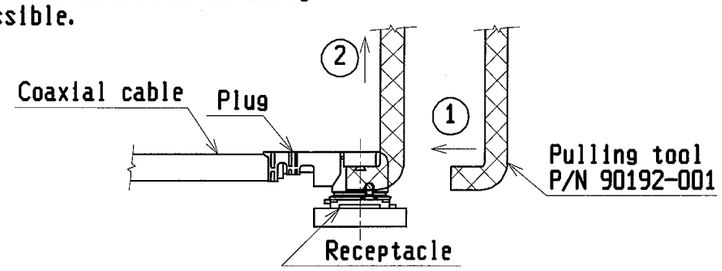
5-1 Mating.
Please mate the connector straightly to vertical direction as much as possible, adjusting the mating axis of plug and receptacle.
As excessive slant angle mating may break the connector , please don't do it.

5. コネクタかん合時および抜去時の注意

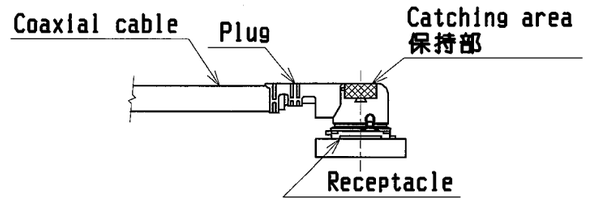
5-1 コネクタ挿入時
PlugとReceptacleのかん合軸を合わせ、できるだけ垂直に挿入して下さい。
極端な斜め挿入は行わないで下さい。
コネクタ破損の原因となりますので、過度なこじり挿抜は行わないで下さい。

5-2 Unmating.

(1) In case of unmating by pulling tool.
Please use the pulling tool as the following drawing, and please pull plug to vertical direction as directly as possible.




(2) In case of unmating directly by hand
Please catch the catching area of plug , and please pull plug to vertical direction as directly as possible.




5-3 Crimp over standards of outer conductor

Standards:Less than 10% from total numbers of outer conductor
(Numbers of outer conductor's crimp over from outer conductor's barrel)

5-4 Caution about Heat shrinkage tubes

Please be cureful not to melt housing when using heat shrinkage tubes.
It will become cause of open circuit.

6. This is 'Pb-free' connector.

5-2 コネクタ抜去時

(1) 抜去ジグを用いる場合
下図のようにできるだけ垂直に引き抜いて下さい。

(2) 手で直接引き抜く場合
下図の保持部をつかみ，できるだけ垂直に引き抜いて下さい。

5-3 外部導体はみ出し量

外部導体はみ出し量規定
：外部導体トータル本数の10%以下
（外部導体バレルの外にはみ出しを量）

5-4 熱収縮チューブについての注意
熱収縮チューブで外部導体を覆う場合は、導通不良の原因になりますので、熱によりハウジグを溶融させないよう注意してください。

6. 本コネクタは' Pb-free' である

| GENERAL TOLERANCE | |
|---|---|
| 6 MAX. | ±0.2 |
| 6 OVER MAX. 30 | ±0.3 |
| 30 OVER MAX. 120 | ±0.5 |
| ANGLE | ±2° |

| REV | ECN | BY | DATE | APP |
|---|---|---|---|---|
| REV. RECORD | | | | |
| SERIES No. | 2814 | | | |

DESIGN'D BY DATE
CHK'D BY DATE
APP'D BY DATE

CUSTOMER COPY

PROJECTION

I-PEX Interconnect and Packaging Electronics TOKYO. JAPAN

TITLE
MHF series micro coaxial connector plug vertical (ground contact : gold plating)

General

| SCALE | UNIT | DWG. No. | SHEET | REV. |
|---|---|---|---|---|
| -/- | mm | 20278 | 4/4 | 19C |

FORM REV. 4

WAS T

Plug, Halogen free type

| Part No. | Contents | Housing | Contact | Ground contact |
|---|---|---|---|---|
| 20278-102R-08 | 材質名/ Material | PBT | Phosphor bronze | Phosphor bronze |
| 20278-112R-08 | 型名/ Cat No. | XFR4840 GF10 | C5210R-H | C5191R-1/2H |
| 20278-102R-13 | 材料メーカ | WINTECH POLYMER LTD. | Nippon Mining & | HARADA METAL |
| 20278-112R-13 | Manufacturer | | Metals Co,.Ltd. | INDUSTRY Co,.Ltd. |
| 20278-102R-32 | UL94難燃性 | V-0 | ---------- | ---------- |
| 20278-112R-32 | UL94 flame | | | |
| 20278-102R-18 | class | | | |
| 20278-112R-18 | UL file No. | E213445 | ---------- | ---------- |
| 20351-102R-37 | | | | |
| 20351-112R-37 | | | | |

