DATASHEET

IP00	LEDtape 2000-6500K CRI90 1500LM TW 15W 24V 5M G4
Code	W1004-TW-5M-G4
	7506486
	3201180
	4127406
	7350102530381

IP68	LEDtape 2400-6500K CRI90 1500LM TW 15W 24V IP68 5M G4
Code	W1004-TW-IP68-5M-G4
	7506487
	3201181
	4127407
	7350102530398

HIGHLIGHTS

- Tunable White flexible LEDtape with high CRI that can generate light temperatures from cool daylight to warm sunrise
- Designed for professional lighting applications with high density and light output
- Available in IP00 and IP68-version
- Best in class optical properties – MacAdam 3 / CRI>90
- High quality adhesive 3M-tape on backside for easy mounting on common surfaces
- Long lifetime: L70 = 50 000h ①
- Optimized for high resolution digital dimming 0.1-100% using Welight LED-driver W71XX-series
- Possible to connect 10 meters in series ⑥

Accessories

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

Technical Data

→ pp. 2

Accessories

→ pp. 4

Mounting Instructions

→ pp. 7

TECHNICAL DATA

Packaging

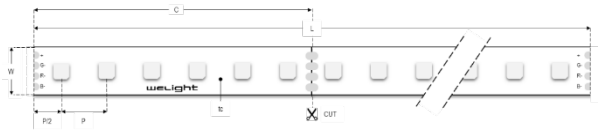
Full carton	20 pcs
Weight per pc	IP00: 600 g | IP68: 900 g
Box dimensions	250 x 250 x 30 mm

Electrical ①

Supply voltage (VDC)	24
DC Voltage Range ④⑥	22-26V @ L ≤5m 24-26V @ L ≤10m
Power (W) per m	15
Current (mA) per m	625
Supply Cable	L = 1 m (both ends) AWG20 UL standard RD (Red +) WH (White Cool -) YL (Yellow Warm -)

Dimensional ②

Length (L)	5 m
Max length in series ⑥	10 m
Min Bending Radius	IP00: 30 mm IP68: 50 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)	83,3 mm
Pitch distance (P)	12 mm (between groups)



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
Energy Declaration (EEEI)	A+ | 10 kWh / 1000h

Optical ①③

Luminous Flux (lm) per m	1500
Beam Angle	120
LED package	2835
LED quantity per m	168
Warmest Colour Temp	IP00: 2000K IP68: 2400K
Coldest Colour Temp	6500K
MacAdam SDCM	≤3
CRI (R1-R8)	>90
CRI (R1-R14)	>90

Photometric Code (according to EN 62717)

White Tone	CCT	Photometric Code
Candlelight	2000K	920 / 349
Sunrise	2400K	924 / 349
Daylight	6500K	965 / 349

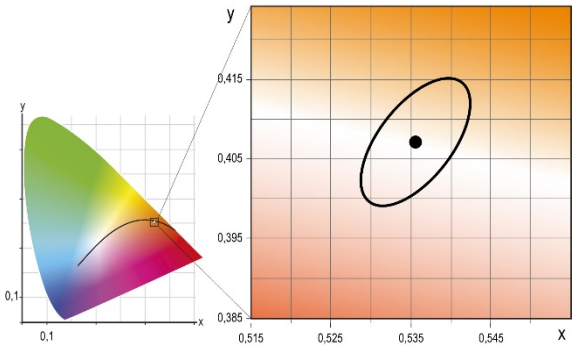
CCT Performance Summary ①③

CCT	IP00 LPM (max)	IP68 LPM (max)
2000K	600	-
2400K	750	600
2700K	1000	900
3000K	1200	1200
4000K	1500	1500
5000K	1200	1200
6500K	900	900

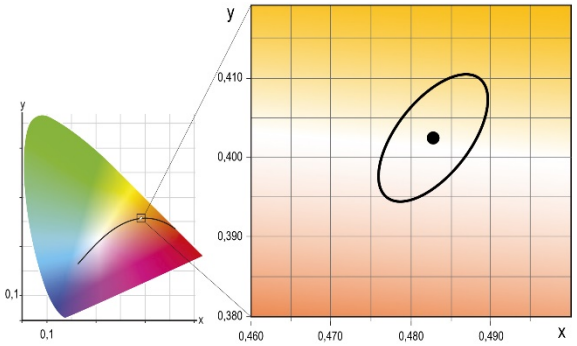
① Tolerance range for electrical and optical data ±10%
② Tolerance range for dimensional data ±1%
③ All values for ta = 25 °C / tc = 65 °C
④ Measured at the beginning of the LEDtape. Exceeding the maximum operating voltage leads to an overload on the tape. This may result in a significant reduction in lifetime or even destruction of the tape.
⑤ Self-cooling at ta ≤ 35 °C
⑥ When connecting 10 meters in series, the supply voltage must be between 24-26V at the beginning of the tape. Lower voltage can cause a significant reduction in light output at the end of length.

