Test Report issued under the responsibility of:

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TEST REPORT
IEC 62031
LED modules for general lighting – Safety specifications

Report Number.....:	CN22P3H5 001
Date of issue.....:	2022-06-16
Total number of pages.....	26 pages
Name of Testing Laboratory preparing the Report.....:	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Applicant's name.....:	**SHENZHEN LEDYI LIGHTING CO., LTD.**
Address.....:	7th Floor, Skyworth Digital Building, Songbai Road, Shiyan, Bao'an District, Shenzhen, Guangdong, P.R. China
Test specification:	
Standard.....:	IEC 62031:2018
Test procedure.....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC62031F
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF.....:	2018-06-14

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.

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Test item description.....:		LED Strip	
Trade Mark.....:		LEDYi	
Manufacturer.....:		Same as applicant's name and address	
Model/Type reference.....:		See "general product information"	
Ratings.....:		See "general product information"	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	Shenzhen LCS Compliance Testing Laboratory Ltd.	
Testing location/ address.....:		101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China	
Tested by (name, function, signature).....:		Taylor Du	
Approved by (name, function, signature)...:		Hart Qiu	
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address.....:		N/A	
Tested by (name, function, signature).....:		N/A	
Approved by (name, function, signature)...:		N/A	
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address.....:		N/A	
Tested by (name + signature).....:		N/A	
Witnessed by (name, function, signature)..:		N/A	
Approved by (name, function, signature)...:		N/A	
☐	**Testing procedure: CTF Stage 3:**	N/A	
☐	**Testing procedure: CTF Stage 4:**	N/A	
Testing location/ address.....:		N/A	
Tested by (name, function, signature).....:		N/A	
Witnessed by (name, function, signature)..:		N/A	
Approved by (name, function, signature)...:		N/A	
Supervised by (name, function, signature) :		N/A	

List of Attachments (including a total number of pages in each attachment):

Attachment 1: Temperature measurements, thermal tests - normal operation.(16 pages)

Attachment 2: Photo biological safety of lamps and lamp systems were according to standard IEC TR 62778:2014.(12 pages)

Attachment 3: Photo document.(24 pages)

Summary of testing:

Tests performed (name of test and test clause):

Clauses	Test
IEC 62031:2018	
6	Marking
9 (10)	Protection against accidental contact with live part
10(11)	Moisture resistance and insulation
11(12)	Electric strength
12(14)	Fault conditions
17(18)	Resistance to heat, fire and tracking
20	Heat management
22	Photobiological safety

Full tests were performed on models LY96-S5050RGB-W24, LY84-S5050RGBW-W24, LY120-S2835W-W24, LY364-S2010TW-W24 and LY480-COBW-W12, partial tests were performed on models LY72-S5050RGB-W24, LY60-S5050RGB-W12, LY84-S5050RGBW-W12, LY60-S5050RGBW-W12, LY90-S2835W-W36, LY78-S2835W-W48, LY120-S2835W-W12, LY60-S2835W-W24, LY240-S2010W-W24, LY120-S2010W-W12 and LY108-S2010W-W24, the test sample was complying with the relevant product standard(s)

Testing location:

Shenzhen LCS Compliance Testing Laboratory Ltd.

101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China

Summary of compliance with National Differences:

List of countries addressed

N/A

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

LED Strip **LEDYi**

Model: LY96-S5050RGB-W24

24VDC, 23W/m, Max. 5m, Max. 115W

tc 85°C

SHENZHEN LEDYI LIGHTING CO., LTD.

7th Floor, Skyworth Digital Building, Songbai Roa d, Shiyan, Bao'an District, Shenzhen, Guangdong, P.R. China

Importer: XXXXXXX

Address: XXXXXXX

Note 1: The height of letters and numerals is 2mm;

Note 2: The height of graphical symbol is 5mm;

Note 3: Above labels are only representative, other model labels are the same design, except model name and rating correspondingly.

Test item particulars..... :	
Classification of installation and use.....:	Built-in module
Supply Connection.....:	Connection leads
.....:	
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item.....:	2022-03-20
Date (s) of performance of tests.....:	2022-03-20 to 2022-05-20

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 61347-1

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... : Same as applicant's name and address

General product information:

Product: LED Strip

1. All models are built-in LED module, constant voltage input.
2. All models only suitable supplied by SELV power source.
3. Models within all series share the same construction and appearance, but differ in size and power.

Model list:

Series No.	Model name	Input Voltage	Wattage (W/m Max.)	Total Wattage (W Max.)	LED Bead (pcs)	Size (L×W mm)	LED chip	CCT
1	**LY96-S5050RGB-W24**	24VDC	23	115	96/M	5000×12	LA-5050RGB-A	RGB
	LY72-S5050RGB-W24	24VDC	17,3	86,5	72/M	5000×10		
	LY60-S5050RGB-W24	24VDC	14,4	72	60/M	5000×10		
	LY60-S5050RGB-W12	12VDC	14,4	72	60/M	5000×10		
	LY48-S5050RGB-W24	24VDC	11	55	48/M	5000×10		
	LY42-S5050RGB-W24	24VDC	10	50	42/M	5000×12		
	LY30-S5050RGB-W24	24VDC	7,2	36	30/M	5000×10		
	LY30-S5050RGB-W12	12VDC	7,2	36	30/M	5000×10		
2	**LY84-S5050RGBW-W24**	24VDC	26,8	134	84/M	5000×12	QZ-W2RGBB5050A-B24W	RGBW
	LY84-S5050RGBW-W12	12VDC	26,8	134	84/M	5000×12		
	LY72-S5050RGBW-W24	24VDC	23	115	72/M	5000×12		
	LY60-S5050RGBW-W24	24VDC	19,2	96	60/M	5000×12		
	LY60-S5050RGBW-W12	12VDC	19,2	96	60/M	5000×12		
3	**LY90-S2835W-W36**	36VDC	7,2	36	90/M	5000×12	JR-2835Wxx-xxxDIA-AD6xYC	2700K-6500K
	LY78-S2835W-W48	48VDC	4,5	22,5	78/M	5000×10		
	LY256-S2835TW-W24	24VDC	19,2	96	256/M	5000×12		
	LY240-S2835TW-W24	24VDC	24	120	240/M	5000×12		
	LY160-S2835TW-W24	24VDC	12	60	160/M	5000×10		
	LY128-S2835TW-W24	24VDC	9,6	48	128/M	5000×10		
	LY120-S2835TW-W24	24VDC	24	120	120/M	5000×10		
	LY120-S2835TW-W12	12VDC	24	120	120/M	5000×10		

	LY112-S2835TW-W24	24VDC	19,2	96	112/M	5000×10		
	LY240-S2835W-W24	24VDC	14,4	72	240/M	5000×10		
	LY240-S2835W-W12	12VDC	14,4	72	240/M	5000×10		
	LY210-S2835W-W24	24VDC	14,4	72	210/M	5000×10		
	LY180-S2835W-W24	24VDC	24	120	180/M	5000×10		
	LY160-S2835W-W24	24VDC	9,6	48	160/M	5000×10		
	LY160-S2835W-W12	12VDC	9,6	48	160/M	5000×10		
	LY140-S2835W-W24	24VDC	24	120	140/M	5000×10		
	LY120-S2835W-W24	24VDC	24	120	120/M	5000×10		
	LY120-S2835W-W12	12VDC	24	120	120/M	5000×10		
	LY90-S2835W-W24	24VDC	4,8	24	90/M	5000×10		
	LY80-S2835W-W24	24VDC	4,8	24	80/M	5000×10		
	LY80-S2835W-W12	12VDC	4,8	24	80/M	5000×10		
	LY70-S2835W-W24	24VDC	12	60	70/M	5000×10		
	LY60-S2835W-W24	24VDC	12	60	60/M	5000×8		
	LY60-S2835W-W12	12VDC	12	60	60/M	5000×8		
4	**LY364-S2010TW-W24**	24VDC	20	100	364/M	5000×10	QZ-***QI2010E-GE-B	W: 6500K WW: 2700K
	LY240-S2010TW-W24	24VDC	10	50	240/M	5000×5		2700K - 6500K
	LY720-S2010W-W24	24VDC	20	100	720/M	5000×10		
	LY700-S2010W-W24	24VDC	20	100	700/M	5000×10		
	LY560-S2010W-W24	24VDC	20	100	560/M	5000×10		
	LY420-S2010W-W24	24VDC	20	100	420/M	5000×10		
	LY300-S2010W-W24	24VDC	20	100	300/M	5000×10		
	LY280-S2010W-W24	24VDC	19,5	97,5	280/M	5000×10		
	LY240-S2010W-W24	24VDC	19,5	97,5	240/M	5000×10		
	LY140-S2010W-W24	24VDC	9,6	48	140/M	5000×8		
	LY120-S2010W-W24	24VDC	9,6	48	120/M	5000×8		
	LY120-S2010W-	12VDC	9,6	48	120/M	5000×8		

	W12							
	LY108-S2010W-W24	24VDC	5	25	108/M	5000×2		
	LY60-S2010W-W24	24VDC	4,8	24	60/M	5000×8		
	LY60-S2010W-W12	12VDC	4,8	24	60/M	5000×8		
5	LY480-COBW-W24	24VDC	15	75	480/M	5000×10	HB-FOB-08XXXXP15N-480-24V	2700-6500K
	LY480-COBW-W12	12VDC	15	75	480/M	5000×10	HB-FOB-08XXXXP15N-480-12V	

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Clause	Requirement + Test	Result - Remark	Verdict

4	**GENERAL REQUIREMENTS**		P
4.2	Classification		P
	Built-in module ..... :	Yes ☒ No ☐	—
	Independent module..... :	Yes ☐ No ☒	—
	Integral module ..... :	Yes ☐ No ☒	—
4.6	Independent modules comply with requirements in IEC 60598-1:2014/AMD1:2017		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A

6	**MARKING**		P
6.2	**Contents of marking for built-in and for independent LED modules**		**P**
	a) mark of origin		P
	b) model number, type reference		P
	c1) constant voltage module; rated supply voltage and supply frequency		P
	c2) constant current module; rated supply current and supply frequency		N/A
	d) rated power		P
	e) indication of connections, wiring diagram		N/A
	f) value of t_c and place on the module	85°C (LED PCB)	P
	g) Ethr if required		N/A
	h) symbol for built-in modules		P
	i) heat transfer temperature t_d		N/A
	j) power for heat-conduction P_d		N/A
	k) working voltage for insulation		N/A
6.3	**Location of marking for built-in LED modules**		**P**
	- marking of a) and b) in 6.2 on the modules		P
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		P
6.4	**Location of marking for independent LED modules**		**N/A**
	- marking of a), b), c) and f) in 6.2 on the modules		N/A
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		N/A
6.5	**Marking of integral LED modules**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
	- information in 6.2 a) to g) in data sheet, leaflet or website		N/A
6.6	**Durable and legibility of marking**		**P**
	- marking on the LED module legible after test with water		P
	- marking not on the LED module legible		P
7	**TERMINALS**		**N/A**
7.1	**Integral terminals**		**N/A**
	Screw terminals comply with section 14 of IEC 60598-1	(see Annex 3)	N/A
	Screwless terminals comply with section 15 of IEC 60598-1	(see Annex 4)	N/A
7.2	**Terminals other than integral terminals**		**N/A**
	Separately approved; component list	(see Annex 2)	N/A
	Ratings suit the conditions		N/A
	Satisfy additional relevant requirements of this standard		N/A
8 (9)	**EARTHING**		**N/A**
- (9.1)	**Provisions for protective earthing**		**N/A**
	Terminal complying with clause 8		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	Earthing via means of fixing		N/A
	Earthing terminal only used for the earthing of the control gear		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
	Test according 7.2.3 of IEC 60598-1		N/A
- (9.2)	**Provision for functional earthing**		**N/A**
	Comply with clause 8 and 9.1		N/A
	Functional earth insulated from live parts by double or reinforced insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
- (9.3)	**Lamp controlgear with conductors for protective earthing by tracks on printed circuit board**		**N/A**
	Test with a current of 25 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω .....:		N/A
- (9.4)	**Earthing of built-in lamp controlgear**		**N/A**
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	**Earthing via independent controlgear**		**N/A**
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω .....:		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

9 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		P
- (10.1)	Controlgear protected against accidental contact with live parts	Protected by luminaire enclosure	P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	N/A
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impendance device	(see Annex A)	N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V .....:		N/A
- (10.3)	Controlgear providing SELV		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N/A
	No connection between output circuit and the body or protective earthing circuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A
	SELV outputs separated from earth by at least basic insulation		N/A
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1		N/A
- (10.4)	Accessible conductive parts in SELV circuits		N/A
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
10 (11)	**MOISTURE RESISTANCE AND INSULATION**		**P**
	After storage 48 h at 91- 95% relative humidity and 20- 30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	For basic insulation ≥ 2 MΩ .....:	From +/- to enclosure: 100 MΩ	P
	For double or reinforced insulation ≥ 4 MΩ .....:		N/A
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A
11 (12)	**ELECTRIC STRENGTH**		**P**
	Immediately after clause 11 electric strength test for 1 min		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulation for SELV, test voltage 500 V	From +/- to enclosure: 500V	P
	Working voltage ≤ 50 V, test voltage 500 V		N/A
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		N/A
	Basic insulation, 2U + 1000 V		N/A
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V		N/A
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A
12 (14)	**FAULT CONDITIONS**		**P**
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
	Short-circuit or interruption of SPDs	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 MΩ ..... :	> 20 MΩ	P
	No flammable gases		P
	No accessible parts have become live		N/A
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		—

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Clause	Requirement + Test	Result - Remark	Verdict
12.2	**Overpower condition**		**P**
	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	No fire, smoke or flammable gas is produced		P
	Molten material does not ignite tissue paper, spread below the module		P
14 (15)	**CONSTRUCTION**		**P**
- (15.1)	**Wood, cotton, silk, paper and similar fibrous material**		**P**
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	**Printed circuits**		**N/A**
	Printed circuits used as internal connections complies with clause 14		N/A
15 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		**N/A**
- (16.1)	**General**		N/A
	Creepage distances and clearances according to 16.2 and 16.3		N/A
	Controlgears providing SELV comply with additional requirements in Annex L		N/A
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P		N/A
- (16.2)	**Creepage distances**		N/A
- (16.2.2)	Minimum creepage distances for working voltages		N/A
	Creepage distances according to Table 7	(see appended table)	N/A
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	**Clearances**		N/A
- (16.3.2)	Clearances for working voltages		N/A
	Clearances distances according to Table 9	(see appended table)	N/A
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10		N/A
	Clearances distances for reinforced insulation according to Table 11		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
16 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		**P**
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		—
(4.11)	**Electrical connections**		**P**
(4.11.1)	Contact pressure		N/A
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread- cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	**Mechanical connections and glands**		**N/A**
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm).....:		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
(4.12.5)	Screwed glands; force (Nm).....:		N/A

17 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**N/A**
- (18.1)	Ball-pressure test ..... :	See Test Table 17 (18.1)	N/A
- (18.2)	Test of printed boards .....:	See Test Table 17 (18.2)	N/A
- (18.3)	Glow- wire test (650°C) .....:	See Test Table 17 (18.3)	N/A
- (18.4)	Needle-flame test (10 s) .....:	See Test Table 17 (18.4)	N/A
- (18.5)	Proof tracking test ..... :	See Test Table 17 (18.5)	N/A

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
18	**RESISTANCE TO CORROSION**		**N/A**
	Comply with requirements according 4.18 of IEC 60598-1		N/A
20	**HEAT MANAGEMENT**		**P**
20.1	**General**		**P**
	Fulfil clause 20 if replaceable LED module and when heat conducting thermal interface is needed.		P
20.2	**Thermal interface material**		**N/A**
	Thermal interface material delivered with the module if necessary		N/A
20.3	**Heat protection**		**N/A**
	Not impair safety when operated under poor heat-conduction conditions according Annex D		N/A
22	**PHOTOBIOLOGICAL SAFETY**		**P**
22.1	**UV radiation**		**N/A**
	Luminous radiation not exceed 2mW/klm		N/A
22.2	**Blue light hazard**		**P**
	Assessed according to IEC TR 62778	RG1	P
22.3	**Infrared radiation**		**N/A**
	Requirements for infrared radiation when required		N/A
A	**ANNEX A - TESTS**		**P**
	All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable		P

12 (14)	**TABLE: tests of fault conditions**	**N/A**
Part	**Simulated fault**	**Hazard**
Model: LY96-S5050RGB-W24		
LED	Short circuited: Test result: Unit shut down immediately, no damage, recoverable	No
LED	Open circuited: Test result: The normal work	No
Resistance (Rg)	Short circuited: Test result: Unit shut down immediately, no damage, recoverable	No
Model: LY84-S5050RGBW-W24		
LED	Short circuited: Test result: Unit shut down immediately, no damage, recoverable	No

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Clause	Requirement + Test	Result - Remark	Verdict
LED	Open circuited: Test result: The normal work		No
Resistance (Rg)	Short circuited: Test result: Unit shut down immediately, no damage, recoverable		No
Model: LY120-S2835W-W24			
LED	Short circuited: Test result: Unit shut down immediately, no damage, recoverable		No
LED	Open circuited: Test result: The normal work		No
Resistance (D89)	Short circuited: Test result: Unit shut down immediately, no damage, recoverable		No
Model: LY364-S2010TW-W24			
LED	Short circuited: Test result: Unit shut down immediately, no damage, recoverable		No
LED	Open circuited: Test result: The normal work		No
Resistance (271)	Short circuited: Test result: Unit shut down immediately, no damage, recoverable		No
Model: LY480-COBW-W12			
LED	Short circuited: Test result: Unit shut down immediately, no damage, recoverable		No
LED	Open circuited: Test result: The normal work		No