※添付資料：ULカード写し／UL CARD COPY

Receptacle

| Part No. | Contents | Housing | Contact | Ground contact |
|---|---|---|---|---|
| 20279-001E-01 | 材質名/ Material | LCP | Brass | Phosphor bronze |
| 20314-001E-01 | 型名/ Cat No. | VECTRA E130i | C2680R-o | C5191R-1/2H |
| | 材料メーカ | Polyplastics Co.,Ltd | Nippon Mining & | HARADA METAL |
| | Manufacturer | | Metals Co,.Ltd. | INDUSTRY Co,.Ltd. |
| | UL94難燃性 | V-0 | ---------- | ---------- |
| | UL94 flame | | | |
| | class | | | |
| | UL file No. | E 106764 | ---------- | ---------- |

※添付資料：ULカード写し／UL CARD COPY

Component - Plastics E213445

**WINTECH POLYMER LTD**

18-1 KONAN 2-CHOME, MINATO-KU, TOKYO 108-8280 JP

## XFR 4840 GF10

**Polybutylene Terephthalate (PBT), "Duranex", furnished as pellets**

| Color | Min Thk (mm) | Flame Class | HWI | HAI | RTI Elec | RTI Imp | RTI Str |
|---|---|---|---|---|---|---|---|
| ALL | 0.75 | V-0 | 1 | 0 | 75 | 75 | 75 |
| | 1.5 | V-0 | 1 | 0 | 75 | 75 | 75 |
| | 3.0 | V-0 | 1 | 0 | 75 | 75 | 75 |

Comparative Tracking Index (CTI): 1

Dimensional Stability (%): -

High-Voltage Arc Tracking Rate (HVTR): 0

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

Dielectric Strength (kV/mm): 24

Volume Resistivity (10xohm-cm): 14

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL94 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 ULI.

Report Date: 2006-07-24
Last Revised: 2006-07-25

Underwriters Laboratories Inc®

c UL us

# IEC and ISO Test Methods

| Test Name | Test Method | Units | Thickness Tested (mm) | Value |
|---|---|---|---|---|
| IEC Flammability | IEC 60695-11-10 | Class (color) | 0.75 | V-0 (ALL) |
| | | | 1.5 | V-0 (ALL) |
| | | | 3.0 | V-0 (ALL) |
| 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/m2 | - | - |
| ISO Izod Impact | ISO 180 | kJ/m2 | - | - |
| ISO Charpy Impact | ISO 179-2 | kJ/m2 | - | - |

