



ARTISTE MONDRIAN

Photometric Test Report

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Testing Process

Total Lumen Measurements

Lumens are measured using a Viso Systems Lab Spion and a 2π Integrating Sphere. As a goniophotometer, the Viso calculates the field lumens of the fixture by taking multiple measurements across the light beam. The measured lumens of the 2π Integrating Sphere tends to be higher than the Viso goniophotometer due to a variety of differences in measurement principles. Therefore, sometimes both values are provided in the report.

Many lumens figures provided for entertainment lighting fixtures are only the 2π sphere values, some even emphasize the LED engine lumens. All Elation product photometric data is the actual light output from the fixture lens, never a theoretical value based on calculation or using the source lumens as the fixtures output. We advise to always compare total fixture lumens acquired with identical measurement systems when comparing lighting fixtures.

Test Lab Equipment and Process

Elation operates an optical testing laboratory at its Los Angeles, CA headquarters to provide accurate photometric data for its lighting products. The testing lab is both light and climate- controlled and contains a variety of precise lighting measurement systems. Fixtures are analyzed with the sophisticated [Viso Systems Lab Spion](#) equipment, which measures all light and color parameters by panning the light beam at a precise speed and from different angles through a calibrated, laser aligned light and color sensor. Test data is collected and summarized by the Viso Light Inspector software. This type of measurement system is referred to as a Goniophotometer.

The Viso software calculates all relevant types of measurements, from beam angles, candela to center light intensity at a variety of distances to the latest color quality measurements like TM30 or CQS as well as accurate color temperature. This wealth of data is then processed by an Elation specific template which is included in the photometric test report for various fixture conditions such as zoom angles and color correction filters.

The Viso software also creates IES (Illuminating Engineering Society) files for each test report. IES is an industry standard file format created for the easy electronic transfer of photometric test data, which is widely used by lighting manufacturers for photometric data distribution.

Fixtures are also analyzed using an 2π Integrating Sphere. This technique takes the output of the fixture and measures the amount of light inside a sealed perfect sphere. Due to the size of most fixtures they shine into an opening on the side of the sphere. A sensor is mounted behind a glare shield to avoid direct light input and a very short measurement is taken to gather the total lumens within the sphere. Due to different measurement principles, distortion and measurement uncertainties, there is a difference in these results.

Additionally, fixtures are periodically rechecked for accuracy using various hand-held light meters including one or more of the devices listed below. This is done to ensure the test data contained in this report is as accurate as possible.

[Asenstek Lighting Passport](#) | [Konica Minolta T-10](#) | [Sekonic C700T](#)

Photometric Report

Total Lumen Output*

Integrating Sphere

VISO Lab Spion **31294 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
2.8°	4°	4.8°

Color Temperature: **6427 K**

CRI: **71.0**

TLCI: **48**

TM30: **72.1**

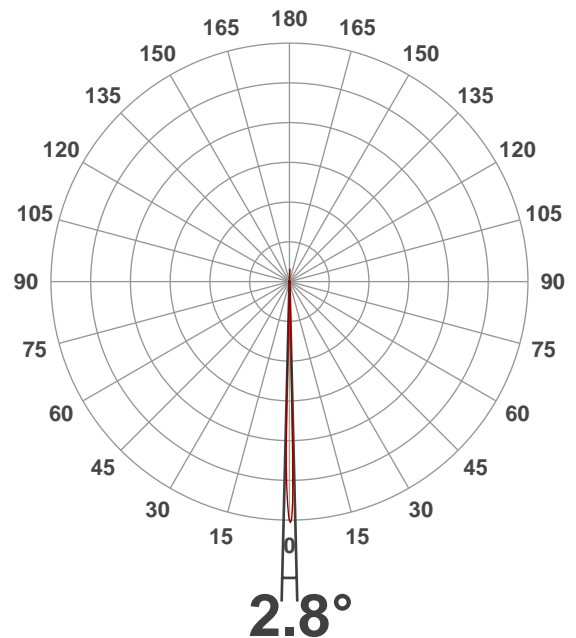
CQS: **68.9**

Voltage: **117 V**, Current: **12.0 A**

Power: **1401 W**

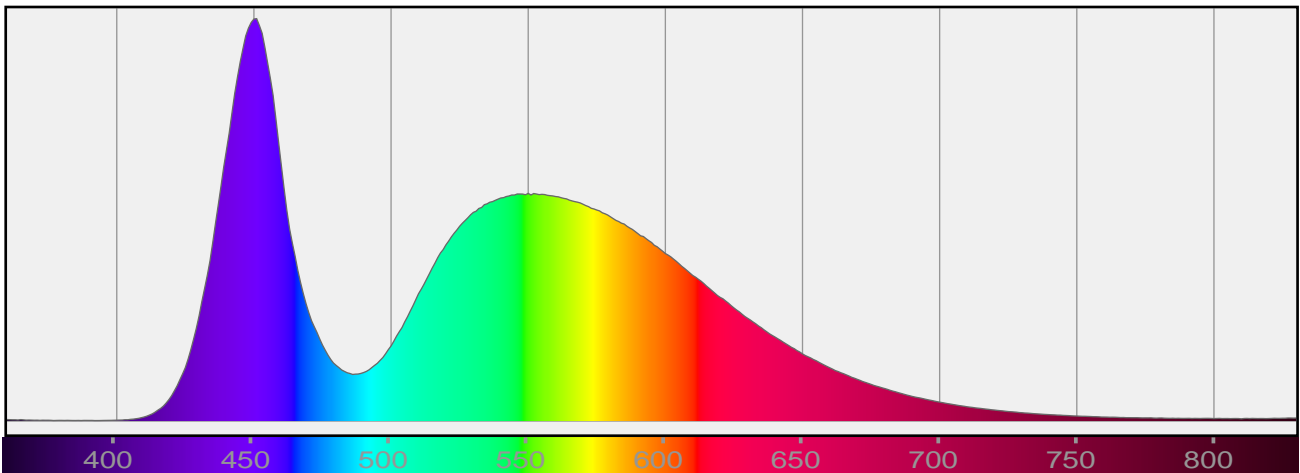
Efficacy: **22 Lumen/Watt**

Measurement Date: **10/13/2020**



Spectral Distribution

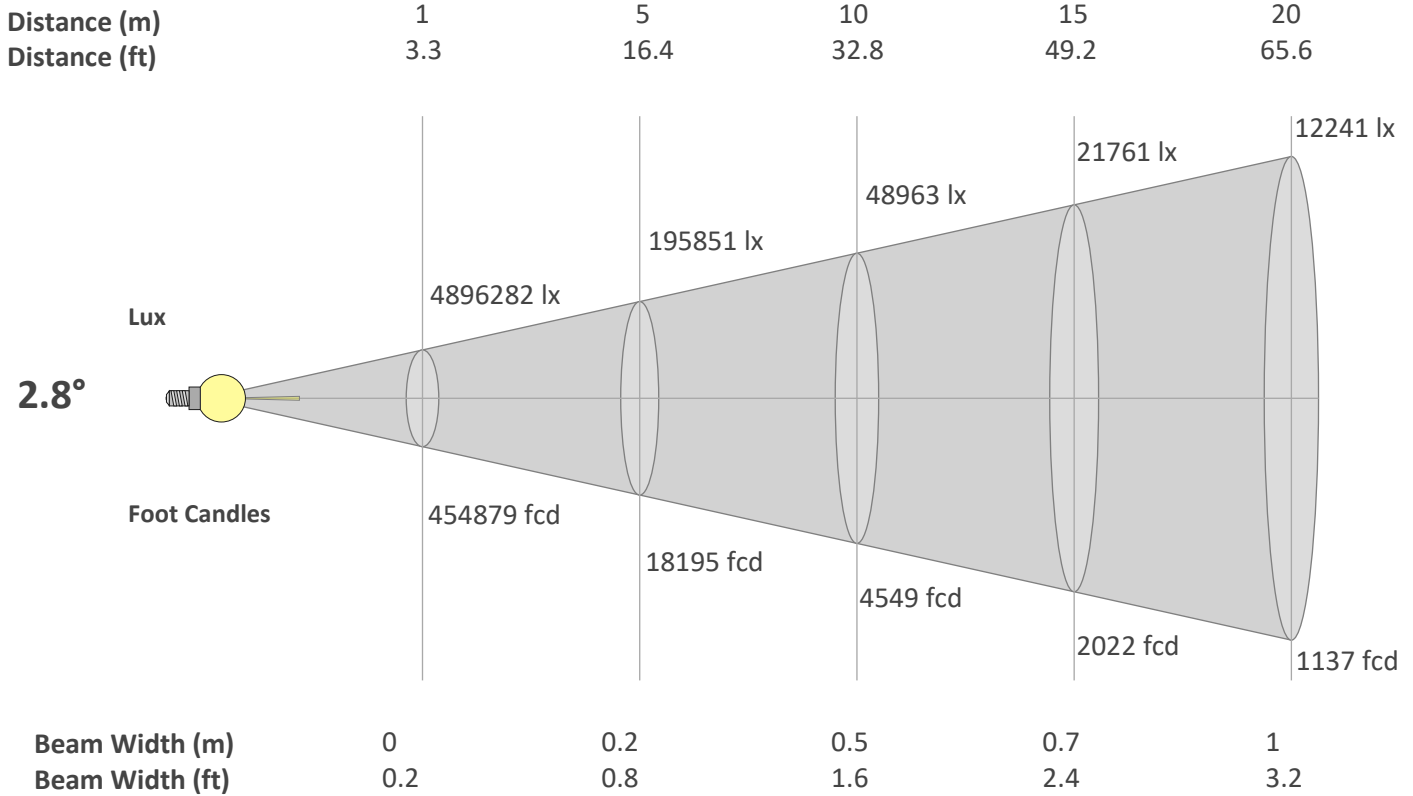
Dominant Wavelength 566 nm



*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
2.8°	4°	4.8°



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	4896282	1224070	544031	306018	195851	136008	99924	76504	60448	48963	40465	34002	28972	24981	21761	19126	16942	15112	13563	12241
FC	454879.5	113719.9	50542.2	28430	18195.2	12635.5	9283.3	7107.5	5615.8	4548.8	3759.3	3158.9	2691.6	2320.8	2021.7	1776.9	1574	1403.9	1260.1	1137.2

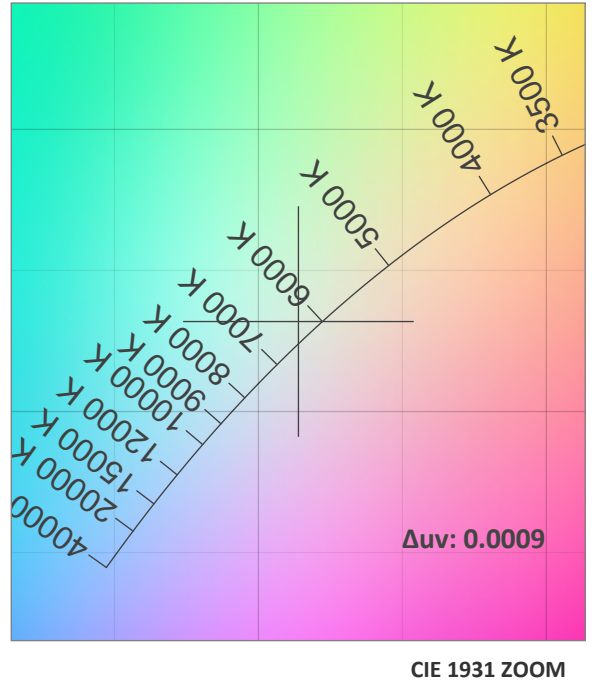
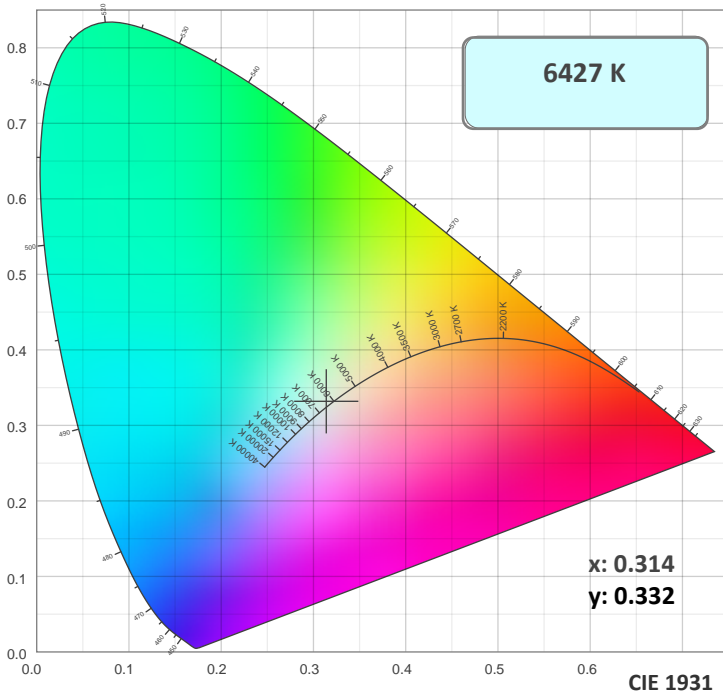
Linear Distribution



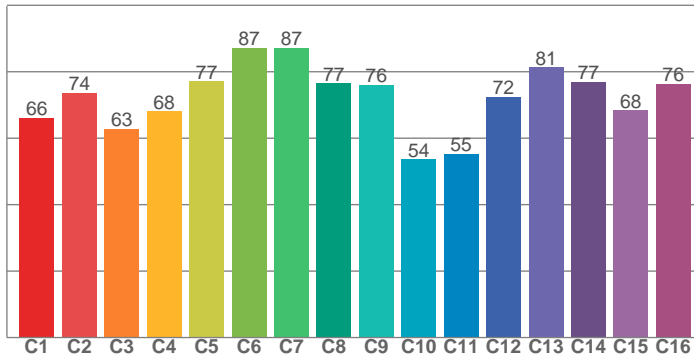
Peak Candela
4951921 cd

Calculate Center Beam Intensities
lux = 4951921 / distance(m)²
fc = 4951921 / distance(ft)²

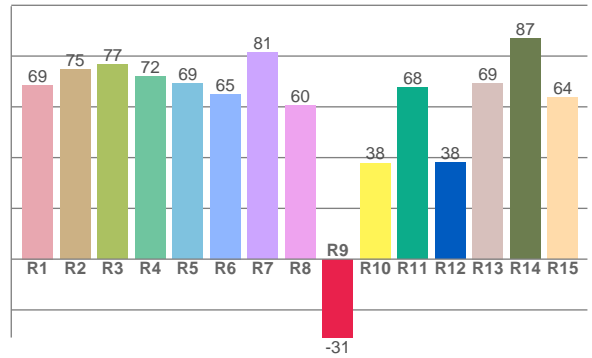
Color Details



TM30: 72.1



CRI: 71.0 (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
68.6	74.8	76.8	72.0	69.3	65.1	81.5	60.4	-30.9	37.9	67.7	38.2	69.4	86.8	63.6

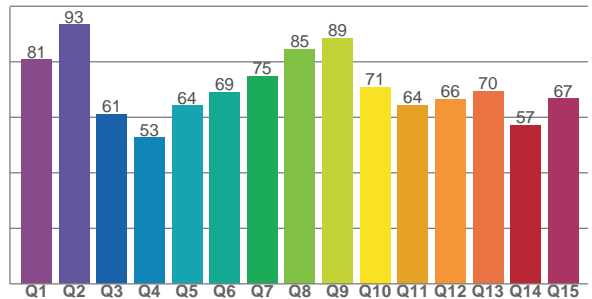
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
66.2	73.7	62.9	68.1	77.2	87.1	87.1	76.6	76.0	53.6	55.4	72.4	81.3	76.9	68.4	76.4

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.7	93.4	61.1	52.6	64.2	69.0	74.9	84.6	88.5	70.8	64.4	66.5	69.5	57.1	66.6