Chromaticity coordinates and tolerances (according to CIE 1931)

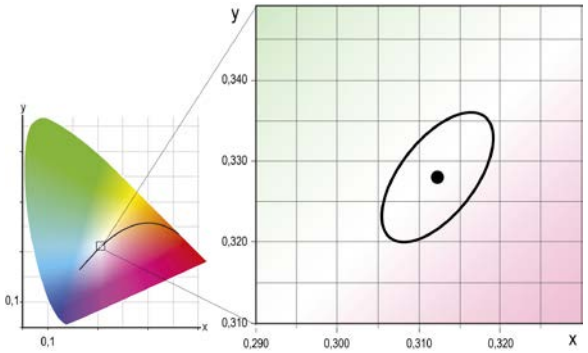
2000 K	x0	y0
Centre	0,536	0,406



2400 K	x0	y0
Centre	0,483	0,403



6500 K	x0	y0
Centre	0.313	0,328



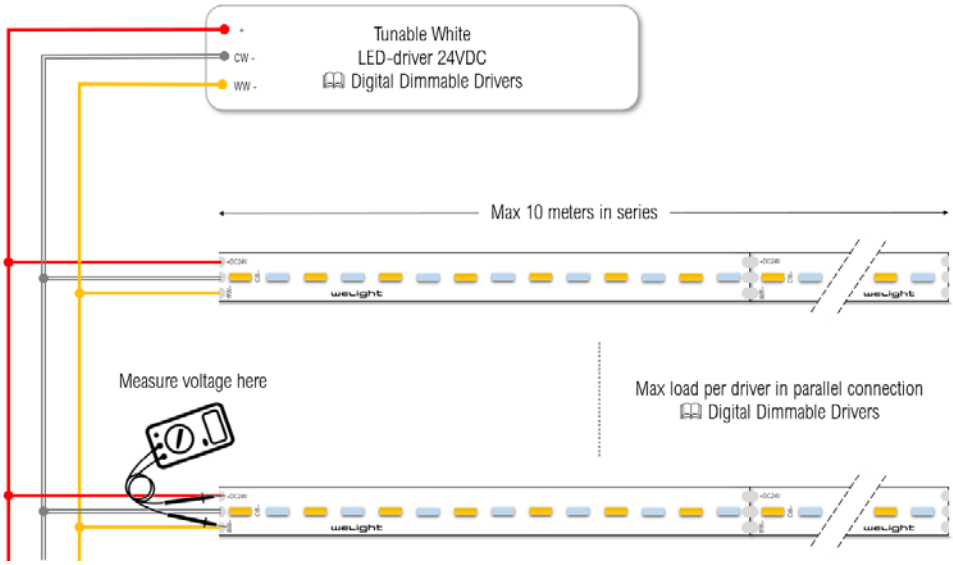
The specified color coordinates are measured by a current impulse with nominal values of module after a settling time of 100 msec. The ambient temperature of the measurement is ta = 25 °C. The measurement tolerance of the color coordinates is ± 0.01.

WIRING

The LEDtape is delivered with colour coded connection cable at each end, L = 1 m, 3 x 0,5 mm² (AWG20).
Do not connect more than 10 meters in series and make sure that the voltage is within the specified range at the beginning of the LEDtape.

Cable Colour	Polarity
RED	+
WHITE	– Cool White
YELLOW	– Warm White

Length	Voltage Range
≤ 5 meters	22-26V
≤ 10 meters	24-26V



DIGITAL DIMMABLE DRIVERS

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

1 2 3

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

DALI DT8-TW DIMMER

If you are looking for a simple yet intuitive way to control your Tunable White installation, we recommend using our driver W7101-TW in combination with our DALI Rotary Dimmer RIO.

Control Signal	Art. Code	Driver Type	Max no of drivers per dimmer
DALI DT8 TW	W7400-DT8-TW	DALI Rotary Dimmer 240VAC 100mA DT8 TW	50

For more details please read the datasheet of the dimmer.

