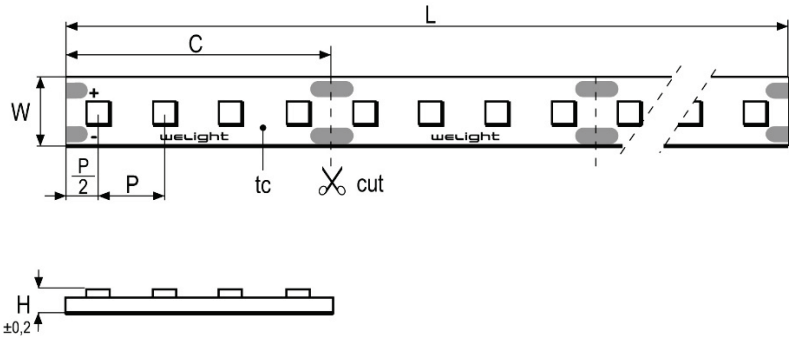
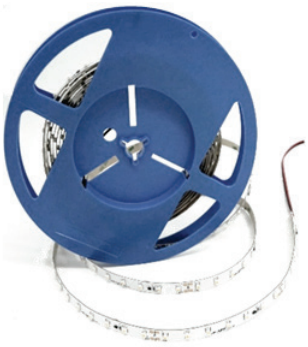
LEDtape 800 TW – Tunable White 2400-6000K CRI>90

IP20/IP65





Highlights

- Flexible tunable white LED-tape for professional lighting applications
- Adjustable color temperature 2400-6000K ⑥
- Simulate everything from a warm sunrise to a cool cloud reflection
- High color rendering index CRI > 90
- Excellent white colour consistency MacAdam SDCM ≤3
- Constant Current Driven IC for professional lighting applications
- 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 ①

Applications

- Accent Lighting
- Ambient Lighting
- Display Lighting
- Shelf Lighting

Electrical Properties

- Supplied with constant voltage 24 VDC
- Stable photometrics in combination with wide input voltage range 24-26 VDC
- Connect up to 10 meters in series ⑧
- Optimized for high resolution digital dimming 0.1-100% and tunable white control using Tridonic and Welight controller range.

Standards

page 2

Accessories/Options

- Outdoor version IP65 with silicon casing
- Aluminum profiles for linear and corner applications
- Wide variety of lenses and covers 15°/30°/60°/120°/Asymmetric/Batwing
- Fixed or adjustable mounting brackets
- Large selection of drivers and dimmers and control systems to fit every need and application

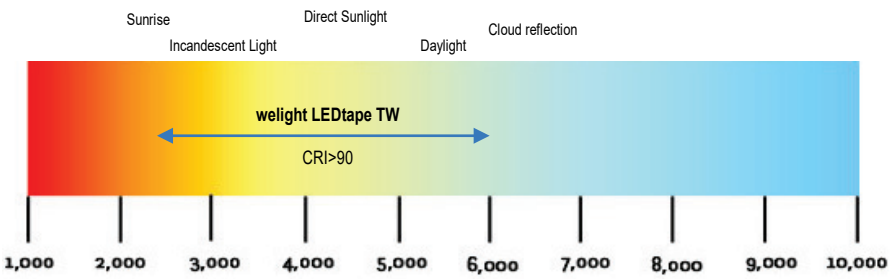
page 4

Mounting Instructions

page 6

Type	Article Code	Supply Voltage (VDC) ③	Power (W) per meter	Luminous flux (lm) per meter ⑦	Pitch Distance (P)	Cutting Length (C)	LxWxH (mm)	Operating temp (°C)	Energy Class	Color (K)		Photometric Code ⑤	Typ. data per meter & color		
													Luminous flux (lm)	Current (mA)	LED quantity
LEDtape 800 TW	W1002-924-960	24	14,4	834	16,8 mm	66,7 mm	5000x10x2	-20 °C +50 °C ④	A	WW	2400K	924 / 349	383	300	30
										CW	6500K	960 / 349	451	300	30
LEDtape 800 TW IP65	W1002-924-960-IP	24	14,4	792	16,8 mm	66,7 mm	5020x14x6	-20 °C +35 °C ④	A	WW	2400K	924 / 349	364	300	30
										CW	6500K	960 / 349	428	300	30

① All values for ta = 25 °C / tc = 65 °C
② Tolerance range for electrical and optical data ±10%
③ 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 / -0V
④ Self-cooling at ta ≤ 35 °C
⑤ According to IEC 62717
⑥ The adjusted color temperatures can shift slightly below B.B.L.
⑦ Value at 100% light level. Lumen is not constant along the B.B.L.
⑧ When connecting 10 meter 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.



