

1.0 Reference and Address			
Report Number	150300649SHA-001	Original Issued: 28-Apr-2015	Revised: None
Standard(s)	Low Voltage Lighting Systems – UL 2108 (Issued: 2004/02/27 Ed: 1 Rev: 2014/02/24) General Requirements for Luminaires – CSA C22.2 No.9.0 (Issued: 1996/06/01 Ed: 1 (R2011); with Gen. Inst. 1: 1997, Gen Inst. 2: 1998)		
Applicant	LEDYI LIGHTING (HK) CO., LIMITED	Manufacturer	LEDYI LIGHTING (HK) CO., LIMITED
Address	Yuechang Technology Park, Shiyan Town, Bao'an District, 518108, Shenzhen, China	Address	Yuechang Technology Park, Shiyan Town, Bao'an District, 518108, Shenzhen, China
Country	China	Country	China
Contact	Martin Wan	Contact	Martin Wan
Phone	+86-755-23088415	Phone	+86-755-23088415
FAX	-	FAX	-
Email	sales@ledyilighting.com	Email	sales@ledyilighting.com

2.0 Product Description							
Product	Low voltage flexible LED strip						
Brand name	NA						
Description	The products covered by this report are wall or ceiling surface-mounted low voltage flexible LED strip, which are supplied by a class 2 power supply unit with output constant voltage. Suitable for damp location.						
Models	LY-STxQyVz-Z (where "x", "y" and "z" is any number, "Z" is a letter or the combination of a letter and a number)						
Model Similarity	<p>All models have similar electrical and mechanical constructions. The main differences between them are nominal ratings, length, LED chips and LED quantities.</p> <p>LY-STxQyVz-Z (where "LY" denote LEDYI; "S" denote LED strip; "Tx" denote the type of LED chips, "x" can be one digit number, 1=type 3030, 2=type 2835, 3=type 3528, 4=type 3014, 5=type 5050, 6=type 5630; "Qy" denote quantities of LED chips, "y" can be 18, 30, 60, 70, 96, 112, 120, 224, 240, 360, 480; "Vz" denote the voltage of LED strip, "z" can be 6, 12, 24; "Z" denote some special features of LED strip, it can be a letter or the combination of a letter and a number, a=the LED strip can adjust the color temperature, c=the LED strip is with functions of constant current, c1=red, c2=green, c3=blue, c4=yellow, c5=white, c6=warm white, c7=natural, c8=RGB, c9=RGBW)</p> <p>Details see the following table.</p>						
Ratings	Non-replaceable LEDs						
	Model no.	Voltage (V)	Current (A)	Wattage (W)	Length (mm)	LED type	Quantities of LED chips (pcs)
	LY-ST3Q18V6	6	0.4	2.4	400	3528	18
	LY-ST2Q60V12	12	5	60	5000	2835	300
	LY-ST3Q60V12	12	2	24	5000	3528	300
	LY-ST3Q120V12	12	4	48	5000	3528	600
	LY-ST5Q60V12	12	6	72	5000	5050	300
	LY-ST5Q60V12-c8	12	6	72	5000	5050	300
	LY-ST5Q60V12-c9	12	6	72	5000	5050	300
	LY-ST6Q30V12	12	3	36	5000	5630	150
	LY-ST6Q60V12	12	6	72	5000	5630	300
	LY-ST2Q60V24	24	2.5	60	5000	2835	300
	LY-ST2Q70V24-c	24	2.5	60	5000	2835	350
	LY-ST2Q112V24-a	24	4	96	5000	2835	560
	LY-ST2Q120V24	24	5	120	5000	2835	600
	LY-ST4Q60V24	24	1.25	30	5000	3014	300
	LY-ST4Q120V24	24	2.5	60	5000	3014	600
	LY-ST4Q224V24-a	24	4	96	5000	3014	1120
	LY-ST1Q70V24	24	3	72	5000	3030	350
	LY-ST3Q60V24	24	1	24	5000	3528	300
	LY-ST3Q120V24	24	2	48	5000	3528	600
	LY-ST3Q120V24-a	24	2	48	5000	3528	600
	LY-ST3Q240V24	24	4	96	5000	3528	1200
	LY-ST3Q360V24	24	6	144	5000	3528	1800
	LY-ST3Q480V24	24	8	192	5000	3528	2400
	LY-ST5Q60V24	24	3	72	5000	5050	300
	LY-ST5Q60V24-c8	24	3	72	5000	5050	300
	LY-ST5Q60V24-c9	24	3	72	5000	5050	300
	LY-ST5Q96V24-c9	24	4.8	115	5000	5050	480
	LY-ST6Q60V24	24	3	72	5000	5630	300
	LY-ST6Q70V24-c	24	3	72	5000	5630	350
	LY-ST6Q112V24-a	24	4.8	115	5000	5630	560
	Other Ratings	NA					

