KL CYC S

Photometric &

Chromaticity Test Reports

CONTENTS

Testing Process

Total Lumen Measurements

Lumens are measured using a Viso Systems Lab Spion. As a goniophotometer, the Viso calculates the field lumens of the fixture by taking multiple measurements across the light beam.

Many lumens figures provided for entertainment lighting fixtures are only 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.

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 C800U

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Key Measurements

Output

Total Lumen Output: 4681 lm

Peak Intensity: 3757 cd

Beam

Beam Angle (50%): 76.2° x 25°

Field Angle (10%): 126.3° x 80.6°

Cutoff Angle (2.5%): 135.4° x 84.3°

Color

Color Temperature: 5876 K

CRI: 93.6

TLCI: 87

TM30 R_F: 92.5

TM30 R_g: 103.7

Power Details

Efficacy: 49 Lumen/Watt

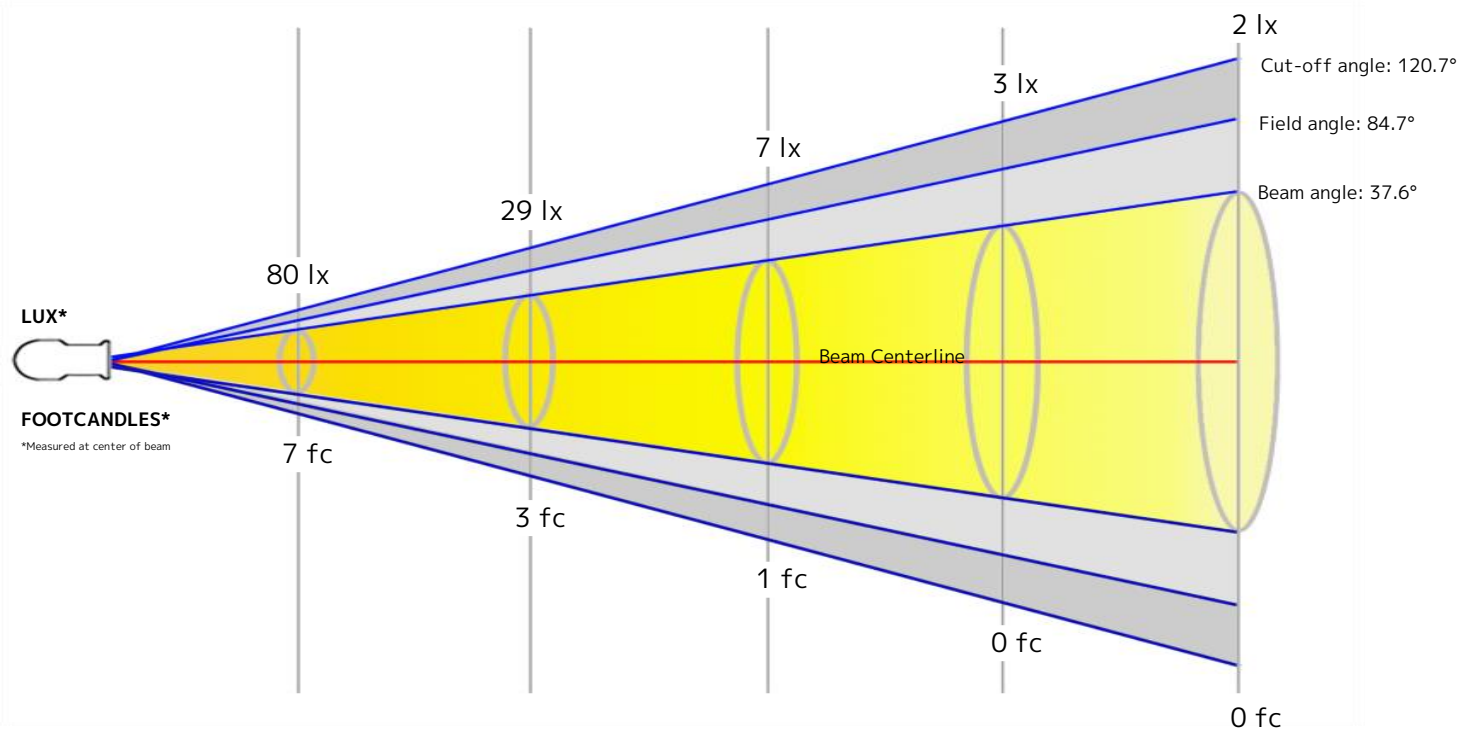
Power: 94.6 W

Supply Voltage: 120 V

Current: 0.794 A

Beam Details

Distance	3 m 2	5 m	10 m	15 m	20 m
Beam Width	m	3.4 m	6.8 m	10.2 m	13.6 m



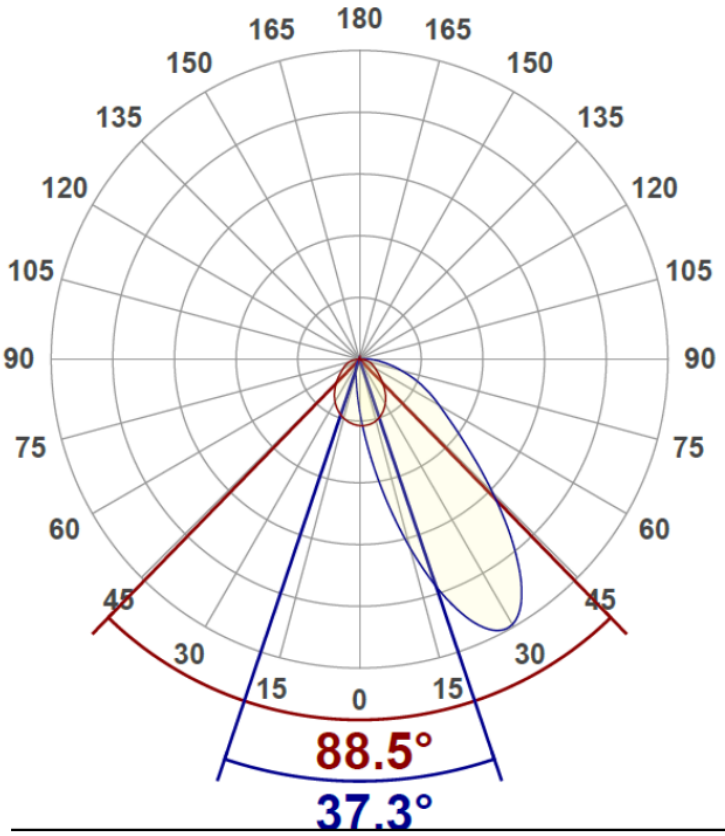
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.7 ft	11.2 ft	22.3 ft	33.5 ft	44.6 ft

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
LX	724	181	80	45	29	20	15	11	9	7	6	5	4	4	3	3	3	2	2	2
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
FC	67.3	16.8	7.5	4.2	2.7	1.9	1.4	1.1	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2

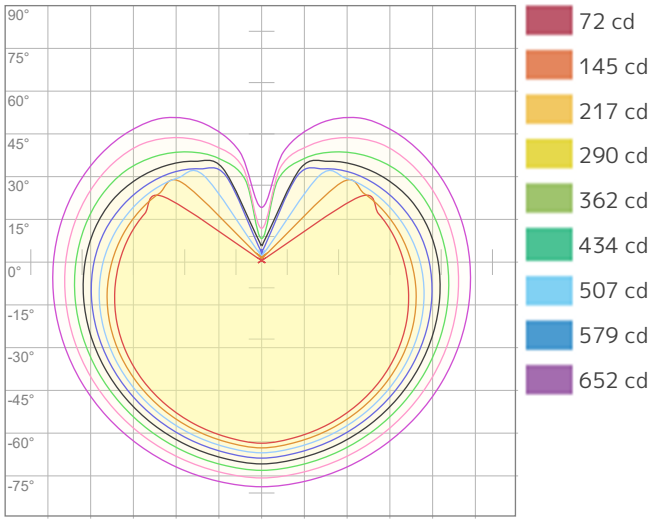
Measurement Date: 5/14/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

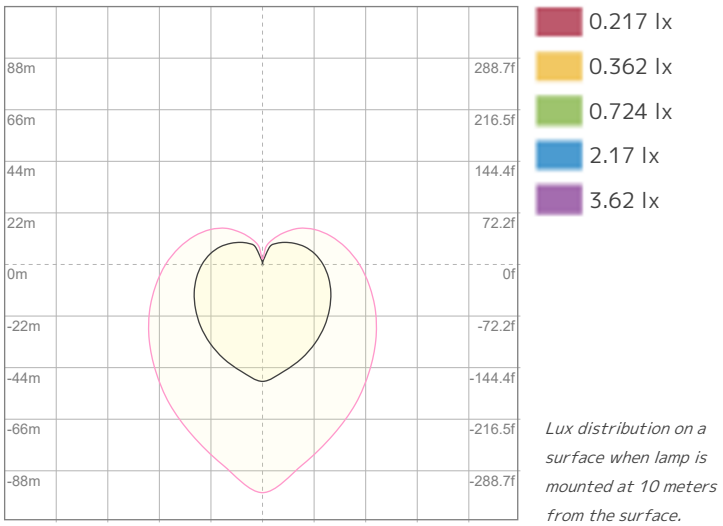


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 724 cd



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

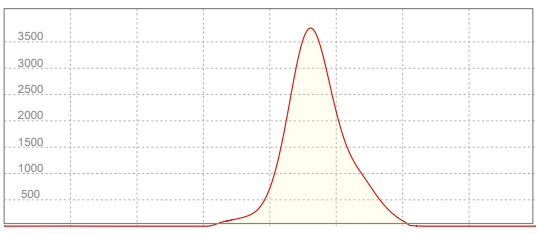
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 7.24 lx

Linear Distribution



Peak Candela

3757 cd

Calculate Center Beam Intensities

lux = 3757 / distance(m)^2

fc = 3757 / distance(ft)^2

Measurement Date: 5/14/2024

Key Measurements

Output

Total Lumen Output: 4949 lm

Peak Intensity: 3797 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 2417 K

CRI: 96.5

TLCI: 82

TM30 R_F: 93.7

TM30 R_g: 100.8

Power Details

Efficacy: 56 Lumen/Watt

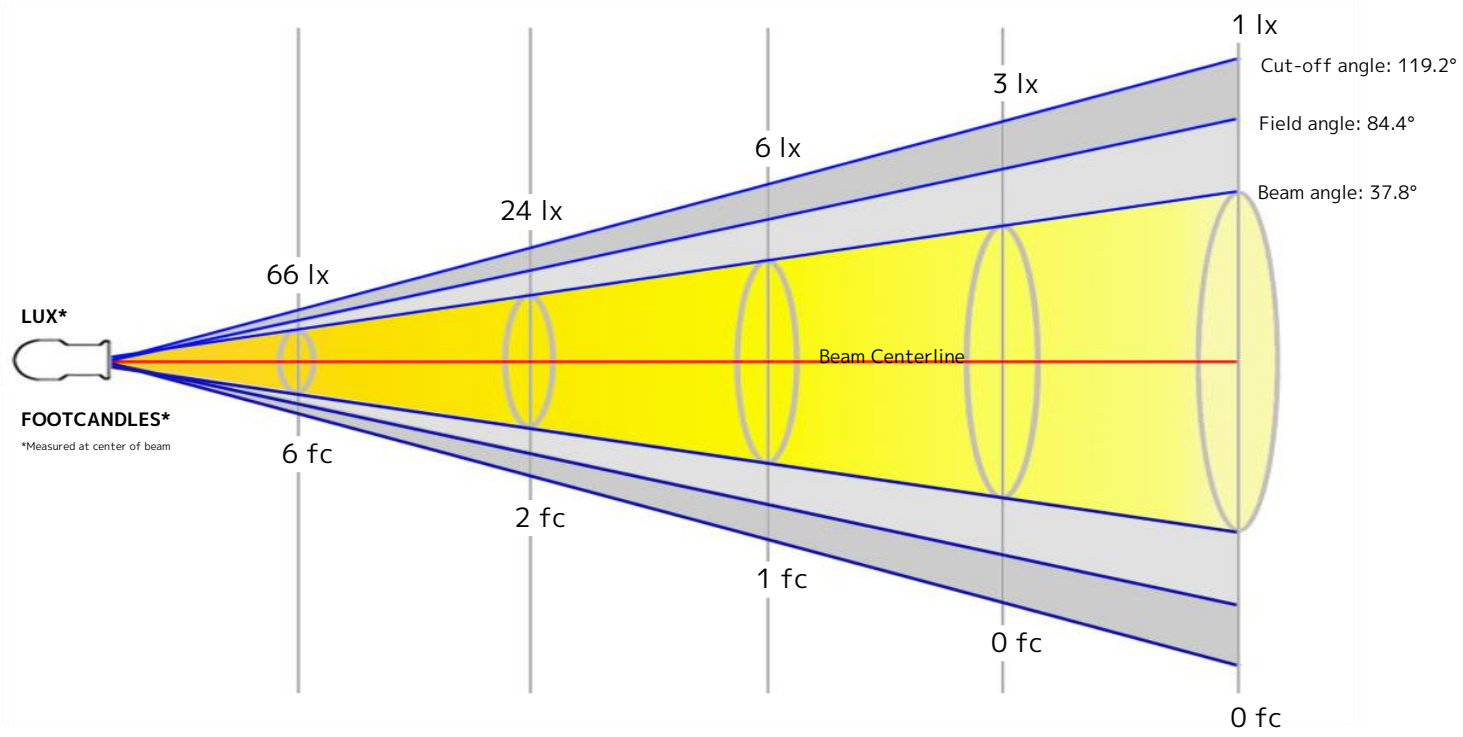
Power: 88.7 W

Supply Voltage: 120 V

Current: 0.746 A

Beam Details

Distance	3 m	5 m	10 m	15 m	20 m
Beam Width	2.1 m	3.4 m	6.9 m	10.3 m	13.7 m



Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.7 ft	11.2 ft	22.5 ft	33.7 ft	44.9 ft

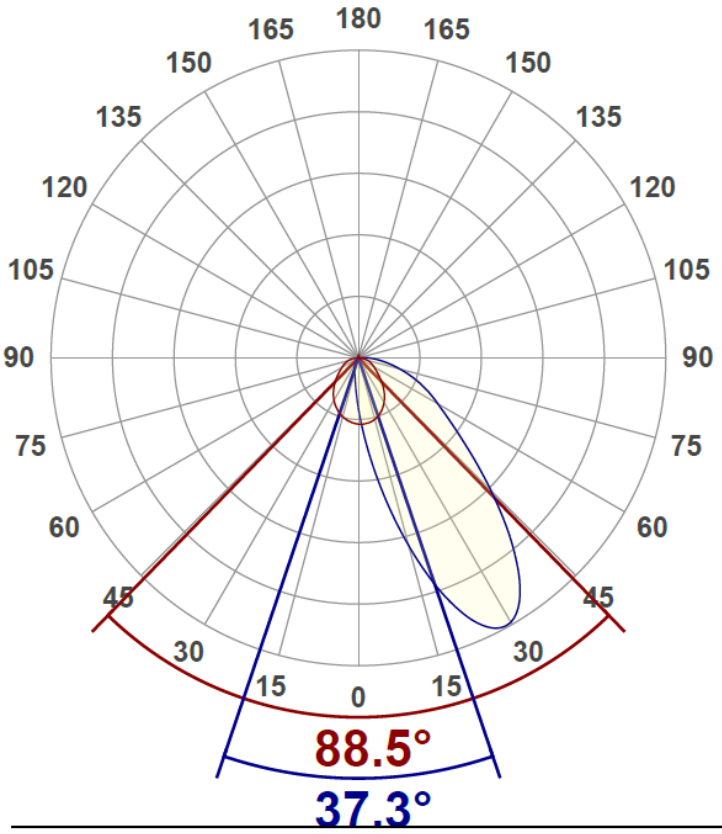
Beam Intensities from 1-20m

M	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
LX	598	150	66	37	24	17	12	9	7	6	5	4	4	3	3	2	2	2	2	1
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
FC	55.6	13.9	6.2	3.5	2.2	1.5	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1

Measurement Date: 5/15/2024

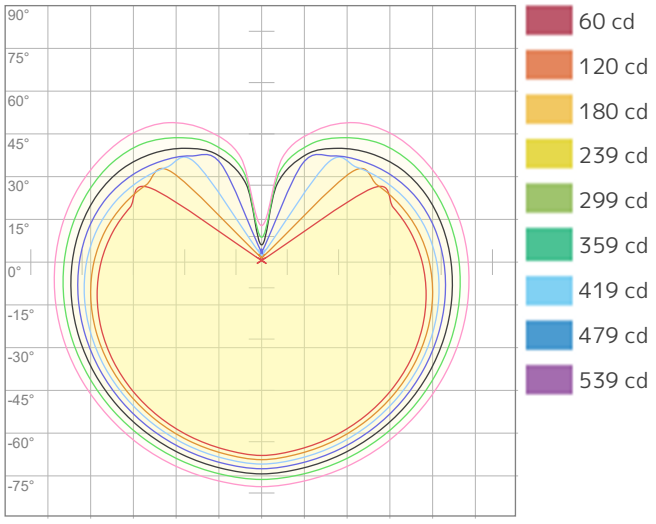
KL CYC S (2400K)

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

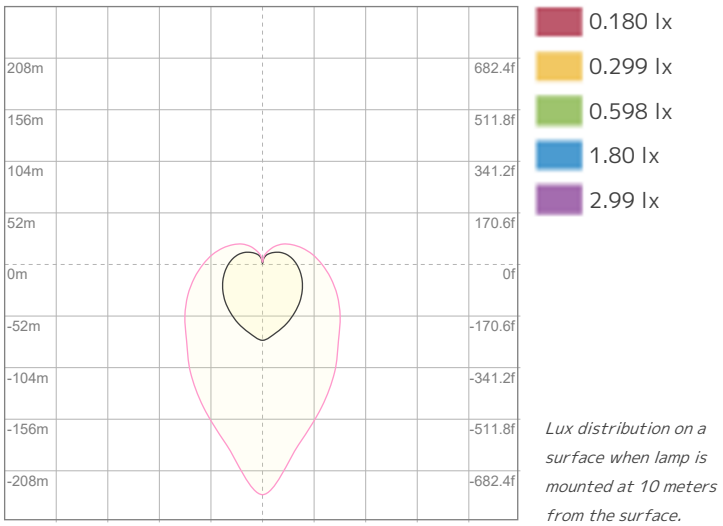


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 598 cd



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

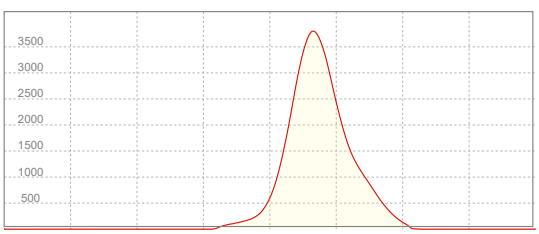
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.98 lx

Linear Distribution



Peak Candela

3797 cd

Calculate Center Beam Intensities

$lux = 3797 / distance(m)^2$

$fc = 3797 / distance(ft)^2$

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 4913 lm

Peak Intensity: 3758 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 3198 K

CRI: 96.4

TLCI: 87

TM30 R_F: 93.8

TM30 R_g: 102.6

Power Details

Efficacy: 57 Lumen/Watt

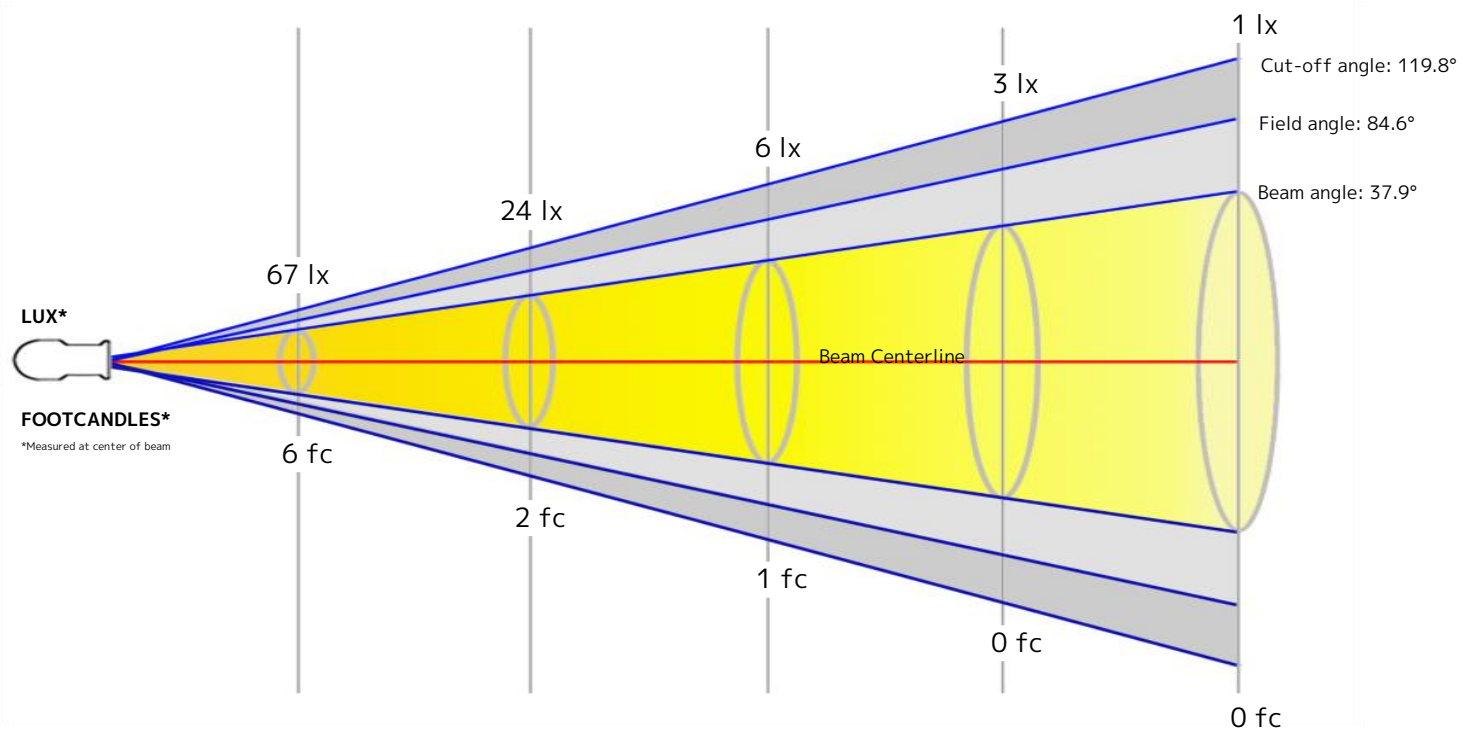
Power: 85.7 W

Supply Voltage: 120 V

Current: 0.722 A

Beam Details

Distance	3 m	5 m	10 m	15 m	20 m
Beam Width	2.1 m	3.4 m	6.9 m	10.3 m	13.7 m



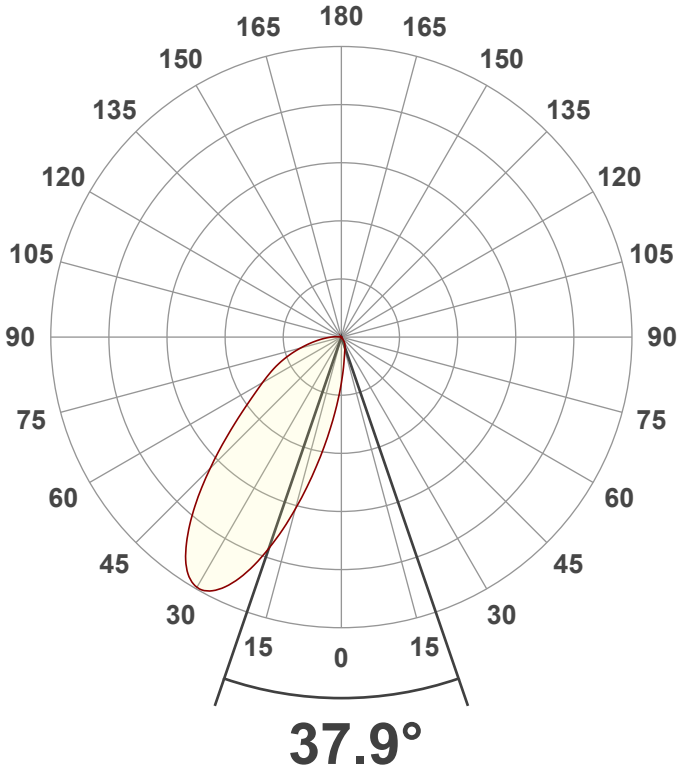
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.7 ft	11.3 ft	22.5 ft	33.8 ft	45 ft

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
LX	599	150	67	37	24	17	12	9	7	6	5	4	4	3	3	2	2	2	2	1
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
FC	55.6	13.9	6.2	3.5	2.2	1.5	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1

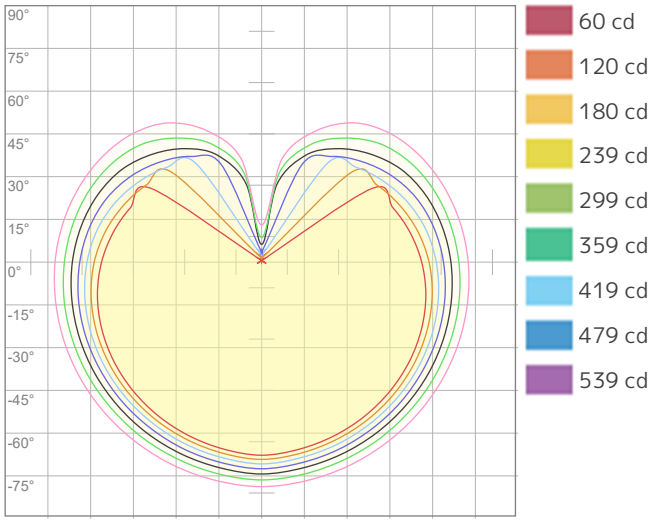
Measurement Date: 5/15/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	**Beam Angle - 50%**
37.9°	37.9°
Field Angle - 10%	**Field Angle - 10%**
84.6°	84.6°
Cutoff Angle - 2.5%	**Cutoff Angle - 2.5%**
119.8°	119.8°

ISO Diagrams

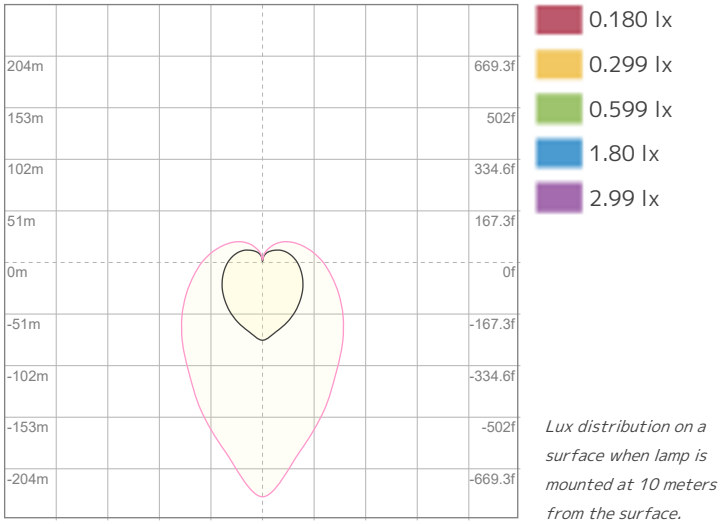


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 599 cd



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

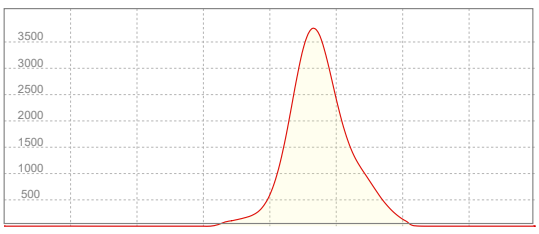
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.99 lx