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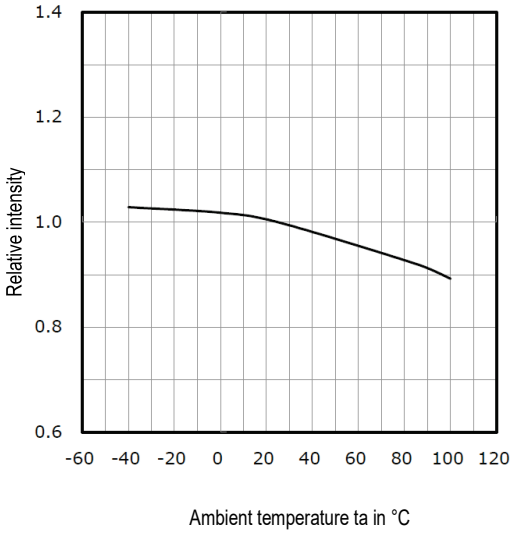
Standards

- IEC 62031
- IEC 62471
- IEC 62717
- IEC 6100-4-2
- IEC 62717

Thermal behaviour

Storage Temperature	-30/+60 °C
Operating Temperature	-20/+35/+50 °C
Tc max	75 °C

Relative luminous flux vs. ambient temperature



⚠ Thermal design and heat sink

The rated life of LED-products depends to a large extent on the temperature. Welight's excellent thermal design for the LED-tape products provides the lowest thermal resistance and therefore allowing new compact designs without sacrificing quality, safety and life time. However, if the permissible temperature limits are exceeded, the life of the LED-tape will be greatly reduced or the LED-tape may be destroyed.

It is often recommended to mount the LED-tape onto a heat sink, e.g. an aluminum profile. The need for a heat sink is largely depending on the ambient temperature (ta) of the application. The following tables should be seen as a guide to a recommended heat sink depending on different ta for the LEDtape:

LEDtape 800 TW (per meter)

Ambient Temperature (Ta)	Reference Temperature (Tc)	Cooling Area (cm^2)	Thermal Resistance R_{thHS-A}	Recommended Aluminum profile
25 °C	65 °C	Self-cooling	Self-cooling	Optional
35 °C	65 °C	Self-cooling	Self-cooling	Optional
45 °C	65 °C	300	2,1 K/W	Z200-2 / Z201-2 / Z22W-2
50 °C	65 °C	400	1,8 K/W	Z22W-2

LEDtape 800 TW IP65 (per meter)

Ambient Temperature (Ta)	Reference Temperature (Tc)	Cooling Area (cm^2)	Thermal Resistance R_{thHS-A}	Recommended Aluminum profile
25 °C	65 °C	Self-cooling	Self-cooling	Optional
35 °C	65 °C	Self-cooling	Self-cooling	Optional
45 °C	Not allowed	-	-	-
50 °C	Not allowed	-	-	-

The temperature at tc reference point is crucial for the light output and life time of a LEDtape. For the welight LEDtape a tc temperature of 65 °C is recommended in order to achieve an optimum between heat sink requirements, light output and life time.

Life time, lumen maintenance and failure fraction

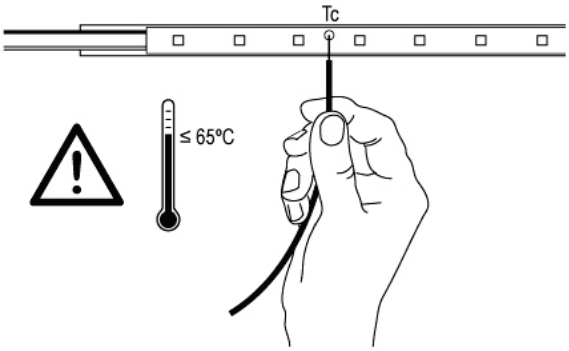
The light output of the LEDs on the tape decreases over the life-time, this is characterized with the L value. L70 means that the LEDtape will give 70 % of its initial luminous flux. This value is always related to the number of operation hours and therefore defines the lifetime of the LEDs.

The L value is a statistical value and the lumen maintenance may vary over the delivered LEDtape. The B value defines the amount of LEDs which are below the specific L value, e.g. L70B10 means 10 % of the LEDs are below 70 % of the initial luminous flux, respectively 90 % will be above 70 % of the initial value.

In addition the percentage of failed LEDs (fatal failure) is characterized by the C value. The F value is the combination of the B and C value. That means for F degradation and complete failures are considered, e.g. L70F10 means 10 % of the LEDs on the tape may fail or be below 70 % of the initial luminous flux.