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Clause	Requirement + Test	Result - Remark	Verdict

15 (16)	TABLE: clearance and creepage distance measurements (mm)							N/A
Applicable part of IEC 61347-1 Table 7 – 11*								
Distances	**Insulation type ****	**Measured clearance**	**Required**		**Measured creepage**	**Required**		
			clearance	***Table**		**creepage**	***Table**	
Distance 1:								
Working voltage (V)..... :								—
Frequency if applicable (kHz)..... :								—
PTI..... :					< 600 ☐ ≥ 600 ☐			—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :								—
Pulse voltage if applicable (kV) ..... :								—
Supplementary information:								
Distance 2:								
Working voltage (V)..... :								—
Frequency if applicable (kHz)..... :								—
PTI..... :					< 600 ☐ ≥ 600 ☐			—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :								—
Pulse voltage if applicable (kV) ..... :								—
Supplementary information:								
Distance 3:								
Working voltage (V)..... :								—
Frequency if applicable (kHz)..... :								—
PTI..... :					< 600 ☐ ≥ 600 ☐			—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :								—
Pulse voltage if applicable (kV) ..... :								—
Supplementary information:								

** Insulation type: B – Basic; S – Supplementary; R – Reinforced

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Clause	Requirement + Test	Result - Remark	Verdict

17 (18.1)	TABLE: Ball Pressure Test of Thermoplastics			N/A
Allowed impression diameter (mm) .....:		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
--	--	--	--	
Supplementary information:				

17 (18.2)	TABLE: Test of printed boards				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--	--	--	--	--
Supplementary information:					

17 (18.3)	TABLE: Glow-wire test					N/A
Glow wire temperature .....:		650°C				—
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)		Verdict
--	--	--	--	--		--
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No).....:						--
Supplementary information:						

17 (18.4)	TABLE: Needle-flame test				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
--	--	--	--	--	--
Supplementary information:					

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict

17 (18.5)	TABLE: Proof tracking test				N/A
Test voltage PTI ..... :		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
--	--	--	--	--	--
Supplementary information:					

(A)	ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK		P
(A.1)	Comply with A.2 or A.3		P

ANNEX 1	LED MODULES WITH INTEGRAL CONTROLGEAR PROVIDING SELV		N/A
(L.5)	**Protection against electric shock**		N/A
	Comply with 9.2 of IEC 61558-1		N/A
(L.6)	**Heating**		N/A
	No excessive temperatures in normal use		N/A
	Value if capacitor tc marked ..... :		—
	Winding insulation classified as Class ..... :		—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N/A
(L.7)	**Short-circuit and overload protection**		N/A
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		N/A
(L.8)	**Insulation resistance and electric strength**		N/A
(L.8.1)	Conditioned 48 h between 91 % and 95 %		N/A
(L.8.2)	Insulation resistance		N/A
	Between input- and output circuits not less than 5 MΩ ..... :		N/A
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ ..... :		N/A
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ ..... :		N/A
(L.8.3)	Electric strength		N/A
	1) Between live parts of input circuits and live parts of output circuits ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	2) Over basic or supplementary insulation between:		N/A
	a) live parts having different polarity ..... :		N/A
	b) live parts and body if intended to be connected to protective earth .....:		N/A
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord ..... :		N/A
	d) live parts and an intermediate metal part ..... :		N/A
	e) intermediate metal parts and the body .....:		N/A
	f) each input circuit and all other input circuits ..... :		N/A
	3) Over reinforced insulation between the body and live parts ..... :		N/A
(L.9)	**Construction**		N/A
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		N/A
	HF transformer comply with 19 of IEC 61558-2-16		N/A
(L.10)	**Components**		N/A
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
(L.11)	**Creepage distances, clearances and distances through insulation**		N/A
	Creepage distances and clearances not less than in Clause 16		N/A
	Distance through insulation according Table L.5 in IEC 61347-1		N/A
	1) Basic distance through insulation		N/A
	Required distance (mm) .....:		—
	Measured (mm) ..... :		N/A
	Supplementary information		—
	2) Supplementary distance through insulation		N/A
	Required distance (mm) .....:		—
	Measured (mm) ..... :		N/A
	Supplementary information		—
	3) Reinforced distance through insulation		N/A
	Required distance (mm) .....:		—
	Measured (mm) ..... :		N/A
	Supplementary information		—

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Critical components information					
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Connection leads	C	ZHONG SHAN YONG ROI ELECTRIC FACTORY CO LTD	1015	22 AWG, 105 °C, 600 V	IEC 62031	UL E204893 Tested with appliance
-Alt	D	SHENZHEN GLAD ELECTRONIC TECHNOLOGY CO LTD	1007	Min. 26 AWG, 80°C, 300VAC	IEC 62031	UL E503305 Tested with appliance
-Alt	D	SHENZHEN GLAD ELECTRONIC TECHNOLOGY CO LTD	1185	Min. 26 AWG, 80°C, 300VAC	IEC 62031	UL E503305 Tested with appliance
-Alt	D	SHENZHEN GLAD ELECTRONIC TECHNOLOGY CO LTD	1569	Min. 26 AWG, 105°C, 300VAC	IEC 62031	UL E503305 Tested with appliance
LED chip(for series 1)	C	ShenZhen Liang an Photoelectricity TechnologyCo., Ltd	LA-5050RGB-A	If=20mA, Vf=R: 2,0-2,2VDC, G: 3,0-3,2VDC, B: 2,8-3,4VDC;	IEC/TR 62778	Tested with appliance
LED chip(for series 2)	C	SHENZHEN QIZHI OPTOELECTRONICS CO., LTD	QZ-W2RGBB5050A-B24W	If=20mA, Vf=R: 1,9-2,3VDC, G: 2,9-3,3VDC, B: 2,9-3,3VDC, W: 2,8-3,2VDC;	IEC/TR 62778	Tested with appliance
LED chip(for series 3)	C	Shenzhenjingrui photoeletric Co.,Ltd	JR-2835Wxx-xxxDIA-AD6xYC	If=60mA, Vf=2,7-3,4VDC CCT. 2700K-6500K	IEC/TR 62778	Tested with appliance
LED chip(for series 4)	C	SHENZHEN QIZHI OPTOELECTRONICS CO., LTD	QZ-***QI2010E-GE-B	If=20mA, Vf=2,7-3,0VDC CCT. 2700K-6500K	IEC/TR 62778	Tested with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

COB(for series 5 model LY480-COBW-W24)	C	ShenZhen Haobing Photoelectricity Technology Co. Ltd	HB-FOB-08XXXXP15N-480-24V	If=312mA, Vf=24VDC CCT. 2700K-6500K	IEC/TR 62778	Tested with appliance
COB(for series 5 model LY480-COBW-W12)	C	ShenZhen Haobing Photoelectricity Technology Co. Ltd	HB-FOB-08XXXXP15N-480-12V	If=625mA, Vf=12VDC CCT. 2700K-6500K	IEC/TR 62778	Tested with appliance
LED PCB	C	HUNAN FOUNDERSOONEST ELECTRONIC TECHNOLOGY CO LTD	FZD01	V-0, 105 °C	IEC 62031	UL E348119 Tested with appliance

Supplementary information:

[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

A - The component is replaceable with another one, also certified, with equivalent characteristics

B - The component is replaceable if authorised by the test house

C - Integrated component tested together with the appliance

D - Alternative component

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screw terminals (part of the luminaire)**		N/A
(14)	**SCREW TERMINALS**		N/A
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²).....:		—
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....:	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm).....:		N/A
	Torque (Nm).....:		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....:		N/A
(14.4.8)	Without undue damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 4	**Screwless terminals (part of the luminaire)**		N/A
(15)	**SCREWLESS TERMINALS**		N/A
(15.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples)..... :		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

(15.6.2)	Mechanical tests		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) ..... :		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	**TABLE: Contact resistance test / Heating tests**									N/A
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints									
	Voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV).....:									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV).....:									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV).....:									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV).....:									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
Supplementary information:										

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
1/16	Type reference.....:	LY96-S5050RGB-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	113,5	—
	Supply current (A)..... :	4,3	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	62,1	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	85,2	--	90	--	--
Ambient	--	49,7	--	--	--	--

Supplementary information:

Attachment 1	Temperature measurements, thermal tests - normal operation		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	TABLE: Thermal tests of Section 12		P
2/16	Type reference.....:	LY72-S5050RGB-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	73,9	—
	Supply current (A)..... :	2,8	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	65,2	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	88,3	--	90	--	--
Ambient	--	52,8	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
3/16	Type reference.....:	LY60-S5050RGB-W12	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	68	—
	Supply current (A)..... :	5,2	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x12=13,2V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	69,2	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	78,4	--	90	--	--
Ambient	--	52,3	--	--	--	--

Supplementary information:

Attachment 1	Temperature measurements, thermal tests - normal operation		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	TABLE: Thermal tests of Section 12		P
4/16	Type reference.....:	LY84-S5050RGBW-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	129,3	—
	Supply current (A)..... :	4,9	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	64,5	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	83,1	--	90	--	--
Ambient	--	46	--	--	--	--

Supplementary information:

Attachment 1	Temperature measurements, thermal tests - normal operation		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	TABLE: Thermal tests of Section 12		P
5/16	Type reference.....:	LY84-S5050RGBW-W12	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	130	—
	Supply current (A)..... :	9,8	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x12=13,2V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	52,2	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	73,1	--	90	--	--
Ambient	--	34,8	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
6/16	Type reference.....:	LY60-S5050RGBW-W12	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	93	—
	Supply current (A)..... :	7	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x12=13,2V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	68,7	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	86,8	--	90	--	--
Ambient	--	52,8	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
7/16	Type reference.....:	LY90-S2835W-W36	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	35,6	—
	Supply current (A)..... :	0,9	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x36=39,6V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	64,9	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	82,3	--	90	--	--
Ambient	--	52,3	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
8/16	Type reference.....:	LY78-S2835W-W48	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	21,3	—
	Supply current (A)..... :	0,4	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x48=52,8V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	72,9	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	83,4	--	90	--	--
Ambient	--	62,3	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
9/16	Type reference.....:	LY120-S2835W-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	113,5	—
	Supply current (A)..... :	4,3	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	71,1	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	84,4	--	90	--	--
Ambient	--	61,3	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
10/16	Type reference.....:	LY120-S2835W-W12	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	114	—
	Supply current (A)..... :	8,6	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x12=13,2V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	69,6	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	82,5	--	90	--	--
Ambient	--	49,1	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
11/16	Type reference.....:	LY60-S2835W-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	58,1	—
	Supply current (A)..... :	2,2	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	71,2	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	85,5	--	90	--	--
Ambient	--	63,5	--	--	--	--

Supplementary information:

Attachment 1	Temperature measurements, thermal tests - normal operation		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	TABLE: Thermal tests of Section 12		P
12/16	Type reference.....:	LY364-S2010TW-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	92,4	—
	Supply current (A)..... :	3,5	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	66,1	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	80,9	--	90	--	--
Ambient	--	50,5	--	--	--	--

Supplementary information:

Attachment 1	Temperature measurements, thermal tests - normal operation		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	TABLE: Thermal tests of Section 12		P
13/16	Type reference.....:	LY240-S2010W-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	89,8	—
	Supply current (A)..... :	3,4	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	72,2	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	83,8	--	90	--	--
Ambient	--	56,2	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
14/16	Type reference.....:	LY120-S2010W-W12	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	43,5	—
	Supply current (A)..... :	3,3	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x12=13,2V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	76,9	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	83	--	90	--	--
Ambient	--	66,5	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
15/16	Type reference.....:	LY108-S2010W-W24	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	21,6	—
	Supply current (A)..... :	0,82	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x24=26,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	76,2	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	81,3	--	90	--	--
Ambient	--	69,8	--	--	--	--

Supplementary information:

Attachment 1	**Temperature measurements, thermal tests - normal operation**		—
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**TABLE: Thermal tests of Section 12**		P
16/16	Type reference.....:	LY480-COBW-W12	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	Internal use of lamps and lanterns	—
	Supply wattage (W).....:	69,3	—
	Supply current (A)..... :	5,3	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	See below	—
	- abnormal operating mode.....:	LED shorted	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,1x12=13,2V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
	test 1	test 2	test 3	limit	test 4	limit
Connection leads	--	76,9	--	80	--	--
LED PCB(tc)	--	85	--	--	--	--
Mounting surface	--	83,3	--	90	--	--
Ambient	--	66,1	--	--	--	--

Supplementary information:

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

7	**MEASUREMENT INFORMATION FLOW**		**P**
7.1	**Basic flow**		**P**
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		N/A
	In case E_{thr} value for RG2 was established the peak value was derived from angular light distribution		N/A
7.2	**Conditions for the radiance measurement**		**P**
	Standard condition applied (200mm distance, 0,011rad field of view)	Tested at 200mm	P
	Non-standard condition applied		N/A
7.3	**Special cases (I): Replacement by a lamp or LED module of another type**		**N/A**
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
7.4	**Special cases (II): Arrays and clusters of primary light sources**		**N/A**
	LED package is evaluated as ..... :	☐ RG0 unlimited ☐ RG1 unlimited	N/A
	E_{thr} of LED package applies to array		N/A
8	**RISK GROUP CLASSIFICATION**		**P**
	Risk group achieved:		P
	-... Risk Group 0 unlimited		N/A
	-... Risk Group 1 unlimited		P
	- E_{thr} ..... (lx) : Distance to reach RG1..... (m) :		N/A

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY96-S5050RGB-W24(R)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	4	RG0
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	7,977E+05	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY96-S5050RGB-W24(G)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	114	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	1,408E+06	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY96-S5050RGB-W24(B)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	2733	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	2,747E+05	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY84-S5050RGBW-W24(R)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	26	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	4,835E+06	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY84-S5050RGBW-W24(G)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	156	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	1,492E+06	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY84-S5050RGBW-W24(B)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	3523	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	4,702E+05	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY84-S5050RGBW-W24(W)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	276	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	9,475E+05	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY120-S2835W-W24	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	6455	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	1333	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	1,599E+06	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY364-S2010TW-W24(W)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	6620	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	628	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	7,594E+05	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY364-S2010TW-W24(WW)	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	3046	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	290	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	8,397E+05	
Illuminance	E	lx	--	

Attachment 2	Photobiological safety of lamps and lamp systems were according to standard IEC TR 62778:2014

Table	Spectroradiometric measurement (IEC TR 62778)		--
	Measurement performed on:	**LED module**	--
	Model number.....:	LY480-COBW-W12	--
	Test voltage (V).....:	24VDC	--
	Test current (mA).....:	--	--
	Test frequency (Hz).....:	--	--
	Ambient, t (°C).....:	25,0	--
	Measurement distance.....:	☒ 20 cm ☐ ... cm	--
	Source size .....:	☒ Non-small ☐ Small : .... mm	--
	Field of view .....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	6642	
x/y colour coordinates	--	--	--	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	140	RG1
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	1,717E+05	
Illuminance	E	lx	--	