CQS: 68.9



Color Parameters

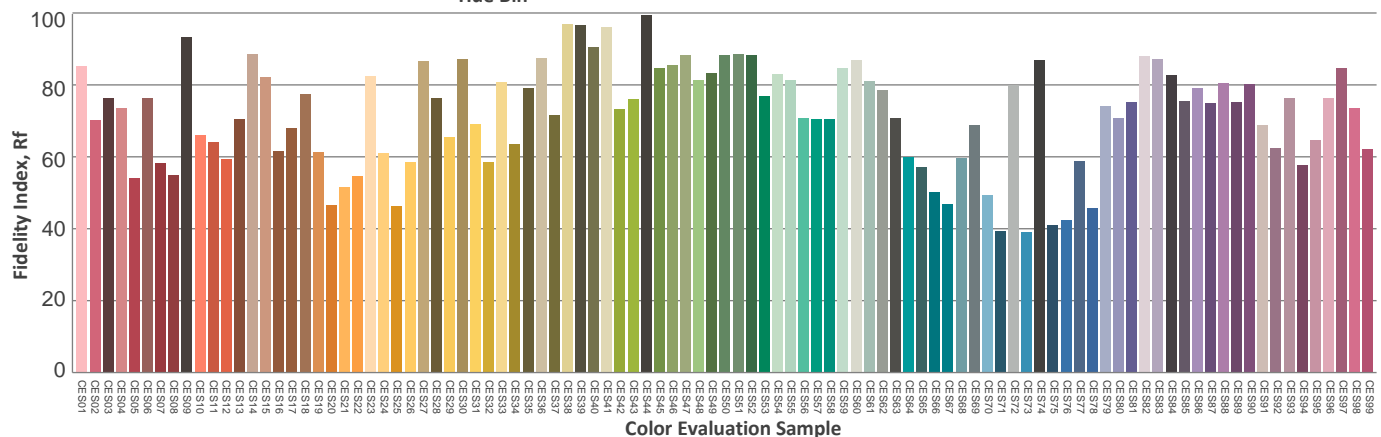
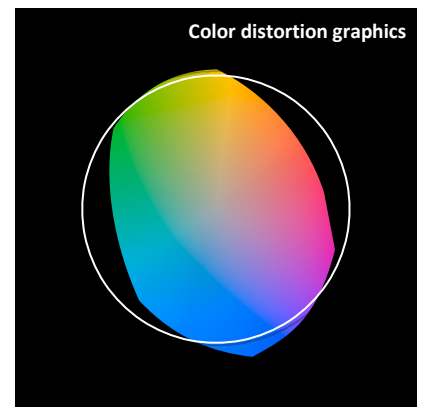
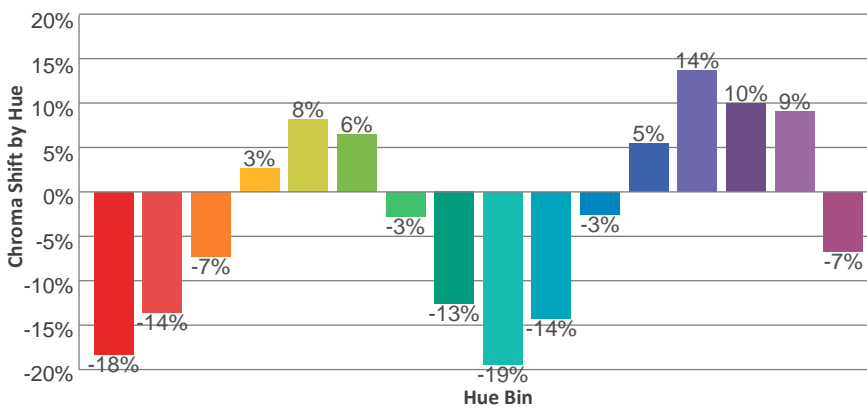
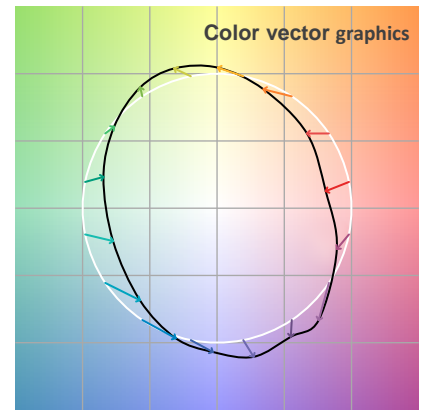
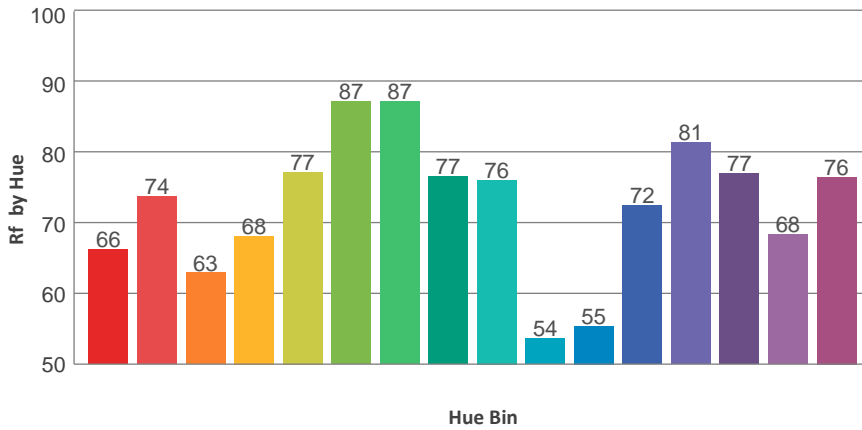
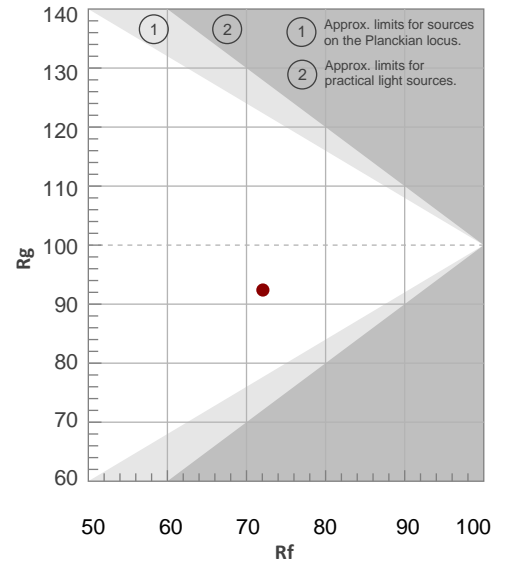
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6427 K	71.0	-30.9	72.1	92.4	68.9	0.314	0.332	0.198	0.313	0.0009

TM30 Details

Rf 72.1
Fidelity Index Rf

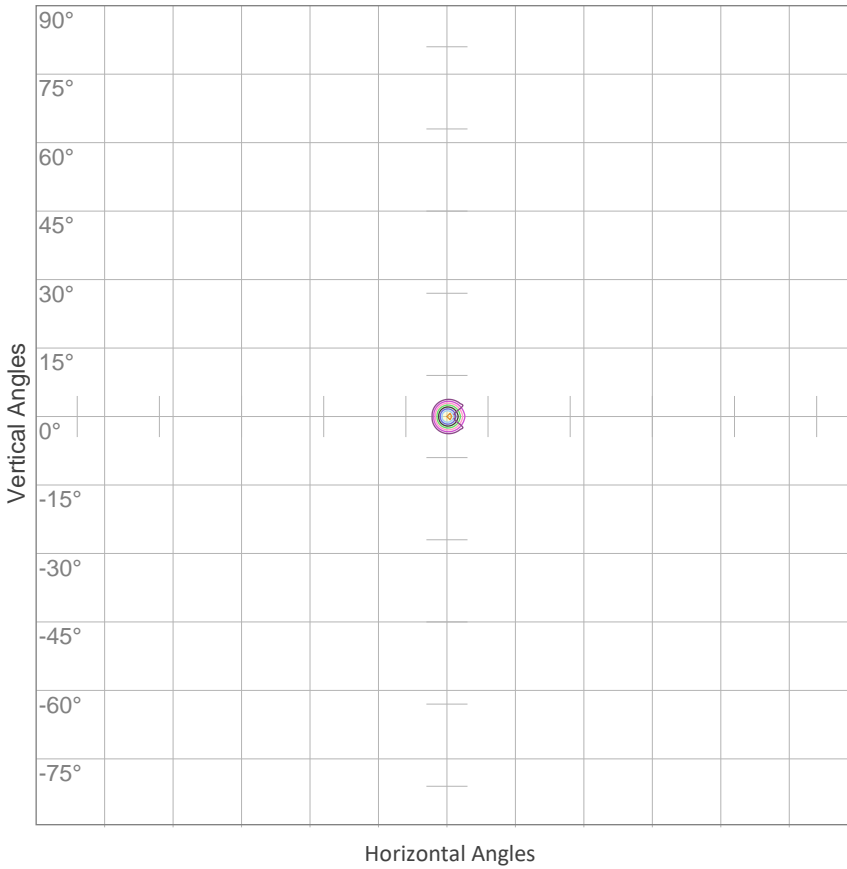
Rg 92.4
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	66	-18%	-3%
2	74	-14%	9%
3	63	-7%	20%
4	68	3%	20%
5	77	8%	11%
6	87	6%	-2%
7	87	-3%	-8%
8	77	-13%	-6%
9	76	-19%	9%
10	54	-14%	25%
11	55	-3%	28%
12	72	5%	18%
13	81	14%	5%
14	77	10%	-8%
15	68	9%	-27%
16	76	-7%	-12%



ISO Diagrams

ISO Candela Diagram



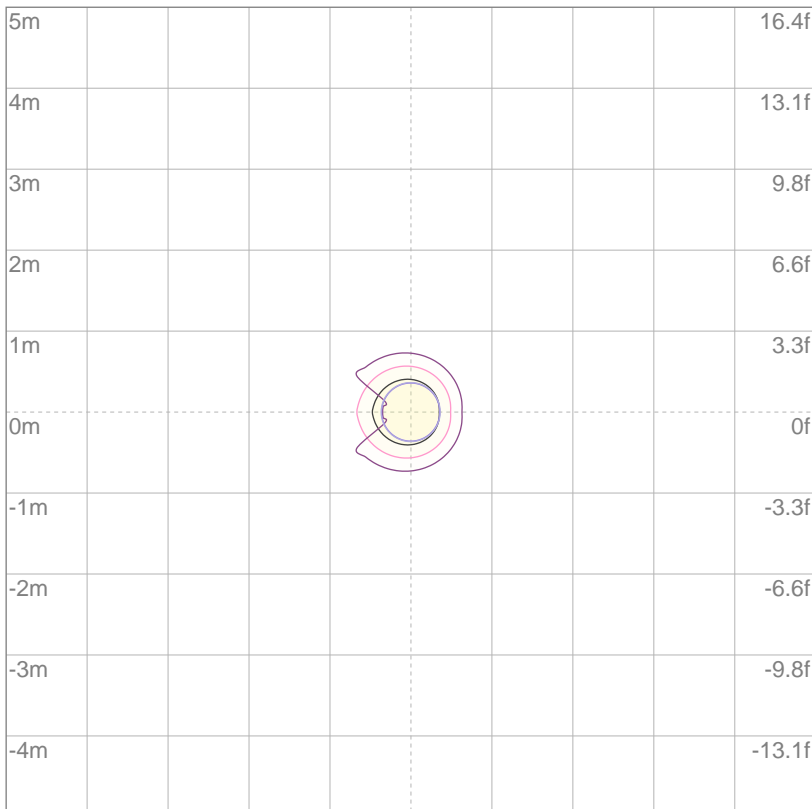
10%	489628 cd
20%	979256 cd
30%	1468885 cd
40%	1958513 cd
50%	2448141 cd
60%	2937769 cd
70%	3427397 cd
80%	3917025 cd
90%	4406654 cd

Conditions:

Number of c-planes: 2

Candela at center: 4896282 cd

ISO Lux Diagram



3%	1469 lx
5%	2448 lx
10%	4896 lx
30%	14.7K lx
50%	24.5K lx

Conditions:

Number of c-planes: 2

Lux at center: 49.0K lx

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

Mounting Height: 10 meters (33 feet)

Photometric Report

Total Lumen Output*

Integrating Sphere 51228 lm

VISO Lab Spion 54154 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
12.5°	16.2°	17.6°

Color Temperature: 6557 K

CRI: 70.8

TLCI: 47

TM30: 71.6

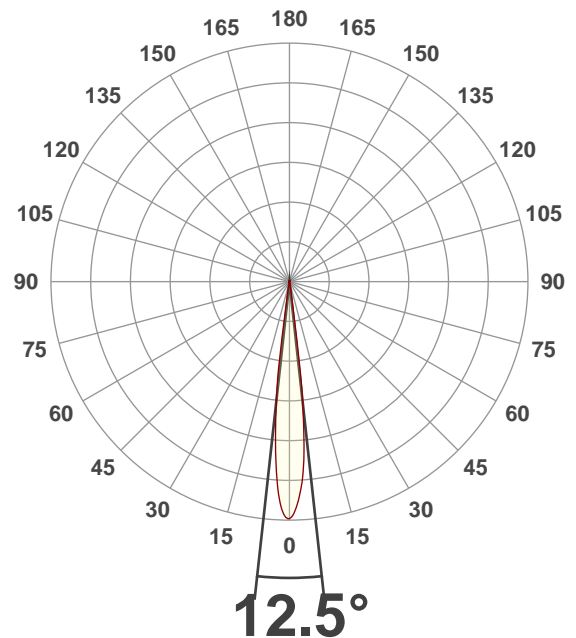
CQS: 68.4

Voltage: 116 V, Current: 12.1 A

Power: 1401 W

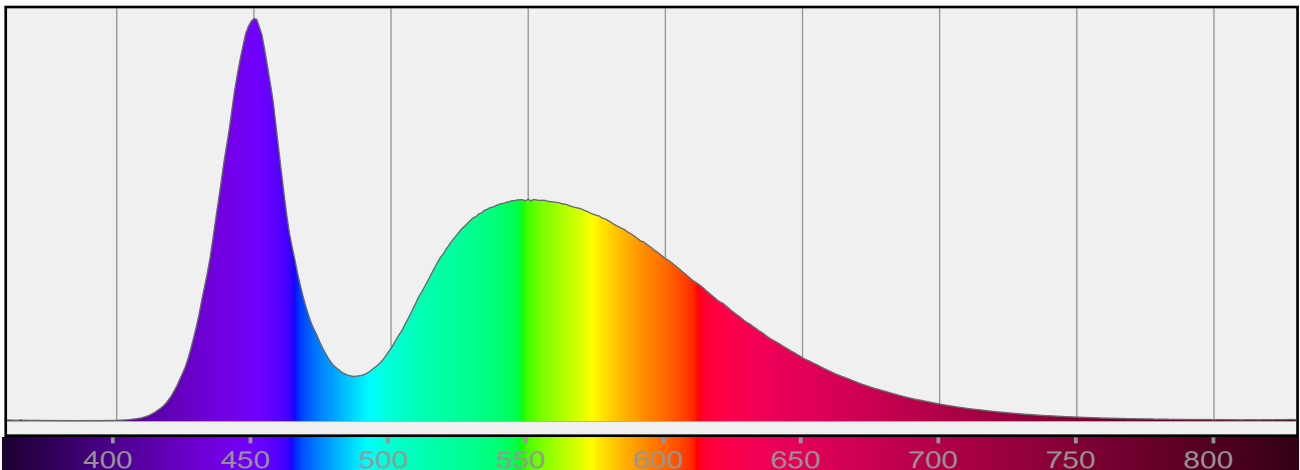
Efficacy: 39 Lumen/Watt

Measurement Date: 10/13/2020



Spectral Distribution

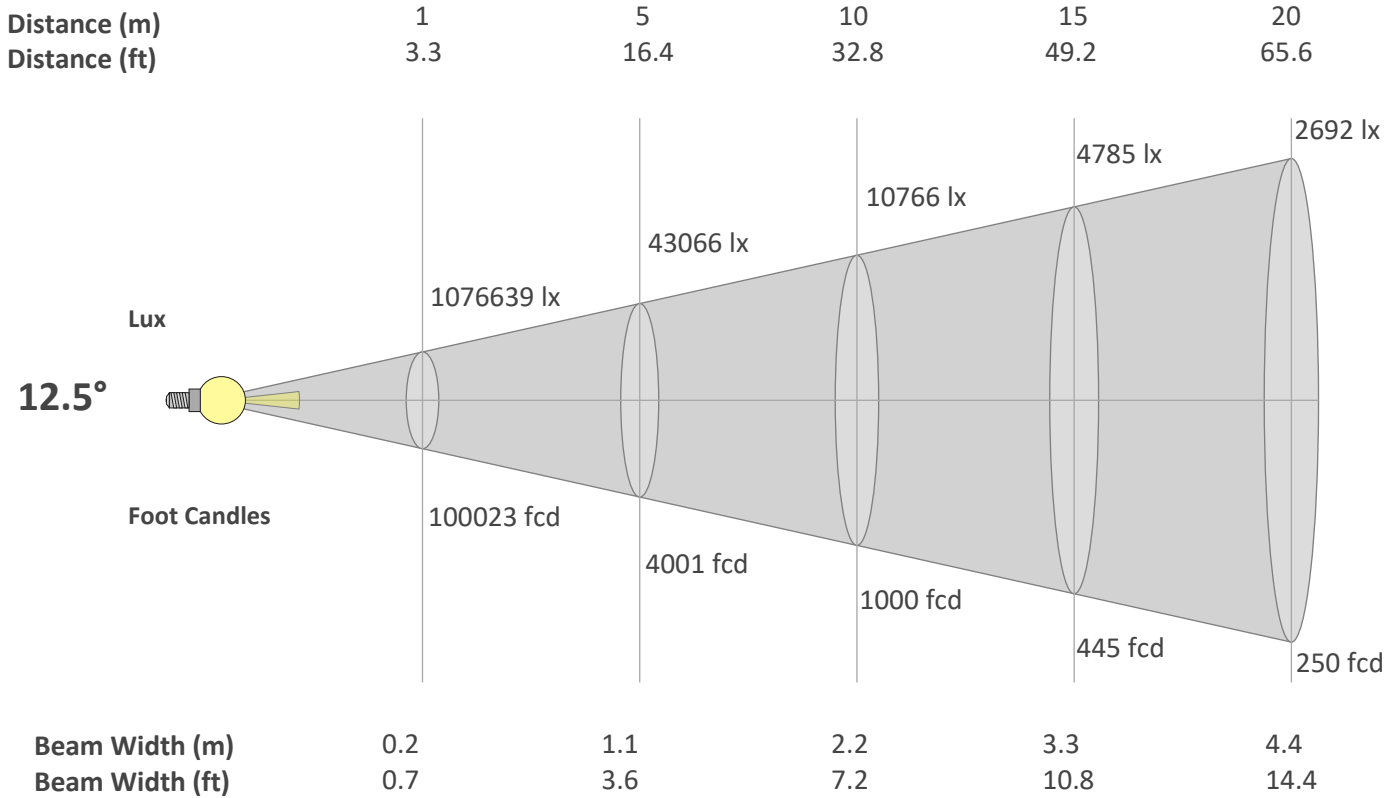
Dominant Wavelength 490 nm



*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Beam Details

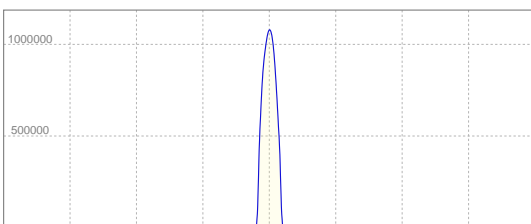
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
12.5°	16.2°	17.6°



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	1076639	269160	119627	67290	43066	29907	21972	16822	13292	10766	8898	7477	6371	5493	4785	4206	3725	3323	2982	2692
FC	100023	25005.8	11113.7	6251.4	4000.9	2778.4	2041.3	1562.9	1234.9	1000.2	826.6	694.6	591.9	510.3	444.5	390.7	346.1	308.7	277.1	250.1

