

Light Efficiency:



Light Quality:



Color Temperature:



Output: 5968 lm

Peak: 286743 cd

Power: 648 W

PF: 1.0



Product Name:

**Proteus Hybrid**

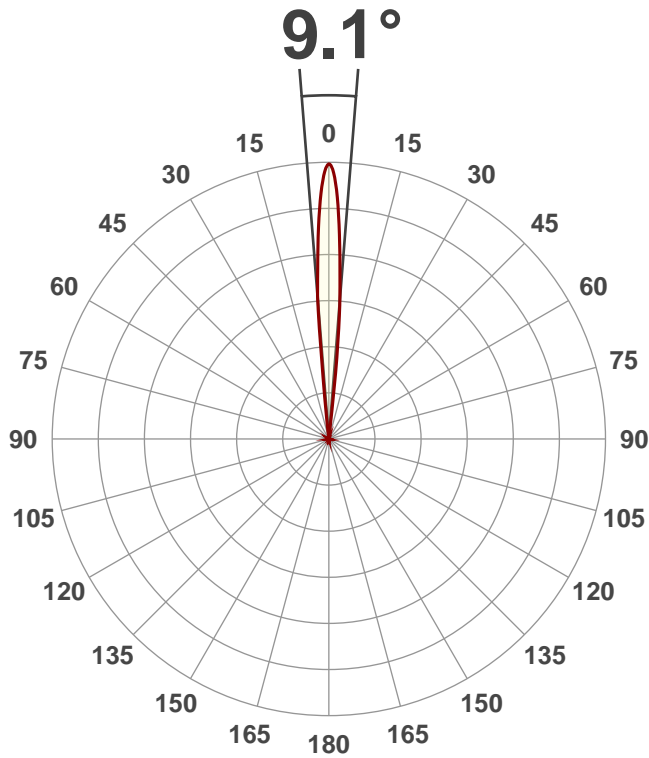
Test:

**Spot CTO color Zoom 50%**

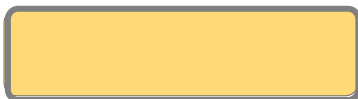
Date:

**1/22/2018**

Note:



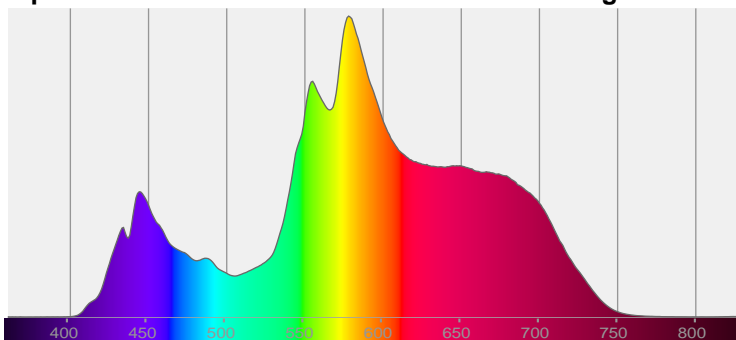
Beam Angle



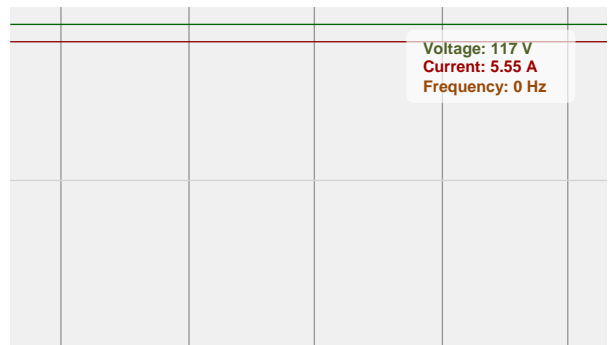
CIE 1931  
x: 0.422  
y: 0.391

Spectra

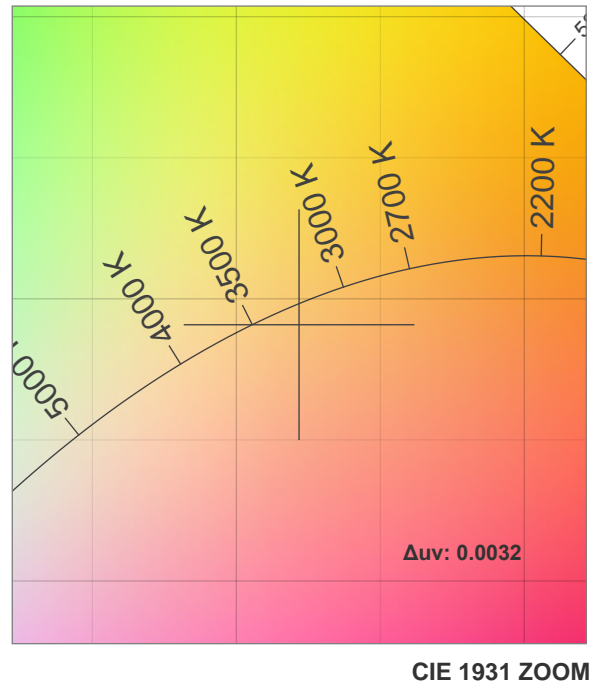
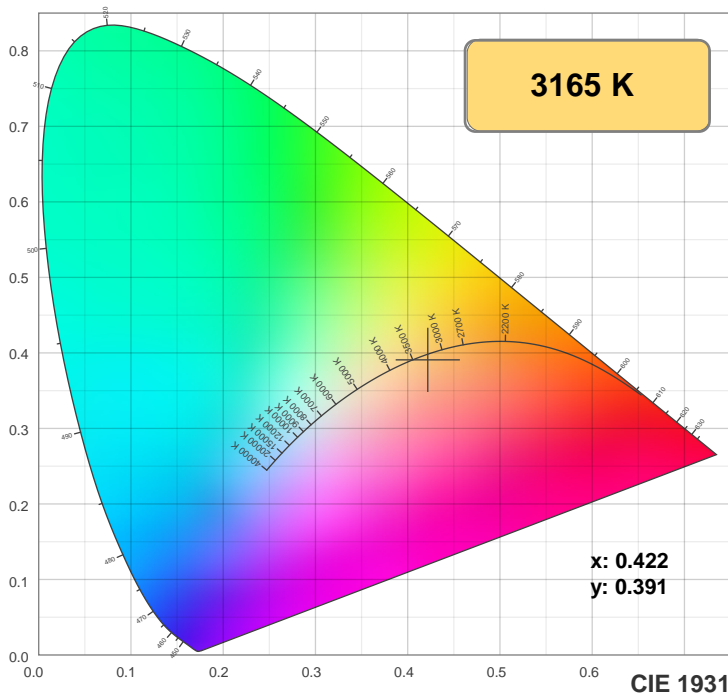
Dominant Wavelength: 584nm



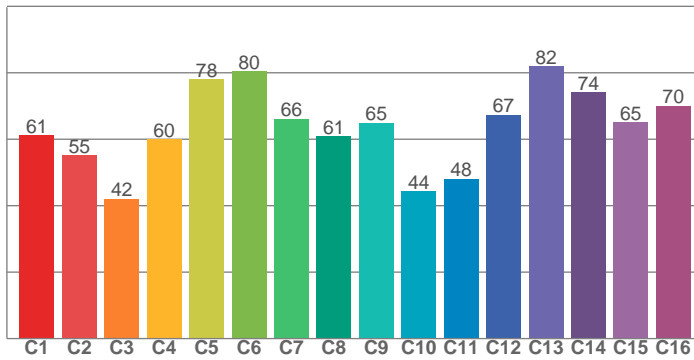
Power



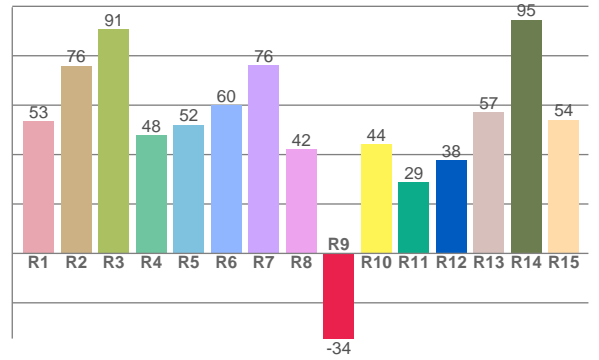
## Color Details



TM30: 62.9



CRI: 62.3 (R1-R8)



