



Arena Zoom Q7IP

Photometric Test Report

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Testing Process

Total Lumen Measurements

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

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

Test Lab Equipment and Process

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

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

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

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

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

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

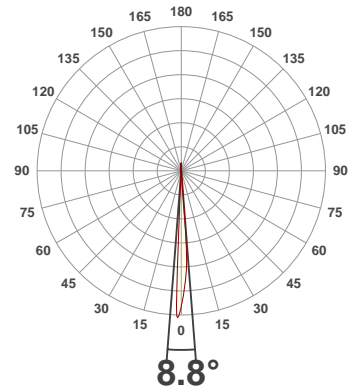
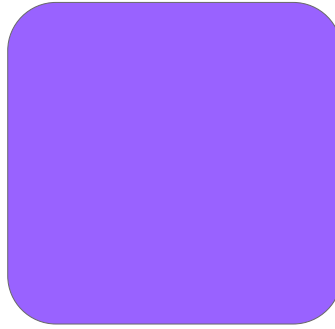
Total Lumen Output: 3170 lm

Voltage: 112 V, Current: 2.11 A

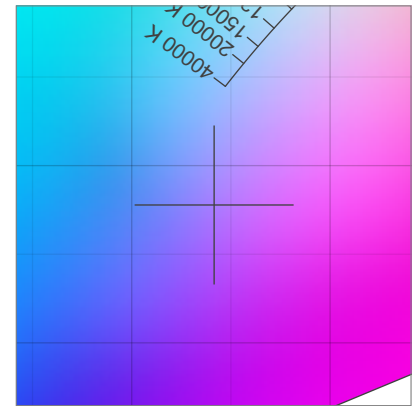
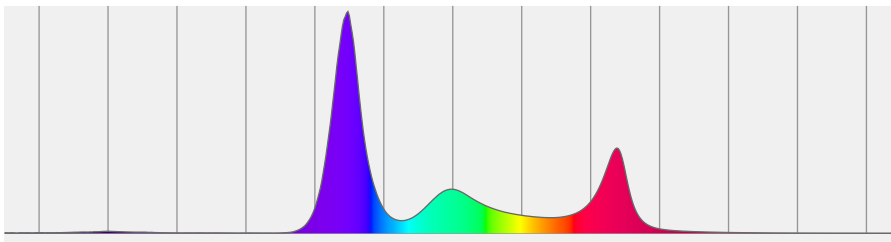
Power: 236.1 W

Efficacy: 13 Lumen/Watt

Measurement Date: 12/14/2020

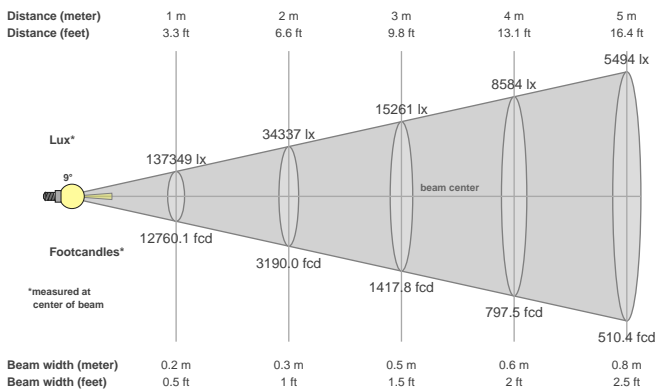


Spectral distribution



Dominant Wavelength	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate
nm	x	y	u	v
442	0.242	0.178	0.208	0.229

Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
8.8°	13.9°	15.5°

Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
156599 cd	100.0%	100.0%

Beam Intensities from 1-20m

M	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FT	3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6
LX	137349	34337	15261	8584	5494	3815	2803	2146	1696	1373	1135	954	813	701	610	537	475	424	380	343
FC	12760.1	3190	1417.8	797.5	510.4	354.4	260.4	199.4	157.5	127.6	105.5	88.6	75.5	65.1	56.7	49.8	44.2	39.4	35.3	31.9

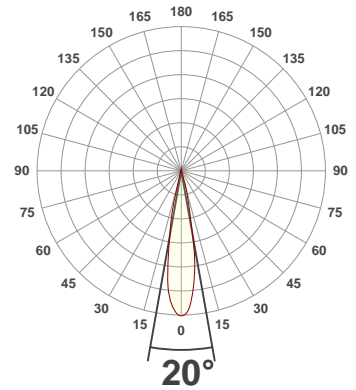
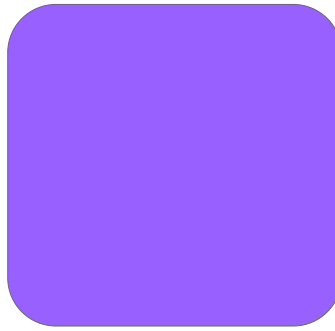
Total Lumen Output: 3124 lm

