

Light Efficiency:



Light Quality:



Color Temperature:



Output: 6536 lm

Peak: 14169403

Power: 649 W

PF: 1.0



Product Name:

**Proteus Hybrid**

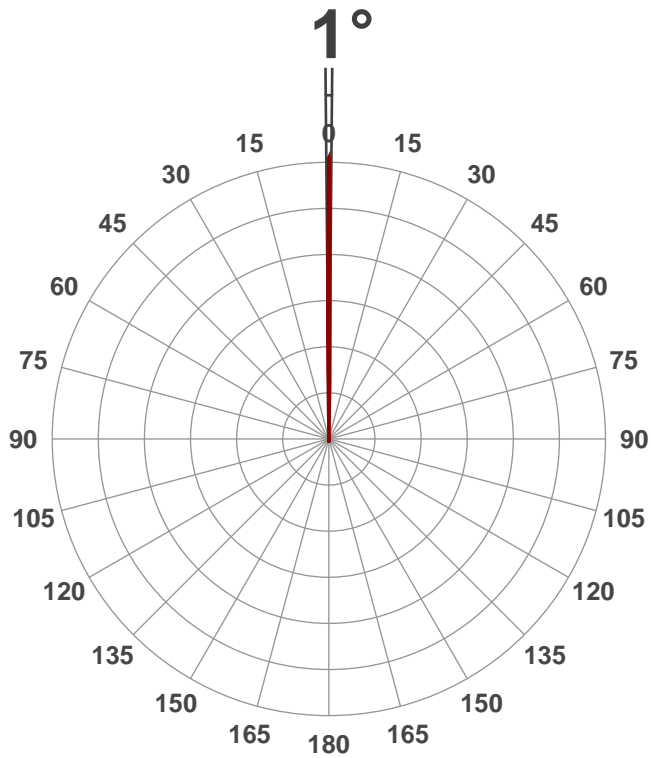
Test:

**Beam CTO color wheel Zoom In**

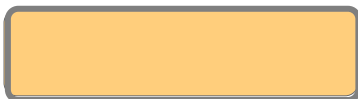
Date:

**1/19/2018**

Note:



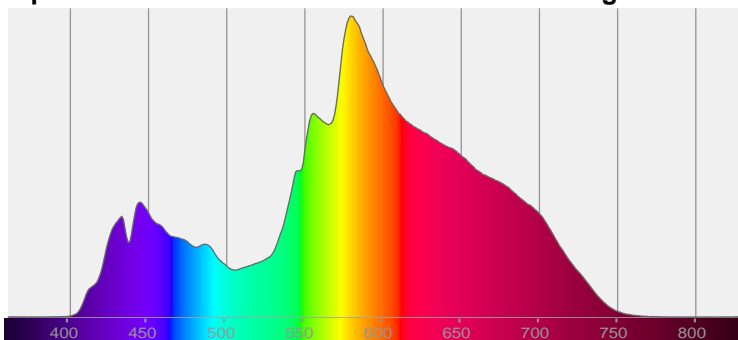
Beam Angle



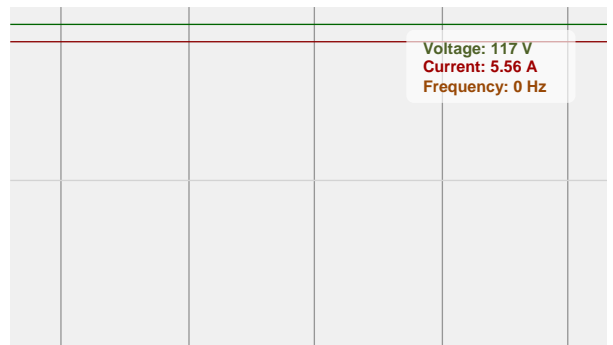
CIE 1931  
x: 0.431  
y: 0.378

Spectra

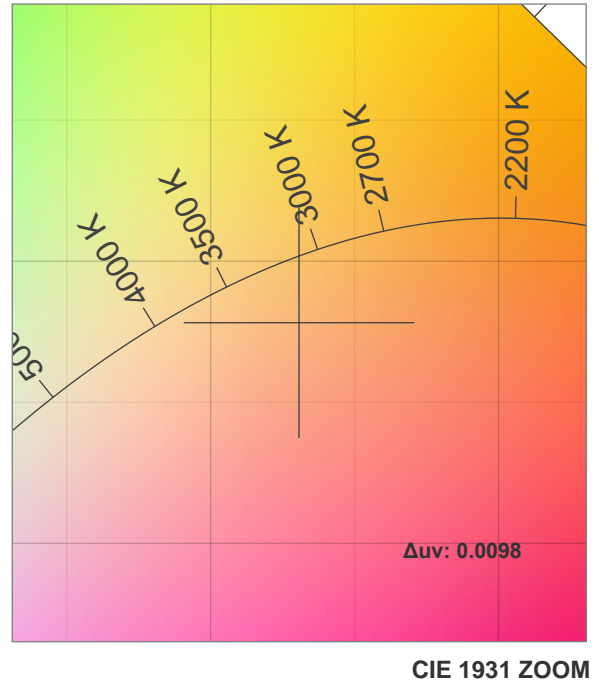
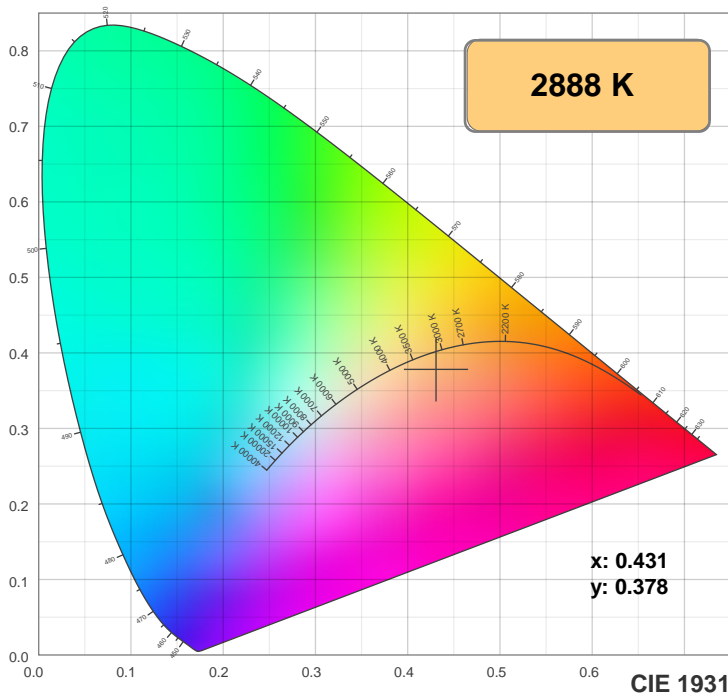
Dominant Wavelength: 588nm



