

Photometric Data Sheet

Laboratory and Equipment

Test Lab
Spectrometer Manufacturer and Model
Measurement Date

Industrial Commercial Lighting - St. Louis, Missouri
LabSpion – Type C, horizontal
11/8/2022

Measurement Conditions

Tested c-planes
Tested Gamma Resolution
Input Power

16 planes – 22.5°
5°
266.4 W

Tested Light Source

Luminaire
Basic Luminous Shape
Manufacturer
Description

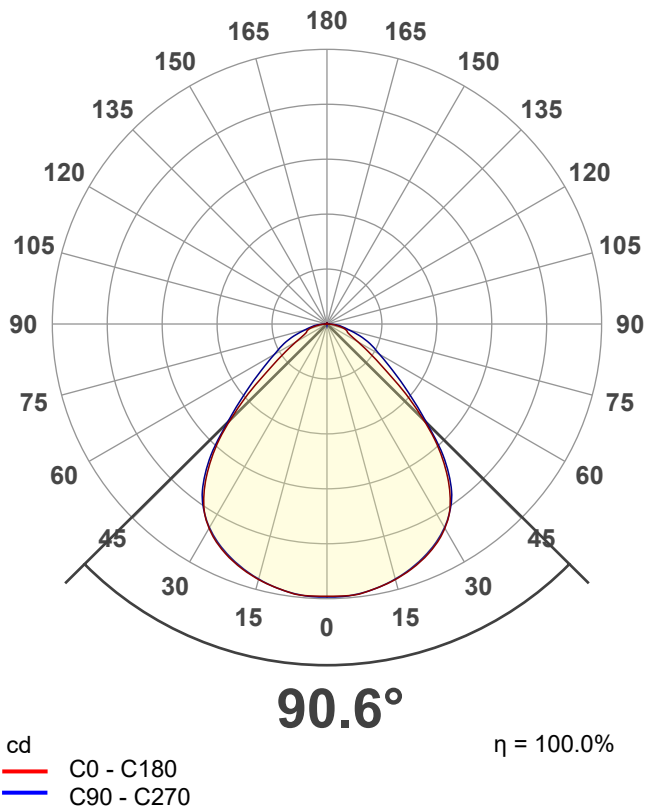
ICLH-50K255ML-P1WH
PANEL
Industrial Commercial Lighting
255W 2ft Linear High Bay LED Light

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Peak Intensity
Correlated Color Temperature, CCT
Color Rendering Index
TM30
SDCM

35810 lm – 0.37% / 99.63%
134 lm/W
16580 cd
5285 K
CRI 84.7
83.6
4.3

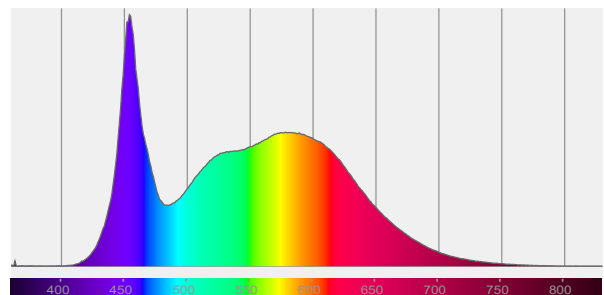
Polar Light Distribution Diagram



Product Photo

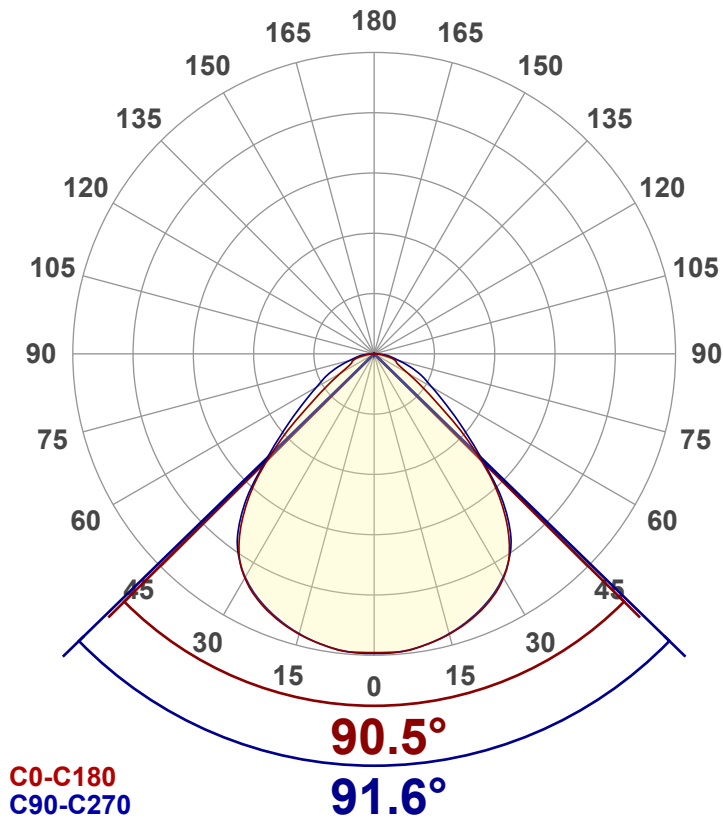


Spectral Power Distribution



Luminous Intensity Diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	35810 lm
Lumen Up% / Down%	0.37% / 99.63%
Peak Intensity	16580 cd
Beam Angle (50%-FWHM)	90.55°
Beam Angle - Horizontal	91.6°
Beam Angle - Vertical	90.5°

