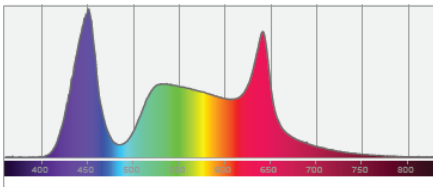
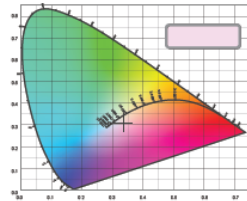


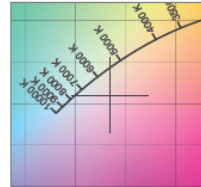
Spectral distribution



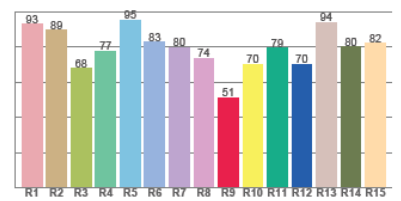
Color coordinates



Zoom color point



CRI R values



# Photometric Test Report

\*Due to additional product enhancements, an updated version of this report may be available online. Please check [www.elationlighting.com](http://www.elationlighting.com) for the latest revision/update of this report.

Color Temperature:



Total Lumen Output:  
2854 lm



Light Quality:

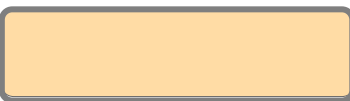


Peak:  
17888 cd

Light Efficiency:



Power: 134 W



CIE 1931  
x: 0.402  
y: 0.362

Test: Full On

Date: 7/12/2018

Voltage: 111 V

Current: 1.21 A

Frequency: 60 Hz

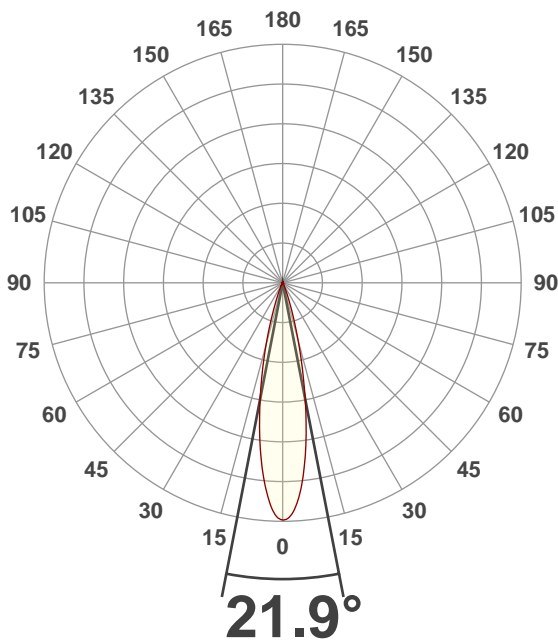
CRI: 86.7

CQS: 83.0

TM30: 84.2

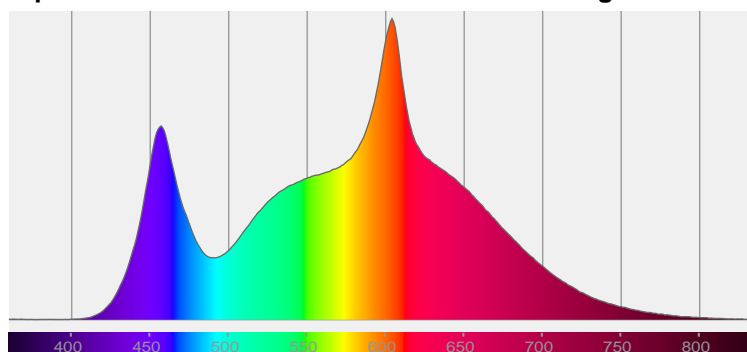
Note:

Beam Angle



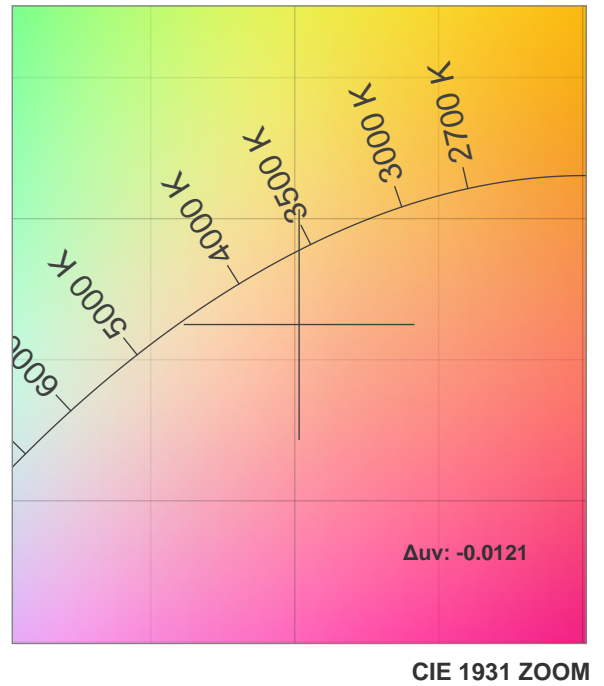
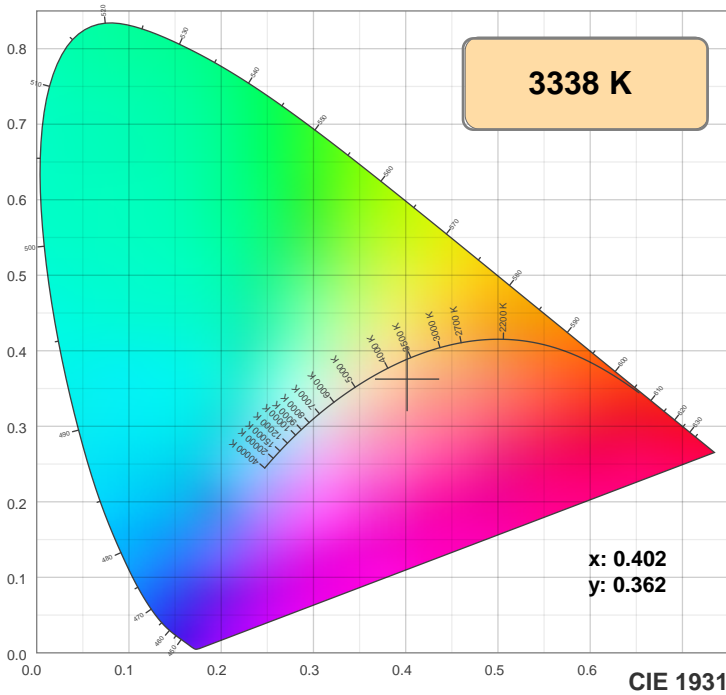
Spectra

Dominant Wavelength: 590nm

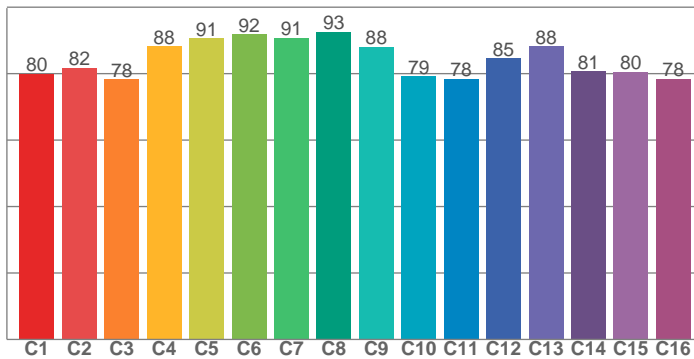


Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
21.9°	38.2°	48.7°

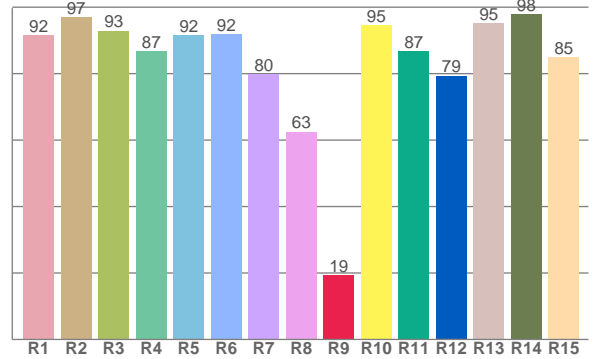
## Color Details



**TM30: 84.2**



**CRI: 86.7 (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
91.6	96.9	92.9	86.7	91.6	91.8	79.7	62.6	19.3	94.7	86.8	79.3	95.2	97.9	85.0

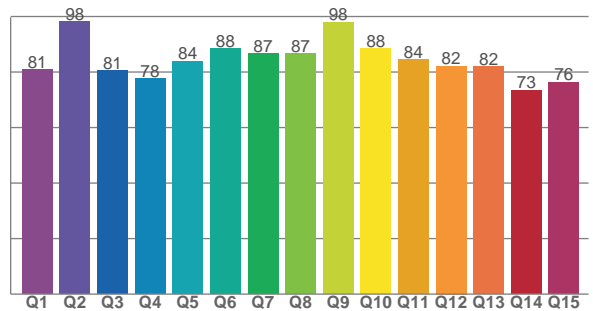
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
80.0	81.7	78.3	88.3	90.6	91.8	90.8	92.6	88.0	79.2	78.5	84.6	88.2	80.7	80.5	78.5

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.9	98.1	80.6	77.6	83.9	88.5	86.5	86.6	98.0	88.4	84.4	82.2	81.9	73.5	76.4

