

CERTIFICATE OF COMPLIANCE

Certificate Number 20140711-E363036
Report Reference E363036-20130823
Issue Date 2014-JULY-11

Issued to: ZHEJIANG HAIYAN ELECTRIC CABLE CO LTD
1351 YANDONG SECTION
01 PROVINCIAL HIGHWAY
HAIYAN, ZHEJIANG 314304 CHINA

**This is to certify that
representative samples of**

POWER-LIMITED FIRE ALARM CABLE
USL: Power Limited Fire Alarm Cables Types FPLR, FPL,
Power-Limited Fire-Alarm Circuit Cable.
CNL: Fire Alarm and Signal Cable, Types FAS and FAS
FTI

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424, Power-Limited Fire-Alarm Circuit Cables;
C22.2 NO. 208-03, Fire-Alarm and Signal Cable

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers:  the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus





FPLR Fire Alarm Cable

ESSENTIAL INFORMATION

Brand: LLT

Place of origin: Shenzhen, China

Specification: 100M / 500m per roll

Packaging method: roll / wooden shaft / carton / pallet Place of shipment: Shenzhen

Mode of transportation: Sea / land / air

Payment method: T / T, L / C, D / P

Starting quantity: 5000m

Daily production: 1000000m

Other services: OEM/ODM



PRODUCT OVERVIEW OF FIRE ALARM CABLE :

TYPE FPLR CABLE – Cable that is intended for use in vertical runs in a shaft, or for installations in which the cable penetrates more than one floor, as specified in section 760-154(B) of the National Electrical Code ANSI/NFPA 70.

CONSTRUCTION OF FIRE ALARM CABLE

Conductor:

25AWG-12AWG: conductor according to UL 1581

Insulation: Flame retardant PVC

Circuit Protective Conductor, Tinned Copperp

Overall Screen: AL/PET (Aluminium/Polyester Tape),

Sheath:Flame retardant PVC

STANDARDS OF FIRE ALARM CABLE

- ★Flame Propagation(Multiple cables) : UL1666
- ★Flame Propagation(single Insulation) : UL2556
- ★Flame spread of single core cable : UL1581
- ★Fire resistance(single cable) : UL1581
- ★Fire resistance time (Multiple cables) : 30min

CHARACTERISTICS OF FIRE ALARM CABLE

Voltage Rating:300V

Temperature limits: -20°C to +105°C

Minimum Bending Radius: 10~15 times cable outer diameter

Should not be installed at temperatures below 0°C or above+40°C

For more information, please consult members of the lilutong wire and cable sales team



OUTER SHEATH COMES IN A CHOICE OF:

Outer sheath color:



E-Bare Earth conductor:

2 core



3 core



4 core



5 core



6 core



7 core



8 core



Normally the cables are packed by drum, carton and put on the pallet and other customized packing are available as per international standard.

- Super production capacity-more than 100 sets of automated production equipment, 24-hour production system, daily production capacity of 1,000,000 meters of cables
- Strict quality inspection procedures-material inspection before production, index inspection during production, general quality inspection after production, packaging inspection
- Complete certificate guarantee-ISO9001 certification, ISO14001 certification, CCC certification, CE certification, UL certification, LPCB certification, VDE certification, etc., so you can purchase with confidence
- Efficient packaging and transportation-machineized packaging, fast and clean. Port city, direct air and sea transportation, fast delivery
- 7*24 hours after-sales service-professionals provide you with services and consultations around the clock
- We can also provide OEM and ODM services



CERTIFICATE OF COMPLIANCE

Certificate Number 20190228- E502147
Report Reference E502147-20190227
Issue Date 2019-FEBRUARY-28

Issued to: SHENZHEN LILUTONG TECHNOLOGY INDUSTRY
CO LTD
2nd &3rd FI Building A No.55, 1st,2nd,3rd FI No.83
Pingxin North Road Shangmugu, Pinghu Street
Longgang District
SHENZHEN, GUANGDONG 518111 CHINA

This certificate confirms that representative samples of POWER-LIMITED CIRCUIT CABLE
Power-Limited Fire-Alarm Cable, Type FPL and FPLR

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424, Cables for Power-Limited Fire-Alarm Circuits

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

B. Mahrenholz

Bruce Mahrenholz, Director North American Certification Program
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/about/locations/>



Fire Alarm Cable

DESCRIPTION

- 1. Solid or stranded, tinned or bare copper conductor
- 2. Fire resistant PVC insulation and jacket
- 3. Fiberglass tape, AL foil, Pet foil, or no
- 4. UL certification is to certify that representative sample of Power

Limited fire alarm cable.

