

liniLED[®]

Dim 4- DMX

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Technical notes

Read the instructions and safety precautions before installation, usage and storage of the products to secure safety of the user and reliability of the product. - Hand over the instructions to the end-user and those responsible for installation and usage.

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- Triolight B.V. cannot be held responsible for improper handling, product installation, usage or storage.

Handling

- The product may not be modified or converted otherwise than described in this manual.
- Products are to be transported in proper packaging. Products should remain packed until installation.
- Take ESD (Electro Static Discharge) protection measures when handling liniLED® products.
- The products and their components may not be exposed to mechanical, static loads and other tension/compression other than from the product itself.

Installation

- Attention: the main power has to be switched off before installation. Not doing so may damage the product or cause injury.
- Installation has to be done by a professional with knowledge of electrical circuits or a certificated maintenance person known with valid directives.
- General and local construction-, safety- and installation regulations must be followed.
- Use only supplied parts, accessories and required tools as prescribed in the installation manual to guarantee a safe installation and use of the product.
- Products may solely be installed in the areas according to their prescribed IP-rating, IK-rating, temperature range and chemical resistances.
- The product must be installed inside an electrical housing protected against overvoltages.
- The product must be installed in a vertical or horizontal position with the cover/ label upwards or vertically; other positions are not permitted.
- It is not permitted to bottom-up position (with the cover/label down).
- Do not install the product in the following cases:
 - Damage is visible on the product or its cables
 - The inside of the product is moistened or dirty
 - The product or its cables have been modified. It could lead to an electrical shock or a short circuit may occur.

Cables

- All cables used in the setup must be dimensioned properly and should be isolated from any other wiring or electronic conductive parts. It is suggested to use double insulated and if applicable shielded and twisted cables.

- The length of the connecting cables between the product and the LED module must be less than 10m.
- The length of the data cables at the BUS input/output (DMX512, Modbus or other) should be as per specification of the respective protocols and regulations.
- DMX512/DMX RDM signal regulations according to USITT standard.
- Maximum of 32 receivers on one DMX line (1 universe), in case of more receivers, active DMX splitters are required.
- Use proper cables according to EIA-485-standard for DMX signals: Standard DMX cable has a shielded twisted pair with an impedance of 120Ω.
- In order to avoid or solve DMX signal reflection related malfunctions a terminator resistor of 120Ω (+5%/-10% tolerance) between DMX + and DMX of the last receiver.
- Use multi-drop-bus topology only.
- For more information please refer to USITT DMX standards.

Operation and use

Solely use the product when its working correctly. If not, switch the power off immediately and advise an electrical specialist in the following cases:

- Damage is visible on the product.
- The product does not function.
- Smoke or steam rises from the product.
- Crackling sounds are noticeable.
- Repairs on the installation may only be performed by qualified electricians.
- Product repairs may solely be done by Triolight B.V.
- Use a suitable power supply.
- Do not drive the product on other voltages than described in their datasheet/product specifications.
- Do not fasten anything on the product, same applies for hanging.
- Children may not play unsupervised with electrical products as they cannot judge the dangers in dealing with electrical circuits correctly.

Cleaning and maintenance

- Attention: Disconnect the power before maintenance and cleaning.
- Paints, solvents and corrosive cleaning chemicals may not contact and thus affect the product.

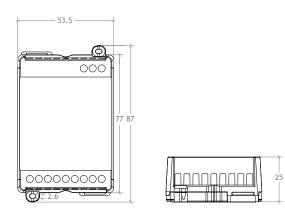
Environment and waste

- This product may not be treated as household waste. Dispose of the material through the waste recycling of electrical and electronic equipment.

Documentation

- For an updated version of the device manual visit our website: www.liniled.com.