**CQS: 83.0**



## Color Parameters

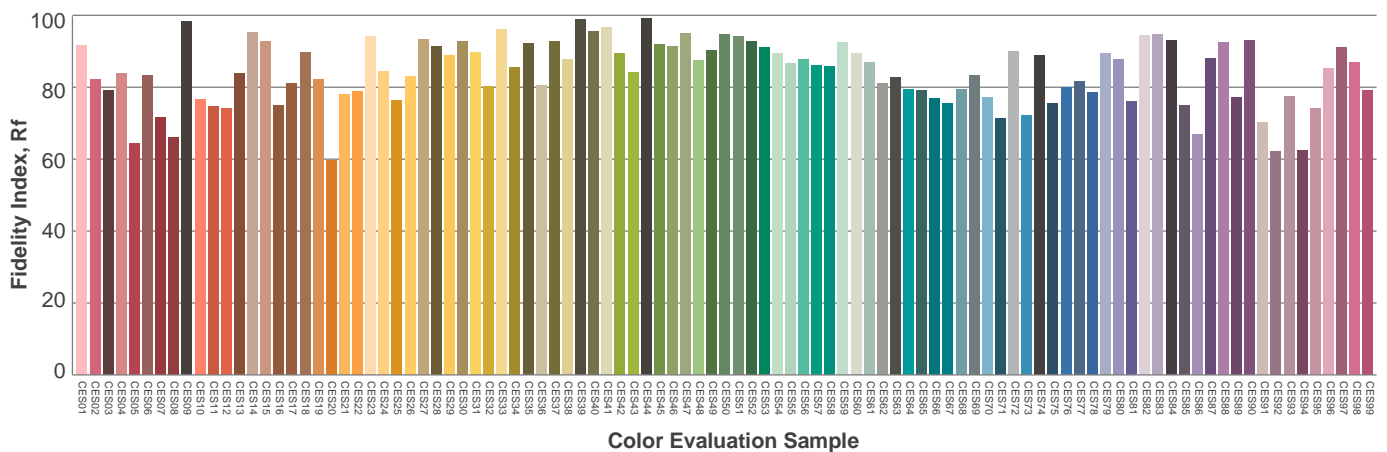
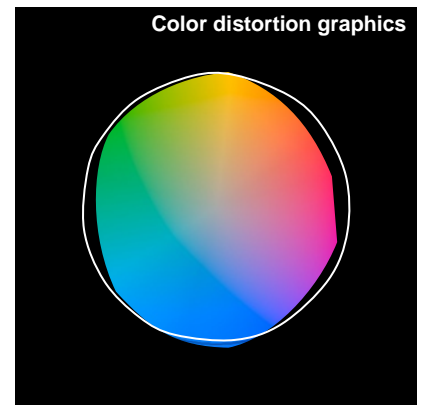
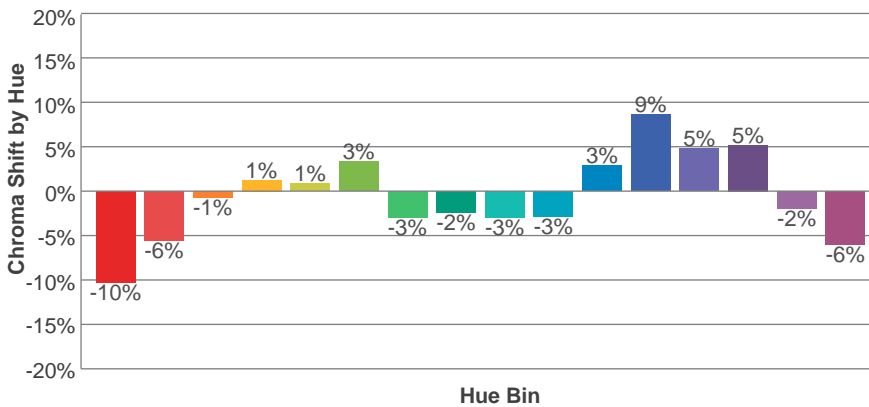
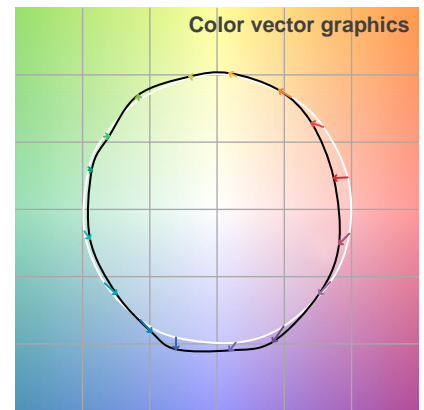
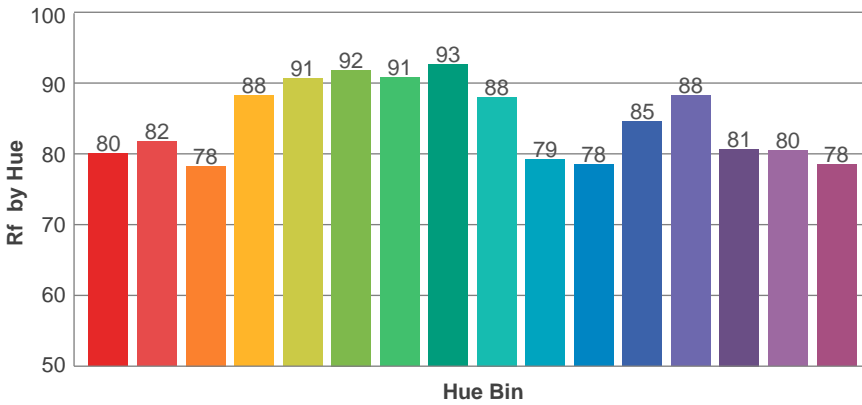
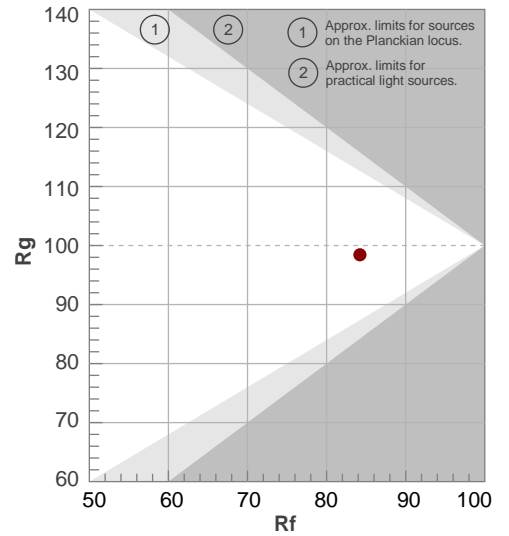
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black Body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	$\Delta uv$
3338 K	86.7	19.3	84.2	98.4	83.0	0.402	0.362	0.245	0.332	-0.0121