3.0 Product Photographs

Photo 1 - External view of model LY-ST1Q70V24

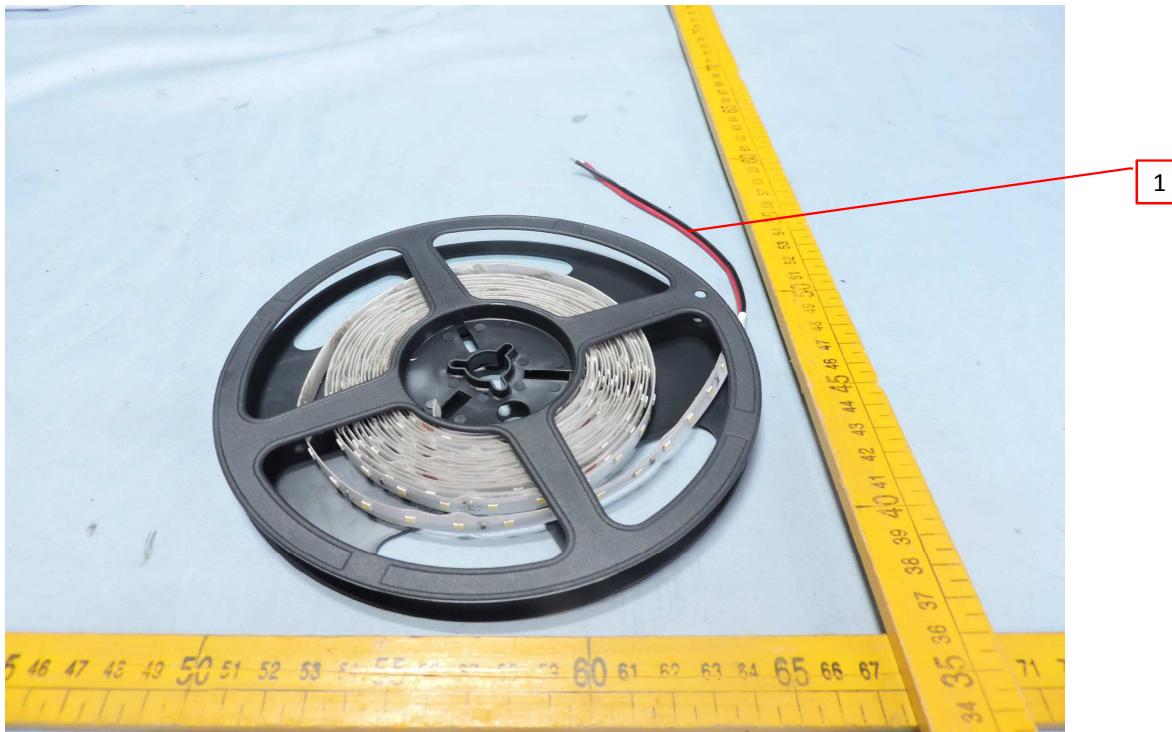
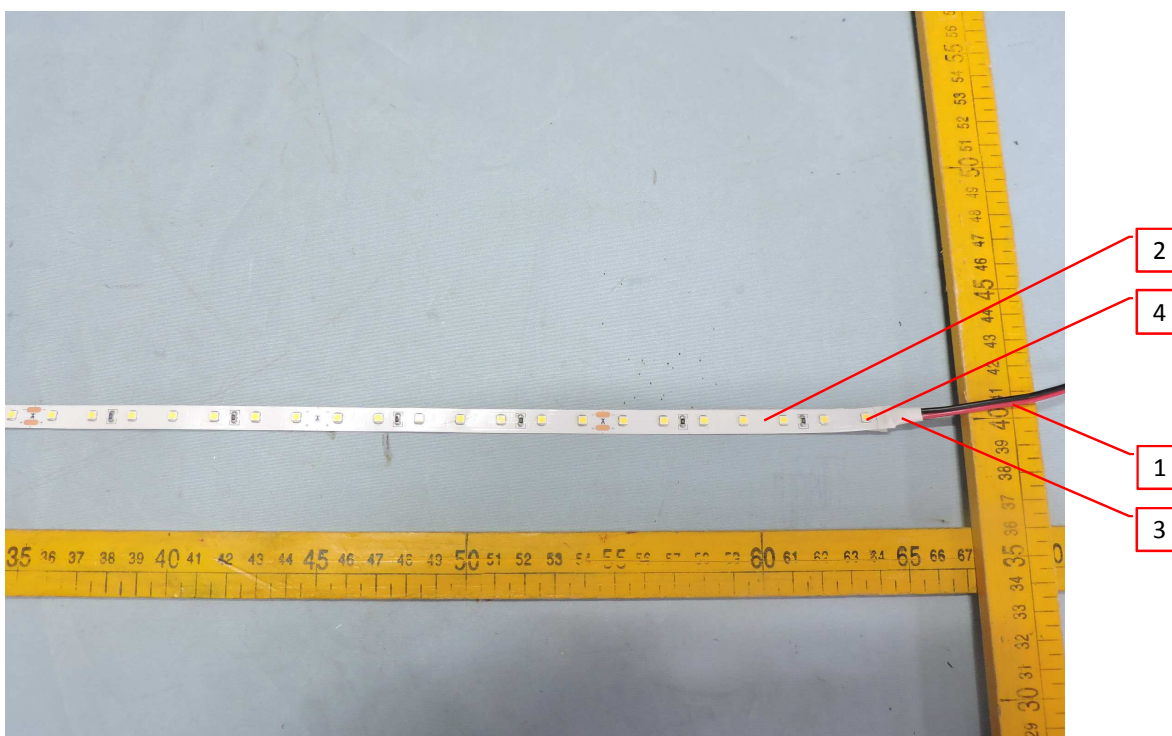


Photo 2 - External view of model LY-ST1Q70V24



3.0 Product Photographs

Photo 3 - External view of model LY-ST2Q120V24 also representative other models LY-ST2Q60V12, LY-ST2Q60V24, LY-ST2Q70V24-c and LY-ST2Q112V24-a