Attachment 3: photo document

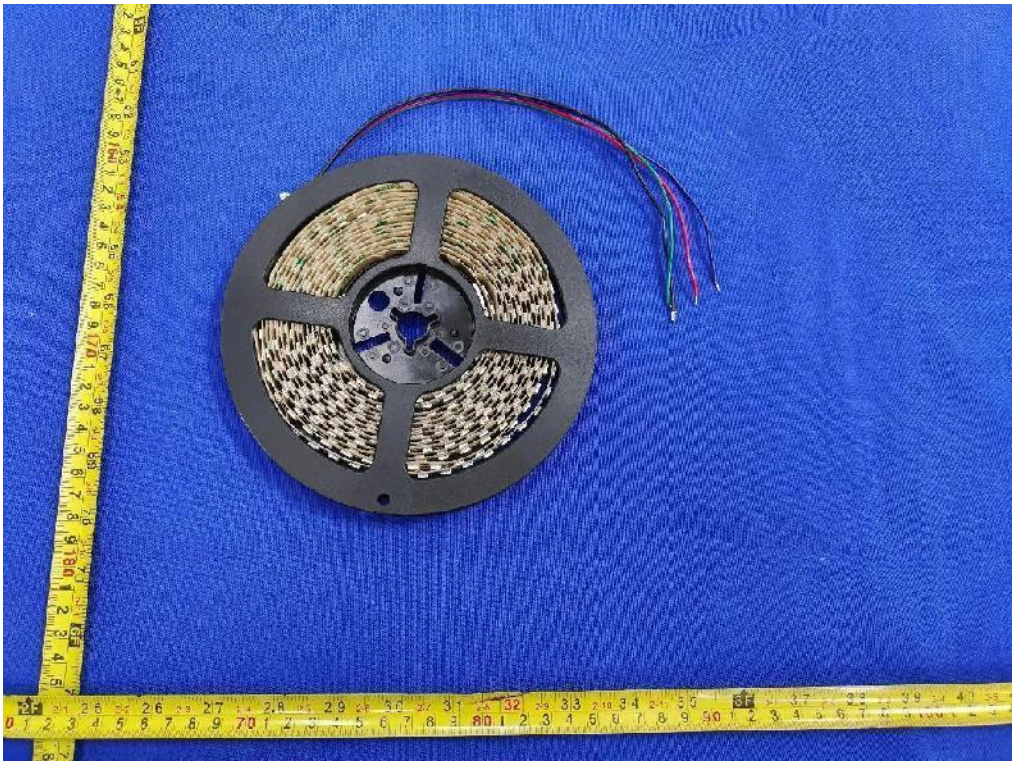

Figure 1 Overview of model LY96-S5050RGB-W24

Figure 2 LED module view of model LY96-S5050RGB-W24

Attachment 3: photo document

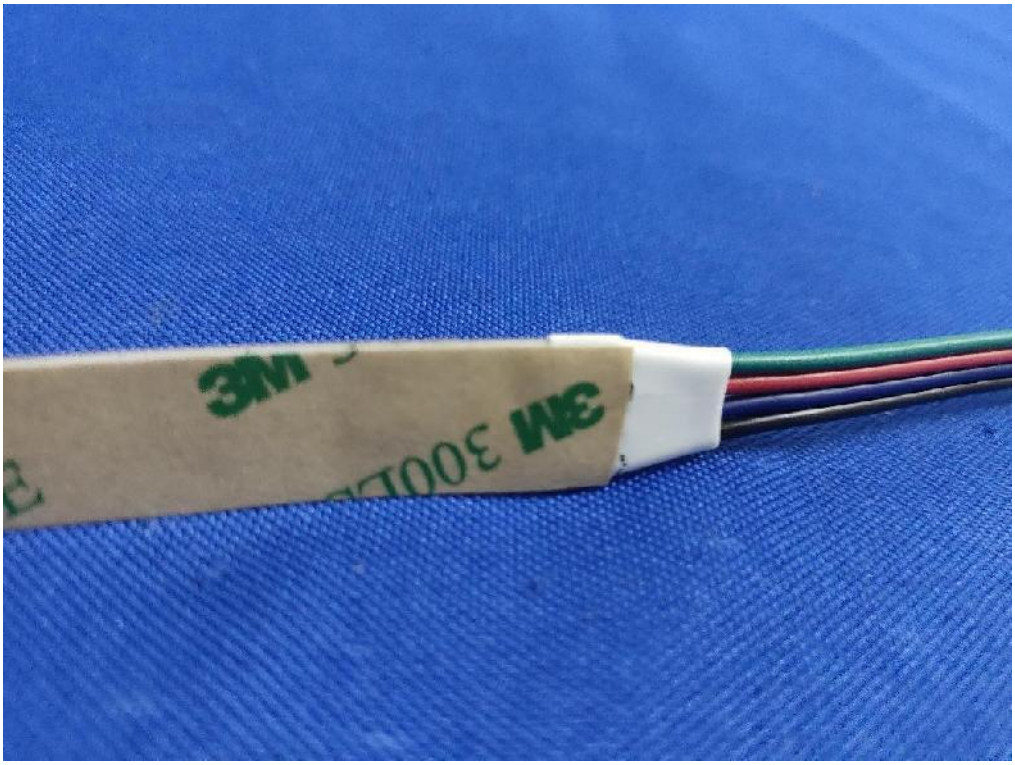

Figure 3 Over view of model LY96-S5050RGB-W24

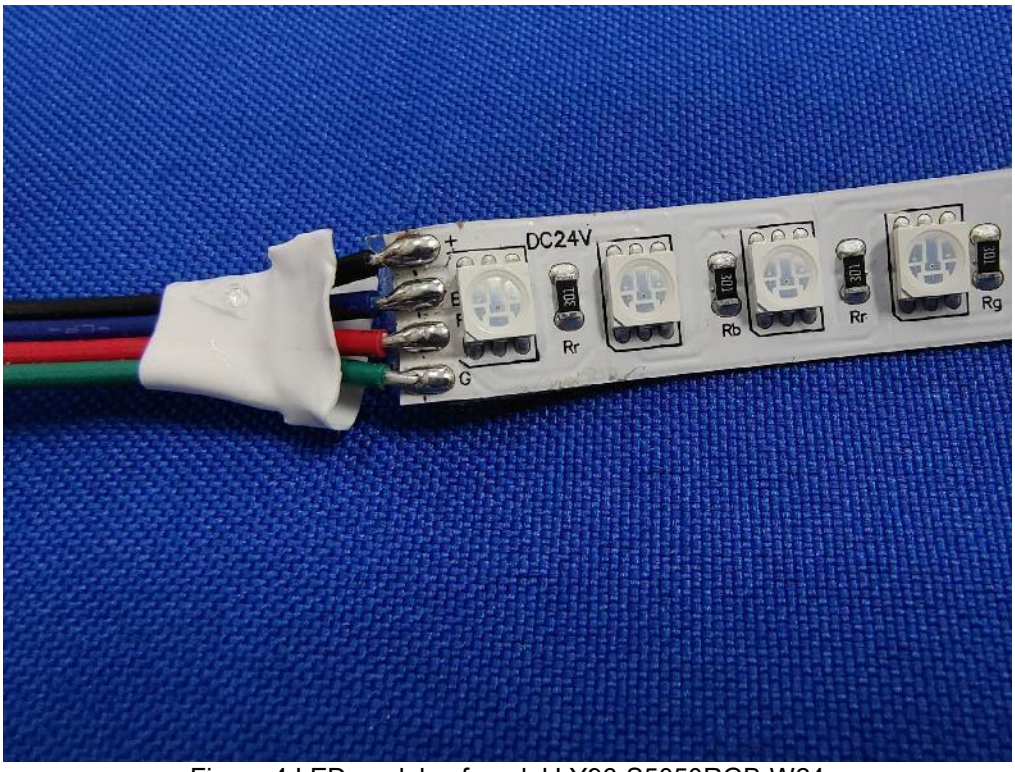

Figure 4 LED module of model LY96-S5050RGB-W24

Attachment 3: photo document

Figure 5 Over view of model LY72-S5050RGB-W24

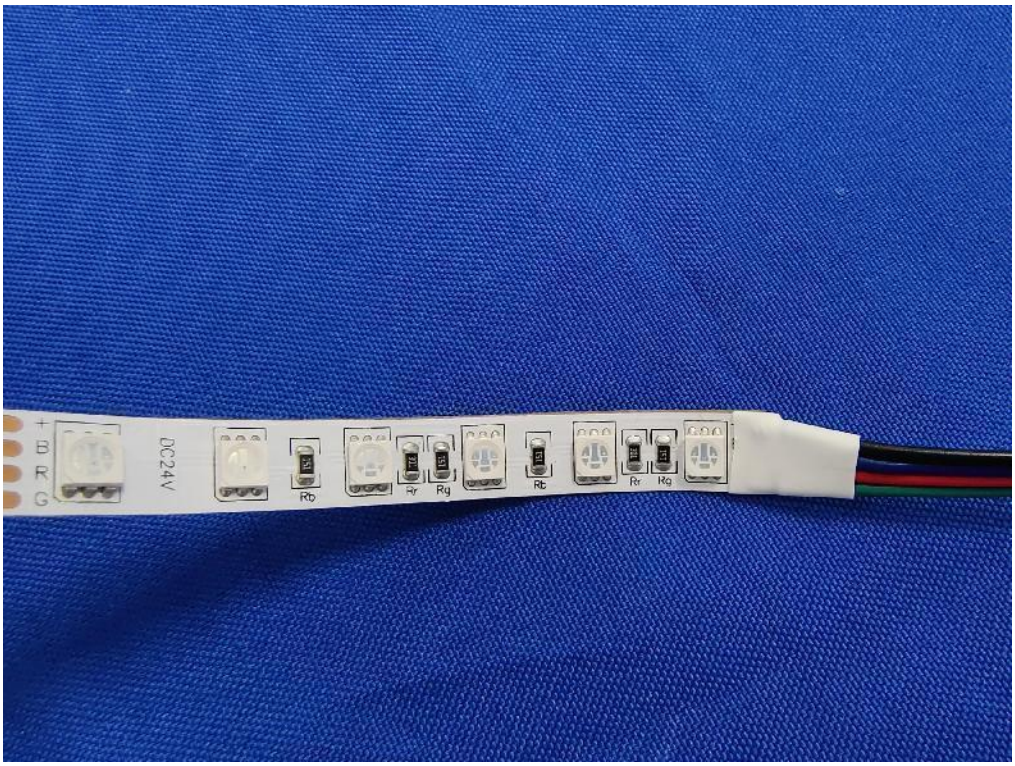

Figure 6 LED module view of model LY72-S5050RGB-W24

Attachment 3: photo document

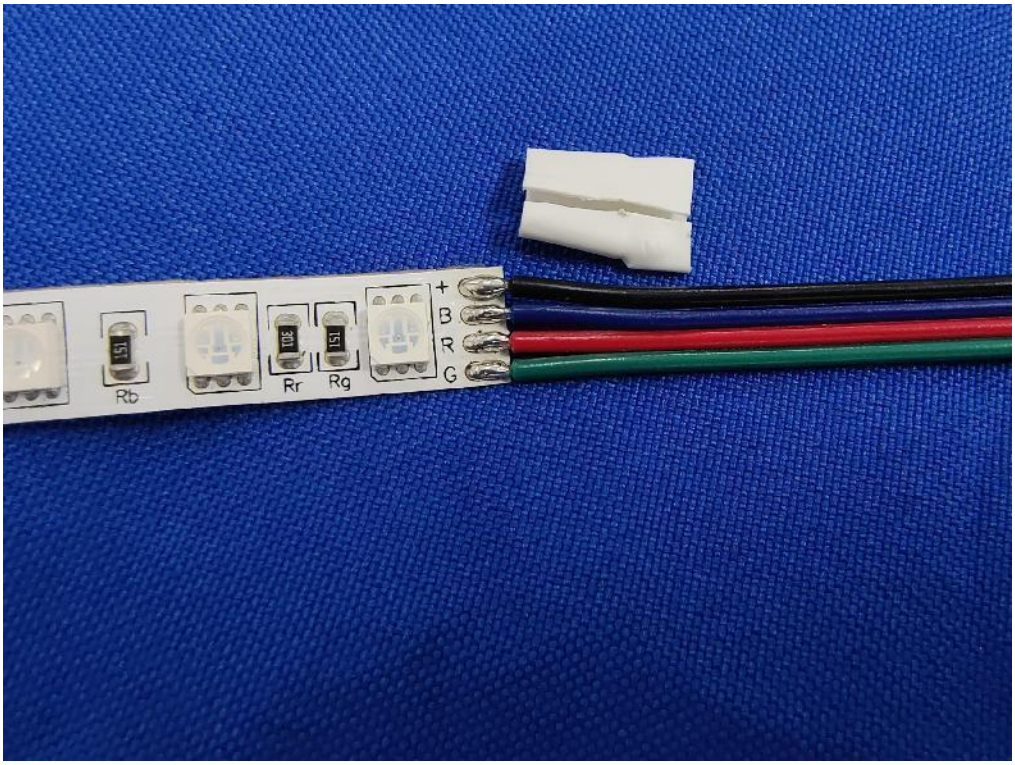

Figure 7 LED module view of model LY72-S5050RGB-W24

Figure 8 Over view of model LY60-S5050RGB-W12

Attachment 3: photo document

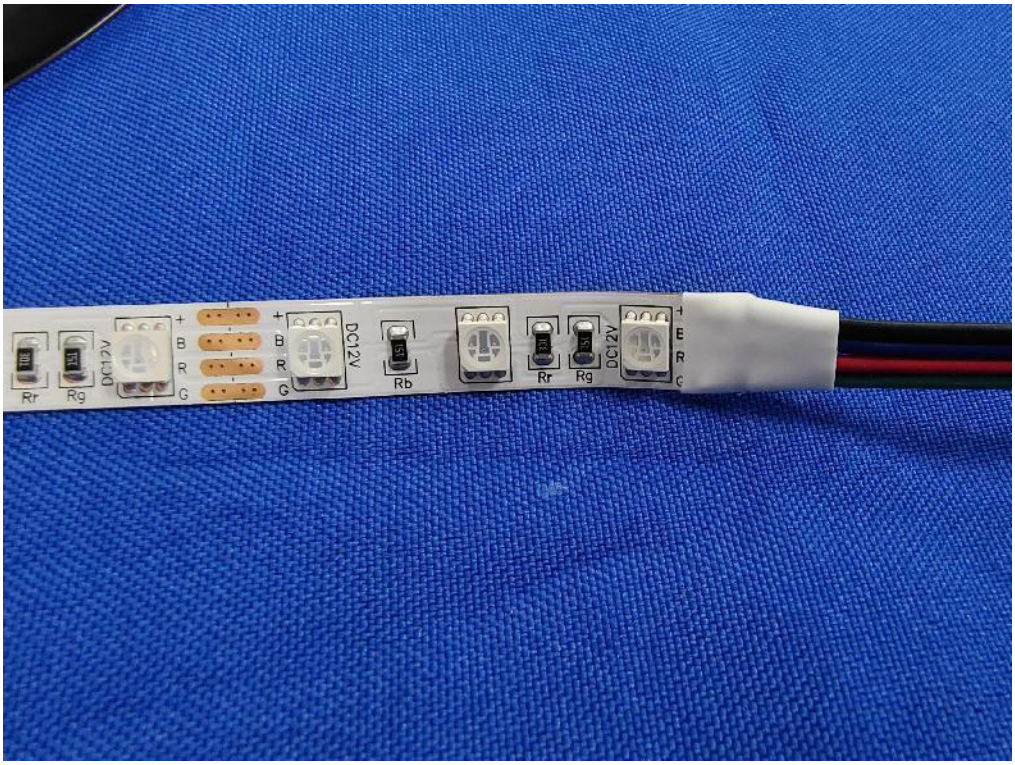

