DATASHEET

IP00	LEDtape RGB 1000LM 15W 24V 5M G2
Code	W1005-RGB-5M-G2
	7506490
	3201184
	4127410
	7350102530428

IP68	LEDtape RGB 1000LM 15W 24V IP68 5M G2
Code	W1005-RGB-IP68-5M-G2
	7506491
	3201185
	4127411
	7350102530435

HIGHLIGHTS

- Short pitch flexible RGB LED-tape for professional lighting applications with high light output
- Available in IP00 and IP68-version
- Multichip RGB LEDs placed under the same lens to achieve high quality colour mixing – no rainbow effects
- Optimized Individual color calibration to generate white light from RGB LEDs
- Reflective white double-layered PCB for optimal system efficiency
- High quality adhesive 3M-tape on backside for easy mounting on common surfaces
- Long lifetime: L70 = 50.000h ⓘ
- Optimized for high resolution digital dimming 0.1-100% and RGB control using Welight LED-driver W71XX-series.
- Stable photometrics in combination with wide input voltage range 22-26 VDC

Accessories

- Aluminium profiles for linear and corner applications
- Wide variety of lenses and covers 15°/30°/60°/120°/Asymmetric/Batwing
- Fixed or adjustable mounting brackets
- Solder-free connectors and bridges
- Optimised drivers to fit every need and application

Technical Data

→ p. 2

Accessory Guide

→ pp. 3

Mounting Instructions

→ pp. 6

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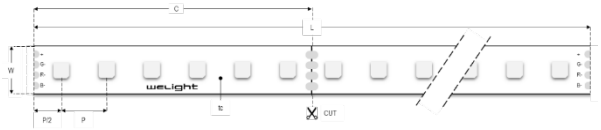
TECHNICAL DATA

Electrical ①

Supply voltage (VDC)	24
DC Voltage Range ④	22-26V
Power (W) per m	15
Current (mA) per m	625
Supply Cable	L = 1 m (both ends) AWG20 UL standard BK (Common +) RD (Red -) GR (Green -) BL (Blue -)

Dimensional ②

Length (L)	5 m
Max length in series	5 m
Min Bending Radius	30 mm
Width (W)	IP00: 10 mm IP68: 12 mm | Incl. Endcap: 14 mm
Height	IP00: 1,4 mm IP68: 4,5 mm | Incl. Endcap: 6,5 mm
Cutting length (C)	41,7 mm
Pitch distance (P)	6 mm



Temperature and Lifetime

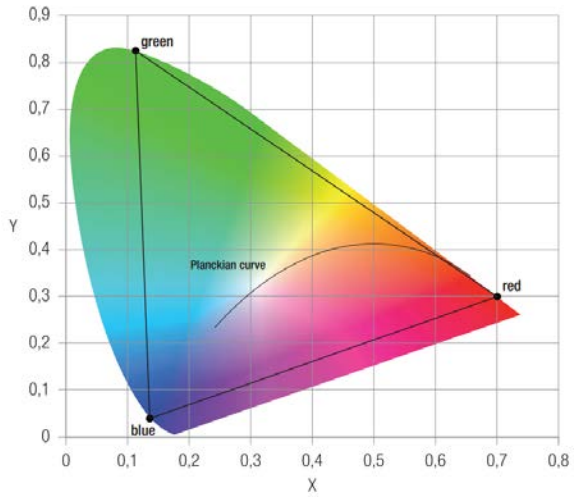
Performance Temp Rating (Tp)	65 °C
Operating Temp Range (Ta) ⑤	-35/+50 °C
Max PCB Temp (Tc)	75 °C
Storage Temp	-35/+80 °C
L70F10 @Tp	50 000 h
L90F10 @Tp	35 000 h
Adhesive	3M VHB 5-year warranty
Warranty Period @Tp	5 years

Safety & Compliance

Constant Current IC	Yes, bipolar IC
Insulation Voltage	0,5kV DC 10mA 60sec
IEC Standards	IEC 62031 IEC 62471 IEC 62717 IEC 61000-4-2
ESD Class	1
Risk group (EN 62471:2008)	1
Classification acc. to IEC 62031	Class III

Optical ①③

Luminous Flux (lm) per m	1 000
Beam Angle	120
LED package	3838
LED quantity per m	120
Red wavelength (nm)	620-625
Green wavelength (nm)	465-470
Blue wavelength (nm)	520-525
CRI R1-R8 (RGB@100%)	80



① Tolerance range for electrical and optical data ±10%
② Tolerance range for dimensional data ±1%
③ All values for ta = 25 °C / tc = 65 °C
④ Exceeding the maximum operating voltage leads to an overload on the tape. This may result in a significant reduction in lifetime or even destruction of the tape. Tolerance range for the supply voltage 24V: +2V / -2V
⑤ Self-cooling at ta ≤ 35 °C