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

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
53.4	76.0	90.6	47.8	52.1	60.0	76.1	42.1	-34.5	44.2	28.9	37.6	57.2	94.5	54.1

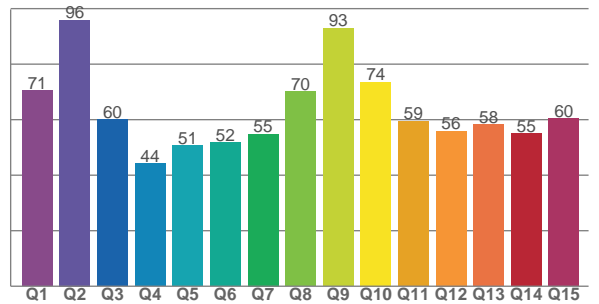
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
61.1	55.2	42.0	60.0	78.1	80.4	66.1	60.9	64.9	44.2	48.1	67.3	81.9	74.2	65.1	70.0

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
70.5	95.8	60.0	44.2	50.7	51.7	54.8	70.1	92.9	73.5	59.4	55.9	58.2	55.0	60.3

CQS: 60.8



## 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	$\Delta uv$
3165 K	62.3	-34.5	62.9	88.7	60.8	0.422	0.391	0.246	0.343	0.0032

TM30 Details

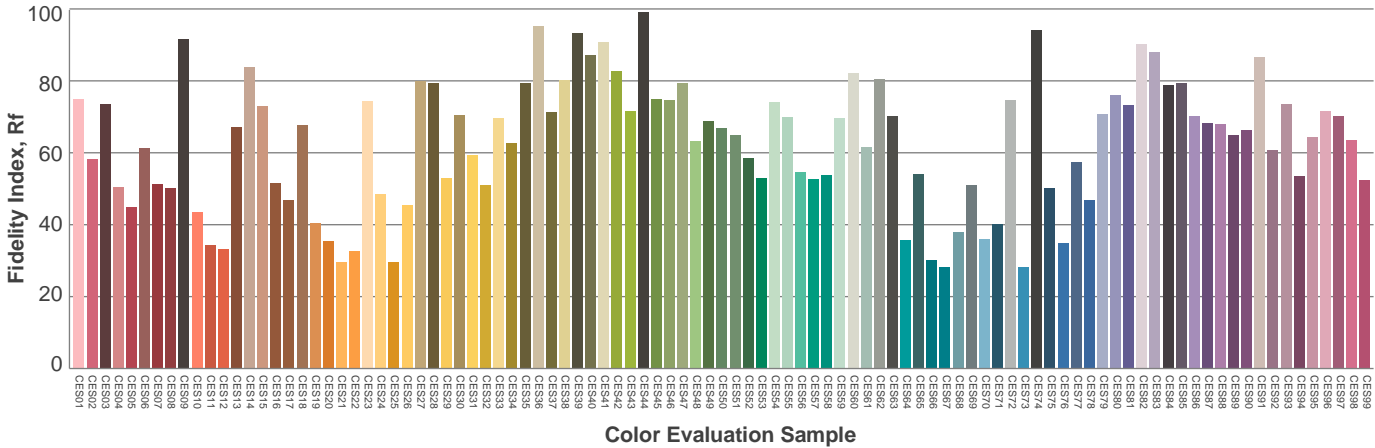
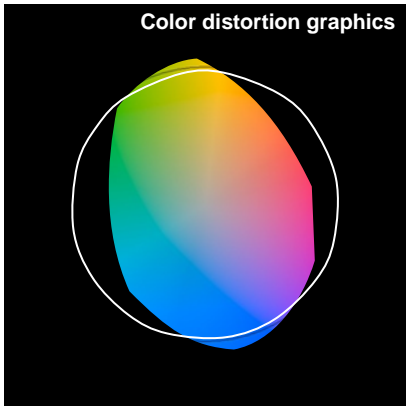
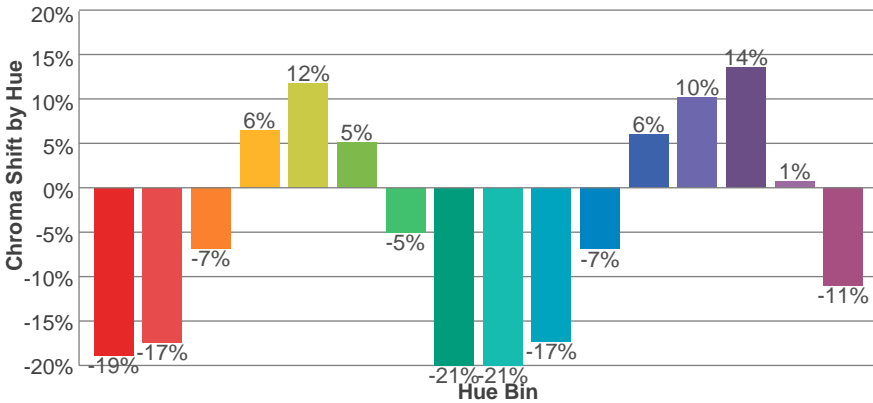
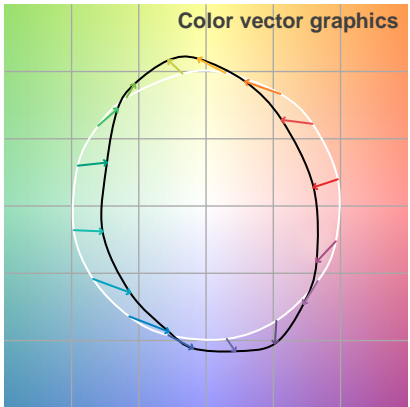
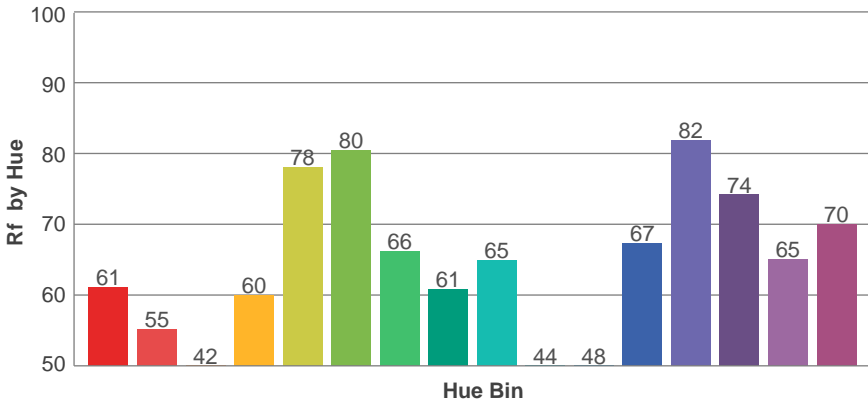
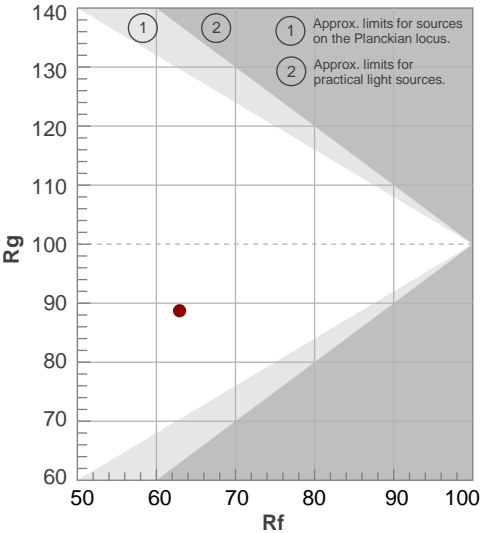
**Rf 62.9**