Linear Distribution



Peak Candela

3758 cd

Calculate Center Beam Intensities

$lux = 3758 / distance(m)^2$

$fc = 3758 / distance(ft)^2$

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 4805 lm

Peak Intensity: 3711 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 4480 K

CRI: 95.6

TLCI: 86

TM30 R_F: 93.1

TM30 R_g: 104.3

Power Details

Efficacy: 53 Lumen/Watt

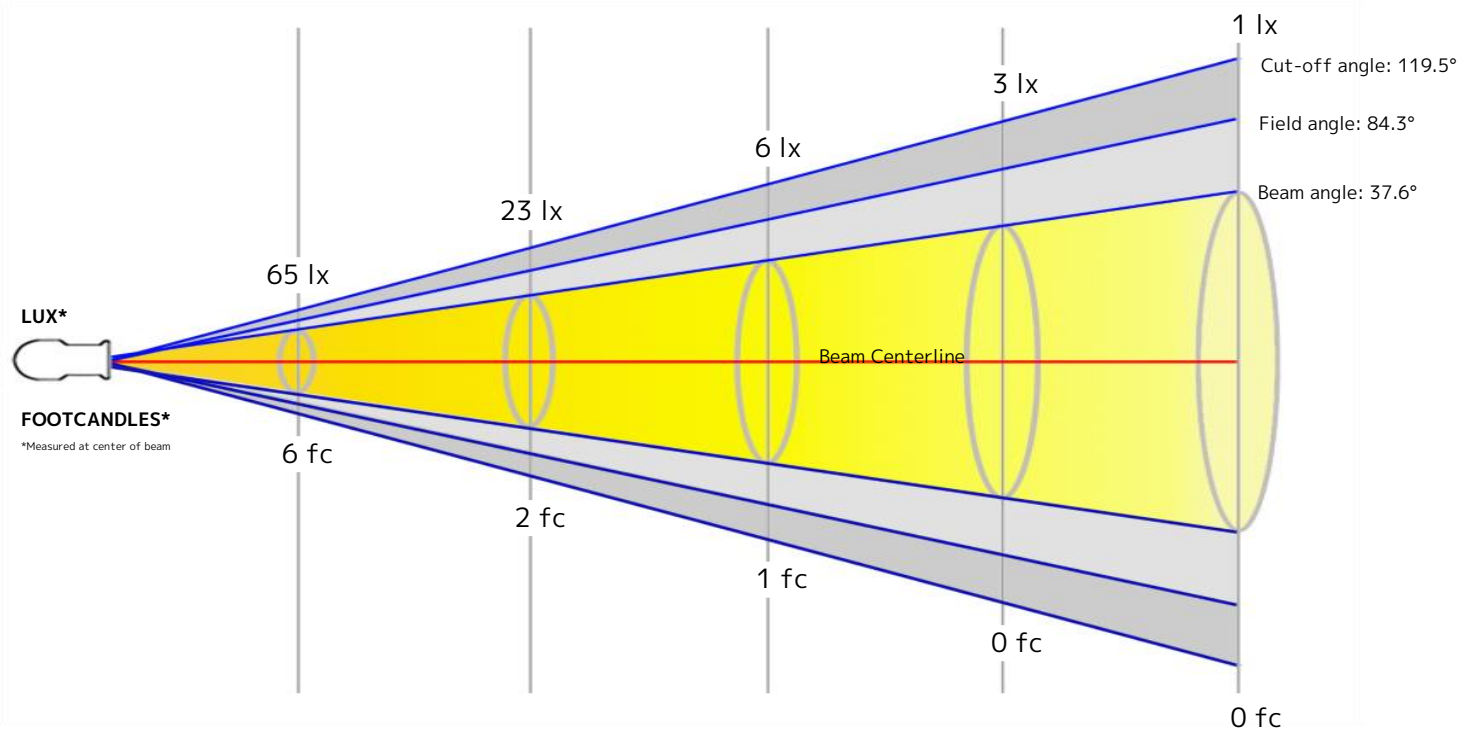
Power: 90.6 W

Supply Voltage: 120 V

Current: 0.760 A

Beam Details

Distance	3 m 2	5 m	10 m	15 m	20 m
Beam Width	m	3.4 m	6.8 m	10.2 m	13.6 m



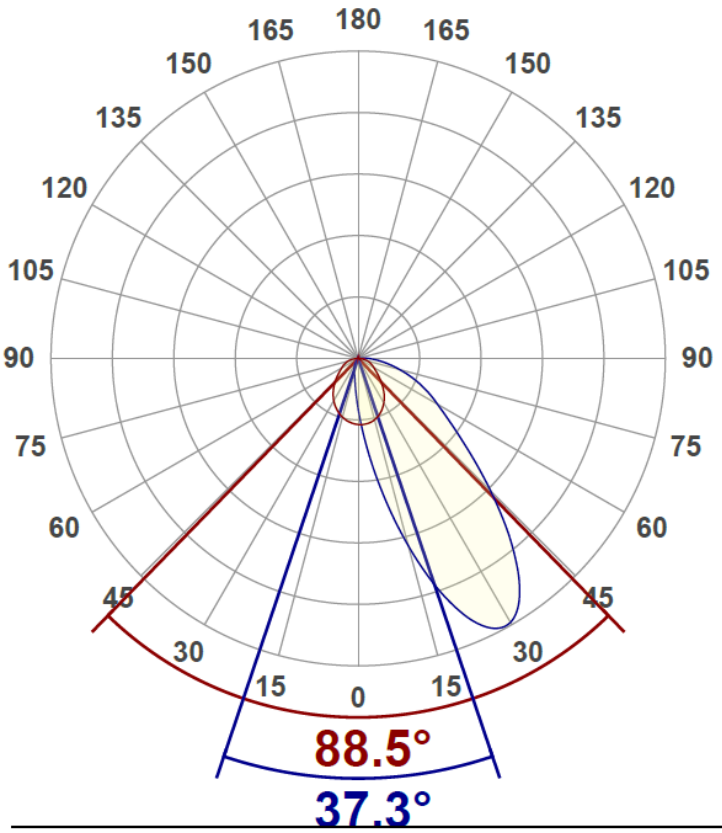
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.7 ft	11.2 ft	22.3 ft	33.5 ft	44.7 ft

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
LX	587	147	65	37	23	16	12	9	7	6	5	4	3	3	3	2	2	2	2	1
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
FC	54.6	13.6	6.1	3.4	2.2	1.5	1.1	0.9	0.7	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1

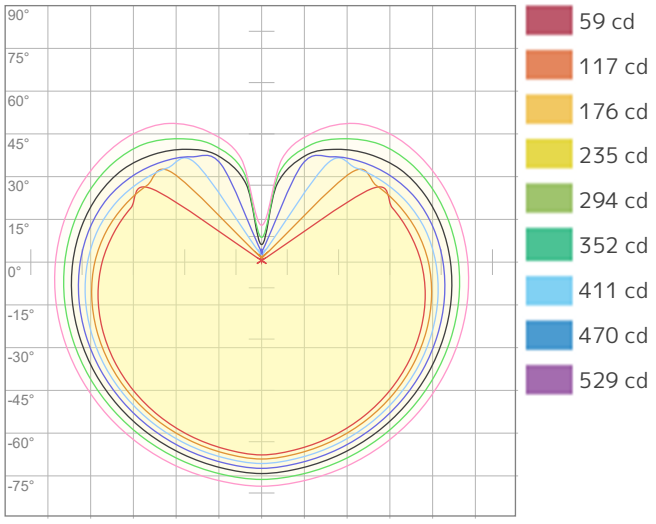
Measurement Date: 5/15/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

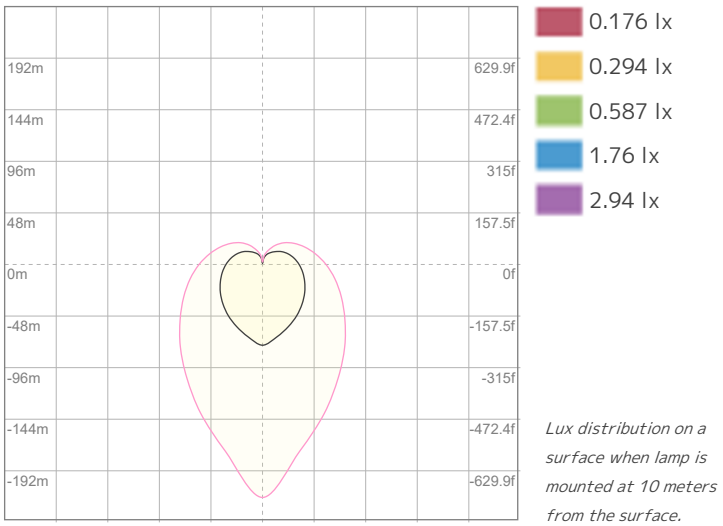


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 587 cd



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

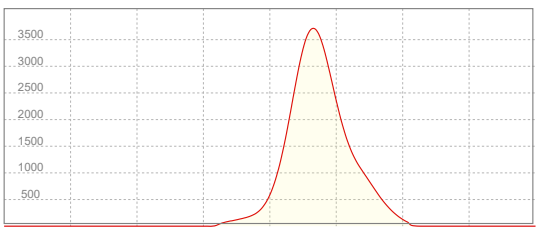
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.87 lx

Linear Distribution



Peak Candela

3711 cd

Calculate Center Beam Intensities

lux = 3711 / distance(m)^2

fc = 3711 / distance(ft)^2

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 4796 lm

Peak Intensity: 3688 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 5631 K

CRI: 94.0

TLCI: 88

TM30 R_F: 91.9

TM30 R_g: 104.8

Power Details

Efficacy: 52 Lumen/Watt

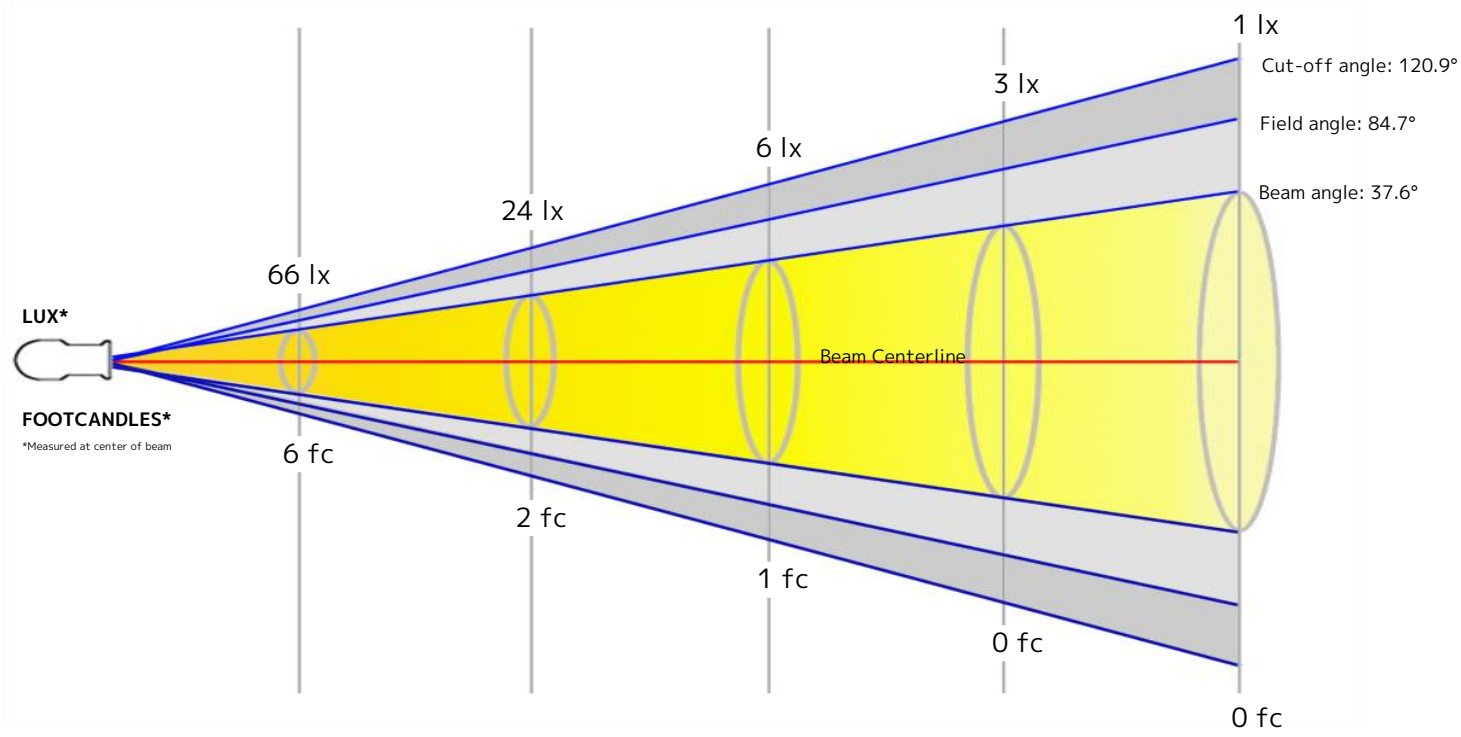
Power: 92.8 W

Supply Voltage: 120 V

Current: 0.780 A

Beam Details

Distance	3 m 2	5 m	10 m	15 m	20 m
Beam Width	m	3.4 m	6.8 m	10.2 m	13.6 m



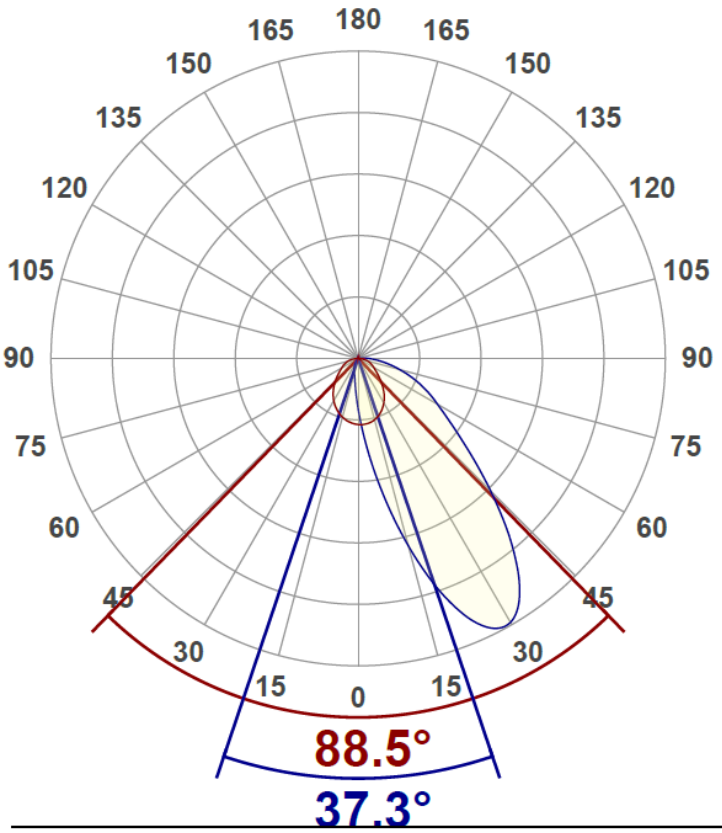
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.7 ft	11.2 ft	22.4 ft	33.5 ft	44.7 ft

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
LX	593	148	66	37	24	16	12	9	7	6	5	4	4	3	3	2	2	2	2	1
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
FC	55.1	13.8	6.1	3.4	2.2	1.5	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1

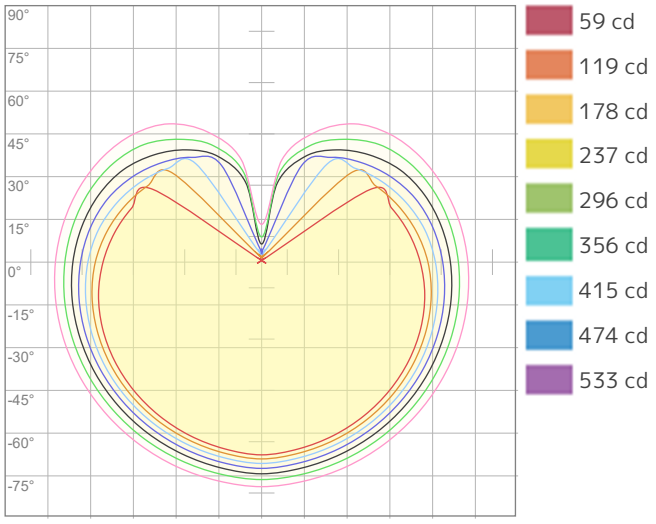
Measurement Date: 5/15/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

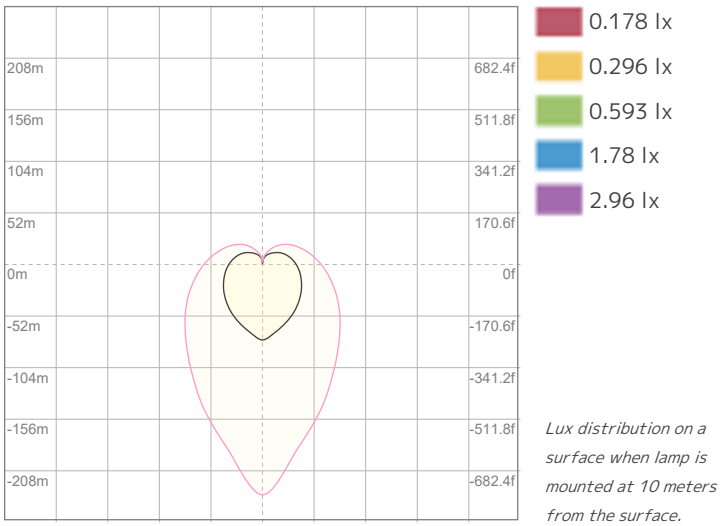


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 593 cd



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

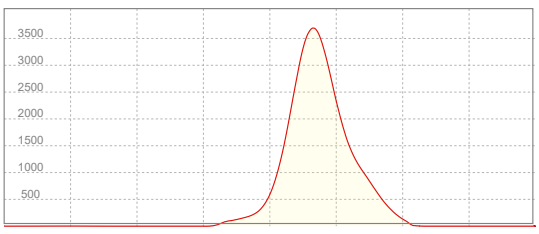
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.93 lx

Linear Distribution



Peak Candela

3688 cd

Calculate Center Beam Intensities

$lux = 3688 / distance(m)^2$

$fc = 3688 / distance(ft)^2$

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 4771 lm

Peak Intensity: 3686 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 6049 K

CRI: 93.8

TLCI: 88

TM30 R_F: 91.7

TM30 R_g: 104.9

Power Details

Efficacy: 51 Lumen/Watt

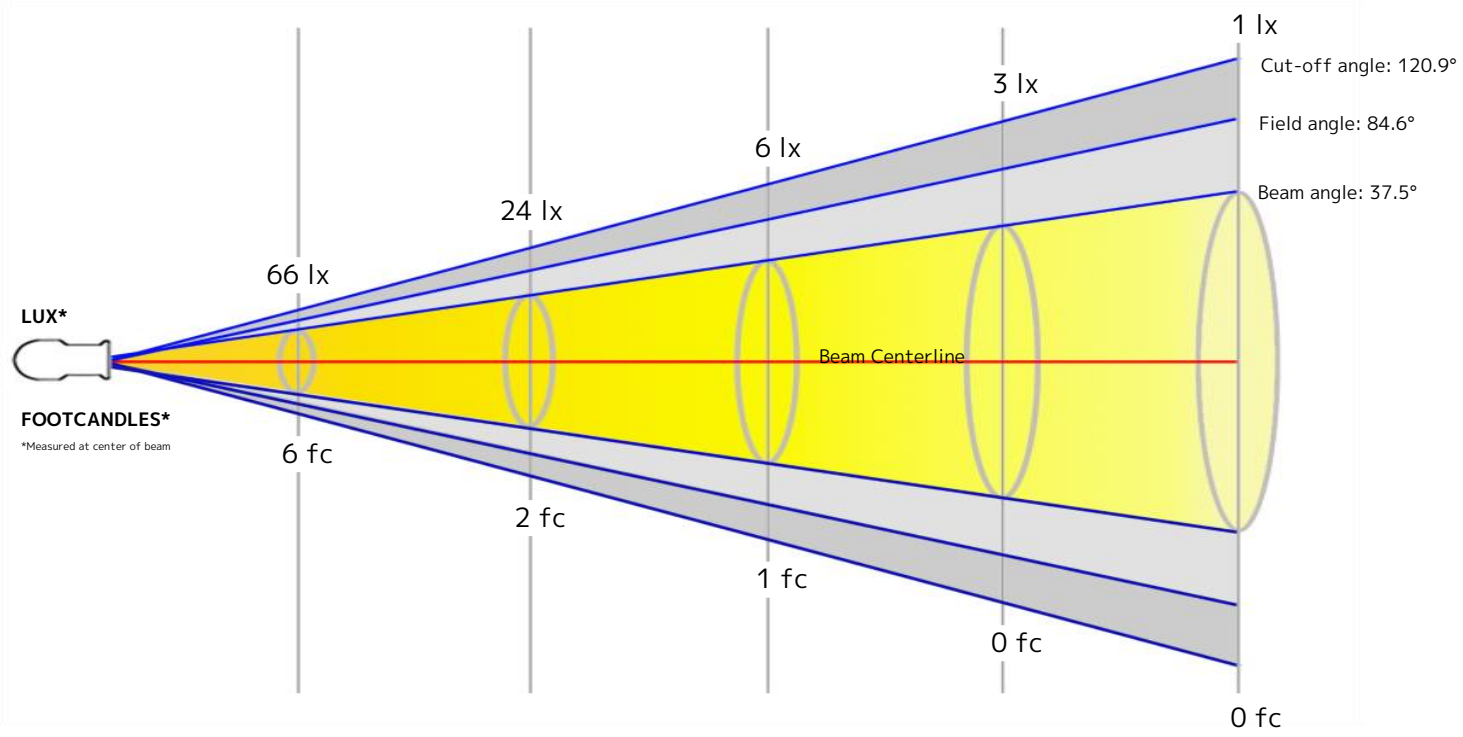
Power: 93.3 W

Supply Voltage: 120 V

Current: 0.784 A

Beam Details

Distance	3 m 2	5 m	10 m	15 m	20 m
Beam Width	m	3.4 m	6.8 m	10.2 m	13.6 m



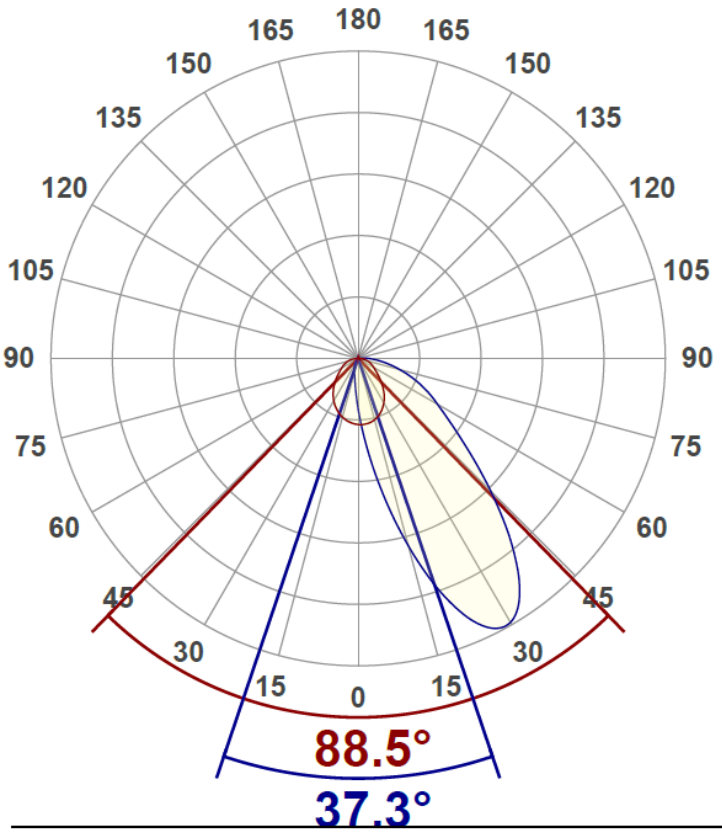
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.7 ft	11.1 ft	22.3 ft	33.4 ft	44.5 ft

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
LX	597	149	66	37	24	17	12	9	7	6	5	4	4	3	3	2	2	2	2	1
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
FC	55.5	13.9	6.2	3.5	2.2	1.5	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1

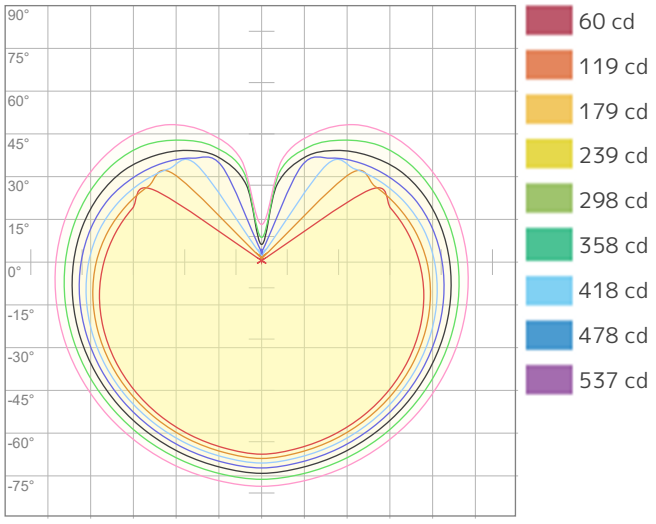
Measurement Date: 5/15/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

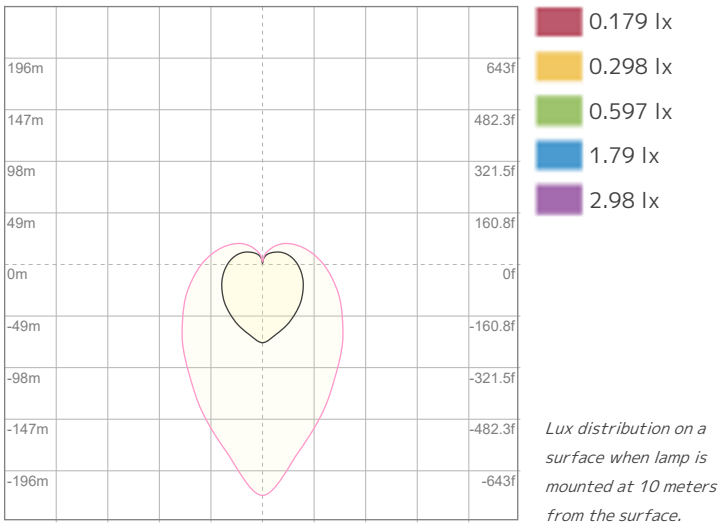


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 597 cd



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

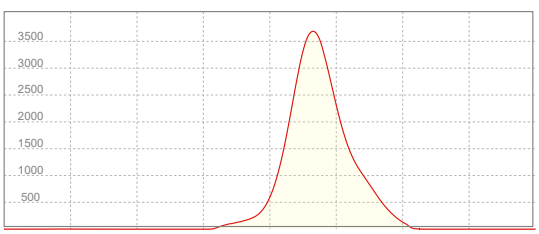
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.97 lx