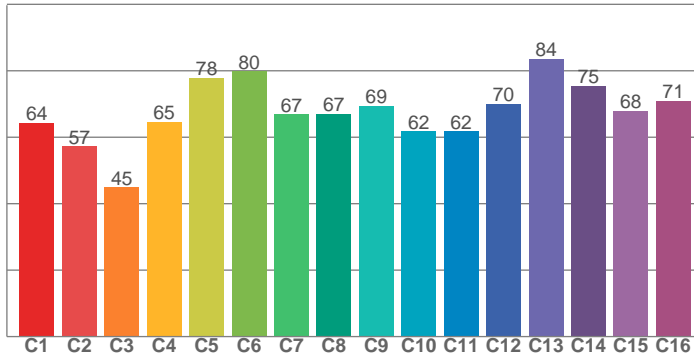
Power



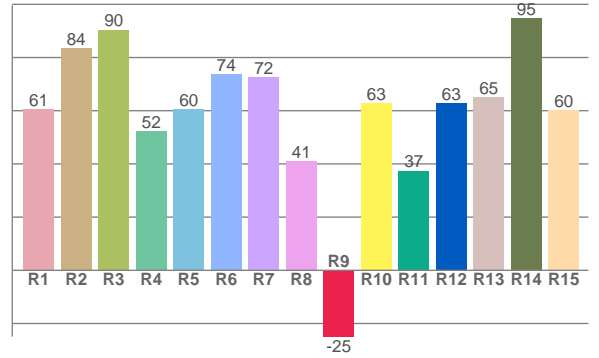
## Color Details



TM30: 67.0



CRI: 66.8 (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
60.6	83.6	90.4	52.3	60.4	73.6	72.5	41.1	-24.9	62.8	37.4	62.9	65.1	94.6	60.1

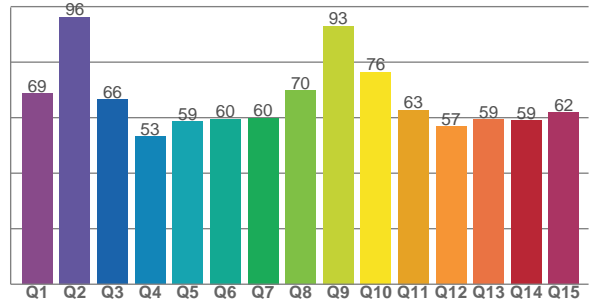
TM30 C Values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
64.3	57.3	44.9	64.7	77.9	79.8	66.9	66.9	69.5	61.8	61.7	70.1	83.7	75.5	67.9	70.9

CQS Q Values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
68.6	96.3	66.5	53.2	58.6	59.6	59.9	69.7	93.0	76.4	62.8	56.7	59.3	58.9	61.8

CQS: 64.4



## 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	Δuv
2888 K	66.8	-24.9	67.0	91.8	64.4	0.431	0.378	0.258	0.340	0.0098