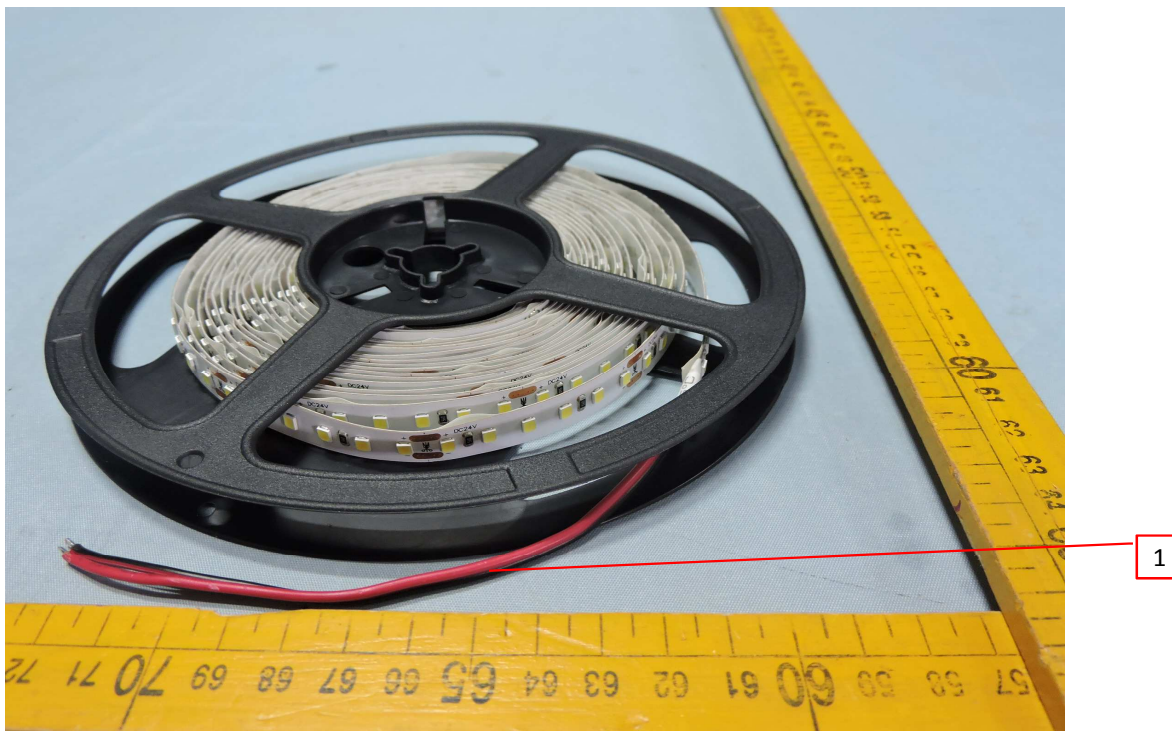
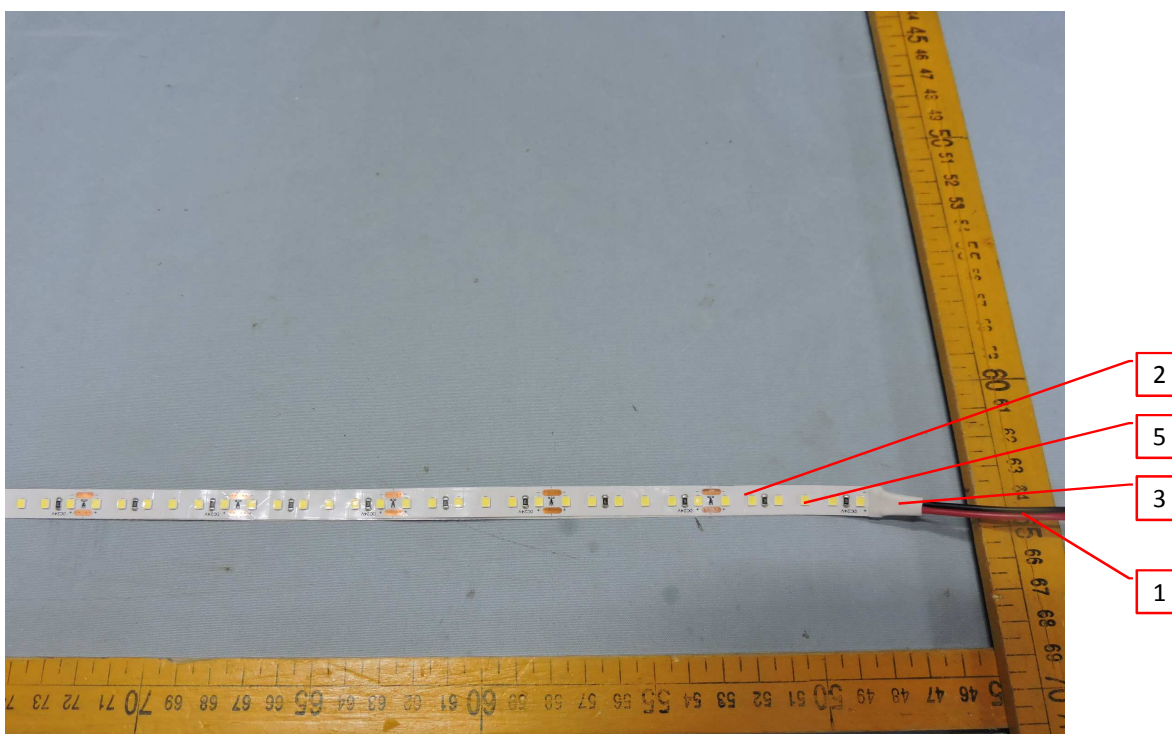


Photo 4 - External view of model LY-ST2Q120V24 also representative other models LY-ST2Q60V12, LY-ST2Q60V24, LY-ST2Q70V24-c and LY-ST2Q112V24-a



3.0 Product Photographs

Photo 5 - External view of model LY-ST3Q480V24 also representative other models LY-ST3Q18V6, LY-ST3Q60V12, LY-ST3Q60V24, LY-ST3Q120V12, LY-ST3Q120V24, LY-ST3Q120V24-a, LY-ST3Q240V24 and LY-ST3Q360V24