Cut-off Angle

Average 2.5%	171.4°
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Field Angle

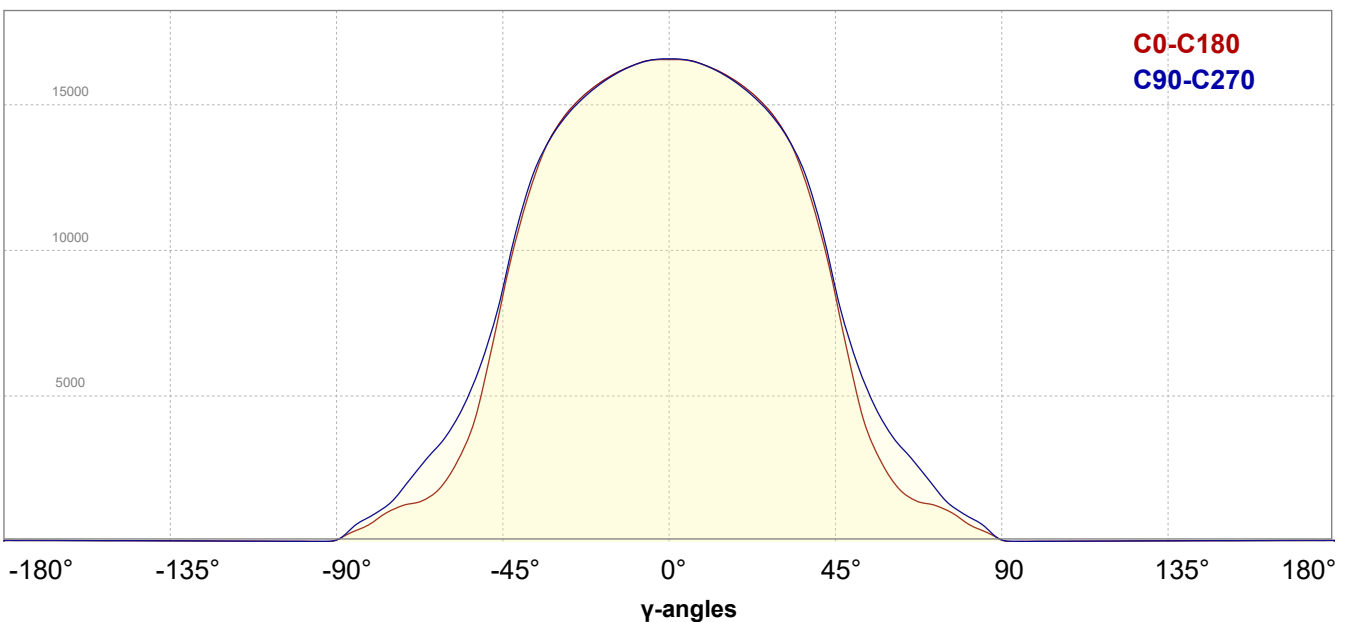
Average 10%	143.7°
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Intensity Ratio

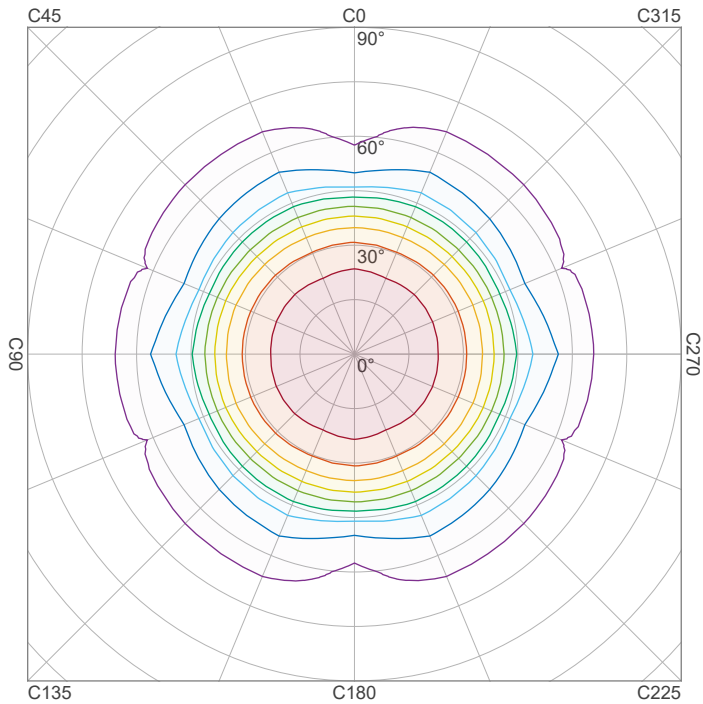
In 120° cone	87.6%
In 90° cone	66.9%

Linear Distribution Diagram

Intensity [cd]