TM30 Details

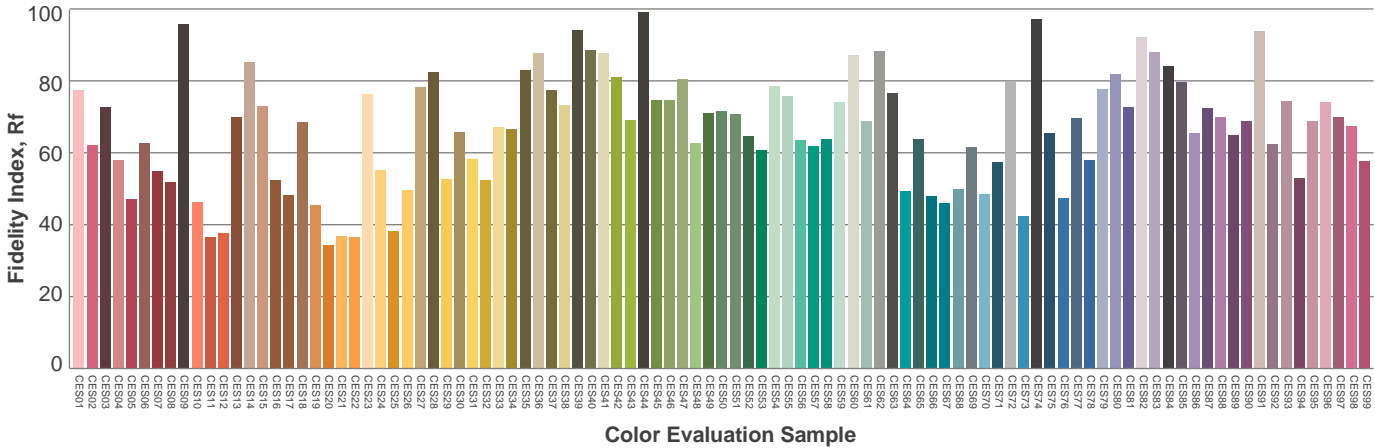
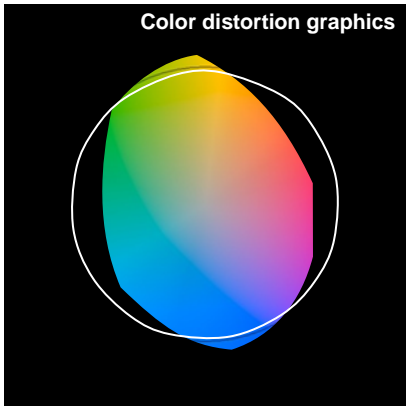
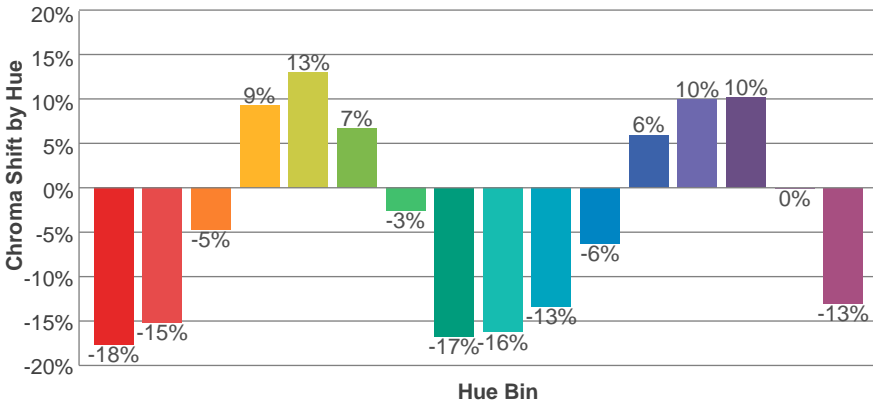
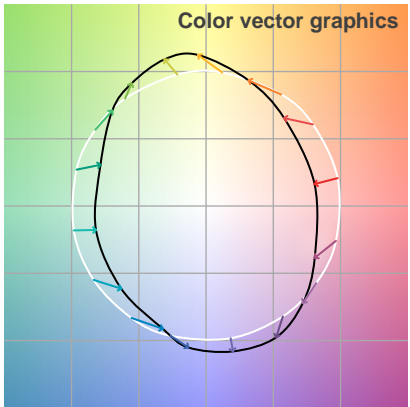
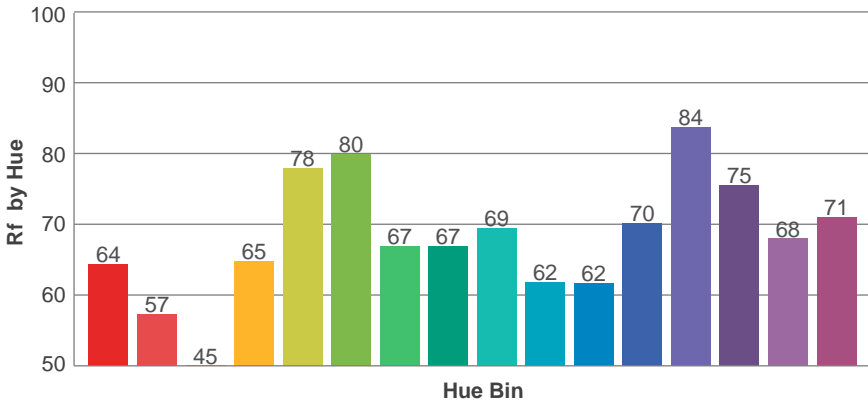
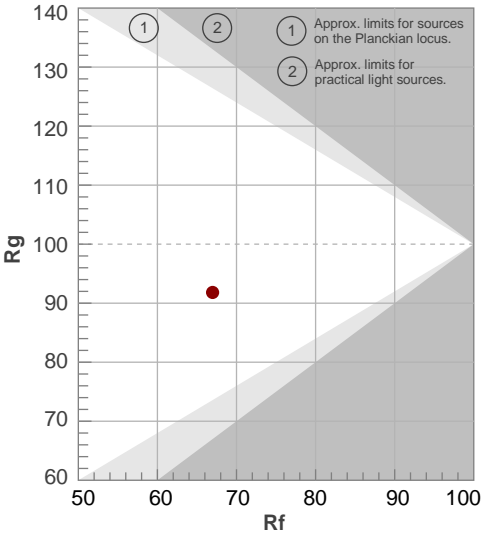
Rf 67.0

