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REPORT

On

LOW-VOLTAGE LIGHTING SYSTEMS, POWER UNITS, LUMINAIRES AND FITTINGS

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Guangzhou, CN

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DESCRIPTION

PRODUCT COVERED:

USL, CNL - Low Voltage Luminaries, Surface mounted, LED tape light, Class 2, Models LNTS3XXXXX-D24, LNTS5XXXXX-D12, LNTS5XXXXX-D24, LNTS6XXXXX-D12, LNTS6XXXXX-D24, LNTS7XXXXX-D12, LNTS7XXXXX-D24, LNTS8XXXXX-D12, LNTS8XXXXX-D24, LNTS0XXXXCOBX-D12, LNTS0XXXXCOBX-D24, LNTKD8XXXXX-D5, LNMS5X2PN46-D12, LNMS5X3PF81-D12, LNMS5X3PN81-D12, LNMS5X2F33-D12, LNMS8X2A0E23E-DC12.

Note: The "X" is variable, for details see below and nomenclature on page 2.

The models with the second "X" is "N", which are suitable for using in dry location. The models with the second "X" is "H, J, Q, U or G", which are suitable for using in wet location.

ELECTRICAL RATINGS:

Low Voltage Luminaries, LED tape light

No.	Model	Input voltage (VDC)	Input current (A)	Input wattage (W)	Max LEDs Qty/m
1	LNTS3XXXXX-D24	24	4	96	240
2	LNTS5XXXXX-D12	12	5	60	120
3	LNTS5XXXXX-D24	24	4	96	120
4	LNTS6XXXXX-D12	12	5	60	300
5	LNTS6XXXXX-D24	24	4	96	300
6	LNTS7XXXXX-D12	12	5	60	120
7	LNTS7XXXXX-D24	24	4	96	120
8	LNTS8XXXXX-D12	12	5	60	714
9	LNTS8XXXXX-D24	24	4	96	700
10	LNTS0XXXXCOBX-D12	12	5	60	N/A
11	LNTS0XXXXCOBX-D24	24	4	96	N/A
12	LNTKD8XXXXX-D5	5	5	25	144
13	LNMS5X2PN46-D12	12	5	60	60
14	LNMS5X3PF81-D12	12	5	60	60
15	LNMS5X3PN81-D12	12	5	60	60
16	LNMS5X2F33-D12	12	5	60	60
17	LNMS8X2A0E23E-DC12	12	5	60	60

Note: LED tape can be cut for each segment and also with scissors marking for where it is suitable for cut. Minimum unit for use was called as a segment.

NOMENCLATURE BREAKDOWN:

LNTS	X	X	X	X	X	-	D12
	I	II	III	IV	V		

LNTS	X	X	X	X	X	-	D24
	I	II	III	IV	V		

LNTKD	X	X	X	X	X	-	D5
	I	II	III	IV	V		

I: Can be 0, 3, 5, 6, 7 or 8, represent COB, 3528, 5050, 2216, 5630, 2835 LED type respectively.

II: Can be WNW, WW, CW, NW, PW, W, R, G, B, Y or RGB, RGBW, represent WNW=Warm white and nature white, WW=Warm white, CW=Cool white, NW=Nature white, PW=Pure white, W=White, R=Red, G=Green, B=Blue, Y=Yellow RGB or RGB white color of LED respectively.

III: Can be any three digit, represent LED qty. per meter respectively.

IV: Can be H, J, N, Q, U, or G, represent enclose method. "H" means extrude tubing, "J" means covered with PU, "N" means bare, non-enclosed, suitable for using in dry location. "H, J, Q, U or G" means tube enclosed by different method, "Q" means Tube enclosed without potting. "U" means U type tube enclosed with potting; "G" means surface potting; suitable for using in wet location.

For model LNTKD8X144XX-D5 V: Can be 0-5, represent LED tape length, "1, 2, 3, 4, 5" means 0.5, 1.0, 1.5, 2.0, 2.5 m respectively.