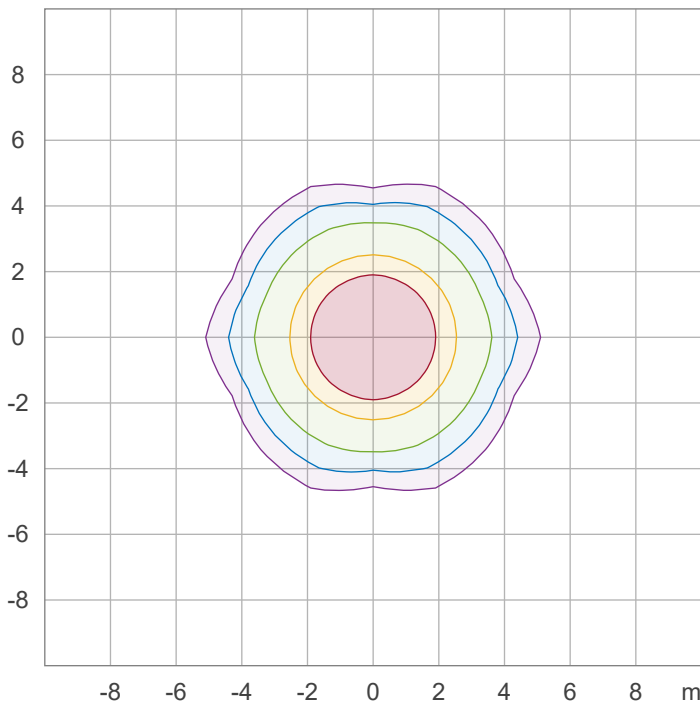
Iso-intensity Diagram (Iso-candela)



90 %	14915.3 cd
80 %	13258.0 cd
70 %	11600.8 cd
60 %	9943.5 cd
50 %	8286.3 cd
40 %	6629.0 cd
30 %	4971.8 cd
20 %	3314.5 cd
10 %	1657.3 cd

Peak intensity: 16572.5 cd
 Number of c-planes: 16

Iso-illuminance Diagram (Iso-lux)



50.0 %	920.5 lx
30.0 %	552.3 lx
10.0 %	184.1 lx
5.0 %	92.0 lx
3.0 %	55.2 lx

Peak illuminance: 1840.9 lx
 Mounting height: 3.0 m
 Number of c-planes: 16



Color Details

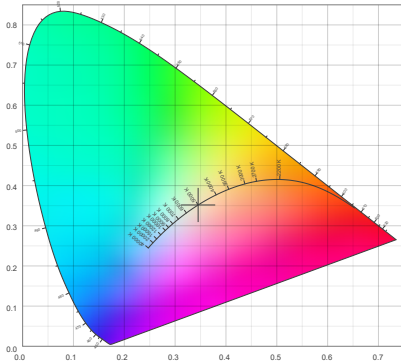
Correlated Color Temperature, Measured
 Color Rendering Index
 Color Rendering Index, R9 (red)
 Color Rendering TM30-18

CCT = 5285 K
 CRI 84.7
 R9 = 14.4
 Rf 83.6
 Rg 94.8

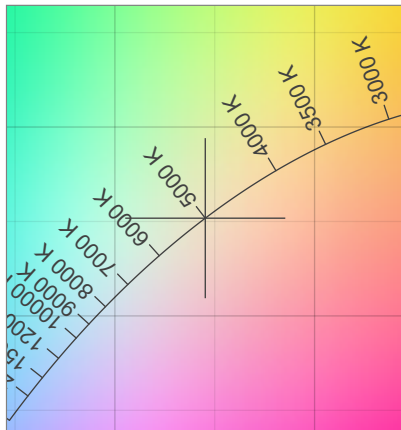
Color deviation from BBL
 Color coordinates CIE 1931
 Color coordinate CIEs 1960
 Color coordinate CIEs 1976
 Color Quality Scale

Duv = -0.0009
 (x;y) = (0.345;0.352)
 (u;v) = (0.211;0.323)
 (u';v') = (0.211;0.485)
 CQS = 80.7