Product drawing



Technical specifications

Dim 4-DMX
11134
DMX 512/DMX-RDM
10.8 26.4 V DC
Max. 10 A
240 W
4
Max. 5 A Total = Max. 10 A
D-PWM, 16 bit resolution
Constant voltage, common anode
=V _{in}
> 95%
Max. 500 mW
0.1 100%
250 Hz
IP20
-40 60°C
-10 40°C
87 x 54 x 26 mm
106 x 59 x 36 mm
74 g
Self-extinguishing PC/ABS
150°C
2.5mm ² solid - 1.5mm ² stranded - 30/12 AWG

¹ Maximum value, depends on the ventilation and environmental conditions. ² Max load definition ($I_{TOT} = I_{1,1} + I_{1,2} + I_{1,4} + I_{1,4}$): 10 A. ³ Provided by MOSFET internal shut down.

Protection circuits

OTP	Over temperature protection ³
OVP	Over voltage protection ⁴
UVP	Under voltage protection ⁴
RVP	Reverse polarity protection ⁴
IFP	Input fuse protection ⁴
SCP	Short circuit protection
CLP	Current limit protection
3 Drouidor	

³ Provided by MOSFET internal shut down.
⁴ Only control logic protection.

Reference standards

This product is designed and produced according to following standards.

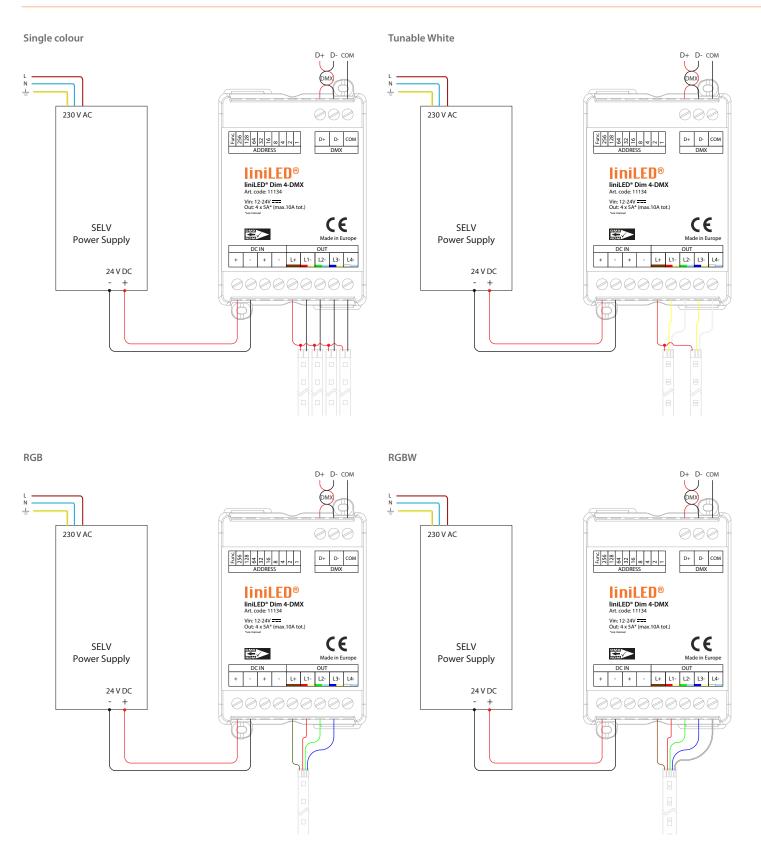
EN 61347-1:2008 + A1:2011 + A2:2013	Lamp control gear - Part 1: General and safety requirements
EN 55015:2013+A1:2015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547:2009	Equipment for general lighting purposes - EMC immunity requirements
EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
ANSI E1.11	Entertainment Technology - USITT DMX512-A - Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories
ANSI E1.20	Entertainment Technology-RDM-Remote Device Management over USITT DMX512 Networks

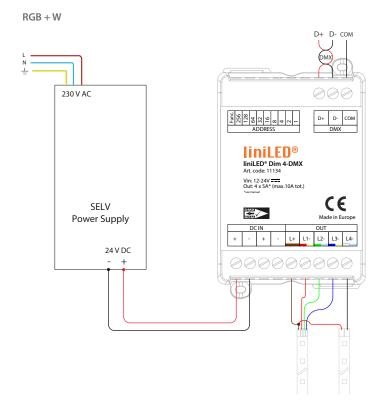
Addressing

Addressing Dip-switches or RDM.

