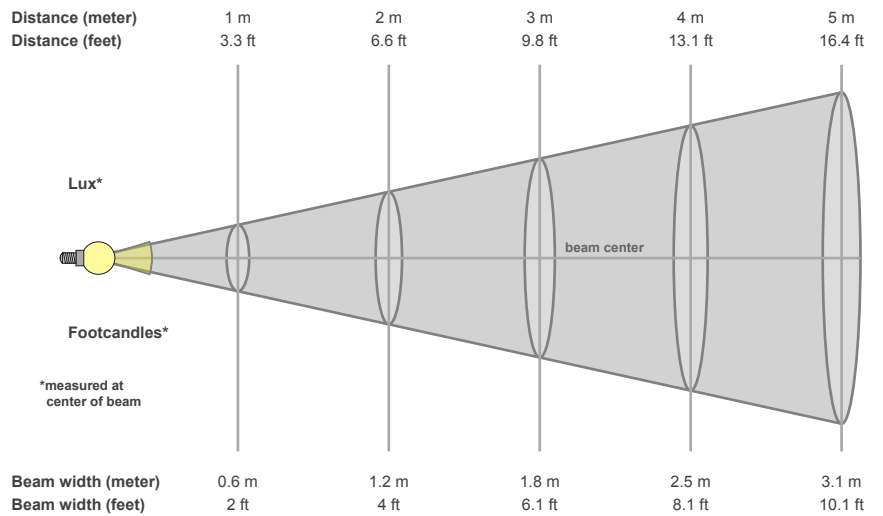
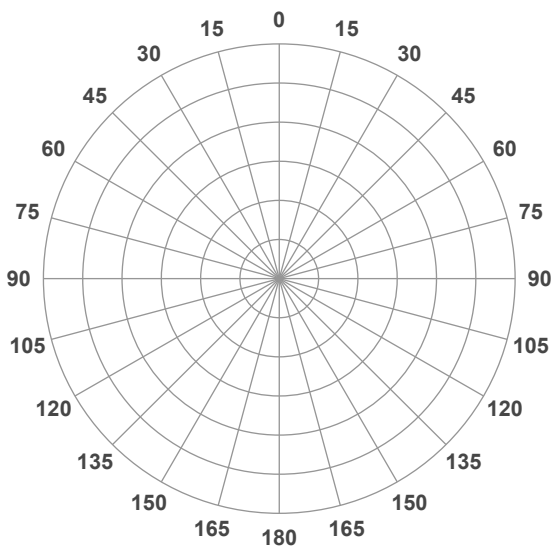
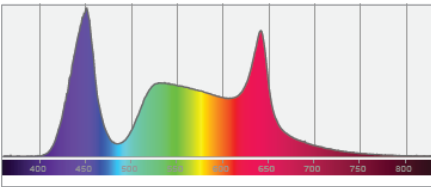
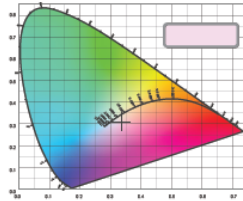




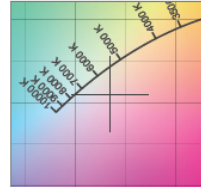
Spectral distribution



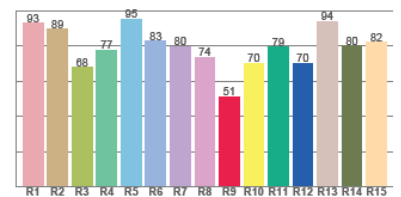
Color coordinates



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.adj.com for the latest revision/update of this report.

32 Hex Panel IP



Light Efficiency:

24 Lumen/Watt

Light Quality:

CRI: 50.6

Color Temperature:

13610 K

Output: 6141 lm

Peak: 28602 cd

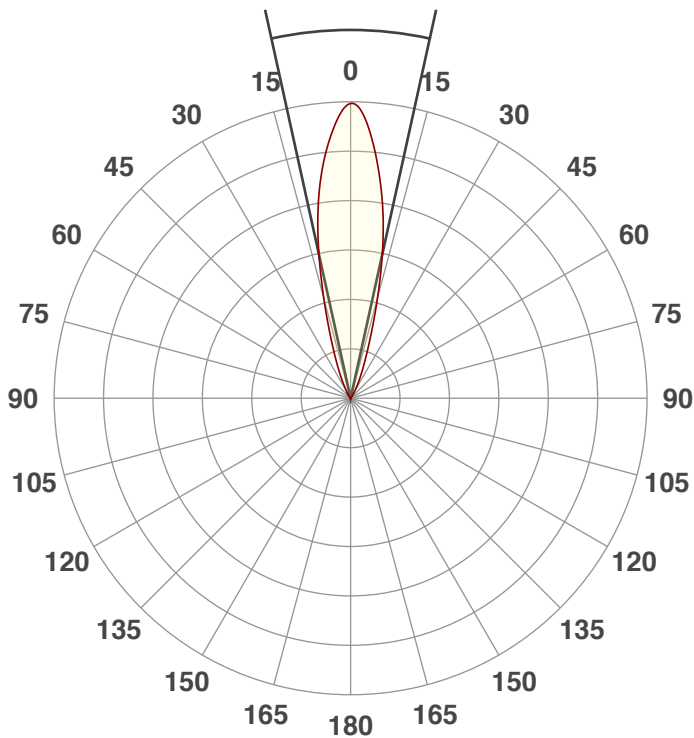
Power: 256.4 W

PF: 0.99



Beam Angle

24.8°



Test:

Full On

Date:

3/5/2019

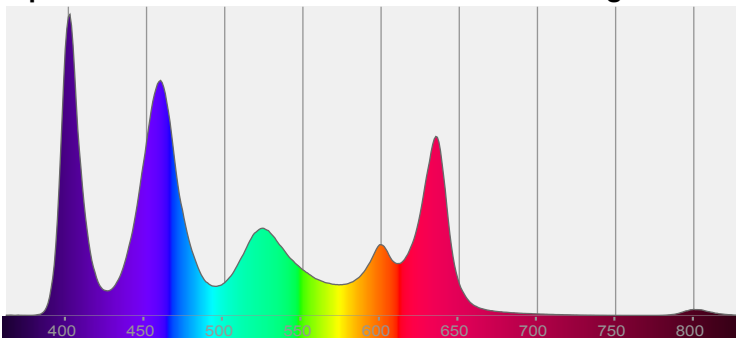
Note:



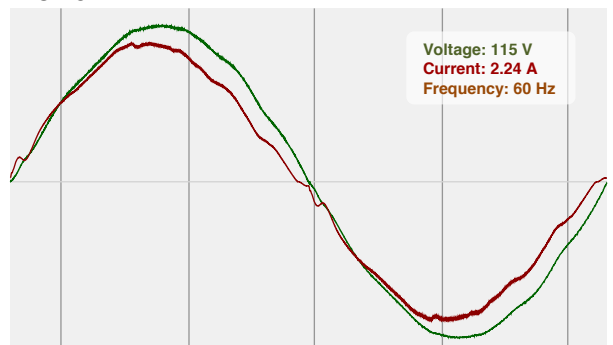
CIE 1931
x: 0.290
y: 0.240

Spectra

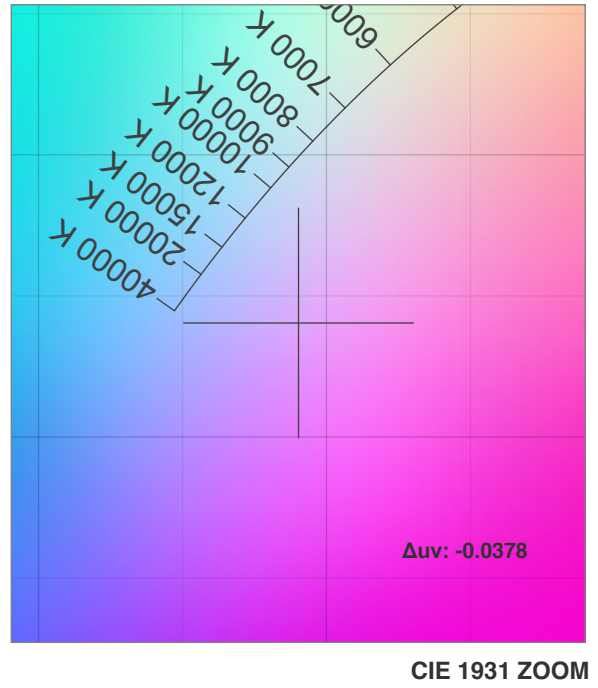
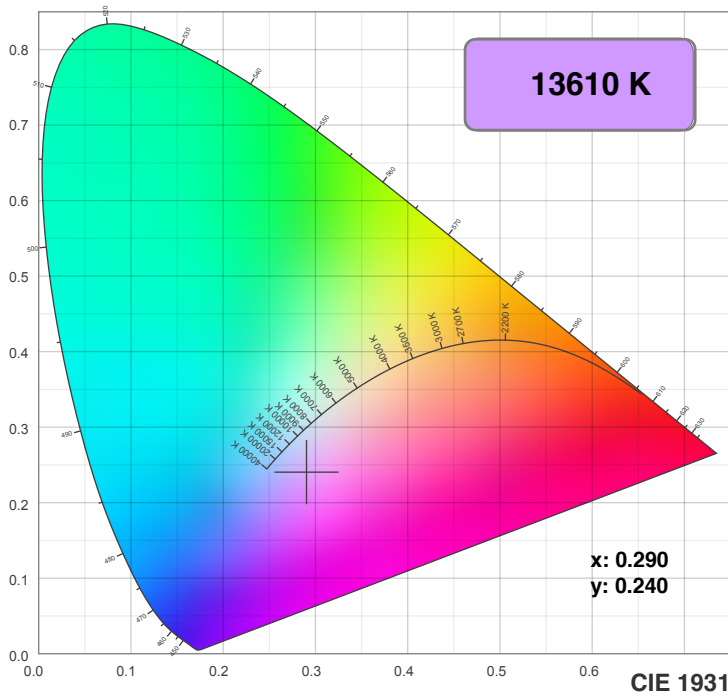
Dominant Wavelength: 360nm



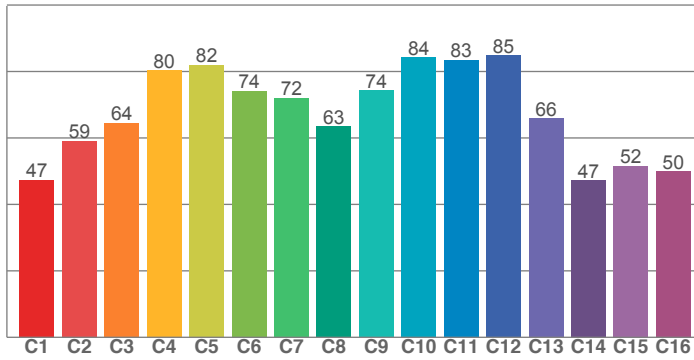
Power



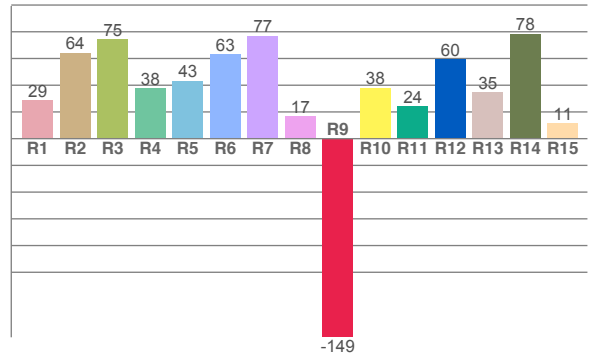
Color Details



TM30: 69.5



CRI: 50.6 (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
29.0	64.2	74.6	37.6	43.4	62.9	77.0	16.6	-148.7	38.0	24.3	59.6	34.9	78.5	11.5

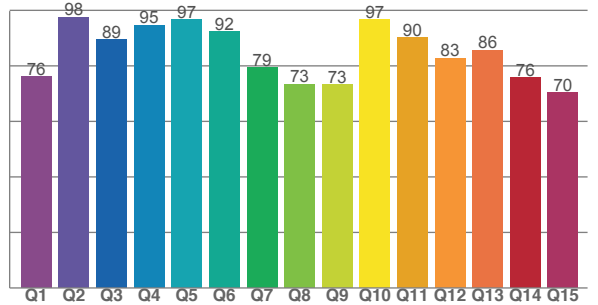
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
47.4	59.2	64.5	80.4	82.0	74.2	72.0	63.5	74.2	84.3	83.4	84.9	65.9	47.3	51.6	50.0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
76.1	97.6	89.4	94.7	96.6	92.4	79.3	73.3	73.2	96.7	90.1	82.8	85.6	75.8	70.4

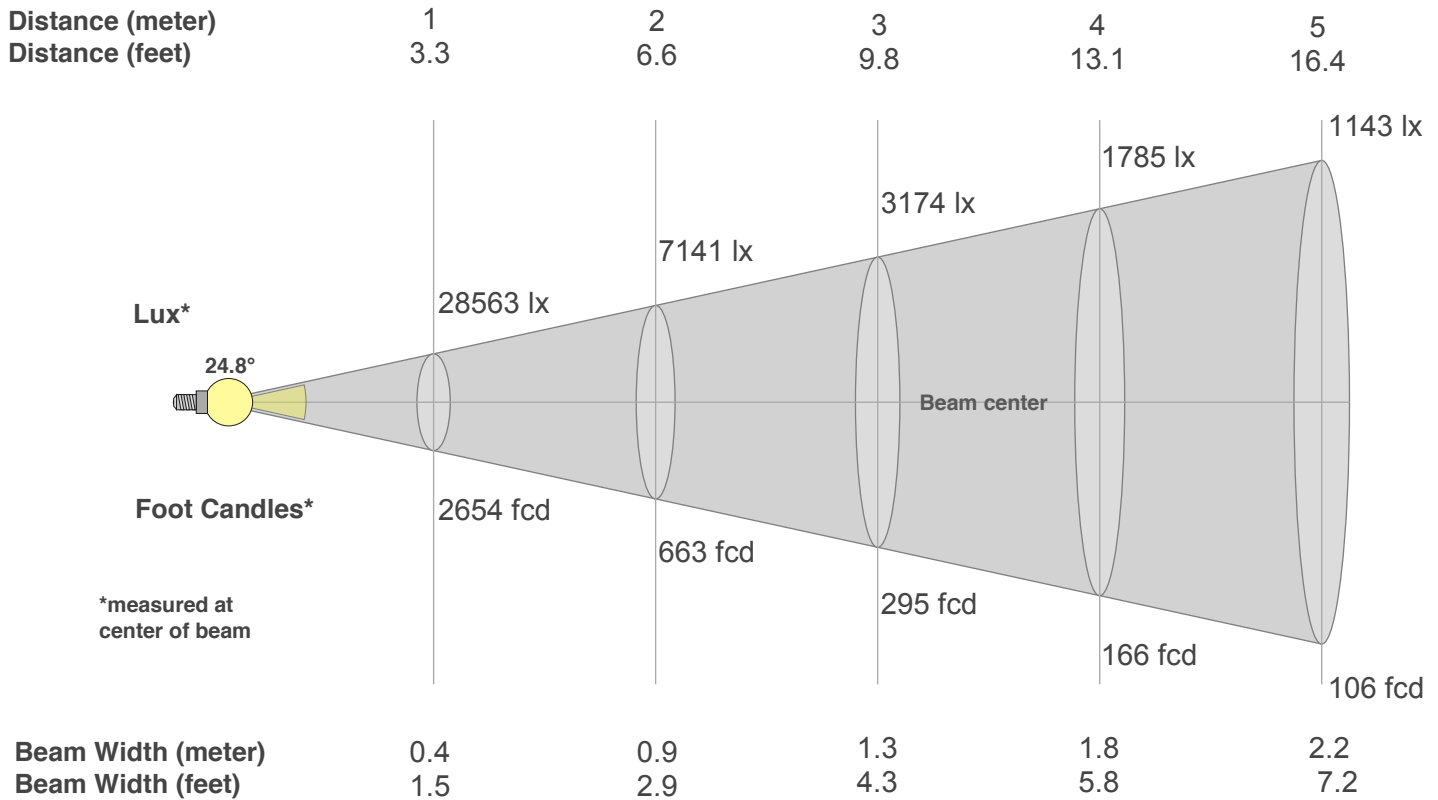
CQS: 82.3



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
13610 K	50.6	-148.7	69.5	117.2	82.3	0.290	0.240	0.219	0.272	-0.0378

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	28563	7141	3174	1785	1143	793	583	446	353	286	236	198	169	146	127	112	99	88	79	71
fcd	2653.6	663.4	294.8	165.9	106.1	73.7	54.2	41.5	32.8	26.5	21.9	18.4	15.7	13.5	11.8	10.4	9.2	8.2	7.4	6.6

Intensities in 0° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
28.6K	27.7K	25.9K	23.7K	21.2K	18.3K	15.0K	11.6K	8.7K	6.3K	4.6K	3.3K	2.4K	1.7K	1.2K	0.8K	0.5K	0.3K	0.2K	0.1K
100%	97%	91%	83%	74%	64%	53%	41%	30%	22%	16%	12%	8%	6%	4%	3%	2%	1%	1%	0%

Intensities in 90° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
28.6K	27.7K	25.9K	23.7K	21.2K	18.3K	15.0K	11.6K	8.7K	6.3K	4.6K	3.3K	2.4K	1.7K	1.2K	0.8K	0.5K	0.3K	0.2K	0.1K
100%	97%	91%	83%	74%	64%	53%	41%	30%	22%	16%	12%	8%	6%	4%	3%	2%	1%	1%	0%

Intensities in 180° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
28.6K	28.0K	26.1K	23.6K	20.9K	18.1K	15.0K	11.7K	8.7K	6.2K	4.5K	3.3K	2.4K	1.7K	1.2K	0.8K	0.5K	0.3K	0.2K	0.2K
100%	98%	91%	83%	73%	63%	52%	41%	30%	22%	16%	12%	9%	6%	4%	3%	2%	1%	1%	1%

Intensities in 270° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
28.6K	28.0K	26.1K	23.6K	20.9K	18.1K	15.0K	11.7K	8.7K	6.2K	4.5K	3.3K	2.4K	1.7K	1.2K	0.8K	0.5K	0.3K	0.2K	0.2K
100%	98%	91%	83%	73%	63%	52%	41%	30%	22%	16%	12%	9%	6%	4%	3%	2%	1%	1%	1%

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
24.8°	46°	60.8°	100.0%	99.8%

32 Hex Panel IP



Light Efficiency:

26 Lumen/Watt

Light Quality:

CRI: 52.3

Color Temperature:

13810 K

Output: 6541 lm

Peak: 31732 cd

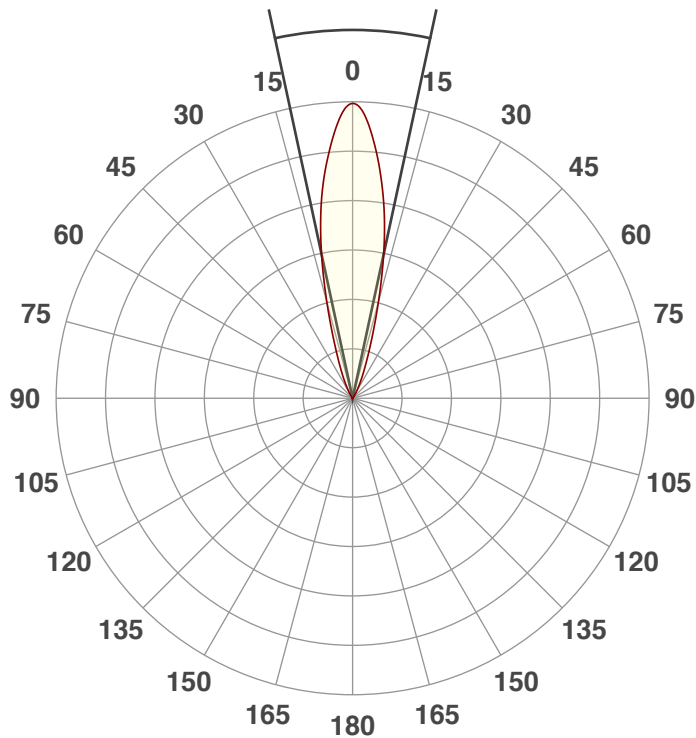
Power: 249.1 W

PF: 0.99



Beam Angle

24.3°



Test:

Full On

Date:

3/5/2019

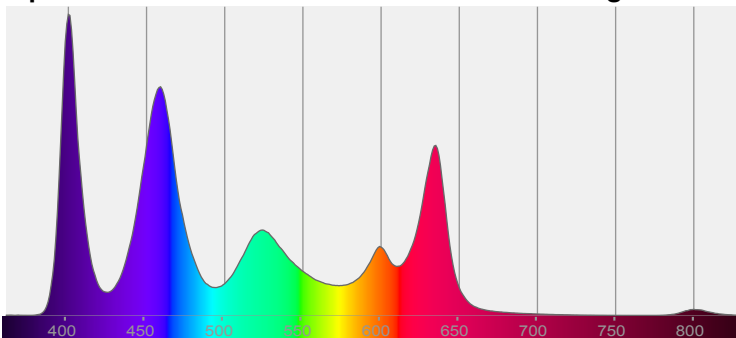
Note:



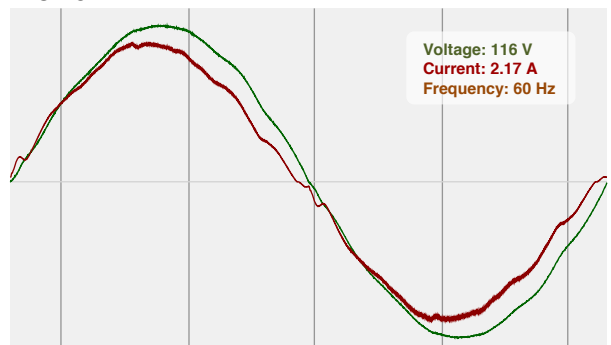
CIE 1931
x: 0.289
y: 0.241

Spectra

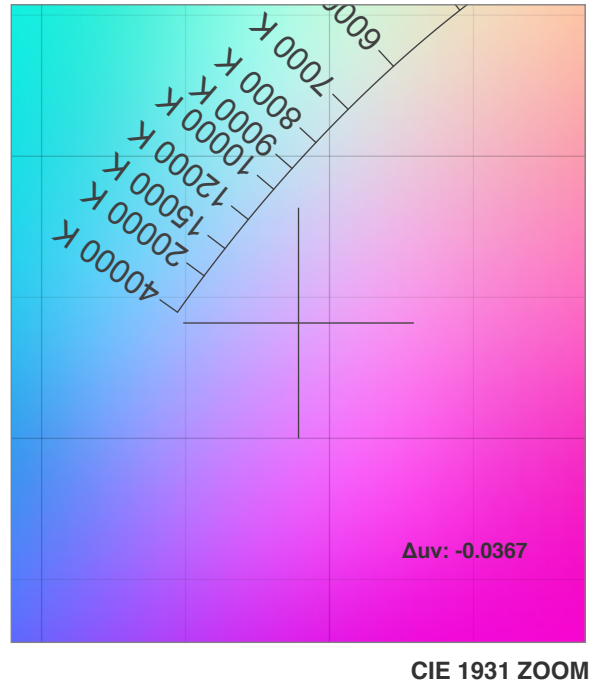
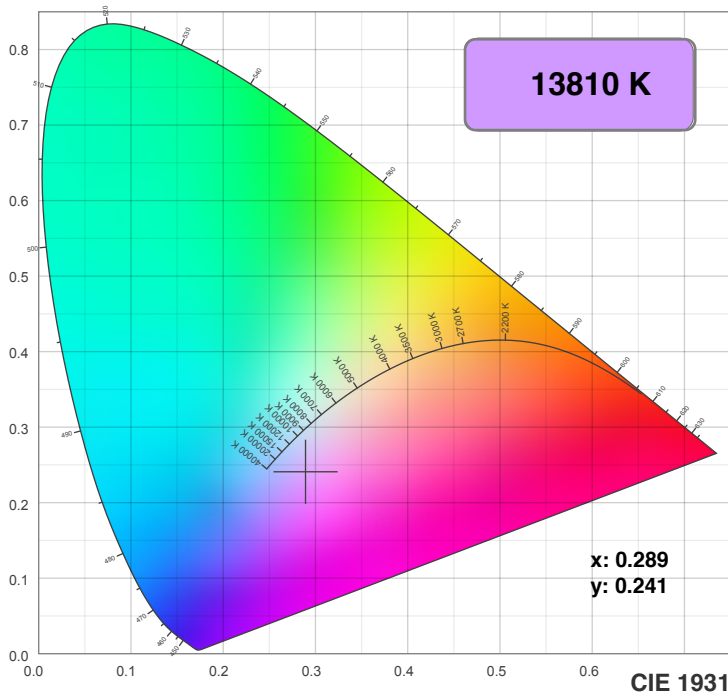
Dominant Wavelength: 360nm



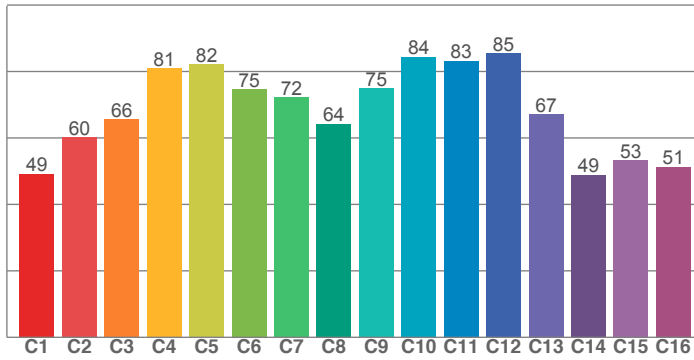
Power



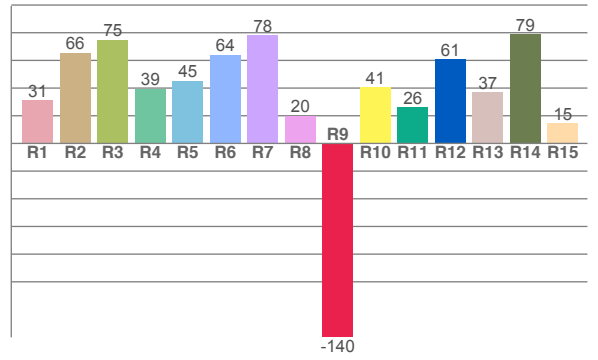
Color Details



TM30: 70.2



CRI: 52.3 (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
31.1	65.5	75.0	39.4	45.3	64.1	78.0	19.9	-140.1	40.6	26.1	60.8	36.9	78.9	14.6

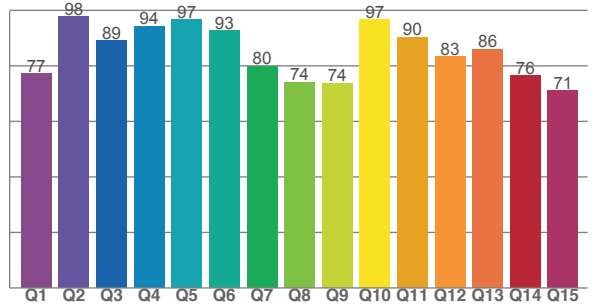
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
49.1	60.2	65.6	80.9	82.1	74.6	72.1	64.2	74.8	84.3	83.2	85.5	67.2	48.8	53.3	51.2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
77.1	97.7	89.2	94.3	96.6	92.6	79.9	74.1	73.8	96.6	90.4	83.3	86.0	76.4	71.2

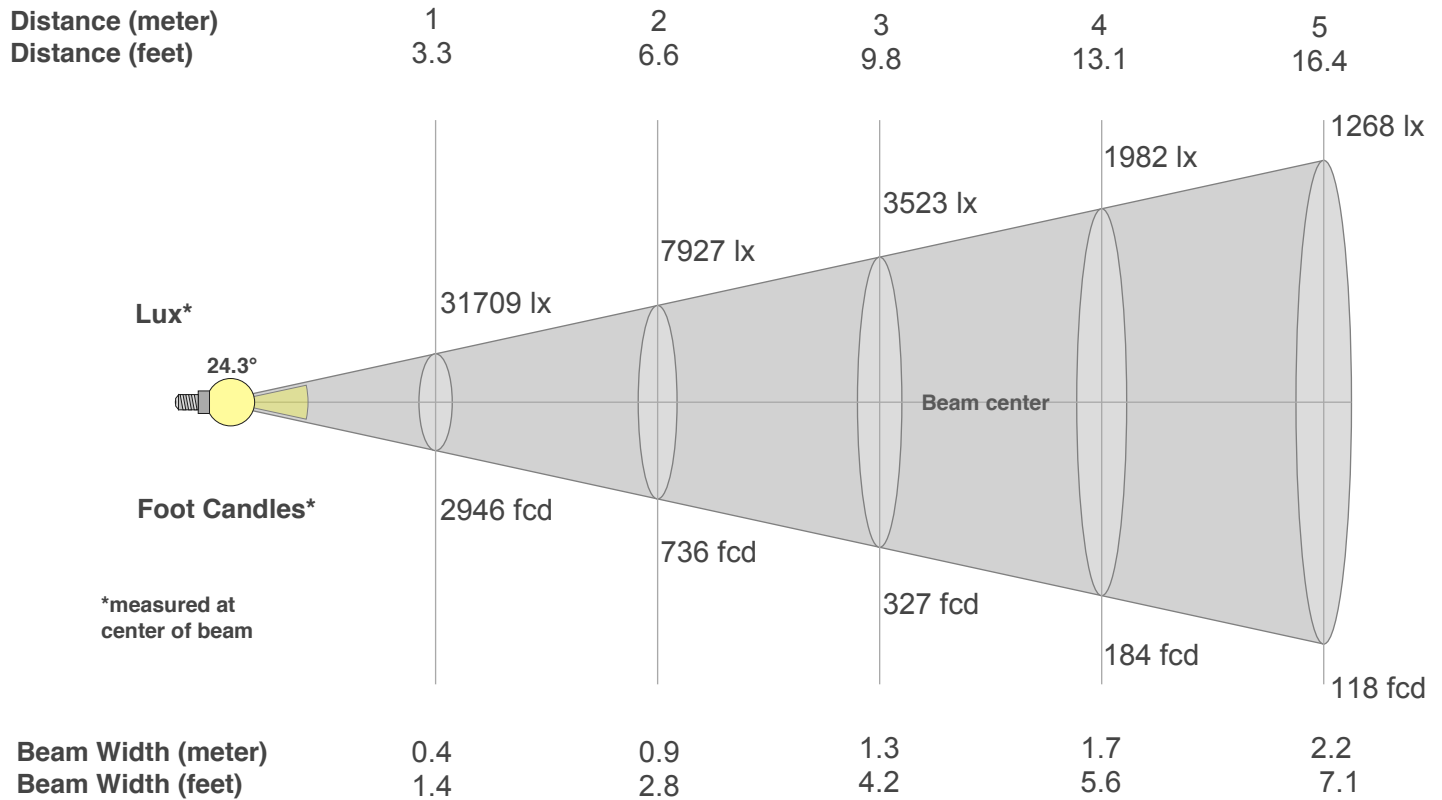
CQS: 82.7



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
13810 K	52.3	-140.1	70.2	116.8	82.7	0.289	0.241	0.218	0.272	-0.0367

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	31709	7927	3523	1982	1268	881	647	495	391	317	262	220	188	162	141	124	110	98	88	79
fcd	2945.9	736.5	327.3	184.1	117.8	81.8	60.1	46	36.4	29.5	24.3	20.5	17.4	15	13.1	11.5	10.2	9.1	8.2	7.4

Intensities in 0° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
31.7K	30.8K	28.6K	25.9K	23.0K	19.8K	16.2K	12.5K	9.1K	6.5K	4.7K	3.4K	2.5K	1.7K	1.2K	0.8K	0.5K	0.3K	0.2K	0.1K
100%	97%	90%	82%	73%	62%	51%	39%	29%	21%	15%	11%	8%	5%	4%	2%	2%	1%	1%	0%

Intensities in 90° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
31.7K	30.8K	28.6K	25.9K	23.0K	19.8K	16.2K	12.5K	9.1K	6.5K	4.7K	3.4K	2.5K	1.7K	1.2K	0.8K	0.5K	0.3K	0.2K	0.1K
100%	97%	90%	82%	73%	62%	51%	39%	29%	21%	15%	11%	8%	5%	4%	2%	2%	1%	1%	0%

Intensities in 180° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
31.7K	30.9K	28.7K	25.9K	22.9K	19.7K	16.2K	12.5K	9.2K	6.6K	4.7K	3.4K	2.5K	1.8K	1.2K	0.8K	0.5K	0.3K	0.2K	0.1K
100%	97%	90%	82%	72%	62%	51%	39%	29%	21%	15%	11%	8%	6%	4%	2%	2%	1%	1%	0%

Intensities in 270° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
31.7K	30.9K	28.7K	25.9K	22.9K	19.7K	16.2K	12.5K	9.2K	6.6K	4.7K	3.4K	2.5K	1.8K	1.2K	0.8K	0.5K	0.3K	0.2K	0.1K
100%	97%	90%	82%	72%	62%	51%	39%	29%	21%	15%	11%	8%	6%	4%	2%	2%	1%	1%	0%

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
24.3°	44.9°	59.8°	99.9%	99.8%

32 Hex Panel IP



Light Efficiency:

31 Lumen/Watt

Light Quality:

CRI: 51.2

Color Temperature:

10108 K

Output: 6425 lm

Peak: 33734 cd

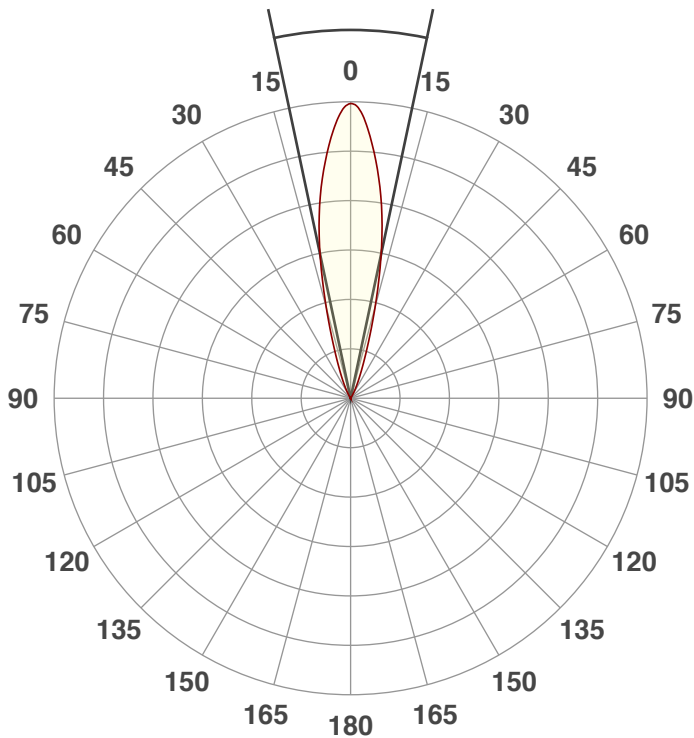
Power: 207.3 W

PF: 0.99



Beam Angle

23.9°



Test:

Full On No UV

Date:

3/5/2019

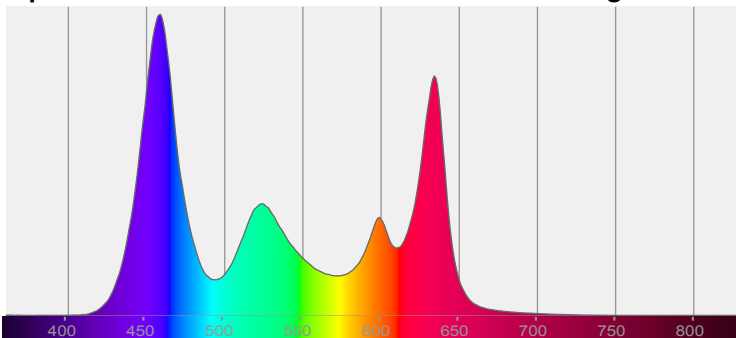
Note:



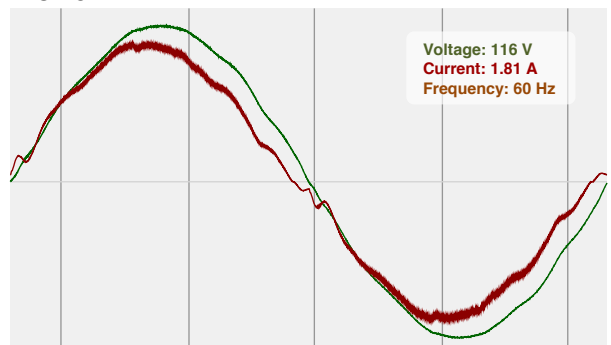
CIE 1931
x: 0.300
y: 0.250

Spectra

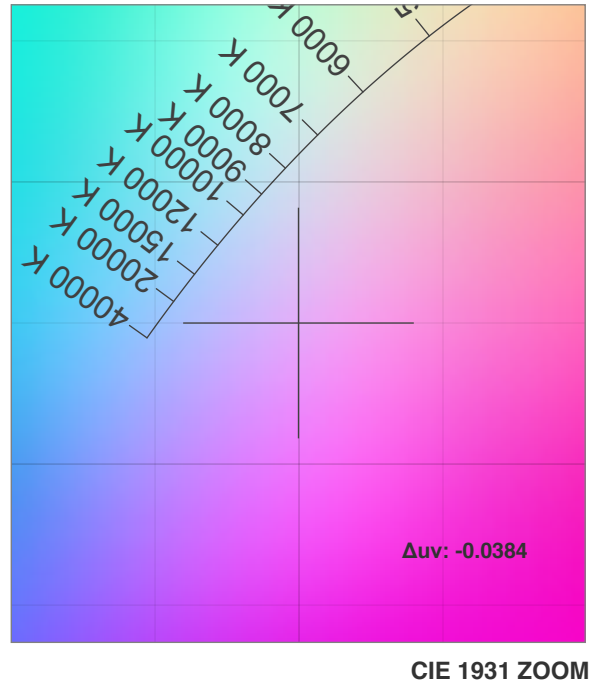
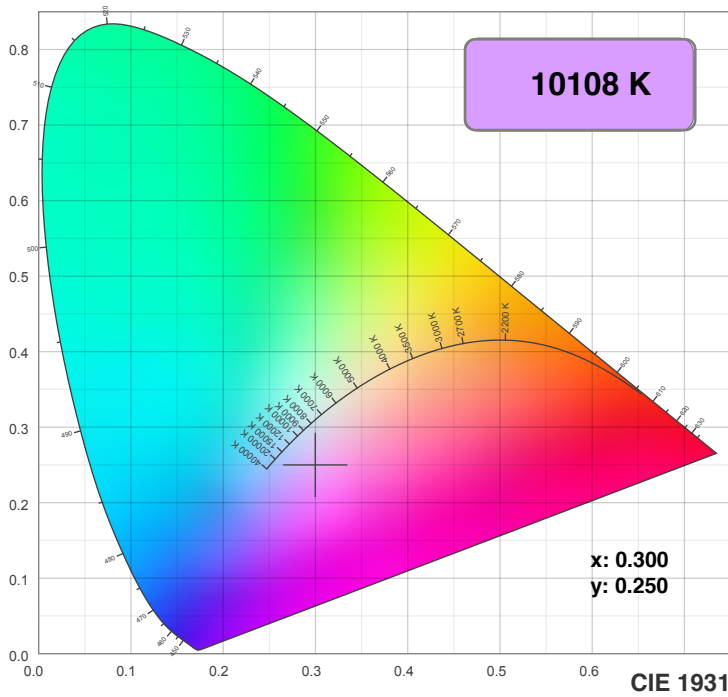
Dominant Wavelength: 360nm



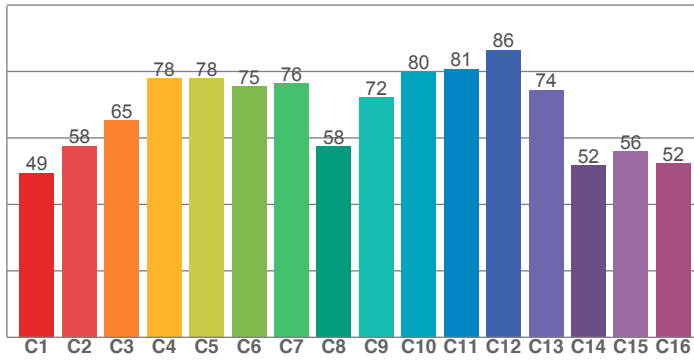
Power



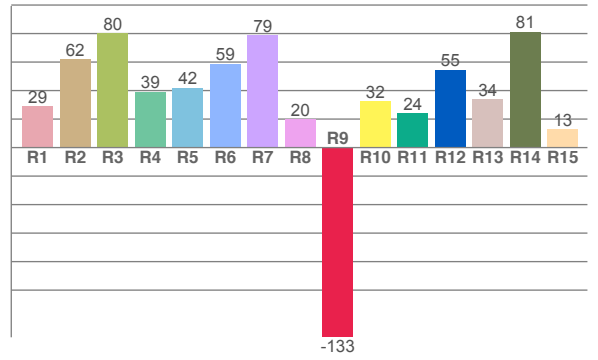
Color Details



TM30: 69.1



CRI: 51.2 (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
28.8	62.0	80.1	39.1	41.9	58.9	78.7	19.8	-133.1	32.3	24.0	54.6	33.9	81.3	13.1

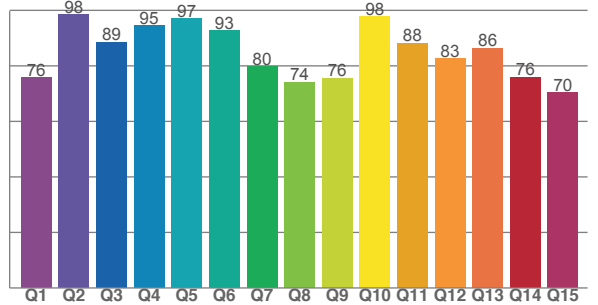
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
49.4	57.6	65.2	77.9	78.0	75.5	76.3	57.5	72.2	79.8	80.7	86.5	74.5	51.7	56.0	52.3

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
75.7	98.4	88.5	94.6	97.1	92.7	79.6	74.1	75.6	97.8	88.1	82.6	86.4	75.9	70.4

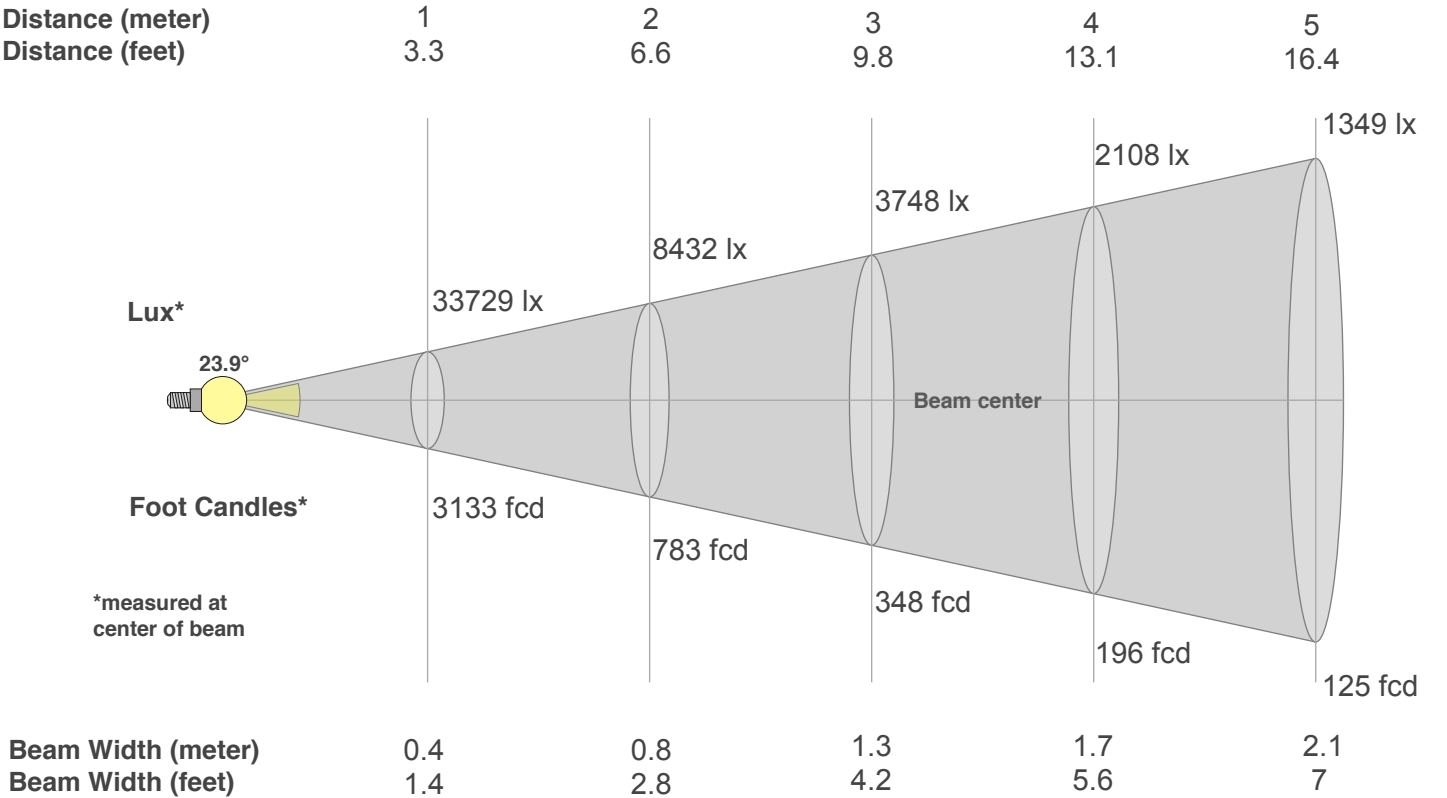
CQS: 82.5



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
10108 K	51.2	-133.1	69.1	116.4	82.5	0.300	0.250	0.222	0.278	-0.0384

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	33729	8432	3748	2108	1349	937	688	527	416	337	279	234	200	172	150	132	117	104	93	84
fcd	3133.5	783.4	348.2	195.8	125.3	87	63.9	49	38.7	31.3	25.9	21.8	18.5	16	13.9	12.2	10.8	9.7	8.7	7.8

Intensities in 0° C-plane																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
33.7K	32.6K	30.3K	27.4K	24.3K	20.7K	16.8K	12.7K	9.1K	6.2K	4.3K	3.0K	2.1K	1.4K	0.9K	0.5K	0.3K	0.2K	0.1K	0.0K
100%	97%	90%	81%	72%	61%	50%	38%	27%	19%	13%	9%	6%	4%	3%	1%	1%	0%	0%	0%

Intensities in 90° C-plane																				
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	
33.7K	32.6K	30.3K	27.4K	24.3K	20.7K	16.8K	12.7K	9.1K	6.2K	4.3K	3.0K	2.1K	1.4K	0.9K	0.5K	0.3K	0.2K	0.1K	0.0K	
100%	97%	90%	81%	72%	61%	50%	38%	27%	19%	13%	9%	6%	4%	3%	1%	1%	0%	0%	0%	

Intensities in 180° C-plane																				
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	
33.7K	32.8K	30.4K	27.4K	24.2K	20.7K	16.8K	12.8K	9.2K	6.3K	4.4K	3.0K	2.1K	1.4K	0.9K	0.5K	0.3K	0.1K	0.1K	0.0K	
100%	97%	90%	81%	72%	61%	50%	38%	27%	19%	13%	9%	6%	4%	3%	2%	1%	0%	0%	0%	

Intensities in 270° C-plane																				
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	
33.7K	32.8K	30.4K	27.4K	24.2K	20.7K	16.8K	12.8K	9.2K	6.3K	4.4K	3.0K	2.1K	1.4K	0.9K	0.5K	0.3K	0.1K	0.1K	0.0K	
100%	97%	90%	81%	72%	61%	50%	38%	27%	19%	13%	9%	6%	4%	3%	2%	1%	0%	0%	0%	

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
23.9°	42.8°	56.3°	100.0%	99.9%

32 Hex Panel IP



Light Efficiency:

32 Lumen/Watt

Light Quality:

CRI: 53.3

Color Temperature:

11988 K

Output: 6364 lm

Peak: 30886 cd

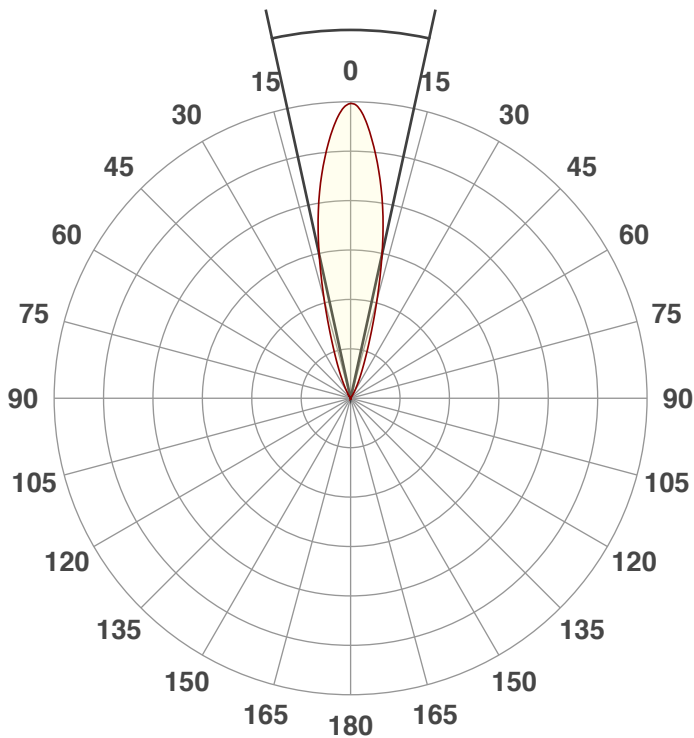
Power: 201.9 W

PF: 0.99



Beam Angle

24.6°



Test:

Full On No UV

Date:

3/5/2019

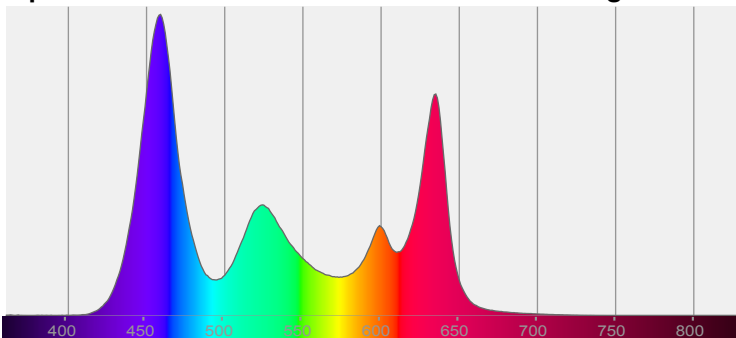
Note:



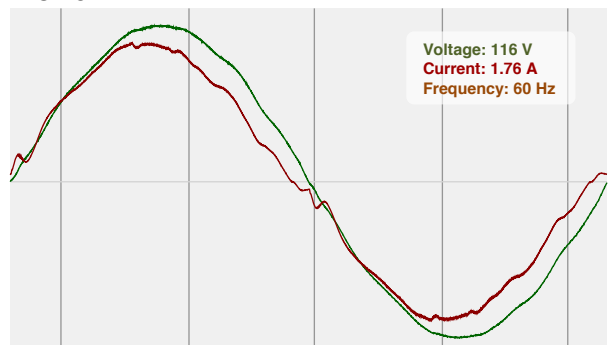
CIE 1931
x: 0.292
y: 0.247

Spectra

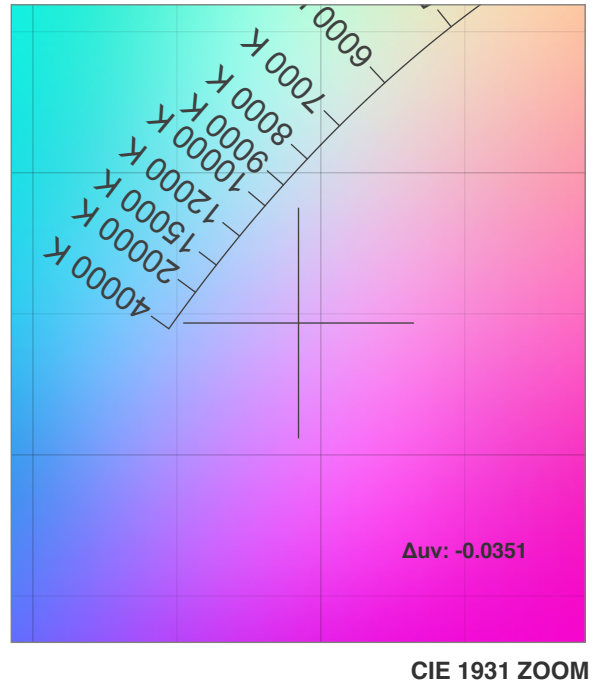
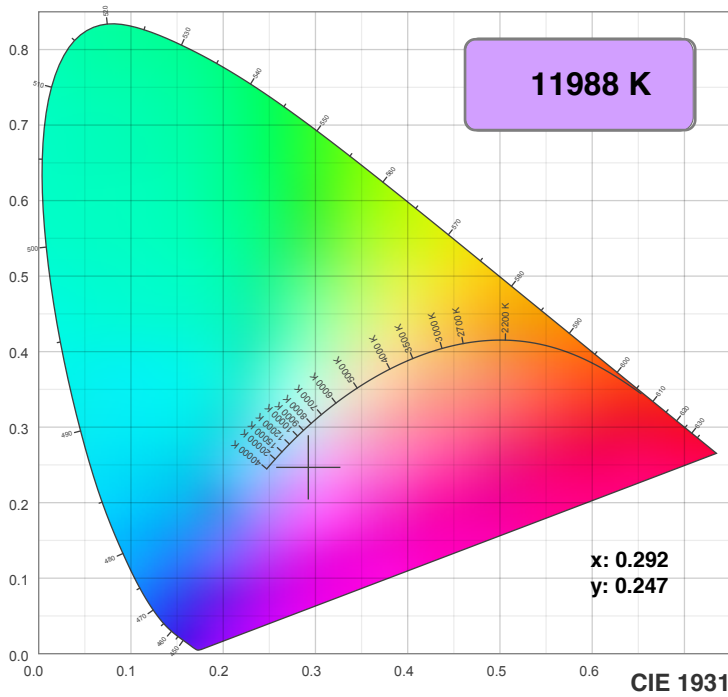
Dominant Wavelength: 360nm



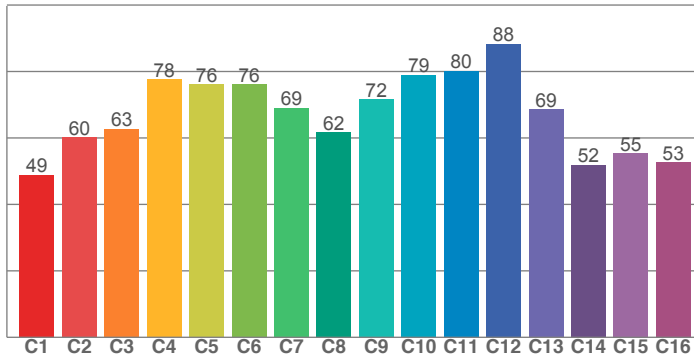
Power



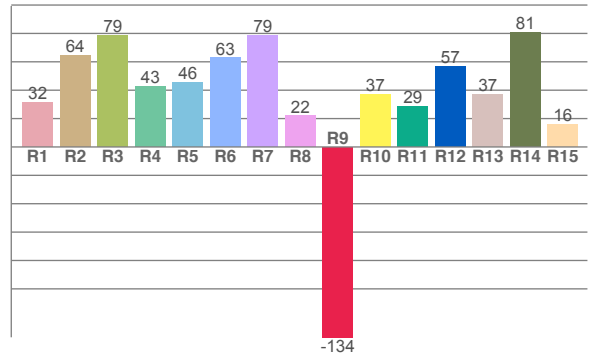
Color Details



TM30: 68.8



CRI: 53.3 (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
31.6	64.3	78.9	42.5	45.8	62.7	78.6	21.9	-134.1	37.2	28.8	57.0	36.8	81.0	15.7

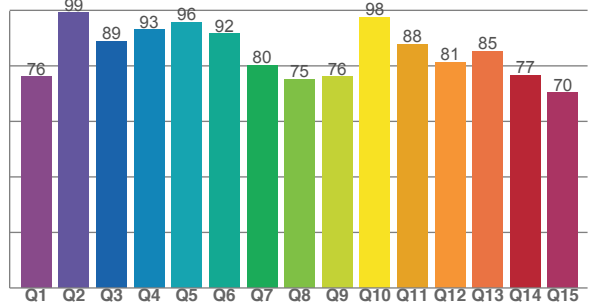
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
48.9	60.1	62.7	77.5	76.1	76.1	69.0	61.7	71.6	79.0	80.2	88.4	68.6	51.9	55.4	52.7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
76.1	99.1	88.9	93.0	95.8	91.6	80.3	75.2	76.0	97.5	87.8	81.4	85.4	76.7	70.3

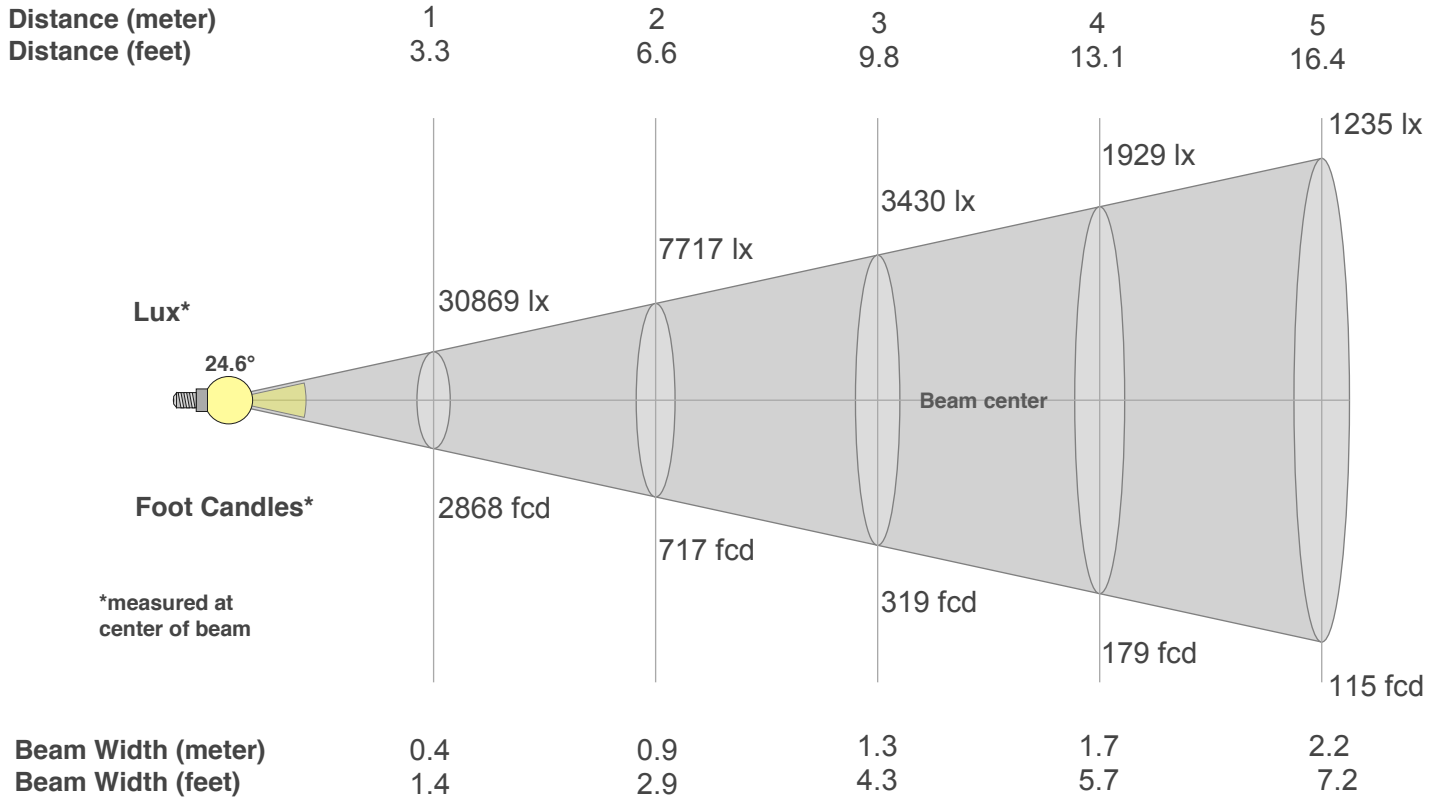
CQS: 82.6



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
11988 K	53.3	-134.1	68.8	114.4	82.6	0.292	0.247	0.217	0.275	-0.0351

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	30869	7717	3430	1929	1235	857	630	482	381	309	255	214	183	157	137	121	107	95	86	77
fcd	2867.9	717	318.7	179.2	114.7	79.7	58.5	44.8	35.4	28.7	23.7	19.9	17	14.6	12.7	11.2	9.9	8.9	7.9	7.2

Intensities in 0° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
30.9K	30.0K	28.0K	25.5K	22.7K	19.5K	16.0K	12.4K	9.1K	6.5K	4.7K	3.3K	2.4K	1.6K	1.1K	0.6K	0.4K	0.2K	0.1K	0.1K
100%	97%	91%	83%	73%	63%	52%	40%	30%	21%	15%	11%	8%	5%	3%	2%	1%	1%	0%	0%

Intensities in 90° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
30.9K	30.0K	28.0K	25.5K	22.7K	19.5K	16.0K	12.4K	9.1K	6.5K	4.7K	3.3K	2.4K	1.6K	1.1K	0.6K	0.4K	0.2K	0.1K	0.1K
100%	97%	91%	83%	73%	63%	52%	40%	30%	21%	15%	11%	8%	5%	3%	2%	1%	1%	0%	0%

Intensities in 180° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
30.9K	30.1K	28.1K	25.5K	22.6K	19.5K	16.0K	12.4K	9.2K	6.5K	4.7K	3.4K	2.4K	1.7K	1.1K	0.7K	0.4K	0.2K	0.1K	0.1K
100%	98%	91%	83%	73%	63%	52%	40%	30%	21%	15%	11%	8%	5%	4%	2%	1%	1%	0%	0%

Intensities in 270° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
30.9K	30.1K	28.1K	25.5K	22.6K	19.5K	16.0K	12.4K	9.2K	6.5K	4.7K	3.4K	2.4K	1.7K	1.1K	0.7K	0.4K	0.2K	0.1K	0.1K
100%	98%	91%	83%	73%	63%	52%	40%	30%	21%	15%	11%	8%	5%	4%	2%	1%	1%	0%	0%

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
24.6°	45°	58.8°	100.0%	99.9%

32 Hex Panel IP



Light Efficiency:

33 Lumen/Watt

Dominant Wavelength:

622 nm

Output:

1330 lm

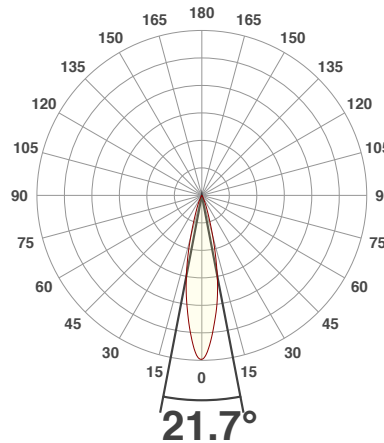
Power:

40.2 W

Peak:

8182 cd

Beam Angle



Test:

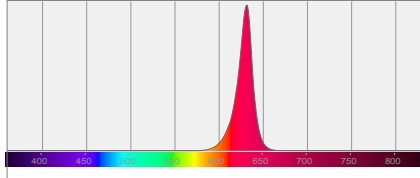
Red

Date:

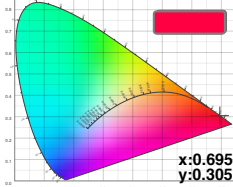
3/5/2019

Note:

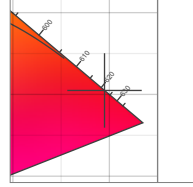
Spectral Distribution



Color Coordinates



Zoom Color Point



Distance (meter)

1

Distance (feet)

3.3

3

9.8

5

16.4

7

22.9

10

32.8

Lux*

21.7°

Foot Candles*

*measured at
center of beam

Beam Width (meter)

Beam Width (feet)

0.4

1.3

1.2

3.8

1.9

6.3

2.7

8.8

3.8

12.6

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
21.7°	39.5°	53.2°	100.0%	100.0%

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	8164	2041	907	510	327	227	167	128	101	82	67	57	48	42	36	32	28	25	23	20
fcd	758.5	189.6	84.3	47.4	30.3	21.1	15.5	11.9	9.4	7.6	6.3	5.3	4.5	3.9	3.4	3	2.6	2.3	2.1	1.9

32 Hex Panel IP



Light Efficiency:

43 Lumen/Watt

Dominant Wavelength:

529 nm

Output:

2122 lm

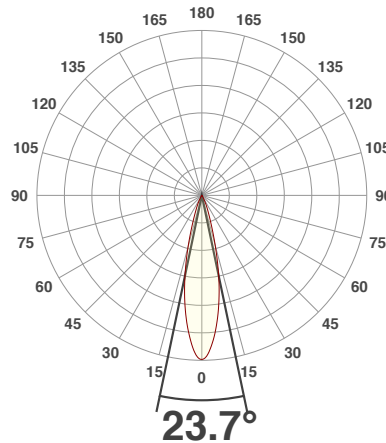
Power:

49.3 W

Peak:

11044 cd

Beam Angle



Test:

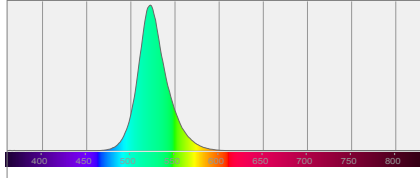
Green

Date:

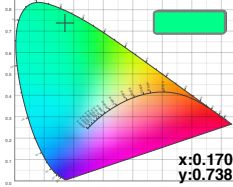
3/5/2019

Note:

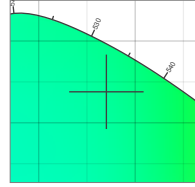
Spectral Distribution



Color Coordinates



Zoom Color Point



Distance (meter)

1

Distance (feet)

3.3

3

9.8

5

16.4

7

22.9

10

32.8

Lux*

23.7°

Foot Candles*

*measured at
center of beam

Beam Width (meter)

Beam Width (feet)

0.4

1.4

1.3

4.1

2.1

6.9

2.9

9.6

4.2

13.8

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
23.7°	43.1°	57.4°	100.0%	100.0%

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	11040	2760	1227	690	442	307	225	172	136	110	91	77	65	56	49	43	38	34	31	28
fcd	1025.6	256.4	114	64.1	41	28.5	20.9	16	12.7	10.3	8.5	7.1	6.1	5.2	4.6	4	3.5	3.2	2.8	2.6

32 Hex Panel IP



Light Efficiency:

8 Lumen/Watt

Dominant Wavelength:

462 nm

Output:

439 lm

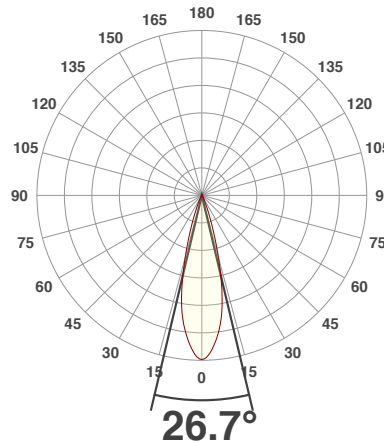
Power:

52.9 W

Peak:

2019 cd

Beam Angle



Test:

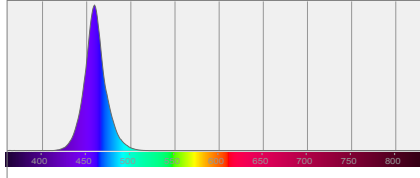
Blue

Date:

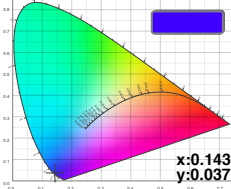
3/5/2019

Note:

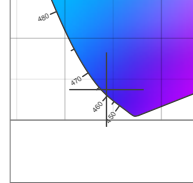
Spectral Distribution



Color Coordinates



Zoom Color Point



Distance (meter)

1

Distance (feet)

3.3

3

9.8

5

16.4

7

22.9

10

32.8

Lux*

26.7°

2015 lx

224 lx

81 lx

41 lx

20 lx

Foot Candles*

187 fcd

21 fcd

7 fcd

4 fcd

2 fcd

*measured at
center of beam

Beam Width (meter)

0.5

Beam Width (feet)

1.6

1.4

4.6

2.4

7.8

3.3

10.9

4.7

15.6

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
26.7°	43.5°	55.6°	99.8%	99.3%

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	2015	504	224	126	81	56	41	31	25	20	17	14	12	10	9	8	7	6	6	5
fcd	187.2	46.8	20.8	11.7	7.5	5.2	3.8	2.9	2.3	1.9	1.5	1.3	1.1	1	0.8	0.7	0.6	0.6	0.5	0.5

32 Hex Panel IP



Light Efficiency:

26 Lumen/Watt

Light Quality:

CRI: -30.4

Color Temperature:

1635 K

Output: 1121 lm

Peak: 5215 cd

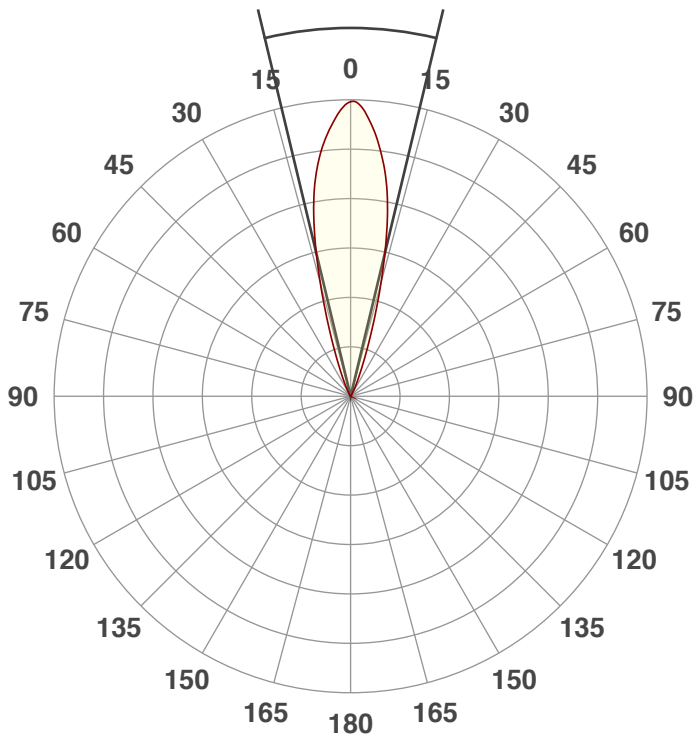
Power: 42.8 W

PF: 0.89



Beam Angle

26.9°



Test:

Amber

Date:

3/6/2019

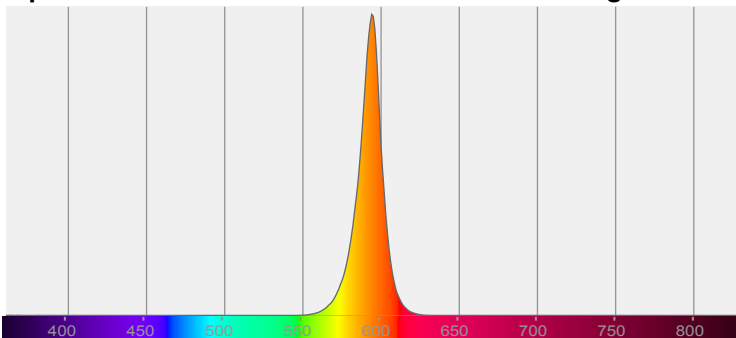
Note:



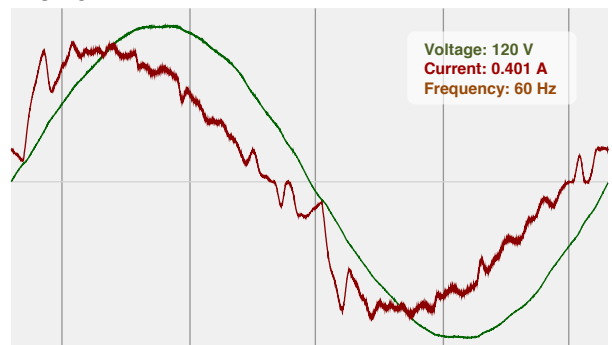
CIE 1931
x: 0.583
y: 0.417

Spectra

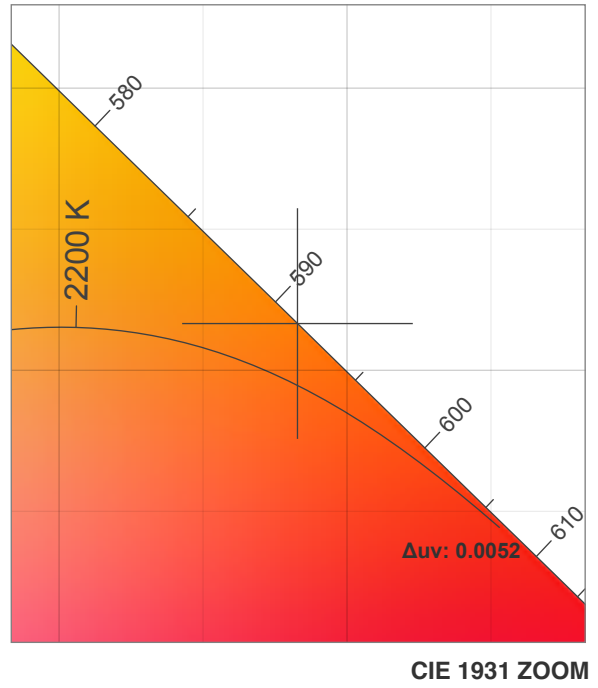
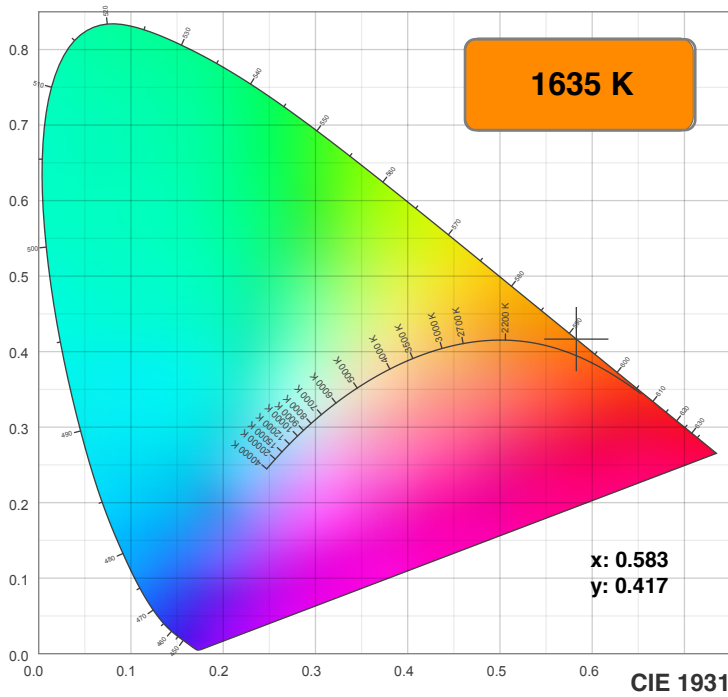
Dominant Wavelength: 591nm



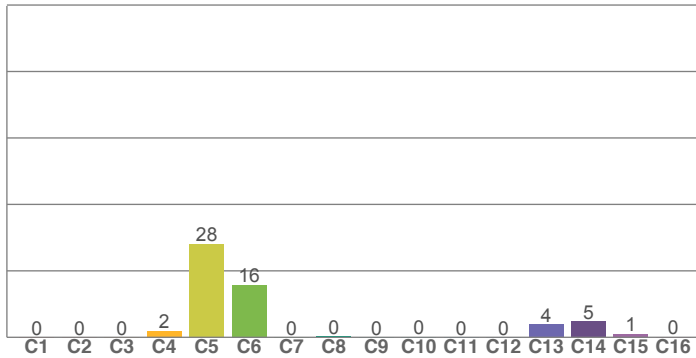
Power



Color Details



TM30: 0.1



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
-46.7	46.7	12.6	-79.7	-52.8	31.7	-10.7	-143.9	-423.4	20.7	-110.9	-25.6	-26.3	42.0	-78.9

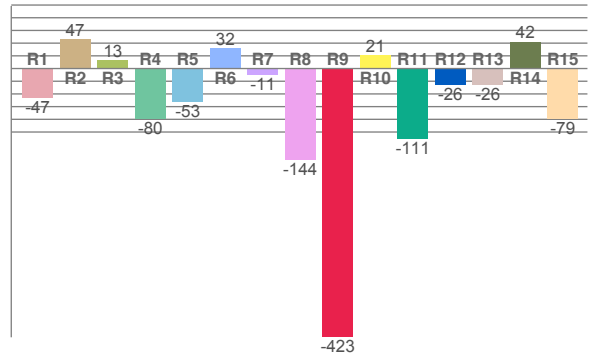
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0.0	0.0	0.0	1.9	28.1	15.8	0.0	0.3	0.0	0.0	0.0	0.0	3.9	4.8	1.0	0.1

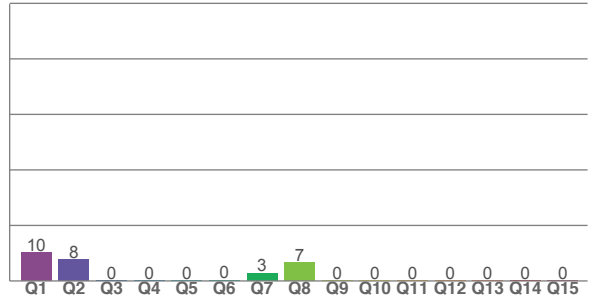
CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
10.3	7.8	0.0	0.0	0.1	0.3	2.8	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1

CRI: -30.4 (R1-R8)



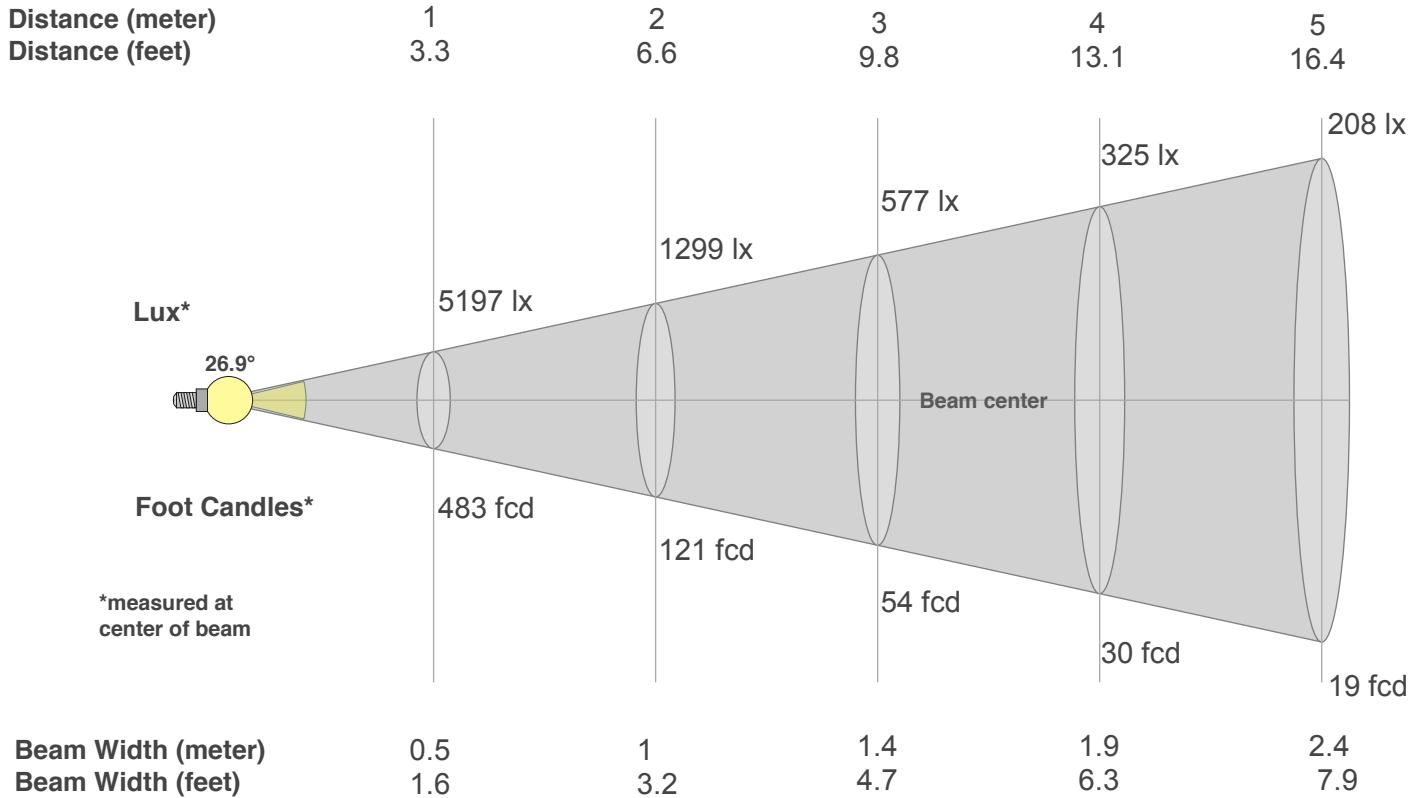
CQS: 0.0



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	Δuv
1635 K	-30.4	-423.4	0.1	0.0	0.0	0.583	0.417	0.341	0.366	0.0052

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	5197	1299	577	325	208	144	106	81	64	52	43	36	31	27	23	20	18	16	14	13
fcd	482.9	120.7	53.7	30.2	19.3	13.4	9.9	7.5	6	4.8	4	3.4	2.9	2.5	2.1	1.9	1.7	1.5	1.3	1.2

Intensities in 0° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
5197	5064	4808	4510	4149	3702	3107	2420	1727	1155	738	462	289	183	117	74	48	35	23	17
100%	97%	93%	87%	80%	71%	60%	47%	33%	22%	14%	9%	6%	4%	2%	1%	1%	1%	0%	0%

Intensities in 90° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
5197	5064	4808	4510	4149	3702	3107	2420	1727	1155	738	462	289	183	117	74	48	35	23	17
100%	97%	93%	87%	80%	71%	60%	47%	33%	22%	14%	9%	6%	4%	2%	1%	1%	1%	0%	0%

Intensities in 180° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
5197	5130	4879	4552	4163	3703	3108	2426	1756	1177	761	479	299	189	118	74	48	34	25	16
100%	99%	94%	88%	80%	71%	60%	47%	34%	23%	15%	9%	6%	4%	2%	1%	1%	1%	0%	0%

Intensities in 270° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
5197	5130	4879	4552	4163	3703	3108	2426	1756	1177	761	479	299	189	118	74	48	34	25	16
100%	99%	94%	88%	80%	71%	60%	47%	34%	23%	15%	9%	6%	4%	2%	1%	1%	1%	0%	0%

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
26.9°	43.1°	55.1°	100.0%	99.8%

32 Hex Panel IP



Light Efficiency:

46 Lumen/Watt

Light Quality:

CRI: 73.7

Color Temperature:

7323 K

Output: 2254 lm

Peak: 11869 cd

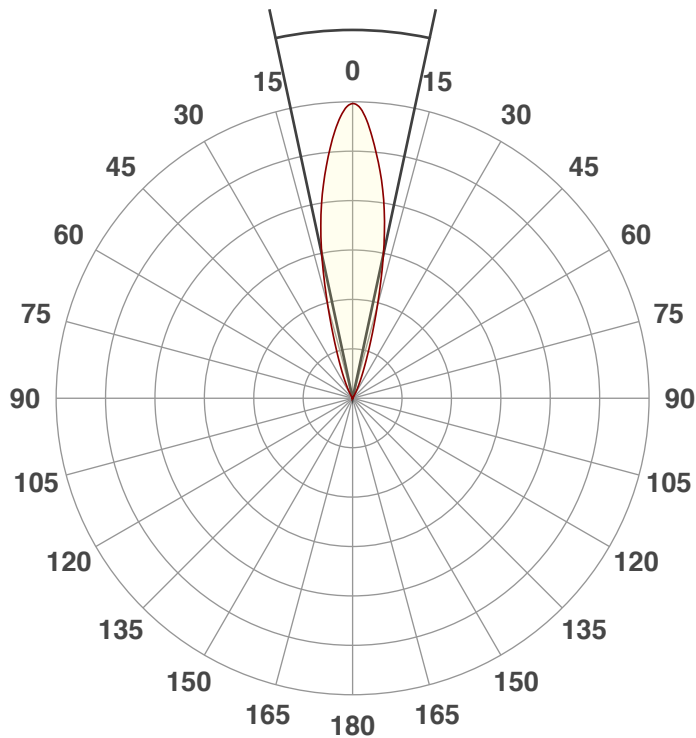
Power: 49.1 W

PF: 0.92



Beam Angle

24.2°



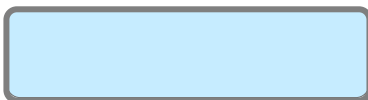
Test:

White

Date:

3/5/2019

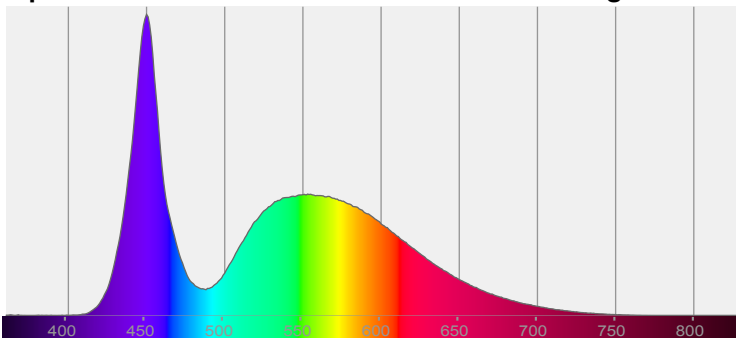
Note:



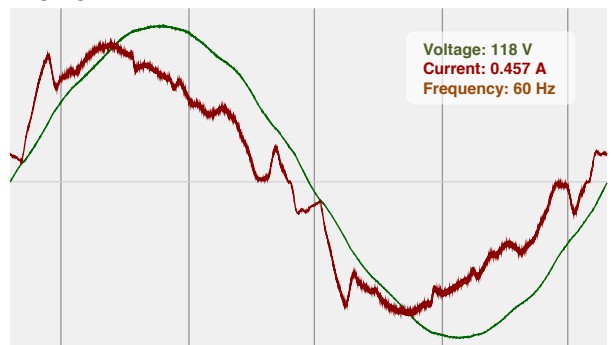
CIE 1931
x: 0.303
y: 0.309

Spectra

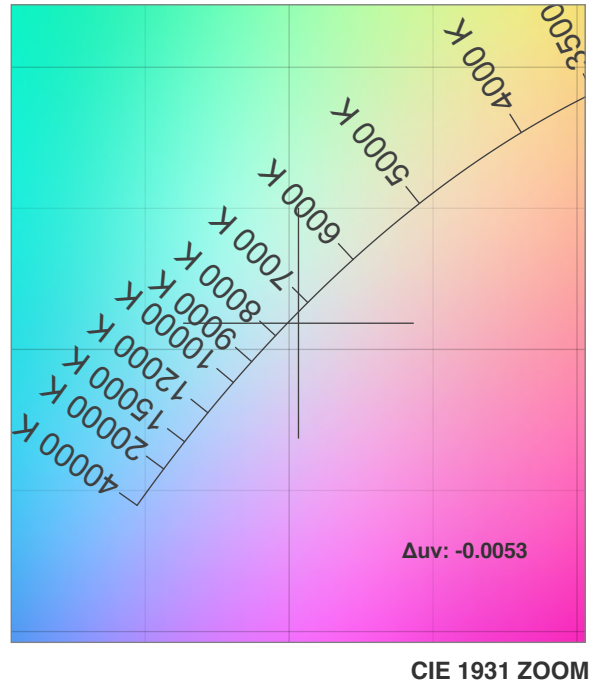
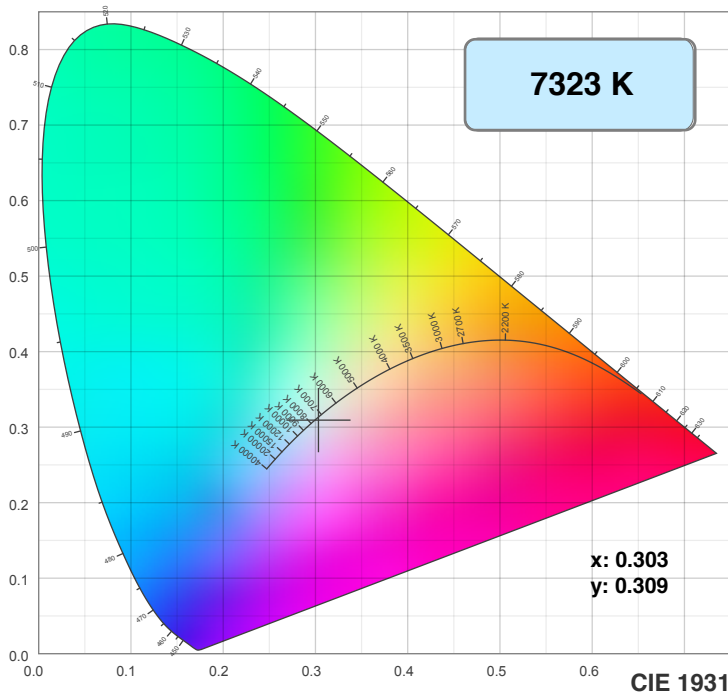
Dominant Wavelength: 445nm



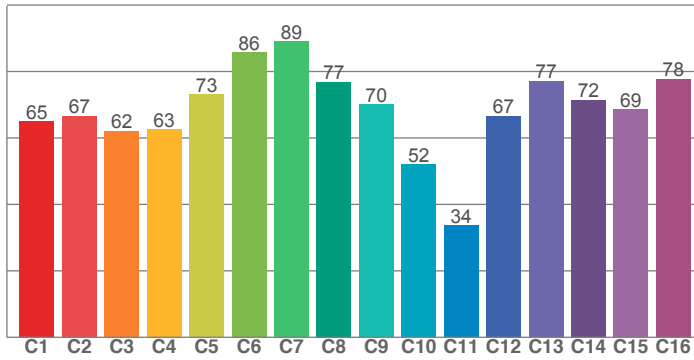
Power



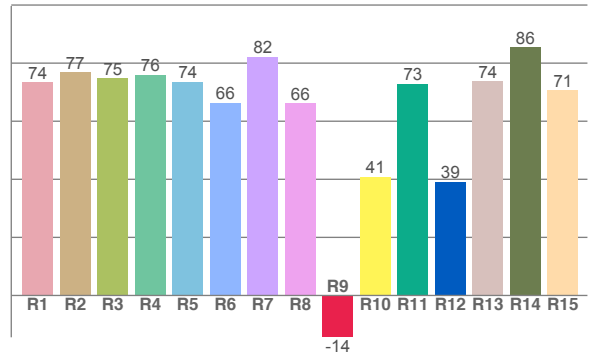
Color Details



TM30: 68.5



CRI: 73.7 (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
73.5	76.8	74.7	76.0	73.6	66.4	82.2	66.2	-14.4	40.9	72.9	39.1	73.8	85.6	70.8

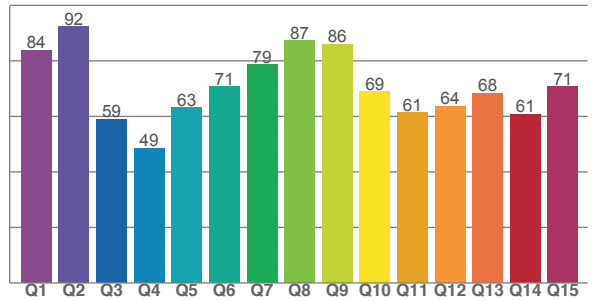
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65.0	66.6	62.1	62.6	73.1	85.7	89.1	76.8	70.0	52.0	33.7	66.6	77.1	71.5	68.5	77.7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
83.8	92.3	59.0	48.6	63.1	70.8	78.7	87.4	86.0	68.9	61.4	63.7	68.4	60.9	70.7

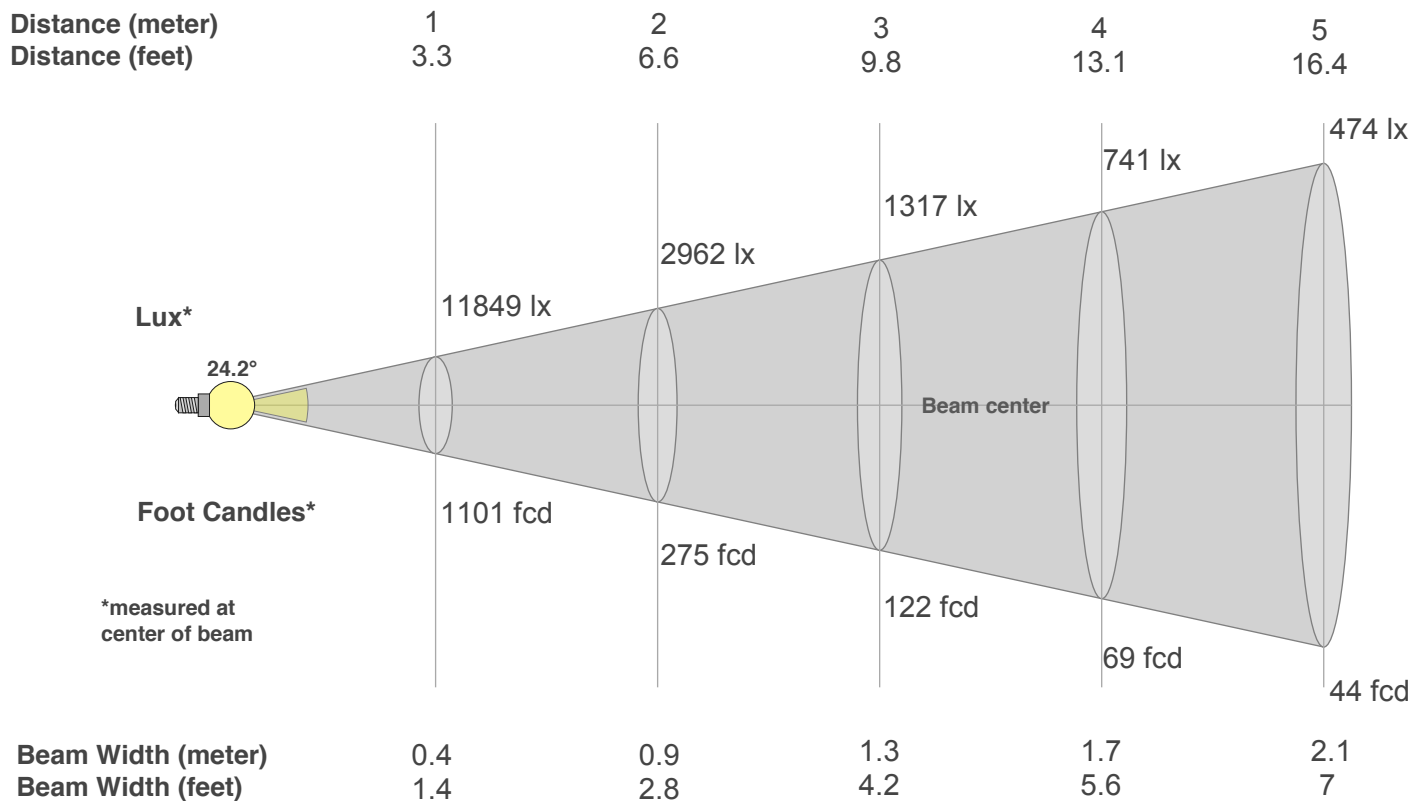
CQS: 68.6



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
7323 K	73.7	-14.4	68.5	94.0	68.6	0.303	0.309	0.199	0.304	-0.0053

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	11849	2962	1317	741	474	329	242	185	146	118	98	82	70	60	53	46	41	37	33	30
fcd	1100.8	275.2	122.3	68.8	44	30.6	22.5	17.2	13.6	11	9.1	7.6	6.5	5.6	4.9	4.3	3.8	3.4	3	2.8

Intensities in 0° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
11.8K	11.5K	10.7K	9.7K	8.6K	7.3K	6.0K	4.5K	3.2K	2.3K	1.6K	1.1K	0.8K	0.5K	0.3K	0.1K	0.1K	0.0K	0.0K	0.0K
100%	97%	90%	81%	72%	62%	51%	38%	27%	19%	13%	9%	6%	4%	2%	1%	1%	0%	0%	0%

Intensities in 90° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
11.8K	11.5K	10.7K	9.7K	8.6K	7.3K	6.0K	4.5K	3.2K	2.3K	1.6K	1.1K	0.8K	0.5K	0.3K	0.1K	0.1K	0.0K	0.0K	0.0K
100%	97%	90%	81%	72%	62%	51%	38%	27%	19%	13%	9%	6%	4%	2%	1%	1%	0%	0%	0%

Intensities in 180° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
11.8K	11.5K	10.7K	9.7K	8.6K	7.4K	6.0K	4.5K	3.2K	2.2K	1.5K	1.1K	0.7K	0.5K	0.3K	0.1K	0.1K	0.0K	0.0K	0.0K
100%	97%	90%	82%	73%	62%	51%	38%	27%	19%	13%	9%	6%	4%	2%	1%	0%	0%	0%	0%

Intensities in 270° C-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
11.8K	11.5K	10.7K	9.7K	8.6K	7.4K	6.0K	4.5K	3.2K	2.2K	1.5K	1.1K	0.7K	0.5K	0.3K	0.1K	0.1K	0.0K	0.0K	0.0K
100%	97%	90%	82%	73%	62%	51%	38%	27%	19%	13%	9%	6%	4%	2%	1%	0%	0%	0%	0%

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
24.2°	42.9°	55.4°	100.0%	100.0%

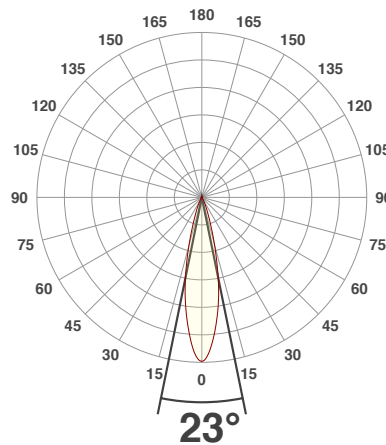
1 Lumen/Watt

418 nm

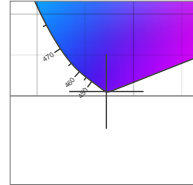
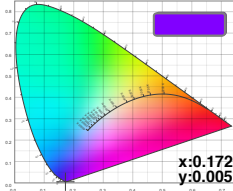
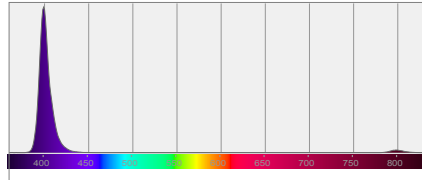
31.4 lm

55.2 W

164 cd



Note:



The diagram illustrates the beam spread of a 23-degree light source. It shows a cone of light originating from a bulb and expanding as distance increases. The beam is divided into sections by vertical lines, with light intensity values provided at each section. The beam center is marked, and the beam edges are shown as ellipses.

Distance (meters)	Distance (feet)	Beam Width (meters)	Beam Width (feet)	Lux*	Foot Candles*
0.4	1.3	-	-	164 lx	15 fcd
1.2	4	-	-	18 lx	2 fcd
2	6.7	-	-	7 lx	1 fcd
2.8	9.3	-	-	3 lx	0 fcd
4.1	13.3	-	-	2 lx	0 fcd

*measured at center of beam

[illegible]

32 Hex Panel IP



Light Efficiency:

33 Lumen/Watt

Light Quality:

CRI: 94.2

Color Temperature:

14848 K

Output: 4560 lm

Peak: 24104 cd

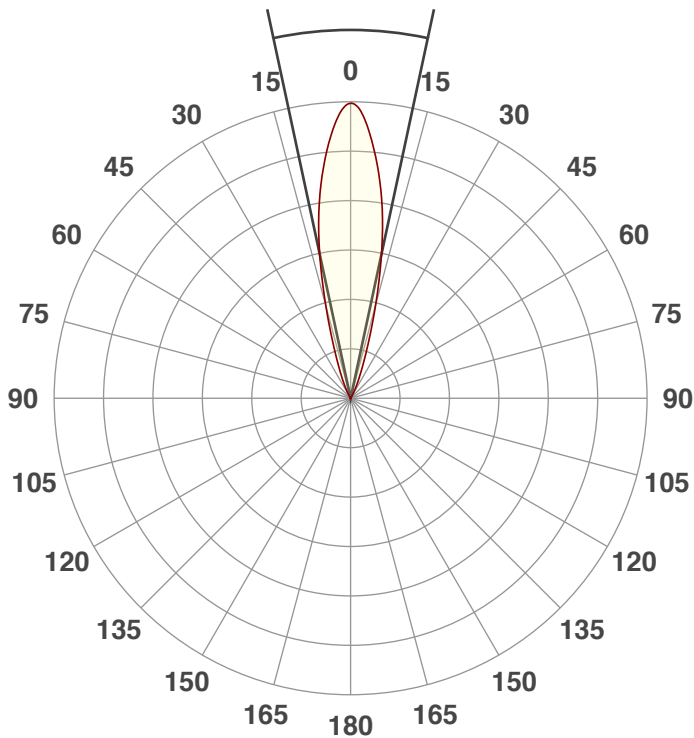
Power: 136.3 W

PF: 0.98



Beam Angle

24.2°



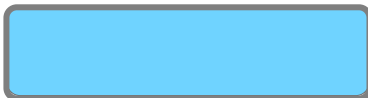
Test:

CRI Value

Date:

3/6/2019

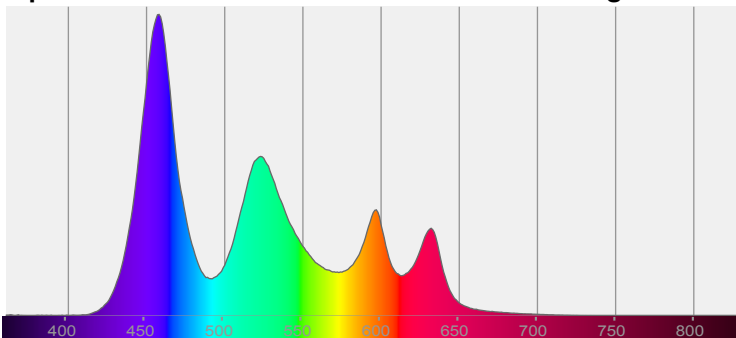
Note:



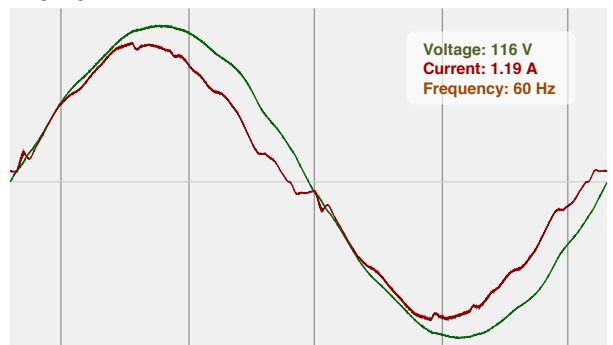
CIE 1931
x: 0.257
y: 0.277

Spectra

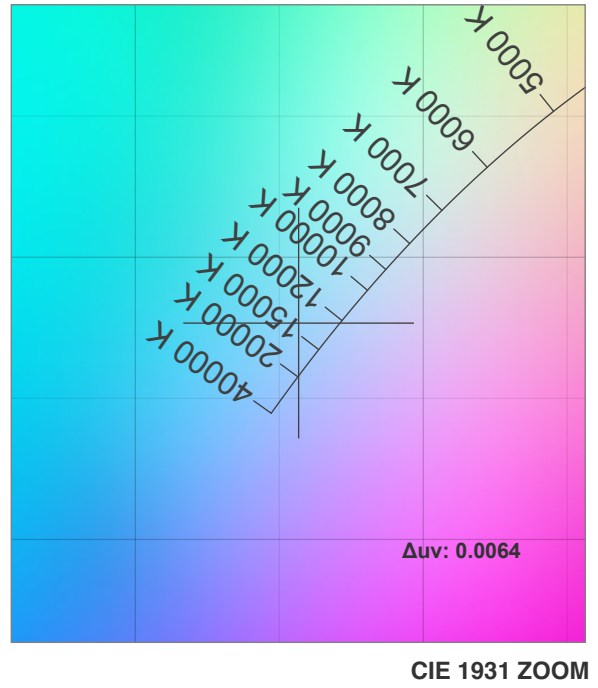
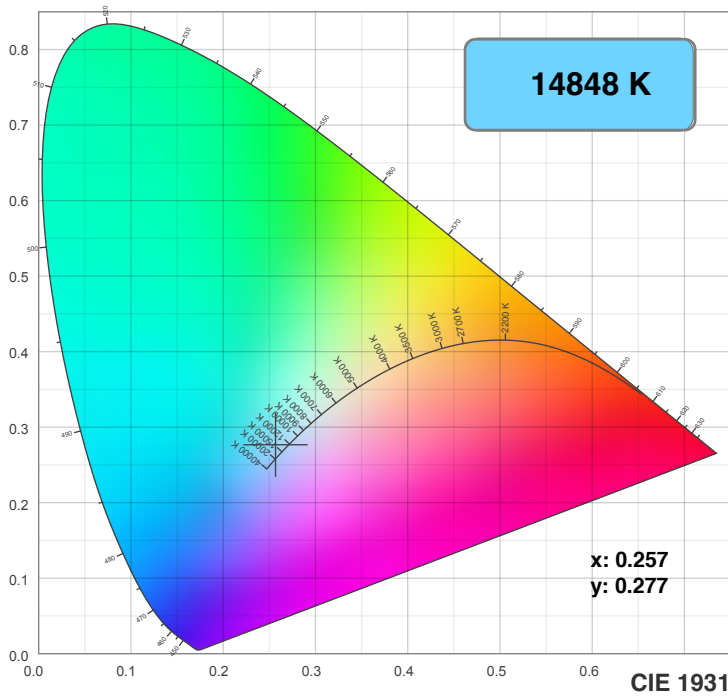
Dominant Wavelength: 479nm



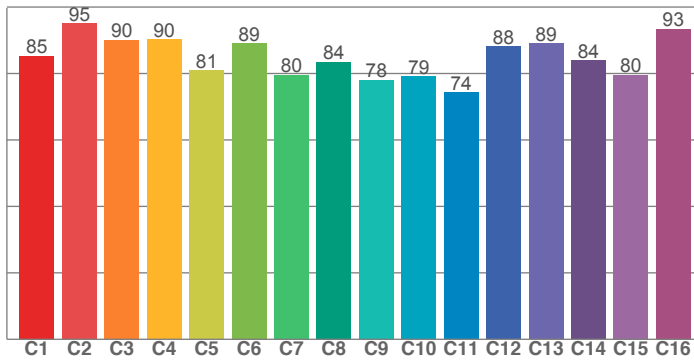
Power



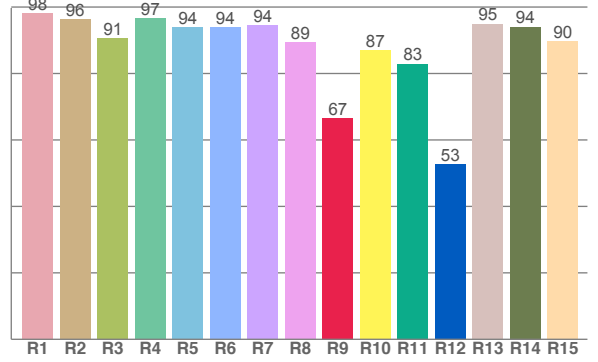
Color Details



TM30: 85.0



CRI: 94.2 (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
98.1	96.3	90.6	96.6	93.8	94.0	94.5	89.3	66.6	87.0	82.9	52.7	95.0	94.1	89.8

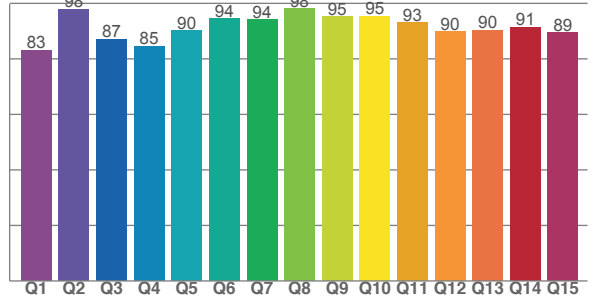
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
85.3	95.1	90.1	90.3	81.0	89.1	79.6	83.5	78.1	79.0	74.2	88.1	89.0	83.9	79.6	93.4

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
83.1	97.9	87.1	84.5	90.2	94.4	94.1	98.1	95.3	95.5	93.0	89.8	90.3	91.4	89.4

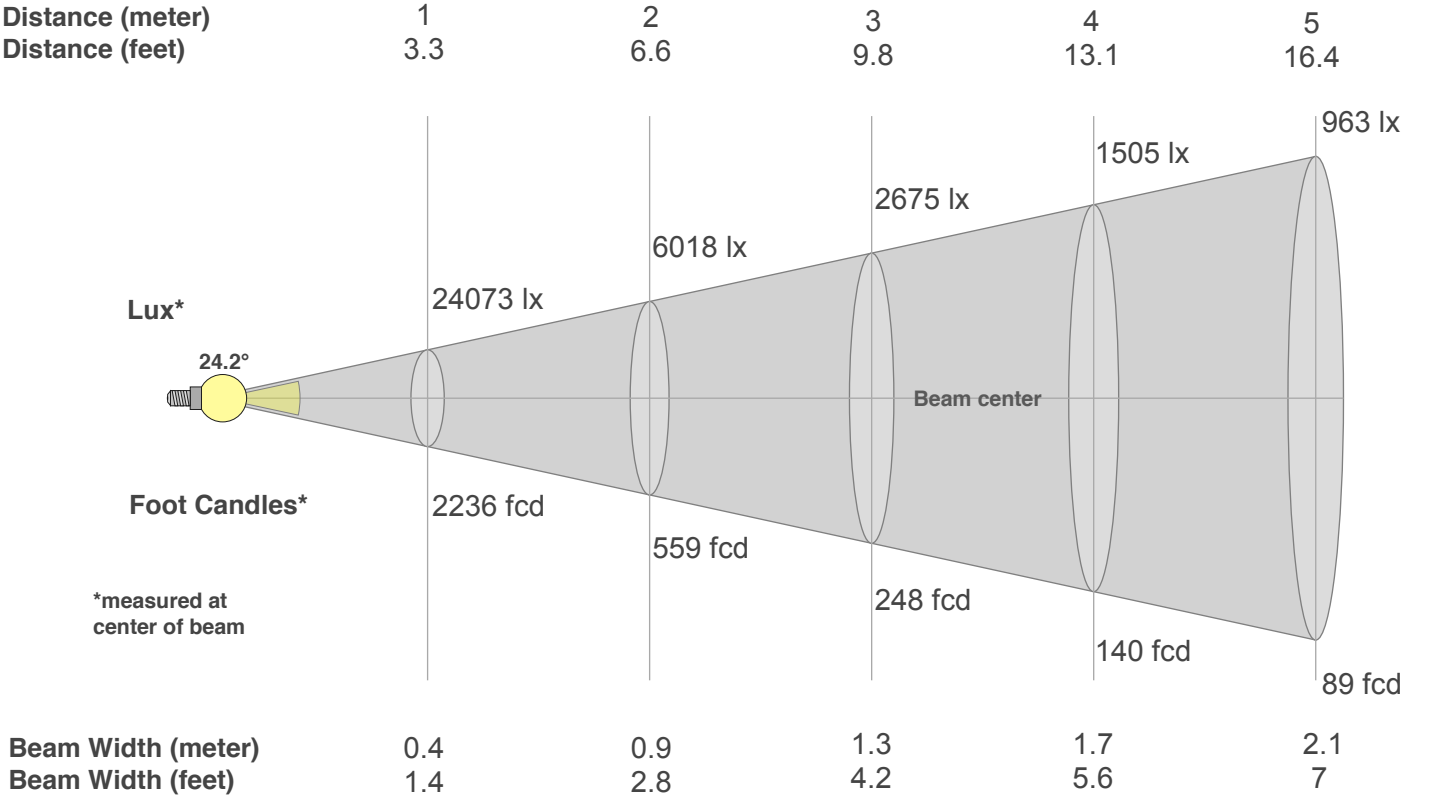
CQS: 90.6



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
14848 K	94.2	66.6	85.0	96.3	90.6	0.257	0.277	0.177	0.286	0.0064

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	24073	6018	2675	1505	963	669	491	376	297	241	199	167	142	123	107	94	83	74	67	60
fcd	2236.5	559.1	248.5	139.8	89.5	62.1	45.6	34.9	27.6	22.4	18.5	15.5	13.2	11.4	9.9	8.7	7.7	6.9	6.2	5.6

Intensities in 0° C-plane																			
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
24.1K	23.4K	21.8K	19.8K	17.5K	15.0K	12.2K	9.2K	6.6K	4.5K	3.1K	2.1K	1.4K	0.9K	0.5K	0.2K	0.1K	0.0K	0.0K	0.0K
100%	97%	91%	82%	73%	62%	51%	38%	27%	19%	13%	9%	6%	4%	2%	1%	0%	0%	0%	0%

Intensities in 90° C-plane																				
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	
24.1K	23.4K	21.8K	19.8K	17.5K	15.0K	12.2K	9.2K	6.6K	4.5K	3.1K	2.1K	1.4K	0.9K	0.5K	0.2K	0.1K	0.0K	0.0K	0.0K	
100%	97%	91%	82%	73%	62%	51%	38%	27%	19%	13%	9%	6%	4%	2%	1%	0%	0%	0%	0%	

Intensities in 180° C-plane																				
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	
24.1K	23.5K	21.8K	19.8K	17.5K	15.0K	12.2K	9.3K	6.6K	4.6K	3.1K	2.1K	1.4K	0.9K	0.5K	0.2K	0.1K	0.1K	0.0K	0.0K	
100%	98%	91%	82%	73%	62%	51%	39%	28%	19%	13%	9%	6%	4%	2%	1%	0%	0%	0%	0%	

Intensities in 270° C-plane																				
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	
24.1K	23.5K	21.8K	19.8K	17.5K	15.0K	12.2K	9.3K	6.6K	4.6K	3.1K	2.1K	1.4K	0.9K	0.5K	0.2K	0.1K	0.1K	0.0K	0.0K	
100%	98%	91%	82%	73%	62%	51%	39%	28%	19%	13%	9%	6%	4%	2%	1%	0%	0%	0%	0%	

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
24.2°	42.6°	54.9°	100.0%	100.0%