ARTISTE DAVINCI™

Photometric Test Report

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

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	**7055 lm**
VISO Lab Spion	**6579 lm**

Color Temperature: 6973 K

CRI: 71.3

TLCI: 46

TM30: 67.6

CQS: 68.1

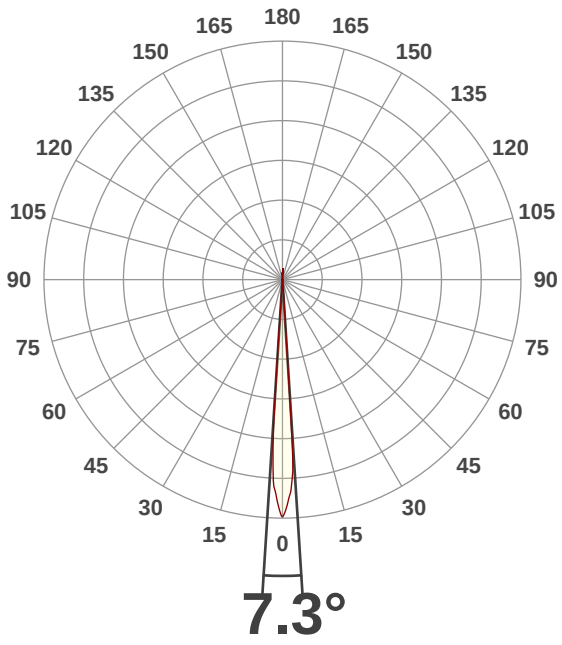
Voltage: 116 V, Current: 3.22 A

Power: 374 W

Efficacy: 18 Lumen/Watt

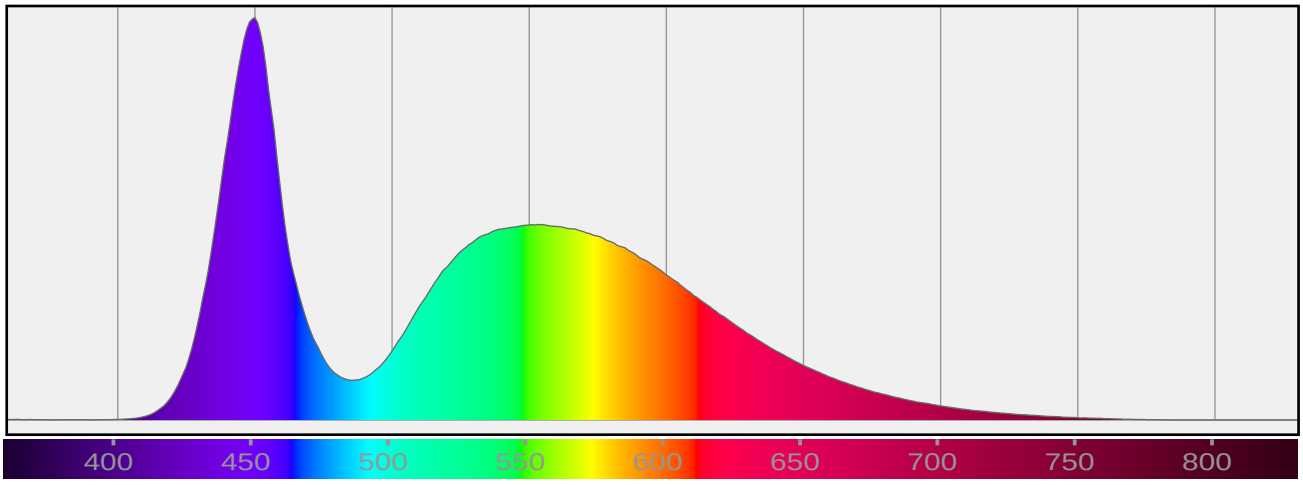
Measurement Date: 7/30/2019

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
7.3°	8.4°	9°



Spectral Distribution

Dominant Wavelength 462 nm



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

Artiste DaVinci (Zoom In)

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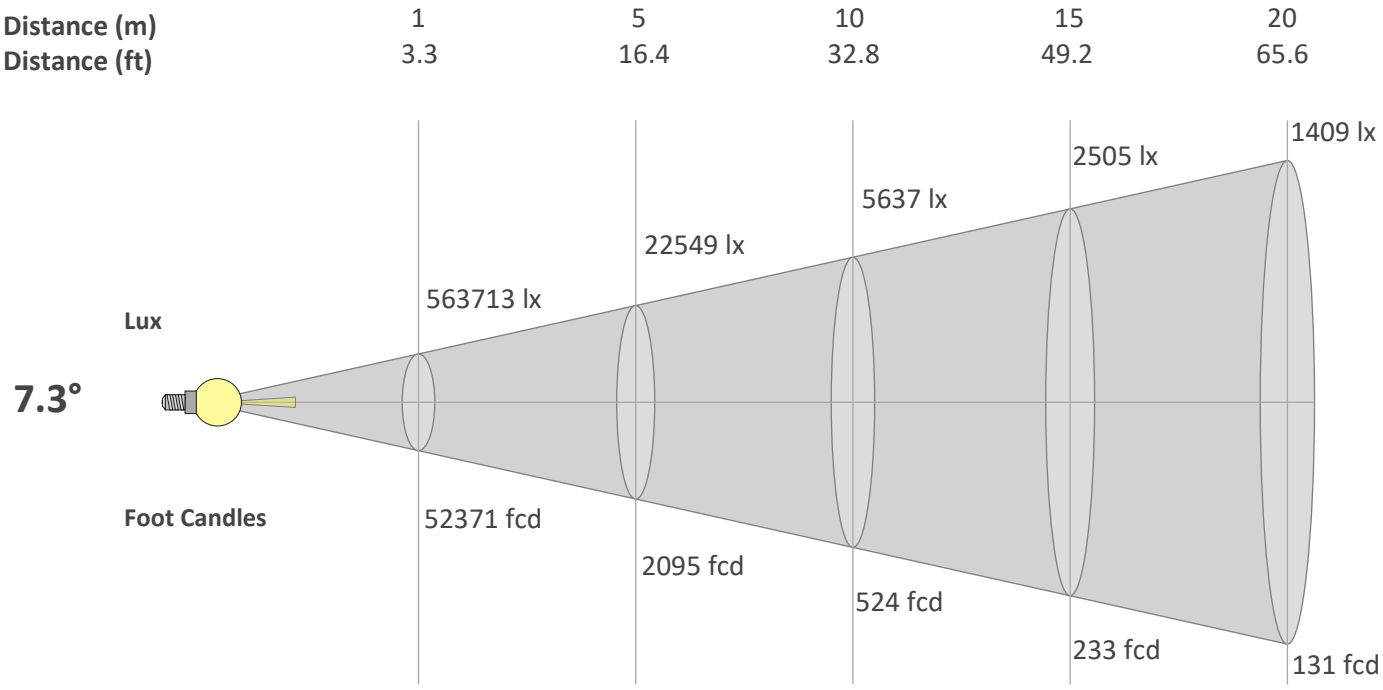
Beam Details

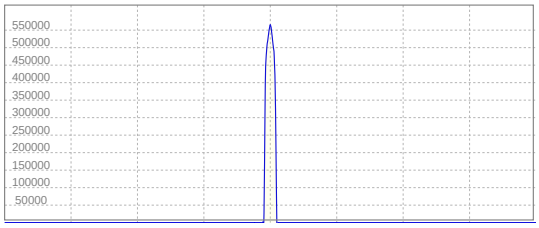
Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
7.3°	**8.4°**	**9°**



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	563713	140928	62635	35232	22549	15659	11504	8808	6959	5637	4659	3915	3336	2876	2505	2202	1951	1740	1562	1409
FC	52370.7	13092.7	5819	3273.2	2094.8	1454.7	1068.8	818.3	646.6	523.7	432.8	363.7	309.9	267.2	232.8	204.6	181.2	161.6	145.1	130.9

Linear Distribution



Peak Candela

565083 cd

Calculate Center Beam Intensities

lux = 565083 / distance(m)^2

fc = 565083 / distance(ft)^2

Artiste DaVinci (Zoom In)

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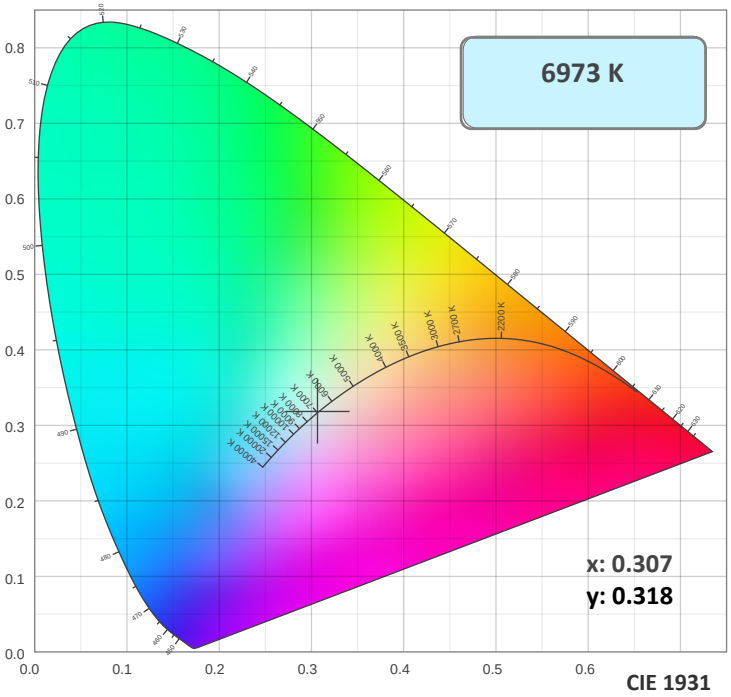
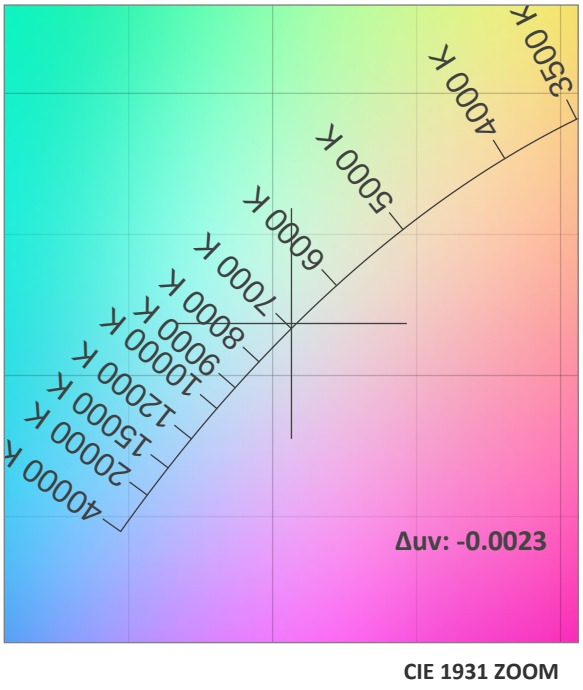
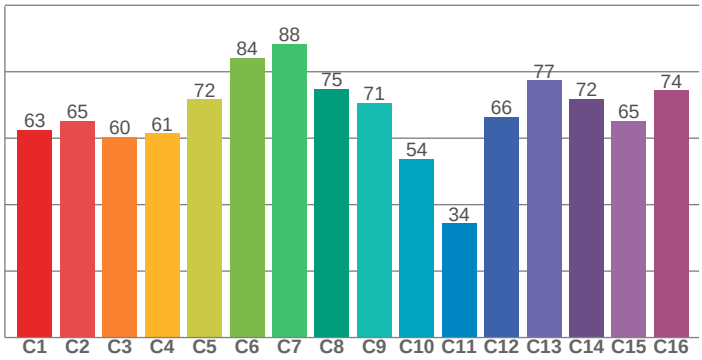
Color Details

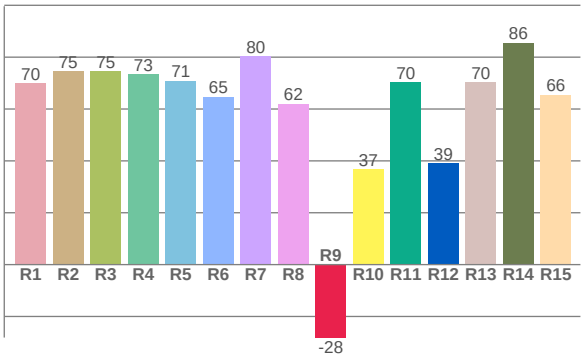




TM30: 67.6



CRI: 71.3 (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
70.0	74.5	74.7	73.3	70.9	64.7	80.5	62.1	-28.1	36.8	70.2	39.1	70.3	85.6	65.5

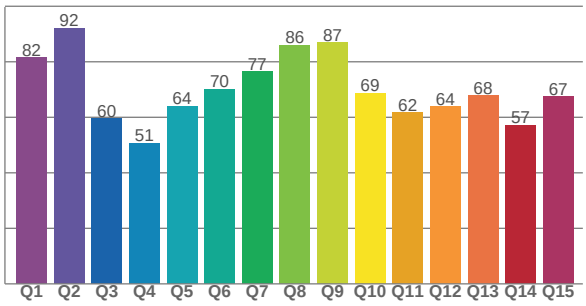
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
62.5	65.2	60.4	61.5	71.6	84.2	88.4	74.8	70.6	53.8	34.3	66.5	77.4	71.8	65.3	74.4

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.6	92.1	59.6	50.7	64.0	70.1	76.5	85.9	86.9	68.7	61.7	63.9	67.8	57.1	67.5

CQS: 68.1



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
6973 K	71.3	-28.1	67.6	93.2	68.1	0.307	0.318	0.198	0.308	-0.0023

Artiste DaVinci (Zoom In)

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TM30 Details

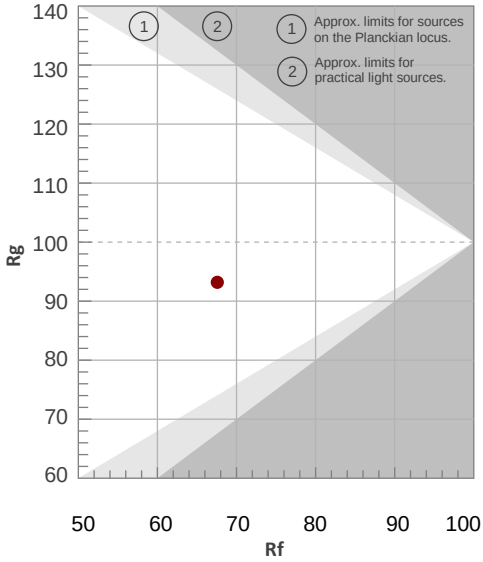
Rf 67.6

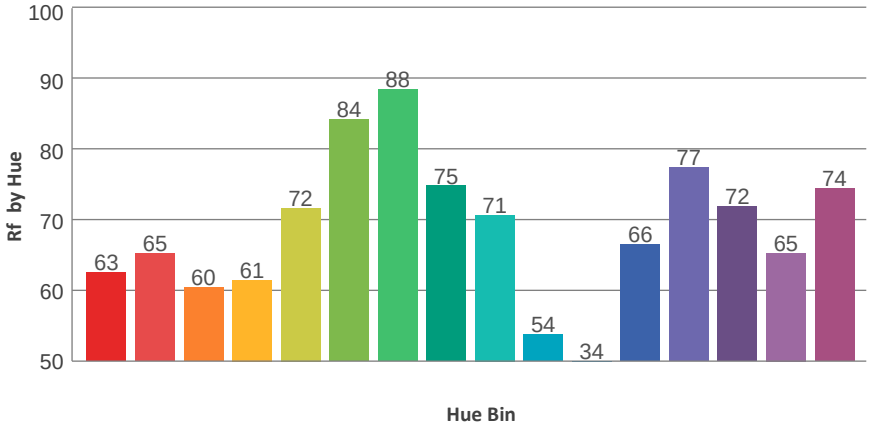
Fidelity Index Rf

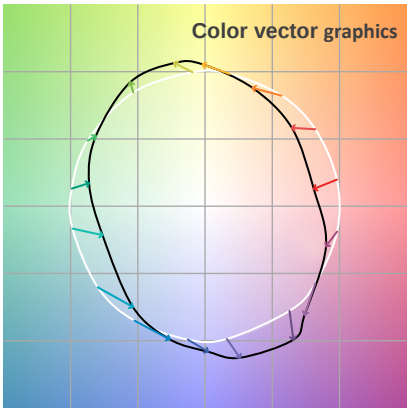
Rg 93.2

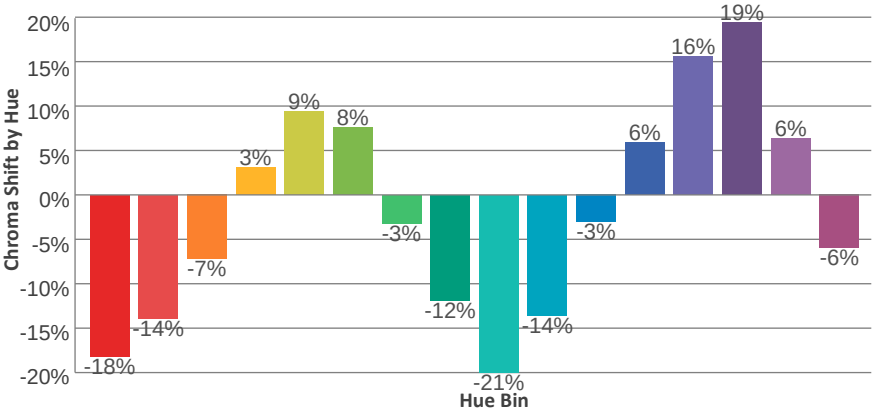
Gamut Index Rg

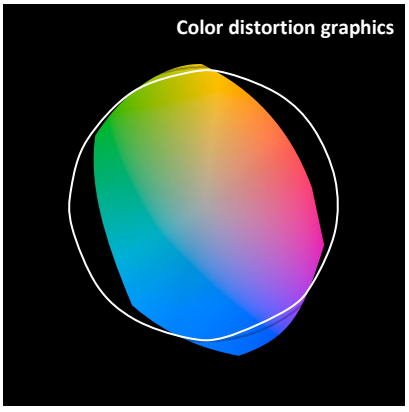
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	63	-18%	-3%
2	65	-14%	11%
3	60	-7%	21%
4	61	3%	21%
5	72	9%	12%
6	84	8%	-2%
7	88	-3%	-6%
8	75	-12%	-6%
9	71	-21%	9%
10	54	-14%	27%
11	34	-3%	29%
12	66	6%	16%
13	77	16%	7%
14	72	19%	-9%
15	65	6%	-24%
16	74	-6%	-12%

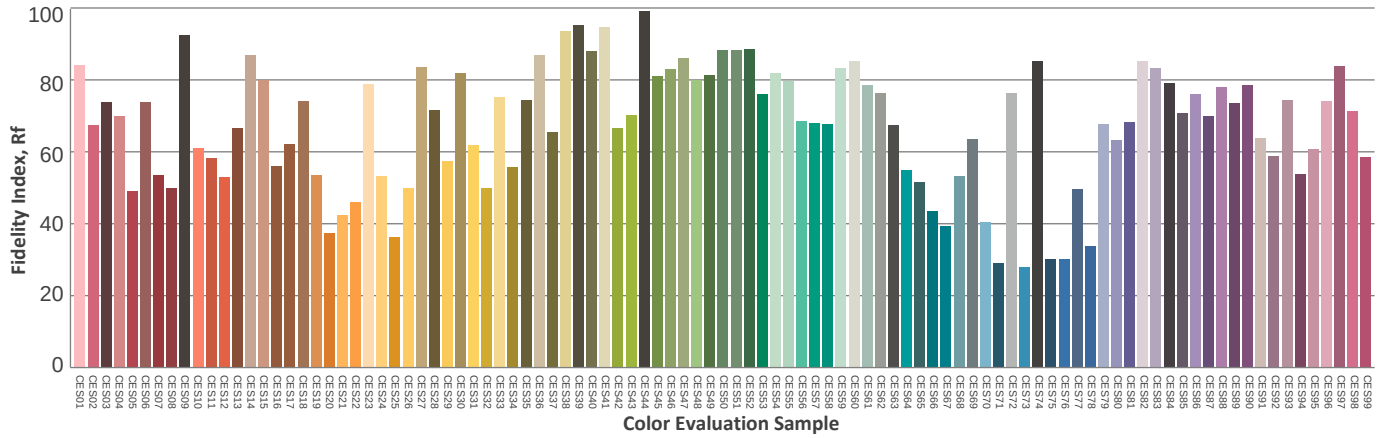












Artiste DaVinci (Zoom In)

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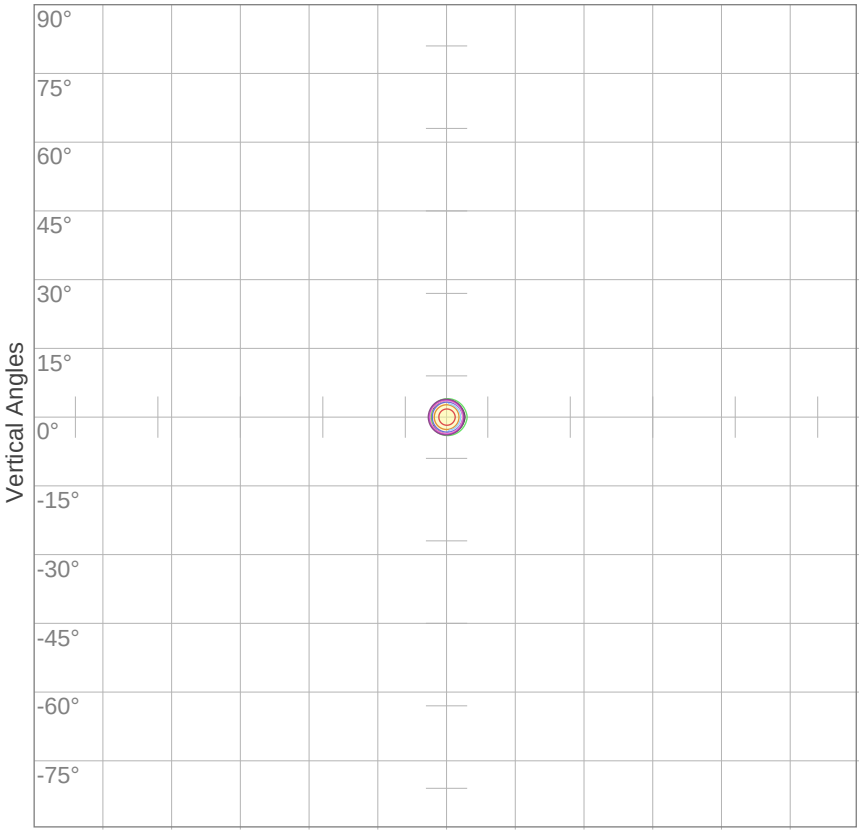
ISO Diagrams

ISO Candela Diagram



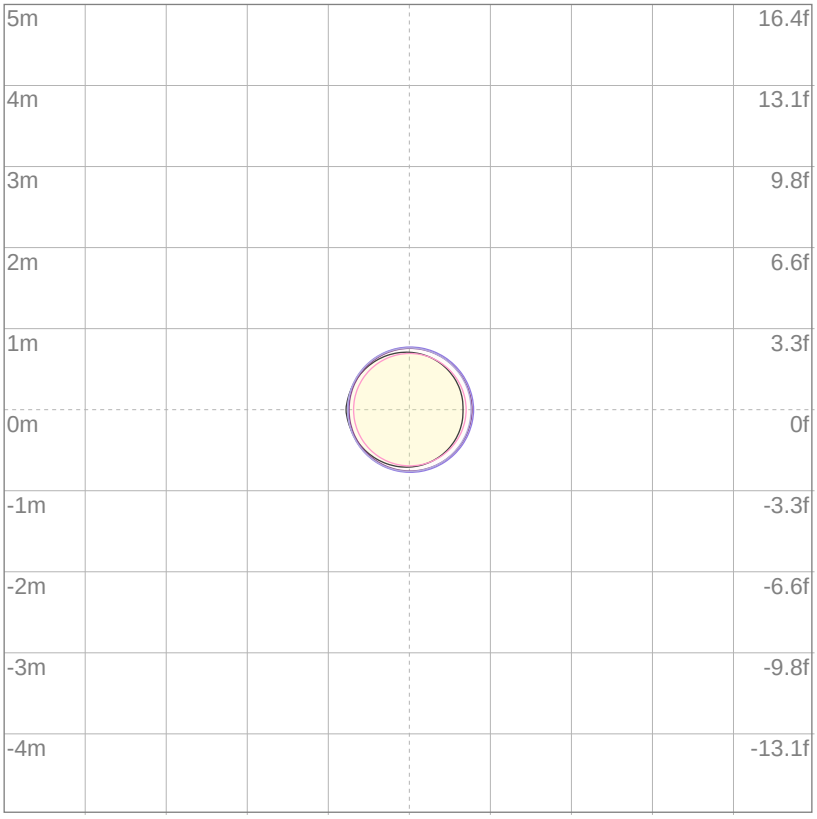
10%	56371 cd
20%	112743 cd
30%	169114 cd
40%	225485 cd
50%	281857 cd
60%	338228 cd
70%	394599 cd
80%	450971 cd
90%	507342 cd

Conditions:

Number of c-planes: 2

Candela at center: 563713 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	169 lx
5%	282 lx
10%	564 lx
30%	1691 lx
50%	2819 lx

Conditions:

Number of c-planes: 2

Lux at center: 5637 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	**9966 lm**
VISO Lab Spion	**9140 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
17.9°	22.2°	23.6°

Color Temperature: 7021 K

CRI: 71.3

TLCI: 46

TM30: 67.4

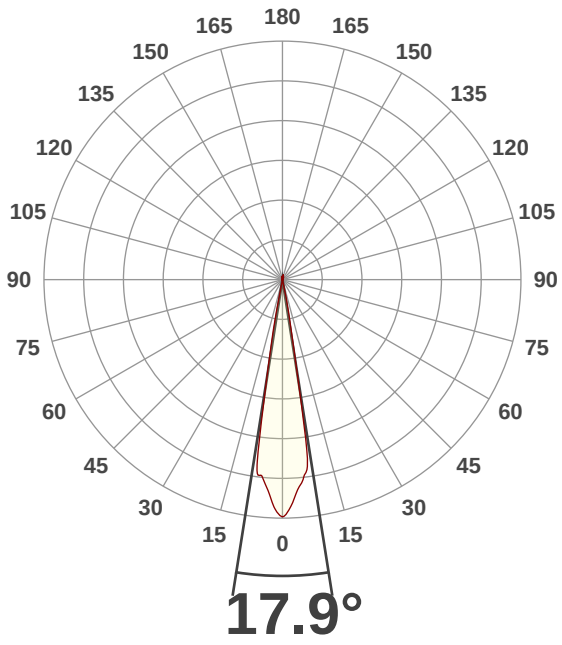
CQS: 68.1

Voltage: 116 V, Current: 3.23 A

Power: 375 W

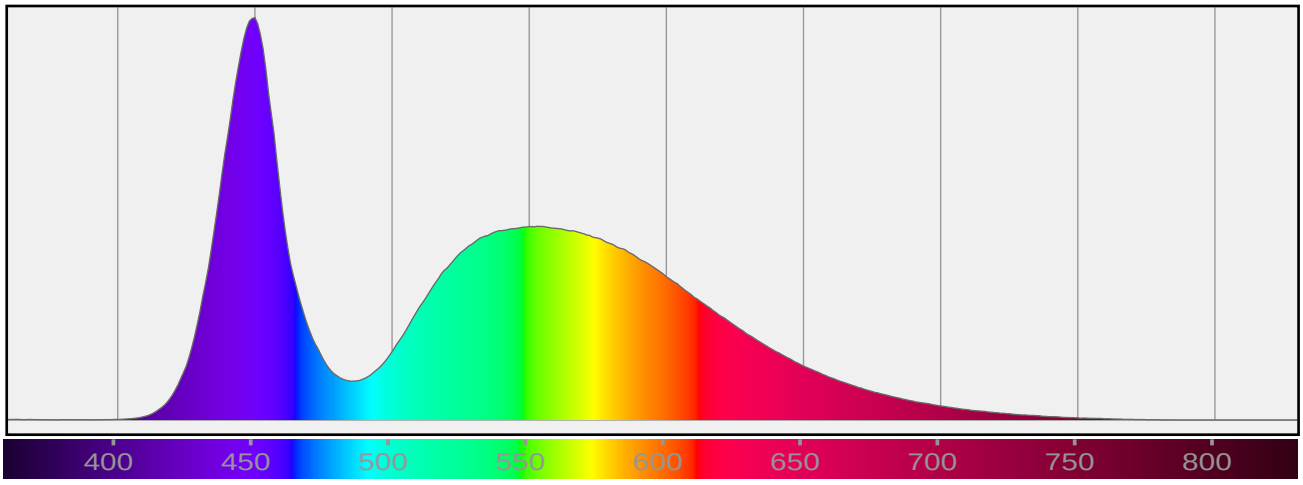
Efficacy: 24 Lumen/Watt

Measurement Date: 7/30/2019



Spectral Distribution

Dominant Wavelength 462 nm



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

Artiste DaVinci (Zoom 50)

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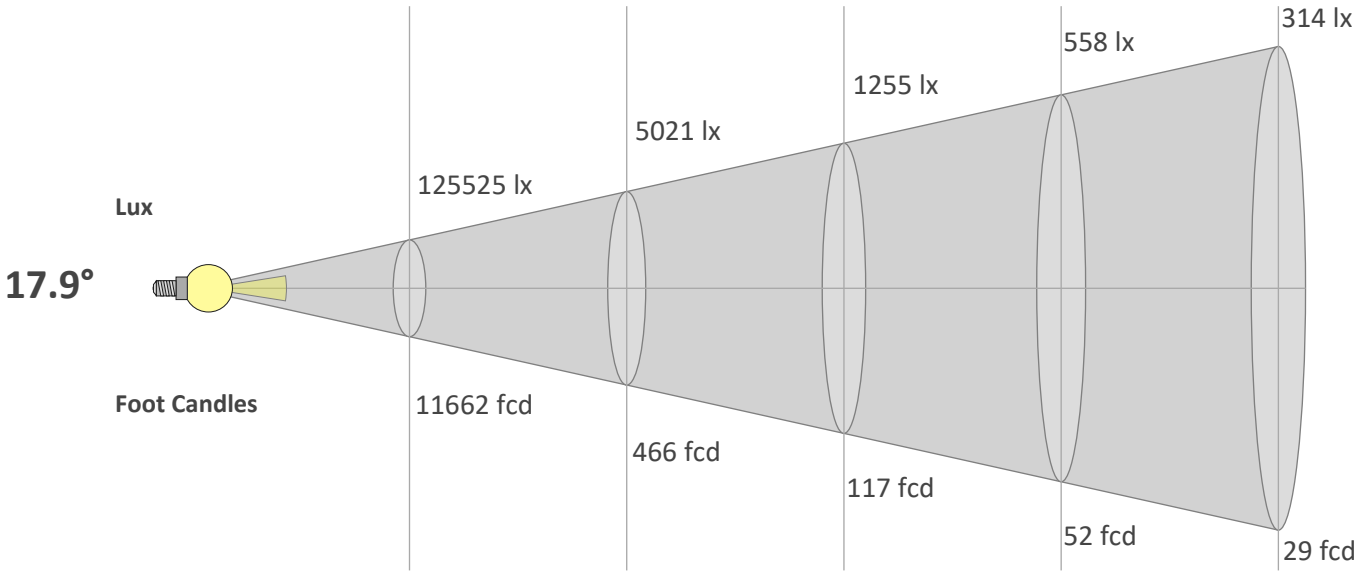
Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
17.9°	**22.2°**	**23.6°**

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	3.2	4.7	6.3
Beam Width (ft)	1	5.2	10.3	15.5	20.7

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	125525	31381	13947	7845	5021	3487	2562	1961	1550	1255	1037	872	743	640	558	490	434	387	348	314
FC	11661.6	2915.4	1295.7	728.9	466.5	323.9	238	182.2	144	116.6	96.4	81	69	59.5	51.8	45.6	40.4	36	32.3	29.2

Linear Distribution

Peak Candela

125768 cd

Calculate Center Beam Intensities

lux = 125768 / distance(m)^2

fc = 125768 / distance(ft)^2

Artiste DaVinci (Zoom 50)

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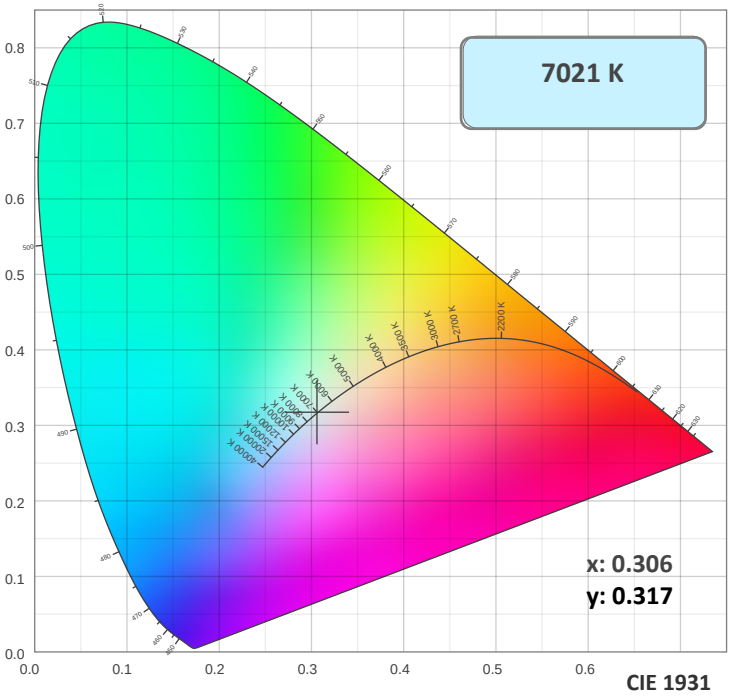
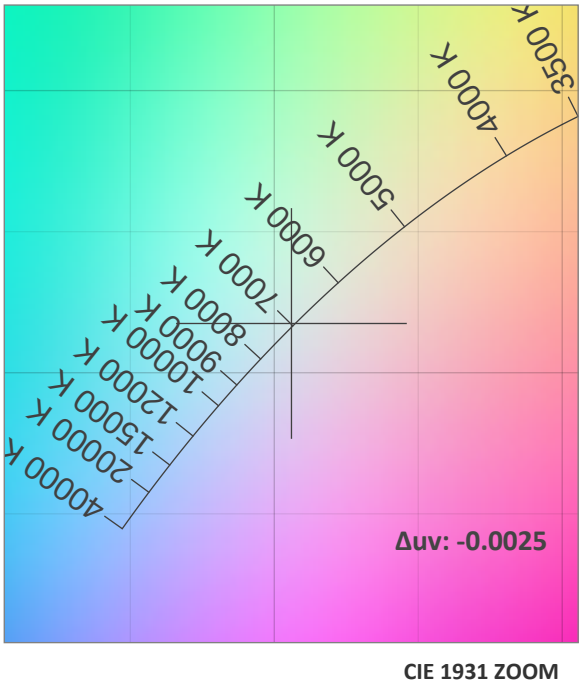
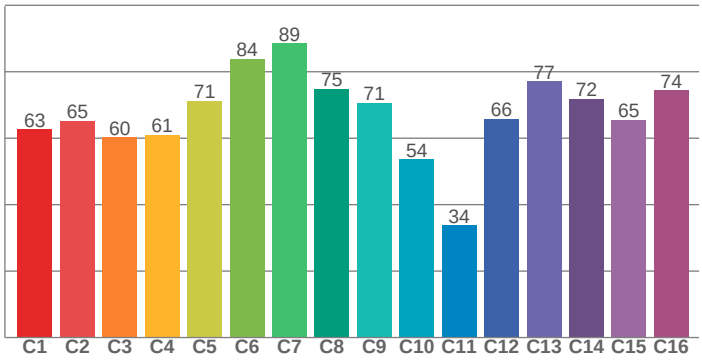
Color Details

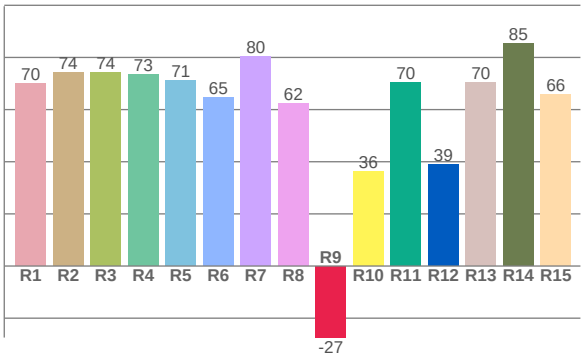




TM30: 67.4



CRI: 71.3 (R1-R8)



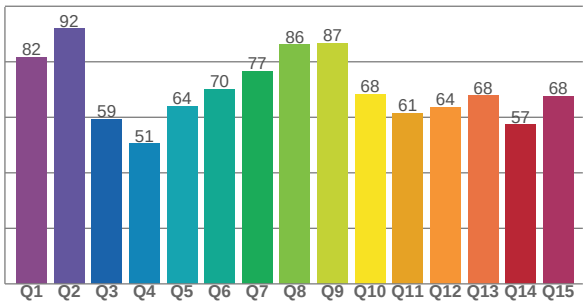
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
70.1	74.4	74.3	73.4	71.0	64.6	80.3	62.3	-27.4	36.4	70.4	39.1	70.3	85.4	65.7

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

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
62.7	65.2	60.2	61.1	71.2	83.9	88.5	74.8	70.7	53.6	33.7	65.9	77.2	71.8	65.5	74.4

CQS: 68.1



CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.7	91.9	59.4	50.5	64.0	70.2	76.6	86.1	86.7	68.4	61.5	63.7	67.7	57.3	67.7

Color Parameters

Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
7021 K	71.3	-27.4	67.4	93.3	68.1	0.306	0.317	0.197	0.307	-0.0025

Artiste DaVinci (Zoom 50)

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TM30 Details

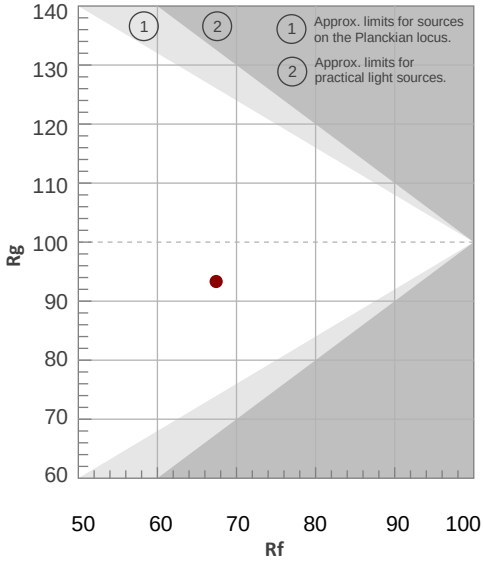
Rf 67.4

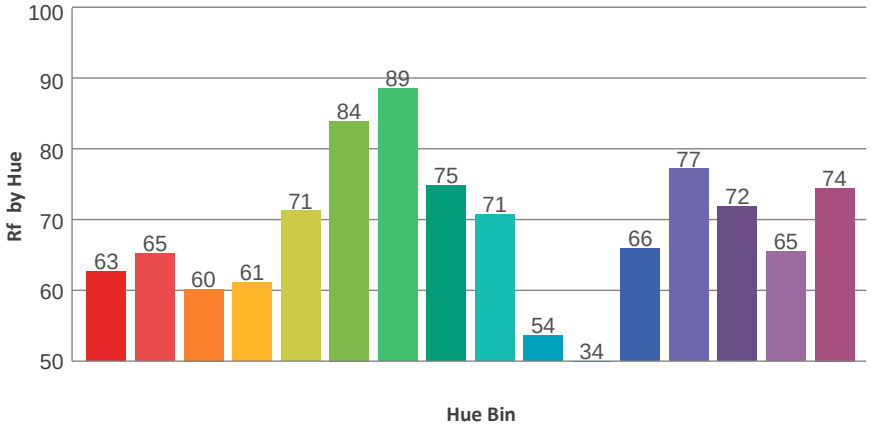
Fidelity Index Rf

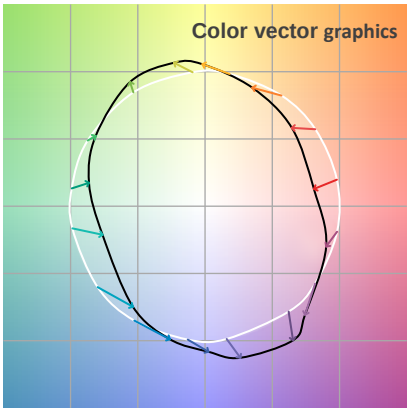
Rg 93.3

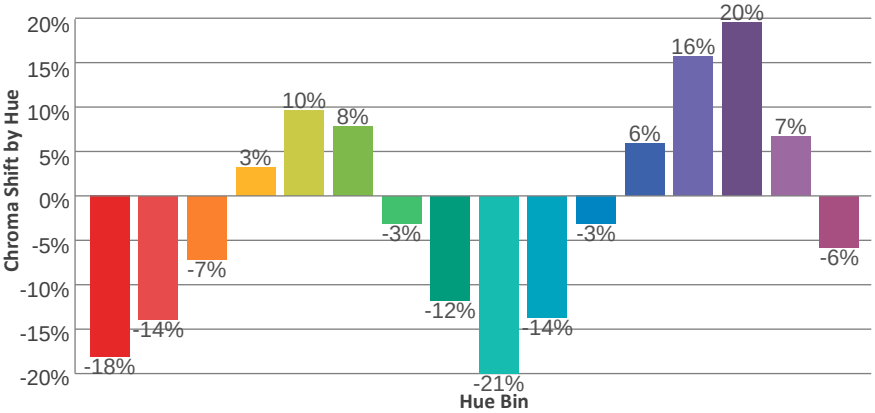
Gamut Index Rg

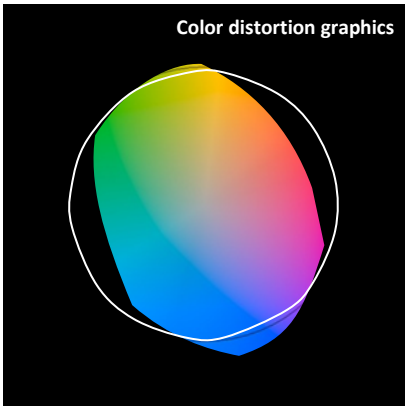
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	63	-18%	-3%
2	65	-14%	11%
3	60	-7%	21%
4	61	3%	21%
5	71	10%	12%
6	84	8%	-2%
7	89	-3%	-6%
8	75	-12%	-7%
9	71	-21%	9%
10	54	-14%	27%
11	34	-3%	30%
12	66	6%	17%
13	77	16%	7%
14	72	20%	-9%
15	65	7%	-23%
16	74	-6%	-12%

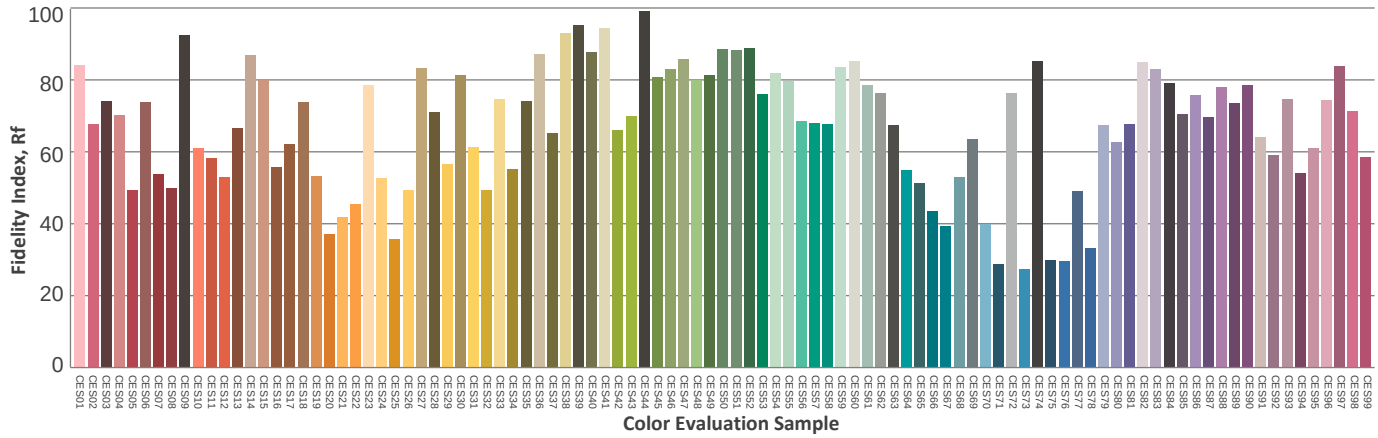












Artiste DaVinci (Zoom 50)

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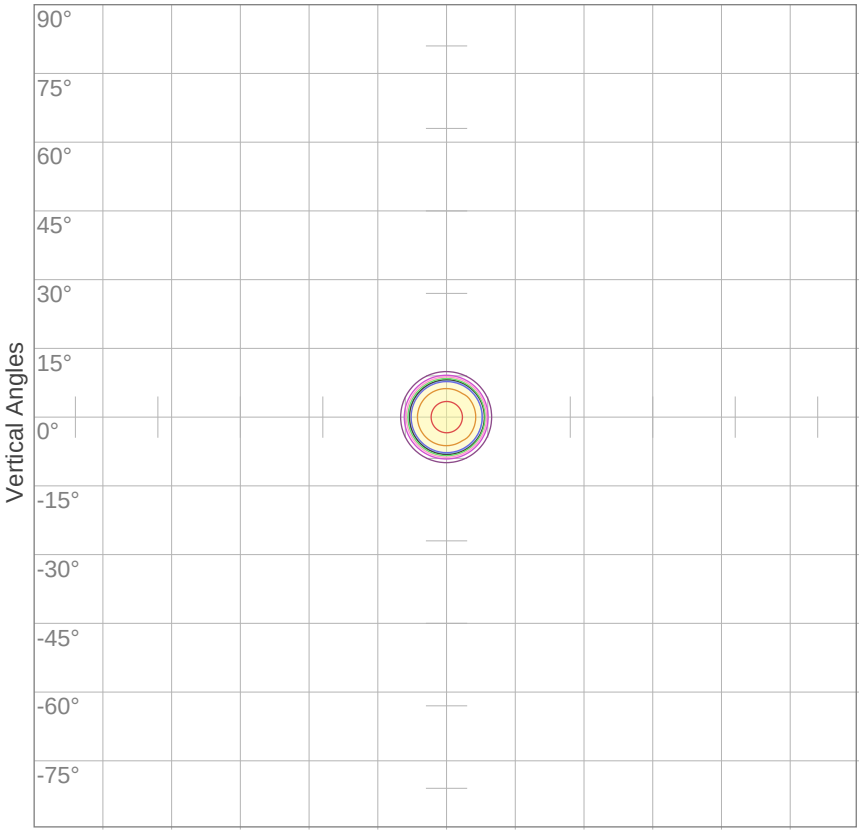
ISO Diagrams

ISO Candela Diagram



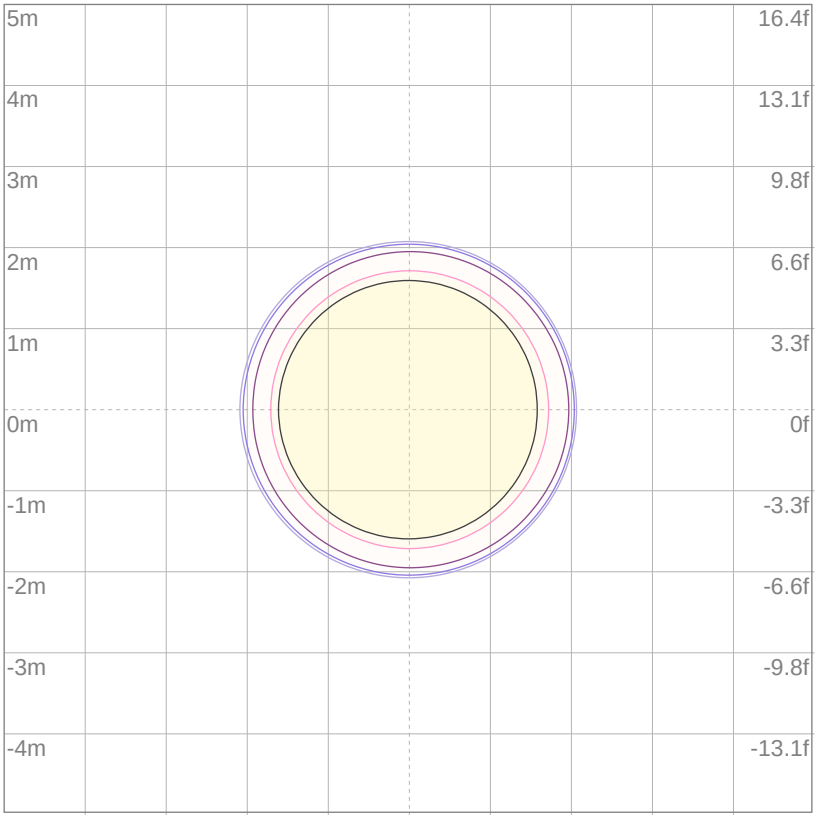
10%	12552 cd
20%	25105 cd
30%	37657 cd
40%	50210 cd
50%	62762 cd
60%	75315 cd
70%	87867 cd
80%	100420 cd
90%	112972 cd

Conditions:

Number of c-planes: 2

Candela at center: 125525 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	37.7 lx
5%	62.8 lx
10%	126 lx
30%	377 lx
50%	628 lx

Conditions:

Number of c-planes: 2

Lux at center: 1255 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	**8338 lm**
VISO Lab Spion	**9518 lm**

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2.5%
41.5°	46.1°	48.1°

Color Temperature: 7027 K

CRI: 71.4

TLCI: 46

TM30: 67.5

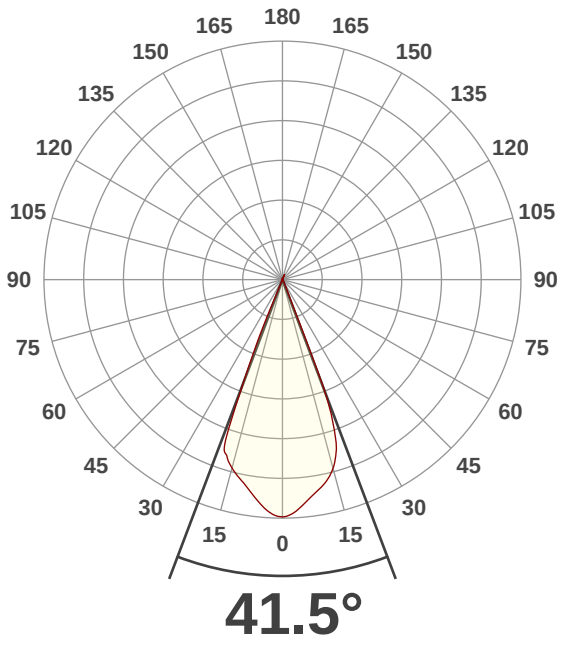
CQS: 68.1

Voltage: 116 V, Current: 3.23 A

Power: 375 W

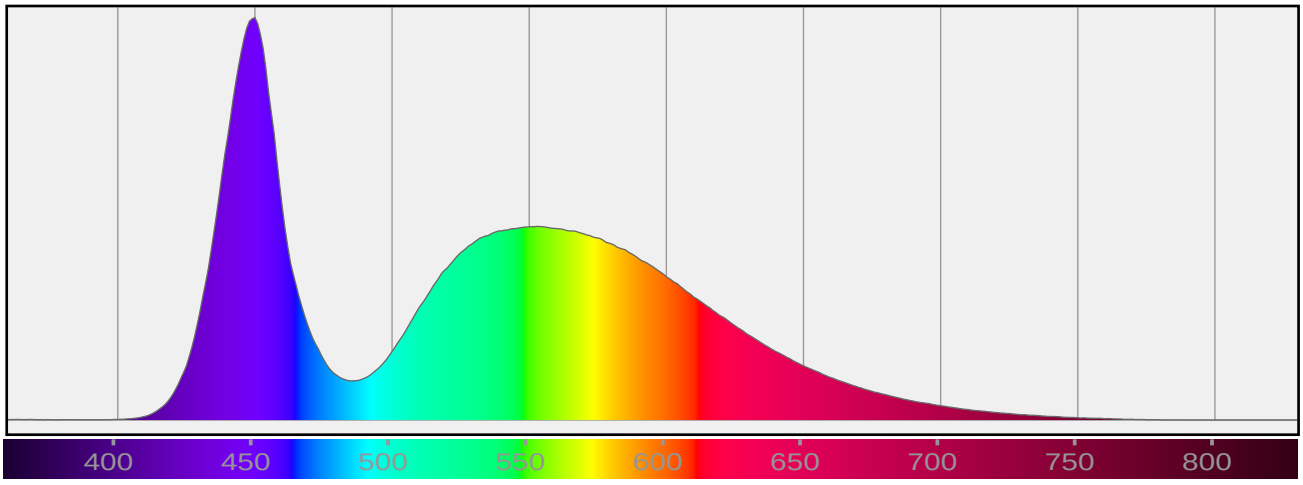
Efficacy: 25 Lumen/Watt

Measurement Date: 7/30/2019



Spectral Distribution

Dominant Wavelength 462 nm



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

Artiste DaVinci (Zoom Out)

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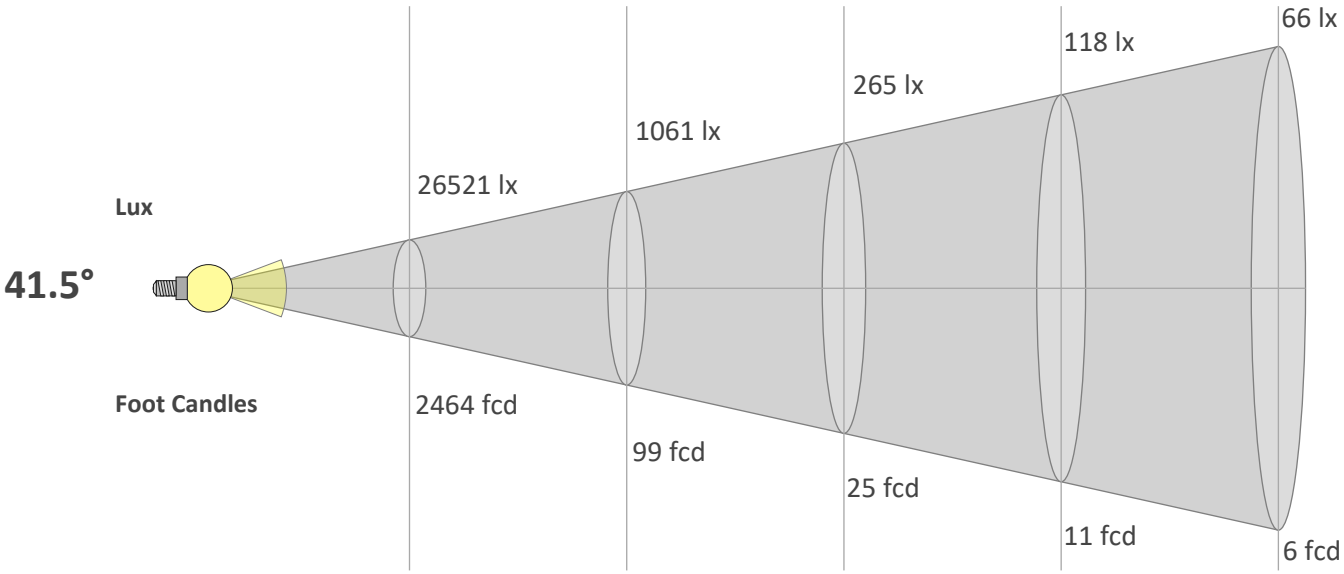
Beam Details