Linear Distribution



Peak Candela

3686 cd

Calculate Center Beam Intensities

$lux = 3686 / distance(m)^2$

$fc = 3686 / distance(ft)^2$

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 4722 lm

Peak Intensity: 3639 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 6477 K

CRI: 93.6

TLCI: 88

TM30 R_F: 91.7

TM30 R_g: 104.9

Power Details

Efficacy: 50 Lumen/Watt

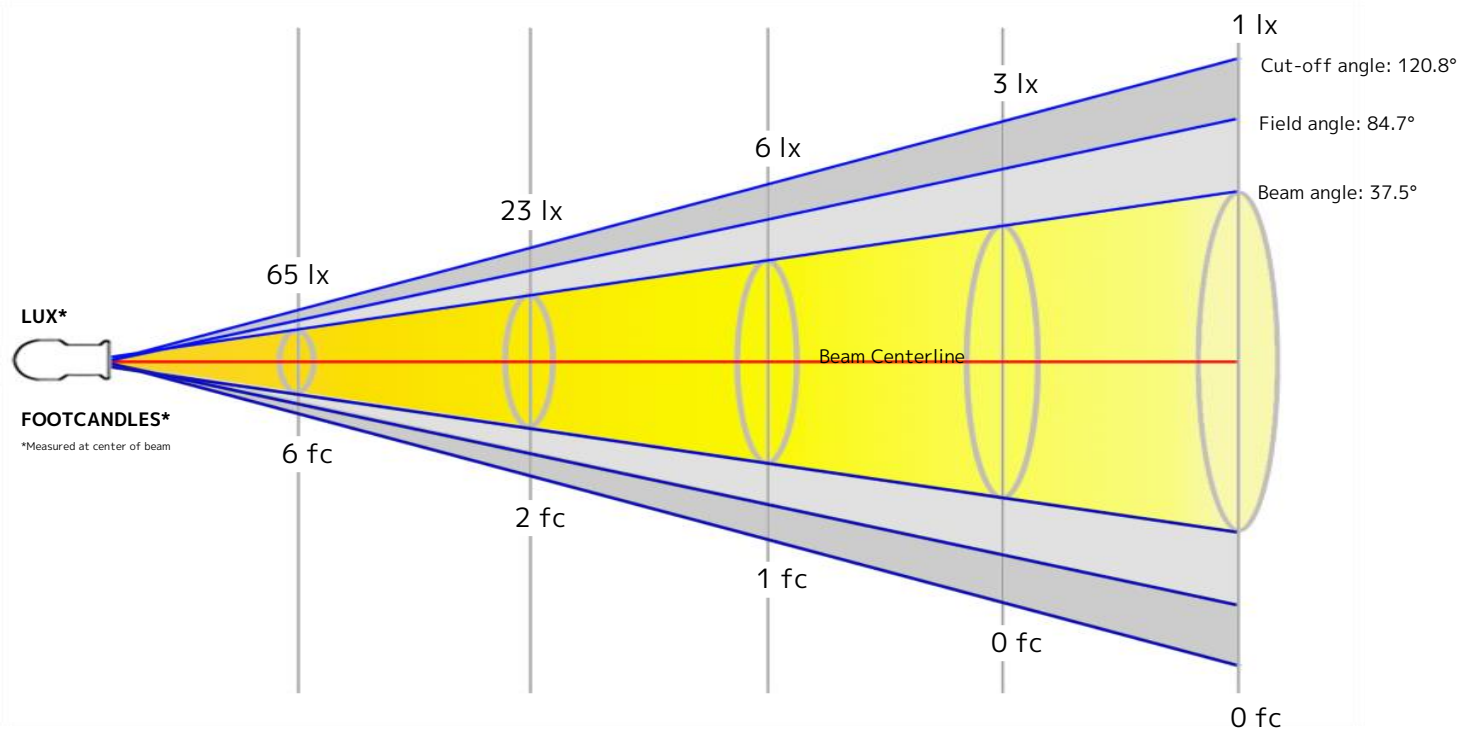
Power: 93.9 W

Supply Voltage: 121 V

Current: 0.784 A

Beam Details

Distance	3 m 2	5 m	10 m	15 m	20 m
Beam Width	m	3.4 m	6.8 m	10.2 m	13.6 m



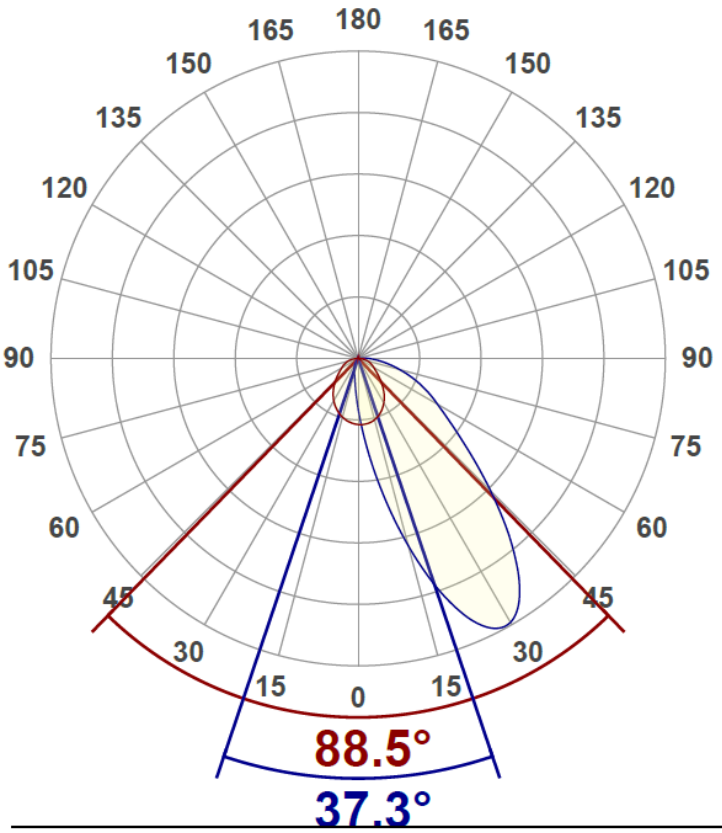
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.7 ft	11.1 ft	22.3 ft	33.4 ft	44.5 ft

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
LX	585	146	65	37	23	16	12	9	7	6	5	4	3	3	3	2	2	2	2	1
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
FC	54.3	13.6	6	3.4	2.2	1.5	1.1	0.8	0.7	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1

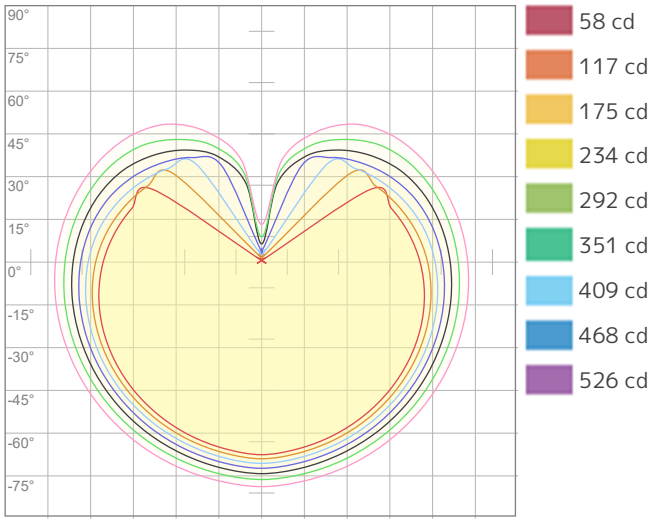
Measurement Date: 5/15/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

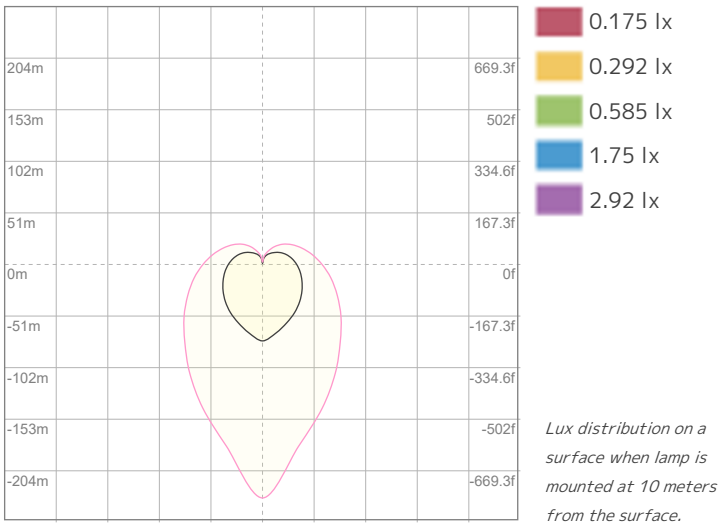


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 585 cd



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

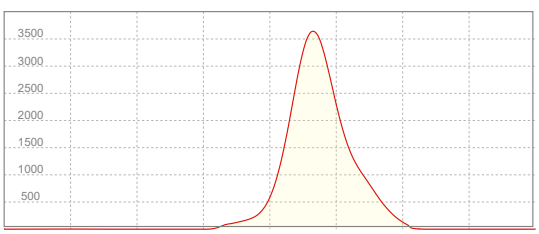
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.85 lx

Linear Distribution



Peak Candela

3639 cd

Calculate Center Beam Intensities

lux = 3639 / distance(m)^2

fc = 3639 / distance(ft)^2

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 4650 lm

Peak Intensity: 3592 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 7551 K

CRI: 93.2

TLCI: 88

TM30 R_F: 91.1

TM30 R_g: 104.5

Power Details

Efficacy: 49 Lumen/Watt

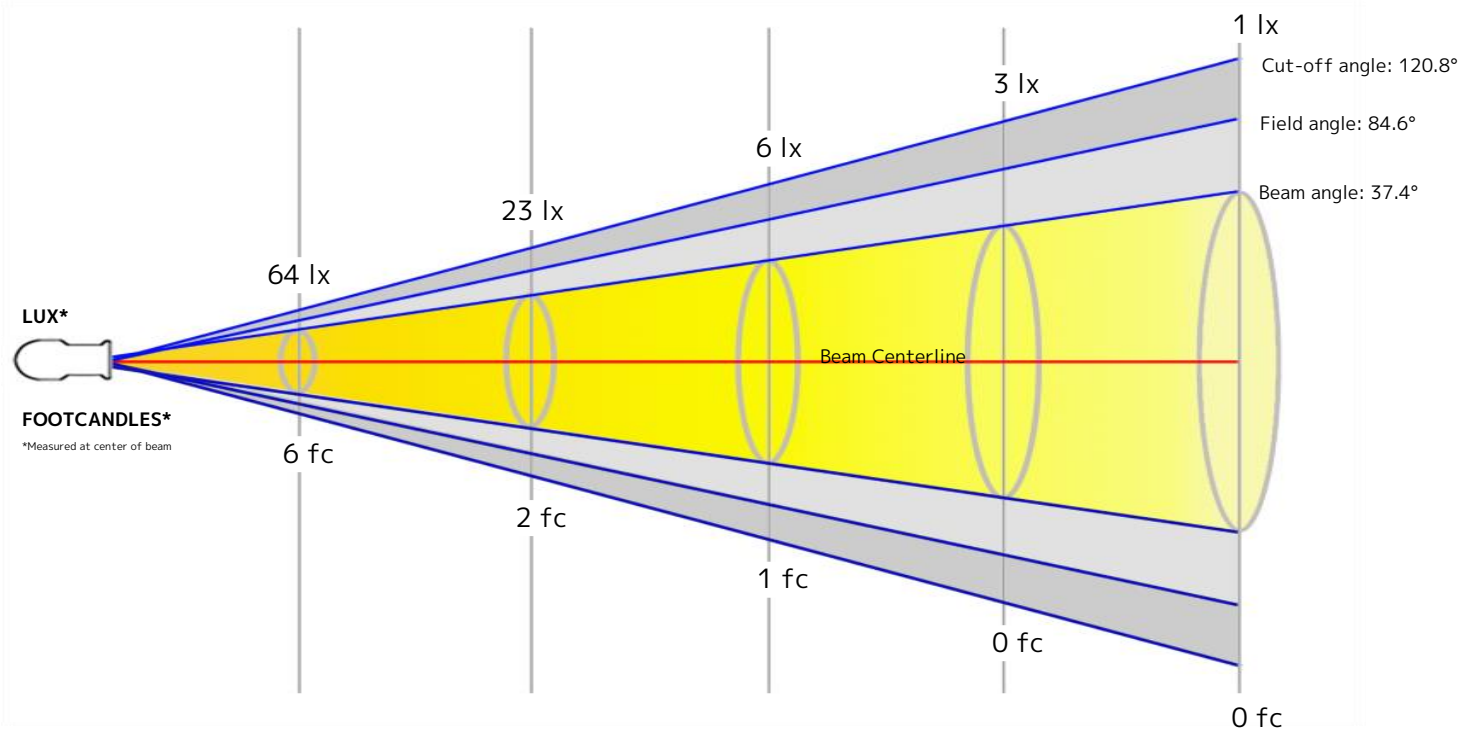
Power: 94.8 W

Supply Voltage: 120 V

Current: 0.797 A

Beam Details

Distance	3 m 2	5 m	10 m	15 m	20 m
Beam Width	m	3.4 m	6.8 m	10.2 m	13.5 m



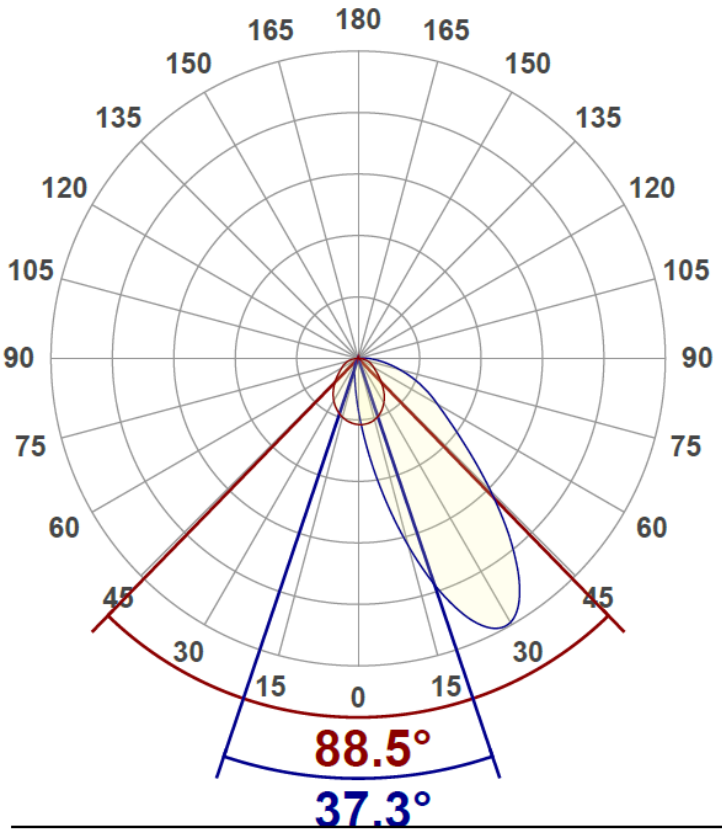
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.6 ft	11.1 ft	22.2 ft	33.3 ft	44.4 ft

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
LX	578	145	64	36	23	16	12	9	7	6	5	4	3	3	3	2	2	2	2	1
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
FC	53.7	13.4	6	3.4	2.1	1.5	1.1	0.8	0.7	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1

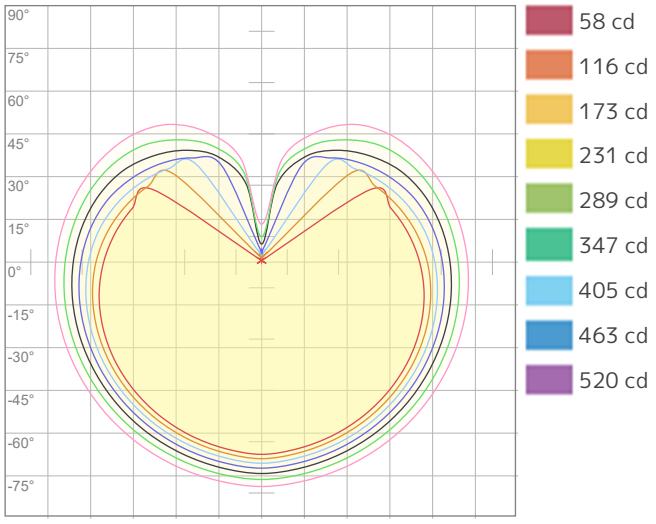
Measurement Date: 5/15/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

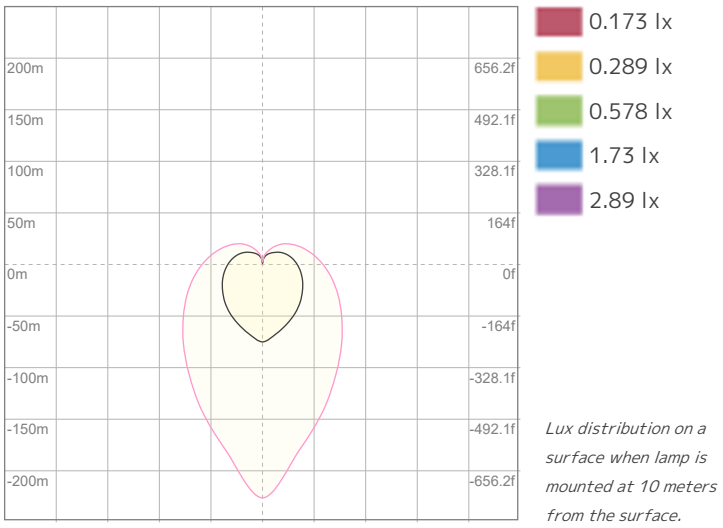


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 578 cd



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

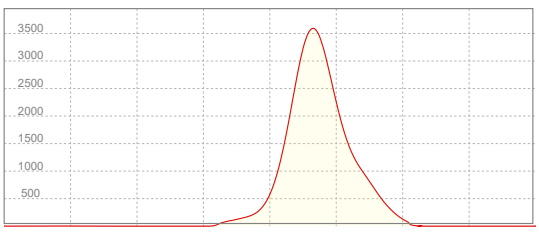
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.78 lx

Linear Distribution



Peak Candela

3592 cd

Calculate Center Beam Intensities

$lux = 3592 / distance(m)^2$

$fc = 3592 / distance(ft)^2$

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 4628 lm

Peak Intensity: 3571 cd

Beam

Beam Angle (50%): 88.5° x 37.3°

Field Angle (10%): 160.2° x 84.5°

Cutoff Angle (2.5%): 171.5° x 120.4°

Color

Color Temperature: 7800 K

CRI: 93.2

TLCI: 88

TM30 R_F: 90.9

TM30 R_g: 104.3

Power Details

Efficacy: 49 Lumen/Watt

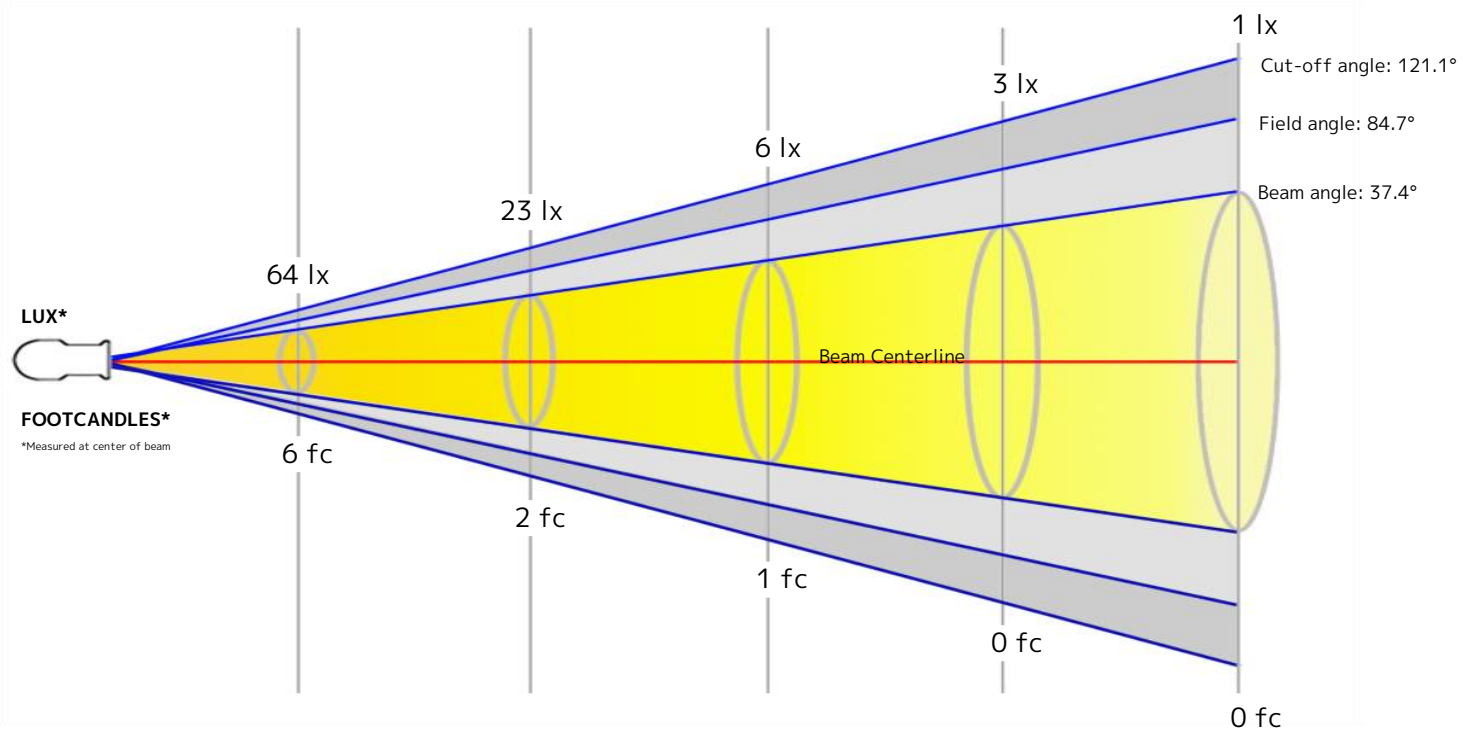
Power: 94.5 W

Supply Voltage: 121 V

Current: 0.789 A

Beam Details

Distance	3 m 2	5 m	10 m	15 m	20 m
Beam Width	m	3.4 m	6.8 m	10.2 m	13.6 m



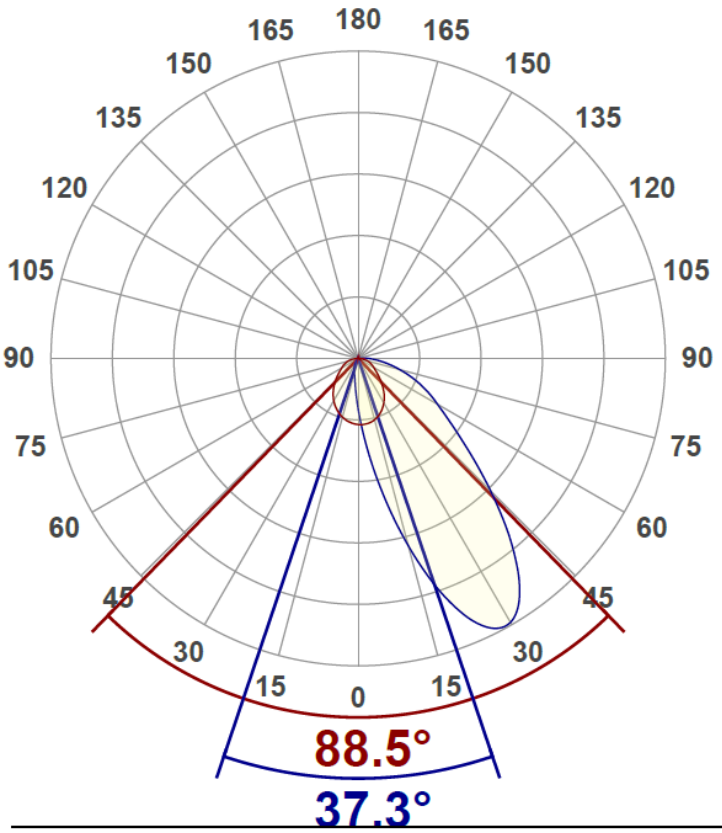
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	6.6 ft	11.1 ft	22.2 ft	33.3 ft	44.5 ft

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
LX	575	144	64	36	23	16	12	9	7	6	5	4	3	3	3	2	2	2	2	1
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
FC	53.5	13.4	5.9	3.3	2.1	1.5	1.1	0.8	0.7	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1

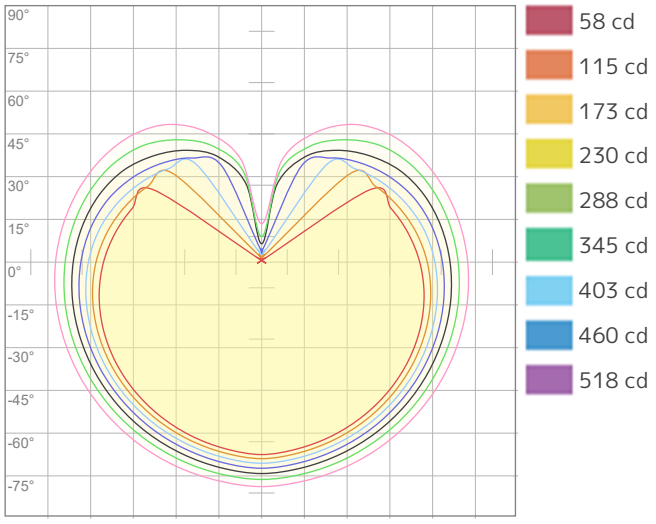
Measurement Date: 5/15/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	Beam Angle - 50%
88.5°	37.3°
Field Angle - 10%	Field Angle - 10%
160.2°	84.5°
Cutoff Angle - 2.5%	Cutoff Angle - 2.5%
171.5°	120.4°

ISO Diagrams

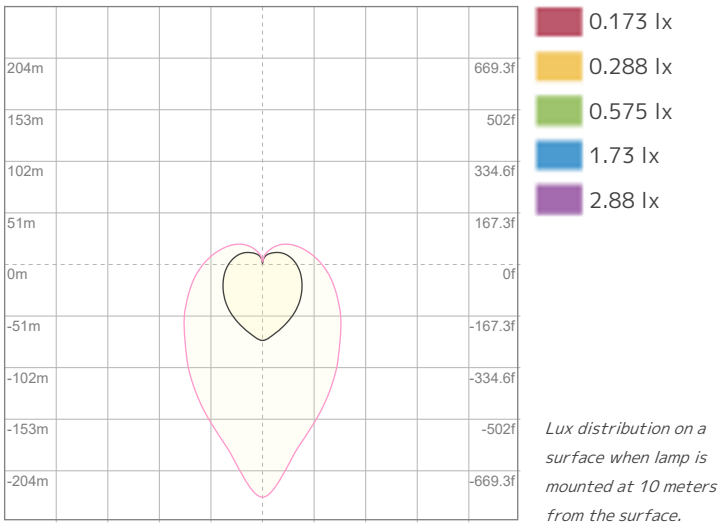


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 575 cd



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

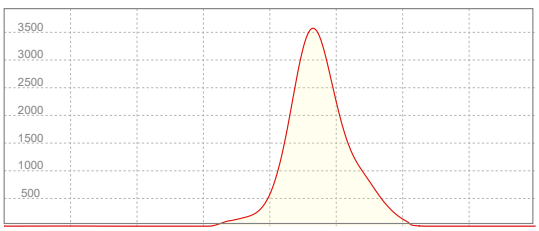
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 5.75 lx

Linear Distribution



Peak Candela

3571 cd

Calculate Center Beam Intensities

$lux = 3571 / distance(m)^2$

$fc = 3571 / distance(ft)^2$

Measurement Date: 5/15/2024

Key Measurements

Output

Total Lumen Output: 5276 lm

Peak Intensity: 5837 cd

Beam

Beam Angle (50%): 76.2° x 25°

Field Angle (10%): 126.3° x 80.6°

Cutoff Angle (2.5%): 135.4° x 84.3°

Color

Color Temperature: 5819 K

CRI: 93.4

TLCI: 88

TM30 R_F: 92.4

TM30 R_g: 103.4

Power Details

Efficacy: 57 Lumen/Watt

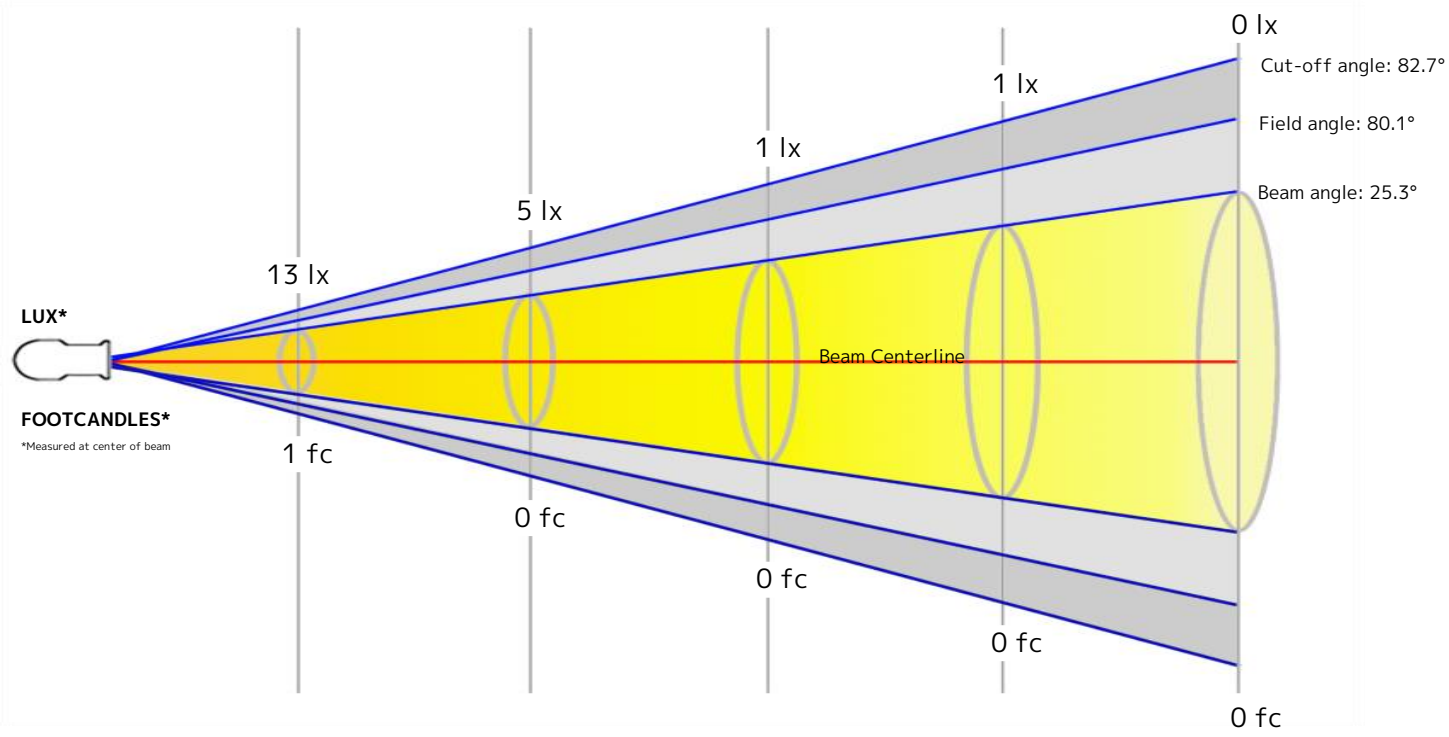
Power: 93.4 W

Supply Voltage: 120 V

Current: 0.780 A

Beam Details

Distance	3 m	5 m	10 m	15 m	20 m
Beam Width	1.3 m	2.2 m	4.5 m	6.7 m	9 m



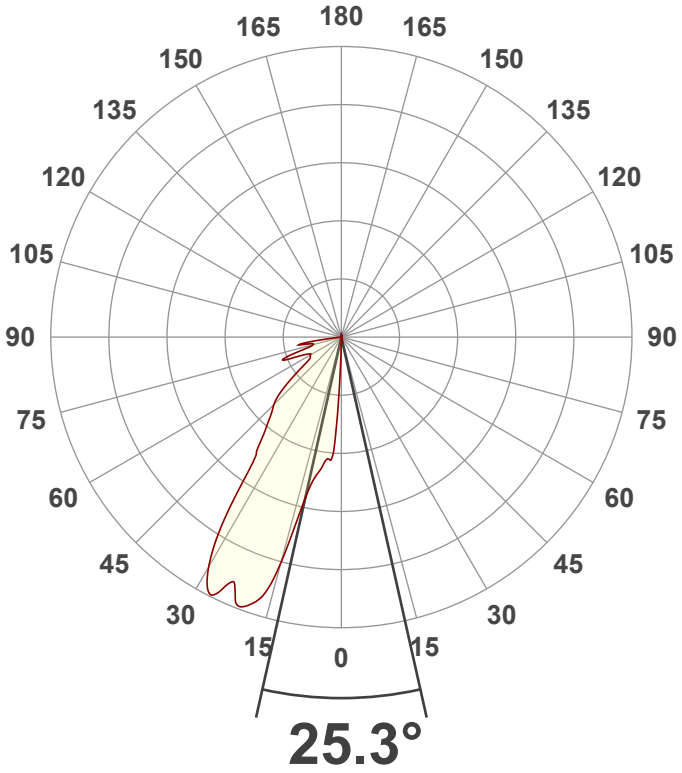
Distance	9.8 ft	16.4 ft	32.8 ft	49.2 ft	65.6 ft
Beam Width	4.4 ft	7.4 ft	14.7 ft	22.1 ft	29.4 ft

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
LX	117	29	13	7	5	3	2	2	1	1	1	1	1	1	1	0	0	0	0	0
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
FC	10.9	2.7	1.2	0.7	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0

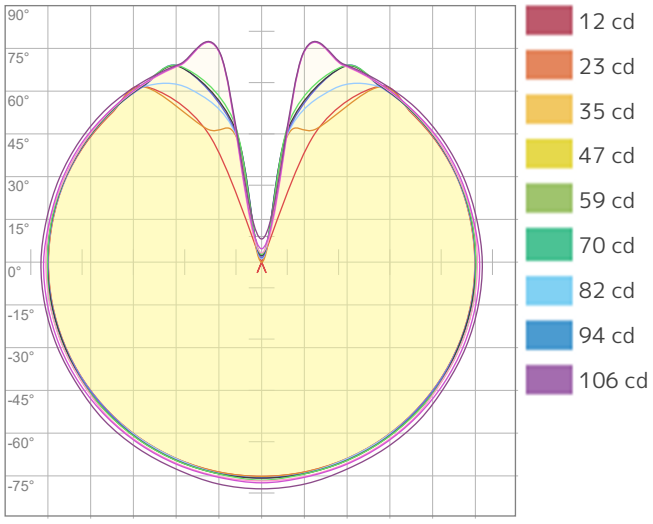
Measurement Date: 5/14/2024

Angular Distribution



0° Plane	90° Plane
Beam Angle - 50%	**Beam Angle - 50%**
25.3°	76.2°
Field Angle - 10%	**Field Angle - 10%**
80.1°	126.3°
Cutoff Angle - 2.5%	**Cutoff Angle - 2.5%**
82.7°	135.4°

ISO Diagrams

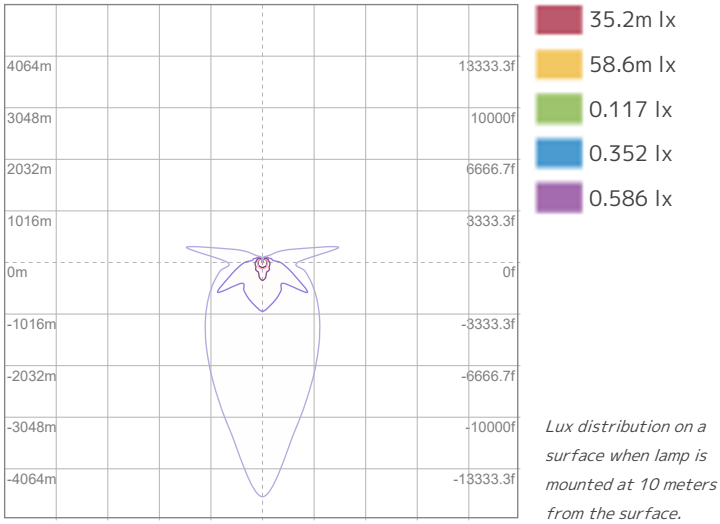


ISO Candela Diagram

Conditions:

Number of c-planes: 2

Candela at center: 117 cd



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

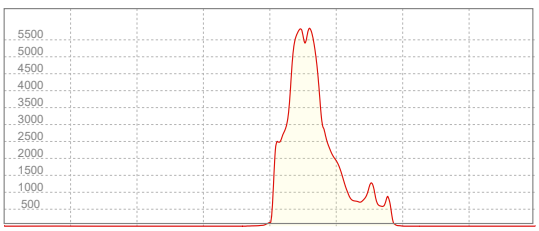
ISO LUX Diagram

Conditions:

Number of c-planes: 2

LUX at center: 1.17 lx

Linear Distribution



Peak Candela

5837 cd

Calculate Center Beam Intensities

lux = 5837 / distance(m)^2

fc = 5837 / distance(ft)^2

Measurement Date: 5/14/2024

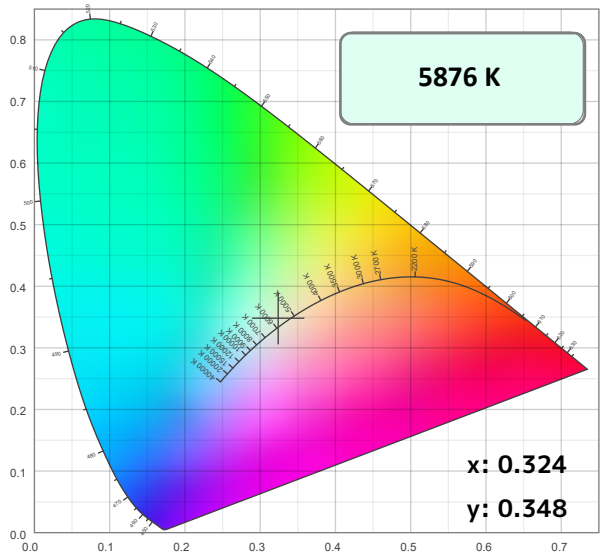
Prepared For ELATION PROFESSIONAL

Color Temperature: 5876K

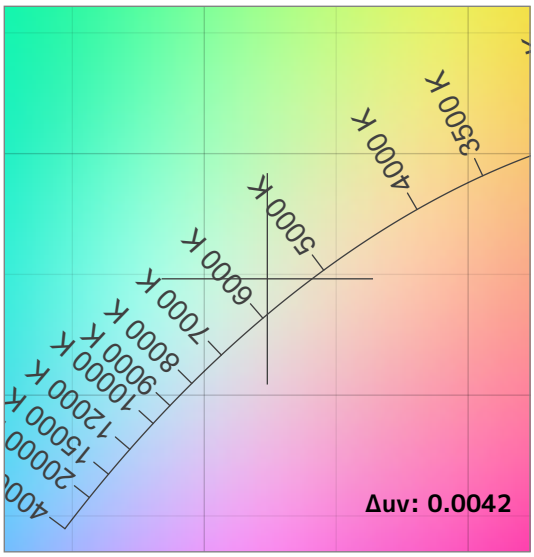
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
93.6	79.7	92.5	103.7	87	94.3	0.324	0.348	0.0042	32	59

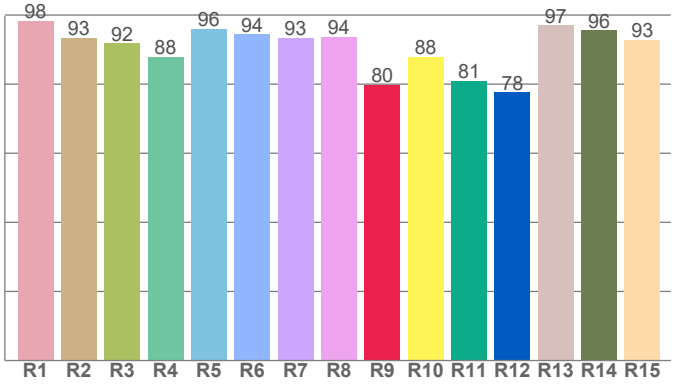
CIE 1931



CIE 1931 ZOOMED

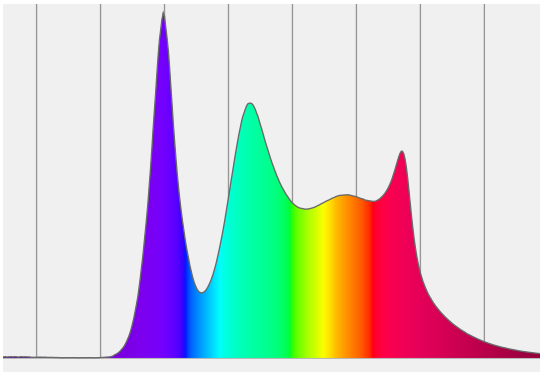


CRI: 93.6 (R1-R8)



Spectral Power Distribution (SPD)

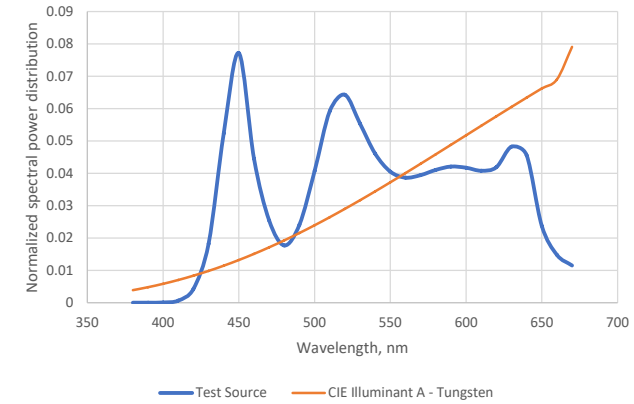
Dominant Wavelength 570 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 32

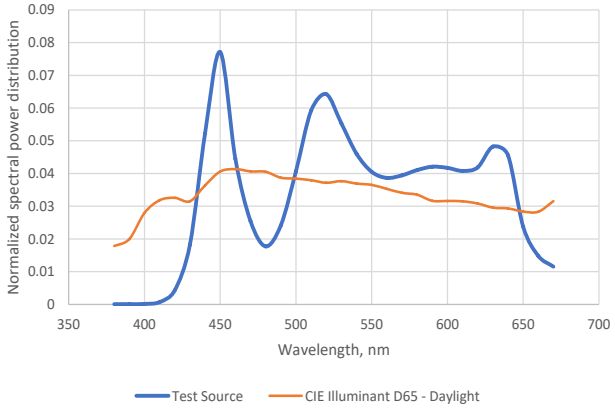
Spectral variance



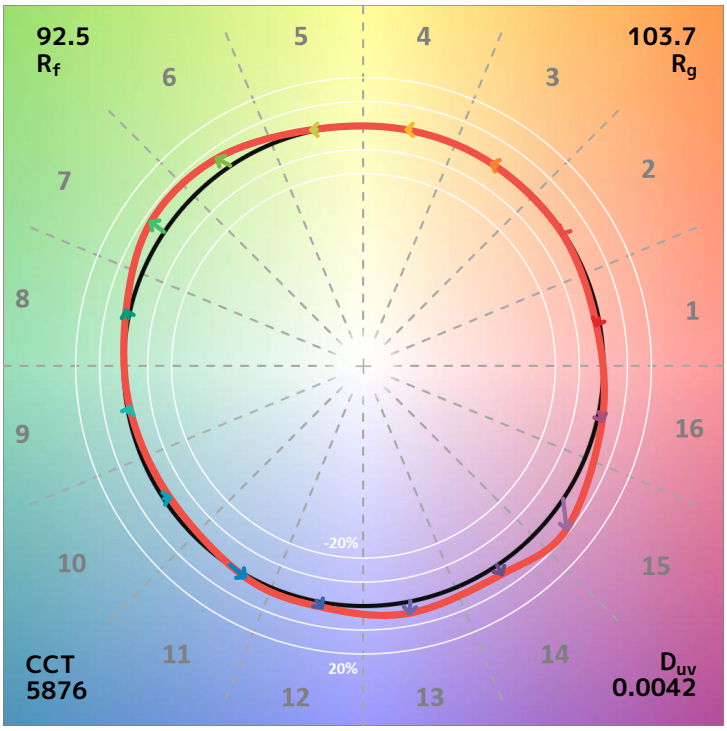
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 59

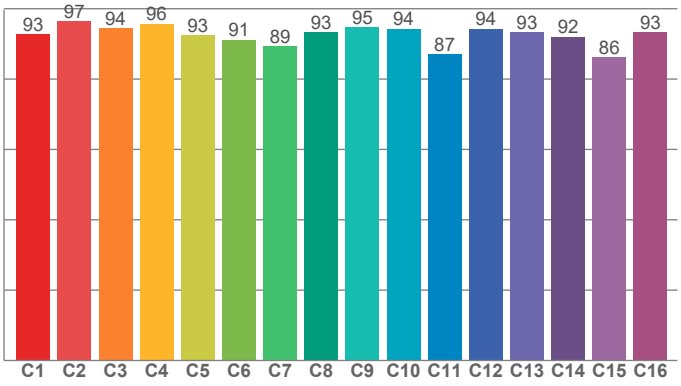
Spectral variance



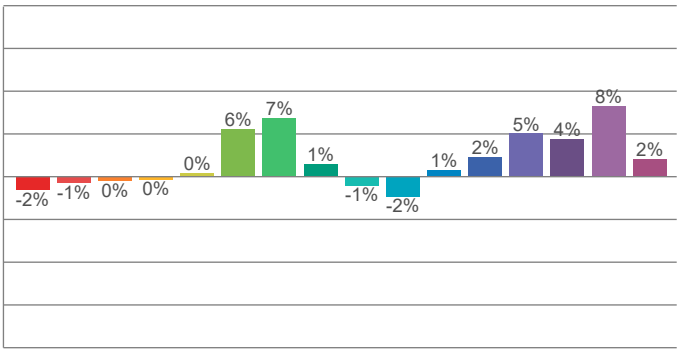
Measurement Date: 5/14/2024



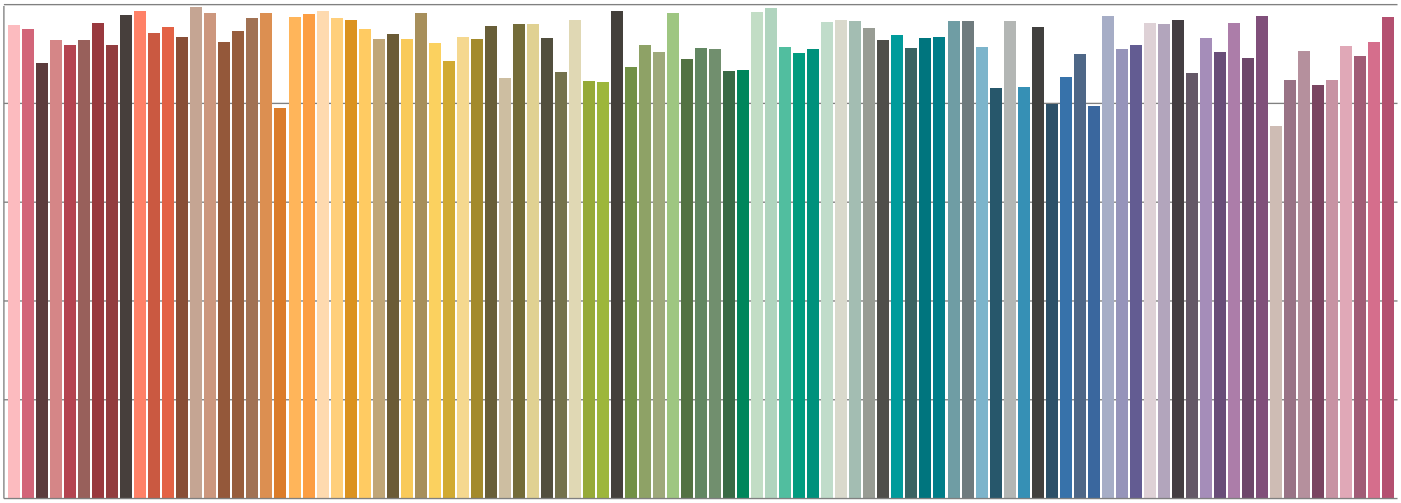
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



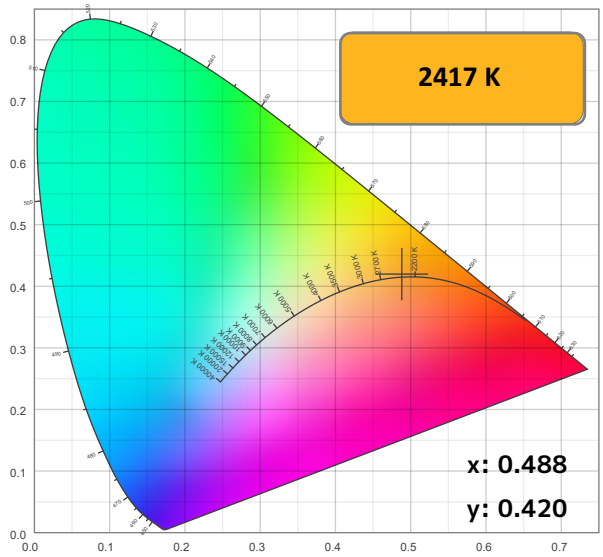
Measurement Date: 5/14/2024

Color Temperature: 2417K

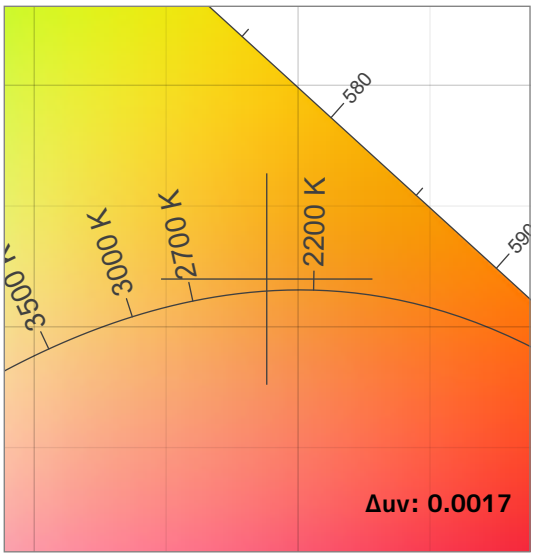
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
96.5	79.7	93.7	100.8	82	90.4	0.488	0.420	0.0017	66	13

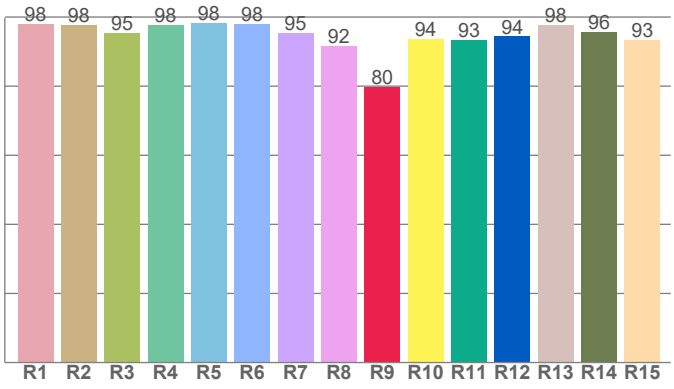
CIE 1931



CIE 1931 ZOOMED

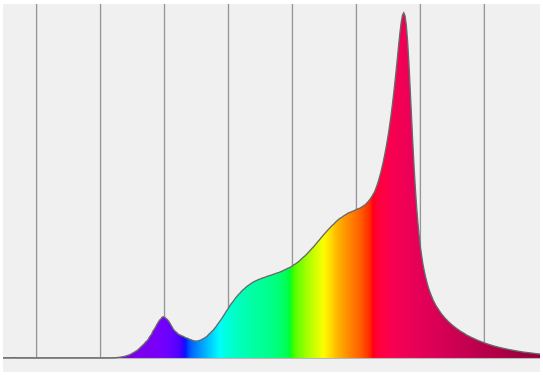


CRI: 96.5 (R1-R8)



Spectral Power Distribution (SPD)

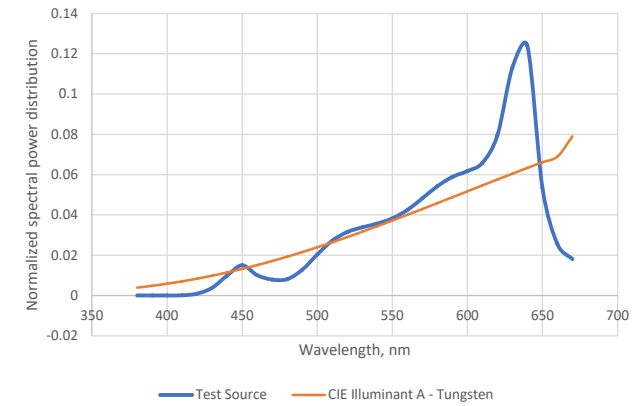
Dominant Wavelength 586 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 66

