



UL LLC  
1075 W Lambert Rd Suite B  
Brea, CA 92821

## Photometric Test Report

Relevant Standards  
IES LM-79-2008  
ANSI C82.77-2002

Prepared For  
**Express Imaging Systems LLC dba Evluma**

Don Vendetti  
3600 Lind Ave SW Suite 140  
Renton, WA 98057

Catalog Number  
**OMNI-70-5K-ME**

Order Number  
11225212  
Test Number  
1234537

Revised Date  
2016-04-18  
Test Date

2016-04-02 - 2016-04-08

Prepared By

Tony Rubio, Technician

Approved By

Eric Gaudreau, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.  
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Laboratory results may not be representative of field performance  
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the  $4\pi$  geometry method.  
Absorption correction was employed for Sphere measurement



**Lamp Description:** Circular white plastic lamp with rubber frosted lens  
**Lamp:** 96 White LEDs  
**Mounting:** VBD  
**Ballast/Driver:** Internal

Lamp



**Lamp Characteristics**

Luminous Diameter: 3.50 in.  
Luminous Height: 1.500 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 7643 Lumens  
Efficacy: 107.8 lm/w  
CCT: 5079 K  
CRI (Ra): 83.5

**Distribution**

Total Lamp Output: 7429 Lumens  
Lamp Efficacy: 105 lm/w  
Maximum Candela: 819 Candela

**Electrical Data at 120 VAC**

Test Temperature: 25.8 °C  
Voltage: 120.1 VAC  
Current: 0.5986 A  
Power: 70.89 W  
Power Factor: 0.986  
Frequency: 60 Hz  
Current THD: 16.9 %



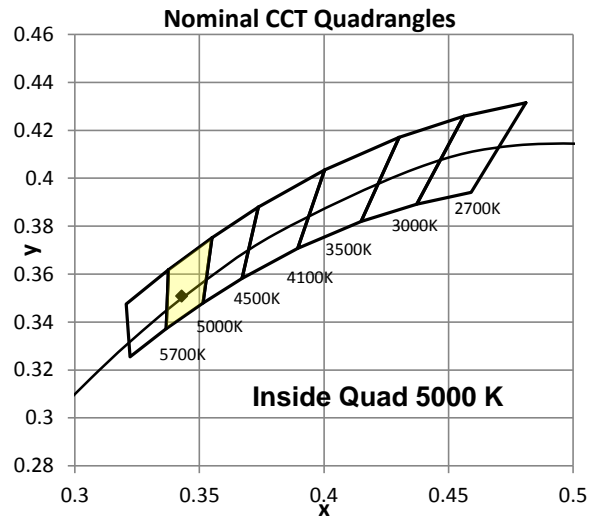
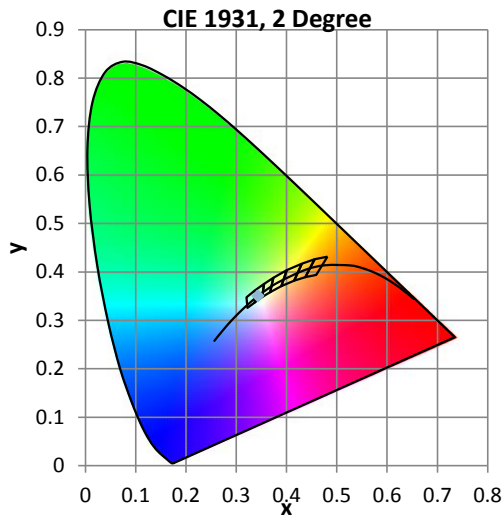
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.8 °C	120.1 VAC	0.5986 A	70.89 W	0.986	60 Hz	16.9 %