Figure 9 LED module view of model LY60-S5050RGB-W12

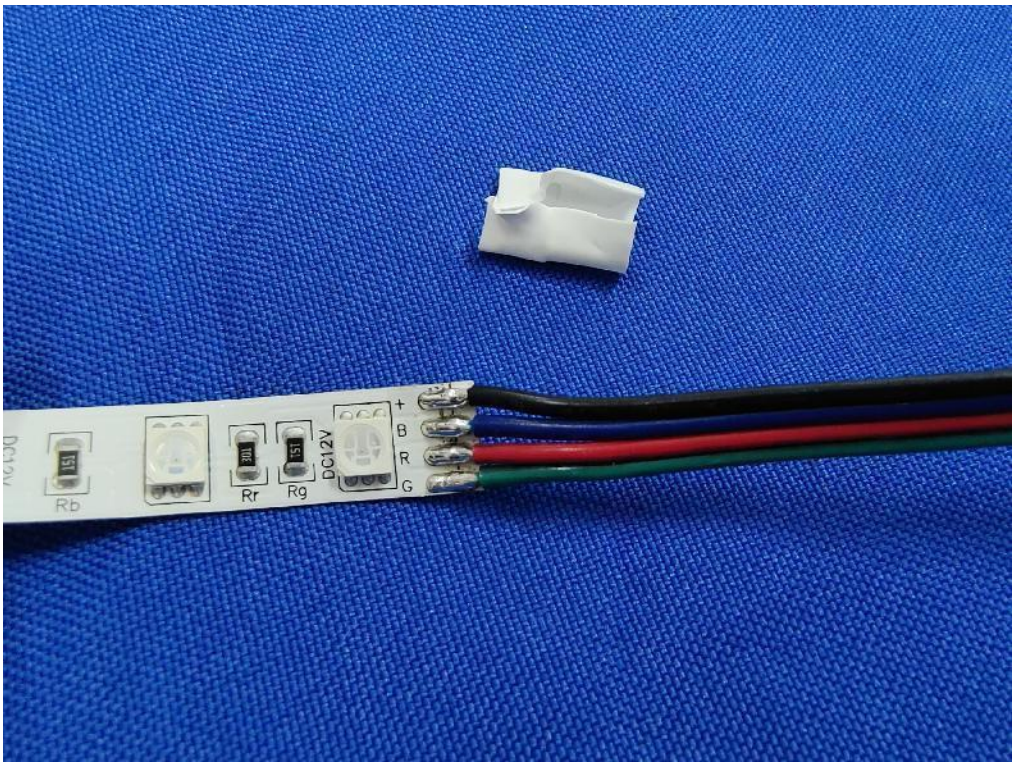

Figure 10 LED module view of model LY60-S5050RGB-W12

Attachment 3: photo document

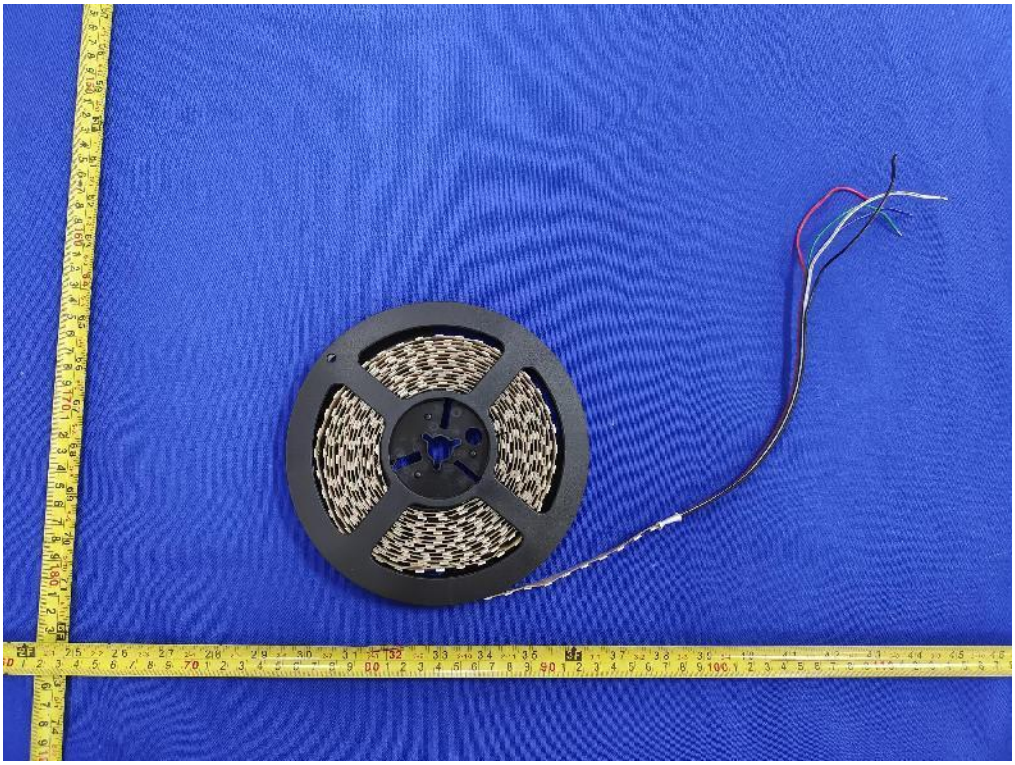

Figure 11 Over view of model LY84-S5050RGBW-W24

Figure 12 LED module view of model LY84-S5050RGBW-W24

Attachment 3: photo document

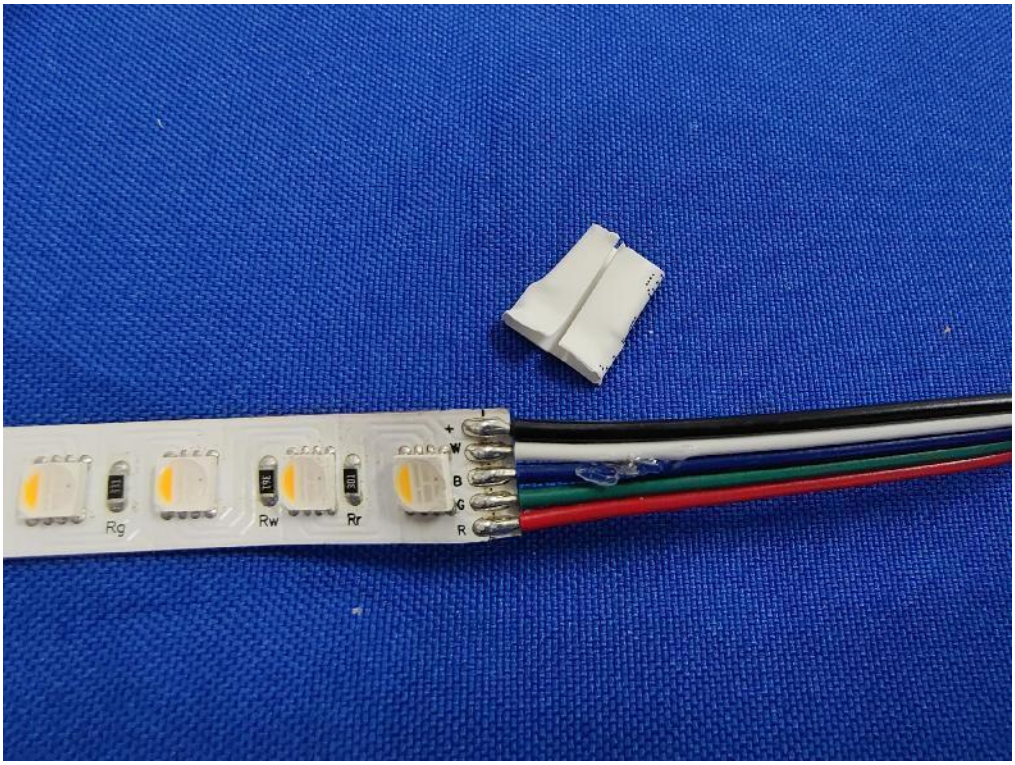

Figure 13 LED module view of model LY84-S5050RGBW-W24

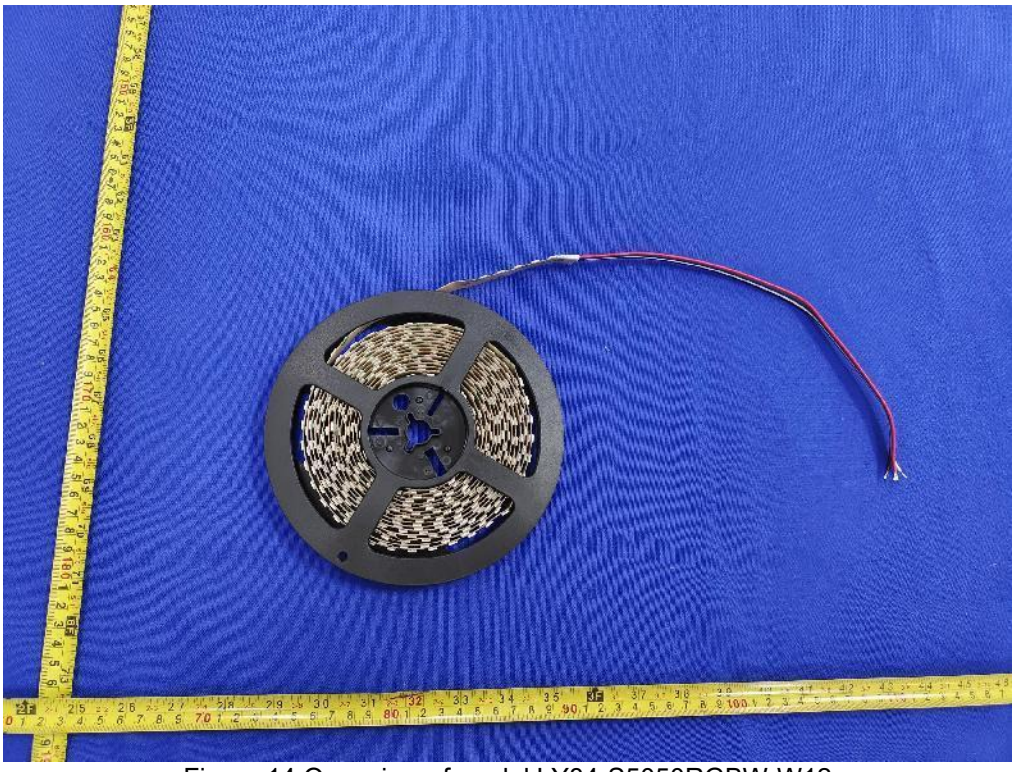

Figure 14 Over view of model LY84-S5050RGBW-W12

Attachment 3: photo document

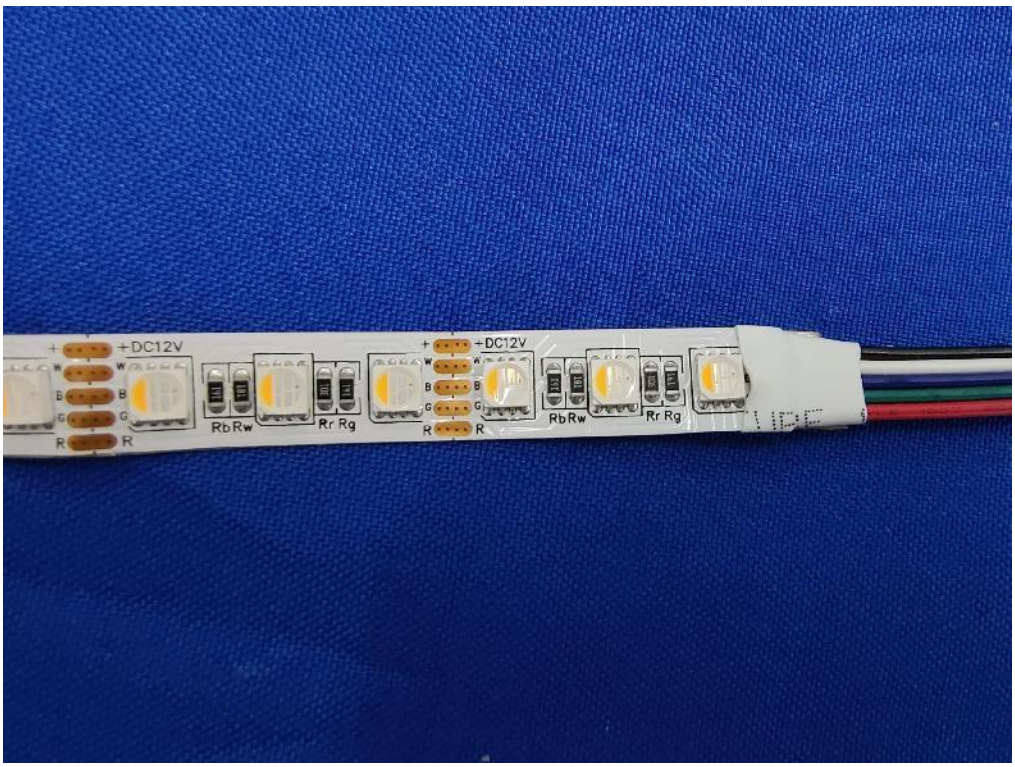

Figure 15 LED module view of model LY84-S5050RGBW-W12

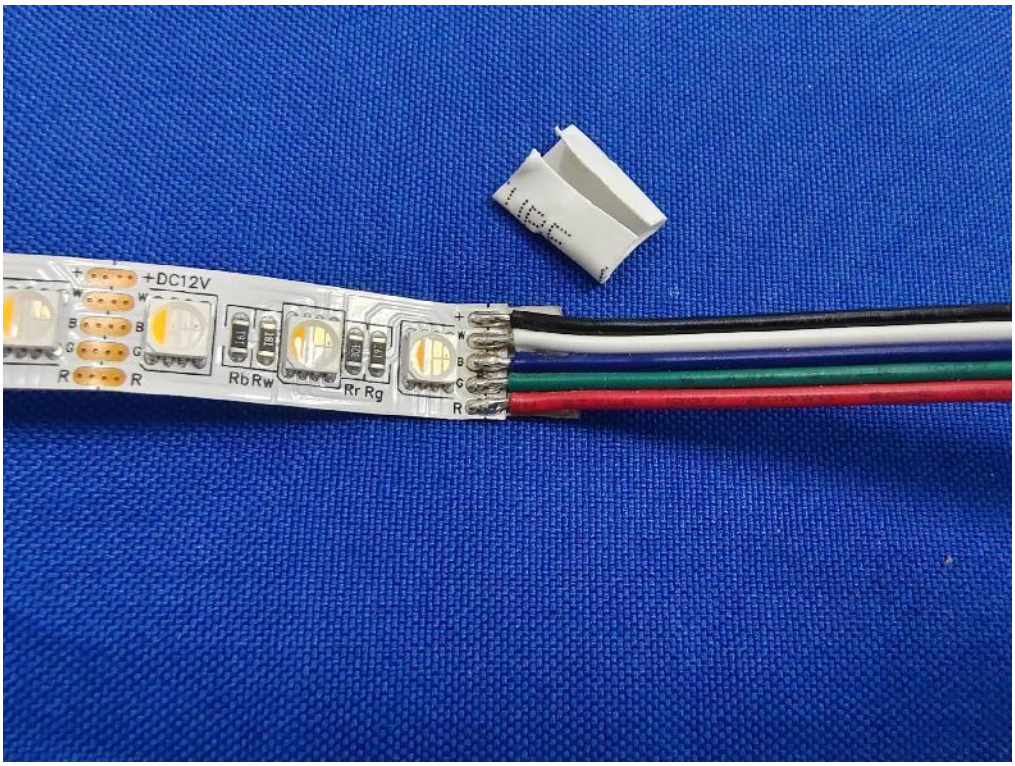

Figure 16 LED module view of model LY84-S5050RGBW-W12

Attachment 3: photo document

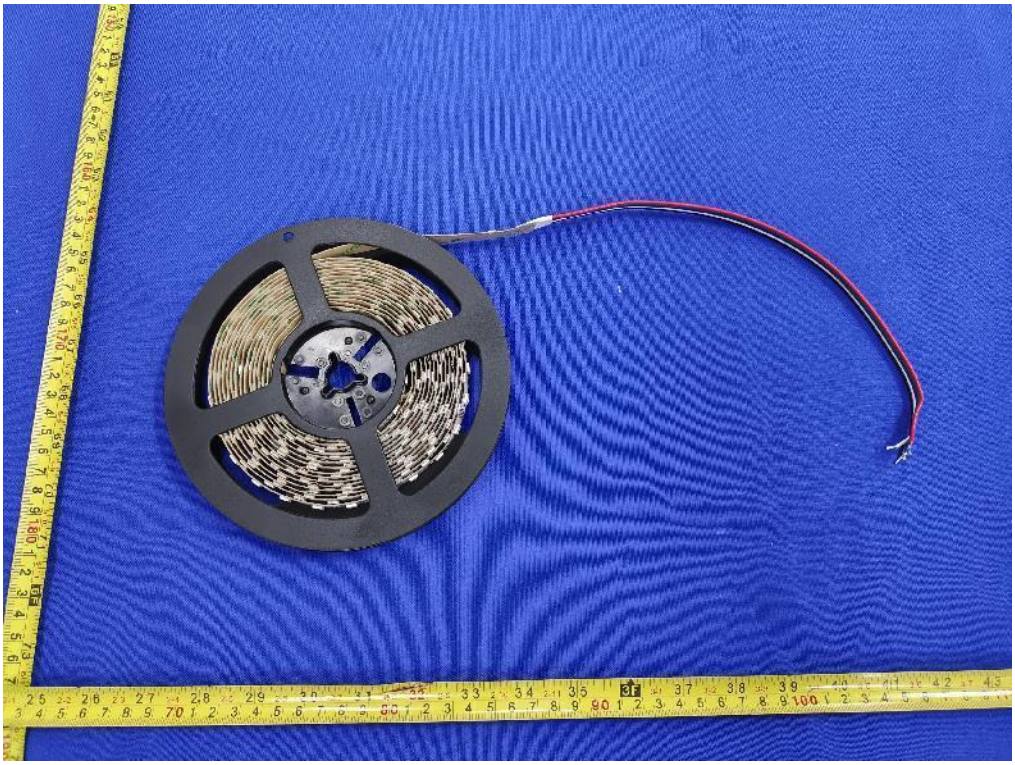