CABLE & CONNECTION ACCESSORIES


1


2


3


4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11


12


13

					Suitable for LEDtape	
Pic	**Type**	**Art. Code**	**Description**	**Included**	**IP00**	**IP68**
1	LEDtape Connector TW Strip-Strip	W8440	Connect Tunable White strips to each other	1 pc	✓	✗
2	LEDtape Connector TW Strip-Cable	W8441	Connect Tunable White strip to a 3-wire cable (cable not included). Max cross section AWG20 (0,5mm²).	1 pc	✓	✗
3	LEDtape Connector TW IP Strip-Strip	W8442	Connect Tunable White IP68 strips to each other ⚠	1 pc	✗	✓
4	LEDtape Connector TW IP Strip-Cable	W8443	Connect Tunable White 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 3X0.5 AWG20 Rd/W/Y 6m	W8419	Connection cable for Tunable White strip, 6m reel	–	✓	✓
9	LEDcable RKUB 3X0.5 AWG20 Rd/W/Y 100m	W8423	Connection cable for Tunable White strip, 100m reel	–	✓	✓
10	LEDtape 3M VHB Adhesive 10mm 33m reel	W8449	3M VHB tape 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	4P connector kit with female and male plug incl. 30cm cable, black. Only 3 poles are used for Tunable White connections.	–	✓	✗
13	LEDaccessory RGB CON IP68 kit F+M	W8411-A4	4P connector kit IP with female and male plug incl. 30cm cable, white. Only 3 poles are used for Tunable White connections.	–	✗	✓

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

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


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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	✗	✗	✓

LEDtape Indoor Series IP00

INSTRUKTIONER
INSTRUCTIONS
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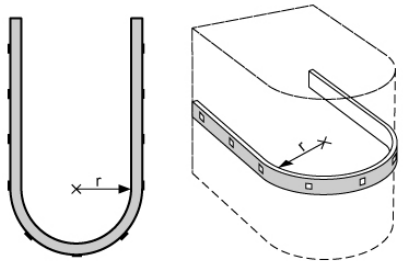
INSTRUCCIONES

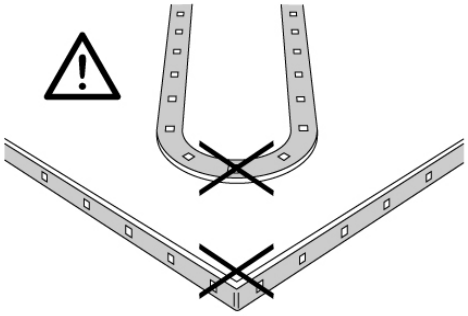
INSTALLATION

1



Never bend the LEDtape at a radius smaller than 30 mm.

2



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

3

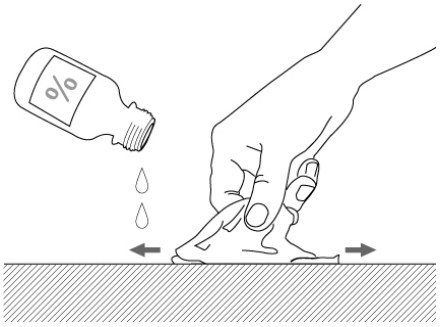
Perform the Pre-connection Checklist:

☑ Maximum length connected in series:
→ 🕮 Datasheet | Wiring

☑ Polarity and Cable Colour Coding:
→ 🕮 Datasheet | Wiring

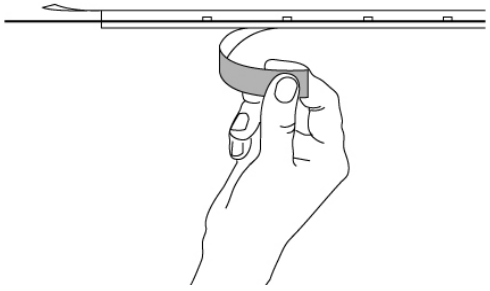
☑ Maximum length per driver:
→ 🕮 Datasheet | Digital Dimmable Drivers

4



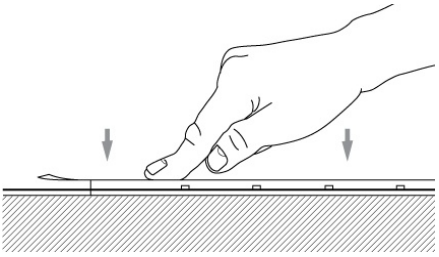
The fixing/cooling surface must be properly cleaned to remove grease, dirt and silicon before application, e.g. using Isopropyl alcohol.