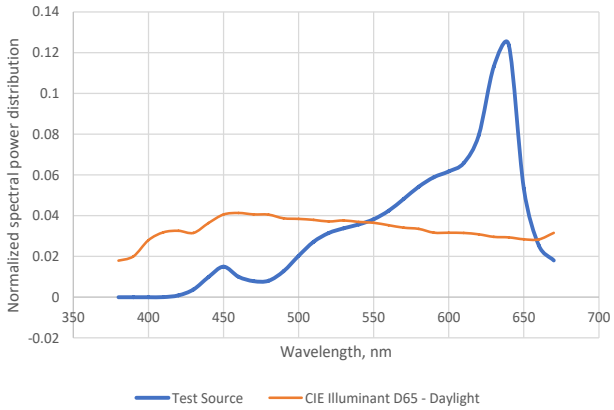
Spectral variance



SSI Spectral Variance Graph- Daylight

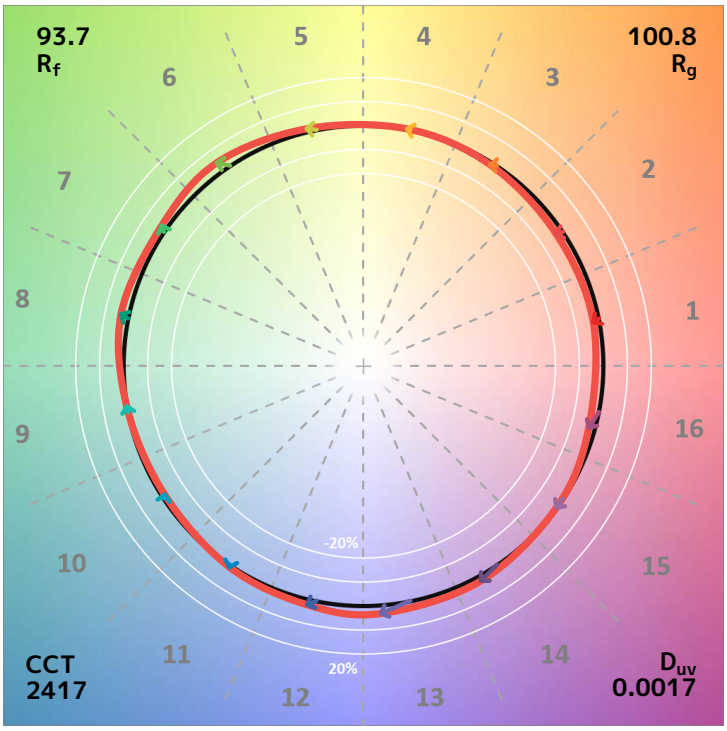
SSI [CIE D65] 13

Spectral variance

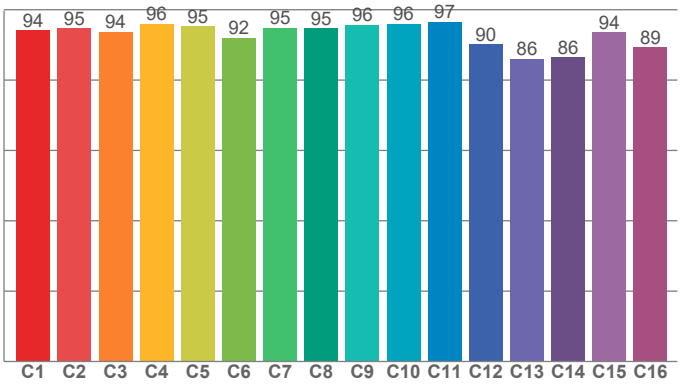


SSI [CIE D65] - Daylight **13**

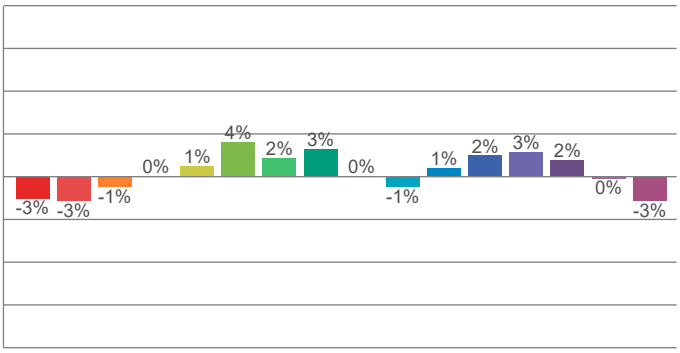
Measurement Date: 5/15/2024



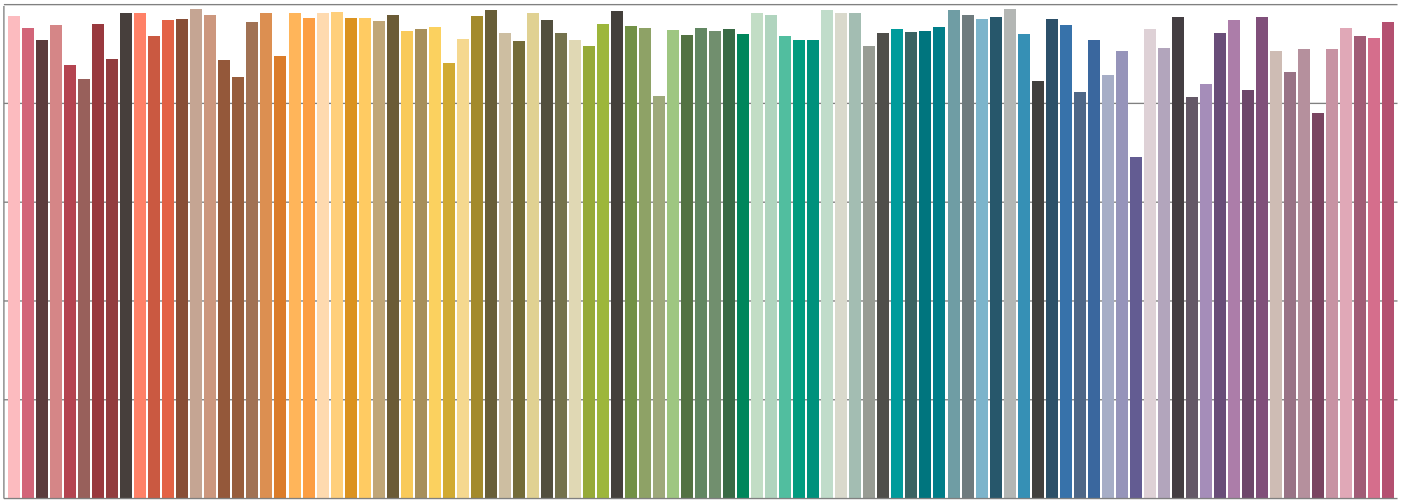
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



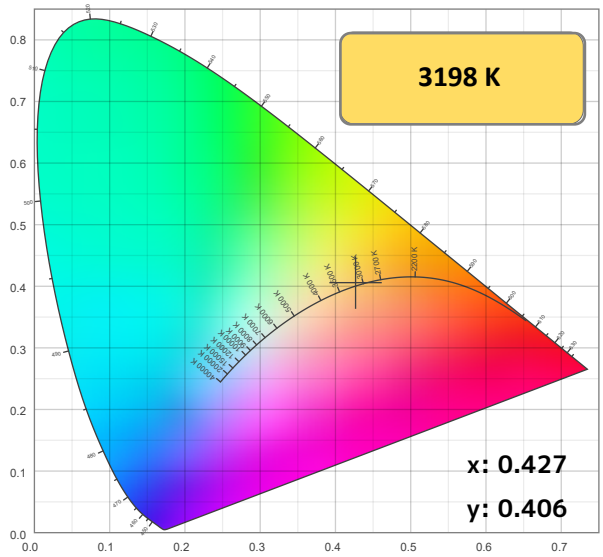
Measurement Date: 5/15/2024

Color Temperature: 3198K

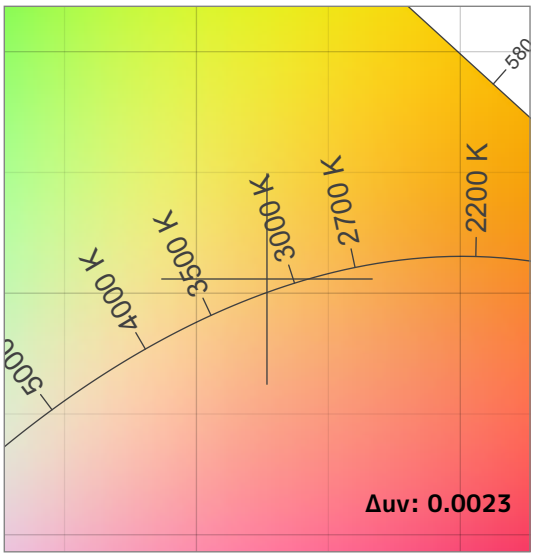
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
96.4	83.7	93.8	102.6	87	94.2	0.427	0.406	0.0023	70	37

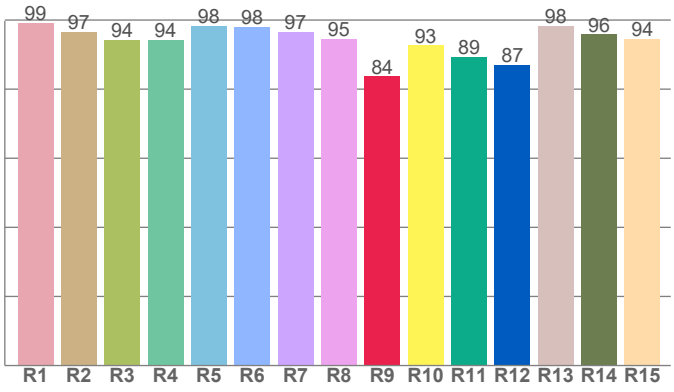
CIE 1931



CIE 1931 ZOOMED

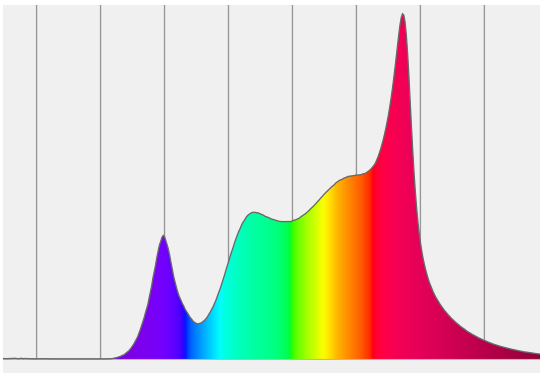


CRI: 96.4 (R1-R8)



Spectral Power Distribution (SPD)

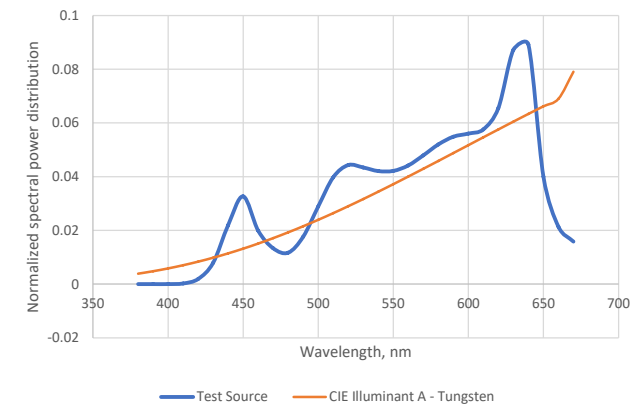
Dominant Wavelength 582 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 70

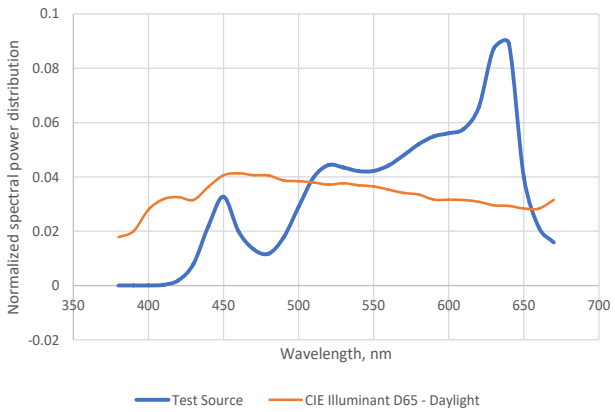
Spectral variance



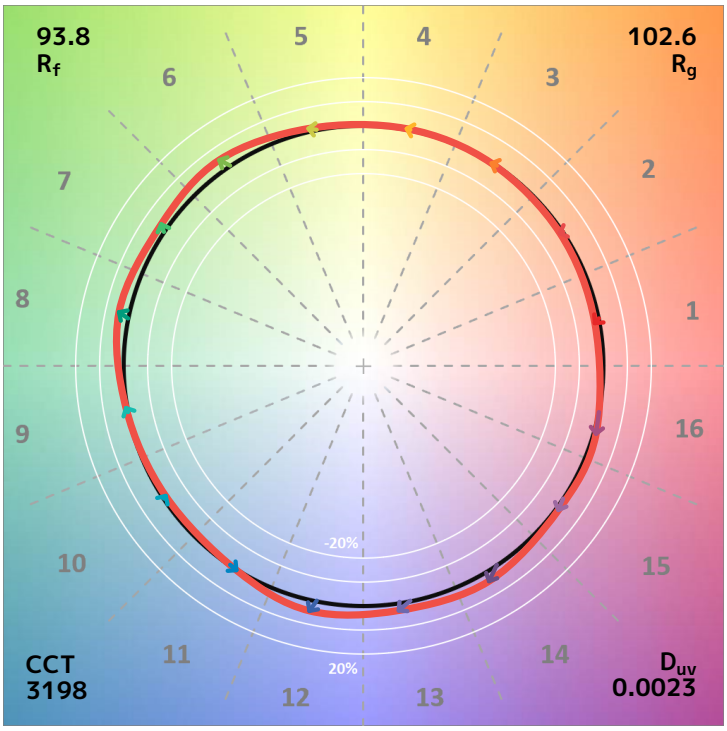
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 37

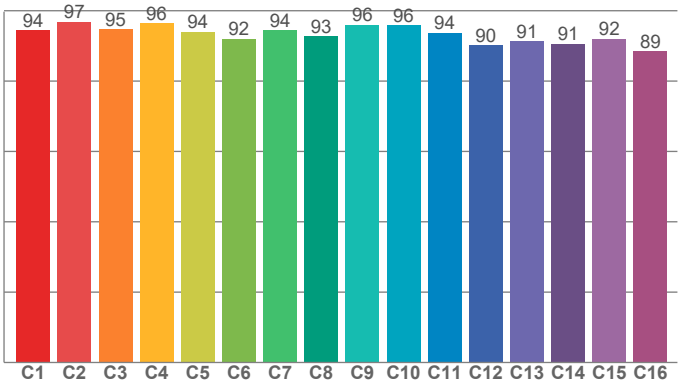
Spectral variance



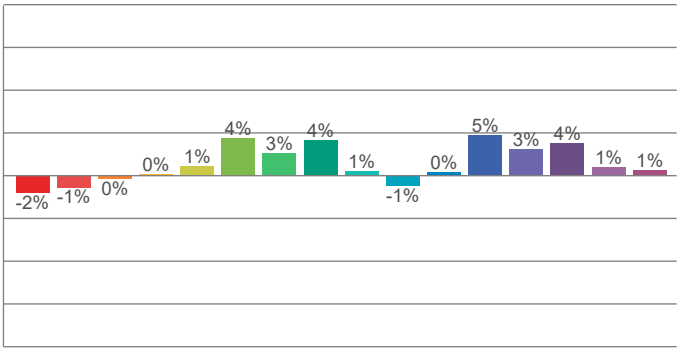
Measurement Date: 5/15/2024



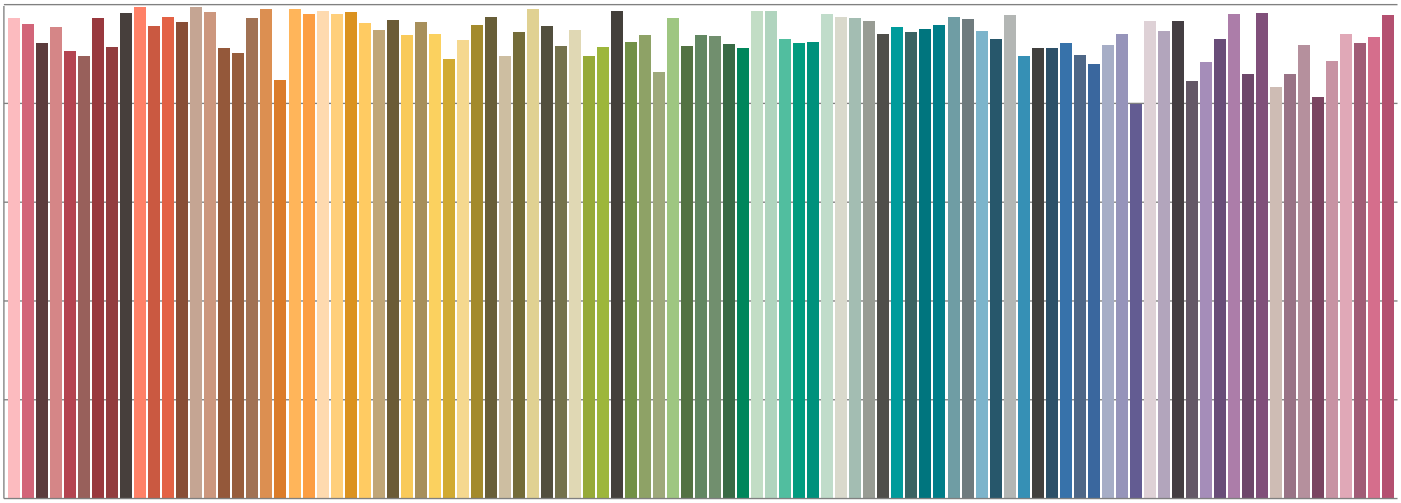
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



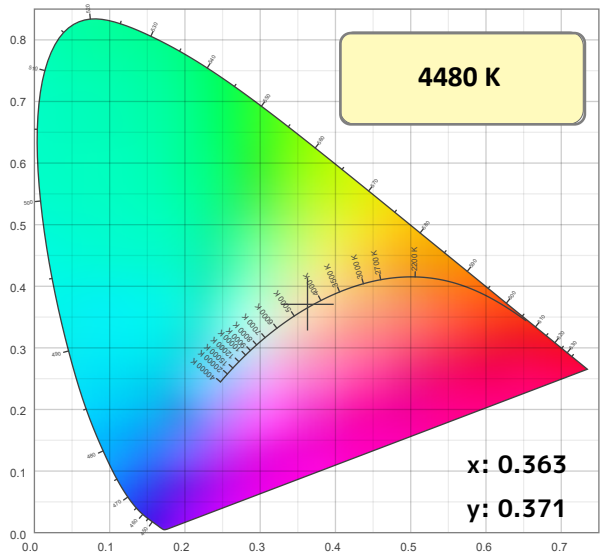
Measurement Date: 5/15/2024

Color Temperature: 4480K

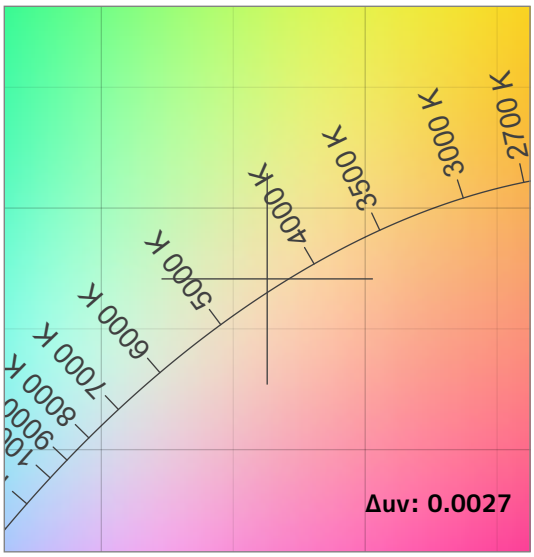
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
95.6	88.9	93.1	104.3	86	95.4	0.363	0.371	0.0027	50	55

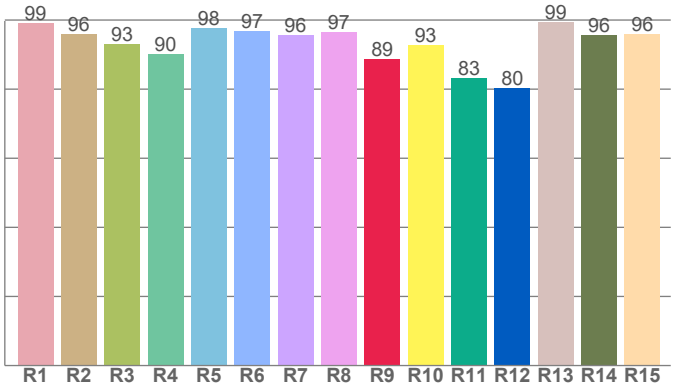
CIE 1931



CIE 1931 ZOOMED

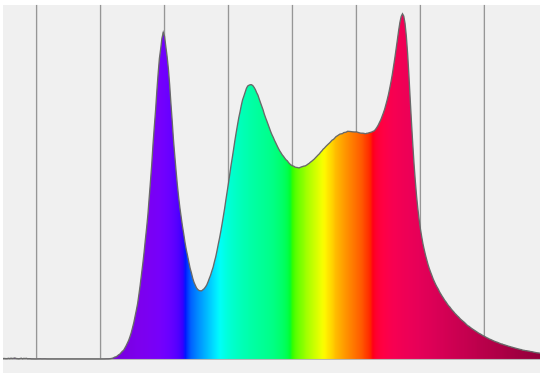


CRI: 95.6 (R1-R8)



Spectral Power Distribution (SPD)

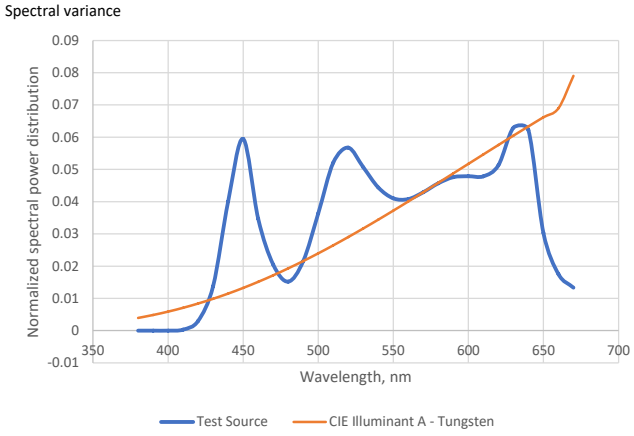
Dominant Wavelength 579 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 50

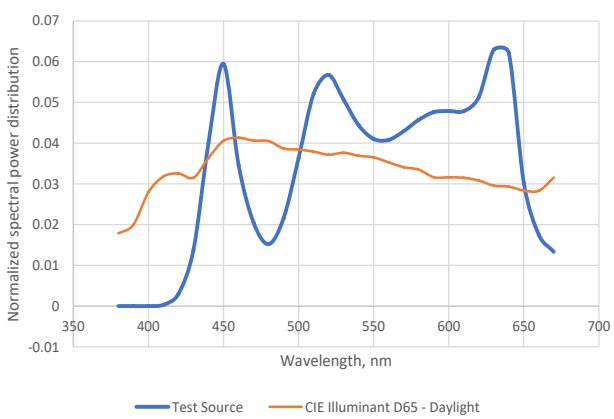
Spectral variance



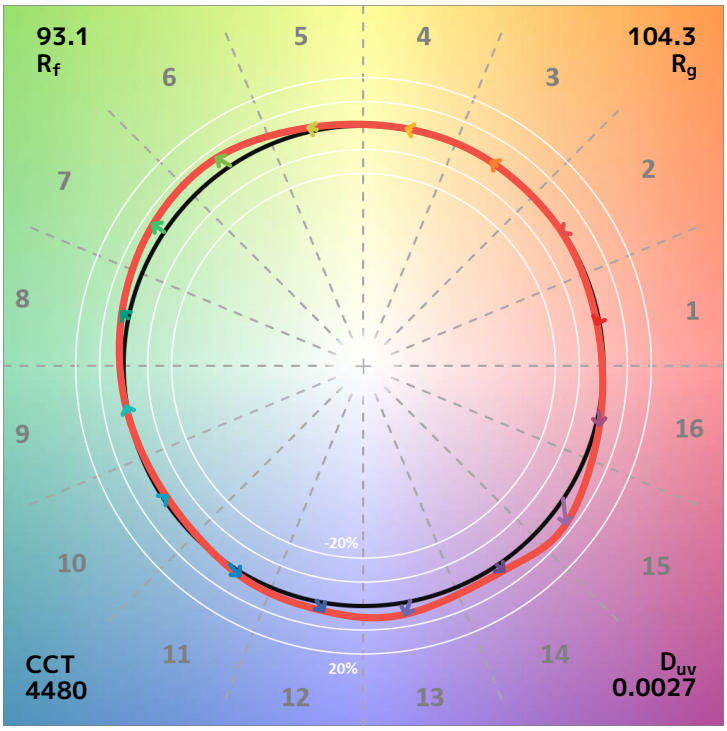
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 55

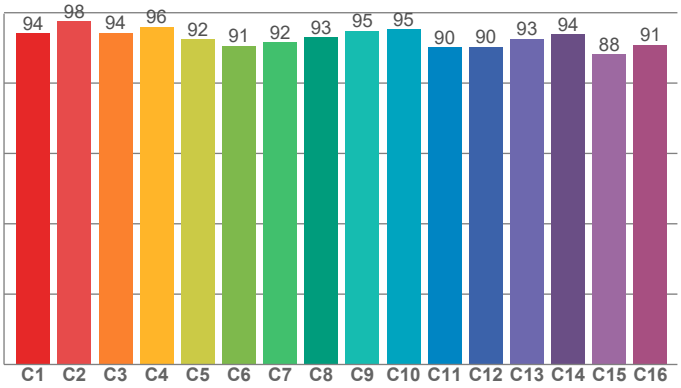
Spectral variance



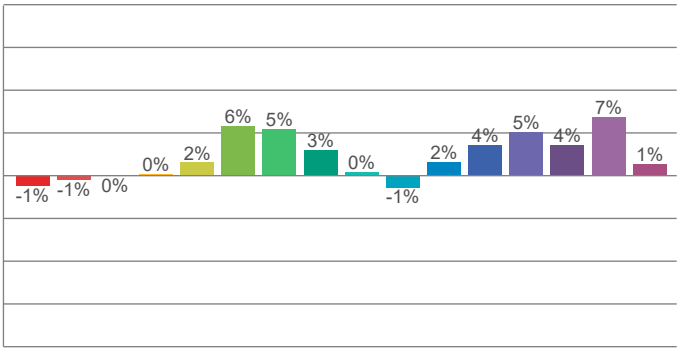
Measurement Date: 5/15/2024



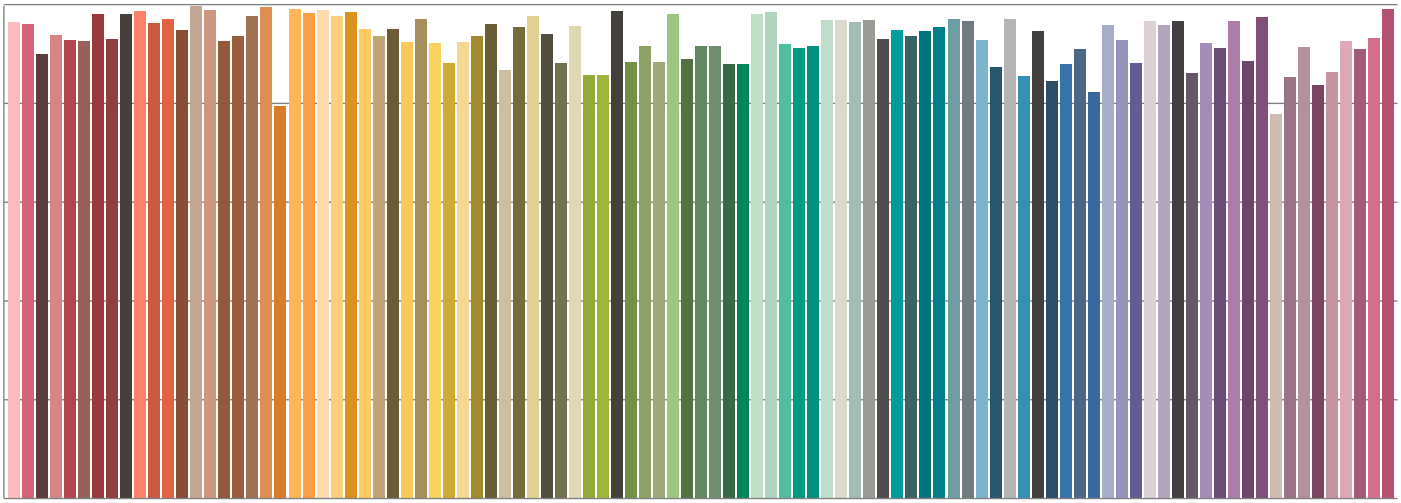
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



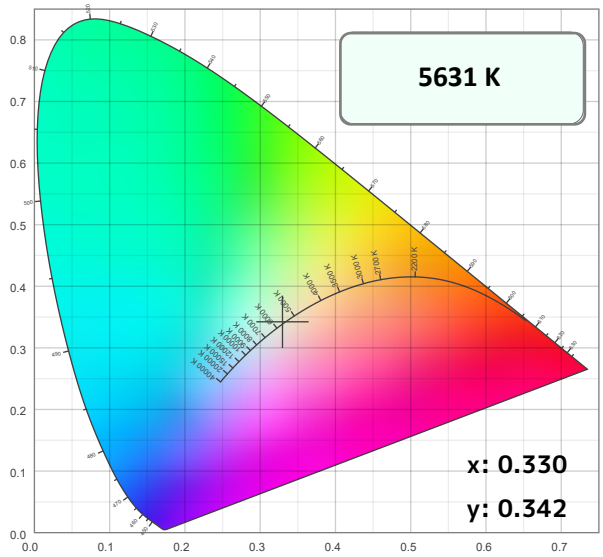
Measurement Date: 5/15/2024

Color Temperature: 5631K

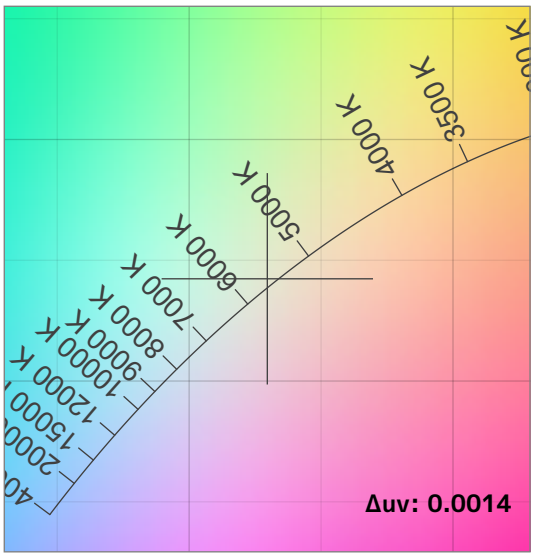
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
94.0	83.6	91.9	104.8	88	94.1	0.330	0.342	0.0014	33	59

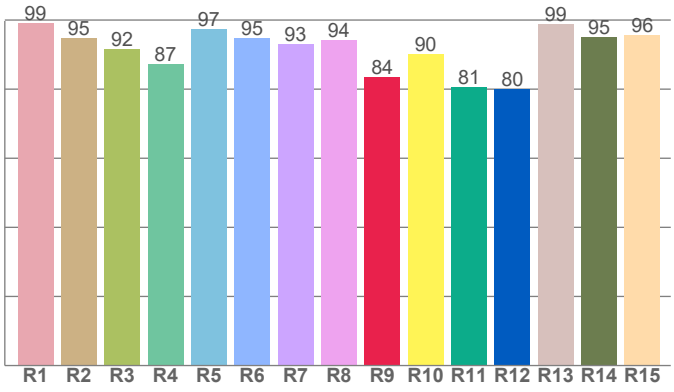
CIE 1931



CIE 1931 ZOOMED

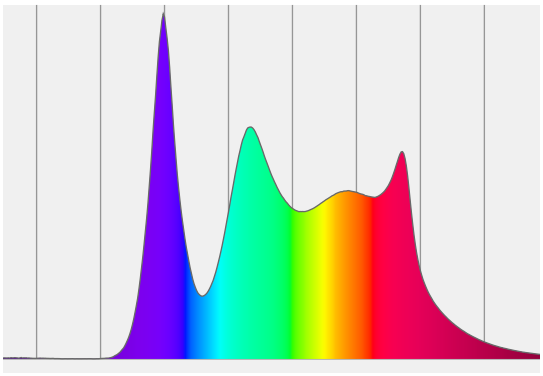


CRI: 94.0 (R1-R8)



Spectral Power Distribution (SPD)

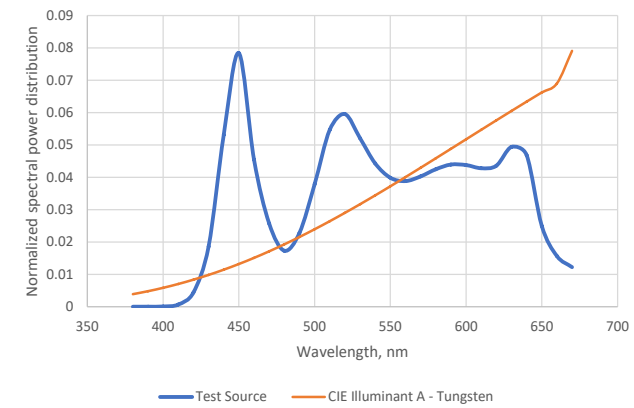
Dominant Wavelength 580 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 33

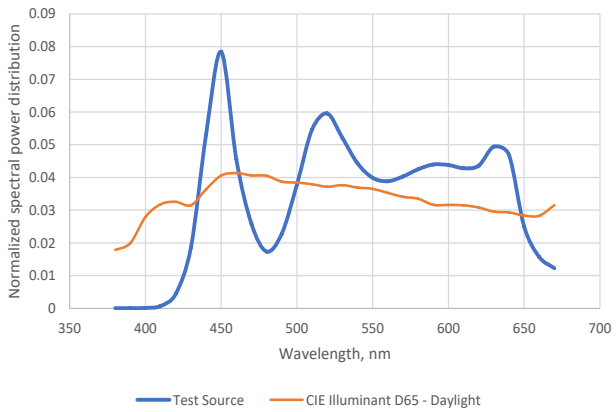
Spectral variance



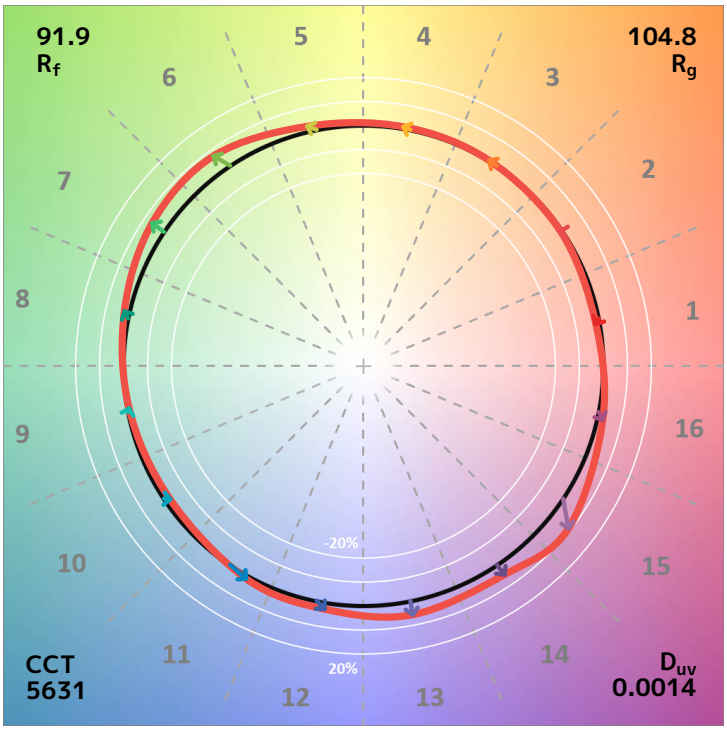
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 59

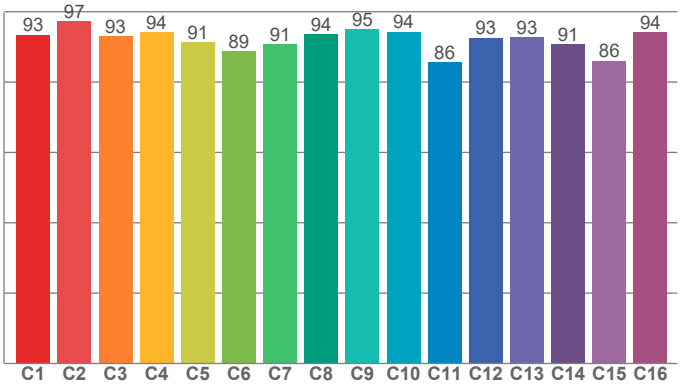
Spectral variance



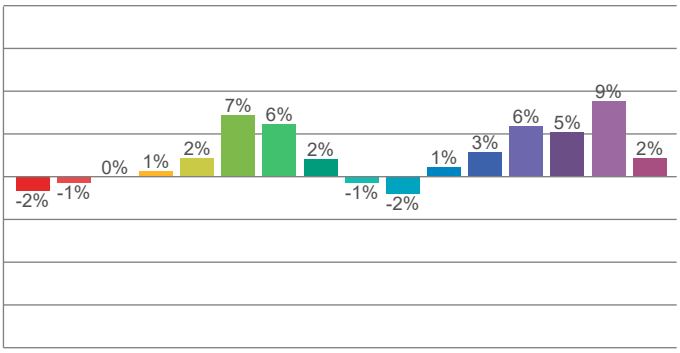
Measurement Date: 5/15/2024



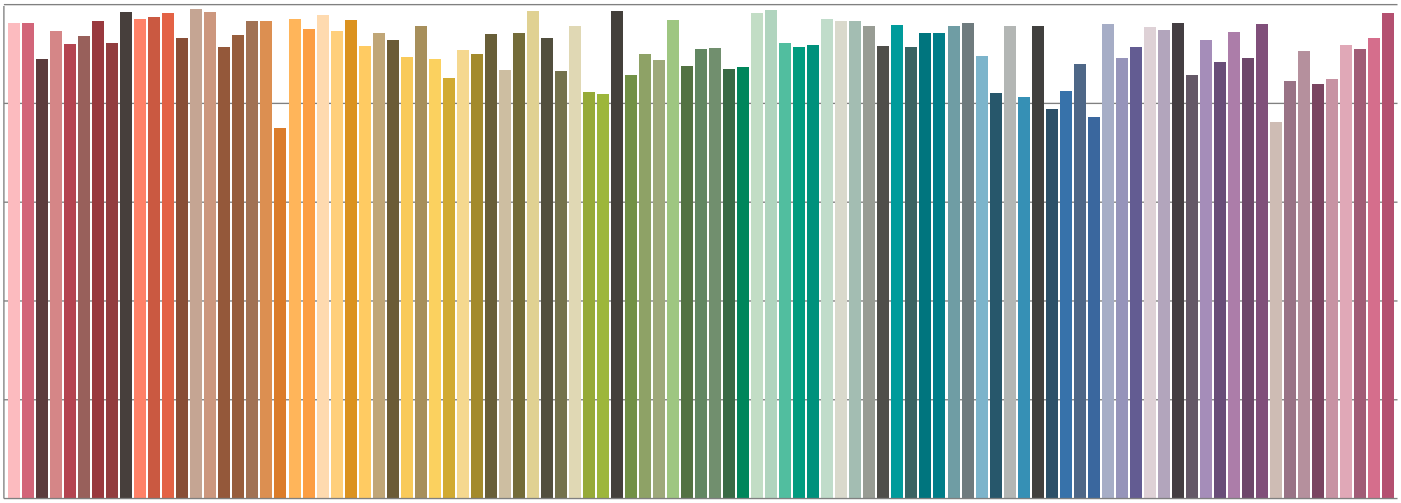
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



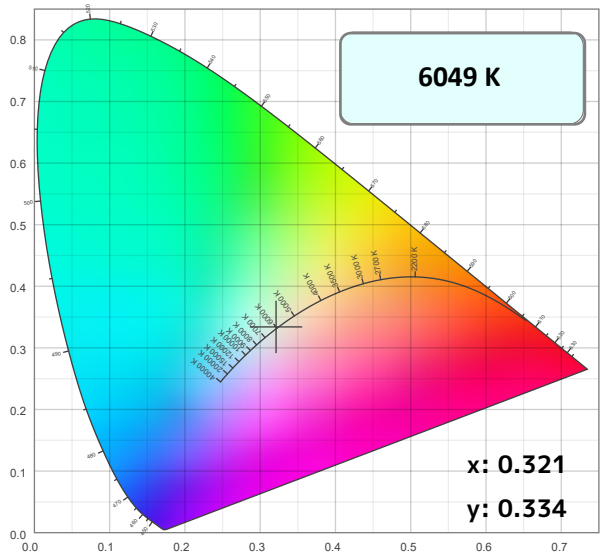
Measurement Date: 5/15/2024

Color Temperature: 6049K

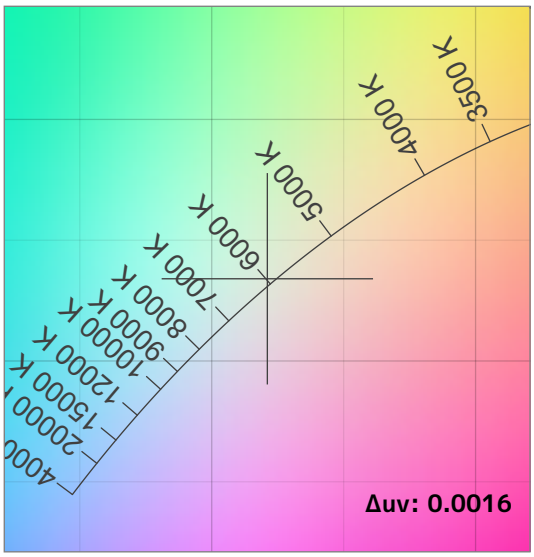
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
93.8	84.2	91.7	104.9	88	94.0	0.321	0.334	0.0016	28	59

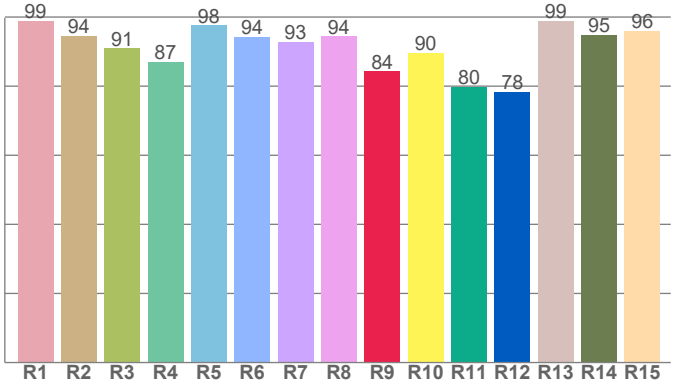
CIE 1931



CIE 1931 ZOOMED

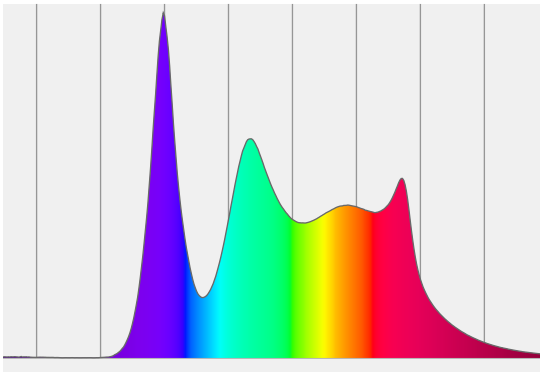


CRI: 93.8 (R1-R8)



Spectral Power Distribution (SPD)

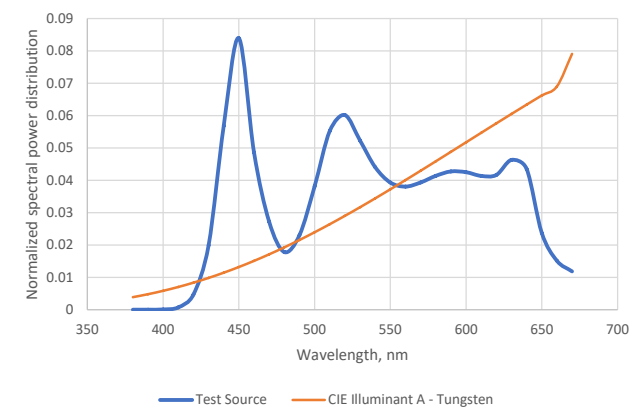
Dominant Wavelength 584 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 28

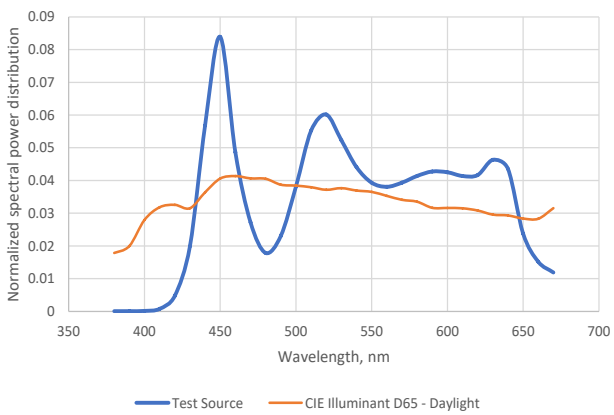
Spectral variance



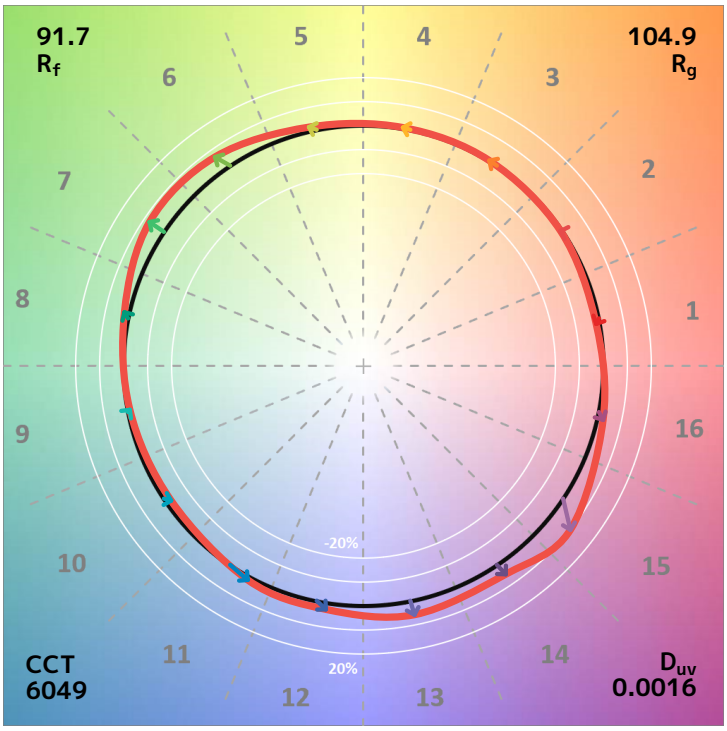
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 59

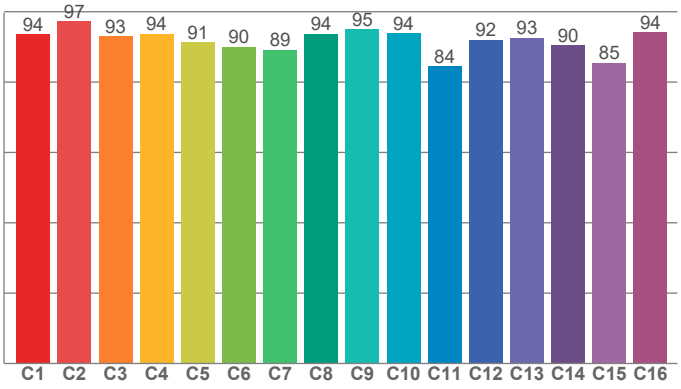
Spectral variance



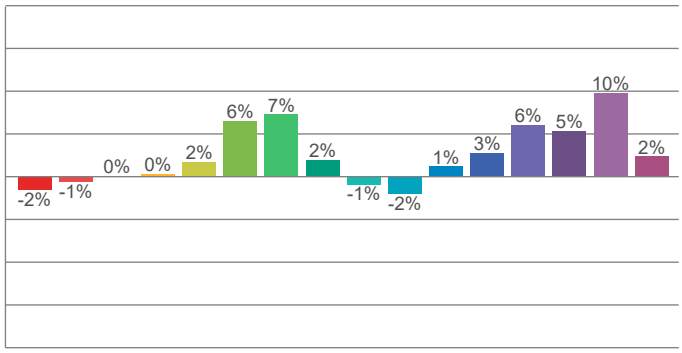
Measurement Date: 5/15/2024



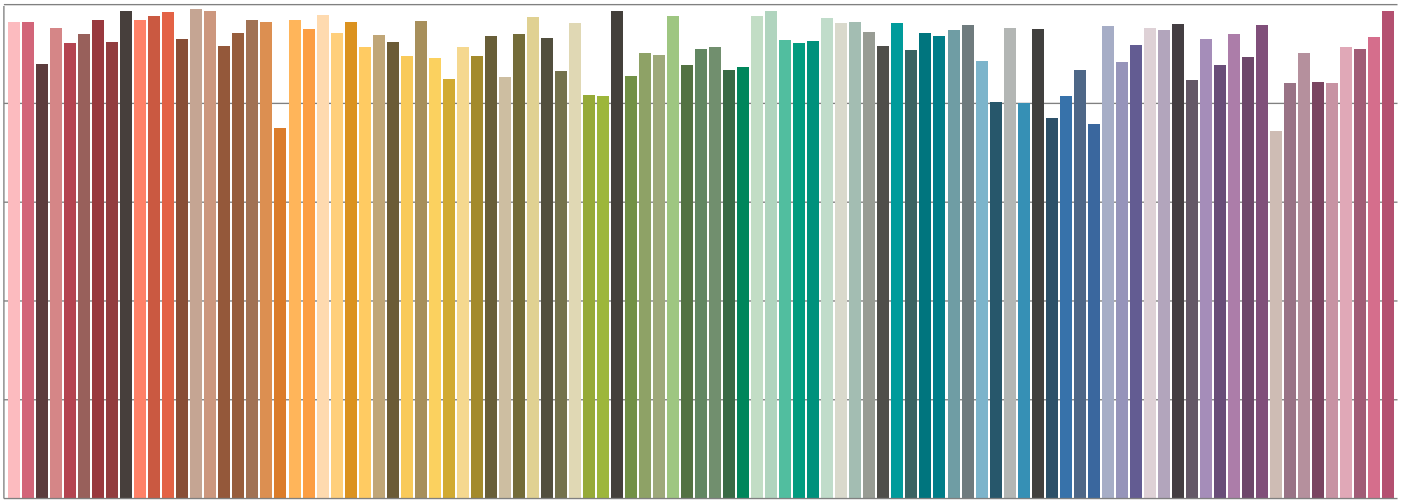
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



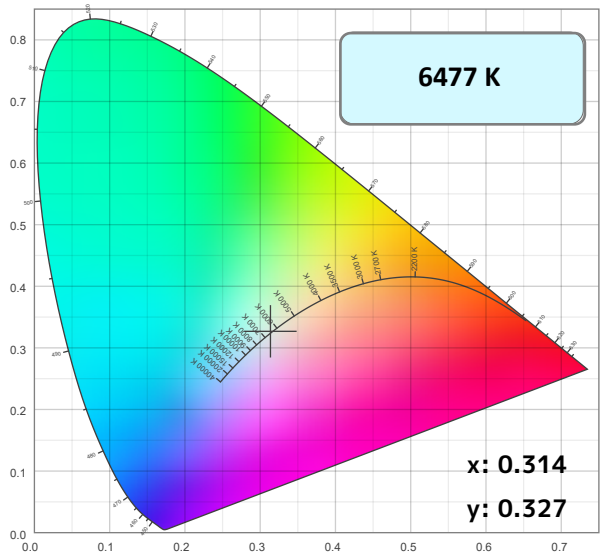
Measurement Date: 5/15/2024

Color Temperature: 6477K

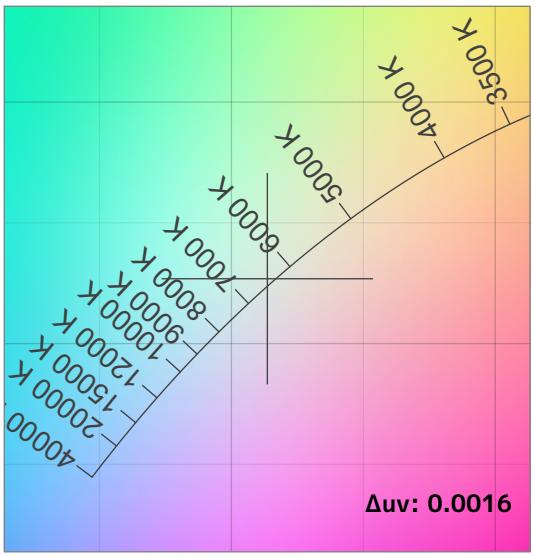
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
93.6	87.4	91.7	104.9	88	94.1	0.314	0.327	0.0016	23	58

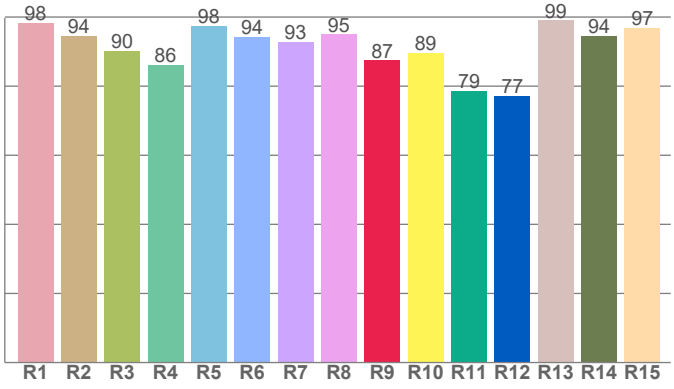
CIE 1931



CIE 1931 ZOOMED

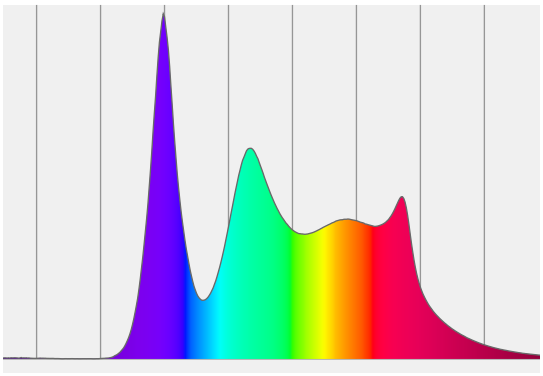


CRI: 93.6 (R1-R8)



Spectral Power Distribution (SPD)

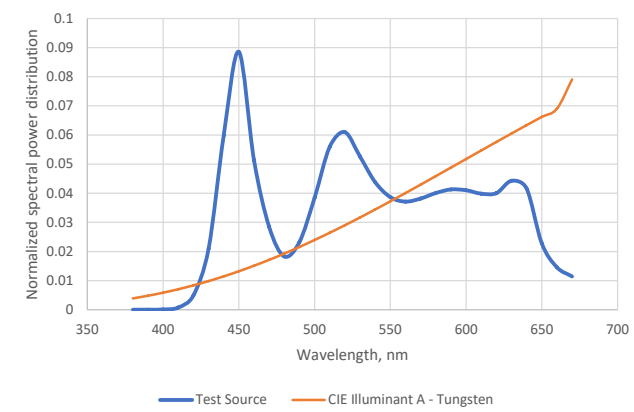
Dominant Wavelength 360 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 23

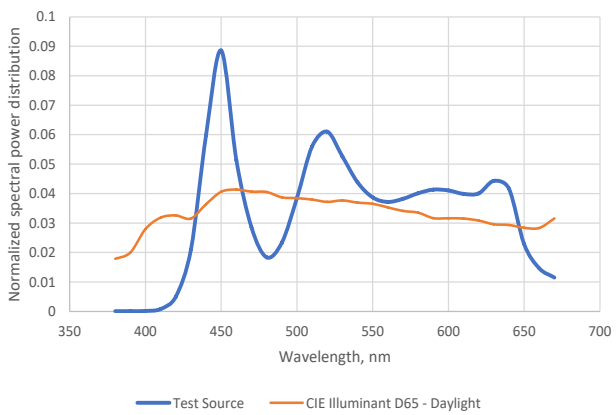
Spectral variance



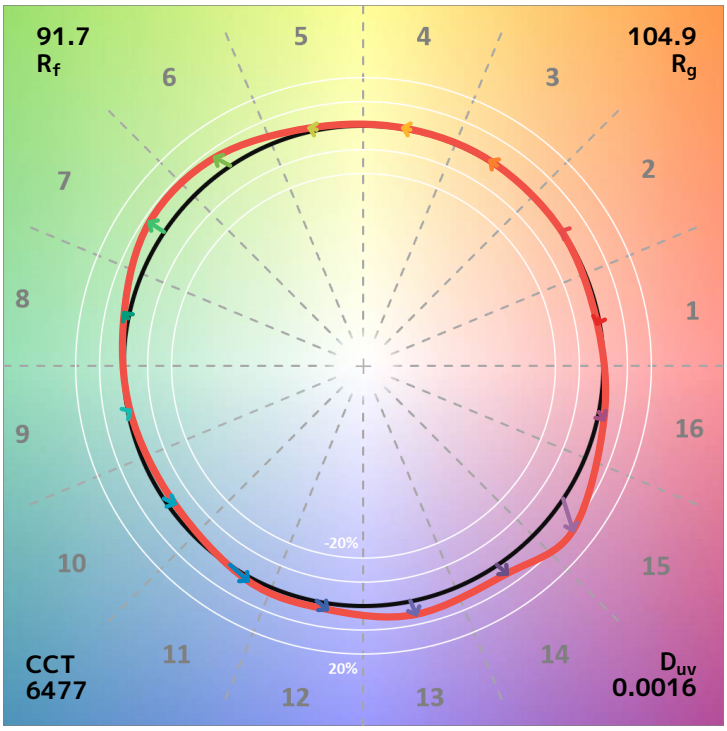
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 58

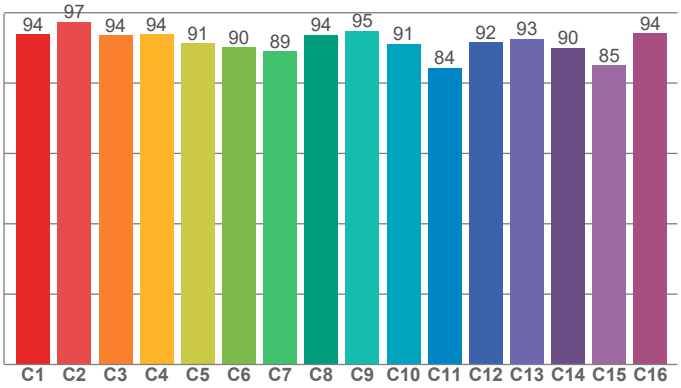
Spectral variance



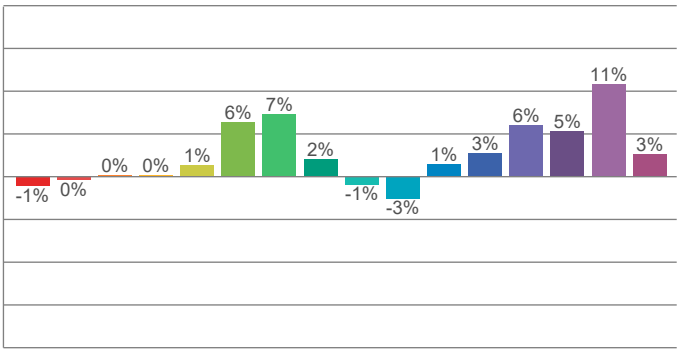
Measurement Date: 5/15/2024



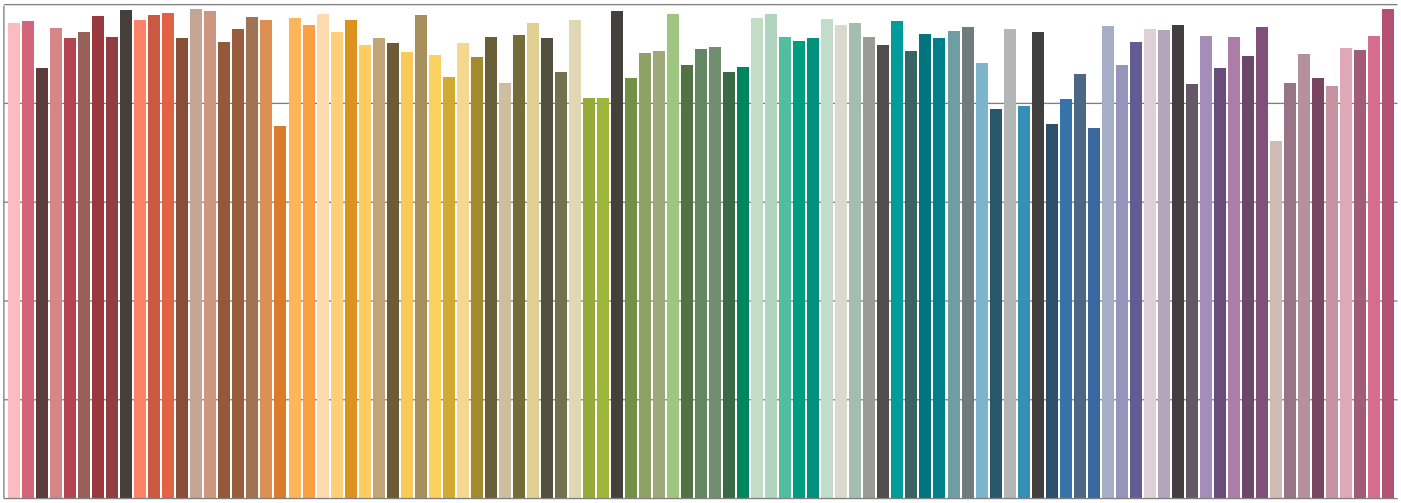
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



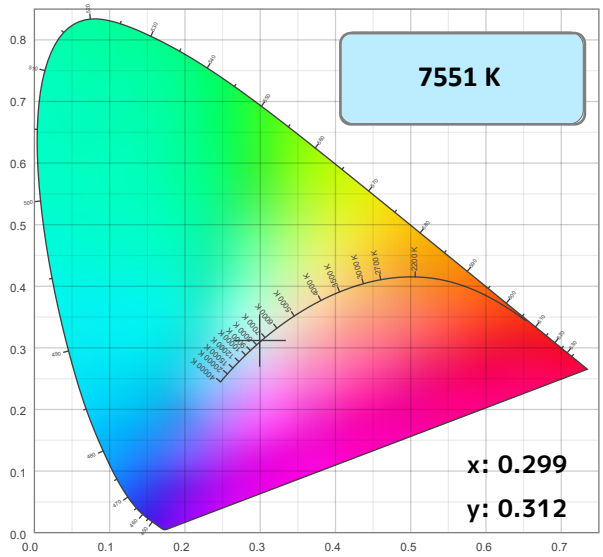
Measurement Date: 5/15/2024

Color Temperature: 7551K

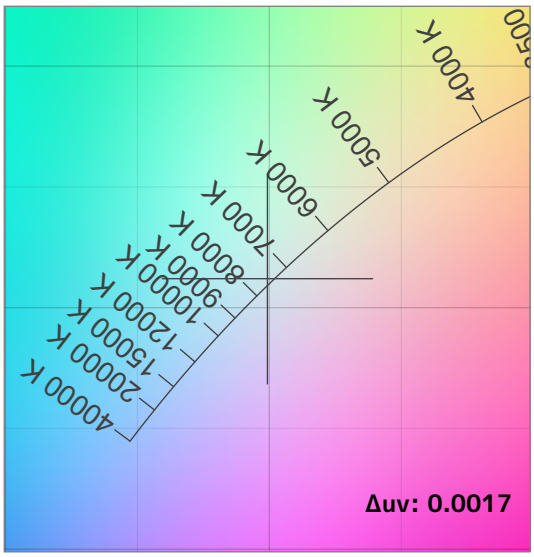
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
93.2	86.3	91.1	104.5	88	93.8	0.299	0.312	0.0017	14	56

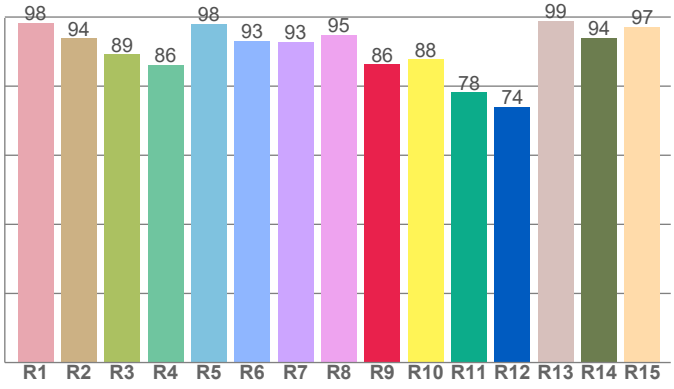
CIE 1931



CIE 1931 ZOOMED

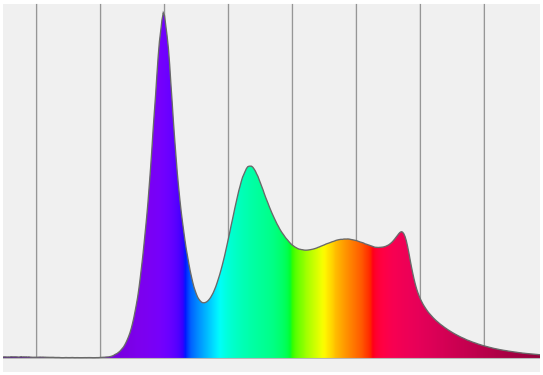


CRI: 93.2 (R1-R8)



Spectral Power Distribution (SPD)

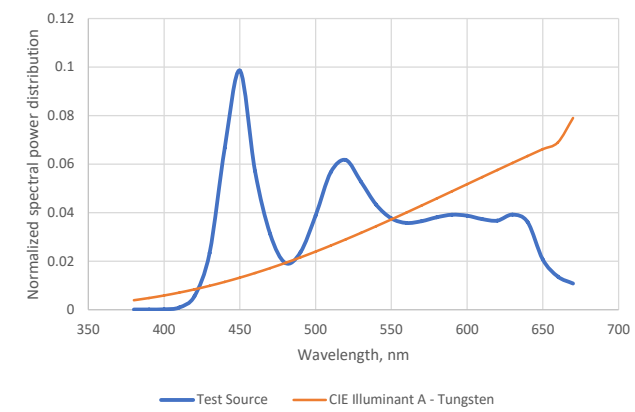
Dominant Wavelength 474 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 14

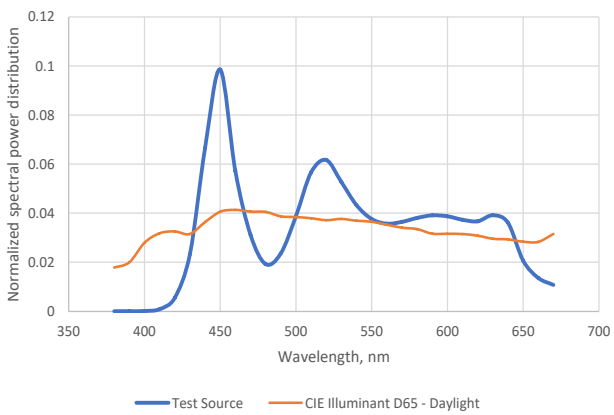
Spectral variance



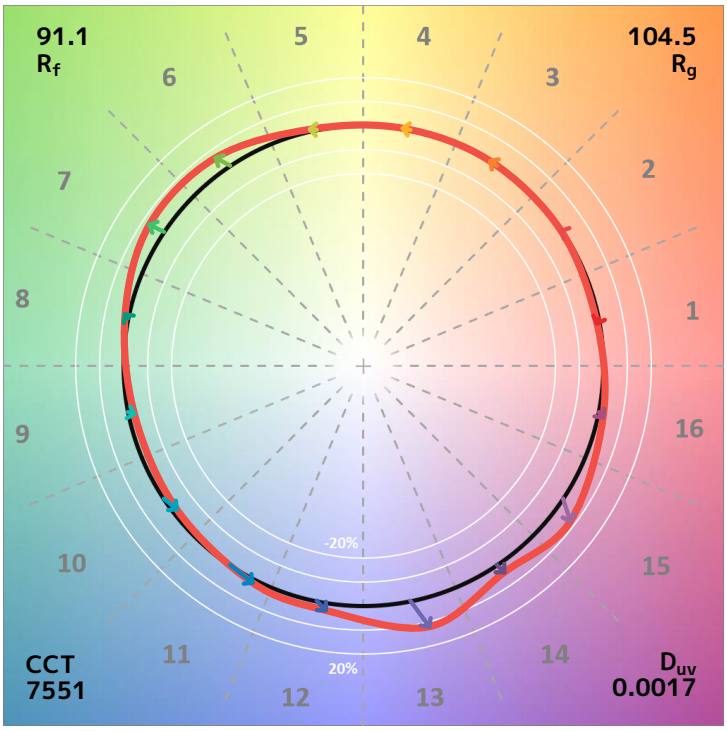
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 56

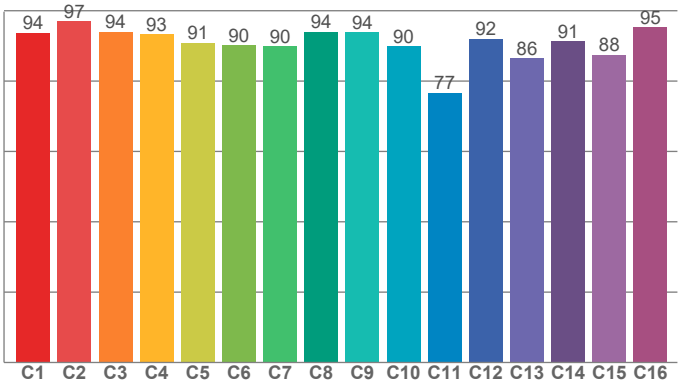
Spectral variance



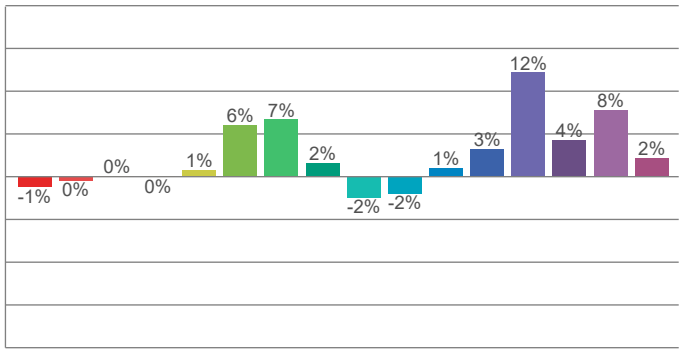
Measurement Date: 5/15/2024



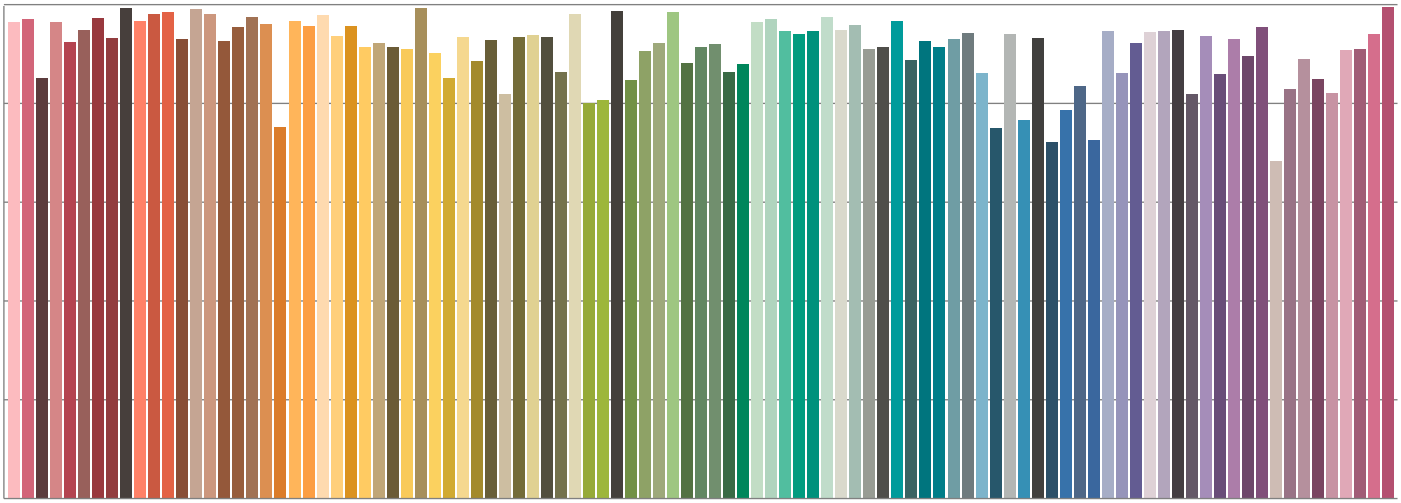
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



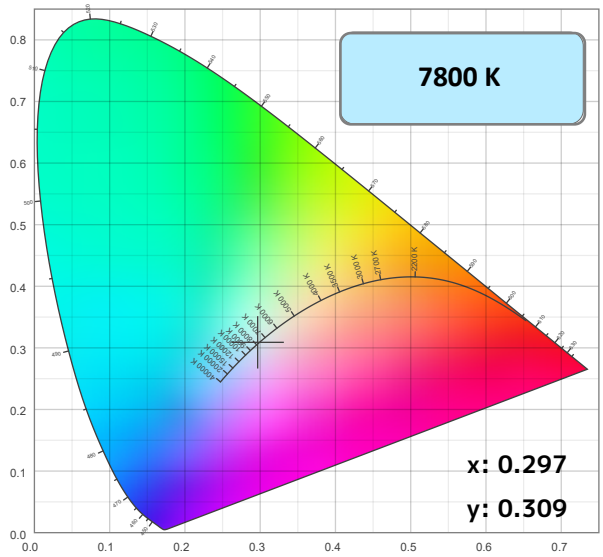
Measurement Date: 5/15/2024

Color Temperature: 7800K

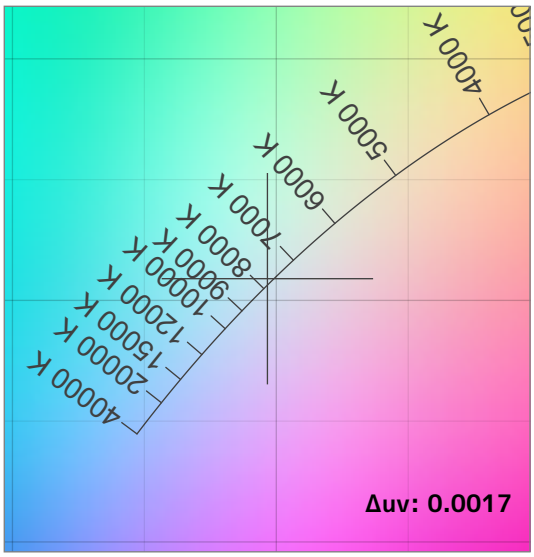
Accuracy Metric Overview

Color Rendering Index	Color Rendering Index, R9 (Red Component)	TM-30 Color Fidelity	TM-30 Color Gamut	Television Lighting Consistency Index	Color Quality Scale	Color Coordinate-CIE 1931	Color Coordinate-CIE 1931	Deviation from Black Body Locus	SSI [CIE A] Tungsten	SSI [CIE D65] Daylight
CRI	CRI R9	TM30 R_f	TM30 R_g	TLCI	CQS	x	Y	Δuv	SSIt	SSId
93.2	84.2	90.9	104.3	88	93.6	0.297	0.309	0.0017	12	56

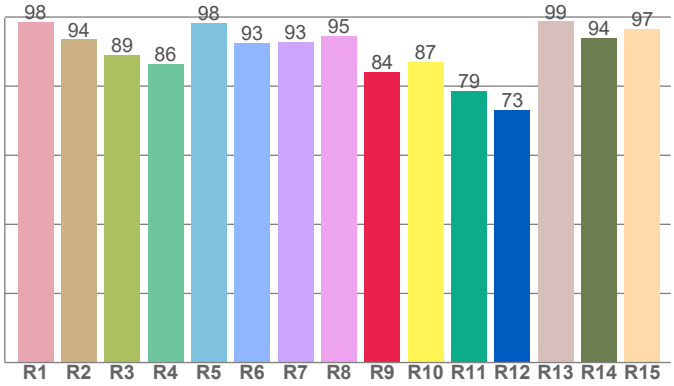
CIE 1931



CIE 1931 ZOOMED

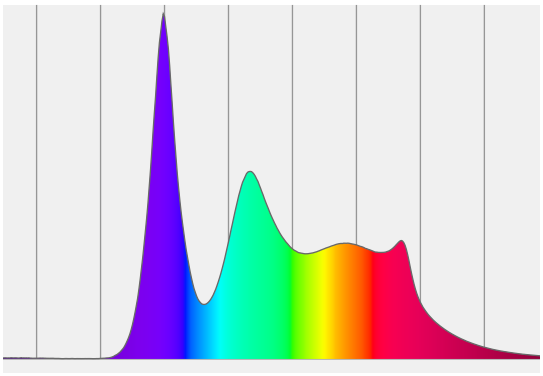


CRI: 93.2 (R1-R8)



Spectral Power Distribution (SPD)

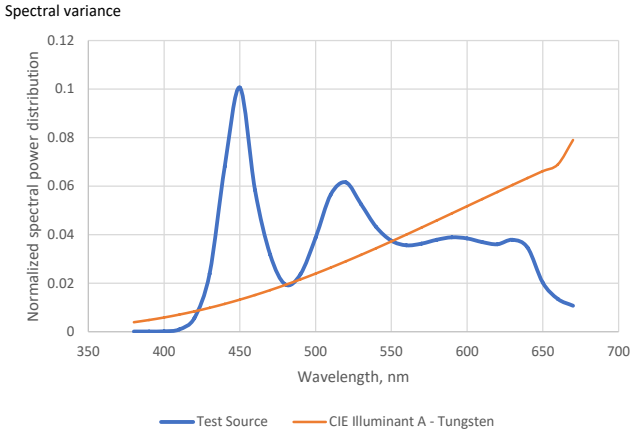
Dominant Wavelength 474 nm



SSI Spectral Variance Graph- Tungsten

SSI [CIE A] 12

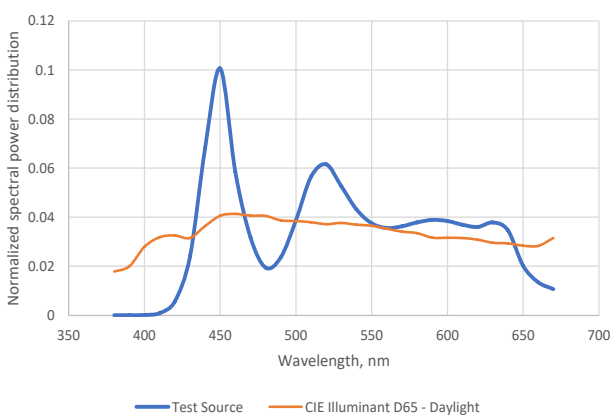
Spectral variance



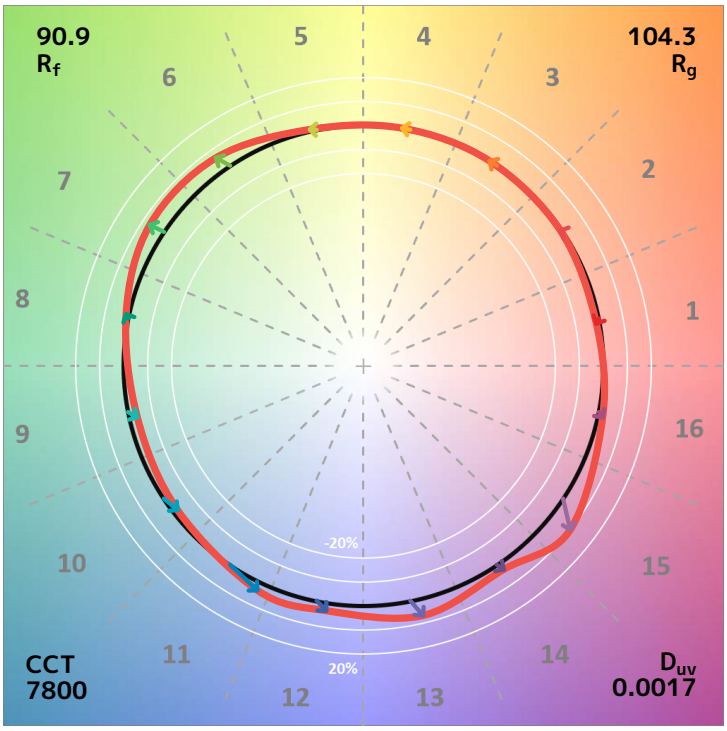
SSI Spectral Variance Graph- Daylight

SSI [CIE D65] 56

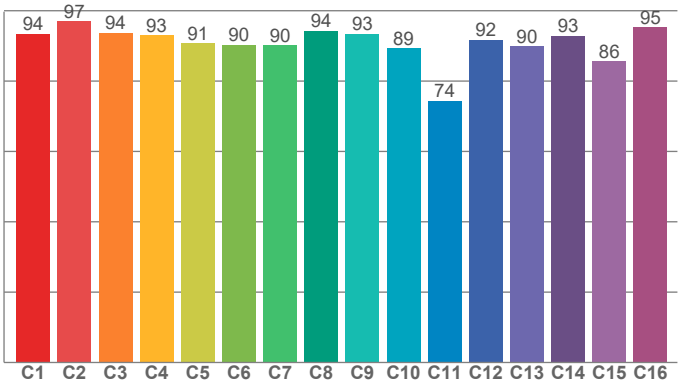
Spectral variance



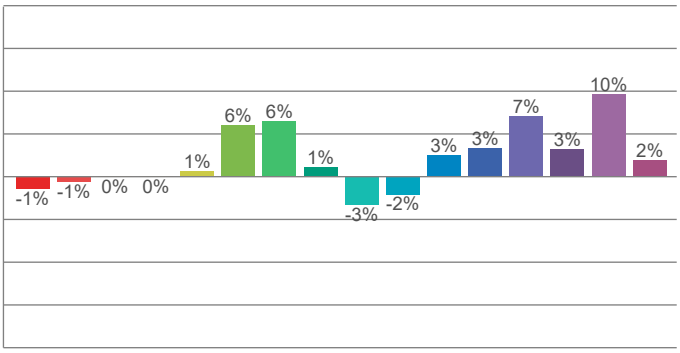
Measurement Date: 5/15/2024



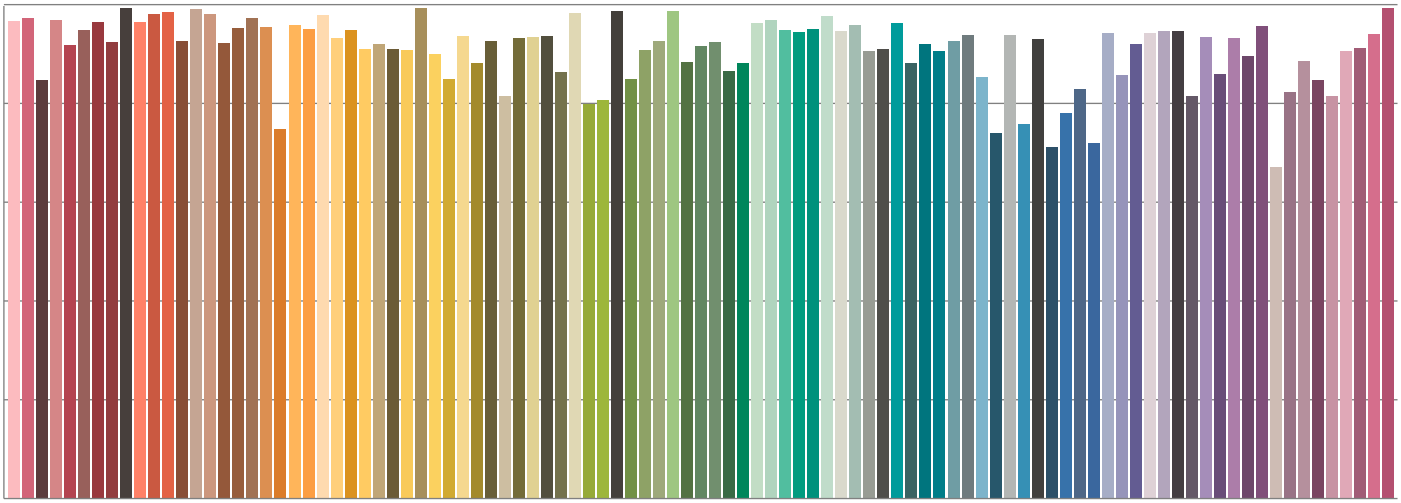
TM30-18 R_f Values per Hue Bin



TM30 Chroma Shift per Hue Bin



TM30-18 R_f Values per Reference Color (CES)