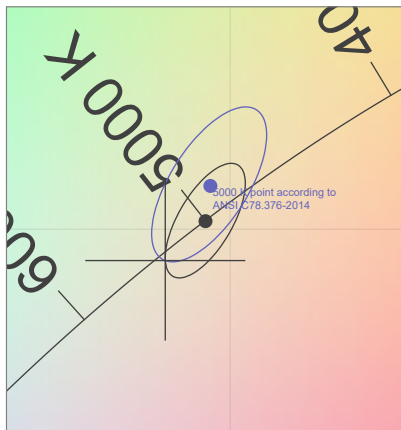
CIE 1931 Chromaticity Diagram



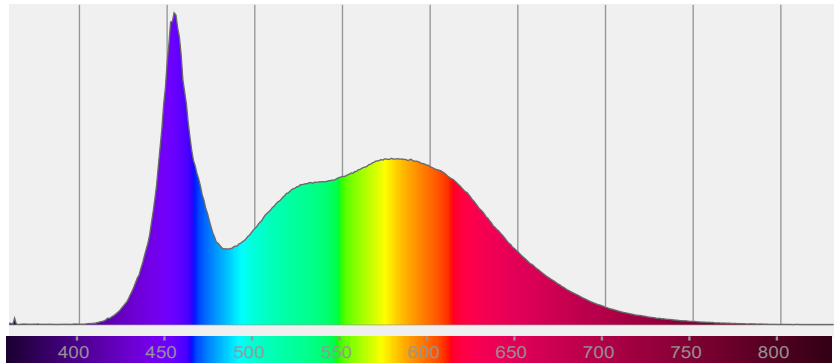
CIE 1931 Chromaticity - Zoomed



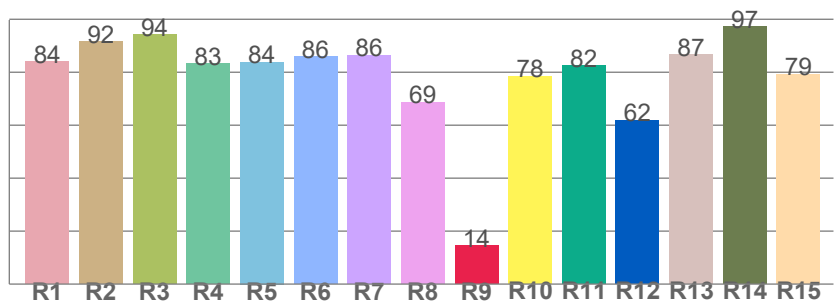
CIE 1931 Chromaticity - SDCM



Spectral Power Distribution



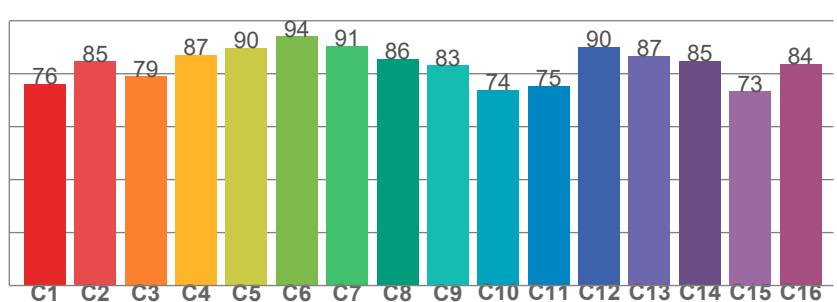
Color Rendering Index per Reference Color (CIE 1995)



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
84.1	91.6	94.1	83.2	83.9	86.0	86.4	68.7	14.4	78.5	82.5	61.9	86.7	97.3	79.2

TM30-18 Rf-values per Hue Bin



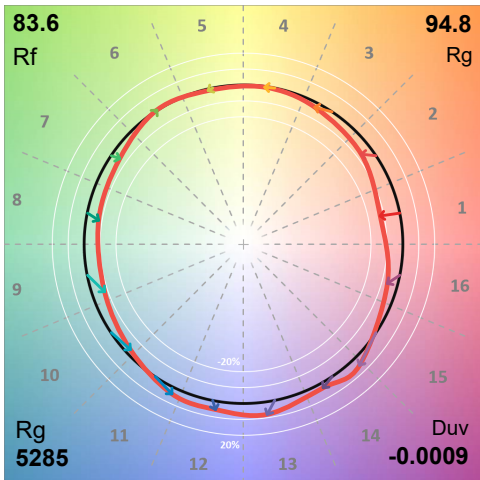
TM30-18 Rf-values per hue bin

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
76.3	84.8	79.0	87.1	89.9	94.1	90.6	85.7	83.1	74.0	75.5	90.1	86.8	84.9	73.4	83.8

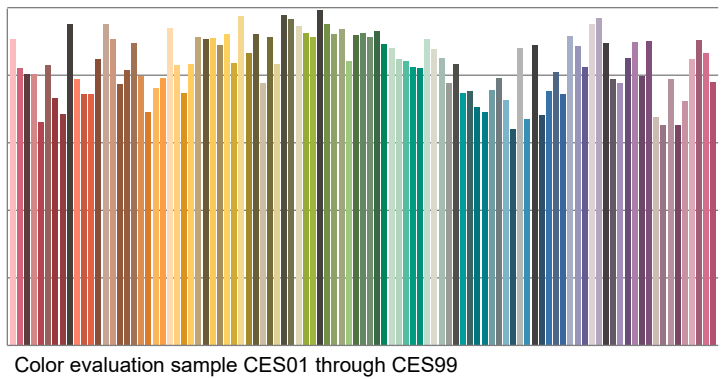


Color details - ANSI/IES TM-30-18 Color Rendition Report

Color Vector Graphic



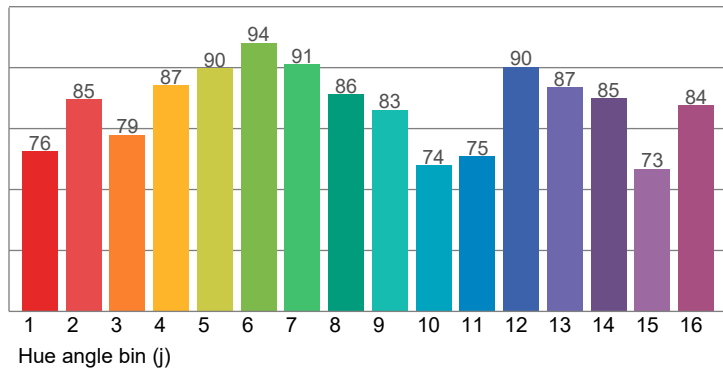
Color Rendition by Color Evaluation Sample (CES)



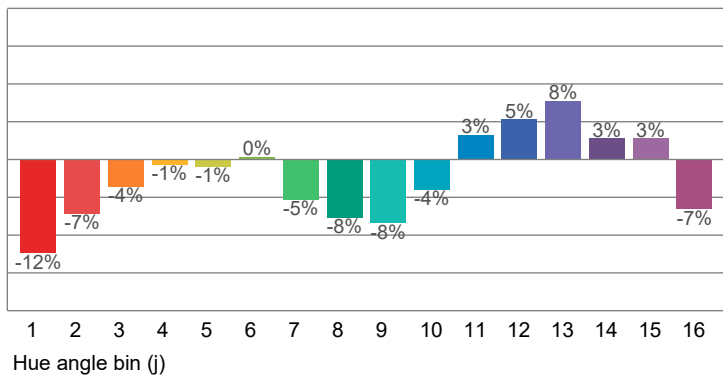
Color Distortion Graphic



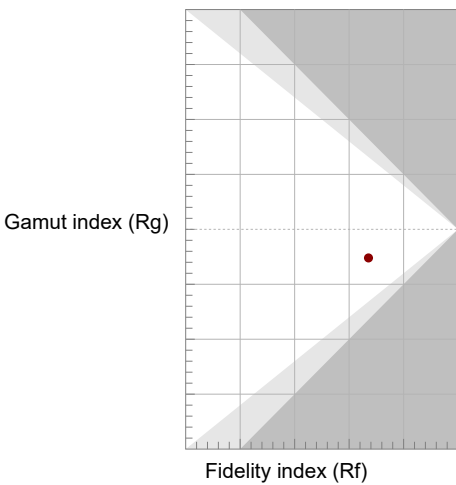
Local Color Fidelity (per hue bin)



Local Chroma Shift (per hue bin)



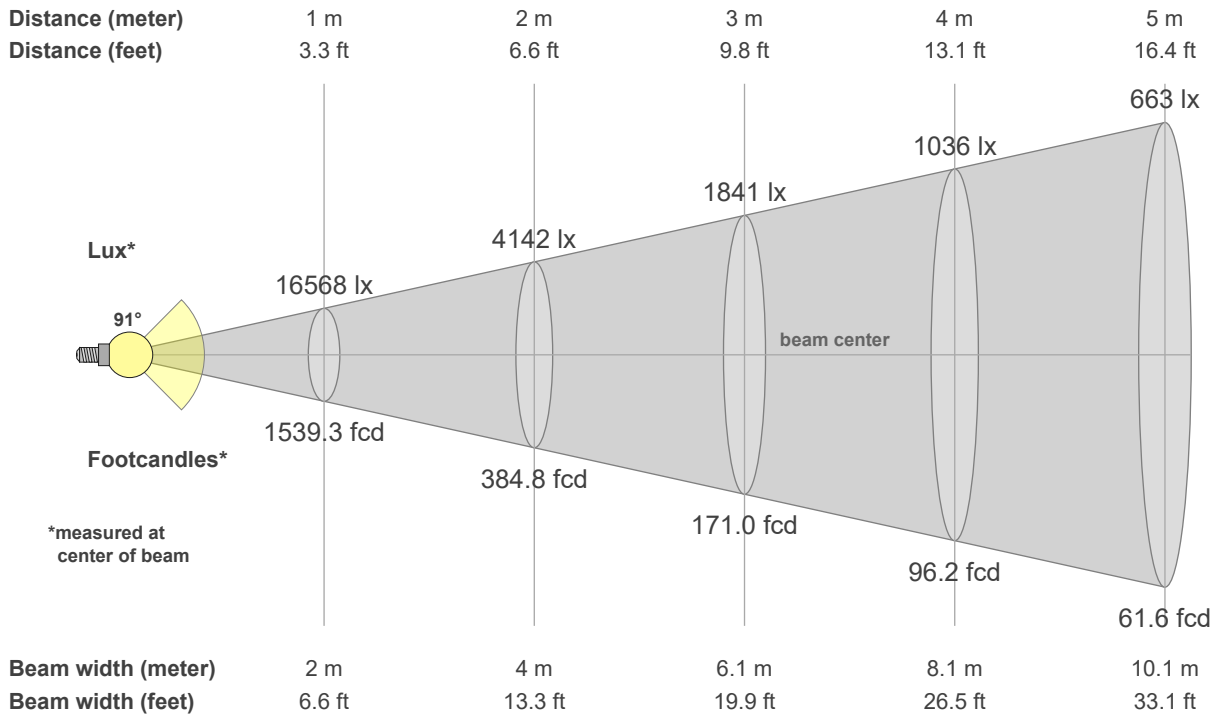
Gamut Index vs. Fidelity Index



x 0.345
y 0.345
u' 0.211
v' 0.485

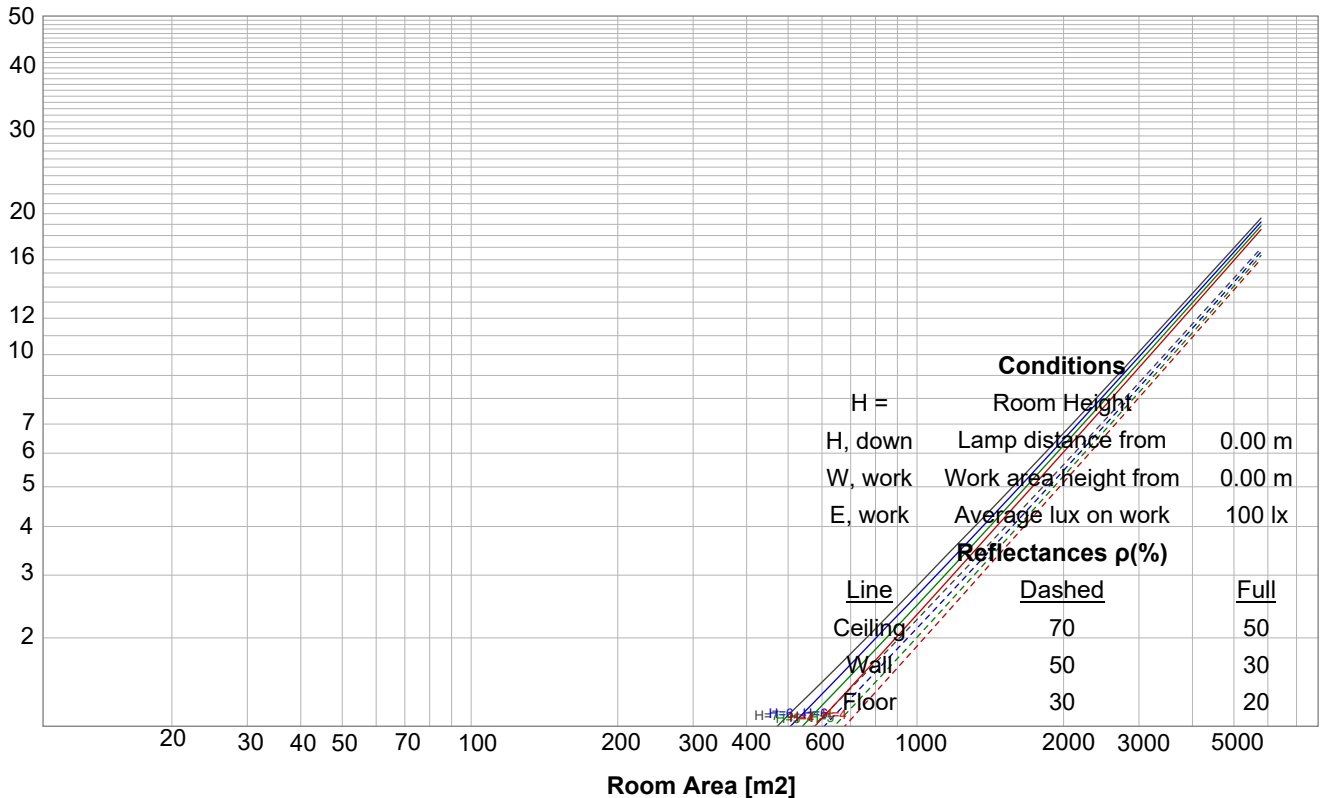
CIE	13.3-1995
Ra	84.7
R9	14.4

Beam Details



Luminaire budgetary diagram

LAMPS (number of lamps)



Intensity Details

Beam intensities from 1 – 20 m

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m
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	ft
16568	4142	1841	1036	663	460	338	259	205	166	137	115	98	85	74	65	57	51	46	41	lux
1539.3	384.8	171	96.2	61.6	42.8	31.4	24.1	19	15.4	12.7	10.7	9.1	7.9	6.8	6	5.3	4.8	4.3	3.8	fc

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
16.6K	16.5K	16.3K	16.0K	15.6K	15.1K	14.3K	13.0K	11.0K	8.4K	5.6K	3.5K	2.2K	1.6K	1.3K	1.1K	0.7K	0.4K	0.1K	0.0K	cd
100%	100%	99%	97%	94%	91%	86%	78%	66%	51%	34%	21%	13%	9%	8%	6%	4%	2%	0%	0%	of 0°val

Intensities in 90° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
16.6K	16.5K	16.3K	16.0K	15.6K	15.0K	14.2K	13.1K	11.3K	8.7K	6.5K	4.9K	3.7K	2.9K	2.2K	1.4K	0.9K	0.6K	0.1K	0.0K	cd
100%	100%	99%	97%	94%	91%	86%	79%	68%	53%	39%	29%	22%	18%	13%	8%	6%	3%	0%	0%	of 0°val

Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
16.6K	16.5K	16.3K	16.0K	15.6K	15.1K	14.3K	13.0K	11.0K	8.4K	5.6K	3.5K	2.2K	1.6K	1.3K	1.1K	0.7K	0.4K	0.1K	0.0K	cd
100%	100%	99%	97%	94%	91%	86%	78%	66%	51%	34%	21%	13%	9%	8%	6%	4%	2%	0%	0%	of 0°val

Intensities in 270° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
16.6K	16.5K	16.3K	16.0K	15.6K	15.0K	14.2K	13.1K	11.3K	8.7K	6.5K	4.9K	3.7K	2.9K	2.2K	1.4K	0.9K	0.6K	0.1K	0.0K	cd
100%	100%	99%	97%	94%	91%	86%	79%	68%	53%	39%	29%	22%	18%	13%	8%	6%	3%	0%	0%	of 0°val