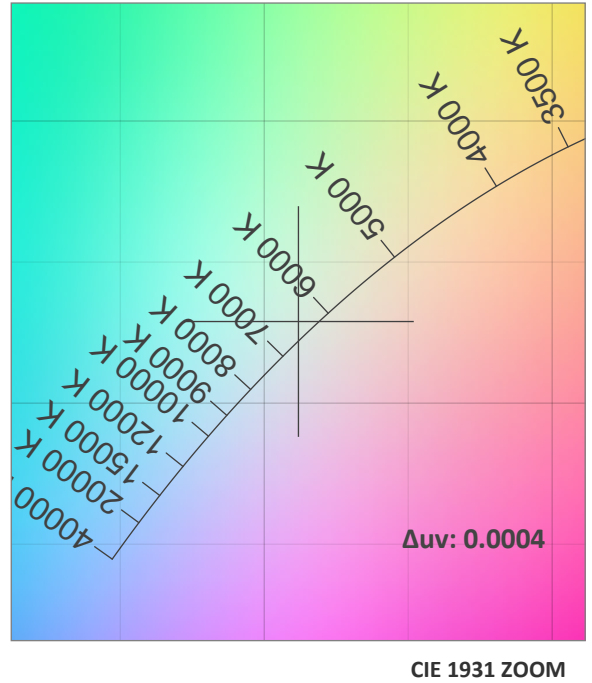
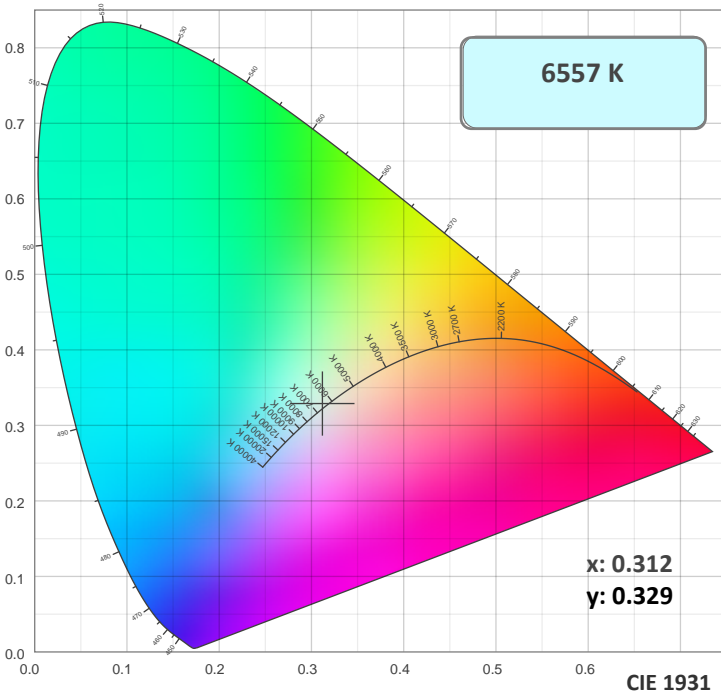
Linear Distribution



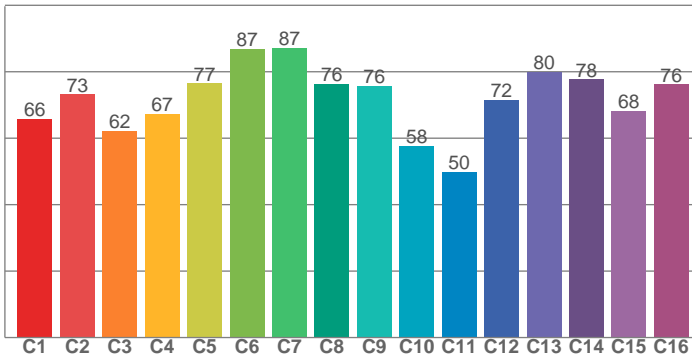
Peak Candela
1079159 cd

Calculate Center Beam Intensities
 $lux = 1079159 / distance(m)^2$
 $fc = 1079159 / distance(ft)^2$

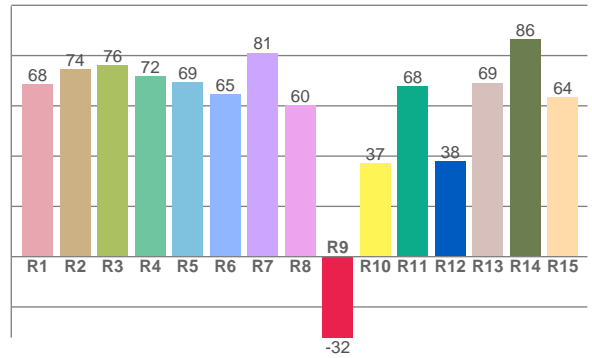
Color Details



TM30: 71.6



CRI: 70.8 (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
68.4	74.5	76.1	71.9	69.2	64.6	81.1	60.3	-32.2	37.0	67.7	37.9	69.2	86.4	63.5

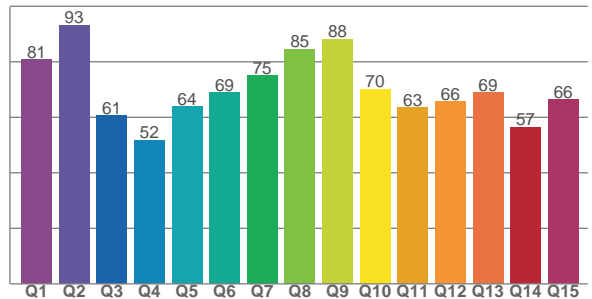
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65.8	73.3	62.2	67.3	76.5	86.9	87.1	76.4	75.8	57.7	49.8	71.6	79.9	77.7	68.1	76.2

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.7	93.1	60.6	51.8	63.8	68.8	74.9	84.6	88.1	70.1	63.5	65.7	68.9	56.5	66.4

CQS: 68.4



Color Parameters

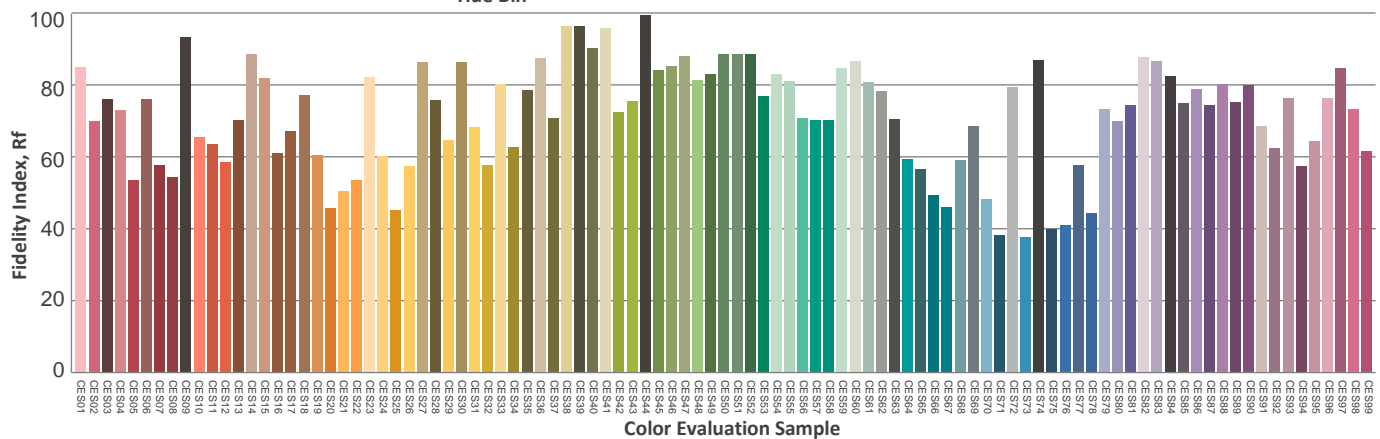
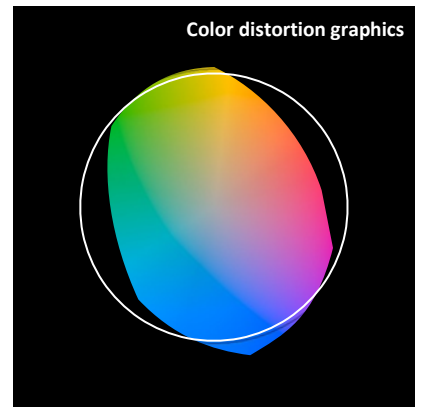
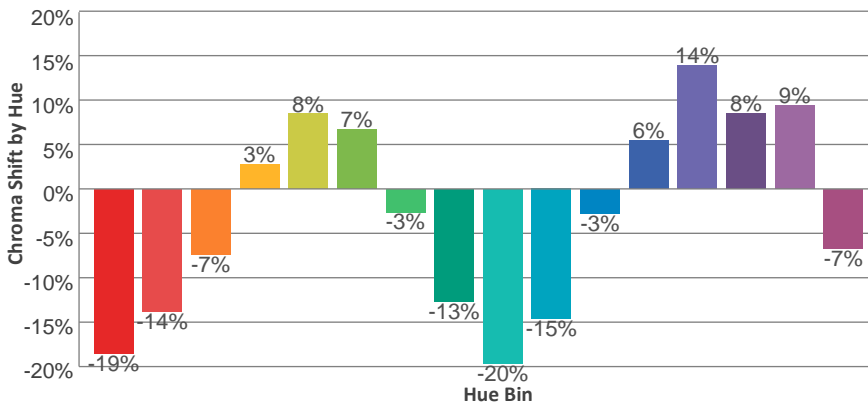
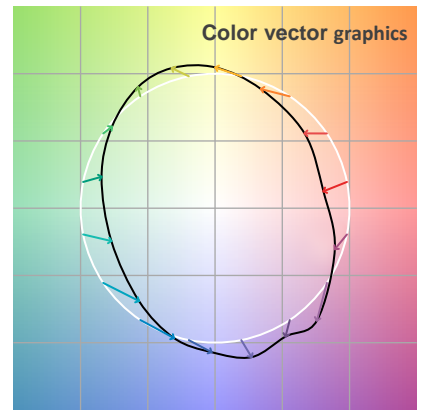
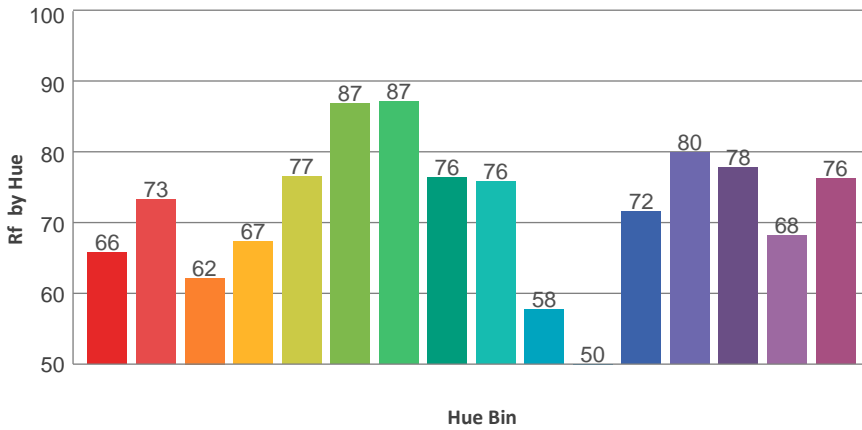
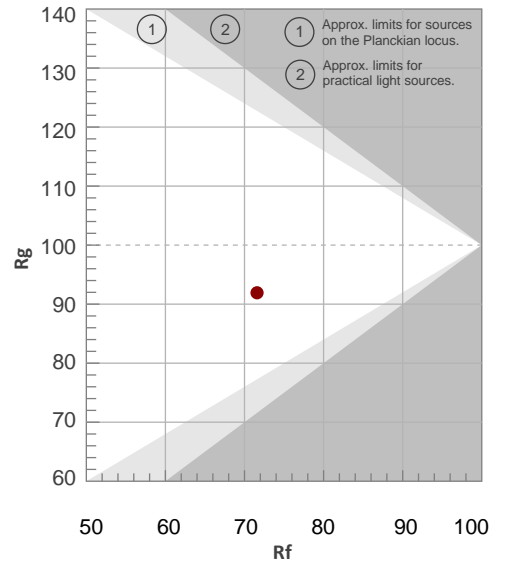
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6557 K	70.8	-32.2	71.6	91.9	68.4	0.312	0.329	0.197	0.312	0.0004

TM30 Details

Rf 71.6
Fidelity Index Rf

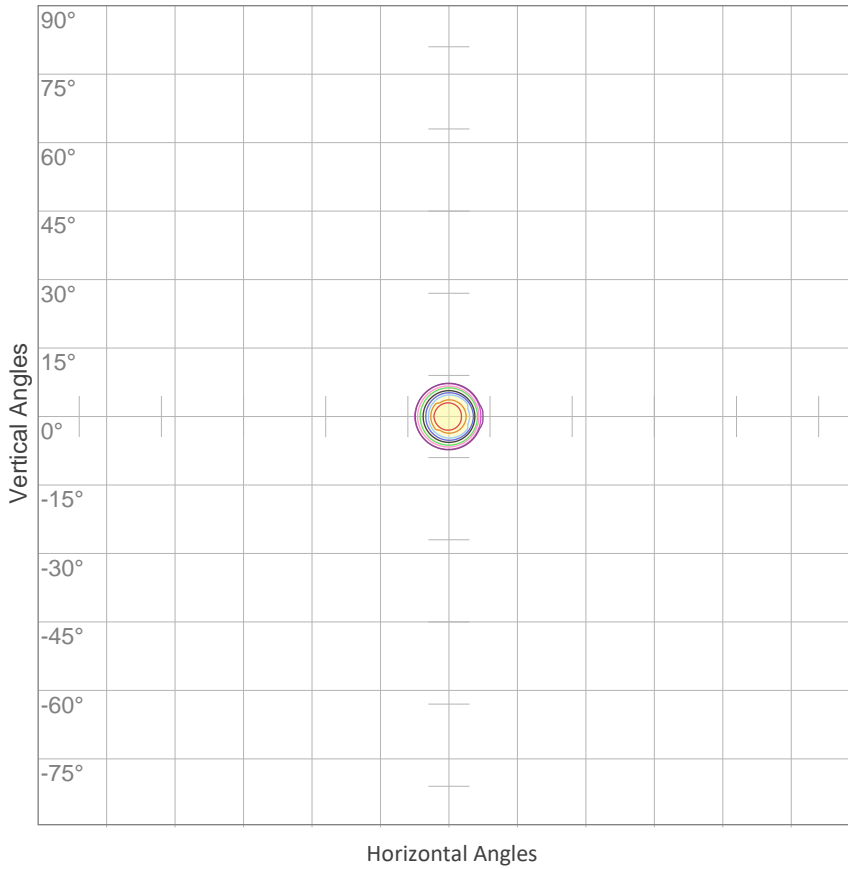
Rg 91.9
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	66	-19%	-3%
2	73	-14%	9%
3	62	-7%	21%
4	67	3%	20%
5	77	8%	11%
6	87	7%	-2%
7	87	-3%	-8%
8	76	-13%	-6%
9	76	-20%	9%
10	58	-15%	26%
11	50	-3%	28%
12	72	6%	18%
13	80	14%	5%
14	78	8%	-9%
15	68	9%	-27%
16	76	-7%	-13%



ISO Diagrams

ISO Candela Diagram



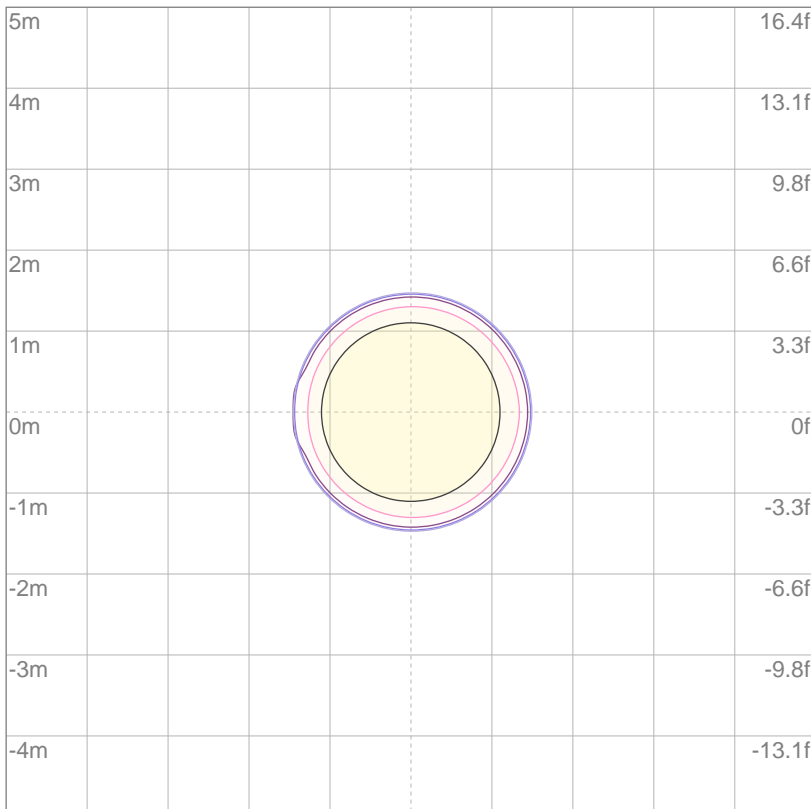
10%	107664 cd
20%	215328 cd
30%	322992 cd
40%	430655 cd
50%	538319 cd
60%	645983 cd
70%	753647 cd
80%	861311 cd
90%	968975 cd

Conditions:

Number of c-planes: 2

Candela at center: 1076639 cd

ISO Lux Diagram



3%	323 lx
5%	538 lx
10%	1077 lx
30%	3230 lx
50%	5383 lx

Conditions:

Number of c-planes: 2

Lux at center: 10.8K lx

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

Mounting Height: 10 meters (33 feet)

Photometric Report

Total Lumen Output*

Integrating Sphere 41079 lm

VISO Lab Spion 38610 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
34.9°	46.1°	49.6°