5



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

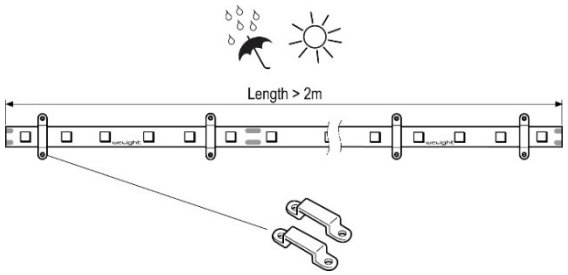
6



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).

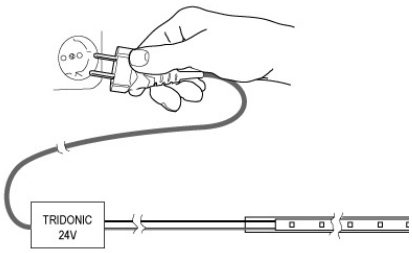
After assembly always check that the entire length has attached properly to the surface and that there is no air pockets underneath.

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.

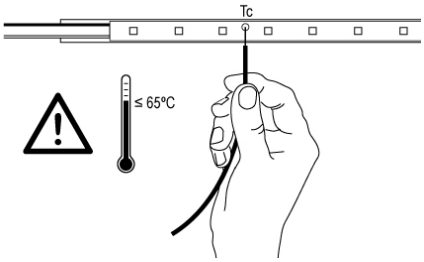
8



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

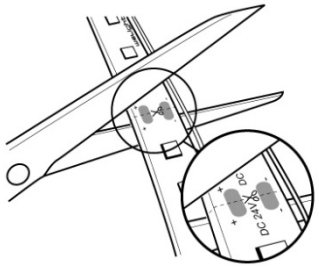
→ Datasheet | Digital Dimmable Drivers

9

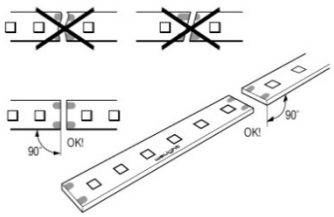


The temperature on the surface of the LEDtape (tc) may under no circumstances be higher than 65 °C if the expected lifetime of the LEDtape is to be met.

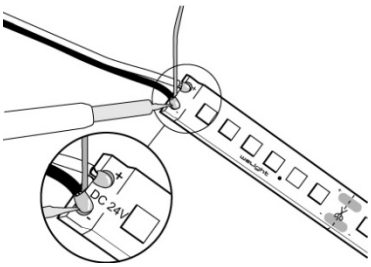
CUT & SOLDER



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:

LEDtape TW Indoor Series IP00

KOPPLINGSDON
CONNECTORS
VERBINDER
CONNETTORI
CONECTORES

STRIP TO CABLE

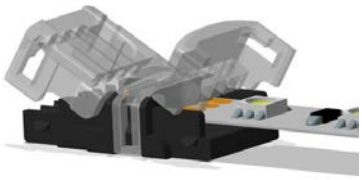
1

Cut the LEDtape in the middle of the solder pads.

2

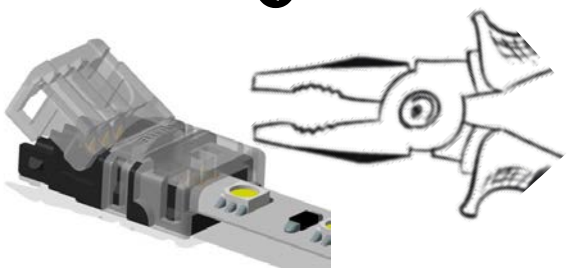
Peel off approx. 1 cm of the adhesive tape from the back of the PCB.

3



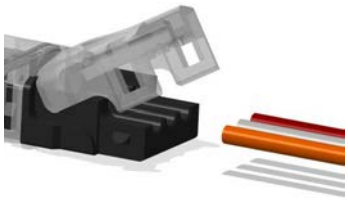
Open the cap as much as possible and insert the LEDtape all the way to the back of the connector.

4



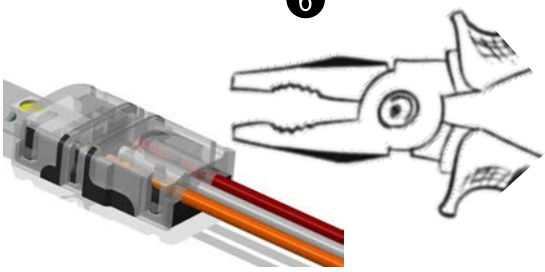
Use a pair of flat pliers to press down on each side of the cap until they lock in position. A “CLICK” can be heard when the pins are locked.