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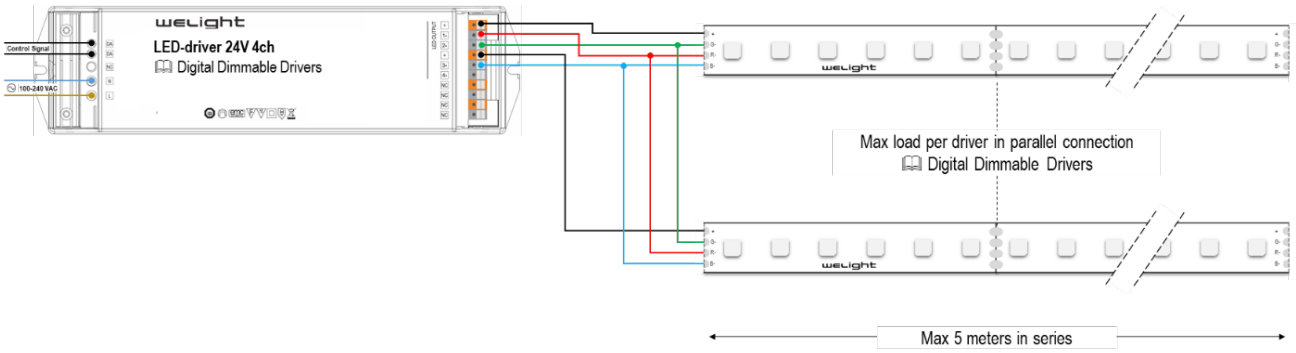
WIRING

Each reel of LED-tape is delivered with colour coded connection cable in each end, L = 1 m, 4 x 0,5 mm^2. Do not connect more than 5 meters of the LED-tape in series and make sure that the voltage is ≥22V at the beginning of the LEDtape. When connecting several sections in parallel please refer to 🕮 **Digital Dimmable Drivers** for the max length allowed per Driver.

Cable Colour	Function	Driver Output
BLACK	+ Common	+
RED	– Red	1 –
GREEN	– Green	2 –
BLUE	– Blue	3 –



APPLICATION NOTES

⚠ Using LEDtape RGB with lenses & covers

Allow for ≥ 20mm distance from the lens to the surface you want to illuminate to achieve an optimal colour mix of the different colours. Without any lens, the equivalent distance is ≥ 30mm.

When using the narrow beam lens (24166405), we recommend single colour operation for optimal optical effect, i.e. only light one colour at the time. When mixing colours with the narrow beam lens, please allow for ≥ 2m distance from the lens to the surface you want to illuminate to achieve an optimal mixed colour.

DIGITAL DIMMABLE DRIVERS

Welight offers a range of suitable LED-drivers especially designed for RGB applications.

Control Signal	Art. Code	Driver Type	Max length per driver
DALI DT6	W7101	LEDdriver LCV 100W 24V 1-4CH DALI SR	6.7 m
DALI DT8 RGBW	W7101-RGBW	LEDdriver LCV 100W 24V DALI DT-8 RGBW SR	6.7 m
DALI DT8 XY	W7101-DT8-XY	LEDdriver LCV 100W 24V DALI-2 DT8 RGBW XY SR	6.7 m
KNX	W7102	LEDdriver LCV 100W 24V 1-4CH KNX SR	6.7 m
DMX	W7103	LEDdriver LCV 100W 24V 1-4CH DMX SR	6.7 m

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CABLE & CONNECTION ACCESSORIES

1

2

3

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12

13

					Suitable for LEDtape	
Pic	**Type**	**Art. Code**	**Description**	**Included**	**IP00**	**IP68**
1	LEDtape Connector RGB Strip-Strip	W8444	Connect RGB strips to each other	1 pc	✓	✗
2	LEDtape Connector RGB Strip-Cable	W8445	Connect RGB strip to a 4-wire cable (cable not included)	1 pc	✓	✗
3	LEDtape Connector RGB IP Strip-Strip	W8446	Connect RGB IP68 strips to each other ⚠	1 pc	✗	✓
4	LEDtape Connector RGB IP Strip-Cable	W8447	Connect RGB IP68 strip to a cable (20cm cable included) ⚠	1 pc	✗	✓
5	LEDtape Mounting Clip	W8430	Mounting clip with single screw for IP00-rated LEDtape	10 pcs	✓	✗
5	LEDtape Mounting Clip IP68	W8431	Mounting clip with single screw for IP68-rated LEDtape	10 pcs	✗	✓
6	LEDtape IP Endcap	W8432	Suitable for sealing the end of a cut LEDtape IP68. Use with W8433.	5 pcs	✗	✓
7	LEDtape Silicon Tube with tip	W8433	Suitable for sealing the end of a cut LEDtape IP68. Can be used together with W8432 for optimal protection.	1 pc	✗	✓
8	LEDcable RKUB 4X0.5 AWG20 Bk/G/Rd/Bl 6m	W8420	Connection cable for RGB strip, 6m reel	–	✓	✓
9	LEDcable RKUB 4X0.5 AWG20 Bk/G/Rd/Bl 100m	W8424	Connection cable for RGB strip, 100m reel	–	✓	✓
10	LEDtape 3M VHB Adhesive 10mm 33m reel	W8449	Additional adhesive for repairing or replacing the adhesive on the back of LEDtape IP00 and IP68. Pre-cut to fit PCB width 10mm. Reel length 33m.	–	✓	✓
11	LEDtape IP Assembly Kit 10	W8901	Endcaps, Mounting Brackets & Silicon	–	✗	✓
12	LEDaccessory RGB CON IP20 kit F+M	W8412-A2	RGB connector kit with female and male plug incl. 30cm cable, black	–	✓	✗
13	LEDaccessory RGB CON IP68 kit F+M	W8411-A4	RGB connector kit IP with female and male plug incl. 30cm cable, white	–	✗	✓

⚠ When using the accessory properly the overall IP-rating of the solution will be IP67.

