



Artiste Rembrandt

**Photometric Test
Report**

©2020 ELATION PROFESSIONAL all rights reserved. Information, specifications, diagrams, images, and instructions herein are subject to change without notice. ELATION PROFESSIONAL logo and identifying product names and numbers herein are trademarks of ELATION PROFESSIONAL. Copyright protection claimed includes all forms and matters of copyrightable materials and information now allowed by statutory or judicial law or hereinafter granted. Product names used in this document may be trademarks or registered trademarks of their respective companies and are hereby acknowledged. All non-ELATION brands and product names are trademarks or registered trademarks of their respective companies.

Elation Professional USA | 6122 S. Eastern Ave. | Los Angeles, CA. 90040

323-582-3322 | 323-832-9142 fax | www.elationlighting.com | info@elationlighting.com

Elation Professional B.V. | Junostraat 2 | 6468 EW Kerkrade, The Netherlands

+31 45 546 85 66 | +31 45 546 85 96 fax | www.elationlighting.eu | info@elationlighting.eu

Elation Professional Mexico | AV Santa Ana 30 | Parque Industrial Lerma, Lerma, Mexico 52000

+52 (728) 282-7070

CONTENTS

Testing Process	4
Fresnel Lens	
Zoom In	5
Zoom 50%	10
Zoom Out	15
HCRI	20
CTO	25
PC Lens	
Zoom In	30
Zoom 50%	35
Zoom Out	40
HCRI	45
CTO	50

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, 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 30901
 VISO Lab Spion 21026 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
6.1°	11.2°	15.9°

Color Temperature: 6881 K

CRI: 70.6

TLCI: 44

TM30: 69.6

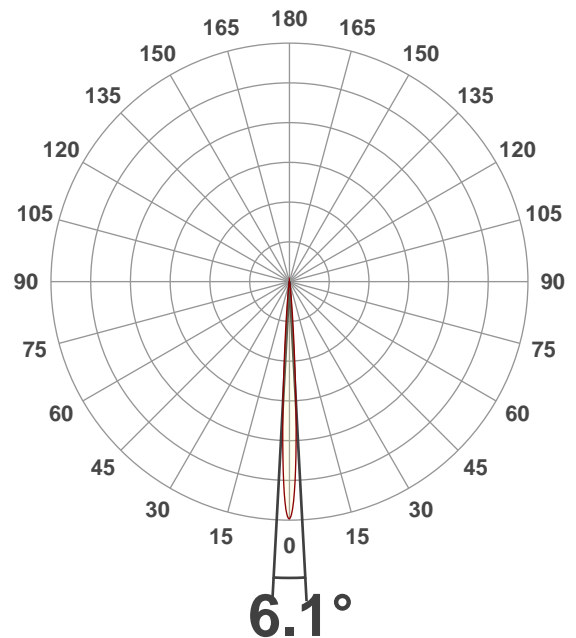
CQS: 66.5

Voltage: 115 V, Current: 12.3 A

Power: 1413 W

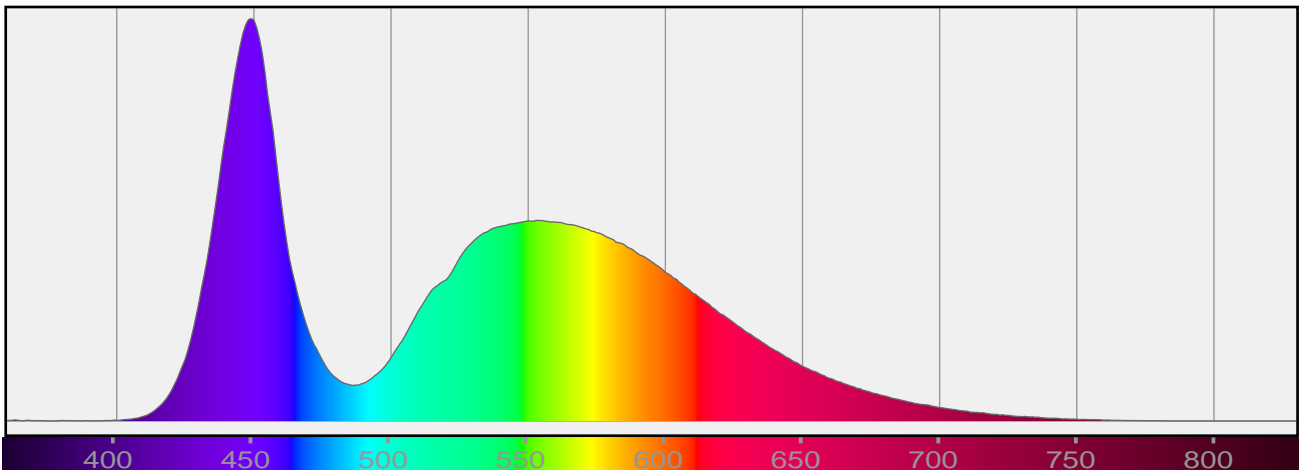
Efficacy: 15 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

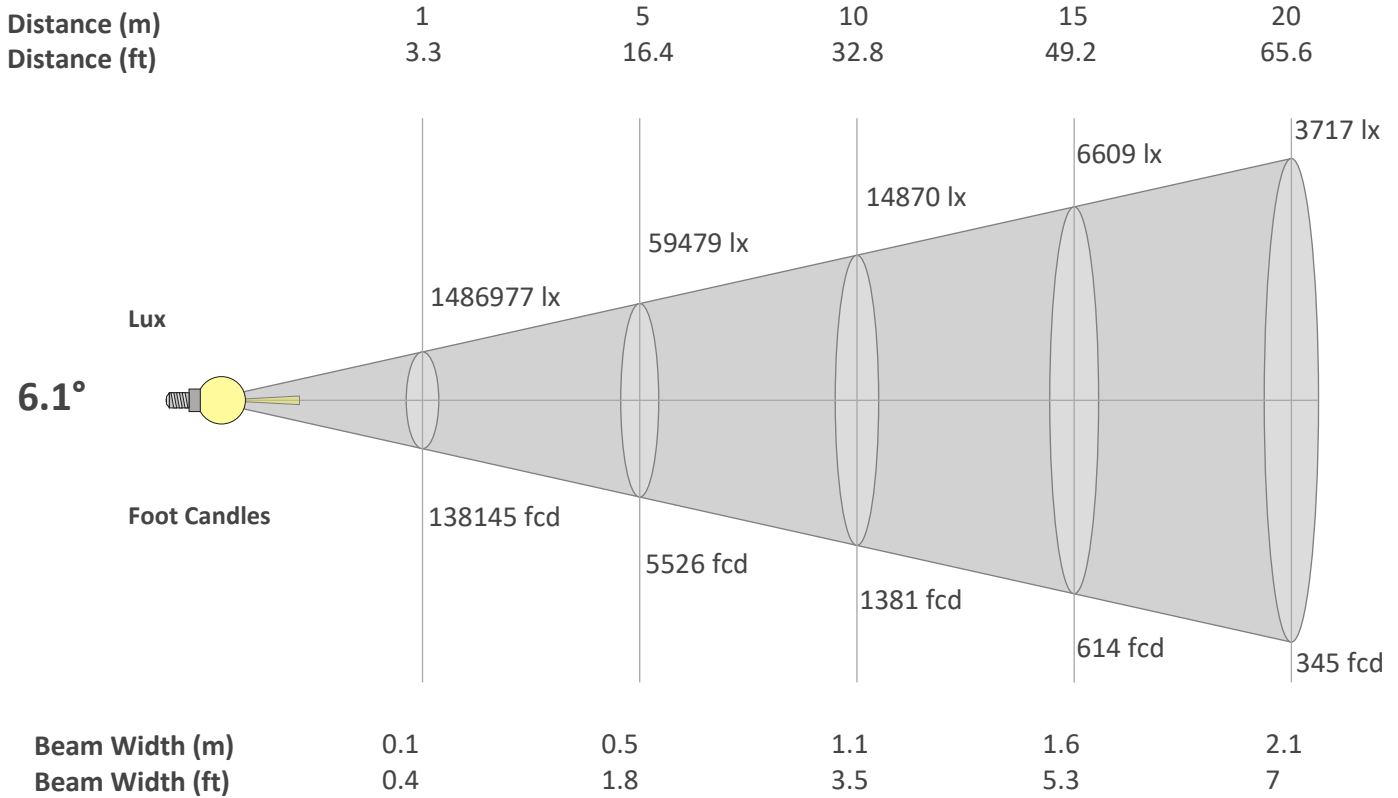
Dominant Wavelength 360 nm



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

Beam Details

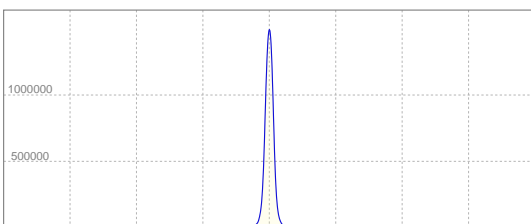
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
6.1°	11.2°	15.9°



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	1486977	371744	165220	92936	59479	41305	30346	23234	18358	14870	12289	10326	8799	7587	6609	5809	5145	4589	4119	3717
FC	138144.7	34536.2	15349.4	8634	5525.8	3837.4	2819.3	2158.5	1705.5	1381.4	1141.7	959.3	817.4	704.8	614	539.6	478	426.4	382.7	345.4

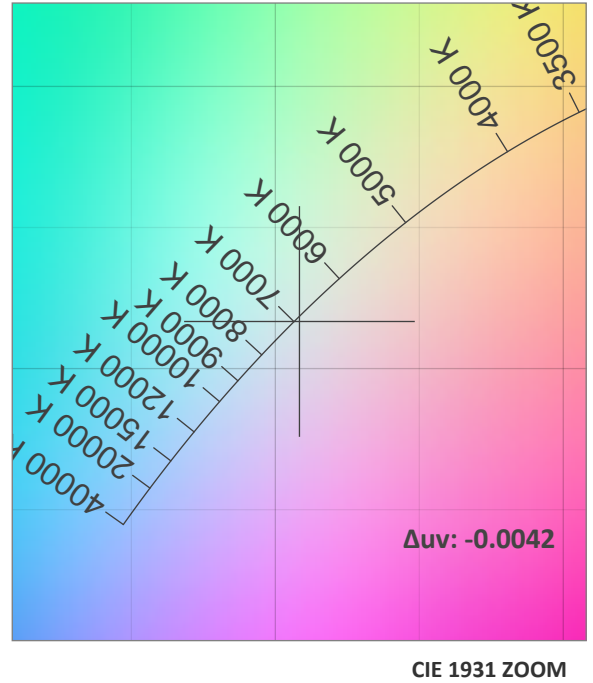
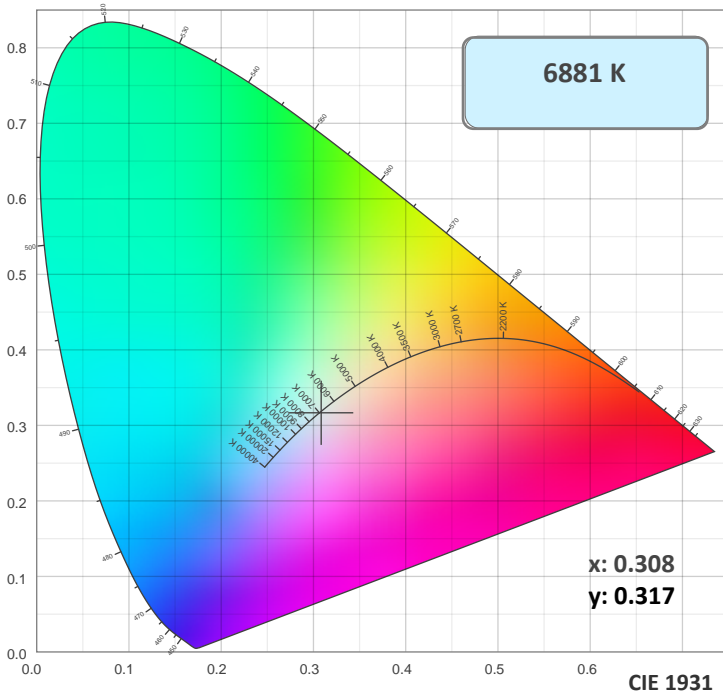
Linear Distribution



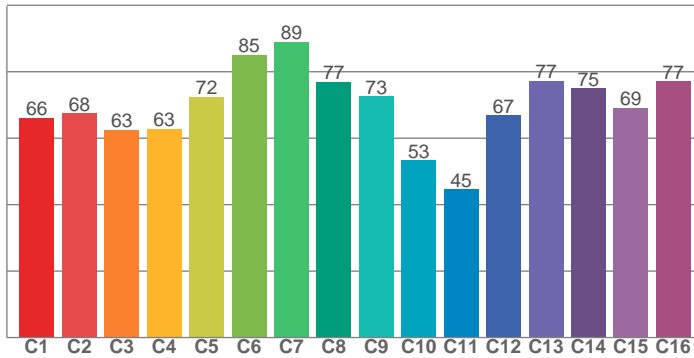
Peak Candela
1491299 cd

Calculate Center Beam Intensities
 $lux = 1491299 / distance(m)^2$
 $fc = 1491299 / distance(ft)^2$

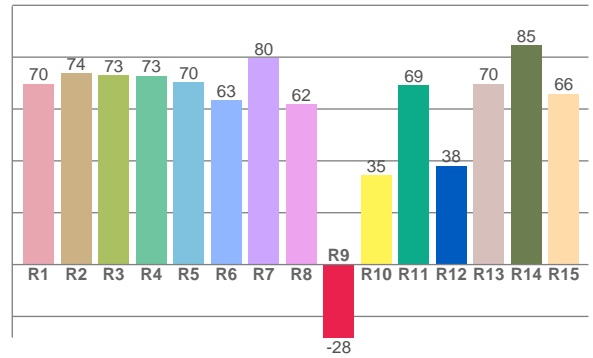
Color Details



TM30: 69.6



CRI: 70.6 (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
69.8	73.9	73.0	72.8	70.4	63.3	79.6	61.9	-28.1	34.5	69.3	38.1	69.8	84.5	65.9

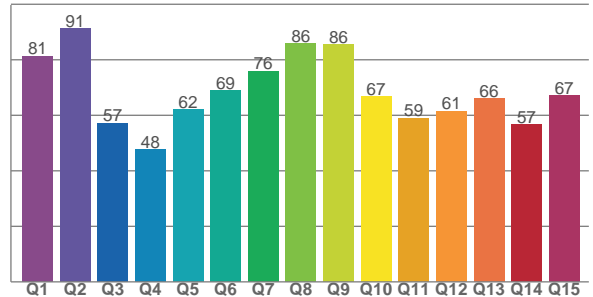
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
66.1	67.5	62.6	62.8	72.5	85.0	89.0	76.9	72.6	53.3	44.5	66.8	77.3	75.0	69.1	77.1

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.3	91.3	57.3	47.7	62.0	68.8	75.9	85.8	85.5	66.7	59.0	61.5	66.0	56.6	67.2

CQS: 66.5



Color Parameters

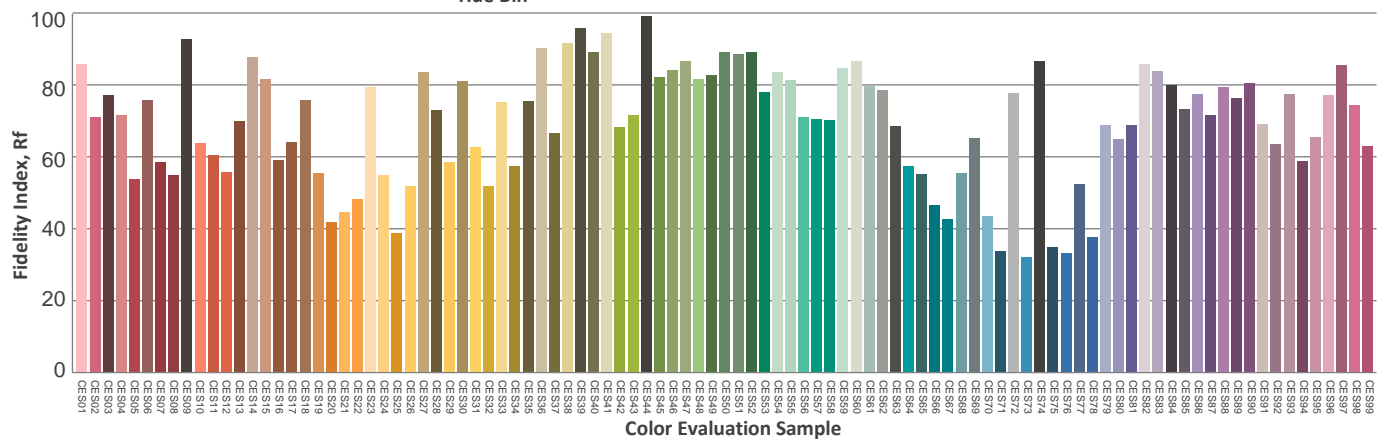
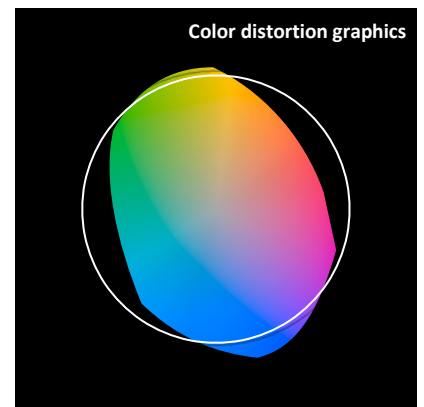
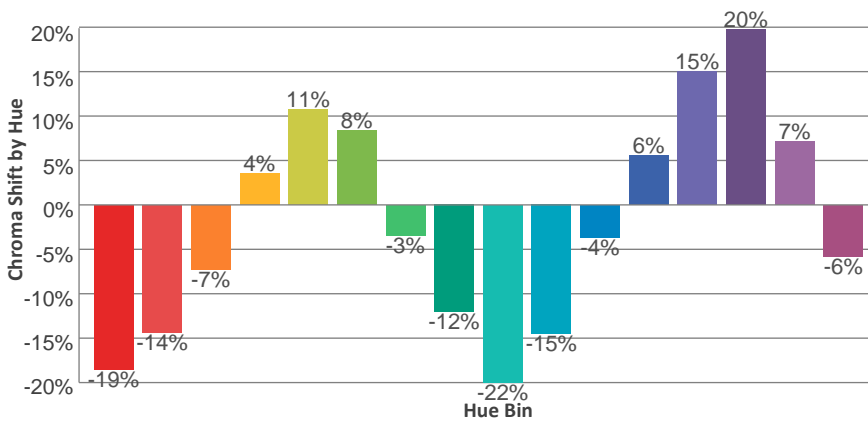
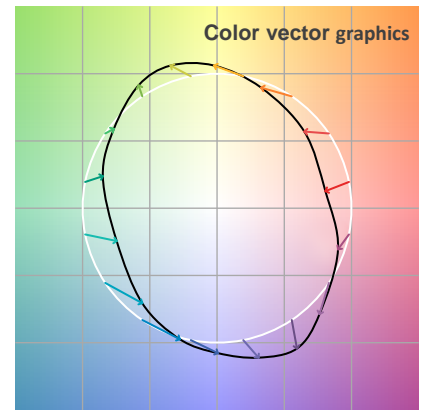
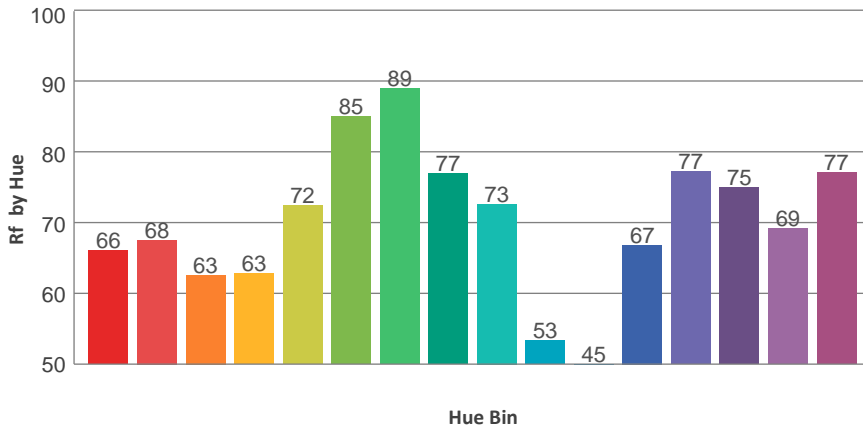
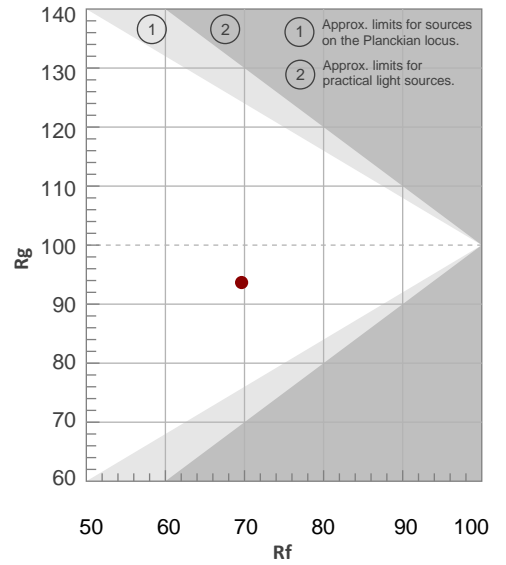
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6881 K	70.6	-28.1	69.6	93.7	66.5	0.308	0.317	0.199	0.307	-0.0042

TM30 Details

Rf 69.6
Fidelity Index Rf

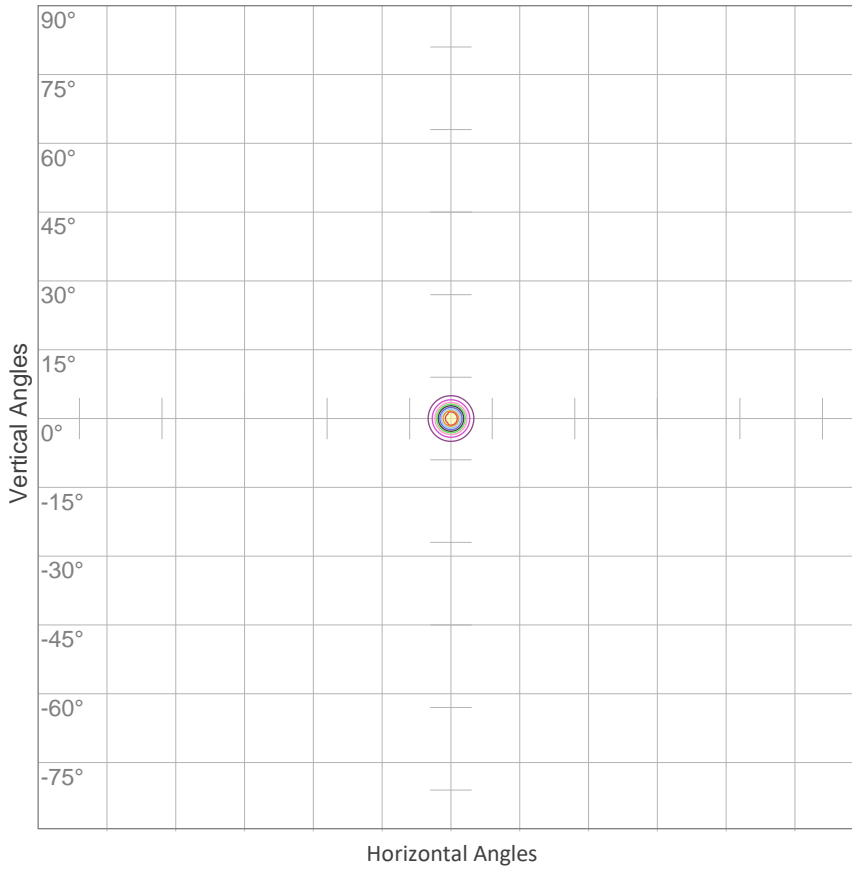
Rg 93.7
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	66	-19%	-3%
2	68	-14%	11%
3	63	-7%	22%
4	63	4%	23%
5	72	11%	13%
6	85	8%	-2%
7	89	-3%	-6%
8	77	-12%	-7%
9	73	-22%	9%
10	53	-15%	28%
11	45	-4%	31%
12	67	6%	22%
13	77	15%	9%
14	75	20%	-9%
15	69	7%	-23%
16	77	-6%	-12%



ISO Diagrams

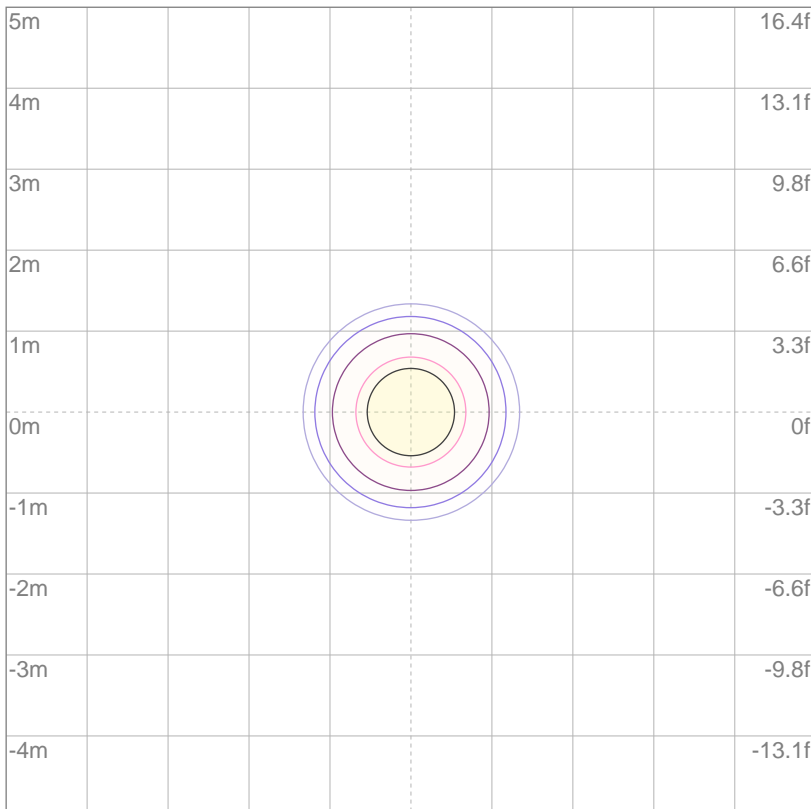
ISO Candela Diagram



10%	148698 cd
20%	297395 cd
30%	446093 cd
40%	594791 cd
50%	743488 cd
60%	892186 cd
70%	1040884 cd
80%	1189581 cd
90%	1338279 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 1486977 cd

ISO Lux Diagram



3%	446 lx
5%	743 lx
10%	1487 lx
30%	4461 lx
50%	7435 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 14.9K 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 47156 lm

VISO Lab Spion 37064 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
22.1°	29.4°	35.7°

Color Temperature: 6954 K

CRI: 70.3

TLCI: 43

TM30: 69.2

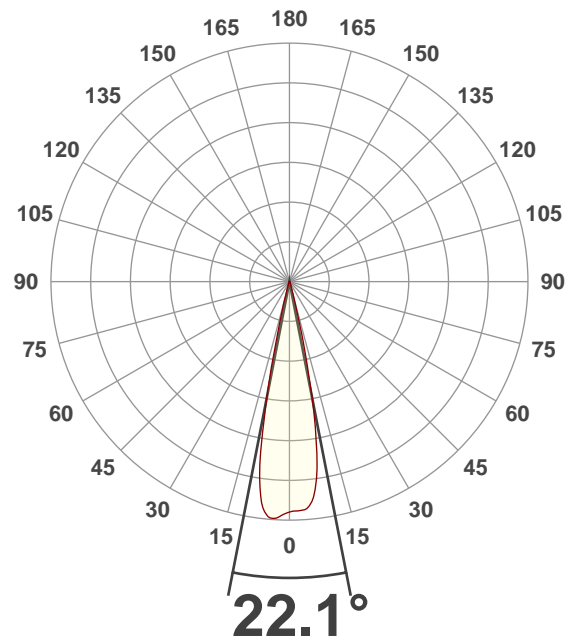
CQS: 66.3

Voltage: 116 V, Current: 12.2 A

Power: 1420 W

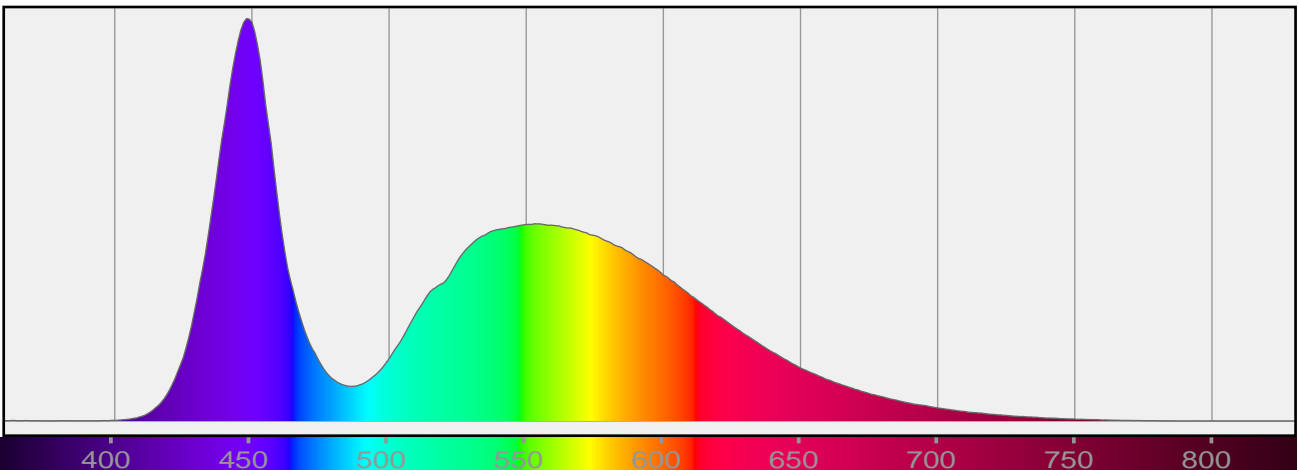
Efficacy: 26 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

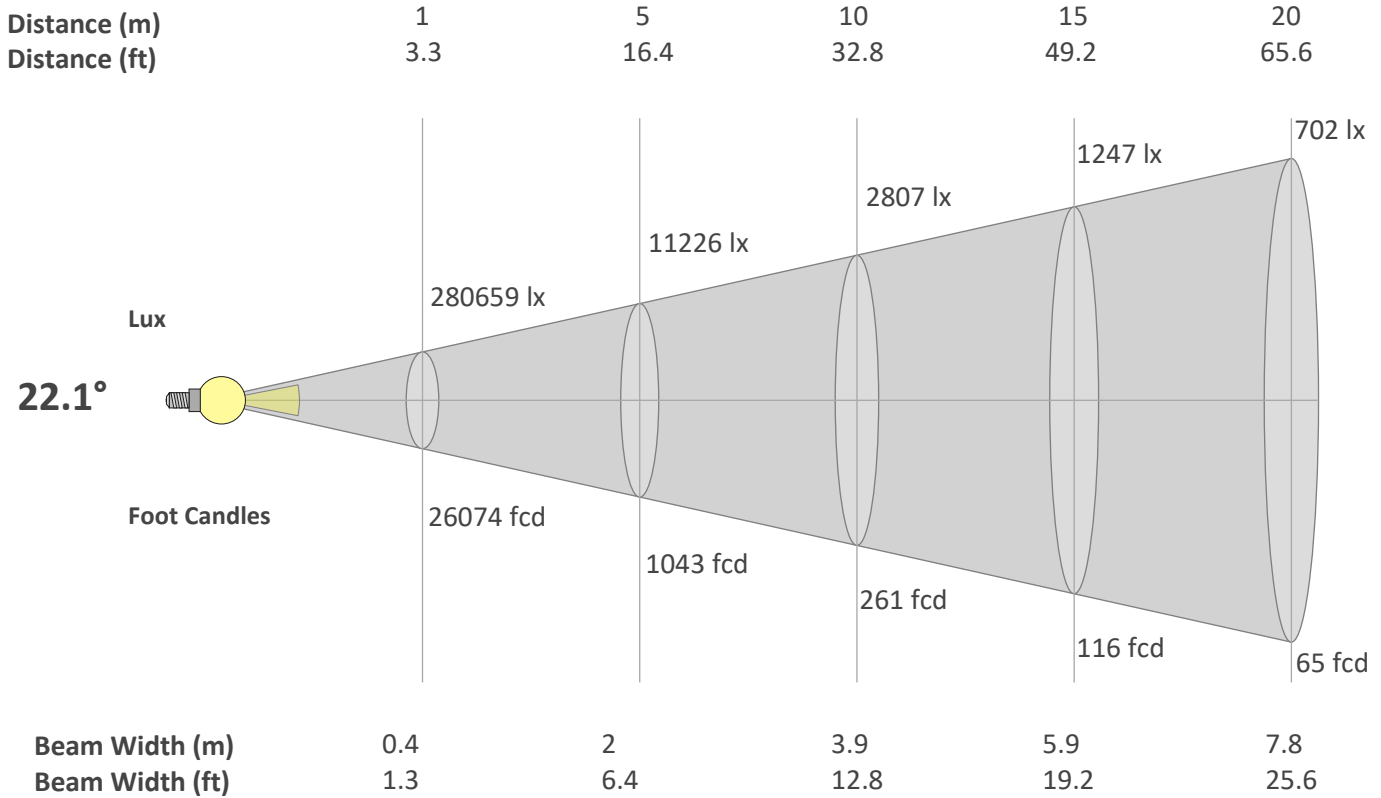
Dominant Wavelength 360 nm



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

Beam Details

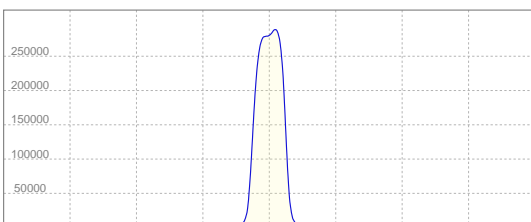
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
22.1°	29.4°	35.7°



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	280659	70165	31184	17541	11226	7796	5728	4385	3465	2807	2319	1949	1661	1432	1247	1096	971	866	777	702
FC	26074.1	6518.5	2897.1	1629.6	1043	724.3	532.1	407.4	321.9	260.7	215.5	181.1	154.3	133	115.9	101.9	90.2	80.5	72.2	65.2

Linear Distribution



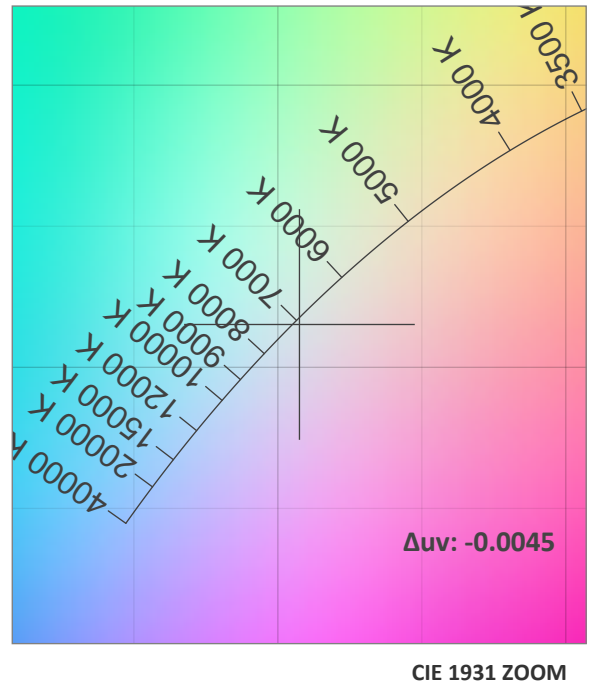
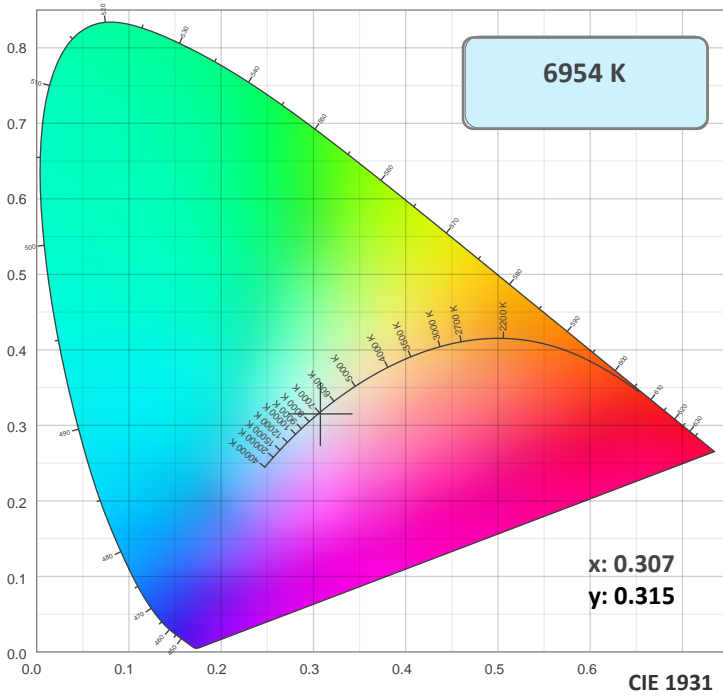
Peak Candela
288454 cd

Calculate Center Beam Intensities

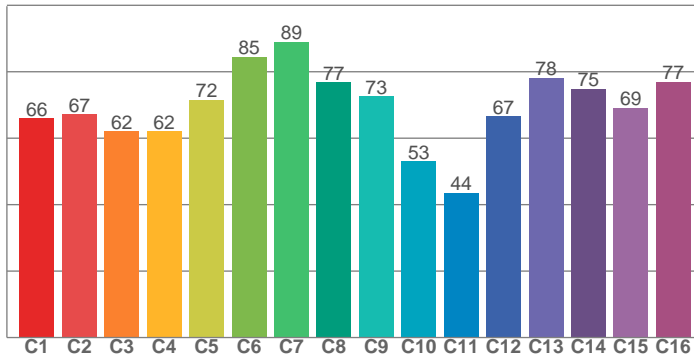
$lux = 288454 / distance(m)^2$

$fc = 288454 / distance(ft)^2$

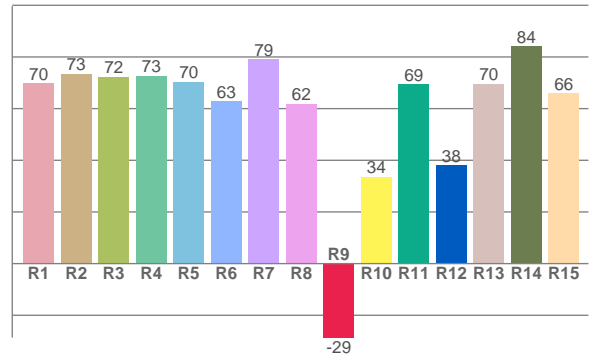
Color Details



TM30: 69.2



CRI: 70.3 (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
69.7	73.5	72.3	72.8	70.4	62.9	79.2	61.8	-28.6	33.6	69.5	38.0	69.6	84.1	65.8

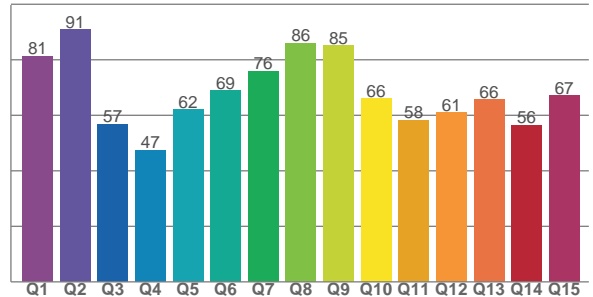
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
66.0	67.2	62.0	62.0	71.6	84.6	89.1	76.8	72.6	53.0	43.6	66.5	78.2	74.9	69.2	76.9

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.3	91.0	56.9	47.4	62.0	68.9	75.9	86.0	85.1	66.1	58.3	60.9	65.6	56.4	67.1

CQS: 66.3



Color Parameters

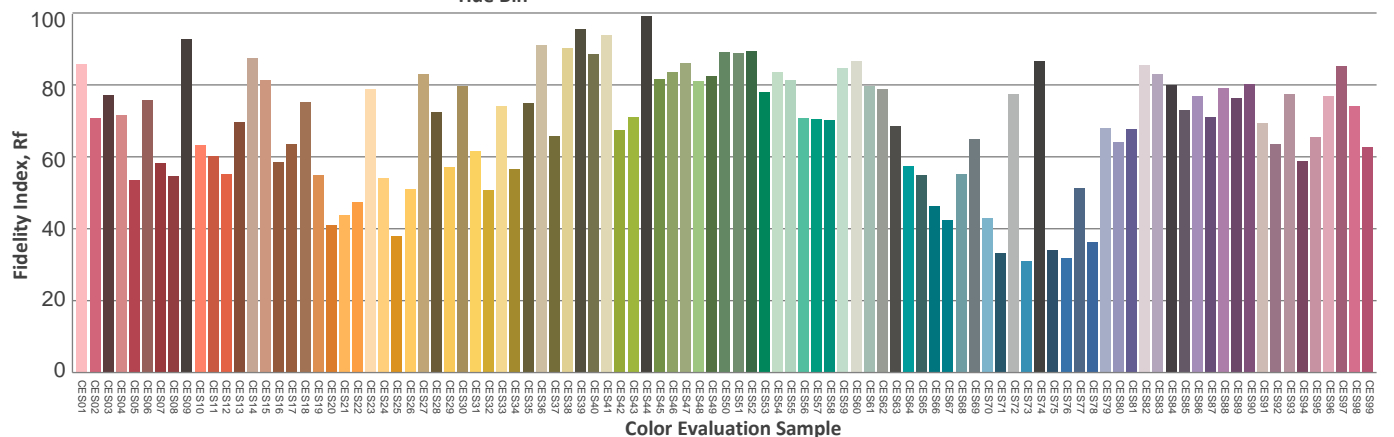
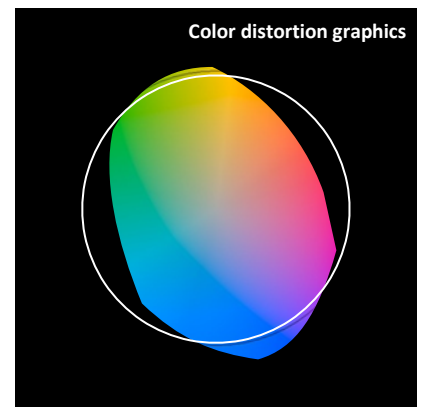
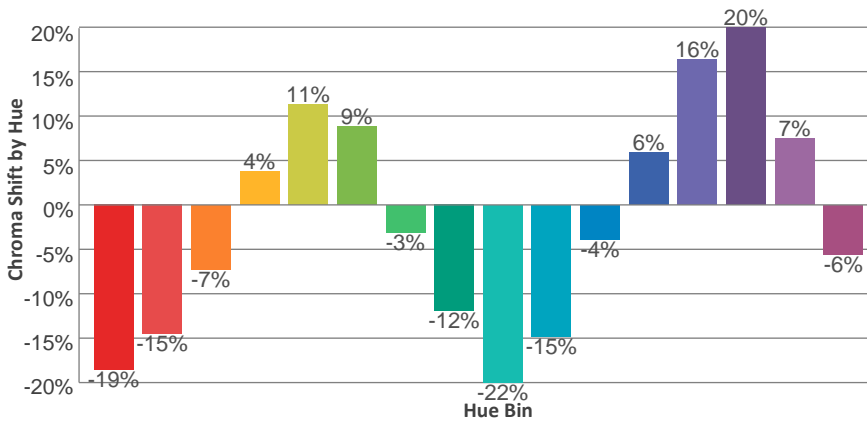
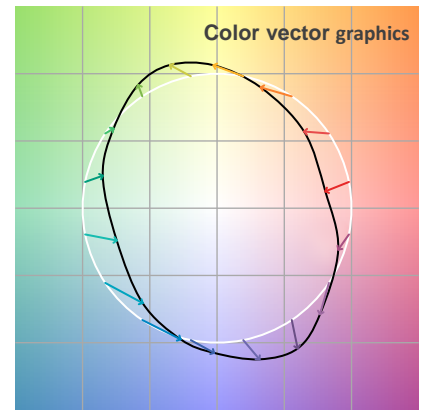
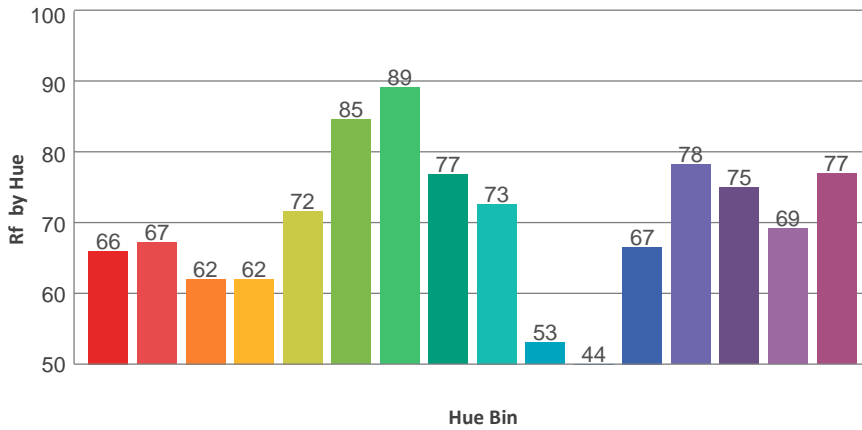
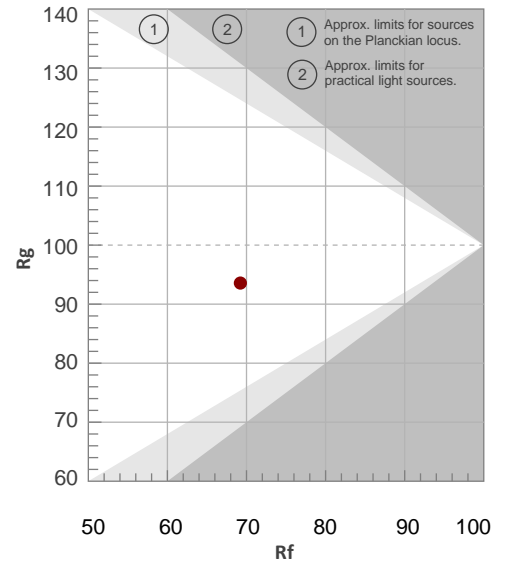
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6954 K	70.3	-28.6	69.2	93.6	66.3	0.307	0.315	0.199	0.307	-0.0045

TM30 Details

Rf 69.2
Fidelity Index Rf

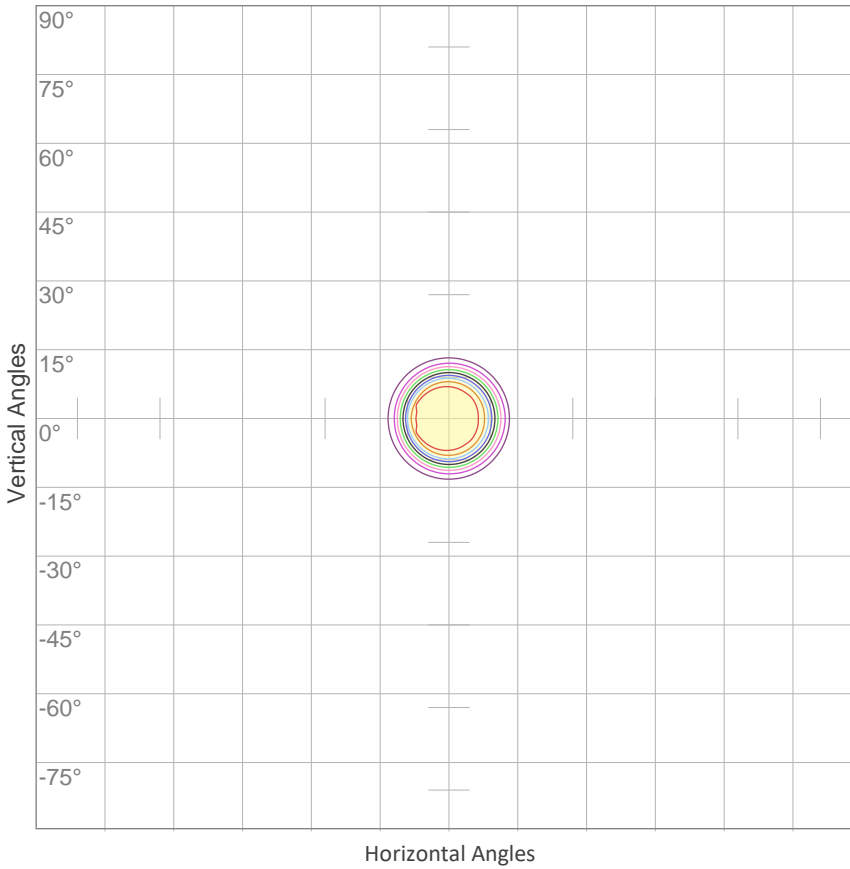
Rg 93.6
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	66	-19%	-3%
2	67	-15%	11%
3	62	-7%	23%
4	62	4%	23%
5	72	11%	14%
6	85	9%	-2%
7	89	-3%	-6%
8	77	-12%	-7%
9	73	-22%	9%
10	53	-15%	28%
11	44	-4%	32%
12	67	6%	19%
13	78	16%	9%
14	75	20%	-8%
15	69	7%	-23%
16	77	-6%	-13%



ISO Diagrams

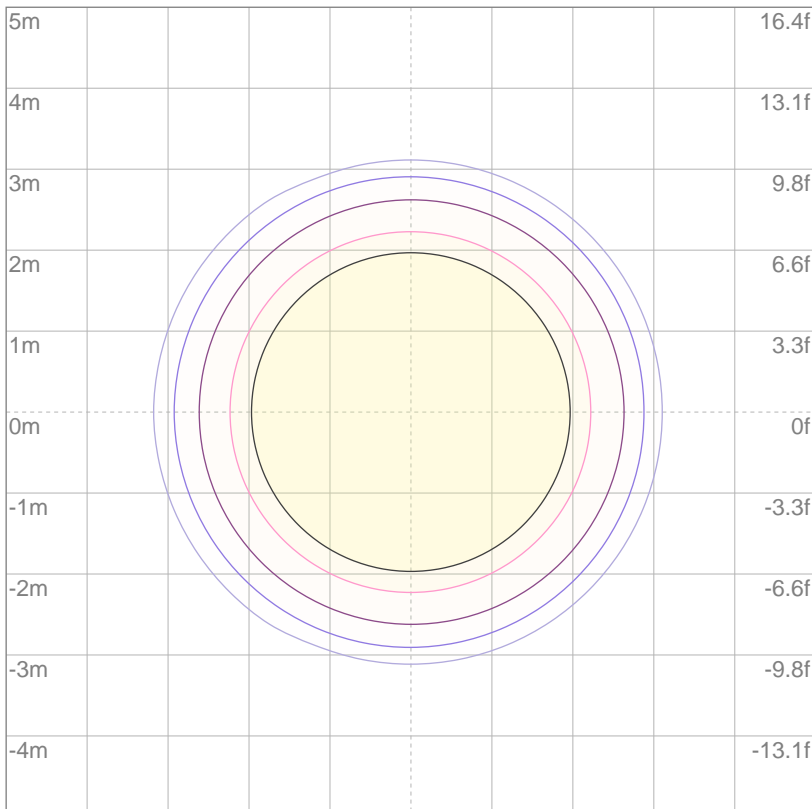
ISO Candela Diagram



10%	28066 cd
20%	56132 cd
30%	84198 cd
40%	112264 cd
50%	140330 cd
60%	168396 cd
70%	196461 cd
80%	224527 cd
90%	252593 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 280659 cd

ISO Lux Diagram



3%	84.2 lx
5%	140 lx
10%	281 lx
30%	842 lx
50%	1403 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 2807 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 **32973**
 VISO Lab Spion **31907 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
51.9°	64.9°	71.3°

Color Temperature: 6787 K

CRI: 70.4

TLCI: 43

TM30: 69.6

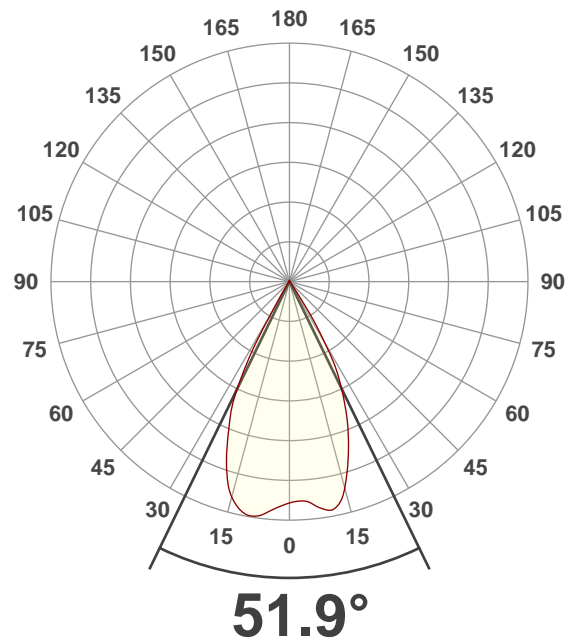
CQS: 66.4

Voltage: 115 V, Current: 12.3 A

Power: 1415.9 W

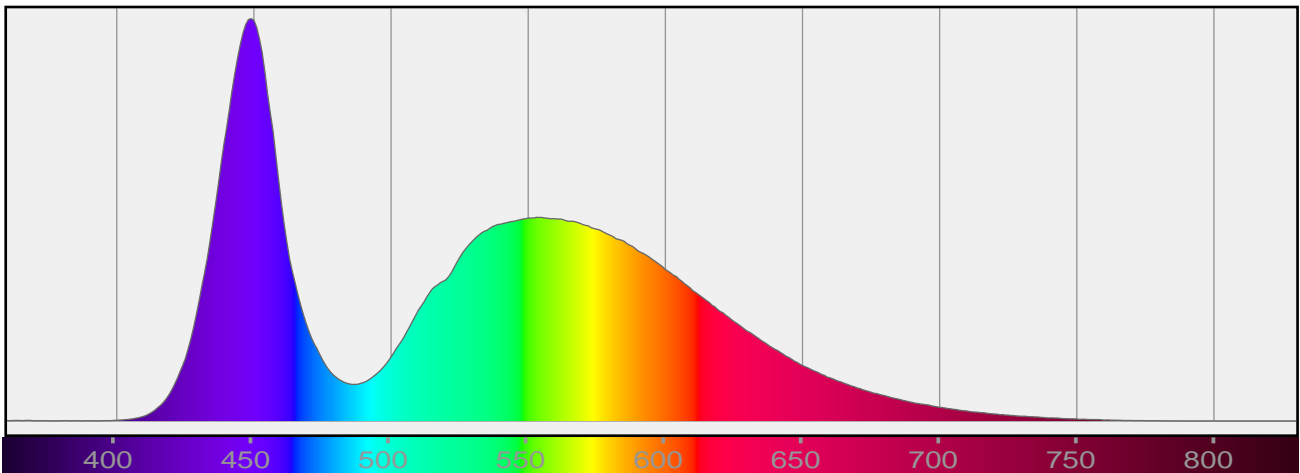
Efficacy: 23 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

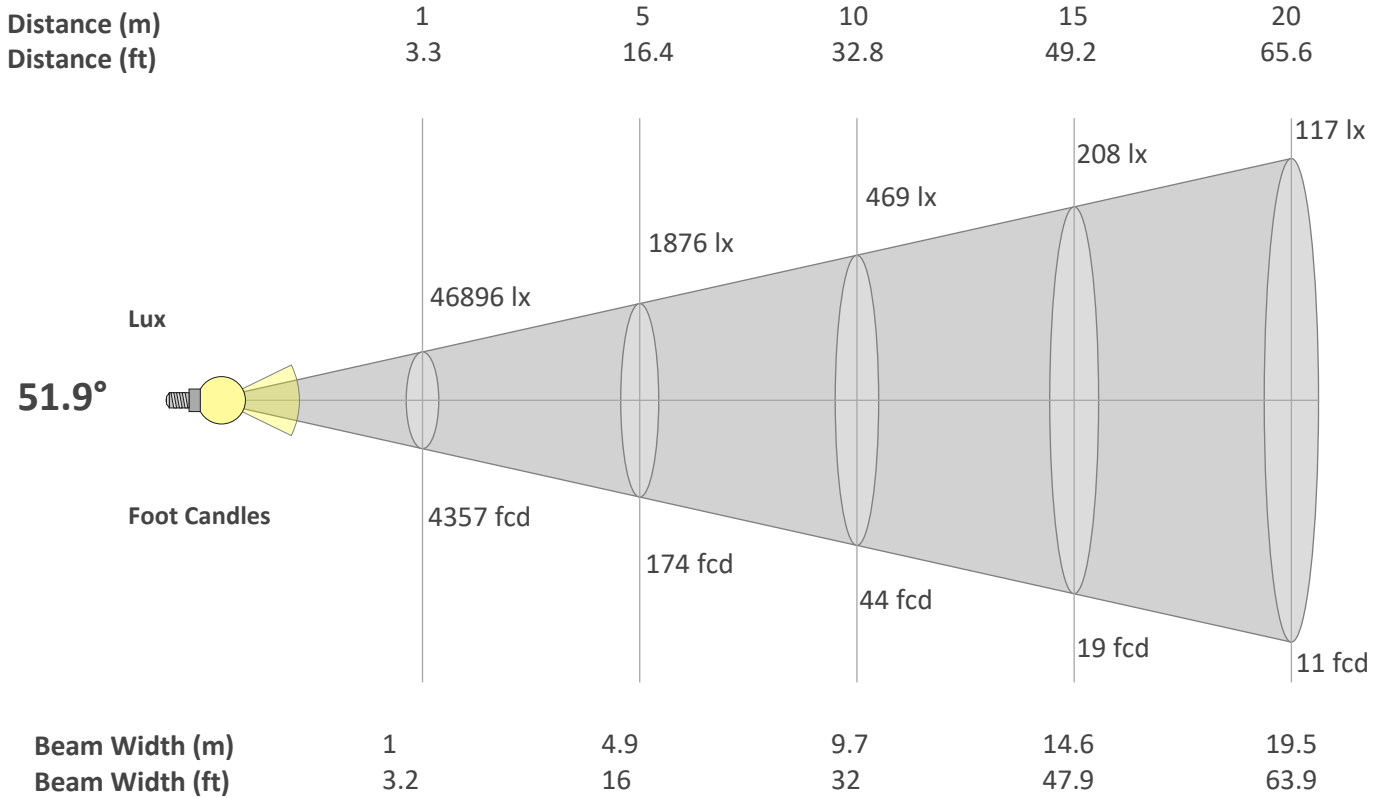
Dominant Wavelength 360 nm



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

Beam Details

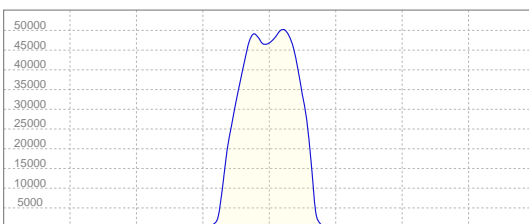
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
51.9°	64.9°	71.3°



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	46896	11724	5211	2931	1876	1303	957	733	579	469	388	326	277	239	208	183	162	145	130	117
FC	4356.8	1089.2	484.1	272.3	174.3	121	88.9	68.1	53.8	43.6	36	30.3	25.8	22.2	19.4	17	15.1	13.4	12.1	10.9

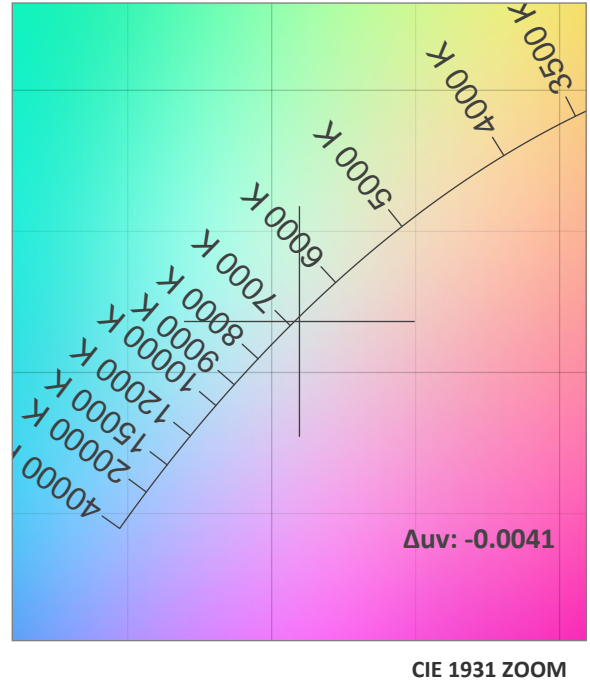
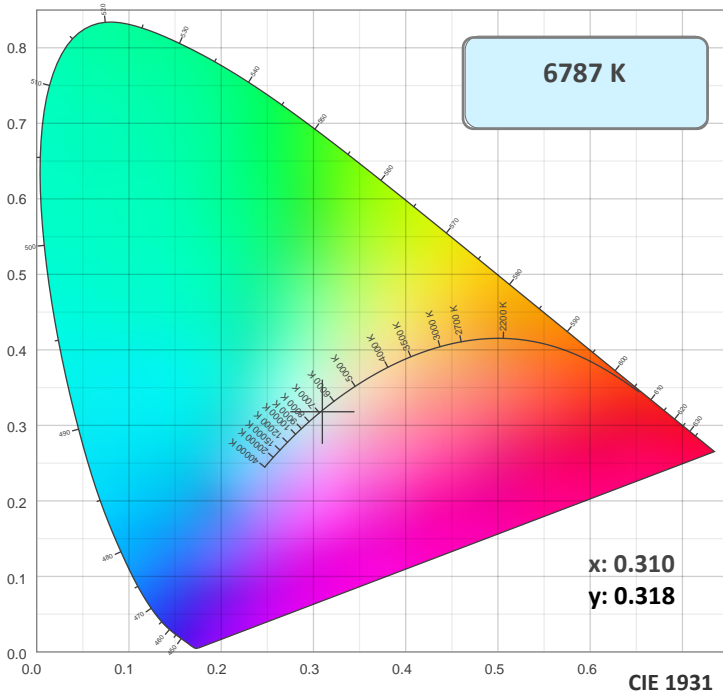
Linear Distribution



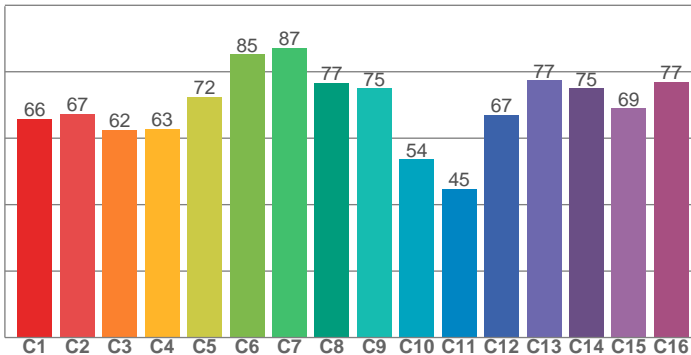
Peak Candela
50134 cd

Calculate Center Beam Intensities
 $lux = 50134 / distance(m)^2$
 $fc = 50134 / distance(ft)^2$

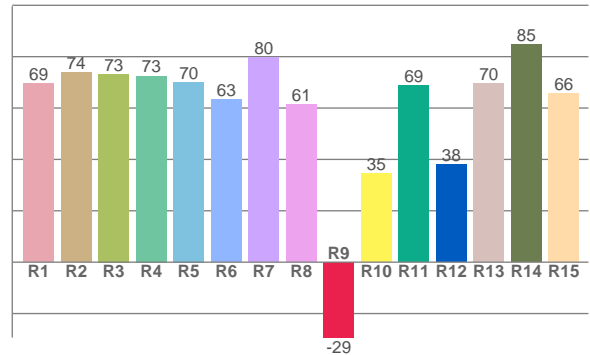
Color Details



TM30: 69.6



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
69.5	73.9	73.3	72.5	70.1	63.3	79.6	61.3	-29.3	34.6	68.8	38.1	69.6	84.7	65.5

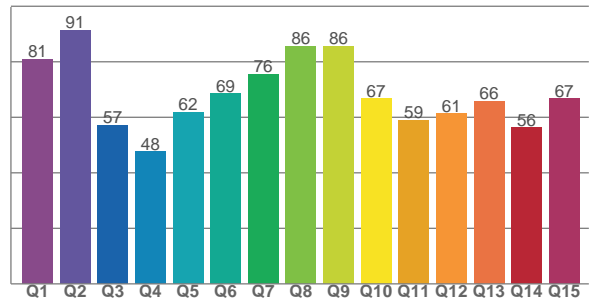
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65.8	67.3	62.5	62.8	72.5	85.3	87.2	76.7	75.1	53.6	44.8	67.0	77.4	75.0	68.9	76.9

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.0	91.4	57.2	47.7	61.8	68.5	75.6	85.6	85.7	66.7	58.9	61.3	65.8	56.3	66.8

CQS: 66.4



Color Parameters

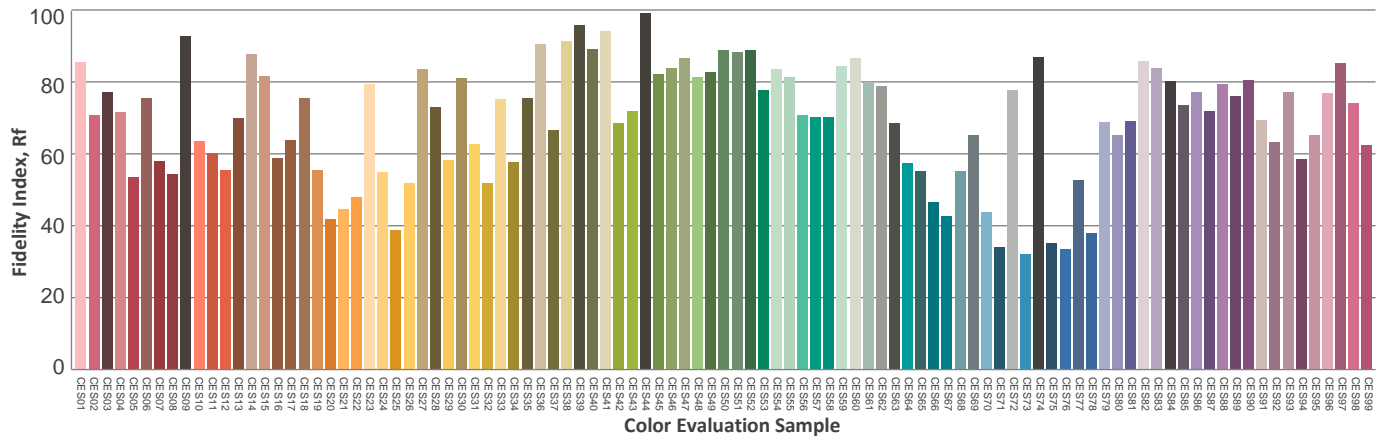
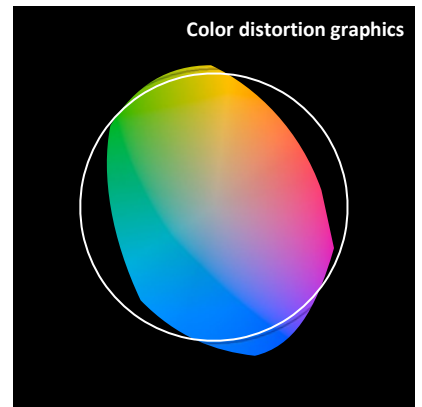
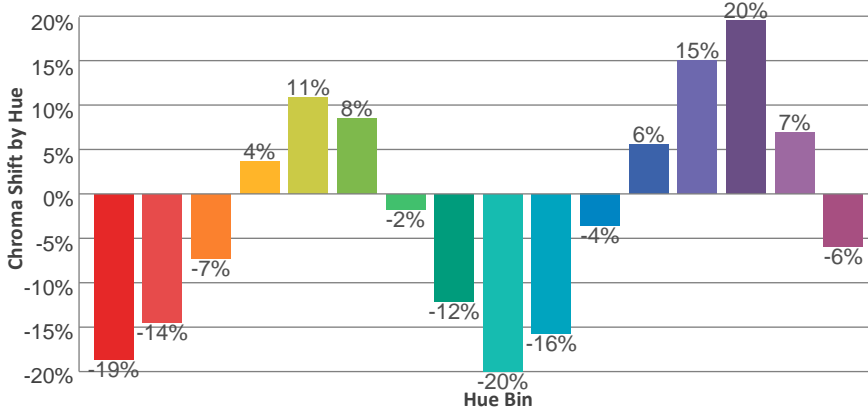
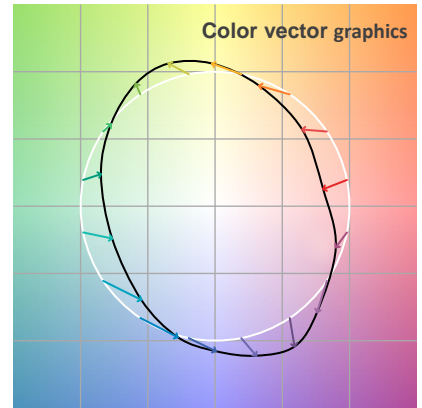
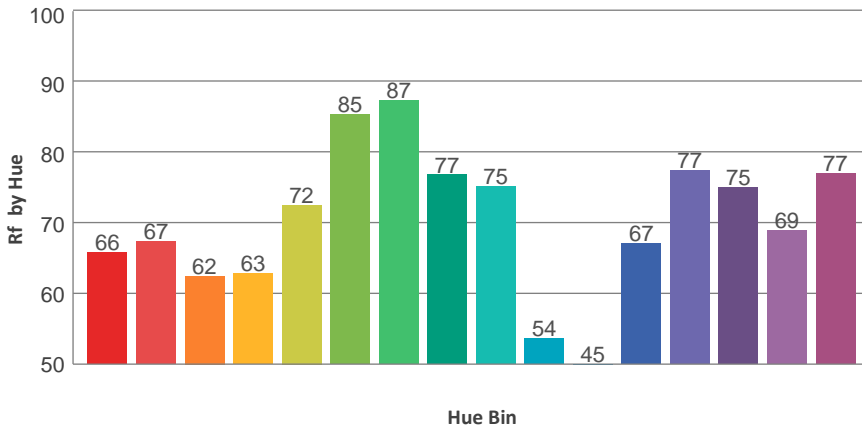
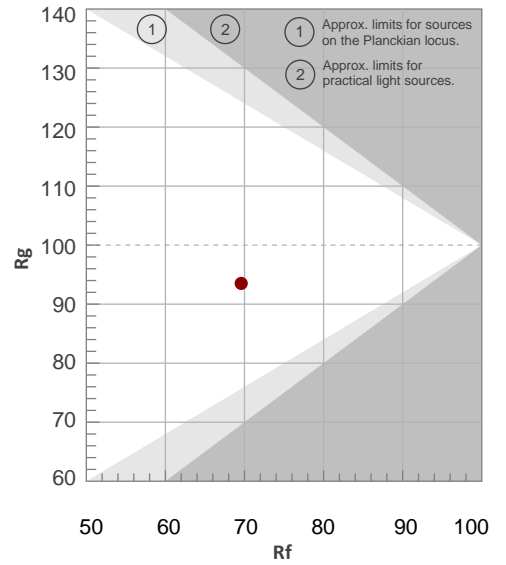
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6787 K	70.4	-29.3	69.6	93.5	66.4	0.310	0.318	0.200	0.308	-0.0041

TM30 Details

Rf 69.6
Fidelity Index Rf

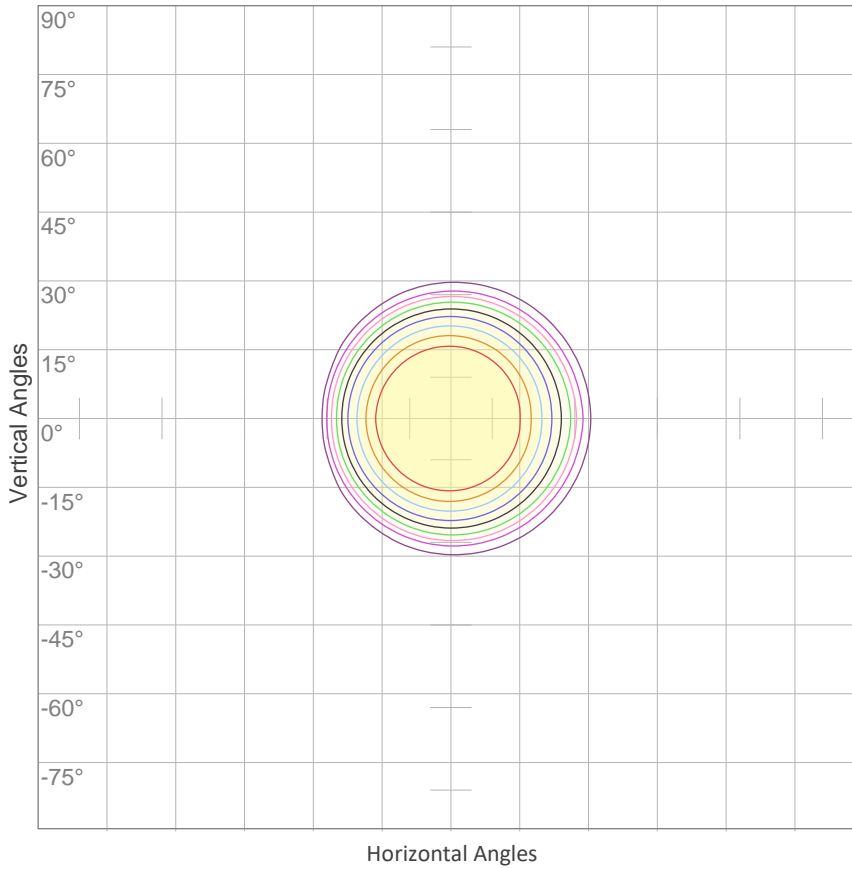
Rg 93.5
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	66	-19%	-3%
2	67	-14%	11%
3	62	-7%	23%
4	63	4%	23%
5	72	11%	13%
6	85	8%	-2%
7	87	-2%	-8%
8	77	-12%	-7%
9	75	-20%	9%
10	54	-16%	27%
11	45	-4%	31%
12	67	6%	22%
13	77	15%	8%
14	75	20%	-9%
15	69	7%	-23%
16	77	-6%	-13%



ISO Diagrams

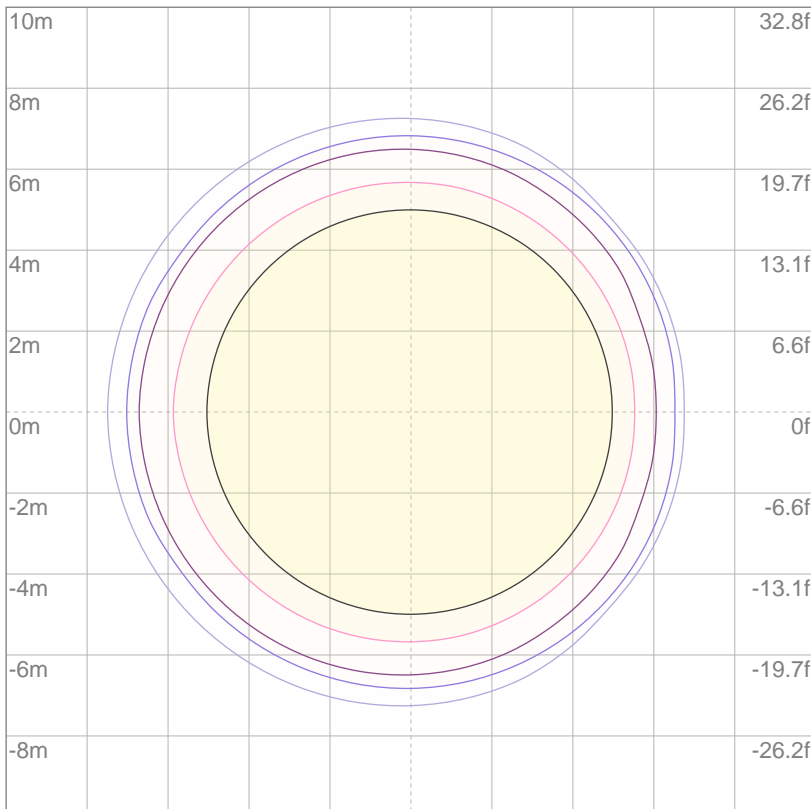
ISO Candela Diagram



10%	4690 cd
20%	9379 cd
30%	14069 cd
40%	18758 cd
50%	23448 cd
60%	28137 cd
70%	32827 cd
80%	37517 cd
90%	42206 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 46896 cd

ISO Lux Diagram



3%	14.1 lx
5%	23.4 lx
10%	46.9 lx
30%	141 lx
50%	234 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 469 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 n/a
 VISO Lab Spion 27682 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
21.9°	29.4°	35.8°

Color Temperature: 6511 K

CRI: 81.9

TLCI: 52

TM30: 75.1

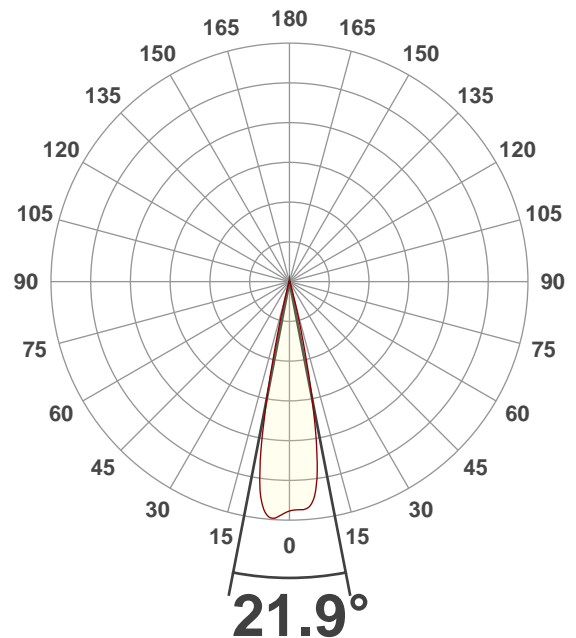
CQS: 70.8

Voltage: 115 V, Current: 12.2 A

Power: 1413 W

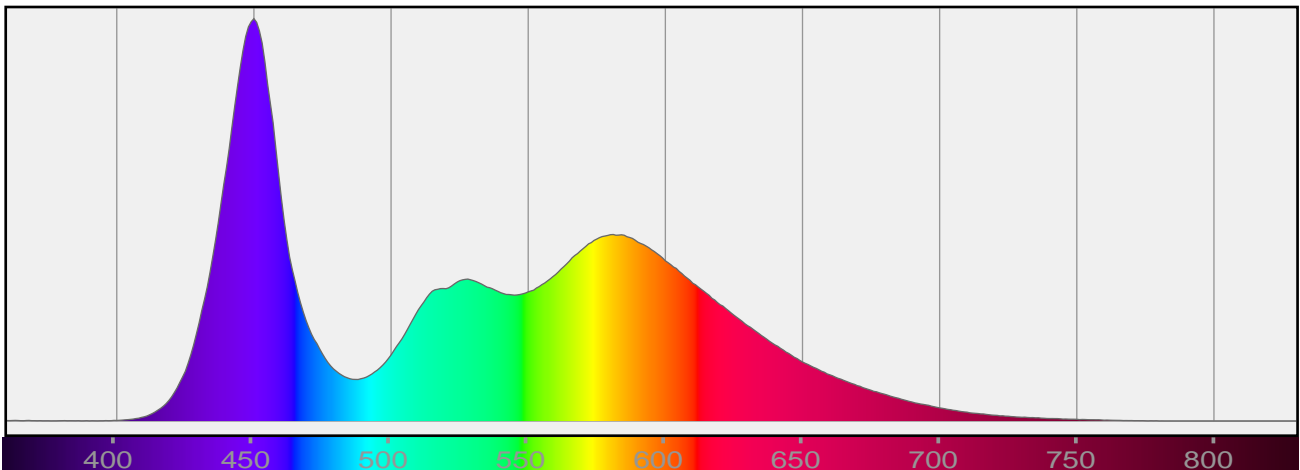
Efficacy: 20 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

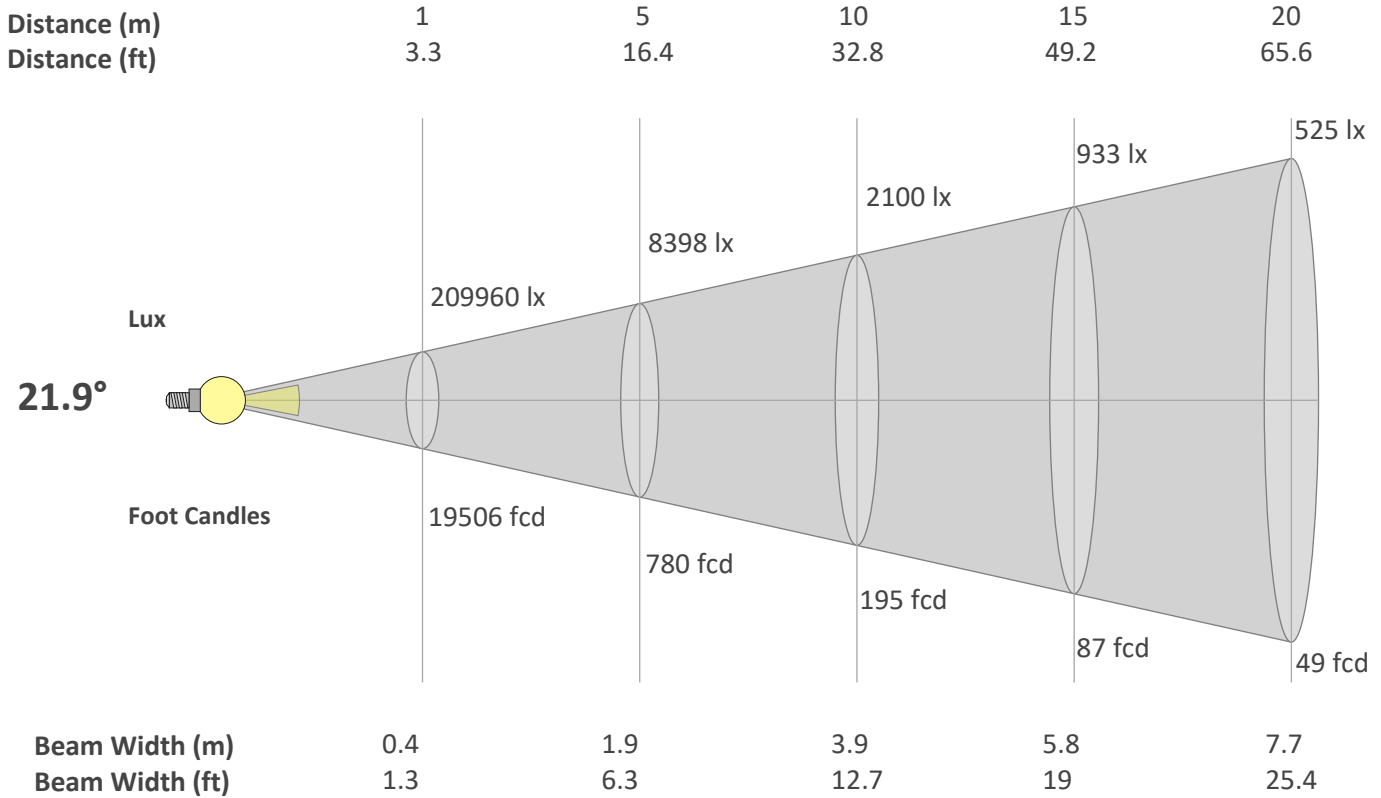
Dominant Wavelength 360 nm



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

Beam Details

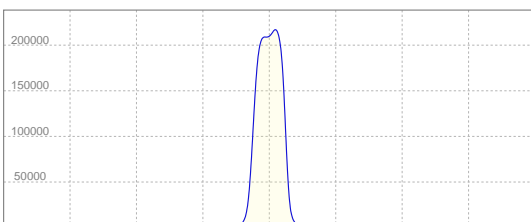
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
21.9°	29.4°	35.8°



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	209960	52490	23329	13123	8398	5832	4285	3281	2592	2100	1735	1458	1242	1071	933	820	727	648	582	525
FC	19506	4876.5	2167.3	1219.1	780.2	541.8	398.1	304.8	240.8	195.1	161.2	135.5	115.4	99.5	86.7	76.2	67.5	60.2	54	48.8

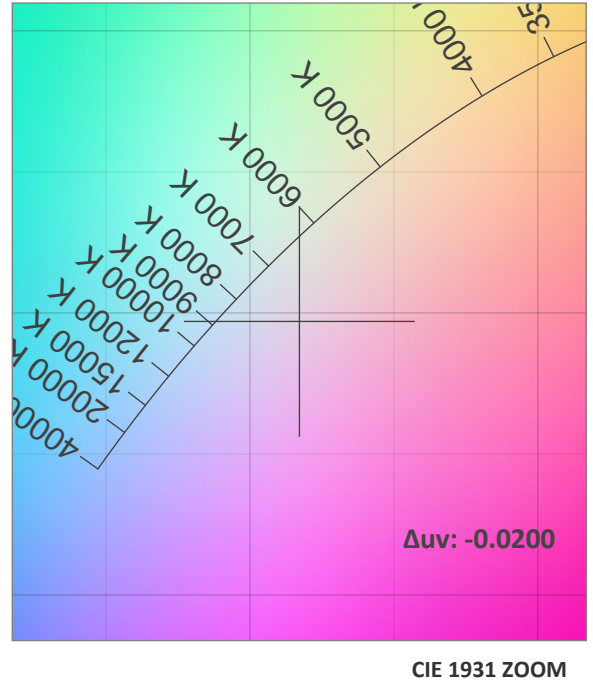
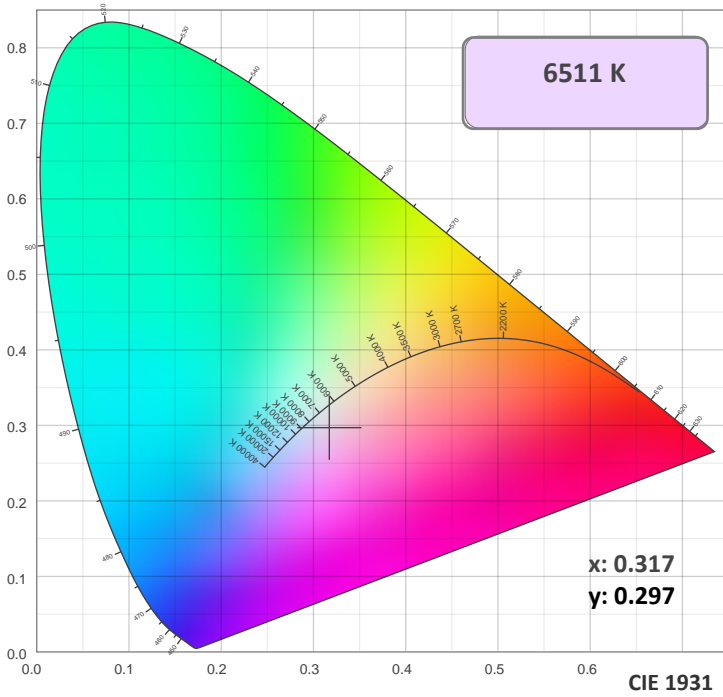
Linear Distribution



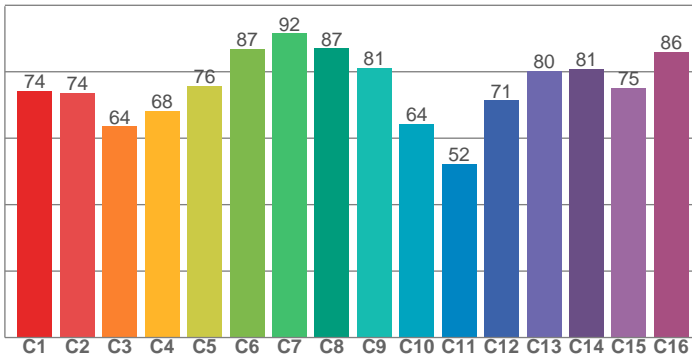
Peak Candela
216766 cd

Calculate Center Beam Intensities
 $lux = 216766 / distance(m)^2$
 $fc = 216766 / distance(ft)^2$

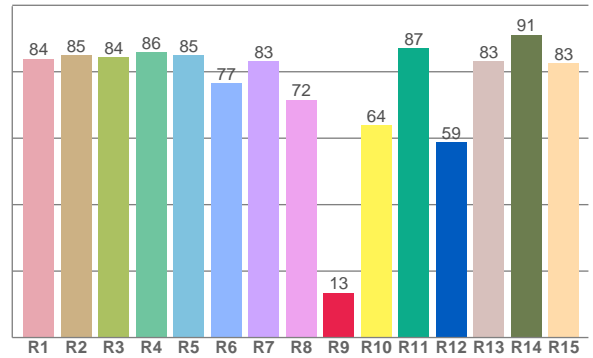
Color Details



TM30: 75.1



CRI: 81.9 (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
83.9	84.9	84.5	85.8	84.9	76.5	83.1	71.6	13.5	64.0	87.1	58.8	83.1	91.2	82.6

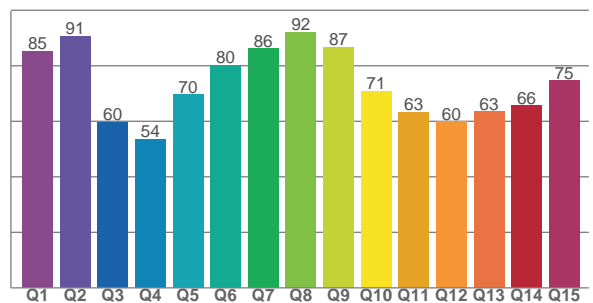
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
74.2	73.7	63.5	68.2	75.8	86.9	91.6	87.1	81.2	64.3	52.2	71.4	80.3	80.9	75.2	86.1

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85.2	90.6	59.7	53.6	69.6	80.2	86.2	92.2	86.6	70.9	63.3	60.0	63.5	65.6	74.6

CQS: 70.8



Color Parameters

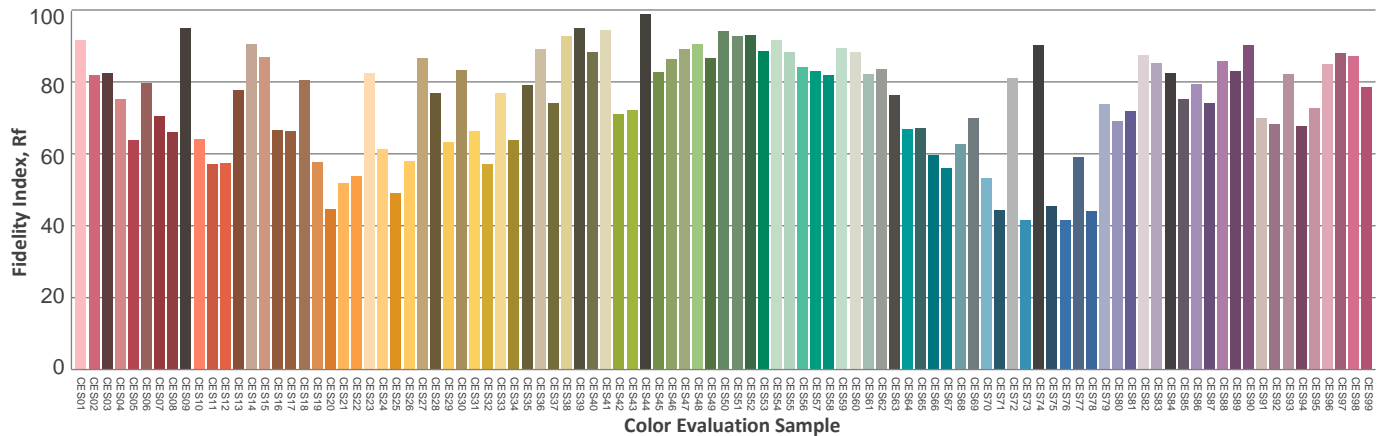
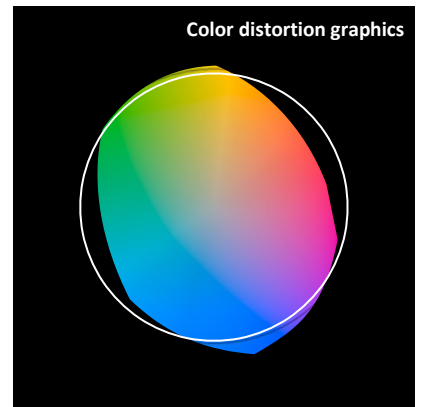
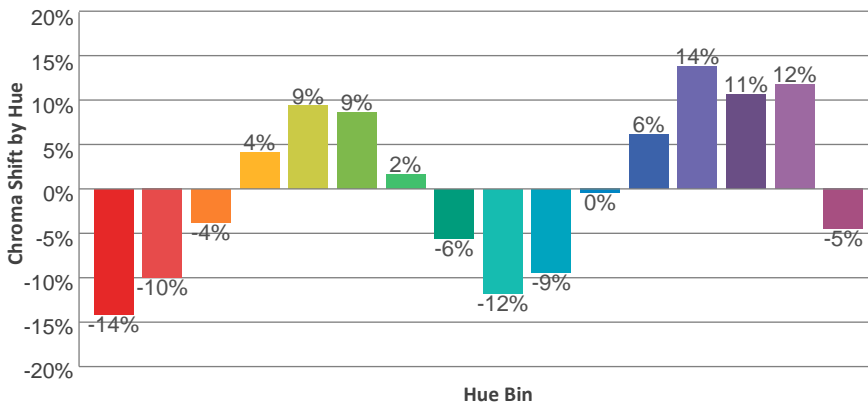
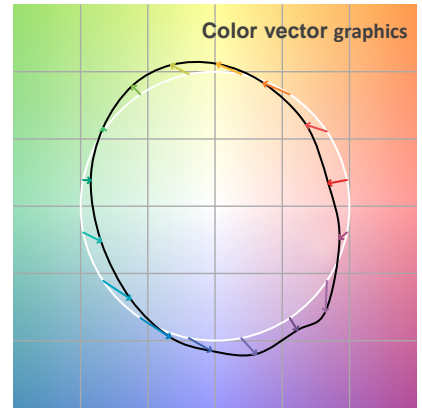
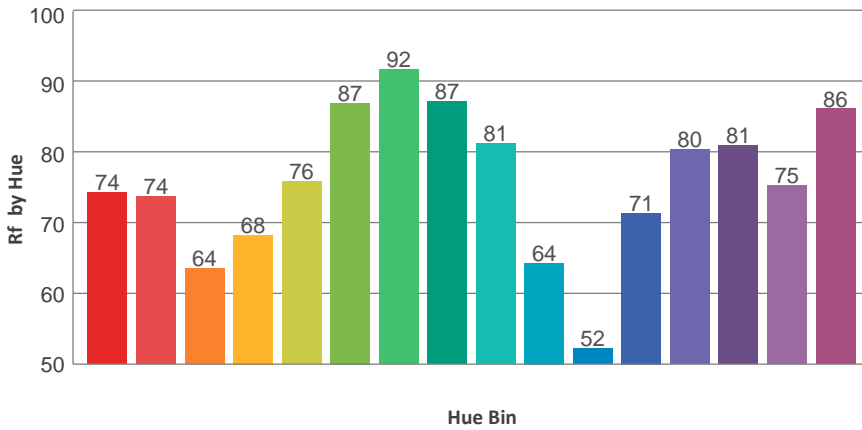
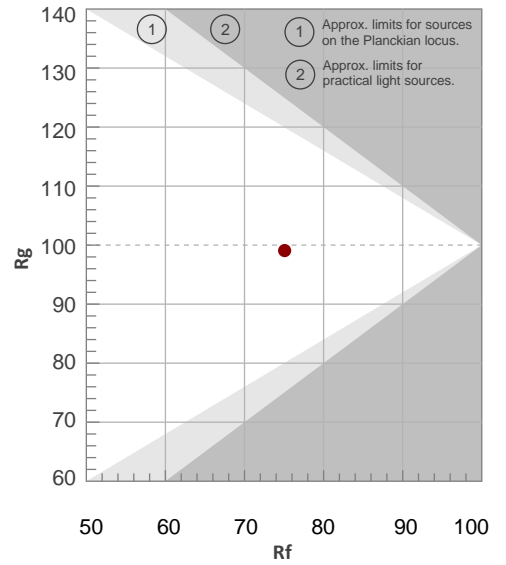
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6511 K	81.9	13.5	75.1	99.1	70.8	0.317	0.297	0.214	0.301	-0.0200

TM30 Details

Rf 75.1
Fidelity Index Rf

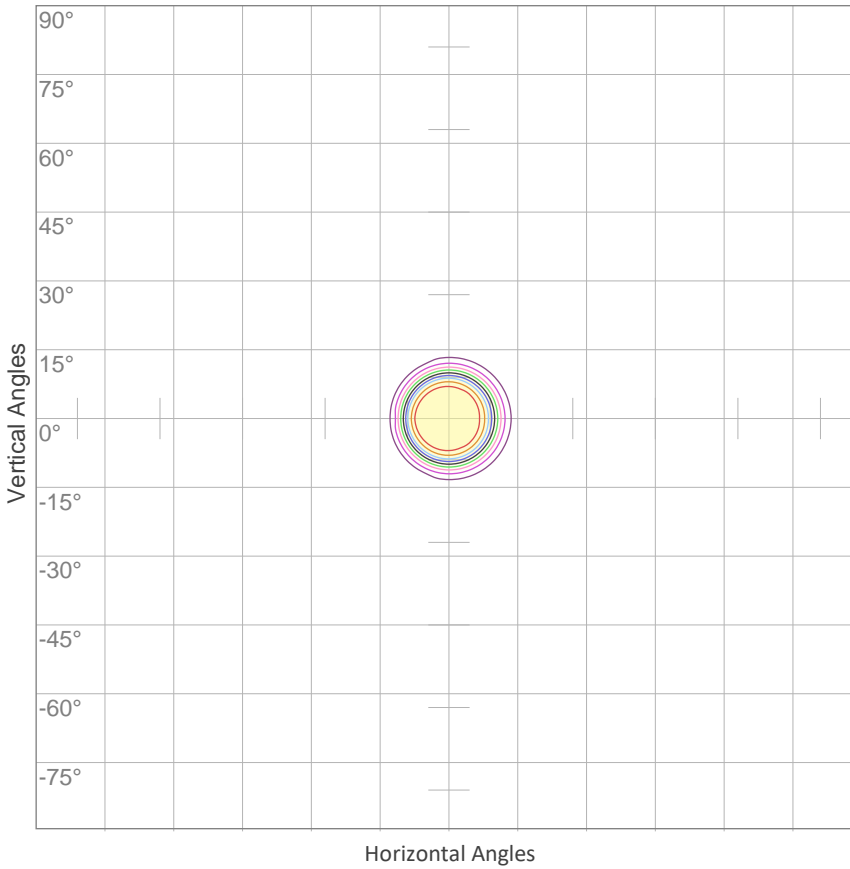
Rg 99.1
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	74	-14%	0%
2	74	-10%	13%
3	64	-4%	21%
4	68	4%	19%
5	76	9%	12%
6	87	9%	2%
7	92	2%	-2%
8	87	-6%	-1%
9	81	-12%	9%
10	64	-9%	22%
11	52	0%	27%
12	71	6%	18%
13	80	14%	8%
14	81	11%	0%
15	75	12%	-20%
16	86	-5%	-6%



ISO Diagrams

ISO Candela Diagram



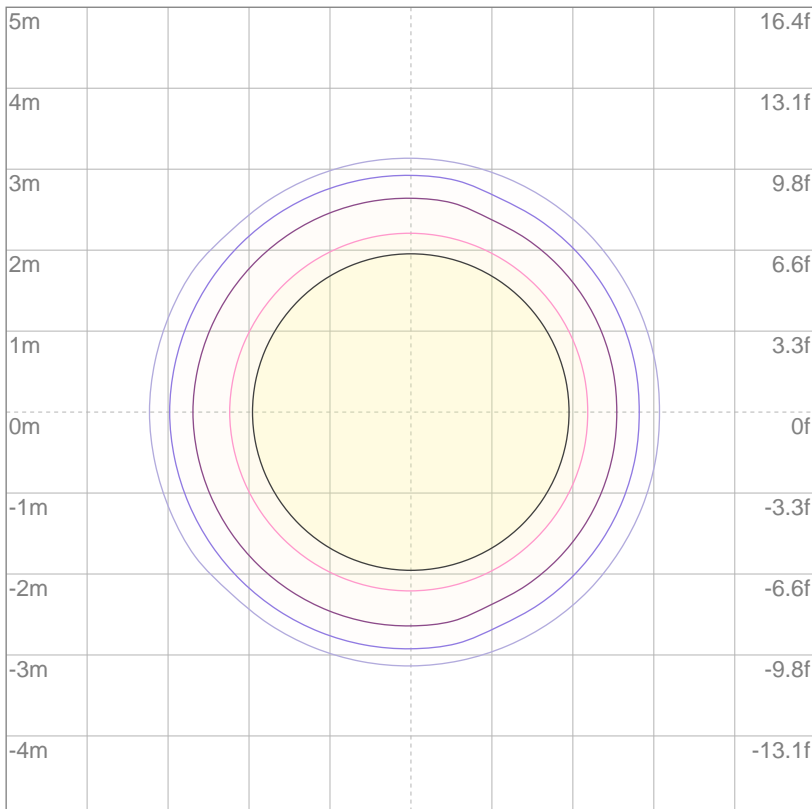
10%	20996 cd
20%	41992 cd
30%	62988 cd
40%	83984 cd
50%	104980 cd
60%	125976 cd
70%	146972 cd
80%	167968 cd
90%	188964 cd

Conditions:

Number of c-planes: 2

Candela at center: 209960 cd

ISO Lux Diagram



3%	63.0 lx
5%	105 lx
10%	210 lx
30%	630 lx
50%	1050 lx

Conditions:

Number of c-planes: 2

Lux at center: 2100 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 **10491 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
22.2°	29.4°	36°

Color Temperature: 2765 K

CRI: 60.7

TLCI: 27

TM30: 61.9

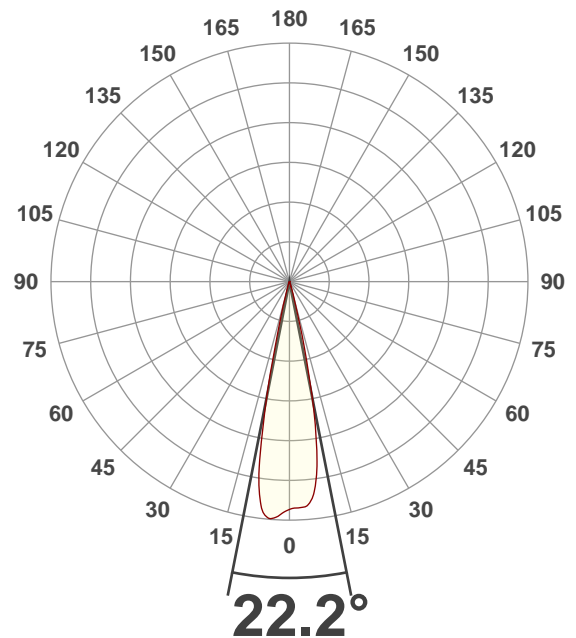
CQS: 58.9

Voltage: 115 V, Current: 12.3 A

Power: 1414 W

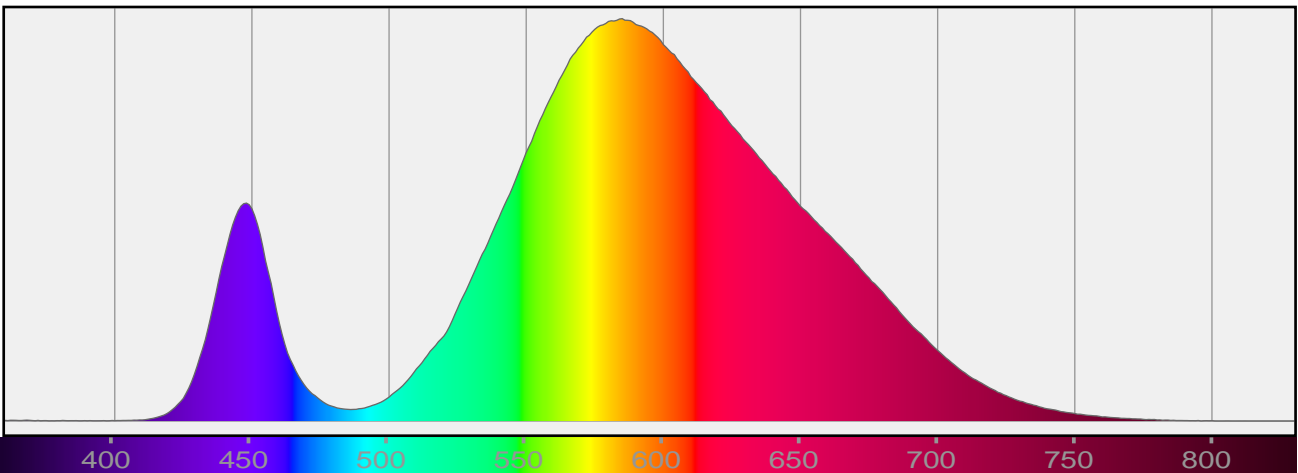
Efficacy: 7 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

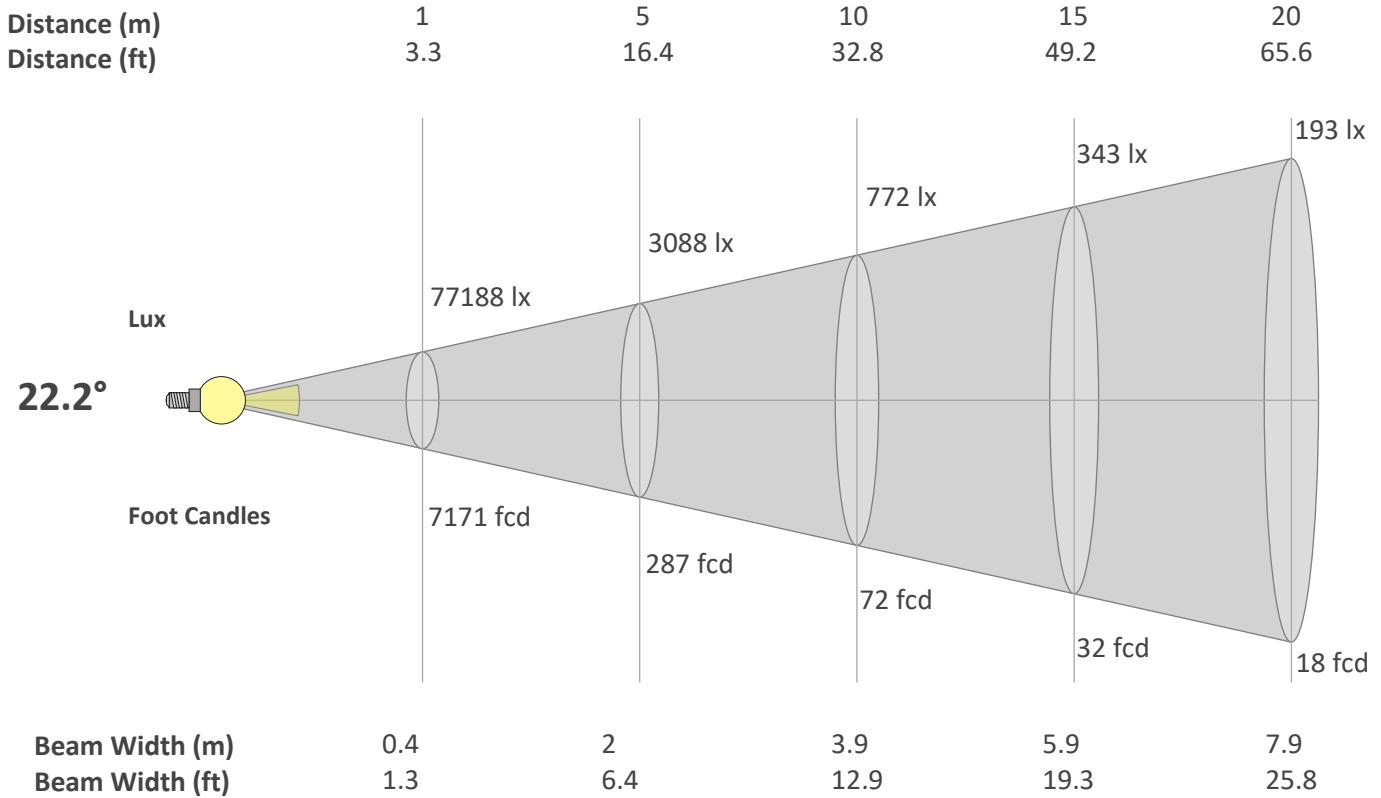
Dominant Wavelength 585 nm



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

Beam Details

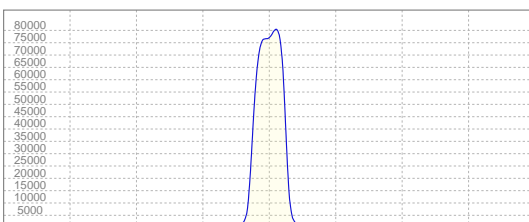
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
22.2°	29.4°	36°



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	77188	19297	8576	4824	3088	2144	1575	1206	953	772	638	536	457	394	343	302	267	238	214	193
FC	7171	1792.8	796.8	448.2	286.8	199.2	146.3	112	88.5	71.7	59.3	49.8	42.4	36.6	31.9	28	24.8	22.1	19.9	17.9

Linear Distribution



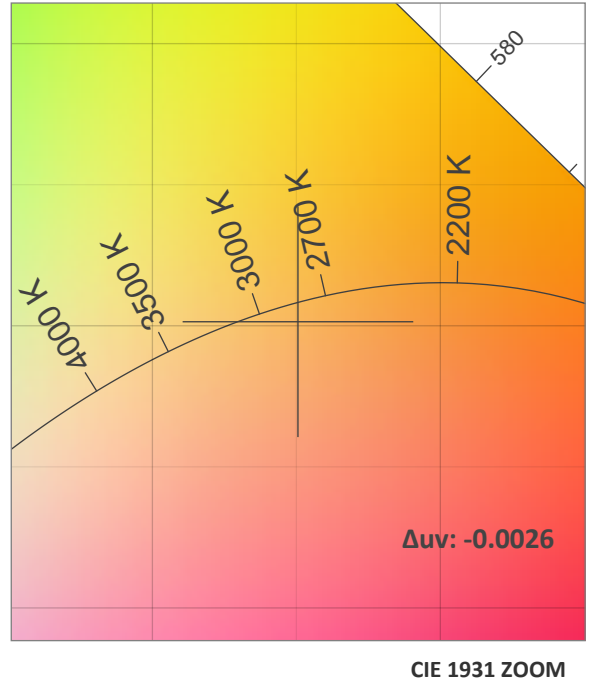
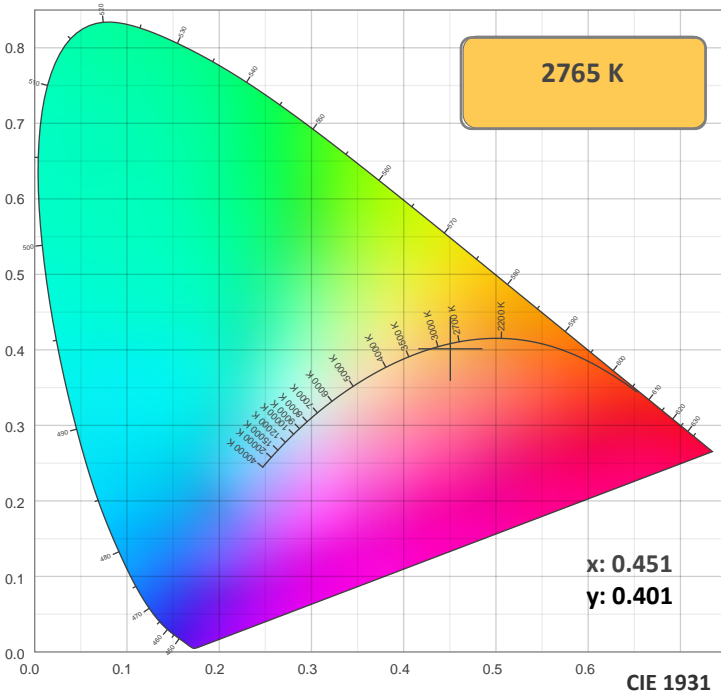
Peak Candela
80213 cd

Calculate Center Beam Intensities

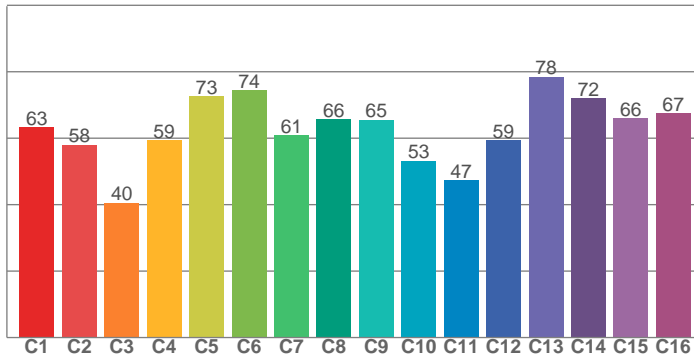
$lux = 80213 / distance(m)^2$

$fc = 80213 / distance(ft)^2$

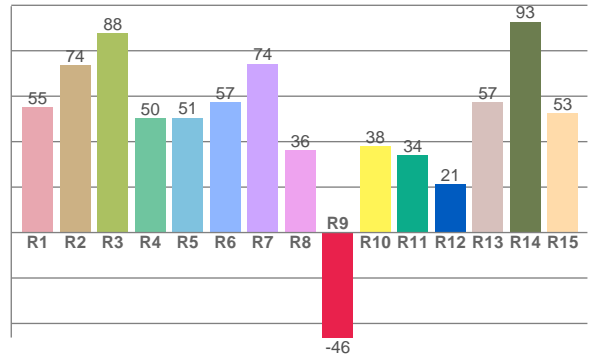
Color Details



TM30: 61.9



CRI: 60.7 (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
55.1	73.6	87.8	50.4	50.6	57.4	74.3	36.2	-46.2	38.1	33.9	21.3	57.4	92.8	52.6

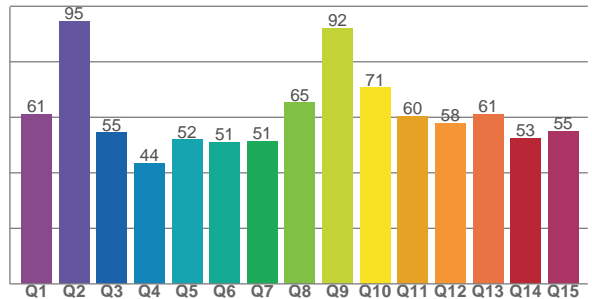
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
63.2	58.0	40.5	59.4	72.6	74.4	60.9	65.7	65.5	53.1	47.3	59.3	78.5	72.0	66.0	67.4

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
61.2	94.7	54.5	43.5	52.0	51.0	51.4	65.3	92.1	70.7	60.4	57.8	61.2	52.6	55.1

CQS: 58.9



Color Parameters

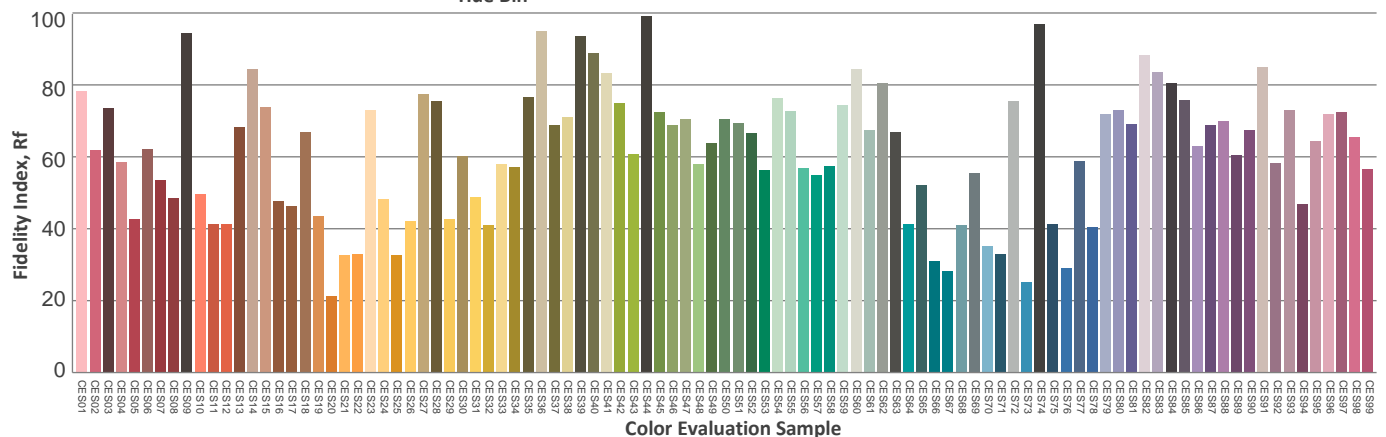
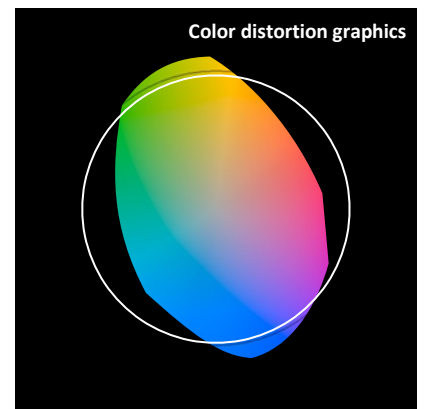
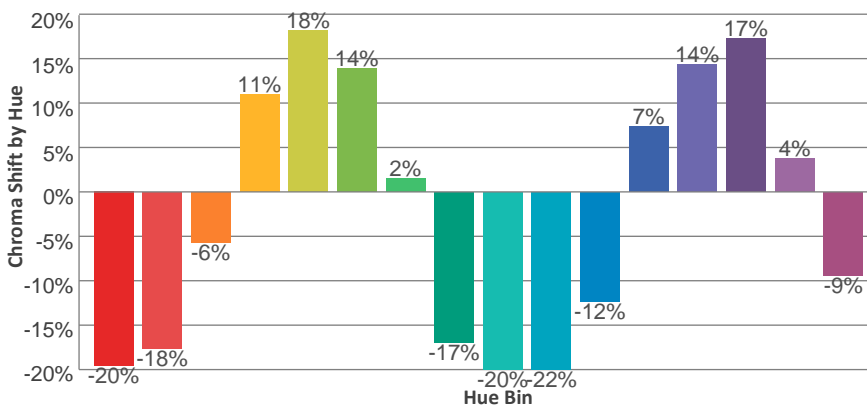
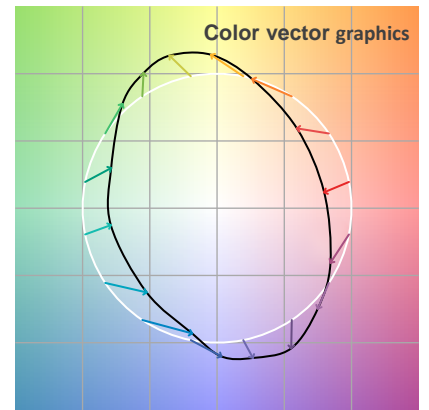
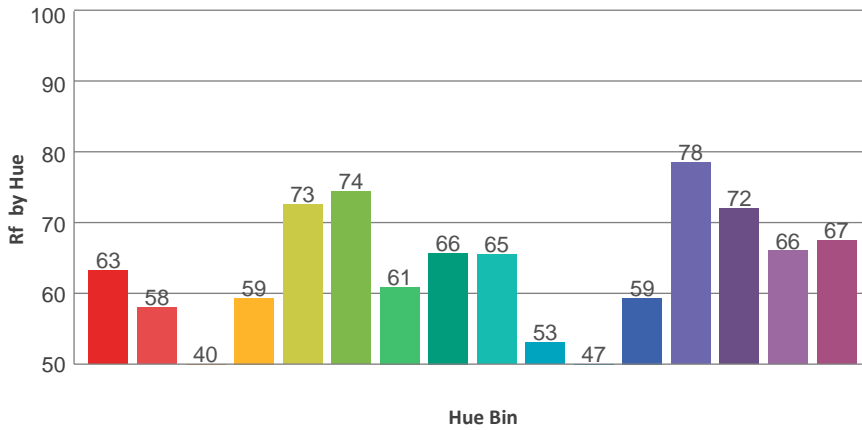
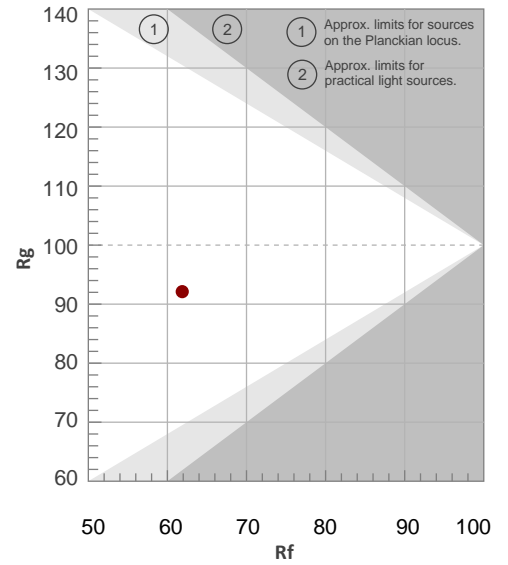
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2765 K	60.7	-46.2	61.9	92.1	58.9	0.451	0.401	0.261	0.348	-0.0026

TM30 Details

Rf 61.9
Fidelity Index Rf

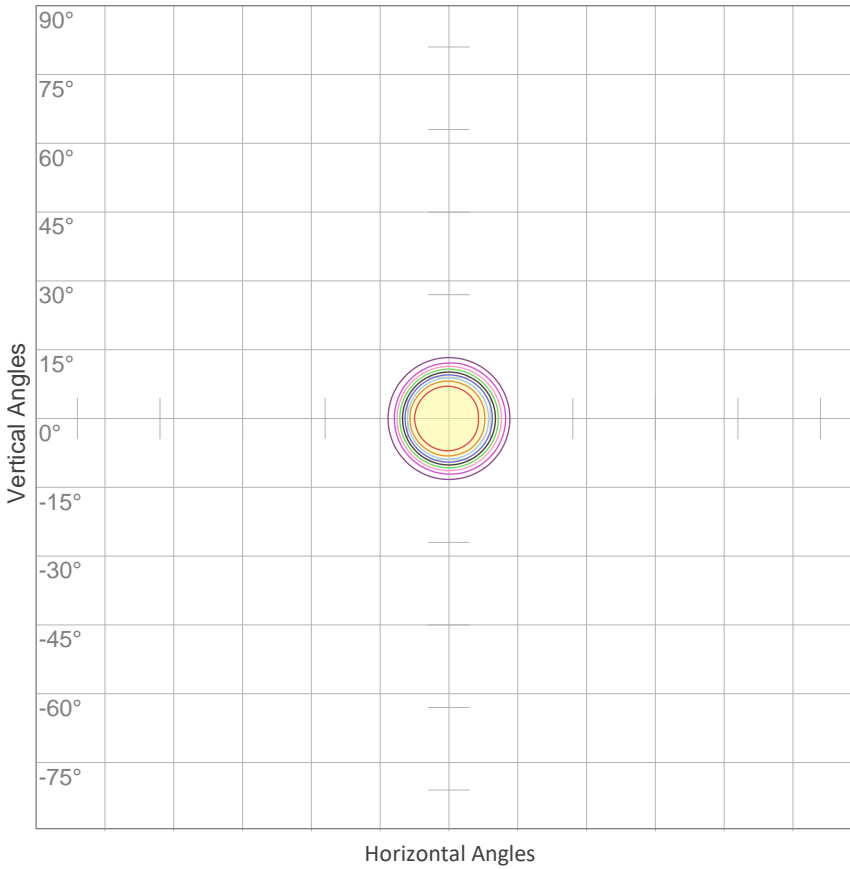
Rg 92.1
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	63	-20%	-4%
2	58	-18%	16%
3	40	-6%	31%
4	59	11%	27%
5	73	18%	13%
6	74	14%	-10%
7	61	2%	-25%
8	66	-17%	-14%
9	65	-20%	-3%
10	53	-22%	23%
11	47	-12%	36%
12	59	7%	25%
13	78	14%	4%
14	72	17%	-12%
15	66	4%	-20%
16	67	-9%	-23%



ISO Diagrams

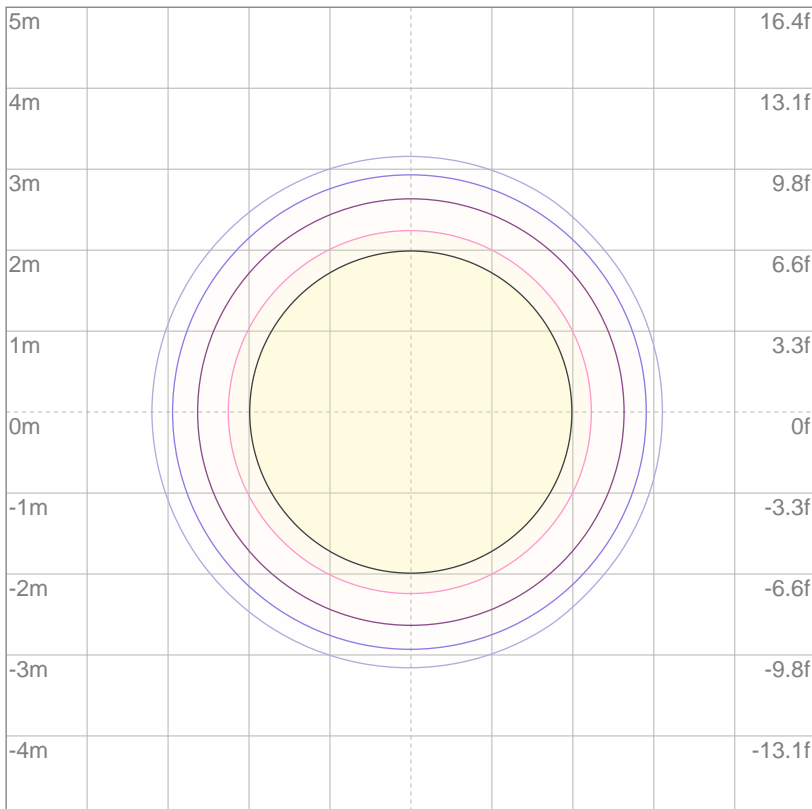
ISO Candela Diagram



10%	7719 cd
20%	15438 cd
30%	23157 cd
40%	30875 cd
50%	38594 cd
60%	46313 cd
70%	54032 cd
80%	61751 cd
90%	69470 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 77188 cd

ISO Lux Diagram



3%	23.2 lx
5%	38.6 lx
10%	77.2 lx
30%	232 lx
50%	386 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 772 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 37617 lm

VISO Lab Spion 25332 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
6.5°	10.8°	12.7°

Color Temperature: 6788 K

CRI: 70.5

TLCI: 44

TM30: 69.9

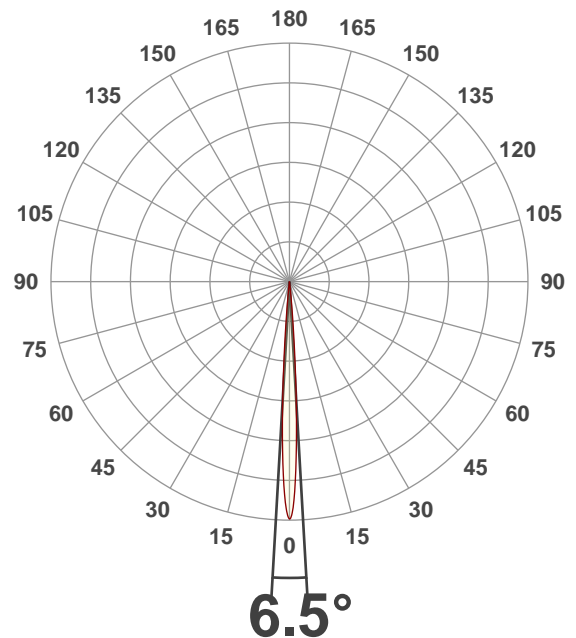
CQS: 66.9

Voltage: 117 V, Current: 12.1 A

Power: 1416 W

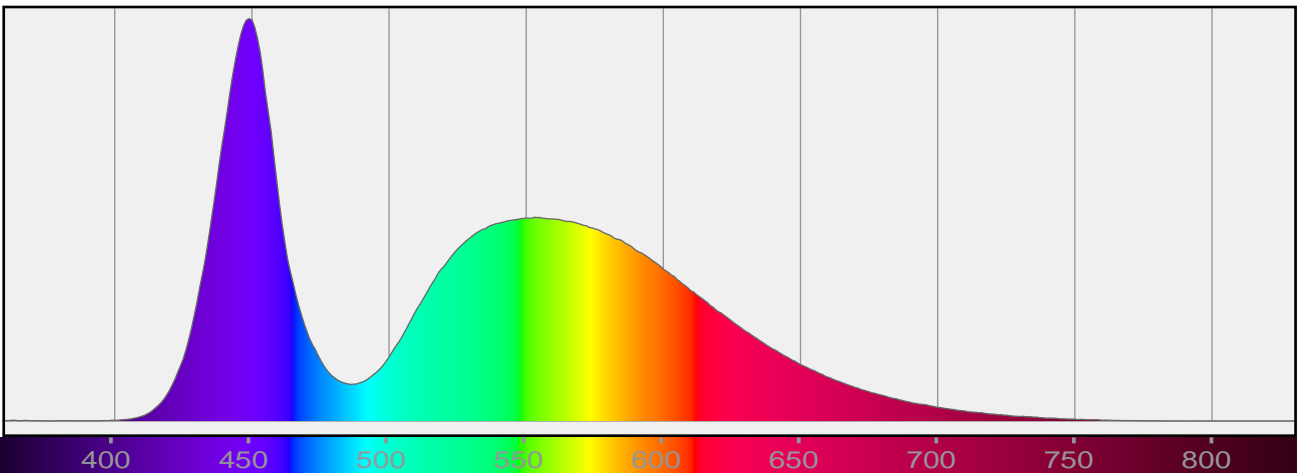
Efficacy: 18 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

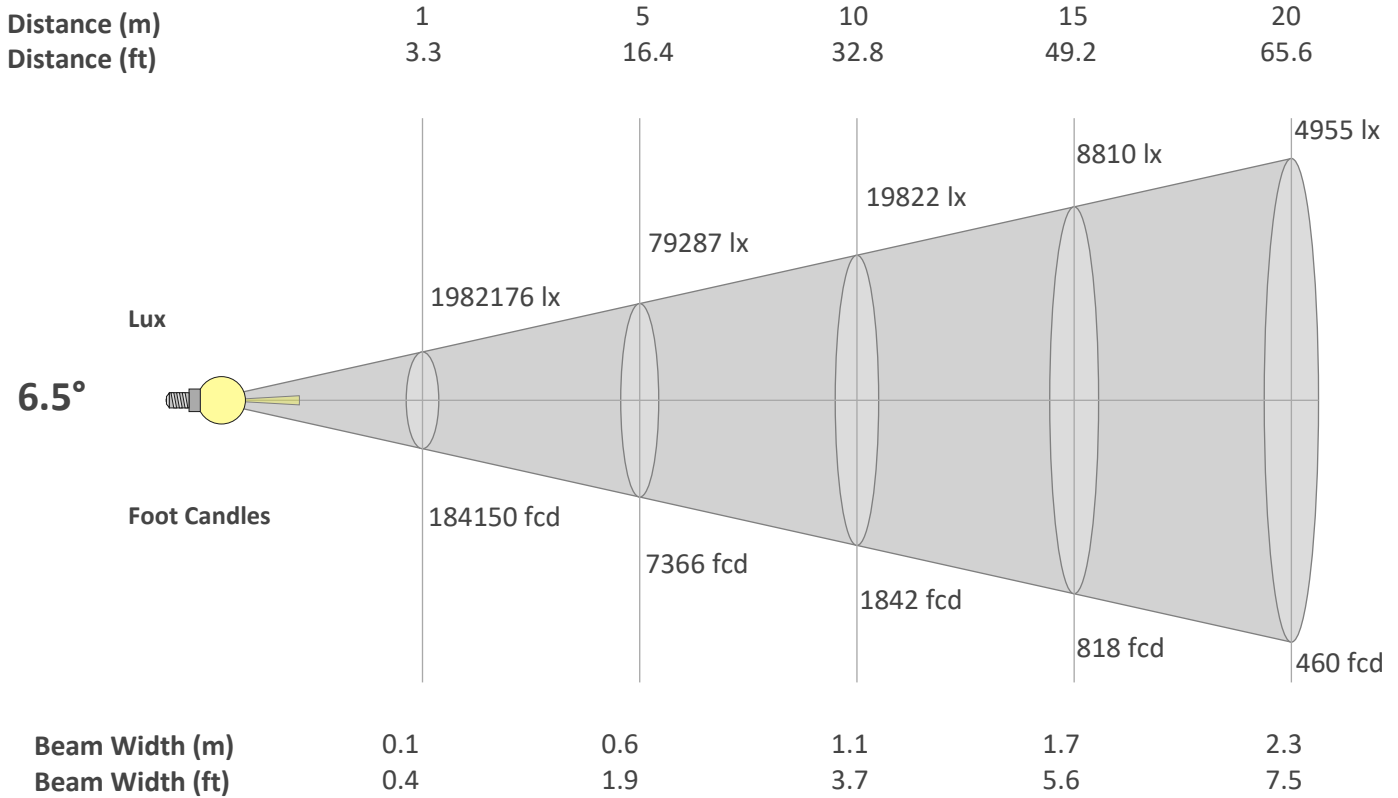
Dominant Wavelength 360 nm



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

Beam Details

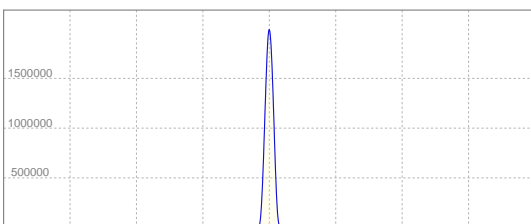
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
6.5°	10.8°	12.7°



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	1982176	495544	220242	123886	79287	55060	40453	30971	24471	19822	16382	13765	11729	10113	8810	7743	6859	6118	5491	4955
FC	184150.2	46037.5	20461.1	11509.4	7366	5115.3	3758.2	2877.3	2273.5	1841.5	1521.9	1278.8	1089.6	939.5	818.4	719.3	637.2	568.4	510.1	460.4

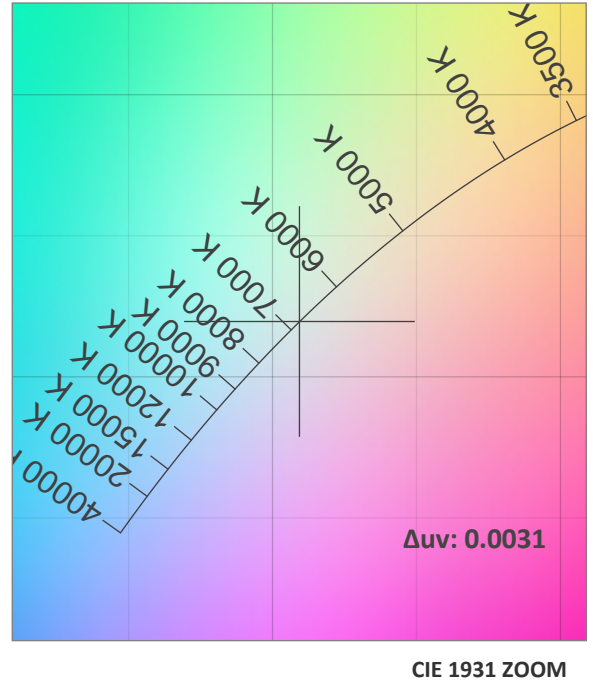
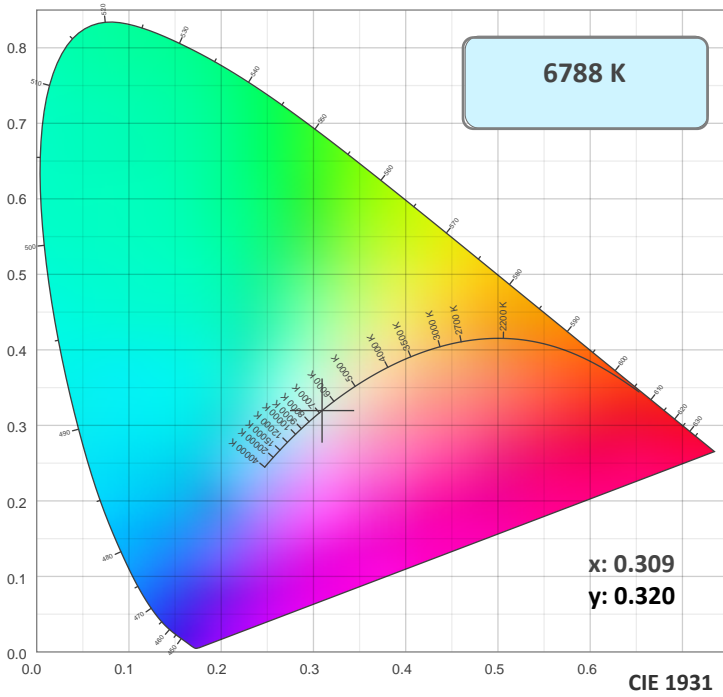
Linear Distribution



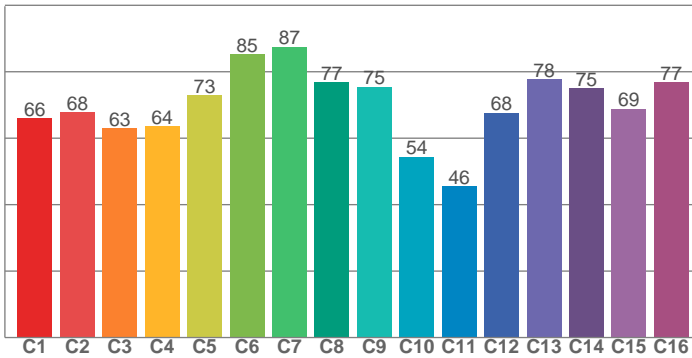
Peak Candela
1987659 cd

Calculate Center Beam Intensities
lux = 1987659 / distance(m)²
fc = 1987659 / distance(ft)²

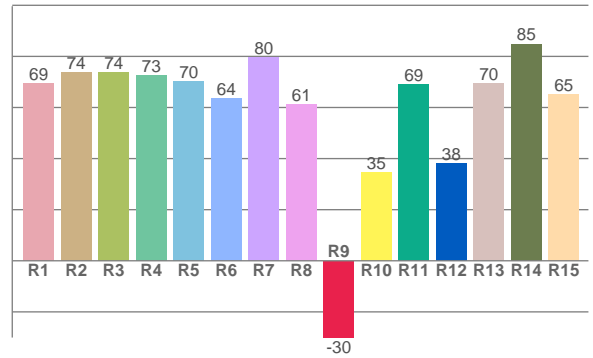
Color Details



TM30: 69.9



CRI: 70.5 (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
69.4	73.8	73.6	72.6	70.1	63.5	79.7	61.2	-30.0	34.7	69.2	38.1	69.5	84.9	65.0

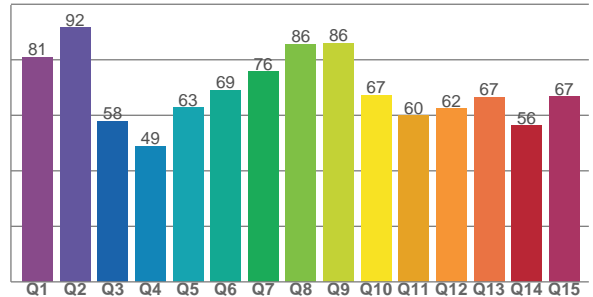
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65.9	67.8	63.0	63.5	72.9	85.2	87.4	76.8	75.5	54.4	45.5	67.6	77.7	75.0	68.9	76.8

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.0	91.5	57.9	48.9	62.7	69.0	75.7	85.6	86.0	67.2	60.0	62.3	66.6	56.3	66.7

CQS: 66.9



Color Parameters

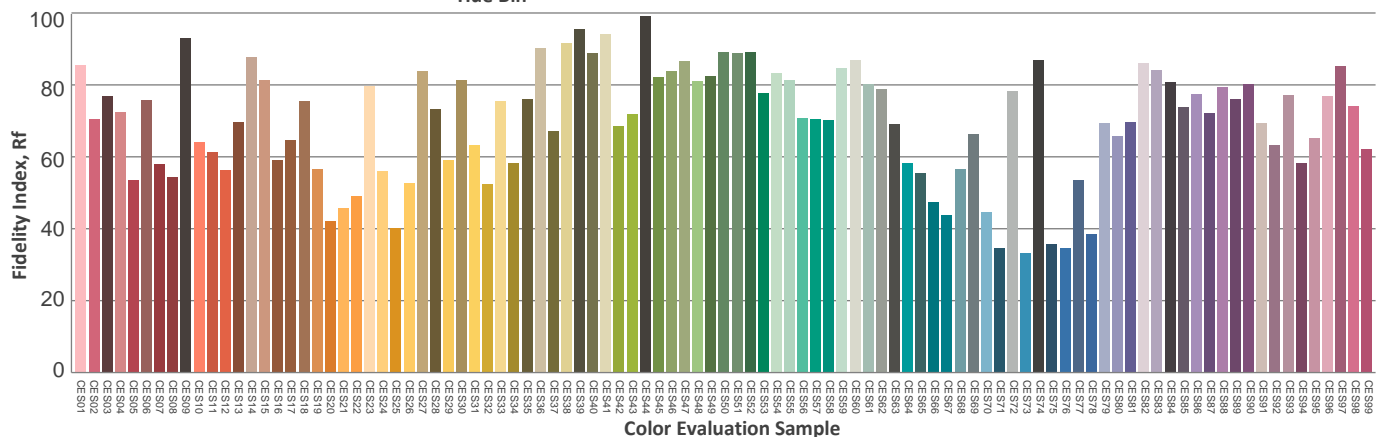
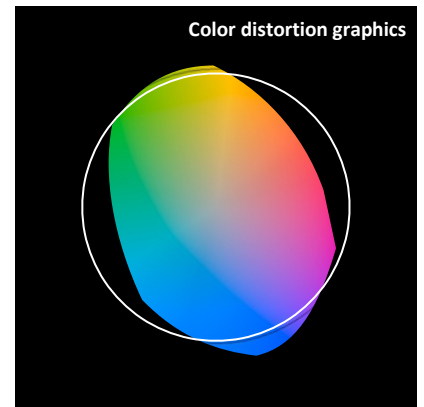
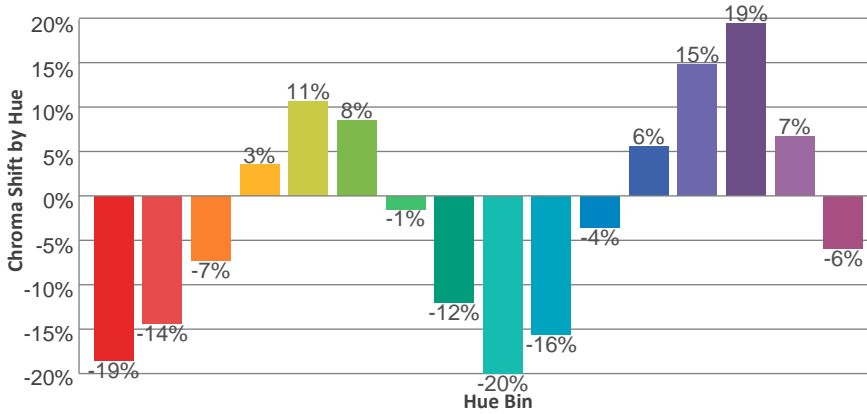
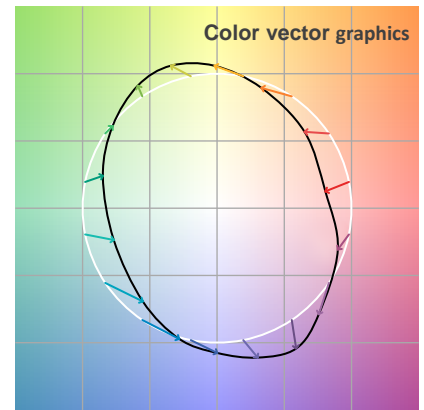
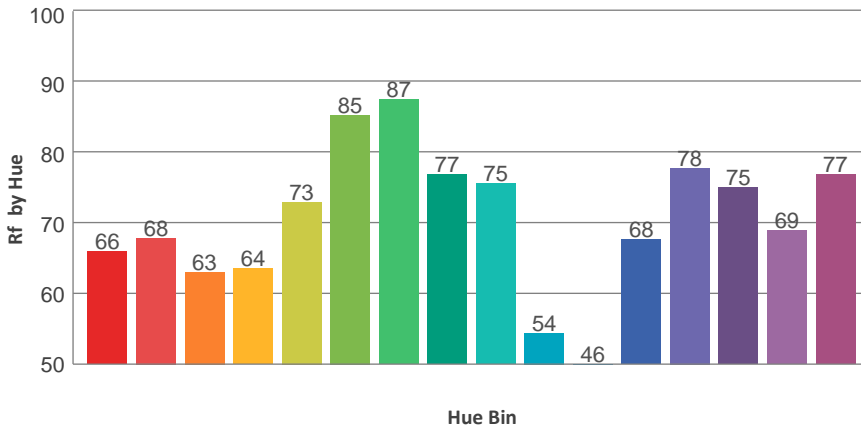
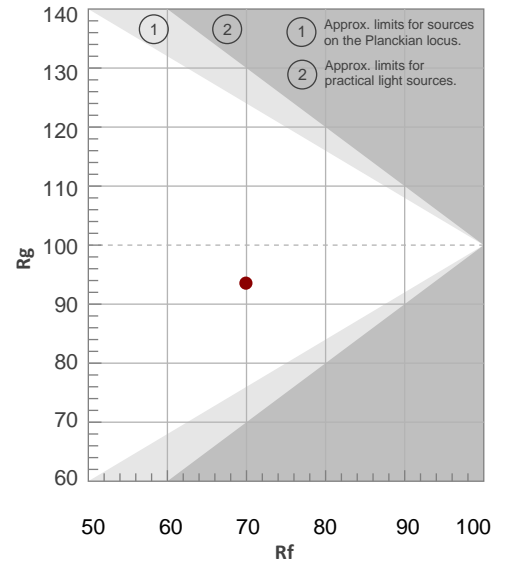
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6788 K	70.5	-30.0	69.9	93.6	66.9	0.309	0.320	0.199	0.308	0.0031

TM30 Details

Rf 69.9
Fidelity Index Rf

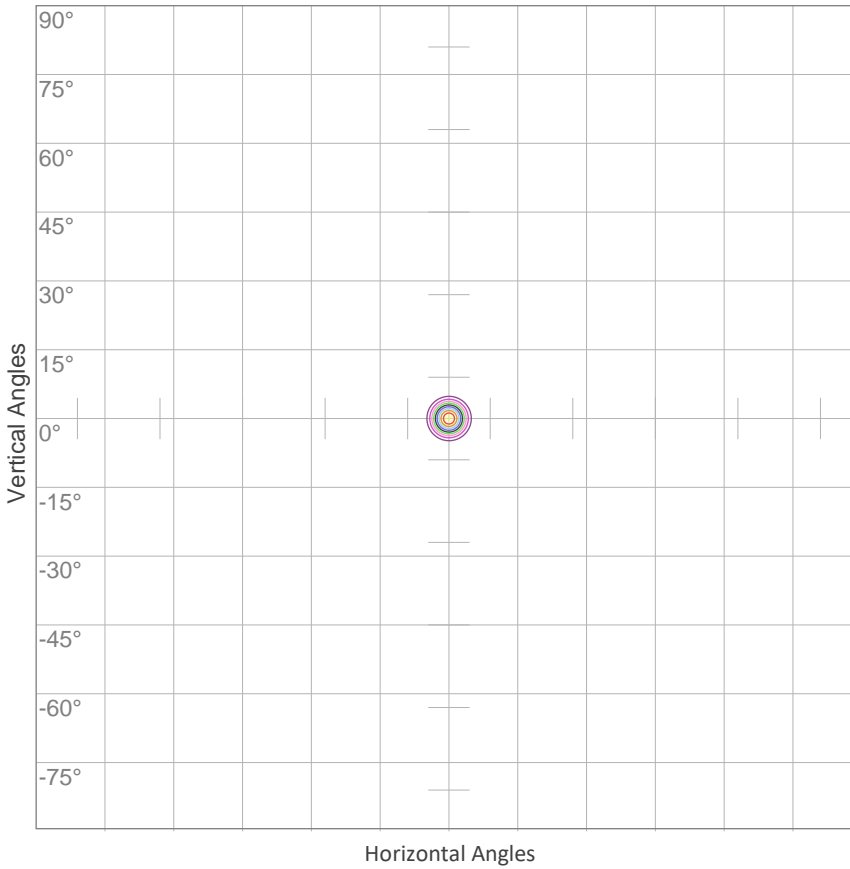
Rg 93.6
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	66	-19%	-3%
2	68	-14%	11%
3	63	-7%	22%
4	64	3%	22%
5	73	11%	13%
6	85	8%	-2%
7	87	-1%	-8%
8	77	-12%	-7%
9	75	-20%	8%
10	54	-16%	27%
11	46	-4%	31%
12	68	6%	21%
13	78	15%	8%
14	75	19%	-9%
15	69	7%	-24%
16	77	-6%	-13%



ISO Diagrams

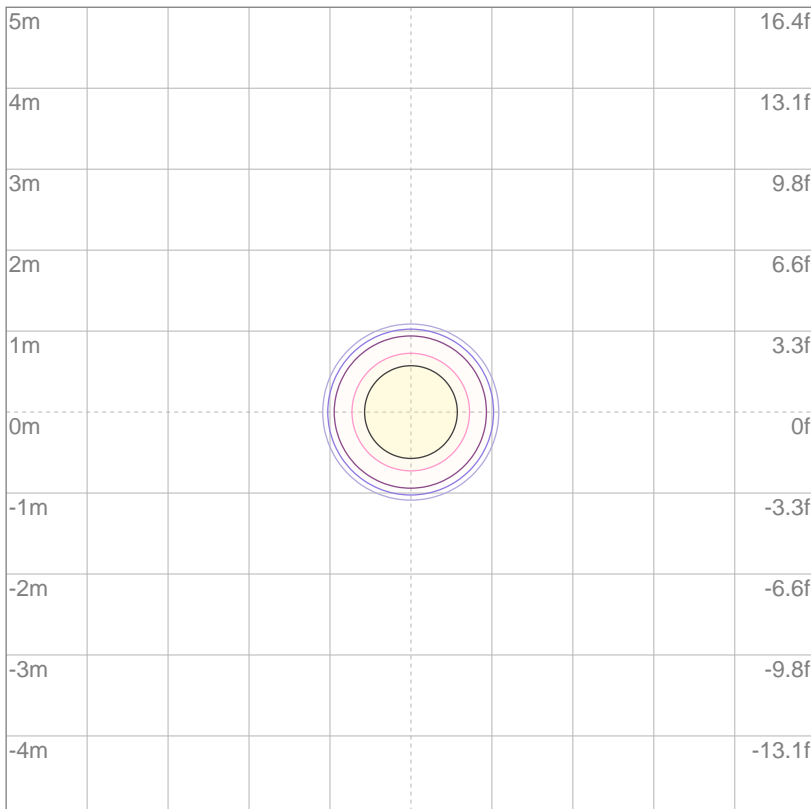
ISO Candela Diagram



10%	198218 cd
20%	396435 cd
30%	594653 cd
40%	792870 cd
50%	991088 cd
60%	1189305 cd
70%	1387523 cd
80%	1585741 cd
90%	1783958 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 1982176 cd

ISO Lux Diagram



3%	595 lx
5%	991 lx
10%	1982 lx
30%	5947 lx
50%	9911 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 19.8K 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 47769 lm

VISO Lab Spion 38241 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
20.5°	30.5°	33.4°

Color Temperature: 6805 K

CRI: 69.9

TLCI: 43

TM30: 69.6

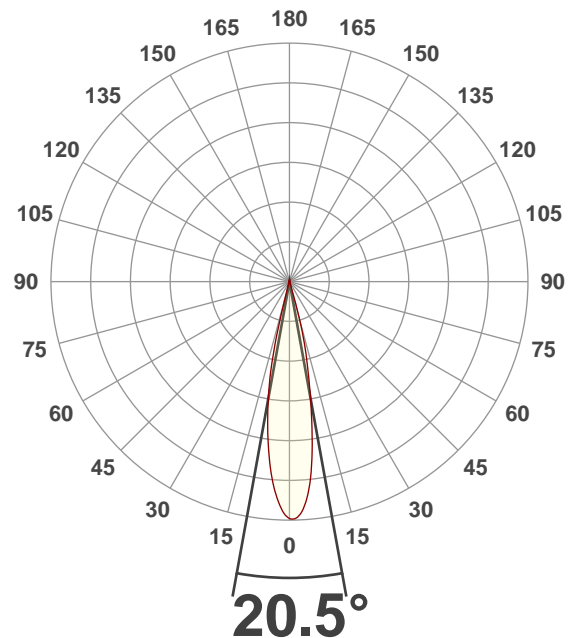
CQS: 66.6

Voltage: 116 V, Current: 12.2 A

Power: 1415 W

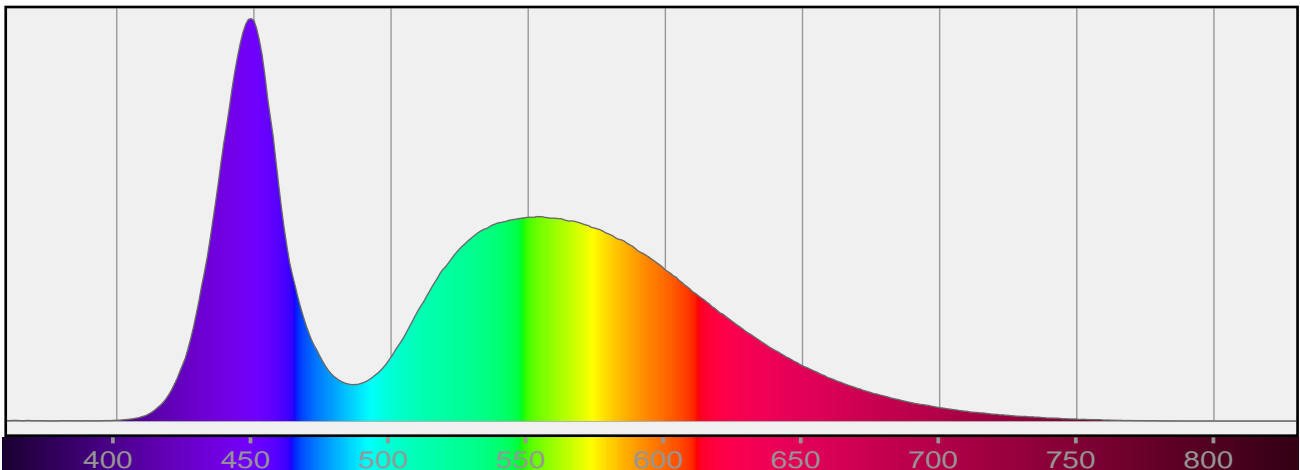
Efficacy: 27 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

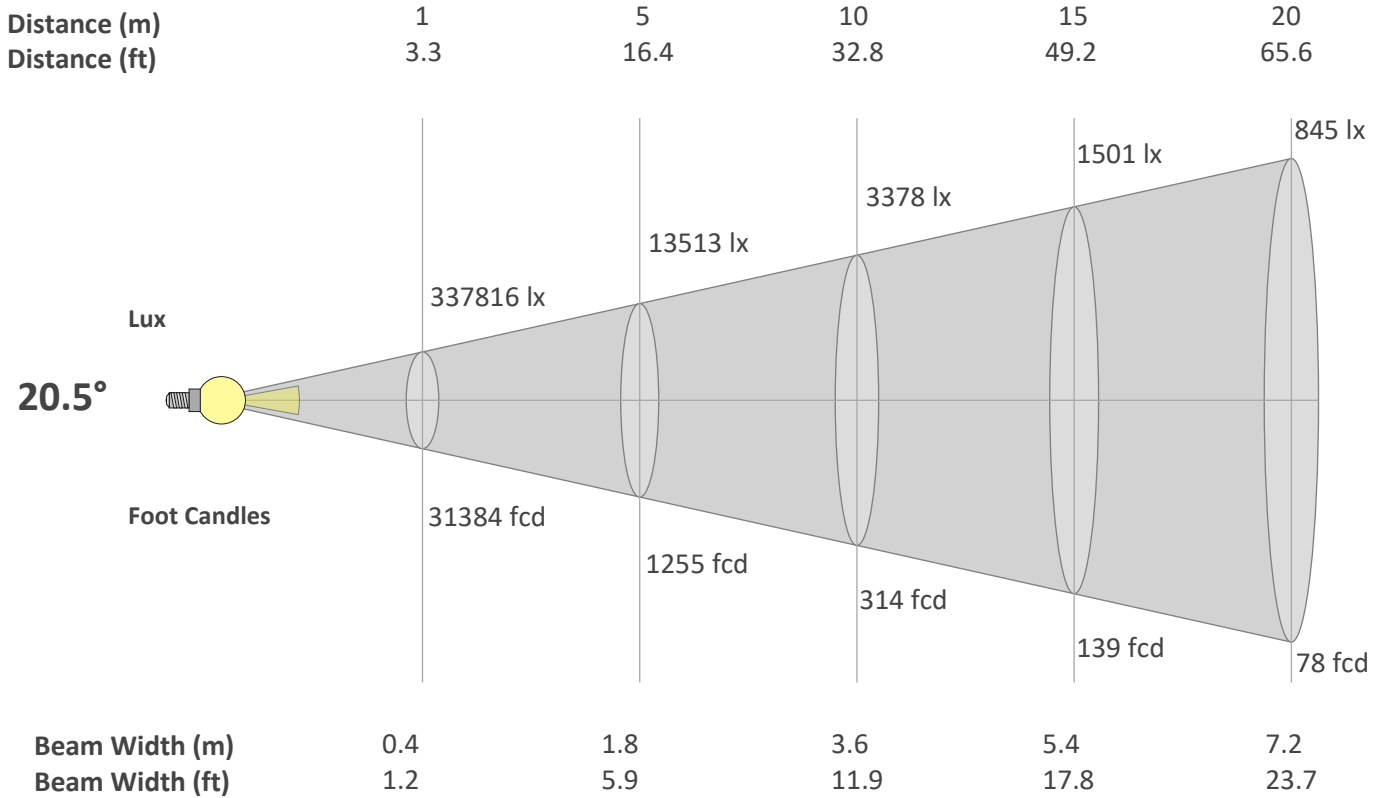
Dominant Wavelength 360 nm



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

Beam Details

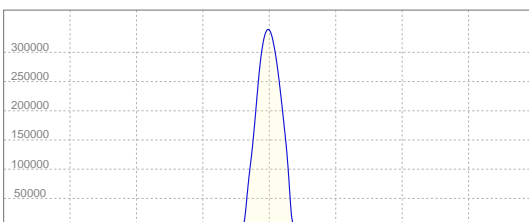
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
20.5°	30.5°	33.4°



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	337816	84454	37535	21114	13513	9384	6894	5278	4171	3378	2792	2346	1999	1724	1501	1320	1169	1043	936	845
FC	31384.2	7846	3487.1	1961.5	1255.4	871.8	640.5	490.4	387.5	313.8	259.4	217.9	185.7	160.1	139.5	122.6	108.6	96.9	86.9	78.5

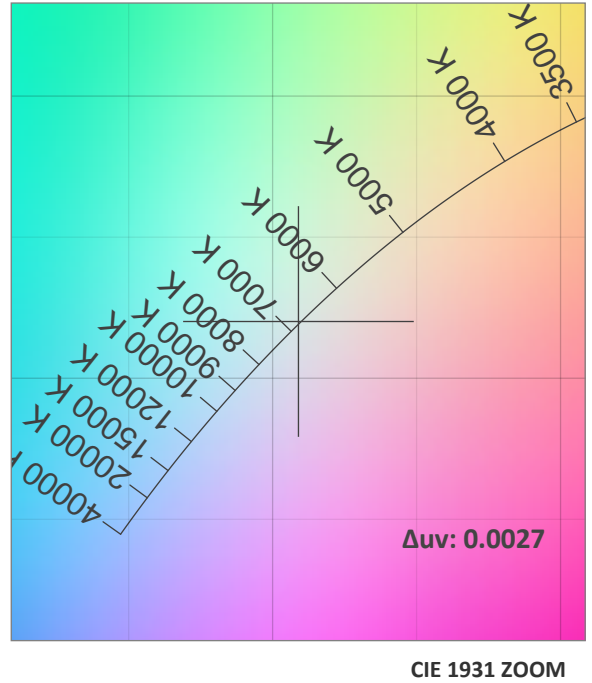
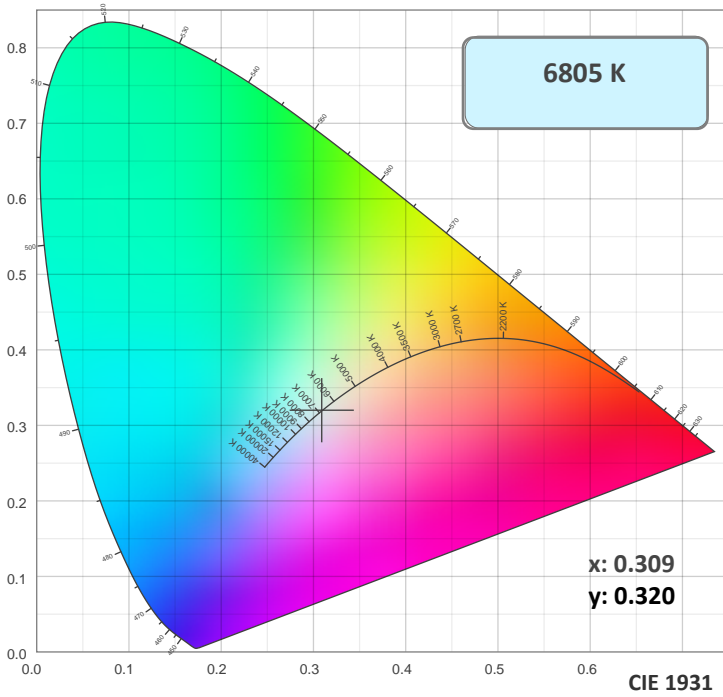
Linear Distribution



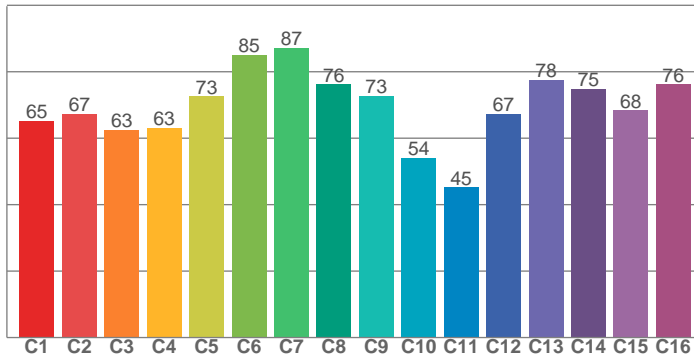
Peak Candela
338458 cd

Calculate Center Beam Intensities
 $lux = 338458 / distance(m)^2$
 $fc = 338458 / distance(ft)^2$

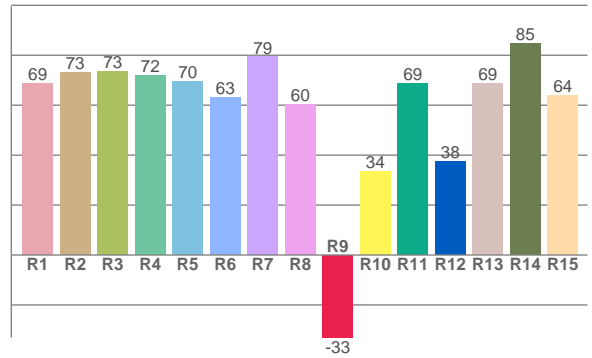
Color Details



TM30: 69.6



CRI: 69.9 (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	73.3	73.4	72.0	69.5	63.0	79.3	60.4	-33.0	33.6	68.5	37.6	68.8	84.8	64.0

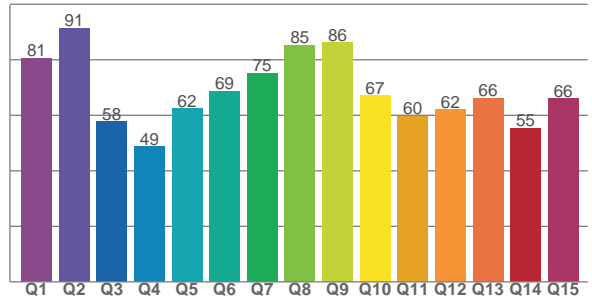
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
65.3	67.4	62.6	63.2	72.6	85.0	87.2	76.2	72.7	54.0	45.2	67.4	77.6	74.8	68.4	76.2

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.6	91.5	57.8	48.7	62.5	68.7	75.2	85.3	86.1	67.0	59.7	62.0	66.2	55.4	66.1

CQS: 66.6



Color Parameters

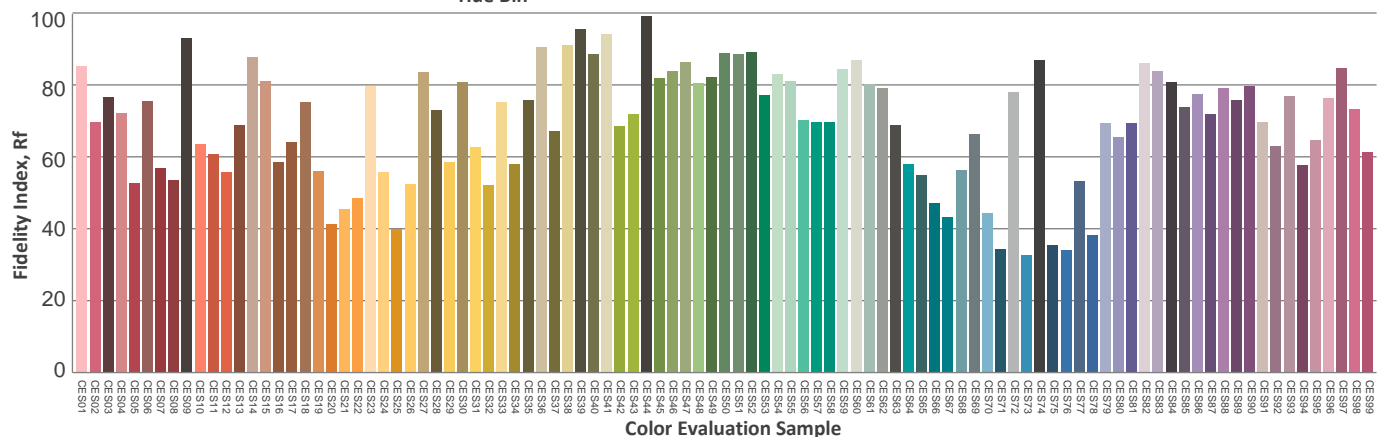
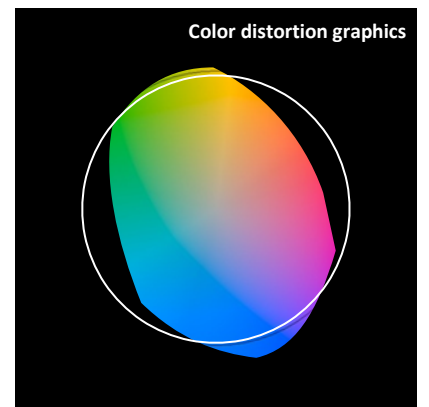
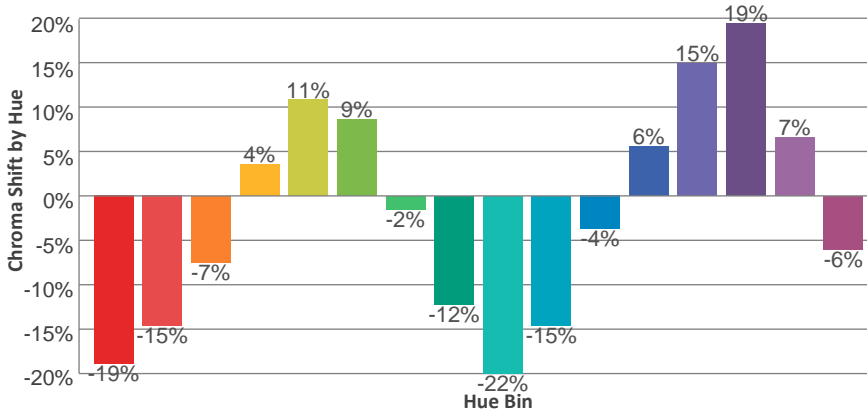
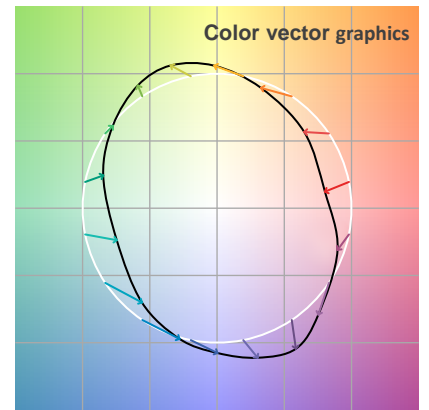
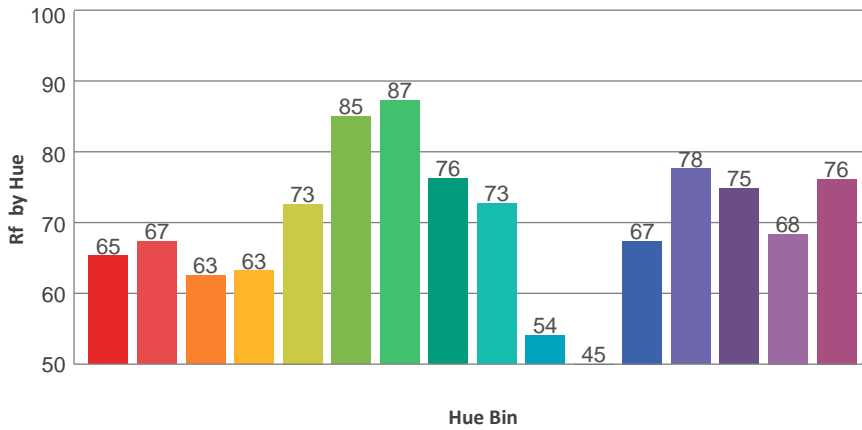
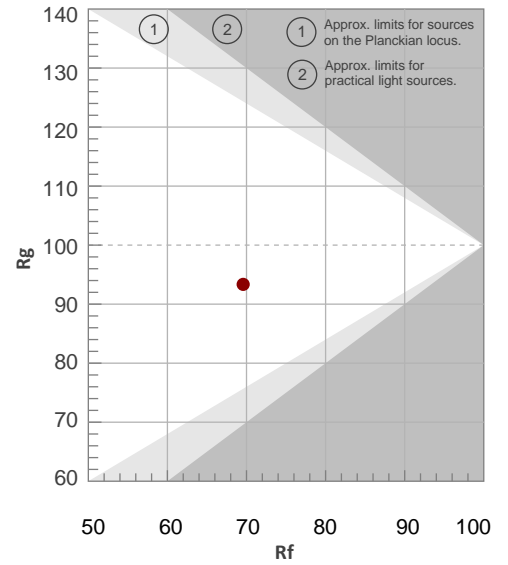
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6805 K	69.9	-33.0	69.6	93.4	66.6	0.309	0.320	0.199	0.309	0.0027

TM30 Details

Rf 69.6
Fidelity Index Rf

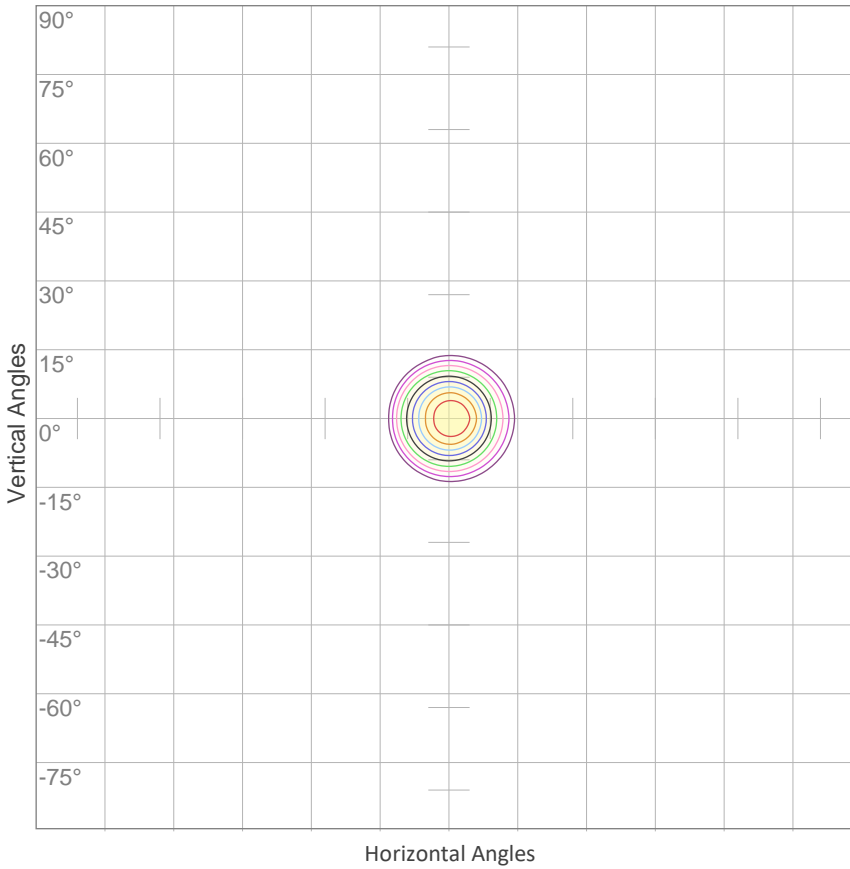
Rg 93.4
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	65	-19%	-4%
2	67	-15%	11%
3	63	-7%	22%
4	63	4%	23%
5	73	11%	13%
6	85	9%	-2%
7	87	-2%	-8%
8	76	-12%	-7%
9	73	-22%	9%
10	54	-15%	27%
11	45	-4%	31%
12	67	6%	21%
13	78	15%	8%
14	75	19%	-9%
15	68	7%	-24%
16	76	-6%	-13%



ISO Diagrams

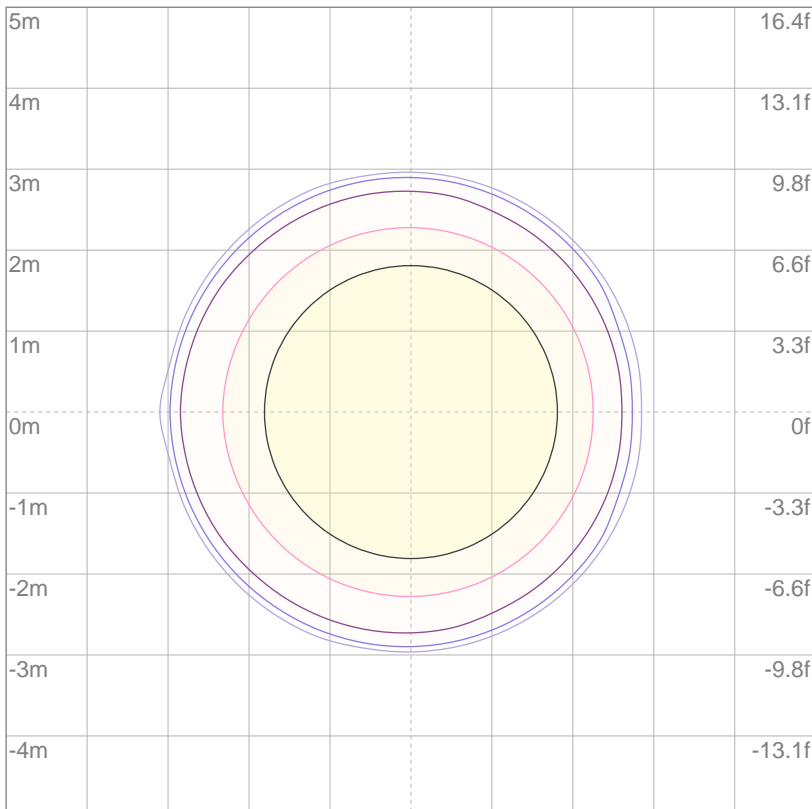
ISO Candela Diagram



10%	33782 cd
20%	67563 cd
30%	101345 cd
40%	135126 cd
50%	168908 cd
60%	202690 cd
70%	236471 cd
80%	270253 cd
90%	304035 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 337816 cd

ISO Lux Diagram



3%	101 lx
5%	169 lx
10%	338 lx
30%	1013 lx
50%	1689 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 3378 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 37855 lm

VISO Lab Spion 36358 lm

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
45°	75.7°	80.9°

Color Temperature: 6610 K

CRI: 69.7

TLCI: 43

TM30: 69.7

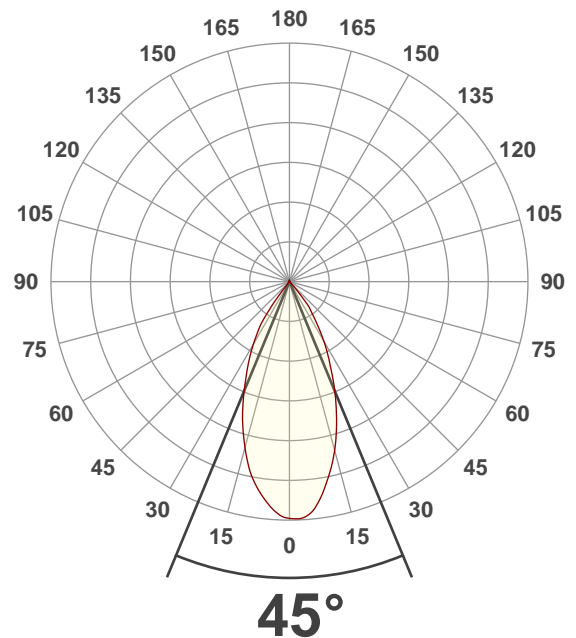
CQS: 66.6

Voltage: 117 V, Current: 12.1 A

Power: 1410 W

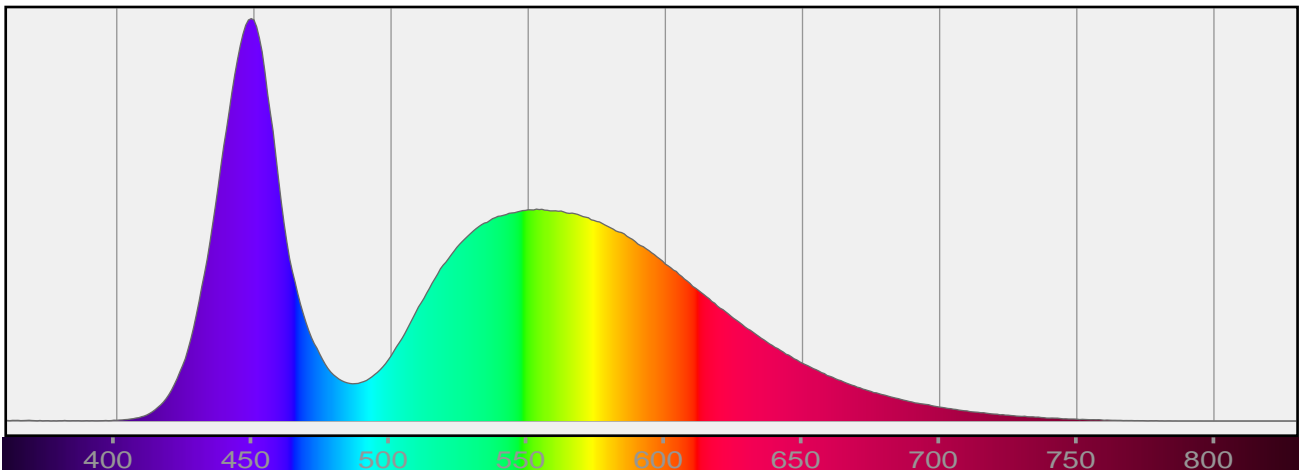
Efficacy: 26 Lumen/Watt

Measurement Date: 3/9/2020



Spectral Distribution

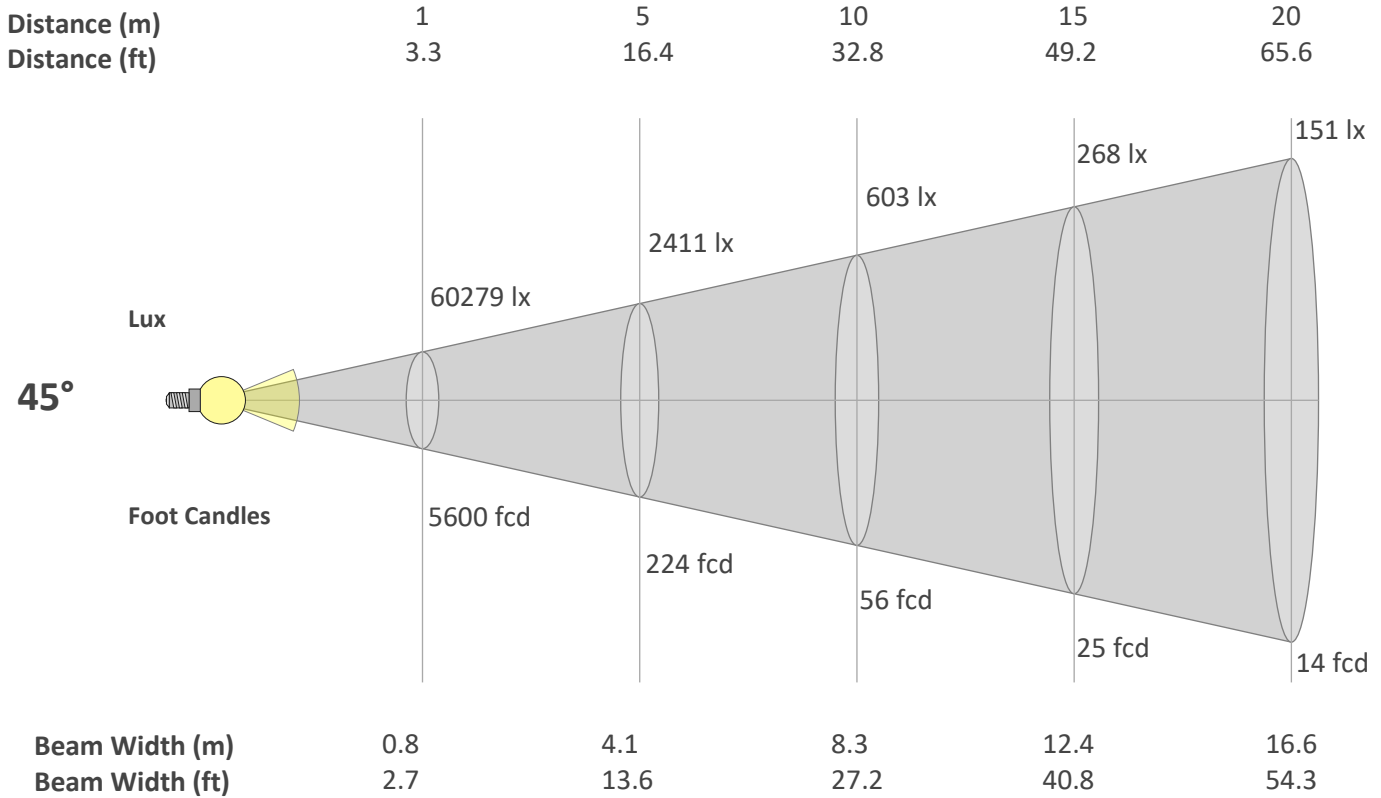
Dominant Wavelength 360 nm



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

Beam Details

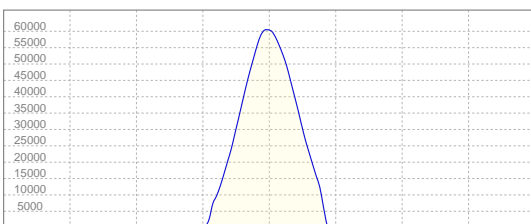
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
45°	75.7°	80.9°



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	60279	15070	6698	3767	2411	1674	1230	942	744	603	498	419	357	308	268	235	209	186	167	151
FC	5600.1	1400	622.2	350	224	155.6	114.3	87.5	69.1	56	46.3	38.9	33.1	28.6	24.9	21.9	19.4	17.3	15.5	14

Linear Distribution



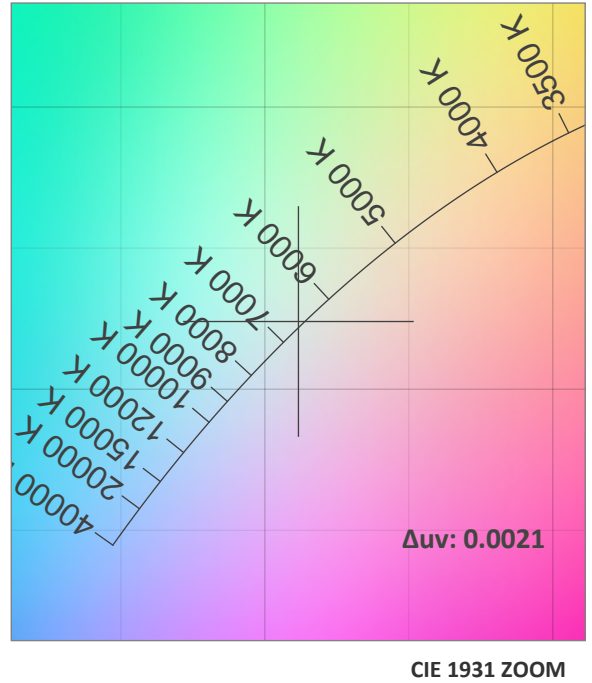
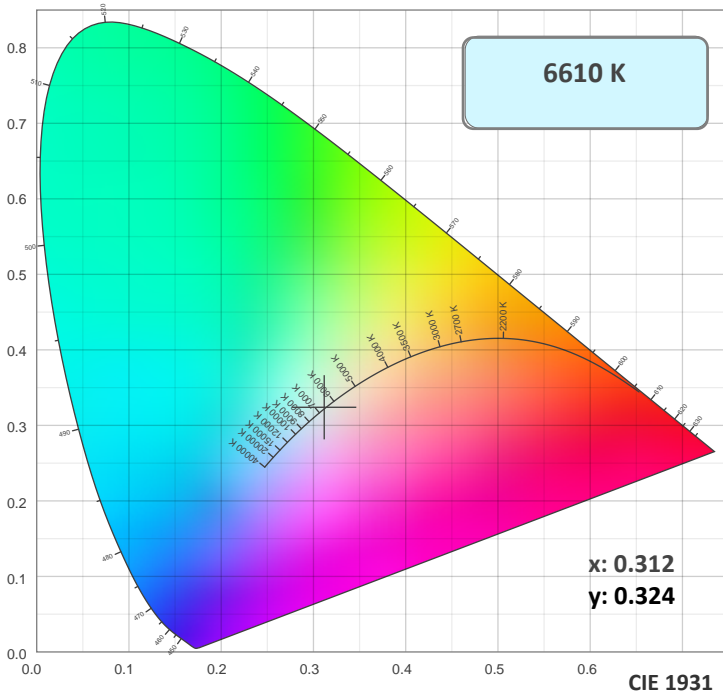
Peak Candela
60435 cd

Calculate Center Beam Intensities

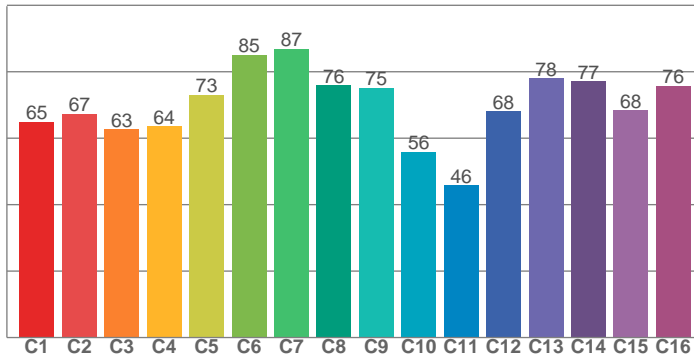
$lux = 60435 / distance(m)^2$

$fc = 60435 / distance(ft)^2$

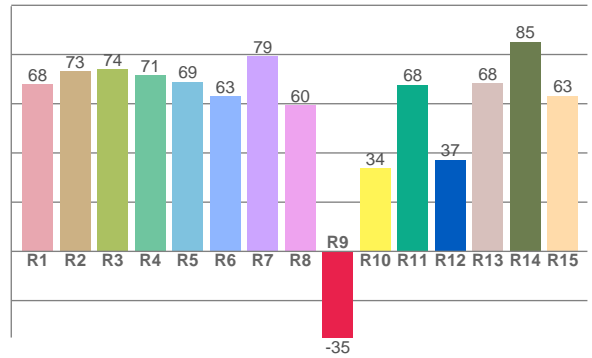
Color Details



TM30: 69.7



CRI: 69.7 (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
68.0	73.3	74.0	71.5	68.9	63.0	79.4	59.5	-35.0	33.9	67.7	37.3	68.4	85.2	63.2

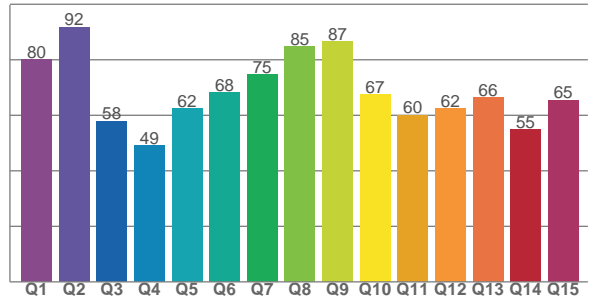
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
64.9	67.3	62.6	63.6	73.0	85.2	86.9	75.9	75.2	55.8	45.8	68.1	78.0	77.1	68.4	75.8

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.1	91.7	57.9	49.1	62.4	68.2	74.6	84.8	86.6	67.4	60.2	62.4	66.3	54.9	65.4

CQS: 66.6



Color Parameters

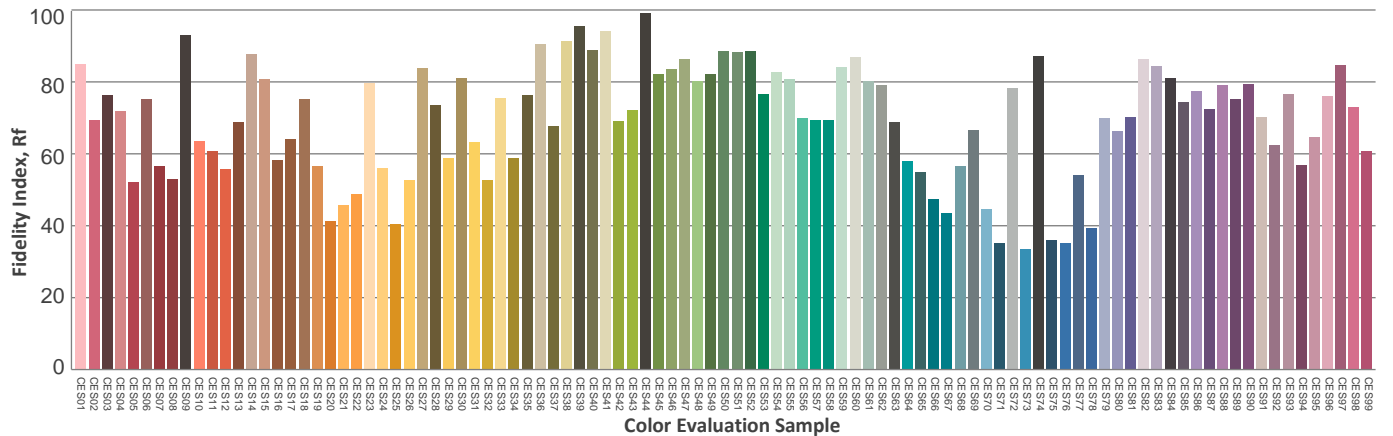
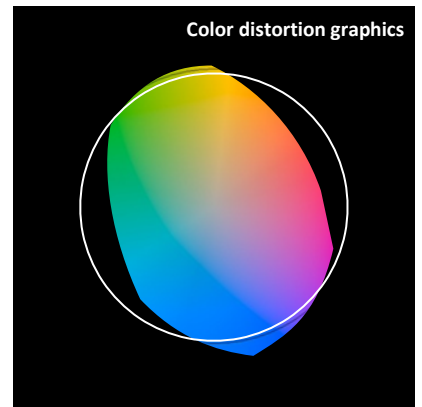
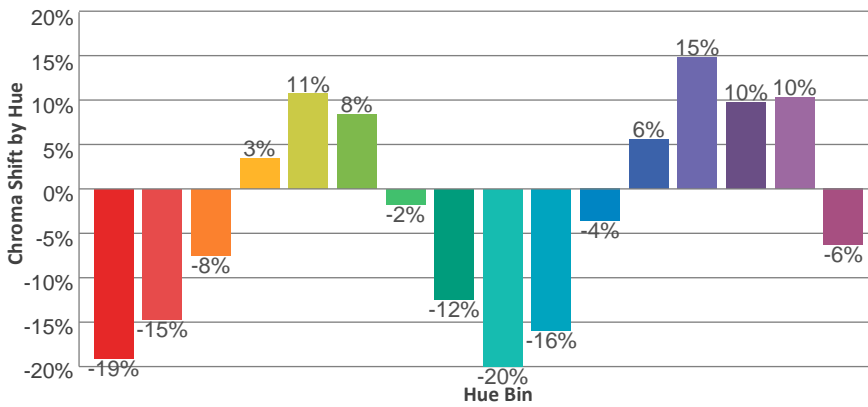
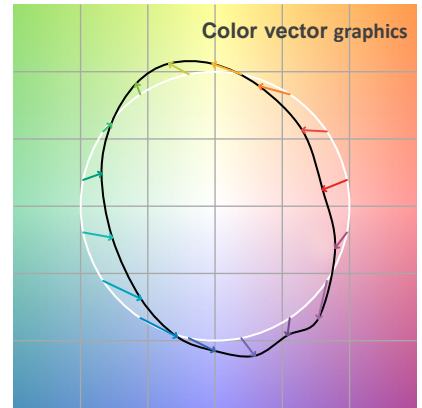
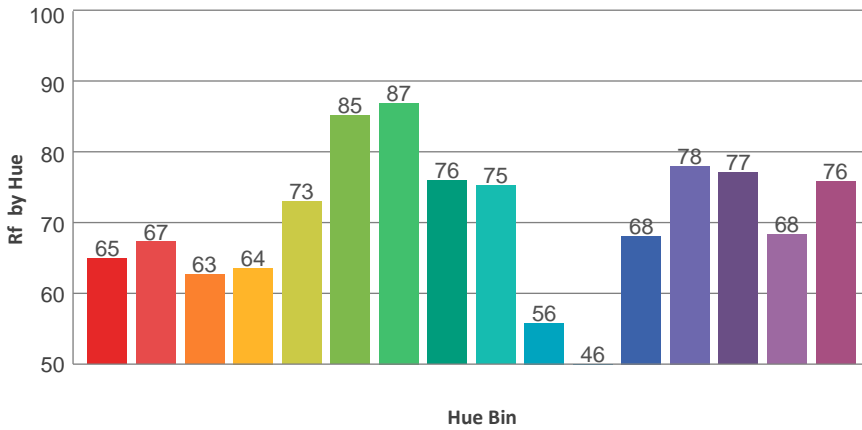
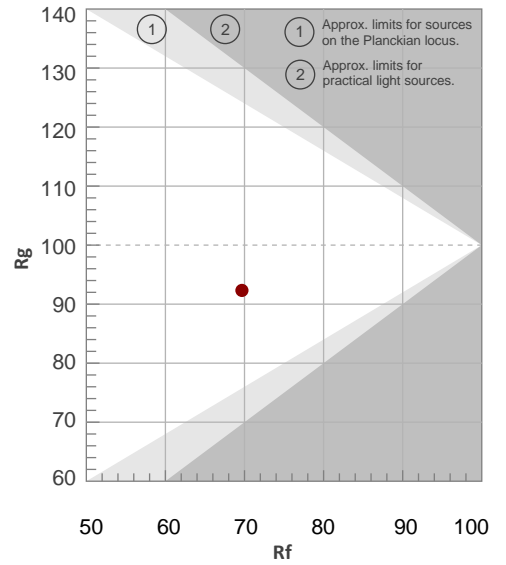
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6610 K	69.7	-35.0	69.7	92.3	66.6	0.312	0.324	0.199	0.310	0.0021

TM30 Details

Rf 69.7
Fidelity Index Rf

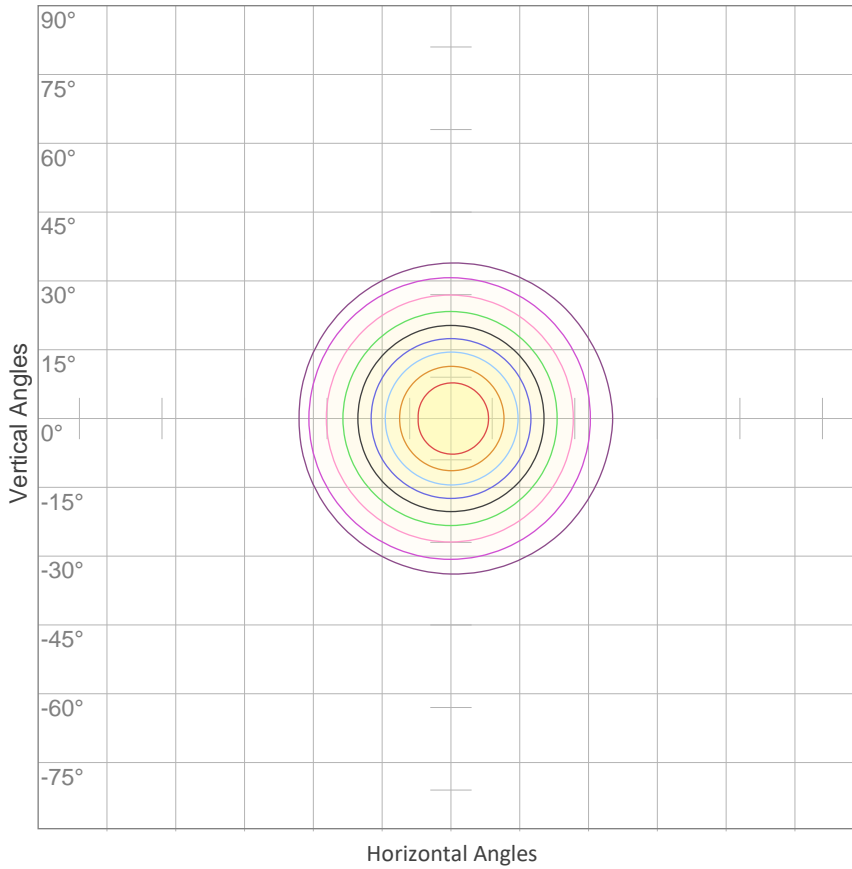
Rg 92.3
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	65	-19%	-4%
2	67	-15%	11%
3	63	-8%	22%
4	64	3%	22%
5	73	11%	13%
6	85	8%	-2%
7	87	-2%	-8%
8	76	-12%	-7%
9	75	-20%	8%
10	56	-16%	27%
11	46	-4%	30%
12	68	6%	21%
13	78	15%	7%
14	77	10%	-9%
15	68	10%	-27%
16	76	-6%	-13%



ISO Diagrams

ISO Candela Diagram



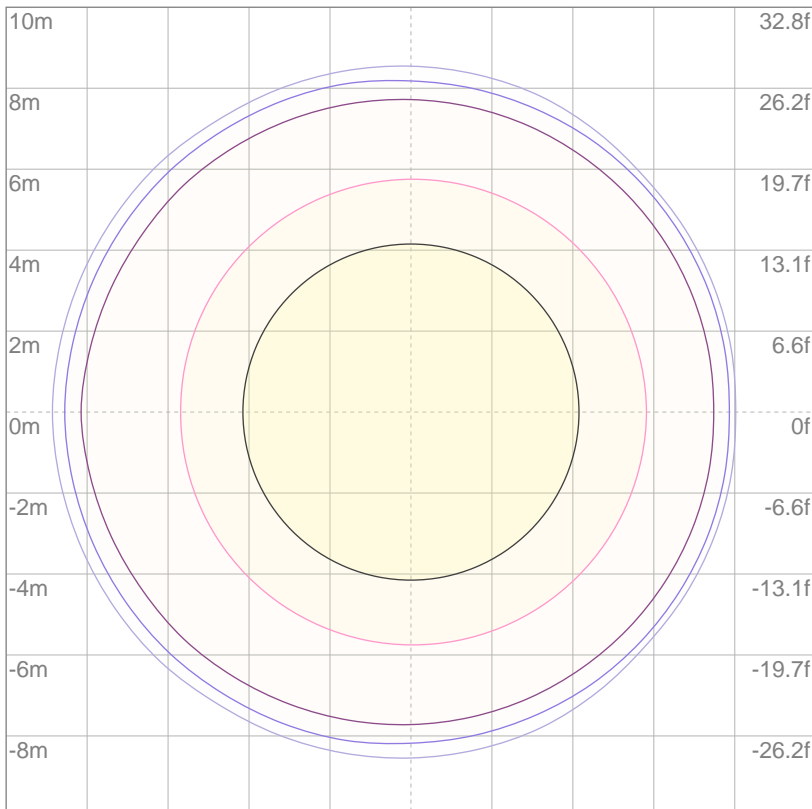
10%	6028 cd
20%	12056 cd
30%	18084 cd
40%	24111 cd
50%	30139 cd
60%	36167 cd
70%	42195 cd
80%	48223 cd
90%	54251 cd

Conditions:

Number of c-planes: 2

Candela at center: 60279 cd

ISO Lux Diagram



3%	18.1 lx
5%	30.1 lx
10%	60.3 lx
30%	181 lx
50%	301 lx

Conditions:

Number of c-planes: 2

Lux at center: 603 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 **29856 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
20.5°	30.5°	33.4°

Color Temperature: **6315 K**

CRI: **80.8**

TLCI: **51**

TM30: **74.7**

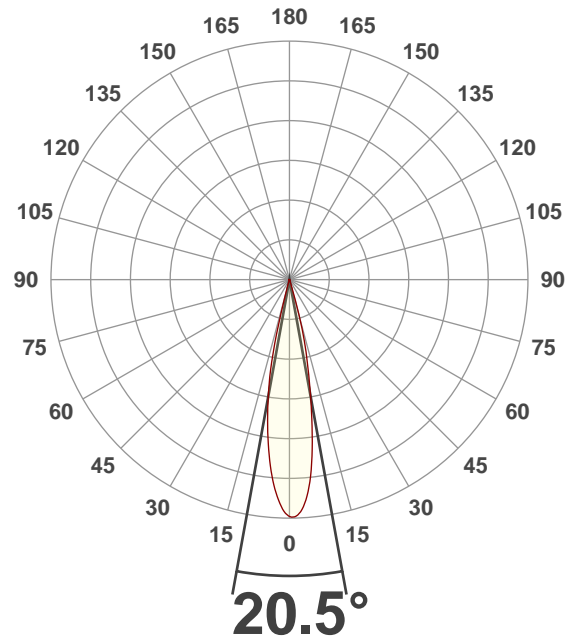
CQS: **71.0**

Voltage: **116 V**, Current: **12.2 A**

Power: **1416 W**

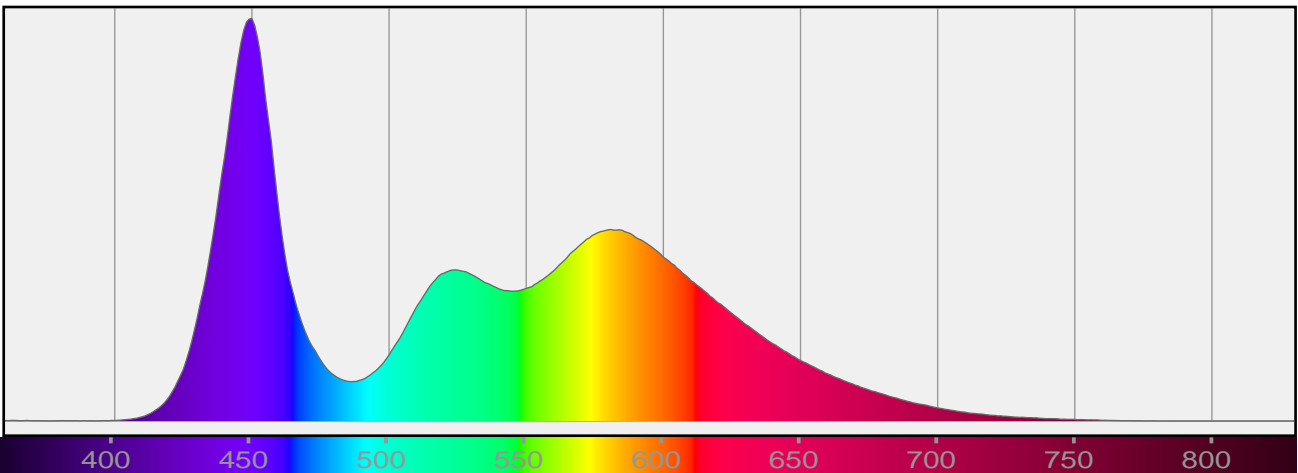
Efficacy: **21 Lumen/Watt**

Measurement Date: **3/9/2020**



Spectral Distribution

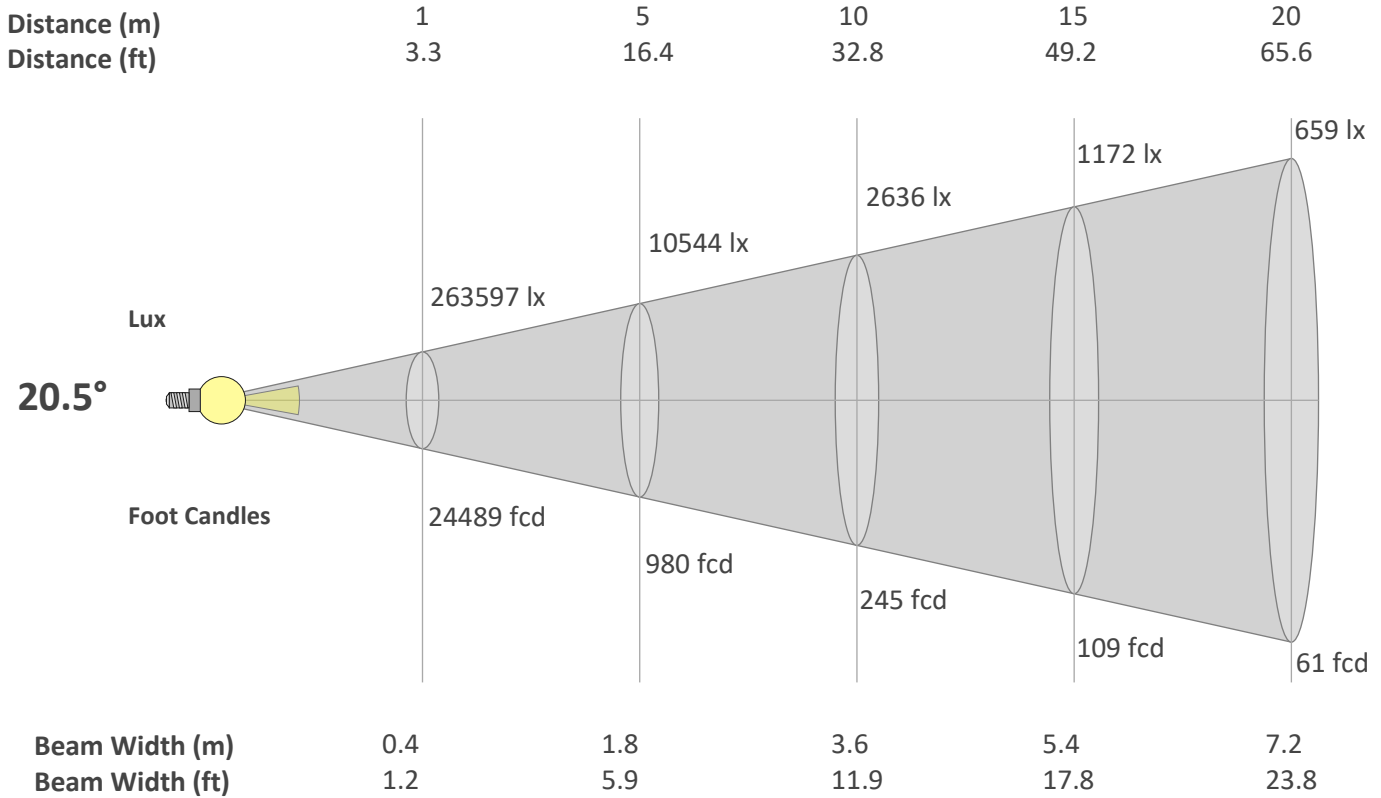
Dominant Wavelength 360 nm



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

Beam Details

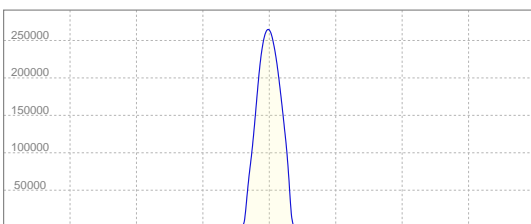
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
20.5°	30.5°	33.4°



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	263597	65899	29289	16475	10544	7322	5380	4119	3254	2636	2178	1831	1560	1345	1172	1030	912	814	730	659
FC	24488.9	6122.2	2721	1530.6	979.6	680.2	499.8	382.6	302.3	244.9	202.4	170.1	144.9	124.9	108.8	95.7	84.7	75.6	67.8	61.2

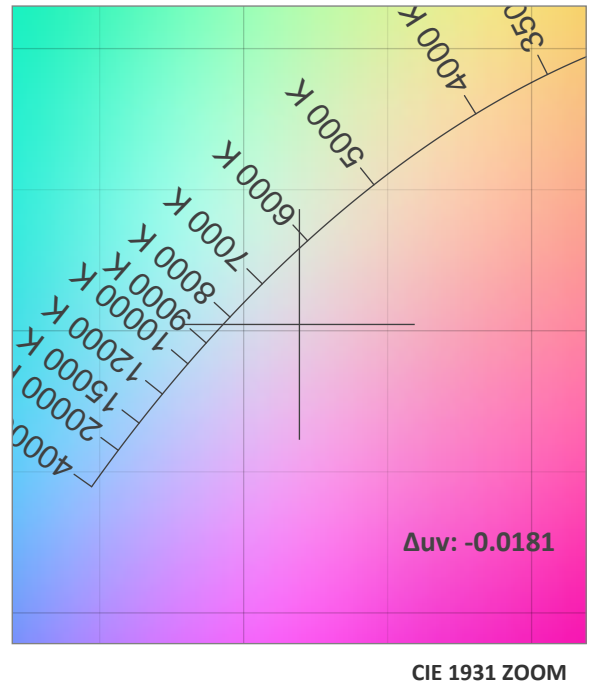
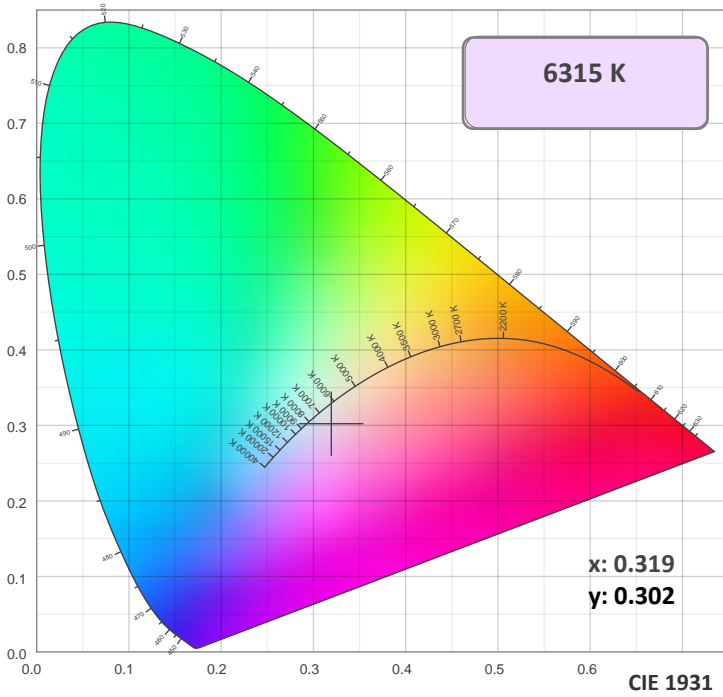
Linear Distribution



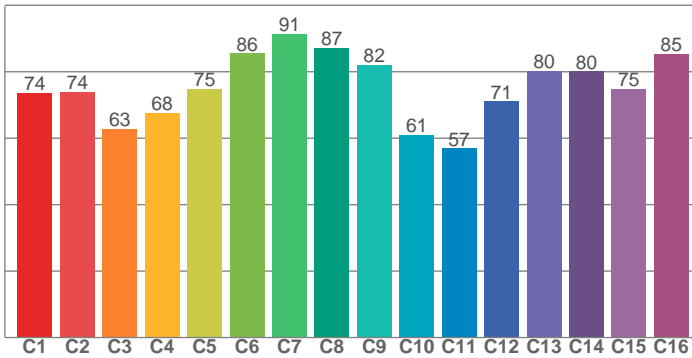
Peak Candela
264189 cd

Calculate Center Beam Intensities
lux = 264189 / distance(m)²
fc = 264189 / distance(ft)²

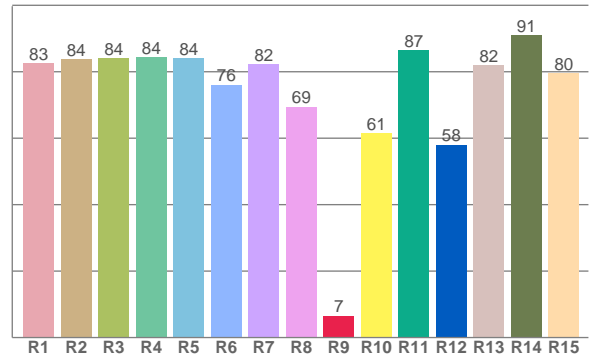
Color Details



TM30: 74.7



CRI: 80.8 (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
82.6	83.8	84.1	84.5	84.0	76.1	82.2	69.4	6.6	61.5	86.5	58.1	81.9	91.0	79.6

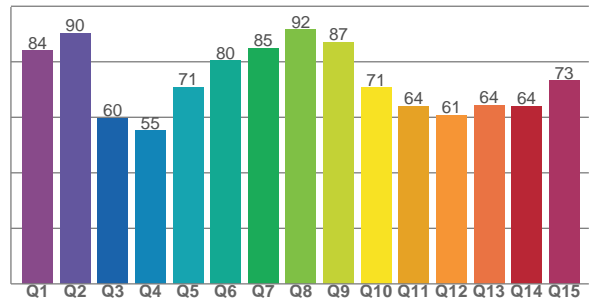
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
73.6	73.9	62.8	67.7	74.8	85.5	91.5	87.1	82.0	60.9	57.0	71.1	80.2	80.2	74.8	85.3

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
84.0	90.4	59.7	55.2	70.9	80.4	85.0	91.6	87.1	70.7	64.0	60.9	64.3	64.1	73.2

CQS: 71.0



Color Parameters

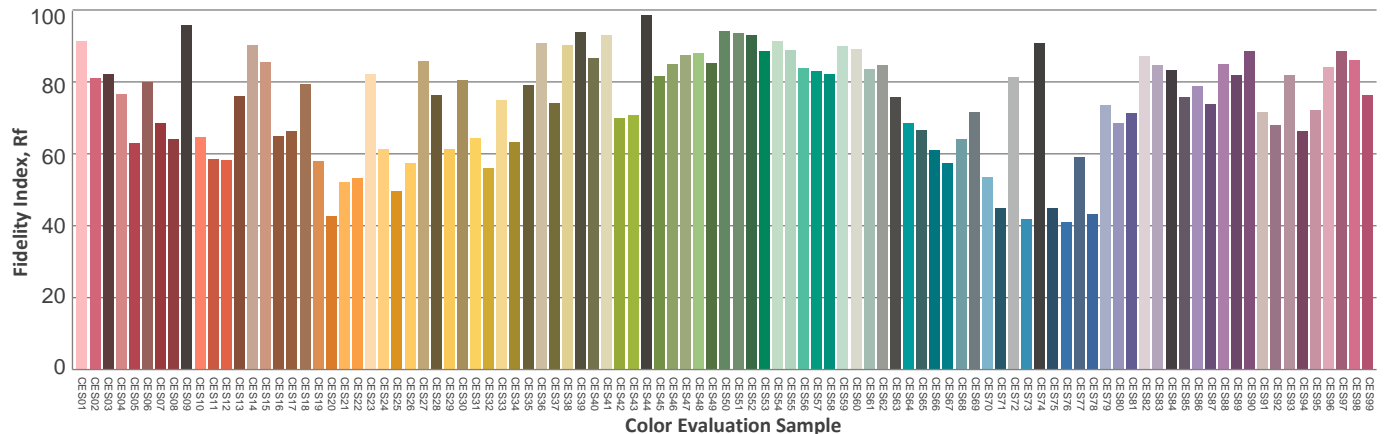
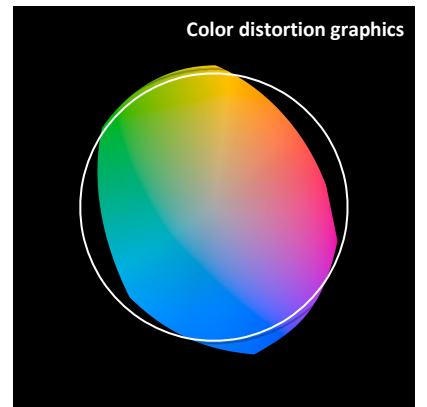
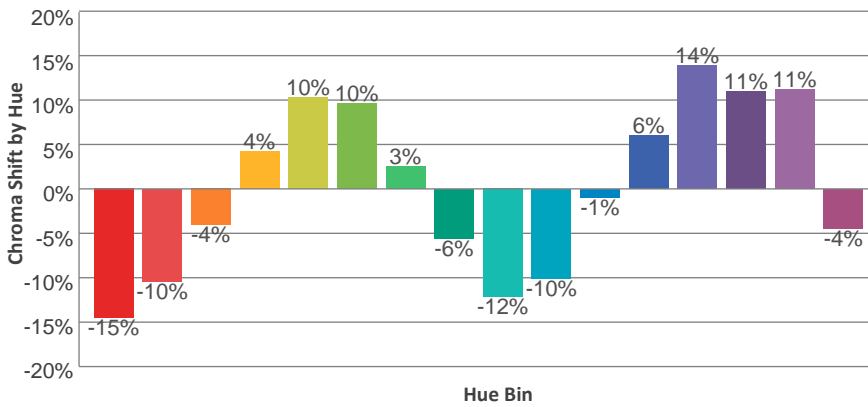
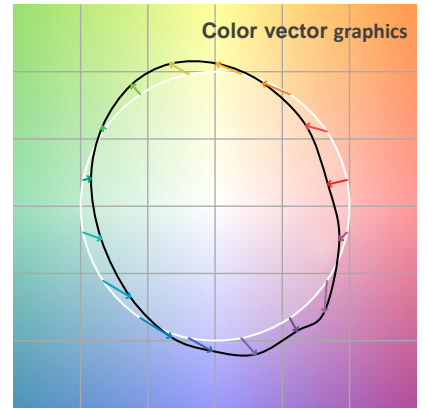
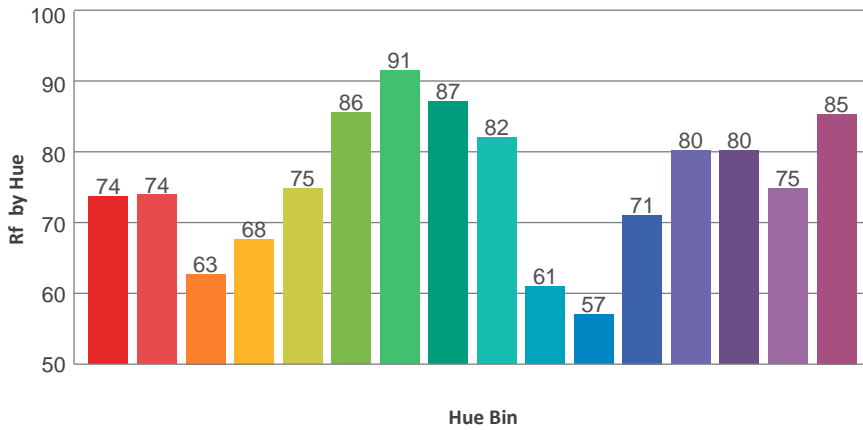
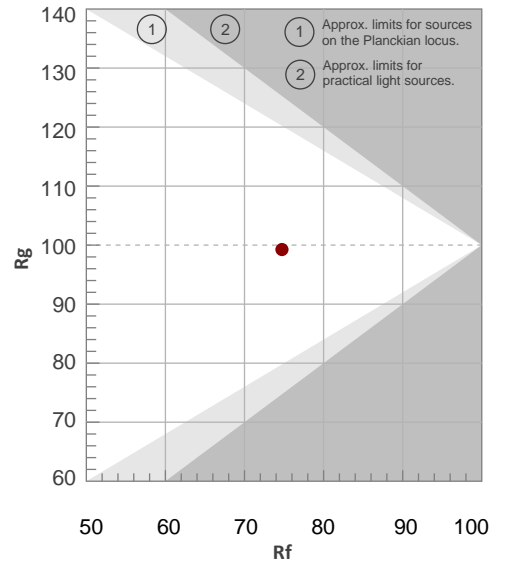
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6315 K	80.8	6.6	74.7	99.3	71.0	0.319	0.302	0.213	0.303	-0.0181

TM30 Details

Rf 74.7
Fidelity Index Rf

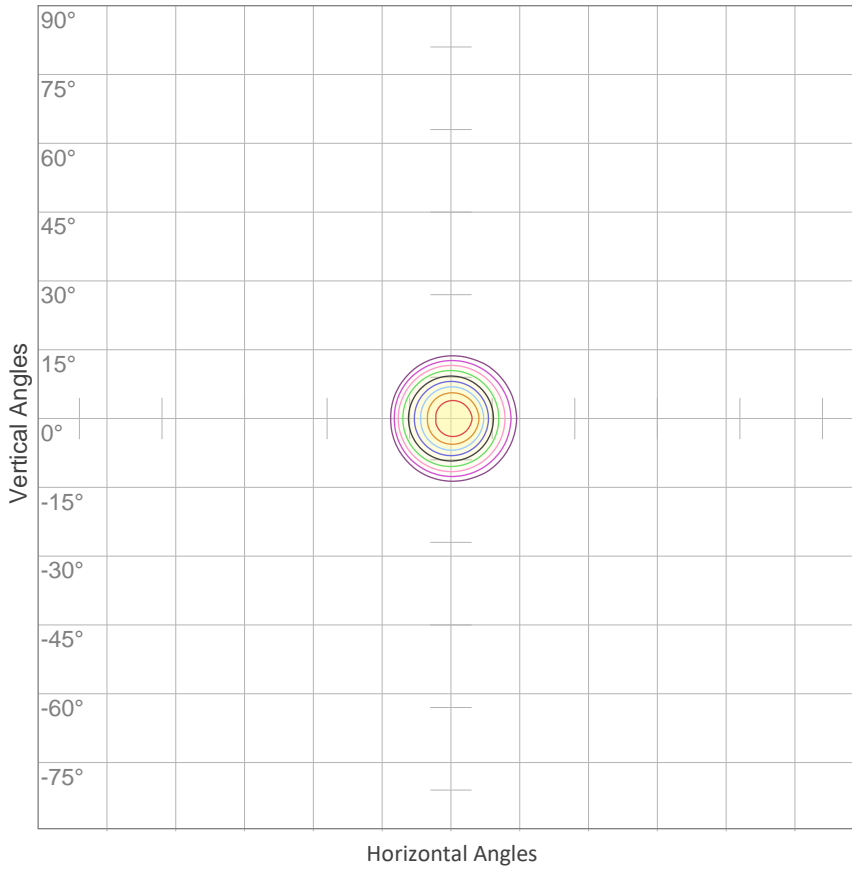
Rg 99.3
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	74	-15%	-1%
2	74	-10%	12%
3	63	-4%	21%
4	68	4%	20%
5	75	10%	12%
6	86	10%	1%
7	91	3%	-3%
8	87	-6%	-2%
9	82	-12%	7%
10	61	-10%	21%
11	57	-1%	27%
12	71	6%	18%
13	80	14%	8%
14	80	11%	-1%
15	75	11%	-20%
16	85	-4%	-7%



ISO Diagrams

ISO Candela Diagram

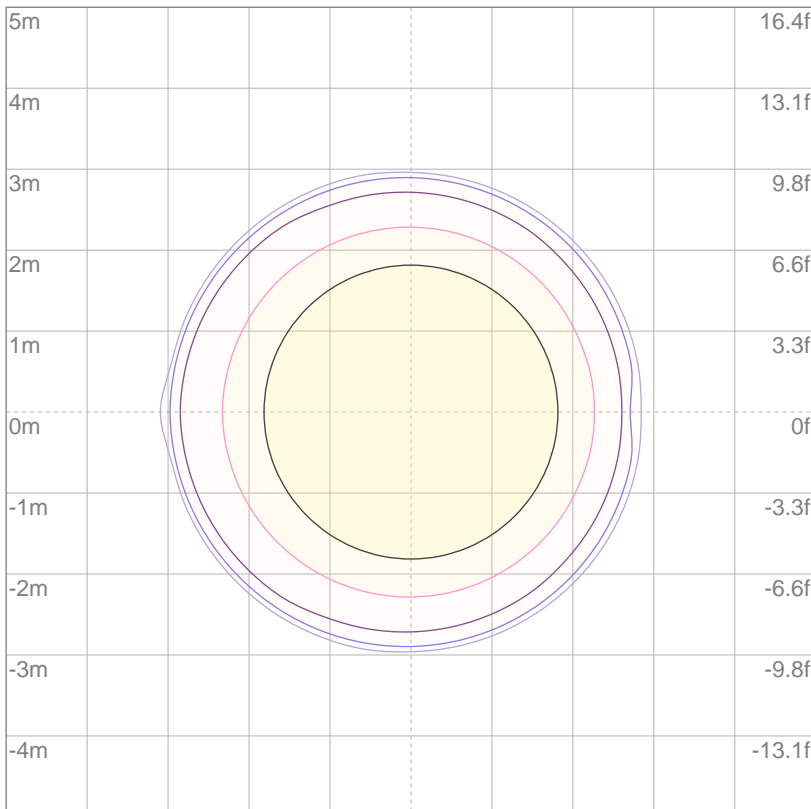


10%	26360 cd
20%	52719 cd
30%	79079 cd
40%	105439 cd
50%	131798 cd
60%	158158 cd
70%	184518 cd
80%	210877 cd
90%	237237 cd

Conditions:

Number of c-planes: 2
Candela at center: 263597 cd

ISO Lux Diagram



3%	79.1 lx
5%	132 lx
10%	264 lx
30%	791 lx
50%	1318 lx

Conditions:

Number of c-planes: 2
Lux at center: 2636 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 **10759 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
20.7°	30.5°	33.3°

Color Temperature: **2779 K**

CRI: **60.6**

TLCI: **27**

TM30: **62.3**

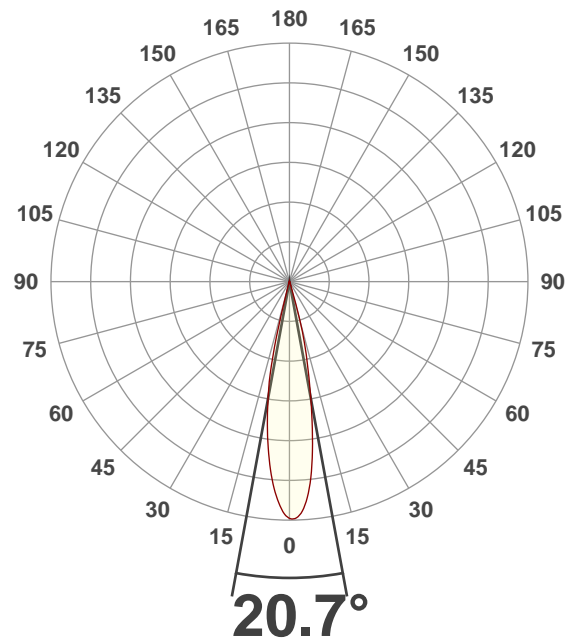
CQS: **59.3**

Voltage: **116 V**, Current: **12.1 A**

Power: **1405 W**

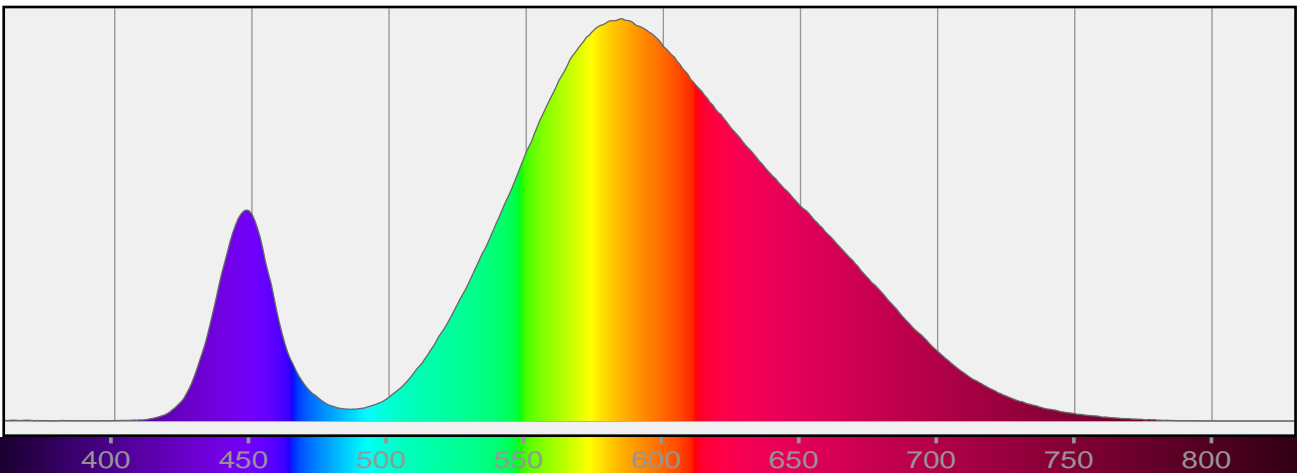
Efficacy: **8 Lumen/Watt**

Measurement Date: **3/9/2020**



Spectral Distribution

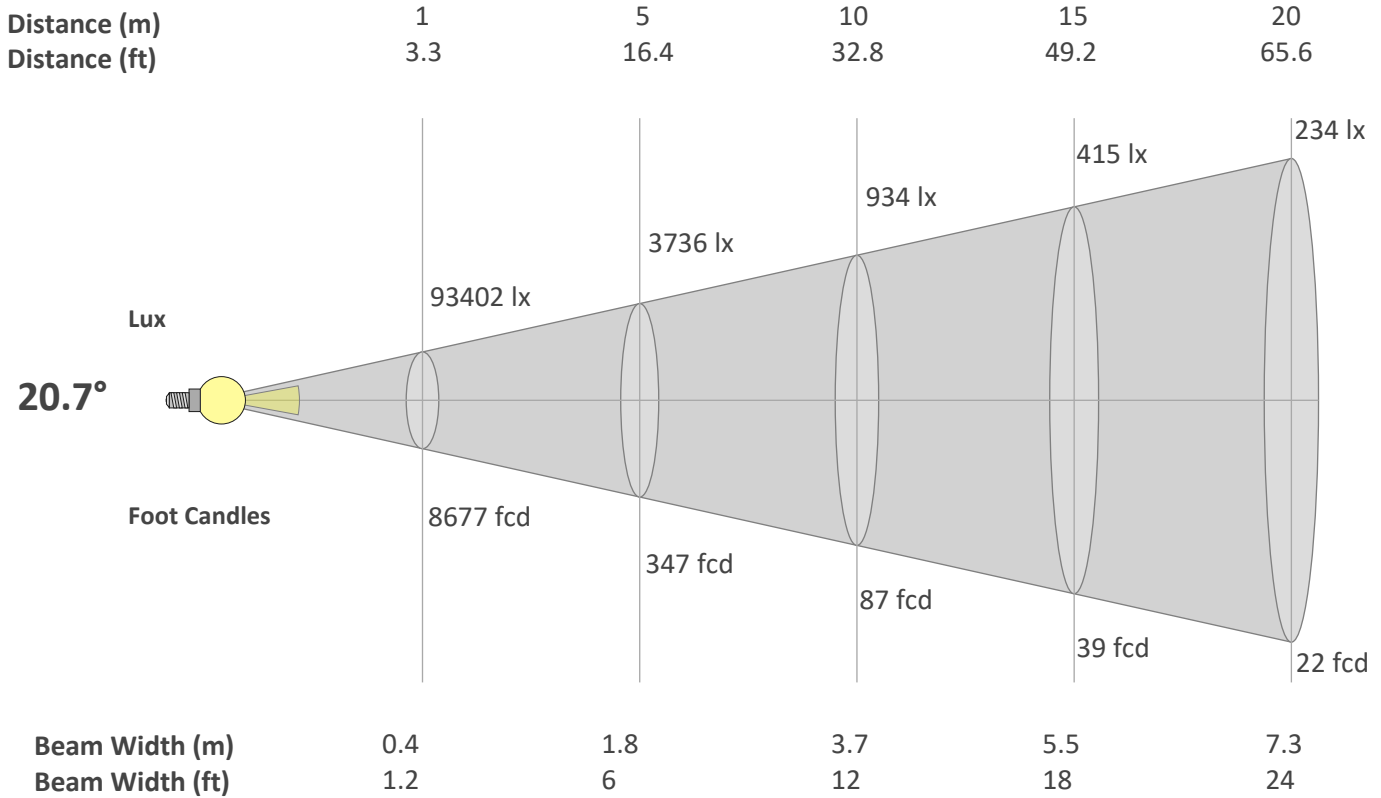
Dominant Wavelength 585 nm



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

Beam Details

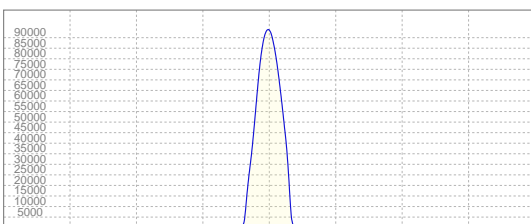
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
20.7°	30.5°	33.3°



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	93402	23351	10378	5838	3736	2595	1906	1459	1153	934	772	649	553	477	415	365	323	288	259	234
FC	8677.4	2169.3	964.2	542.3	347.1	241	177.1	135.6	107.1	86.8	71.7	60.3	51.3	44.3	38.6	33.9	30	26.8	24	21.7

Linear Distribution



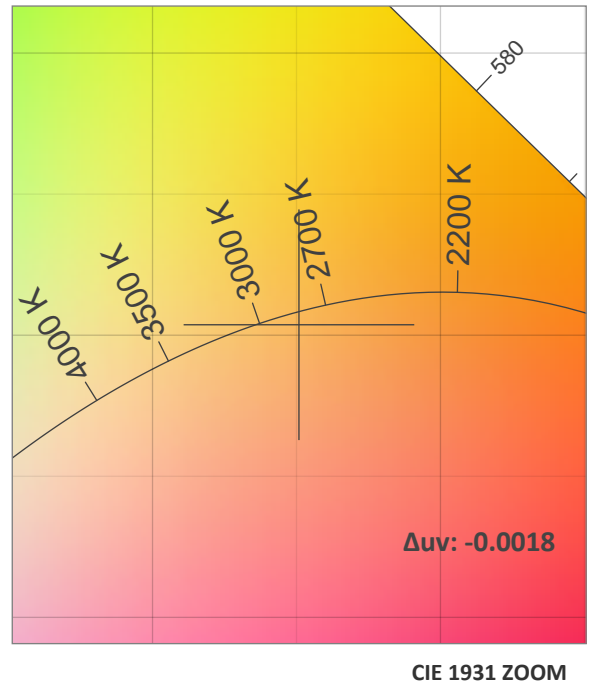
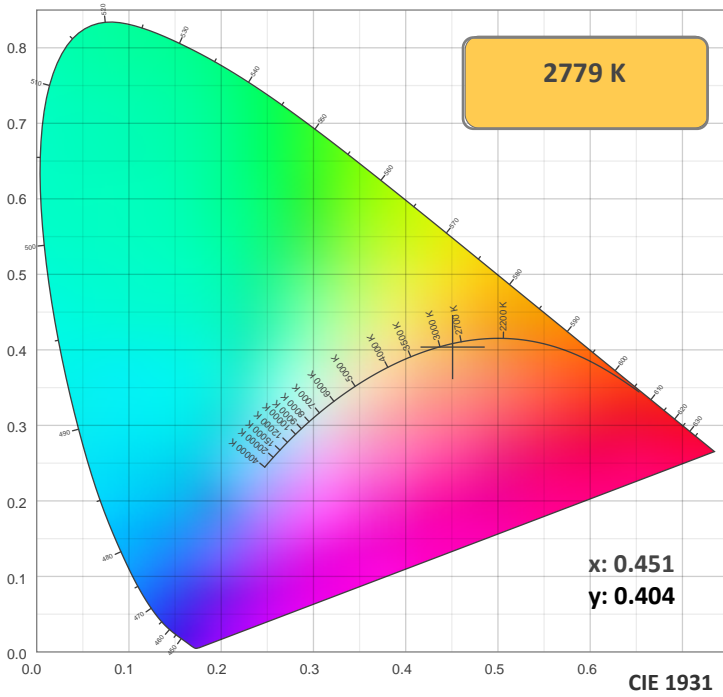
Peak Candela
93695 cd

Calculate Center Beam Intensities

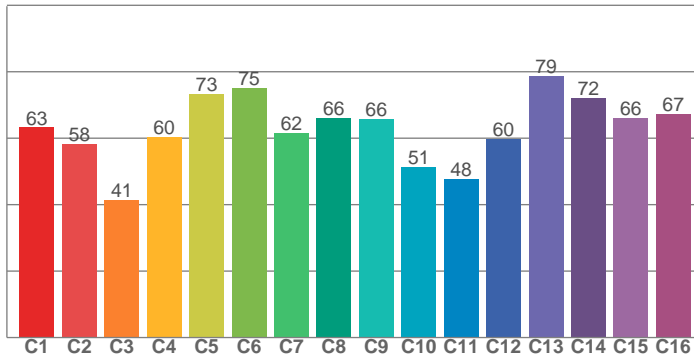
$lux = 93695 / distance(m)^2$

$fc = 93695 / distance(ft)^2$

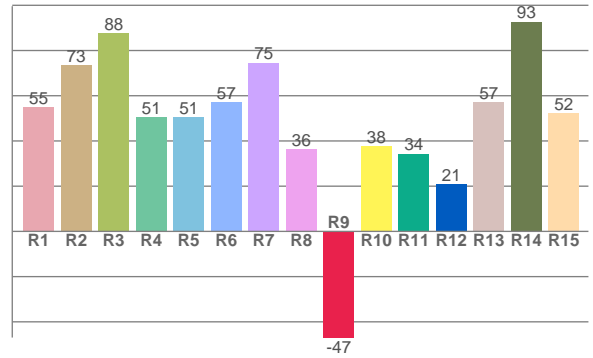
Color Details



TM30: 62.3



CRI: 60.6 (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
54.9	73.4	87.7	50.6	50.5	57.1	74.6	36.2	-47.0	37.7	34.4	20.7	57.2	92.7	52.1

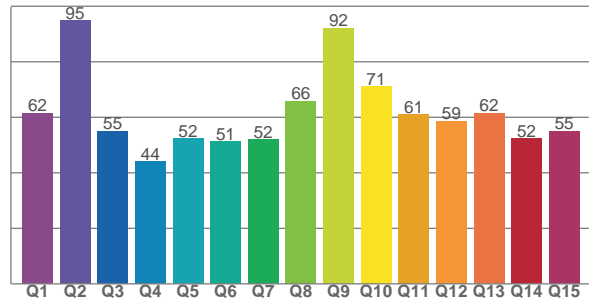
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
63.2	58.3	41.4	60.3	73.3	75.1	61.5	66.1	65.9	51.3	47.8	59.9	78.8	72.2	66.2	67.3

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
61.6	94.8	55.1	44.1	52.3	51.3	51.9	65.8	92.1	71.1	61.0	58.6	61.5	52.3	55.1

CQS: 59.3



Color Parameters

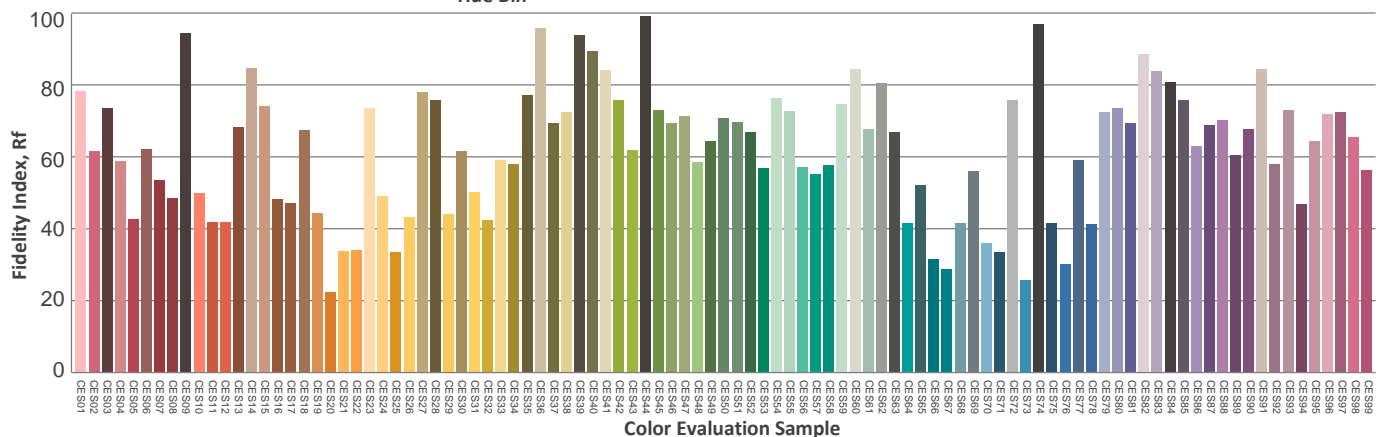
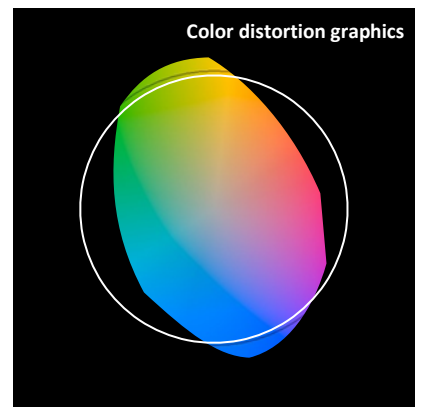
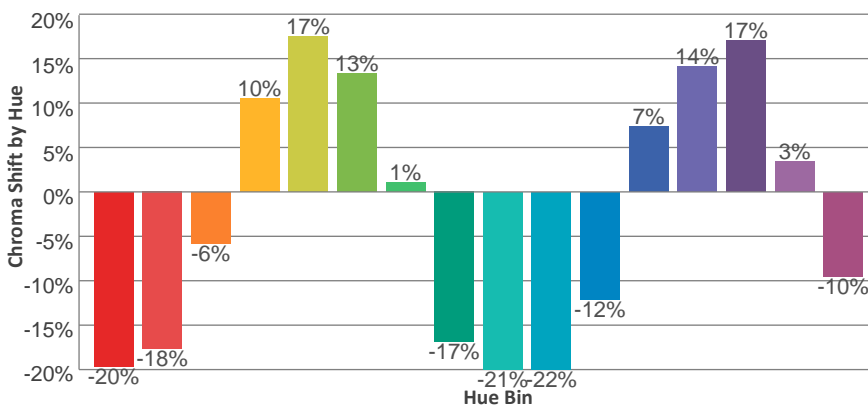
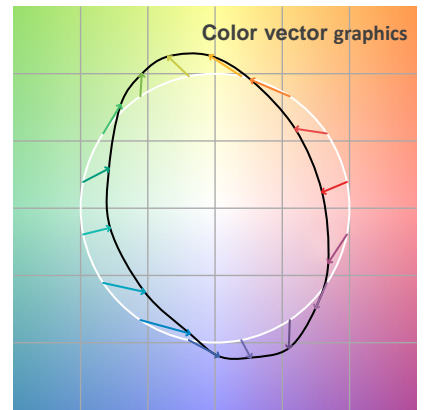
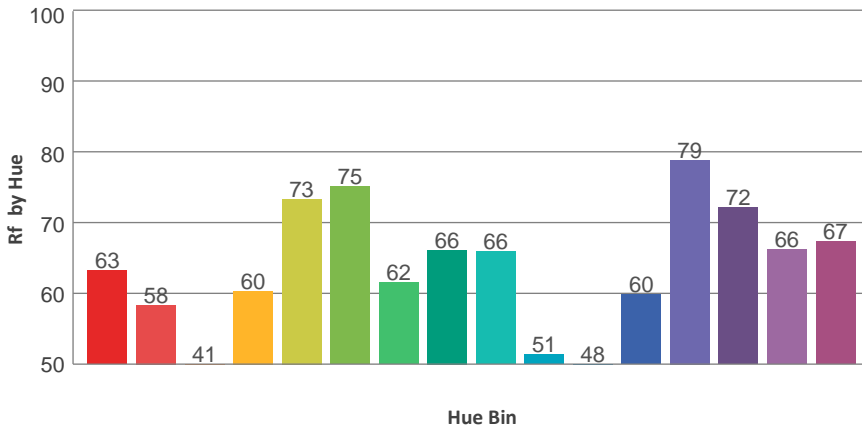
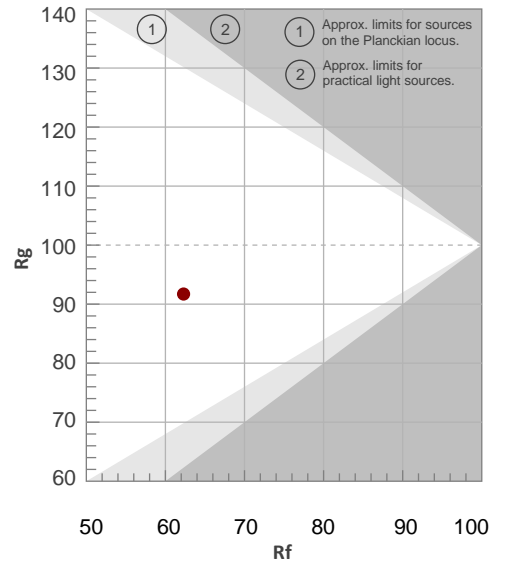
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2779 K	60.6	-47.0	62.3	91.7	59.3	0.451	0.404	0.260	0.349	-0.0018

TM30 Details

Rf 62.3
Fidelity Index Rf

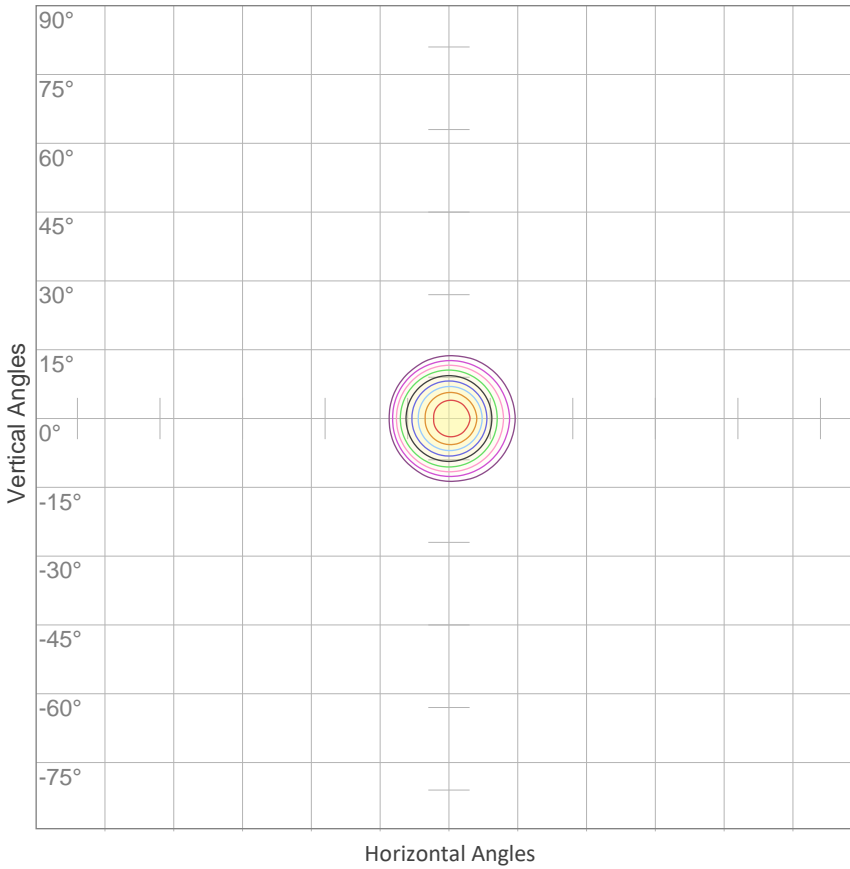
Rg 91.7
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	63	-20%	-4%
2	58	-18%	16%
3	41	-6%	31%
4	60	10%	26%
5	73	17%	12%
6	75	13%	-10%
7	62	1%	-25%
8	66	-17%	-14%
9	66	-21%	-1%
10	51	-22%	23%
11	48	-12%	36%
12	60	7%	24%
13	79	14%	4%
14	72	17%	-12%
15	66	3%	-20%
16	67	-10%	-23%



ISO Diagrams

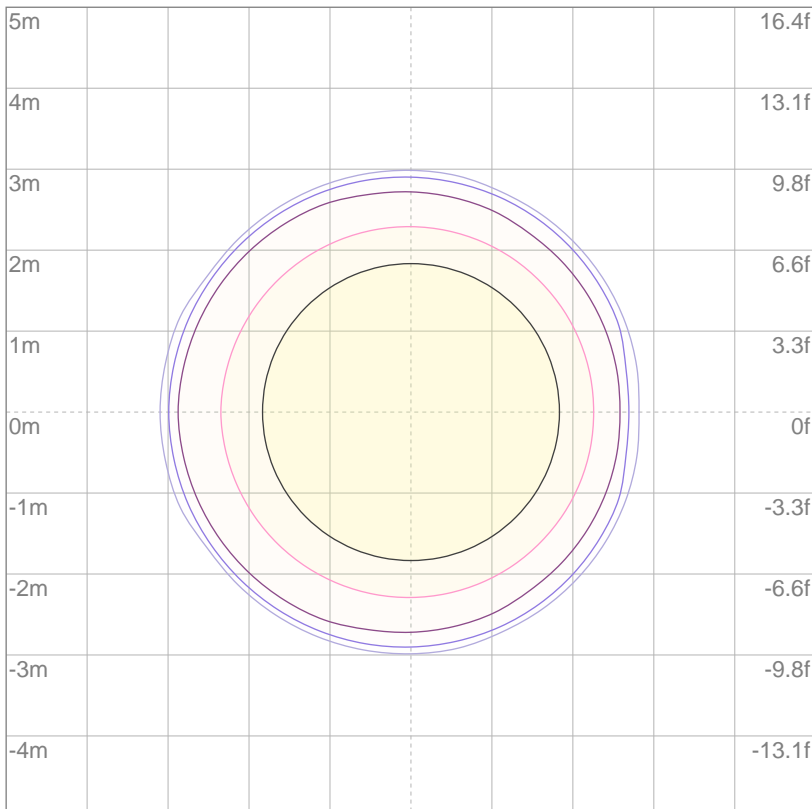
ISO Candela Diagram



10%	9340 cd
20%	18680 cd
30%	28021 cd
40%	37361 cd
50%	46701 cd
60%	56041 cd
70%	65382 cd
80%	74722 cd
90%	84062 cd

Conditions:
 Number of c-planes: 2
 Candela at center: 93402 cd

ISO Lux Diagram



3%	28.0 lx
5%	46.7 lx
10%	93.4 lx
30%	280 lx
50%	467 lx

Conditions:
 Number of c-planes: 2
 Lux at center: 934 lx

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

Mounting Height: 10 meters (33 feet)