ONLINE CERTIFICATIONS DIRECTORY

# QMFZ8.E213445
# Plastics Certified for Canada - Component

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Page Bottom

## Plastics Certified for Canada - Component

See General Information for Plastics Certified for Canada - Component

**WINTECH POLYMER LTD** E213445
18-1 KONAN 2-CHOME
MINATO-KU
TOKYO, 108-8280 JAPAN

| | | Min. | | H | H | H | R T I | | | C |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Thk | Flame | W | A | V | Elec | Mech | | T |
| Mtl Dsg | Color | mm | Class | I | I | A | | Imp | Str | I |
| **Acrylonitrile Butadiene Styrene/Polybutylene Terephthalate (ABS/PBT), flame retardant, "Duranex", furnished as pellets.** | | | | | | | | | | |
| **901SS** | BK | 0.8 | V-2 | - | - | - | 60 | 60 | 60 | |
| **Acrylonitrile Butadiene Styrene/Polybutylene Terephthalate (ABS/PBT), glass reinforced, "Duranex", furnished as pellets.** | | | | | | | | | | |
| **AN7315(++)** | ALL | 0.75 | V-0 | - | - | - | 60 | 60 | 60 | |
| **AN75(yy)(++)** | ALL | 0.75 | V-0, 5VA | 3 | 2 | 3 | 120 | 105 | 110 | 3 |
| | | 1.5 | V-0, 5VA | 2 | 2 | 3 | 130 | 105 | 130 | |
| | | 3.0 | V-0, 5VA | 2 | 1 | 3 | 130 | 105 | 140 | |
| **AN7515(++)** | ALL | 0.75 | V-0, 5VA | 3 | 1 | 3 | 120 | 105 | 110 | 3 |
| | | 1.5 | V-0, 5VA | 2 | 1 | 3 | 140 | 105 | 130 | |
| | | 3.0 | V-0, 5VA | 2 | 1 | 3 | 140 | 105 | 140 | |
| **AN7530(++)** | ALL | 0.75 | V-0, 5VA | 3 | 2 | 3 | 120 | 105 | 130 | 3 |
| | | 1.5 | V-0, 5VA | 2 | 2 | 0 | 130 | 105 | 140 | |
| | | 3.0 | V-0, 5VA | 2 | 1 | 0 | 130 | 105 | 140 | |
| **ANM7315(++)** | ALL | 1.5 | V-0 | - | - | - | 60 | 60 | 60 | |
| **ANM7515(++)** | ALL | 2.0 | V-1, 5VA | - | - | - | 60 | 60 | 60 | |
| | | 3.0 | V-0, 5VA | - | - | - | 60 | 60 | 60 | |
| **CXY5540(++)** | BK | 1.6 | V-0 | - | - | - | 75 | 75 | 75 | |
| **Acrylonitrile Butadiene Styrene/Polybutylene Terephthalate (ABS/PBT), "Duranex", furnished as pellets.** | | | | | | | | | | |
| **304SA** | ALL | 0.75 | HB | - | - | - | 60 | 60 | 60 | |
| | | 1.5 | HB | - | - | - | 60 | 60 | 60 | |
| | | 3.0 | HB | - | - | - | 60 | 60 | 60 | |
| **70(p)SA** | ALL | 0.75 | HB | - | - | - | 60 | 60 | 60 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **PBT-7001-2(+)** | | | | | | | | | | |
| | ALL | 1.5 | V-0 | - | - | - | 75 | 75 | 75 | |
| **R6350FE** | ALL | 0.44 | V-0 | - | - | - | 75 | 75 | 75 | 2 |
| | | 0.75 | V-0 | 3 | 0 | - | 140 | 130 | 140 | |
| | | 1.5 | V-0 | 2 | 0 | - | 140 | 130 | 140 | |
| | | 3.0 | V-0 | 0 | 0 | - | 140 | 130 | 140 | |
| **RA6(z4)4** | ALL | 0.72 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RA6(z4)4FE** | ALL | 0.75 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RA6154** | ALL | 0.72 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RA6154FE** | ALL | 0.75 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RA6304** | ALL | 0.72 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RA6304FE** | ALL | 0.75 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RH1150** | BK | 0.75 | HB | - | - | - | 75 | 75 | 75 | |
| **RH6(z5)5** | ALL | 0.40 | V-2 | - | - | - | 75 | 75 | 75 | |
| | | 0.75 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RH6005** | ALL | 0.40 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RH6305** | ALL | 0.40 | V-2 | - | - | - | 75 | 75 | 75 | |
| | | 0.75 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RS6(z5)2** | ALL | 0.40 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RS6002** | ALL | 0.40 | V-0 | - | - | - | 75 | 75 | 75 | |
| **RS6302** | ALL | 0.40 | V-0 | - | - | - | 75 | 75 | 75 | |
| **SH6002** | ALL | 0.40 | V-0 | - | - | - | 75 | 75 | 75 | |
| **SS6002** | ALL | 0.40 | V-0 | - | - | - | 75 | 75 | 75 | |
| **XFR 4840** | ALL | 0.75 | V-0 | 3 | 0 | - | 75 | 75 | 75 | 0 |
| | | 1.5 | V-0 | 2 | 0 | - | 75 | 75 | 75 | |
| | | 3.0 | V-0 | 2 | 0 | 0 | 75 | 75 | 75 | |
| **XFR 4840 GF10** | | | | | | | | | | |
| | ALL | 0.75 | V-0 | 1 | 0 | - | 75 | 75 | 75 | 1 |
| | | 1.5 | V-0 | 1 | 0 | - | 75 | 75 | 75 | |
| | | 3.0 | V-0 | 1 | 0 | 0 | 75 | 75 | 75 | |
| **XFR 6840 GF20** | | | | | | | | | | |
| | ALL | 0.75 | V-0 | 1 | 0 | - | 75 | 75 | 75 | 1 |
| | | 1.5 | V-0 | 1 | 0 | - | 75 | 75 | 75 | |
| | | 3.0 | V-0 | 1 | 0 | 0 | 75 | 75 | 75 | |
| **XFR 6840 GF30** | | | | | | | | | | |
| | ALL | 0.75 | V-0 | 1 | 0 | - | 75 | 75 | 75 | 0 |
| | | 1.5 | V-0 | 1 | 0 | - | 75 | 75 | 75 | |
| | | 3.0 | V-0 | 1 | 0 | 0 | 75 | 75 | 75 | |
| **Polybutylene Terephthalate (PBT), "Duranex".** | | | | | | | | | | |
| **315EP(n)(e)(k1)** | | | | | | | | | | |

