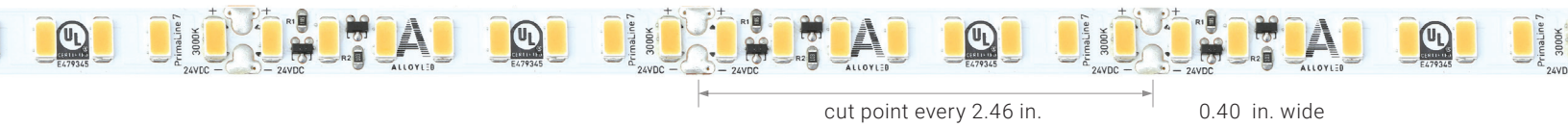


PrimaLine® 7 LED Tape Light



PrimaLine 7 LED tape light is a high-output tape light that was specifically designed to provide bright, hotspot-free lighting in our narrow, low-profile channels as well as our wider channels. With a 22 ft. max run and compatible Amp Champ connectors, PrimaLine 7 is the perfect solution for your primary lighting needs.

- Compatible with Amp Champ Family and is hotspot-free in most channels
- Up to 779 lumens per foot
- Industry-leading 95+ CRI (Color Rendering Index)
- High R9 and R13 values for superb rendering of warm tones

TECHNICAL INFORMATION

Stocked CCTs (Kelvin Temp.)*	2200K, 2400K, 2700K, 3000K, 3500K, 4200K, 5000K*
Power Consumption per ft.	7 Watts/292.68mA
Input Voltage	24V DC
Diodes per foot	39
Diode Spacing	0.31 inches
Tape Height	0.06 inches
Beam Angle	120°
Field Cutable (UL 2108)	Every 2.46 inches
Max Run Length	22 ft.
Dimmable	Yes

Diode Type	5730 Epistar
Mounting	3M™ Self-Adhesive Tape (Non-porous)
Operating Temp.	-13° F to 140° F
Ambient Temp.	-40° F to 176° F
Environment	Indoor, Dry
Spool Lengths	22 ft.
Certifications	UL Listed, UL 2108, RoHS
Standards	Certified to the CA Energy Commission in accordance with the Title 24 JA8 2016 std.
Warranty	6 Year Limited

* In addition to stocked colors, a wide variety of kelvin temperatures is also available by special order. Please call or email to order.

**Each spool comes with 36 in. CL2 rated 20 AWG tinned lead wires at each end.

PRODUCT INFORMATION

22 ft. spool Item #	Voltage	Kelvin temp.(CCT)	CRI	R9 Values	R13 Values	TM30	CQS	Lumens / foot
AL-01-19-2400	24V DC	● 2200K	97	81.3	99.2	95.3	87.1	534
AL-01-19-2405	24V DC	● 2400K	97.4	83.4	99.7	94.9	90.9	610
AL-01-19-2401	24V DC	● 2700K	97.6	96.9	97.2	94.7	95.8	688
AL-01-19-2402	24V DC	● 3000K	97.6	91.5	98.1	94.6	95.3	707
AL-01-19-2408	24V DC	● 3500K	96.6	93.8	95.2	93.8	96.8	736
AL-01-19-2403	24V DC	○ 4200K	98.2	97.1	97.9	93.6	97.1	701
AL-01-19-2404	24V DC	● 5000K	97.4	89.4	97.6	91.4	94.8	779

VOLTAGE DROP GUIDANCE CHART

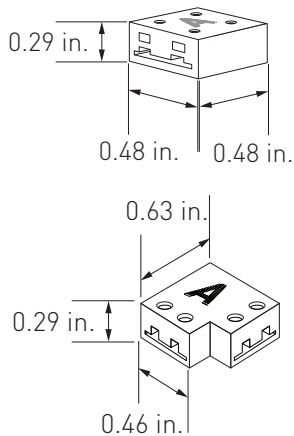
Standard Non-XT 24V Voltage Drop & Wire Length Distance Chart (3% Drop or 24V)*

Wire Gauge	Copper Wire Resistance (Ω/kFT)	10W (0.42A)	20W (0.83A)	30W (1.25A)	40W (1.67A)	50W (2.08A)	60W (2.50A)	70W (2.92A)	80W (3.33A)	90W (3.75A)	96W (4A)
22 AWG	16.14	54 ft.	27 ft.	18 ft.	14 ft.	11 ft.	9 ft.	8 ft.	7 ft.	6 ft.	6 ft.
20 AWG	10.15	86 ft.	43 ft.	29 ft.	22 ft.	18 ft.	15 ft.	13 ft.	11 ft.	10 ft.	9 ft.
18 AWG	6.39	136 ft.	68 ft.	46 ft.	34 ft.	28 ft.	23 ft.	20 ft.	17 ft.	16 ft.	15 ft.
16 AWG	4.02	216 ft.	108 ft.	72 ft.	54 ft.	44 ft.	36 ft.	31 ft.	27 ft.	24 ft.	23 ft.
14 AWG	2.53	343 ft.	172 ft.	115 ft.	86 ft.	69 ft.	58 ft.	49 ft.	43 ft.	39 ft.	36 ft.
12 AWG	1.59	545 ft.	273 ft.	182 ft.	137 ft.	109 ft.	91 ft.	78 ft.	69 ft.	61 ft.	57 ft.
10 AWG	0.99	865 ft.	433 ft.	289 ft.	217 ft.	173 ft.	145 ft.	124 ft.	109 ft.	97 ft.	91 ft.

Note: These tables provide general guidelines for determining Wire Gauge based on total load and distance from LED driver to beginning of luminaire.

ACCESSORIES (SOLD SEPARATELY)

Amp Champ: For a more secure connection



Accepts many combinations of tape and wire. Includes spade connectors for stranded wire, 3M® adhesive backing, and pre-attached 6 inch in-wall-rated 18 AWG lead wire.

Note: Amp Champ Corner does not include the pre-attached 6 inch in-wall-rated 18 AWG lead wire.

Standard Amp Champ

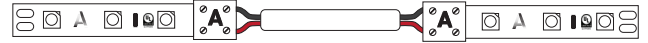
AL-01-19-9900
AL-01-19-9900-10 (10 pack)

Amp Champ Corner

AL-01-19-9900-L

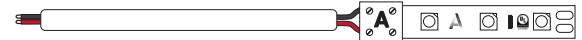
Amp Champ Jumper and Power Feed Kits

Amp Champ Jumper Kit includes 2 Amp Champs and 1 pre-tinned 18AWG jumper wire.



AL-01-19-9900-3IN-JK (3" jumper wire)
AL-01-19-9900-6IN-JK (6" jumper wire)
AL-01-19-9900-36IN-JK (36" jumper wire)

Amp Champ Power Feed Kit includes 1 Amp Champ and 1 pre-tinned 18AWG power feed wire.

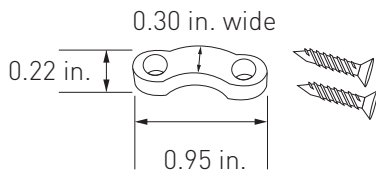


AL-01-19-9900-36IN-PK (36" power feed wire)
AL-01-19-9900-8FT-PK (8' power feed wire)

Wire and Tape Light Management

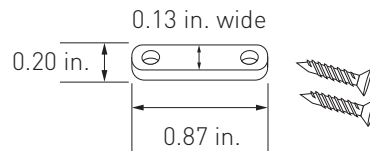
We recommend the use of the wire and tape harness.

- At least 1 wire harness at the beginning to secure the lead wire; for longer lead wires, place a harness every 2 feet
- 1 tape harness every 2 feet and 1 harness at the end of the tape light to secure it



Wire Harness

Holds wire in place securely
AL-01-99-9901-10 (10 pack)

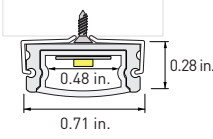
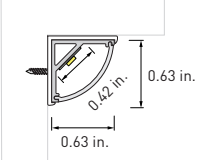
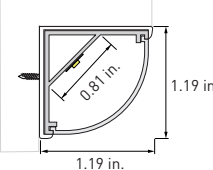
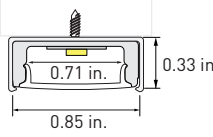
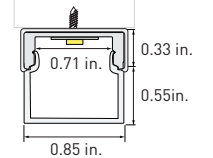
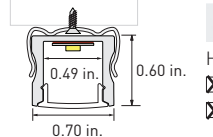
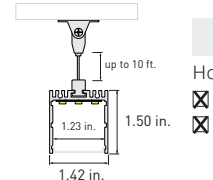
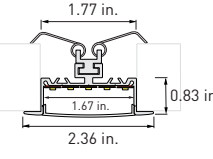
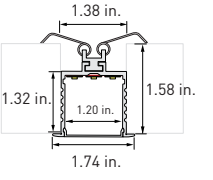
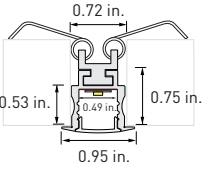
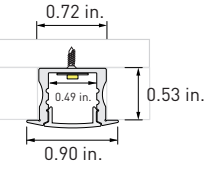
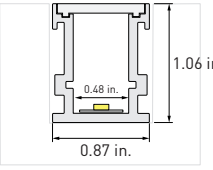
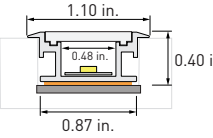
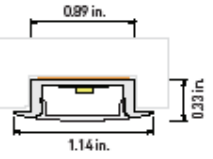


Tape Harness

Provides extra security for tape light, especially at the ends of a run
AL-01-99-9900-10 (10 pack)

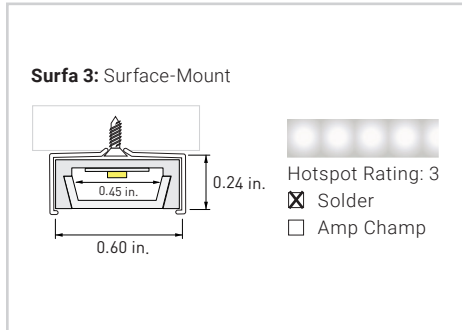
COMPATIBLE CHANNELS (Diagrams below not to scale)

Reduced Hotspot Pairings (Hotspot Rating from 0-5)

<p>Surfa 1: Surface-Mount</p>  <p>Hotspot Rating: 1 <input checked="" type="checkbox"/> Solder <input type="checkbox"/> Amp Champ</p>	<p>Surfa 2: Corner-Mount</p>  <p>Hotspot Rating: 1 <input checked="" type="checkbox"/> Solder <input type="checkbox"/> Amp Champ</p>	<p>Surfa 2X: Corner-Mount</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>
<p>Surfa 6: Surface-Mount</p>  <p>Hotspot Rating: 1 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>	<p>Surfa 6 Surround: Surface-Mount</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>	<p>Surfa 7: Surface-Mount</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>
<p>Suspan 1: Suspended</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>	<p>Ankr 1: In-Wall</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>	<p>Ankr 2: In-Wall</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>
<p>Ankr 3: In-Wall</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>	<p>Ankr 4: Mud-In</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>	<p>Duro 1: In-Ground</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input type="checkbox"/> Amp Champ</p>
<p>Duro 2: In-Ground</p>  <p>Hotspot Rating: 0 <input checked="" type="checkbox"/> Solder <input type="checkbox"/> Amp Champ</p>	<p>Naro 4: Recessed</p>  <p>Hotspot Rating: 1 <input checked="" type="checkbox"/> Solder <input checked="" type="checkbox"/> Amp Champ</p>	

COMPATIBLE CHANNELS (Diagrams below not to scale)

Other Compatible Pairings (Hotspot Rating from 0-5)

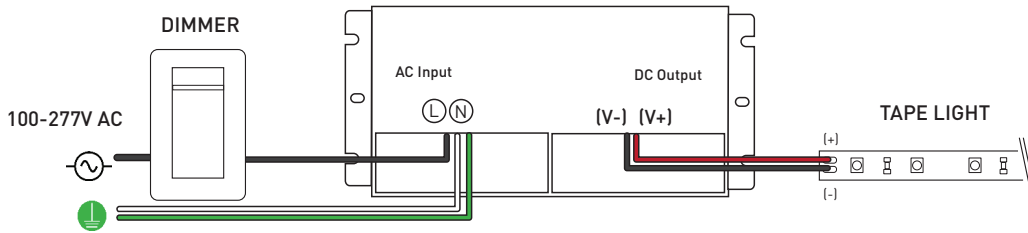
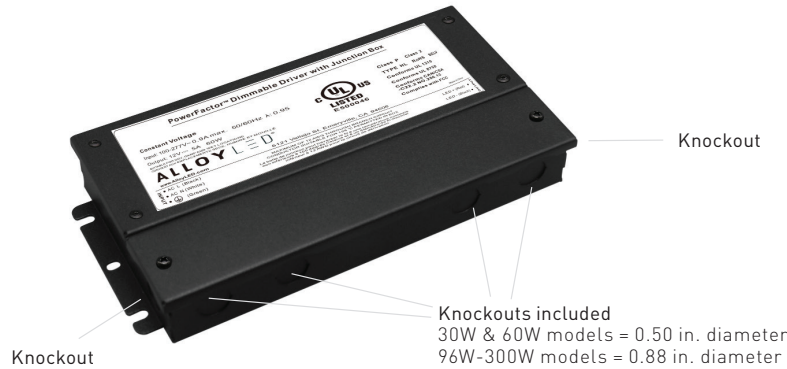


ALLOY LED[®] Specifications

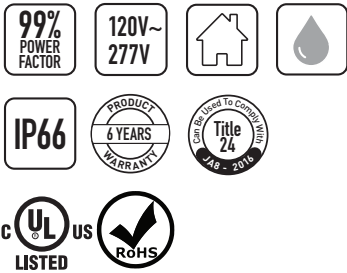
RECOMMENDED POWER SUPPLIES (SOLD SEPARATELY)



Alloy LED PowerFactor™ Dimmable Power Supplies w/ Integrated UL Listed Junction Box
Compact, highly efficient, and code-compliant power supply with versatile and smooth dimming capabilities.



Wiring diagram is for reference ONLY. Please refer to dimmer wiring specifications sheet for accurate directions.



Single Tap Models

Item #	Output Voltage	Wattage	Wet Location	Minimum Load	Dimensions (L x W x H)	Class 2
AL-98-10-12030	12V DC	30W	N	10%	6.50 x 3.72 x 1.02 in.	Y
AL-98-10-12060	12V DC	60W	N	10%	7.40 x 3.72 x 1.02 in.	Y
AL-98-10-12120	12V DC	120W	Y (IP66)	10%	8.66 x 3.72 x 1.57 in.	N
AL-98-10-24030	24V DC	30W	N	10%	6.50 x 3.72 x 1.02 in.	Y
AL-98-10-24060	24V DC	60W	N	10%	7.40 x 3.72 x 1.02 in.	Y
AL-98-10-24096	24V DC	96W	Y (IP66)	10%	8.66 x 3.72 x 1.57 in.	Y
AL-98-10-24150	24V DC	150W	Y (IP66)	10%	10.24 x 4.13 x 1.77 in.	N
AL-98-10-24200	24V DC	200W	Y (IP66)	10%	10.24 x 4.13 x 1.77 in.	N
AL-98-10-24300	24V DC	300W	Y (IP66)	10%	10.94 x 4.33 x 1.77 in.	N

Class 2 Compliant Multi-Tap Models

Item #	Output Voltage	Wattage	Wet Location	Minimum Load	Dimensions (L x W x H)	Class 2
AL-98-10-12300-MT	12V DC	300W	Y (IP66)	10%	11.85 x 4.33 x 1.77 in.	Y
AL-98-10-24192-MT	24V DC	192W	Y (IP66)	10%	10.94 x 4.33 x 1.77 in.	Y
AL-98-10-24288-MT	24V DC	288W	Y (IP66)	10%	10.85 x 4.33 x 1.77 in.	Y

Note: PowerFactor assumes 80% load.

Inspectors prefer power supply to be used with junction box.
For dimmer compatibility, refer to drivers specification sheet.

ALLOY LED® Specifications

RECOMMENDED POWER SUPPLIES (SOLD SEPARATELY)

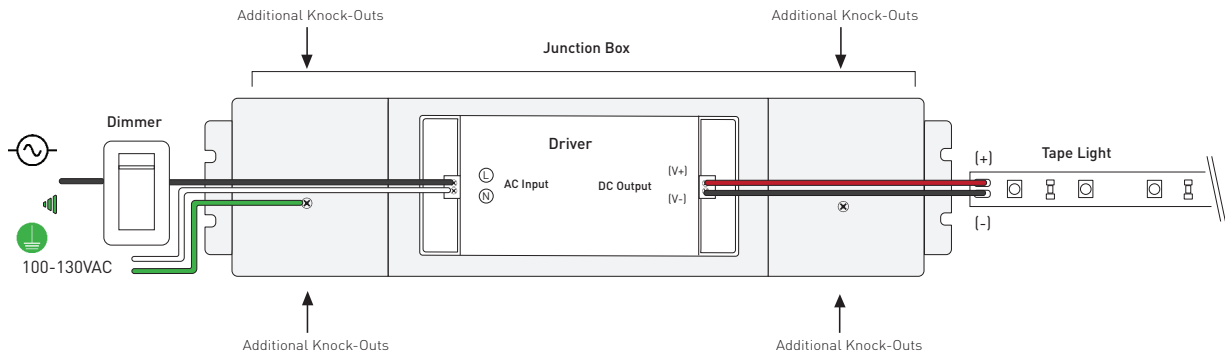
Alloy LED Primavolt® No Minimum Load Dimmable Power Supplies w/ETL Listed Junction Box
Code-compliant power supply with versatile and smooth dimming capabilities. Compatible with ELV, MLV, and TRIAC dimmers.