Figure 17 Over view of model LY60-S5050RGBW-W12

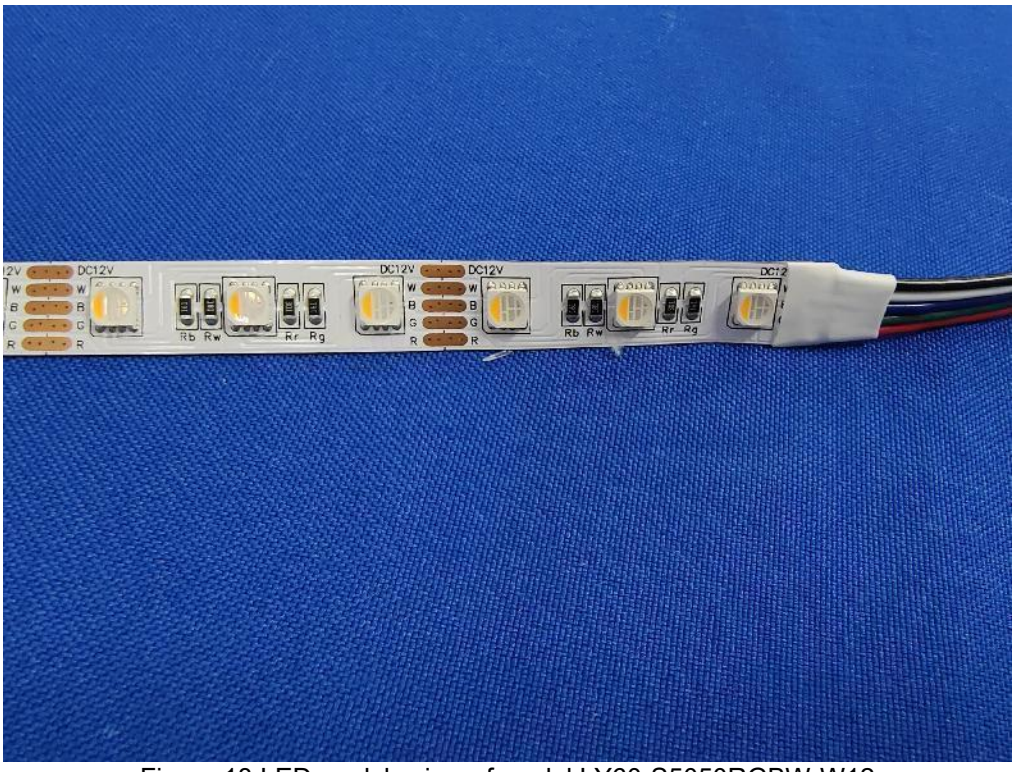

Figure 18 LED module view of model LY60-S5050RGBW-W12

Attachment 3: photo document

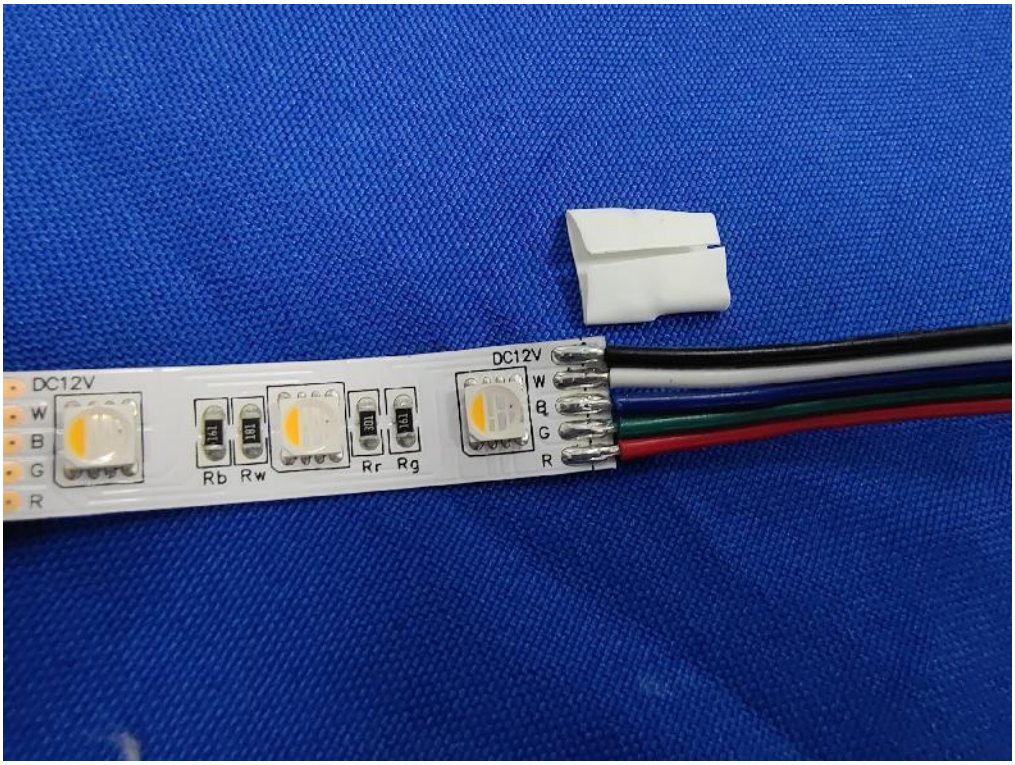

Figure 19 LED module view of model LY60-S5050RGBW-W12

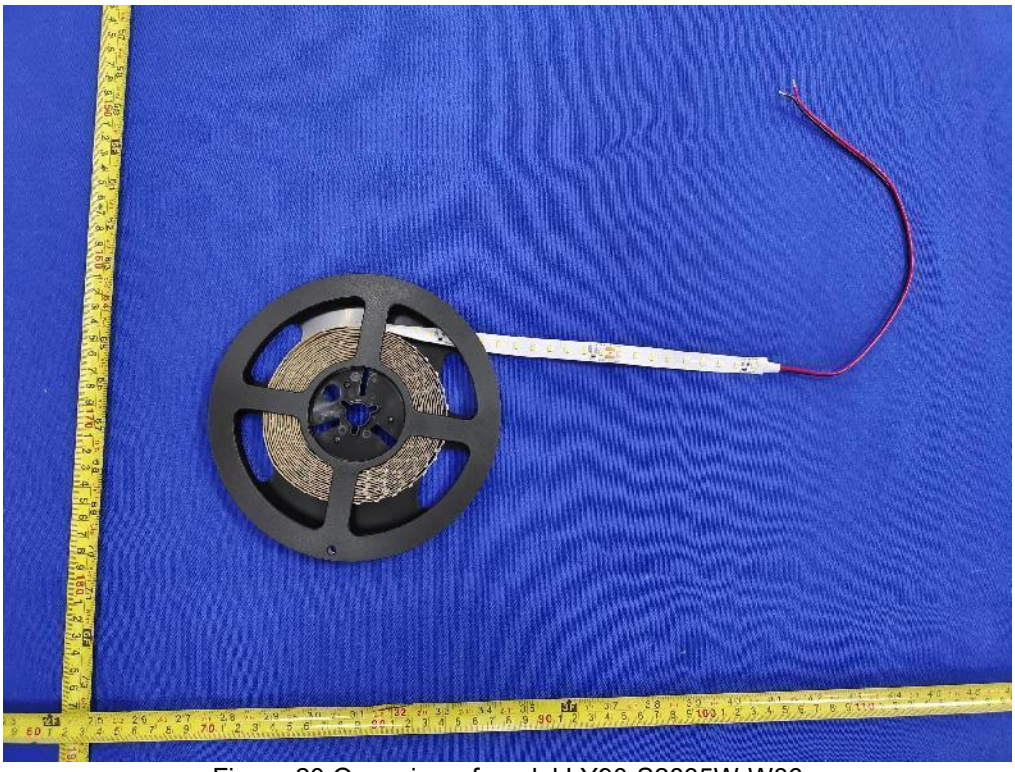

Figure 20 Over view of model LY90-S2835W-W36

Attachment 3: photo document

Figure 21 LED module view of model LY90-S2835W-W36

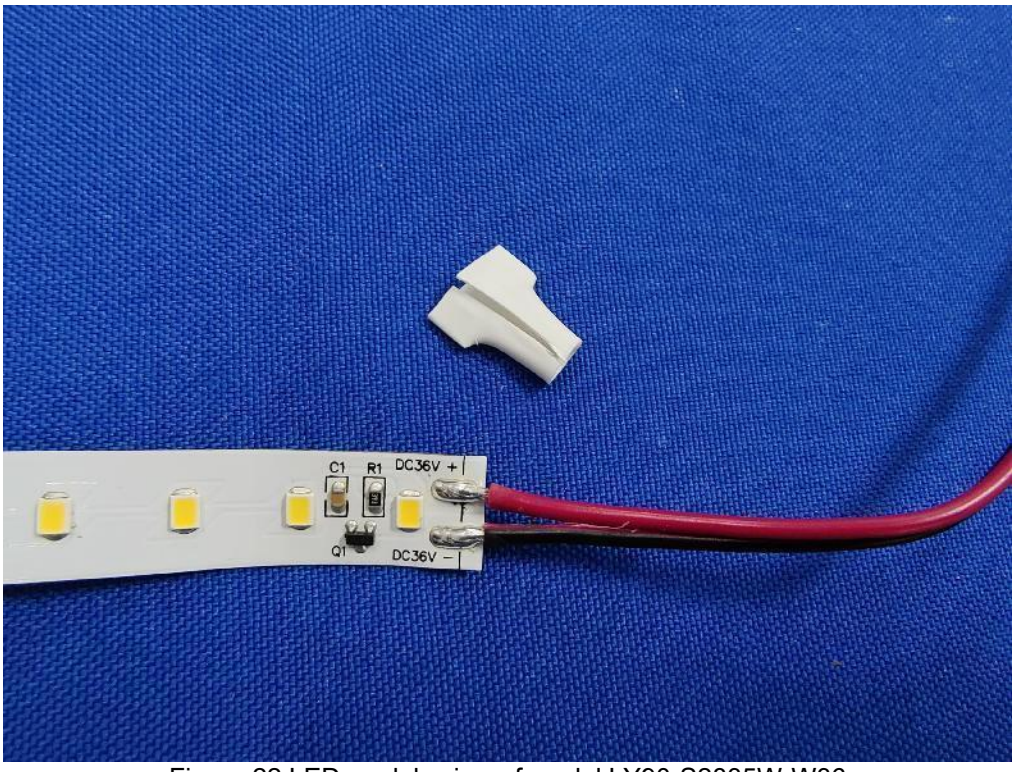

Figure 22 LED module view of model LY90-S2835W-W36

Attachment 3: photo document

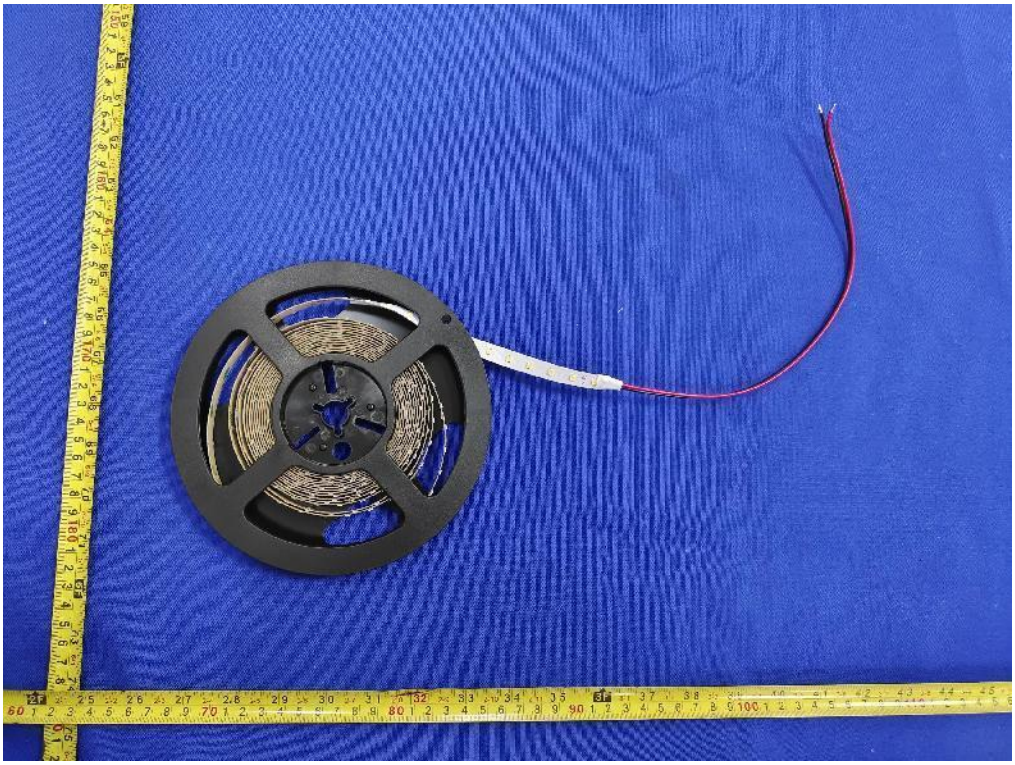

Figure 23 Over view of model LY78-S2835W-W48

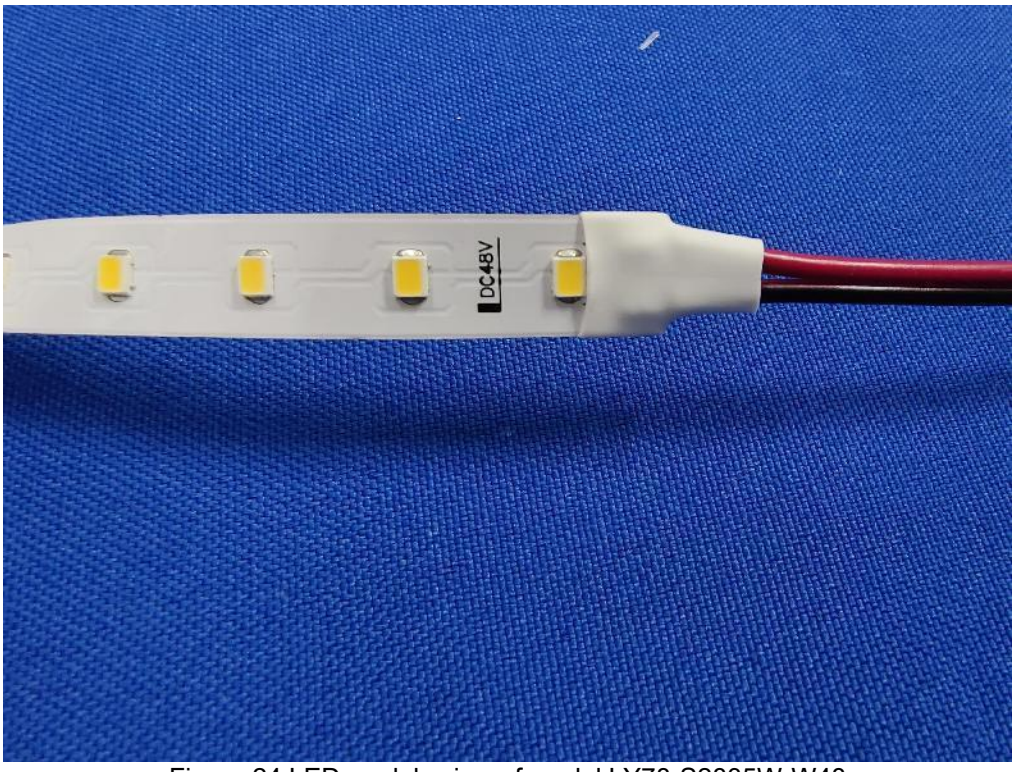

Figure 24 LED module view of model LY78-S2835W-W48

Attachment 3: photo document

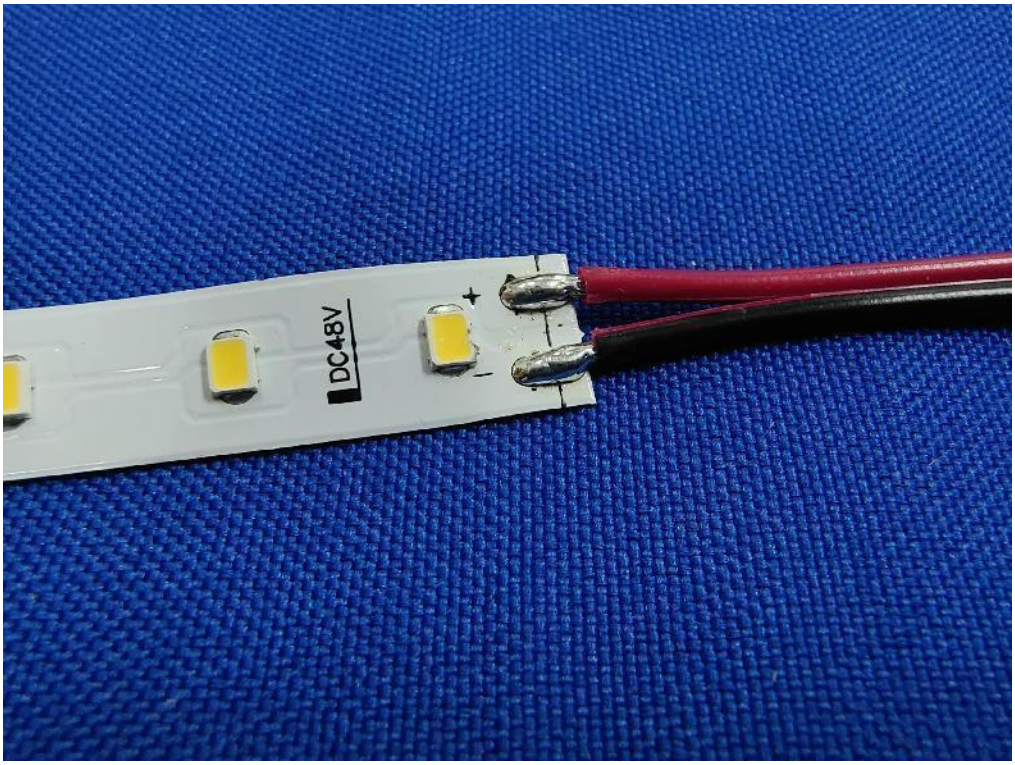