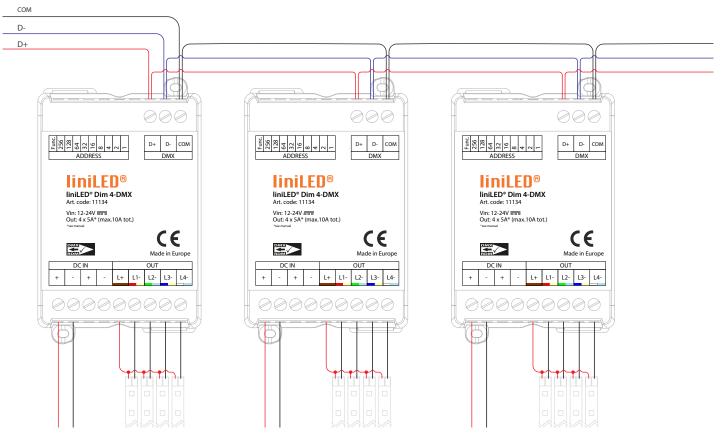
Function	Dip-switch	Addressing
Addressing managed by RDM	ON	DIP 1 DIP 2 DIP 3 DIP 4 DIP 5 DIP 6 DIP 7 DIP 8 DIP 9 DIP 10 OFF OFF OFF OFF OFF OFF OFF OFF OFF OFF
Manual Addressing	1 2 3 4 5 6 7 8 9 10	All DIPS are OFF!
Manual Addressing [1 511]	ON 1 2 3 4 5 6 7 8 9 10 1 2 4 8 16 32 64 128 256 OFF	DIP 10 = OFF DMX address from 1 to 511. Table with settings is shown on page 12. - value 1 corresponds to dip ON - value 0 corresponds to dip OFF

Wiring schemes





Sequence connection (up to 16 drivers)



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Stand alone configuration

Activation of the stand alone function is done with the dip-switches.

Function	Dip-switch	Address	sing										
64 static	ON	Levels	1st Channel			2nd Channel			3rc	l Channel	4th Channel		
colours			Dip 1		Dip 2	Dip 3		Dip 4	Dip 5	Dip 6	Dip 7		Dip 8
	1 2 3 4 5 6 7 8 9 10	100%	ON		ON	ON		ON	ON	ON	ON		ON
	Red Green Blue White OFF ON	66%	OFF		ON	OFF		ON	OFF	ON	OFF		ON
	neu Green Blue White Ori Ori	33%	ON		OFF	ON		OFF	ON	OFF	ON		OFF
		0%	OFF		OFF	OFF		OFF	OFF	OFF	OFF		OFF
		To set the	inten	sity levels.									
Rainbow	ON	Levels		Colours			White						
			Dip 1		Dip 2	Dip 3		Dip 4					
	1 2 3 4 5 6 7 8 9 10	100%	ON		ON	ON		ON					
	Colors White Rainbow	66%	OFF		ON	OFF		ON					
	Colors White Rainbow OFF ON ON level level time	33%	ON		OFF	ON		OFF	-				
		0%	OFF		OFF	OFF		OFF					
		To set the	e inten	sity levels.									
		Time		Dip 5	[Dip 6	Dip	7					
		30 min		ON		ON	0	N					
		15 min		OFF		ON	0	N					
		6 min.		ON		OFF	0	N					
		1 min.		OFF		OFF	0	N					
		30 sec.		ON		ON	OF	F					
		15 sec.		OFF		ON	OF	F					
		б sec.		ON		OFF	OF	F					
		3 sec.		OFF		OFF	OF	F					
		To set the	e time l	between tv	vo adja	cent colo	our chang	es.					
Strobe	ON	Levels		1st Channel		2	2nd Channe	2	3rc	l Channel		4th Channe	
			Dip 1			Dip 2			Dip 3		Dip 4		
	1 2 3 4 5 6 7 8 9 10	100%	ON			ON			ON		ON		
	R G B W Strobe rate ON ON ON	0%	OFF			OFF			OFF		OFF		
			te on tl	he outputs.	1		1						
		fps	_	Dip 5	-	Dip 6	Dip						
		10	_	ON		ON	OF						
		8		ON		ON	0						
		5	_	OFF	-	ON	0						
		3	_	ON		OFF	OF						
		1		OFF		OFF	OF	·F					
		To set the	e strob	e frequency	/.								