## TM30 Details

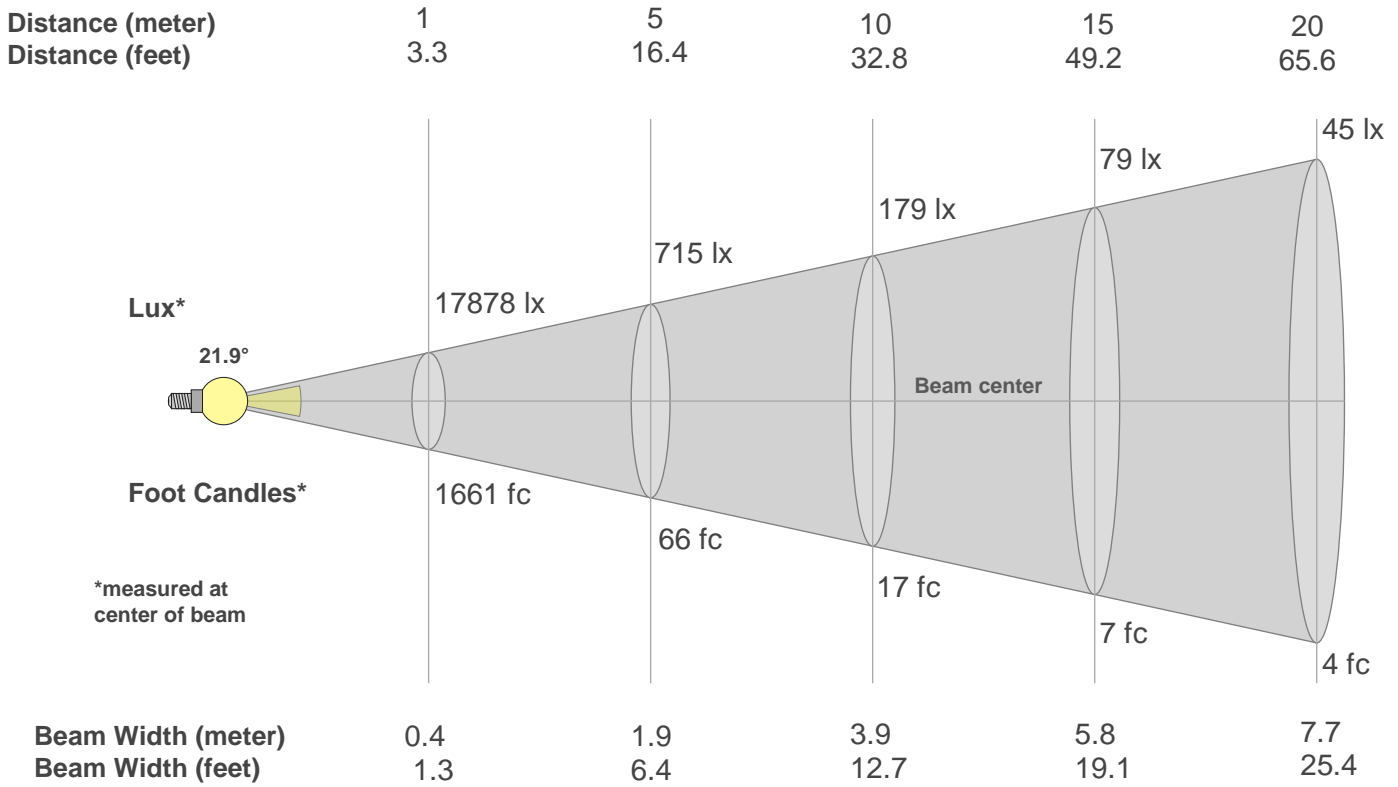
**Rf 84.2**  
Fidelity Index Rf

**Rg 98.4**  
Gamut Index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	80	-10%	2%
2	82	-6%	7%
3	78	-1%	10%
4	88	1%	5%
5	91	1%	3%
6	92	3%	-2%
7	91	-3%	-3%
8	93	-2%	-1%
9	88	-3%	6%
10	79	-3%	12%
11	78	3%	12%
12	85	9%	2%
13	88	5%	-6%
14	81	5%	-13%
15	80	-2%	-12%
16	78	-6%	-9%



## Beam Details



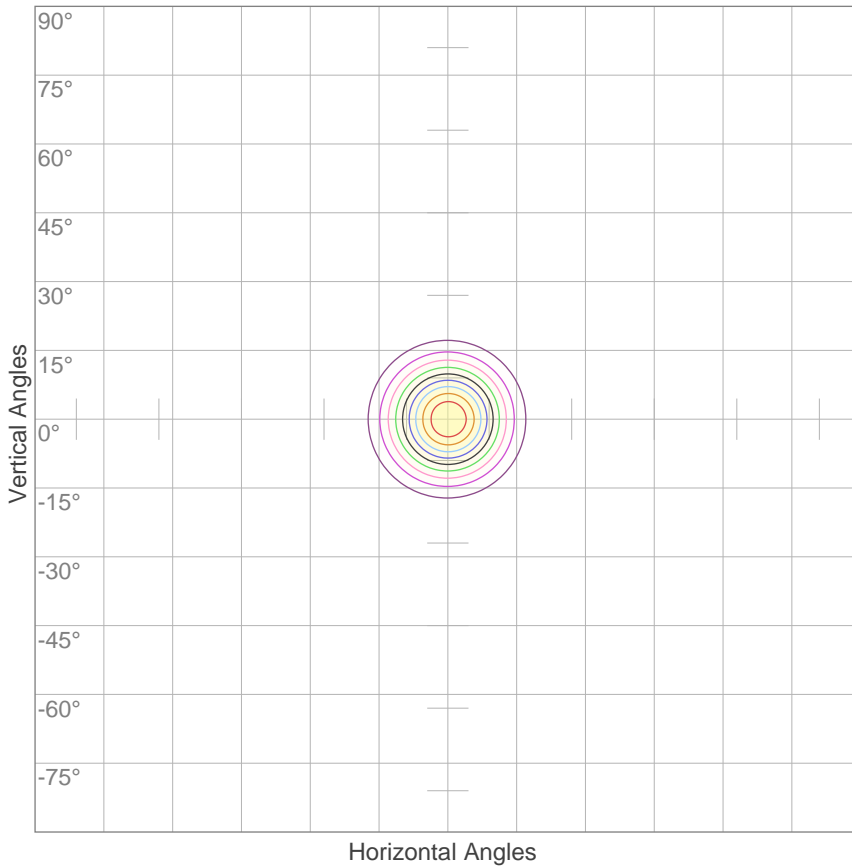
### Beam Intensities from 1-20m

m	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ft	3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6
lx	17878	4469	1986	1117	715	497	365	279	221	179	148	124	106	91	79	70	62	55	50	45
fc	1660.9	415.2	184.5	103.8	66.4	46.1	33.9	26	20.5	16.6	13.7	11.5	9.8	8.5	7.4	6.5	5.7	5.1	4.6	4.2

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
21.9°	38.2°	48.7°	100.0%	99.7%

## ISO Diagrams

### ISO Candela Diagram



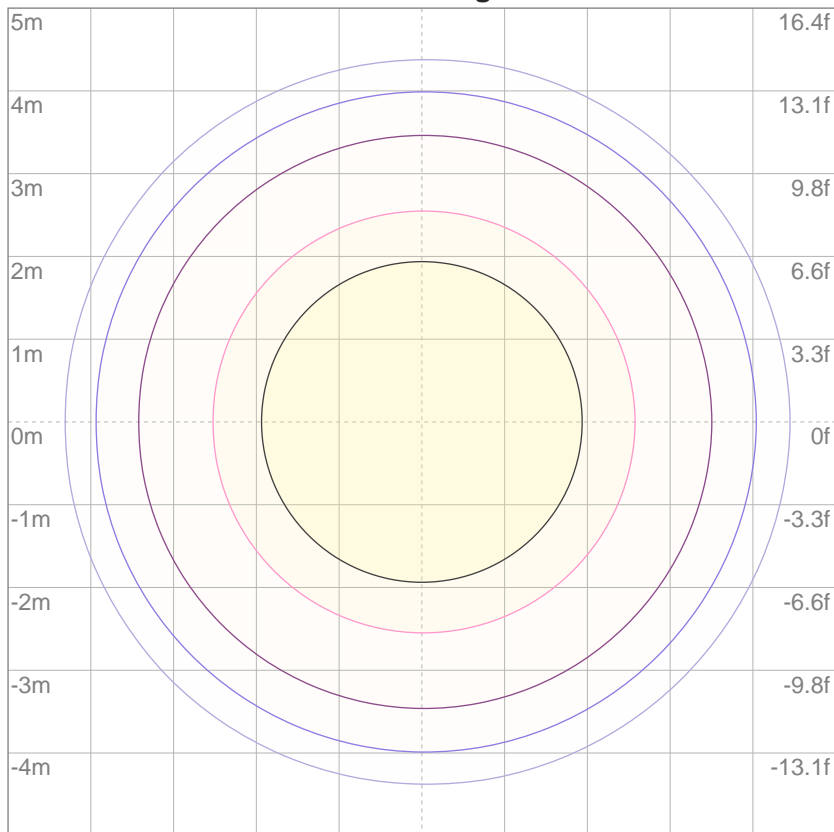
10%	1788 cd
20%	3576 cd
30%	5363 cd
40%	7151 cd
50%	8939 cd
60%	10727 cd
70%	12514 cd
80%	14302 cd
90%	16090 cd

Conditions:

Number of c-planes: 2

Candela at center: 17878 cd

### ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	5.36 lx
5%	8.94 lx
10%	17.9 lx
30%	53.6 lx
50%	89.4 lx

Conditions:

Number of c-planes: 2

Lux at center: 179 lx

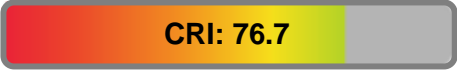
*Lux distribution on a surface when lamp is mounted at 10 meters from the surface.*

Color Temperature:



Total Lumen Output:  
1451 lm

Light Quality:

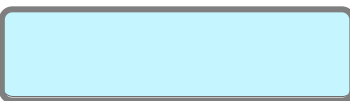


Peak:  
9177 cd

Light Efficiency:



Power: 42.2 W



CIE 1931  
x: 0.305  
y: 0.322

Test: CW

Date: 7/12/2018

Voltage: 112 V

Current: 0.383 A

Frequency: 60 Hz

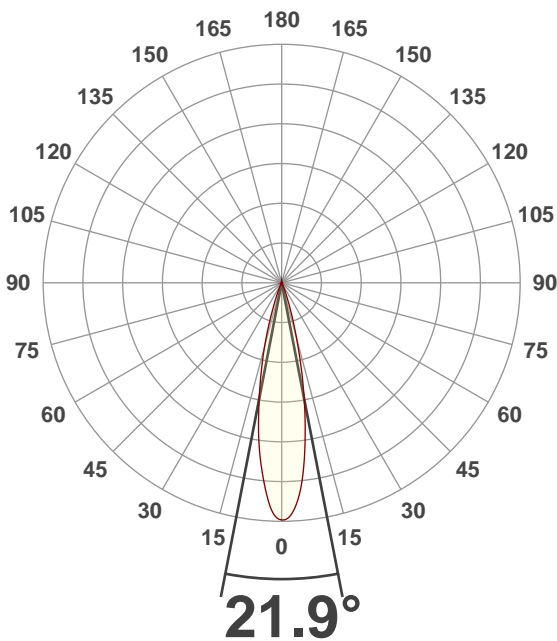
CRI: 76.7

CQS: 72.5

TM30: 73.6

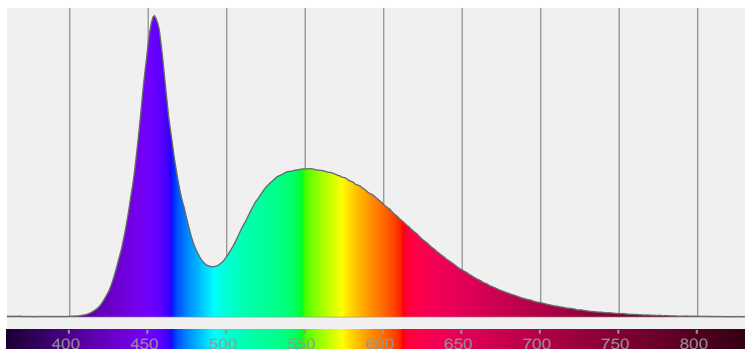
Note:

Beam Angle



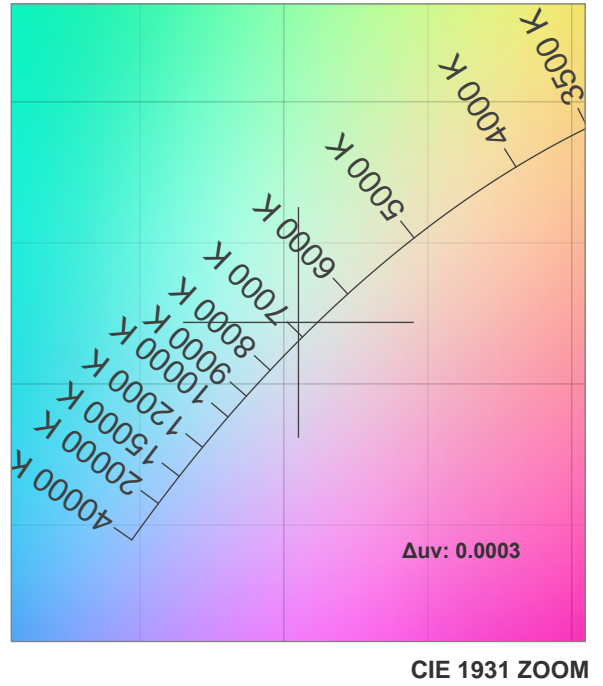
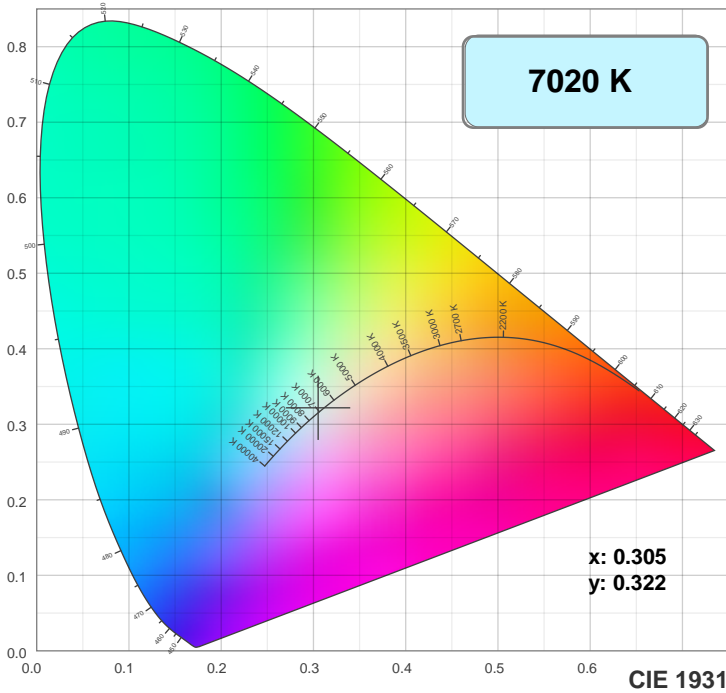
Spectra

Dominant Wavelength: 479nm

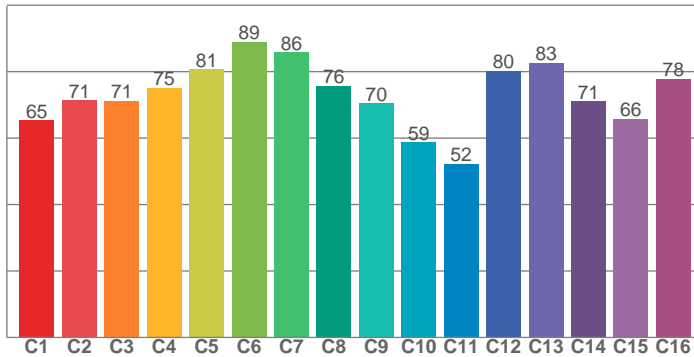


Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
21.9°	38°	47.8°

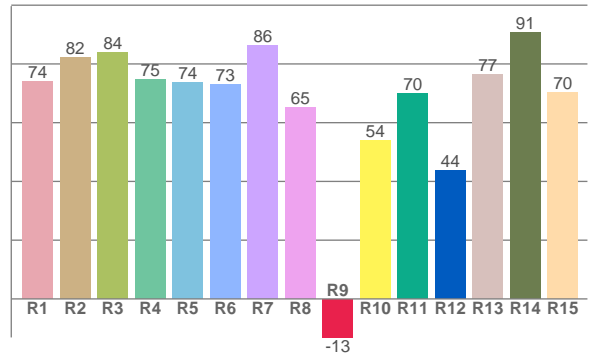
## Color Details



**TM30: 73.6**



**CRI: 76.7 (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
74.2	82.2	83.8	74.8	73.8	73.1	86.3	65.1	-13.1	53.9	70.1	43.8	76.5	90.9	70.3

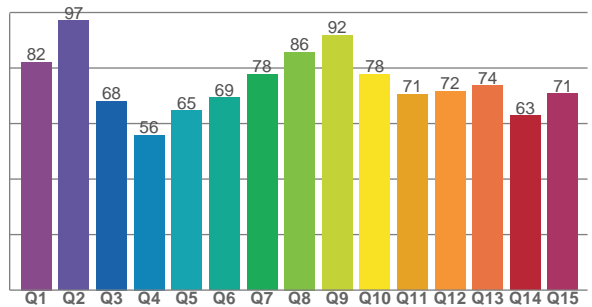
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65.3	71.4	71.1	75.2	80.7	89.1	85.8	75.6	70.4	58.8	52.3	80.2	82.6	71.0	65.8	77.8

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
82.2	97.1	68.1	55.9	64.7	69.4	77.7	85.8	91.9	77.7	70.5	71.7	73.7	62.9	70.8