UGR Table

Corrected, comprehensive UGR table according to 117-1995, S/H ratio=0.25

Reflectances		ρ Ceiling	70	70	50	50	30	70	70	50	50	30	
	ρ Walls	50	30	50	30	30	50	30	50	30	30	50	
	ρ Floor	20	20	20	20	20	20	20	20	20	20	20	
Room size		Viewed Crosswise					Viewed Endwise						
H = mounting height above eye level		(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)						
	X	Y											
2H	2H	2H	25.8	26.8	26.0	27.1	27.3	25.8	26.9	26.0	27.2	27.4	
		3H	26.4	27.5	26.8	27.7	27.9	26.6	27.8	27.1	28.0	28.2	
		4H	26.7	27.8	27.1	28.1	28.3	27.1	28.2	27.5	28.5	28.7	
		6H	27.1	28.0	27.4	28.3	28.7	27.6	28.5	27.9	28.8	29.2	
		8H	27.2	28.1	27.6	28.4	28.8	27.8	28.7	28.1	29.0	29.4	
		12H	27.3	28.1	27.7	28.5	28.9	27.9	28.8	28.3	29.1	29.6	
4H	2H	2H	26.0	27.1	26.4	27.3	27.6	26.0	27.1	26.5	27.4	27.6	
		3H	27.1	28.0	27.5	28.3	28.8	27.2	28.1	27.6	28.4	28.9	
		4H	27.6	28.4	28.0	28.8	29.4	27.8	28.6	28.2	29.0	29.6	
		6H	28.1	28.9	28.6	29.2	29.6	28.4	29.2	28.9	29.5	29.9	
		8H	28.2	29.0	28.8	29.3	29.7	28.7	29.4	29.2	29.7	30.1	
		12H	28.4	29.0	28.9	29.4	29.9	28.9	29.5	29.4	29.9	30.4	
8H	4H	4H	27.9	28.6	28.4	29.0	29.4	28.1	28.8	28.6	29.2	29.5	
		6H	28.6	29.1	29.1	29.6	30.1	28.9	29.4	29.4	29.9	30.4	
		8H	28.9	29.4	29.4	29.9	30.5	29.3	29.7	29.8	30.3	30.9	
		12H	29.1	29.5	29.7	30.0	30.6	29.6	30.0	30.2	30.5	31.1	
12H	4H	4H	27.9	28.5	28.4	28.9	29.4	28.1	28.7	28.6	29.1	29.6	
		6H	28.7	29.2	29.2	29.7	30.3	29.0	29.5	29.5	30.0	30.6	
		8H	29.1	29.4	29.7	29.9	30.6	29.4	29.8	30.0	30.3	30.9	
Variations with the observer position for the luminaire spacings, S:													
S = 1.0H		0.3 / -0.4					0.2 / -0.3						
S = 1.5H		0.6 / -0.9					0.7 / -0.7						
S = 2.0H		1.3 / -1.3					1.4 / -1.0						

Coefficients of utilization

Ceiling reflectance	80				70				50			30			10			0
Wall reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Floor reflectance	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
RCR (Room Cavity Ratio) Room values are expressed as percentage of Lumen delivered to the task surface																		
0	119.0	119.0	119.0	119.0	116.1	116.1	116.1	116.1	110.9	110.9	110.9	106.1	106.1	106.1	101.7	101.7	101.7	99.6
1	110.0	105.8	102.1	98.7	107.3	103.6	100.1	97.0	99.3	96.5	93.9	95.4	93.1	91.0	91.8	90.0	88.3	86.2
2	101.4	94.1	88.0	83.0	98.8	92.2	86.7	82.0	88.7	84.0	80.0	85.4	81.6	78.2	82.4	79.3	76.4	74.4
3	93.4	84.0	76.7	70.9	91.1	82.5	75.7	70.3	79.5	73.8	69.0	76.8	71.9	67.8	74.3	70.2	66.6	64.6
4	86.3	75.5	67.5	61.5	84.1	74.2	66.8	61.0	71.7	65.3	60.2	69.4	63.8	59.3	67.3	62.5	58.5	56.5
5	79.9	68.2	59.9	53.9	77.9	67.1	59.3	53.6	65.0	58.2	53.0	63.0	57.1	52.4	61.2	56.0	51.8	49.9
6	74.2	61.9	53.6	47.7	72.3	60.9	53.2	47.5	59.2	52.2	47.1	57.5	51.4	46.6	56.0	50.5	46.2	44.3
7	69.0	56.5	48.3	42.6	67.4	55.7	47.9	42.4	54.1	47.2	42.1	52.7	46.5	41.8	51.4	45.8	41.5	39.6
8	64.5	51.8	43.8	38.3	62.9	51.1	43.5	38.2	49.8	42.9	38.0	48.5	42.3	37.7	47.4	41.7	37.5	35.7
9	60.3	47.7	39.9	34.7	59.0	47.1	39.7	34.6	46.0	39.2	34.4	44.9	38.7	34.2	43.9	38.2	34.0	32.3
10	56.6	44.1	36.6	31.6	55.4	43.6	36.4	31.5	42.6	36.0	31.4	41.7	35.6	31.2	40.8	35.2	31.1	29.4



Power Details

Input power

Frequency of input power	60 Hz
Power feed to light source	266.4 W
RMS Input voltage feed V,RMS	115 V
RMS Input current feed I,RMS	2.32 A
Volt-Amp or apparent power = V,RMS*I,RMS	267.05 VA
Displacement factor of AC power feed	1.0
Power factor of AC current feed	1.0
Total harmonic distortion of the current	6.26%
Total harmonic distortion of the voltage	1.93%