USL: Power Limited Fire Alarm Cables Types FPLR, FPL (60°C to 105°C).

CNL: Fire Alarm and Signal Cable, Type FAS, FAS FT1, FAS FT4, FAS90, FAS105 Ft1, FAS105 FT4, FAS90 FT1, FAS90 FT4 or FAS105

- 5. Standard for safety: UL 1424, Power-Limited Fire-Alarm Circuit Cables

C22.2 NO. 208-03, Fire-Alarm and Signal Cable



CERTIFICATE OF COMPLIANCE

Certificate Number: 20130528-E361320
Report Reference: E361320-20130524
Issue Date: 2013-MAY-28

Issued to: NINGBO HAISHU TIANYU WIRE CO LTD
ZHONGYI VLG
GULIN TOWN
HAISHU DIST
NINGBO
ZHEJIANG 315177 CHINA

This is to certify that representative samples of POWER-LIMITED FIRE ALARM CABLE
USL: Power Limited Fire Alarm Cables Types FPLR, FPL (60°C to 105°C).
CNL: Fire Alarm and Signal Cable, Type FAS, FAS FT1, FAS FT4, FAS90, FAS105 FT1, FAS105 FT4, FAS90 FT1, FAS90 FT4 or FAS105.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424, Power-Limited Fire-Alarm Circuit Cables C22.2 NO. 208-03, Fire-Alarm and Signal Cable

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada. The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers; the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

William P. Coughlin
Vice President, Sales, Marketing, and Technical Certification Programs
UL LLC

Any reproduction or use of information contained herein is prohibited without the written consent of UL LLC. For questions, please contact your local UL representative.

Page 1 of 1



UL:E361320

Item No.	Description	Conductor Spec.	Insulation		Jacket		Approximate Cable weight	Conductor resistance	Current ratings	Voltage drop	Packing
			Nom.Thick. (mm)	Nom.Diam. (mm)	Nom.Thick. (mm)	Nom.Diam. (mm)					
TYUL208	BC/TC Solid or stranded Shielded or unshielded PVC Insulation Jacket	2*0.5mm ²	0.45	1.7	0.65	4.9	30KG/KM	36 Ω/KM	12A	91.8V/M	Box Coil Drum Paper reel Plastic reel Wooden reel
TYUL308		3*0.5mm ²	0.45	1.7	0.65	5.1	38KG/KM	36 Ω/KM	12A	91.8V/M	
TYUL408		4*0.5mm ²	0.45	1.7	0.7	5.8	48KG/KM	36 Ω/KM	12A	91.8V/M	
TYUL2100		2*0.8mm ²	0.5	2.0	0.7	5.4	40KG/KM	24 Ω/KM	18A	61.2V/M	
TYUL3100		3*0.8mm ²	0.5	2.0	0.7	5.7	51KG/KM	24 Ω/KM	18A	61.2V/M	
TYUL4100		4*0.8mm ²	0.5	2.0	0.75	6.6	66KG/KM	24 Ω/KM	18A	61.2V/M	
TYUL2113		2*1.0mm ²	0.55	2.25	0.75	6.2	48KG/KM	18.1 Ω/KM	20A	46.2V/M	
TYUL3113		3*1.0mm ²	0.55	2.25	0.75	6.5	63KG/KM	18.1 Ω/KM	20A	46.2V/M	
TYUL4113		4*1.0mm ²	0.55	2.25	0.8	7.3	80KG/KM	18.1 Ω/KM	20A	46.2V/M	
TYUL2138		2*1.5mm ²	0.6	2.6	0.8	7.0	64KG/KM	12.1 Ω/KM	25A	30.9V/M	
TYUL3138		3*1.5mm ²	0.6	2.6	0.8	7.4	85KG/KM	12.1 Ω/KM	25A	30.9V/M	
TYUL4138		4*1.5mm ²	0.6	2.6	0.85	8.3	108KG/KM	12.1 Ω/KM	25A	30.9V/M	
TYUL2178		2*2.5mm ²	0.6	3.0	0.8	7.8	87KG/KM	7.41 Ω/KM	34A	18.9V/M	
TYUL3178		3*2.5mm ²	0.6	3.0	0.8	8.2	118KG/KM	7.41 Ω/KM	34A	18.9V/M	
TYUL4178		4*2.5mm ²	0.6	3.0	0.85	9.2	151KG/KM	7.41 Ω/KM	34A	18.9V/M	

NINGBO HAISHU TIANYU WIRE CO LTD

Add:Gulin Town,Haishu District,Ningbo China.