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.

STRIP TO STRIP

1

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2

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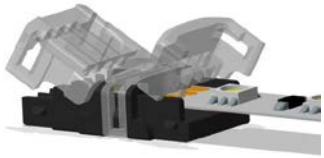
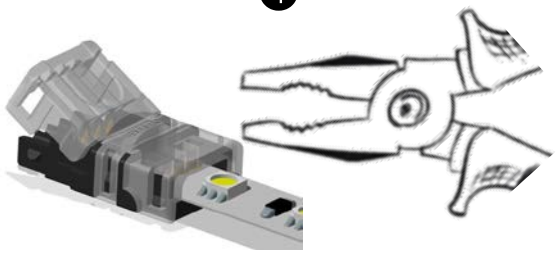
3



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

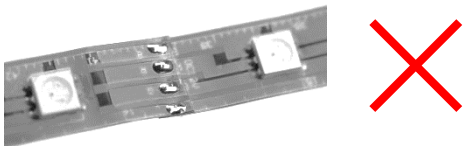
Repeat steps 1-4 for the other connecting end of the LEDtape. Make sure you check that both ends are facing the **SAME POLARITY** before locking the last connector in place.

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.

LEDtape Outdoor Series IP68

INSTRUKTIONER
INSTRUCTIONS
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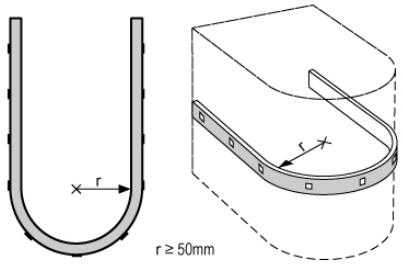
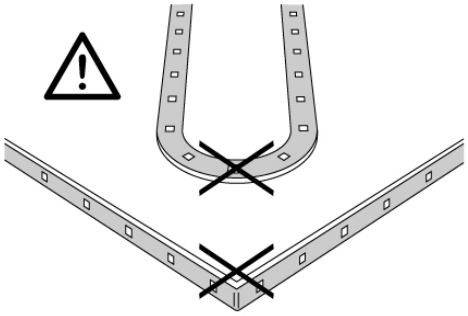
INSTALLATION

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

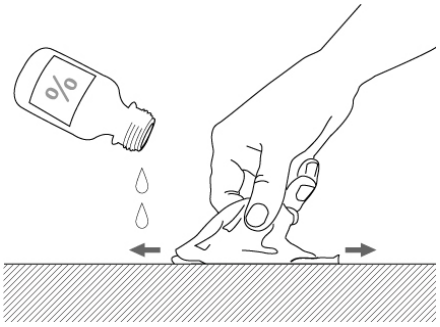
Perform the Pre-connection Checklist:

☑ Maximum length connected in series:
→ Datasheet | Wiring

☑ Polarity and Cable Colour Coding:
→ Datasheet | Wiring

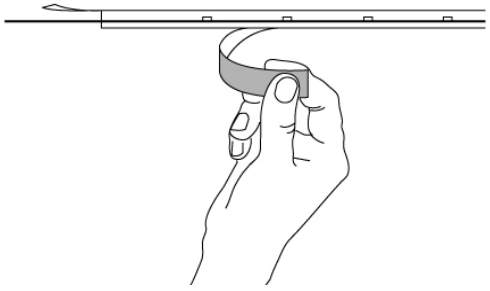
☑ Maximum length per driver:
→ Datasheet | Digital Dimmable Drivers

4



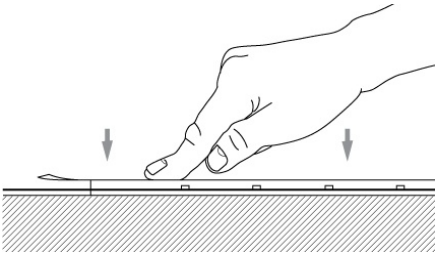
The fixing/cooling surface must be properly cleaned to remove grease, dirt and silicon before application, e.g. using Isopropyl alcohol.

5



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

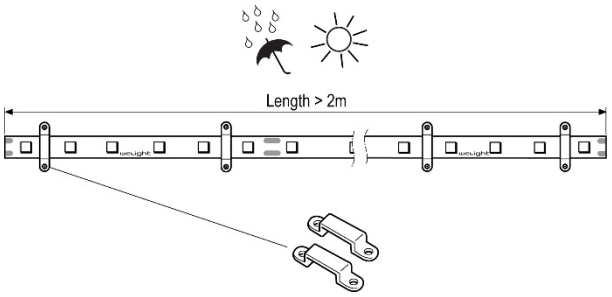
6



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).