Color Temperature: 6540 K

CRI: 70.4

TLCI: 46

TM30: 71.4

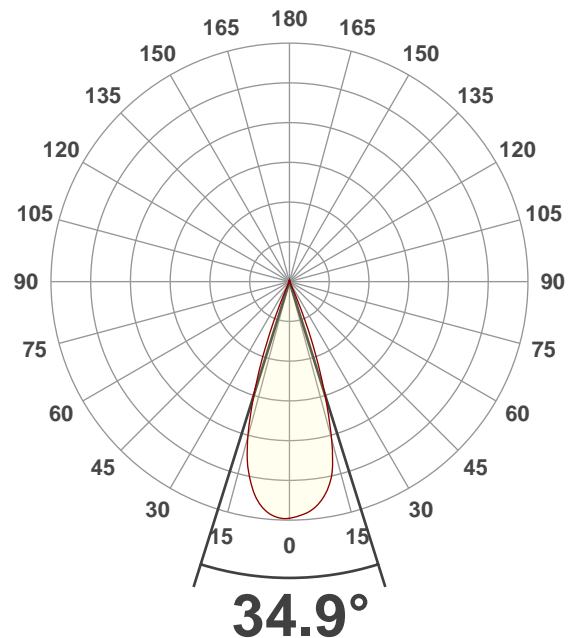
CQS: 68.2

Voltage: 118 V, Current: 11.9 A

Power: 1401 W

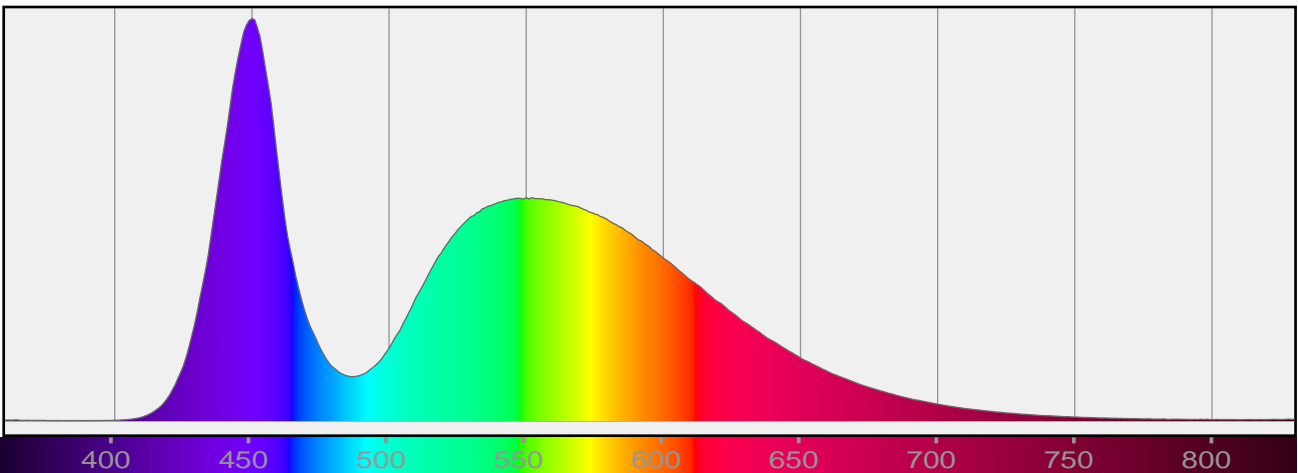
Efficacy: 28 Lumen/Watt

Measurement Date: 10/14/2020



Spectral Distribution

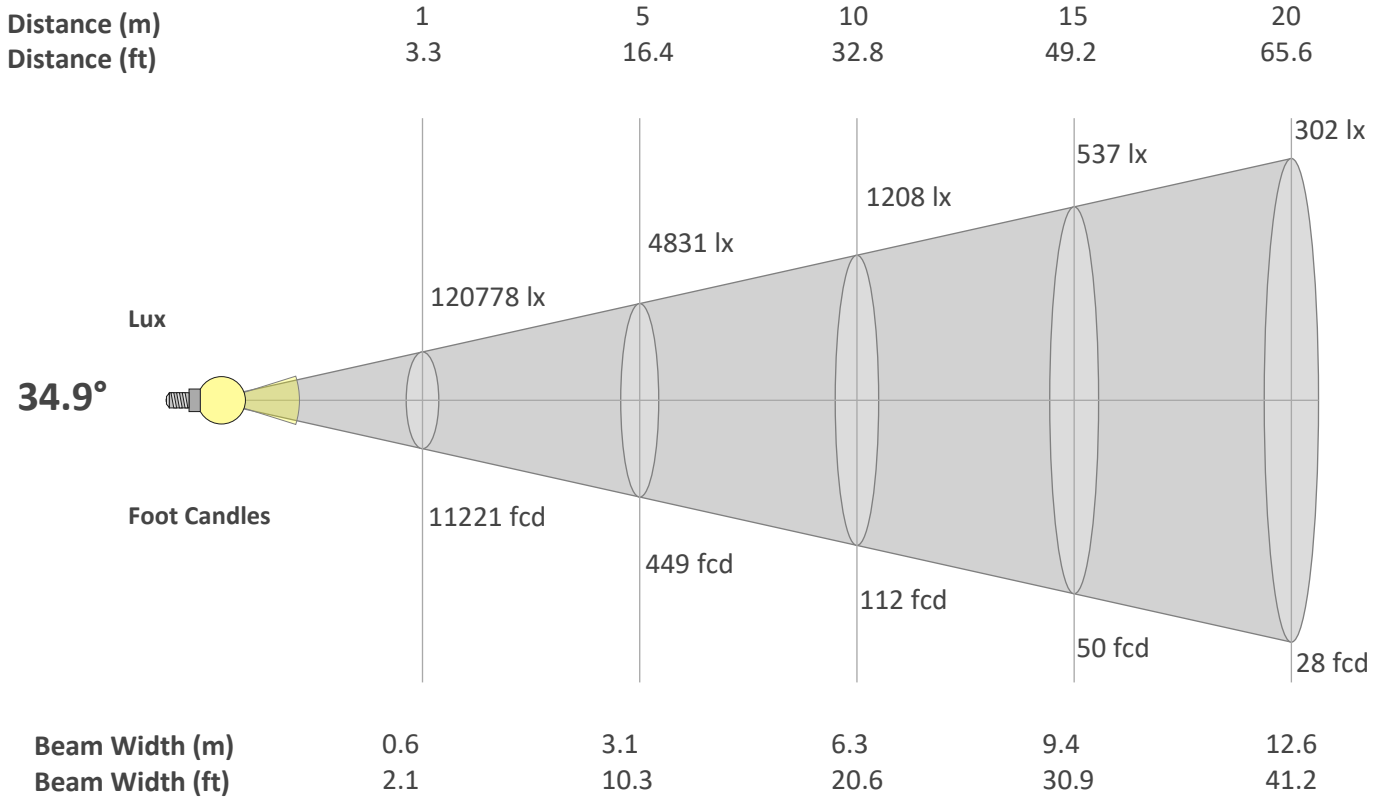
Dominant Wavelength 506 nm



*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Beam Details

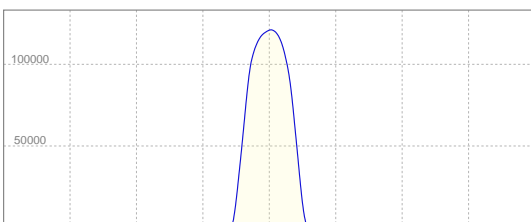
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
34.9°	46.1°	49.6°



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	120778	30195	13420	7549	4831	3355	2465	1887	1491	1208	998	839	715	616	537	472	418	373	335	302
FC	11220.7	2805.2	1246.7	701.3	448.8	311.7	229	175.3	138.5	112.2	92.7	77.9	66.4	57.2	49.9	43.8	38.8	34.6	31.1	28.1

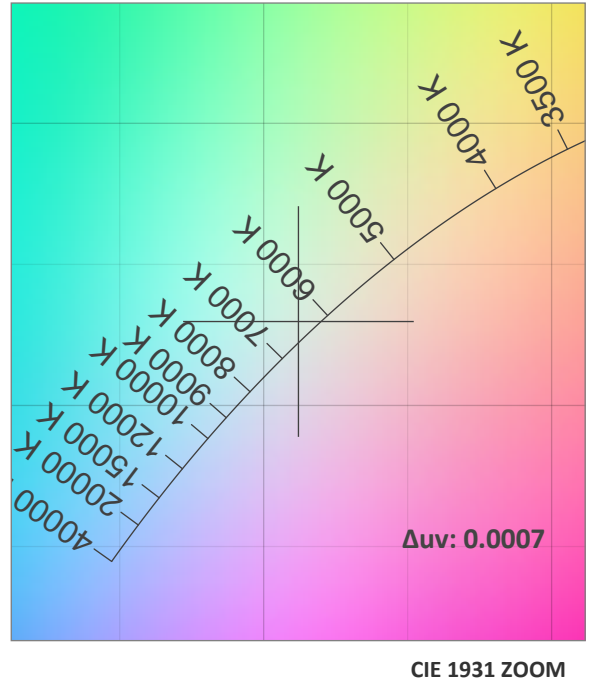
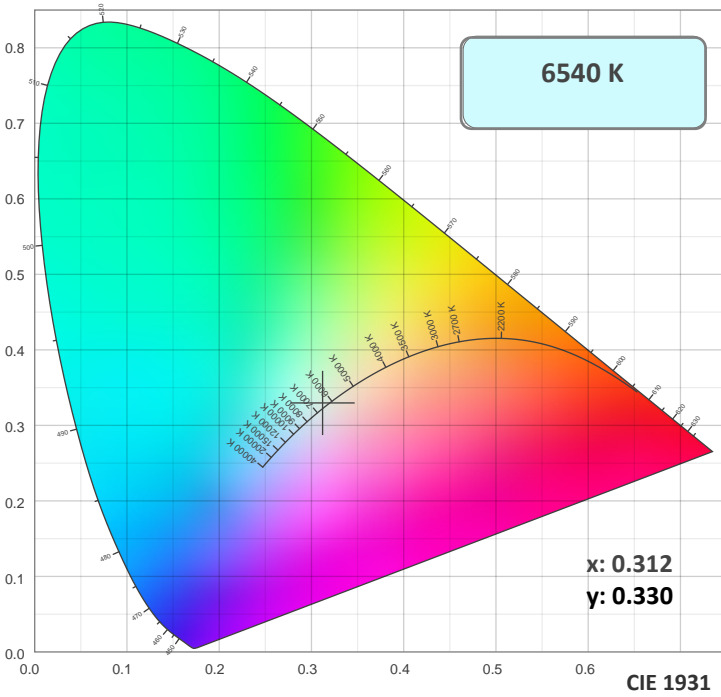
Linear Distribution



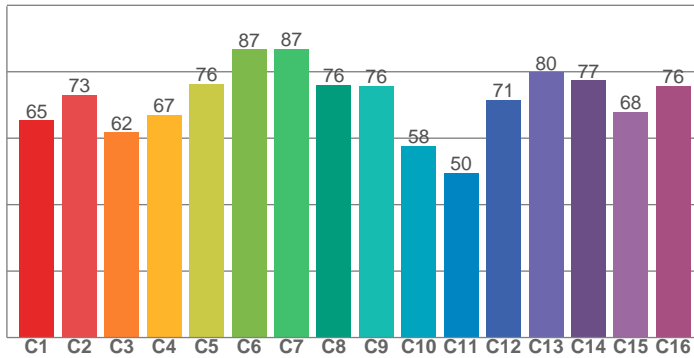
Peak Candela
121096 cd

Calculate Center Beam Intensities
lux = 121096 / distance(m)²
fc = 121096 / distance(ft)²

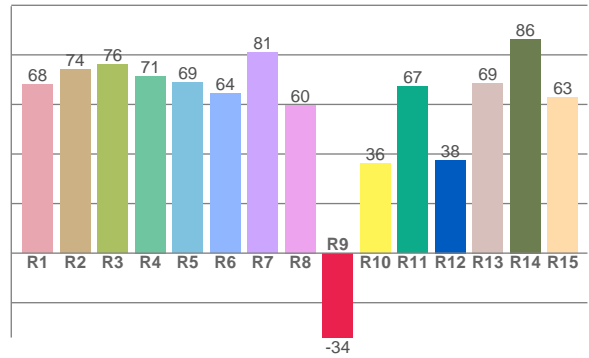
Color Details



TM30: 71.4



CRI: 70.4 (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
67.9	74.2	76.0	71.5	68.8	64.3	80.9	59.7	-34.1	36.4	67.3	37.5	68.7	86.4	62.8

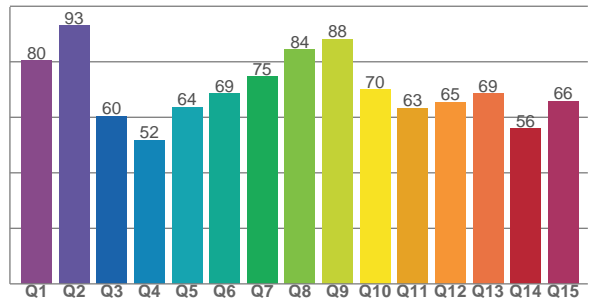
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65.4	73.0	61.8	67.1	76.3	86.7	87.0	76.1	75.7	57.6	49.6	71.5	79.8	77.4	67.9	75.8

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.4	93.1	60.5	51.8	63.6	68.6	74.6	84.4	88.2	70.0	63.4	65.5	68.6	56.0	65.9

CQS: 68.2



Color Parameters

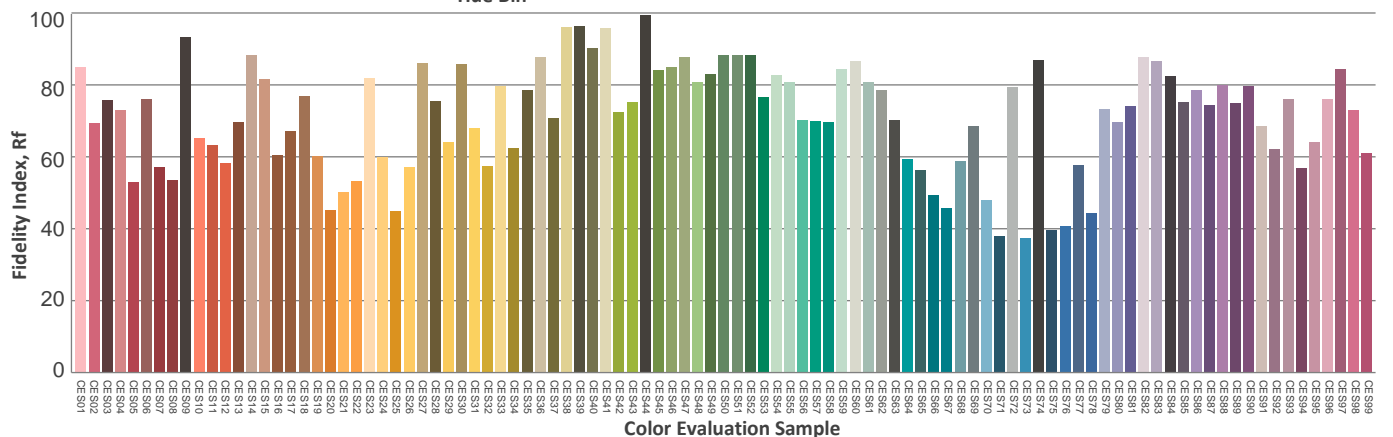
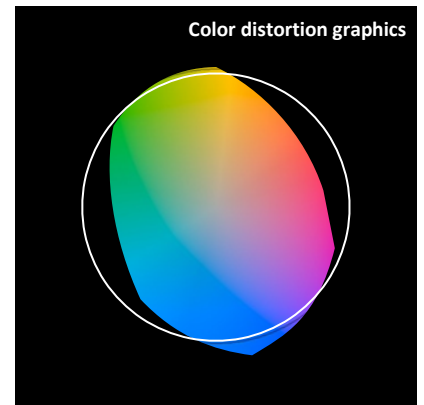
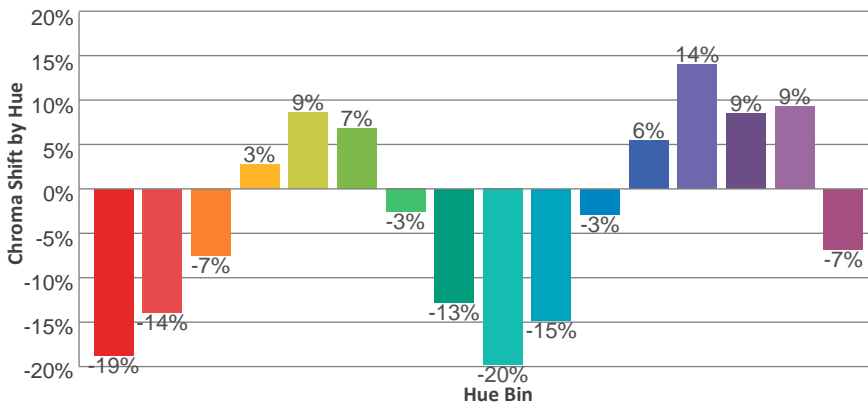
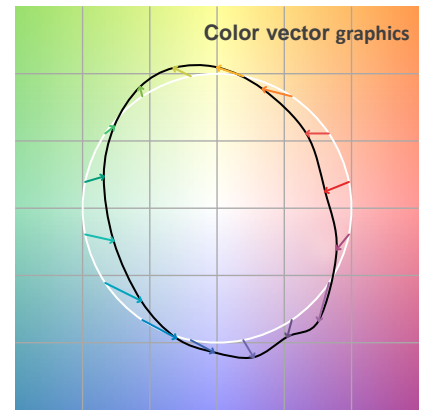
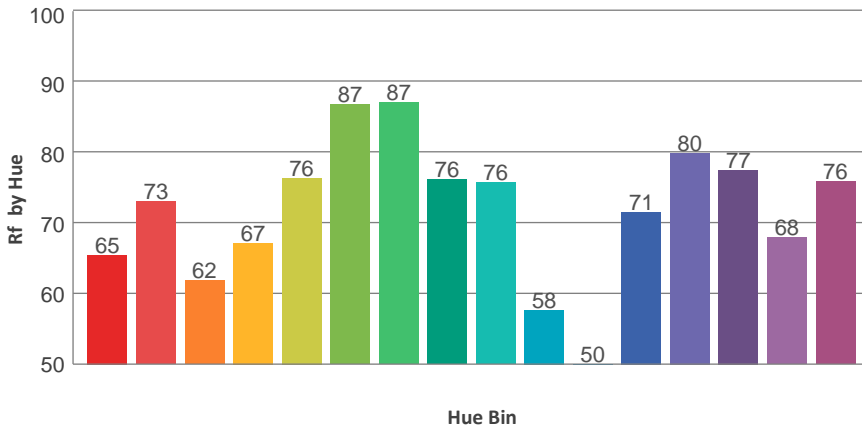
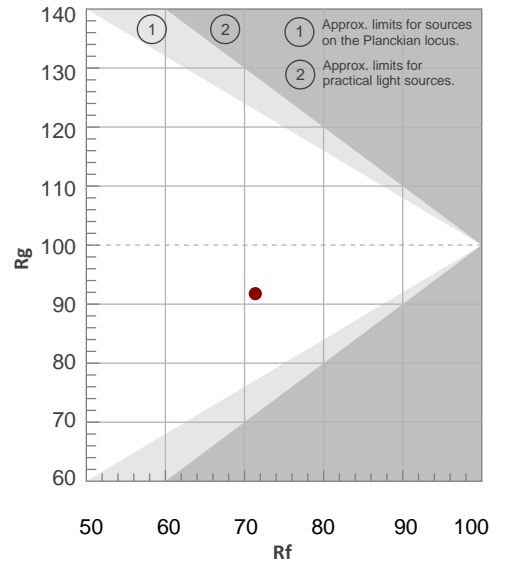
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6540 K	70.4	-34.1	71.4	91.8	68.2	0.312	0.330	0.197	0.312	0.0007

TM30 Details

Rf 71.4
Fidelity Index Rf

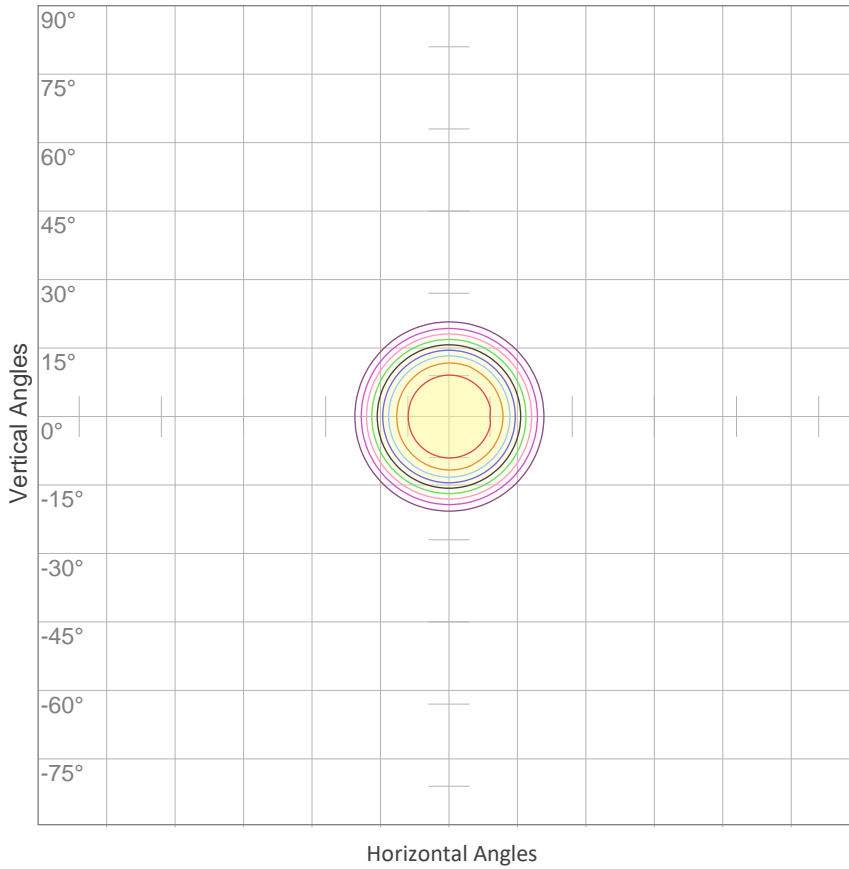
Rg 91.8
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	65	-19%	-3%
2	73	-14%	9%
3	62	-7%	21%
4	67	3%	20%
5	76	9%	11%
6	87	7%	-2%
7	87	-3%	-8%
8	76	-13%	-7%
9	76	-20%	9%
10	58	-15%	26%
11	50	-3%	28%
12	71	6%	18%
13	80	14%	5%
14	77	9%	-10%
15	68	9%	-28%
16	76	-7%	-13%



ISO Diagrams

ISO Candela Diagram



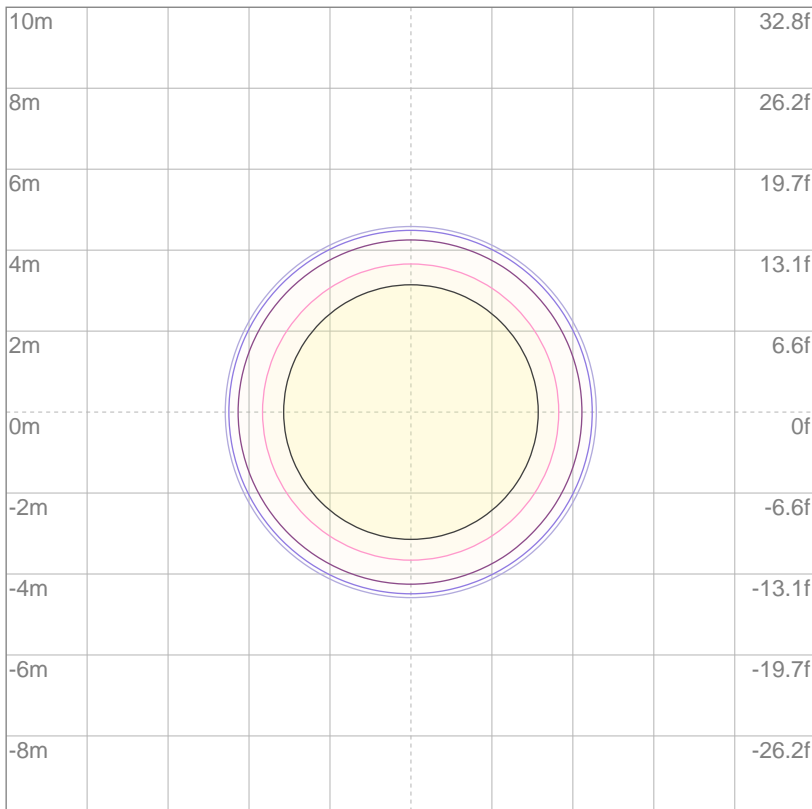
10%	12078 cd
20%	24156 cd
30%	36234 cd
40%	48311 cd
50%	60389 cd
60%	72467 cd
70%	84545 cd
80%	96623 cd
90%	108701 cd

Conditions:

Number of c-planes: 2

Candela at center: 120778 cd

ISO Lux Diagram



3%	36.2 lx
5%	60.4 lx
10%	121 lx
30%	362 lx
50%	604 lx

Conditions:

Number of c-planes: 2

Lux at center: 1208 lx

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

Mounting Height: 10 meters (33 feet)

Photometric Report

Total Lumen Output*

Integrating Sphere

VISO Lab Spion **14602 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
12.8°	16.3°	17.2°

Color Temperature: **2780 K**

CRI: **63.4**

TLCI: **32**

TM30: **65.4**

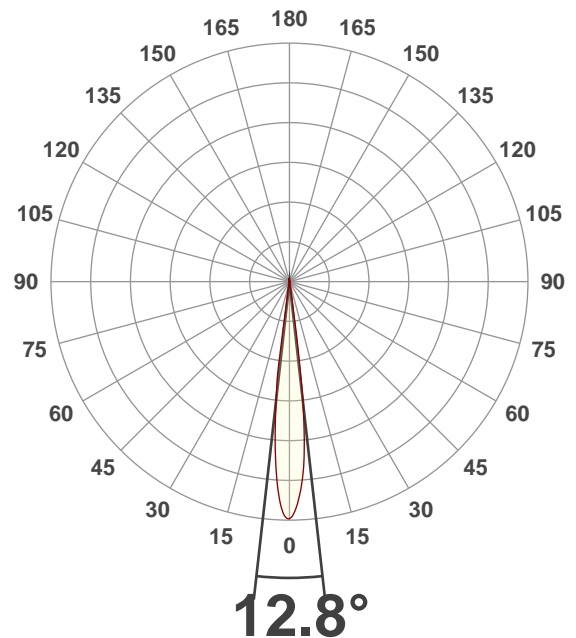
CQS: **62.7**

Voltage: **117 V**, Current: **11.8 A**

Power: **1388 W**

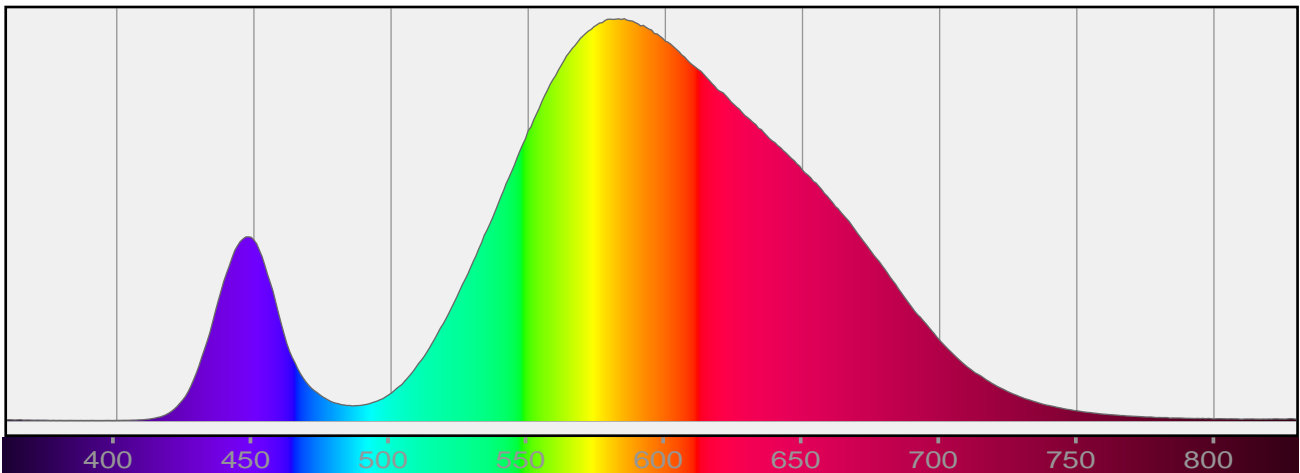
Efficacy: **11 Lumen/Watt**

Measurement Date: **10/14/2020**



Spectral Distribution

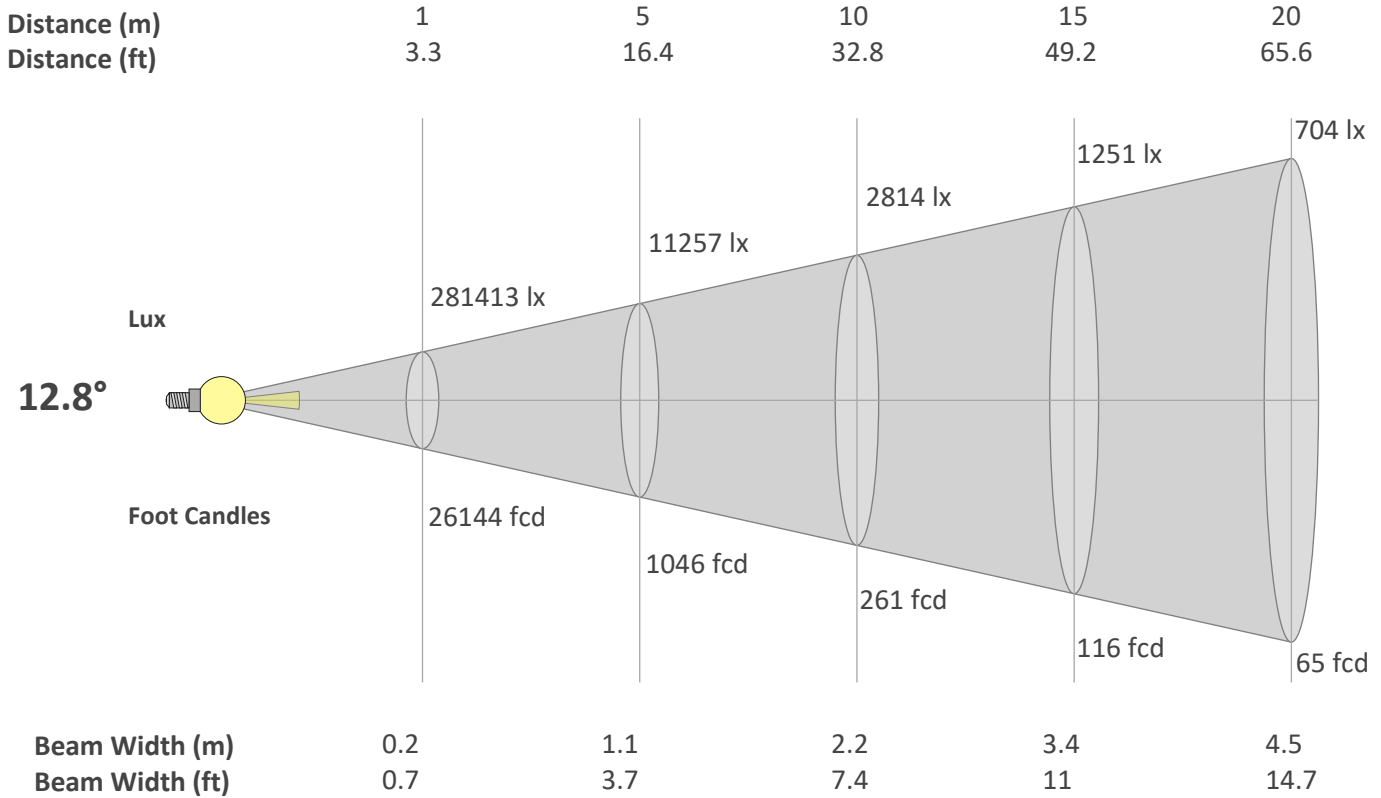
Dominant Wavelength 584 nm



*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Beam Details

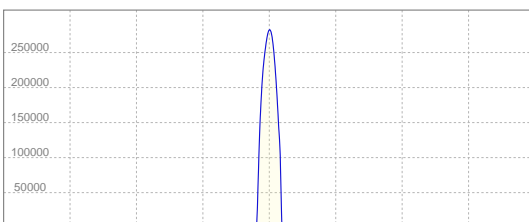
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
12.8°	16.3°	17.2°



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	281413	70353	31268	17588	11257	7817	5743	4397	3474	2814	2326	1954	1665	1436	1251	1099	974	869	780	704
FC	26144.1	6536	2904.9	1634	1045.8	726.2	533.6	408.5	322.8	261.4	216.1	181.6	154.7	133.4	116.2	102.1	90.5	80.7	72.4	65.4

Linear Distribution

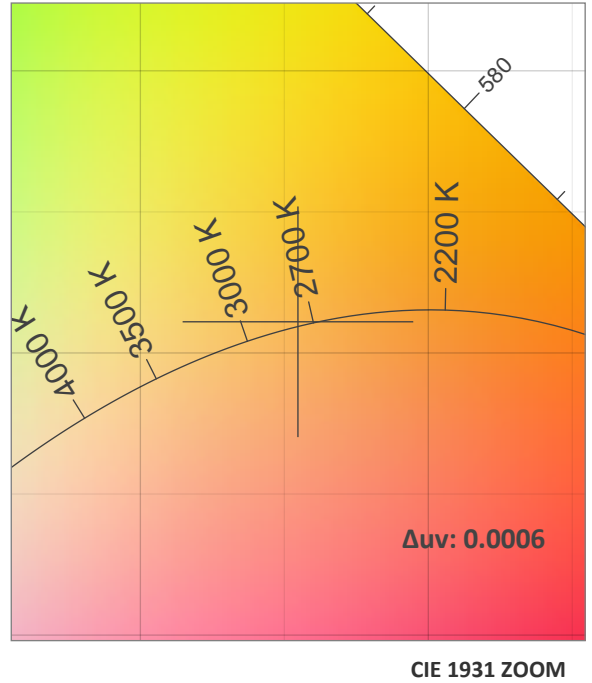
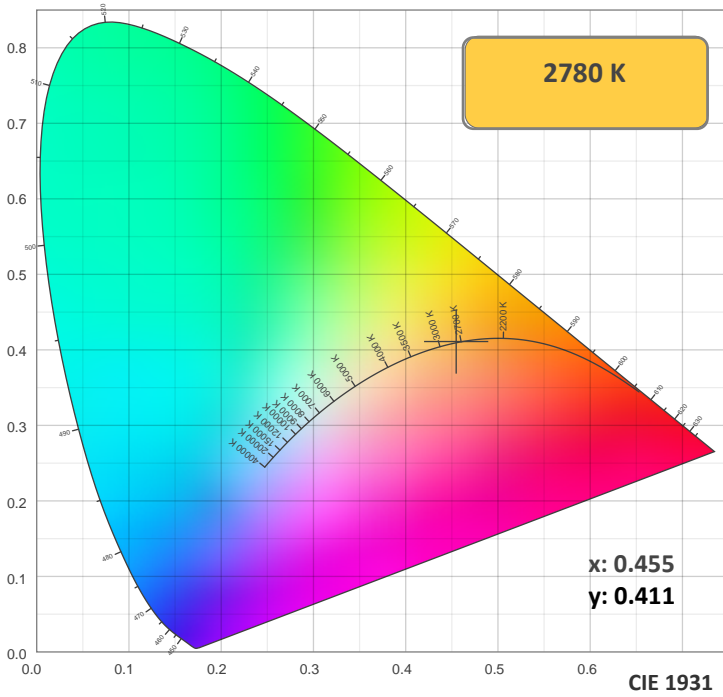


Peak Candela
282378 cd

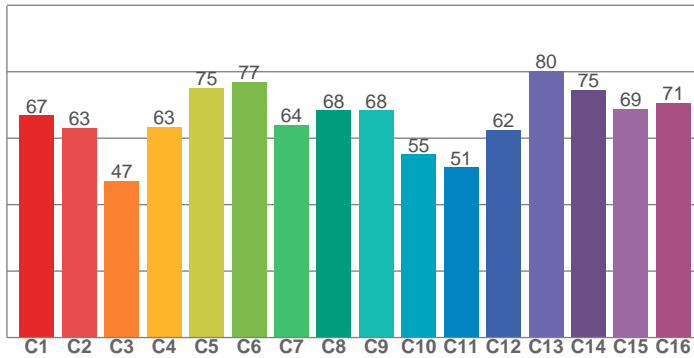
Calculate Center Beam Intensities

lux = 282378 / distance(m)²
fc = 282378 / distance(ft)²

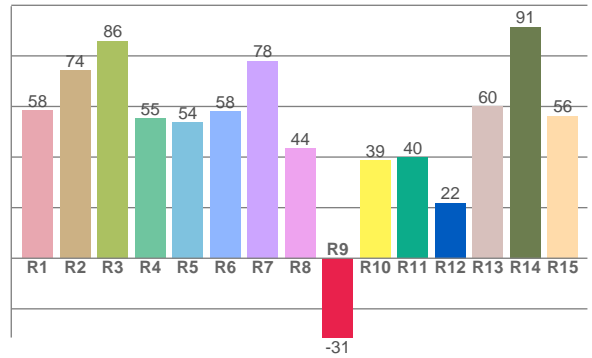
Color Details



TM30: 65.4



CRI: 63.4 (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
58.4	74.2	85.9	55.3	53.8	58.0	78.1	43.6	-31.3	38.7	39.8	21.9	60.1	91.5	56.3