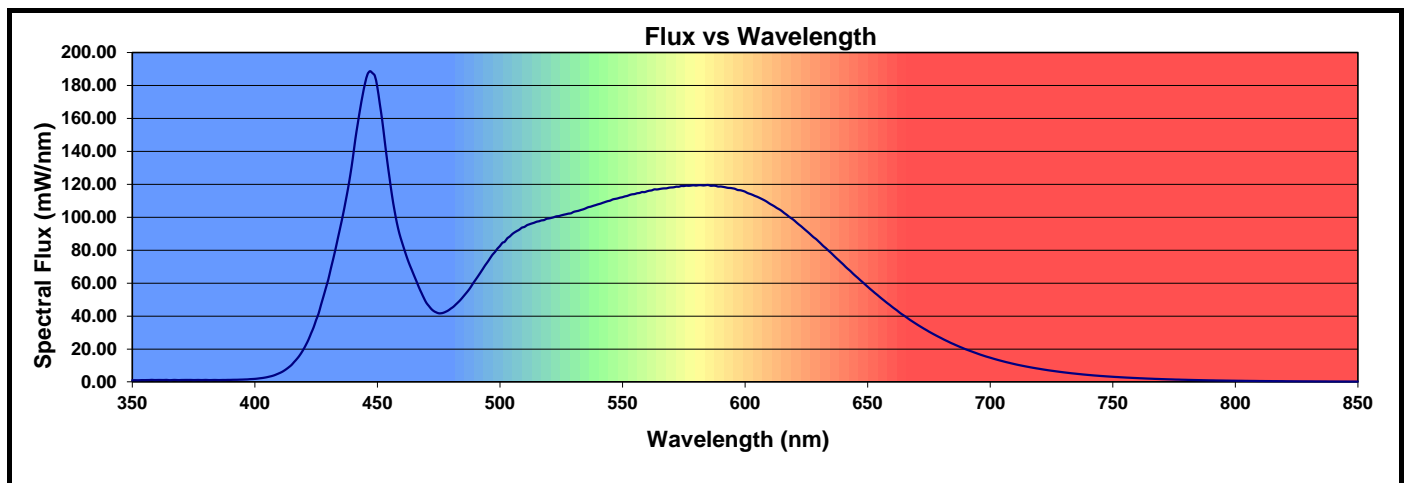
### Summary of Results

<b>Total Output:</b>	7643 Lumens	<b>Chromaticity (x):</b>	0.3429
<b>Efficacy:</b>	107.8 lm/w	<b>Chromaticity (y):</b>	0.3508
<b>CCT:</b>	5079 K	<b>Chromaticity (u'):</b>	0.2102
<b>CRI (Ra):</b>	83.5	<b>Chromaticity (v'):</b>	0.4840
<b>CRI (R9):</b>	13.2	<b>TM-30 R<sub>f</sub>:</b>	82.2
<b>Peak Wavelength:</b>	447.4 nm	<b>TM-30 R<sub>g</sub>:</b>	98.3
<b>Dominant Wavelength:</b>	571 nm	<b>Duv:</b>	0.0002
<b>S/P Ratio:</b>	1.955		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.5	82.5	86.9	90.6	84.8	84.0	83.0	86.1	69.8	13.2	69.7	85.8	70.2	83.1	94.9





## Distribution - Goniophotometer

### Distribution Test Conditions

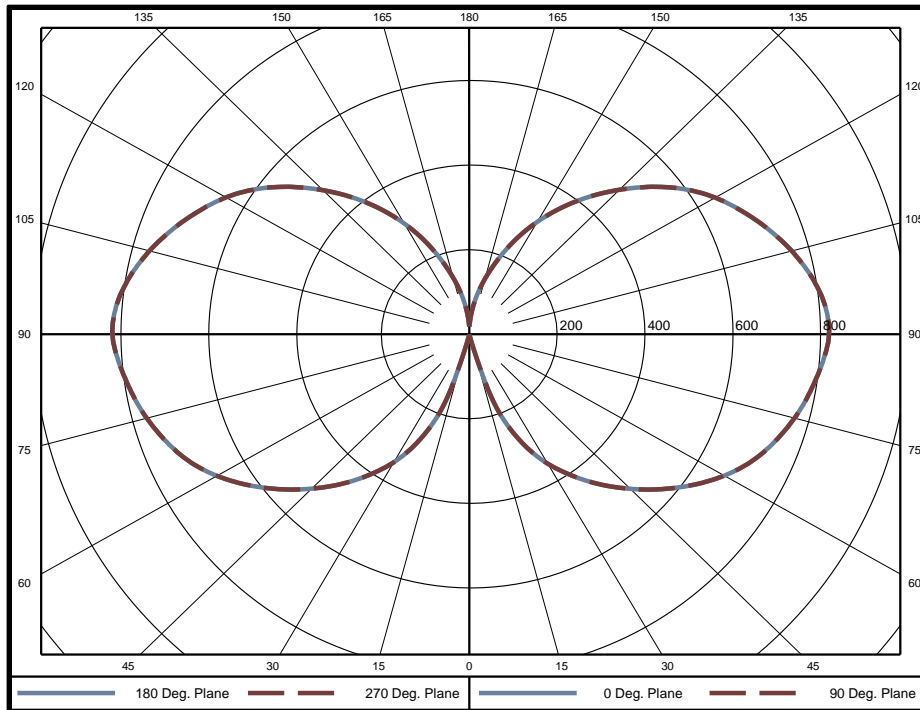
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.1 VAC	0.5975 A	70.72 W	0.986	60 Hz	16.8 %