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PROFILE SYSTEMS & LENSES

Start by selecting an aluminium **profile (A)** and a suitable **lens cover (B)** and then add optional **accessories (C)**.

(A)

1 2 3

Pic	Type	Art. Code	L (mm)	W (mm)	H (mm)	W (mm) incl. lens cover	H (mm) incl. lens cover	Application	Optional accessories: Lens Cover	End Cap	Fixed Mount	Adjustable Mount
1	Z200-2	24166148	2000	18	9	21	16	Corner	✓	✕	✕	✕
2	Z201-2	24166149	2000	18	9	21	16	Linear Slim	✓	✓	✓	✕
3	Z22W-2	24166150	2000	18	16	21	24	Linear	✓	✓	✓	✓

(B)

1 2 3 4 5 6 7

Pic	Type	Art. Code	L (mm)	Mounting Method	Typ. application	Profile: Z200-2	Z201-2	Z22W-2
1	15°	24166405	2000	Slide-on	Wall wash ⚠	✓	✓	✓
2	30°	24166409	2000	Slide-on	Wall wash	✓	✓	✓
3	60°	24166410	2000	Slide-on	Shelf/Cabinet	✓	✓	✓
3	90°	24166411	2000	Slide-on	Shelf/Cabinet	✓	✓	✓
4	30° x 60°	24166412	2020	Slide-on	Asymmetric	✓	✓	✓
5	Batwing	24166123	2000	Snap-on	Side-emitting	✕	✕	✓
6	120°	24138743	2000	Snap-on	Accent / Cove	✓	✓	✓
7	Opal	24138742	2000	Snap-on	Accent / Cove	✓	✓	✓

(C)

1 2 3 4 5

Pic	Type	Art. Code	Profile: Z200-2	Z201-2	Z22W-2
1	End cap Grey PMMA	24166334	✕	✓	✕
2	End Cap Aluminium	24139174	✕	✕	✓
2	End Cap Aluminium Cable Entry	24139173	✕	✕	✓
3	Mounting Bracket 0°	88166859	✕	✓	✓
4	Mounting Bracket 15°	88167372	✕	✓	✓
4	Mounting Bracket 30°	88167373	✕	✓	✓
4	Mounting Bracket 45°	88167374	✕	✓	✓
4	Mounting Bracket 60°	88167375	✕	✓	✓
5	Mounting Bracket Adjustable	24166024	✕	✕	✓

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LEDtape Indoor Series IP00

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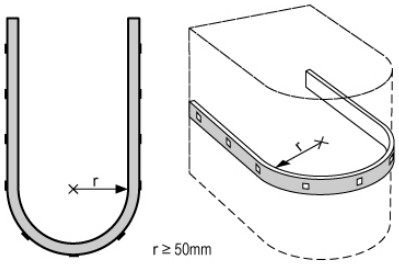
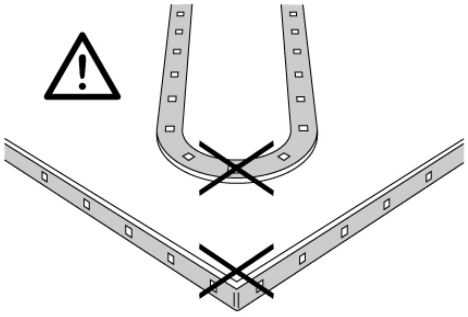
INSTALLATION

1



Never bend the LEDtape at a radius smaller than 50 mm.

2



Assembly must not damage or destroy conducting paths on the PCB.

3

Perform the Pre-connection Checklist:

☑ Maximum length connected in series:

→ 🕮 Datasheet | Wiring

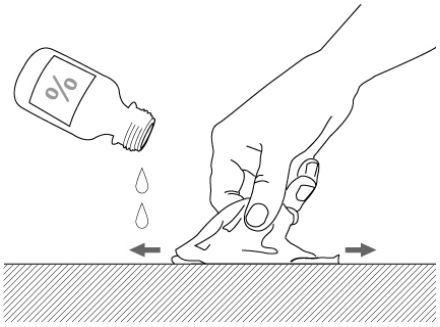
☑ Polarity and Cable Colour Coding:

→ 🕮 Datasheet | Wiring

☑ Maximum length per driver:

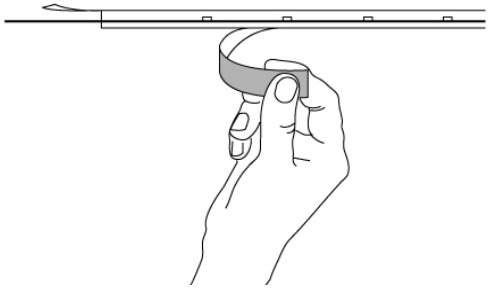
→ 🕮 Datasheet | Digital Dimmable Drivers

4



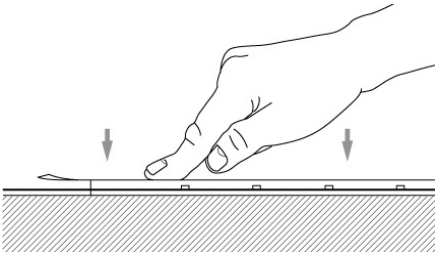
The fixing/cooling surface must be properly cleaned to remove grease, dirt and silicon before application, e.g. using Isopropyl alcohol.

5



Remove the adhesive tape from the backside and fix the LEDtape on the cleaned fixing/cooling surface.