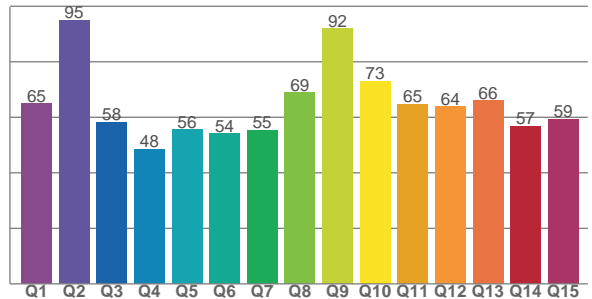
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
66.8	63.1	47.2	63.5	75.1	77.0	64.1	68.4	68.4	55.1	51.2	62.5	80.3	74.5	68.7	70.6

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
64.9	95.0	58.3	48.5	55.6	54.2	55.3	69.0	92.0	73.1	64.8	63.8	66.1	56.8	59.3

CQS: 62.7



Color Parameters

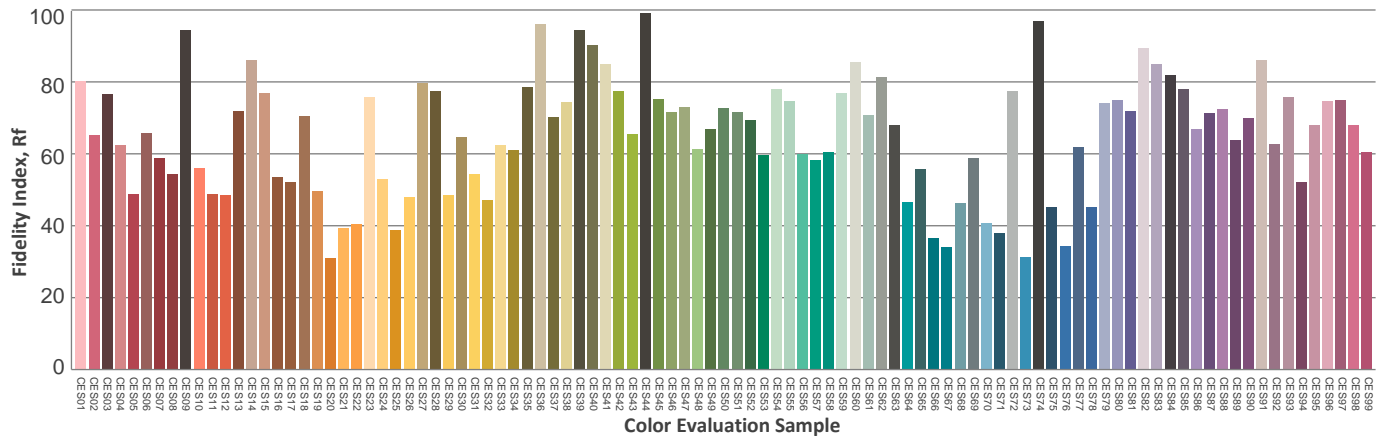
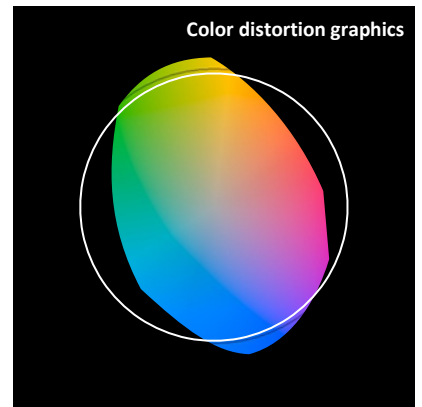
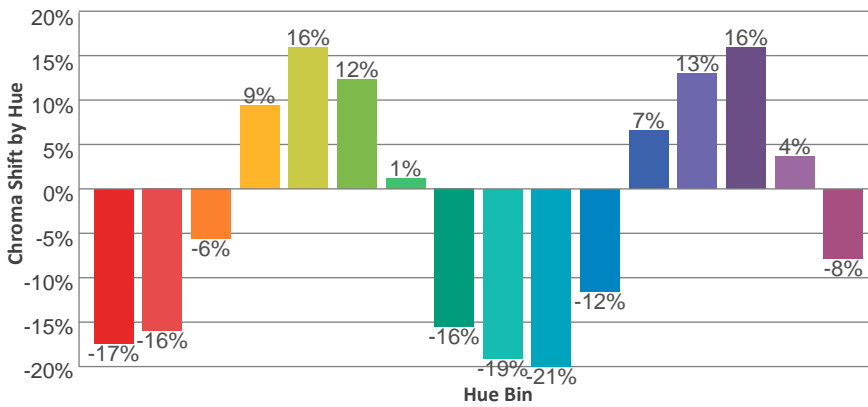
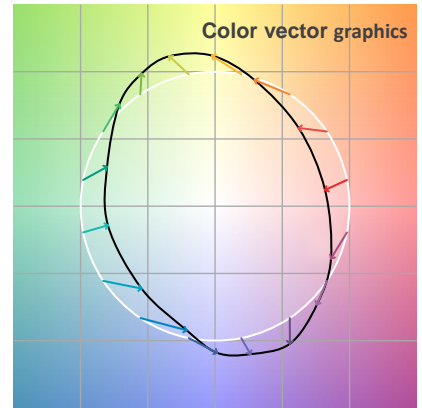
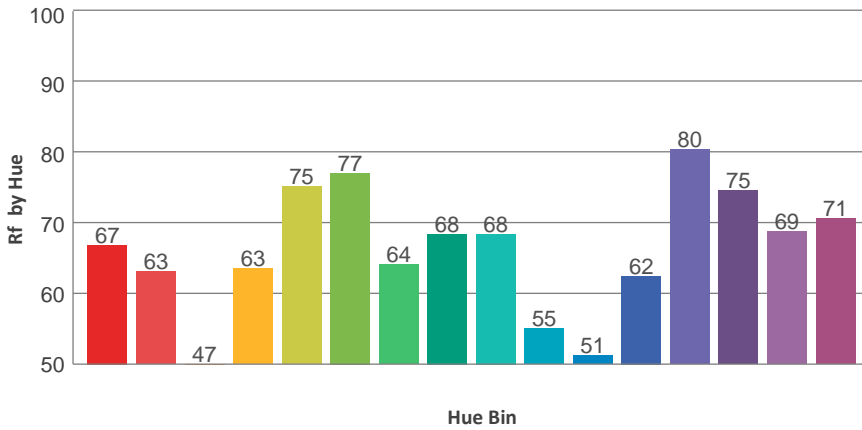
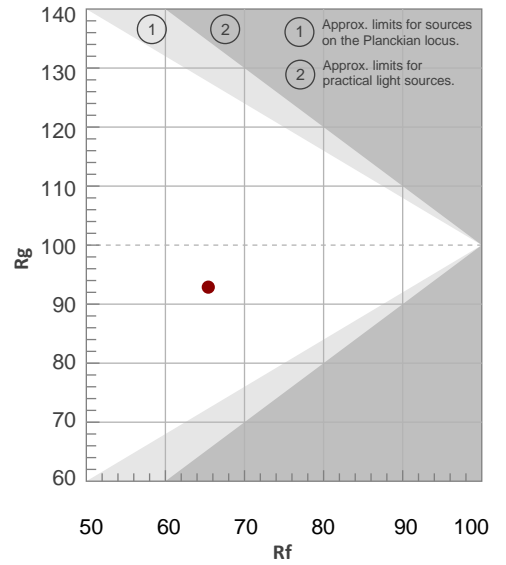
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2780 K	63.4	-31.3	65.4	92.9	62.7	0.455	0.411	0.259	0.351	0.0006

TM30 Details

Rf 65.4
Fidelity Index Rf

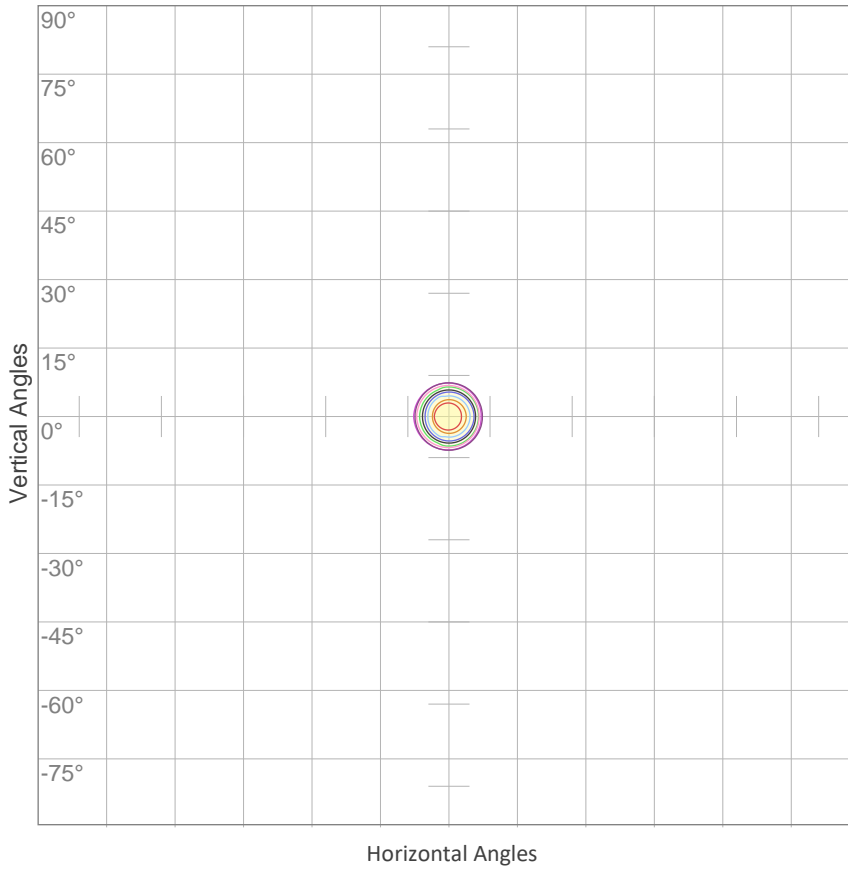
Rg 92.9
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	67	-17%	-4%
2	63	-16%	14%
3	47	-6%	28%
4	63	9%	24%
5	75	16%	12%
6	77	12%	-9%
7	64	1%	-23%
8	68	-16%	-13%
9	68	-19%	-2%
10	55	-21%	21%
11	51	-12%	34%
12	62	7%	23%
13	80	13%	4%
14	75	16%	-11%
15	69	4%	-19%
16	71	-8%	-21%



ISO Diagrams

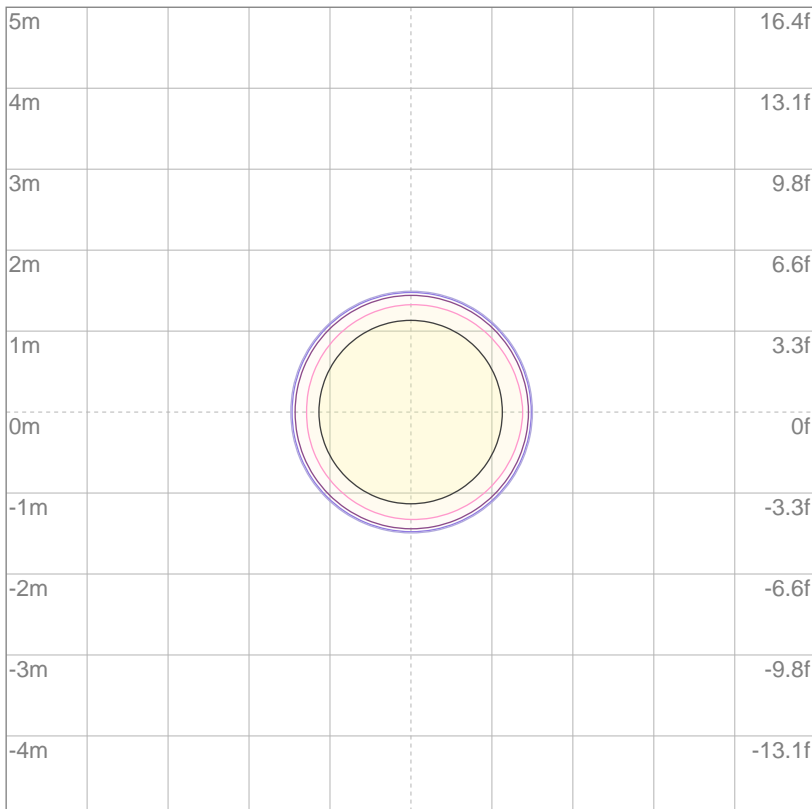
ISO Candela Diagram



10%	28141 cd
20%	56283 cd
30%	84424 cd
40%	112565 cd
50%	140707 cd
60%	168848 cd
70%	196989 cd
80%	225130 cd
90%	253272 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 281413 cd

ISO Lux Diagram



3%	84.4 lx
5%	141 lx
10%	281 lx
30%	844 lx
50%	1407 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 2814 lx

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

Mounting Height: 10 meters (33 feet)

Photometric Report

Total Lumen Output*

Integrating Sphere

VISO Lab Spion **43451 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
12.8°	16.4°	16.9°

Color Temperature: 6129 K

CRI: 84.0

TLCI: 59

TM30: 79.8

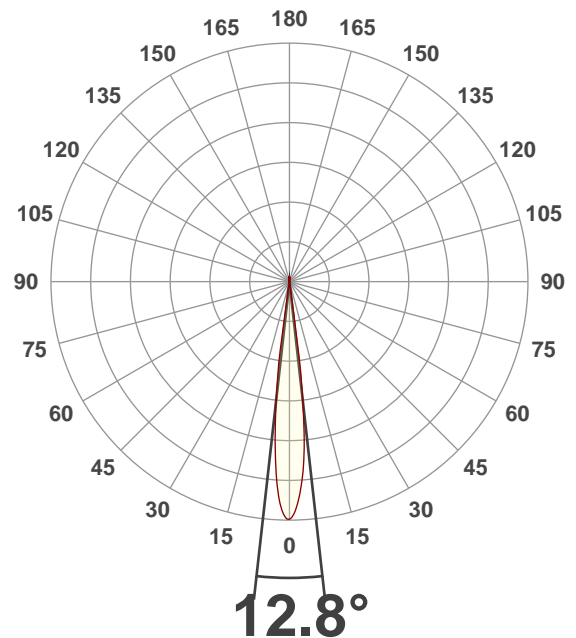
CQS: 76.6

Voltage: 118 V, Current: 11.8 A

Power: 1388 W

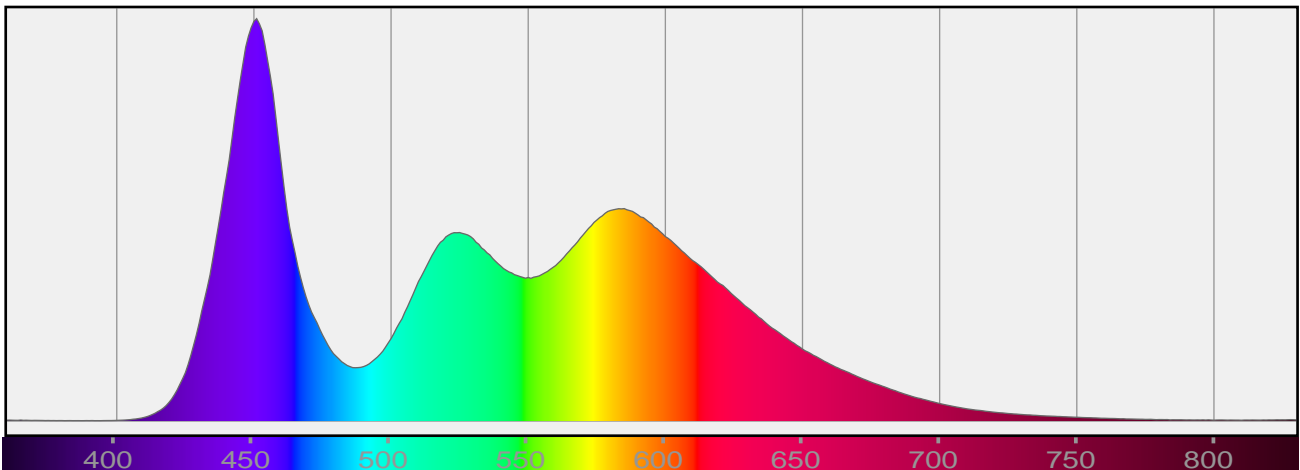
Efficacy: 31 Lumen/Watt

Measurement Date: 10/14/2020



Spectral Distribution

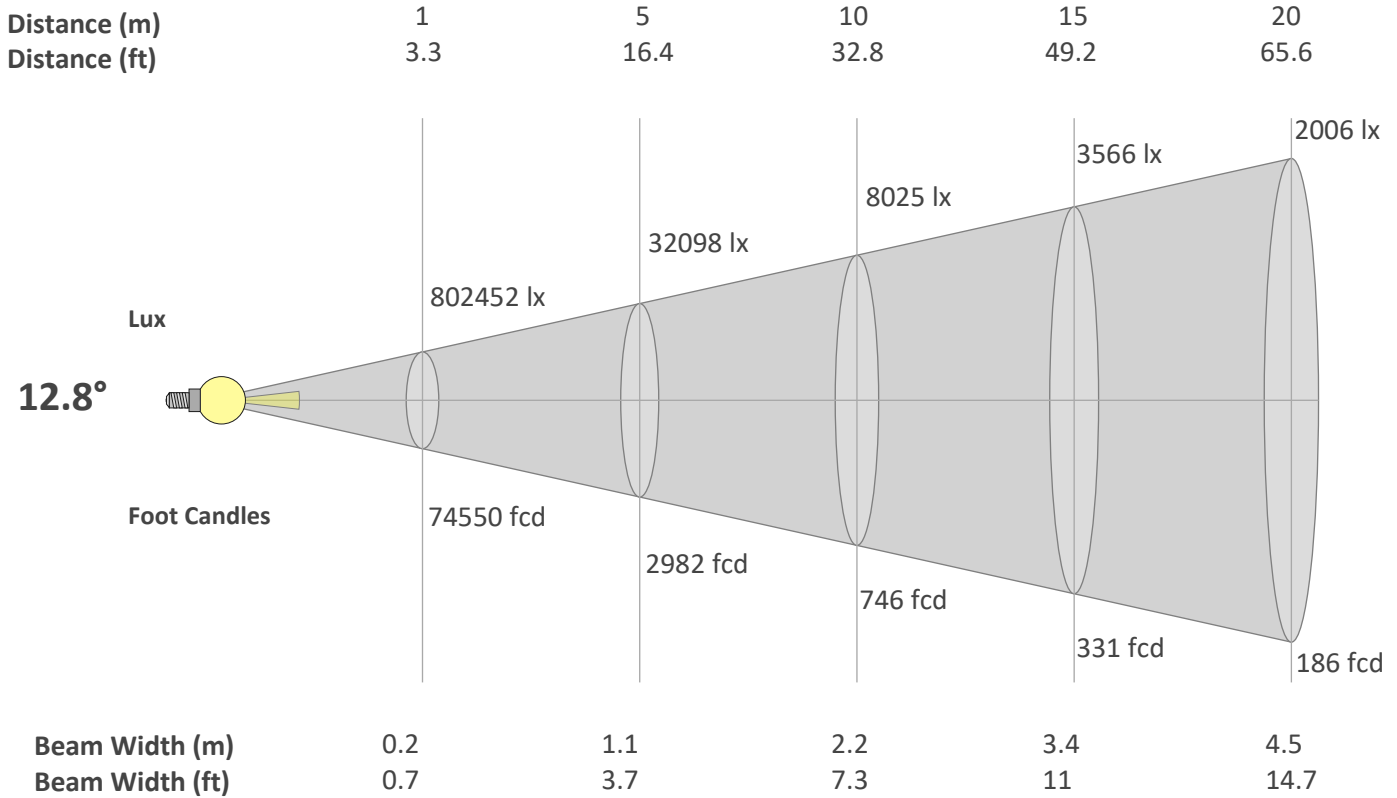
Dominant Wavelength 360 nm



*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Beam Details

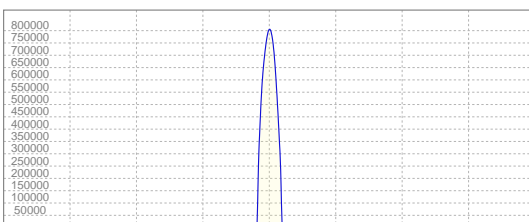
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
12.8°	16.4°	16.9°