Installation

Tools required for installation: 1 x Phillips screwdriver 2 x Screws (e.g. d2.9 x 6.5 mm) 1 x Flat screwdriver 2-3.5 mm 1 x Power meter (optional for checking driver input voltage)

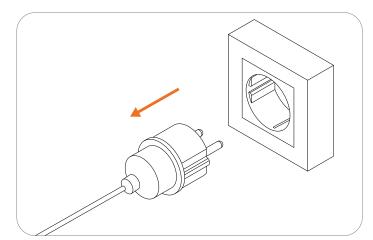
▲ Danger! Turn off the power before starting the installation!

This chapter is described in the correct installation order, we advise you to follow this order.

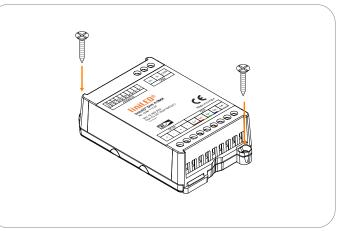


2. Make sure that a proper SELV driver suitable to drive LED strips is installed and ensure that the output voltage is within limits of the LED strip specifications. For LED strip operating voltages, please check respective product datasheet.

1. Unpack the driver and check for any damages. **Note:** Never install a damaged driver and report any defects immediately to your supplier.

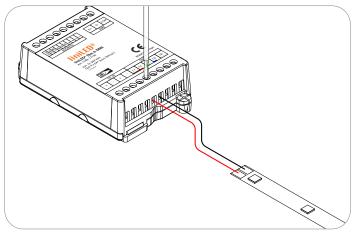


3. Disconnect the power supply from the mains voltage.

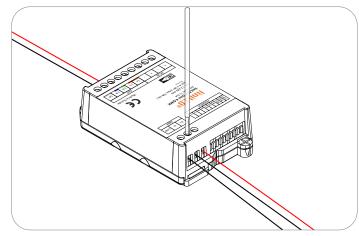


4. Install the driver on a suitable surface and fixate it by using the screwholes.

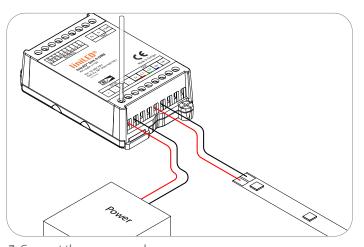
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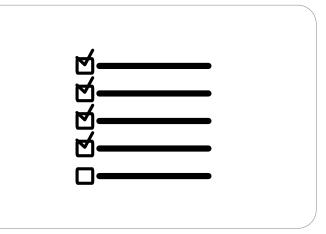


5. Connect the LED strip wires to the outputs according to the wiring scheme on page 6.



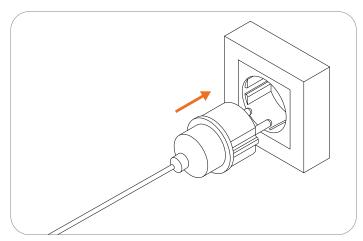
6. Connect the DMX signal.