ONLINE CERTIFICATIONS DIRECTORY

# QMFZ2.E58579
# Plastics - Component

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Page Bottom

## Plastics - Component

See General Information for Plastics - Component

**INOAC CORP** E58579
13-4 MEIEKI-MINAMI 2-CHOME
NAKAMURA-KU
NAGOYA-SHI, AICHI-KEN 450-0003 JAPAN

| | | | | | | | | | H | D | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | | H | H | R T I | | | V | 4 | C |
| | | Thk | Flame | W | A | Elec | Mech | | T | 9 | T |
| Material Dsg | Color | mm | Class | I | I | | Imp | Str | R | 5 | I |
| **BR, furnished as sheets.** | | | | | | | | | | | |
| **Calmflex RP** | BK | 1.8 | V-0 | - | - | 50 | 50 | 50 | - | - | - |
| **BR, furnished as sheets or rolls.** | | | | | | | | | | | |
| **Calmflex RZ** | BK | 1.8-3.3 | V-0 | - | - | 50 | 50 | 50 | - | - | - |
| **Chloroprene Rubber (CR), flexible foam, furnished as sheets, blocks.** | | | | | | | | | | | |
| **C-4266 (w)** | BK | 1.0 | HF-1 | - | - | - | - | - | - | - | - |
| **C-4305 (x)** | BK | 1.0 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 1.0 | HB | - | - | 50 | 50 | 50 | | | |
| **C-4315 (y)** | GY | 1.0 | HF-1 | - | - | - | - | - | - | - | - |
| **C-4405 (z)** | BK | 1.0 | HF-1 | - | - | - | - | - | - | - | - |
| **C-4505 (aa)** | BK | 1.0 | HF-1 | - | - | - | - | - | - | - | - |
| **Chloroprene Rubber (CR), Foam, furnished as sheets or blocks.** | | | | | | | | | | | |
| **C-4255 (ss)** | BK | 1.0 ONLY | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| **Chloroprene Rubber (CR), furnished as finished sheets.** | | | | | | | | | | | |
| **Calmflex RH** | BK | 1.0 | V-0 | - | - | 50 | 50 | 50 | - | - | - |
| **Chloroprene Rubber (CR), furnished as sheets.** | | | | | | | | | | | |
| **CD 4302 (jj)** | BK | 1.0 ONLY | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| **Chloroprene Rubber (CR), furnished as Sheets or Blocks.** | | | | | | | | | | | |
| **INOAC C4305 (a3)** | BK | 1.0 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 3.0 - 3.3 | HF-1 | - | - | 50 | 50 | 50 | | | |
| | | 8.0 | HBF | - | - | 50 | 50 | 50 | | | |
| | | 13.0 | HBF | - | - | 50 | 50 | 50 | | | |
| **Epoxy Molding Compound (EP - Molding), flexible foam, furnished as sheets, blocks.** | | | | | | | | | | | |
| **C-4205 (u)** | BK | 1.0 | HF-1 | - | - | - | - | - | - | - | - |
| **Ethylene Propylene Diene Terpolymer (EPDM), furnished as finished parts.** | | | | | | | | | | | |
| **E-263** | BK | 1.2 | V-0 | 0 | 2 | 50 | 50 | 50 | 2 | - | 1 |
| | | 3.2 | V-0 | 0 | - | 50 | 50 | 50 | | | |
| | | 6.0 | V-0 | 0 | 2 | 50 | 50 | 50 | | | |
| **Ethylene Propylene Diene Terpolymer (EPDM), furnished as sheets.** | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Calmflex RS** | BK | 1.0 | HB | - | - | 50 | 50 | 50 | - | - | - |
| **Ethylene Vinyl Acetate (E/VAC), furnished as sheets.** | | | | | | | | | | | |
| **RL-150FR(h1)** | BK | 0.5 | HBF | - | - | 50 | 50 | 50 | - | - | - |
| | | 1.5 | HBF | - | - | 50 | 50 | 50 | | | |
| | | 12.5 | HBF | - | - | 50 | 50 | 50 | | | |
| **Ethylene/Propylene (E/P), rubber, foam, furnished as sheet or block.** | | | | | | | | | | | |
| **E-4238 (ww)** | BK | 1.0-1.1 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 7.0 | HBF | - | - | 50 | 50 | 50 | | | |
| | | 12.5 | HBF | - | - | 50 | 50 | 50 | | | |
| **E-4338 (hh)** | BK | 1.0 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 1.0-13.0 | HBF | - | - | 50 | 50 | 50 | | | |
| **E-4382 (qq)** | BK | 1.0 - 1.1 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 1.2 - 13.0 | HBF | - | - | 50 | 50 | 50 | | | |
| **modified Polyurethane, furnished as slabs, sheets, or rolls.** | | | | | | | | | | | |
| **Calmflex F-22(k1)** | GY | 0.5-10.0 | HF-1 | - | - | 0 | 0 | 0 | - | - | - |
| **Olefin, rubber, furnished as finished parts.** | | | | | | | | | | | |
| **M-1601** | BK | 0.80 | V-0 | 1 | 0 | 50 | 50 | 50 | - | - | 0 |
| | | 1.3 | V-0 | 0 | 0 | 50 | 50 | 50 | | | |
| | | 1.6 | V-0 | 0 | 0 | 50 | 50 | 50 | | | |
| **Polyester Urethane, flexible foam, furnished as slabs, sheets, rolls.** | | | | | | | | | | | |
| **Moltofilter MF-55 (d)** | | | | | | | | | | | |
| | BK | 2.0 | HBF | - | - | - | - | - | - | - | - |
| **Moltopren SM-55 (d)** | | | | | | | | | | | |
| | BK, WT, GY | 2.0 | HBF | - | - | - | - | - | - | - | - |
| **Polyether Urethane, flexible foam, furnished as sheets.** | | | | | | | | | | | |