Fidelity Index Rf

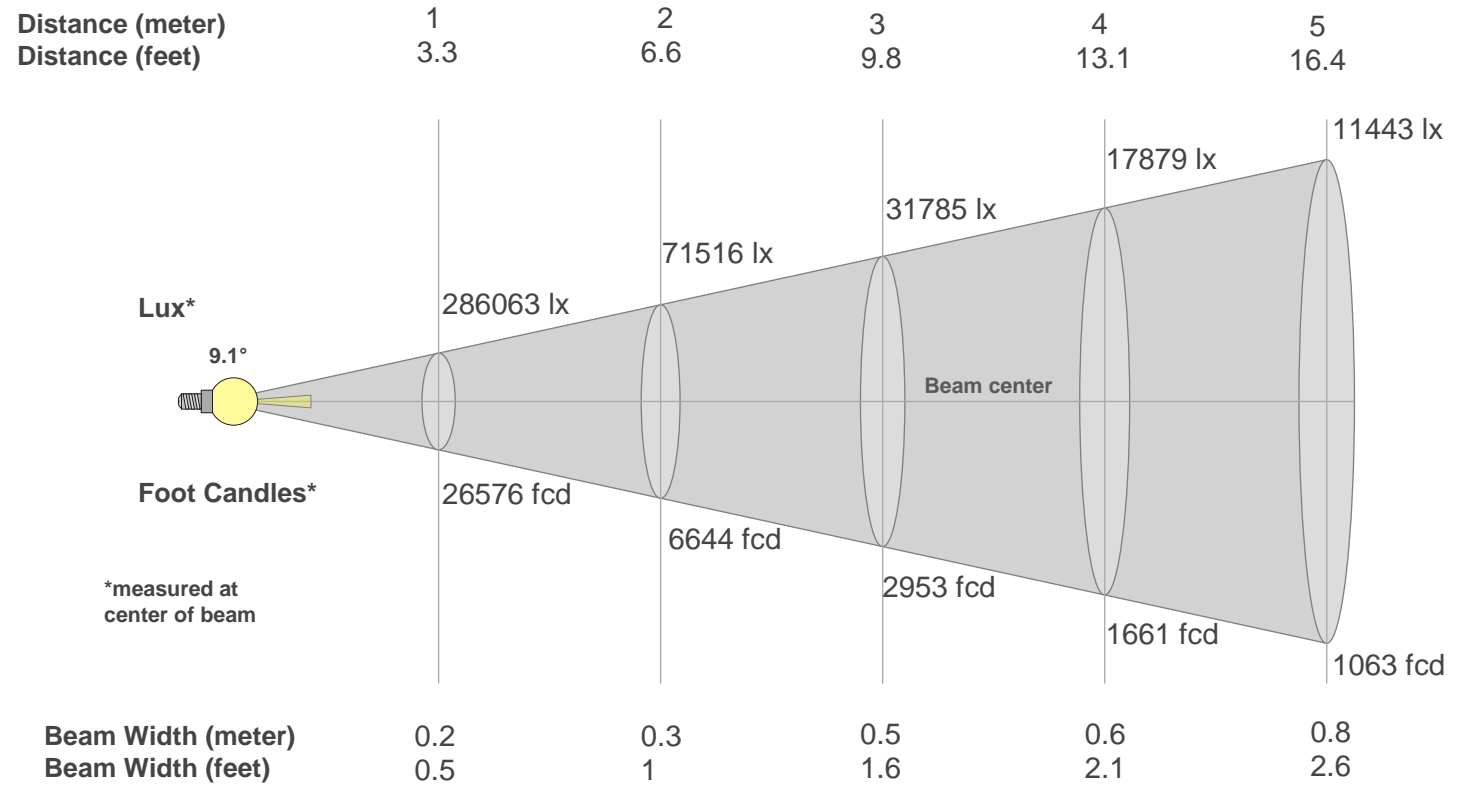
**Rg 88.7**

Gammut Index Rg

Hue Bin	Rf	Graphic shifts (%)	
		Chroma	Hue
1	61	-19%	-2%
2	55	-17%	15%
3	42	-7%	27%
4	60	6%	22%
5	78	12%	8%
6	80	5%	-10%
7	66	-5%	-19%
8	61	-21%	-6%
9	65	-21%	5%
10	44	-17%	24%
11	48	-7%	31%
12	67	6%	20%
13	82	10%	4%
14	74	14%	-10%
15	65	1%	-20%
16	70	-11%	-18%



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	286063	71516	31785	17879	11443	7946	5838	4470	3532	2861	2364	1987	1693	1460	1271	1117	990	883	792	715
Fcd	26576.1	6644	2952.9	1661	1063	738.2	542.4	415.3	328.1	265.8	219.6	184.6	157.3	135.6	118.1	103.8	92	82	73.6	66.4

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°	
286K	276K	250K	212K	167K	108K	30K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	
100%	97%	87%	74%	58%	38%	10%	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°	
286K	276K	250K	212K	167K	108K	30K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	
100%	97%	87%	74%	58%	38%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

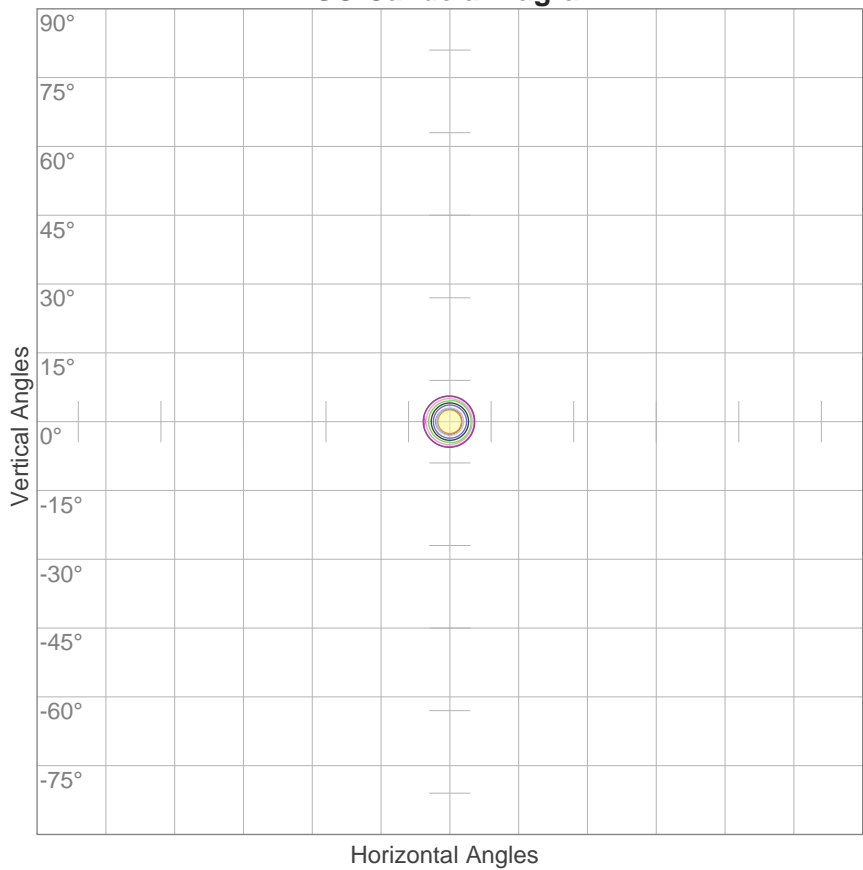
Intensities in 180° C-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
286K	278K	252K	212K	166K	121K	58K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K
100%	97%	88%	74%	58%	42%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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°
286K	278K	252K	212K	166K	121K	58K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K
100%	97%	88%	74%	58%	42%	20%	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
9.1°	12.4°	13.2°	98.7%	98.3%

# ISO Diagrams

ISO Candela Diagram

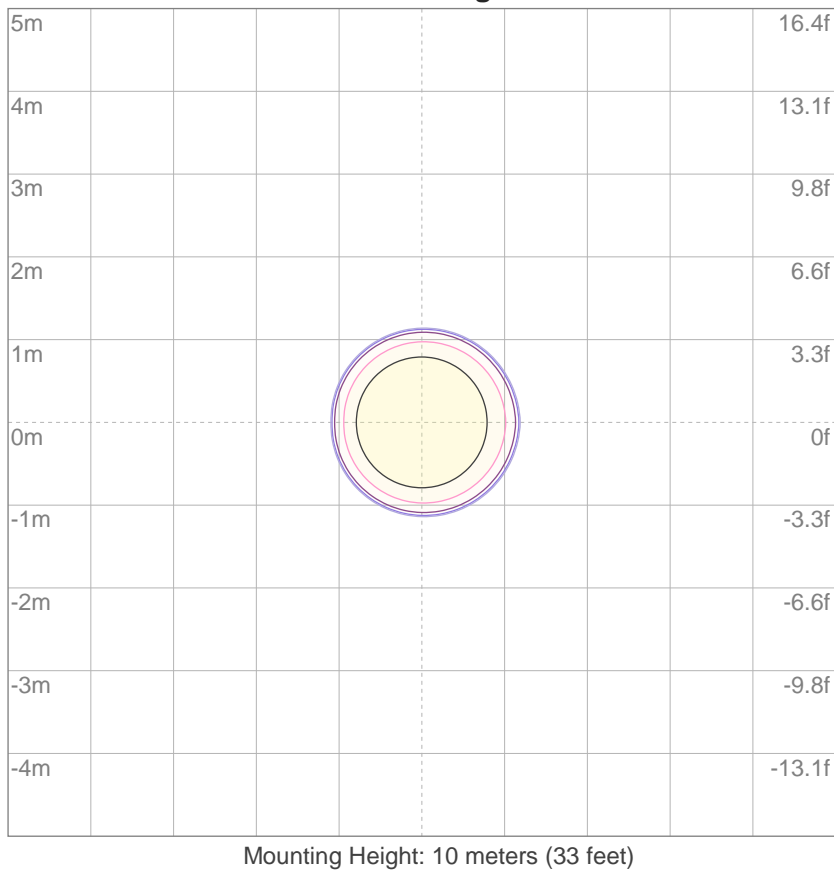


10%	28606 cd
20%	57213 cd
30%	85819 cd
40%	114425 cd
50%	143031 cd
60%	171638 cd
70%	200244 cd
80%	228850 cd
90%	257456 cd

Conditions:

Number of c-planes: 2  
Candela at center: 286063 cd

ISO Lux Diagram



3%	85.8 lx
5%	143 lx
10%	286 lx
30%	858 lx
50%	1430 lx

Conditions:

Number of c-planes: 2  
Lux at center: 2861 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	106	106	106	101	101	101	99
1	116	115	113	112	114	112	111	110	108	107	107	104	104	103	101	100	100	98
2	114	111	109	108	112	110	108	106	106	105	104	104	102	102	101	100	99	98
3	112	109	106	105	110	108	105	104	105	103	102	103	101	100	101	100	99	98
4	110	107	104	102	109	106	104	102	104	102	101	102	101	99	100	99	98	97
5	109	105	103	101	108	105	102	100	103	101	100	101	100	99	100	99	98	97
6	108	104	102	100	107	103	101	99	102	100	99	101	99	98	100	99	97	97
7	107	103	101	99	106	102	100	99	101	100	98	100	99	98	100	98	97	96
8	106	102	100	98	105	102	100	98	101	99	98	100	98	97	99	98	97	96
9	105	101	99	98	104	101	99	98	100	99	97	100	98	97	99	98	97	96
10	104	101	99	97	104	101	98	97	100	98	97	99	98	97	99	97	96	96

## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
5593 lm	87.5 lm	111 lm	60.5 lm	26.9 lm	11.7 lm	4.89 lm	1.85 lm	1.29 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
1.56 lm	0.998 lm	1.04 lm	7.42 lm	14.0 lm	16.9 lm	16.7 lm	10.1 lm	0.724 lm