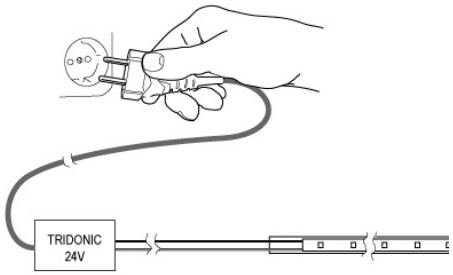
After assembly always check that the entire length has attached properly to the surface and that there is no air pockets underneath.

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.

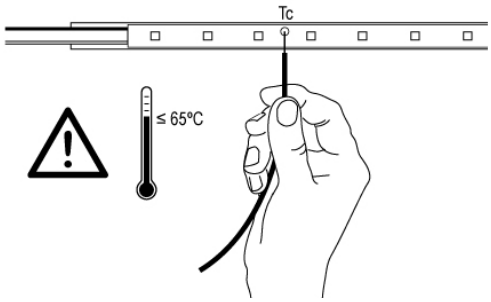
8



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

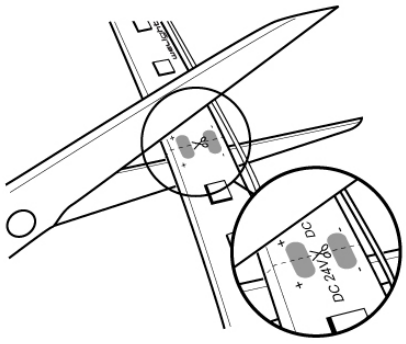
9



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.

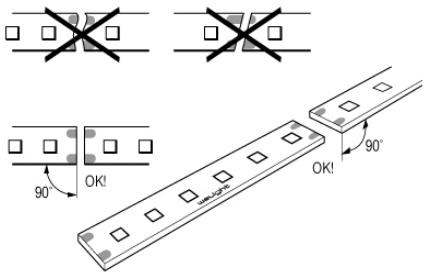
CUT & RE-SEAL

1



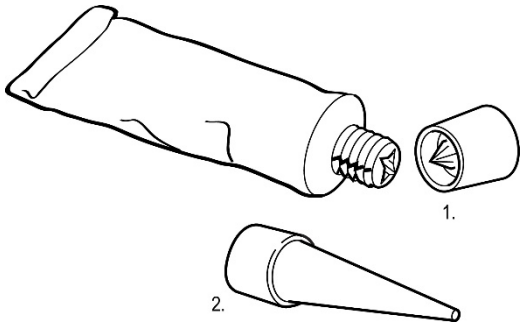
The LEDtape is separable at the middle of every solder pad with the full function of each LED segment. It is only allowed to cut at the indicated cutting line.

2



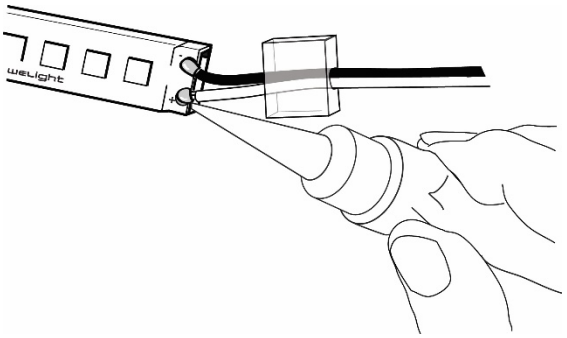
Always cut the LEDtape in a straight line – 90° in relation to the PCB edges. Failure to do so can result in damage of the internal conducting paths. Use Welight's official connection accessories to split, connect, bridge and re-seal the LEDtape.

3



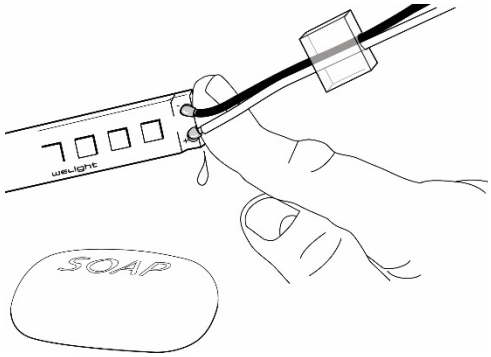
Locate the accessories included in the LEDtape box. Puncture the seal of the tube using the backside of the tube cap. Screw the dispersion needle onto the tube. Cut the top of the needle at an angle of 45-60°.