| **Calmflex F-4 (t)** | GY | 5.0 | HBF | - | - | - | - | - | - | - | - |
| | | 13.0 | HBF | - | - | - | - | - | | | |
| **Polyether Urethane, flexible foam, furnished as sheets, blocks.** | | | | | | | | | | | |
| **Colorfoam CP@ (bb)** | BK | 0.5 | HBF | - | - | - | - | - | - | - | - |
| | | 0.5 | HF-2 | - | - | - | - | - | | | |
| **Polyether Urethane, flexible foam, furnished as slabs, sheets, rolls.** | | | | | | | | | | | |
| **Calmflex F-2 (i)** | GY | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 13.0 | HF-1 | - | - | - | - | - | | | |
| **Calmflex F-6 (j)** | GY | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 6.0 | HF-1 | - | - | - | - | - | | | |
| | | 13.0 | HF-1 | - | - | - | - | - | | | |
| **Colorfoam UEI (i)** | GY, WT | 6.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 13.0 | HF-1 | - | - | - | - | - | | | |
| **Polyether Urethane, furnished as sheets, blocks, rolls.** | | | | | | | | | | | |
| **Colorfoam UEM-55 (cc)** | | | | | | | | | | | |
| | GY | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 6.0 | HF-1 | - | - | - | - | - | | | |
| | | 12.7 | HF-1 | - | - | - | - | - | | | |
| | BG | 2.0 | HF-1 | - | - | - | - | - | | | |
| | | 6.0-6.6 | HF-1 | - | - | - | - | - | | | |
| | | 12.7 | HF-2 | - | - | - | - | - | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| **Polyethylene (PE), furnished as sheets.** | | | | | | | | | | | |
| **PE-LITE B-300FR(ff)** | | | | | | | | | | | |
| | GY | 2.0 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 6.0 | HF-1 | - | - | 50 | 50 | 50 | | | |
| | | 10.0 | HF-1 | - | - | 50 | 50 | 50 | | | |
| **PE-LITE B-300FRE(g1)** | | | | | | | | | | | |
| | GY | 0.5-1.65 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 6.5 | HBF | - | - | 50 | 50 | 50 | | | |
| | | 12.5 | HBF | - | - | 50 | 50 | 50 | | | |
| **Polymethyl Methacrylate (PMMA).** | | | | | | | | | | | |
| **MASA-SHEET GN** | GY | 0.4 | V-2 | - | - | 50 | 50 | 50 | - | - | - |
| | | 1.85 | V-0 | - | - | 50 | 50 | 50 | | | |
| | | 3.0 | V-0 | - | - | 50 | 50 | 50 | | | |
| **Polyurethane (PUR), flexible foam, "INOAC", furnished as slabs, sheets, or rolls.** | | | | | | | | | | | |
| **Calmflex F-9L (b1)** | BK | 2.0 | HBF | - | - | - | - | - | - | - | - |
| | | 12.7 | HBF | - | - | - | - | - | | | |
| **Calmflex F-9M (b2)** | BK, GY | 2.0 | HBF | - | - | - | - | - | - | - | - |
| | | 12.7 | HBF | - | - | - | - | - | | | |
| **Polyurethane (PUR), flexible foam, furnished as blocks, sheets, rolls.** | | | | | | | | | | | |
| **Colorfoam UEI-3 (g)** | | | | | | | | | | | |
| | GY | 5.5 | HF-1 | - | - | - | - | - | - | - | - |
| | | 13.0 | HF-1 | - | - | - | - | - | | | |
| **Sputline RT-5/B-1 (h)** | | | | | | | | | | | |
| | BK | 3.0 | HBF | - | - | - | - | - | - | - | - |
| **Polyurethane (PUR), Flexible foam, furnished as slabs, sheets, or rolls.** | | | | | | | | | | | |
| **Colorfoam UEM-55TP (pp)** | | | | | | | | | | | |
| | GY | 0.5 | HBF | - | - | - | - | - | - | - | - |
| | | 12.7 | HBF | - | - | - | - | - | | | |
| **Colorfoam UEM-55TP1 (oo)** | | | | | | | | | | | |
| | GY | 0.7 | HF-1 | - | - | - | - | - | - | - | - |
| | | 1.3 | HF-1 | - | - | - | - | - | | | |
| **Polyurethane (PUR), flexible foam, furnished as slabs, sheets, rolls.** | | | | | | | | | | | |
| **Calmflex F-10N (n)** | GY | 0.70 | HF-1 | - | - | - | - | - | - | - | - |
| | | 2.5 | HF-1 | - | - | - | - | - | | | |
| **Calmflex F-10S (m)** | GY | 0.75 | HF-1 | - | - | - | - | - | - | - | - |
| | | 3.0 | HF-1 | - | - | - | - | - | | | |
| | | 6.0 | HF-1 | - | - | - | - | - | | | |
| | | 13.1 | HF-1 | - | - | - | - | - | | | |
| **Polyurethane (PUR), furnished as sheets.** | | | | | | | | | | | |
| **Calmflex F-11CS(kk)** | | | | | | | | | | | |
| | GY | 0.55 | HF-1 | - | - | - | - | - | - | - | - |
| | | 4.0 | HF-1 | - | - | - | - | - | | | |
| **SORBFLEX BT** | BK | 0.03 | VTM-0 | - | - | 50 | 50 | 50 | - | - | - |
| | | 0.20 - 0.22 | V-0 | - | - | 50 | 50 | 50 | | | |
| **Polyurethane (PUR), furnished as slabs, sheets and rolls.** | | | | | | | | | | | |
| **Celldamper BF-500(d2)** | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | BK | 3.0 | HBF | - | - | 50 | 50 | 50 | - | - | - |
| | | 8.0 | HBF | - | - | 50 | 50 | 50 | | | |
| | | 13.0 | HBF | - | - | 50 | 50 | 50 | | | |
| **Polyurethane (PUR), furnished as Slabs, Sheets or Rolls.** | | | | | | | | | | | |
| **Calmflex F-1000G(e1)** | | | | | | | | | | | |