Tel: +86/574/2788 6208 27886108

Fax: +86/574/2788 6186

M.T: +86/574/88290698 015888110547

P.C: 315177

Http:www.minpor.com

E-mail:minpor@minpor.com



HNIR.E361320 - Power-limited Fire Alarm Cable

Power-limited Fire Alarm Cable

[See General Information for Power-limited Fire Alarm Cable](#)

NINGBO HAISHU TIANYU WIRE CO LTD

E361320

Zhongyi Village Gulin Town Haishu District

NINGBO, ZHEJIANG 315177 CHINA

Type(s) FPL, FPLR

Trademark and/or Tradename: "Soloarti"

Last Updated on 2019-06-04

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2021 UL LLC"



HNIR7.E361320 - Power-limited Fire Alarm Cable Certified for Canada

Power-limited Fire Alarm Cable Certified for Canada

[See General Information for Power-limited Fire Alarm Cable Certified for Canada](#)

NINGBO HAISHU TIANYU WIRE CO LTD

E361320

Zhongyi Village Gulin Town Haishu District

NINGBO, ZHEJIANG 315177 CHINA

Type(s) FAS, FAS FT1, FAS FT4, FAS105, FAS105 FT1, FAS105 FT4, FAS90, FAS90 FT1, FAS90 FT4

Trademark and/or Tradename: "Soloarti"

Last Updated on 2019-06-04

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2021 UL LLC"

CERTIFICATE OF COMPLIANCE

Certificate Number 20130528-E361320
Report Reference E361320-20130524
Issue Date 2013-MAY-28

Issued to: NINGBO HAISHU TIANYU WIRE CO LTD
ZHONGYI VLG
GULIN TOWN
HAISHU DIST
NINGBO
ZHEJIANG 315177 CHINA

**This is to certify that
representative samples of**

POWER-LIMITED FIRE ALARM CABLE
USL: Power Limited Fire Alarm Cables Types FPLR, FPL
(60°C to 105°C).
CNL: Fire Alarm and Signal Cable, Type FAS, FAS FT1,
FAS FT4, FAS90, FAS105 FT1, FAS105 FT4, FAS90 FT1,
FAS90 FT4 or FAS105.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424, Power-Limited Fire-Alarm Circuit Cables
C22.2 NO. 208-03, Fire-Alarm and Signal Cable

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers:  the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus





ZHEJIANG TIANJIE INDUSTRIAL CO., LTD.
Add: Linglong Economic Development Zone, Lin'an,
Hangzhou 311301 ZJ, China

1.5mm² Shielded 2 Core FIRE ALARM CABLE

BASIC CONSTRUCTION DIAMETER

Conductor:	Copper solid	1.38MM NOM.
Insulation:	PVC ,UL FPLR Type 2 core. Red & Black.	2.3 MM NOM.
Shielding:	Pet foil + AL foil	
Rip cord		
Drain wire:	Tinned Copper solid	0.8MM NOM
Jacket:	PVC,UL FPLR Type, Red	Thickness 0.8MM.NOM

ELECTRICAL PERFORMANCE

- ①Temp range: -20°C-75°C
- ②Dielectric PVC min pressure 2000(PSI)
- ③Jacket PVC min pressure 2500(PSI)
- ④Certified with UL –FPLR grade



ZHEJIANG TIANJIE INDUSTRIAL CO., LTD.
Add: Linglong Economic Development Zone, Lin'an,
Hangzhou 311301 ZJ, China

2.5mm² Shielded 2 Core FIRE ALARM CABLE

BASIC CONSTRUCTION DIAMETER

Conductor:	Copper solid	1.76MM NOM.
Insulation:	PVC ,UL FPLR Type 2 core. Red & Black.	2.68 MM NOM.
Shielding:	Pet foil + AL foil	
Rip cord		
Drain wire:	Tinned Copper solid	0.8MM NOM
Jacket:	PVC,UL FPLR Type, Red	Thickness 1.0MM.NOM

ELECTRICAL PERFORMANCE

- ①Temp range: -20°C-75°C
- ②Dielectric PVC min pressure 2000(PSI)
- ③Jacket PVC min pressure 2500(PSI)
- ④Certified with UL –FPLR grade