**CQS: 72.5**



## 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
7020 K	76.7	-13.1	73.6	91.1	72.5	0.305	0.322	0.195	0.309	0.0003

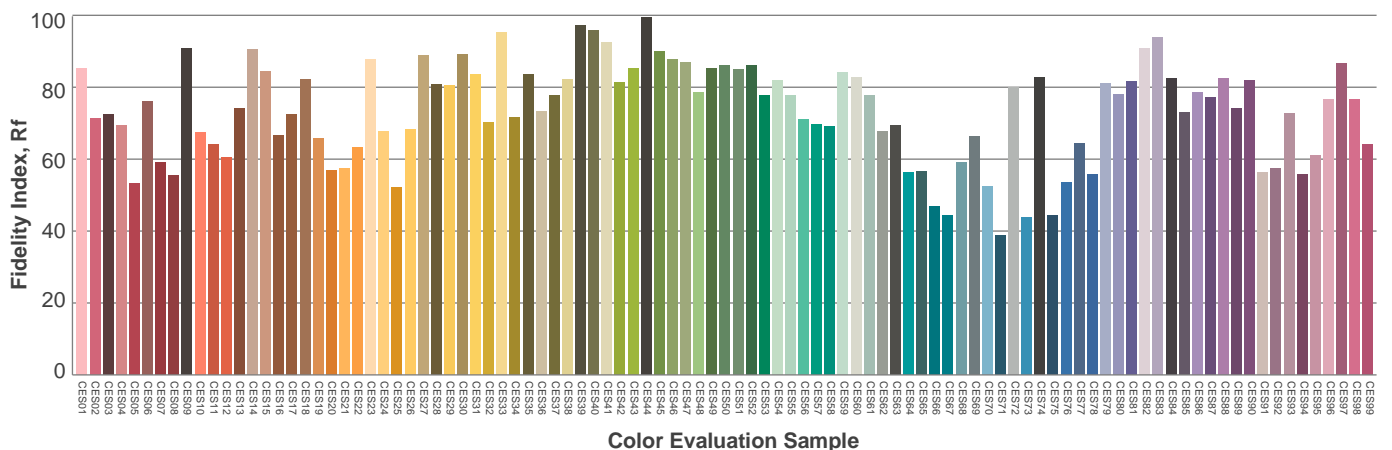
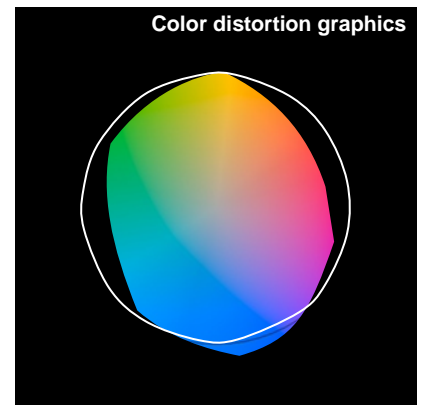
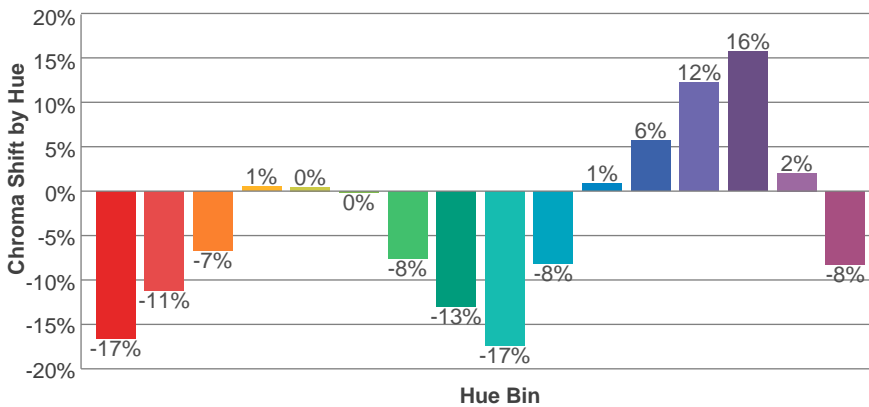
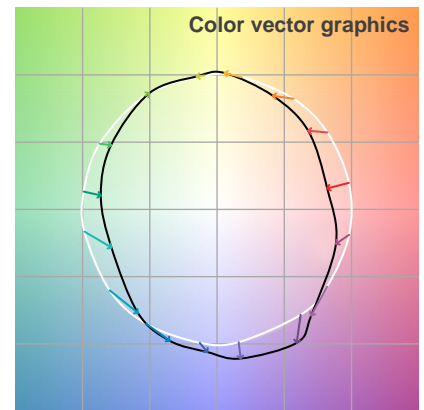
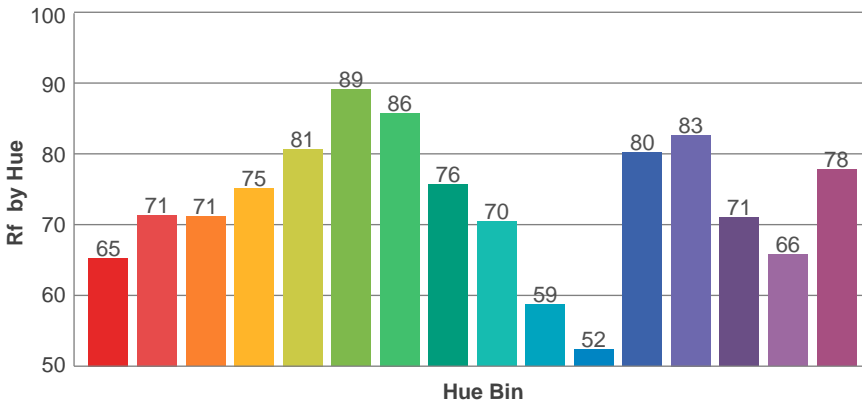
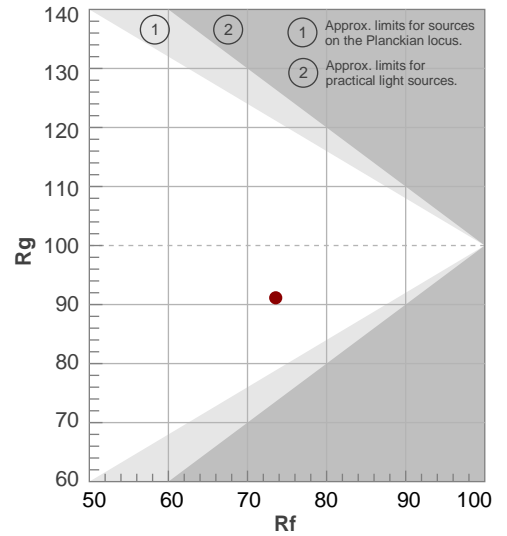


## TM30 Details

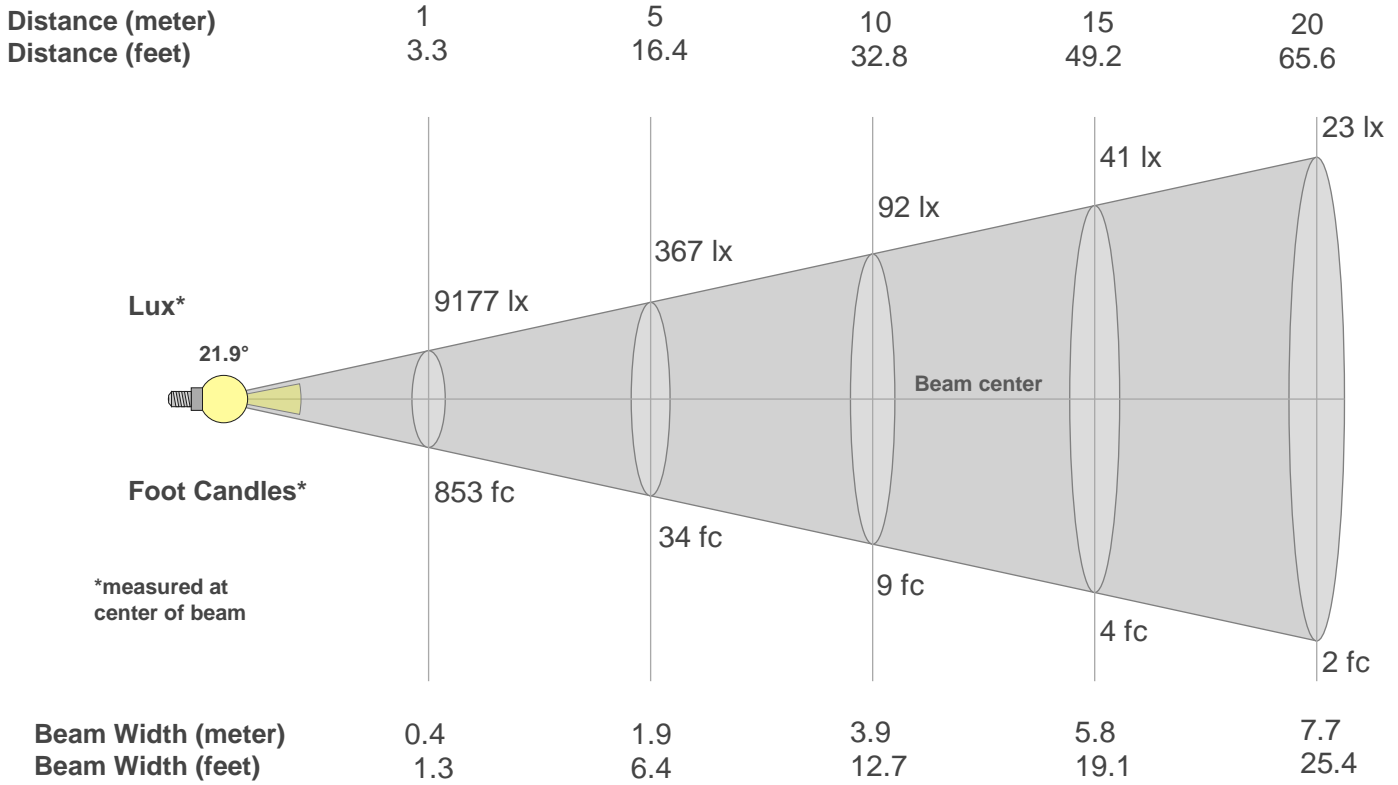
**Rf 73.6**  
Fidelity Index Rf

**Rg 91.1**  
Gamut Index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	65	-17%	-1%
2	71	-11%	9%
3	71	-7%	14%
4	75	1%	13%
5	81	0%	6%
6	89	0%	-3%
7	86	-8%	-4%
8	76	-13%	0%
9	70	-17%	16%
10	59	-8%	26%
11	52	1%	21%
12	80	6%	7%
13	83	12%	-1%
14	71	16%	-14%
15	66	2%	-24%
16	78	-8%	-8%



## Beam Details



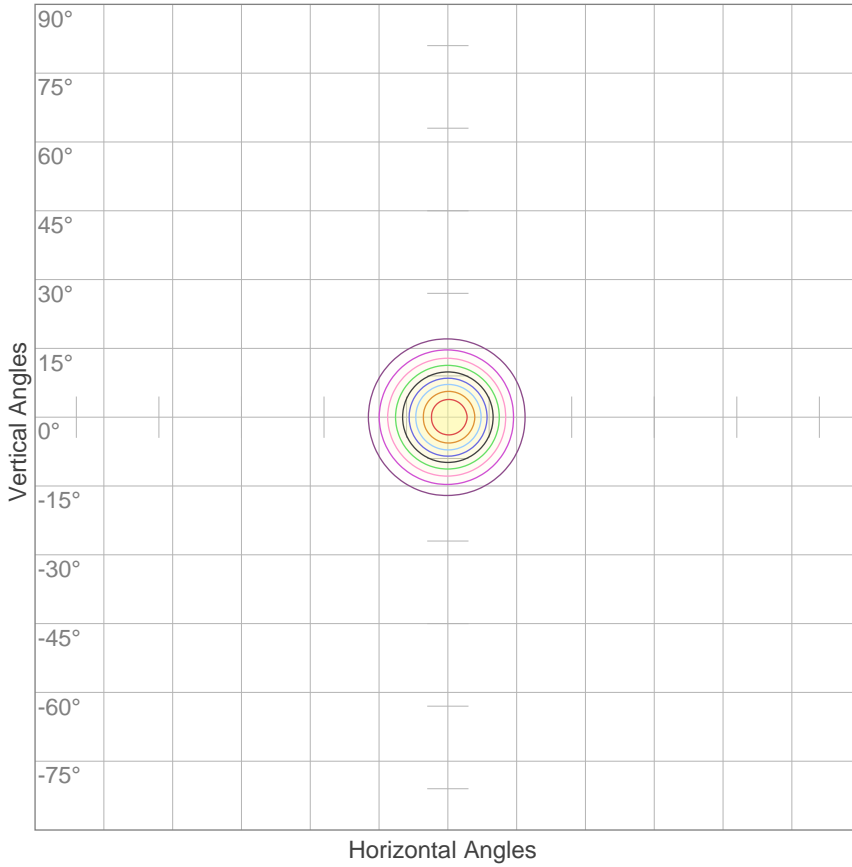
### Beam Intensities from 1-20m

m	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ft	3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6
lx	9177	2294	1020	574	367	255	187	143	113	92	76	64	54	47	41	36	32	28	25	23
fc	852.5	213.1	94.7	53.3	34.1	23.7	17.4	13.3	10.5	8.5	7	5.9	5	4.3	3.8	3.3	2.9	2.6	2.4	2.1