4



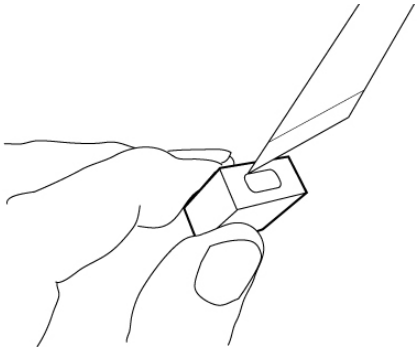
Dispense the silicone inside the open end of the LEDtape.

5



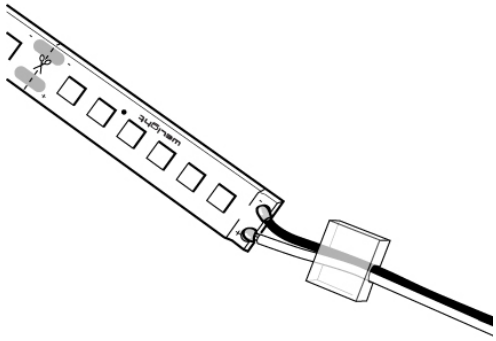
Then use your finger dipped in soapy water to smoothen out the opening creating a solid wall of silicon.

6



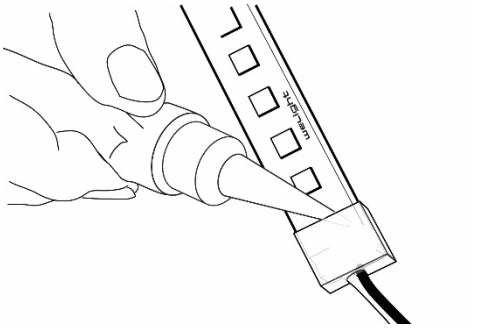
Using a sharp knife or blade, make a small hole in the end cap.

❼



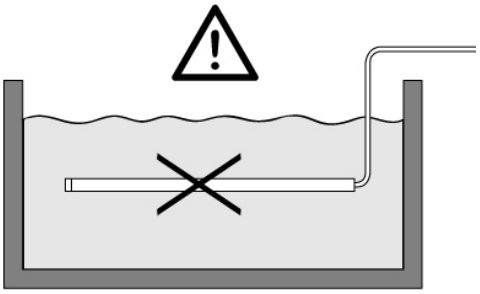
Thread the connection cable through the hole of the end cap.

❽



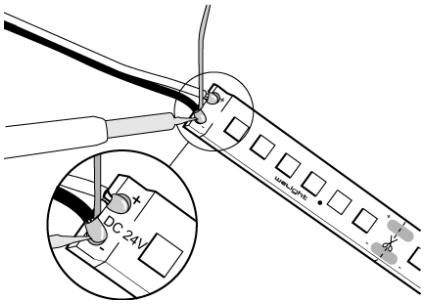
Dispense a small portion of silicon inside the end cap and then slide it into place over the end of the LEDtape. Please wait 60 minutes for the silicone to solidify.

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:

LEDtape TW Outdoor Series IP68

KOPPLINGSDON
CONNECTORS
VERBINDER
CONNETTORI
CONECTORES

STRIP TO CABLE

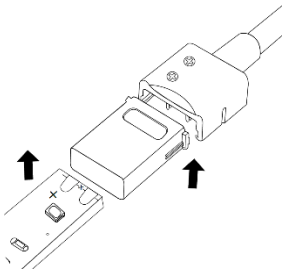
1

Cut the LEDtape in the middle of the solder pads.

2

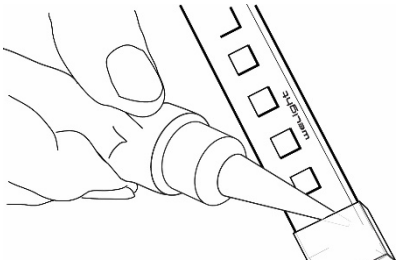
Peel off approx. 1 cm of the adhesive tape from the back of the LEDtape.

3



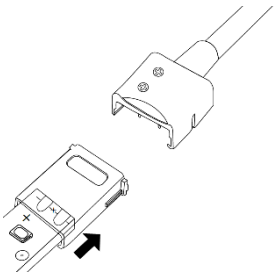
Position the connector sleeve to match the LEDtape with the hole facing upwards.