8. Double check the wiring and connections.

7. Connect the power supply.



9. Connect the power supply to the mains voltage and power up the driver.

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DMX dip-switch addressing

Addr	dip-switch	Addr	dip-switch	Addr	dip-switch	Addr	dip-switch	Addr	dip-switch	Addr	dip-switch	Addr	dip-switch	Addr	dip-switch
	123456789		123456789		123456789		123456789		123456789		123456789		123456789		123456789
RDM	000000000	64	000000100	128	00000010	192	000000110	256	00000001	320	000000101	384	00000011	448	000000111
1	10000000	65	100000100	129	100000010	193	100000110	257	10000001	321	100000101	385	100000011	449	100000111
2	01000000	66	010000100	130	010000010	194	010000110	258	010000001	322	010000101	386	010000011	450	010000111
3	110000000	67	110000100	131	110000010	195	110000110	259	110000001	323	110000101	387	110000011	451	110000111
4	001000000	68	001000100	132	001000010	196	001000110	260	001000001	324	001000101	388	001000011	452	001000111
5	101000000	69	101000100	133	101000010	197	101000110	261	101000001	325	101000101	389	101000011	453	101000111
6	011000000	70	011000100	134	011000010	198	011000110	262	011000001	326	011000101	390	011000011	454	011000111
7	111000000	71	111000100	135	111000010	199	111000110	263	111000001	327	111000101	391	111000011	455	111000111
8	000100000	72	000100100	136	000100010	200	000100110	264	000100001	328	000100101	392	000100011	456	000100111
9	100100000	73	100100100	137	100100010	201	100100110	265	100100001	329	100100101	393	100100011	457	100100111
10	010100000	74	010100100	138	010100010	202	010100110	266	010100001	330	010100101	394	010100011	458	010100111
11	110100000	75	110100100	139	110100010	203	110100110	267	110100001	331	110100101	395	110100011	459	110100111
12	001100000	76	001100100	140	001100010	204	001100110	268	001100001	332	001100101	396	001100011	460	001100111
13	101100000	77	101100100	141	101100010	205	101100110	269	101100001	333	101100101	397	101100011	461	101100111
14	011100000	78	011100100	142	011100010	206	011100110	270	011100001	334	011100101	398	011100011	462	011100111
15	111100000	79	111100100	143	111100010	207	111100110	271	111100001	335	111100101	399	111100011	463	111100111
16	000010000	80	000010100	144	000010010	208	000010110	272	000010001	336	000010101	400	000010011	464	000010111
17	100010000	81	100010100	145	100010010	209	100010110	273	100010001	337	100010101	401	100010011	465	100010111
18	010010000	82	010010100	146	010010010	210	010010110	274	010010001	338	010010101	402	010010011	466	010010111
19	110010000	83	110010100	147	110010010	211	110010110	275	110010001	339	110010101	403	110010011	467	110010111
20	001010000	84	001010100	148	001010010	212	001010110	276	001010001	340	001010101	404	001010011	468	001010111
21	101010000	85	101010100	149	101010010	213	101010110	277	101010001	341	101010101	405	101010011	469	101010111
22	011010000	86	011010100	150	011010010	214	011010110	278	011010001	342	011010101	406	011010011	470	011010111
23	111010000	87	111010100	151	111010010	215	111010110	279	111010001	343	111010101	407	111010011	471	111010111
24	000110000	88	000110100	152	000110010	216	000110110	280	000110001	344	000110101	408	000110011	472	000110111
25	100110000	89	100110100	153	100110010	217	100110110	281	100110001	345	100110101	409	100110011	473	100110111
26	010110000	90	010110100	154	010110010	218	010110110	282	010110001	346	010110101	410	010110011	474	010110111
27	110110000	91	110110100	155	110110010	219	110110110	283	110110001	347	110110101	411	110110011	475	110110111
28	001110000	92	001110100	156	001110010	220	001110110	284	001110001	348	001110101	412	001110011	476	001110111
29	101110000	93	101110100	157	101110010	221	101110110	285	101110001	349	101110101	413	101110011	477	101110111
30	011110000	94	011110100	158	011110010	222	011110110	286	011110001	350	011110101	414	011110011	478	011110111
31	111110000	95	111110100	159	111110010	223	111110110	287	111110001	351	111110101	415	111110011	479	111110111
32	000001000	96	000001100	160	000001010	224	000001110	288	000001001	352	000001101	416	000001011	480	000001111
33	100001000	97	100001100	161	100001010	225	100001110	289	100001001	353	100001101	417	100001011	481	100001111
34	010001000	98	010001100	162	010001010	226	010001110	290	010001001	354	010001101	418	010001011	482	010001111