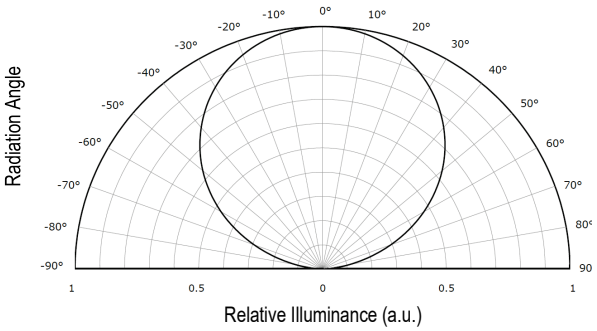
Type	Reference Temperature (Tc)	L90F10	L70F10
LEDtape 800 TW	65°C	24 000 h	>50 000 h
	75°C	12 000 h	36 000 h
LEDtape 800 TW IP65	65°C	20 000 h	>50 000 h
	75°C	10 000 h	32 000 h

NOTE! 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. Compliance with the maximum permissible reference temperature at the tc point must be checked under operating conditions in a thermally stable state. The maximum value must be determined under worst-case conditions for the relevant application.



Light Distribution

Radiance Angle = 120°



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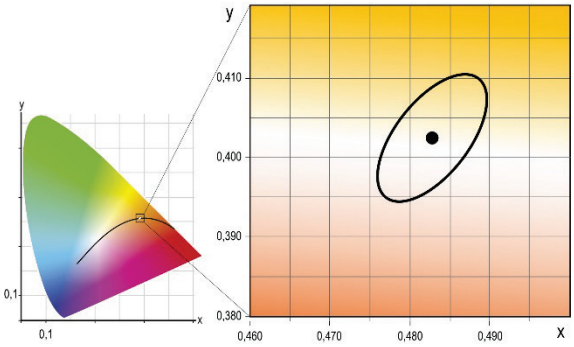
Photometric Code (according to EN 62717)

1 st digit		2nd + 3rd digit	4th digit	5th digit	6th digit	
Code	CRI	Color temperature in Kelvin x 100	Initial MacAdam ellipse SDCM	Maintained MacAdam ellipse SDCM after 25%of the lifetime (6000 h)	Lumen maintenance after 25%of the lifetime (6000 h)	
					Code	Light Output
7	67 – 76				7	≥ 70 %
8	77 – 86				8	≥ 80 %
9	87 – ≥90				9	≥ 90 %

Chromaticity coordinates and tolerances (according to CIE 1931)

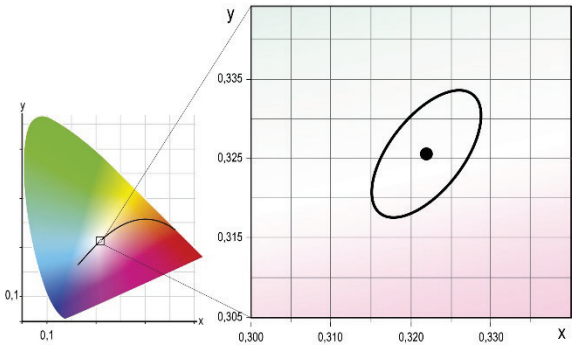
White Tone	CCT	Photometric Code
Sunrise	2400 K	924 / 349
Daylight	6000 K	960 / 349

2400 K	x0	y0
Centre	0,4829	0,4027



MacAdam ellipse: 3 SDCM

6000 K	x0	y0
Centre	0.3220	0,3257



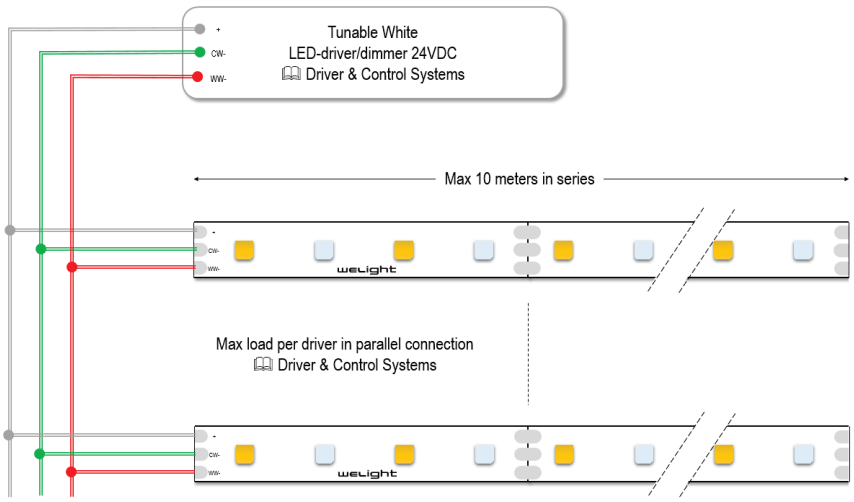
MacAdam ellipse: 3 SDCM

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 are ± 0.01.