4



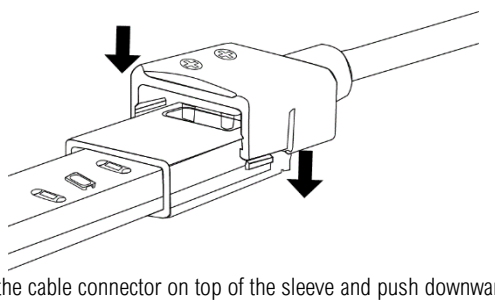
Use the included Silicon Tube to dispense silicon around the end of the LEDtape to facilitate the insertion into the connector sleeve.

5

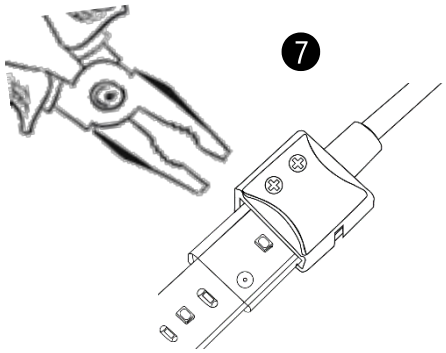


Push the lubricated end of the LEDtape all the way into the sleeve.

6

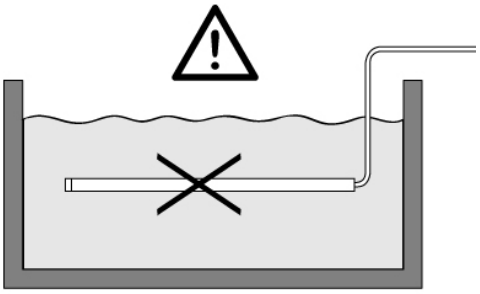


Put the cable connector on top of the sleeve and push downwards. Make sure you **match the POLARITY** of the LEDtape with the connector before locking the connector in place.



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

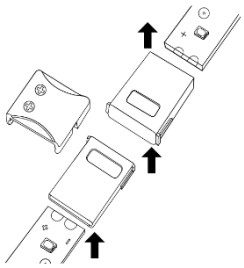


Do not use connectors permanently under water! When using connectors, the overall protection of the LEDtape will be reduced from IP68 to IP67.

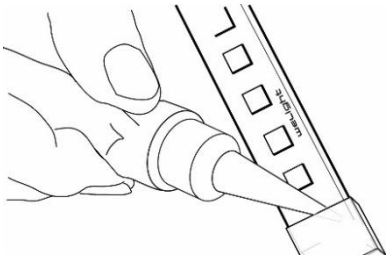
STRIP TO STRIP

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.

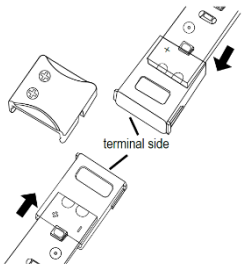


Position the connector sleeves to match both ends of the LEDtape with the holes facing upwards.



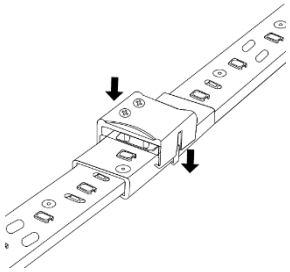
Use the included Silicon Tube to dispense silicon around the ends of the LEDtape to facilitate the insertion into the connector sleeves.

5



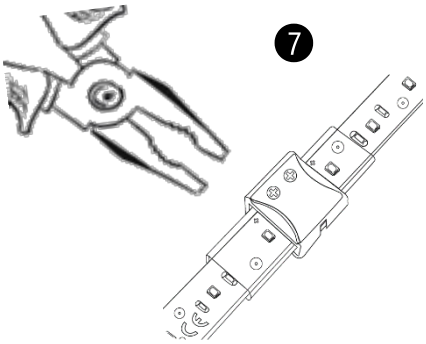
Push the lubricated ends of the LEDtape all the way into the sleeves.

6



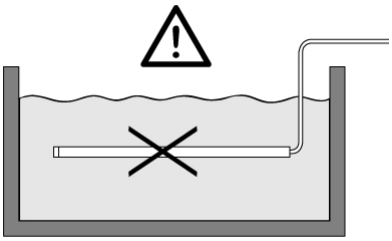
Put the bridge connector on top of the sleeves and push downwards. Make sure you **match the POLARITY** of the LEDtape with the connector before locking the bridge connector in place.

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.

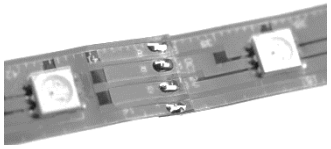
LEDtape IP68 + Connectors = IP67



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: