ELATION PROFESSIONAL

ARTISTE VAN GOGH™

Photometric Test Report

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C O N T E N T S

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 C700

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Photometric Report

Total Lumen Output*

Integrating Sphere	**9322 lm**
VISO Lab Spion	**7591 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
5.6°	7.1°	7.8°

Color Temperature: 6471 K

CRI: 90.9

TLCI: 86

TM30: 84.5

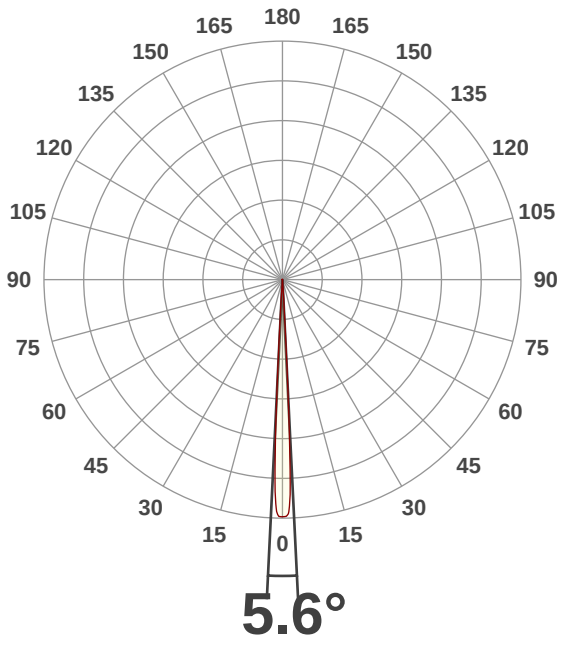
CQS: 86.8

Voltage: 116 V, Current: 4.85 A

Power: 562.9 W

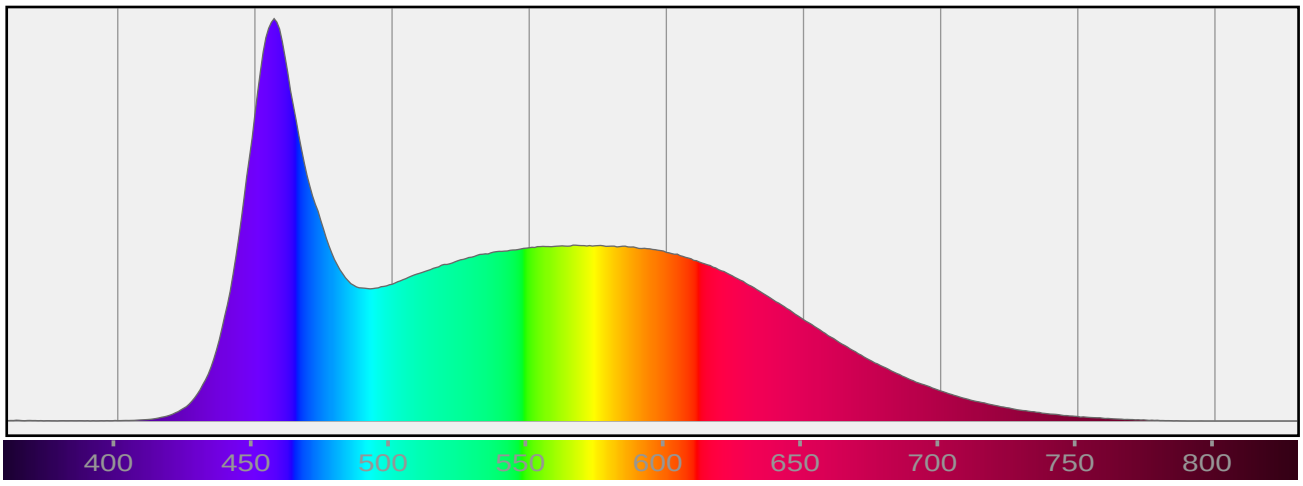
Efficacy: 13 Lumen/Watt

Measurement Date: 7/31/2019



Spectral Distribution

Dominant Wavelength 360 nm



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

Artiste Van Gogh (Zoom In)

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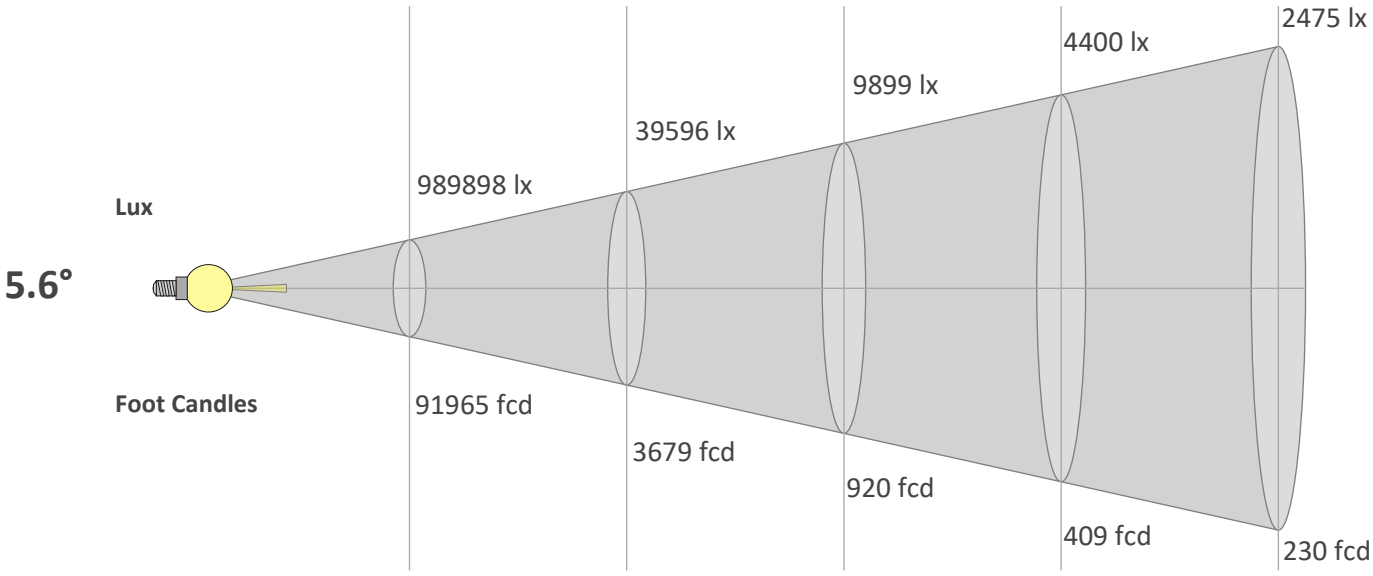
Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
5.6°	**7.1°**	**7.8°**

Distance (m)	1	5	10	15	20
Distance (ft)	3.3	16.4	32.8	49.2	65.6

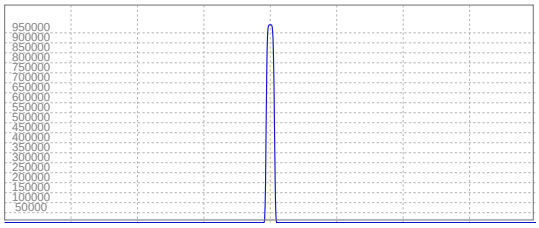


Beam Width (m)	0.1	0.5	1	1.5	2
Beam Width (ft)	0.3	1.6	3.2	4.8	6.4

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	989898	247474	109989	61869	39596	27497	20202	15467	12221	9899	8181	6874	5857	5050	4400	3867	3425	3055	2742	2475
FC	91964.5	22991.1	10218.3	5747.8	3678.6	2554.6	1876.8	1436.9	1135.4	919.6	760	638.6	544.2	469.2	408.7	359.2	318.2	283.8	254.7	229.9

Linear Distribution



Peak Candela

989901 cd

Calculate Center Beam Intensities

lux = 989901 / distance(m)^2

fc = 989901 / distance(ft)^2

Artiste Van Gogh (Zoom In)

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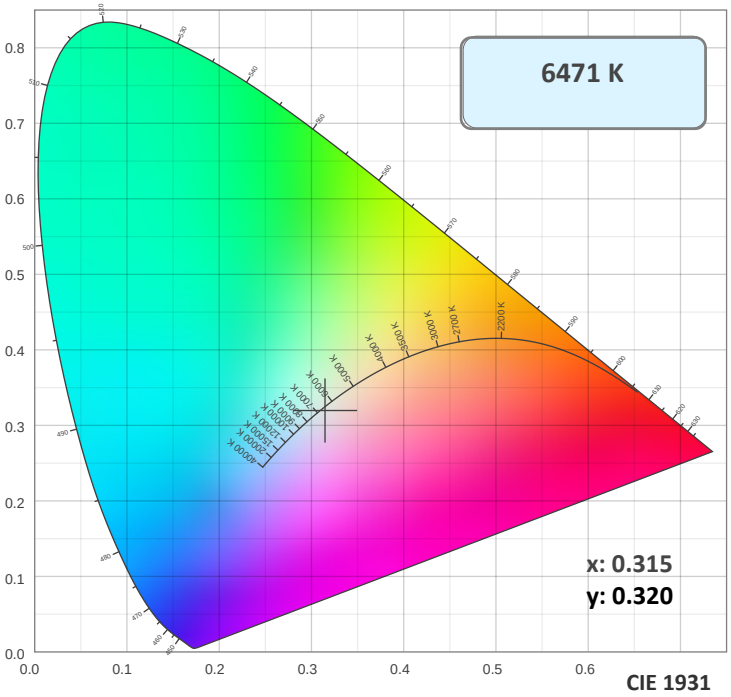
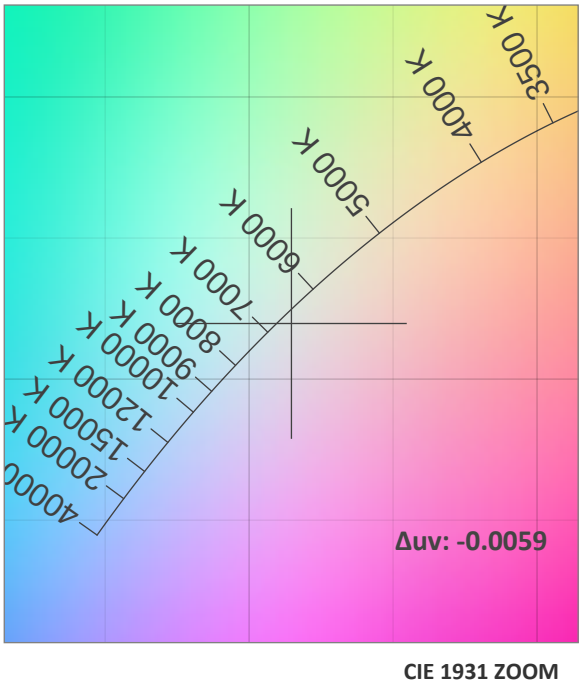
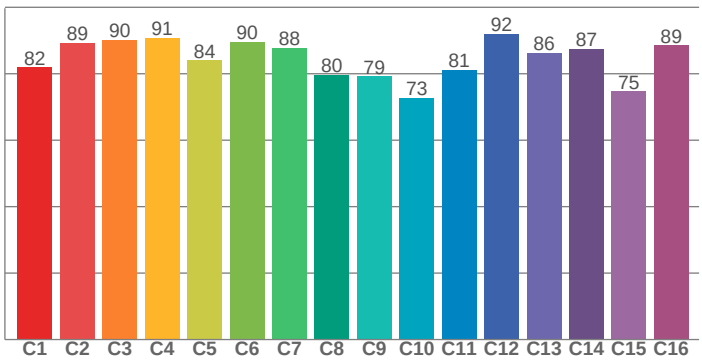
Color Details

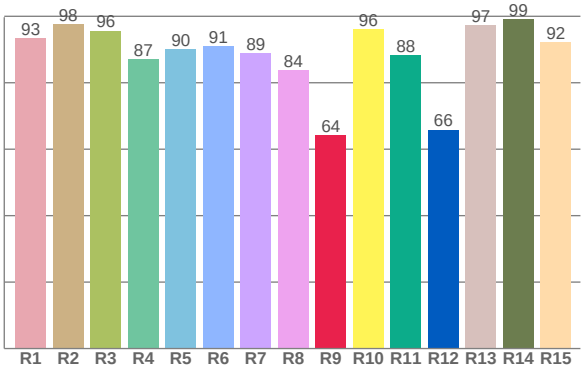




TM30: 84.5



CRI: 90.9 (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
93.4	97.6	95.7	87.0	90.2	91.0	89.0	83.8	64.2	96.1	88.2	65.9	97.4	99.1	92.3

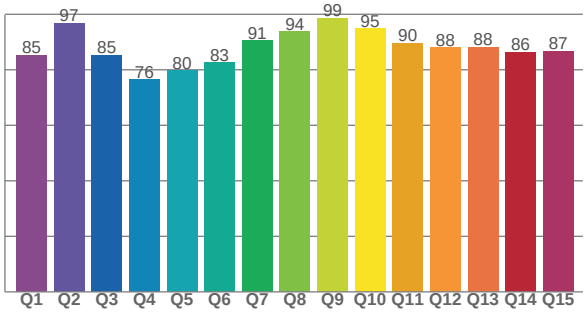
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.9	89.3	90.1	90.8	84.0	89.7	87.9	79.7	79.2	72.7	81.2	92.0	86.2	87.5	74.7	88.5

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85.2	96.7	85.3	76.5	79.7	82.6	90.6	93.8	98.6	94.8	89.6	88.0	88.1	86.4	86.7

CQS: 86.8



Color Parameters

Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6471 K	90.9	64.2	84.5	95.1	86.8	0.315	0.320	0.203	0.309	-0.0059

Artiste Van Gogh (Zoom In)

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TM30 Details

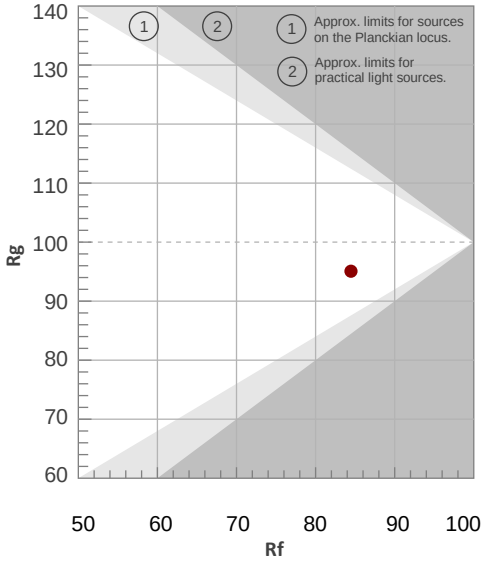
Rf 84.5

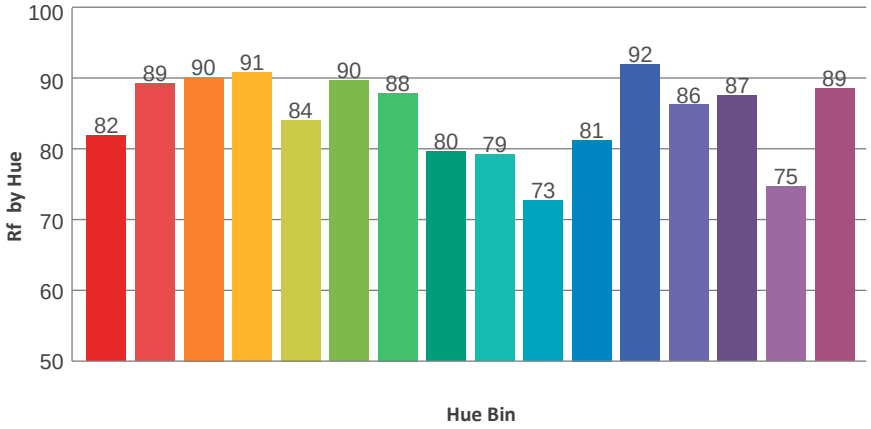
Fidelity Index Rf

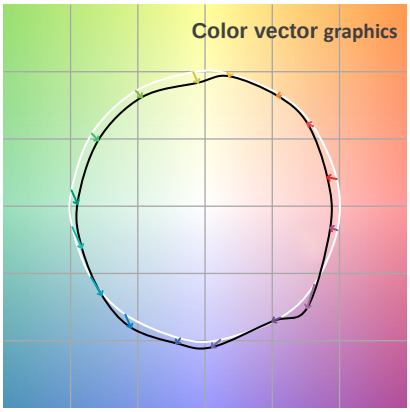
Rg 95.1

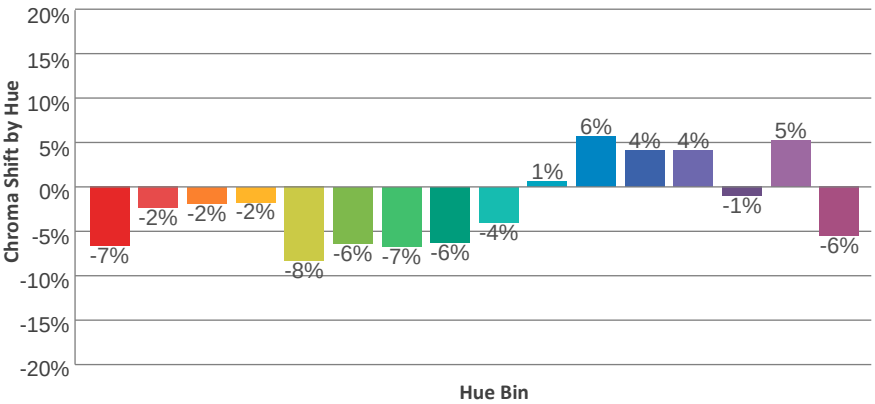
Gamut Index Rg

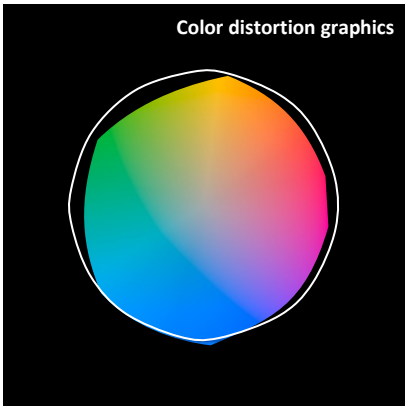
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	82	-7%	3%
2	89	-2%	4%
3	90	-2%	2%
4	91	-2%	0%
5	84	-8%	-2%
6	90	-6%	-1%
7	88	-7%	2%
8	80	-6%	9%
9	79	-4%	16%
10	73	1%	15%
11	81	6%	9%
12	92	4%	-2%
13	86	4%	-7%
14	87	-1%	-6%
15	75	5%	-17%
16	89	-6%	1%

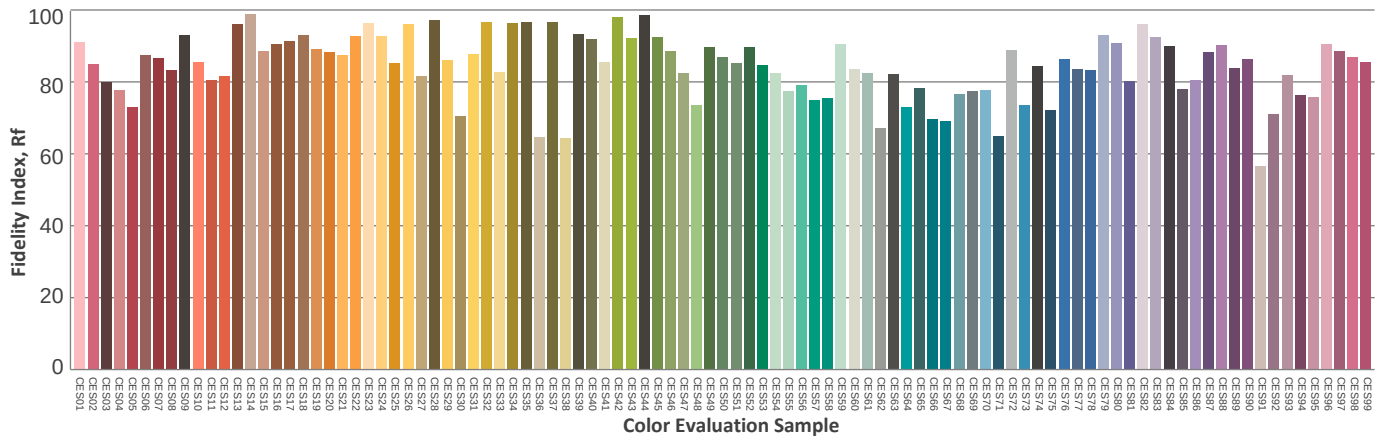












Artiste Van Gogh (Zoom In)

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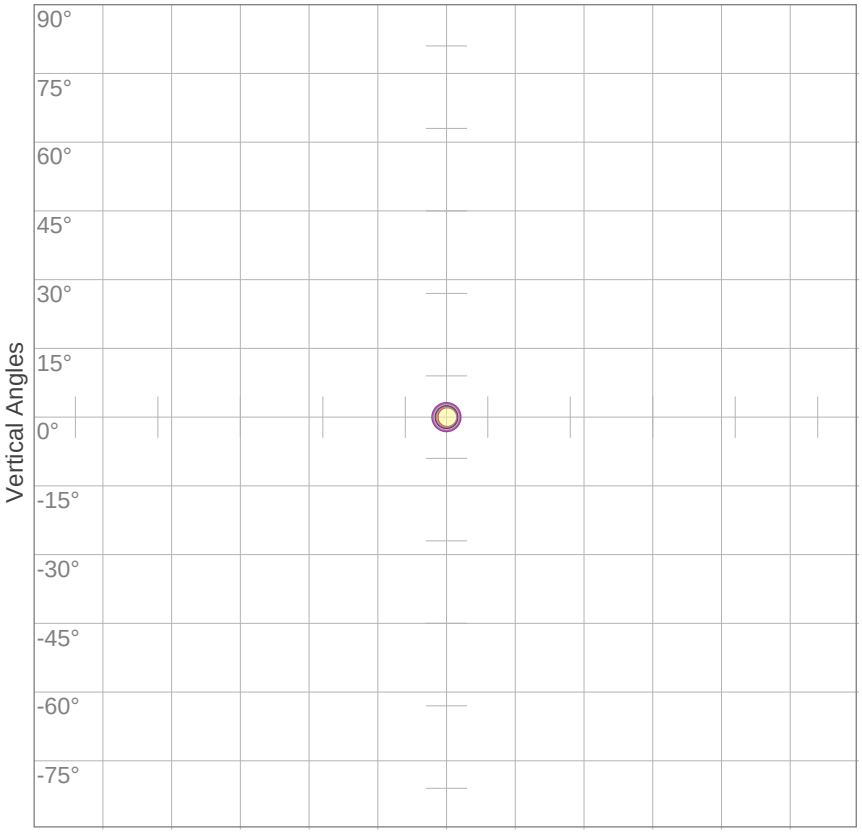
ISO Diagrams

ISO Candela Diagram



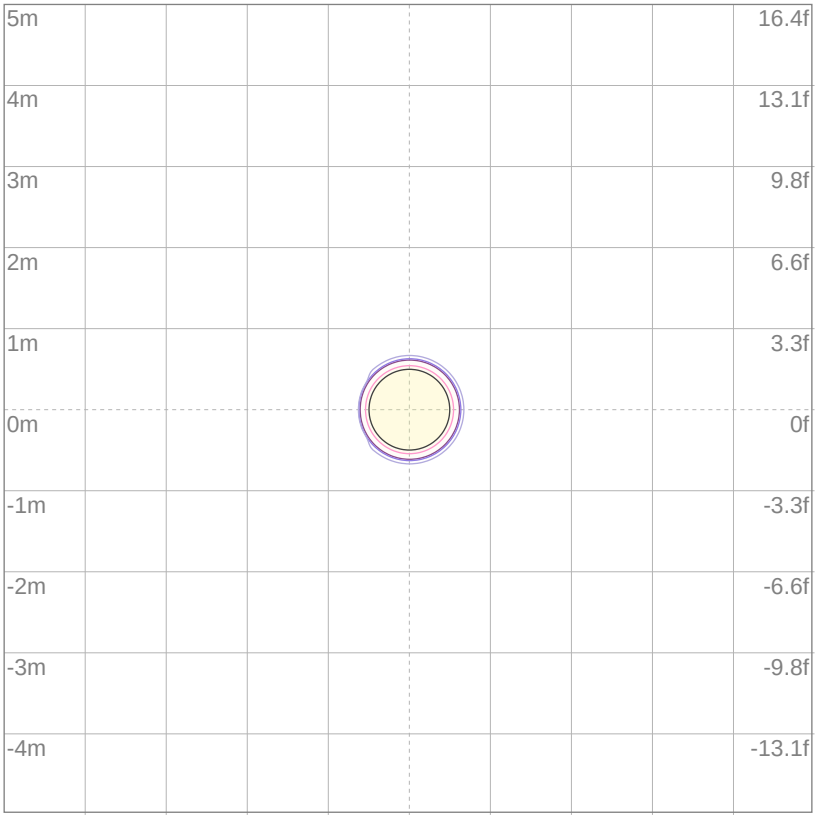
10%	98990 cd
20%	197980 cd
30%	296969 cd
40%	395959 cd
50%	494949 cd
60%	593939 cd
70%	692928 cd
80%	791918 cd
90%	890908 cd

Conditions:

Number of c-planes: 2

Candela at center: 989898 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	297 lx
5%	495 lx
10%	990 lx
30%	2970 lx
50%	4949 lx

Conditions:

Number of c-planes: 2

Lux at center: 9899 lx

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

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Photometric Report

Total Lumen Output*

Integrating Sphere	**16139 lm**
VISO Lab Spion	**11072 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
18.1°	22°	24.2°

Color Temperature: 6669 K

CRI: 90.9

TLCI: 86

TM30: 84.3

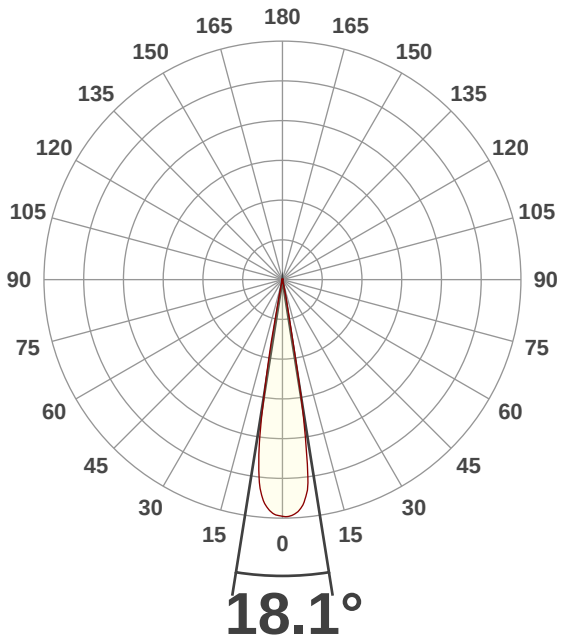
CQS: 86.6

Voltage: 116 V, Current: 4.85 A

Power: 562.9 W

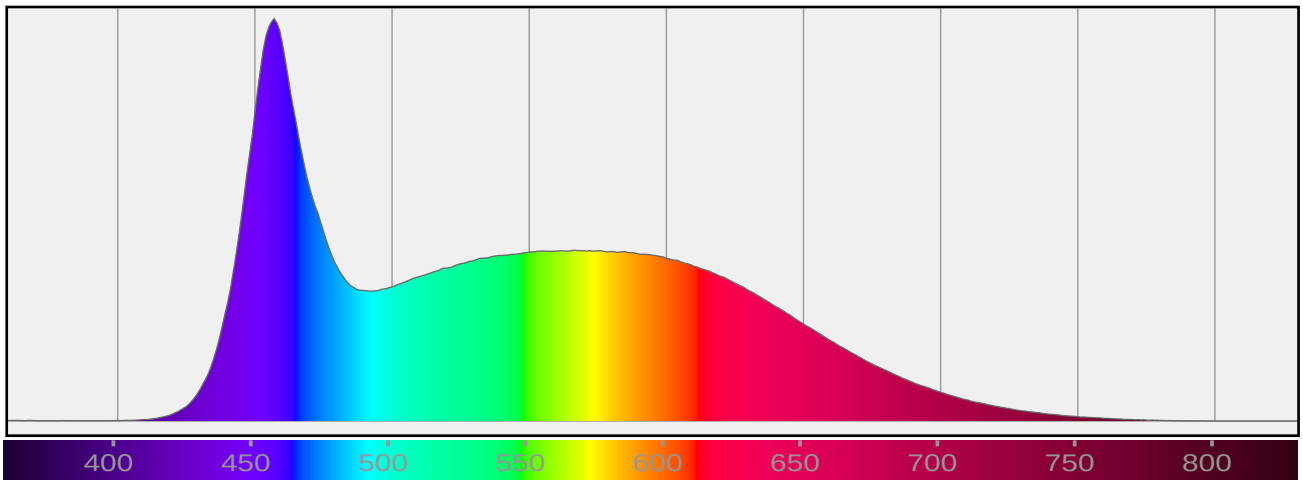
Efficacy: 20 Lumen/Watt

Measurement Date: 7/31/2019



Spectral Distribution

Dominant Wavelength 360 nm



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

Artiste Van Gogh (Zoom 50)

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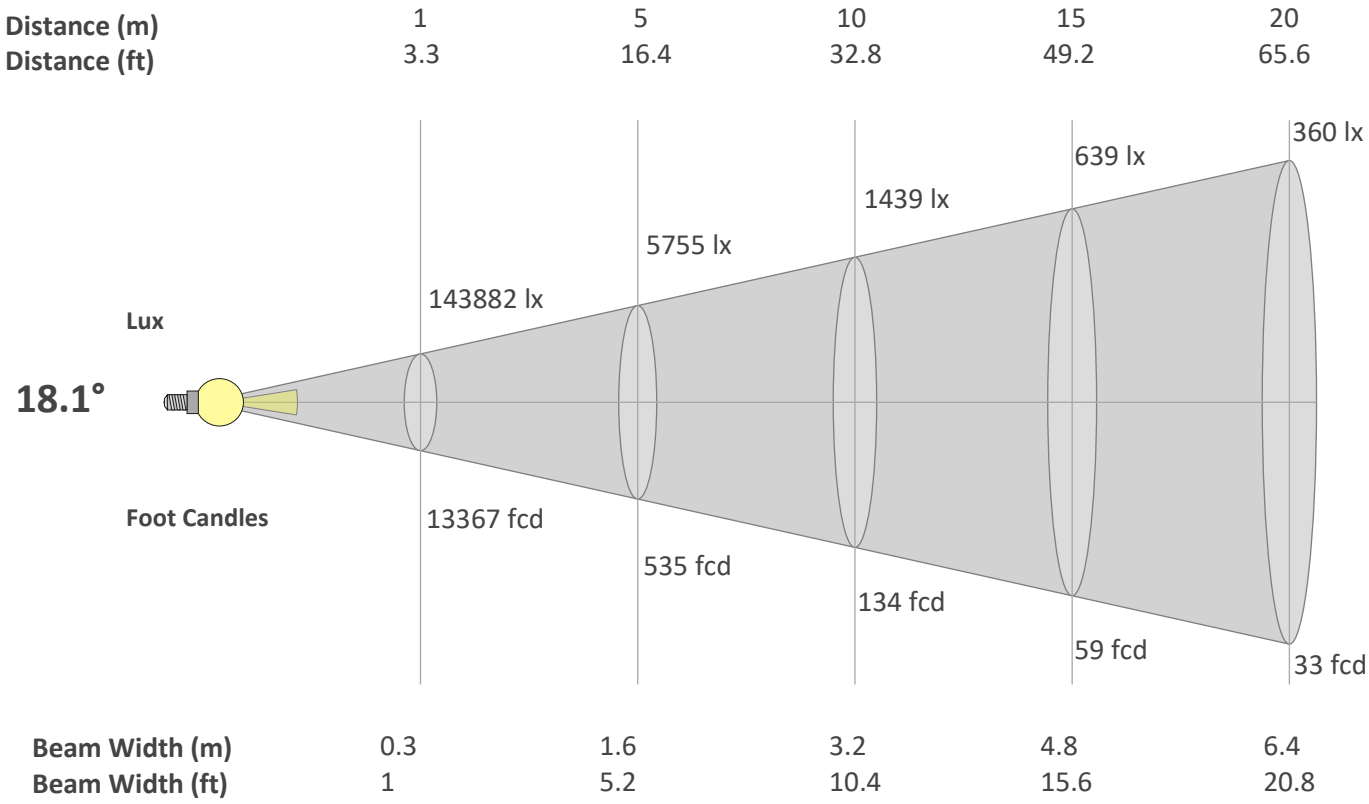
Beam Details

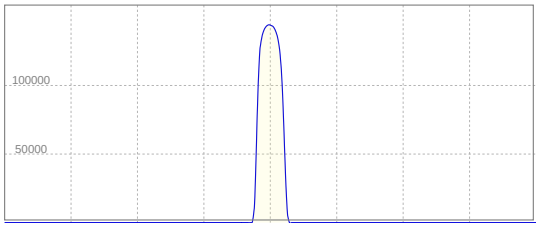
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
18.1°	**22°**	**24.2°**



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	143882	35970	15987	8993	5755	3997	2936	2248	1776	1439	1189	999	851	734	639	562	498	444	399	360
FC	13367.1	3341.8	1485.2	835.4	534.7	371.3	272.8	208.9	165	133.7	110.5	92.8	79.1	68.2	59.4	52.2	46.3	41.3	37	33.4

Linear Distribution



Peak Candela

144198 cd

Calculate Center Beam Intensities

lux = 144198 / distance(m)²

fc = 144198 / distance(ft)²

Artiste Van Gogh (Zoom 50)

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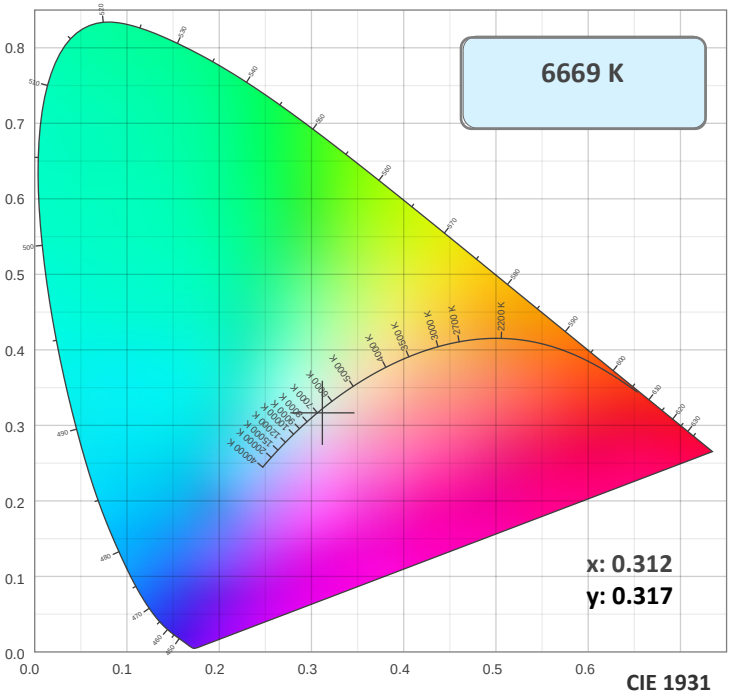
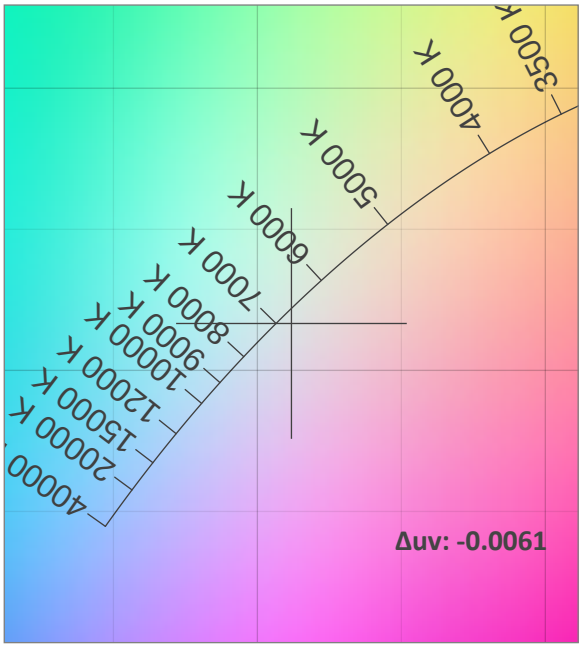
Color Details

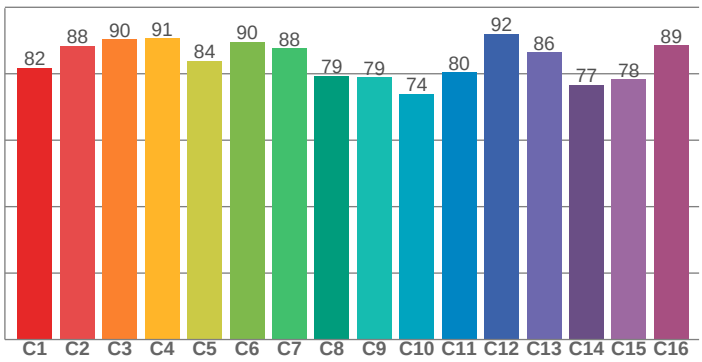


CIE 1931

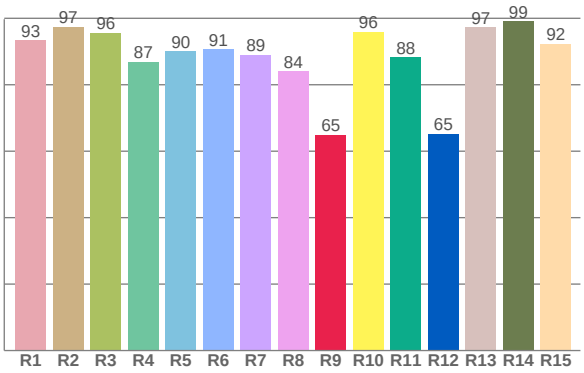


CIE 1931 ZOOM

TM30: 84.3



CRI: 90.9 (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
93.4	97.5	95.7	86.9	90.0	90.7	89.0	84.1	64.9	96.0	88.2	65.3	97.4	99.1	92.3

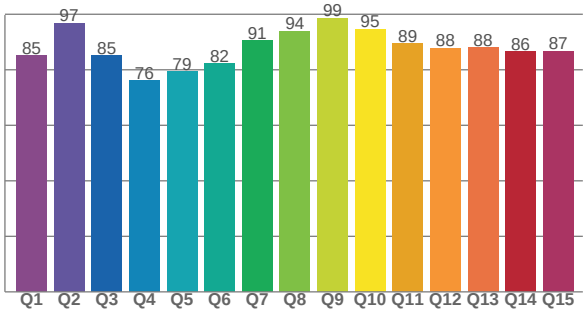
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.8	88.5	90.4	90.6	83.8	89.5	87.7	79.4	78.9	73.9	80.4	92.0	86.5	76.7	78.3	88.5

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85.1	96.8	85.1	76.0	79.3	82.3	90.5	93.9	98.5	94.7	89.4	87.9	88.0	86.5	86.8

CQS: 86.6



Color Parameters

Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6669 K	90.9	64.9	84.3	95.4	86.6	0.312	0.317	0.202	0.308	-0.0061

Artiste Van Gogh (Zoom 50)

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TM30 Details

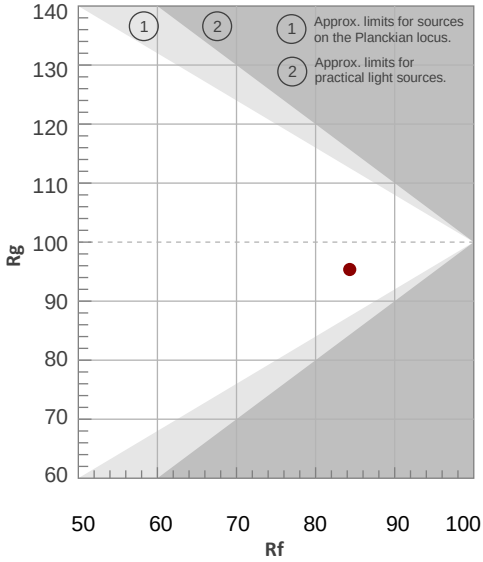
Rf 84.3

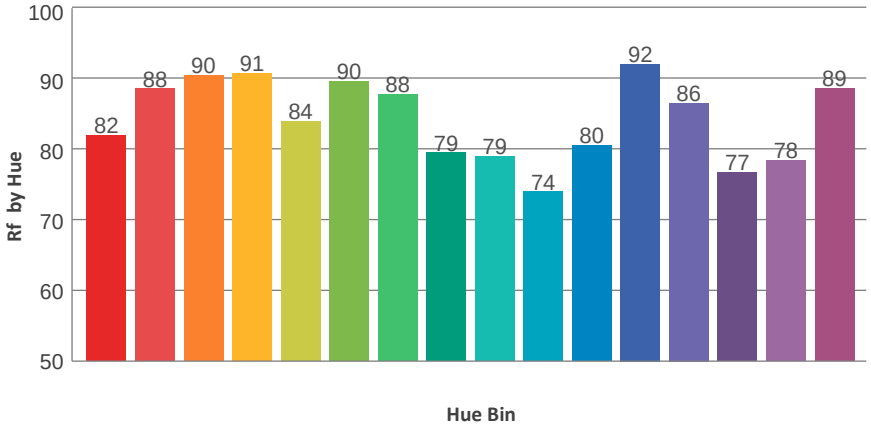
Fidelity Index Rf

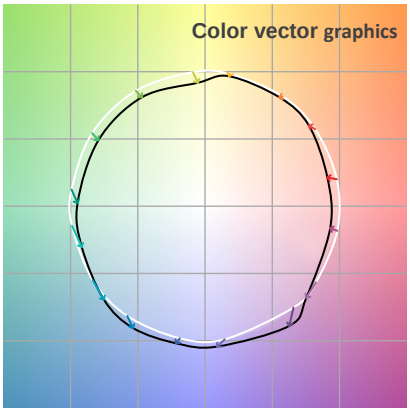
Rg 95.4

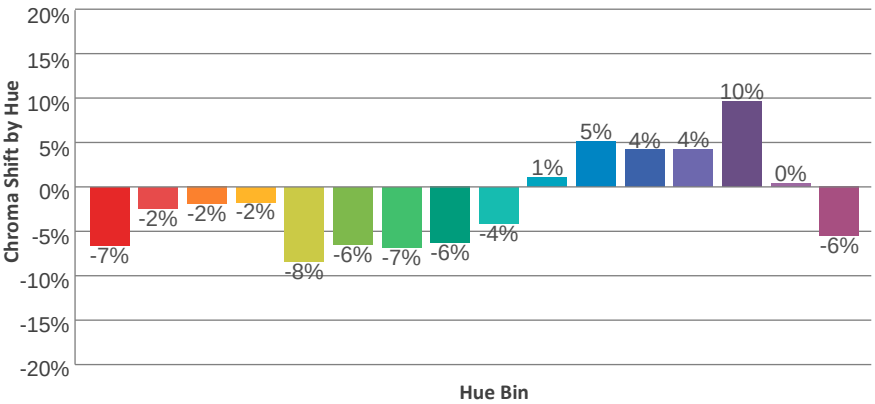
Gamut Index Rg

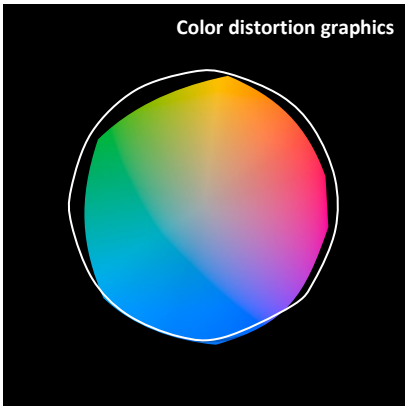
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	82	-7%	3%
2	88	-2%	5%
3	90	-2%	2%
4	91	-2%	0%
5	84	-8%	-2%
6	90	-6%	-1%
7	88	-7%	2%
8	79	-6%	9%
9	79	-4%	17%
10	74	1%	17%
11	80	5%	8%
12	92	4%	-2%
13	86	4%	-7%
14	77	10%	-10%
15	78	0%	-13%
16	89	-6%	1%

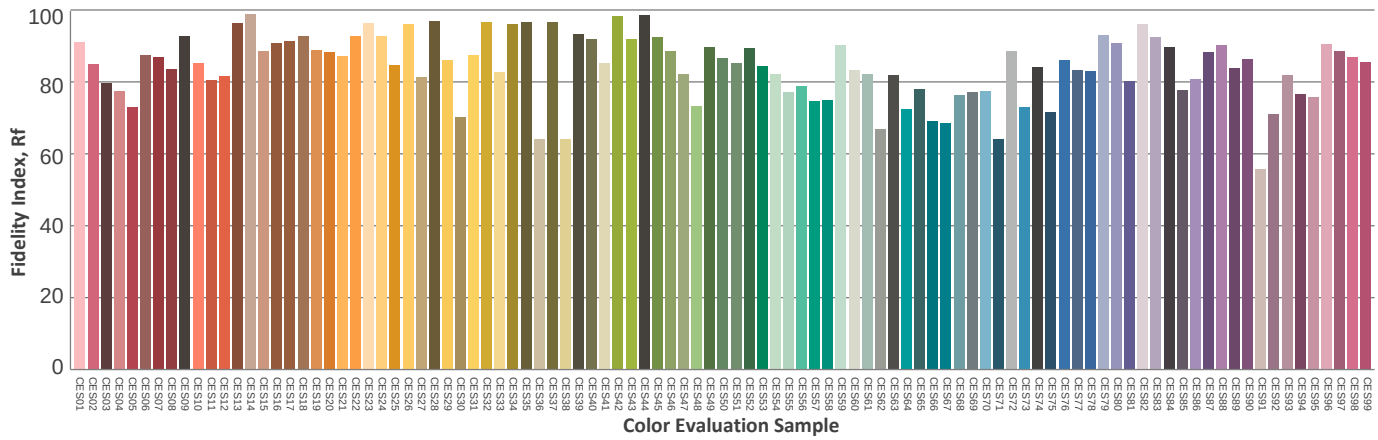












Artiste Van Gogh (Zoom 50)

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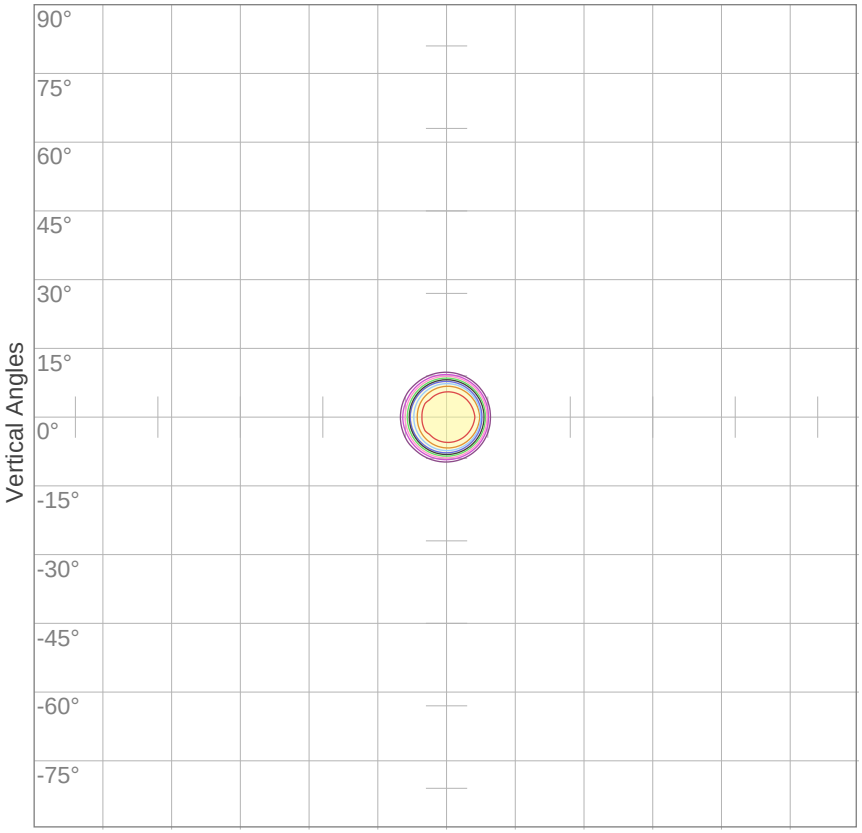
ISO Diagrams

ISO Candela Diagram



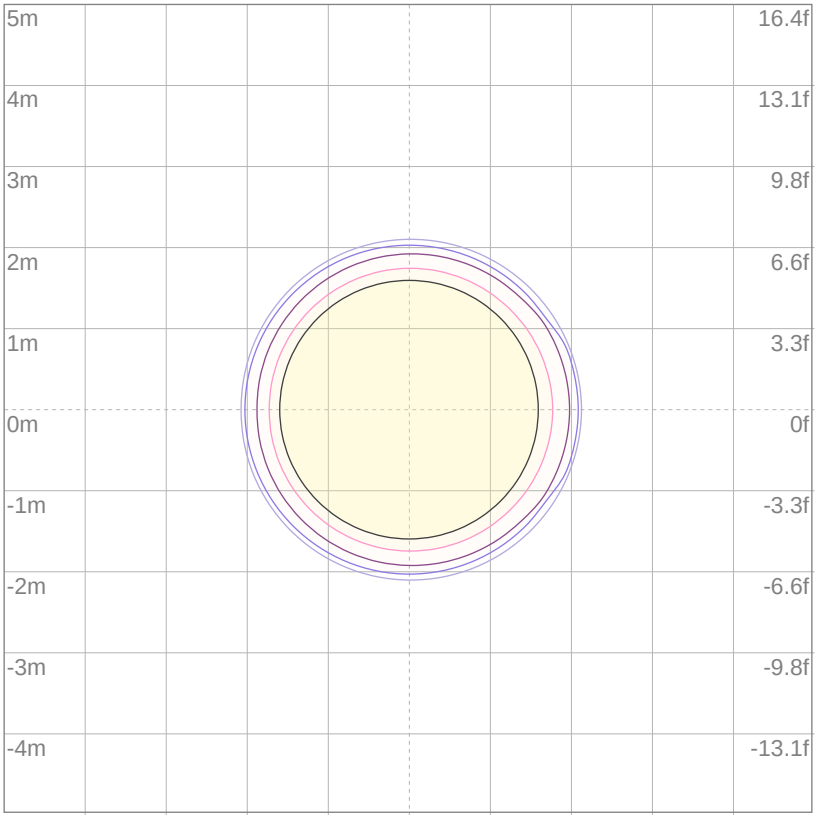
10%	14388 cd
20%	28776 cd
30%	43165 cd
40%	57553 cd
50%	71941 cd
60%	86329 cd
70%	100717 cd
80%	115106 cd
90%	129494 cd

Conditions:

Number of c-planes: 2

Candela at center: 143882 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	43.2 lx
5%	71.9 lx
10%	144 lx
30%	432 lx
50%	719 lx

Conditions:

Number of c-planes: 2

Lux at center: 1439 lx

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

Artiste Van Gogh (Zoom Out)

Prepared For ELATION PROFESSIONAL

Photometric Report

Total Lumen Output*

Integrating Sphere	**11987 lm**
VISO Lab Spion	**10687 lm**

Color Temperature: 6624 K

CRI: 90.7

TLCI: 85

TM30: 84.1

CQS: 86.3

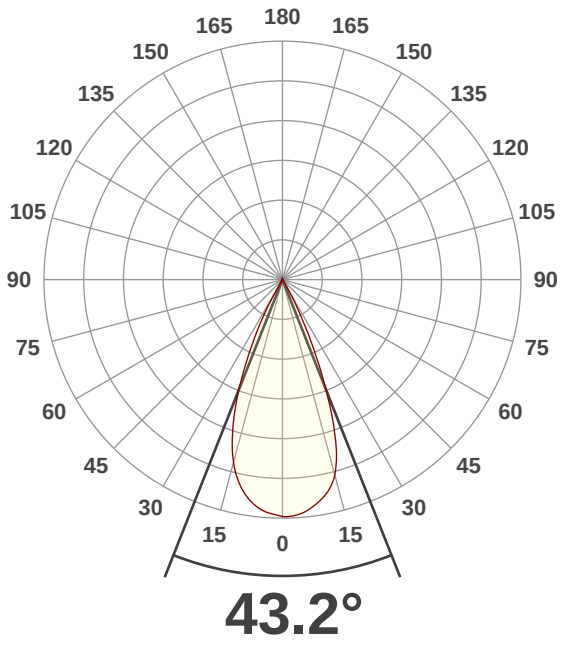
Voltage: 116 V, Current: 4.85 A

Power: 562 W

Efficacy: 19 Lumen/Watt

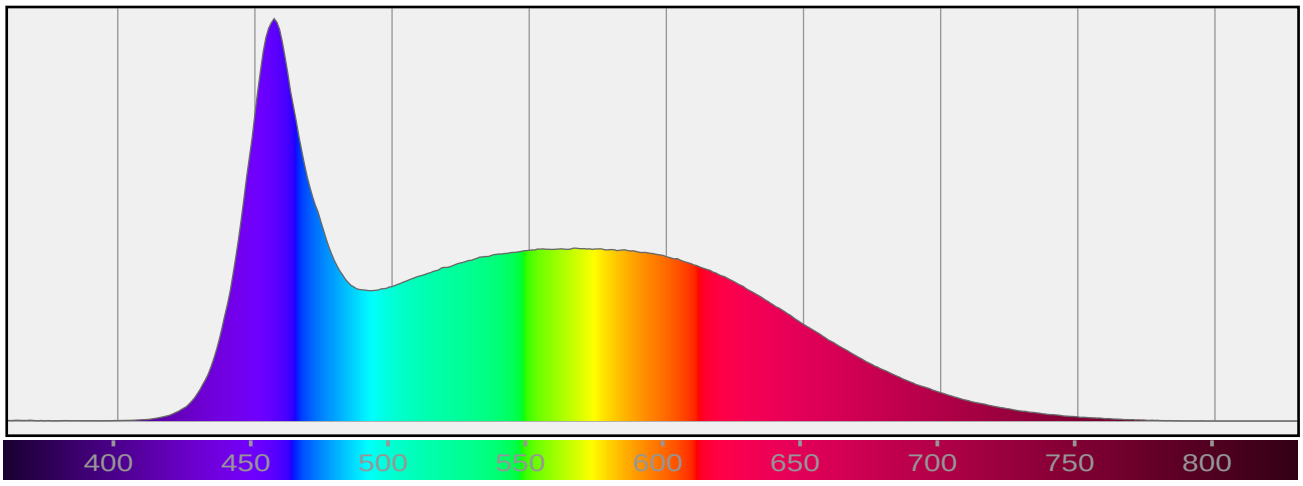
Measurement Date: 7/31/2019

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
43.2°	58°	62.7°



Spectral Distribution

Dominant Wavelength 360 nm



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

Artiste Van Gogh (Zoom Out)

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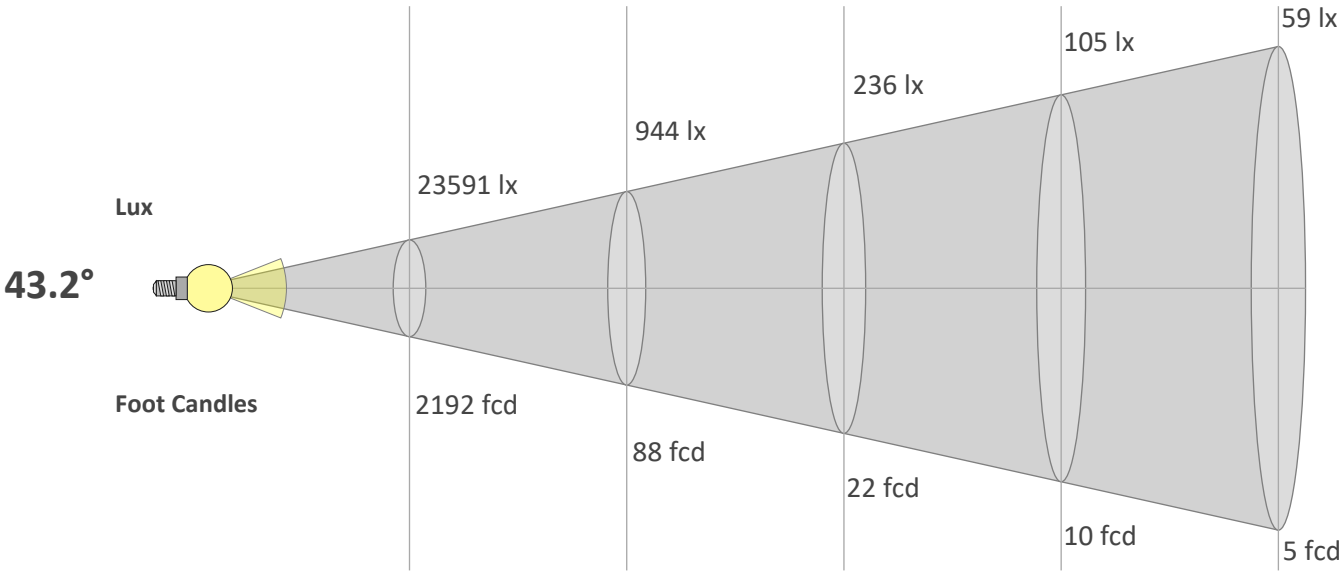
Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
43.2°	**58°**	**62.7°**

Distance (m)	1	5	10	15	20
Distance (ft)	3.3	16.4	32.8	49.2	65.6

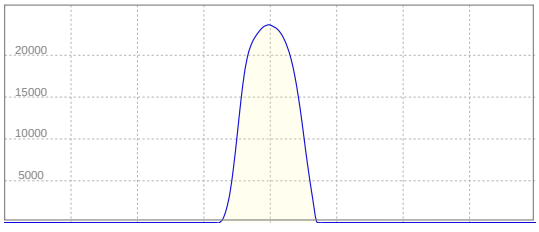


Beam Width (m)	0.8	4	7.9	11.9	15.8
Beam Width (ft)	2.6	13	26	38.9	51.9

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	23591	5898	2621	1474	944	655	481	369	291	236	195	164	140	120	105	92	82	73	65	59
FC	2191.7	547.9	243.5	137	87.7	60.9	44.7	34.2	27.1	21.9	18.1	15.2	13	11.2	9.7	8.6	7.6	6.8	6.1	5.5

Linear Distribution



Peak Candela

23633 cd

Calculate Center Beam Intensities

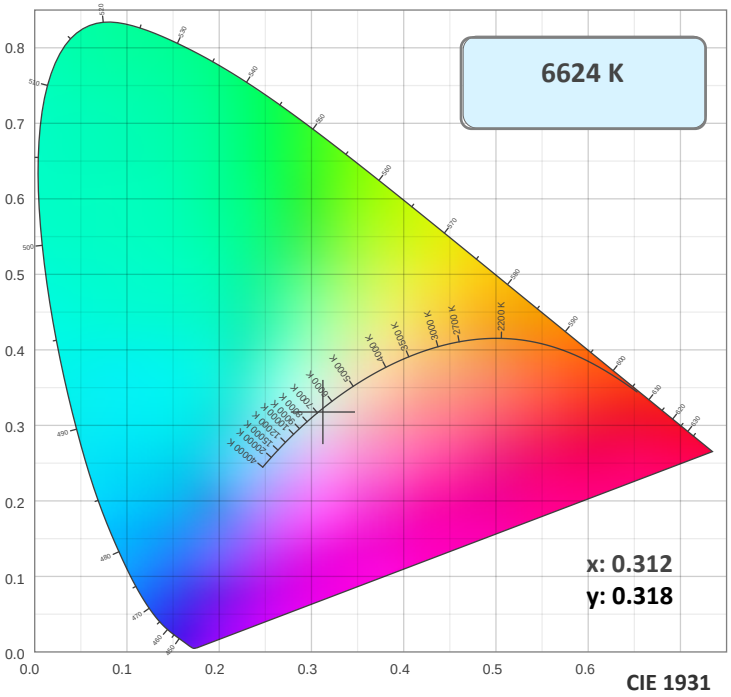
lux = 23633 / distance(m)^2

fc = 23633 / distance(ft)^2

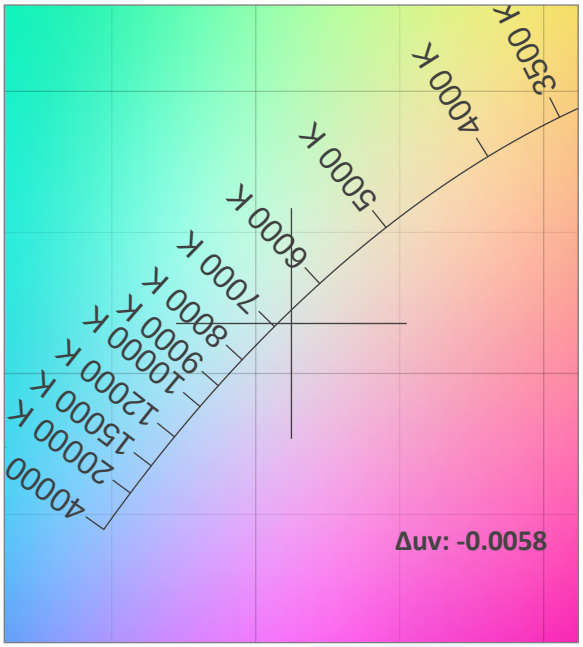
Artiste Van Gogh (Zoom Out)

Prepared For ELATION PROFESSIONAL

Color Details

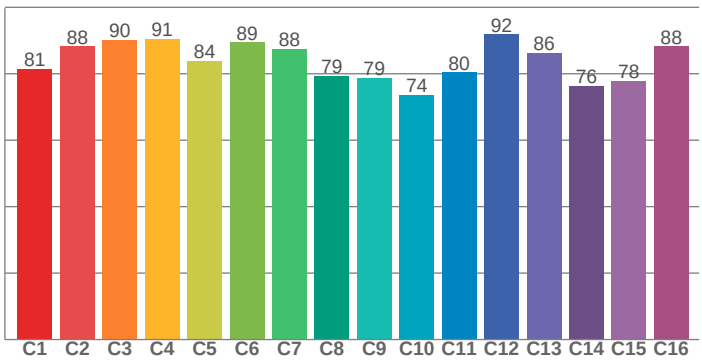


CIE 1931

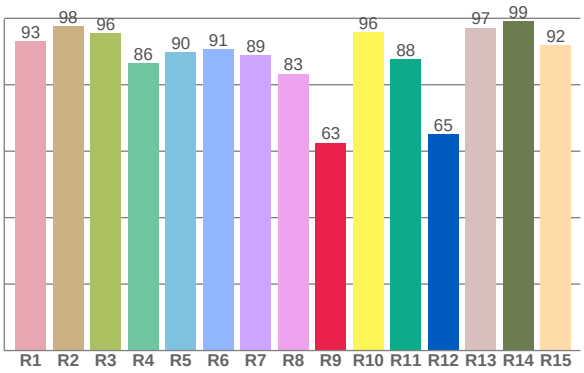


CIE 1931 ZOOM

TM30: 84.1



CRI: 90.7 (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
93.1	97.7	95.6	86.4	89.7	90.8	88.8	83.3	62.6	95.7	87.6	65.1	97.2	99.0	91.9

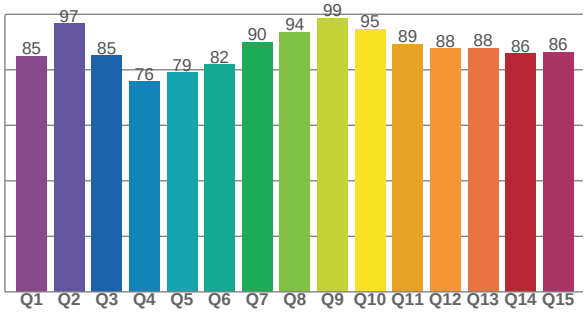
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.4	88.2	90.2	90.6	83.8	89.4	87.5	79.3	78.8	73.7	80.4	91.9	86.2	76.4	77.8	88.2

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
84.8	96.7	85.1	75.8	79.0	81.9	90.0	93.6	98.5	94.6	89.2	87.7	87.8	85.9	86.3

CQS: 86.3



Color Parameters

Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6624 K	90.7	62.6	84.1	95.1	86.3	0.312	0.318	0.202	0.308	-0.0058

Artiste Van Gogh (Zoom Out)

Prepared For ELATION PROFESSIONAL

TM30 Details

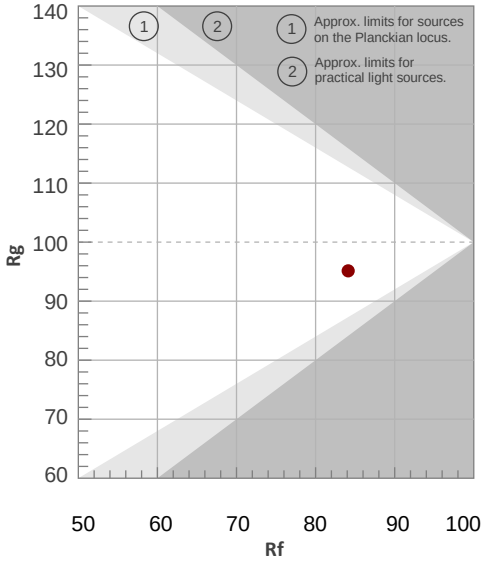
Rf 84.1

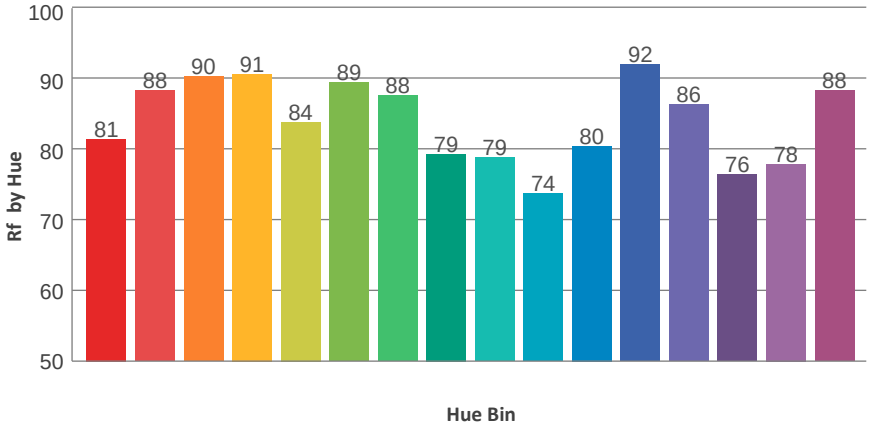
Fidelity Index Rf

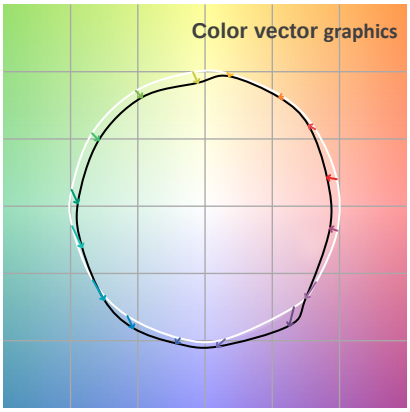
Rg 95.1

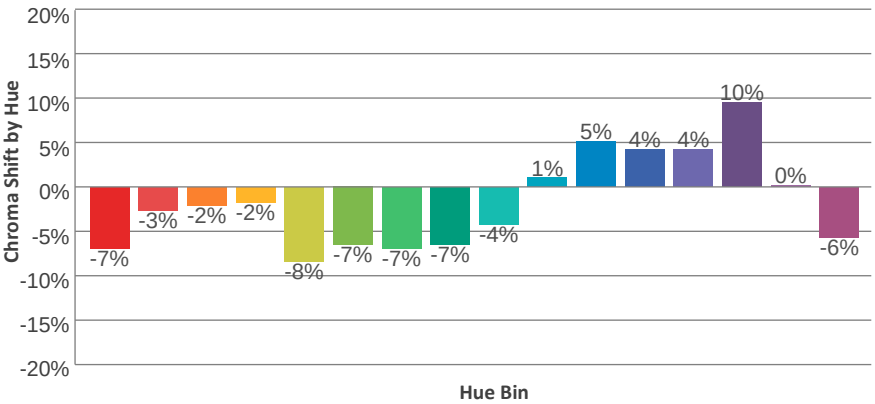
Gamut Index Rg

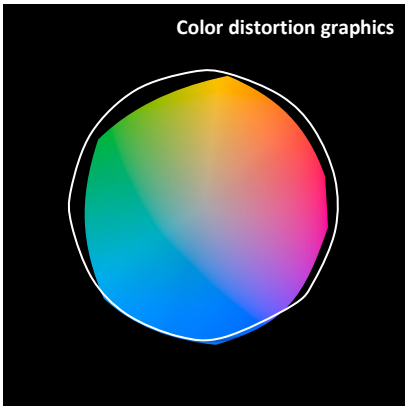
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	81	-7%	3%
2	88	-3%	5%
3	90	-2%	2%
4	91	-2%	0%
5	84	-8%	-2%
6	89	-7%	-1%
7	88	-7%	2%
8	79	-7%	9%
9	79	-4%	17%
10	74	1%	17%
11	80	5%	8%
12	92	4%	-2%
13	86	4%	-7%
14	76	10%	-11%
15	78	0%	-14%
16	88	-6%	1%

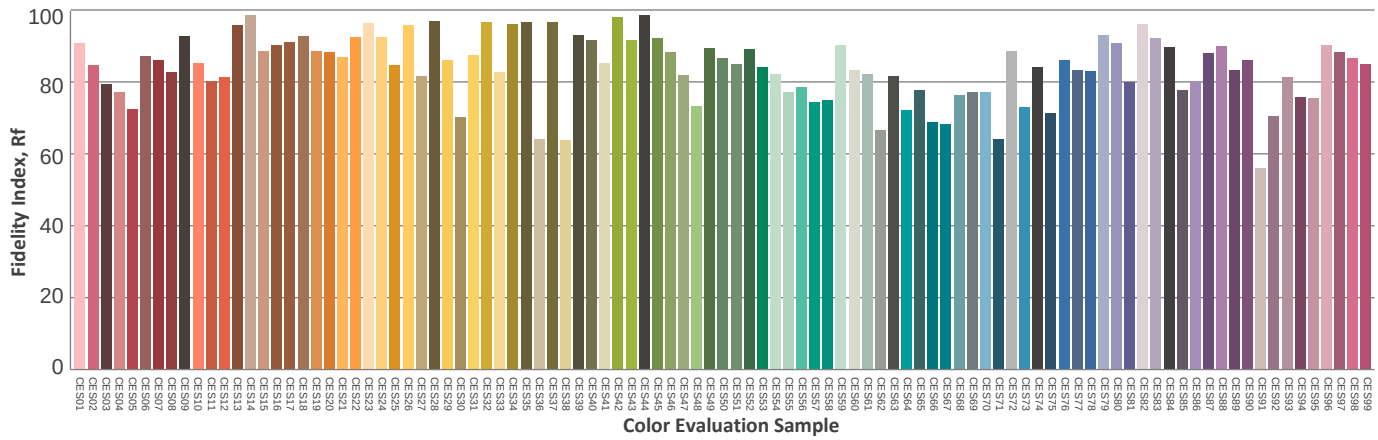










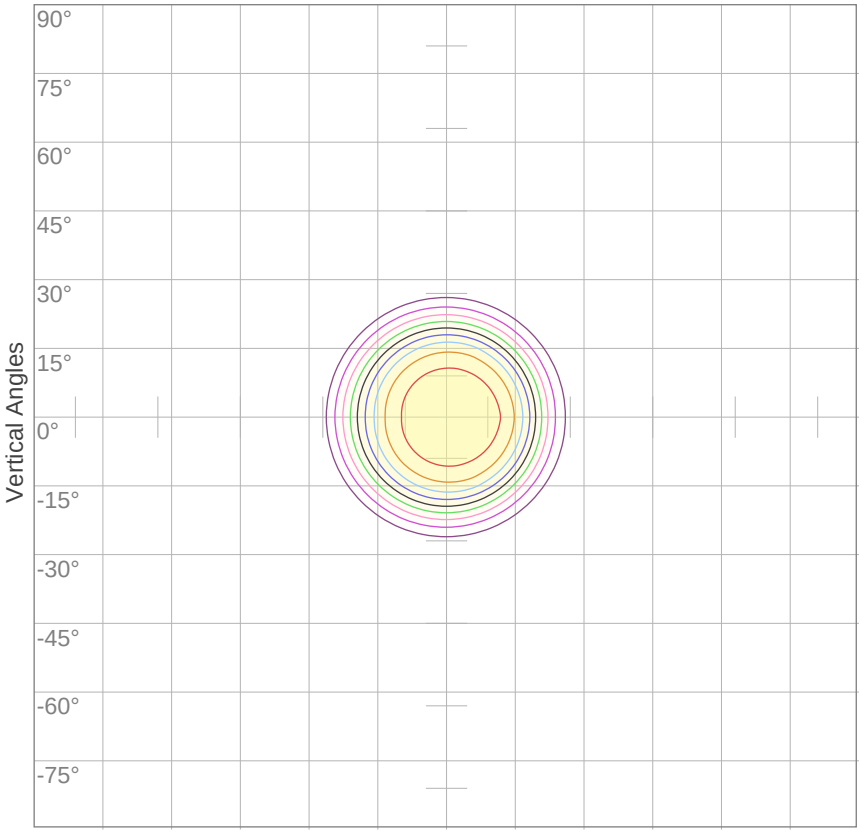


Artiste Van Gogh (Zoom Out)

Prepared For ELATION PROFESSIONAL

ISO Diagrams

ISO Candela Diagram



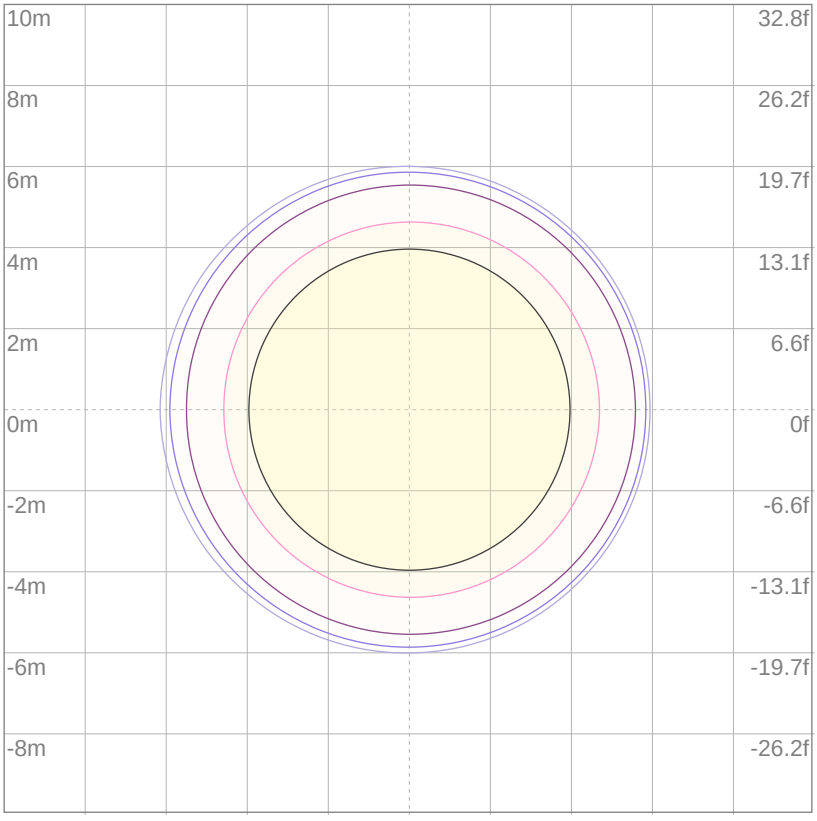
10%	2359 cd
20%	4718 cd
30%	7077 cd
40%	9436 cd
50%	11795 cd
60%	14155 cd
70%	16514 cd
80%	18873 cd
90%	21232 cd

Conditions:

Number of c-planes: 2

Candela at center: 23591 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	7.08 lx
5%	11.8 lx
10%	23.6 lx
30%	70.8 lx
50%	118 lx

Conditions:

Number of c-planes: 2

Lux at center: 236 lx

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

Prepared For ELATION PROFESSIONAL

Photometric Report

Total Lumen Output*

Integrating Sphere	**N/A**
VISO Lab Spion	**60.2 lm**

Color Temperature: 0 K

CRI: 0.0

TLCI: n/a

TM30: 0.0

CQS: 0.0

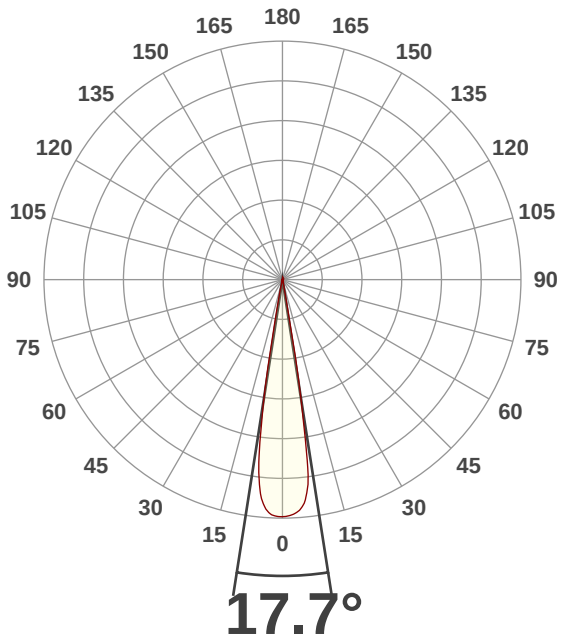
Voltage: 116 V, Current: 4.85 A

Power: 562 W

Efficacy: 0 Lumen/Watt

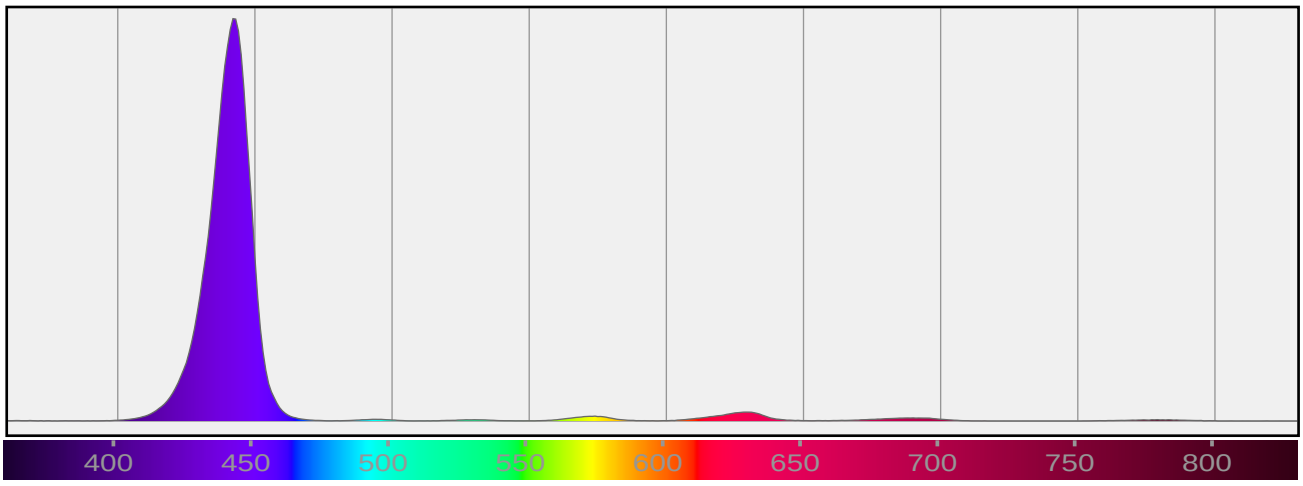
Measurement Date: 7/31/2019

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
17.7°	21.6°	23.7°



Spectral Distribution

Dominant Wavelength 435 nm



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

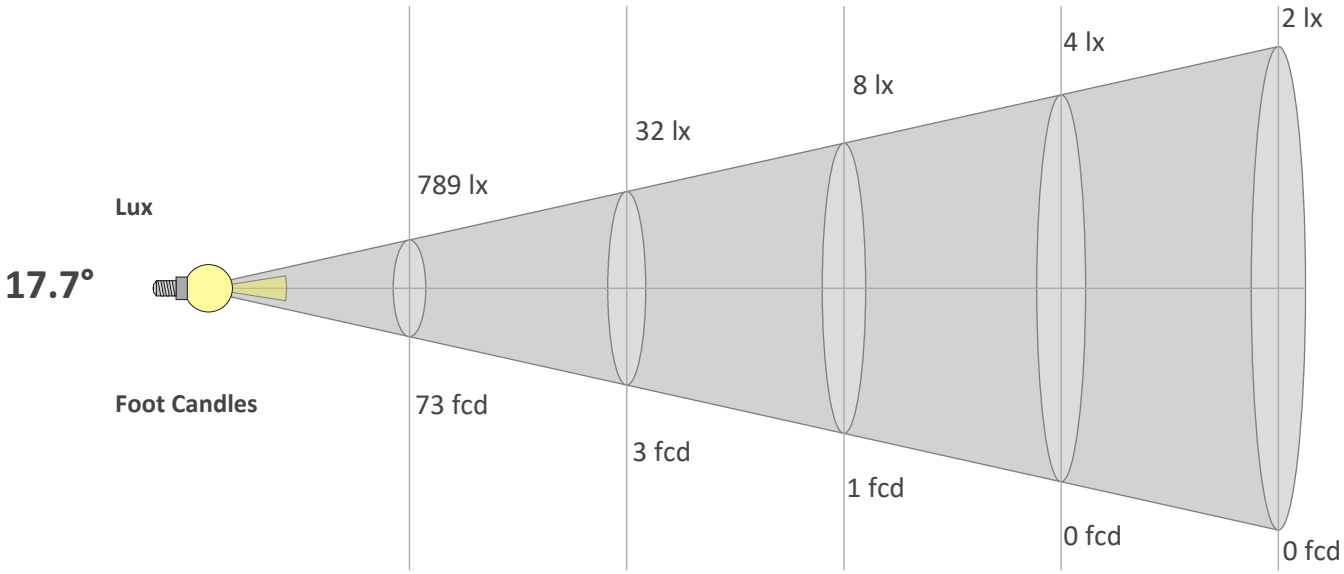
Artiste Van Gogh (UV)

Prepared For ELATION PROFESSIONAL

Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
17.7°	**21.6°**	**23.7°**

Distance (m)	1	5	10	15	20
Distance (ft)	3.3	16.4	32.8	49.2	65.6

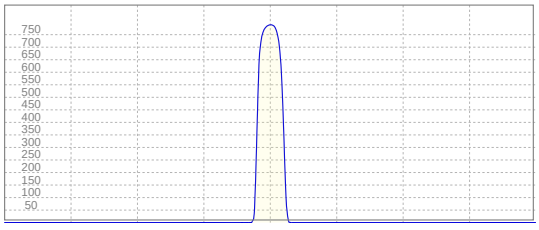


Beam Width (m)	0.3	1.6	3.1	4.7	6.2
Beam Width (ft)	1	5.1	10.2	15.3	20.5

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	789	197	88	49	32	22	16	12	10	8	7	5	5	4	4	3	3	2	2	2
FC	73.3	18.3	8.1	4.6	2.9	2	1.5	1.1	0.9	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2

Linear Distribution



Peak Candela

789 cd

Calculate Center Beam Intensities

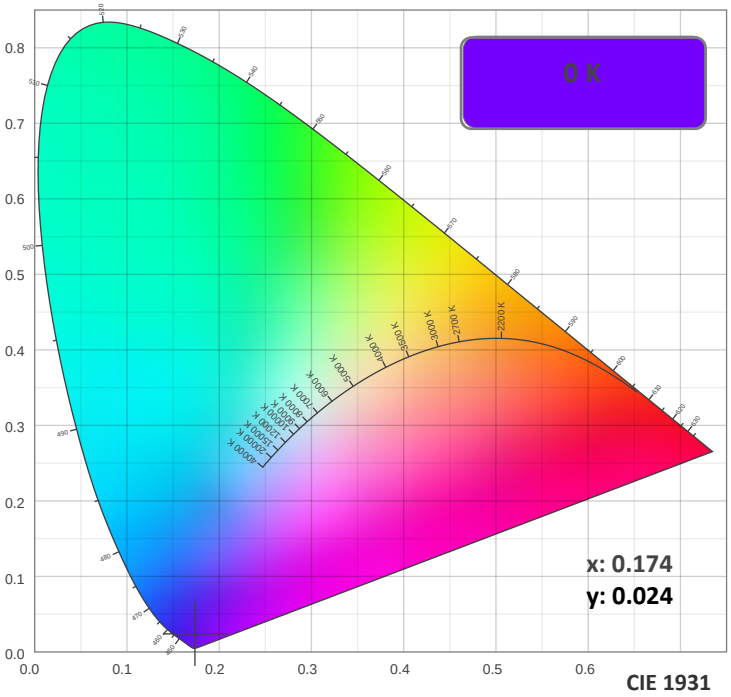
lux = 789 / distance(m)²

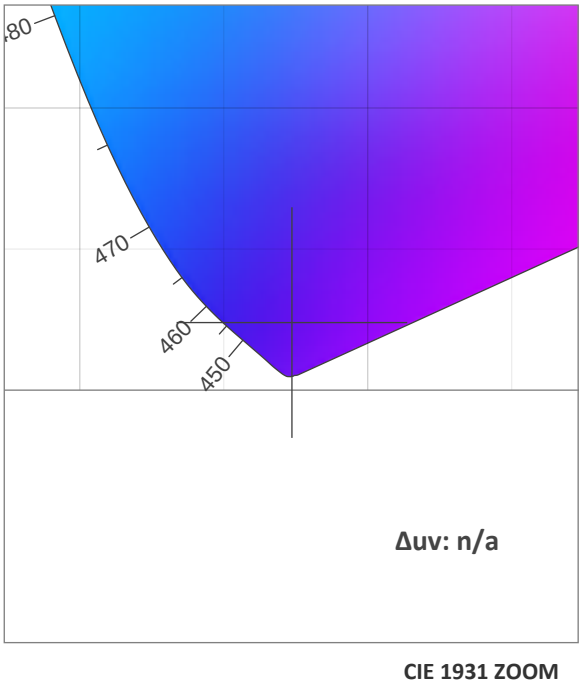
fc = 789 / distance(ft)²

Artiste Van Gogh (UV)

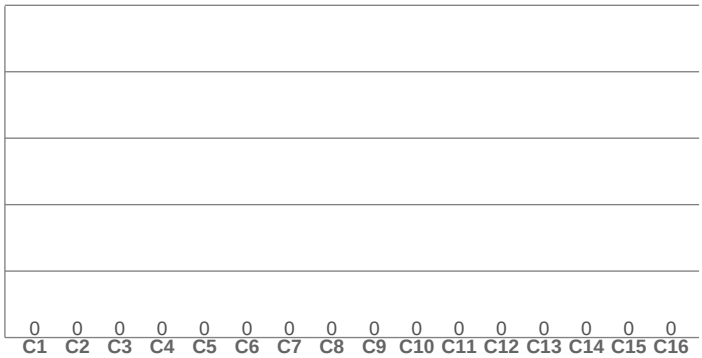
Prepared For ELATION PROFESSIONAL

Color Details

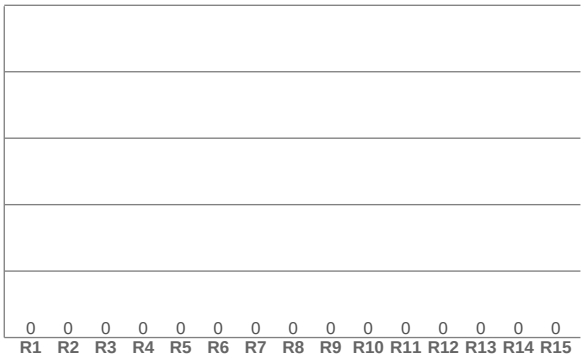




TM30: 0.0



CRI: 0.0 (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
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

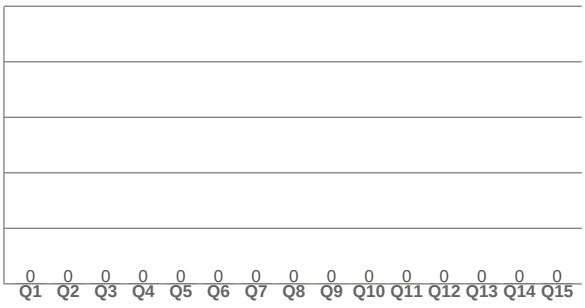
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CQS: 0.0



Color Parameters

Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
0 K	0.0	0.0	0.0	0.0	0.0	0.174	0.024	0.236	0.049	n/a

Artiste Van Gogh (UV)

Prepared For ELATION PROFESSIONAL

TM30 Details

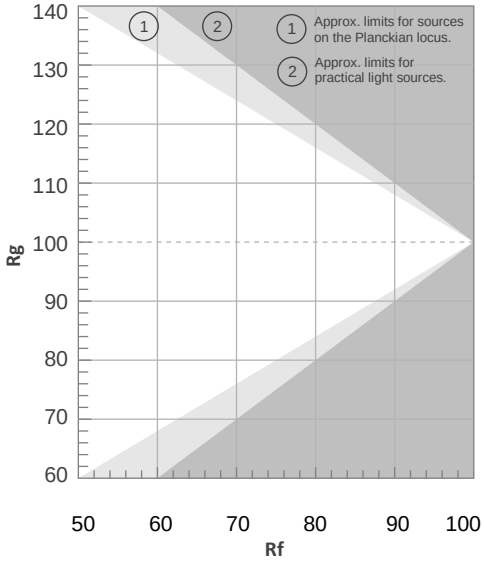
Rf 0.0

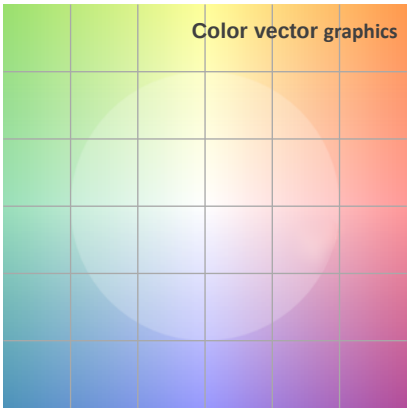
Fidelity Index Rf

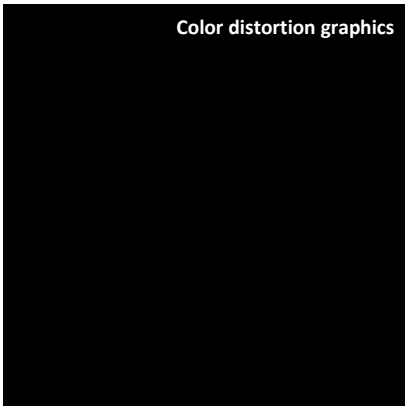
Rg 0.0

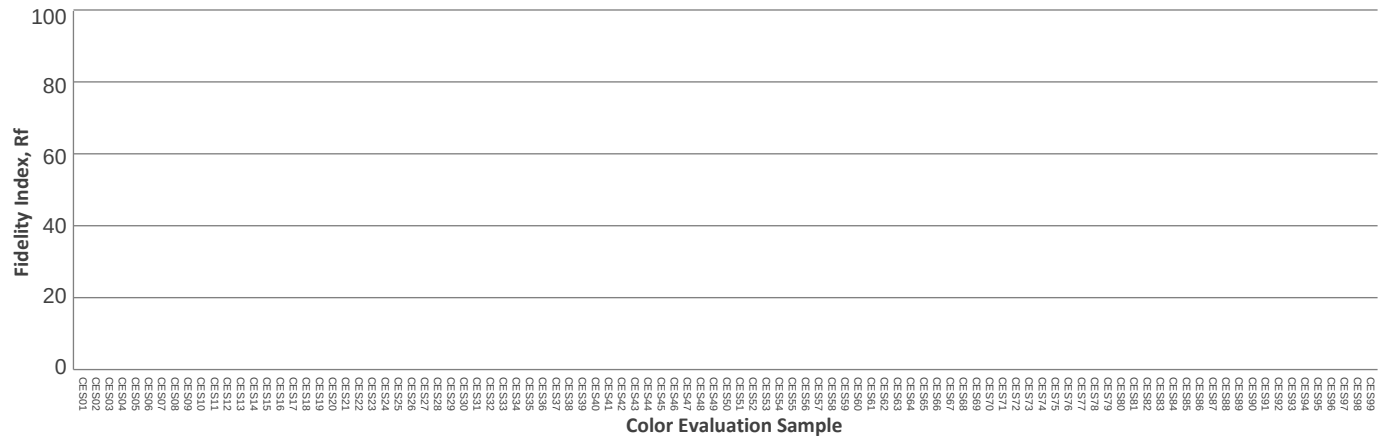
Gamut Index Rg

		Graphic shifts (%)	
Hue Bin	R_f	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%







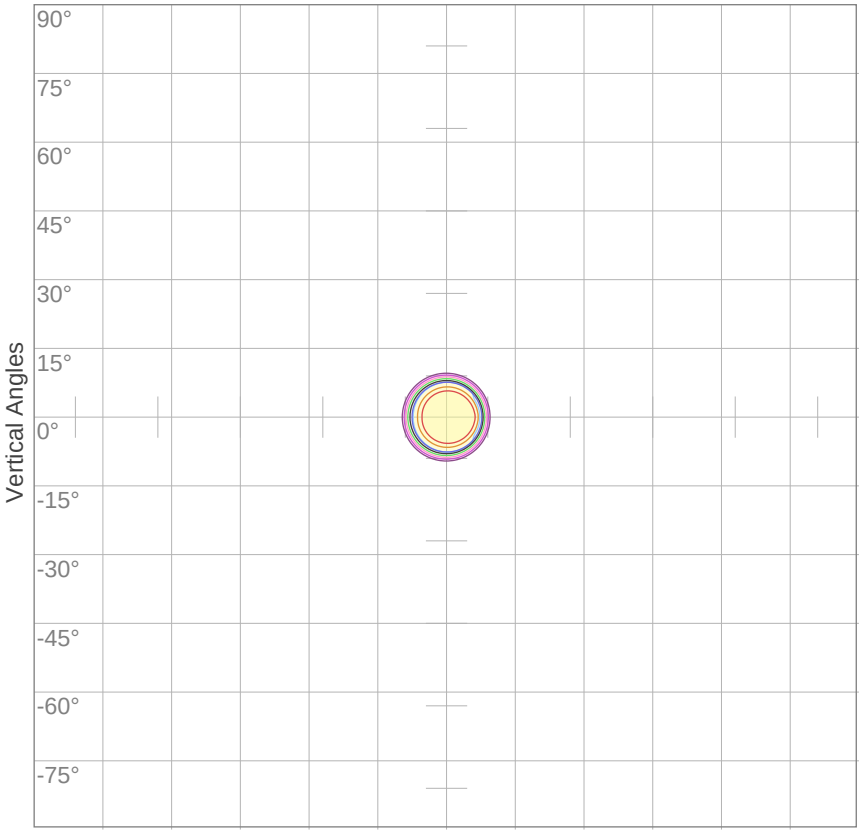


Artiste Van Gogh (UV)

Prepared For ELATION PROFESSIONAL

ISO Diagrams

ISO Candela Diagram



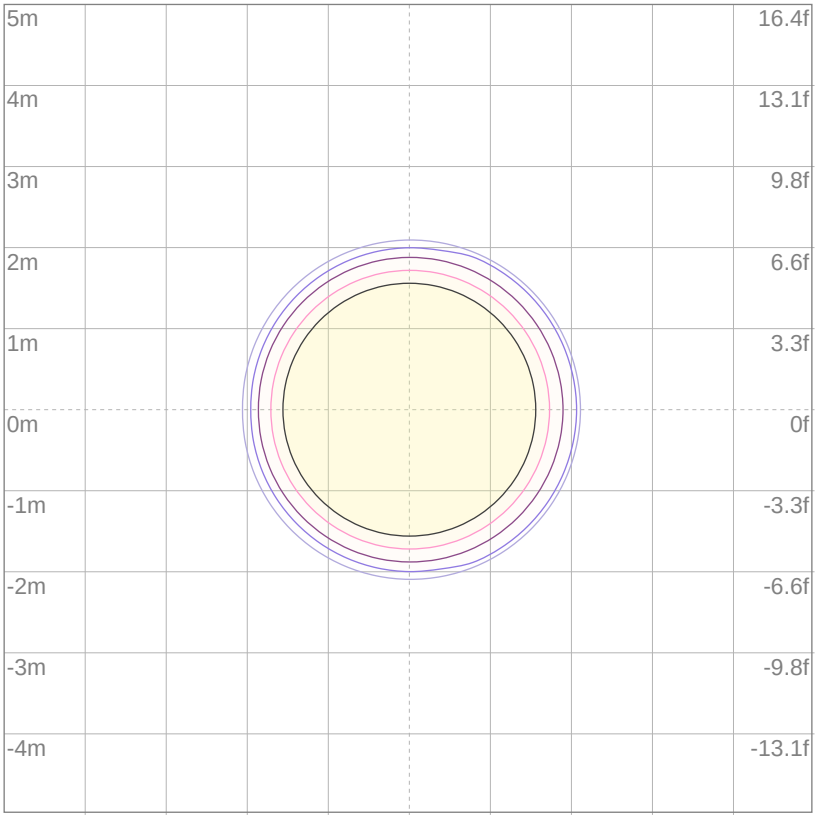
10%	79 cd
20%	158 cd
30%	237 cd
40%	316 cd
50%	395 cd
60%	473 cd
70%	552 cd
80%	631 cd
90%	710 cd

Conditions:

Number of c-planes: 2

Candela at center: 789 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	0.237 lx
5%	0.395 lx
10%	0.789 lx
30%	2.37 lx
50%	3.95 lx

Conditions:

Number of c-planes: 2

Lux at center: 7.89 lx

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

Artiste Van Gogh (CTO)

Prepared For ELATION PROFESSIONAL

Photometric Report

Total Lumen Output*

Integrating Sphere	**N/A**
VISO Lab Spion	**4129 lm**

Color Temperature: 2549 K

CRI: 85.4

TLCI: 76

TM30: 83.3

CQS: 81.6

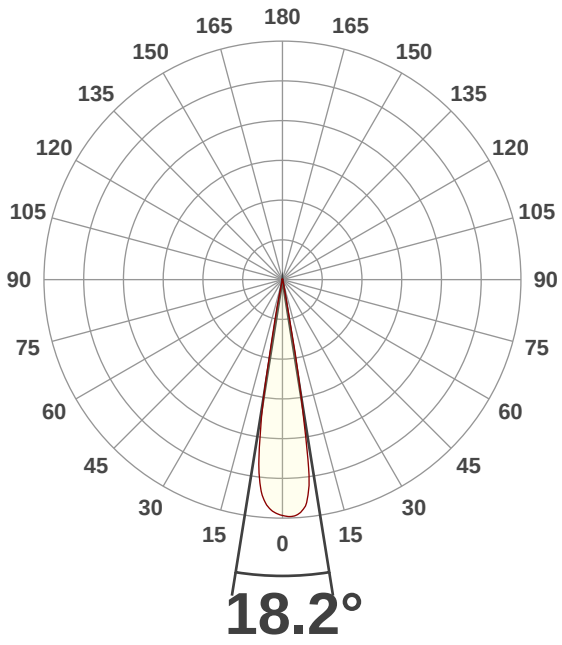
Voltage: 116 V, Current: 4.85 A

Power: 562 W

Efficacy: 7 Lumen/Watt

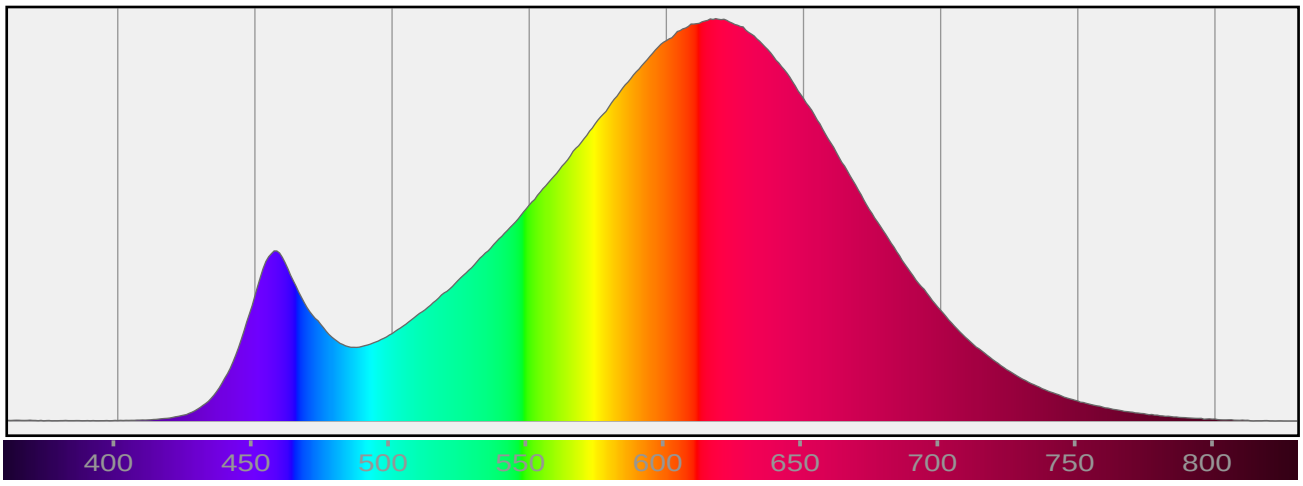
Measurement Date: 7/31/2019

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
18.2°	22.1°	24.1°



Spectral Distribution

Dominant Wavelength 587 nm



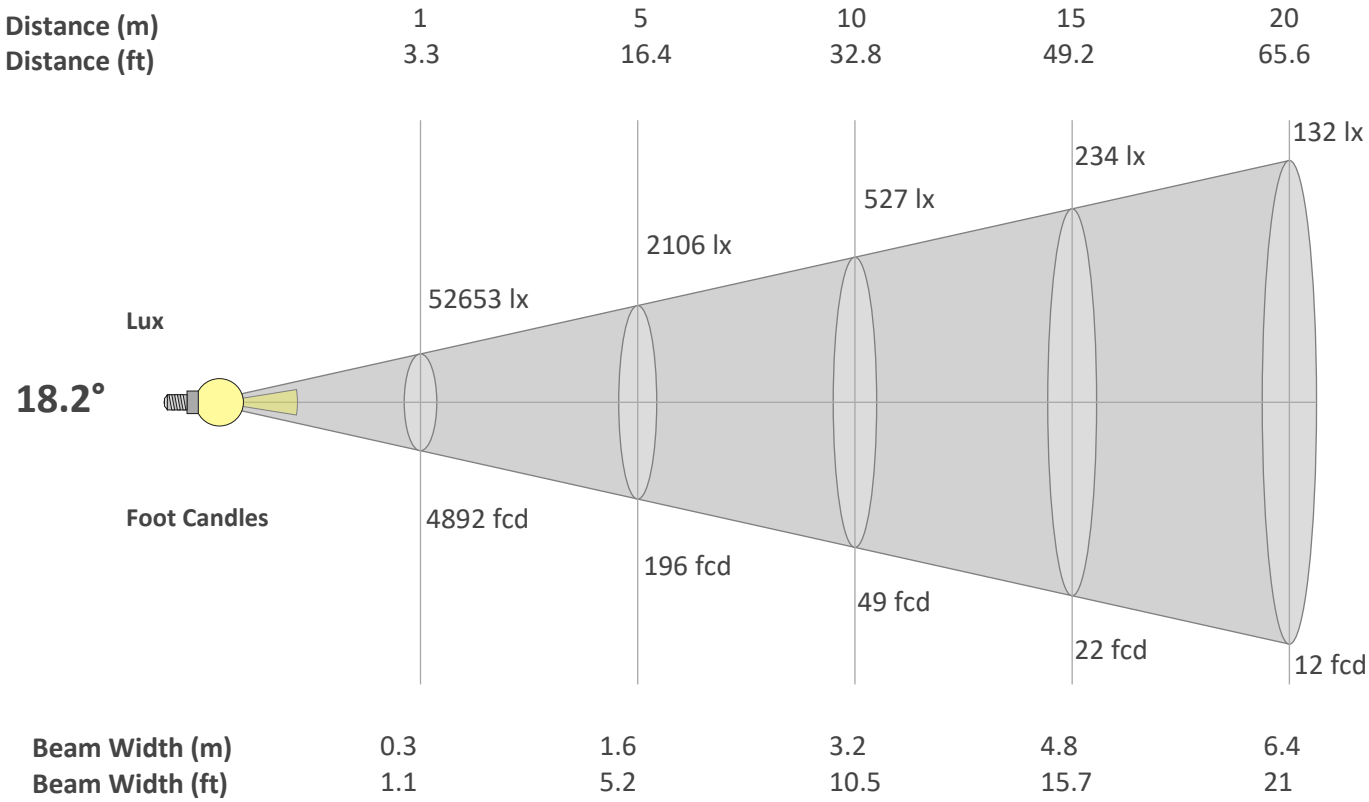
*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Artiste Van Gogh (CTO)

Prepared For ELATION PROFESSIONAL

Beam Details

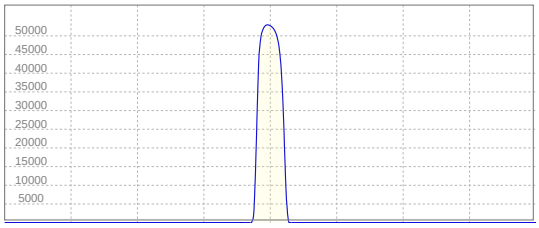
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
18.2°	**22.1°**	**24.1°**



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	52653	13163	5850	3291	2106	1463	1075	823	650	527	435	366	312	269	234	206	182	163	146	132
FC	4891.7	1222.9	543.5	305.7	195.7	135.9	99.8	76.4	60.4	48.9	40.4	34	28.9	25	21.7	19.1	16.9	15.1	13.6	12.2

Linear Distribution



Peak Candela

52939 cd

Calculate Center Beam Intensities

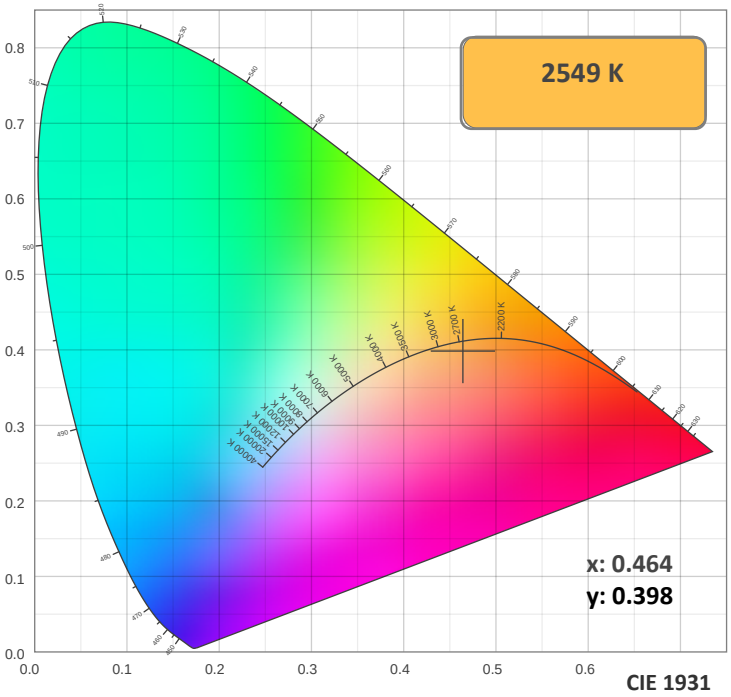
lux = 52939 / distance(m)²

fc = 52939 / distance(ft)²

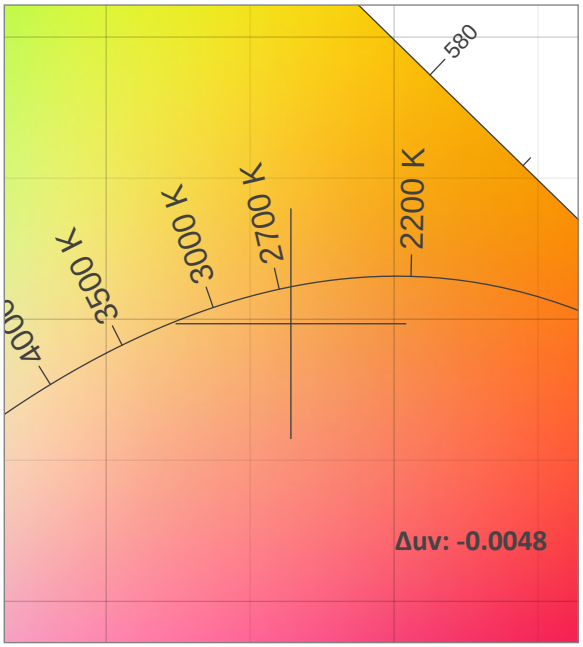
Artiste Van Gogh (CTO)

Prepared For ELATION PROFESSIONAL

Color Details

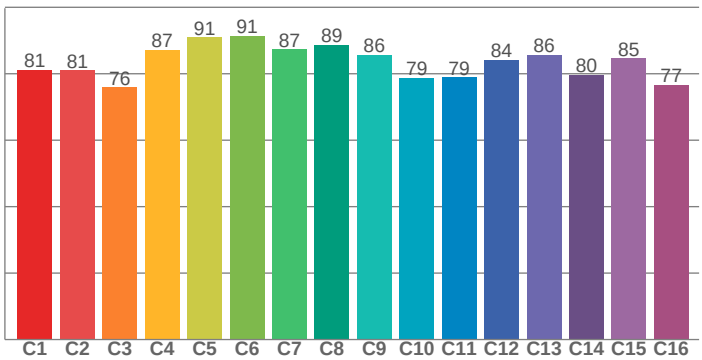


CIE 1931

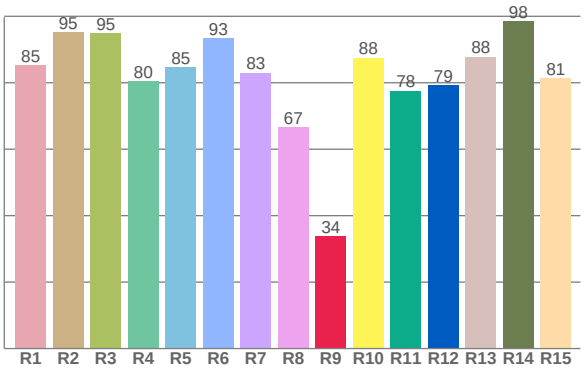


CIE 1931 ZOOM

TM30: 83.3



CRI: 85.4 (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
85.3	95.2	94.9	80.5	84.7	93.3	83.0	66.7	33.8	87.6	77.6	79.3	87.8	98.4	81.3

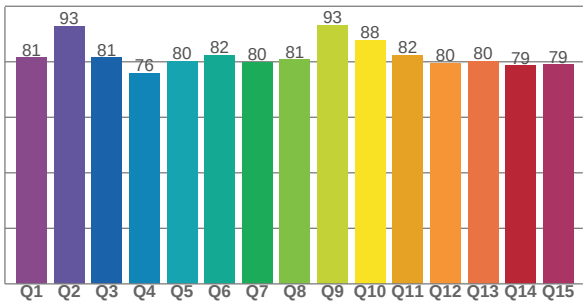
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.1	81.1	75.9	87.2	90.9	91.4	87.3	88.7	85.7	78.7	78.9	84.2	85.7	79.7	84.6	76.7

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.5	92.9	81.4	75.9	80.2	82.3	79.9	80.7	93.3	87.8	82.5	79.6	80.3	78.7	79.1

CQS: 81.6



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
2549 K	85.4	33.8	83.3	98.3	81.6	0.464	0.398	0.271	0.349	-0.0048

Artiste Van Gogh (CTO)

Prepared For ELATION PROFESSIONAL

TM30 Details

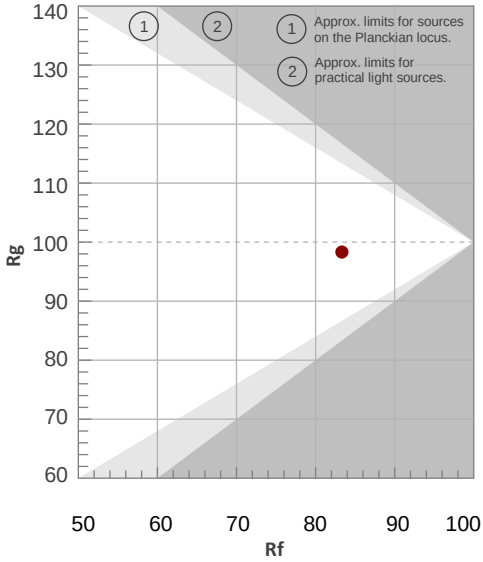
Rf 83.3

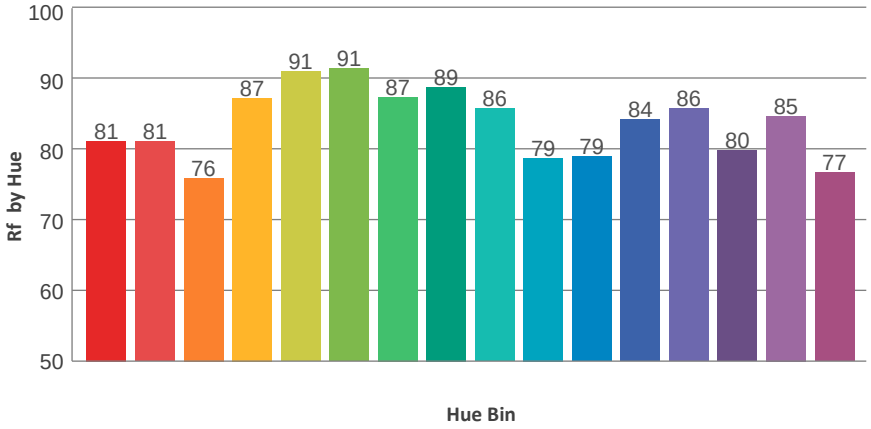
Fidelity Index Rf

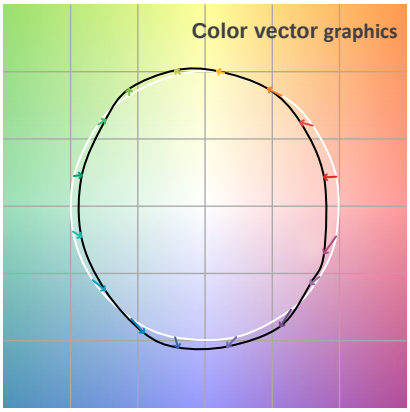
Rg 98.3

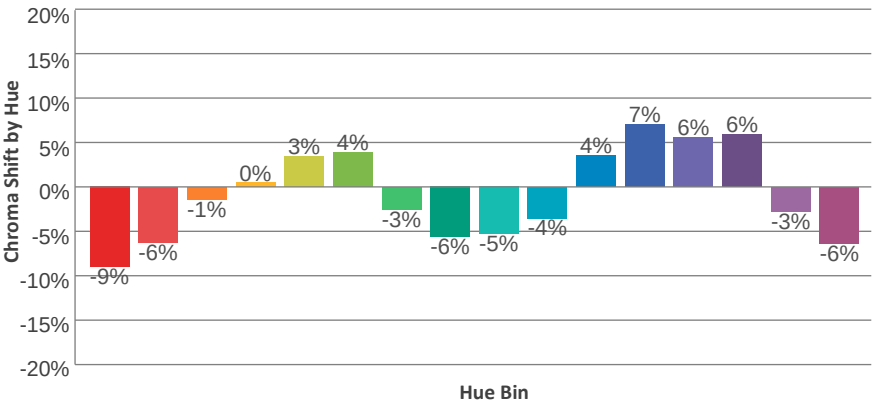
Gamut Index Rg

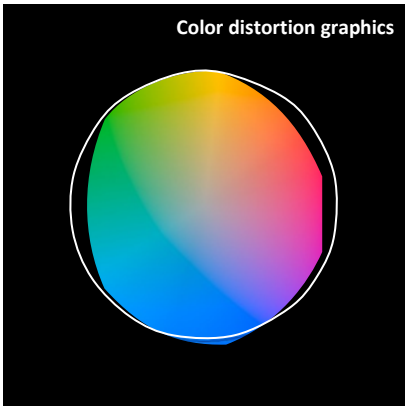
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	81	-9%	1%
2	81	-6%	7%
3	76	-1%	11%
4	87	0%	6%
5	91	3%	3%
6	91	4%	-2%
7	87	-3%	-6%
8	89	-6%	-2%
9	86	-5%	5%
10	79	-4%	11%
11	79	4%	13%
12	84	7%	4%
13	86	6%	-8%
14	80	6%	-13%
15	85	-3%	-8%
16	77	-6%	-14%

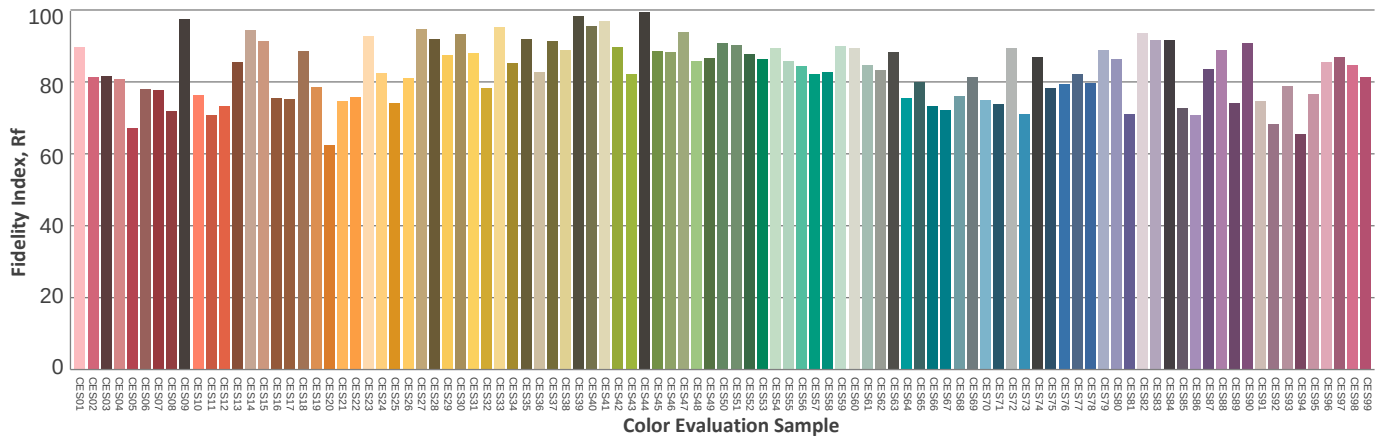










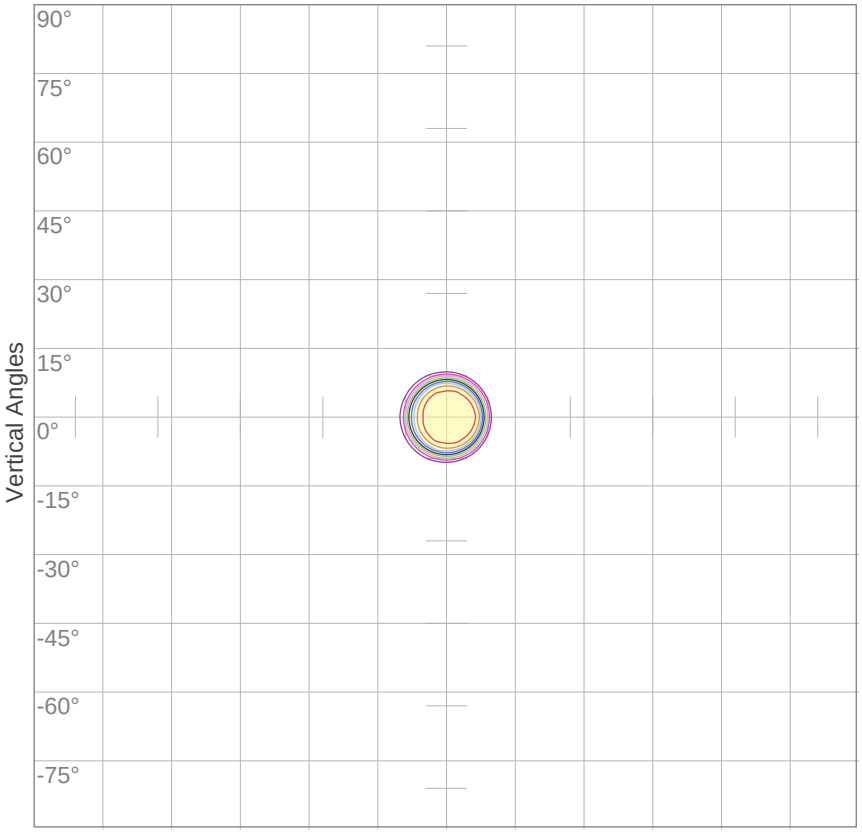


Artiste Van Gogh (CTO)

Prepared For ELATION PROFESSIONAL

ISO Diagrams

ISO Candela Diagram



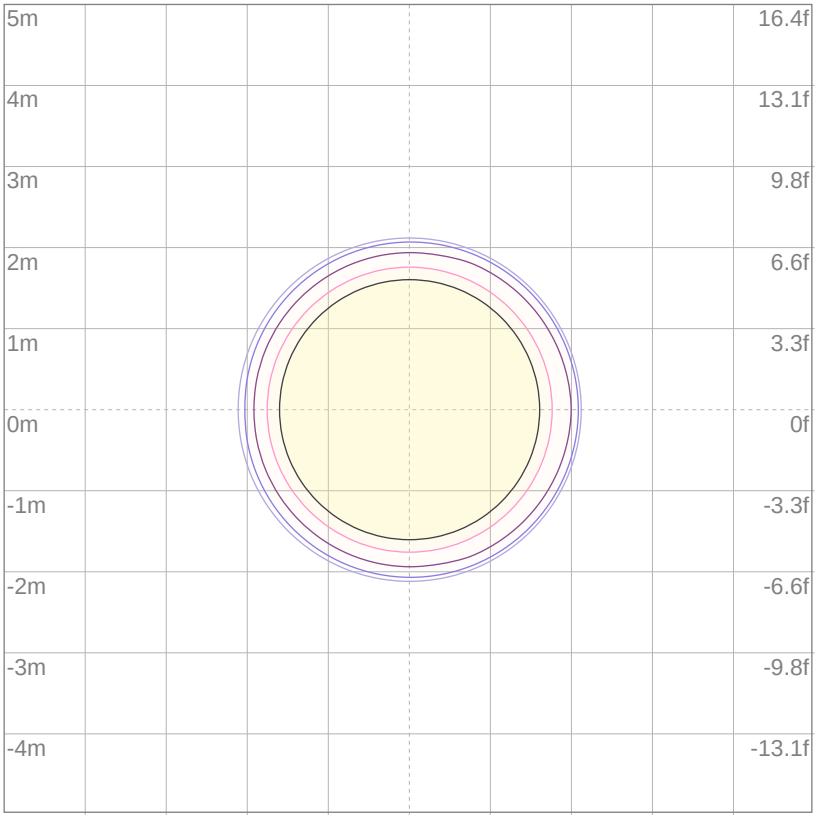
10%	5265 cd
20%	10531 cd
30%	15796 cd
40%	21061 cd
50%	26327 cd
60%	31592 cd
70%	36857 cd
80%	42123 cd
90%	47388 cd

Conditions:

Number of c-planes: 2

Candela at center: 52653 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	15.8 lx
5%	26.3 lx
10%	52.7 lx
30%	158 lx
50%	263 lx

Conditions:

Number of c-planes: 2

Lux at center: 527 lx

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

Artiste Van Gogh (Fresnel Zoom In)

Prepared For ELATION PROFESSIONAL

Photometric Report

Total Lumen Output*

Integrating Sphere	**N/A**
VISO Lab Spion	**7232 lm**

Color Temperature: 6729 K

CRI: 90.6

TLCI: 85

TM30: 83.9

CQS: 86.2

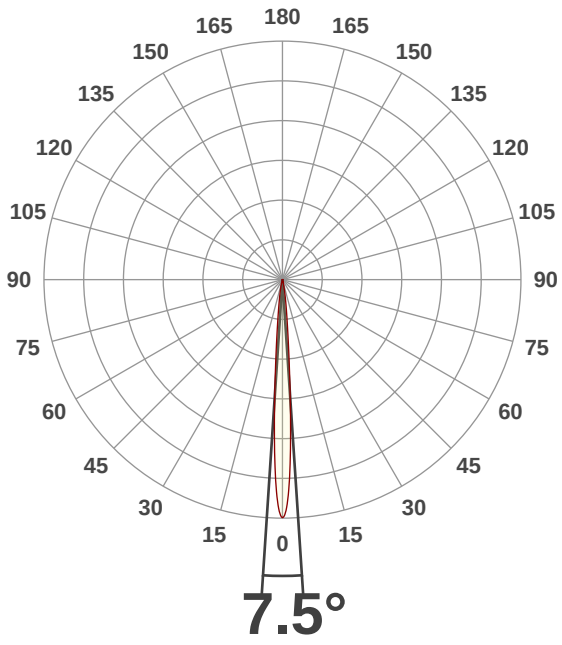
Voltage: 116 V, Current: 4.85 A

Power: 562 W

Efficacy: 13 Lumen/Watt

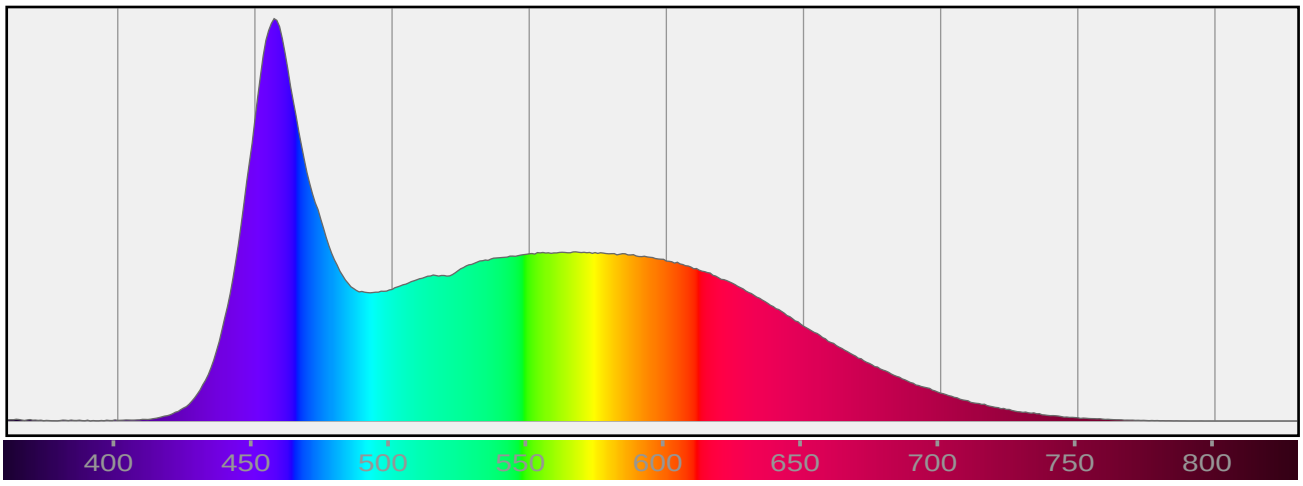
Measurement Date: 7/31/2019

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
7.5°	16.5°	25°



Spectral Distribution

Dominant Wavelength 360 nm



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

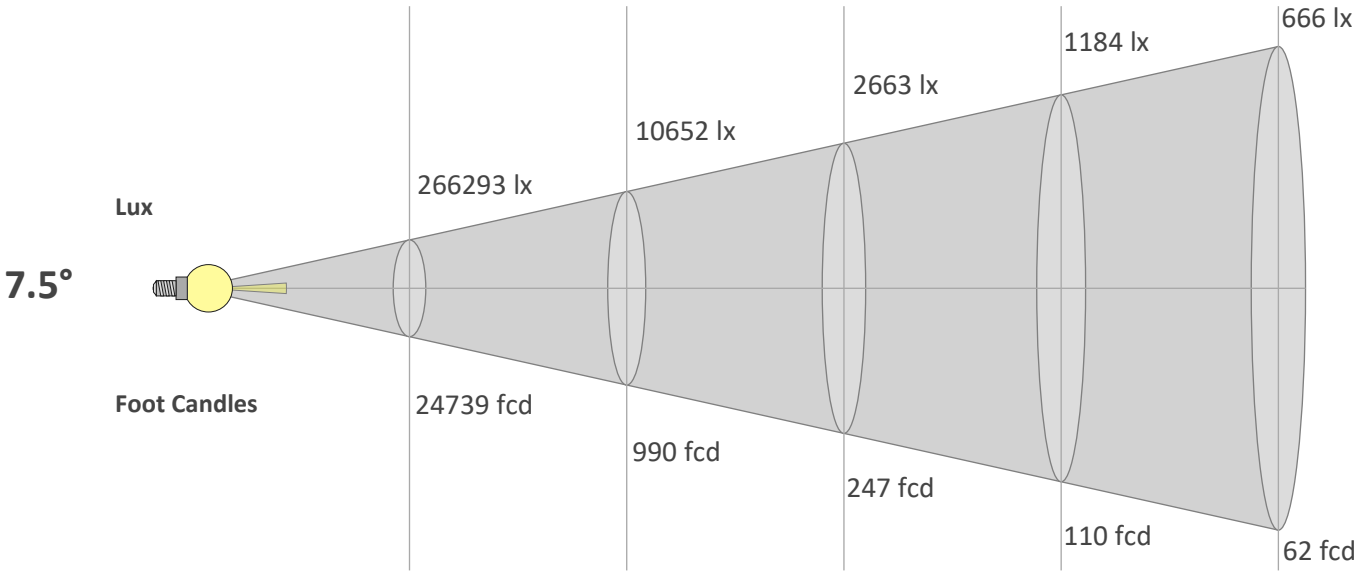
Artiste Van Gogh (Fresnel Zoom In)

Prepared For ELATION PROFESSIONAL

Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
7.5°	**16.5°**	**25°**

Distance (m)	1	5	10	15	20
Distance (ft)	3.3	16.4	32.8	49.2	65.6

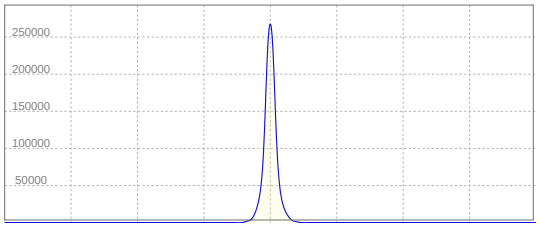


Beam Width (m)	0.1	0.7	1.3	2	2.6
Beam Width (ft)	0.4	2.2	4.3	6.5	8.6

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	266293	66573	29588	16643	10652	7397	5435	4161	3288	2663	2201	1849	1576	1359	1184	1040	921	822	738	666
FC	24739.4	6184.9	2748.8	1546.2	989.6	687.2	504.9	386.6	305.4	247.4	204.5	171.8	146.4	126.2	110	96.6	85.6	76.4	68.5	61.8

Linear Distribution



Peak Candela

266479 cd

Calculate Center Beam Intensities

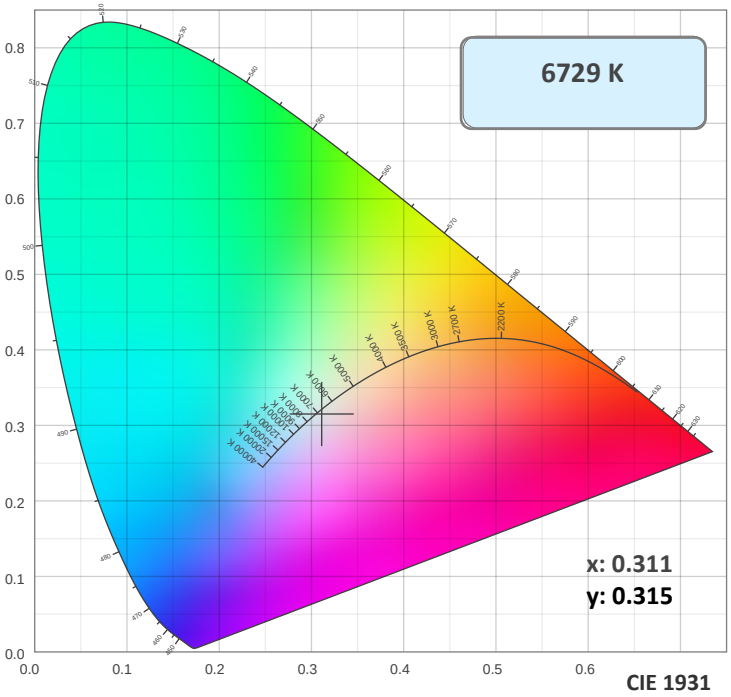
lux = 266479 / distance(m)^2

fc = 266479 / distance(ft)^2

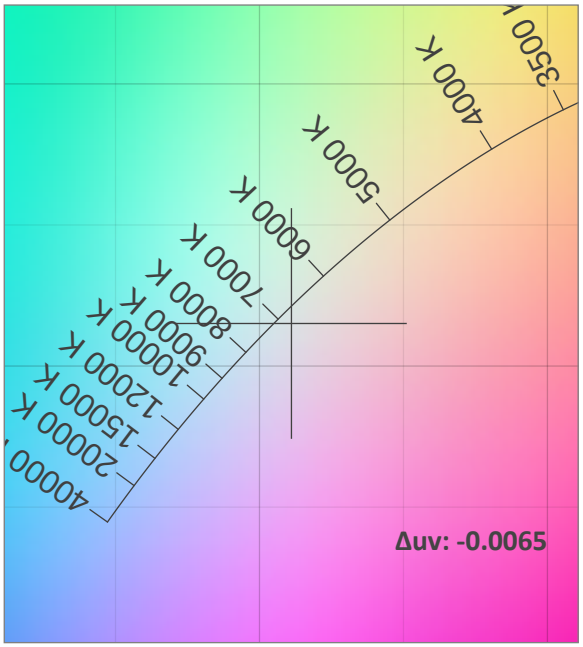
Artiste Van Gogh (Fresnel Zoom In)

Prepared For ELATION PROFESSIONAL

Color Details

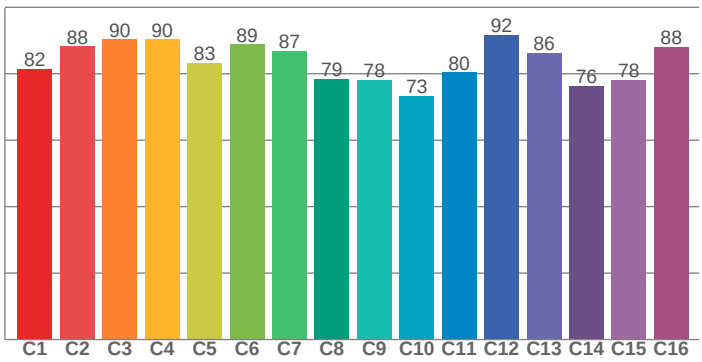


CIE 1931

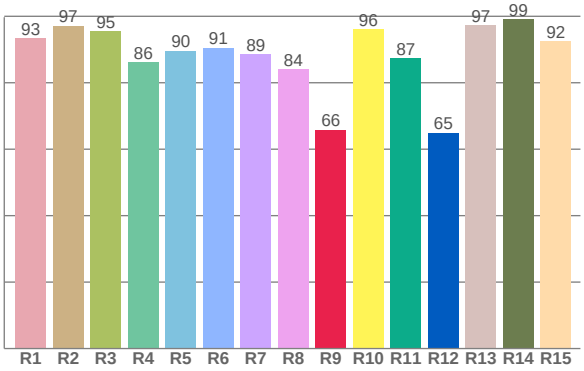


CIE 1931 ZOOM

TM30: 83.9



CRI: 90.6 (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
93.3	97.2	95.5	86.2	89.7	90.5	88.6	84.0	65.8	96.1	87.4	65.0	97.4	99.1	92.4

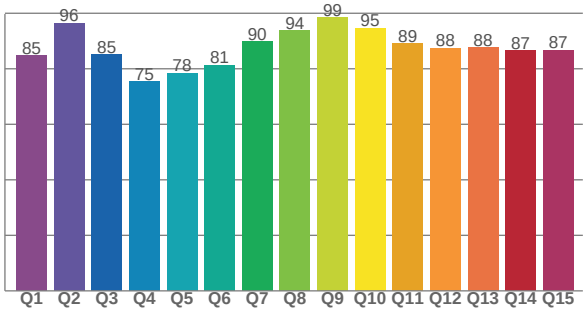
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.5	88.2	90.3	90.4	83.4	88.9	86.9	78.5	78.2	73.3	80.4	91.8	86.2	76.3	78.2	88.1

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
84.8	96.4	85.1	75.4	78.4	81.3	89.9	93.7	98.5	94.7	89.0	87.5	87.6	86.6	86.7

CQS: 86.2



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
6729 K	90.6	65.8	83.9	95.1	86.2	0.311	0.315	0.202	0.307	-0.0065

Artiste Van Gogh (Fresnel Zoom In)

Prepared For ELATION PROFESSIONAL

TM30 Details

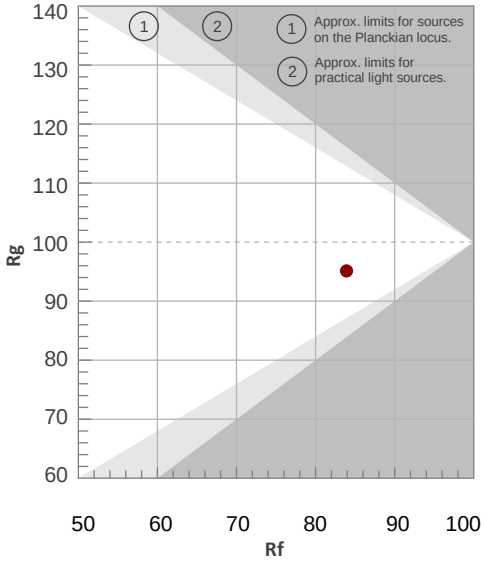
Rf 83.9

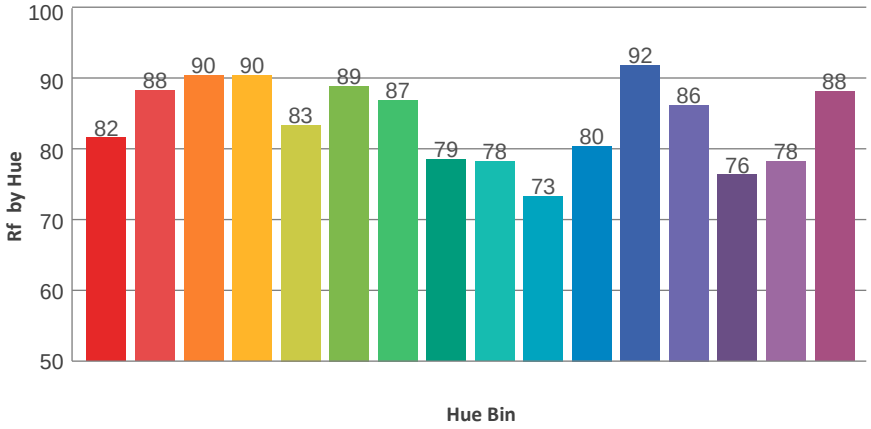
Fidelity Index Rf

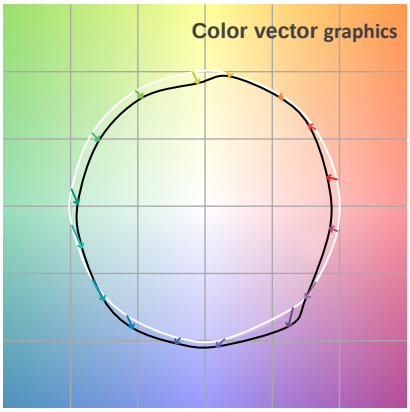
Rg 95.1

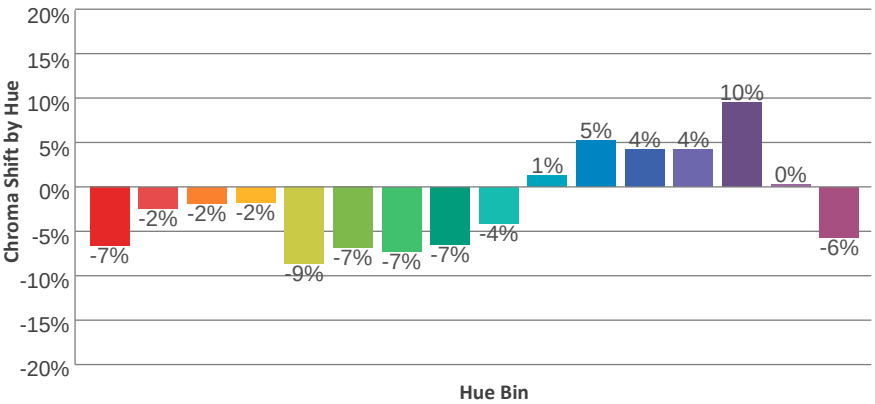
Gamut Index Rg

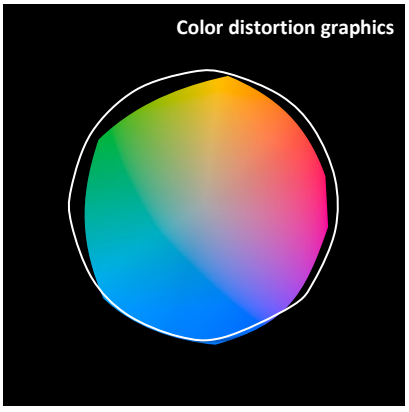
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	82	-7%	3%
2	88	-2%	5%
3	90	-2%	2%
4	90	-2%	0%
5	83	-9%	-2%
6	89	-7%	-1%
7	87	-7%	2%
8	79	-7%	9%
9	78	-4%	17%
10	73	1%	17%
11	80	5%	8%
12	92	4%	-2%
13	86	4%	-7%
14	76	10%	-10%
15	78	0%	-13%
16	88	-6%	1%

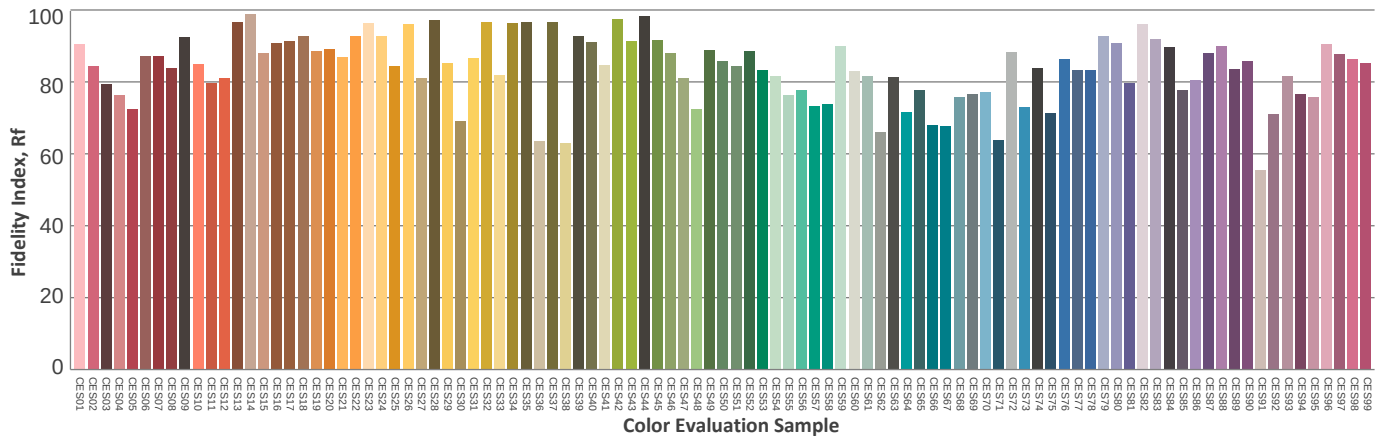










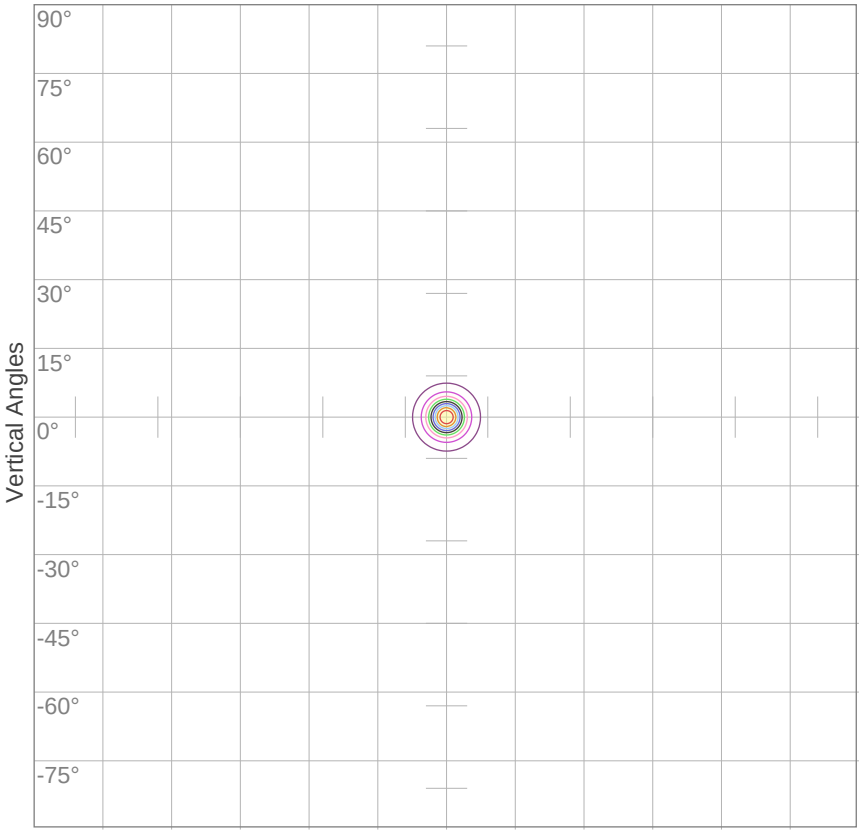


Artiste Van Gogh (Fresnel Zoom In)

Prepared For ELATION PROFESSIONAL

ISO Diagrams

ISO Candela Diagram



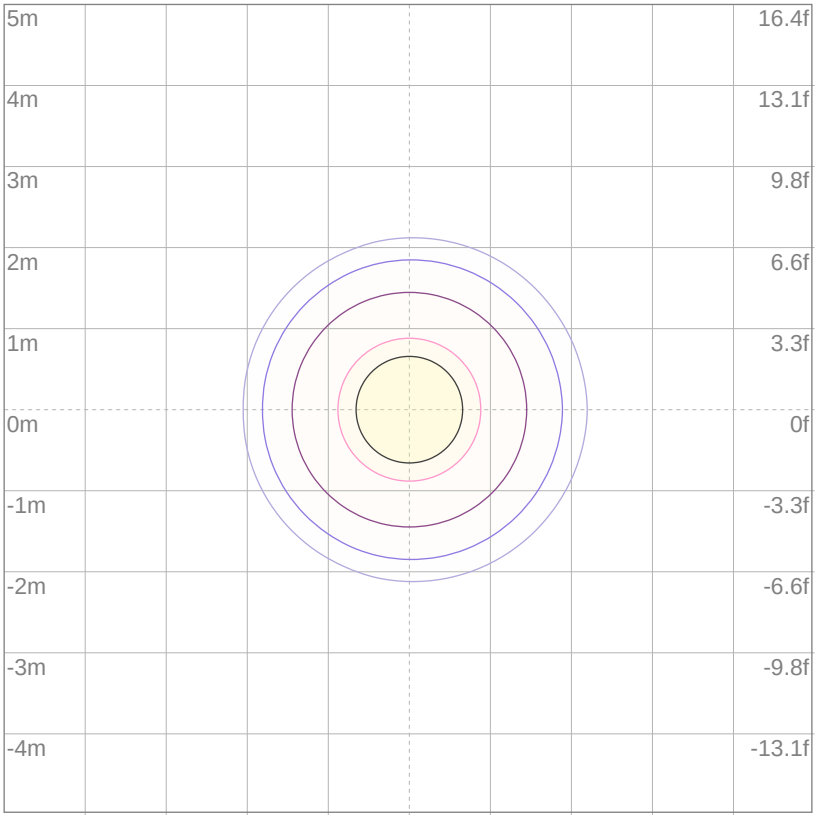
10%	26629 cd
20%	53259 cd
30%	79888 cd
40%	106517 cd
50%	133146 cd
60%	159776 cd
70%	186405 cd
80%	213034 cd
90%	239663 cd

Conditions:

Number of c-planes: 2

Candela at center: 266293 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	79.9 lx
5%	133 lx
10%	266 lx
30%	799 lx
50%	1331 lx

Conditions:

Number of c-planes: 2

Lux at center: 2663 lx

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

Prepared For ELATION PROFESSIONAL

Photometric Report

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
20.2°	30.9°	37.4°

Total Lumen Output*

Integrating Sphere N/A

VISO Lab Spion 9806 lm

Color Temperature: 6756 K

CRI: 90.8

TLCI: 85

TM30: 84.2

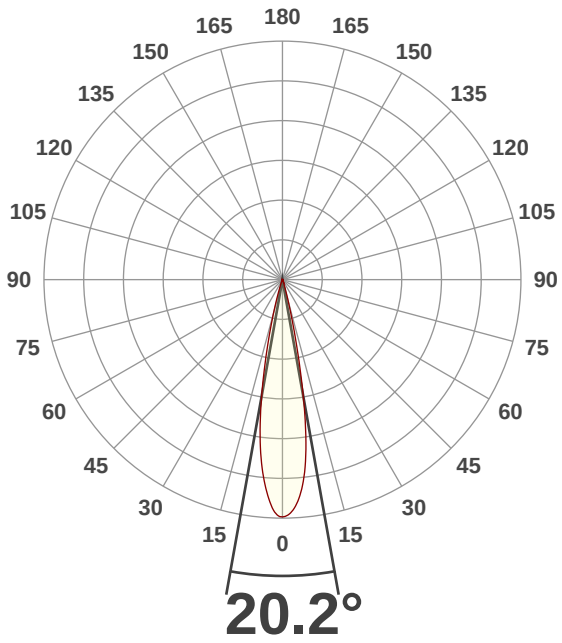
CQS: 86.3

Voltage: 116 V, Current: 4.85 A

Power: 562.9 W

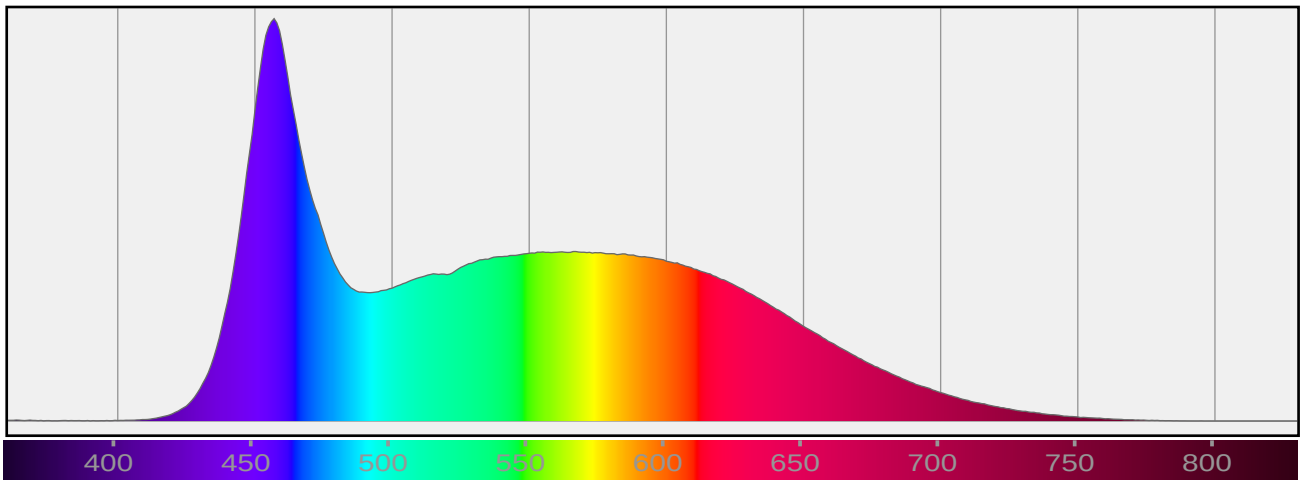
Efficacy: 17 Lumen/Watt

Measurement Date: 7/31/2019



Spectral Distribution

Dominant Wavelength 360 nm



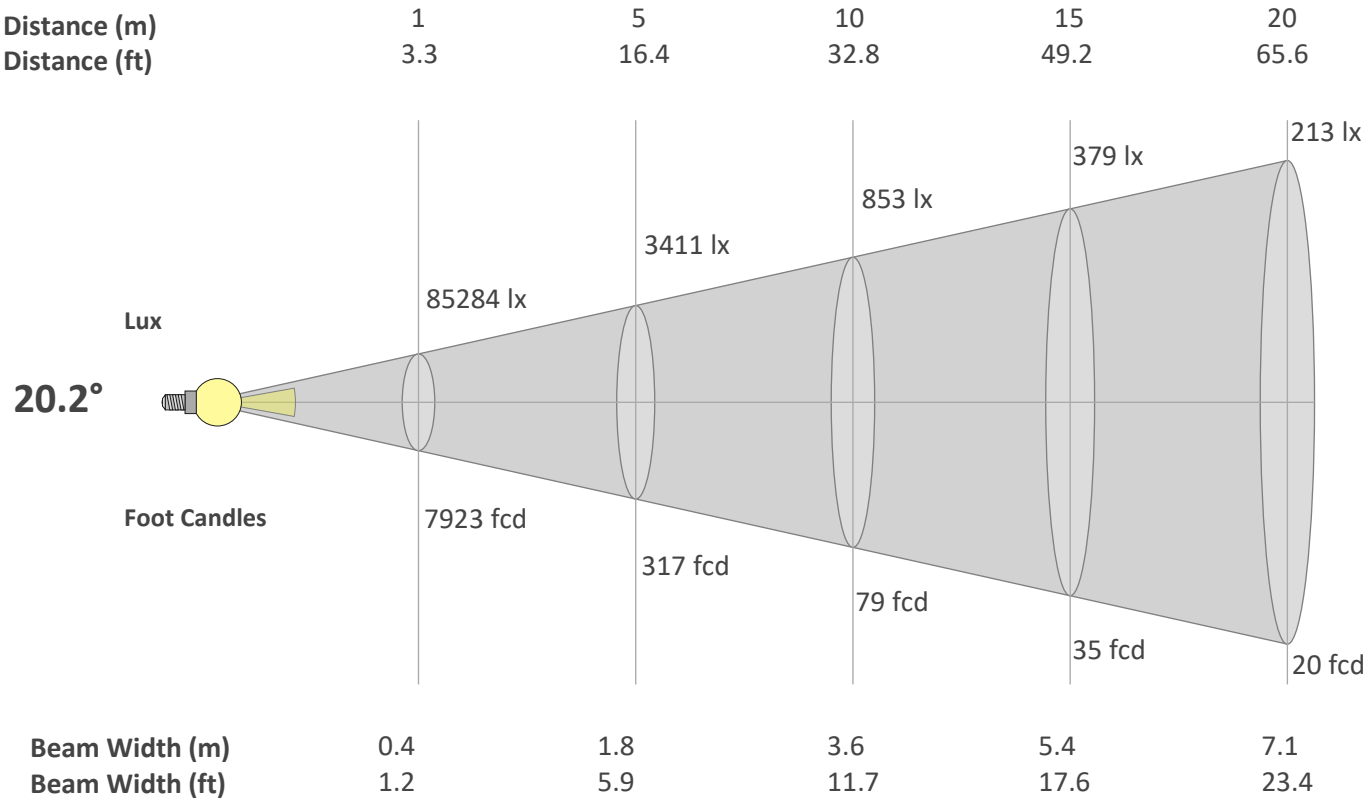
*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Artiste Van Gogh (Fresnel Zoom 50)

Prepared For ELATION PROFESSIONAL

Beam Details

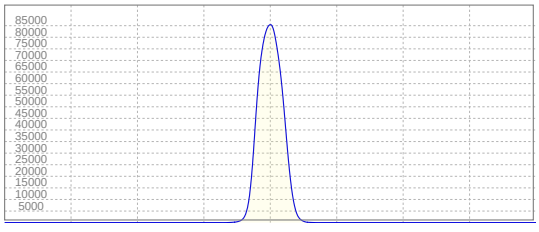
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
20.2°	**30.9°**	**37.4°**



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	85284	21321	9476	5330	3411	2369	1740	1333	1053	853	705	592	505	435	379	333	295	263	236	213
FC	7923.1	1980.8	880.3	495.2	316.9	220.1	161.7	123.8	97.8	79.2	65.5	55	46.9	40.4	35.2	30.9	27.4	24.5	21.9	19.8

Linear Distribution



Peak Candela

85351 cd

Calculate Center Beam Intensities

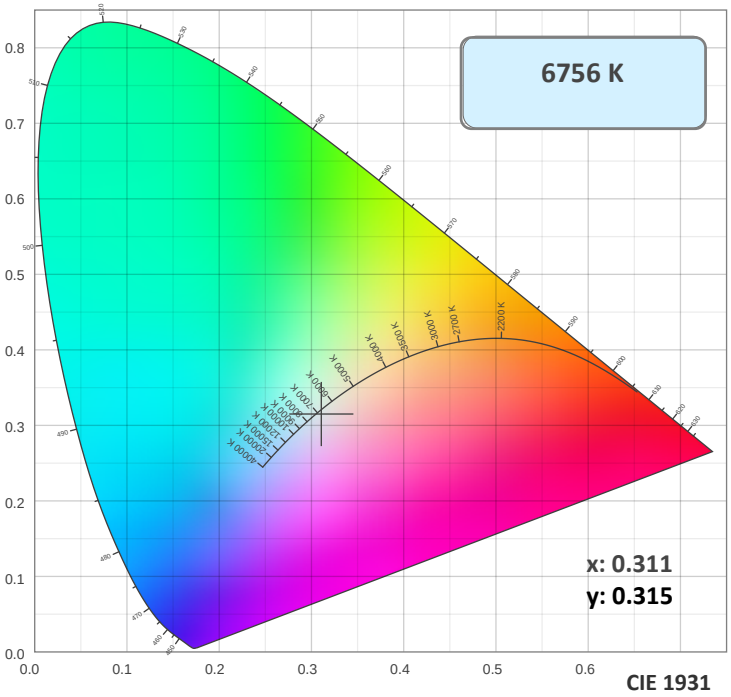
lux = 85351 / distance(m)^2

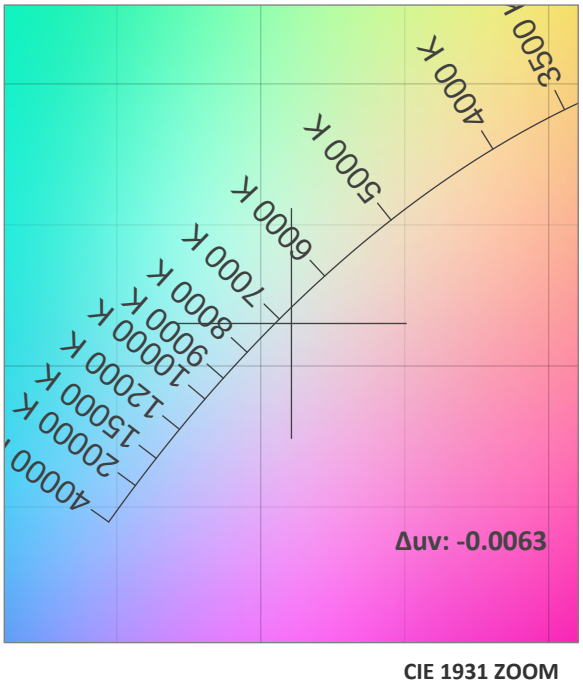
fc = 85351 / distance(ft)^2

Artiste Van Gogh (Fresnel Zoom 50)

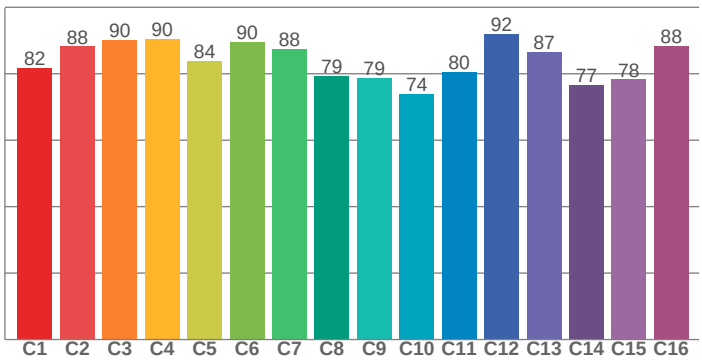
Prepared For ELATION PROFESSIONAL

Color Details

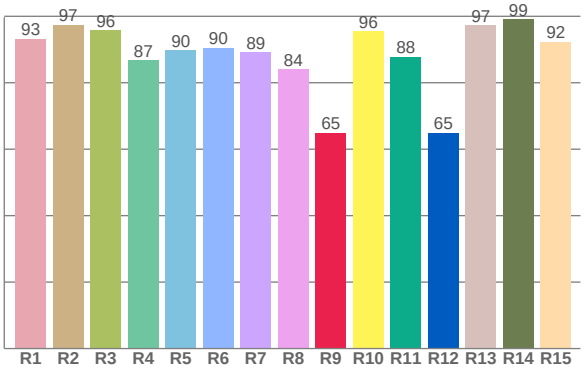




TM30: 84.2



CRI: 90.8 (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
93.2	97.4	95.7	86.7	89.8	90.5	89.1	84.2	64.9	95.6	87.8	64.9	97.2	99.1	92.3

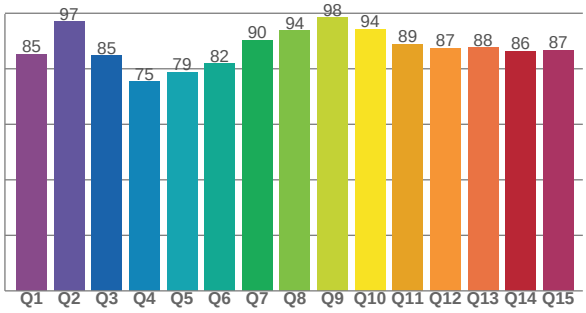
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.7	88.2	90.1	90.4	83.8	89.6	87.5	79.3	78.7	73.9	80.5	92.0	86.5	76.6	78.3	88.5

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85.3	96.9	84.7	75.4	78.8	81.9	90.2	93.8	98.4	94.3	88.8	87.4	87.6	86.4	86.8

CQS: 86.3



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
6756 K	90.8	64.9	84.2	95.4	86.3	0.311	0.315	0.202	0.307	-0.0063

Artiste Van Gogh (Fresnel Zoom 50)

Prepared For ELATION PROFESSIONAL

TM30 Details

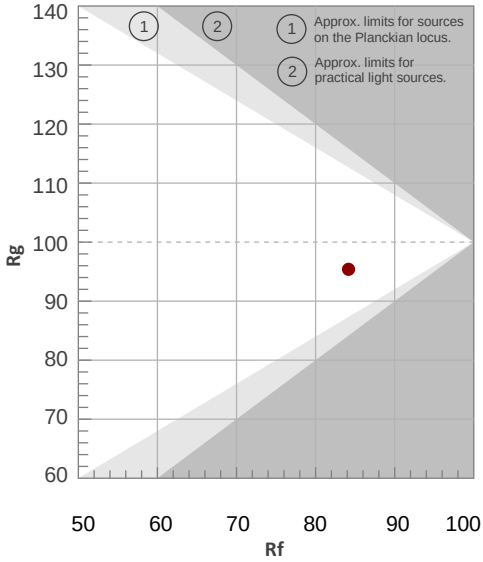
Rf 84.2

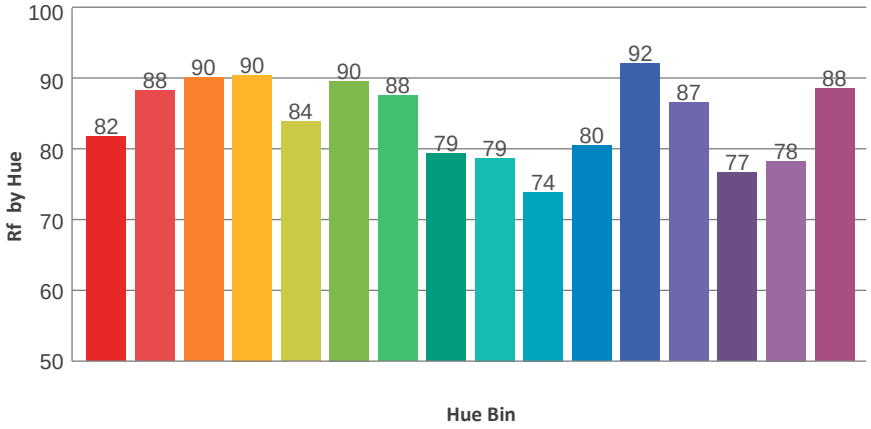
Fidelity Index Rf

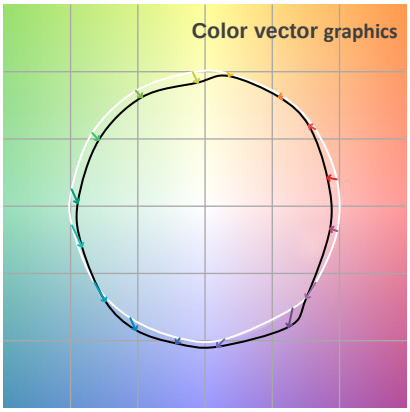
Rg 95.4

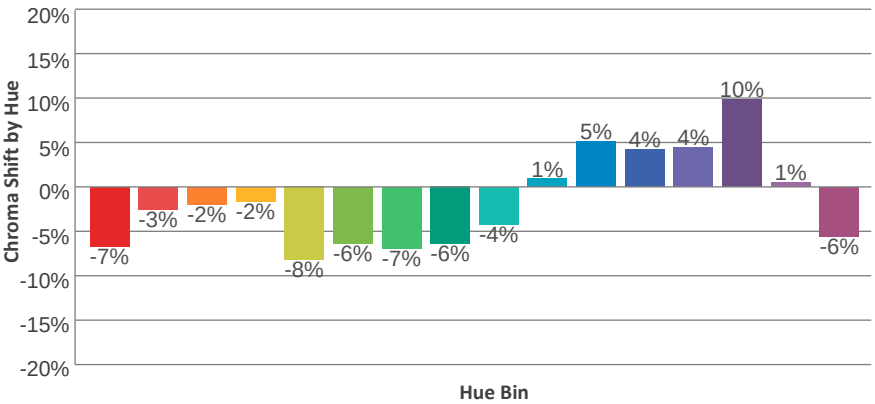
Gamut Index Rg

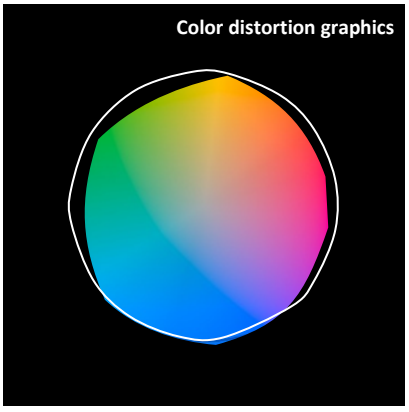
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	82	-7%	3%
2	88	-3%	5%
3	90	-2%	2%
4	90	-2%	0%
5	84	-8%	-2%
6	90	-6%	-1%
7	88	-7%	2%
8	79	-6%	9%
9	79	-4%	17%
10	74	1%	16%
11	80	5%	8%
12	92	4%	-2%
13	87	4%	-6%
14	77	10%	-10%
15	78	1%	-13%
16	88	-6%	1%

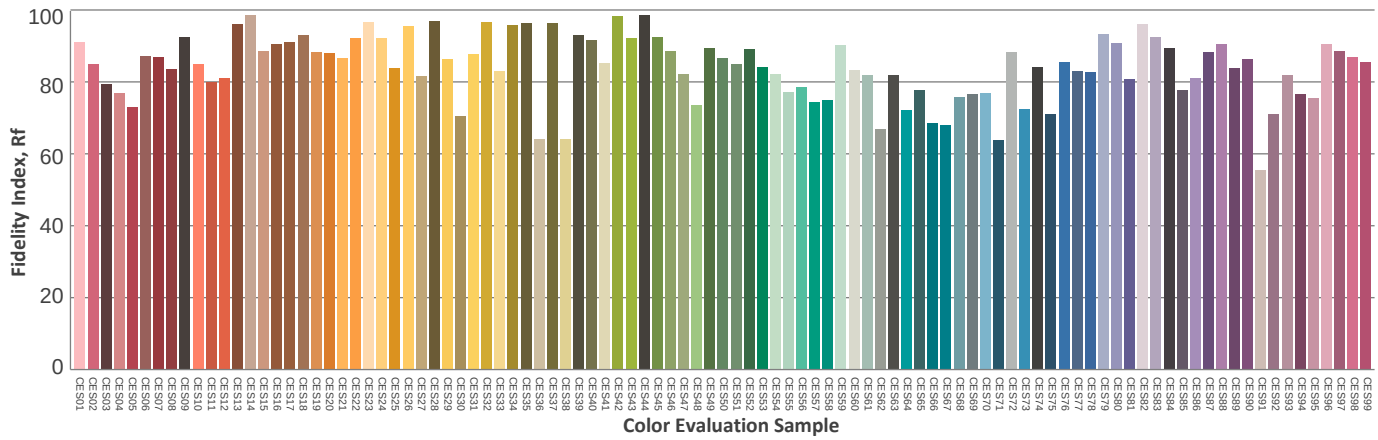










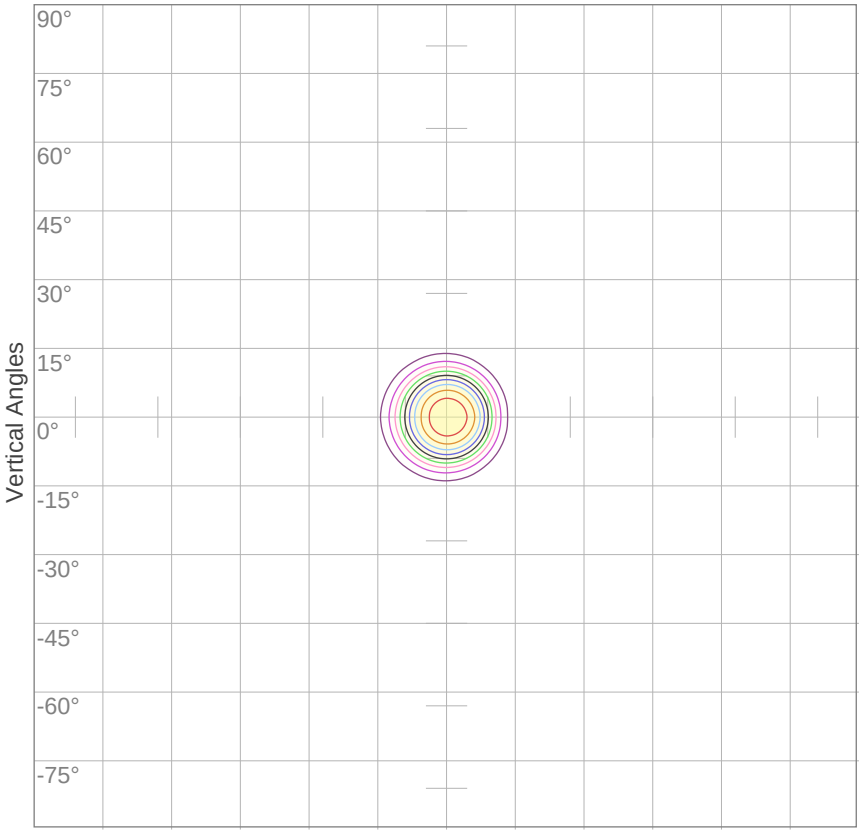


Artiste Van Gogh (Fresnel Zoom 50)

Prepared For ELATION PROFESSIONAL

ISO Diagrams

ISO Candela Diagram



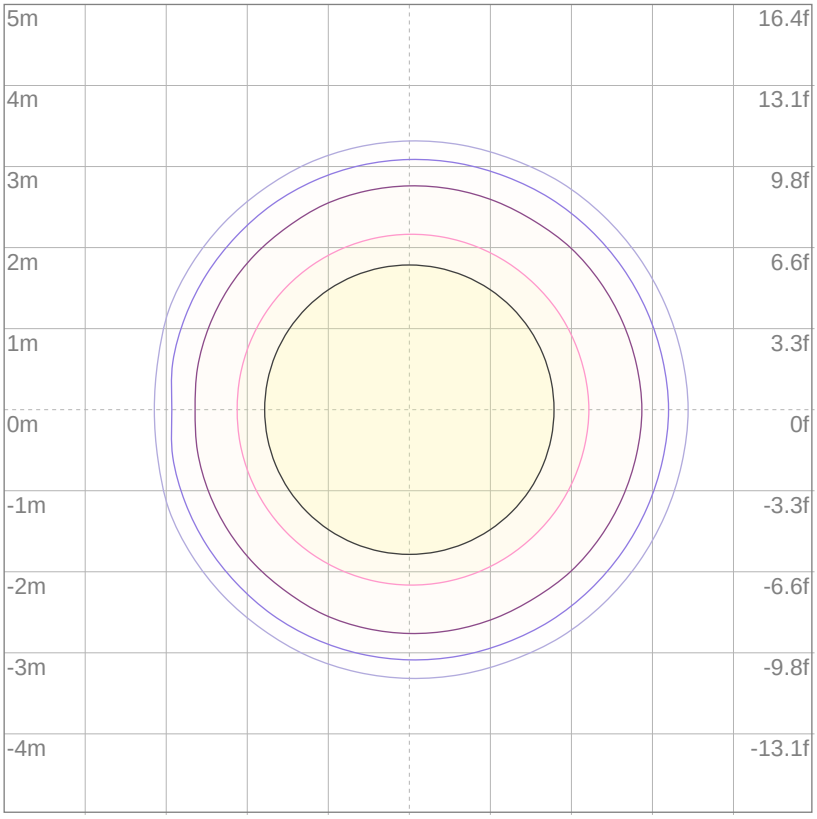
10%	8528 cd
20%	17057 cd
30%	25585 cd
40%	34113 cd
50%	42642 cd
60%	51170 cd
70%	59699 cd
80%	68227 cd
90%	76755 cd

Conditions:

Number of c-planes: 2

Candela at center: 85284 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	25.6 lx
5%	42.6 lx
10%	85.3 lx
30%	256 lx
50%	426 lx

Conditions:

Number of c-planes: 2

Lux at center: 853 lx

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

Artiste Van Gogh (Fresnel Zoom Out)

Prepared For ELATION PROFESSIONAL

Photometric Report

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
45.2°	68.2°	79.5°

Total Lumen Output*

Integrating Sphere N/A

VISO Lab Spion 9395 lm

Color Temperature: 6718 K

CRI: 90.6

TLCI: 84

TM30: 84.0

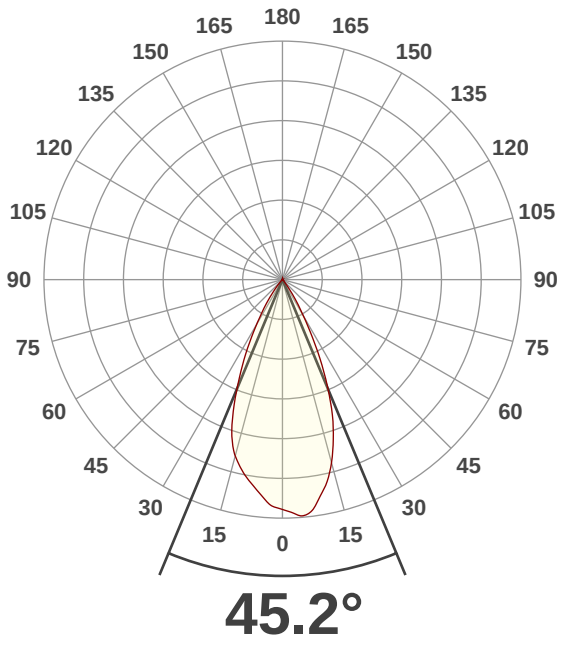
CQS: 86.1

Voltage: 116 V, Current: 4.85 A

Power: 562 W

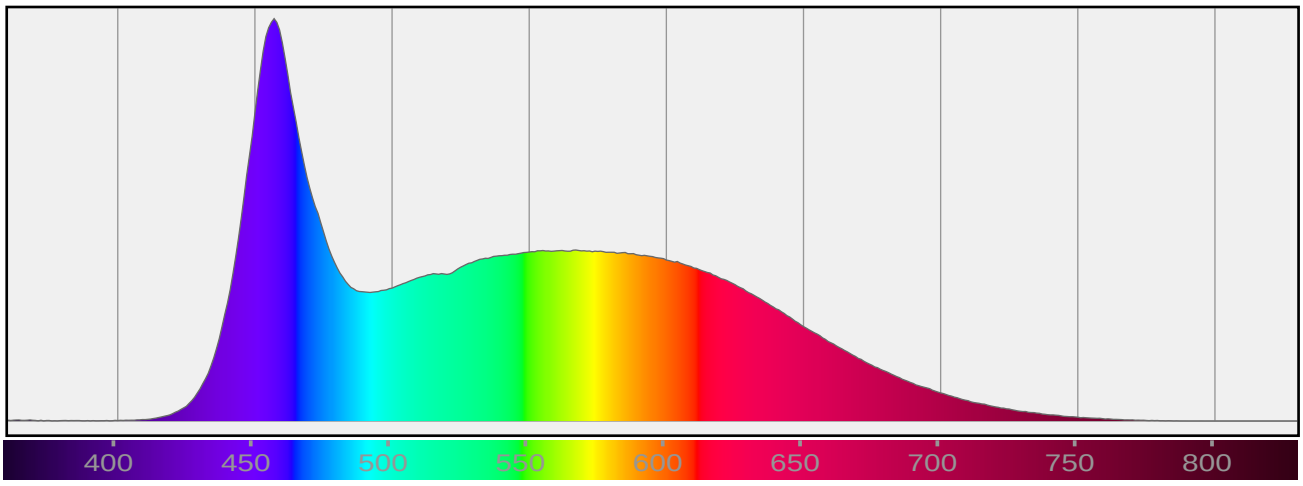
Efficacy: 17 Lumen/Watt

Measurement Date: 7/31/2019



Spectral Distribution

Dominant Wavelength 360 nm



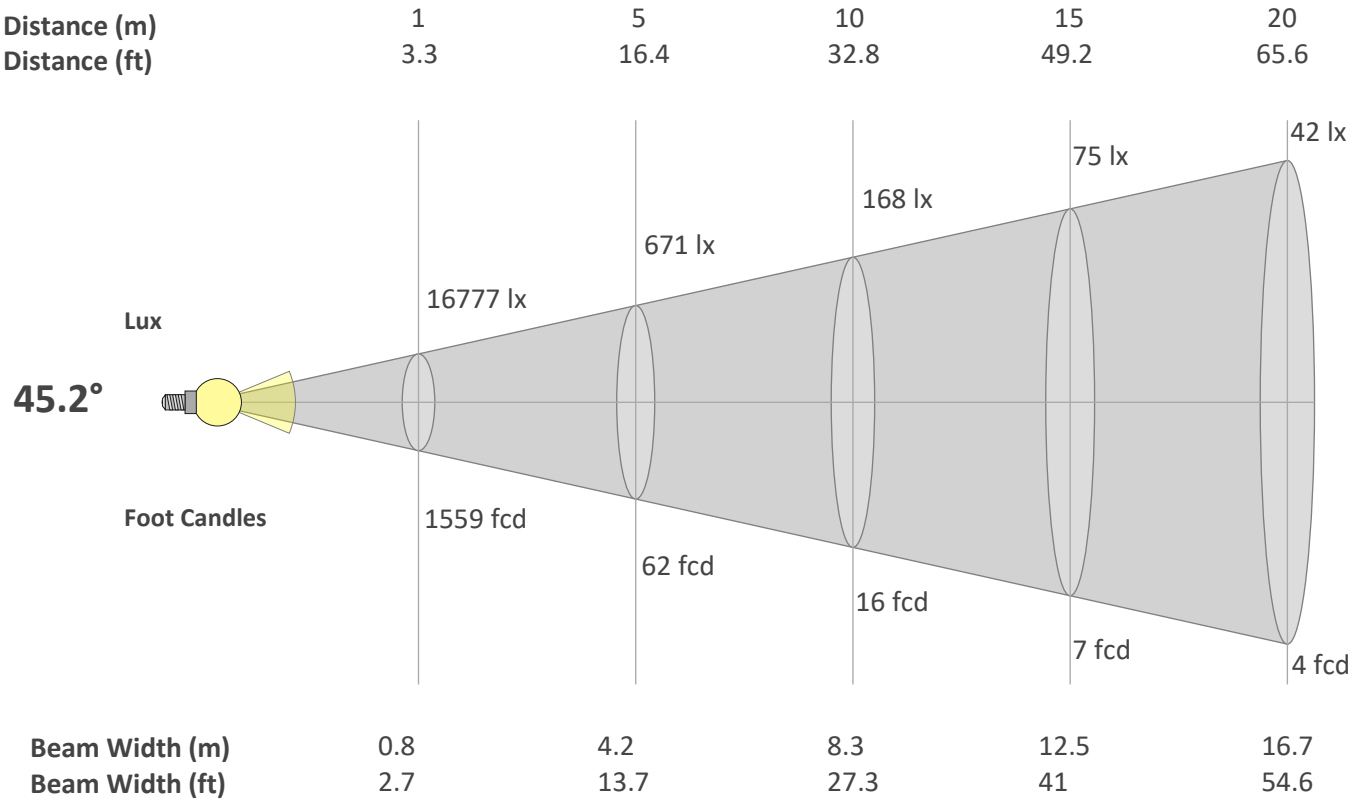
*Total Lumen measurements by calibrated Everfine 2π Integrating Sphere and Viso Systems Lab Spion

Artiste Van Gogh (Fresnel Zoom Out)

Prepared For ELATION PROFESSIONAL

Beam Details

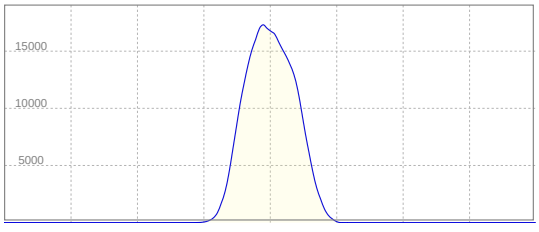
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
45.2°	**68.2°**	**79.5°**



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	16777	4194	1864	1049	671	466	342	262	207	168	139	117	99	86	75	66	58	52	46	42
FC	1558.6	389.7	173.2	97.4	62.3	43.3	31.8	24.4	19.2	15.6	12.9	10.8	9.2	8	6.9	6.1	5.4	4.8	4.3	3.9

Linear Distribution



Peak Candela

17301 cd

Calculate Center Beam Intensities

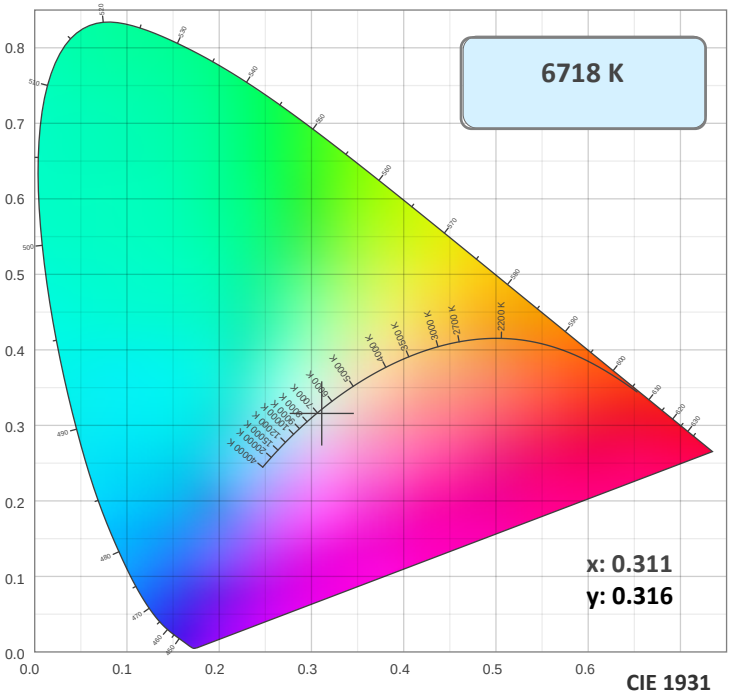
lux = 17301 / distance(m)^2

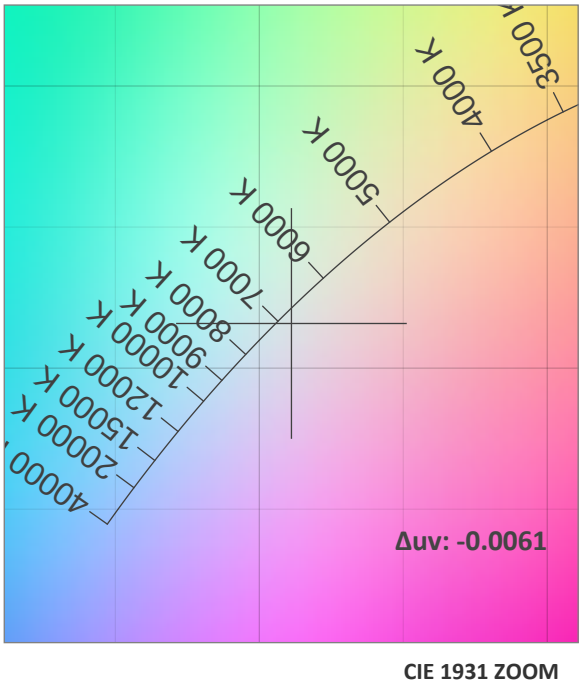
fc = 17301 / distance(ft)^2

Artiste Van Gogh (Fresnel Zoom Out)

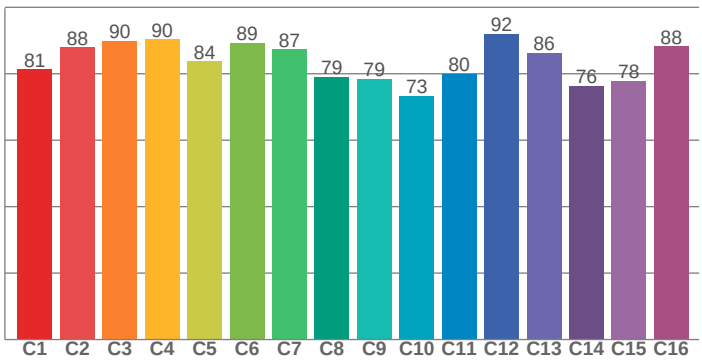
Prepared For ELATION PROFESSIONAL

Color Details

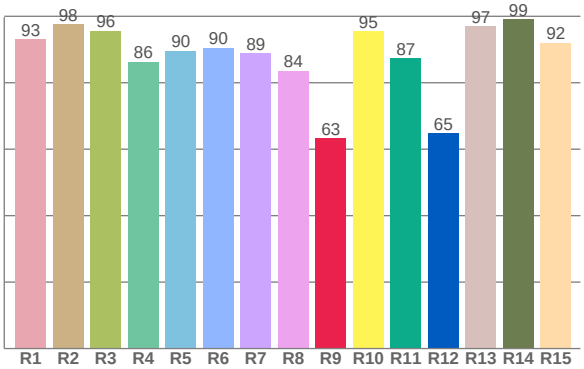




TM30: 84.0



CRI: 90.6 (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
93.0	97.5	95.6	86.3	89.6	90.5	88.9	83.6	63.3	95.5	87.3	64.8	97.1	99.1	92.0

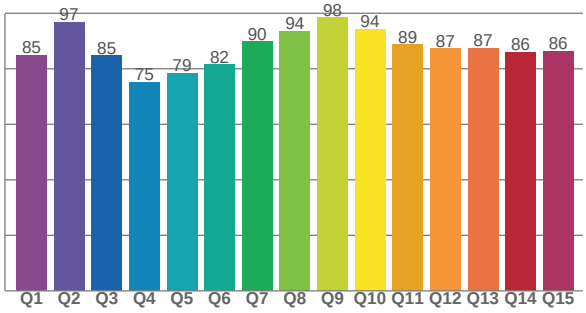
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.4	88.0	90.0	90.4	83.7	89.4	87.3	79.1	78.5	73.3	80.0	91.9	86.3	76.4	77.9	88.2

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85.0	96.8	84.7	75.2	78.5	81.5	89.8	93.6	98.4	94.3	88.7	87.3	87.4	85.9	86.4

CQS: 86.1



Color Parameters

Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
6718 K	90.6	63.3	84.0	95.2	86.1	0.311	0.316	0.202	0.307	-0.0061

Artiste Van Gogh (Fresnel Zoom Out)

Prepared For ELATION PROFESSIONAL

TM30 Details

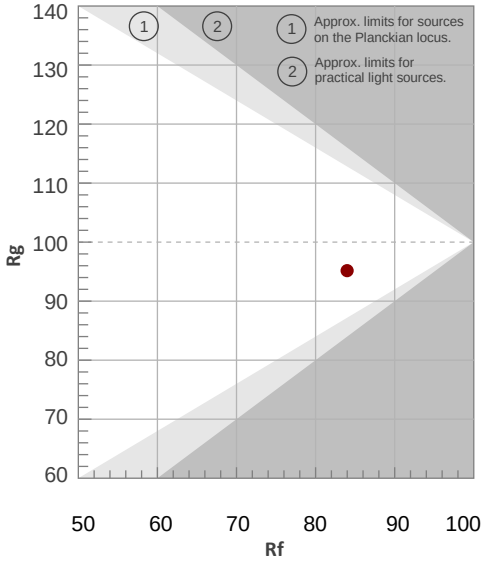
Rf 84.0

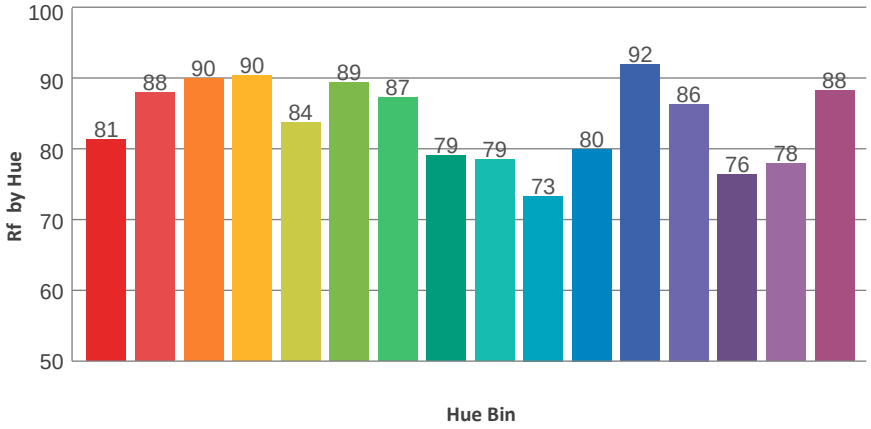
Fidelity Index Rf

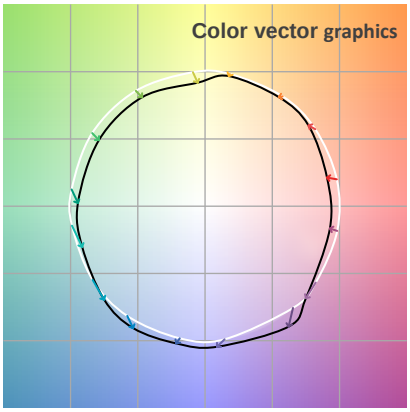
Rg 95.2

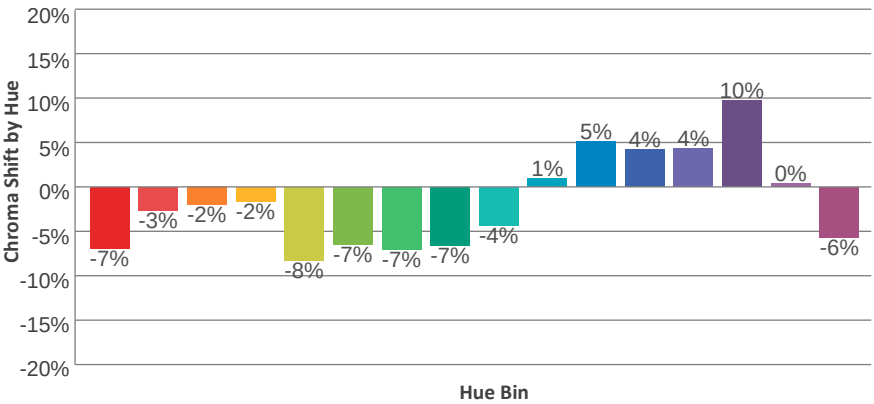
Gamut Index Rg

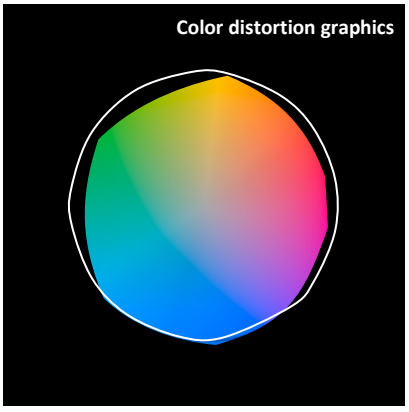
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	81	-7%	3%
2	88	-3%	5%
3	90	-2%	2%
4	90	-2%	0%
5	84	-8%	-2%
6	89	-7%	-1%
7	87	-7%	2%
8	79	-7%	9%
9	79	-4%	17%
10	73	1%	17%
11	80	5%	9%
12	92	4%	-2%
13	86	4%	-7%
14	76	10%	-10%
15	78	0%	-14%
16	88	-6%	1%

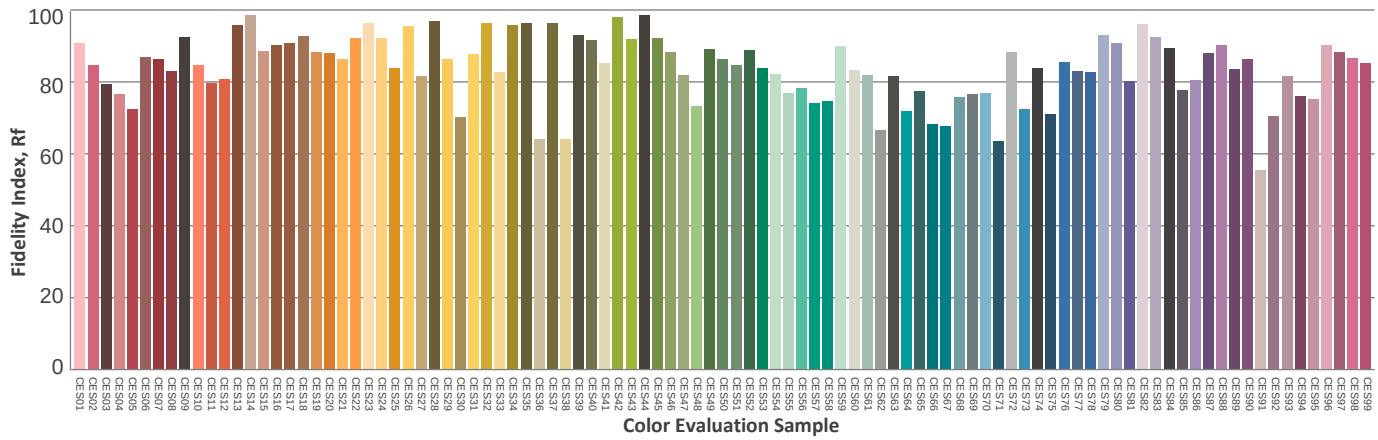










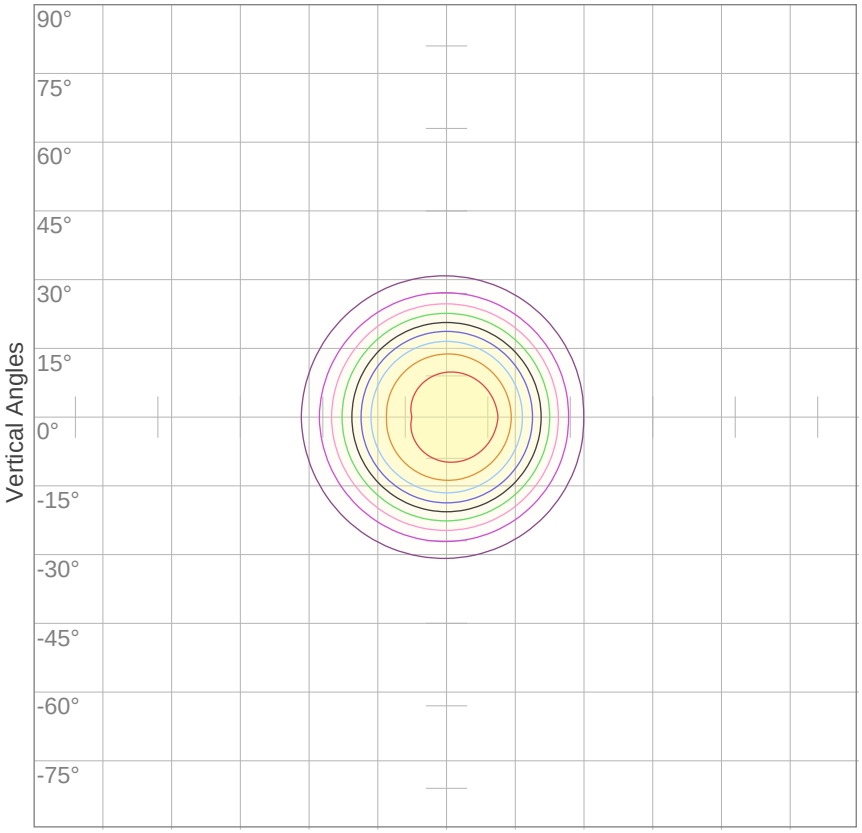


Artiste Van Gogh (Fresnel Zoom Out)