White model for 60W and lower



Black model for 80W and higher



Wiring diagram is for reference ONLY. Please refer to dimmer wiring specifications sheet for accurate directions.



Item #	Output Voltage	Wattage	Dry/Damp Location	Min. Load	Dimensions (Junction box) (L x W x H)	Class 2
AL-98-03-12024-NM	12V DC	24W	Y	0%	13.77 x 3.03 x 1.45 in.	Y
AL-98-03-12048-NM	12V DC	48W	Y	0%	13.77 x 3.03 x 1.45 in.	Y
AL-98-03-12060-NM	12V DC	60W	Y	0%	13.77 x 3.03 x 1.45 in.	Y
AL-98-03-12080-NM	12V DC	80W	Y	0%	14.96 x 3.03 x 2.24 in.	N
AL-98-03-12120-NM	12V DC	120W	Y	0%	14.96 x 3.03 x 2.24 in.	N
AL-98-03-24024-NM	24V DC	24W	Y	0%	13.77 x 3.03 x 1.45 in.	Y
AL-98-03-24048-NM	24V DC	48W	Y	0%	13.77 x 3.03 x 1.45 in.	Y
AL-98-03-24060-NM	24V DC	60W	Y	0%	13.77 x 3.03 x 1.45 in.	Y
AL-98-03-24080-NM	24V DC	80W	Y	0%	14.96 x 3.03 x 2.24 in.	Y
AL-98-03-24096-NM	24V DC	96W	Y	0%	14.96 x 3.03 x 2.24 in.	Y
AL-98-03-24150-NM	24V DC	150W	Y	0%	15.98 x 3.42 x 2.36 in.	N
AL-98-03-24200-NM	24V DC	200W	Y	0%	15.98 x 3.42 x 2.36 in.	N

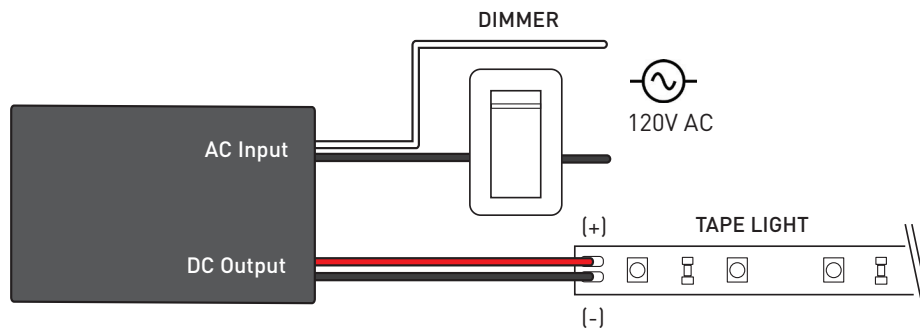
Note: Alloy LED strongly recommends using Listed Class 2 power supplies for all installations. Always install in accordance with local and national electrical code regulations. Inspectors prefer power supply to be used with junction box. For dimmer compatibility, refer to drivers specification sheet.

ALLOY LED® Specifications

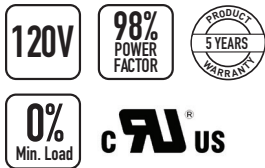
RECOMMENDED POWER SUPPLIES (SOLD SEPARATELY)

ELV Dimmable Power Supplies for Remote Enclosures

The drivers are derated, but when installed in a small enclosure with no heatsink or air circulation, we recommend a max. load of 40W.



Wiring diagram is for reference ONLY. Please refer to dimmer wiring specifications sheet for accurate directions.



Item #	Output	Wattage	Dimensions (L x W x H)	Class 2
AL-98-08-12060	12V DC	60W	2.66 x 1.30 x 0.83 in.	Y
AL-98-08-24060	24V DC	60W	2.66 x 1.30 x 0.83 in.	Y

Note: Inspectors prefer power supply to be used with junction box.
For dimmer compatibility, refer to drivers specification sheet.

ALLOY LED® Specifications

DIMMING ACCESSORIES (SOLD SEPARATELY)

Lutron® Dimming Accessories

By participating in Lutron's OEM Advantage program, Alloy LED is able to offer a range of the highest quality low voltage power supplies and selected controls on the market.



Hi-lume Premier
0.1% EcoSystem /
3-wire LED Driver
(96W 24VDC)



Hi-lume 1% LED Driver 40W
- EcoSystem / 3-wire control
- 2-wire 120V forward
phase control



Lutron Vive PowPak RF Module
- RF module for EcoSystem LED
driver control
- Use with the Lutron EcoSystem
drivers shown to "Vive-enable"
Alloy LED products

Lutron® Hi-lume LED Drivers

Item #	Output	Wattage	Min. Load	Class 2
AL-98-07-12040	12V DC	40W	n/a	Y
AL-98-07-12040-3WIRE	12V DC	40W	n/a	Y
AL-98-07-24040	24V DC	40W	n/a	Y
AL-98-07-24040-3WIRE	24V DC	40W	n/a	Y
AL-98-07-24096-3WIRE	24V DC	96W	n/a	Y

Lutron® Controls

Item #	Description	Voltage
AL-98-07-9901	EcoSystem Control Module	n/a
AL-98-07-9901-8	EcoSystem Control Module - 8 pack	n/a
AL-98-07-9950	CL Dimmer	120V AC
AL-98-07-9950-FPLATE	CL Dimmer faceplate	n/a

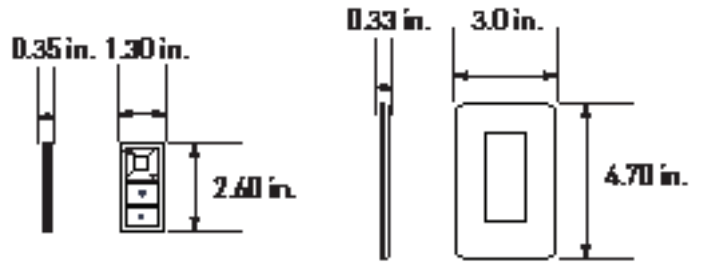
DIMMING ACCESSORIES (SOLD SEPARATELY)

Dimmers & Switches

SlimDim Wireless Dimmers

Using long-range RF technology, these LED dimmers connect wirelessly to a receiver, offering freedom to mount anywhere. Can also be used as a fob for mobile, hand-held control.

AL-70-01-0001	SlimDim Wireless Dimmer
AL-70-01-0002	Single Color Receiver (96W max.) (sold separately)
AL-98-07-9950-FPLATE	SlimDim Wall Plate (sold separately)



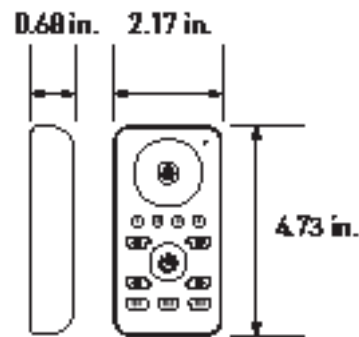
SlimDim Wireless Dimmer

SlimDim Wall Plate (Sold Separately)

Remote Control Dimmer Switch

Provides full dimming and on/off control, and includes a touch wheel that allows for direct visual selection of brightness. It can also operate up to four independent zones.

AL-60-03-0001	Remote Control Dimmer Switch
AL-70-01-0002	Single Channel Receiver (sold separately)
AL-60-03-0004-V2	Wireless Receiver (RGB & RGB-W) (sold separately)

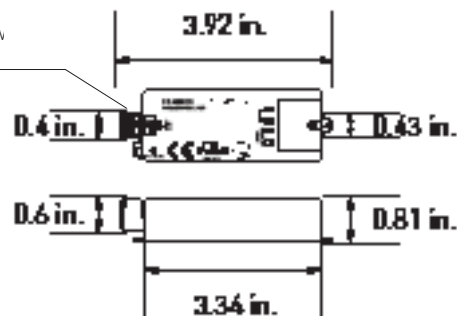


Single Channel Wireless Receiver

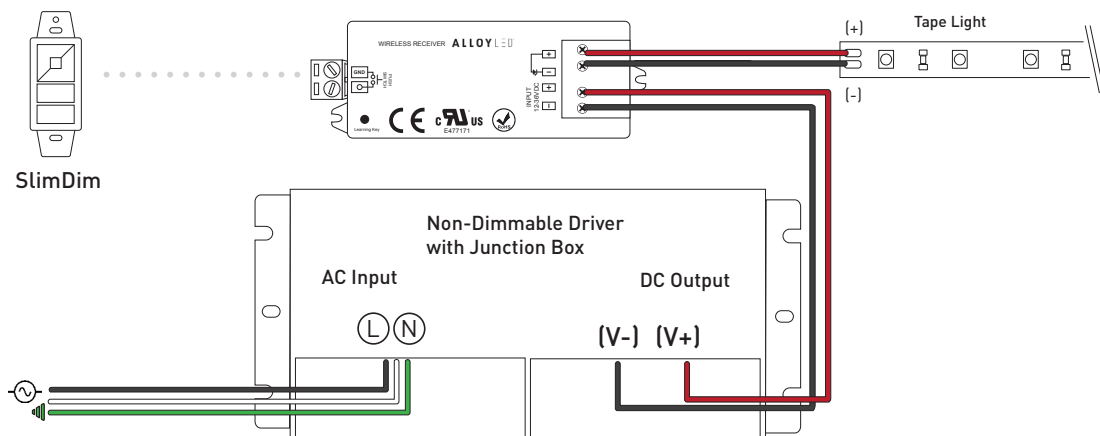
Pair with the Remote Control Dimmer Switch or the SlimDim Wireless Dimmer to dim PrimaLine tape lights. Use one remote to make independent lighting zones with multiple receivers with certain controllers.

AL-70-01-0002	Single Channel Wireless Receiver
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Terminal for hardwired on/off switch

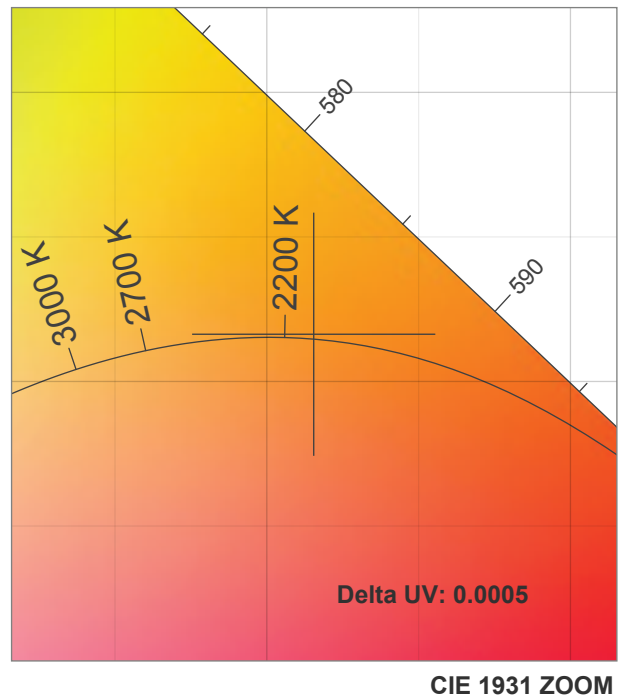
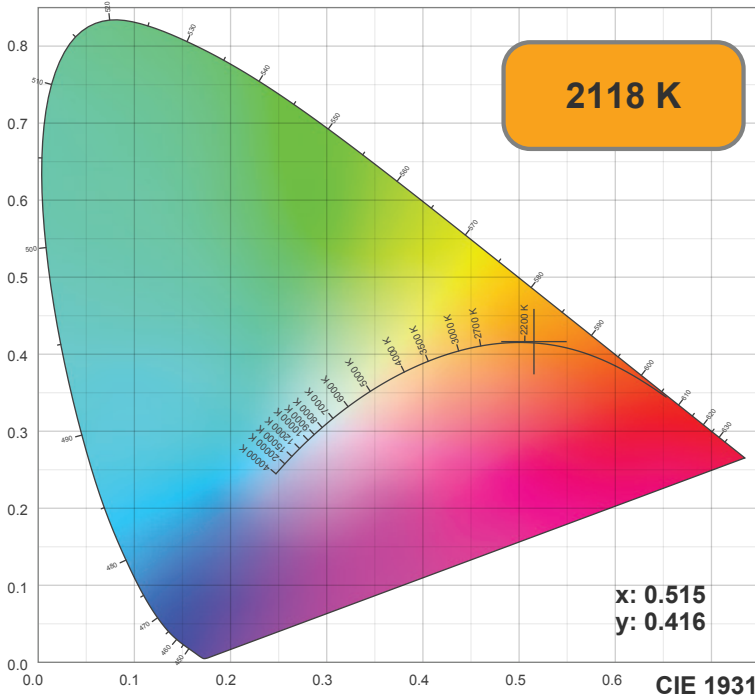


WIRING DIAGRAM

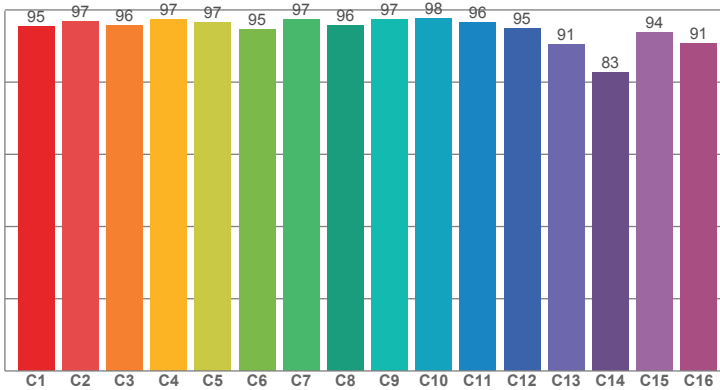


Note: specifications are representative of the diode type and not a particular tape light article.

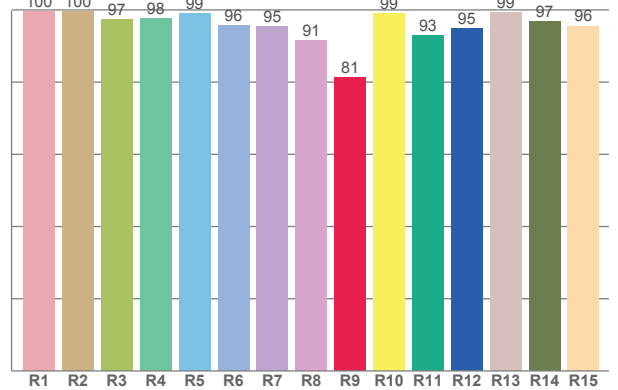
2200K



TM30: 95.3



CRI: 97.0 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
99.61	99.67	97.46	97.72	99.04	95.73	95.47	91.47	81.35	98.94	92.92	94.78	99.18	96.87	95.55

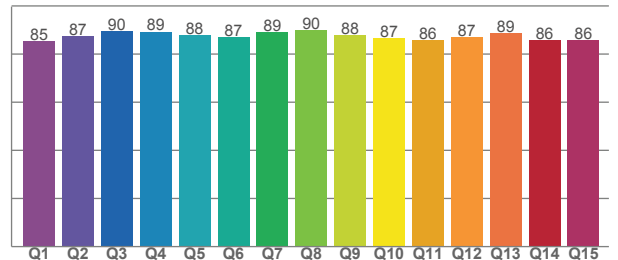
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
95.34	96.75	95.57	97.25	96.55	94.54	97.32	95.79	97.46	97.69	96.49	94.78	90.50	82.57	93.64	90.63

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85.19	87.34	89.62	89.30	87.99	86.96	89.08	89.87	87.75	86.57	85.78	86.90	88.57	85.81	85.62

CQS: 87.1



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2118 K	97.0	81.3	95.3	100.2	87.1	0.5	0.4	0.3	0.4	0.0005

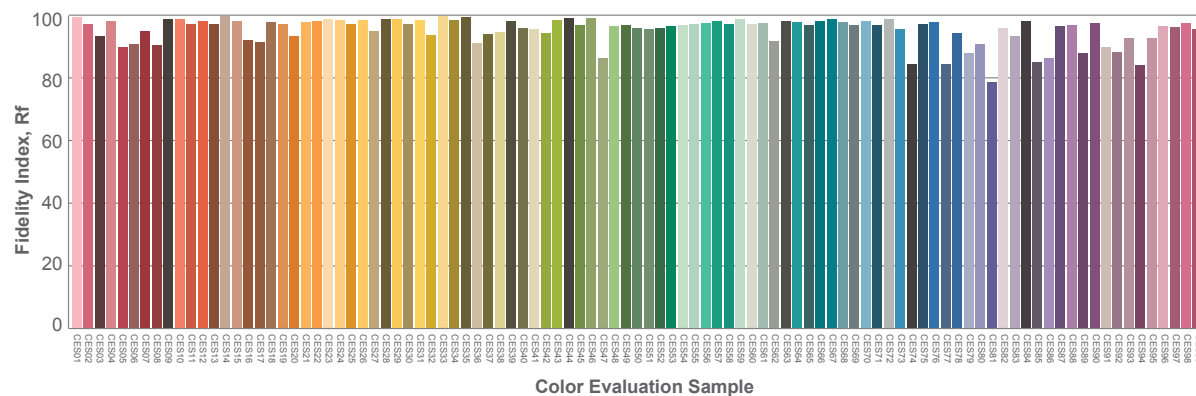
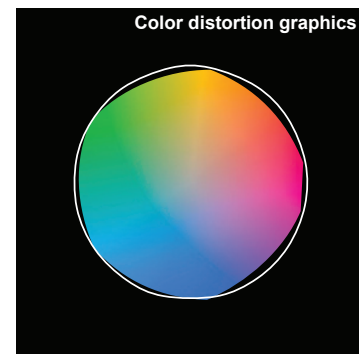
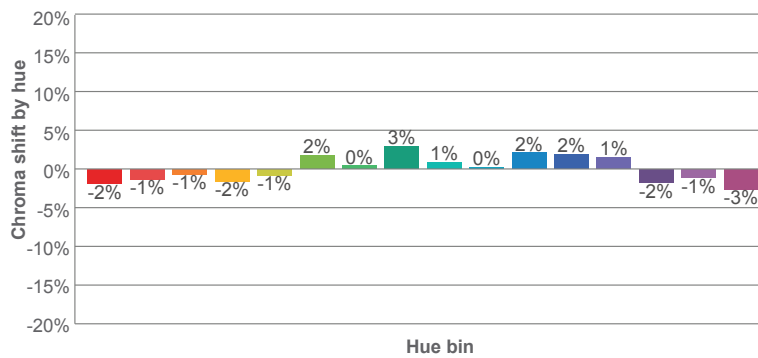
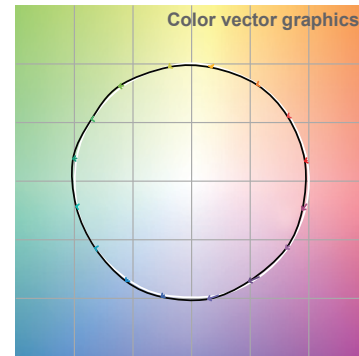
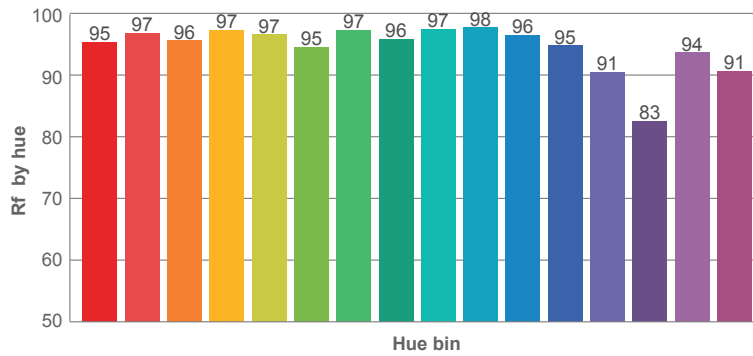
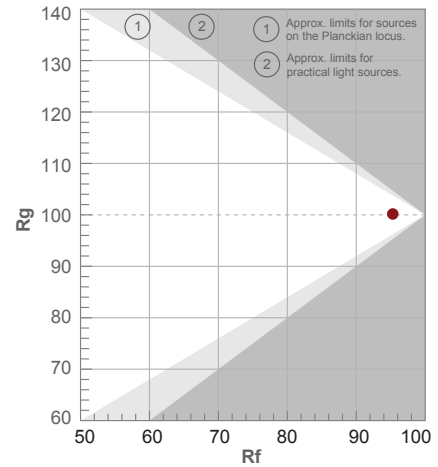
Note: specifications are representative of the diode type and not a particular tape light article.

2200K

Rf 95.3
Fidelity index Rf

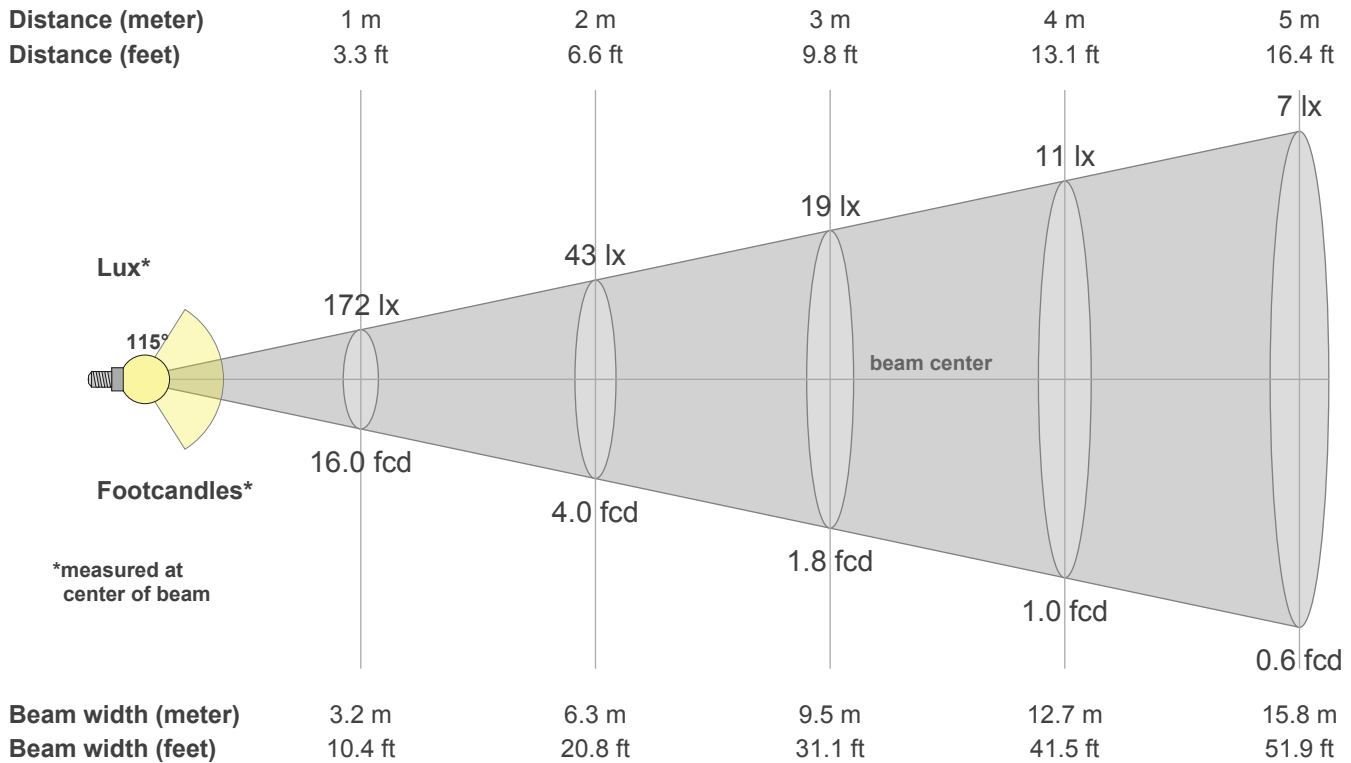
Rg 100.2
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	95	-2%	0%
2	97	-1%	0%
3	96	-1%	1%
4	97	-2%	-1%
5	97	-1%	2%
6	95	2%	3%
7	97	0%	0%
8	96	3%	1%
9	97	1%	0%
10	98	0%	0%
11	96	2%	0%
12	95	2%	-2%
13	91	1%	-9%
14	83	-2%	-9%
15	94	-1%	-4%
16	91	-3%	-5%



Note: specifications are representative of the diode type and not a particular tape light article.

2200K



Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
172	172	170	166	161	155	147	139	129	118	106	93	80	65	50	36	21	10	5	3
100%	100%	99%	96%	94%	90%	85%	81%	75%	69%	62%	54%	46%	38%	29%	21%	12%	6%	3%	2%

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
172	172	170	166	161	155	147	139	129	118	106	93	80	65	50	36	21	10	5	3
100%	100%	99%	96%	94%	90%	85%	81%	75%	69%	62%	54%	46%	38%	29%	21%	12%	6%	3%	2%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
172	172	169	165	160	154	147	138	128	117	106	94	79	64	49	35	21	9	4	2
100%	100%	98%	96%	93%	90%	85%	80%	74%	68%	61%	54%	46%	37%	29%	20%	12%	5%	2%	1%

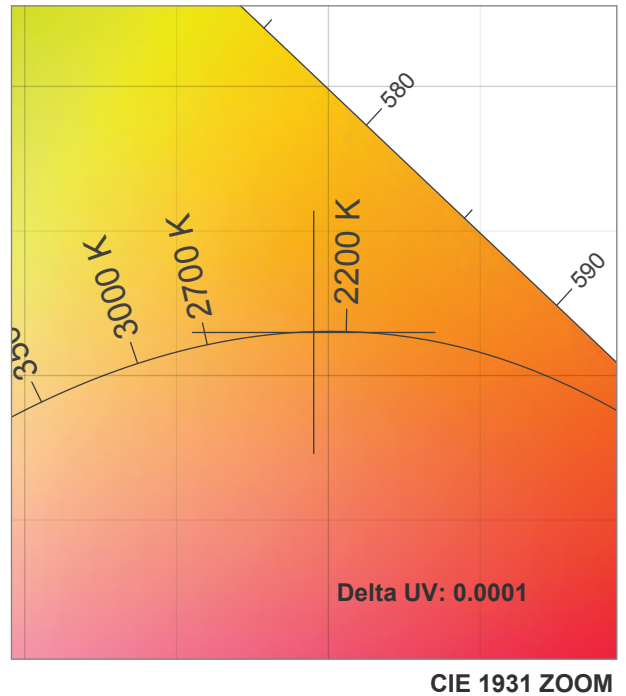
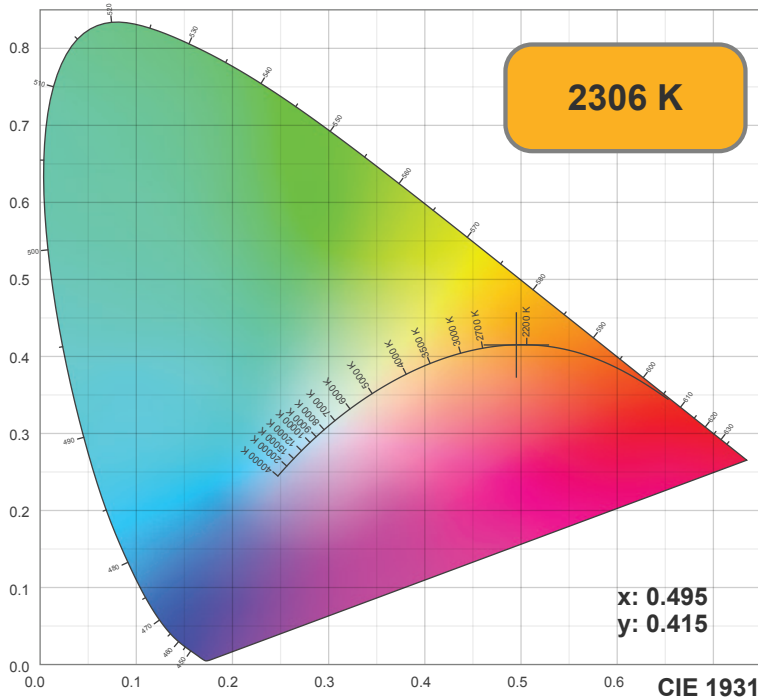
Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
172	172	169	165	160	154	147	138	128	117	106	94	79	64	49	35	21	9	4	2
100%	100%	98%	96%	93%	90%	85%	80%	74%	68%	61%	54%	46%	37%	29%	20%	12%	5%	2%	1%

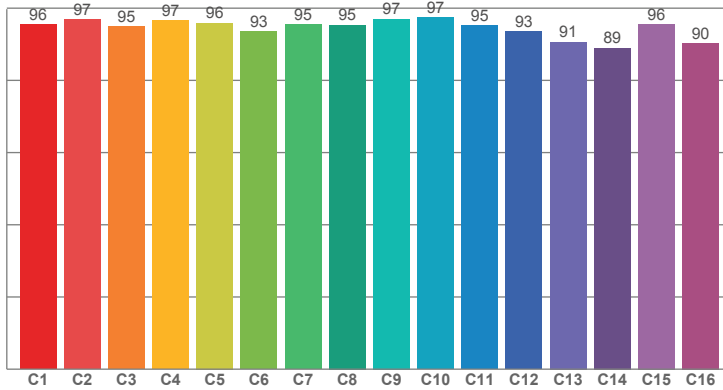
Beam angle 50%	Field angle 10%	Cutoff angle 2.5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
115.4°	163.3°	360.0°	74.3%	50.1%

Note: specifications are representative of the diode type and not a particular tape light article.

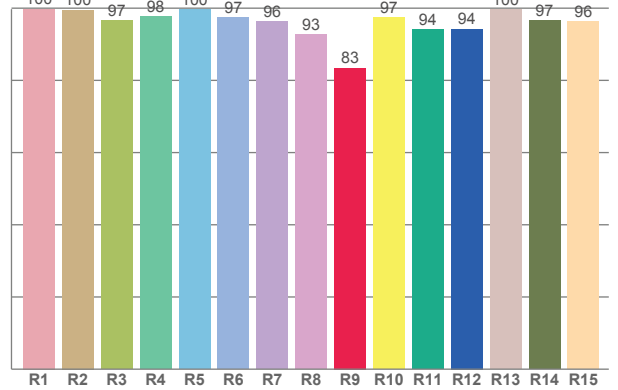
2400K



TM30: 94.9



CRI: 97.4 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
99.76	99.53	96.61	97.71	99.62	97.34	96.27	92.75	83.44	97.37	94.14	94.24	99.65	96.59	96.29

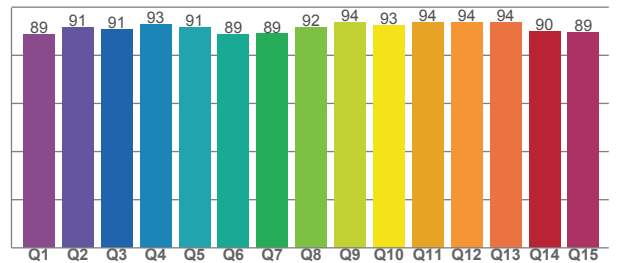
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
95.51	96.78	94.88	96.55	95.89	93.47	95.50	95.36	97.04	97.48	95.24	93.45	90.62	88.98	95.58	90.31

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
88.88	91.49	90.72	92.84	91.47	88.68	88.95	91.69	93.87	92.66	93.80	93.85	93.73	90.06	89.46

CQS: 90.9



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2306 K	97.4	83.4	94.9	102.0	90.9	0.5	0.4	0.3	0.4	-0.0002

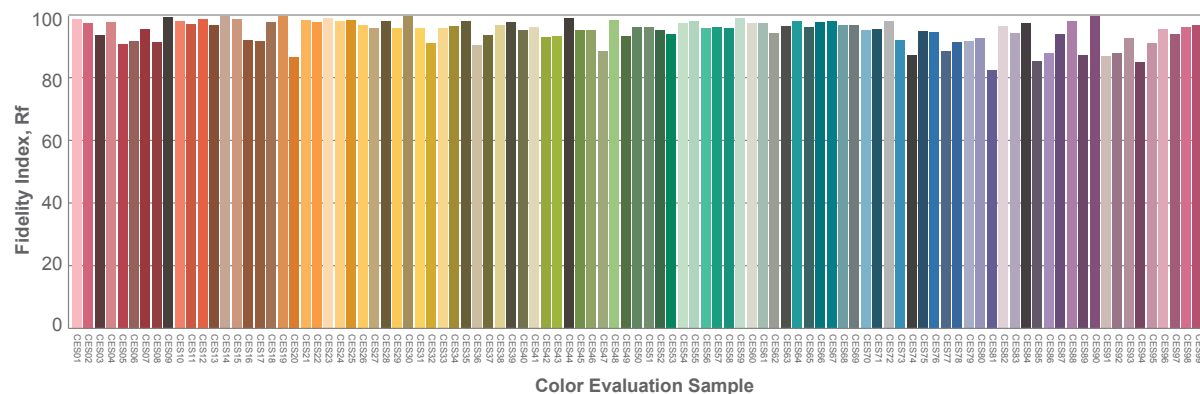
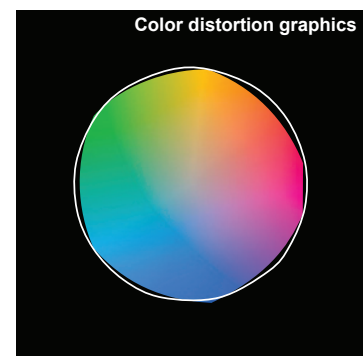
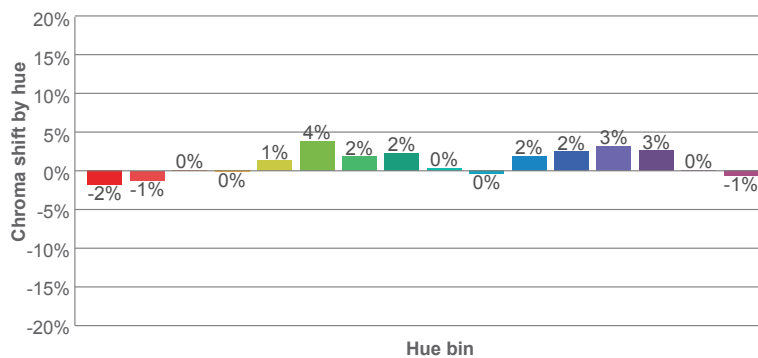
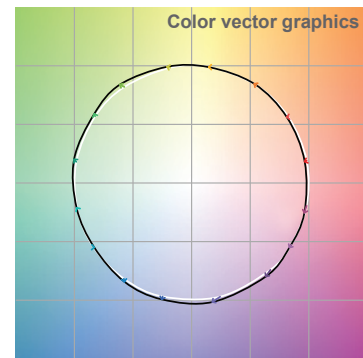
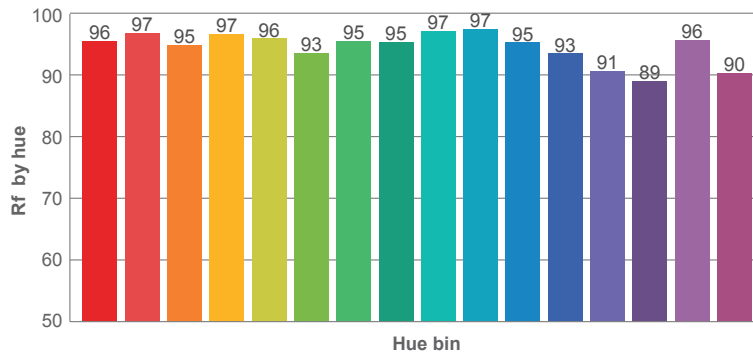
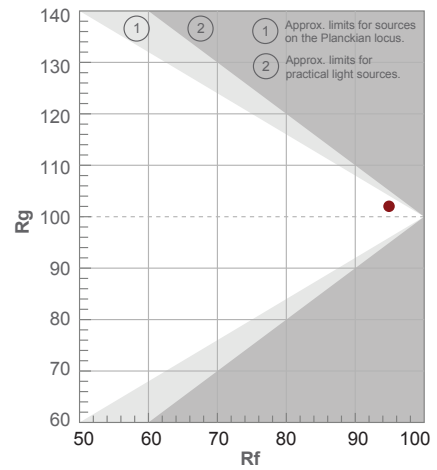
Note: specifications are representative of the diode type and not a particular tape light article.

2400K

Rf 94.9
Fidelity index Rf

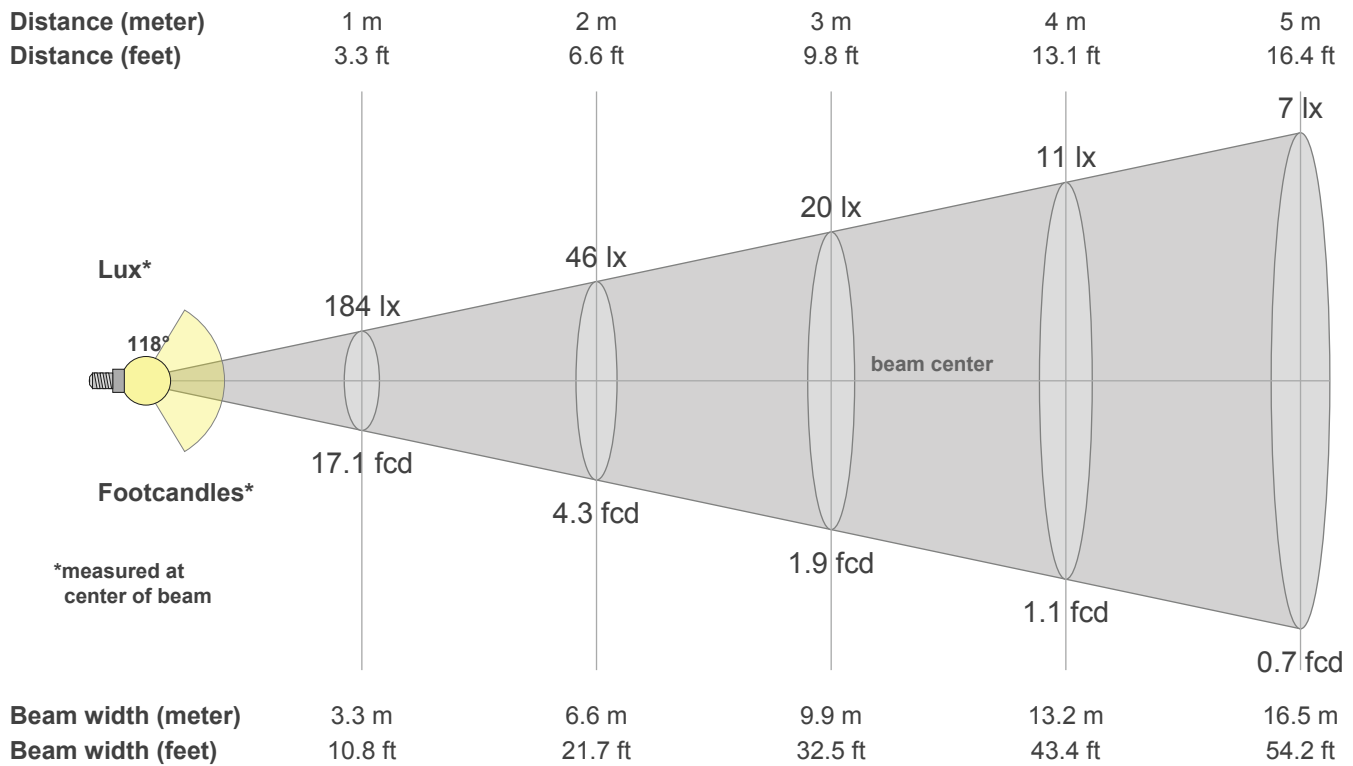
Rg 102.0
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	96	-2%	0%
2	97	-1%	1%
3	95	0%	2%
4	97	0%	1%
5	96	1%	3%
6	93	4%	2%
7	95	2%	-1%
8	95	2%	-2%
9	97	0%	-1%
10	97	0%	0%
11	95	2%	2%
12	93	2%	0%
13	91	3%	-7%
14	89	3%	-6%
15	96	0%	-3%
16	90	-1%	-6%



Note: specifications are representative of the diode type and not a particular tape light article.

2400K



Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
184	183	181	176	171	165	158	149	139	128	116	103	88	74	59	43	28	14	9	6
100%	100%	98%	96%	93%	90%	86%	81%	76%	70%	63%	56%	48%	40%	32%	23%	15%	8%	5%	3%

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
184	183	181	176	171	165	158	149	139	128	116	103	88	74	59	43	28	14	9	6
100%	100%	98%	96%	93%	90%	86%	81%	76%	70%	63%	56%	48%	40%	32%	23%	15%	8%	5%	3%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
184	183	182	178	174	167	159	151	141	129	117	103	88	73	57	41	25	14	8	6
100%	100%	99%	97%	94%	91%	87%	82%	77%	70%	64%	56%	48%	40%	31%	22%	14%	7%	4%	3%

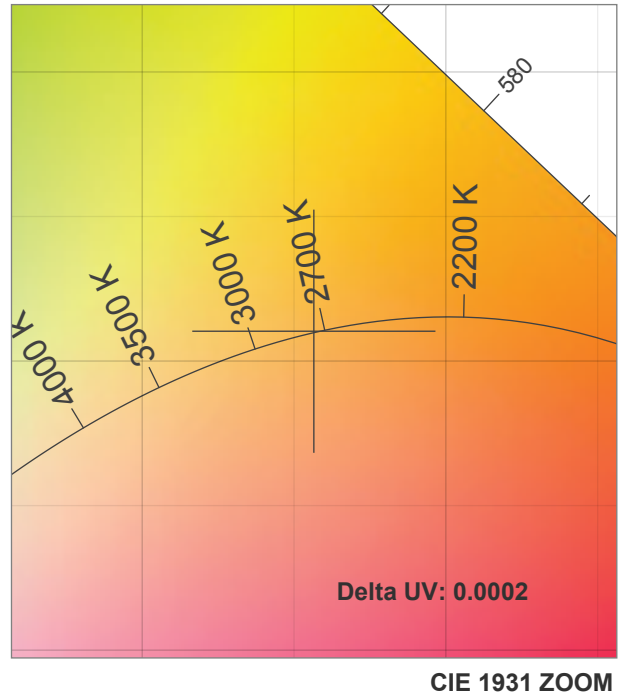
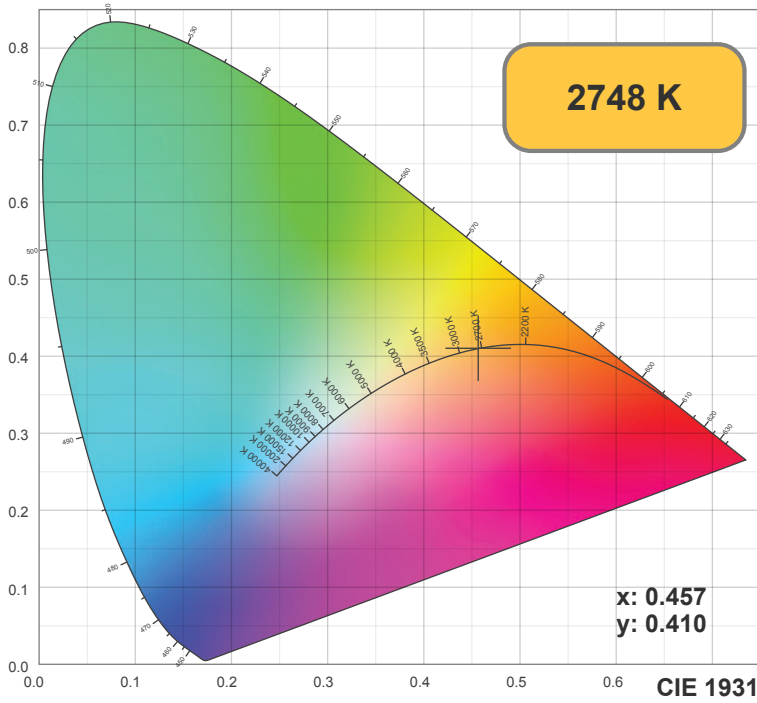
Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
184	183	182	178	174	167	159	151	141	129	117	103	88	73	57	41	25	14	8	6
100%	100%	99%	97%	94%	91%	87%	82%	77%	70%	64%	56%	48%	40%	31%	22%	14%	7%	4%	3%

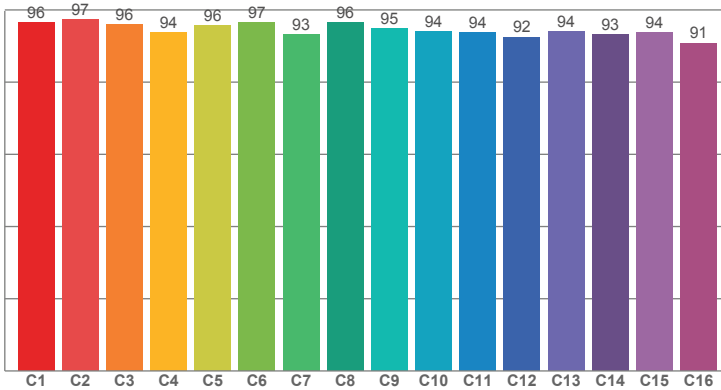
Beam angle 50%	Field angle 10%	Cutoff angle 2.5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
117.6°	166.5°	360.0°	70.5%	47.3%

Note: specifications are representative of the diode type and not a particular tape light article.

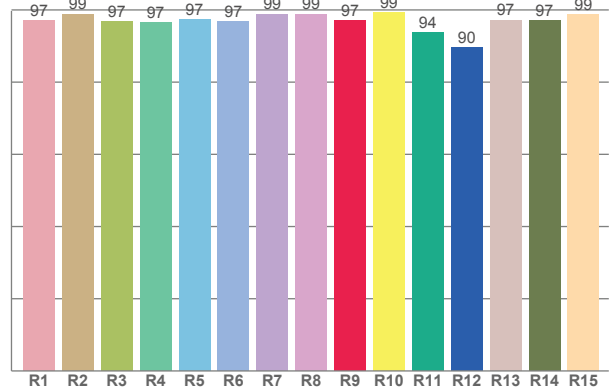
2700K



TM30: 94.7



CRI: 97.6 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
97.09	98.88	96.77	96.54	97.41	96.70	98.88	98.87	96.95	99.39	93.64	89.55	97.22	96.97	98.67

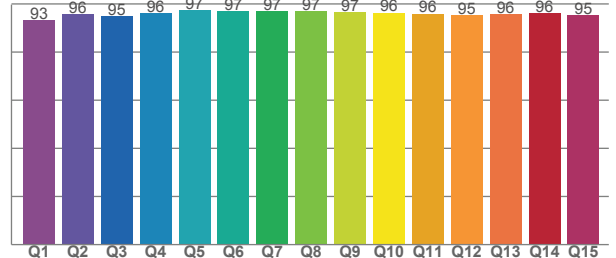
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
96.46	97.30	96.08	93.64	95.79	96.62	93.17	96.45	94.93	94.06	93.65	92.50	93.99	93.30	93.72	90.83

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
93.37	95.82	95.02	96.09	97.45	96.99	97.05	97.11	96.52	96.36	95.93	95.31	95.81	96.11	95.20

CQS: 95.8



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2748 K	97.6	97.0	94.7	100.5	95.8	0.5	0.4	0.3	0.4	0.0002

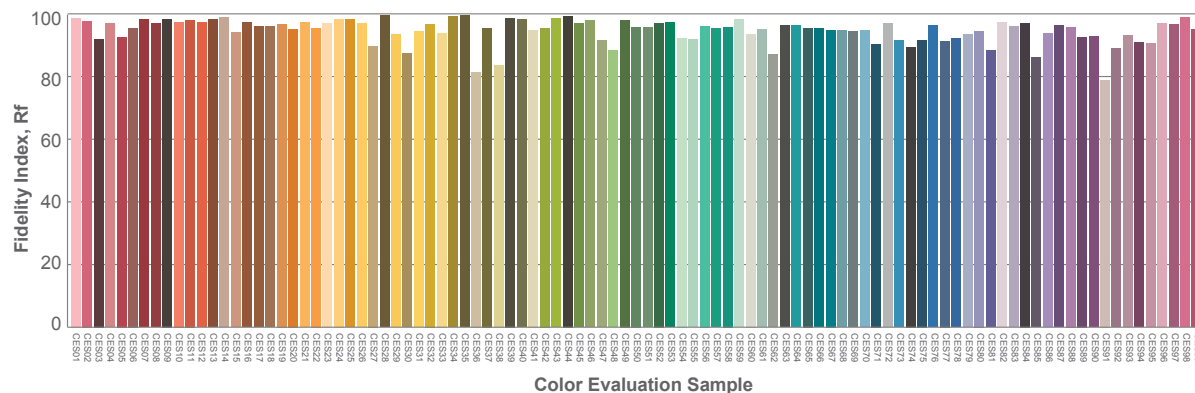
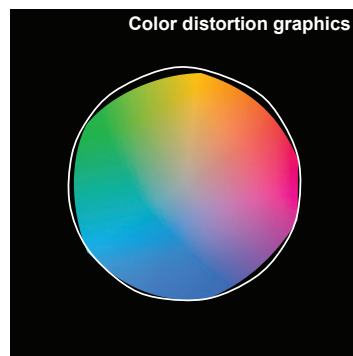
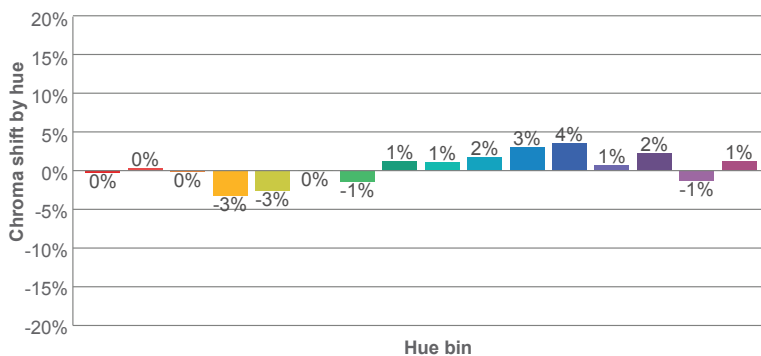
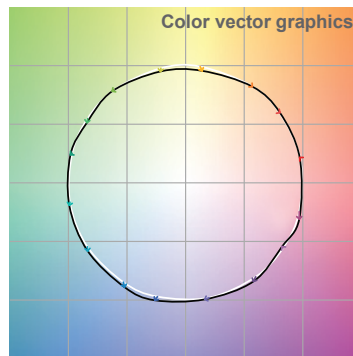
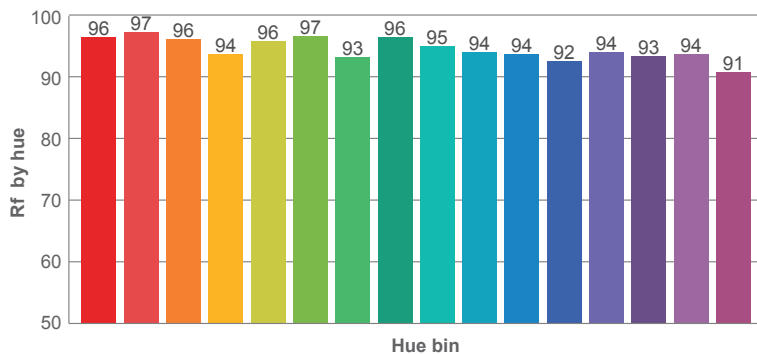
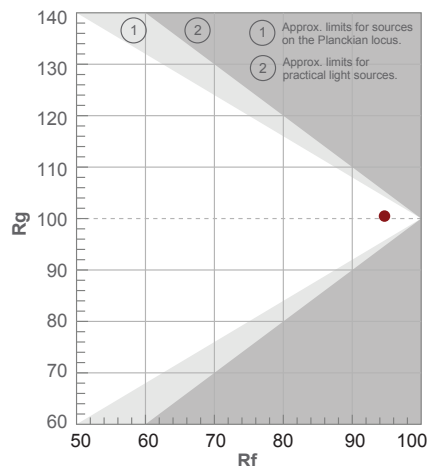
Note: specifications are representative of the diode type and not a particular tape light article.

2700K

Rf 94.7
Fidelity index Rf

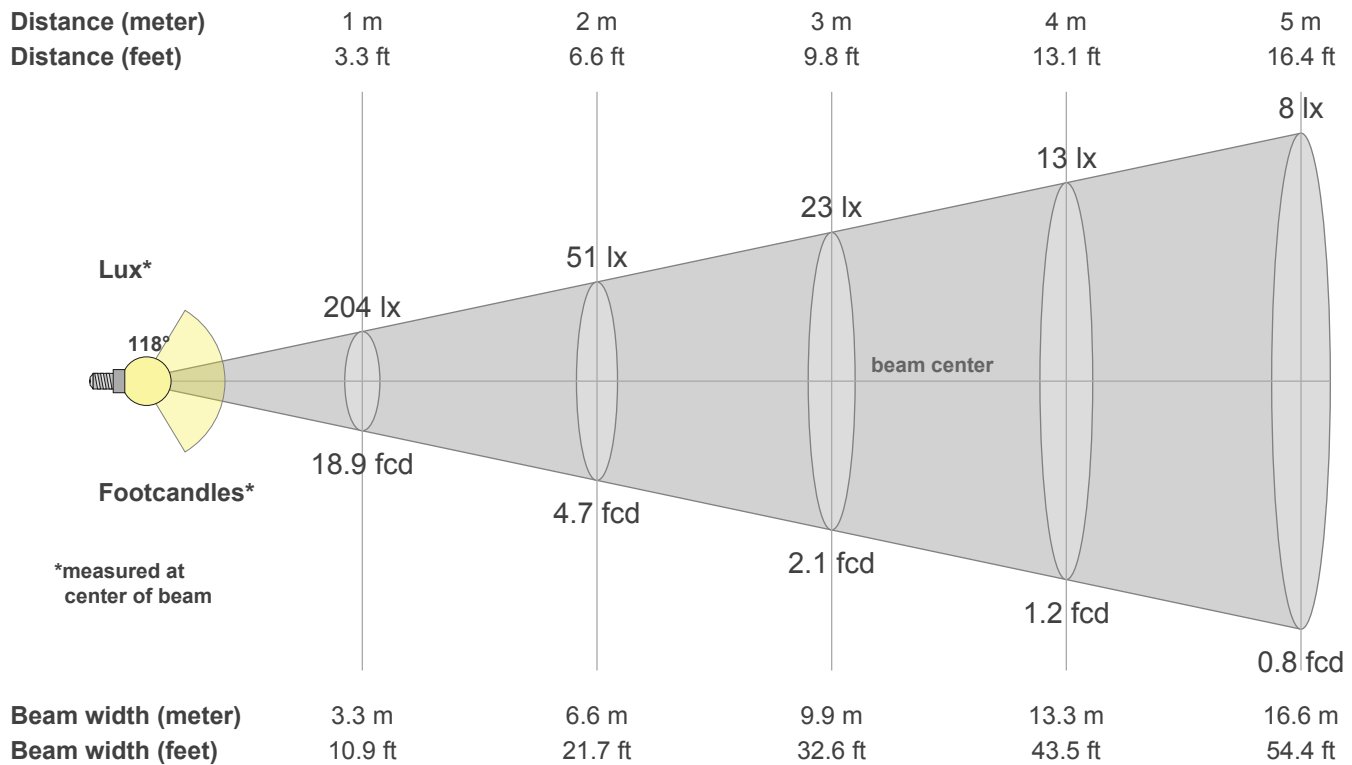
Rg 100.5
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	96	0%	0%
2	97	0%	-1%
3	96	0%	-2%
4	94	-3%	-2%
5	96	-3%	1%
6	97	0%	2%
7	93	-1%	3%
8	96	1%	2%
9	95	1%	2%
10	94	2%	3%
11	94	3%	3%
12	92	4%	-2%
13	94	1%	-4%
14	93	2%	-4%
15	94	-1%	0%
16	91	1%	-6%



Note: specifications are representative of the diode type and not a particular tape light article.

2700K



Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
204	203	200	196	191	184	175	166	155	142	129	114	98	82	64	47	30	16	8	9
100%	100%	98%	96%	94%	90%	86%	81%	76%	70%	63%	56%	48%	40%	32%	23%	15%	8%	4%	4%

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
204	203	200	196	191	184	175	166	155	142	129	114	98	82	64	47	30	16	8	9
100%	100%	98%	96%	94%	90%	86%	81%	76%	70%	63%	56%	48%	40%	32%	23%	15%	8%	4%	4%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
204	203	201	197	192	185	177	167	156	143	130	115	98	81	63	45	28	14	8	7
100%	100%	99%	97%	94%	91%	87%	82%	76%	70%	64%	56%	48%	40%	31%	22%	14%	7%	4%	4%

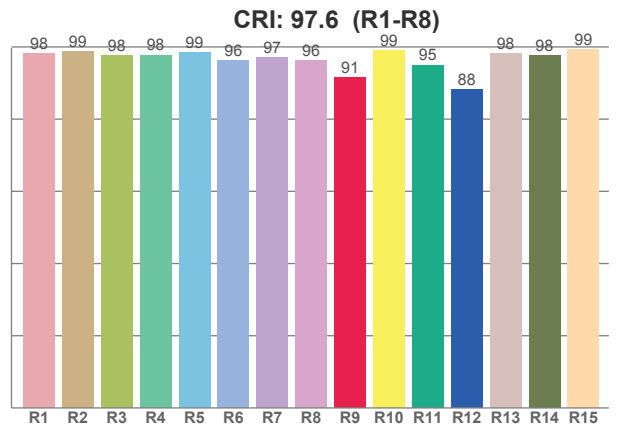
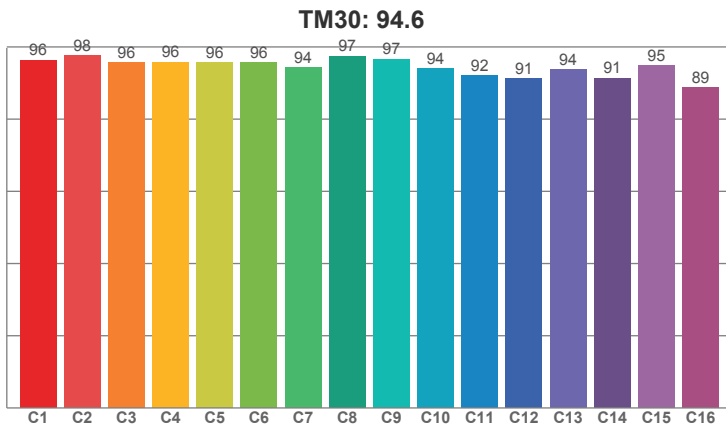
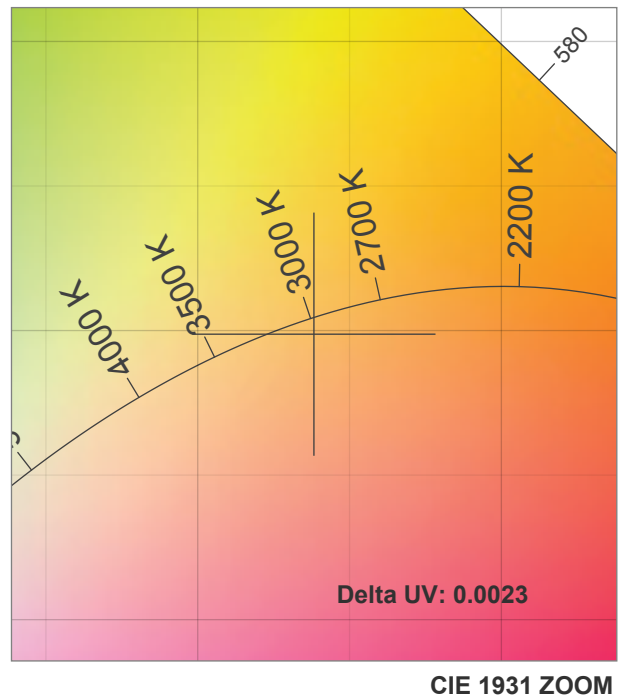
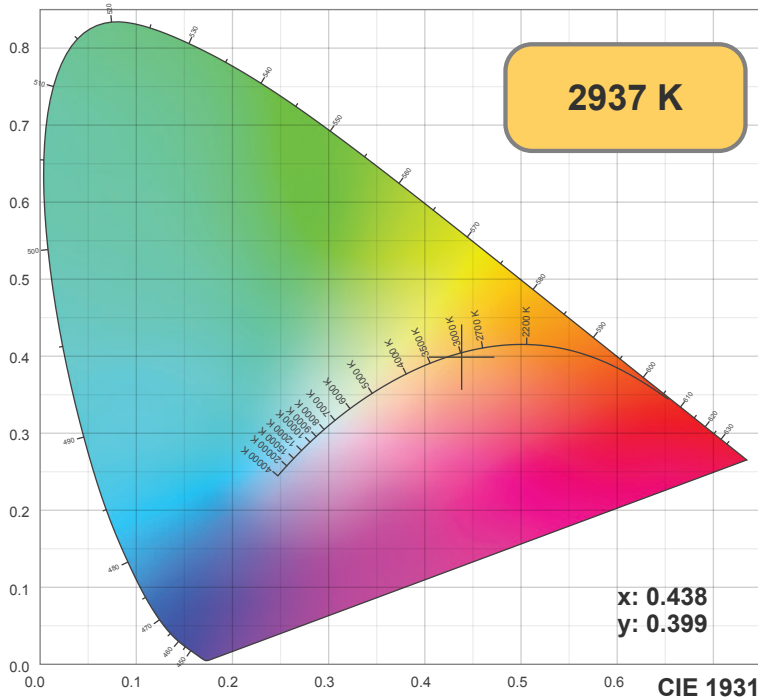
Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
204	203	201	197	192	185	177	167	156	143	130	115	98	81	63	45	28	14	8	7
100%	100%	99%	97%	94%	91%	87%	82%	76%	70%	64%	56%	48%	40%	31%	22%	14%	7%	4%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2.5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
117.8°	165.8°	360.0°	69.2%	46.4%

Note: specifications are representative of the diode type and not a particular tape light article.

3000K



CRI R values, only R1-R8 are used to calculate final CRI value

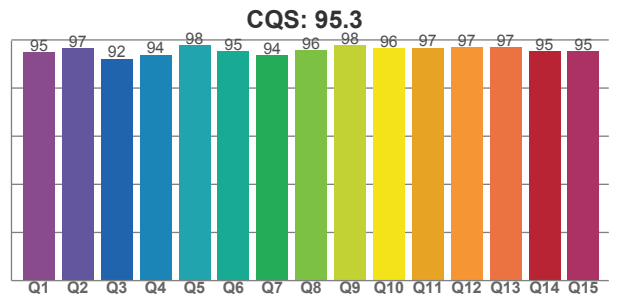
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
98.23	98.78	97.72	97.75	98.52	96.24	97.07	96.19	91.48	99.01	94.98	88.20	98.06	97.67	99.34

TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
96.39	97.52	95.73	95.82	95.58	95.61	94.34	97.47	96.66	94.09	92.10	91.32	93.63	91.39	94.78	88.64

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
94.79	96.73	92.20	93.86	97.66	95.29	93.63	95.77	97.85	96.40	96.81	97.15	97.04	95.26	95.27



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
2937 K	97.6	91.5	94.6	101.9	95.3	0.4	0.4	0.3	0.3	-0.0023

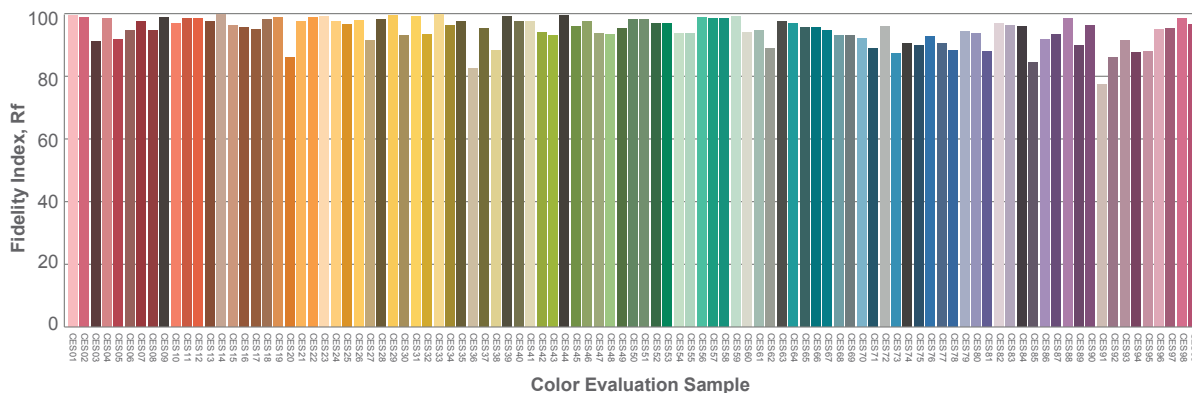
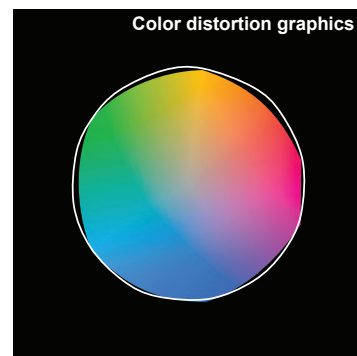
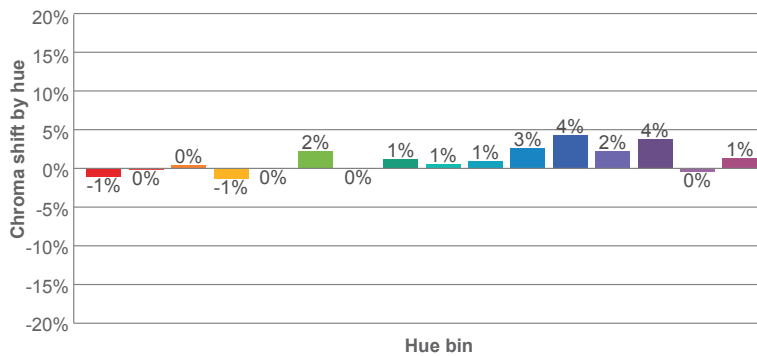
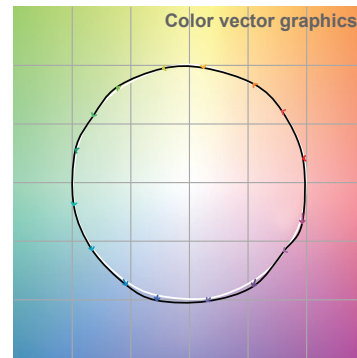
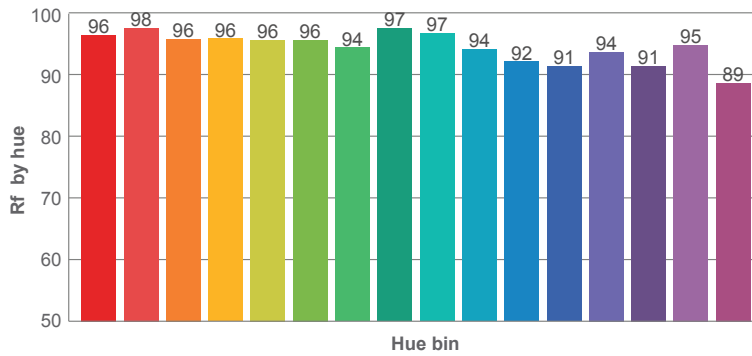
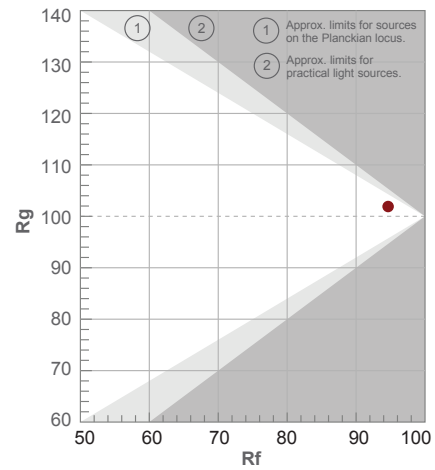
Note: specifications are representative of the diode type and not a particular tape light article.