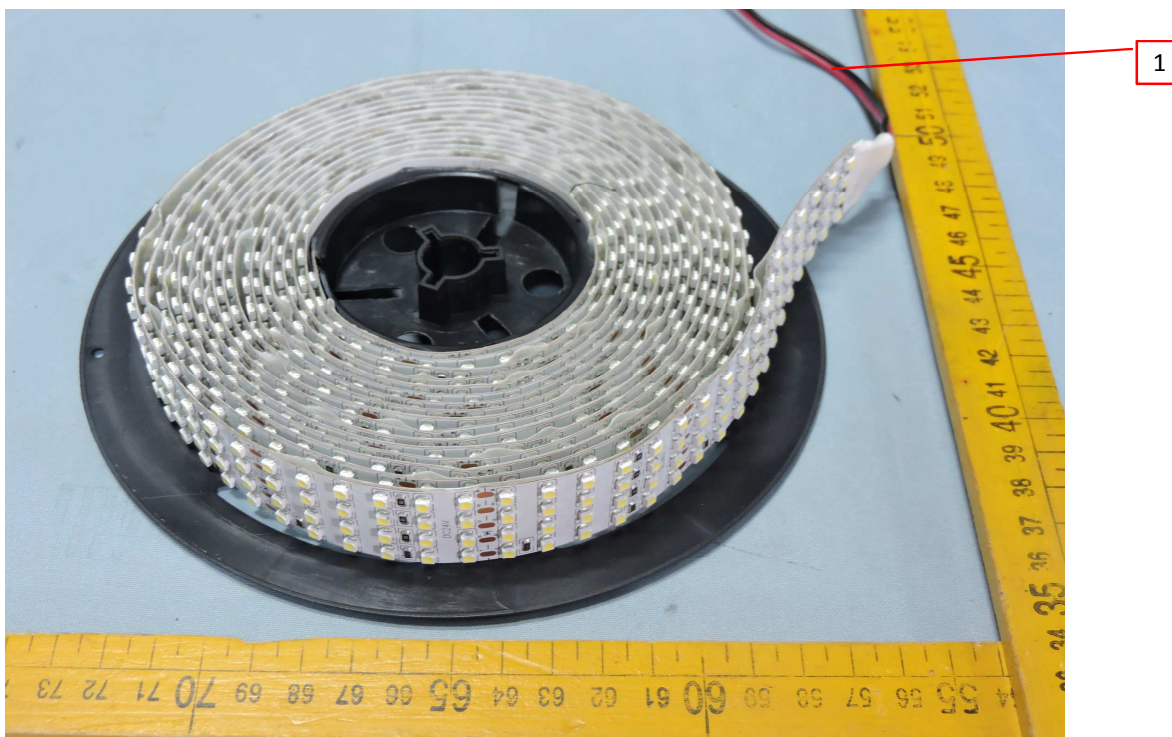
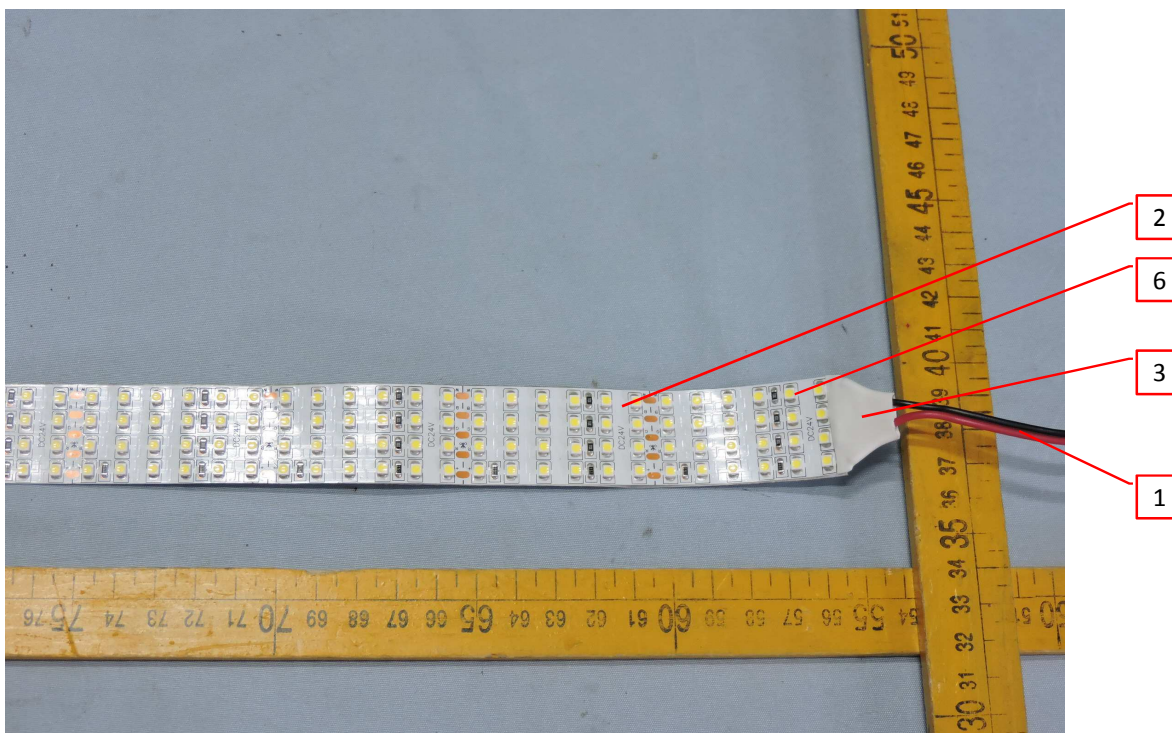


Photo 6 - External view of model LY-ST3Q480V24 also representative other models LY-ST3Q18V6, LY-ST3Q60V12, LY-ST3Q60V24, LY-ST3Q120V12, LY-ST3Q120V24, LY-ST3Q120V24-a, LY-ST3Q240V24 and LY-ST3Q360V24



3.0 Product Photographs

Photo 7 - External view of model LY-ST4Q224V24-a also representative other models LY-ST4Q60V24 and LY-ST4Q120V24