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
21.9°	38°	47.8°	100.0%	99.7%

## ISO Diagrams

### ISO Candela Diagram



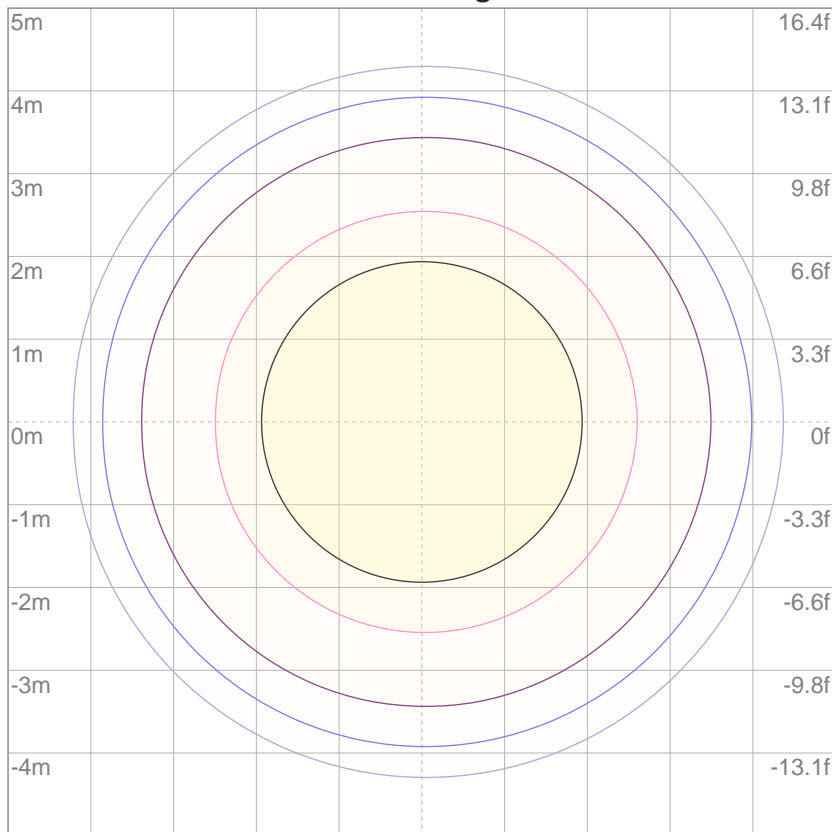
10%	918 cd
20%	1835 cd
30%	2753 cd
40%	3671 cd
50%	4588 cd
60%	5506 cd
70%	6424 cd
80%	7341 cd
90%	8259 cd

Conditions:

Number of c-planes: 2

Candela at center: 9177 cd

### ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	2.75 lx
5%	4.59 lx
10%	9.18 lx
30%	27.5 lx
50%	45.9 lx

Conditions:

Number of c-planes: 2

Lux at center: 91.8 lx

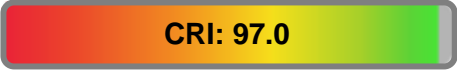
*Lux distribution on a surface when lamp is mounted at 10 meters from the surface.*

Color Temperature:



Total Lumen Output:  
1515 lm

Light Quality:



Peak:  
9475 cd

Light Efficiency:



Power: 75.9 W



CIE 1931  
x: 0.457  
y: 0.409

Test: WW

Date: 7/12/2018

Voltage: 112 V

Current: 0.685 A

Frequency: 60 Hz

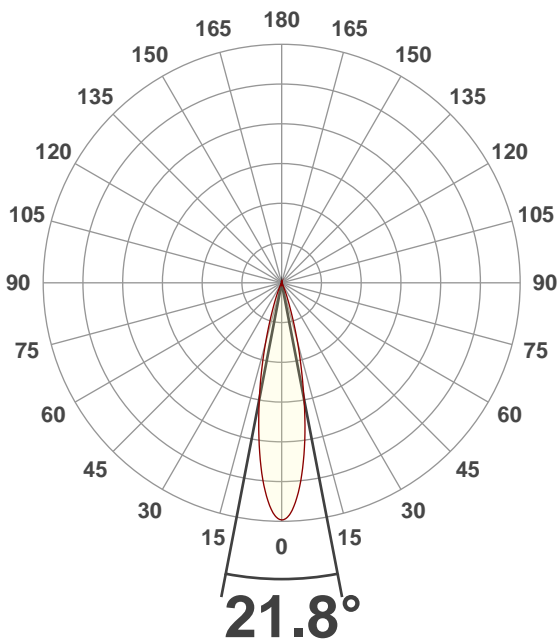
CRI: 97.0

CQS: 93.8

TM30: 92.0

Note:

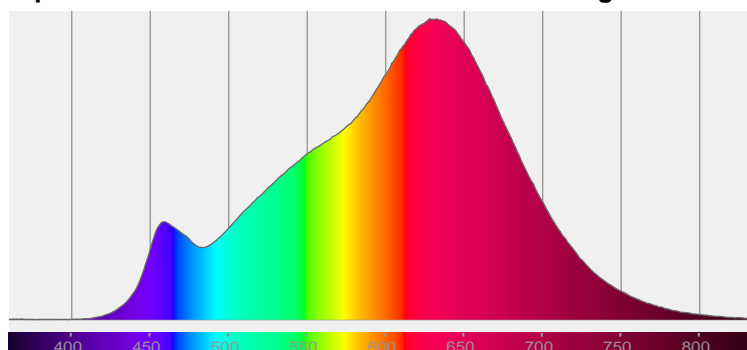
Beam Angle



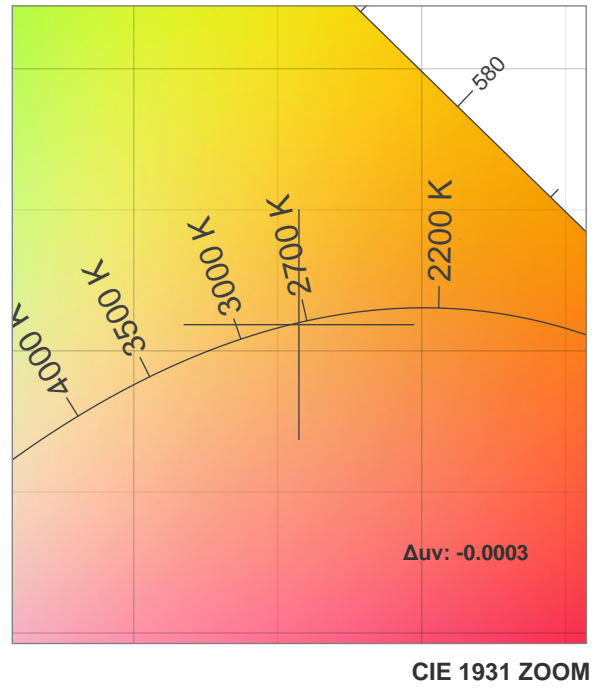
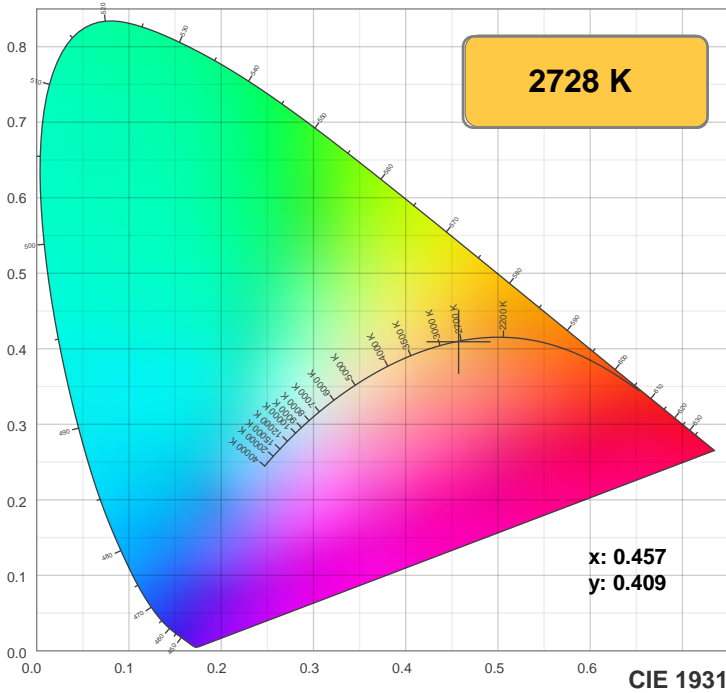
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
21.8°	38.4°	49.1°