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%
41.5°	**46.1°**	**48.1°**

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

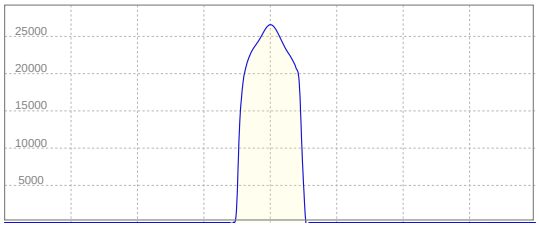


Beam Width (m)	0.8	3.8	7.6	11.4	15.1
Beam Width (ft)	2.5	12.4	24.8	37.2	49.7

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	26521	6630	2947	1658	1061	737	541	414	327	265	219	184	157	135	118	104	92	82	73	66
FC	2463.9	616	273.8	154	98.6	68.4	50.3	38.5	30.4	24.6	20.4	17.1	14.6	12.6	11	9.6	8.5	7.6	6.8	6.2

Linear Distribution



Peak Candela

26548 cd

Calculate Center Beam Intensities

lux = 26548 / distance(m)^2

fc = 26548 / distance(ft)^2

Artiste DaVinci (Zoom Out)

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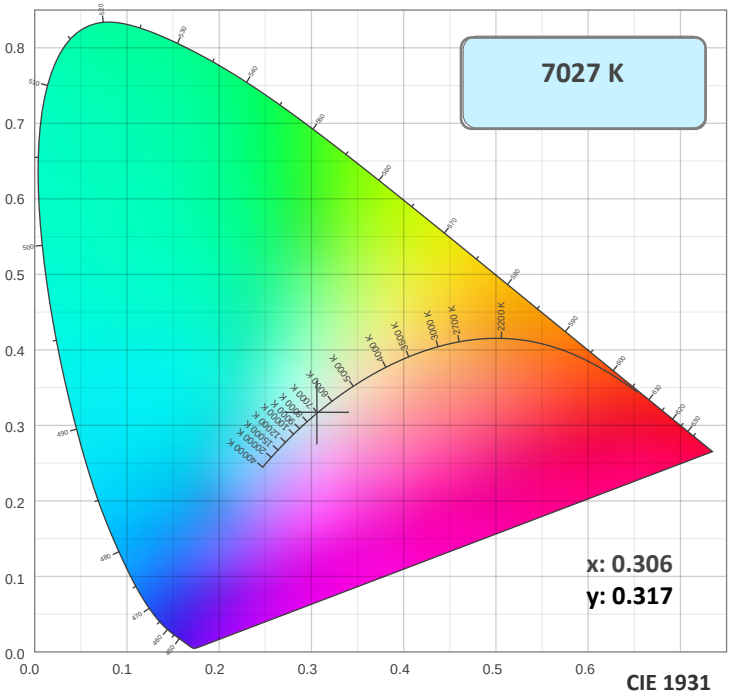
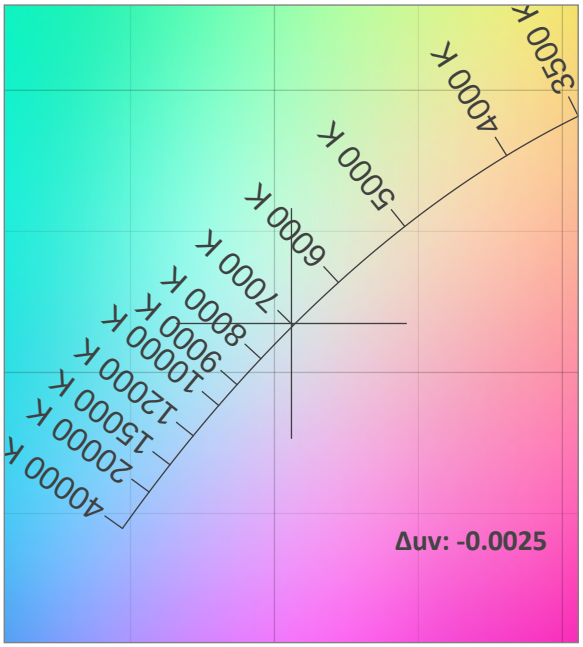
Color Details

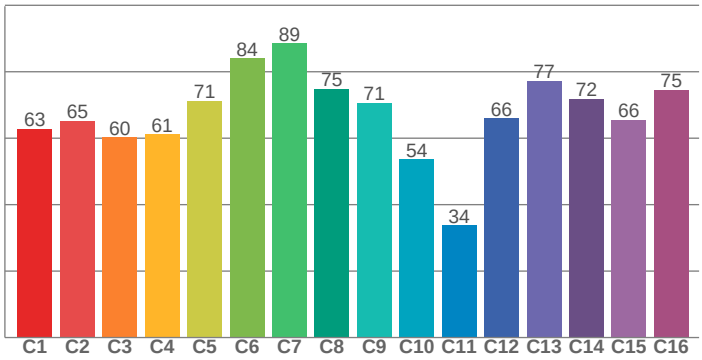


CIE 1931

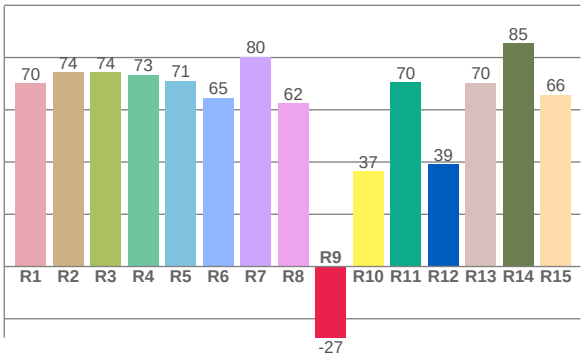


CIE 1931 ZOOM

TM30: 67.5



CRI: 71.4 (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
70.2	74.5	74.3	73.5	71.1	64.6	80.4	62.4	-27.2	36.6	70.5	39.1	70.4	85.4	65.8

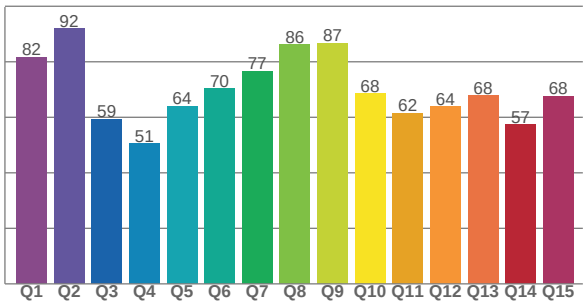
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
62.8	65.2	60.3	61.2	71.3	84.0	88.5	74.9	70.7	53.6	33.8	66.0	77.2	71.9	65.5	74.5

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
81.7	92.0	59.4	50.5	64.1	70.2	76.7	86.1	86.7	68.5	61.5	63.8	67.8	57.4	67.7

CQS: 68.1



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
7027 K	71.4	-27.2	67.5	93.3	68.1	0.306	0.317	0.197	0.307	-0.0025

Artiste DaVinci (Zoom Out)

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TM30 Details

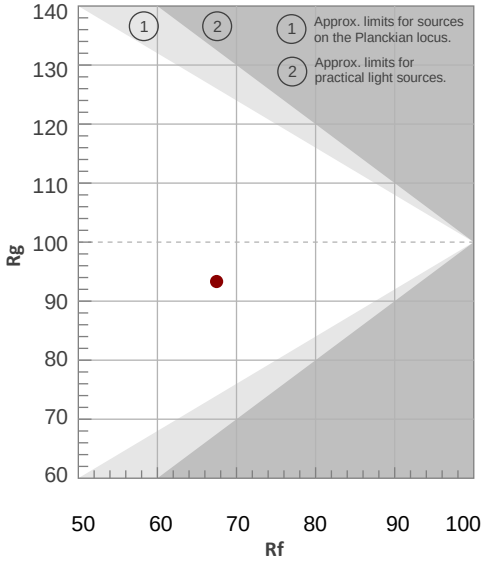
Rf 67.5

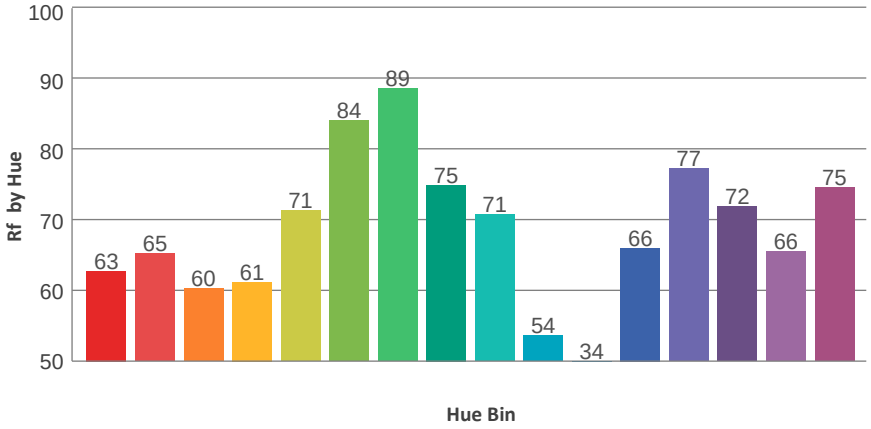
Fidelity Index Rf

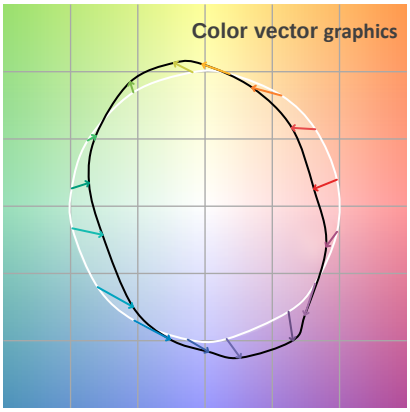
Rg 93.3

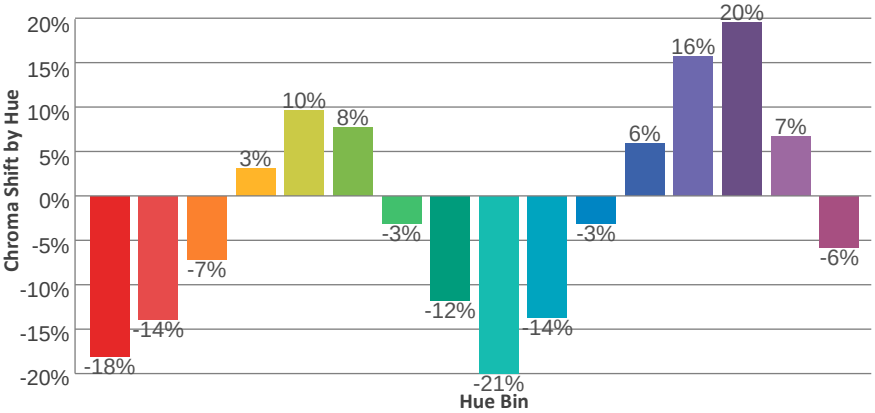
Gamut Index Rg

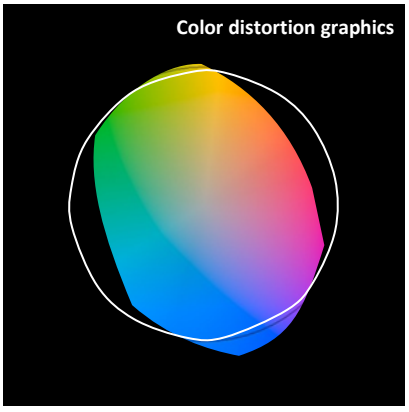
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	63	-18%	-3%
2	65	-14%	11%
3	60	-7%	21%
4	61	3%	21%
5	71	10%	12%
6	84	8%	-2%
7	89	-3%	-6%
8	75	-12%	-7%
9	71	-21%	9%
10	54	-14%	27%
11	34	-3%	30%
12	66	6%	17%
13	77	16%	7%
14	72	20%	-9%
15	66	7%	-23%
16	75	-6%	-12%

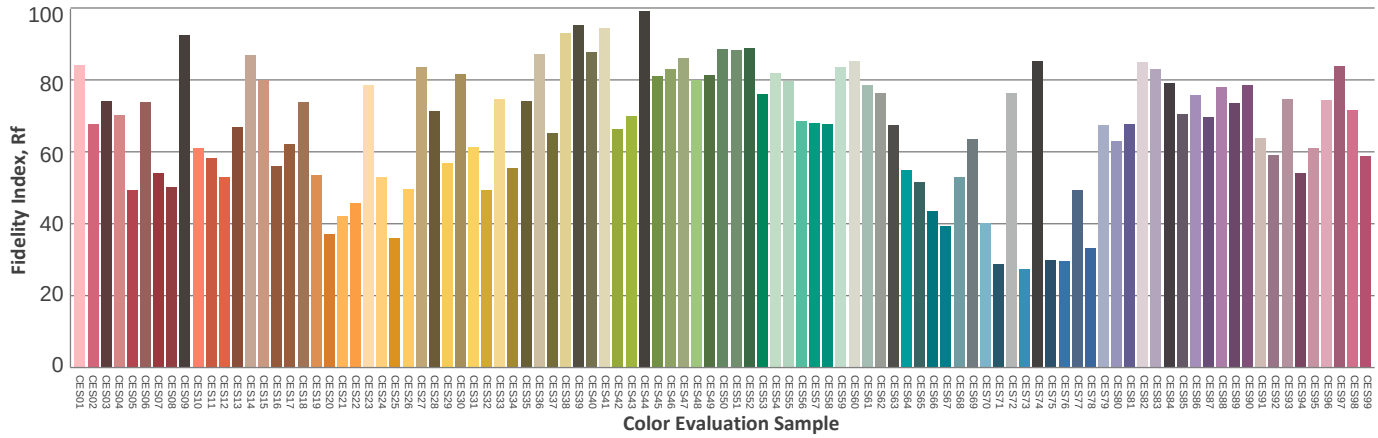












Artiste DaVinci (Zoom Out)

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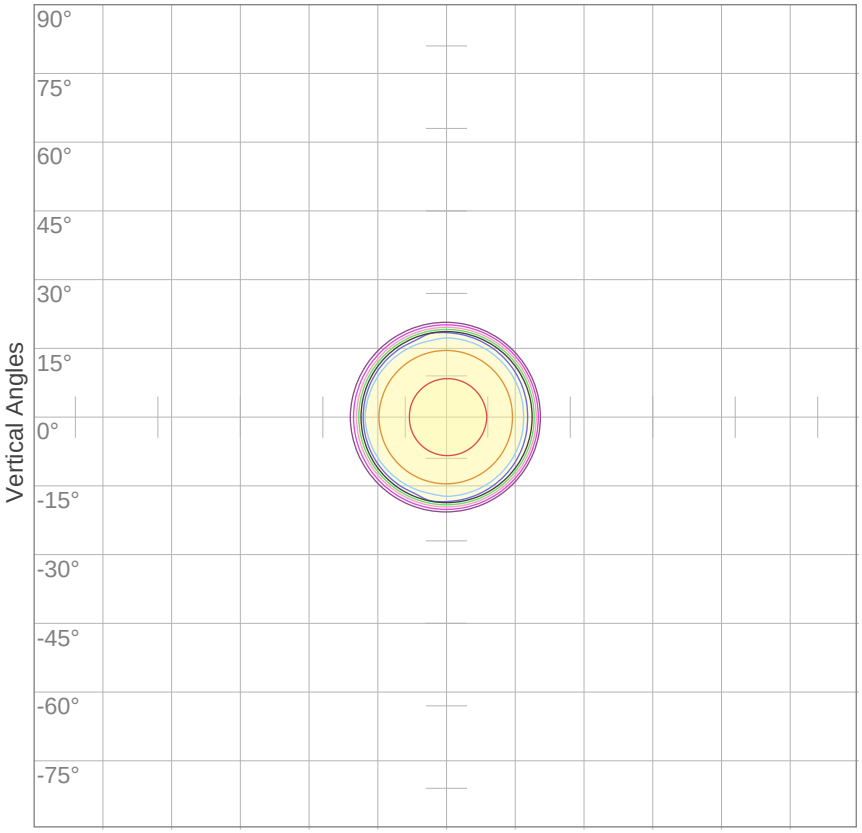
ISO Diagrams

ISO Candela Diagram



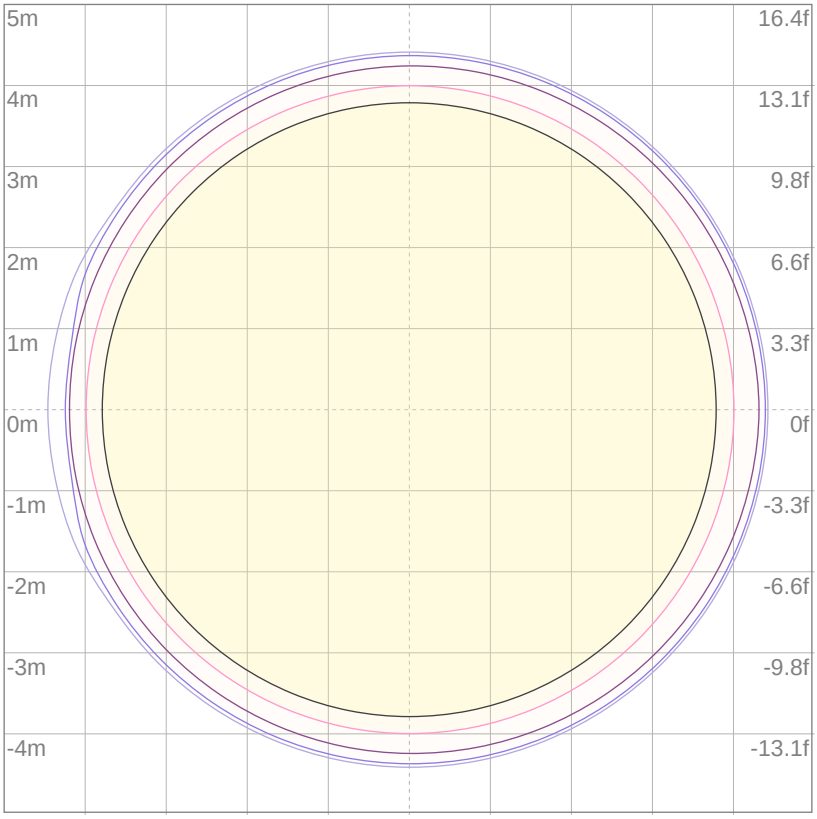
10%	2652 cd
20%	5304 cd
30%	7956 cd
40%	10608 cd
50%	13261 cd
60%	15913 cd
70%	18565 cd
80%	21217 cd
90%	23869 cd

Conditions:

Number of c-planes: 2

Candela at center: 26521 cd

ISO Lux Diagram



Mounting Height: 10 meters (33 feet)

3%	7.96 lx
5%	13.3 lx
10%	26.5 lx
30%	79.6 lx
50%	133 lx

Conditions:

Number of c-planes: 2

Lux at center: 265 lx

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