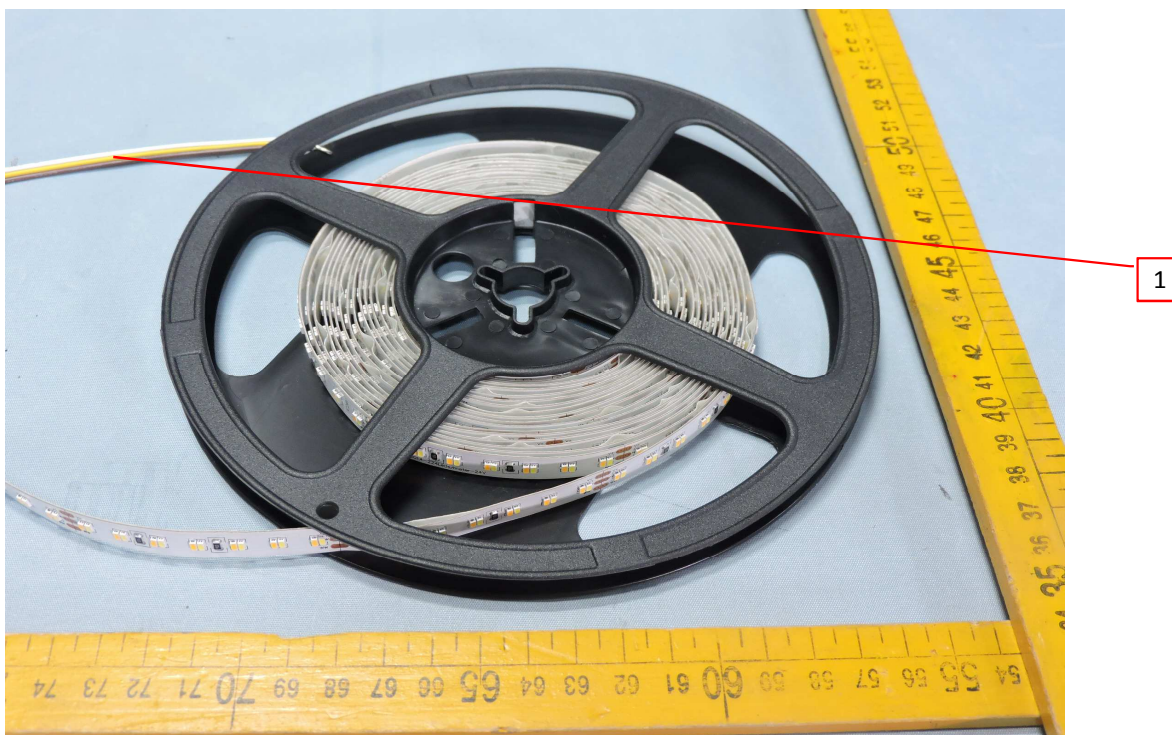
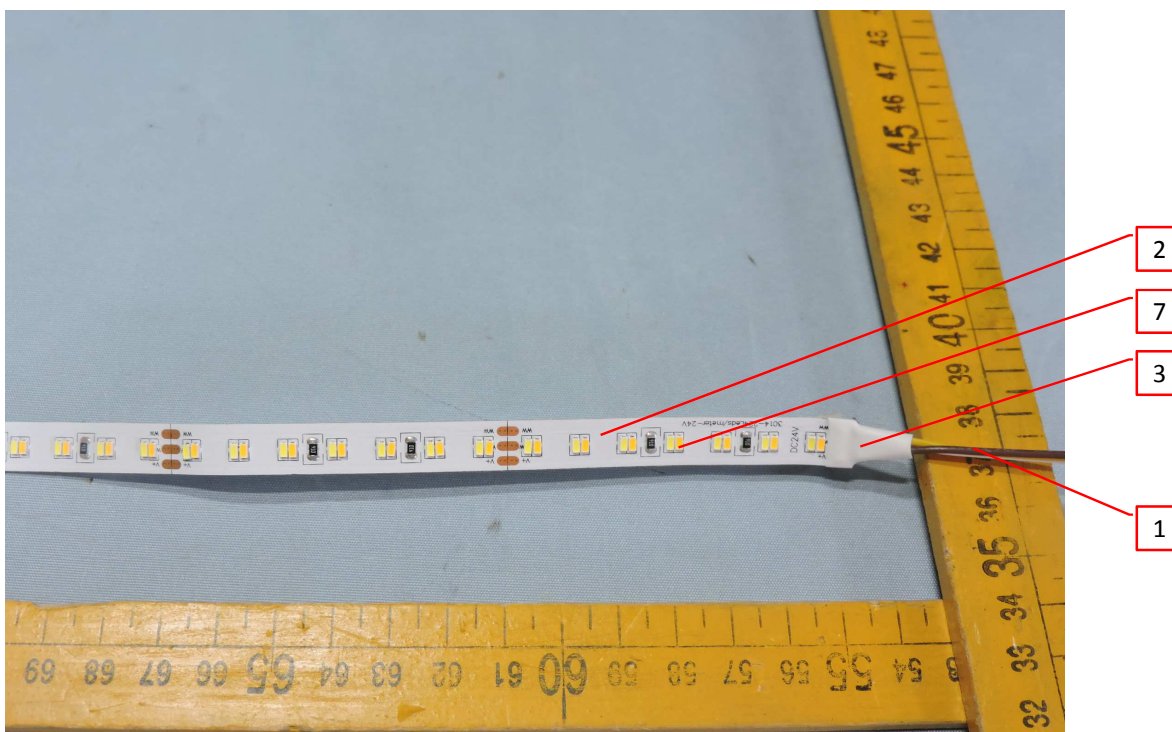


Photo 8 - External view of model LY-ST4Q224V24-a also representative other models LY-ST4Q60V24 and LY-ST4Q120V24



3.0 Product Photographs

Photo 9 - External view of model LY-ST5Q96V24-c9 also representative other models LY-ST5Q60V12, LY-ST5Q60V12-c8, LY-ST5Q60V12-c9, LY-ST5Q60V24, LY-ST5Q60V24-c8 and LY-ST5Q60V24-c9