3000K

Rf 94.6
Fidelity index Rf

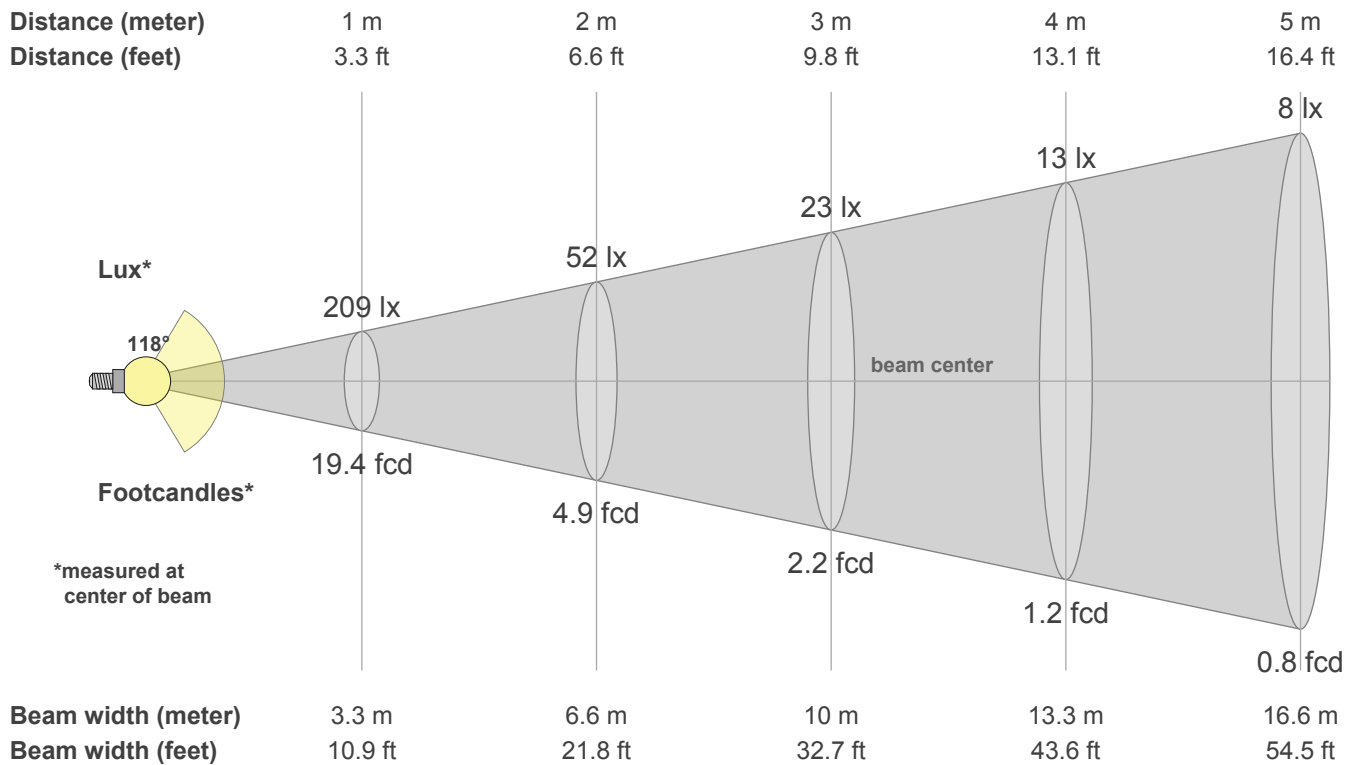
Rg 101.9
Gammut index Rg

		Graphic shifts (%)	
Hue Bin	R _f	Chroma	Hue
1	96	-1%	0%
2	98	0%	0%
3	96	0%	2%
4	96	-1%	0%
5	96	0%	1%
6	96	2%	1%
7	94	0%	1%
8	97	1%	0%
9	97	1%	2%
10	94	1%	3%
11	92	3%	5%
12	91	4%	0%
13	94	2%	-4%
14	91	4%	-5%
15	95	0%	-1%
16	89	1%	-8%



Note: specifications are representative of the diode type and not a particular tape light article.

3000K



Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
209	208	205	201	195	188	180	170	159	146	132	117	101	84	66	49	32	18	10	9
100%	99%	98%	96%	93%	90%	86%	81%	76%	70%	63%	56%	48%	40%	32%	23%	15%	8%	5%	4%

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
209	208	205	201	195	188	180	170	159	146	132	117	101	84	66	49	32	18	10	9
100%	99%	98%	96%	93%	90%	86%	81%	76%	70%	63%	56%	48%	40%	32%	23%	15%	8%	5%	4%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
209	209	207	202	197	190	182	172	160	147	133	117	101	83	65	47	29	15	8	8
100%	100%	99%	97%	94%	91%	87%	82%	77%	70%	63%	56%	48%	40%	31%	22%	14%	7%	4%	4%

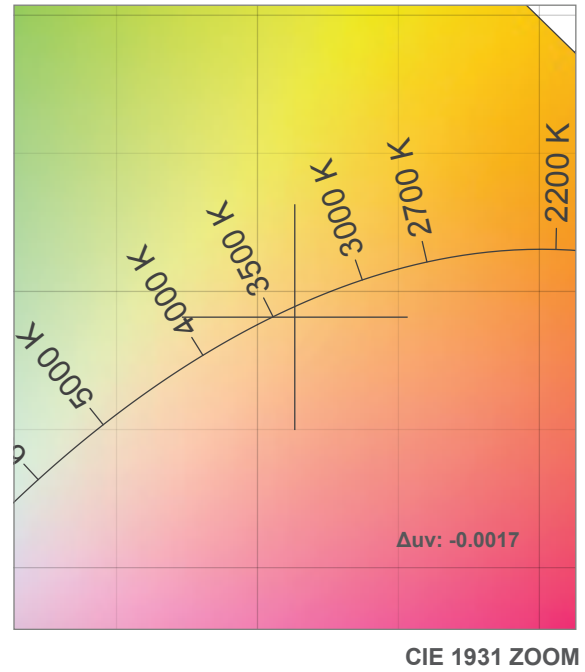
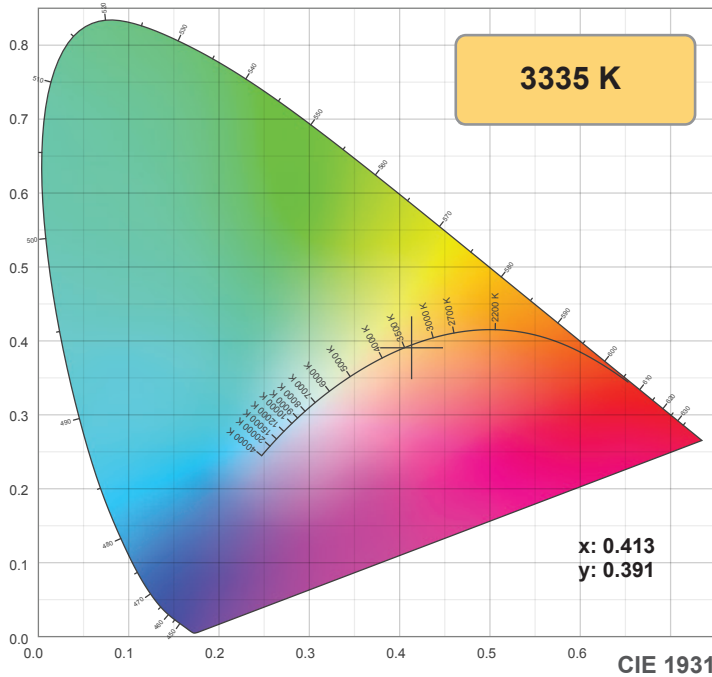
Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
209	209	207	202	197	190	182	172	160	147	133	117	101	83	65	47	29	15	8	8
100%	100%	99%	97%	94%	91%	87%	82%	77%	70%	63%	56%	48%	40%	31%	22%	14%	7%	4%	4%

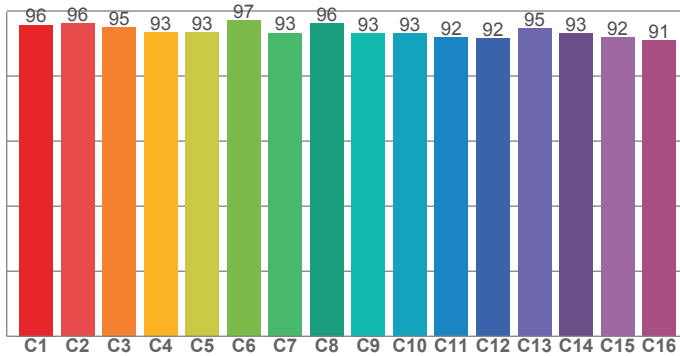
Beam angle 50%	Field angle 10%	Cutoff angle 2.5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
117.9°	166.4°	360.0°	69.2%	46.3%

Note: specifications are representative of the diode type and not a particular tape light article.

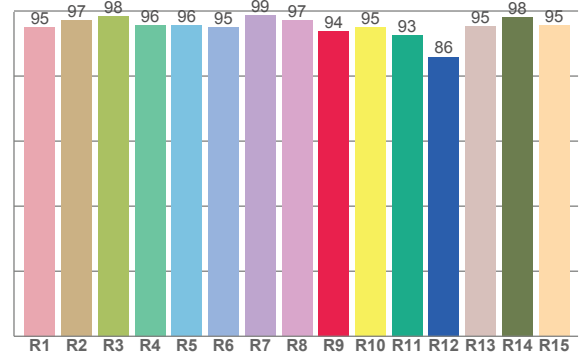
3500K



TM30: 93.8



CRI: 96.6 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
95.1	97.2	98.4	95.7	95.5	94.9	98.6	97.1	93.8	95.1	92.6	85.9	95.2	98.1	95.5

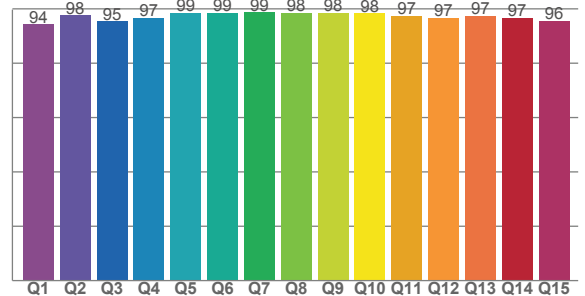
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
95.7	96.2	95.0	93.5	93.4	97.1	93.2	96.3	93.2	93.1	91.9	91.5	94.6	93.1	91.9	91.0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
94.3	97.5	95.3	96.7	98.6	98.5	98.6	98.4	98.5	98.3	97.3	96.8	97.4	96.7	95.6

CQS: 96.8



Color parameters

Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
3335 K	96.6	93.8	93.8	101.4	96.8	0.413	0.391	0.241	0.342	-0.0017

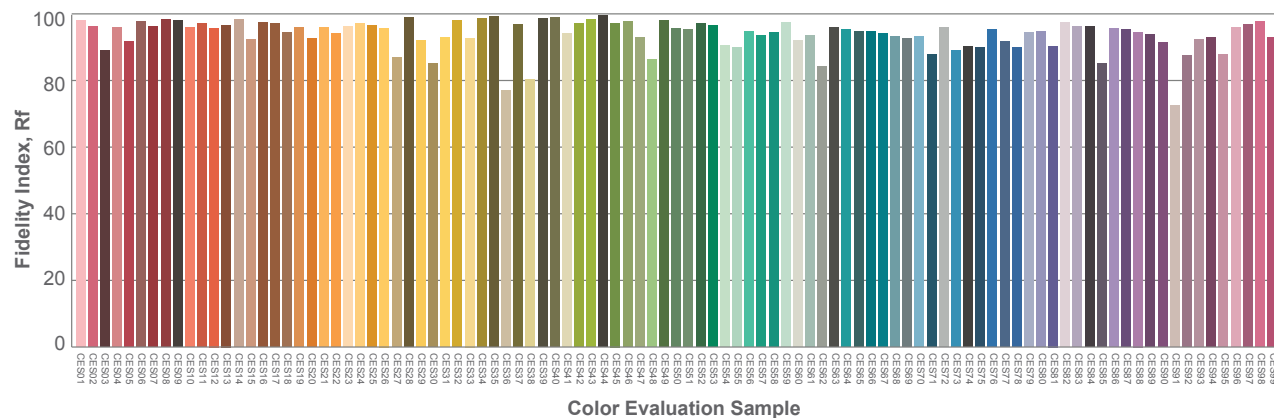
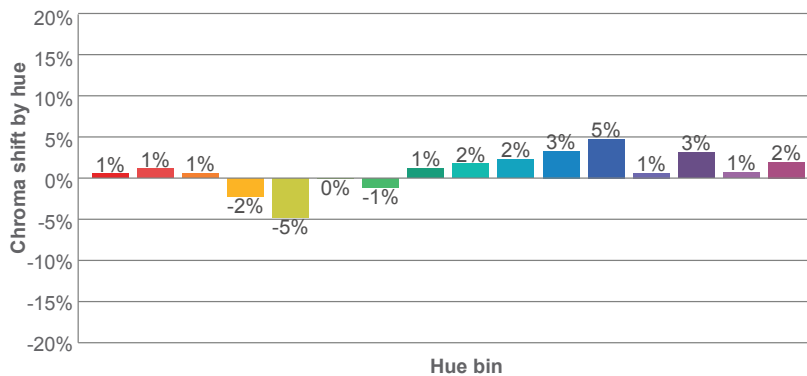
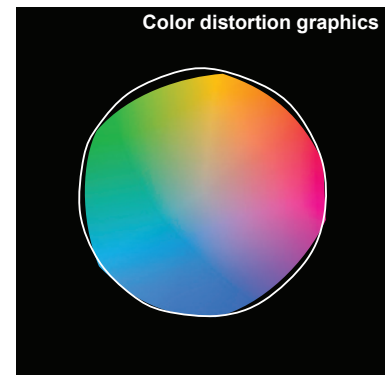
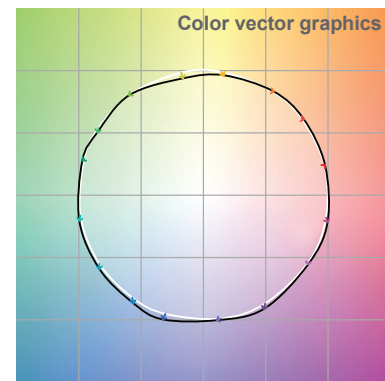
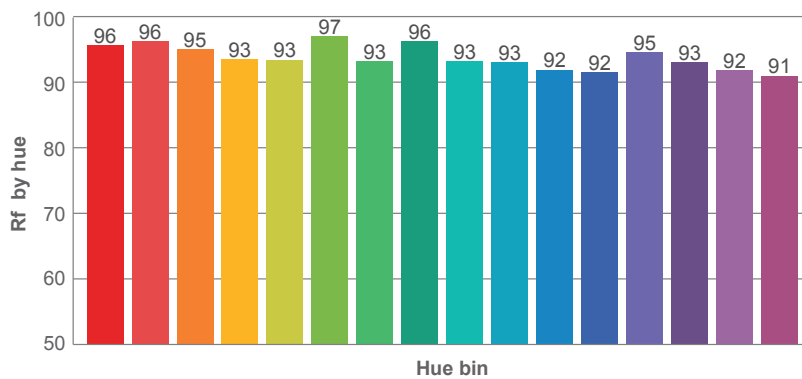
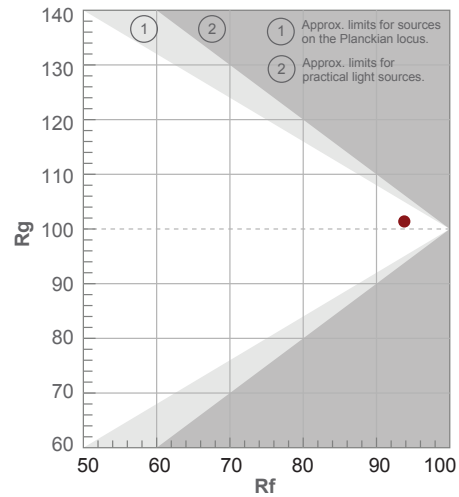
Note: specifications are representative of the diode type and not a particular tape light article.

3500K

Rf 93.8
Fidelity index Rf

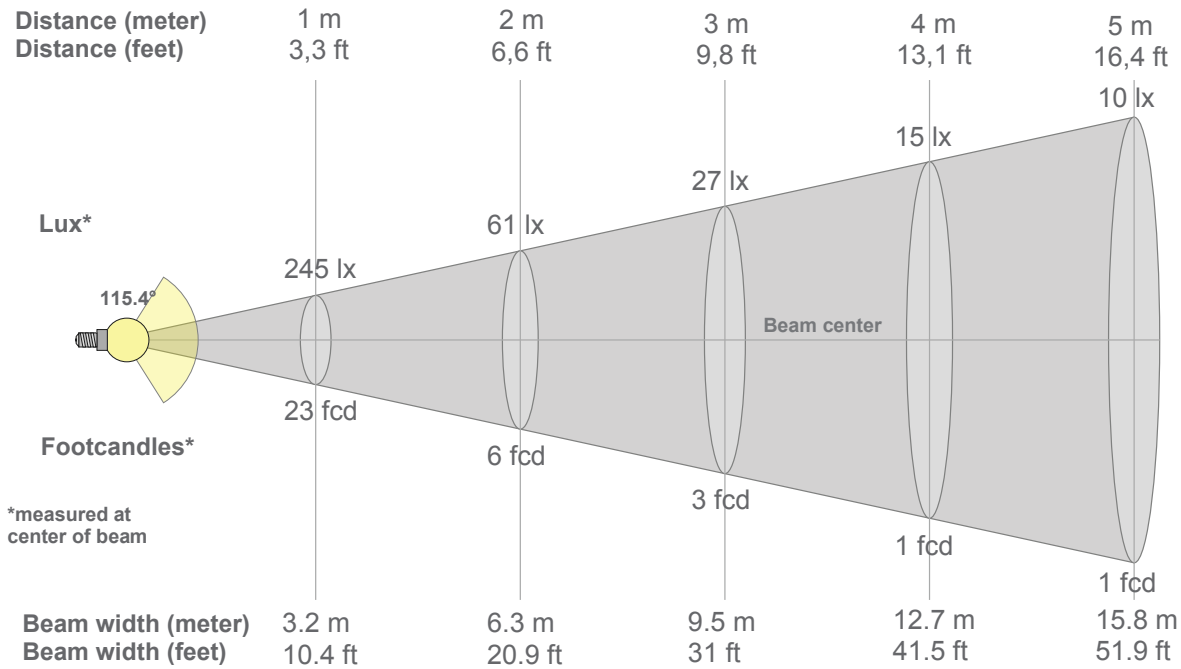
Rg 101.4
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	96	1%	0%
2	96	1%	-1%
3	95	1%	-1%
4	93	-2%	-3%
5	93	-5%	-1%
6	97	0%	2%
7	93	-1%	4%
8	96	1%	2%
9	93	2%	4%
10	93	2%	4%
11	92	3%	3%
12	92	5%	-1%
13	95	1%	-3%
14	93	3%	-3%
15	92	1%	-1%
16	91	2%	-3%



Note: specifications are representative of the diode type and not a particular tape light article.