6



When fixing the LEDtape to a surface, apply an even but gentle pressure and try to avoid applying pressure directly on the LED itself (the maximum allowed pressure is 20 N/cm²).

After assembly always check that the entire length has attached properly to the surface and that there is no air pockets underneath.

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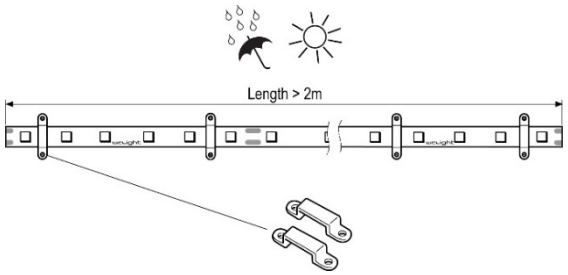
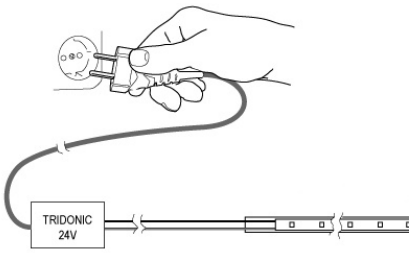
7



If the total length is longer than 2 meters it is recommended to use the included screw mounting clips in addition to the adhesive tape.

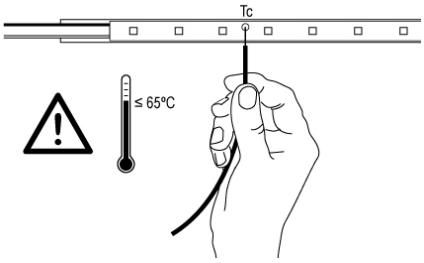
8



Always use our approved drivers and controls to power the LEDtape. If the wrong type of driver is used the product warranty is void.

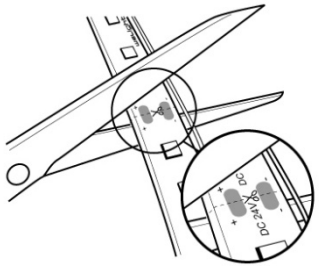
→ Datasheet | Digital Dimmable Drivers

9

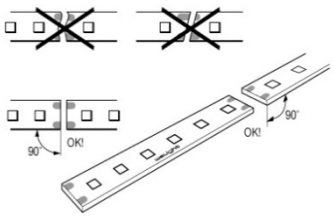


The temperature on the surface of the LEDtape (tc) may under no circumstances be higher than 65 °C if the expected lifetime of the LEDtape is to be met.

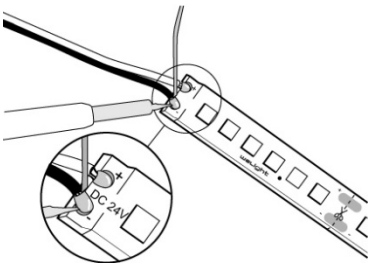
CUT & SOLDER



The LEDtape is separable at the middle of every solder pad with the full function of each LED segment. It is only allowed to cut at the indicated cutting line.



Always cut the LEDtape in a straight line – 90° in relation to the PCB edges. Use Welight's official connection accessories to split, connect, and bridge the LEDtape.



If you need to solder the LEDtape, pre-tin the cables only. Soldering temperature max 300 °C for 4 seconds.

For details on how to solder an IP00 LEDtape, please watch this VIDEO TUTORIAL:

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LEDtape RGB Indoor Series IP00

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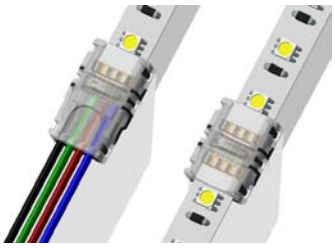


STRIP TO CABLE

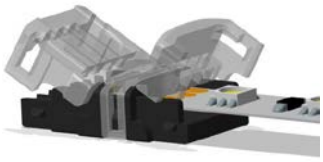
1

Cut the LEDtape in the middle of the solder pads.

2

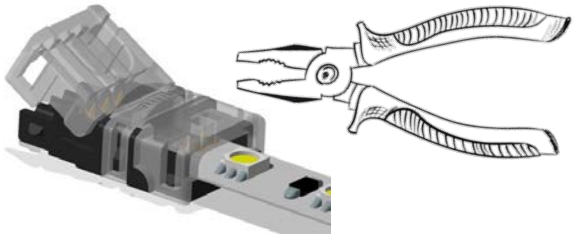
Peel off approx. 1 cm of the adhesive tape from the back of the PCB.

3



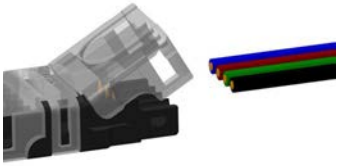
Open the cap as much as possible and insert the LEDtape all the way to the back of the connector.

4



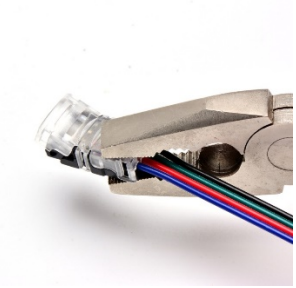
Use a pair of flat pliers to press down on each side of the cap until they lock in position. A “CLICK” can be heard when the pins are locked.

5



Insert the cable all the way to the back of the connector.. Make sure you **match the POLARITY** of the LEDtape before locking the connector in place.