Voltage: 113 V, Current: 2.11 A

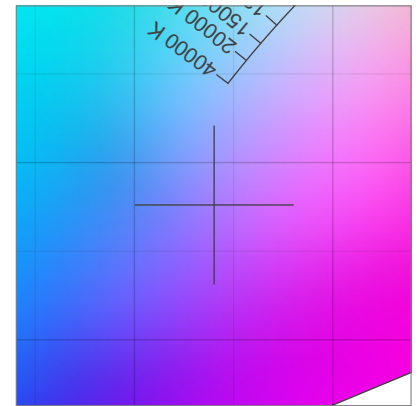
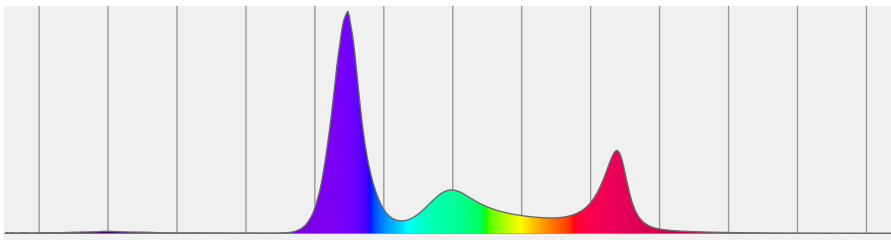
Power: 236.3 W

Efficacy: 13 Lumen/Watt

Measurement Date: 12/14/2020

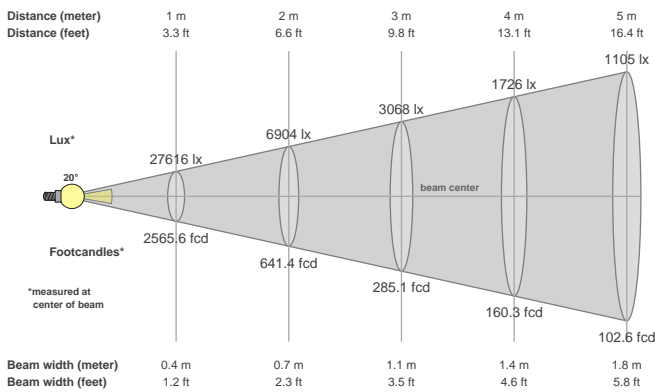


Spectral distribution



Dominant Wavelength	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate
nm	x	y	u	v
443	0.240	0.176	0.207	0.228

Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
20°	31.6°	36.8°

Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
28017 cd	100.0%	100.0%

Beam Intensities from 1-20m

M	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FT	3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6
LX	27616	6904	3068	1726	1105	767	564	431	341	276	228	192	163	141	123	108	96	85	76	69
FC	2565.6	641.4	285.1	160.3	102.6	71.3	52.4	40.1	31.7	25.7	21.2	17.8	15.2	13.1	11.4	10	8.9	7.9	7.1	6.4

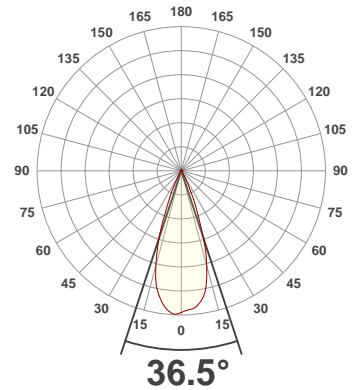
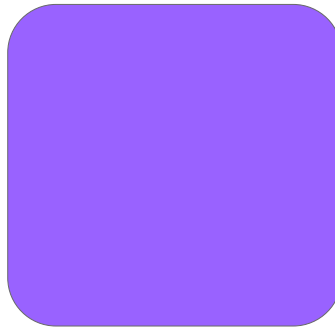
Total Lumen Output: 3204 lm

Voltage: 112 V, Current: 2.12 A

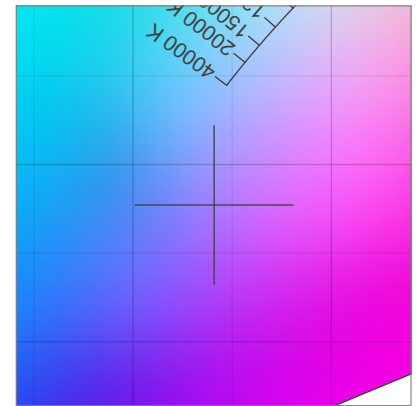
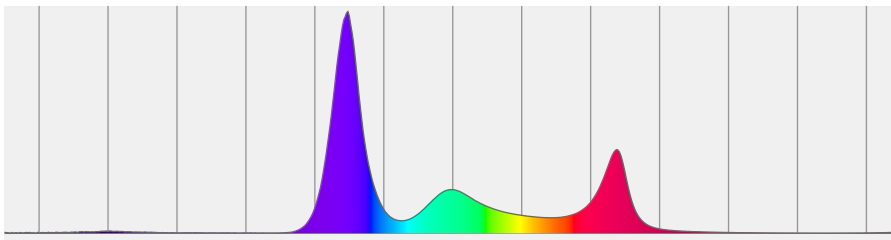
Power: 236.4 W

Efficacy: 14 Lumen/Watt

Measurement Date: 12/14/2020

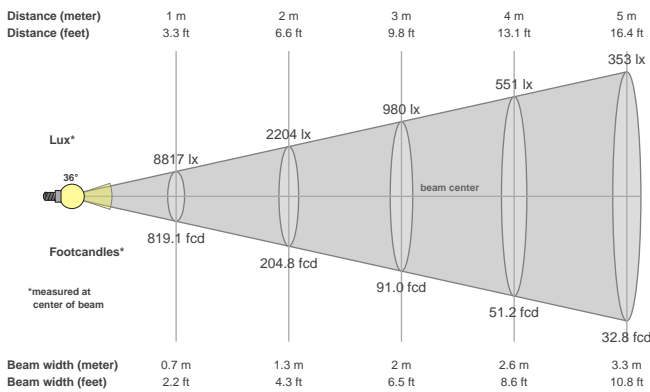


Spectral distribution



Dominant Wavelength	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate
nm	x	y	u	v
443	0.241	0.177	0.207	0.229

Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
36.5°	53.6°	64.2°

Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
8951 cd	99.4%	99.4%

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	8817	2204	980	551	353	245	180	138	109	88	73	61	52	45	39	34	31	27	24	22
FC	819.1	204.8	91	51.2	32.8	22.8	16.7	12.8	10.1	8.2	6.8	5.7	4.8	4.2	3.6	3.2	2.8	2.5	2.3	2

Total Lumen Output: 2274 lm

Color Temperature: 5817 K

CRI: 82.0

TLCI: 2

TM30: 80.3

CQS: 85.0

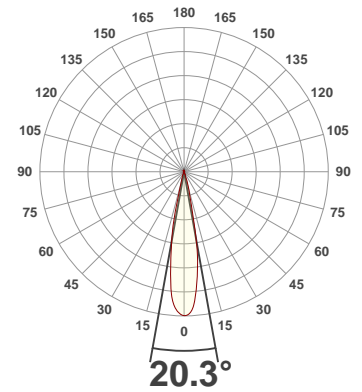
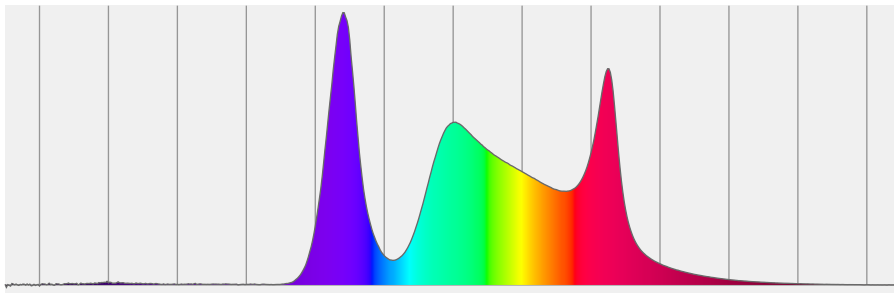
Measurement Date:

Voltage: 114 V, Current: 1.000 A

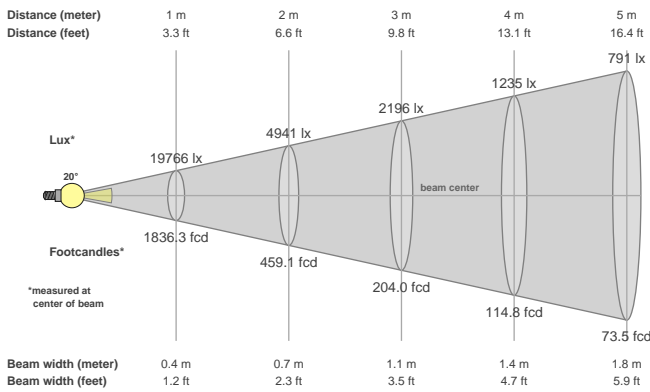
Power: 113.7 W

Efficacy: 20 Lumen/Watt

Spectral distribution
Dominant Wavelength 595



Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
20.3°	31.3°	37.7°

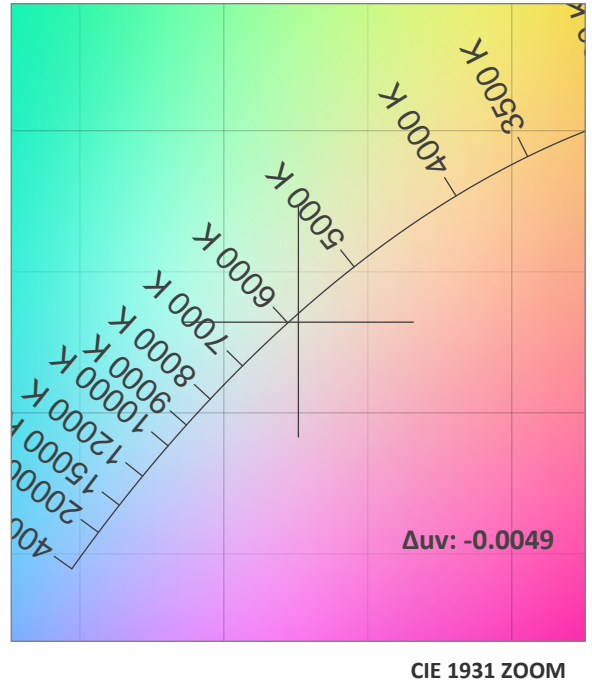
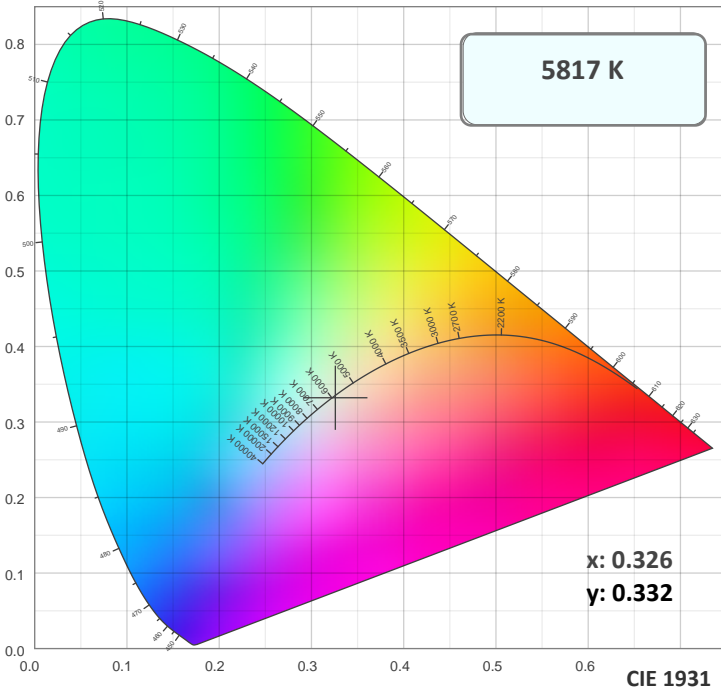
Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
19998 cd	99.9%	99.9%

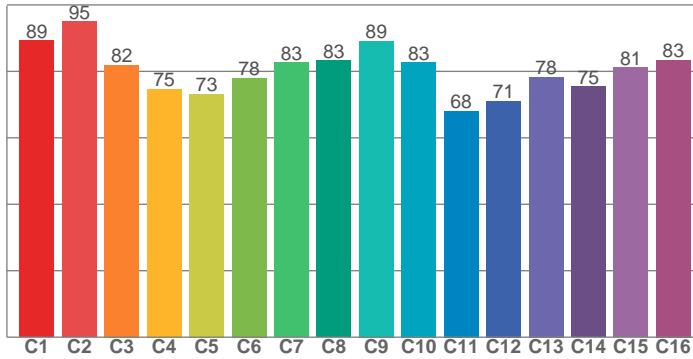
Beam Intensities from 1-20m

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	19766	4941	2196	1235	791	549	403	309	244	198	163	137	117	101	88	77	68	61	55	49
FC	1836.3	459.1	204	114.8	73.5	51	37.5	28.7	22.7	18.4	15.2	12.8	10.9	9.4	8.2	7.2	6.4	5.7	5.1	4.6

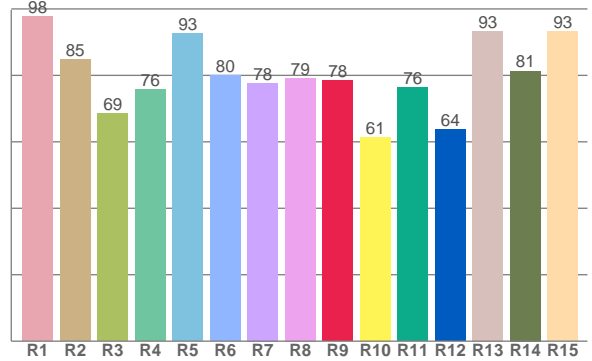
Color Details



TM30: 80.3



CRI: 82.0 (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
97.7	84.7	68.5	75.7	92.7	80.0	77.7	79.2	78.4	61.5	76.4	63.7	93.4	81.4	93.3

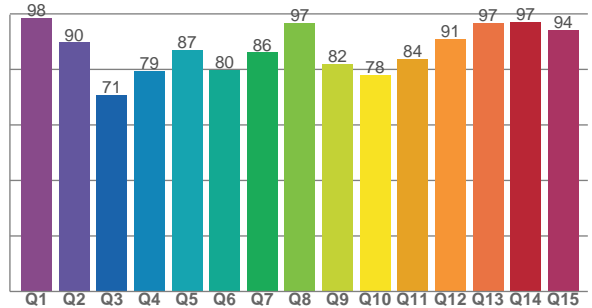
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
89.3	95.1	81.9	74.7	73.2	78.1	82.7	83.4	89.1	82.8	68.0	71.1	78.3	75.4	81.1	83.4

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
98.4	89.7	70.6	79.5	86.9	79.7	86.1	96.7	81.9	78.0	83.8	91.0	96.9	97.2	94.1

CQS: 85.0



Color Parameters

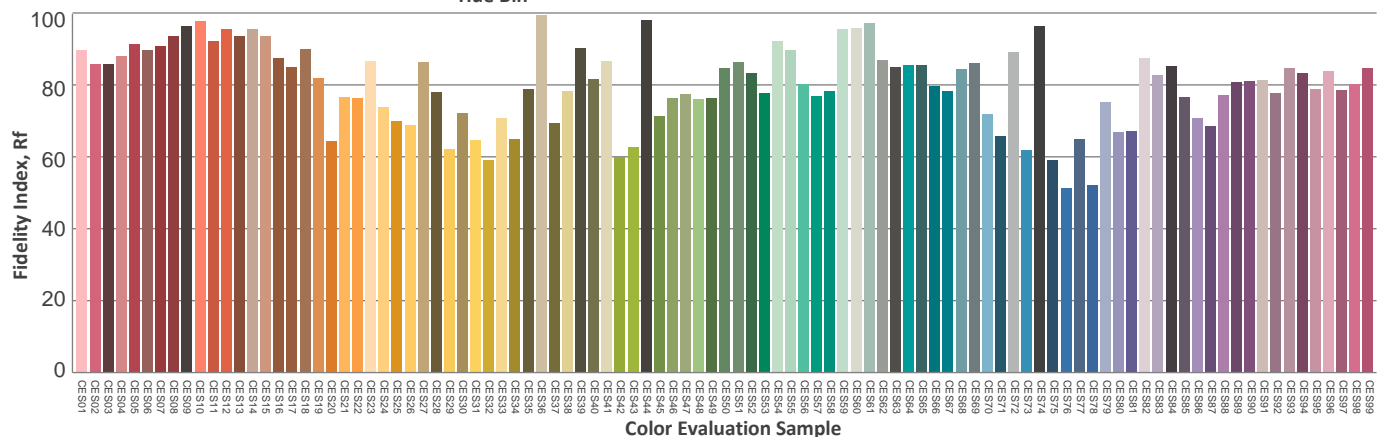
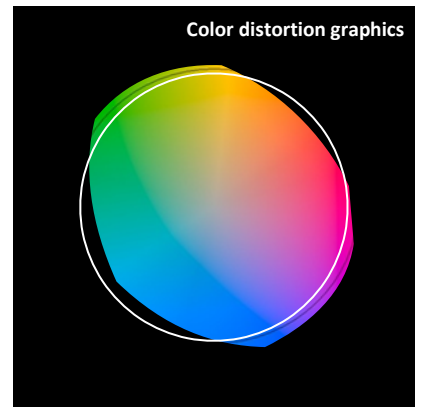
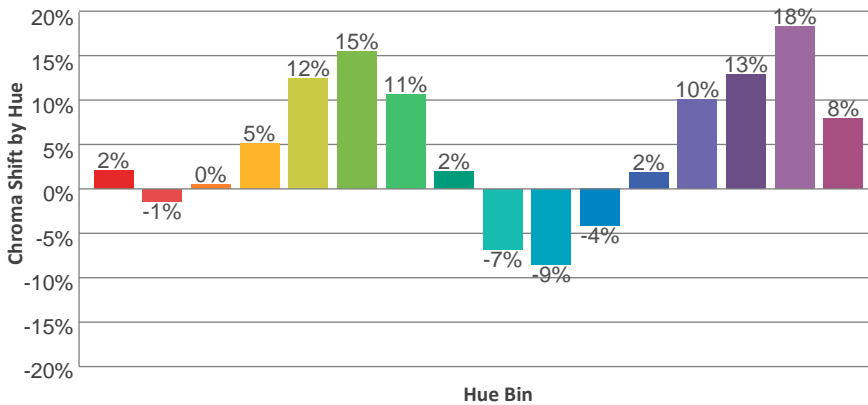
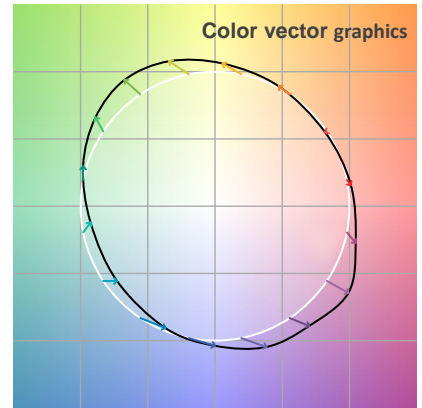
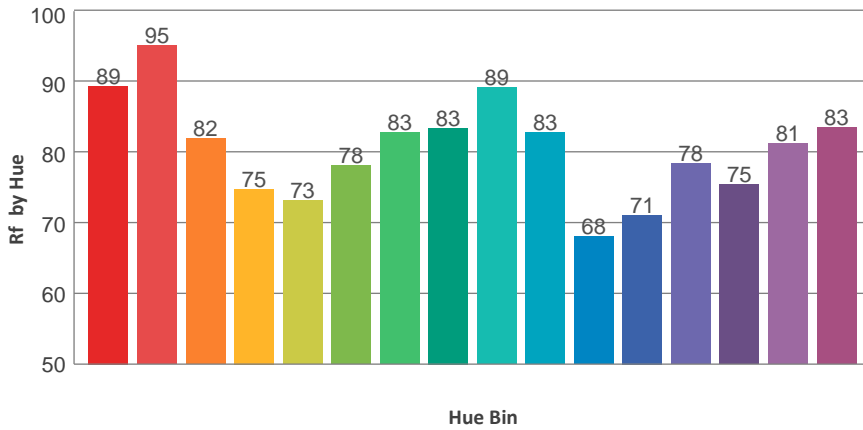
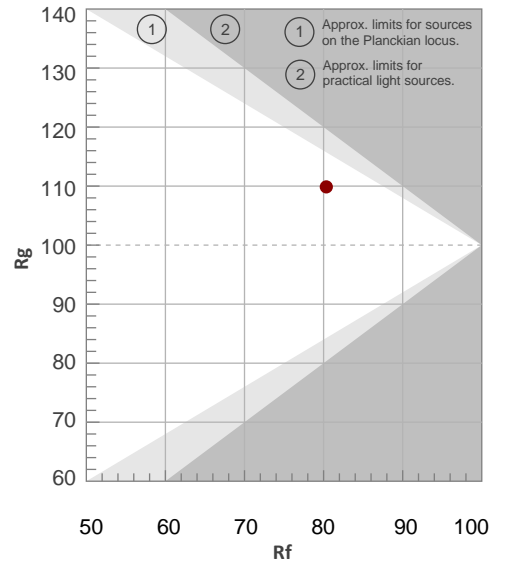
Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Diviation from Black
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
5817 K	82.0	78.4	80.3	109.9	85.0	0.326	0.332	0.206	0.315	-0.0049

TM30 Details

Rf 80.3
Fidelity Index Rf

Rg 109.9
Gamut Index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	89	2%	-4%
2	95	-1%	0%
3	82	0%	10%
4	75	5%	15%
5	73	12%	13%
6	78	15%	4%
7	83	11%	-5%
8	83	2%	-10%
9	89	-7%	-6%
10	83	-9%	6%
11	68	-4%	20%
12	71	2%	20%
13	78	10%	17%
14	75	13%	9%
15	81	18%	1%
16	83	8%	-6%



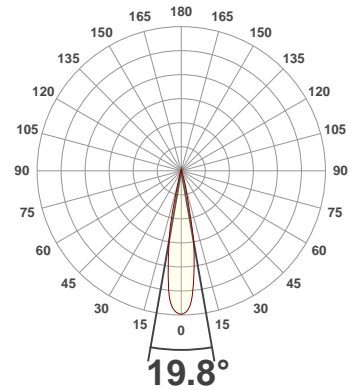
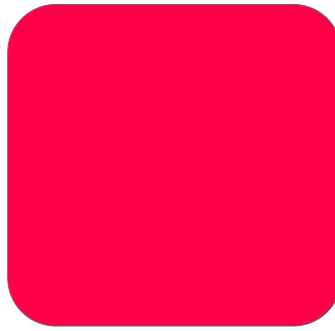
Total Lumen Output: 642 lm

Voltage: 115 V, Current: 0.635 A

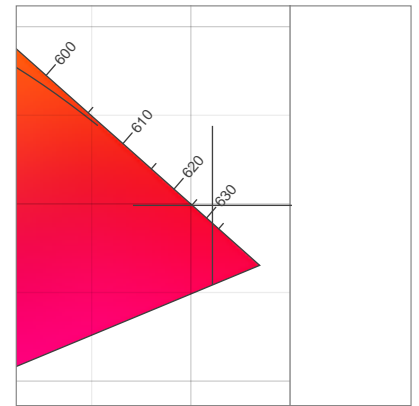
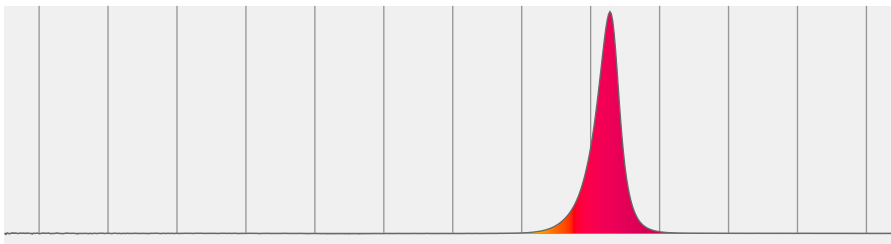
Power: 71.9 W

Efficacy: 9 Lumen/Watt

Measurement Date: 12/14/2020

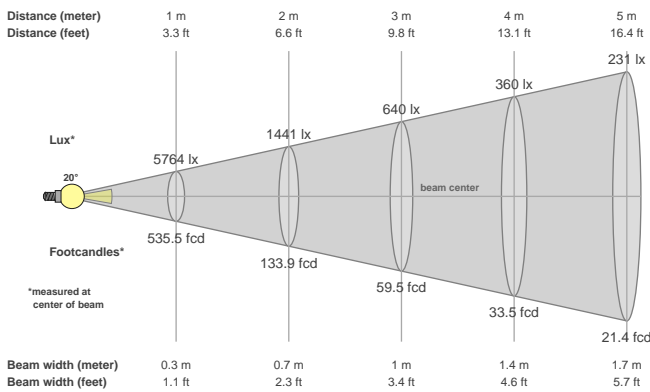


Spectral distribution



Dominant Wavelength	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate
nm	x	y	u	v
625	0.711	0.299	0.550	0.347

Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
19.8°	30.7°	37.7°

Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
5818 cd	99.8%	99.7%

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	5764	1441	640	360	231	160	118	90	71	58	48	40	34	29	26	23	20	18	16	14
FC	535.5	133.9	59.5	33.5	21.4	14.9	10.9	8.4	6.6	5.4	4.4	3.7	3.2	2.7	2.4	2.1	1.9	1.7	1.5	1.3

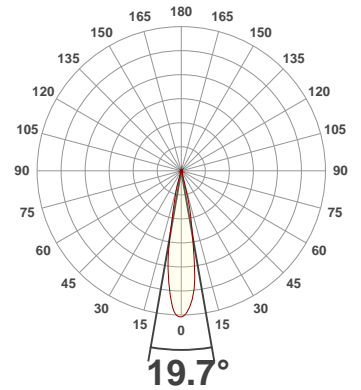
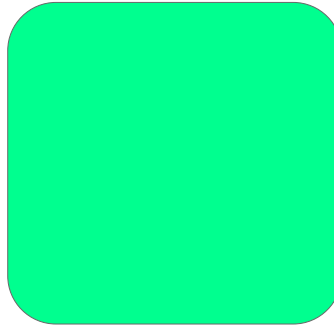
Total Lumen Output: 1169 lm

Voltage: 114 V, Current: 0.820 A

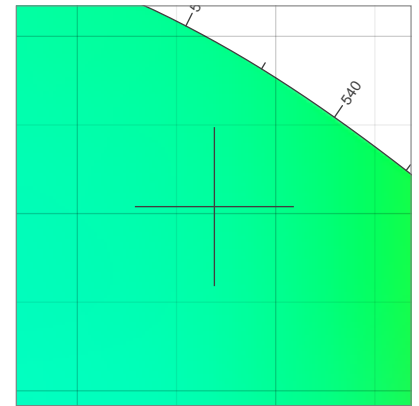
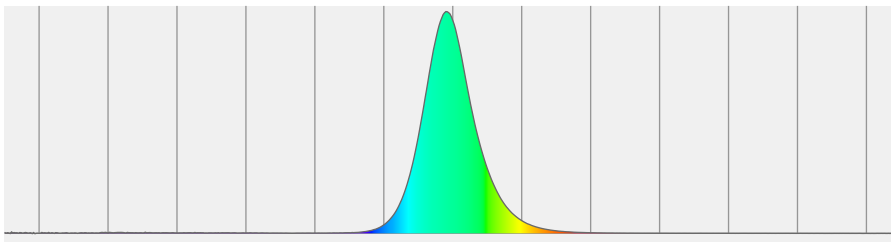
Power: 93.0 W

Efficacy: 13 Lumen/Watt

Measurement Date: 12/14/2020

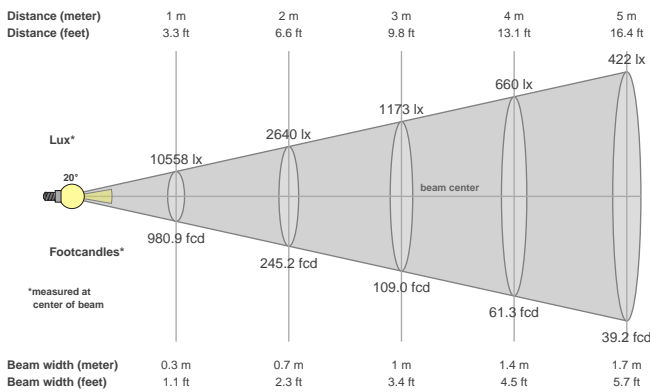


Spectral distribution



Dominant Wavelength	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate
nm	x	y	u	v
526	0.169	0.704	0.061	0.380

Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
19.7°	31.4°	36.5°

Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
10667 cd	99.6%	99.5%

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	10558	2640	1173	660	422	293	215	165	130	106	87	73	62	54	47	41	37	33	29	26
FC	980.9	245.2	109	61.3	39.2	27.2	20	15.3	12.1	9.8	8.1	6.8	5.8	5	4.4	3.8	3.4	3	2.7	2.5

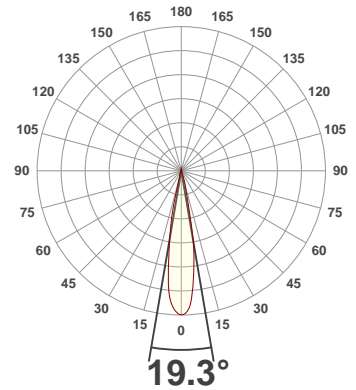
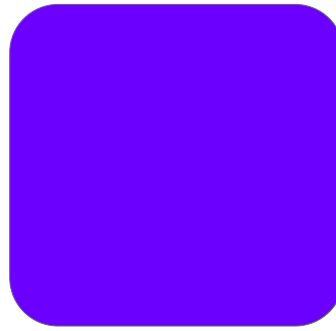
Total Lumen Output: 309 lm

Voltage: 115 V, Current: 0.712 A

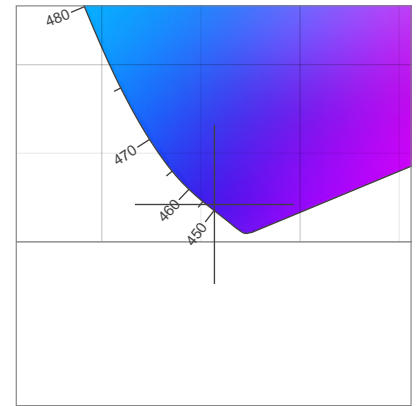
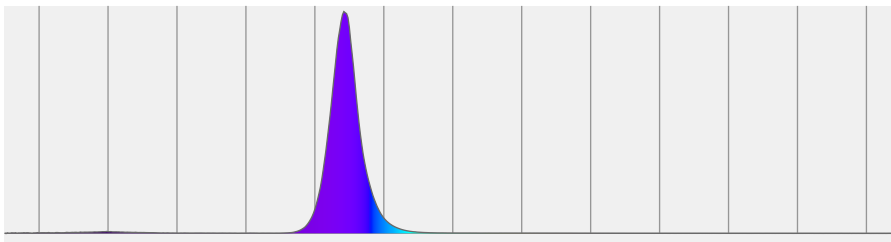
Power: 80.8 W

Efficacy: 4 Lumen/Watt

Measurement Date: 12/14/2020

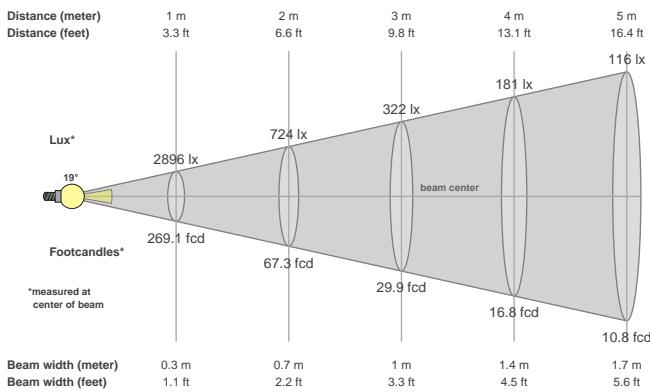


Spectral distribution



Dominant Wavelength	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate
nm	x	y	u	v
451	0.157	0.021	0.213	0.043

Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
19.3°	30.3°	36.7°

Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
2939 cd	99.8%	99.8%

Beam Intensities from 1-20m

M	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FT	3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6
LX	2896	724	322	181	116	80	59	45	36	29	24	20	17	15	13	11	10	9	8	7
FC	269.1	67.3	29.9	16.8	10.8	7.5	5.5	4.2	3.3	2.7	2.2	1.9	1.6	1.4	1.2	1.1	0.9	0.8	0.7	0.7

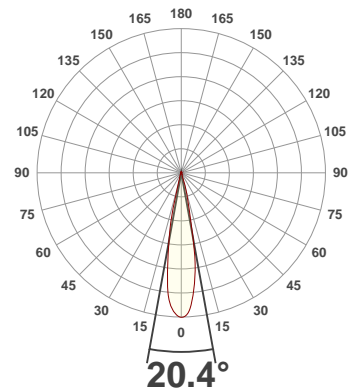
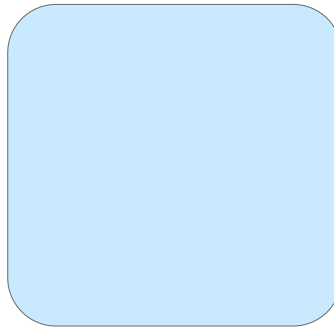
Total Lumen Output: 1858 lm

Voltage: 115 V, Current: 0.713 A

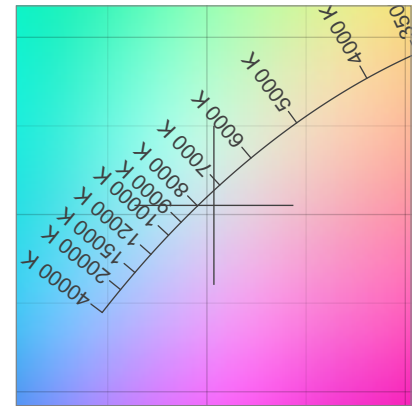
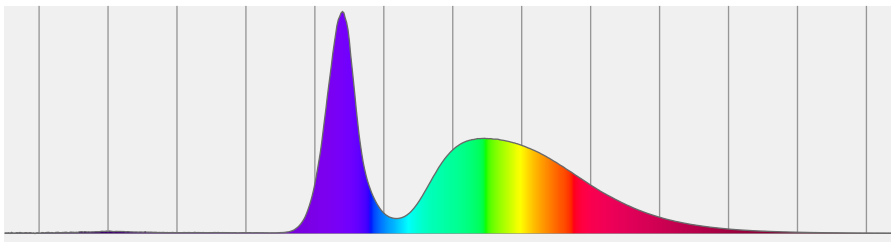
Power: 80.7 W

Efficacy: 23 Lumen/Watt

Measurement Date: 12/14/2020

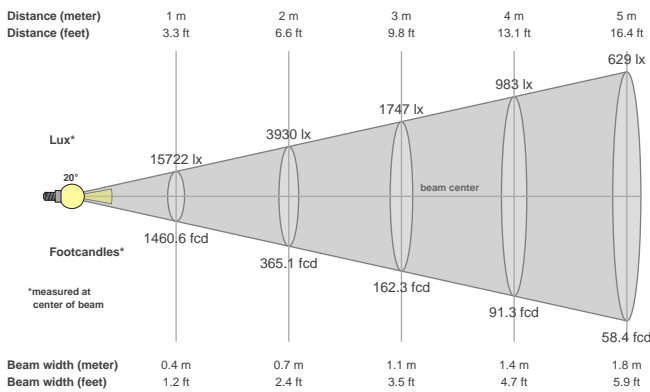


Spectral distribution



Dominant Wavelength	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate
nm	x	y	u	v
360	0.304	0.305	0.201	0.302

Beam details



Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%
20.4°	31.8°	37.5°

Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone
15932 cd	99.5%	99.4%

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	15722	3930	1747	983	629	437	321	246	194	157	130	109	93	80	70	61	54	49	44	39
FC	1460.6	365.1	162.3	91.3	58.4	40.6	29.8	22.8	18	14.6	12.1	10.1	8.6	7.5	6.5	5.7	5.1	4.5	4	3.7