Figure 25 LED module view of model LY78-S2835W-W48

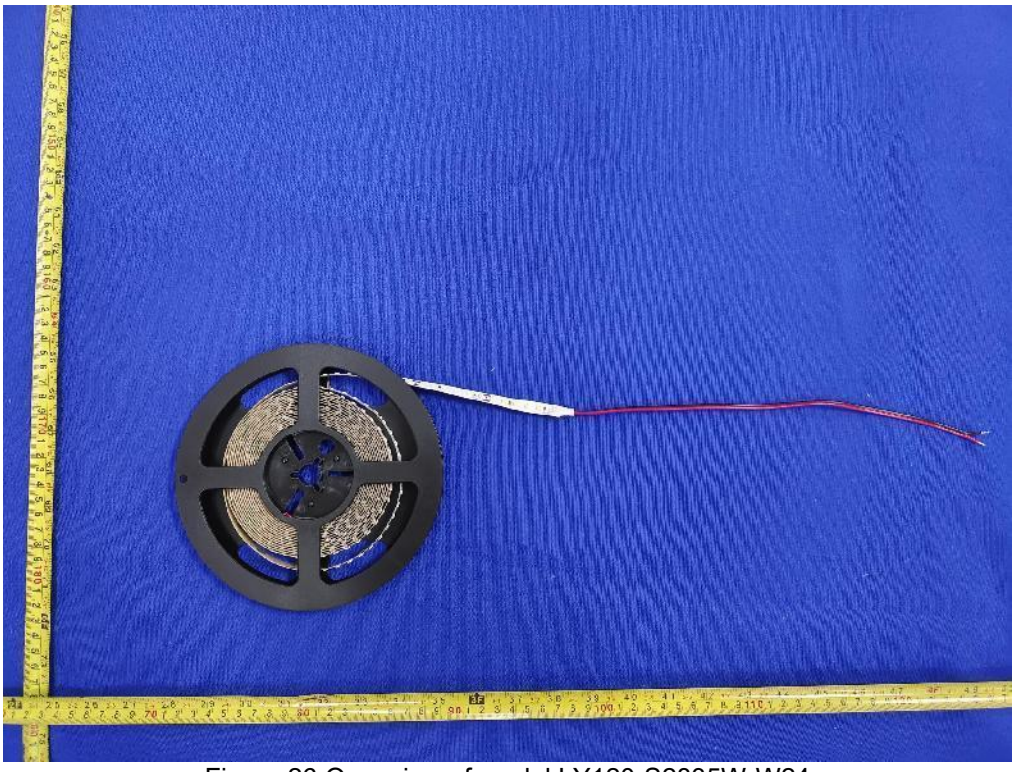

Figure 26 Over view of model LY120-S2835W-W24

Attachment 3: photo document

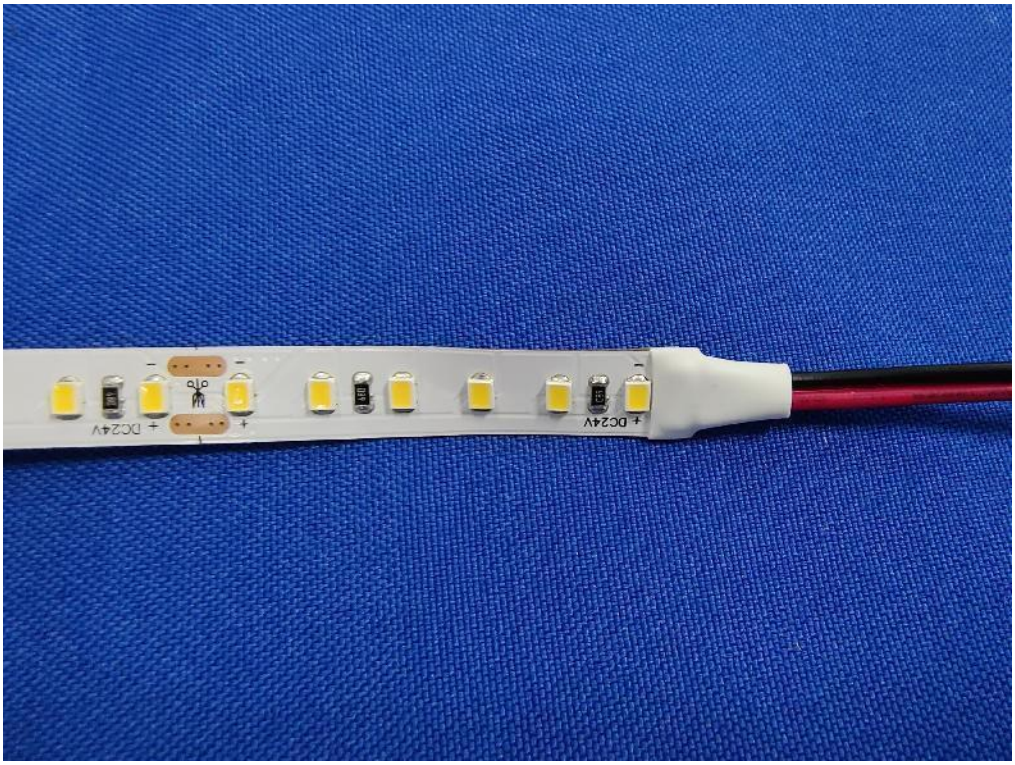

Figure 27 LED module view of model LY120-S2835W-W24

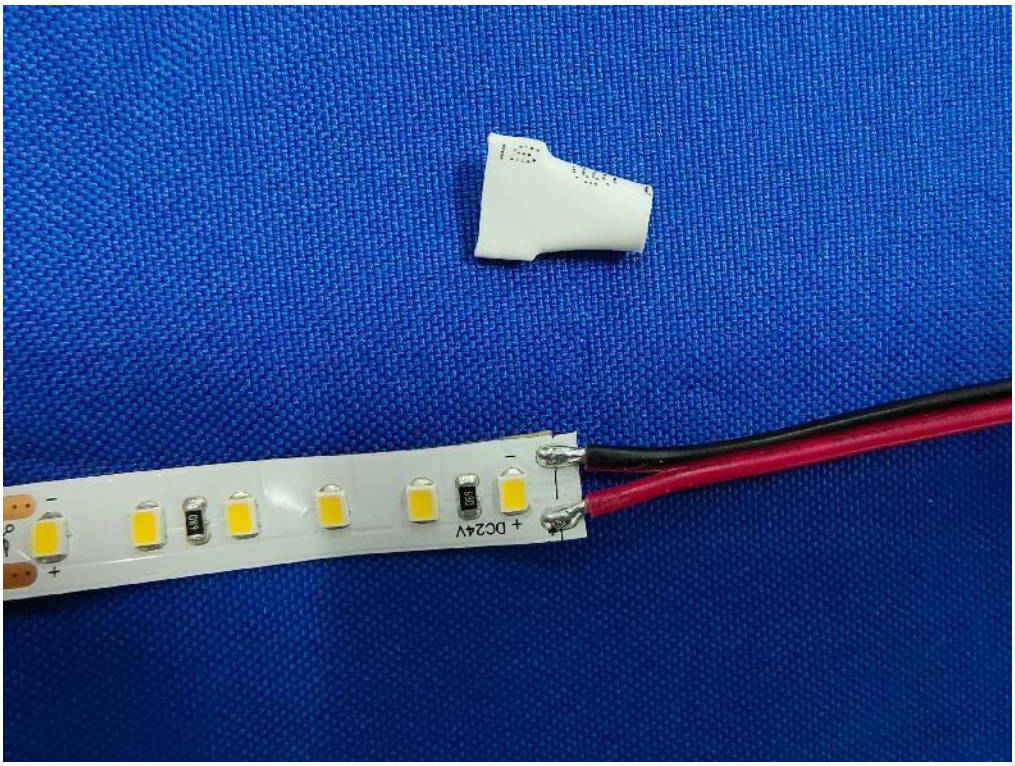

Figure 28 LED module view of model LY120-S2835W-W24

Attachment 3: photo document

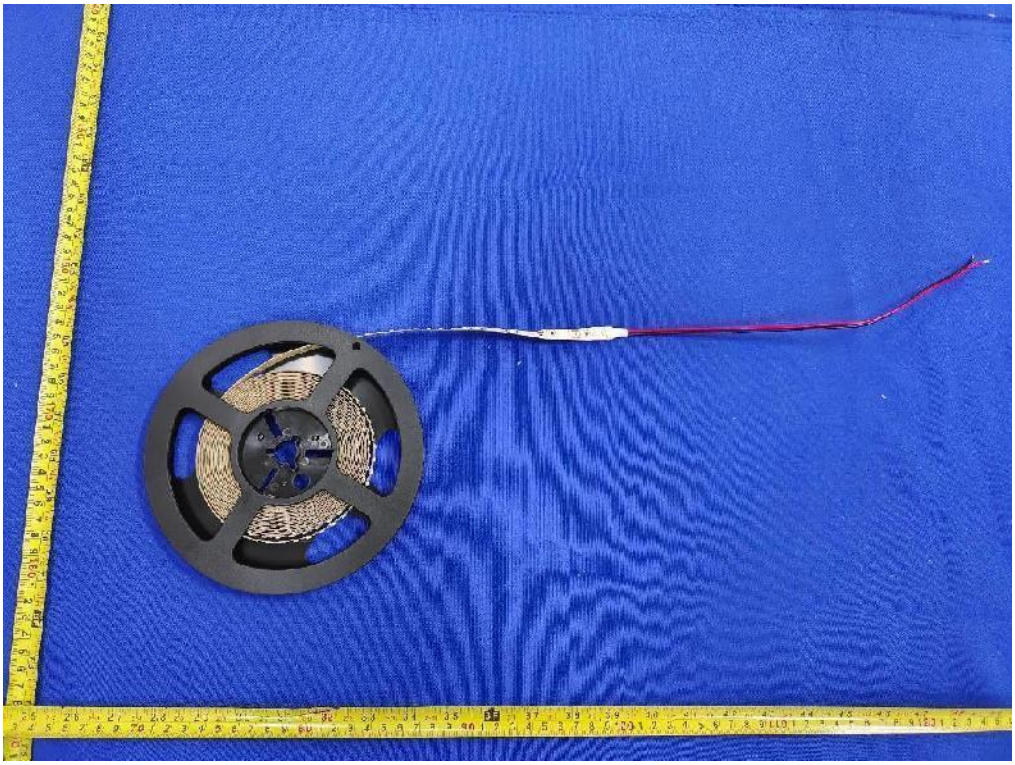

Figure 29 Over view of model LY120-S2835W-W12

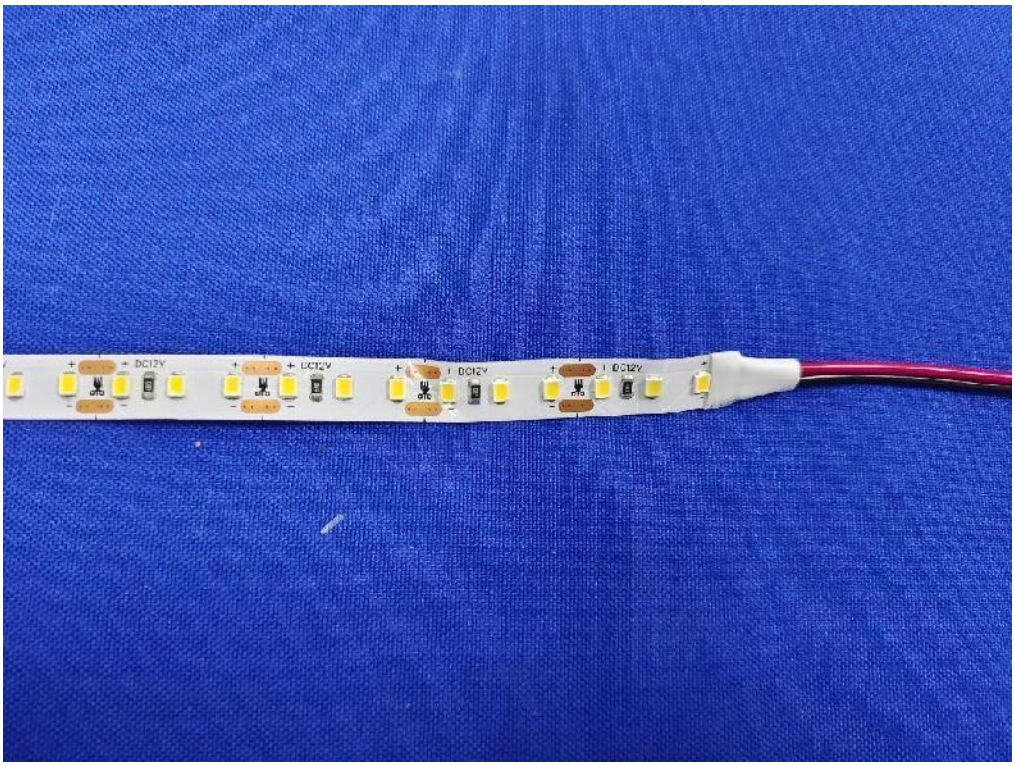

Figure 30 LED module view of model LY120-S2835W-W12

Attachment 3: photo document

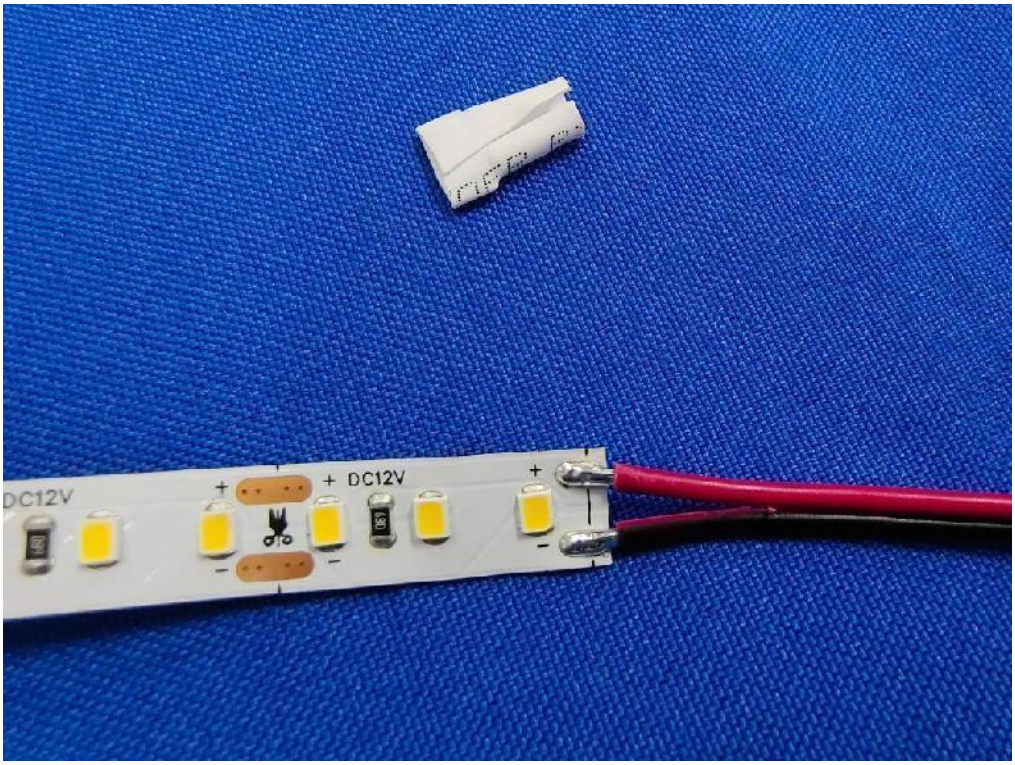

Figure 31 LED module view of model LY120-S2835W-W12

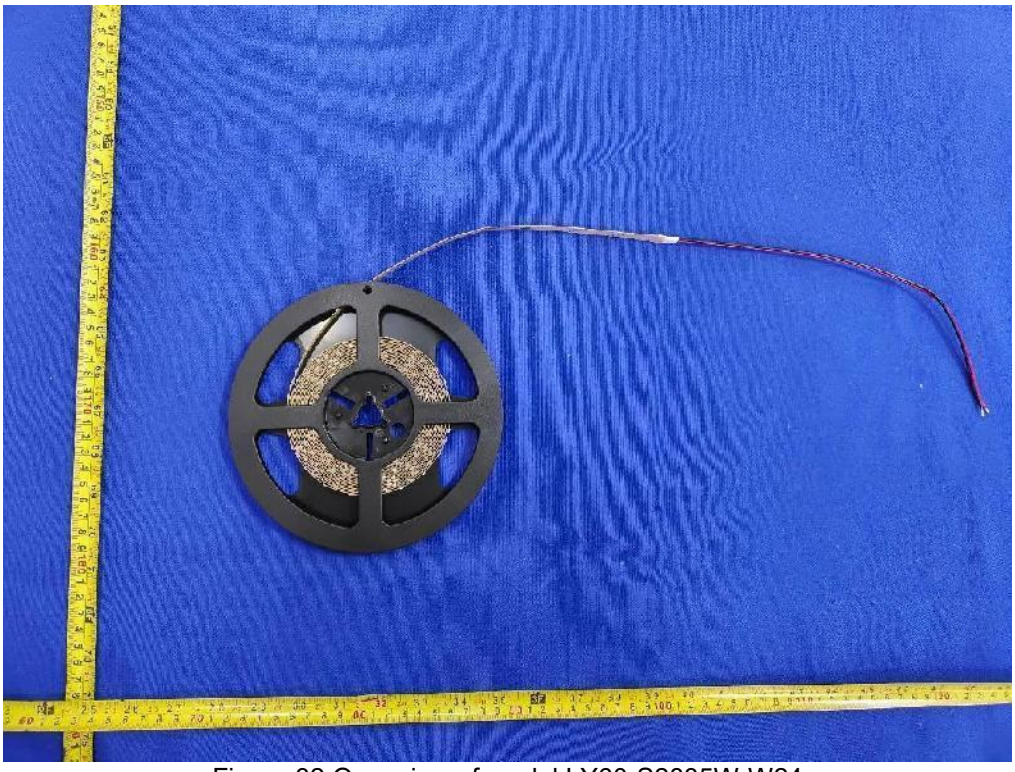

Figure 32 Over view of model LY60-S2835W-W24

Attachment 3: photo document