35	110001000	99	110001100	163	110001010	227	110001110	291	110001001	355	110001101	419	110001011	483	110001111
36	001001000	100	001001100	164	001001010	228	001001110	292	001001001	356	001001101	420	001001011	484	001001111
37	101001000	101	101001100	165	101001010	229	101001110	293	101001001	357	101001101	421	101001011	485	101001111
38	011001000	102	011001100	166	011001010	230	011001110	294	011001001	358	011001101	422	011001011	486	011001111
39	111001000	103	111001100	167	111001010	231	111001110	295	111001001	359	111001101	423	111001011	487	111001111
40	000101000	104	000101100	168	000101010	232	000101110	296	000101001	360	000101101	424	000101011	488	000101111
41	100101000	105	100101100	169	100101010	233	100101110	297	100101001	361	100101101	425	100101011	489	100101111
42	010101000	106	010101100	170	010101010	234	010101110	298	010101001	362	010101101	426	010101011	490	010101111
43	110101000	107	110101100	171	110101010	235	110101110	299	110101001	363	110101101	427	110101011	491	110101111
44	001101000	108	001101100	172	001101010	236	001101110	300	001101001	364	001101101	428	001101011	492	001101111
45	101101000	109	101101100	173	101101010	237	101101110	301	101101001	365	101101101	429	101101011	493	101101111
46	011101000	110	011101100	174	011101010	238	011101110	302	011101001	366	011101101	430	011101011	494	011101111
47	111101000	111	111101100	175	111101010	239	111101110	303	111101001	367	111101101	431	111101011	495	111101111
48	000011000	112	000011100	176	000011010	240	000011110	304	000011001	368	000011101	432	000011011	496	000011111
49	100011000	113	100011100	177	100011010	241	100011110	305	100011001	369	100011101	433	100011011	497	100011111
50	010011000	114	010011100	178	010011010	242	010011110	306	010011001	370	010011101	434	010011011	498	010011111
51	110011000	115	110011100	179	110011010	243	110011110	307	110011001	371	110011101	435	110011011	499	110011111
52	001011000	116	001011100	180	001011010	244	001011110	308	001011001	372	001011101	436	001011011	500	001011111
53	101011000	117	101011100	181	101011010	245	101011110	309	101011001	373	101011101	437	101011011	501	101011111
54	011011000	118	011011100	182	011011010	246	011011110	310	011011001	374	011011101	438	011011011	502	011011111
55	111011000	119	111011100	183	111011010	247	111011110	311	111011001	375	111011101	439	111011011	503	111011111
56	000111000	120	000111100	184	000111010	248	000111110	312	000111001	376	000111101	440	000111011	504	000111111
57	100111000	121	100111100	185	100111010	249	100111110	313	100111001	377	100111101	441	100111011	505	100111111
58	010111000	122	010111100	186	010111010	250	010111110	314	010111001	378	010111101	442	010111011	506	010111111
59	110111000	123	110111100	187	110111010	251	110111110	315	110111001	379	110111101	443	110111011	507	110111111
	001111000	124	001111100	188	001111010	252	001111110	316	001111001	380	001111101	444	001111011	508	001111111
60										-					
61	101111000	125	101111100	189	101111010	253	101111110	317	101111001	381	101111101	445	101111011	509	101111111
		125 126 127	101111100 011111100 11111100	189 190 191	101111010 011111010 111111010	253 254 255	101111110 011111110 11111110	317 318 319	101111001 011111001 111111001	381 382 383	101111101 011111101 11111101	445 446 447	101111011 011111011 111111011	509 510 511	101111111 011111111 111111111

Symbols



Manufacturer's declaration that the product meets the applicable EC directives.

Restriction of Hazardous Substances (RoHS): product complies with the RoHS directive and each homogeneous material does not exceed the limits for the materials mentioned under the RoHS directive (Pb, Hg, Cd, Cr6+, PBB and PBDE).

Protected against ingress of solid foreign objects ≥ 12.5 millimetres. Not-protected against ingress of water.

Electrical appliance class III: this product is designed to be supplied from an extra-low voltage (\leq 60.0 V DC or \leq 42.4 V AC).

Operating voltage of 12-24 V DC (please check or refer to LED product specification).

System guarantee of 5 years when the complete system consist of liniLED® products with the 5 years system warranty logo. Terms & conditions apply.

Disclaimer

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