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	802452	200613	89161	50153	32098	22290	16377	12538	9907	8025	6632	5573	4748	4094	3566	3135	2777	2477	2223	2006
FC	74550.2	18637.6	8283.4	4659.4	2982	2070.8	1521.4	1164.8	920.4	745.5	616.1	517.7	441.1	380.4	331.3	291.2	258	230.1	206.5	186.4

Linear Distribution



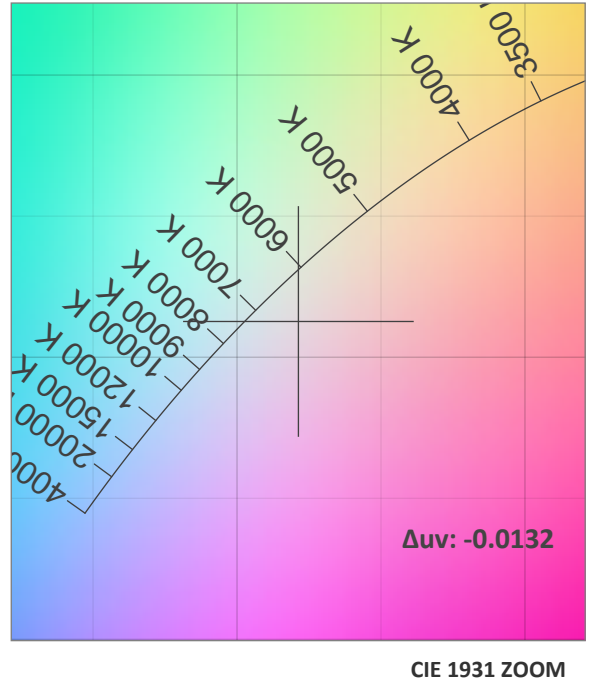
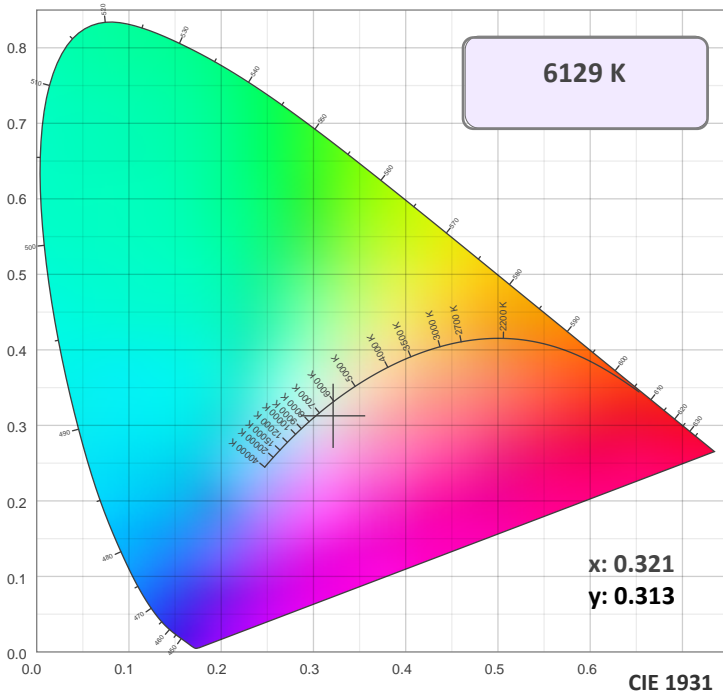
Peak Candela
803158 cd

Calculate Center Beam Intensities

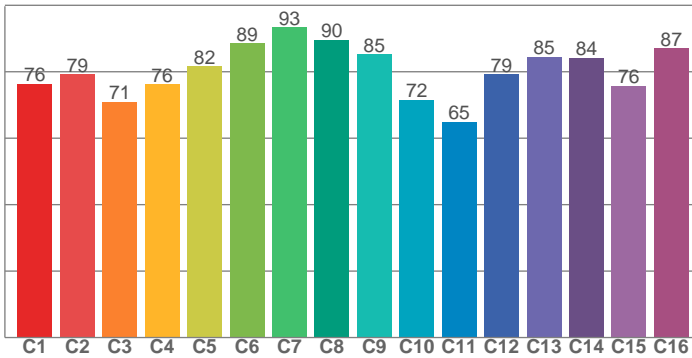
$lux = 803158 / distance(m)^2$

$fc = 803158 / distance(ft)^2$

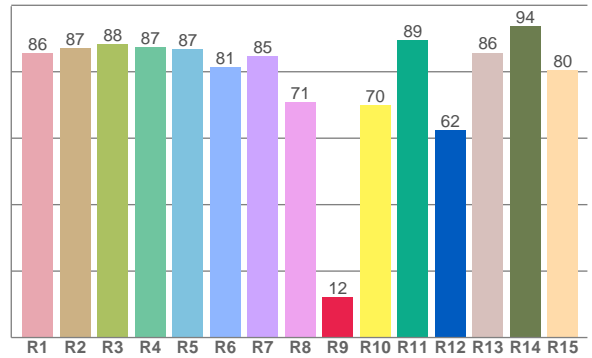
Color Details



TM30: 79.8



CRI: 84.0 (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
85.5	87.1	88.4	87.4	86.7	81.4	84.7	70.9	12.2	69.8	89.5	62.4	85.8	93.6	80.5

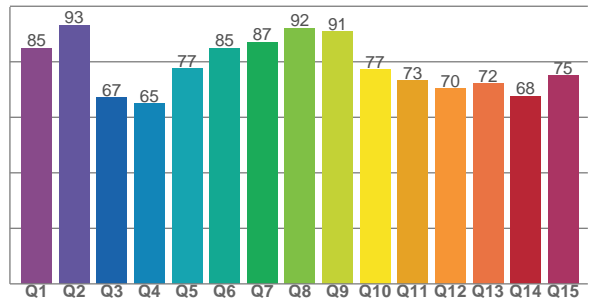
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
76.4	79.2	71.0	76.2	81.6	88.6	93.4	89.5	85.2	71.6	64.9	79.2	84.6	84.1	75.7	87.0

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
84.9	93.2	67.1	64.9	77.5	84.8	87.2	92.1	90.8	77.1	73.2	70.3	72.1	67.6	74.9

CQS: 76.6



Color Parameters

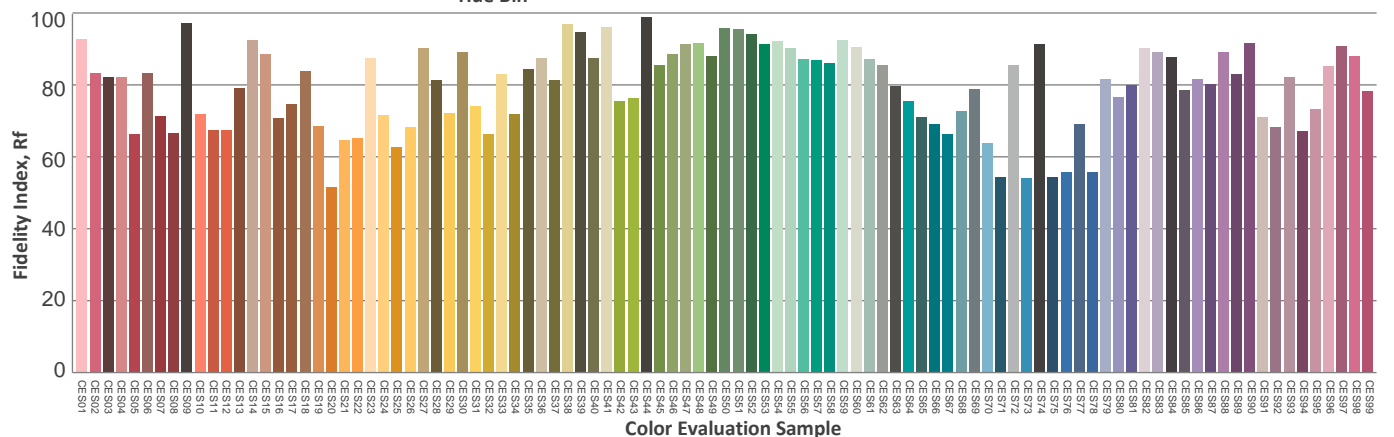
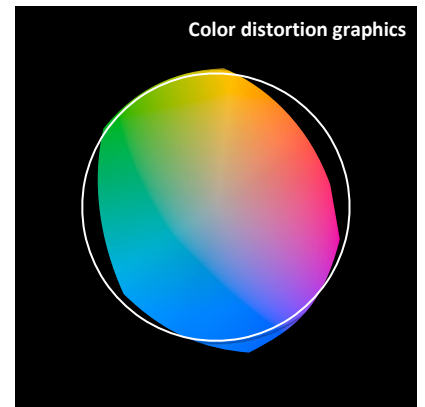
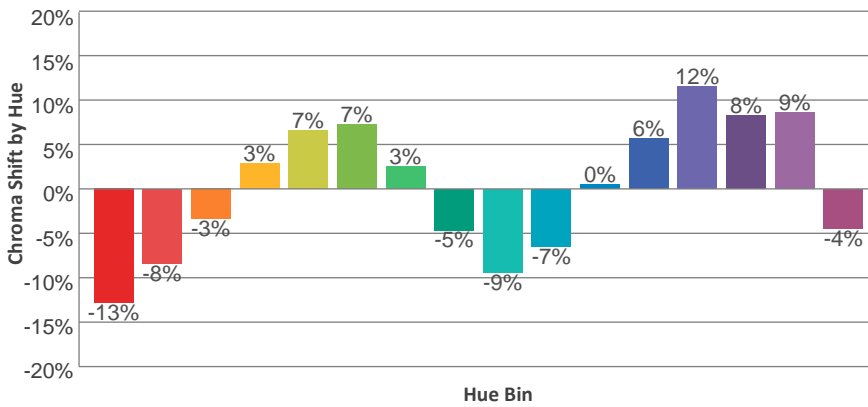
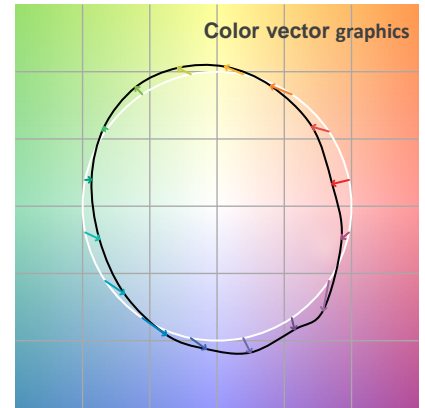
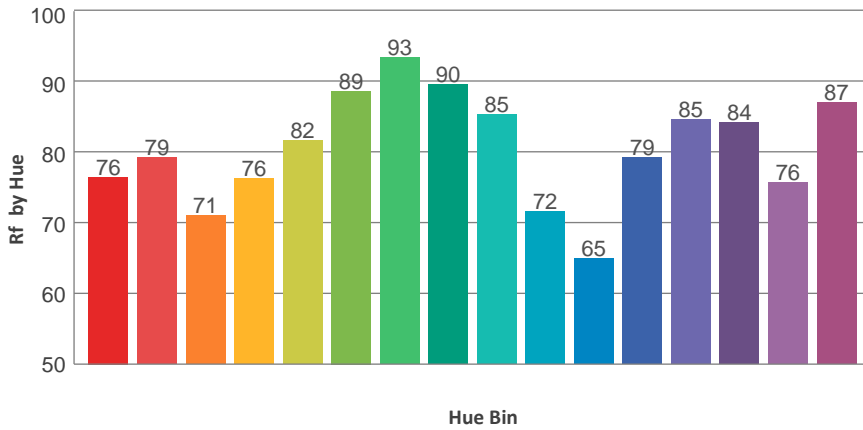
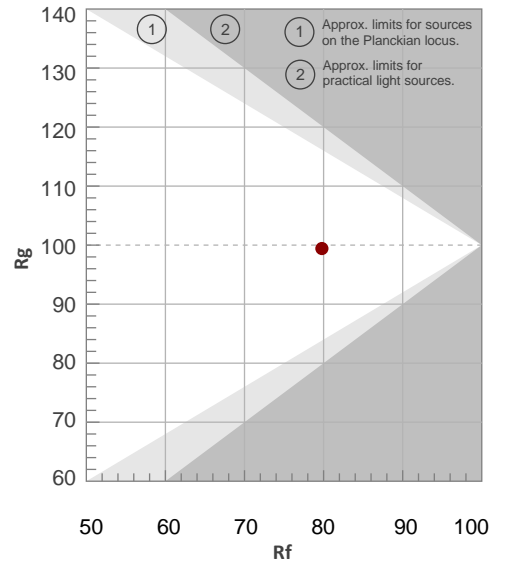
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6129 K	84.0	12.2	79.8	99.4	76.6	0.321	0.313	0.210	0.307	-0.0132

TM30 Details

Rf 79.8
Fidelity Index Rf

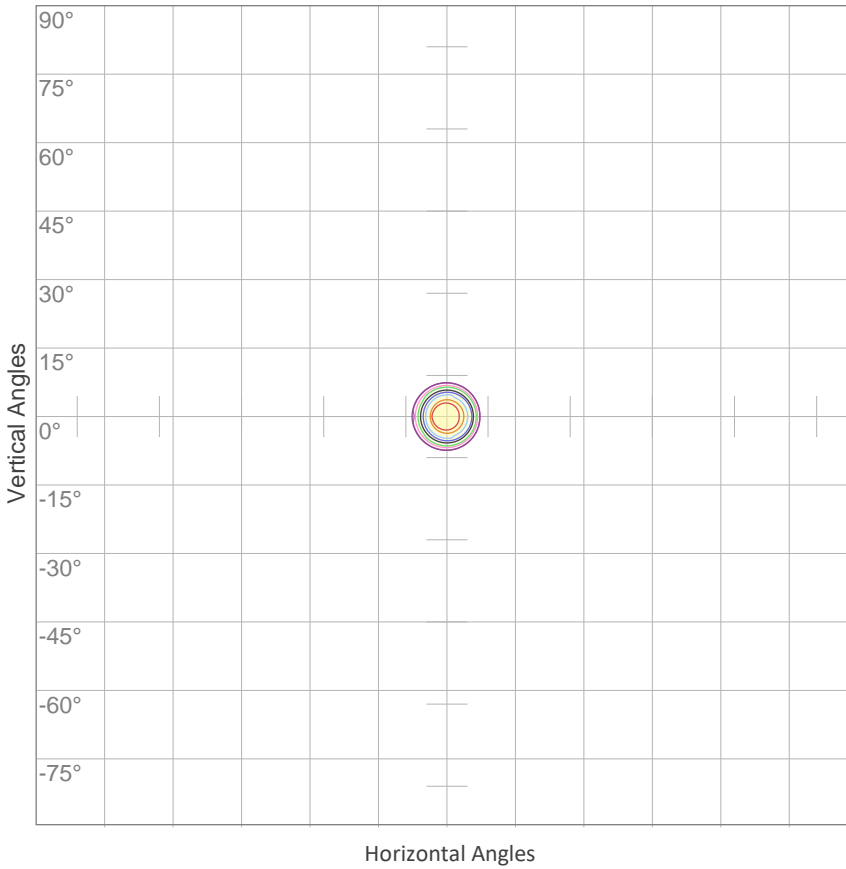
Rg 99.4
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	76	-13%	-1%
2	79	-8%	10%
3	71	-3%	16%
4	76	3%	14%
5	82	7%	9%
6	89	7%	1%
7	93	3%	-2%
8	90	-5%	-1%
9	85	-9%	7%
10	72	-7%	16%
11	65	0%	22%
12	79	6%	13%
13	85	12%	3%
14	84	8%	-3%
15	76	9%	-21%
16	87	-4%	-6%



ISO Diagrams

ISO Candela Diagram



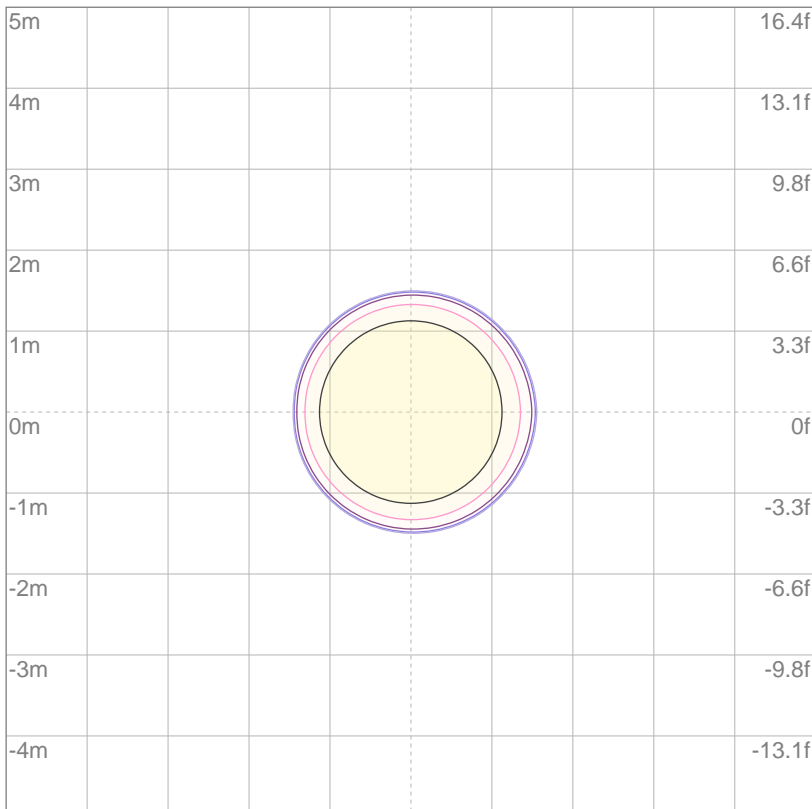
10%	80245 cd
20%	160490 cd
30%	240736 cd
40%	320981 cd
50%	401226 cd
60%	481471 cd
70%	561716 cd
80%	641962 cd
90%	722207 cd