Fidelity Index Rf

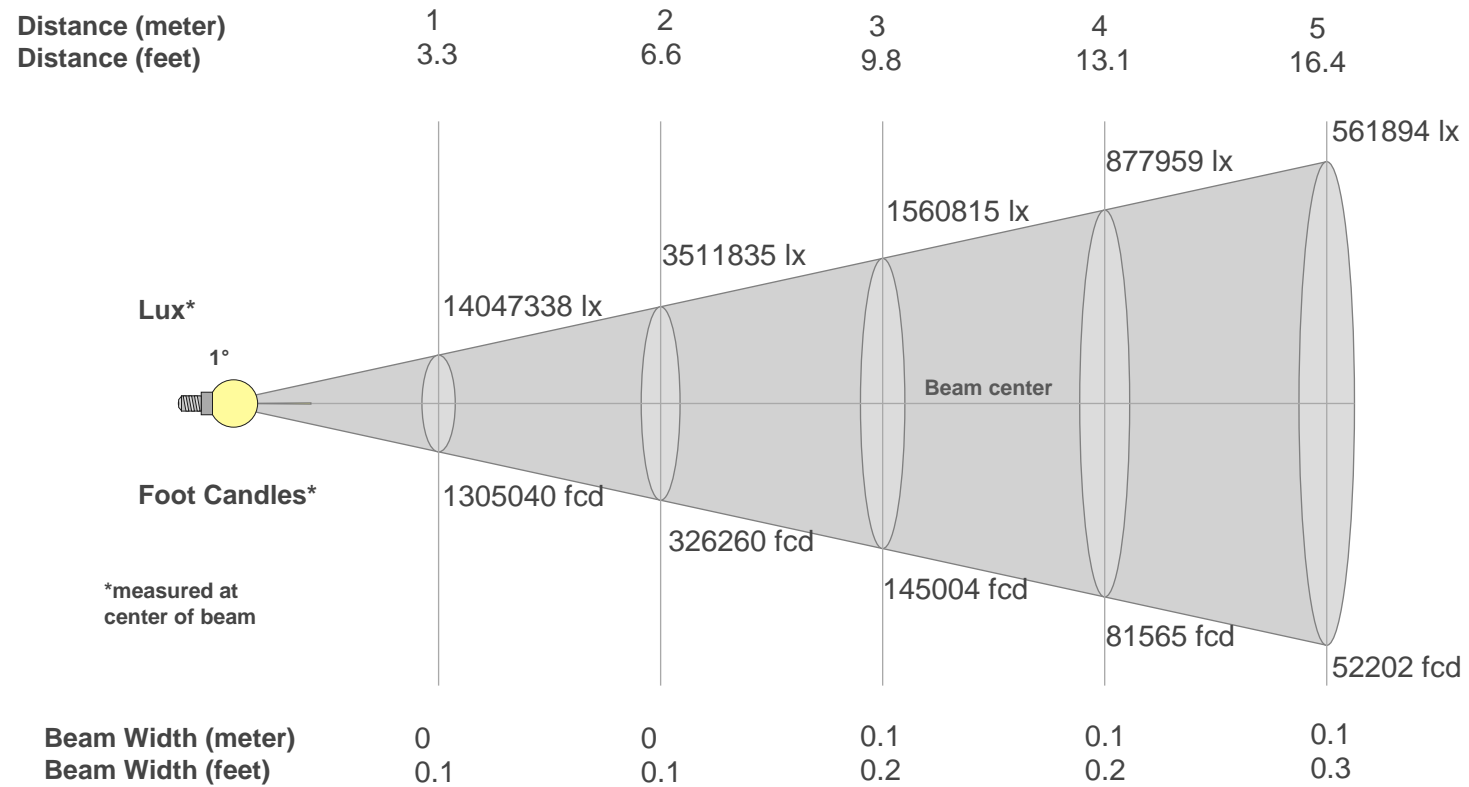
Rg 91.8

Gammut Index Rg

		Graphic shifts (%)	
Hue Bin	R <sub>f</sub>	Chroma	Hue
1	64	-18%	-1%
2	57	-15%	16%
3	45	-5%	26%
4	65	9%	20%
5	78	13%	7%
6	80	7%	-10%
7	67	-3%	-19%
8	67	-17%	-7%
9	69	-16%	3%
10	62	-13%	17%
11	62	-6%	24%
12	70	6%	15%
13	84	10%	0%
14	75	10%	-13%
15	68	0%	-18%
16	71	-13%	-15%



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	14047338	3511835	1560815	877959	561894	390204	286680	219490	173424	140473	116094	97551	83120	71670	62433	54872	48607	43356	38912	35118
Fcd	1305040.5	326260.1	145004.5	81565	52201.6	36251.1	26633.5	20391.3	16111.6	13050.4	10785.5	9062.8	7722.1	6658.4	5800.2	5097.8	4515.7	4027.9	3615.1	3262.6

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°