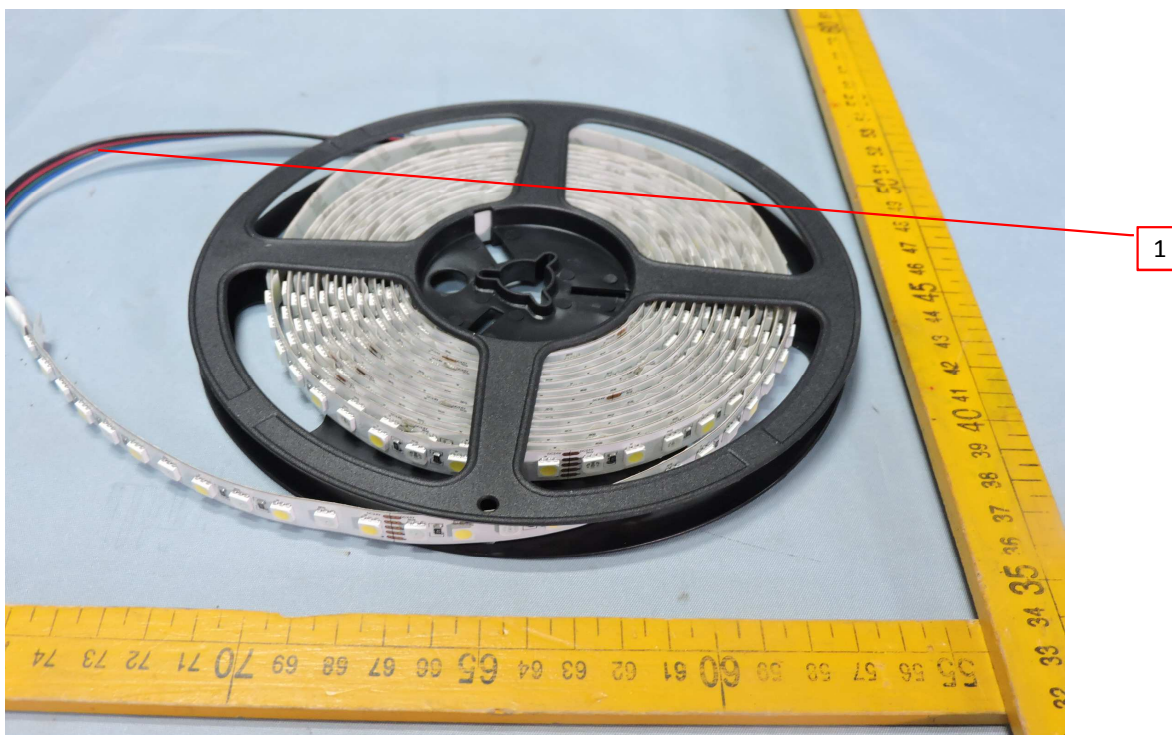
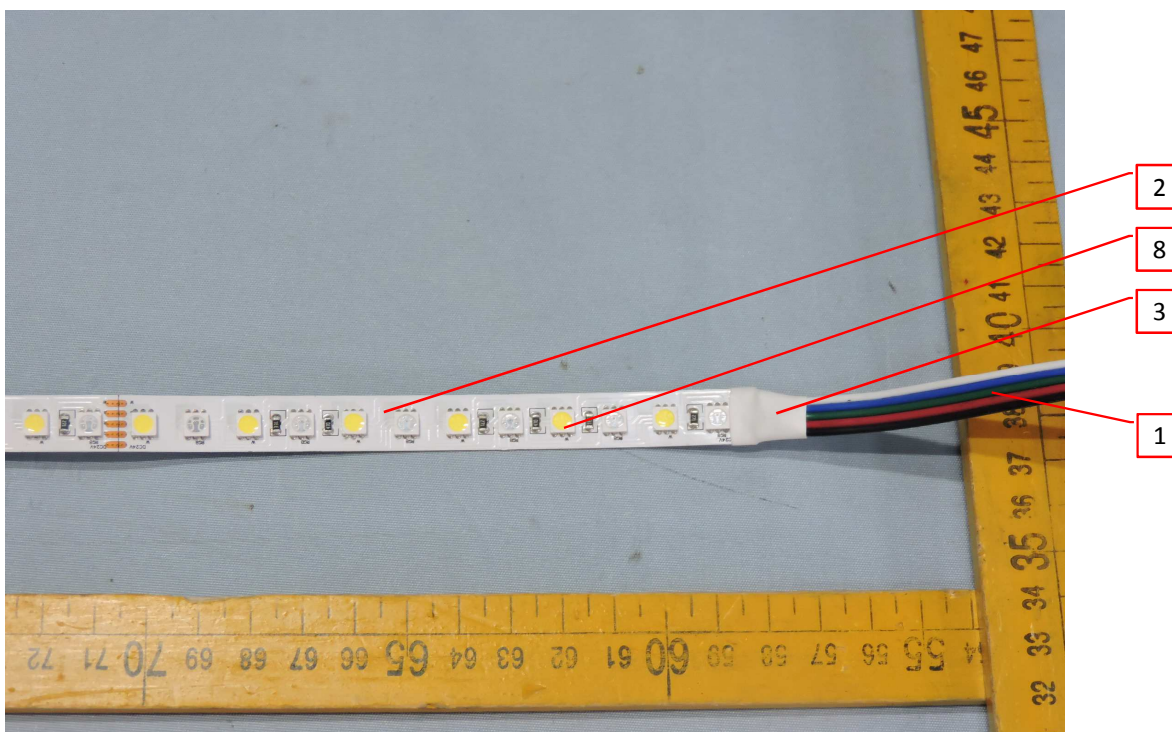


Photo 10 - External view of model LY-ST5Q96V24-c9 also representative other models LY-ST5Q60V12, LY - ST5Q60V12-c8, LY-ST5Q60V12-c9, LY-ST5Q60V24, LY-ST5Q60V24-c8 and LY-ST5Q60V24-c9



3.0 Product Photographs

Photo 11 - External view of model LY-ST6Q112V24-a also representative other models LY-ST6Q30V12, LY - ST6Q60V12, LY-ST6Q60V24 and LY-ST6Q70V24-c

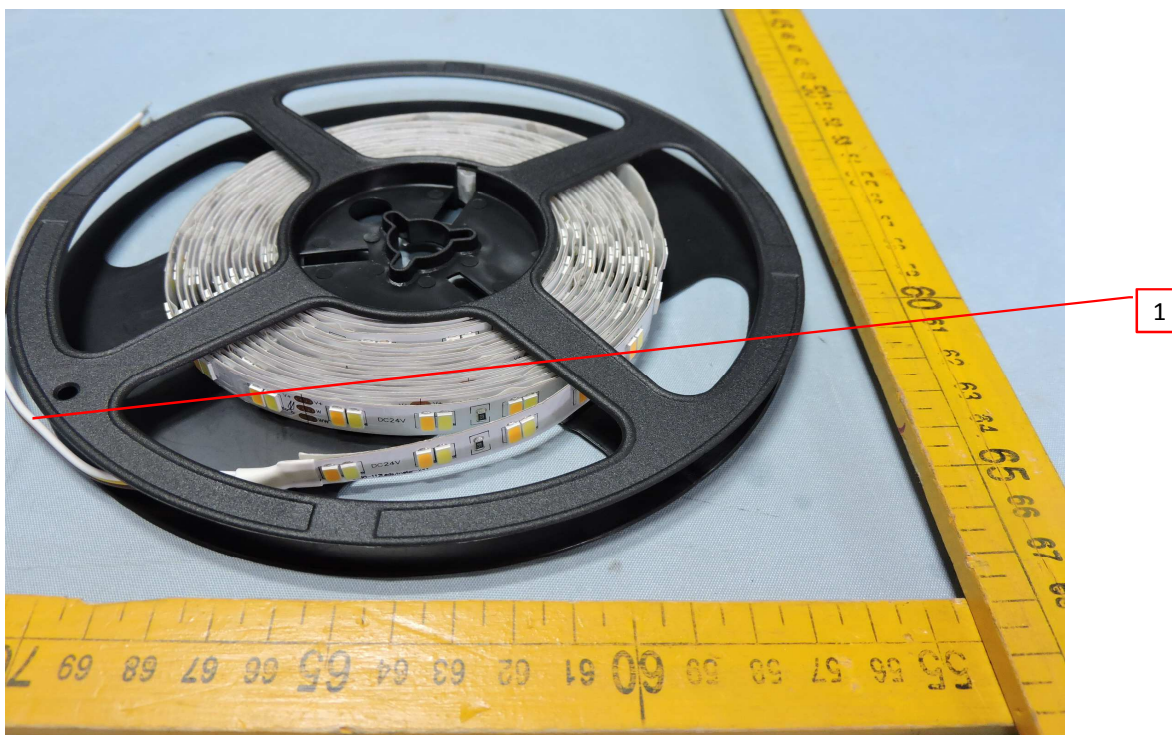
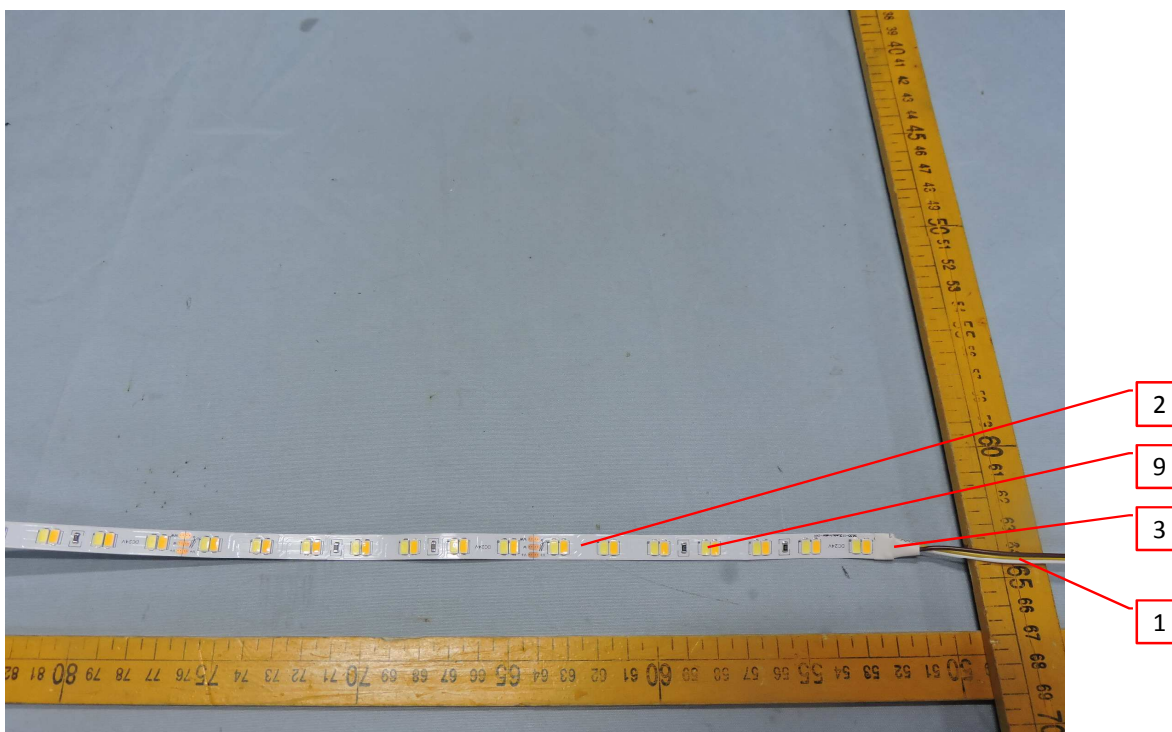