Wiring

Each reel of LED-tape is delivered with color coded connection cable L=350mm, 3x0,5 mm². Do not connect more than 10 meters of the LED-tape in series and make sure that the voltage is ≥24V at the beginning of the LEDtape. When connecting several sections in parallel please refer to the table *Driver & Control Systems* for the allowed total length connected to one controller/dimmer.

Color	White	Green	Red
Function	+	CW -	WW -



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ACCESSORIES

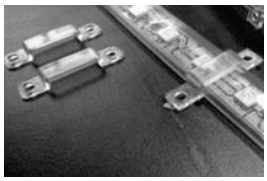
Cable & Connection accessories


1


2


3


4


5

	Type	Art. Code	Description	TW	TW IP
1	LEDaccessory IP Assembly Kit 10	W8901	End Caps, Mounting Brackets & Silicon (one kit is included on delivery)	○	●
2	LEDaccessory RGB Cable 100m	W8408	R2KB 4X0.35 Yd=4,8mm, Dark Grey, 100 m	●	●
3	LEDaccessory RGB CON IP20 kit F+M	W8412-A2	Quick Connector kit, 4-poles, with female and male plug including 30 cm cable, black	●	○
4	LEDaccessory RGB CON IP68 kit F+M	W8411-A4	Quick Connector kit, 4-poles, with female and male plug including 30 cm cable, white	○	●
5	LEDtape Accessory IP Clips 100-pack	W8902	Plastic mounting clips for all IP65-rated LEDtapes, 100 pcs per bag.	○	●

Driver & Control Systems

(a) Select the way you want to control your system and (b) chose a driver that matches your LED-power.

(a)


1


2


3


4


5

(a)	Control Signal	Dimmer Type	Art. Code	LEDtape TW (max length)	Multiple dimmers allowed
1	DALI	welight LEDcontrol 2x10A	W7003	30 meter	Yes
2	Stand-alone color sequencer	Tridonic C002	86454968	6,5 meter	No. Use booster type C004 to extend the installation.
2	1-10V	Tridonic C001	86454974	6,5 meter	Yes
3	DALI integrated ①	Tridonic K211	28000852	1,1 meter	Yes
4	DMX	feno fd dmx 3-24e	00000070	6,5 meter	Yes
5	IP44 Dimmer Protection Kit	Type 2-4 above	24138842	-	-

① The dimmer has a 25W integrated LED-driver and cannot be used together with external LED-driver in table (b).

(b)


1


2-4


5


IP67-versions

(b)	Power	Driver	IP20 Art. Code	IP67 Art. Code
1	25 W	Tridonic LCU 25W 24V	28000849	-
2	35 W	Tridonic LCU 35W 24V EXC	28000411	-
3	60 W	Tridonic LCU 60W 24V EXC	28000412	28000512
4	96 W	Tridonic LCU 96W 24V EXC	28000413	28000513
5	180 W	Tridonic LCU 180W 24V EXC	28000414	28000514

LED-drivers <25 W available on request. Please contact us at info@welight.se for information about suitable end-user control interfaces, e.g. touch panels, color mixing software, potentiometers, push-buttons, etc.

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Aluminum Profile Systems & Lenses

Start by selecting an aluminum profile (a) and a suitable lens cover (b) and then add optional accessories (c).

(a)


1


2


3

									Optional accessories			
(a)	Type	Art. Code	L (mm)	W (mm)	H (mm)	W (mm) incl. lens cover	H (mm) incl. lens cover	Application	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

					Profile		
(b)	Type	Art. Code	L (mm)	Typ. application	Z200-2	Z201-2	Z22W-2
1	15°	24166409	2000	Wall wash	●	●	●
2	30°	24166410	2000	Wall wash	●	●	●
3	60°	24166411	2000	Shelf	●	●	●
4	30° x 60°	24166412	2020	Asymmetric	●	●	●
5	Batwing	24166120	2000	Side-emitting	●	●	●
6	120°	24138737	2000	Accent	●	●	●
7	120° opal	24138736	2000	Lines	●	●	●

(c)


1


2


3


4


5

			Profile		
(c)	Type	Art. Code	Z200-2	Z201-2	Z22W-2
1	End cap Grey PMMA	24166334	○	●	○
2	End Cap Aluminum	24139174	○	○	●
2	End Cap Aluminum 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	○	○	●

⚠ **We also have complete profile systems for IP66 protection for demanding outdoor environments. Please contact us for further details.**

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