| | GY | 2.0 | HF-1 | - | - | 50 | 50 | 50 | - | - | - |
| | | 6.0 | HF-1 | - | - | 50 | 50 | 50 | | | |
| | | 12.7 | HF-1 | - | - | 50 | 50 | 50 | | | |
| **Calmflex F-10G(yy)** | BK | 0.8-4.0 | HF-1 | - | - | - | - | - | - | - | - |
| **Calmflex F-14(mm)** | GY | 0.5 | HF-1 | - | - | - | - | - | - | - | - |
| | | 4.0 | HF-1 | - | - | - | - | - | | | |
| **Calmflex F-18G(zz)** | GY | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 3.0 | HF-1 | - | - | - | - | - | | | |
| | | 4.0 | HF-1 | - | - | - | - | - | | | |
| | | 5.0-5.5 | HF-1 | - | - | - | - | - | | | |
| | | 10.0 | HBF | - | - | - | - | - | | | |
| | | 12.7 | HBF | - | - | - | - | - | | | |
| **Calmflex F-200G(d1)** | | | | | | | | | | | |
| | BK | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 7.0 | HF-1 | - | - | - | - | - | | | |
| | | 12.7 | HF-1 | - | - | - | - | - | | | |
| **Calmflex F-22G (v1)** | | | | | | | | | | | |
| | GY | 1.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 3.0 | HF-1 | - | - | - | - | - | | | |
| | | 5.0 | HF-1 | - | - | - | - | - | | | |
| **Calmflex F-2G (c2)** | BK | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 7.0 | HF-1 | - | - | - | - | - | | | |
| | | 12.7 | HF-1 | - | - | - | - | - | | | |
| **Calmflex F-80 (rr)** | BK | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 12.7 | HF-1 | - | - | - | - | - | | | |
| **Polyurethane (PUR), furnished as Slabs, Sheets, Rolls.** | | | | | | | | | | | |
| **Calmflex F-30G (f)** | GY | 2.0 | HF-1 | - | - | - | - | - | - | - | - |
| | | 6.0 - 6.6 | HF-1 | - | - | - | - | - | | | |
| | | 13.0 | HBF | - | - | - | - | - | | | |
| **Polyurethane (PUR), furnished as slabs, sheets, rolls.** | | | | | | | | | | | |
| **Colorfoam UEG-G(tt)** | | | | | | | | | | | |
| | GY | 0.80-0.88 | HF-1 | - | - | - | - | - | - | - | - |
| | | 6.8 | HBF | - | - | - | - | - | | | |
| | | 12.7 | HBF | - | - | - | - | - | | | |
| **Moltopren SMP# (dd)** | | | | | | | | | | | |
| | WT, BK | 0.90 | HBF | - | - | - | - | - | - | - | - |
| | | 3.2 | HBF | - | - | - | - | - | | | |
| | | 6.0 | HBF | - | - | - | - | - | | | |
| | | 12.9 | HBF | - | - | - | - | - | | | |
| **Polyvinyl acetate - Polyethylene (PVAC-PE), Copolymer Compound, furnished as sheets.** | | | | | | | | | | | |
| **SORBFLEX BF** | GY | 0.30 | VTM-0 | - | - | 50 | 50 | 50 | - | - | - |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.50 - 1.10 | V-0 | - | - | 50 | 50 | 50 | | | |
| **Polyvinylacetate Polyethylene (PVAC-PE) , Copolymer compound, furnished as sheets.** | | | | | | | | | | | |
| **SORBFLEX BK** | GY | 0.30 | VTM-0 | - | - | 50 | 50 | 50 | - | - | - |
| | | 0.50 - 1.10 | V-0 | - | - | 50 | 50 | 50 | | | |
| **Polyvinylchloride (PVC), w / adhesive on one side, furnished as sheets.** | | | | | | | | | | | |
| **RV** | BK | 0.90 | V-0 | - | - | - | - | - | - | - | - |
| **Silicone (SI), furnished as sheets.** | | | | | | | | | | | |
| **GHA, SORBFLEX TA** | GY | 0.4 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| | | 6.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **GP** | GY | 0.4 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| | | 6.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **Silicone Molding Resin (SIR), furnished as sheets.** | | | | | | | | | | | |
| **GM** | RD | 1.0 | V-1 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-1 | - | - | 150 | 150 | 150 | | | |
| | | 6.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **GM III** | GY | 0.38 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| | | 6.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **MASA-SHEET GD** | PK | 0.40 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **MASA-SHEET GS** | GY | 0.4 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **MASA-SHEET GT** | GY | 0.4 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **MASA-SHEET GV** | GY | 0.5 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **MASA-SHEET GXIII** | GY | 0.5 | V-0 | - | - | 150 | 150 | 150 | - | - | - |
| | | 3.0 | V-0 | - | - | 150 | 150 | 150 | | | |
| **Silicone Molding Resin (SIR), furnished as sheets or rolls.** | | | | | | | | | | | |
| **GB** | GY | 0.37 | V-0 | - | - | 105 | 105 | 105 | - | - | - |
| | | 3.0 | V-0 | - | - | 105 | 105 | 105 | | | |
| **Styrene Ethylene Butylene Styrene (SEBS).** | | | | | | | | | | | |
| **NAGFLEX NH** | BK | 1.5 | HB | - | - | 50 | 50 | 50 | - | - | - |

# - Density range: 0.054-0.077 g/cc.

(a3) - Density range 0.147-0.233 g/cc

(aa) - Density range 0.18-0.25 g/cc.

(b1) - Density range: 0.025-0.031g/cc

(b2) - Density range: 0.032 - 0.038 g/cc

(bb) - Density range 0.18-0.22 g/cc. for HBF, 0.040-0.17 g/cc for HF-2.

(c2) - Density range 0.021-0.029 g/cc

(cc) - Density range 0.052-0.058 g/cc.

(d) - Density range 0.052-0.062 g/cc.

(d1) - Density range 0.024-0.031 g/cc.

(d2) - Density range 0.404 - 0.581 g/cc

(dd) - Density range 0.085-0.29 g/cc.

(e1) - Density range 0.044-0.060 g/cc.

(f) - Density range 0.019-0.030 g/cc.

(ff) - Density range: 0.032-0.036 g/cc

(g) - Density range 0.018-0.022 g/cc.

(g1) - Density range: 0.020-0.041 g/cc

(h) - Density range 0.026-0.036 g/cc.

(h1) - Density range: 0.0735-0.0921 g/cc

(hh) - Density range 0.0761-0.1069 g/cc.

(i) - Density range 0.023-0.027 g/cc.

(j) - Density range 0.030-0.037 g/cc.

(jj) - Density range 0.1630-0.2496 g/cc

(k1) - Density Range 0.054 - 0.077 g/cc

(kk) - Density range: 0.065-0.095 g/cc

(m) - Density range 0.055-0.065 g/cc.

(mm) - Density range 0.060-0.090 g/cc

(n) - Density range 0.030-0.040 g/cc.

(oo) - Density range 0.06-0.15 g/cc

(pp) - Density range 0.10-0.26 g/cc

(qq) - Density range 0.110-0.210 g/cc.

(rr) - Density range 0.022 - 0.030 g/cc

(ss) - Density range 0.191-0.220 g/cc

(t) - Density range 0.020-0.029 g/cc (without skin) or 0.029-0.042 g/cc (with skin).

(tt) - Density range: 0.050 - 0.063g/cc

(u) - Density range 0.016-0.27 g/cc.

(v1) - Density range 0.048-0.070 g/cc.

(w) - Density range 0.16-0.21 g/cc.

(ww) - Density range 0.127-0.206 g/cc.

(x) - Density range 0.13-0.23 g/cc.

(y) - Density range 0.130-0.198 g/cc.

(yy) - Density Range 0.038 - 0.057g/cc

(z) - Density range 0.14-0.25 g/cc.

(zz) - Density Range 0.045 - 0.058 g/cc

@ - Optional suffix which includes hyphen and any number from 1.0 to 8.0.

Marking: Company name or trademark INOAC and material designation on container, wrapper or finished part.
Last Updated on 2011-02-25

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ONLINE CERTIFICATIONS DIRECTORY