Photo 12 - External view of model LY-ST6Q112V24-a also representative other models LY-ST6Q30V12, LY - ST6Q60V12, LY-ST6Q60V24 and LY-ST6Q70V24-c



3.0 Product Photographs

Photo 13 - Adhesive tape view for all models



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4.0 Critical Components						
Photo #	Item no. ¹	Name	Manufacturer/ trademark ²	Type / model ²	Technical data and securement means	Mark(s) of conformity ³
1,2, 3,4, 5,6, 7,8, 9	1	Lead wire to LED PCB	Various	Various	20-18AWG, rated 80°C, 300V, VW-1, suitable for external use.	cURus
2,4, 6,8, 10, 12	2	Flexible base PCB	HUNAN FOUNDERSOON EST ELECTRONIC TECHNOLOGY CO LTD	FZD01	Rated 94V-0, 105°C, Single layer.	URus
2,4, 6,8, 10, 12	3	Tubing	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	Flexible Heat-Shrinkable Polyolefin Tubing, 600V, 125°C.	cURus
2	4	LED chips	NICHIA CORPORATION	3030	IF: max. 180mA, VF: 2.4-3.3V, -40°C-100°C, sized: 3.0 x 3.0 x 0.52 mm.	NR
4	5	LED chips	HUANG TAI	2835	IF: max. 100mA, VF: 3.0-3.6V, -40°C-110°C, sized: 3.5 x 2.8 x 0.8 mm.	NR
6	6	LED chips	HUANG TAI	3528	IF: max. 30mA, VF: 3.0-3.6V, -40°C-110°C, sized: 3.5 x 2.8 x 1.9 mm.	NR
8	7	LED chips	HUANG TAI	3014	IF: max. 30mA, VF: 3.0-3.6V, -40°C-110°C, sized: 3.0 x 1.4 x 0.7 mm.	NR
10	8	LED chips	HUANG TAI	5050	IF: max. 30mA x 3, VF: 3.0-3.6V, -40°C-85°C, sized: 5.0 x 5.0 x 1.65 mm.	NR
12	9	LED chips	HUANG TAI	5630	IF: max. 150mA, VF: 3.0-3.6V, -40°C-85°C, sized: 5.7 x 3.0 x 0.9 mm.	NR
13	10	3M Adhesive tape	3M COMPANY INDUSTRIAL ADHESIVES & TAPES DIV	9437	VHB adhesive tapes, suitable for indoor application, 90°C	URus
1,3, 5,7, 9, 11	11	Label (not shown)	Various	Various	Rated 80°C attached to input wire	URus

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) "Various" means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates Unlisted and only visual examination is necessary. "See 5.0" indicates Unlisted components or assemblies to be evaluated periodically refer to section 5.0 for details.

5.0 Critical Unlisted CEC Components

No Unlisted CEC components are used in this report.

6.0 Critical Features

Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.

Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.

Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.

Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.

Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.