6



Use a pair of flat pliers to press down on each side of the cap until they lock in position. A “CLICK” can be heard when the pins are locked.

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STRIP TO STRIP

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Cut the LEDtape in the middle of the solder pads.

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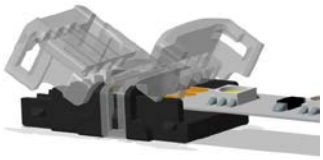
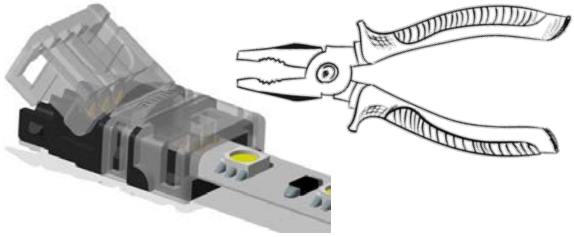


Open the cap as much as possible and insert the LED-strip all the way to the back of the connector.

4



Use a pair of flat pliers to press down on each side of the cap until they lock in position. A “CLICK” can be heard when the pins are locked.

5

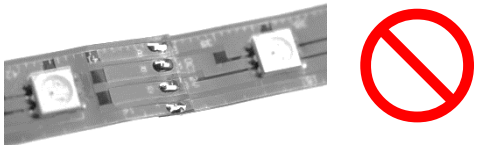
Repeat steps 1-4 for the other connecting end of the LEDtape. Make sure you check that both ends are facing the **SAME POLARITY** before locking the last connector in place.

If you are in doubt, consider soldering your connection instead. There is no substitute for a permanent soldered connection.

VIDEO TUTORIAL:

Do NOT use Quick Connectors when…

- ⃠ You need to connect a pre-soldered joint.



- ⃠ Your LED strips might be subjected to movement - as in installations on cars, boats, or other vehicles; or in installations that might be installed or set up several times, such as portable shelving or displays.
- ⃠ You have a large number of connections to make - particularly in installations that require many connections back to back, where one failure would result in the loss of large sections of light.
- ⃠ You are installing in tight places - when the added size of the connector would make your LED strip installation difficult or impossible.
- ⃠ Your connectors absolutely MUST NOT fail - as in connectors installed in hard to reach places, in products or installations you’re delivering or shipping to a customer.

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LEDtape Outdoor Series IP68

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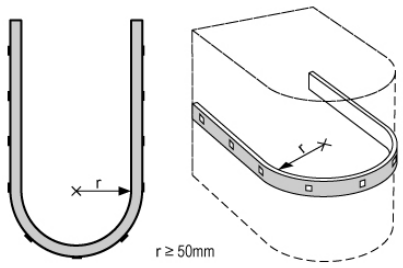
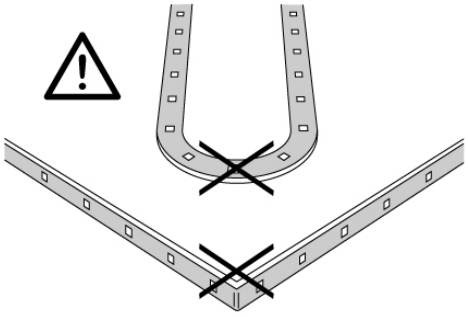
INSTALLATION

1



Never bend the LEDtape at a radius smaller than 50 mm.

2



Assembly must not damage or destroy conducting paths on the PCB.

3

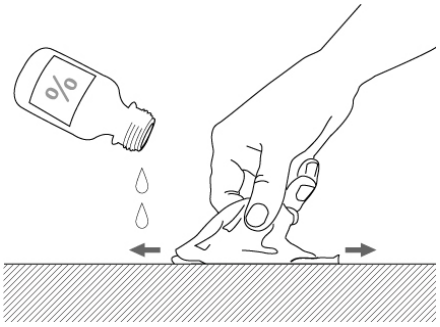
Perform the Pre-connection Checklist:

☑ Maximum length connected in series:
→ Datasheet | Wiring

☑ Polarity and Cable Colour Coding:
→ Datasheet | Wiring

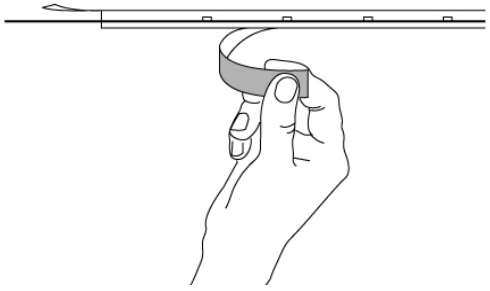
☑ Maximum length per driver:
→ Datasheet | Digital Dimmable Drivers

4



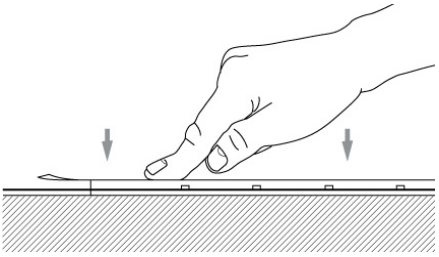
The fixing/cooling surface must be properly cleaned to remove grease, dirt and silicon before application, e.g. using Isopropyl alcohol.

5



Remove the adhesive tape from the backside and fix the LEDtape on the cleaned fixing/cooling surface.

6



When fixing the LEDtape to a surface, apply an even but gentle pressure and try to avoid applying pressure directly on the LED itself (the maximum allowed pressure is 20 N/cm²).