# PGGU2.MH15431
# Marking and Labeling System Materials - Component

Page Bottom

## Marking and Labeling System Materials - Component

See General Information for Marking and Labeling System Materials - Component

**SONY CHEMICAL & INFORMATION DEVICE CORP** MH15431
KANUMA FACTORY
18 SATSUKI-CHO
KANUMA-SHI, TOCHIGI-KEN 322-8501 JAPAN

**Pressure-sensitive laminating adhesives:**

| Model No. | Face Stock | Face Stock Thk(mm) | Application Surface | Max Temp (°C) | Min Temp (°C) | Indoor Use | Outdoor Use | Additional Conditions |
|---|---|---|---|---|---|---|---|---|
| **G4000, G9303S, T3500, T3500S, T3500SW, T3500W** | | | | | | | | |
| | Acrylic | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **G90XX, G90XX-$$** | | | | | | | | |
| | Acrylic | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **G91XX, G91XX-$$** | | | | | | | | |
| | Acrylic | 0.508 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.203 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.508 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **G99XX, G99XX-$$** | | | | | | | | |
| | Acrylic | 0.508 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.508 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **NP203, NP203W** | | | | | | | | |
| | Acrylic | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **NP303, NP303W** | | | | | | | | |
| | Acrylic | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene | 80 | -40 | X | - | - |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | styrene (ABS) | | | | | |
| | Polycarbonate | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **T4000, T4000W** | | | | | | | | |
| | Acrylic | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **T4000B, T4000BW** | | | | | | | | |
| | Acrylic | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **T4410, T4410W, T4411, T4411W, T4900, T4900W** | | | | | | | | |
| | Aluminum | 0.051 - 0.813 | Alkyd paint (AK PT) | 150 | -40 | X | X | - |
| | | 0.051 - 0.813 | Aluminum (AL) | 150 | -40 | X | - | - |
| | | 0.051 - 0.813 | Galvanized steel (GS) | 150 | -40 | X | X | - |
| | | 0.051 - 0.813 | Porcelain (PRCLN) | 150 | -40 | X | X | - |
| | | 0.051 - 0.813 | Stainless steel (SS) | 150 | -40 | X | - | - |
| | | 0.051 - 0.813 | Polycarbonate (PC) | 100 | -40 | X | - | - |
| | | 0.051 - 0.813 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | X | - |
| | | 0.051 - 0.813 | Nylon - polyamide (PA) | 80 | -40 | X | - | - |
| | | 0.051 - 0.813 | Polyphenylene oxide/ether (PPOX) | 80 | -40 | X | - | - |
| **T4500B, T4500BW** | | | | | | | | |
| | Acrylic | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Aluminum | 0.178 - 0.508 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | Polycarbonate | 0.48 - 2 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| **T4700M** | | | | | | | | |
| | Aluminum | 0.051 - 0.813 | Aluminum (AL) | 150 | -40 | X | - | - |
| | | 0.051 - 0.813 | Galvanized steel (GS) | 150 | -40 | X | - | - |
| | | 0.051 - 0.813 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | | 0.051 - 0.813 | Polypropylene (PP) | 80 | -40 | X | - | - |
| | | 0.051 - 0.813 | Polystyrene (PS) | 60 | -40 | X | - | - |
| **T4720** | | | | | | | | |
| | Aluminum | 0.051 - 0.813 | Aluminum (AL) | 150 | -40 | X | - | - |
| | | 0.051 - 0.813 | Galvanized steel (GS) | 150 | -40 | X | - | - |
| | | 0.051 - 0.813 | Acrylonitrile butadiene styrene (ABS) | 80 | -40 | X | - | - |
| | | 0.051 - 0.813 | Polypropylene (PP) | 80 | -40 | X | - | - |
| | | 0.051 - 0.813 | Polystyrene (PS) | 60 | -40 | X | - | - |

Note: Labels suitable for application to two or more plastic or painted surfaces are considered suitable for blends of those plastics or paints, with Conditions of Acceptability common to the individual components in the blend.

$$ - May be replaced by alpha characters denoting release liner type.

XX - Replaced by digits denoting product thickness.

Marking: Company name and model designation.

Last Updated on 2010-07-27

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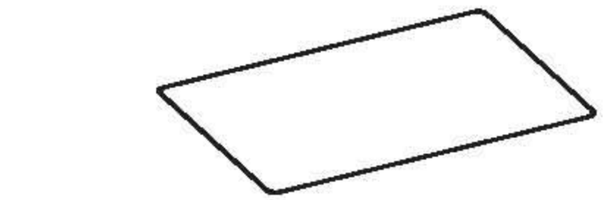
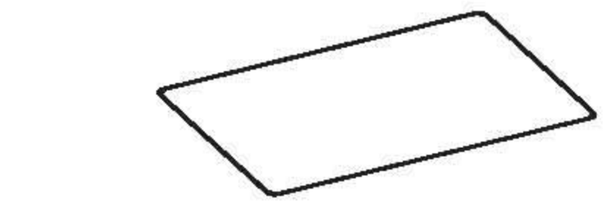
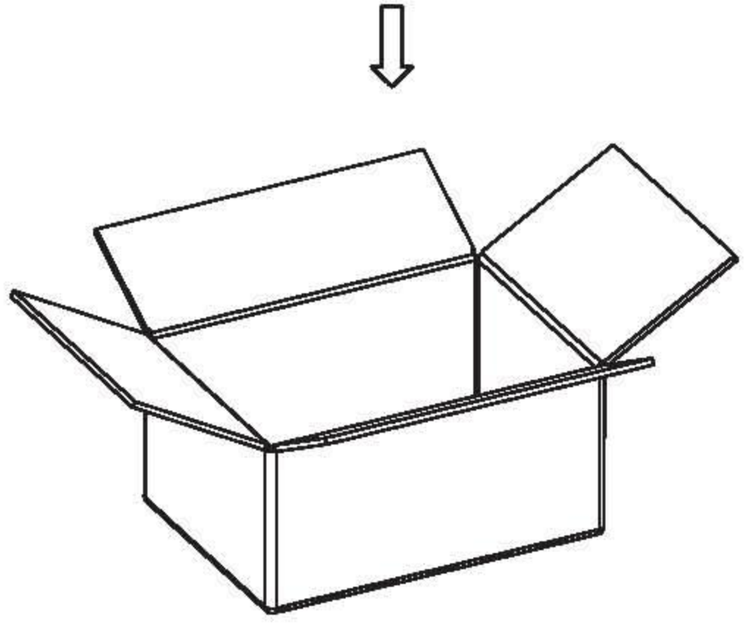
## Packing Specification



天地板 (上)



天地板 (下)



1箱裝：6000PCS( 500PCS*12包 )

包裝數量具體由天線大小定義