CERTIFICATE OF COMPLIANCE

Certificate Number 20131121-E464899
Report Reference E464899-20131118
Issue Date 2013-NOVEMBER-21

Issued to: ZHEJIANG TIANJIE INDUSTRIAL CO LTD
LINGLONG ECONOMICAL DEVELOPMENT ZONE
LINAN
HANGZHOU
ZHEJIANG 311301 CHINA

This is to certify that representative samples of Power-Limited Fire-Alarm Circuit Cable
Power-Limited Fire-Alarm Circuit Cable; Types FPLR, FPL
or Power-Limited Fire-Alarm Circuit Cable rated 60 or 75°C.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424 - Cables for Power-Limited Fire-Alarm Circuits
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle:  with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

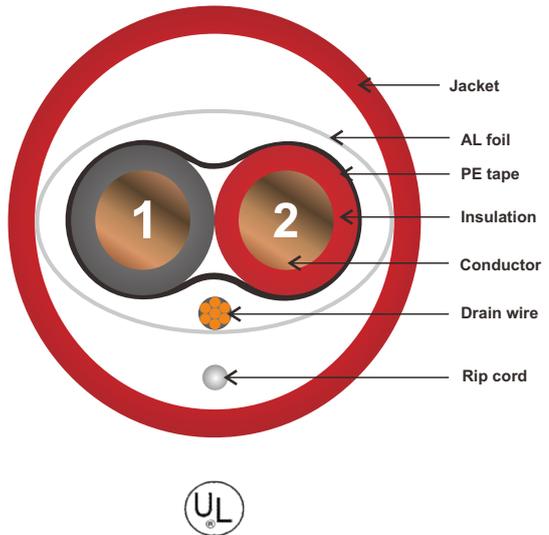


William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus



European gauge UL fire alarm cable



- Certificate: UL Listed
- Brand: TPMC E489608
- Conductor: Bare copper
- Insulation (dielectric): Black or red PVC
- Jacket: Red PVC
- Shield: PE tape+aluminum foil
- Drain wire (earth wire): Tinned copper
- Drain wire size: 7-strand x 0.2mm, with 0.22m²
- Rip cord: 150D Nylon



Basic specification:

Standard	UL 1424 / NEC Article 760 / ASTM B-3	Operating voltage	300V max
Temp. rating	-20°C to 75°C	Packaging	Reel 100m, or customized
Feature	Sunlight resistant; Sequential footage marking every 1 meter		
Application	Wiring of fire alarm, smoke detector, voice communication, burglar alarm, fire protective circuit, etc.		

Available size

Ref. No.	C03-2x1.5	C03-2x2.5	C03-2x1.5S	C03-2x2.5S
Stranded / solid conductor	Solid	Solid	7-strand	7-strand
Conductor size (mm)	1.36	1.76	7 x 0.52	7 x 0.67
Cross-section area (mm²)	1.50	2.50	1.50	2.50
DC Resistance 20°C (Max, Ω/KM)	12.10	7.41	12.10	7.41
Insulation OD (mm)	2.35	2.75	2.55	3.00
Insulation THK (mm)	0.50	0.50	0.50	0.50
Jacket OD (mm)	6.60	7.40	6.70	7.50
Jacket THK (mm)	0.85	0.85	0.85	0.85

CERTIFICATE OF COMPLIANCE

Certificate Number 20161229-E489608
Report Reference E489608-20161216
Issue Date 2016-DECEMBER-29

Issued to: TIANJIN PROFOUND MULTINATIONAL TRADE CO LTD
25th floor, 2nd Tower, Beichen Building, Jingjin Road,
Beichen District
Tianjin, CHINA

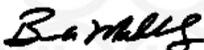
This is to certify that representative samples of POWER-LIMITED FIRE ALARM CABLE
Power-Limited Fire-Alarm Circuit Cable - FPLR, FPL

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424 - Cables for Power-Limited Fire-Alarm Circuits
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



UL Listed Fire Alarm Cables

ANSI/UL 1424, FPLR Type-Power Limited Fire Alarm Cable

UL Certificate No: E389608

Specification: 2 x 1.5mm² 2 x 14AWG 2 x 18AWG
2 x 2.5mm² 2 x 16AWG 2 x 20AWG

1. Raw material and production line:



II. Products:



III. Inspection:



IV: Packing and Loading:

