

Light Efficiency:



Light Quality:



Color Temperature:



Output: 8666 lm

Peak: 880758 cd

Power: 649 W

PF: 1.0



Product Name:

**Proteus Hybrid**

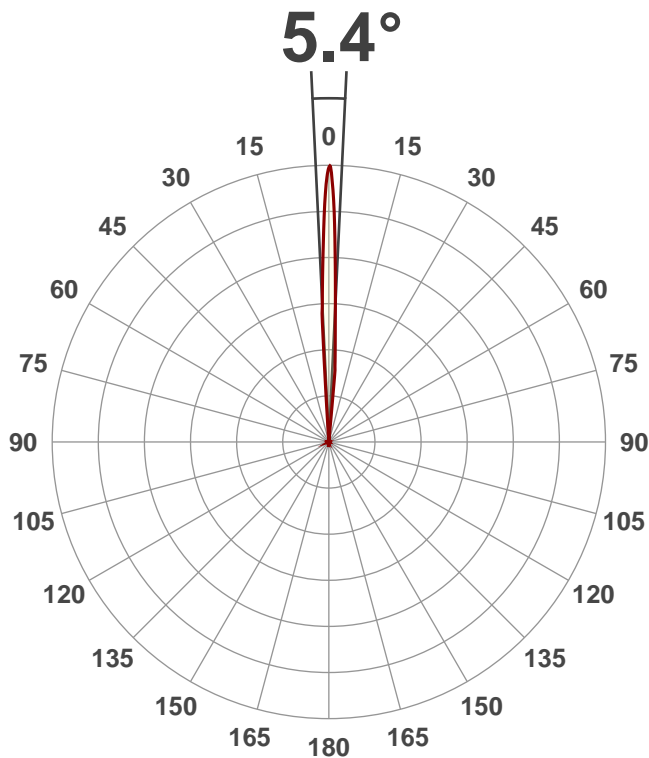
Test:

**Beam CTB color wheel Zoom 50%**

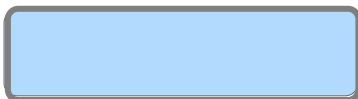
Date:

**1/19/2018**

Note:



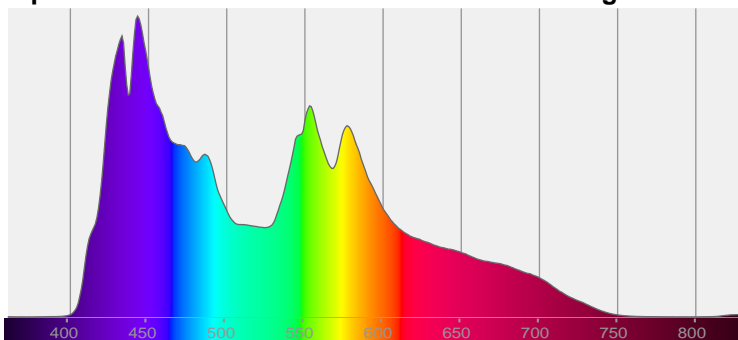
Beam Angle



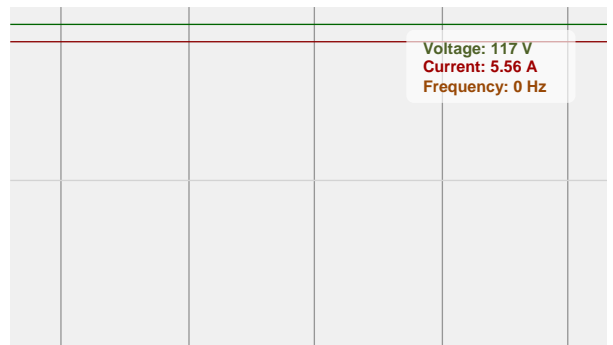
CIE 1931  
x: 0.287  
y: 0.284

Spectra

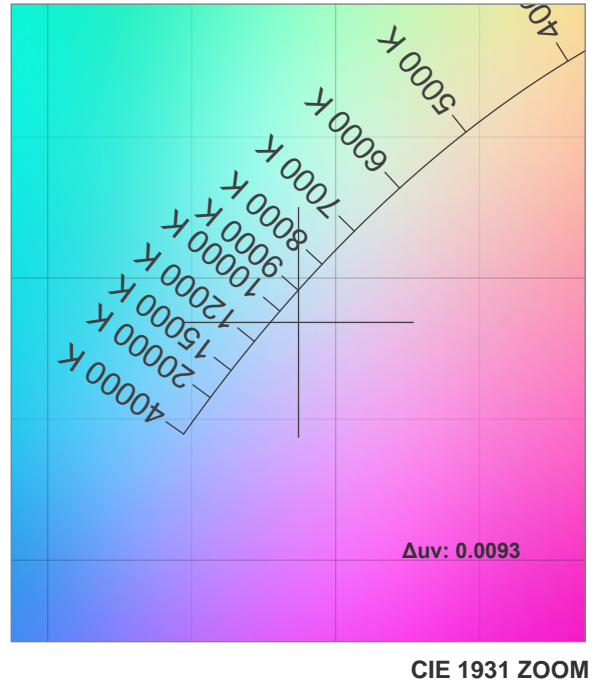
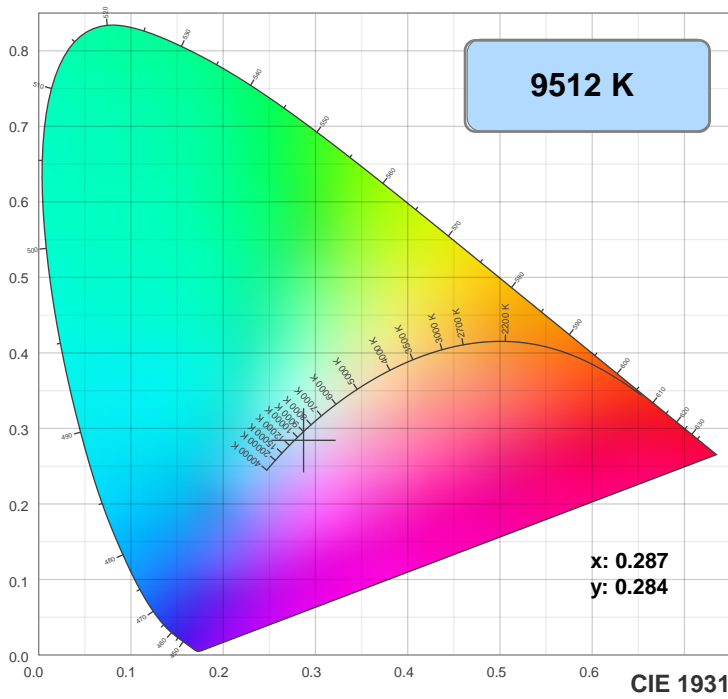
Dominant Wavelength: 461nm



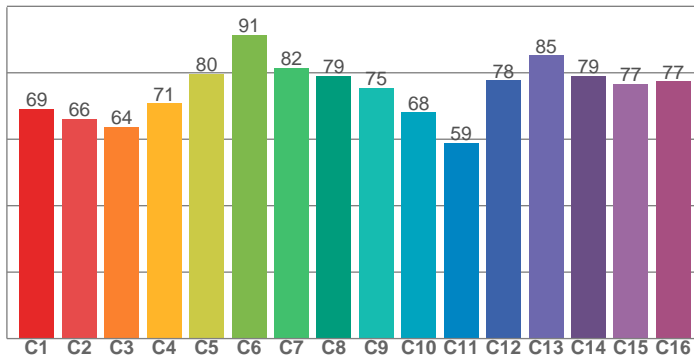
Power



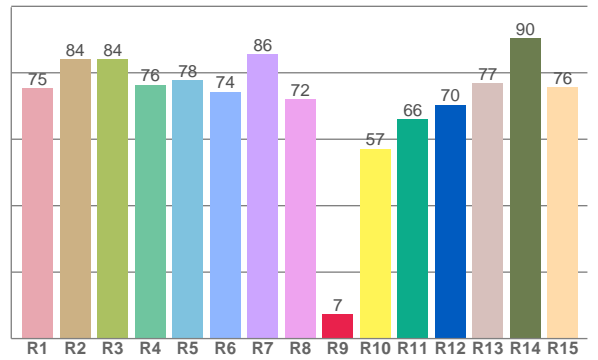
## Color Details



TM30: 75.5



CRI: 78.7 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
75.3	84.1	84.2	76.4	77.7	74.3	85.6	72.1	7.4	57.1	66.0	70.4	76.8	90.5	75.7

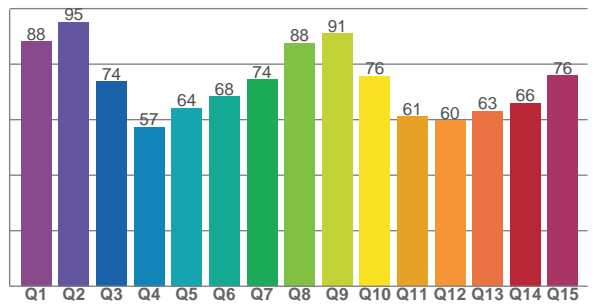
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
69.2	66.2	63.8	70.8	79.7	91.4	81.5	79.1	75.4	68.1	58.9	77.7	85.2	79.0	76.6	77.4

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
88.1	95.2	73.7	57.3	64.1	68.3	74.4	87.7	91.0	75.7	61.0	59.7	63.0	66.0	75.9

CQS: 70.9



## Color Parameters

Color Temperature	Color Rendering Index	Red Component	Color Fidelity	Color Gamut	Color Quality Scale	Color Coordinate CIE 1931	Color Coordinate CIE 1931	Color Coordinate	Color Coordinate	Color Deviation from Black Body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	$\Delta uv$
9512 K	78.7	7.4	75.5	92.5	70.9	0.287	0.284	0.197	0.292	0.0093

TM30 Details

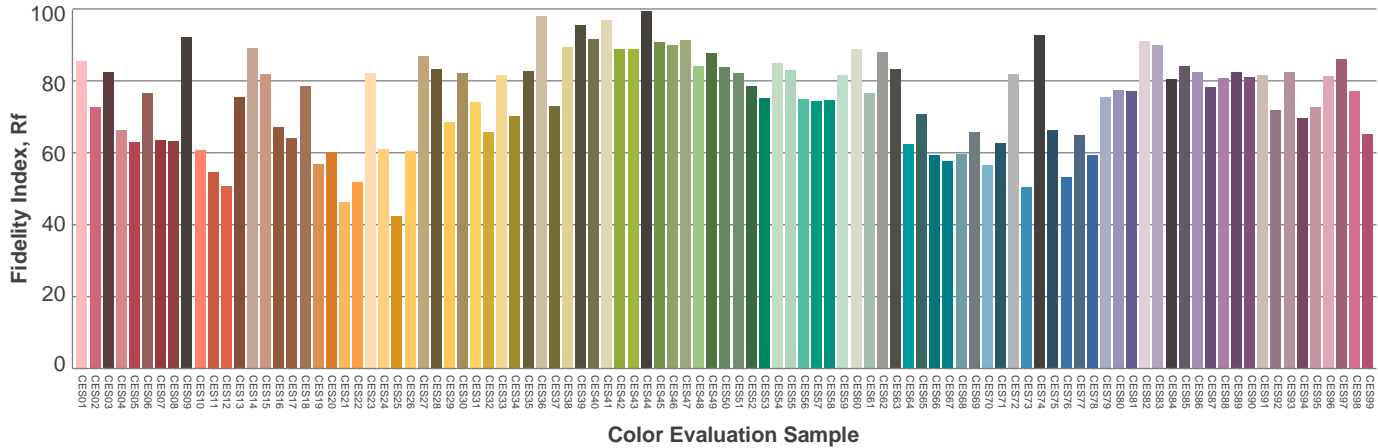
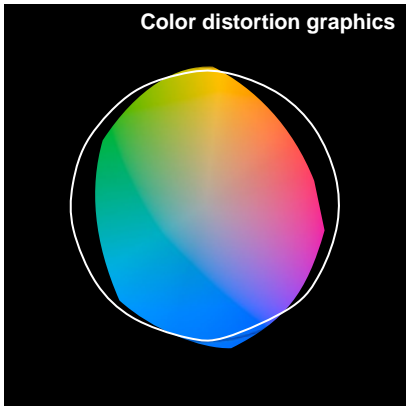
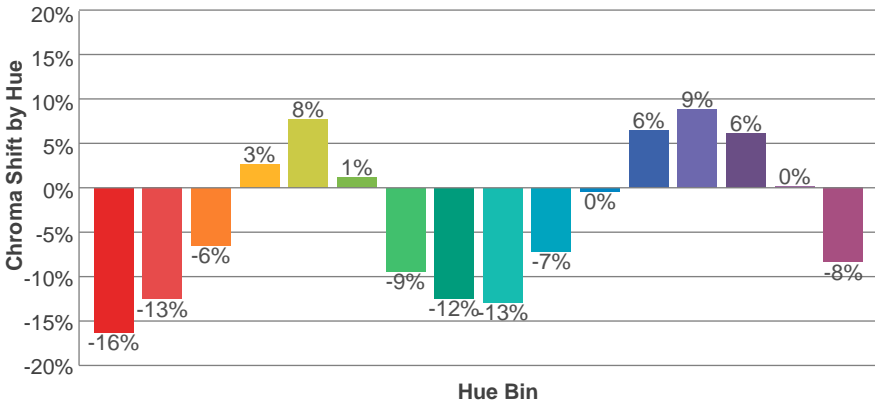
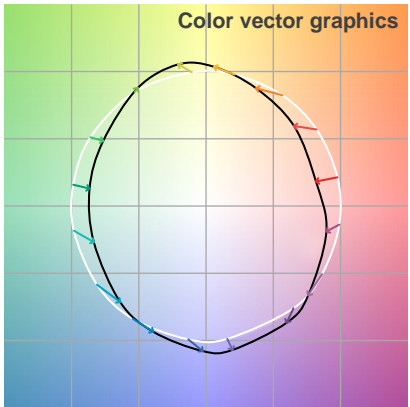
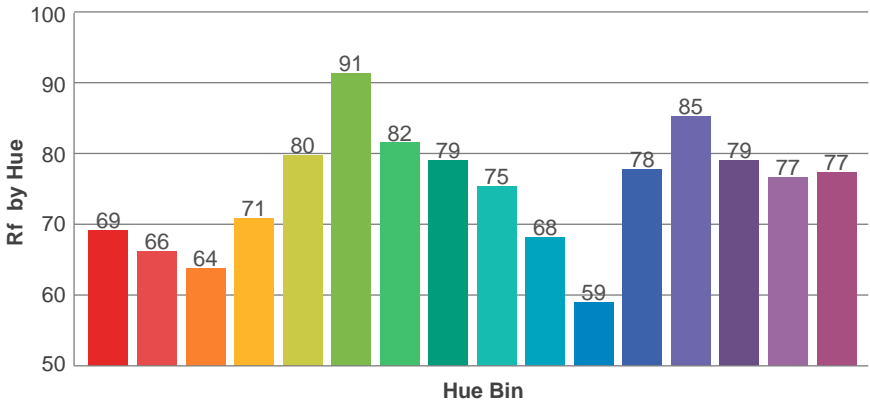
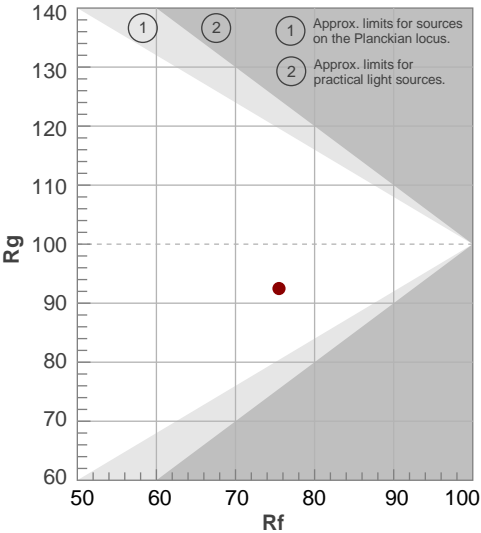
Rf 75.5

Fidelity Index Rf

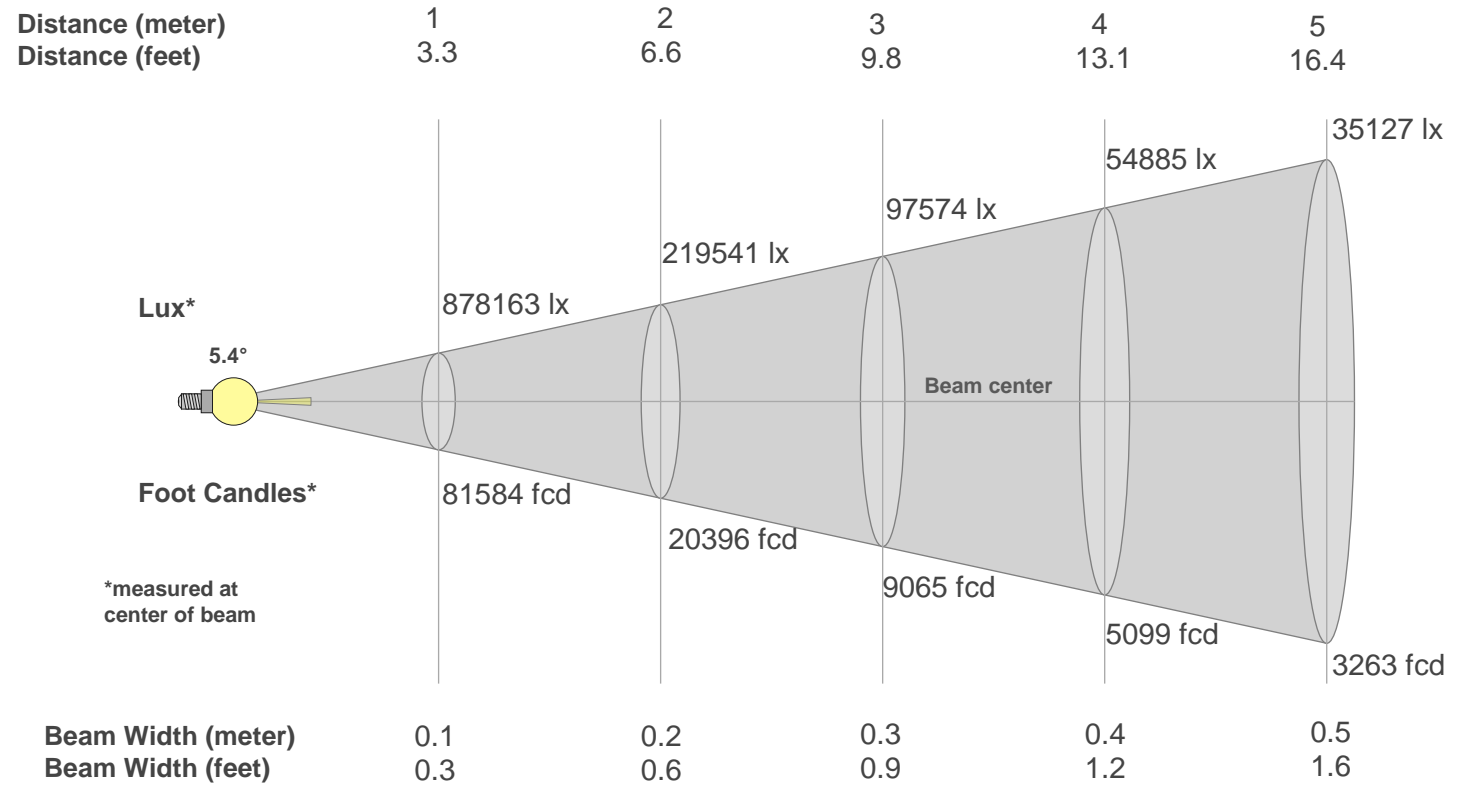
Rg 92.5

Gammut Index Rg

		Graphic shifts (%)	
Hue Bin	R <sub>f</sub>	Chroma	Hue
1	69	-16%	0%
2	66	-13%	11%
3	64	-6%	19%
4	71	3%	16%
5	80	8%	9%
6	91	1%	-4%
7	82	-9%	-3%
8	79	-12%	0%
9	75	-13%	11%
10	68	-7%	20%
11	59	0%	18%
12	78	6%	12%
13	85	9%	2%
14	79	6%	-10%
15	77	0%	-19%
16	77	-8%	-7%



Beam Details



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	878163	219541	97574	54885	35127	24393	17922	13721	10842	8782	7258	6098	5196	4480	3903	3430	3039	2710	2433	2195
Fcd	81584	20396	9064.9	5099	3263.4	2266.2	1665	1274.7	1007.2	815.8	674.2	566.6	482.7	416.2	362.6	318.7	282.3	251.8	226	204

Intensities in 0° C-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
878K	759K	561K	399K	1K	1K	0K	0K	0K	0K	0K	0K	0K	0K	1K	1K	1K	1K	1K	1K
100%	86%	64%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Intensities in 90° C-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
878K	759K	561K	399K	1K	1K	0K	0K	0K	0K	0K	0K	0K	0K	1K	1K	1K	1K	1K	1K
100%	86%	64%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

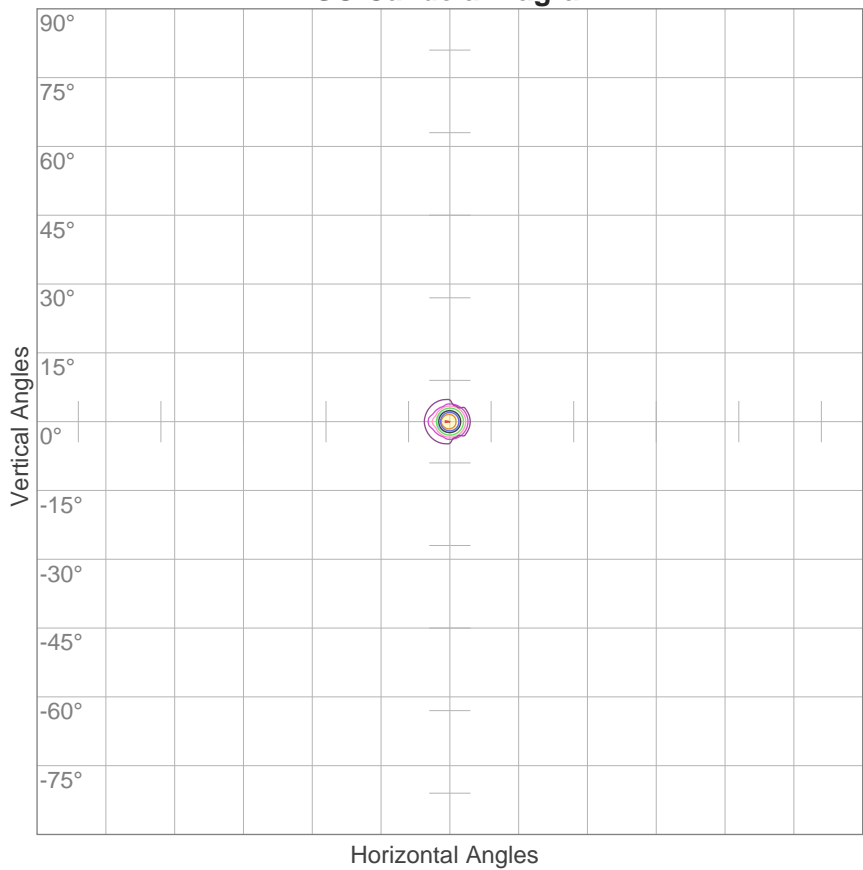
Intensities in 180° C-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
878K	795K	584K	397K	291K	198K	1K	0K	0K	0K	0K	0K	0K	1K	1K	1K	1K	1K	1K	1K
100%	91%	66%	45%	33%	23%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Intensities in 270° C-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
878K	795K	584K	397K	291K	198K	1K	0K	0K	0K	0K	0K	0K	1K	1K	1K	1K	1K	1K	1K
100%	91%	66%	45%	33%	23%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Beam Angle 50%	Field Angle 10%	Cutoff Angle 2,5%	Intensity Ratio in 120° Cone	Intensity Ratio in 90° Cone
5.4°	8.9°	9.2°	97.6%	97.0%

# ISO Diagrams

ISO Candela Diagram



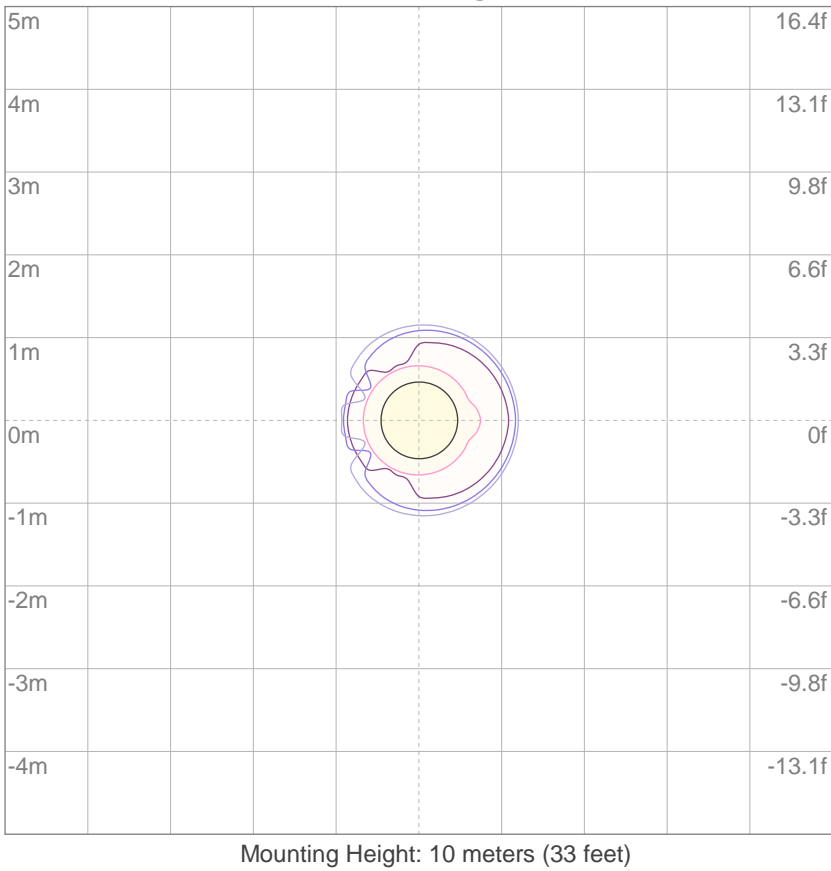
10%	87816 cd
20%	175633 cd
30%	263449 cd
40%	351265 cd
50%	439081 cd
60%	526898 cd
70%	614714 cd
80%	702530 cd
90%	790346 cd

Conditions:

Number of c-planes: 2

Candela at center: 878163 cd

ISO Lux Diagram



3%	263 lx
5%	439 lx
10%	878 lx
30%	2634 lx
50%	4391 lx

Conditions:

Number of c-planes: 2

Lux at center: 8782 lx

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

# Light Planning

## 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	0
RCR	(RCR: Room Cavity Ratio) Room Values are expressed as percentage of Lumens delivered to the task surface																	
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	98
1	116	114	113	111	113	112	111	109	108	107	106	104	103	102	100	100	99	97
2	113	111	109	107	111	109	107	105	106	104	103	103	101	100	100	99	98	97
3	111	108	106	103	110	107	104	103	104	102	101	102	100	99	99	98	97	96
4	110	106	103	101	108	105	102	101	103	101	99	101	99	98	99	98	97	96
5	108	104	102	100	107	103	101	99	102	100	98	100	98	97	99	97	96	95
6	107	103	100	98	106	102	100	98	101	99	97	100	98	96	98	97	96	95
7	106	102	99	97	105	101	99	97	100	98	96	99	97	96	98	97	95	95
8	105	101	98	97	104	100	98	96	99	97	96	98	97	95	98	96	95	94
9	104	100	98	96	103	100	97	96	99	97	95	98	96	95	97	96	95	94
10	103	99	97	95	102	99	97	95	98	96	95	98	96	95	97	96	95	94

## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
7899 lm	177 lm	192 lm	107 lm	54.4 lm	30.1 lm	16.0 lm	13.5 lm	10.1 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
11.6 lm	10.9 lm	10.4 lm	20.4 lm	33.6 lm	31.7 lm	28.8 lm	19.1 lm	1.47 lm