Conditions:

Number of c-planes: 2

Candela at center: 802452 cd

ISO Lux Diagram



3%	241 lx
5%	401 lx
10%	802 lx
30%	2407 lx
50%	4012 lx

Conditions:

Number of c-planes: 2

Lux at center: 8025 lx

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

Mounting Height: 10 meters (33 feet)

Photometric Report

Total Lumen Output*

Integrating Sphere

VISO Lab Spion **188 lm**

Color Temperature: **0 K**

CRI: **0.0**

TLCI: **n/a**

TM30: **0.0**

CQS: **0.0**

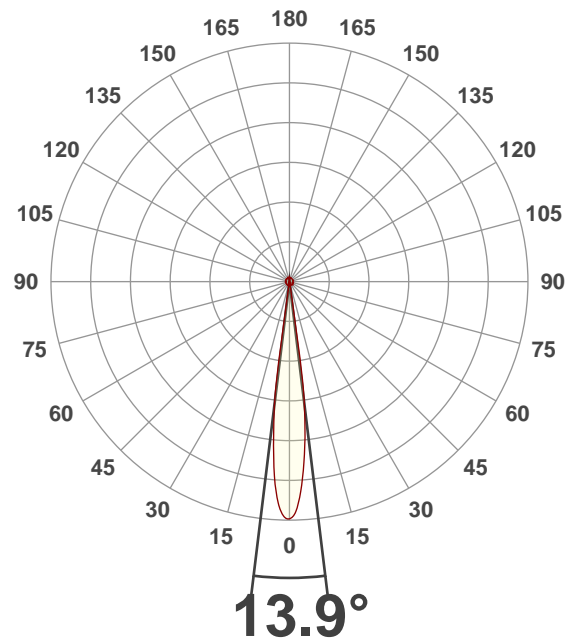
Voltage: **118 V**, Current: **11.8 A**

Power: **1387 W**

Efficacy: **0 Lumen/Watt**

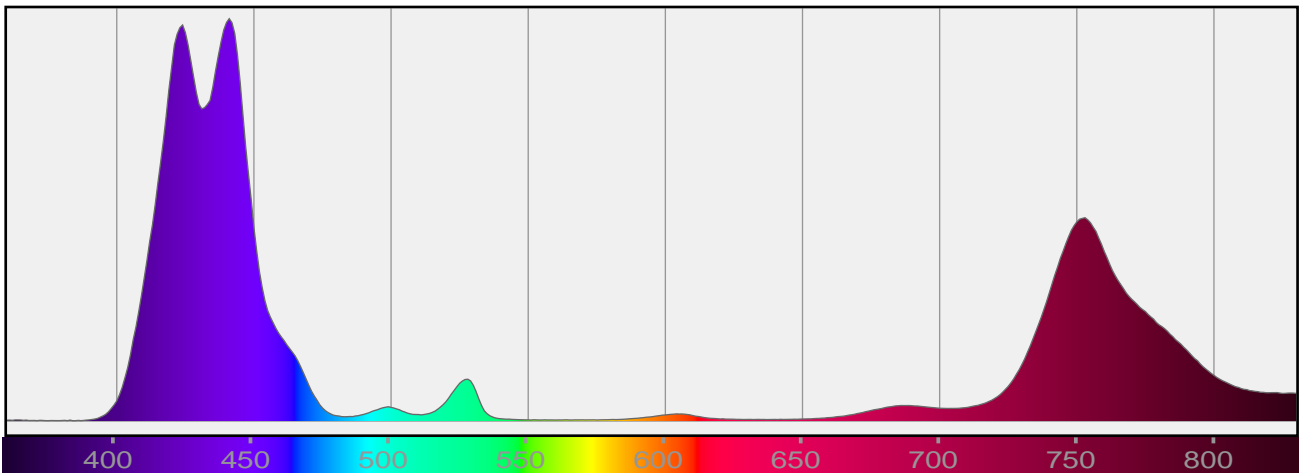
Measurement Date: **10/14/2020**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
13.9°	17.5°	18.8°



Spectral Distribution

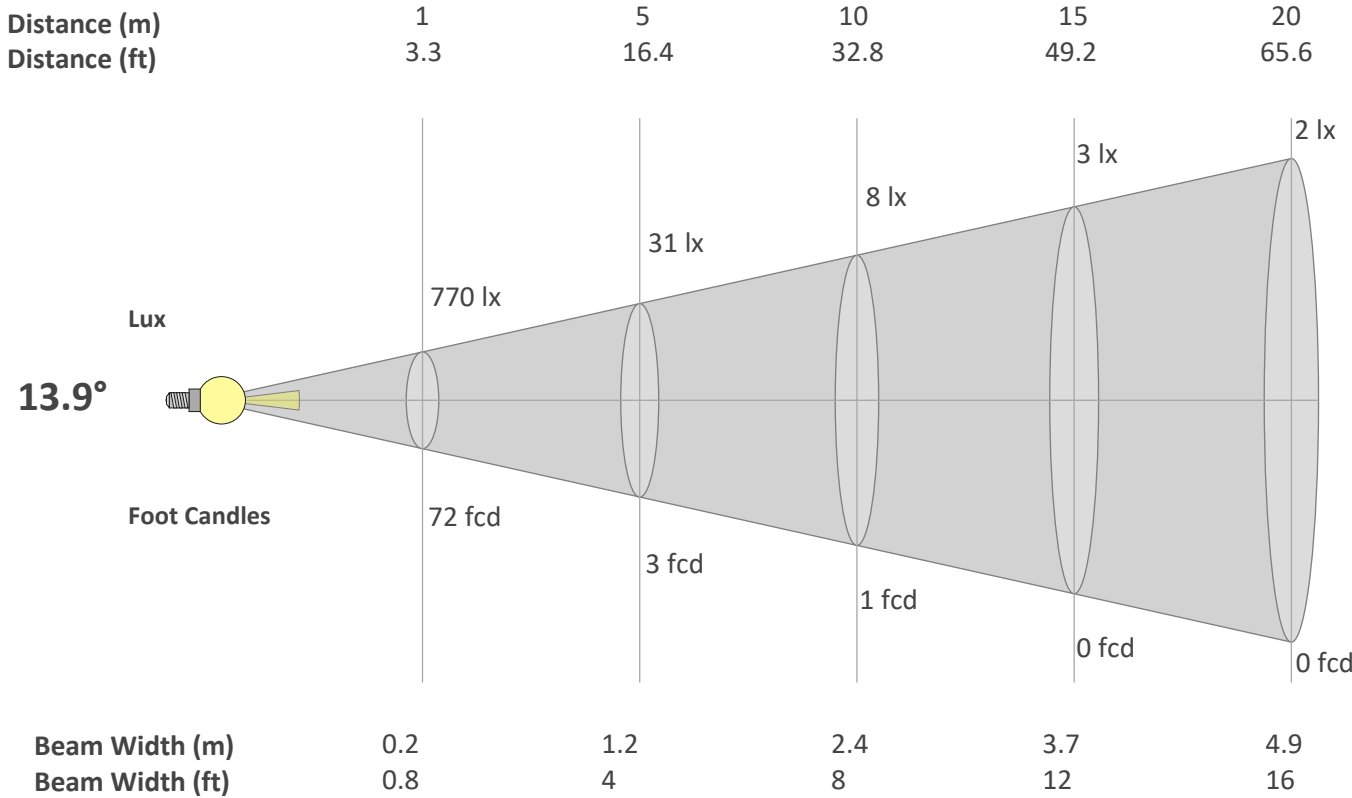
Dominant Wavelength 450 nm



*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Beam Details

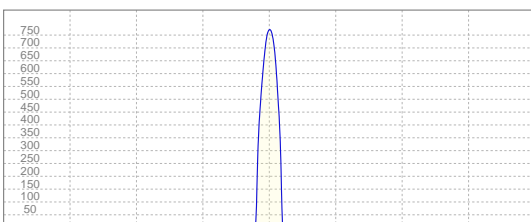
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
13.9°	17.5°	18.8°



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	770	192	86	48	31	21	16	12	10	8	6	5	5	4	3	3	3	2	2	2
FC	71.5	17.9	7.9	4.5	2.9	2	1.5	1.1	0.9	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2

Linear Distribution



Peak Candela
770 cd

Calculate Center Beam Intensities

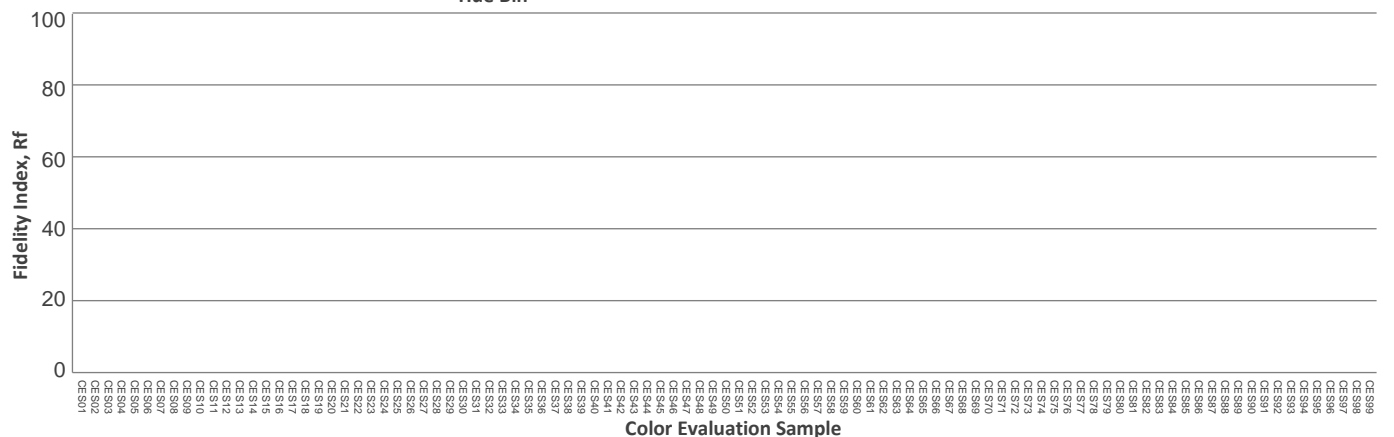
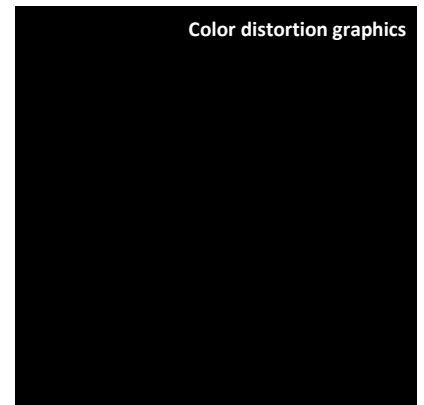
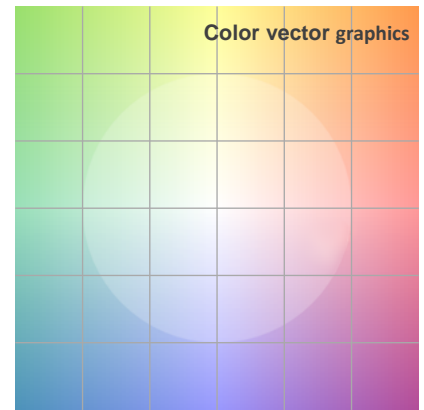
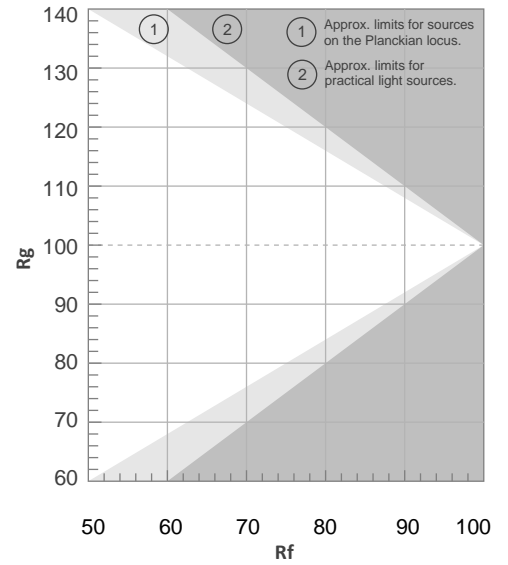
lux = 770 / distance(m)²
fc = 770 / distance(ft)²

TM30 Details

Rf 0.0
Fidelity Index Rf

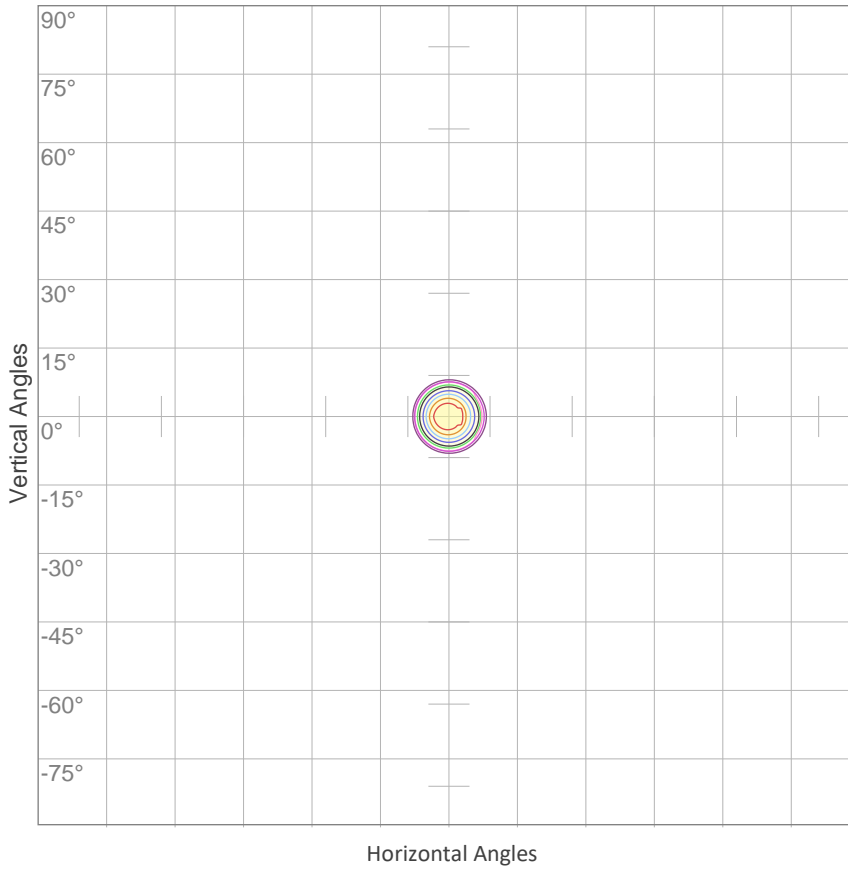
Rg 0.0
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	0	0%	0%
5	0	0%	0%
6	0	0%	0%
7	0	0%	0%
8	0	0%	0%
9	0	0%	0%
10	0	0%	0%
11	0	0%	0%
12	0	0%	0%
13	0	0%	0%
14	0	0%	0%
15	0	0%	0%
16	0	0%	0%



ISO Diagrams

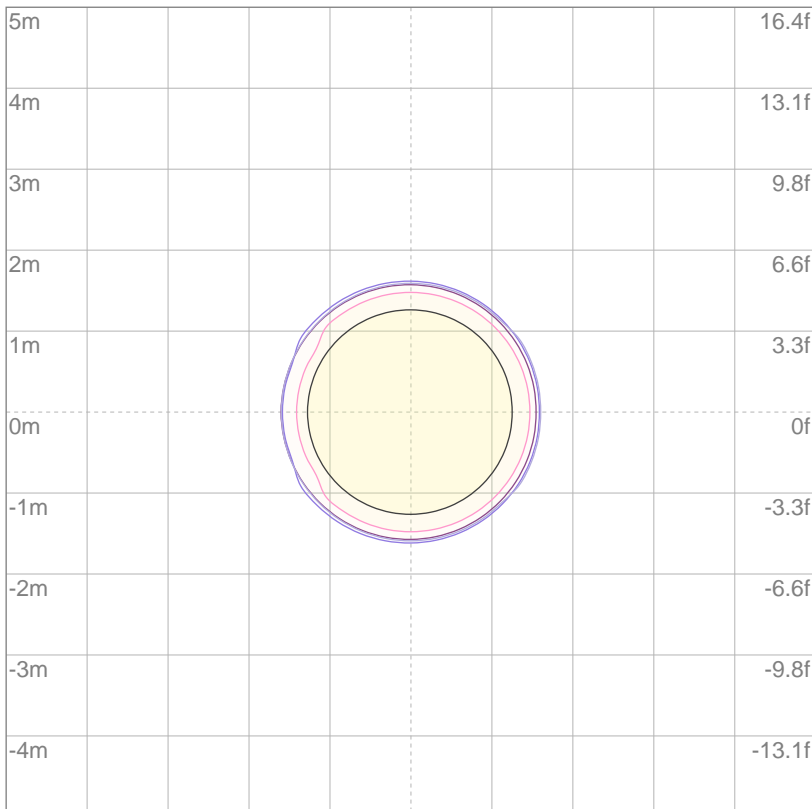
ISO Candela Diagram



10%	77 cd
20%	154 cd
30%	231 cd
40%	308 cd
50%	385 cd
60%	462 cd
70%	539 cd
80%	616 cd
90%	693 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 770 cd

ISO Lux Diagram



3%	0.231 lx
5%	0.385 lx
10%	0.770 lx
30%	2.31 lx
50%	3.85 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 7.70 lx

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

Mounting Height: 10 meters (33 feet)