Measurement Date: 5/15/2024

Measurements

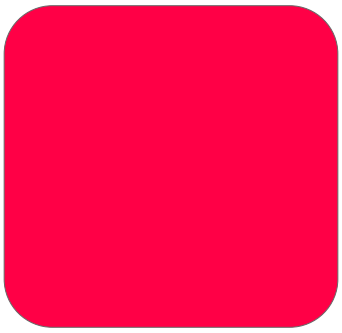
Total Lumen Output: 1067 lm

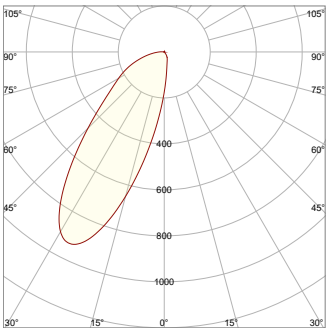
Peak Intensity: 174 cd

Efficacy: 22 Lumen/Watt

Power: 47.8 W

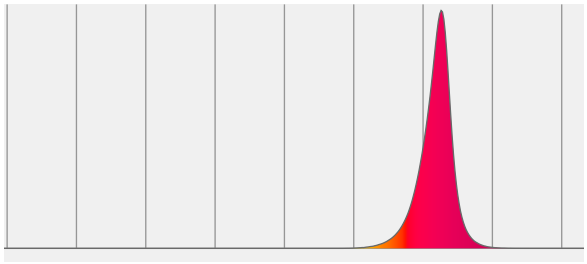
Voltage: 120 V, Current: 0.410 A

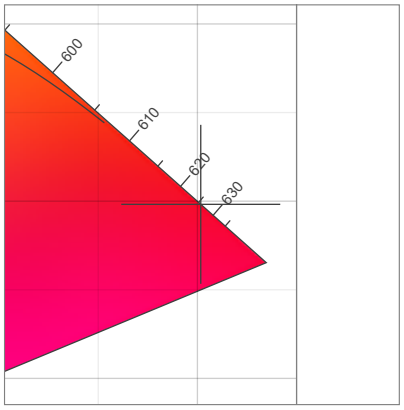




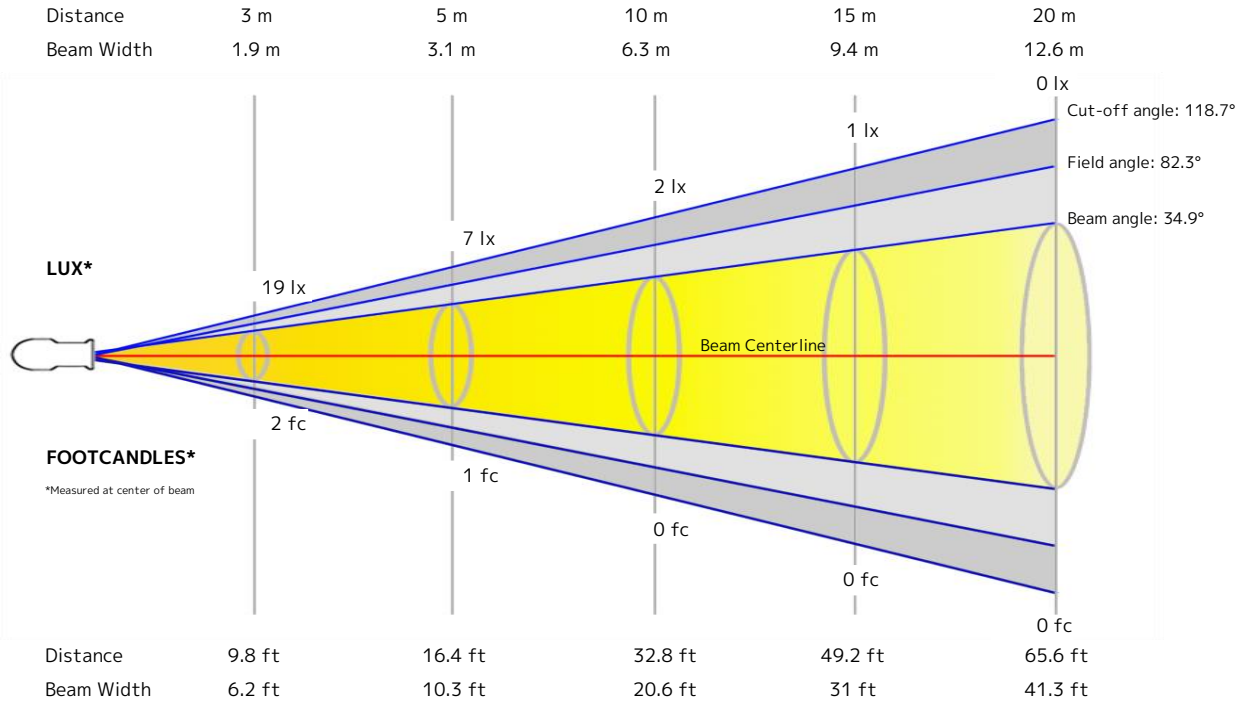
Spectral Power Distribution

Dominant Wavelength 626 nm





Dominant Wavelength	Color Coordinate CIE 1931	Color Coordinate CIE1931	Color Coordinate CIE 1964	Color Coordinate CIE 1964
nm	x	y	u	v
626	0.702	0.298	0.542	0.346



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	174	43	19	11	7	5	4	3	2	2	1	1	1	1	1	1	1	1	0	0
FC	16.2	4	1.8	1	0.6	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0

Measurements

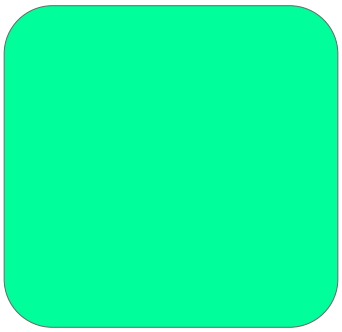
Total Lumen Output: 2204 lm

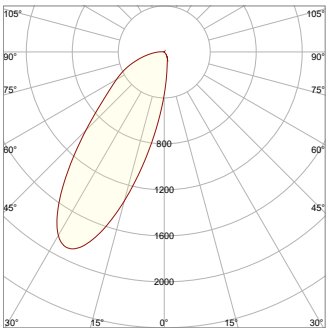
Peak Intensity: 370 cd

Efficacy: 38 Lumen/Watt

Power: 58.5 W

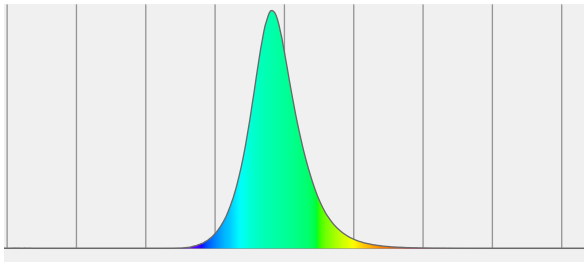
Voltage: 121 V, Current: 0.493 A

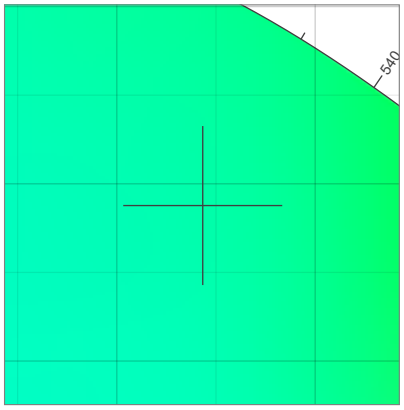




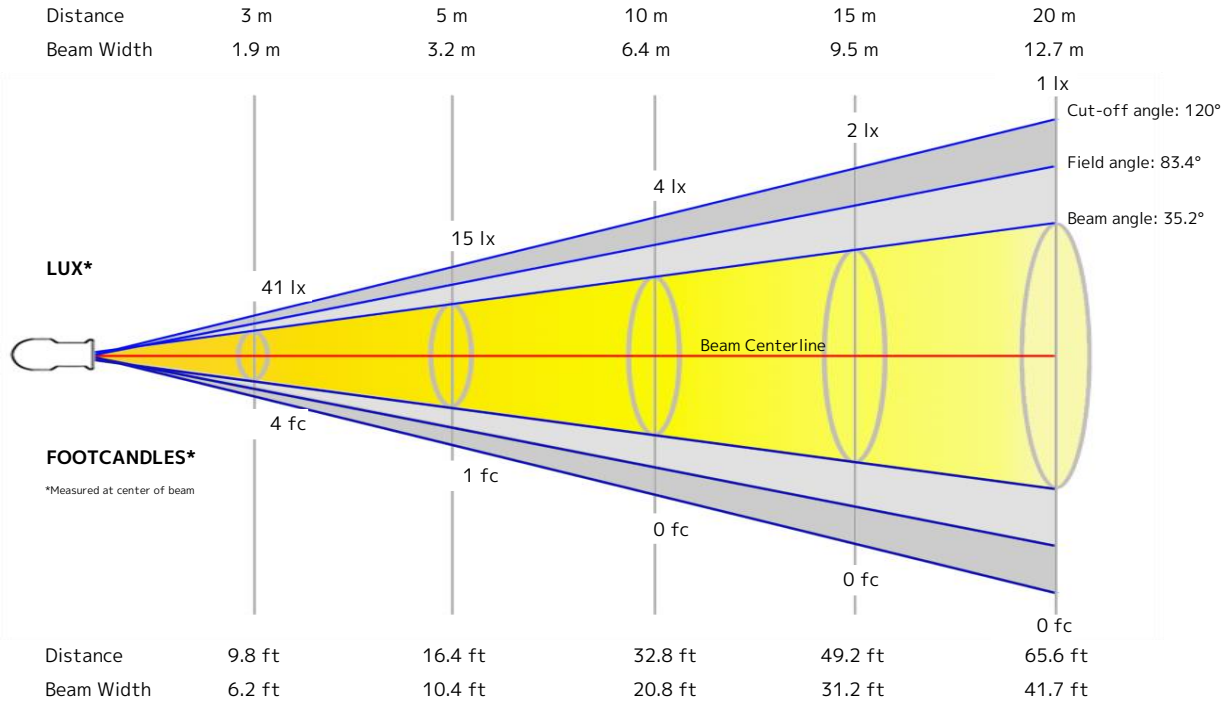
Spectral Power Distribution

Dominant Wavelength 520 nm





Dominant Wavelength	Color Coordinate CIE 1931	Color Coordinate CIE1931	Color Coordinate CIE 1964	Color Coordinate CIE 1964
nm	x	y	u	v
520	0.143	0.688	0.052	0.376



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	370	92	41	23	15	10	8	6	5	4	3	3	2	2	2	1	1	1	1	1
FC	34.4	8.6	3.8	2.1	1.4	1	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1

Measurement Date: 5/14/2024

Measurements

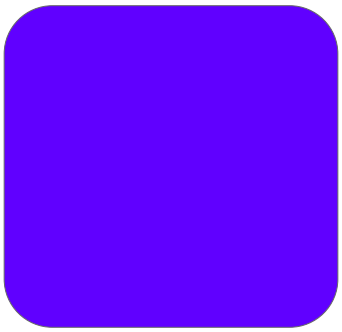
Total Lumen Output: 484 lm

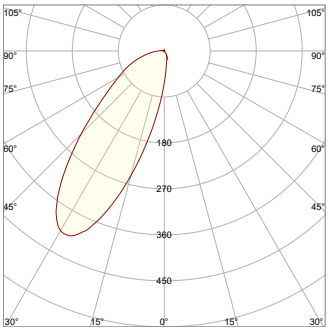
Peak Intensity: 62.7 cd

Efficacy: 9 Lumen/Watt

Power: 55.1 W

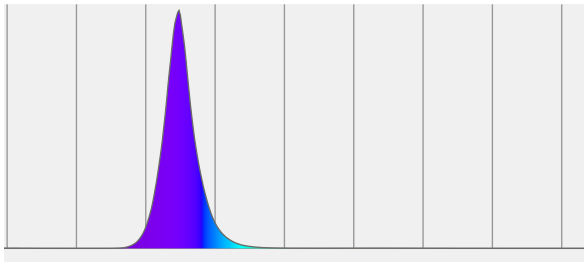
Voltage: 121 V, Current: 0.467 A

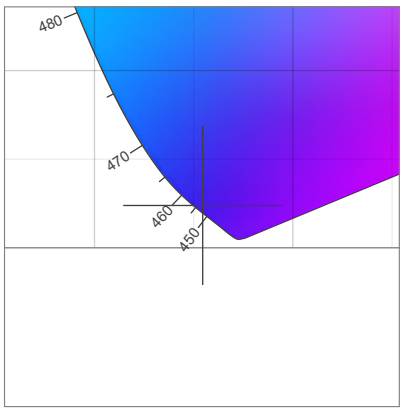




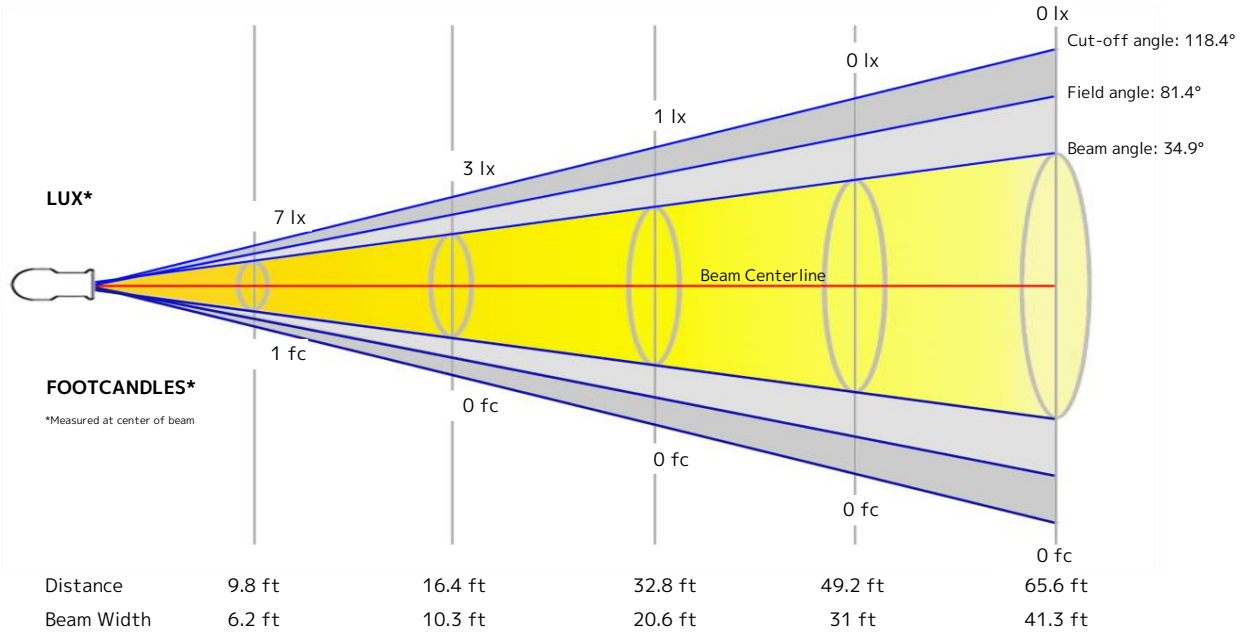
Spectral Power Distribution

Dominant Wavelength 453 nm





Dominant Wavelength	Color Coordinate CIE 1931	Color Coordinate CIE1931	Color Coordinate CIE 1964	Color Coordinate CIE 1964
nm	x	y	u	v
453	0.155	0.024	0.208	0.048



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	63	16	7	4	3	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0
FC	5.8	1.5	0.6	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0

Measurement Date: 5/15/2024

Measurements

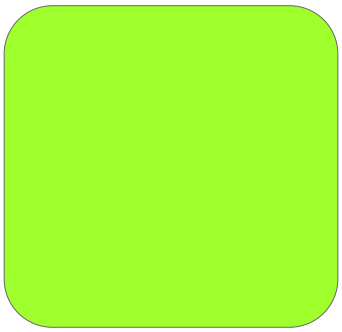
Total Lumen Output: 4965 lm

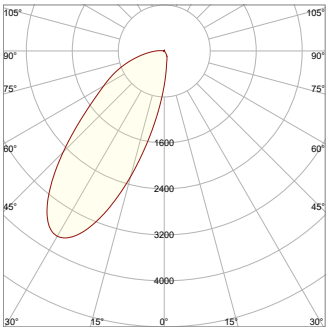
Peak Intensity: 594 cd

Efficacy: 90 Lumen/Watt

Power: 55.0 W

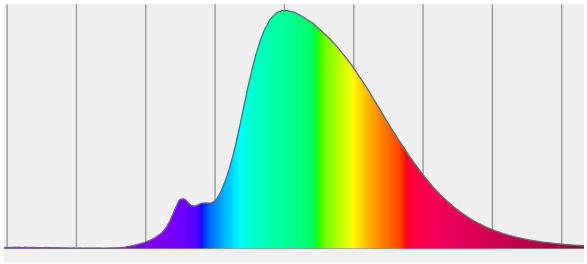
Voltage: 121 V, Current: 0.466 A

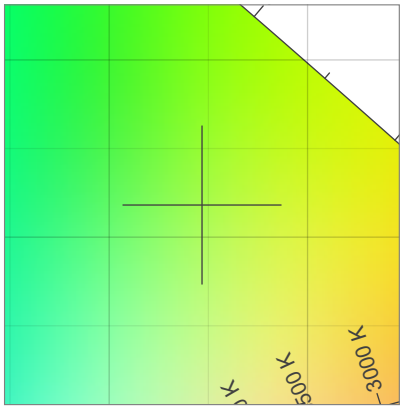




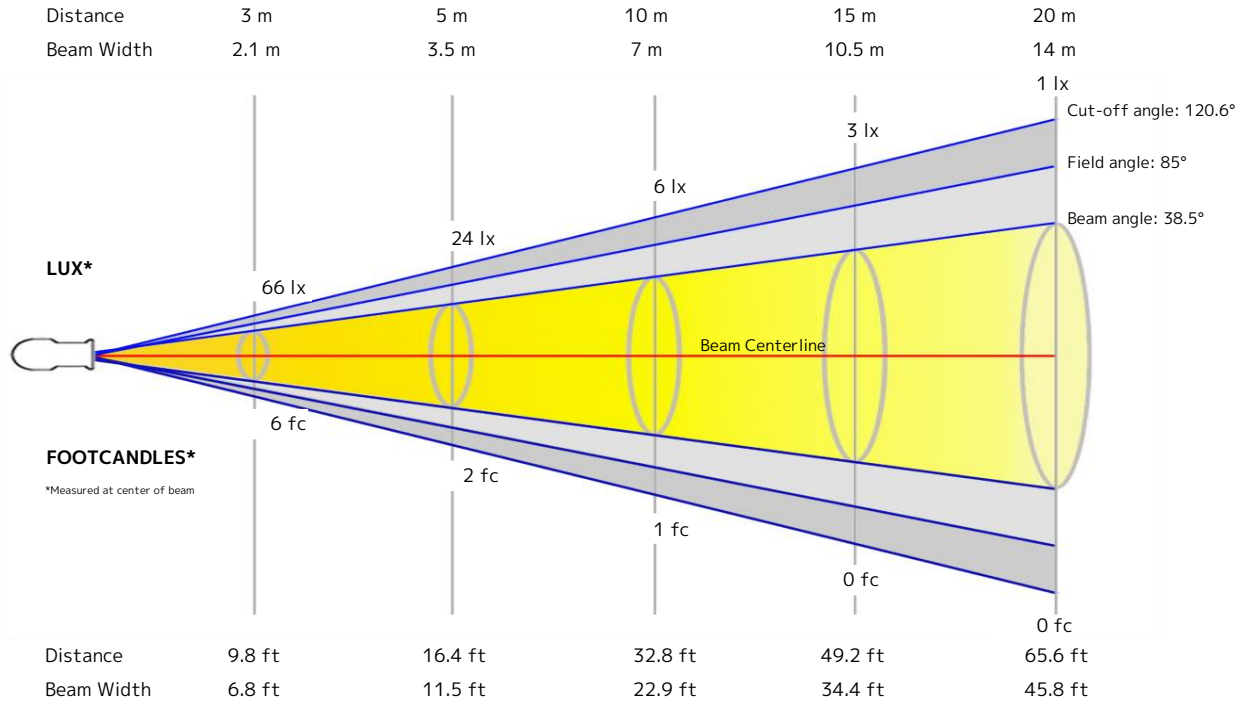
Spectral Power Distribution

Dominant Wavelength 559 nm





Dominant Wavelength	Color Coordinate CIE 1931	Color Coordinate CIE1931	Color Coordinate CIE 1964	Color Coordinate CIE 1964
nm	x	y	u	v
559	0.347	0.518	0.163	0.365



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	594	148	66	37	24	16	12	9	7	6	5	4	4	3	3	2	2	2	2	1
FC	55.2	13.8	6.1	3.4	2.2	1.5	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1

Measurement Date: 5/15/2024

Measurements

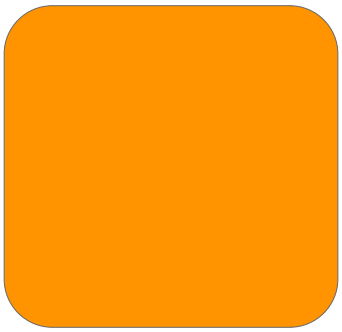
Total Lumen Output: 2866 lm

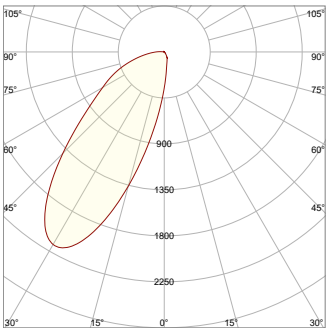
Peak Intensity: 350 cd

Efficacy: 52 Lumen/Watt

Power: 55.3 W

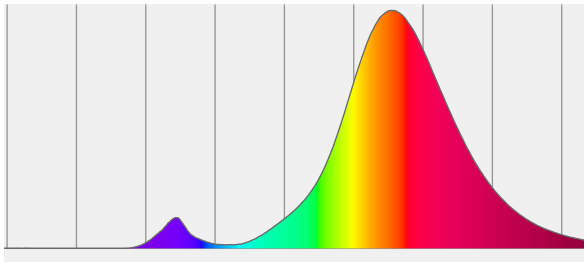
Voltage: 121 V, Current: 0.469 A

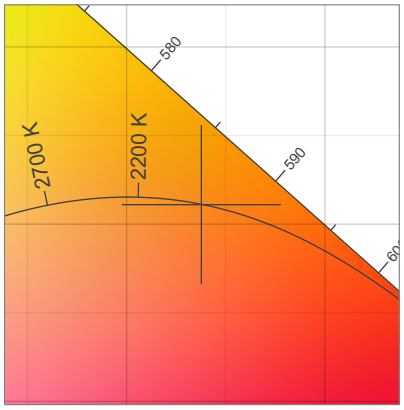




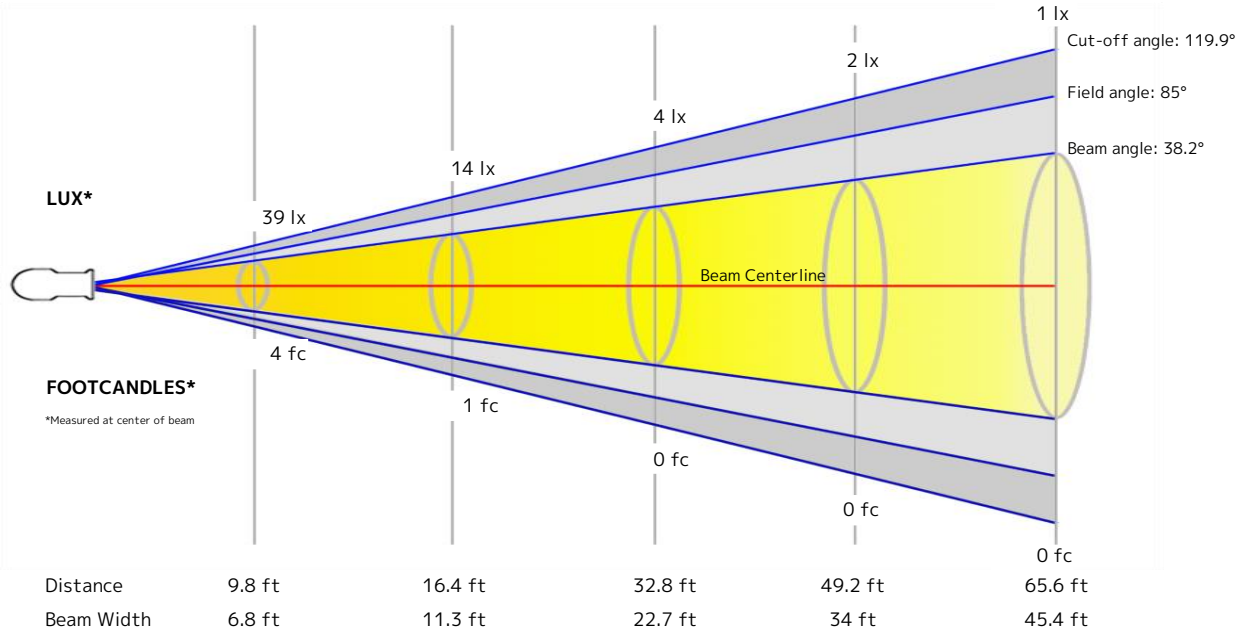
Spectral Power Distribution

Dominant Wavelength 590 nm





Dominant Wavelength	Color Coordinate CIE 1931	Color Coordinate CIE1931	Color Coordinate CIE 1964	Color Coordinate CIE 1964
nm	x	y	u	v
590	0.538	0.411	0.314	0.360



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	350	88	39	22	14	10	7	5	4	4	3	2	2	2	2	1	1	1	1	1
FC	32.6	8.1	3.6	2	1.3	0.9	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1

Measurement Date: 5/15/2024