14M	1M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M
100%	9%	0%	0%	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°	
14M	1M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	
100%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

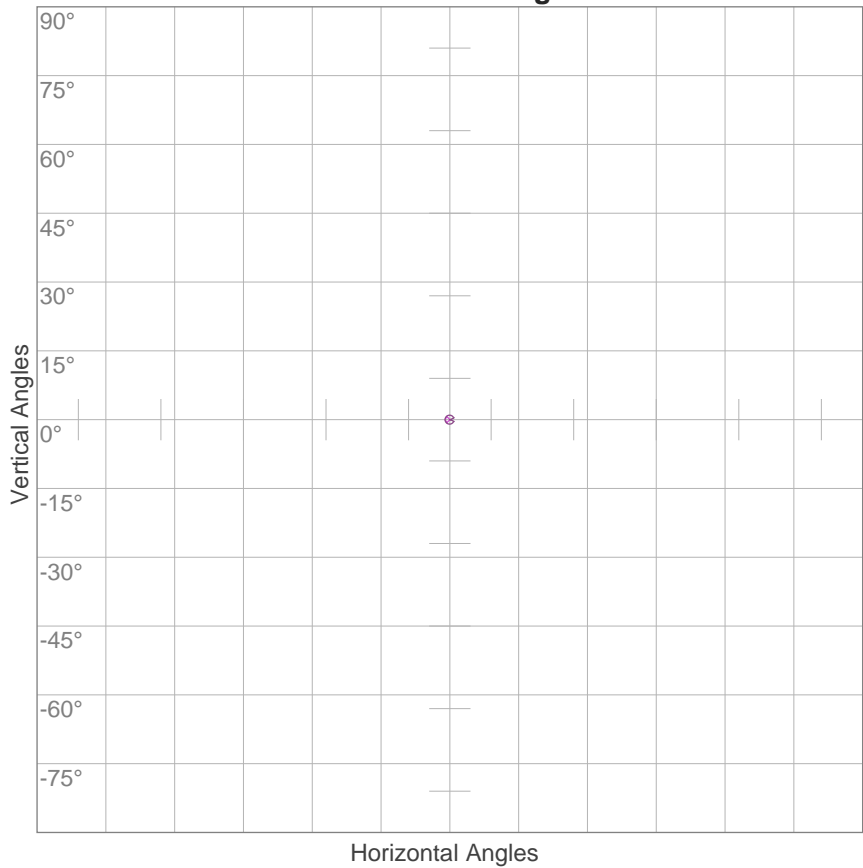
Intensities in 180° C-plane																			
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
14M	3M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M
100%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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°
14M	3M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M
100%	24%	0%	0%	0%	0%	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
1°	2.3°	2.5°	100.0%	99.9%