After assembly always check that the entire length has attached properly to the surface and that there is no air pockets underneath.

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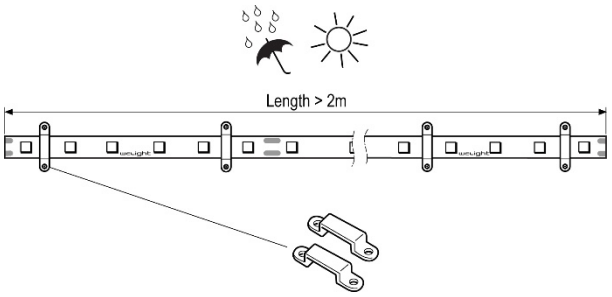
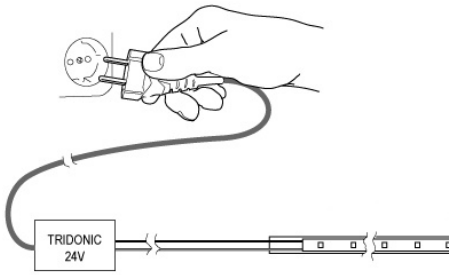
7



If the total length is longer than 2 meters or when used in environments with large variations in temperature (e.g. outdoor applications) it is recommended to use the included screw mounting clips in addition to the adhesive tape.

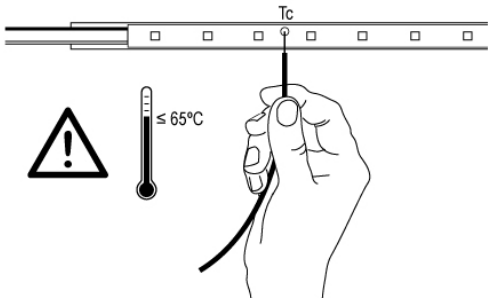
8



Before you connect the power supply, make sure all cable connections have been properly sealed using weatherproof connectors, e.g. 3M Scotchlok (not included). Always use our approved drivers and controls to power the LEDtape. If the wrong type of driver is used the product warranty is void.

→ Datasheet | Digital Dimmable Drivers

9



The temperature on the surface of the LEDtape (tc) may under no circumstances be higher than 65 °C if the expected lifetime of the LEDtape is to be met.

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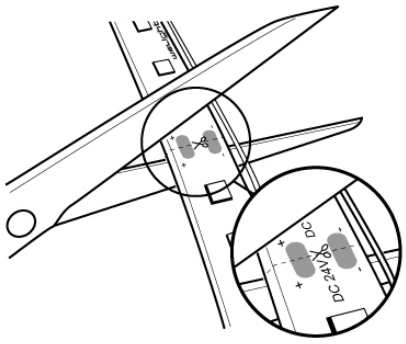
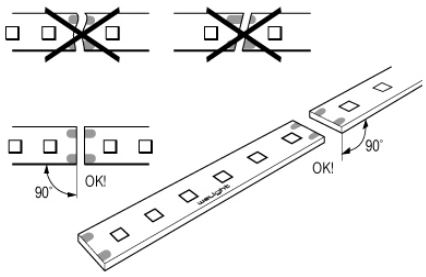
CUT & RE-SEAL

1



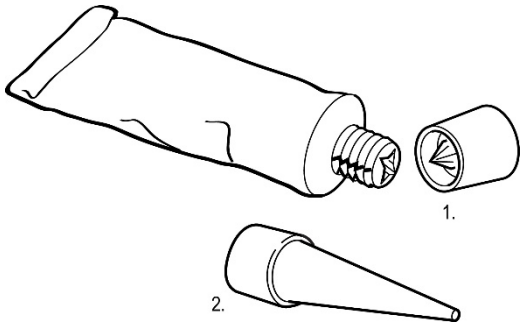
The LEDtape is separable at the middle of every solder pad with the full function of each LED segment. It is only allowed to cut at the indicated cutting line.

2



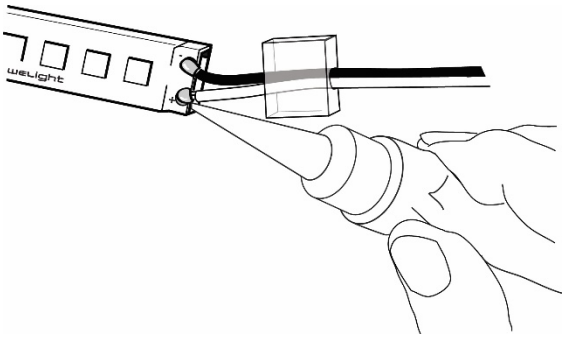
Always cut the LEDtape in a straight line – 90° in relation to the PCB edges. Failure to do so can result in damage of the internal conducting paths. Use Welight's official connection accessories to split, connect, bridge and re-seal the LEDtape.

3



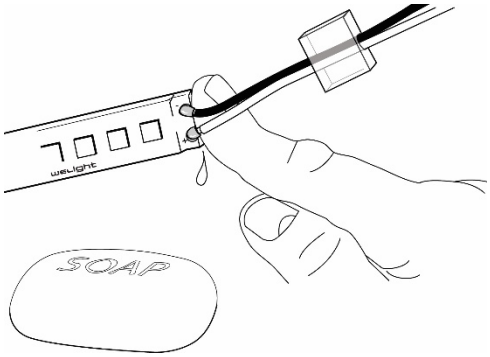
Locate the accessories included in the LEDtape box. Puncture the seal of the tube using the backside of the tube cap. Screw the dispersion needle onto the tube. Cut the top of the needle at an angle of 45-60°.