Figure 33 LED module view of model LY60-S2835W-W24

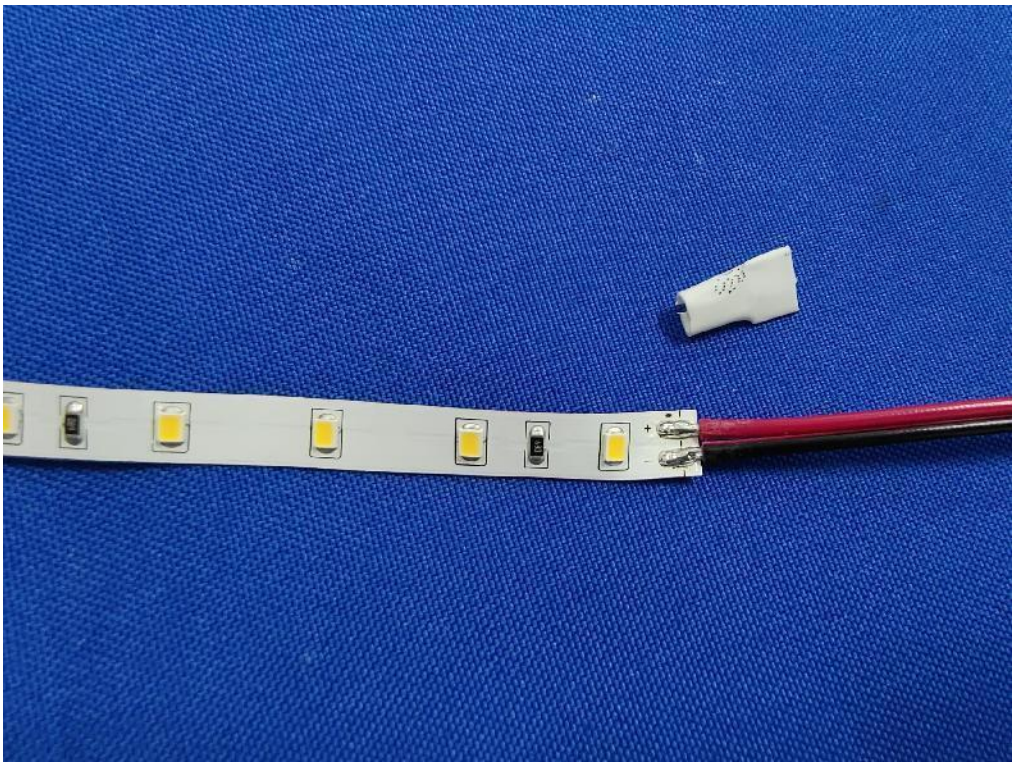

Figure 34 LED module view of model LY60-S2835W-W24

Attachment 3: photo document

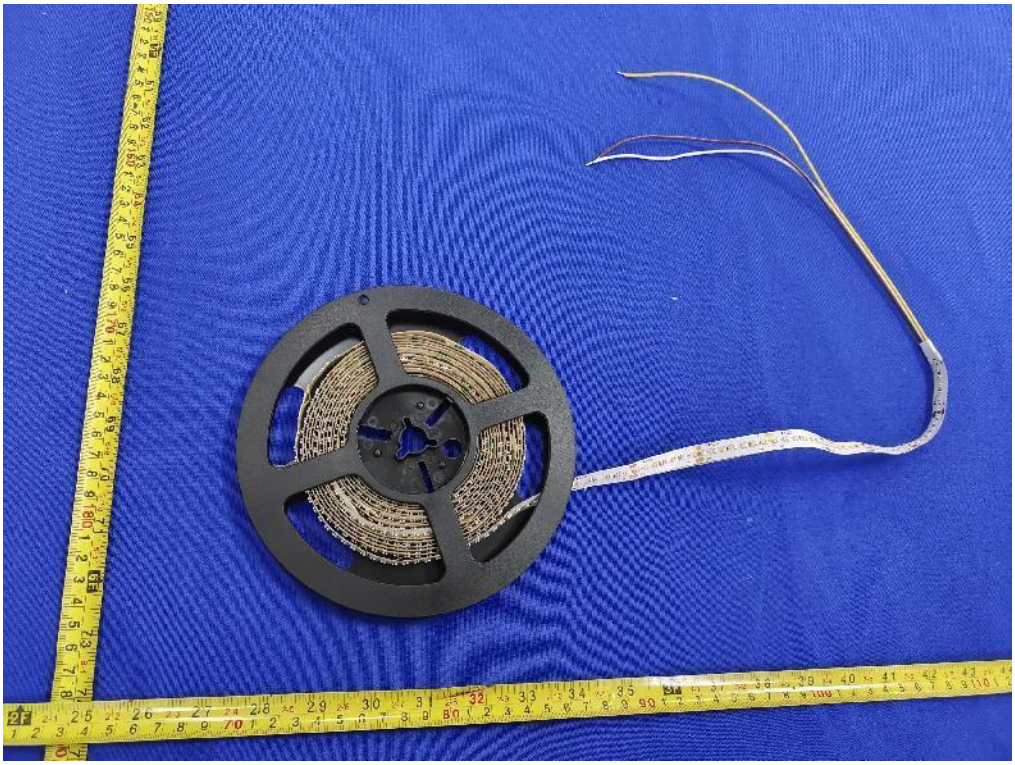

Figure 35 Over view of model LY364-S2010TW-W24

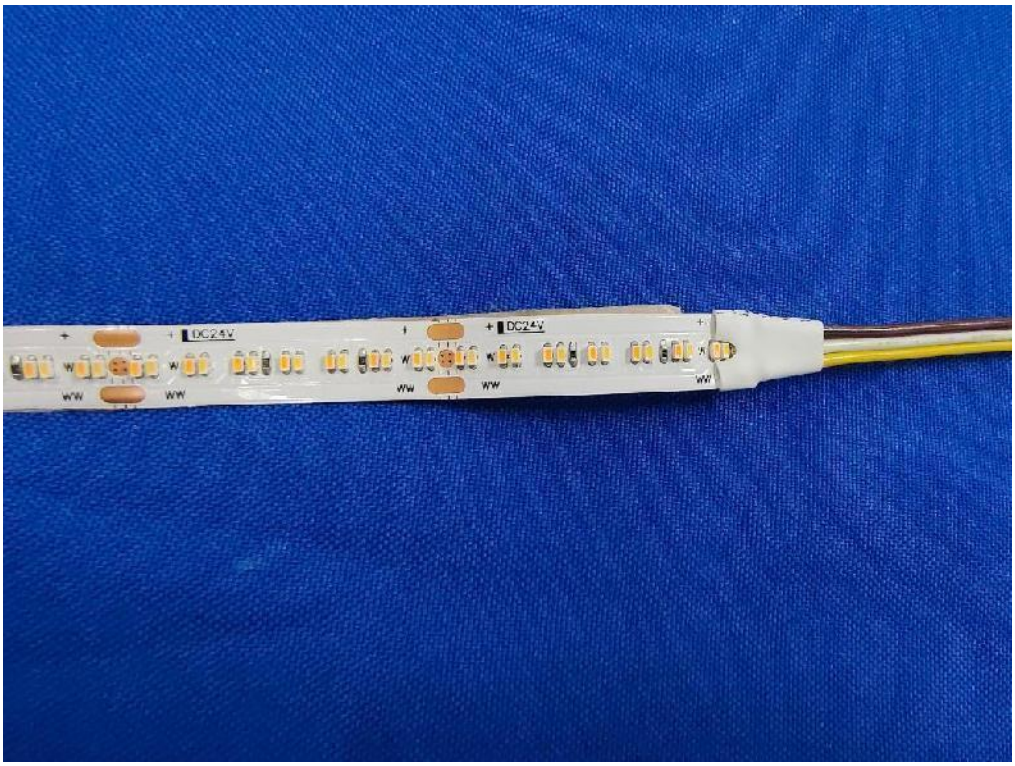

Figure 36 LED module view of model LY364-S2010TW-W24

Attachment 3: photo document

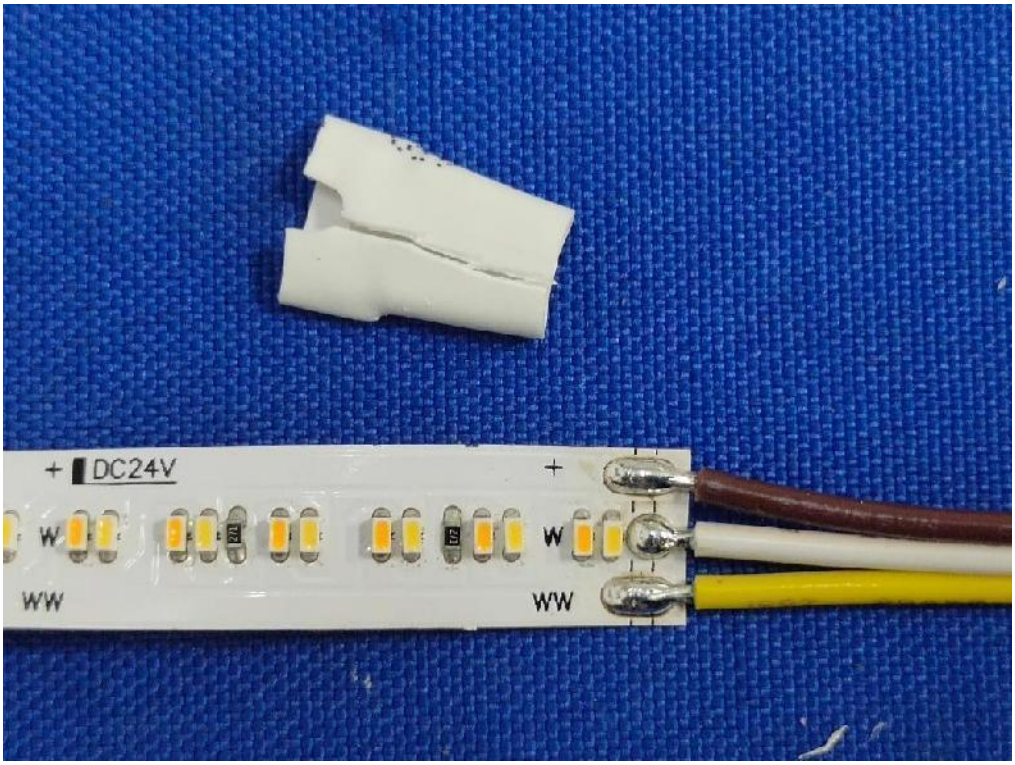

Figure 37 LED module view of model LY364-S2010TW-W24

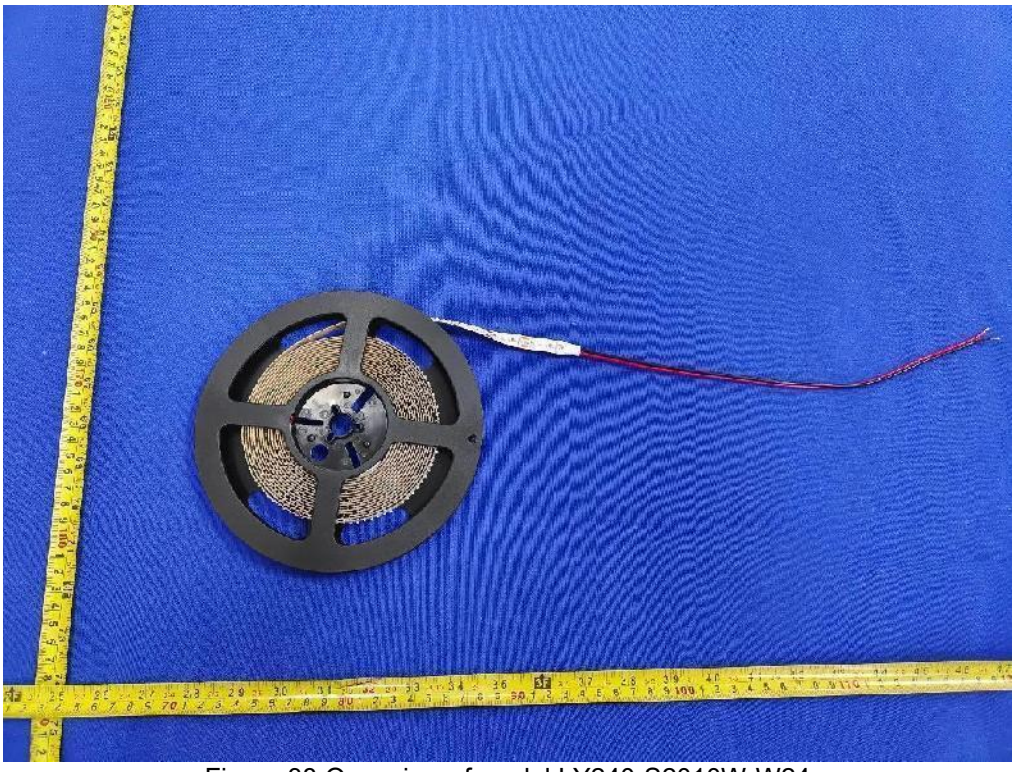

Figure 38 Over view of model LY240-S2010W-W24

Attachment 3: photo document

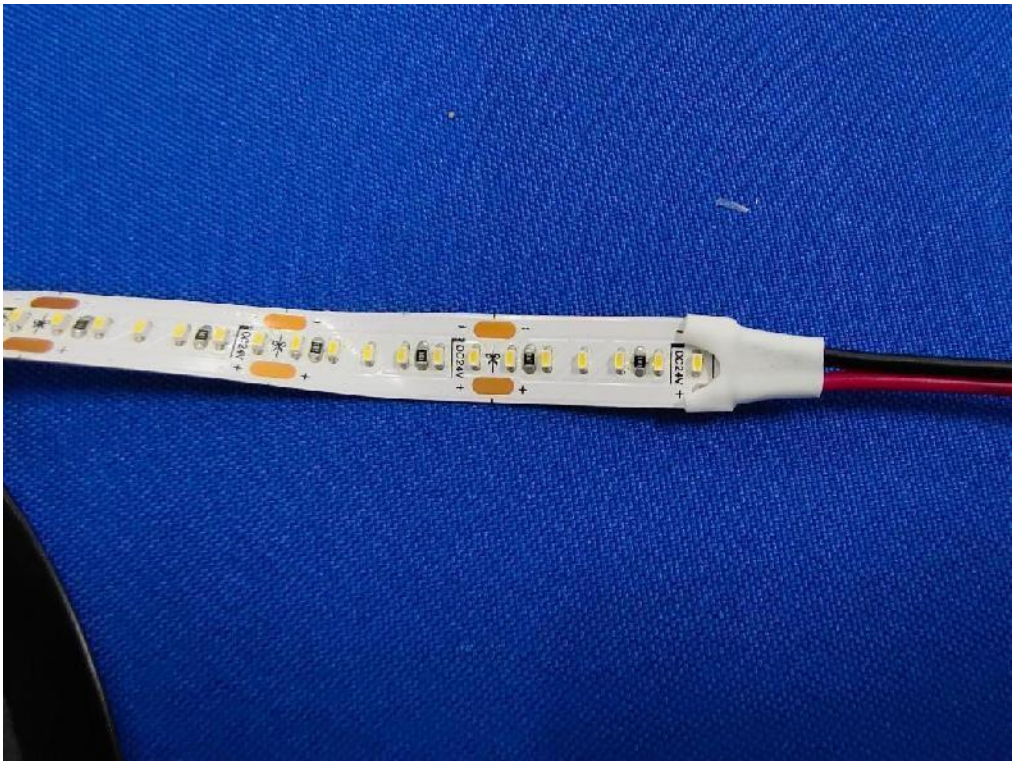

Figure 39 LED module view of model LY240-S2010W-W24

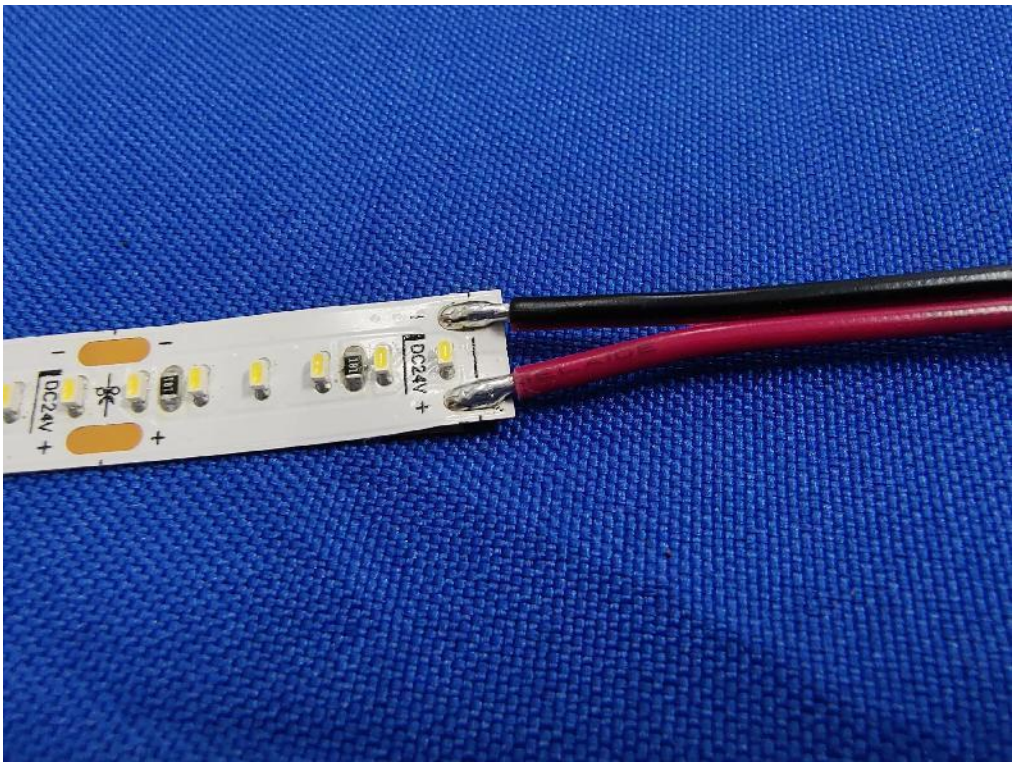

Figure 40 LED module view of model LY240-S2010W-W24

Attachment 3: photo document