Spectra

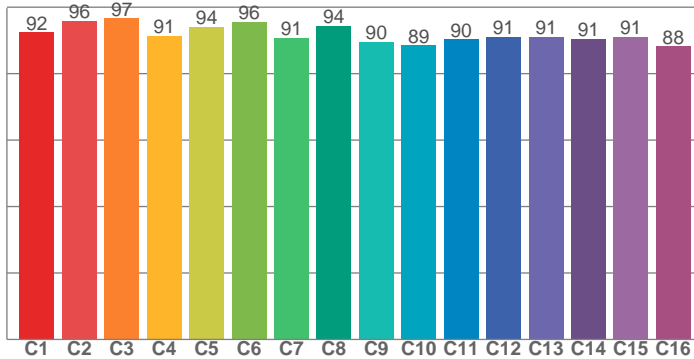
Dominant Wavelength: 585nm



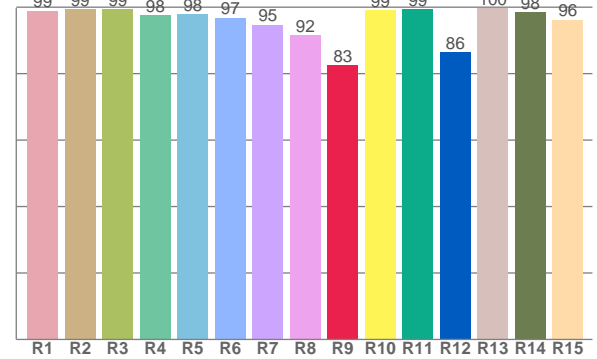
## Color Details



### TM30: 92.0



### 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
99.0	99.4	99.4	97.5	98.0	96.9	94.8	91.5	82.5	99.0	99.3	86.5	99.8	98.4	96.2

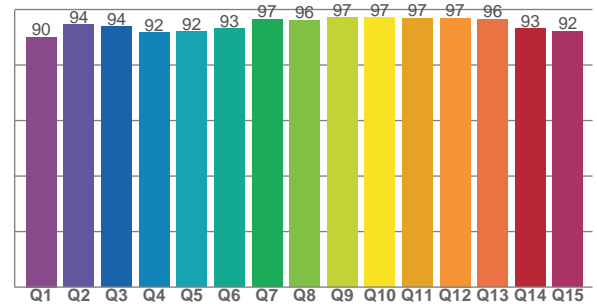
#### TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92.4	95.8	96.6	91.4	94.1	95.6	90.8	94.4	89.6	88.5	90.3	91.1	91.1	90.5	91.2	88.2

#### CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
90.1	94.5	93.7	91.7	92.0	93.2	96.5	96.1	97.1	97.1	96.9	96.9	96.5	93.1	92.2

### CQS: 93.8



## Color Parameters

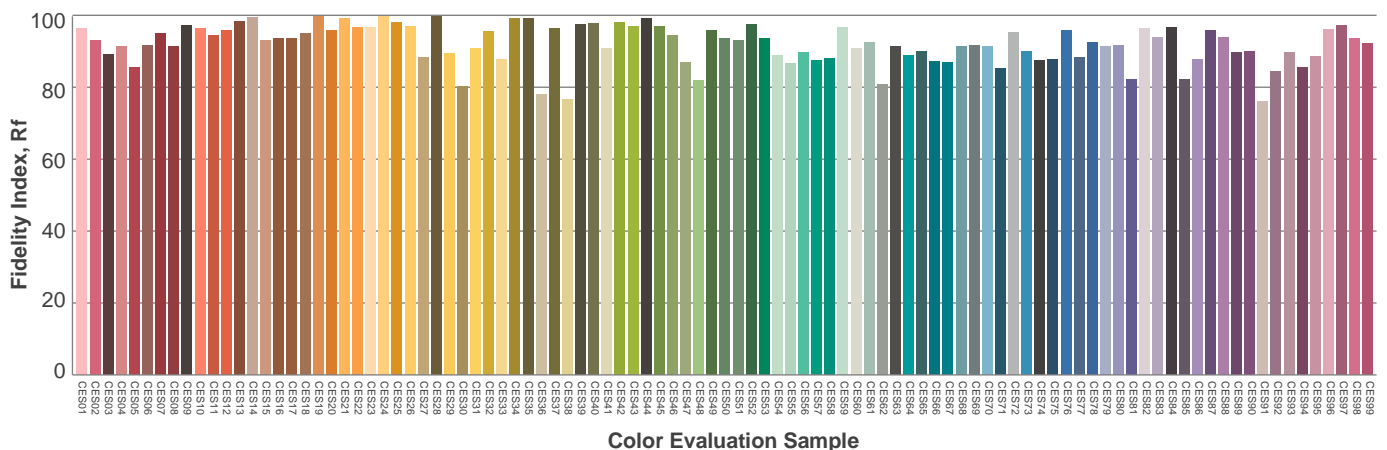
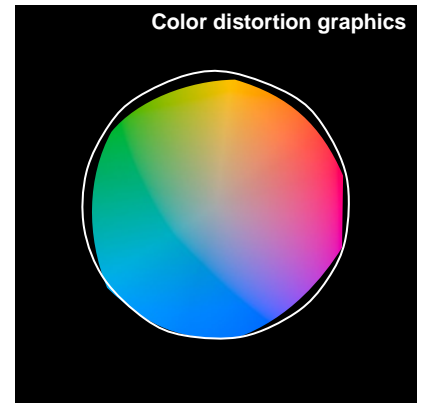
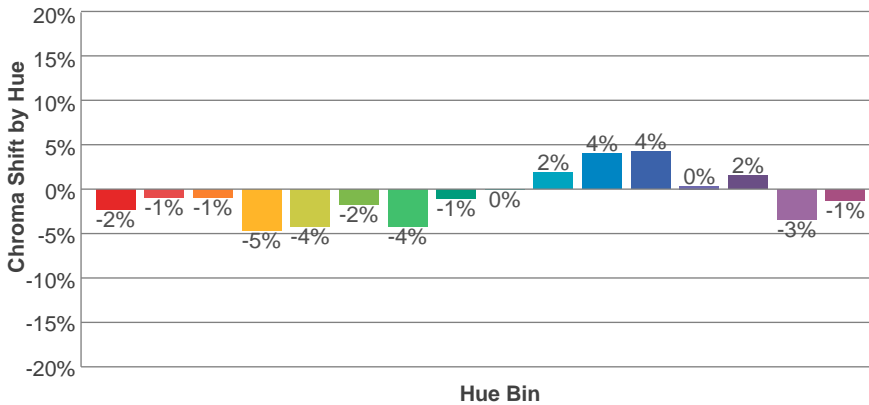
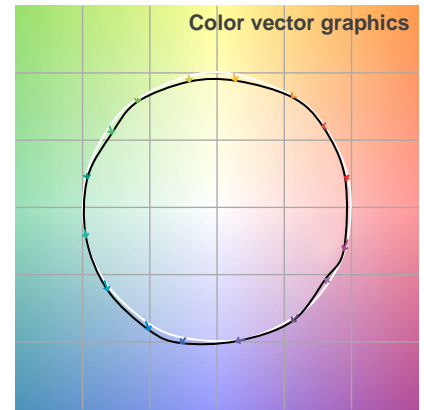
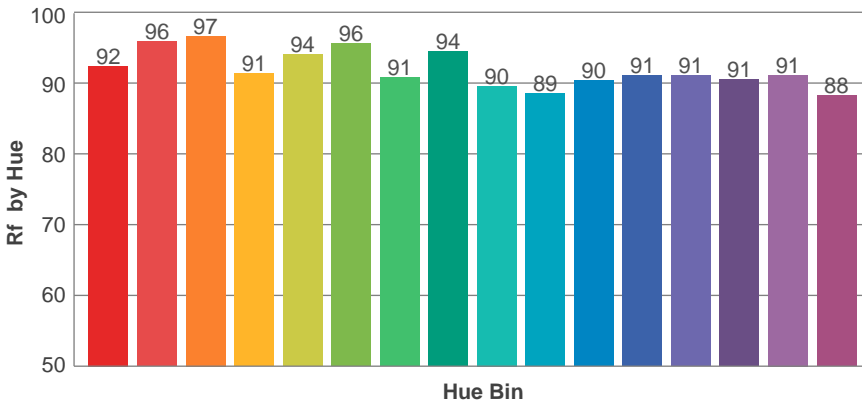
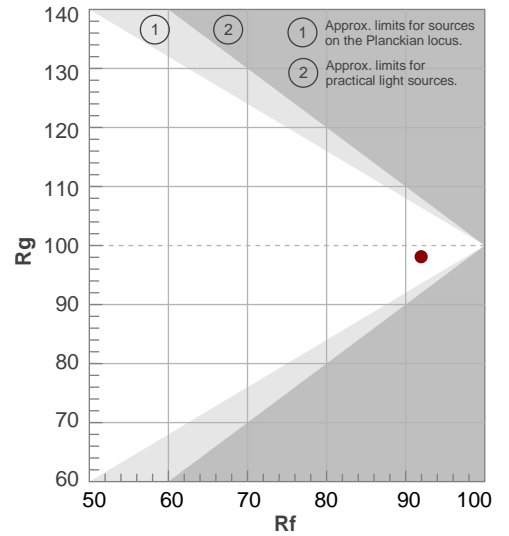
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black Body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2728 K	97.0	82.5	92.0	98.1	93.8	0.457	0.409	0.261	0.351	-0.0003

## TM30 Details

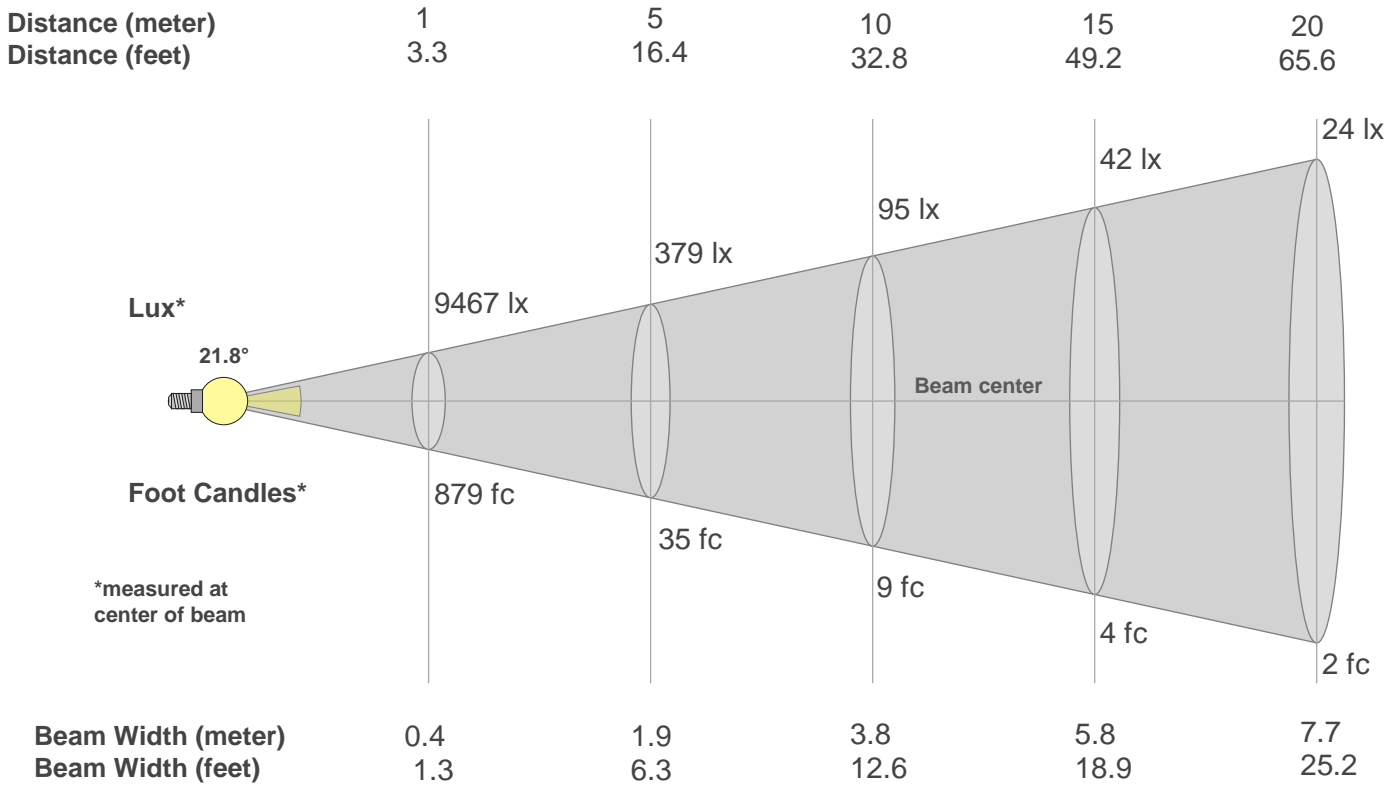
**Rf 92.0**  
Fidelity Index Rf

**Rg 98.1**  
Gamut Index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	92	-2%	2%
2	96	-1%	0%
3	97	-1%	0%
4	91	-5%	-3%
5	94	-4%	0%
6	96	-2%	2%
7	91	-4%	4%
8	94	-1%	3%
9	90	0%	6%
10	89	2%	7%
11	90	4%	5%
12	91	4%	-2%
13	91	0%	-6%
14	91	2%	-6%
15	91	-3%	0%
16	88	-1%	-8%



## Beam Details



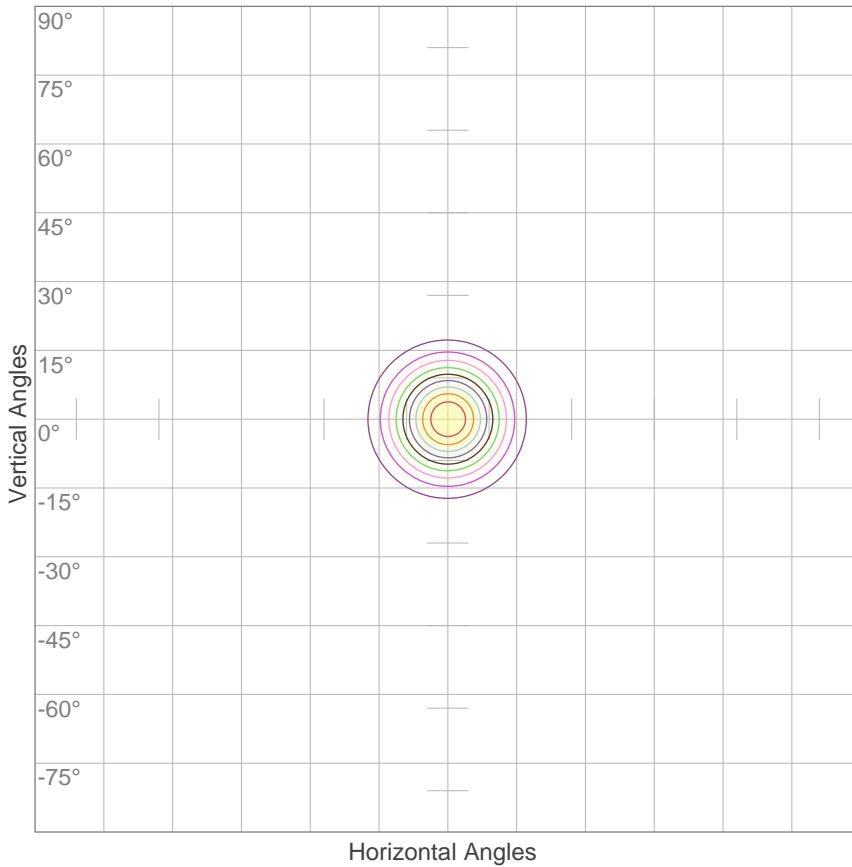
### Beam Intensities from 1-20m

m	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ft	3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6
lx	9467	2367	1052	592	379	263	193	148	117	95	78	66	56	48	42	37	33	29	26	24
fc	879.5	219.9	97.7	55	35.2	24.4	17.9	13.7	10.9	8.8	7.3	6.1	5.2	4.5	3.9	3.4	3	2.7	2.4	2.2

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
21.8°	38.4°	49.1°	99.9%	99.6%

## ISO Diagrams

### ISO Candela Diagram



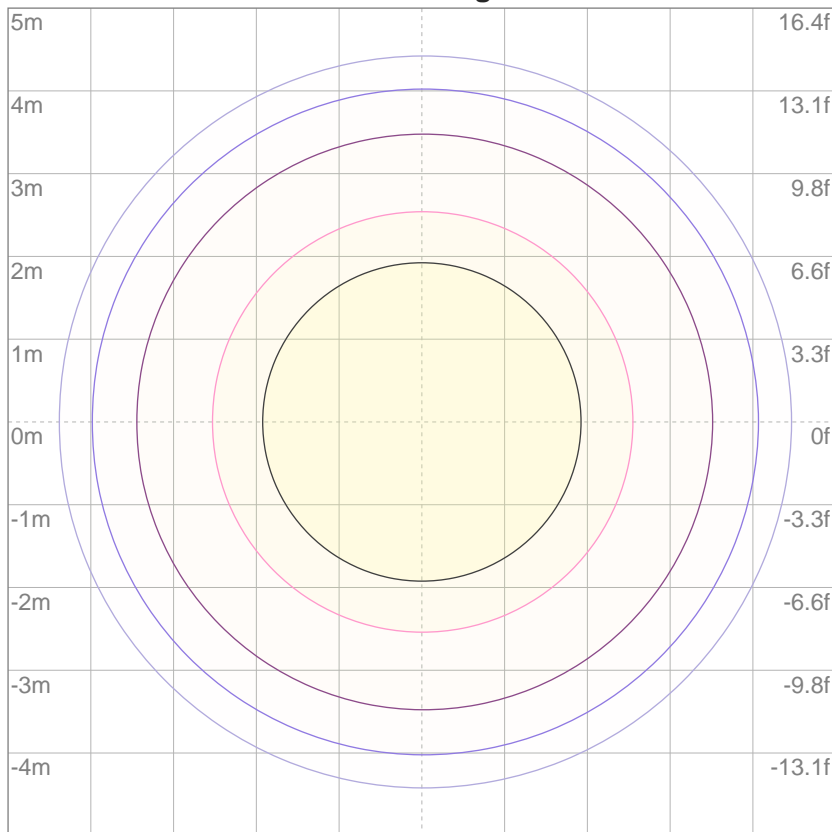
10%	947 cd
20%	1893 cd
30%	2840 cd
40%	3787 cd
50%	4733 cd
60%	5680 cd
70%	6627 cd
80%	7573 cd
90%	8520 cd

Conditions:

Number of c-planes: 2

Candela at center: 9467 cd

### ISO Lux Diagram



3%	2.84 lx
5%	4.73 lx
10%	9.47 lx
30%	28.4 lx
50%	47.3 lx

Conditions:

Number of c-planes: 2

Lux at center: 94.7 lx

*Lux distribution on a surface when lamp is mounted at 10 meters from the surface.*