For all other models V: Can be 0-9, represent LED tape length, "1, 2, ... 9" means 0.5, 1.0, ... 4.5 m respectively, "0" means 5 m.

GENERAL CONSTRUCTION:

This product complies with the applicable Standards for USL and/or CNL luminaires as noted under the "Technical Considerations" section noted below, the Section General, and the Description on the following pages.

All components of products bearing the C-UL mark shall be Listed or Recognized for Canada or CSA Certified, in addition to being UL Listed or Recognized.

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USL indicates product complies with the Standard for Low Voltage Lighting Systems, UL 2108, and the United States country specific requirements

CNL indicates product complies with the Canadian National Standard for Lighting Systems, CSA C22.2 No. 250.2, and the Canadian country-specific requirements.

INSTALLATION INSTRUCTIONS - Each luminaire shall be provided with Installation Instructions in accordance with Sec. Gen. The installation instructions shall include specific instructions for mounting, proper wiring, minimum wire size, and servicing of the luminaire. The instructions shall also caution against using the luminaire with other than a Listed Class 2 Power Unit. Instructions shall be included with the luminaire in a manner that will require the installer to handle the instructions during installation, or the luminaire carton shall be marked to require installation by a qualified electrician. Instructions shall mark maximum number of units to be interconnected. See ILL. 13 for details.

MARKINGS - Each luminaire shall be provided with markings in accordance with the Section General, and the following:

1. Listee's name, UL file number, trade name, or trademark.
2. The date or other dating period of manufacture.
3. Distinctive catalog, part, or model number.
4. Electrical ratings (input voltage and wattage).
5. May be marked "SUITABLE FOR DRY LOCATIONS" - in Form A3 for Models mentioned on PRODUCT COVERED on page 1.
6. Marked in Form A3 "SUITABLE FOR WET LOCATIONS" for models mentioned on PRODUCT COVERED on page 1.
7. Marked in Form A3 "Use only with Class 2 power unit".

Installation instructions for a luminaire whose mounting means is adhesive shall include a statement such as the following: "CAUTION: The mounting means provided with this luminaire has not been evaluated for reliability. If installed where failure of the mounting means could cause injury to persons or damage to property below, supplemental means of securement should be considered."

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MODELS LNTS3X240XX-D24, LNTS5X120XX-D12, LNTS5X120XX-D24, LNTS6X300XX-D12, LNTS6X300XX-D24, LNTS7X120XX-D12, LNTS7X120XX-D24, LNTS8X714XX-D12, LNTS8X700XX-D24, LNTS0X504COBXX-D12, LNTS0X640COBXX-D24, LNTKD8X144XX-D5

General - The general design, shape and arrangement for model LNTS3X240XX-D24 shown in Fig. 1, LNTS5X120XX-D12, LNTS5X120XX-D24 shown in Fig. 2, LNTS6X300XX-D12, LNTS6X300XX-D24 shown in Fig. 3, LNTS7X120XX-D12, LNTS7X120XX-D24 shown in Fig. 4, LNTS8X714XX-D12, LNTS8X700XX-D24 shown in Fig. 5, LNTS0X504COBXX-D12, LNTS0X640COBXX-D24 shown in Fig. 6, LNTKD8X144XX-D5 shown in Fig. 7. All dimensions are nominal, within engineering tolerances, except where specifically indicated as a minimum or a maximum.

1. LED Tape - Consists of flexible PCB, R/C (ZPXK2), single side, rated min. 105°C, min. 0.4 mm thick. See below table for component list for each segment for details.