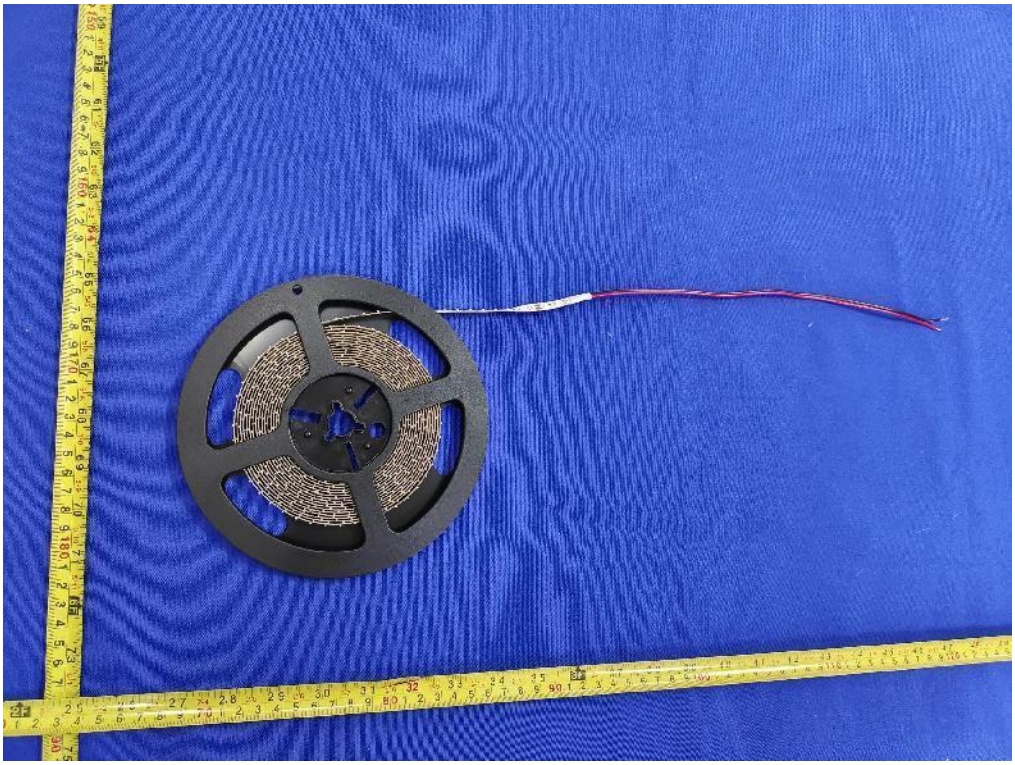

Figure 41 Over view of model LY120-S2010W-W12

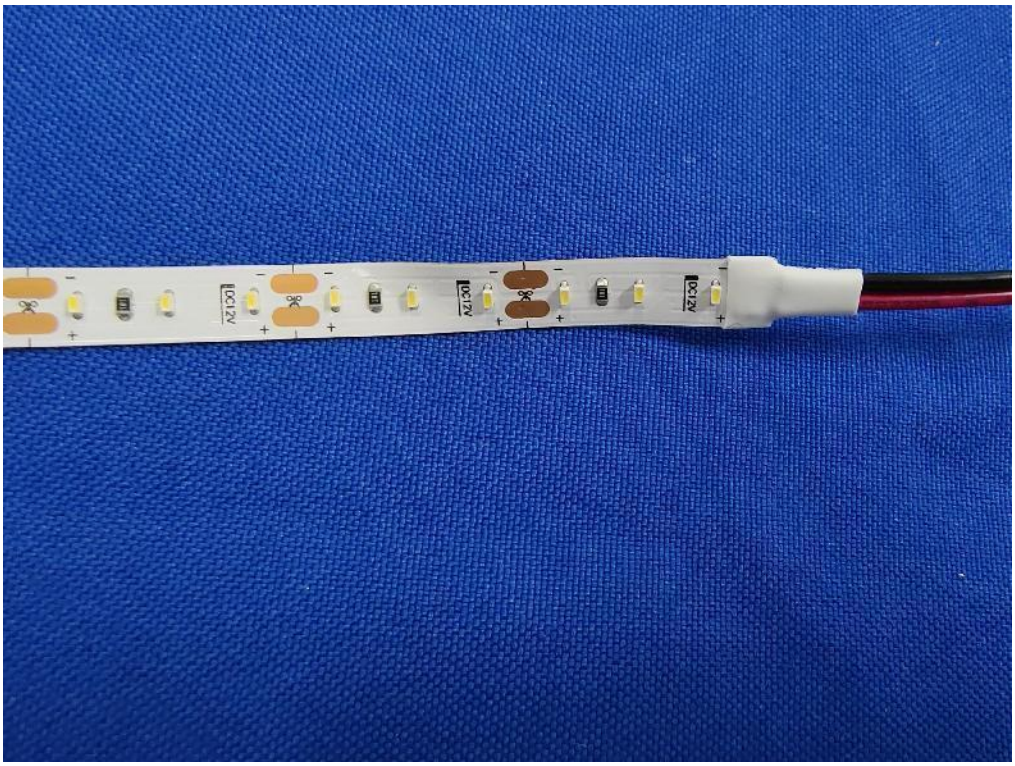

Figure 42 LED module view of model LY120-S2010W-W12

Attachment 3: photo document

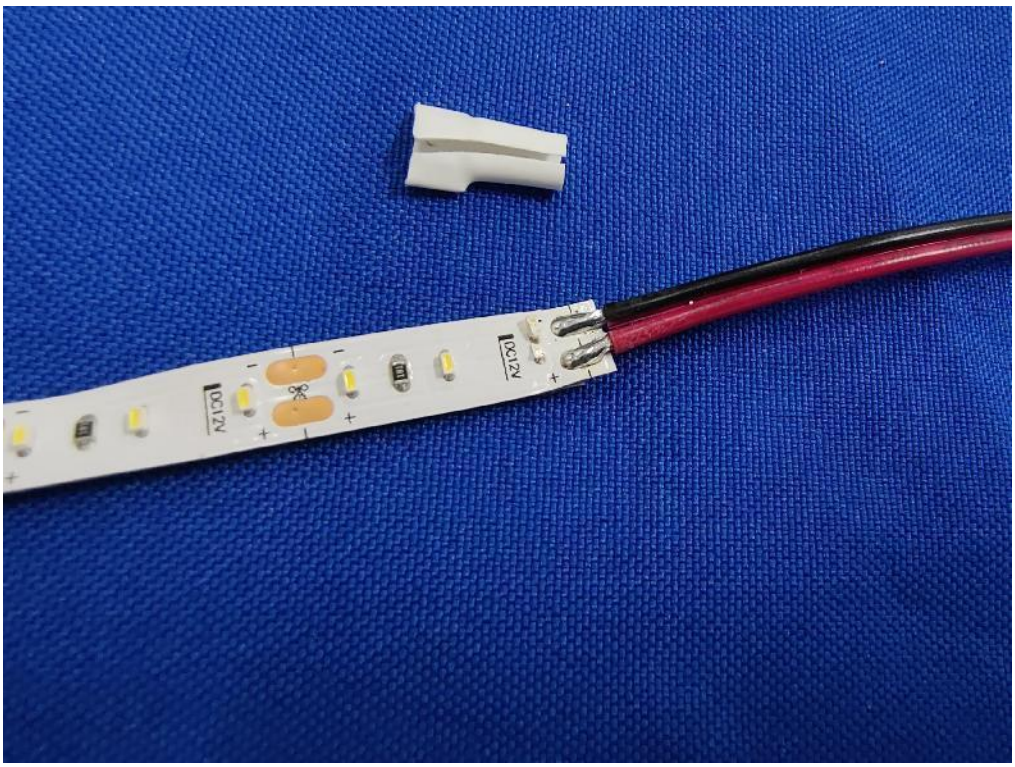

Figure 43 LED module view of model LY120-S2010W-W12

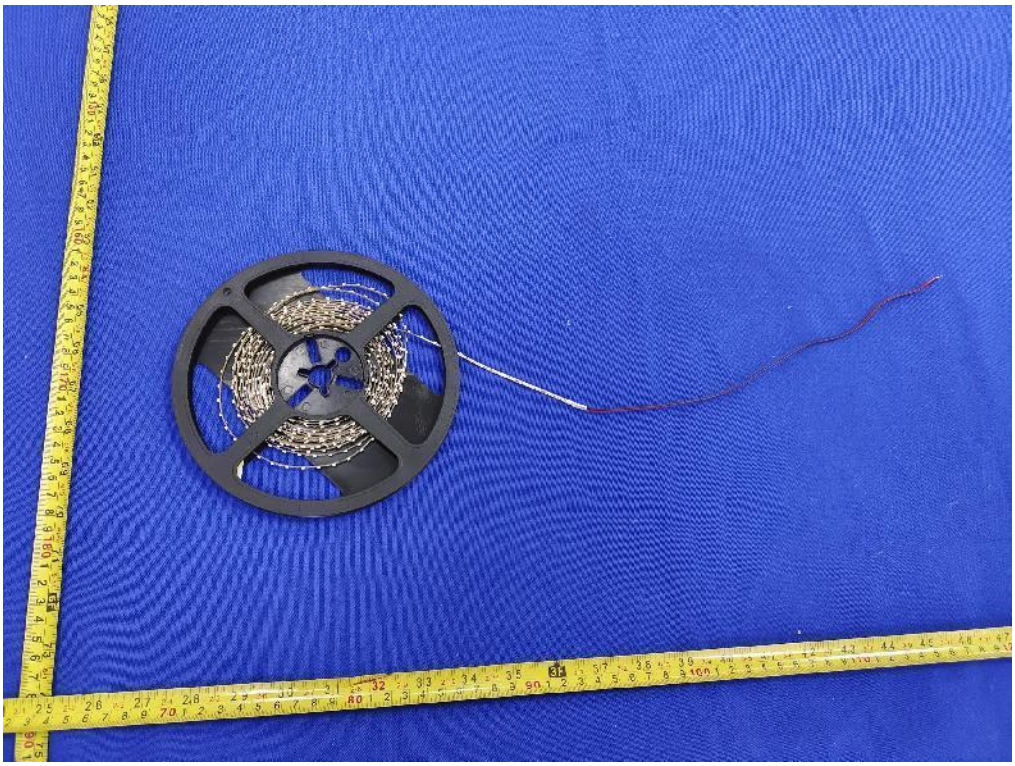

Figure 44 Over view of model LY108-S2010W-W24

Attachment 3: photo document

Figure 45 LED module view of model LY108-S2010W-W24

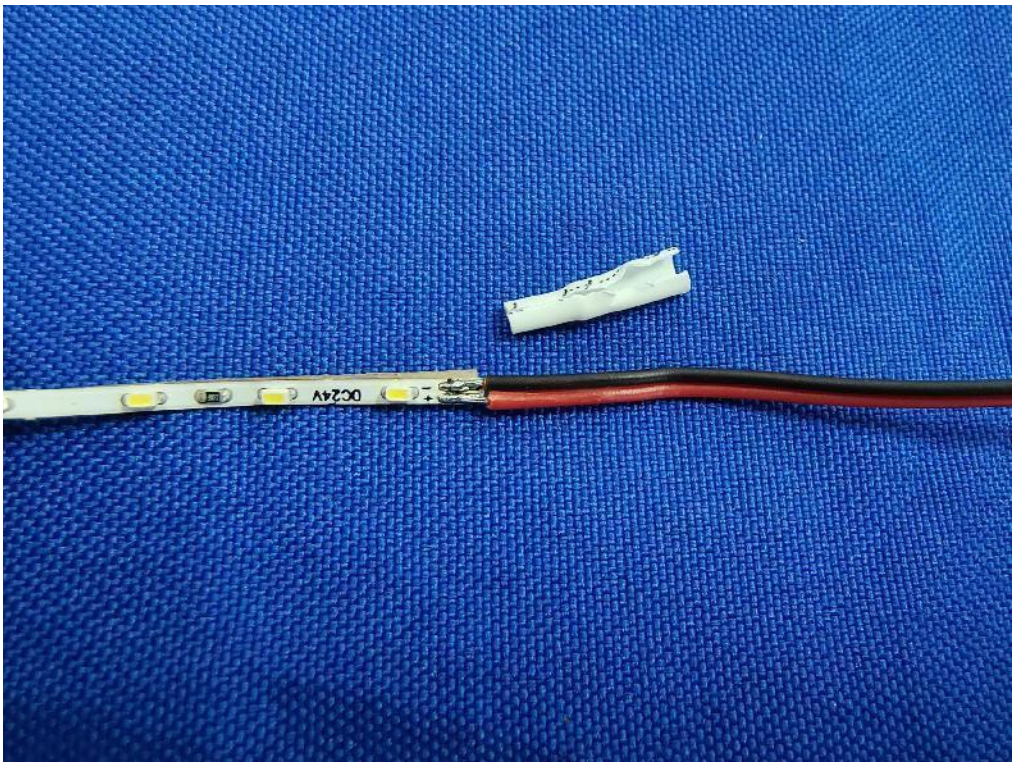

Figure 46 LED module view of model LY108-S2010W-W24

Attachment 3: photo document

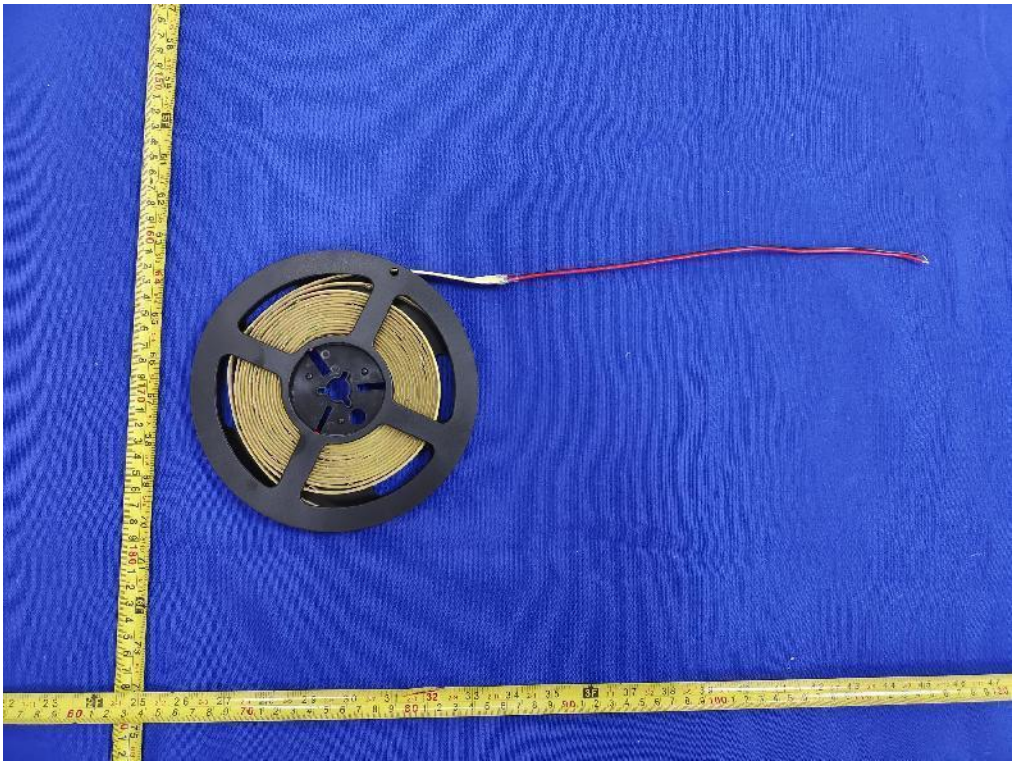

Figure 47 Over view of model LY480-COBW-W12

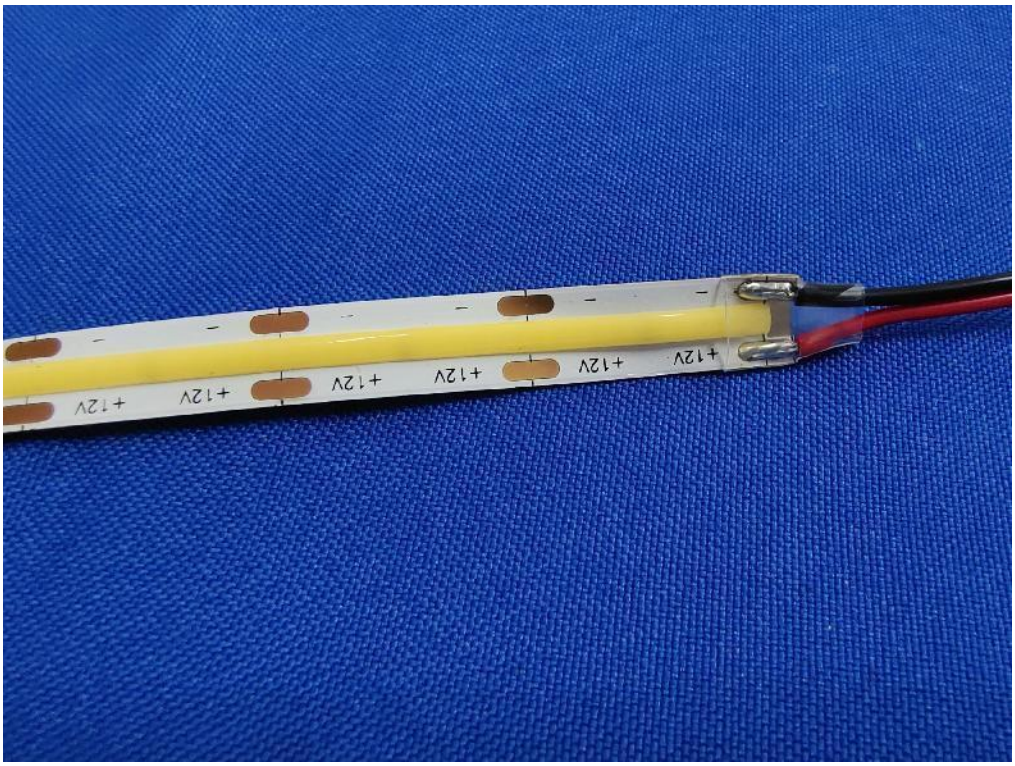

Figure 48 LED module view of model LY480-COBW-W12

- END OF REPORT -