# ISO Diagrams

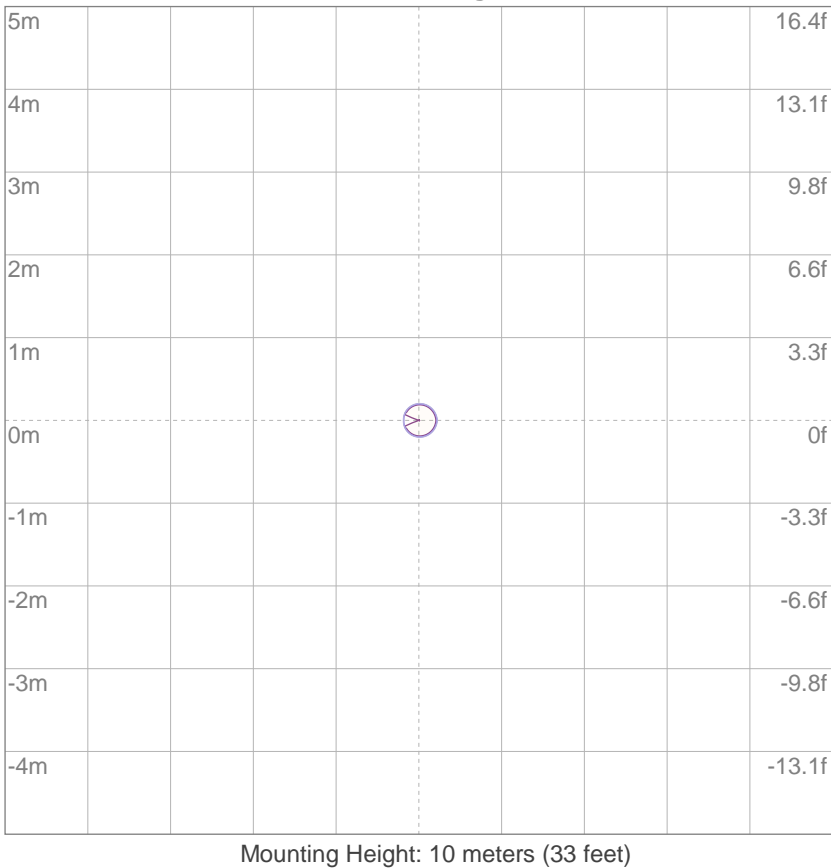
ISO Candela Diagram



10%	1404734 cd
20%	2809468 cd
30%	4214202 cd
40%	5618935 cd
50%	7023669 cd
60%	8428403 cd
70%	9833137 cd
80%	11237871 cd
90%	12642605 cd

Conditions:  
Number of c-planes: 2  
Candela at center: 14047338 cd

ISO Lux Diagram



3%	4214 lx
5%	7024 lx
10%	14.0K lx
30%	42.1K lx
50%	70.2K lx

Conditions:  
Number of c-planes: 2  
Lux at center: 140K 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	111	111	111	106	106	106	102	102	102	100
1	117	115	114	113	114	113	112	111	109	108	108	106	105	105	102	102	102	100
2	115	112	111	109	113	111	109	108	108	107	105	105	104	103	103	102	101	100
3	113	110	108	106	112	109	107	106	107	105	104	105	103	102	103	102	101	100
4	112	109	106	105	110	108	106	104	106	104	103	104	103	102	103	102	101	100
5	111	107	105	103	110	107	105	103	105	104	102	104	103	101	103	102	101	100
6	110	106	104	103	109	106	104	102	105	103	102	104	102	101	103	102	101	100
7	109	106	104	102	108	105	103	102	104	103	101	103	102	101	103	101	101	100
8	108	105	103	102	108	105	103	101	104	102	101	103	102	101	103	101	100	100
9	108	105	103	101	107	104	102	101	104	102	101	103	102	101	103	101	100	100
10	107	104	102	101	107	104	102	101	103	102	101	103	102	101	102	101	100	100

## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
6532 lm	0.139 lm	0.132 lm	0.139 lm	0.215 lm	0.388 lm	0.323 lm	0.428 lm	0.304 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.470 lm	0.288 lm	0.356 lm	0.314 lm	0.286 lm	0.155 lm	0.128 lm	0.077 lm	0.030 lm