4



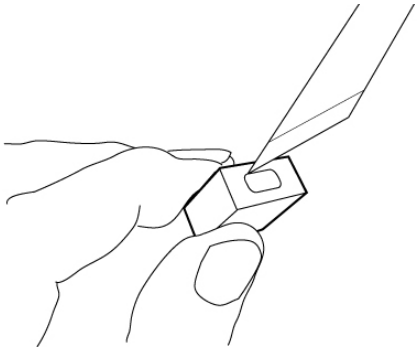
Dispense the silicone inside the open end of the LEDtape.

5



Then use your finger dipped in soapy water to smoothen out the opening creating a solid wall of silicon.

6



Using a sharp knife or blade, make a small hole in the end cap.

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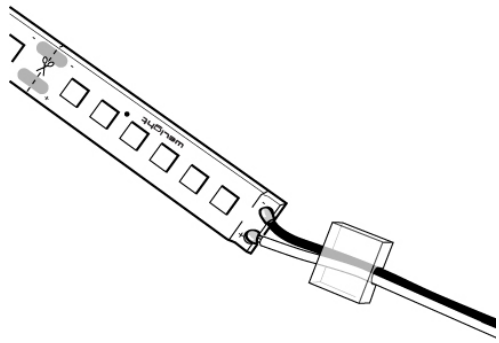
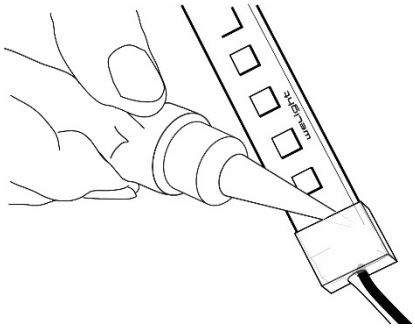
❼



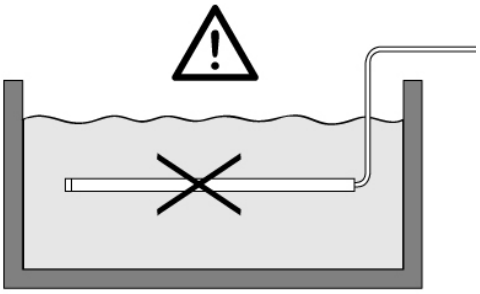
Thread the connection cable through the hole of the end cap.

❽



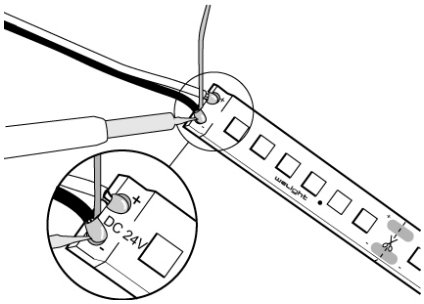
Dispense a small portion of silicon inside the end cap and then slide it into place over the end of the LEDtape. Please wait 60 minutes for the silicone to solidify.

CUT IP68 = IP67



Do not place the re-sealed parts permanently under water! When cut and re-sealed properly the overall protection of the LEDtape will be reduced from IP68 to IP67.

SOLDERING



If you need to solder the LEDtape, pre-tin the cables only. Soldering temperature max 300 °C for 4 seconds.

For details on how to solder an IP68 LEDtape, please watch this VIDEO TUTORIAL:

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LEDtape RGB Outdoor Series IP68

KOPPLINGSDON
CONNECTORS
VERBINDER
CONNETTORI
CONECTORES

STRIP TO CABLE

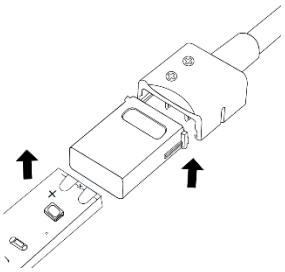
1

Cut the LEDtape in the middle of the solder pads.

2

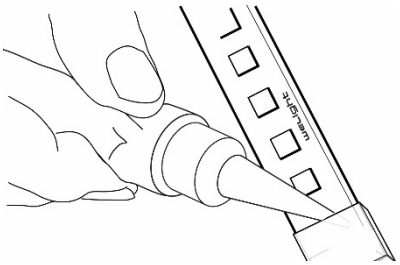
Peel off approx. 1 cm of the adhesive tape from the back of the LEDtape.

3



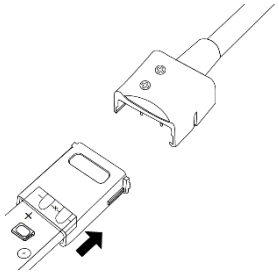
Position the connector sleeve to match the LEDtape with the hole facing upwards.

4



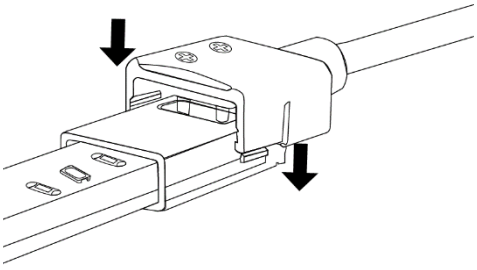
Use the included Silicon Tube to dispense silicon around the end of the LEDtape to facilitate the insertion into the connector sleeve.