Model No.	Component	Specification	Quantity Per each segment	PWB length by wide Per each segment (mm)	PWB layout	Center-to-Center space between two adjacent LEDs (mm)
LNTS3X240XX-D24	LED	Max Vf=3.4 V, If=30 mA	10	50X15	ILL. 1	7.4
	Resistor	150 Ω, 1/4 W.	2			
LNTS5X120XX-D12	LED	Max Vf=3.4 V, If=60 mA	6	50X20	ILL. 2	10.0
	Resistor	470 Ω, 1/4 W.	6			
LNTS5X120XX-D24	LED	Max Vf=3.4 V, If=60 mA	12	100X20	ILL. 3	10.0
	Resistor	270 Ω, 1/4 W.	12			
LNTS6X300XX-D12	LED	Max Vf=3.4 V, If=40 mA	3	10X8	ILL. 4	3.4
	Resistor	120 Ω, 1/4 W.	1			
LNTS6X300XX-D24	LED	Max Vf=3.4 V, If=40 mA	6	20x10	ILL. 5	3.1
	Resistor	240 Ω, 1/4 W.	2			
LNTS7X120XX-D12	LED	Max Vf=3.6 V, If=60 mA	6	50X15	ILL. 6	7.9
	Resistor	82 Ω, 1/4 W.	4			
LNTS7X120XX-D24	LED	Max Vf=3.6 V, If=60 mA	6	50x16	ILL. 7	16.6
	Resistor	47 Ω, 1/4 W.	2			
	Resistor	43 Ω, 1/4 W.	2			
LNTS8X714XX-D12	LED	Max Vf=3.6 V, If=60 mA	21	30X60	ILL. 8	8.7
	Resistor	100 Ω, 1/4 W.	7			

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Model No.	Component	Specification	Quantity Per each segment	PWB length by wide Per each segment (mm)	PWB layout	Center-to-Center space between two adjacent LEDs (mm)
LNTS8X700X X-D24	LED	Max Vf=3.4 V, If=40 mA	35	50X60	ILL. 9	8.2
	Resistor	100 Ω , 1/4 W.	10			
LNTS0X504C OBXX-D12	LED	Max Vf=3.4 V, If=40 mA	N/A	18X10	ILL. 10	N/A
	Resistor	100 Ω , 1/10 W.	N/A			
LNTS0X640C OBXX-D24	LED	Max Vf=3.4 V, If=40 mA	N/A	100x10	ILL. 11	N/A
	Resistor	100 Ω , 1/8 W.	N/A			
LNTKD8X144 XX-D5	LED	Max Vf=3.4 V, If=40 mA	72	1000X10	ILL. 12	7.0
	Resistor	100 Ω , 1/4 W.	72			

2. Lead Wire - R/C (AVLV2/8), min 24 AWG, suitable for external use, rated min. 80 °C, solder to LED tape PWB.
3. Adhesive Tape - For models with the first "X" is "N", "G". The Double side tape. One side secured to LED Tape, and use for mounting means.
4. Tube - For models with the first "X" is "Q", "U". Silicone molding resin (SIR), R/C (QMFZ2/8), min. HB, min. 80 °C, min 1.0 mm thickness. Totally enclosed PWB of LED Tap.
5. Potting - For models with the first "X" is "U". Silicone "Room Temperature Vulcanizing" (RTV), R/C (QMFZ2/8), min. HB, min. 80 °C. Filled in the Tube.
6. Cover - For models with the first "X" is G. Silicone "Room Temperature Vulcanizing" (RTV), R/C (QMFZ2/8), min. HB, min. 80 °C, min 2.0 mm thickness. Totally enclosed PWB of LED Tape.
7. Mounting clamps - For models with the first "X" is "Q", "H", "J", "U". R/C (QMFZ2/8), min HB, min 1.0 mm thickness. Secured LED Tape to mounting surface by screws. See ILL. 14 for dimension details.
8. Connector (for model LNTKD8X144XX-D5) - R/C (ECBT2/8), min. 100 V, min. 80 °C.
9. Controller (for model LNTKD8X144XX-D5) - Fully covered by Electrical tubing, see ILL. 15 for PWB trace layout.

MODEL LNMS5X2PN46-D12 - FIG. 8

General - All components located in Class 2 circuit. Main components as following.