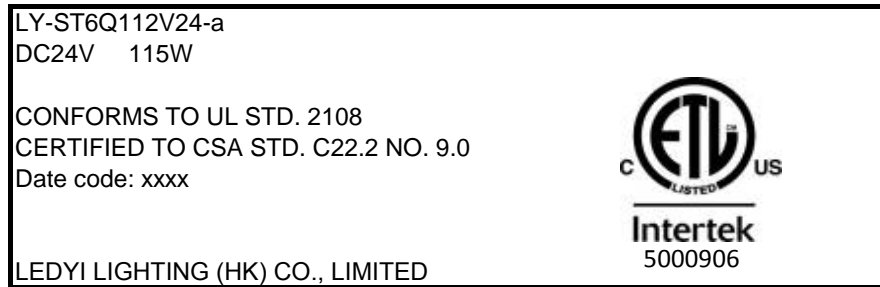
1. Spacing - No spacing required as it is supplied by a class 2 power supply unit.
2. Mechanical Assembly - Components such as switches, fuseholders, connectors, wiring terminals and display lamps are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.
3. Corrosion Protection - All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.
4. Accessibility of Live Parts - All uninsulated live parts in primary circuitry are housed within a non-metallic enclosure constructed with no openings other than those specifically described in Sections 4 and 5.
5. Grounding - This product is not provided with a means of grounding as it is supply by class 2 power unit.
6. Polarized Connection - This product is provided with a polarized power supply connection. The red wire must connect to "DC+", and black wire must connect to "DC-". Detail refer to manual.
7. Internal Wiring - Internal wiring is routed away from sharp or moving parts. Internal wiring leads terminating in soldered connections are made mechanically secure prior to soldering. Recognized Component separable (quick disconnect) connectors of the positive detent type, closed loop connectors, or other types specifically described in the text of this report are also acceptable as internal wiring terminals. At points where internal wiring passes through metal walls or partitions, the wiring insulation is protected against abrasion or damage by plastic bushings or grommets. All wiring is minimum 20 AWG, with a minimum rating of 300V, 80°C.
8. Schematics - NA
9. Markings - The product is marked on a labeling system as described in item no. 11 of Section 4.0 as follows: manufacturer's name or brand name, model number, date of manufacturer, electrical ratings. Refer to Illustration No. 1 for details.

The following markings in French are required: refer to Illustration No. 1 for details.
10. Cautionary Markings - The following are required: Refer to Illustration No. 1 for details.
11. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No. 2 for details.

7.0 Illustrations

Illustration 1 - Label

Sample: (model LY-ST6Q112V24-a for representative)



Cautionary markings

- i) "Use only with Class 2 power unit" and "Utiliser seulement avec l'unité de puissance Classe 2"
- ii) "Wall or ceiling surface mount" and "Mur ou plafond pour montage en surface"

Remark:



1. Above markings were marked on a label as described in item no. 11 of Section 4.0, which attached to lead wire of product.
2. The ETL logo shall not be less than 8 mm in width and 8 mm in height, "CM" shall not be less than 1 mm in height, "C" and "US" shall not be less than 2 mm in height, "Intertek" shall not be less than 3 mm in height. Control no. shall not be less than 2 mm in height.
3. All letters shall be at least 3.2 mm in height.
4. The marking "xxxx" is the manufacturing data or batch number.
5. Other models have the same label as above except for the model no. and rating (refer to sec. 2.0).

Illustration 2 - Instruction manual

The instruction manual shall include the information below:

- Mounting method of the luminaire.
- Proper wire connecting method.
- Other warnings that will not lead to misuse.

8.0 Test Summary					
Evaluation Period	13-Mar-2015 to 27-Apr-2015		Project No.	150300649SHA	
Sample Rec. Date	12-Mar-2015	Condition	Prototype	Sample ID.	0150311-12-001-060
Test Location	Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China				
Test Procedure	Testing Lab				
Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.					
The following tests were performed:					
Test Description	Low Voltage Lighting Systems – UL 2108 (Issued: 2004/02/27 Ed: 1 Rev: 2014/02/24)/ Clause		General Requirements for Luminaires – CSA C22.2 No.9.0 (Issued: 1996/06/01 Ed: 1 (R2011); with Gen. Inst. 1: 1997, Gen Inst. 2: 1998)/ Clause		
Normal Temperature Test	59		11		
Mounting Means Test	62A		/		
Abnormal Operations Test	62B		/		
Luminaire Component Fault Test	62C		/		
Test Description	UL 8750 (Issued: 2009/11/18 Ed:1 Rev:2014/05/22)/ Clause		CSA C22.2 No. 250.13 (Issued: 2014/07/01)/ Clause		
Input test	8.2		9.2		
Temperature test	8.3		9.3		

8.1 Signatures			
A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.			
Completed by:	Ryan Lai	Reviewed by:	Tim Su
Title:	Engineer	Title:	Reviewer
Signature:		Signature:	

9.0 Correlation Page For Multiple Listings

The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program.

BASIC LISTEE	LEDYI LIGHTING (HK) CO., LIMITED
Address	Yuechang Technology Park, Shiyan Town, Bao'an District, 518108, Shenzhen, China
Country	China
Product	Low voltage flexible LED strip

MULTIPLE LISTEE 1	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURER	
Address	
Country	
MULTIPLE LISTEE 1 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 2	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURER	
Address	
Country	
MULTIPLE LISTEE 2 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 3	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURER	
Address	
Country	
MULTIPLE LISTEE 3 MODELS	BASIC LISTEE MODELS

10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments and/or revisions.

LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is subject to the control of Intertek.

The mark must include the following four items:

- 1) applicable country identifiers "US" and/or "C" or "US", "C" and "EU"
- 2) the word "Listed" or "Classified" or "Recognized Component" (whichever is appropriate)
- 3) a control number issue by Intertek
- 4) a product descriptor that identifies the standards used for certification. Example:

For US standards, the words, "Conforms to" shall appear with the standard number along with the word, "Standard" or "Std." Example: "Conforms to ANSI/UL Std. XX."

For Canadian standards, the words "Certified to CAN/CSA Standard CXX No. XX." shall be used, or abbreviated, "Cert. to CAN/CSA Std. CXX No. XX."

Can be used together when both standards are used.

Note: A facsimile must be submitted to Intertek, Attn: Follow-up Services for approval prior to use.

The facsimile need not have a control number. A control number will be issued **after signed Certification**

Agreements have been received by the Follow-up Services office, approval of the facsimile of your proposed Listing Mark, satisfactory completion of the Listing Report, and scheduling of a factory assessment in your facility.

MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility (and any locations authorized to apply the mark) shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

1. Conformance of the manufactured product to the descriptions in this Report.
2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
3. Manufacturing changes.
4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

1. Correct the non-conformance.
2. Remove the ETL Mark from non-conforming product.
3. Contact the issuing product safety evaluation center for instructions.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:

Intertek Testing Services Shanghai Limited

ETL Component Evaluation Center

Building No. 86, 1198 Qinzhou Road (North)

Shanghai 200233, China

Attn: Ms. Dansy Xu

Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples.

The request for return must accompany the initial component shipment.

11.0 Manufacturing and Production Tests

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

Required Tests

NA

12.0 Revision Summary

The following changes are in compliance with the declaration of Section 8.1:

[illegible]