3500K



Beam intensities from 1-20m

1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
245lx	61lx	27lx	15lx	10lx	7lx	5lx	4lx	3lx	2lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx
22.8fcd	5.7fcd	2.5fcd	1.4fcd	0.9fcd	0.6fcd	0.5fcd	0.4fcd	0.3fcd	0.2fcd	0.2fcd	0.2fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
245	244	241	237	230	221	211	199	185	170	152	134	113	92	70	47	27	10	4	1
100%	100%	98%	97%	94%	90%	86%	81%	76%	69%	62%	55%	46%	37%	28%	19%	11%	4%	1%	1%

Intensities in 90° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
245	244	241	237	230	221	211	199	185	170	152	134	113	92	70	47	27	10	4	1
100%	100%	98%	97%	94%	90%	86%	81%	76%	69%	62%	55%	46%	37%	28%	19%	11%	4%	1%	1%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
245	244	240	235	228	219	209	197	183	168	151	133	114	93	71	50	29	13	2	1
100%	99%	98%	96%	93%	90%	85%	80%	75%	68%	62%	54%	46%	38%	29%	20%	12%	5%	1%	1%

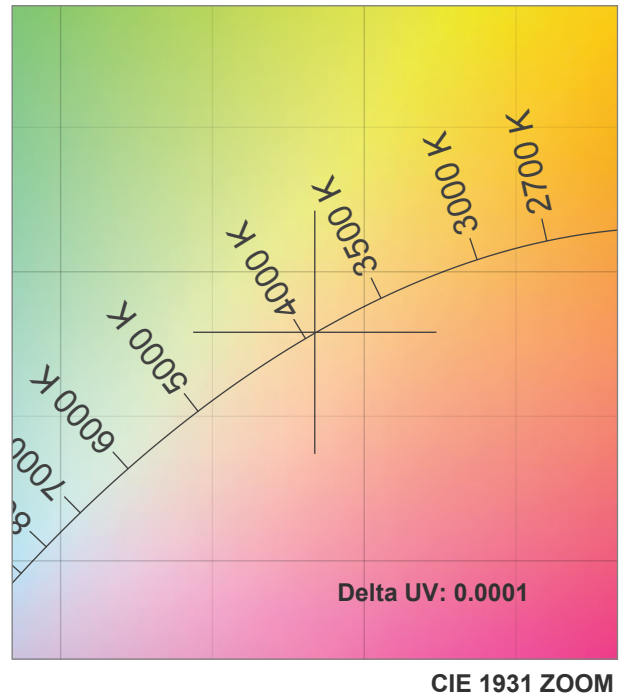
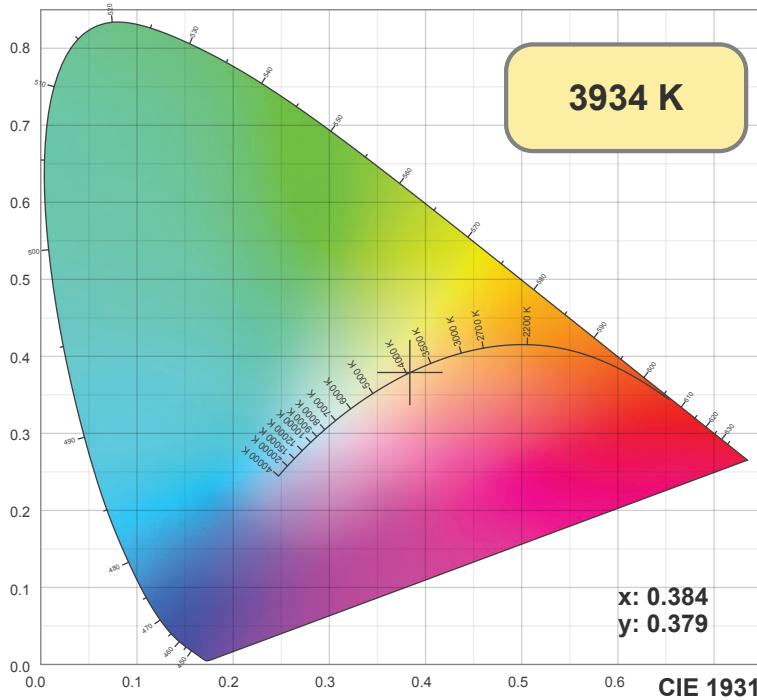
Intensities in 270° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
245	244	240	235	228	219	209	197	183	168	151	133	114	93	71	50	29	13	2	1
100%	99%	98%	96%	93%	90%	85%	80%	75%	68%	62%	54%	46%	38%	29%	20%	12%	5%	1%	1%

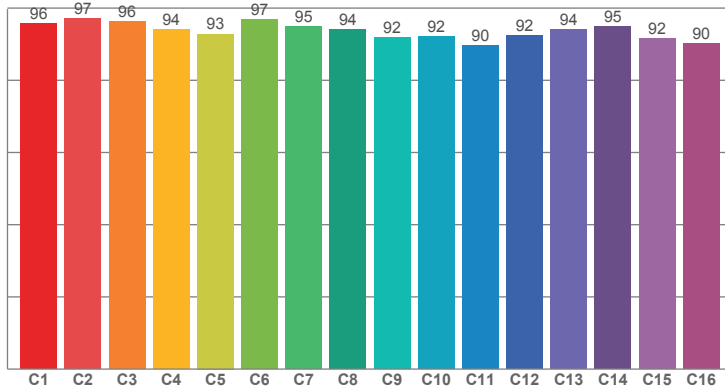
Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
115.4°	161.7°	175.4°	76.7%	51.7%

Note: specifications are representative of the diode type and not a particular tape light article.

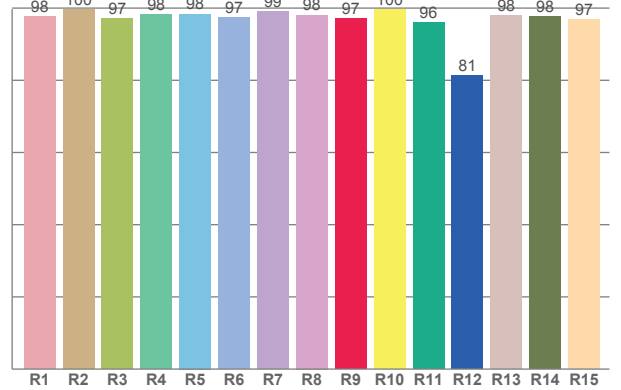
4200K



TM30: 93.6



CRI: 98.2 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
97.72	99.52	97.02	98.33	98.39	97.36	99.00	98.09	97.14	99.62	96.08	81.27	97.98	97.67	96.91

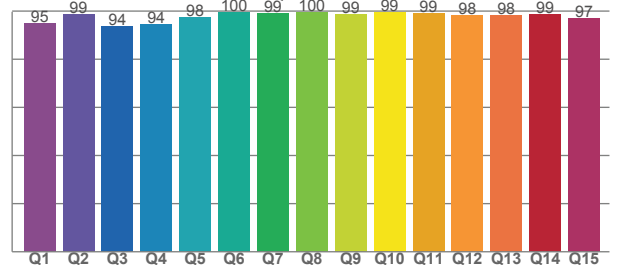
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
95.70	97.08	96.25	94.18	92.83	96.87	95.01	94.06	91.75	92.09	89.54	92.42	94.06	94.84	91.58	90.30

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
94.91	98.79	93.63	94.45	97.55	99.67	99.03	99.67	98.85	99.35	99.15	98.17	98.31	98.61	97.15

CQS: 97.1



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
3934 K	98.2	97.1	93.6	100.6	97.1	0.4	0.4	0.2	0.3	0.0002

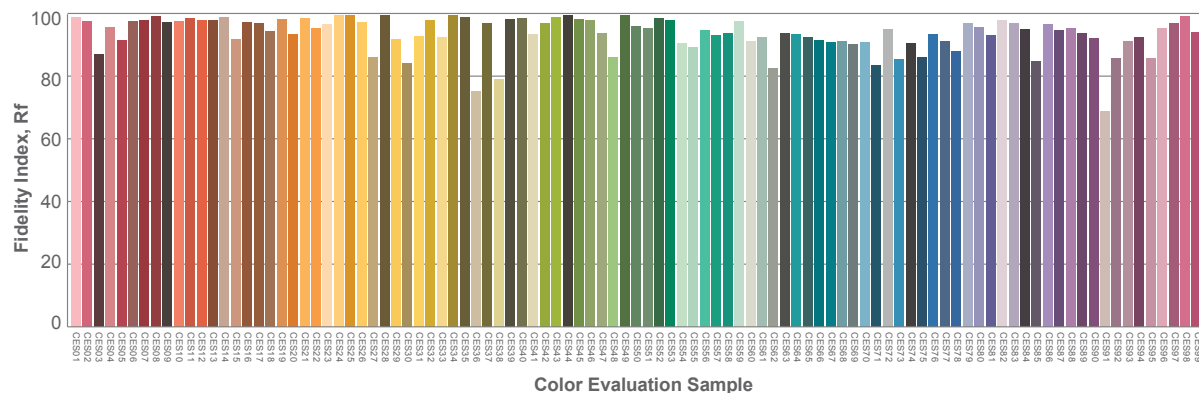
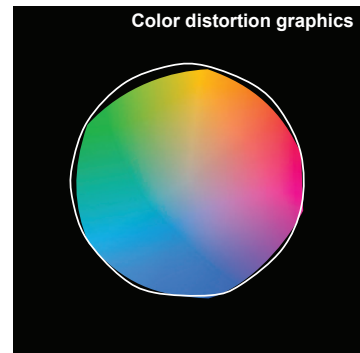
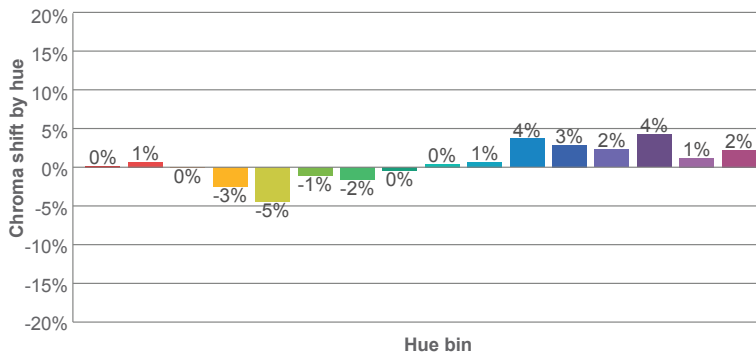
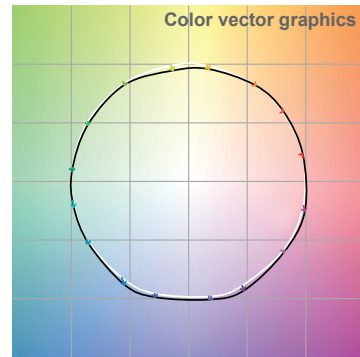
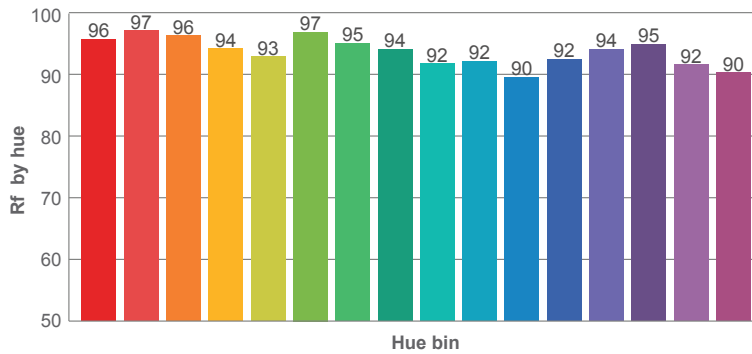
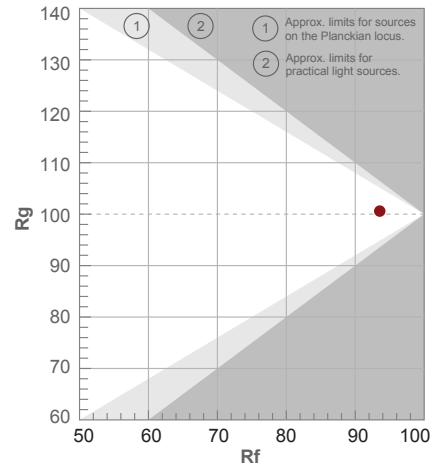
Note: specifications are representative of the diode type and not a particular tape light article.

4200K

Rf 93.6
Fidelity index Rf

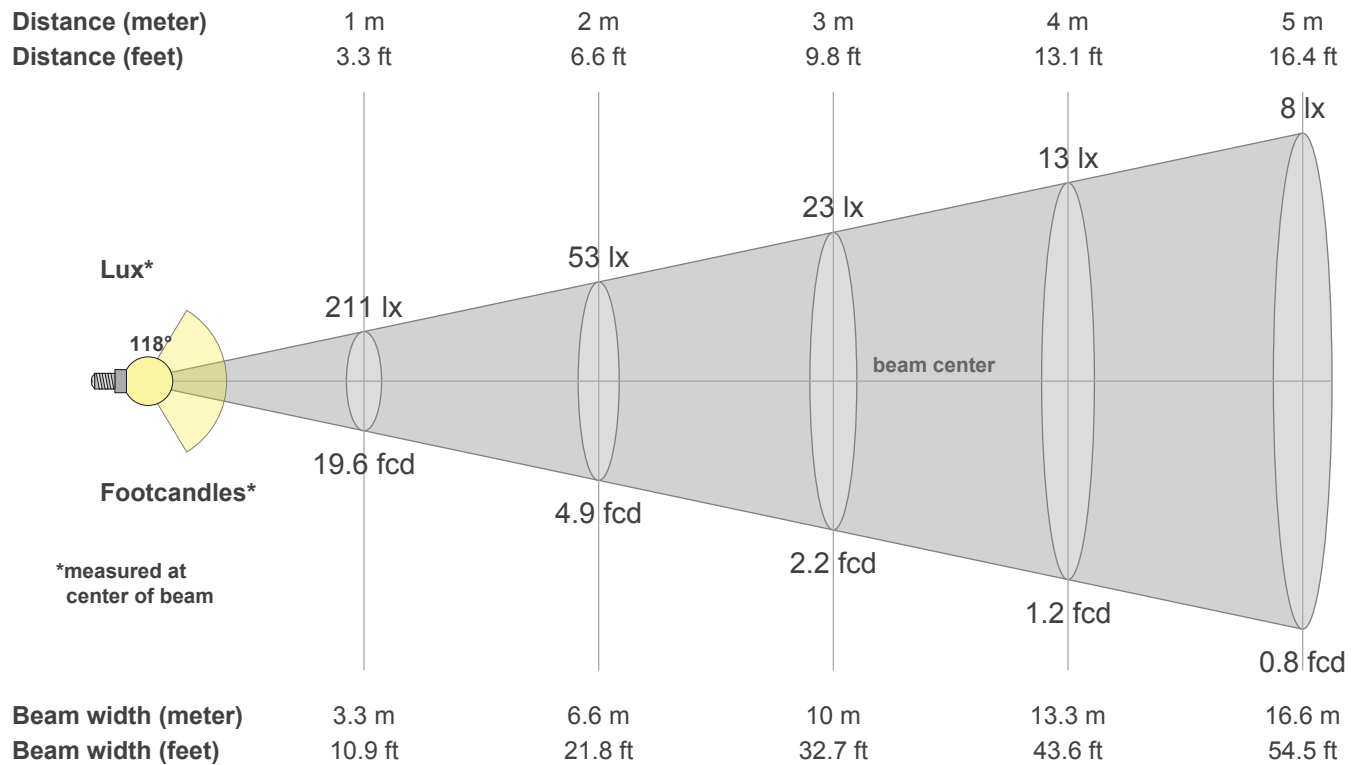
Rg 100.6
Gamut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	96	0%	0%
2	97	1%	-1%
3	96	0%	-1%
4	94	-3%	-2%
5	93	-5%	-1%
6	97	-1%	1%
7	95	-2%	3%
8	94	0%	3%
9	92	0%	6%
10	92	1%	4%
11	90	4%	5%
12	92	3%	1%
13	94	2%	-2%
14	95	4%	-1%
15	92	1%	-2%
16	90	2%	-4%



Note: specifications are representative of the diode type and not a particular tape light article.