5



Push the lubricated end of the LEDtape all the way into the sleeve.

6



Put the cable connector on top of the sleeve and push downwards. Make sure you **match the POLARITY** of the LEDtape with the connector before locking the connector in place.

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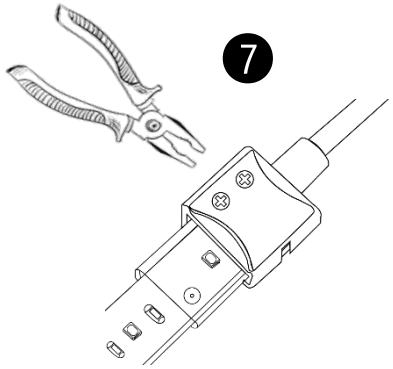
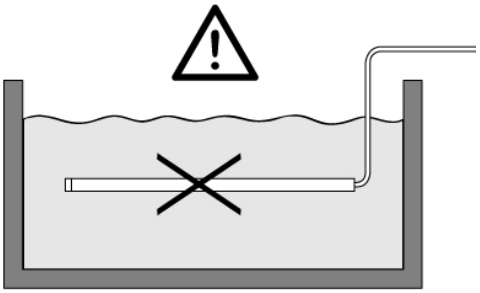


Use a pair of flat pliers to press down on each side of the cap until they lock in position. A “CLICK” can be heard when the pins are locked.

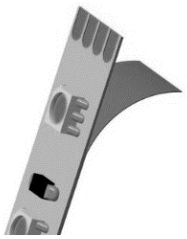
LEDtape IP68 + Connectors = IP67



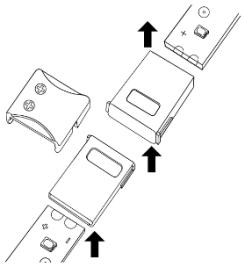
Do not use connectors permanently under water! When using connectors, the overall protection of the LEDtape will be reduced from IP68 to IP67.

STRIP TO STRIP

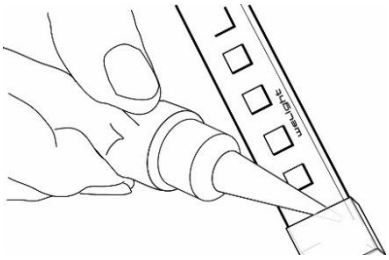
Cut the LEDtape in the middle of the solder pads.



Peel off approx. 1 cm of the adhesive tape from the back of the LEDtape.



Position the connector sleeves to match both ends of the LEDtape with the holes facing upwards.



Use the included Silicon Tube to dispense silicon around the ends of the LEDtape to facilitate the insertion into the connector sleeves.

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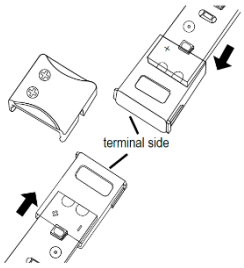
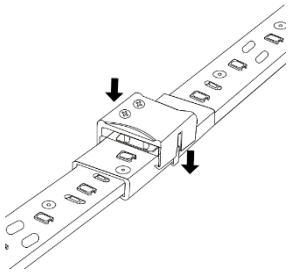
5



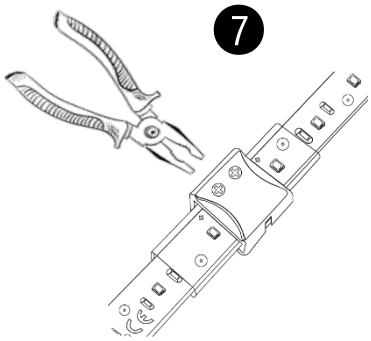
Push the lubricated ends of the LEDtape all the way into the sleeves.

6



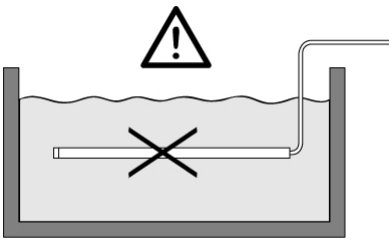
Put the bridge connector on top of the sleeves and push downwards. Make sure you **match the POLARITY** of the LEDtape with the connector before locking the bridge connector in place.

7



Use a pair of flat pliers to press down on each side of the cap until they lock in position. A "CLICK" can be heard when the pins are locked.

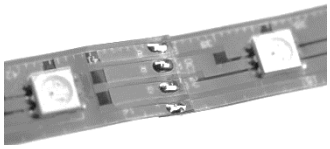
LEDtape IP68 + Connectors = IP67



Do not use connectors permanently under water! When using connectors, the overall protection of the LEDtape will be reduced from IP68 to IP67.

Do NOT use Quick Connectors when…

- ⃠ You need to connect a pre-soldered joint.



- ⃠ Your LED strips might be subjected to movement - as in installations on cars, boats, or other vehicles; or in installations that might be installed or set up several times, such as portable shelving or displays.
- ⃠ You have a large number of connections to make - particularly in installations that require many connections back to back, where one failure would result in the loss of large sections of light.
- ⃠ You are installing in tight places - when the added size of the connector would make your LED strip installation difficult or impossible.
- ⃠ Your connectors absolutely MUST NOT fail - as in connectors installed in hard to reach places, in products or installations you're delivering or shipping to a customer.

➔ If you are in doubt, consider soldering your connection instead. There is no substitute for a permanent soldered connection.

VIDEO TUTORIAL:

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