1. Supply Leads - R/C (AVLV2), CN, min. 24 AWG, rated 80 °C, for external use. Secured to PWB by soldering.
2. PWB - R/C (ZPMV2), metal base, shape, size and design may vary, rated min. HB, 90°C, secured to Housing by mechanical fit. See ILL. 16 for trace layout.
3. Housing - R/C (QMFZ2), min. 1.0 mm thick, rated min. HB, 80 °C.
4. Lens - Two provided, R/C (QMFZ2), PC, rated min. HB, 80 °C. Secured to Housing by mechanical fit.
5. LEDs - PWB mounted, two provided, each rated 8-9.6 V, max. 100 mA.
6. Mounting Means - Each module provided with a mounting holes and double-sided tape for securement.

MODEL LNMS5X3PF81-D12 - FIG. 9

General - All components located in Class 2 circuit. Main components as following.

1. Supply Leads - R/C (AVLV2), CN, min. 24 AWG, rated 80 °C, for external use. Secured to PWB by soldering.
2. PWB - R/C (ZPMV2), metal base, shape, size and design may vary, rated min. HB, 90°C, secured to Housing by mechanical fit. See ILL. 17 for trace layout.
3. Housing - R/C (QMFZ2), min.1.0 mm thick, rated min. HB, 80 °C.
4. Potting Compound - Silicone, rated min. HB, 80 °C, fully covered the LED package as lens.
5. LEDs - PWB mounted, three provided, each rated 2.8-3.4 V, max. 100 mA.
6. Mounting Means - Each module provided with two mounting holes and double-sided tape for securement.

MODEL LNMS5X3PN81-D12 - FIG. 10

General - All components located in Class 2 circuit. Main components as following.

1. Supply Leads - R/C (AVLV2), CN, min. 24 AWG, rated 80 °C, for external use. Secured to PWB by soldering.
2. PWB - R/C (ZPMV2), metal base, shape, size and design may vary, rated min. HB, 90°C, secured to Housing by mechanical fit. See ILL. 18 for trace layout.
3. Housing - R/C (QMFZ2), min.1.0 mm thick, rated min. HB, 80 °C.
4. Lens - Three provided, R/C (QMFZ2), PC, rated min. HB, 80 °C. Secured to Housing by mechanical fit.
5. LEDs - PWB mounted, three provided, each rated 2.8-3.4 V, max. 100 mA.
6. Mounting Means - Each module provided with two mounting holes and double-sided tape for securement.

MODEL LNMS5X2F33-D12 - FIG. 11

General - All components located in Class 2 circuit. Main components as following.

1. Supply Leads - R/C (AVLV2), CN, min. 24 AWG, rated 80 °C, for external use. Secured to PWB by soldering.
2. PWB - R/C (ZPMV2), metal base, shape, size and design may vary, rated min. HB, 90°C, secured to Housing by mechanical fit. See ILL. 19 for trace layout.
3. Housing - R/C (QMFZ2), min. 1.0 mm thick, rated min. HB, 80 °C.
4. Potting Compound - Silicone, rated min. HB, 80 °C, fully covered the front side of housing.
5. LEDs - PWB mounted, two provided, each rated 2.8-3.4 V, max. 100 mA.
6. Resistor (R1)- Rated 100-200 Ω , 1/4 W.
7. Mounting Means - Each module provided with a mounting holes and double-sided tape for securement.

MODEL LNMS8X2A0E23E-DC12 - FIG. 12

General - All components located in Class 2 circuit. Main components as following.

1. Supply Leads - R/C (AVLV2), CN, min. 24 AWG, rated 80 °C, for external use. Secured to PWB by soldering.
2. PWB - R/C (ZPMV2), metal base, shape, size and design may vary, rated min. HB, 90°C, secured to Housing by mechanical fit. See ILL. 20 for trace layout.
3. Housing - R/C (QMFZ2), min. 1.0 mm thick, rated min. HB, 80 °C.
4. Potting Compound - Silicone, rated min. HB, 80 °C, fully covered the front side of housing.
5. LEDs - PWB mounted, two provided, each rated 8-9.6 V, max. 100 mA.
6. Resistor - Two provided, rated 100-200 Ω , 1/4 W.
7. Mounting Means - Each module provided with double-sided tape for securement.