4200K



Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
211	210	207	203	198	191	182	172	160	148	134	118	102	85	66	48	30	16	8	7
100%	99%	98%	96%	94%	90%	86%	82%	76%	70%	63%	56%	48%	40%	31%	23%	14%	8%	4%	3%

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
211	210	207	203	198	191	182	172	160	148	134	118	102	85	66	48	30	16	8	7
100%	99%	98%	96%	94%	90%	86%	82%	76%	70%	63%	56%	48%	40%	31%	23%	14%	8%	4%	3%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
211	211	209	205	199	193	184	174	162	149	135	119	102	84	65	46	28	14	7	6
100%	100%	99%	97%	94%	91%	87%	82%	77%	71%	64%	56%	48%	40%	31%	22%	13%	7%	4%	3%

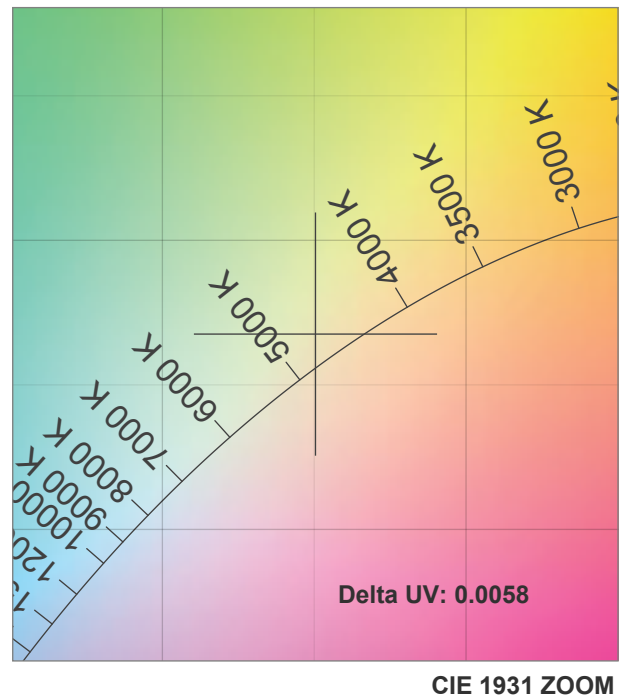
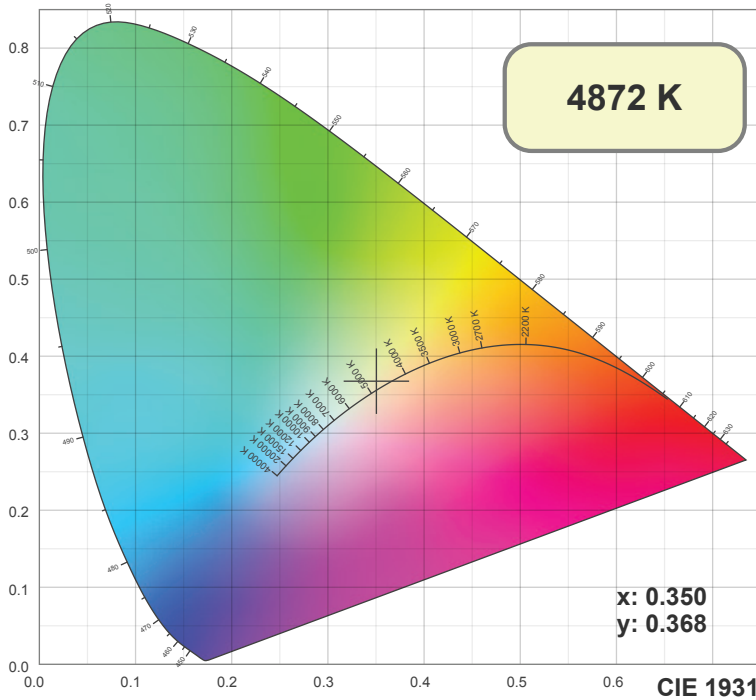
Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
211	211	209	205	199	193	184	174	162	149	135	119	102	84	65	46	28	14	7	6
100%	100%	99%	97%	94%	91%	87%	82%	77%	71%	64%	56%	48%	40%	31%	22%	13%	7%	4%	3%

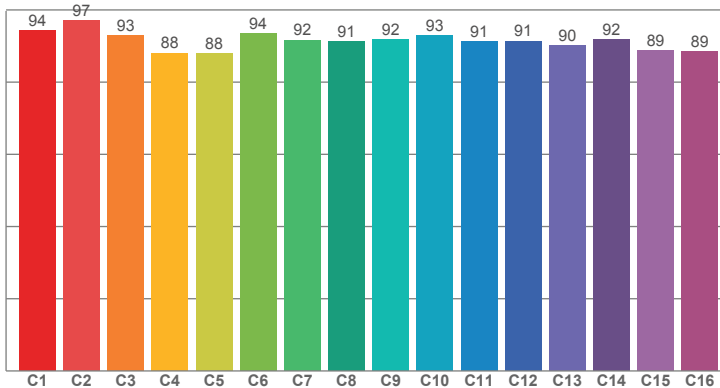
Beam angle 50%	Field angle 10%	Cutoff angle 2.5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
117.9°	165.3°	360.0°	70.6%	47.3%

Note: specifications are representative of the diode type and not a particular tape light article.

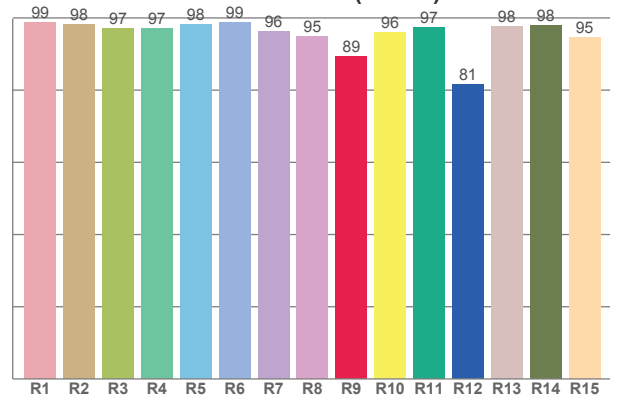
5000K



TM30: 91.4



CRI: 97.4 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
98.70	98.13	97.19	97.13	98.23	98.66	96.28	94.76	89.41	96.08	97.26	81.47	97.59	97.96	94.52

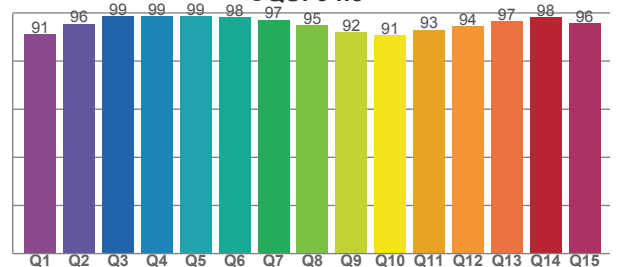
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
94.37	97.07	92.86	88.09	87.90	93.54	91.69	91.21	91.89	92.99	91.19	91.41	90.08	91.87	88.65	88.60

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
91.18	95.54	98.71	98.59	98.78	98.08	97.22	94.94	91.88	90.64	93.03	94.38	96.61	98.35	95.74

CQS: 94.8



Color parameters

CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Duv
4872 K	97.4	89.4	91.4	98.2	94.8	0.4	0.4	0.2	0.3	0.0058

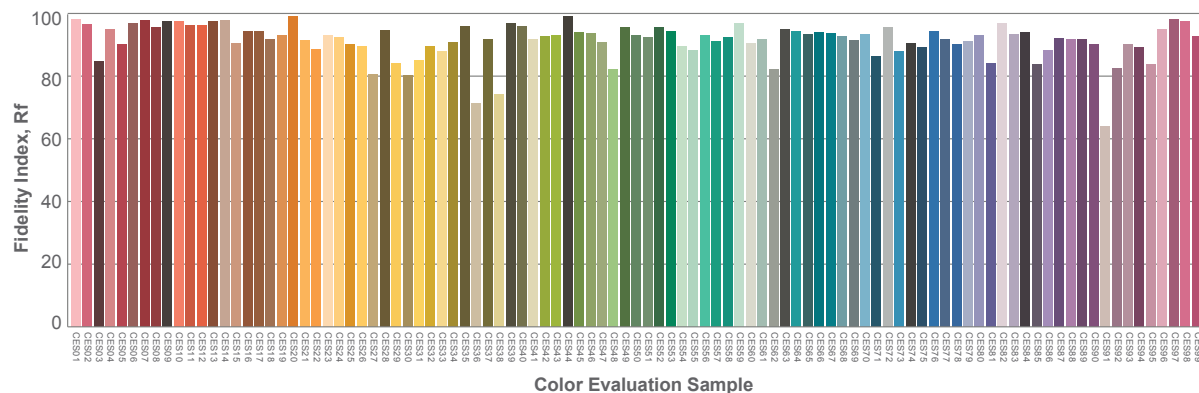
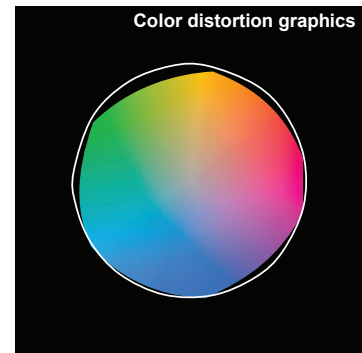
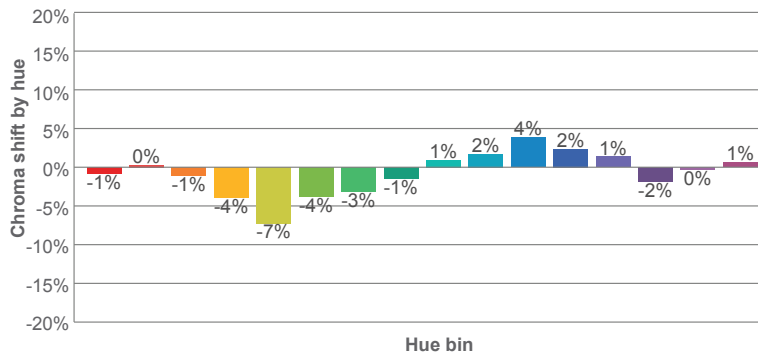
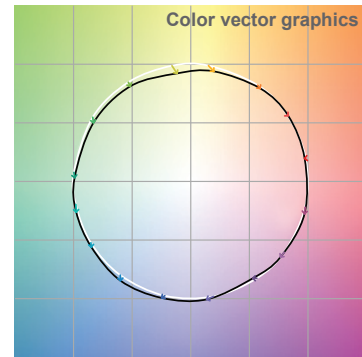
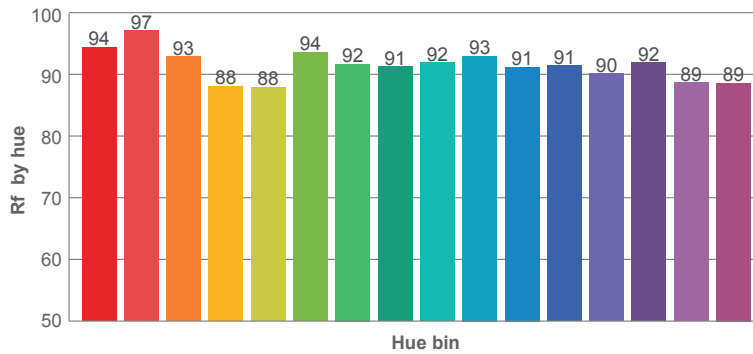
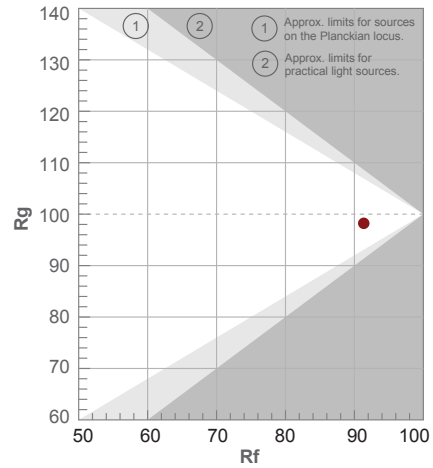
Note: specifications are representative of the diode type and not a particular tape light article.

5000K

Rf 91.4
Fidelity index Rf

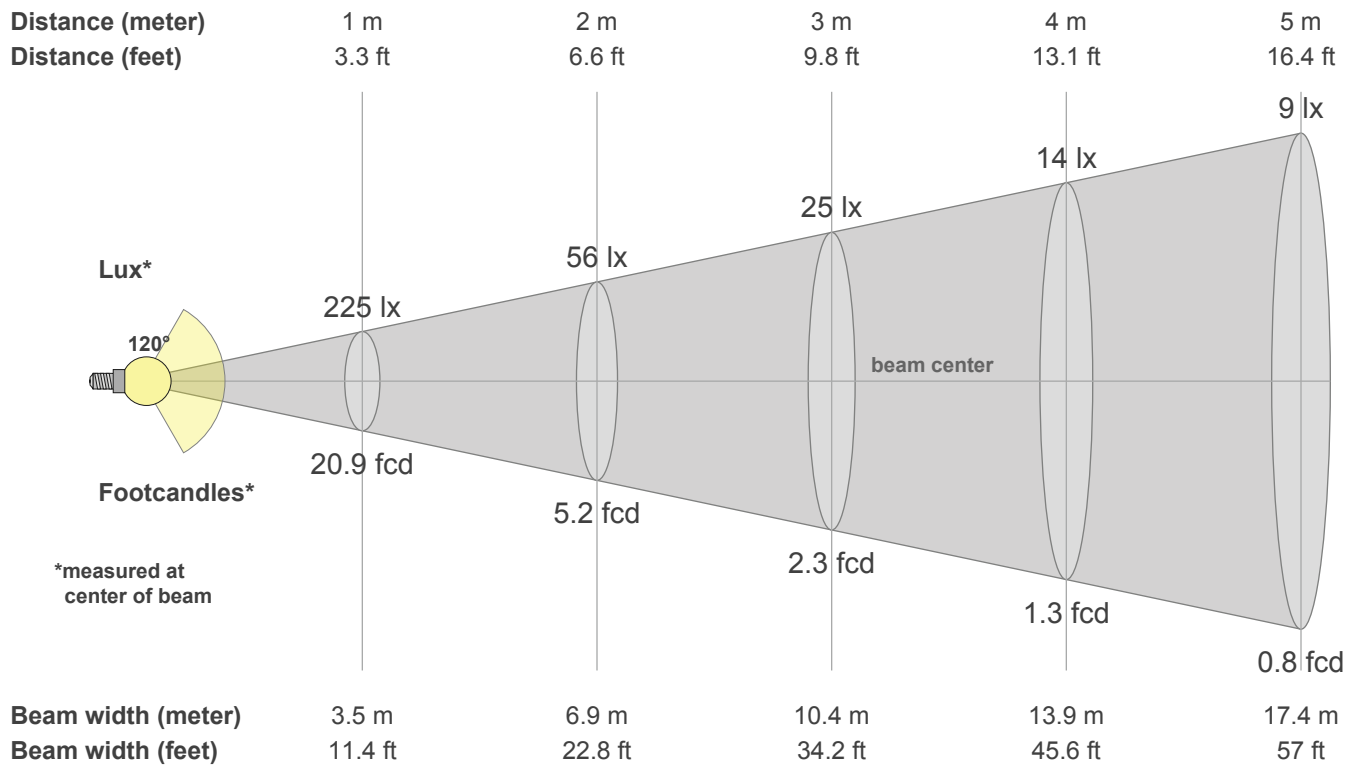
Rg 98.2
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-1%	0%
2	97	0%	-1%
3	93	-1%	-3%
4	88	-4%	-5%
5	88	-7%	-3%
6	94	-4%	1%
7	92	-3%	4%
8	91	-1%	6%
9	92	1%	4%
10	93	2%	3%
11	91	4%	3%
12	91	2%	-2%
13	90	1%	-6%
14	92	-2%	-3%
15	89	0%	-5%
16	89	1%	-6%



Note: specifications are representative of the diode type and not a particular tape light article.

5000K



Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
225	224	221	217	212	204	195	185	173	160	145	130	113	94	75	55	36	20	10	9
100%	99%	98%	97%	94%	91%	87%	82%	77%	71%	65%	58%	50%	42%	33%	24%	16%	9%	4%	4%

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
225	224	221	217	212	204	195	185	173	160	145	130	113	94	75	55	36	20	10	9
100%	99%	98%	97%	94%	91%	87%	82%	77%	71%	65%	58%	50%	42%	33%	24%	16%	9%	4%	4%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
225	225	223	219	214	207	199	189	177	164	148	131	113	94	74	54	34	18	9	9
100%	100%	99%	97%	95%	92%	89%	84%	79%	73%	66%	58%	50%	42%	33%	24%	15%	8%	4%	4%

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
225	225	223	219	214	207	199	189	177	164	148	131	113	94	74	54	34	18	9	9
100%	100%	99%	97%	95%	92%	89%	84%	79%	73%	66%	58%	50%	42%	33%	24%	15%	8%	4%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2.5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
120.1°	167.3°	360.0°	68.8%	45.9%