Input power curve



Efficiency

Radiated power efficiency 42.4%



Lumen efficiency 134 lm/W



Stabilization details

Warmup Conditions

Stable period	15 min
Stable change max	2.0%
Minimum time	15 min

Color Temperature Change

CCT start	4841 K
CCT end	5285 K

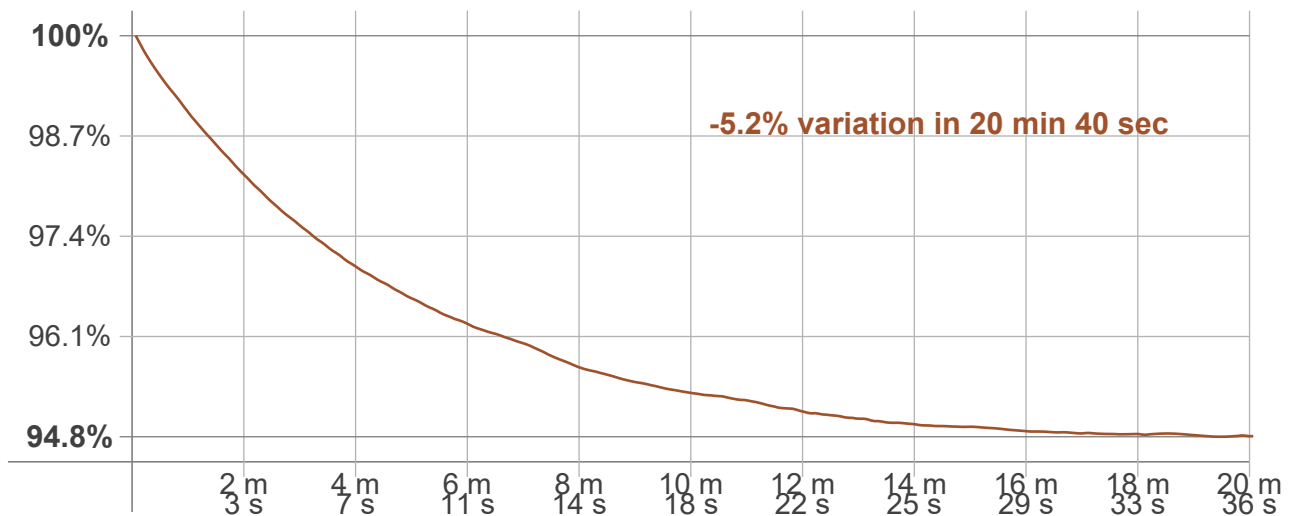
Warmup Result

Total warmup time	Lamp stabilized
Warmup variation	-5.3%

Output Change

Output start	38026 lm
Output change	-2216 lm
Output end	35810 lm

Stabilization Curve



Flicker T TLA Details

Flicker Meter Type	Viso Systems LabFlicker
Frequency of input power	60 Hz
Flicker/TLA sample rate	20000 samples/s

Measurement time	
PstLM	180 sec.
All other indices	1.5 sec.

Flicker indices according to Illuminating Engineering Society

Flicker frequency	120.48 Hz
Percent Flicker	29.67 %
Flicker index	0.09

Flicker indices according to California Energy Commission (CEC)

JA8/10 40 Hz	0.18 %
JA8/10 90 Hz	0.53 %
JA8/10 200 Hz	29.21 %
JA8/10 400 Hz	29.83 %
JA8/10 1000 Hz	29.69 %

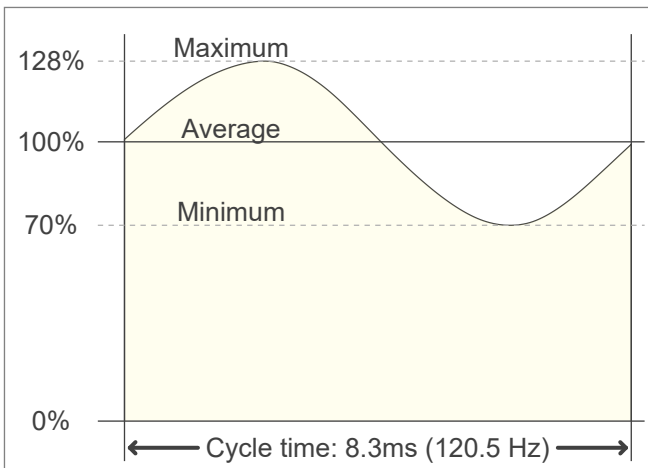
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC

PstLM value (F < 80 Hz)	0.08
SVM value (80 < F < 2000 Hz)	1.05

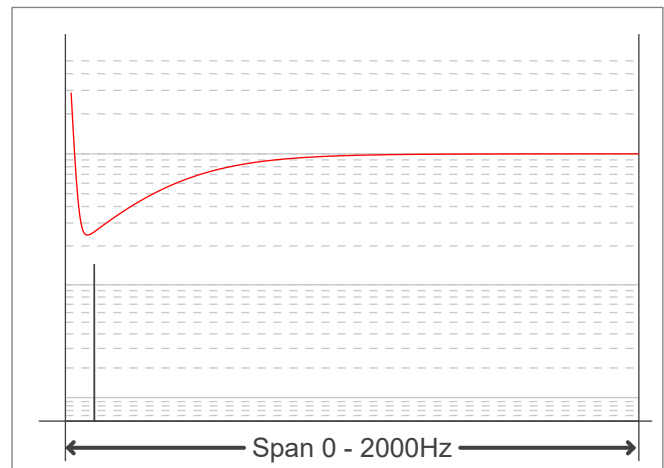
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp	0.05
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Flicker frame (frame of one flicker period in time domain)



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation Plot