Prepared For ELATION PROFESSIONAL

ISO Diagrams

ISO Candela Diagram



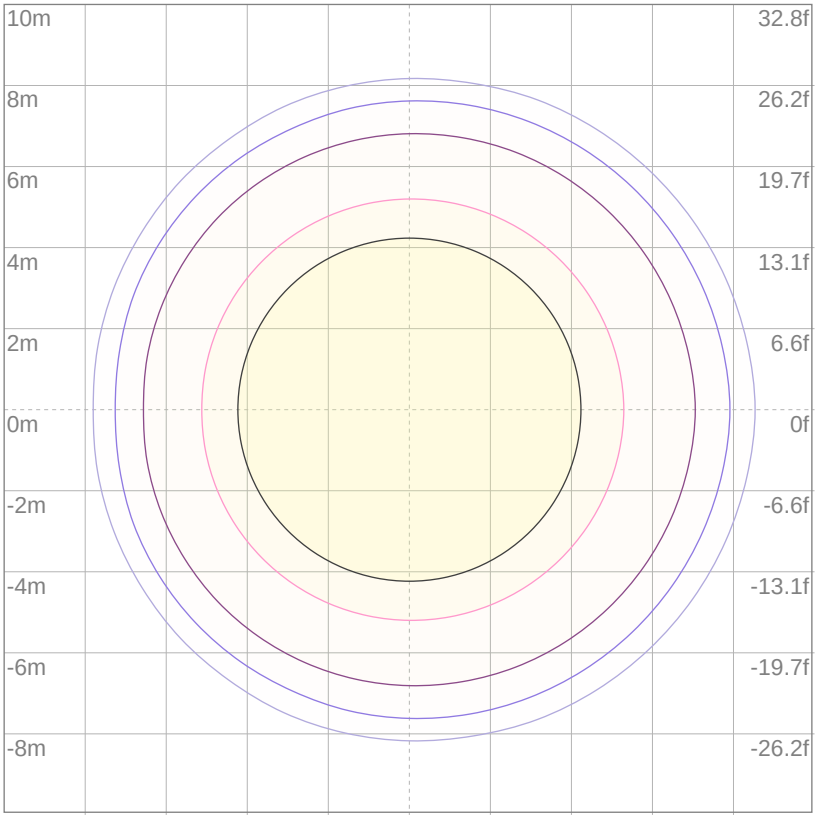
10%	1678 cd
20%	3355 cd
30%	5033 cd
40%	6711 cd
50%	8389 cd
60%	10066 cd
70%	11744 cd
80%	13422 cd
90%	15099 cd

Conditions:

Number of c-planes: 2

Candela at center: 16777 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	5.03 lx
5%	8.39 lx
10%	16.8 lx
30%	50.3 lx
50%	83.9 lx

Conditions:

Number of c-planes: 2

Lux at center: 168 lx

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

Artiste Van Gogh (Fresnel CTO)

Prepared For ELATION PROFESSIONAL

Photometric Report

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
20.5°	31°	37.7°

Total Lumen Output*

Integrating Sphere N/A

VISO Lab Spion 3603 lm

Color Temperature: 2555 K

CRI: 85.4

TLCI: 76

TM30: 83.1

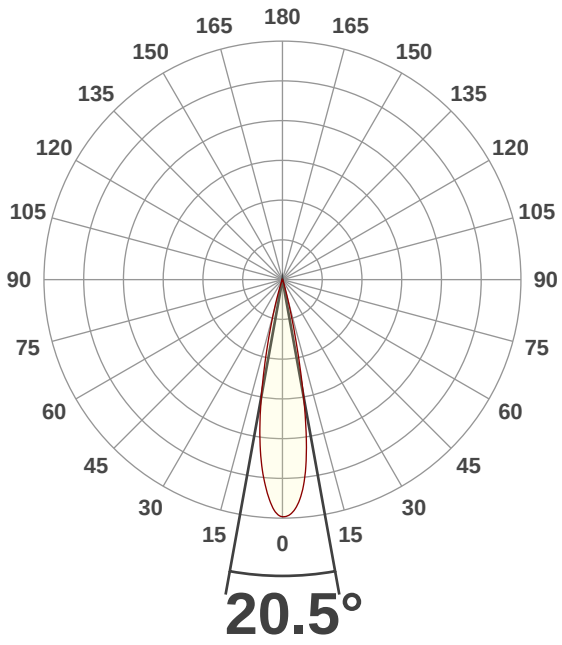
CQS: 81.4

Voltage: 116 V, Current: 4.85 A

Power: 562 W

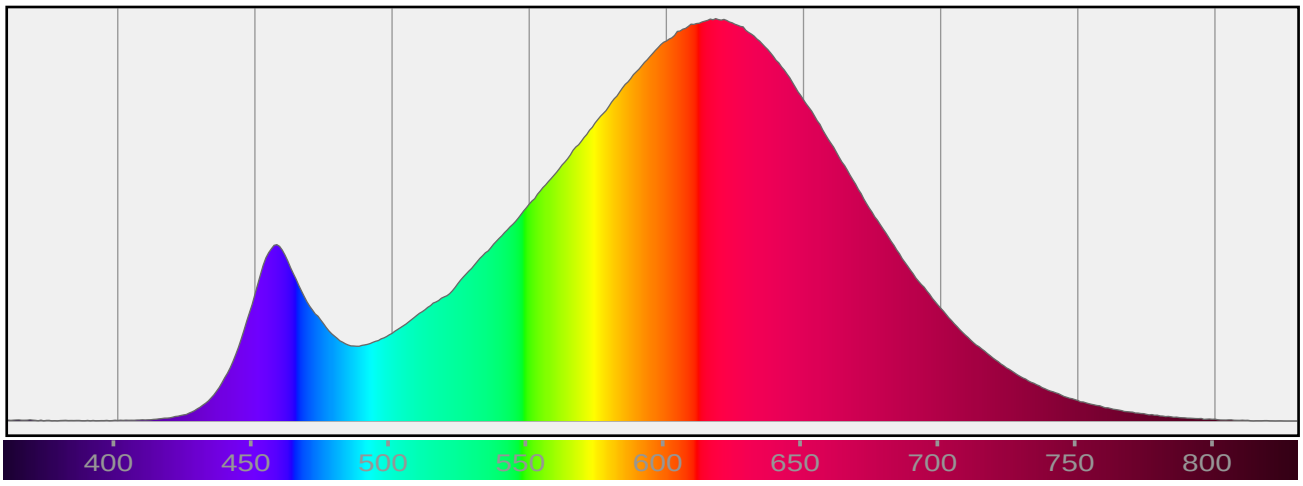
Efficacy: 6 Lumen/Watt

Measurement Date: 7/31/2019



Spectral Distribution

Dominant Wavelength 587 nm



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

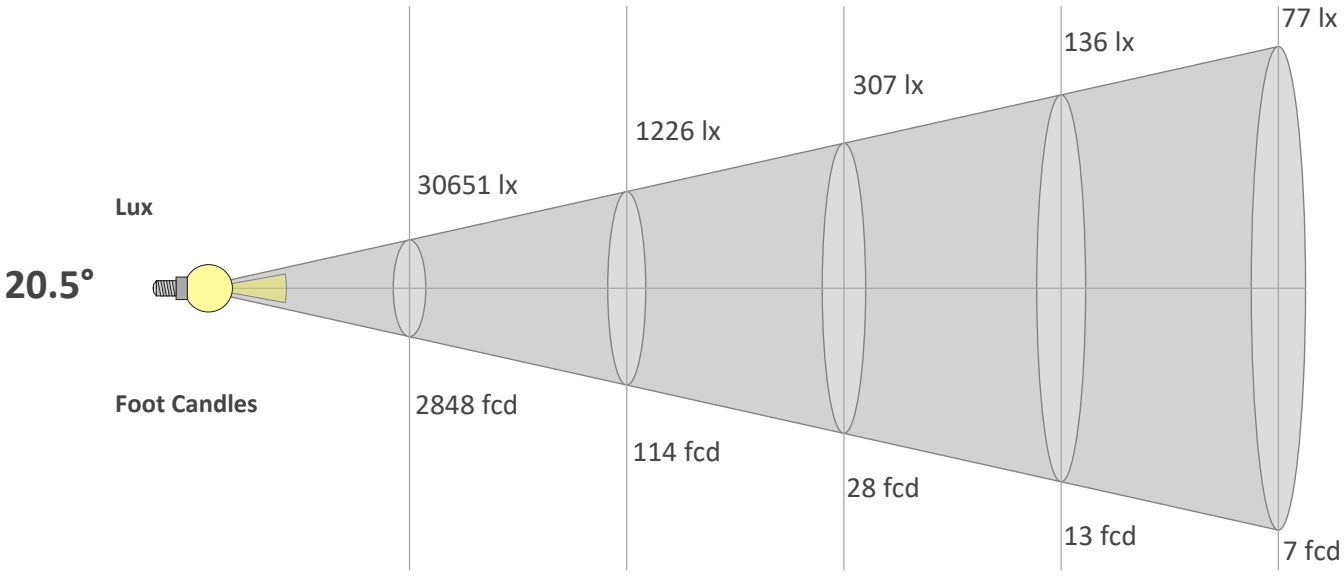
Artiste Van Gogh (Fresnel CTO)

Prepared For ELATION PROFESSIONAL

Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
20.5°	**31°**	**37.7°**

Distance (m)	1	5	10	15	20
Distance (ft)	3.3	16.4	32.8	49.2	65.6

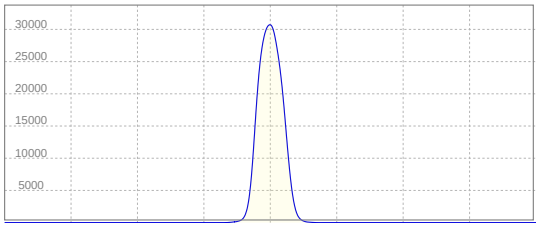


Beam Width (m)	0.4	1.8	3.6	5.4	7.2
Beam Width (ft)	1.2	5.9	11.8	17.8	23.7

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	30651	7663	3406	1916	1226	851	626	479	378	307	253	213	181	156	136	120	106	95	85	77
FC	2847.6	711.9	316.4	178	113.9	79.1	58.1	44.5	35.2	28.5	23.5	19.8	16.8	14.5	12.7	11.1	9.9	8.8	7.9	7.1

Linear Distribution



Peak Candela

30703 cd

Calculate Center Beam Intensities

lux = 30703 / distance(m)^2

fc = 30703 / distance(ft)^2

Artiste Van Gogh (Fresnel CTO)

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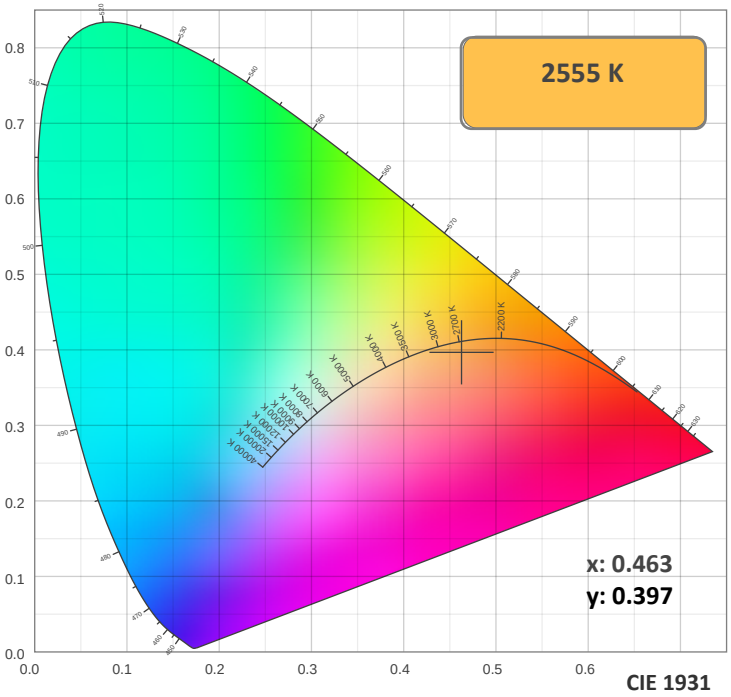
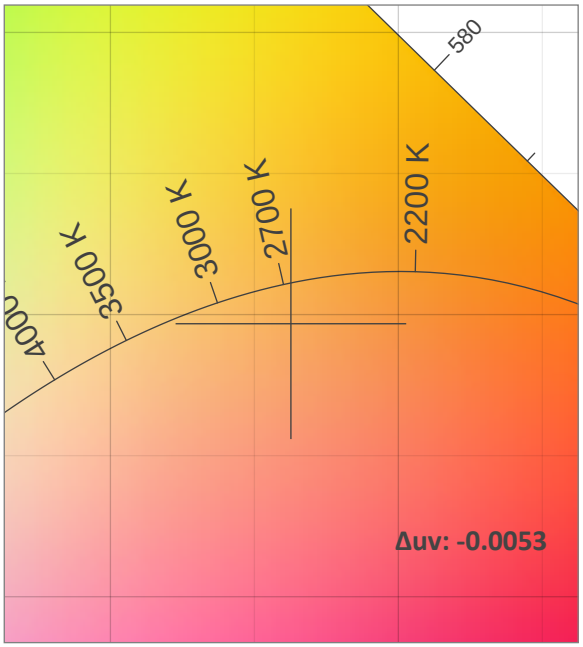
Color Details

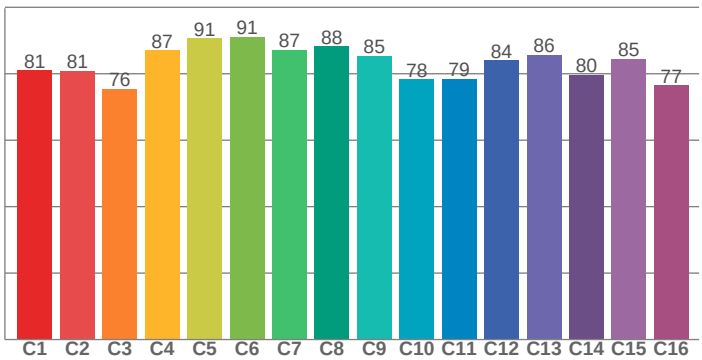


CIE 1931

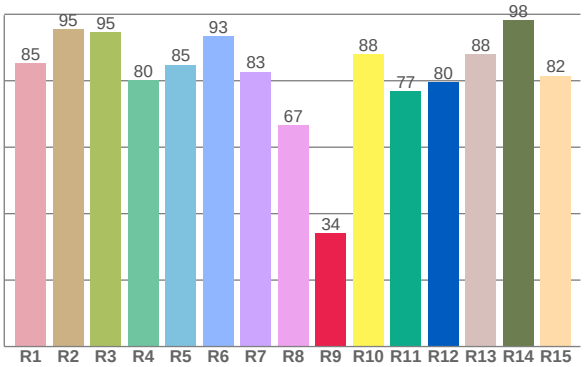


CIE 1931 ZOOM

TM30: 83.1



CRI: 85.4 (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
85.3	95.5	94.6	80.1	84.8	93.4	82.7	66.6	34.1	88.0	76.9	79.5	88.0	98.3	81.6

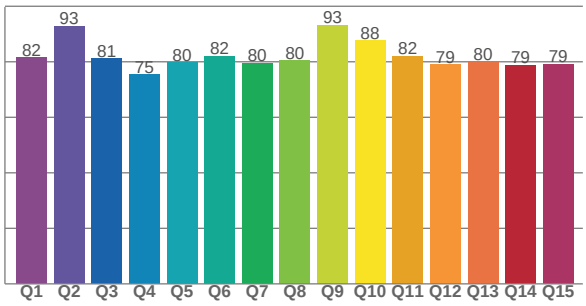
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.0	80.9	75.5	87.0	90.7	91.2	87.1	88.3	85.3	78.3	78.5	84.1	85.6	79.6	84.6	76.5

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.6	92.9	81.2	75.4	79.7	82.1	79.6	80.3	93.2	87.6	82.0	79.1	79.8	78.8	79.1

CQS: 81.4



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 Deviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2555 K	85.4	34.1	83.1	98.3	81.4	0.463	0.397	0.271	0.348	-0.0053

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TM30 Details

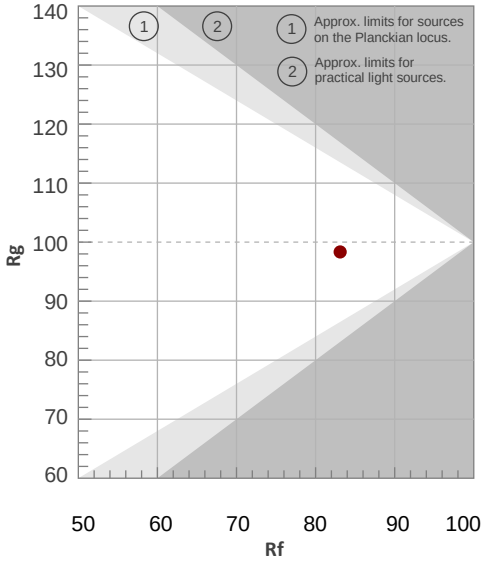
Rf 83.1

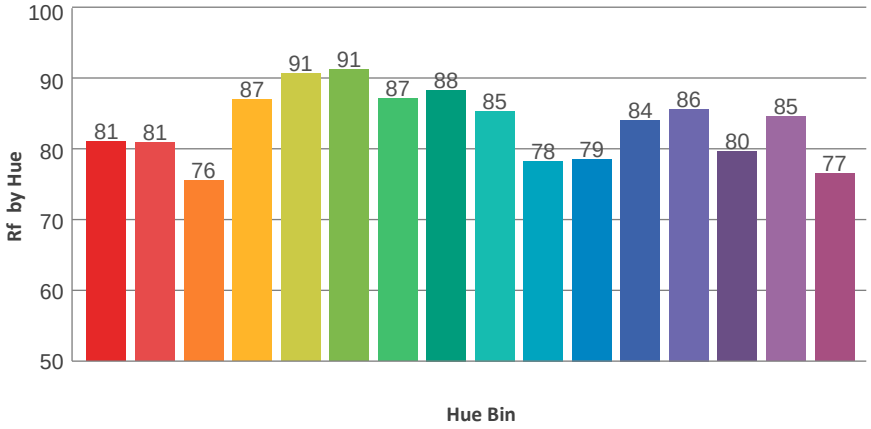
Fidelity Index Rf

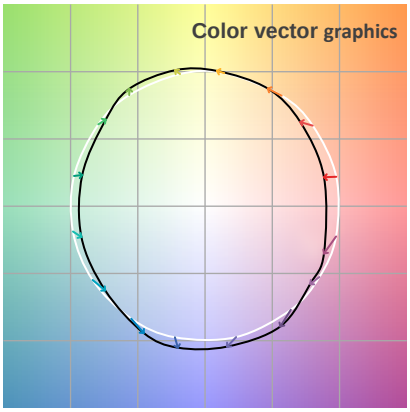
Rg 98.3

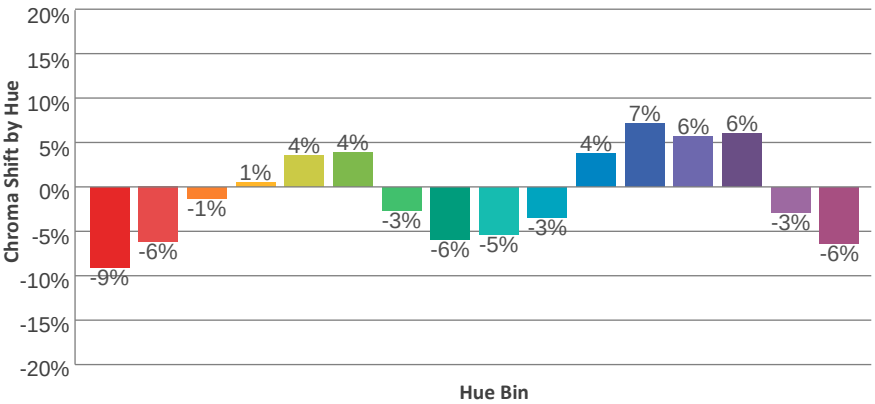
Gamut Index Rg

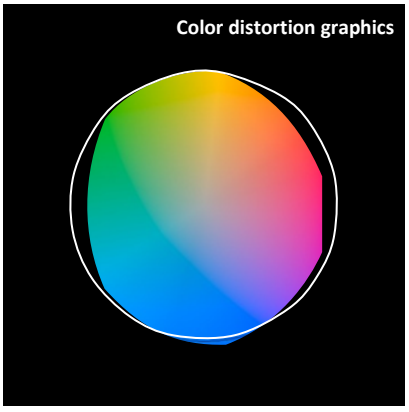
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	81	-9%	1%
2	81	-6%	7%
3	76	-1%	12%
4	87	1%	6%
5	91	4%	3%
6	91	4%	-3%
7	87	-3%	-6%
8	88	-6%	-2%
9	85	-5%	5%
10	78	-3%	12%
11	79	4%	14%
12	84	7%	4%
13	86	6%	-8%
14	80	6%	-13%
15	85	-3%	-8%
16	77	-6%	-14%

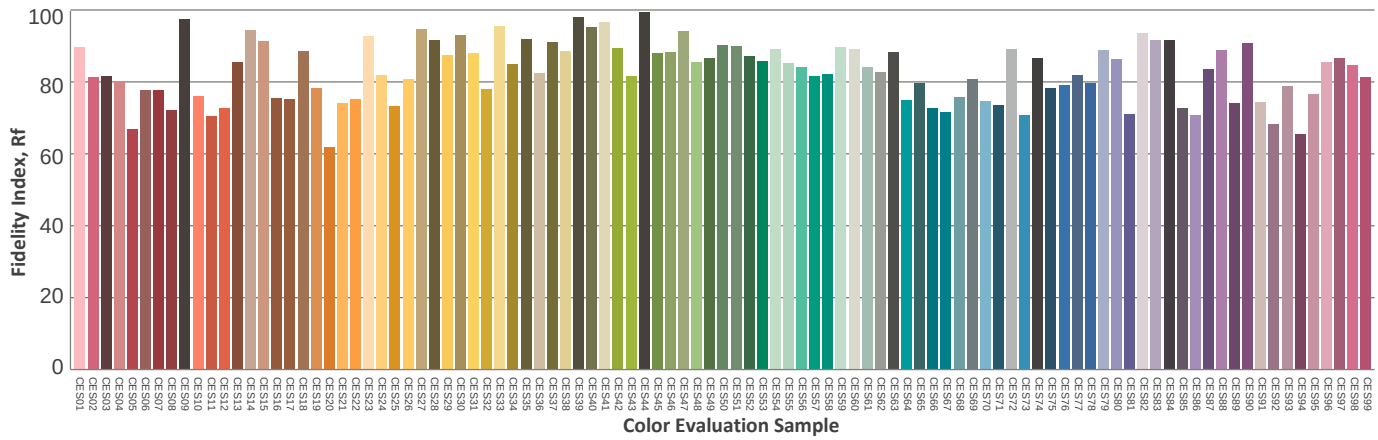












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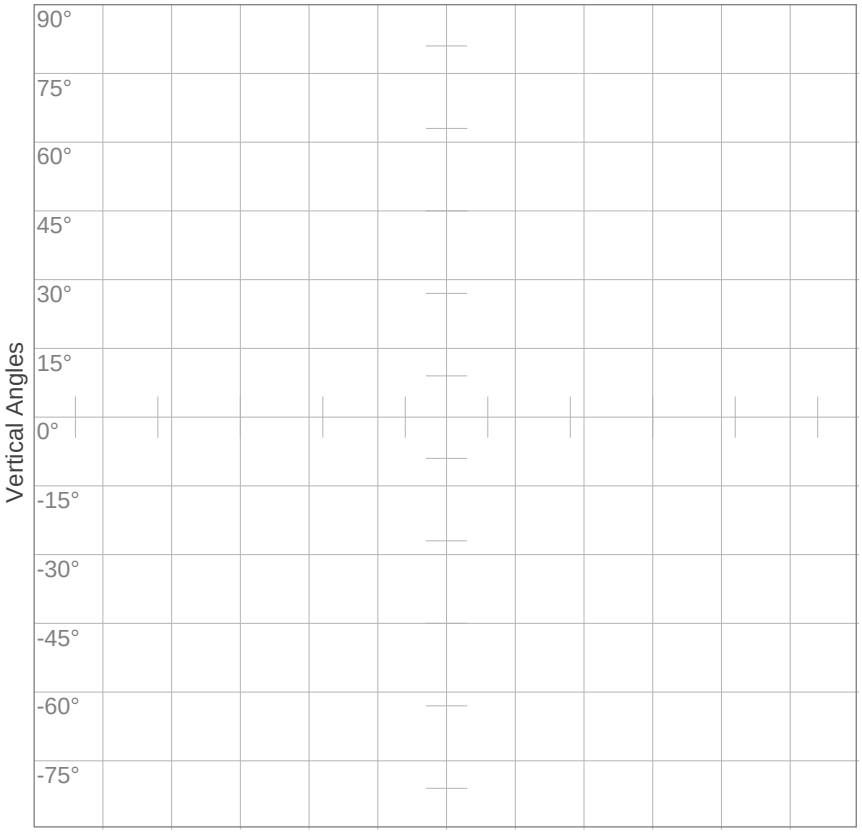
ISO Diagrams

ISO Candela Diagram



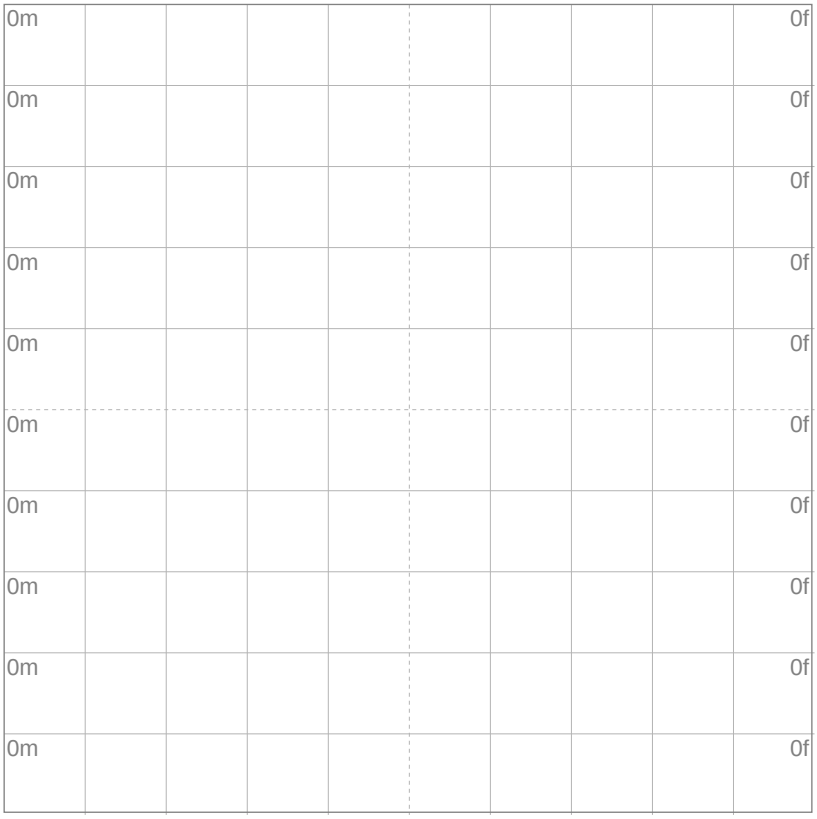
10%	3065 cd
20%	6130 cd
30%	9195 cd
40%	12261 cd
50%	15326 cd
60%	18391 cd
70%	21456 cd
80%	24521 cd
90%	27586 cd

Conditions:

Number of c-planes: 2

Candela at center: 30651 cd

ISO Lux Diagram



3%	9.20 lx
5%	15.3 lx
10%	30.7 lx
30%	92.0 lx
50%	153 lx

Conditions:

Number of c-planes: 2

Lux at center: 307 lx

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