### Summary of Results

**Spacing Criteria**  
 0-180: 13.44  
 90-270: 13.44

**Total Lumen Output:** 7429 Lumens  
**Lamp Efficacy:** 105.0 lm/w  
**Maximum Candela:** 819 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.1	0.0%	60-65	335.8	4.5%	120-125	287.7	3.9%
5-10	0.4	0.0%	65-70	367.7	4.9%	125-130	248.0	3.3%
10-15	0.9	0.0%	70-75	394.0	5.3%	130-135	207.1	2.8%
15-20	18.9	0.3%	75-80	415.9	5.6%	135-140	167.9	2.3%
20-25	50.9	0.7%	80-85	432.9	5.8%	140-145	131.6	1.8%
25-30	81.0	1.1%	85-90	445.3	6.0%	145-150	98.7	1.3%
30-35	112.3	1.5%	90-95	447.1	6.0%	150-155	69.6	0.9%
35-40	145.9	2.0%	95-100	435.5	5.9%	155-160	45.2	0.6%
40-45	181.9	2.4%	100-105	414.8	5.6%	160-165	26.3	0.4%
45-50	220.0	3.0%	105-110	388.0	5.2%	165-170	13.2	0.2%
50-55	259.3	3.5%	110-115	357.2	4.8%	170-175	4.9	0.1%
55-60	298.8	4.0%	115-120	324.0	4.4%	175-180	0.8	0.0%

Zone	Lumens	% of Luminaire
0-40	410	5.5%
0-60	1370	18.4%
0-90	3762	50.6%
90-180	3668	49.4%



**Candela Tabulation**  
Horizontal Angle (Degrees)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
5	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
10	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
15	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
20	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3	194.3
25	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9	282.9
30	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0	352.0
35	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0	409.0
40	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0	464.0
45	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2	517.2
50	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5
55	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6	621.6
60	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6	669.6
65	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8
70	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4	740.4
75	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2	766.2
80	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4	787.4
85	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7	805.7
90	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2	818.2
95	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4	811.4
100	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6	789.6
105	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6	759.6
110	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2	724.2
115	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9
120	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6	645.6
125	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3
130	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
135	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4	482.4
140	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4
145	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3
150	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4
155	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1	244.1
160	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9	184.9
165	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0
170	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3	87.3
175	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9
180	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6

**Average Luminance (cd/m<sup>2</sup>)**  
Horizontal Angle (Degrees)

	0	45	90
0	816	816	816
45	114600	114600	114600
55	139400	139400	139400
65	166400	166400	166400
75	193000	193000	193000
85	224200	224200	224200



### Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity 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
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	7971	7971	7971	7971	7359	7359	7359	7359	6217	6217	6217	5172	5172	5172	4213	4213	4213	3762
1	6822	6307	5845	5429	6226	5773	5364	4994	4774	4456	4165	3856	3613	3387	3010	2827	2656	2236
2	6033	5257	4616	4076	5477	4796	4226	3743	3929	3484	3100	3130	2787	2486	2391	2132	1900	1524
3	5398	4475	3760	3191	4885	4075	3438	2925	3321	2820	2407	2624	2235	1908	1977	1680	1426	1091
4	4872	3867	3132	2570	4403	3519	2861	2352	2862	2340	1927	2252	1843	1513	1684	1370	1110	812
5	4427	3382	2652	2113	4000	3078	2422	1932	2503	1978	1576	1967	1553	1229	1467	1146	889	623
6	4046	2988	2277	1768	3657	2721	2080	1615	2214	1698	1313	1741	1331	1018	1297	978	727	490
7	3718	2663	1979	1500	3363	2427	1808	1369	1978	1476	1111	1557	1156	856	1162	847	606	393
8	3432	2391	1736	1286	3107	2181	1587	1173	1781	1296	950	1405	1015	730	1051	743	513	320
9	3182	2161	1536	1114	2884	1974	1405	1016	1615	1148	821	1277	900	629	959	659	439	264
10	2961	1965	1368	972	2688	1796	1252	886	1474	1025	715	1169	804	547	881	590	380	221

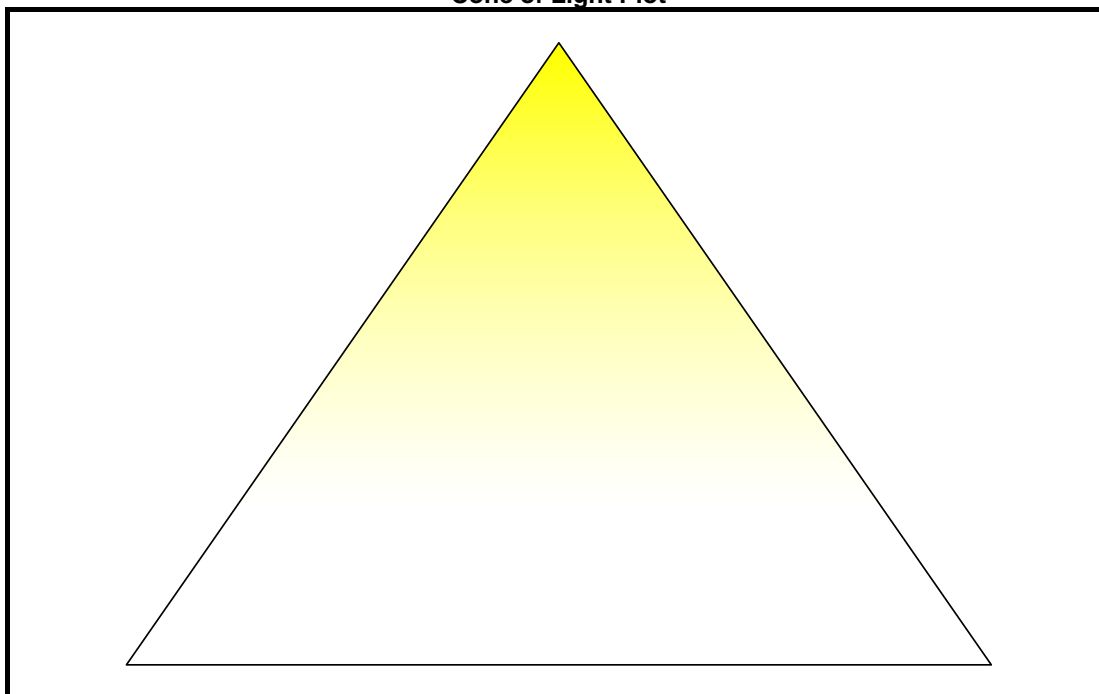
#### Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	0.317	53.7
6.00	0.141	80.6
8.00	0.0792	107
10.0	0.0507	134
12.0	0.0352	161
14.0	0.0258	188
16.0	0.0198	215

#### Beam and Field Information

CIE Type:	Direct/Indirect
Center Beam Intensity:	5.1 Candela
Central Cone Intensity:	5 Candela
Beam Flux:	7429.2 Lumens
Beam Angle (0-180):	#REF! Degrees
Beam Angle (90-270):	#REF! Degrees
Field Angle (0-180):	#REF! Degrees
Field Angle (90-270):	#REF! Degrees

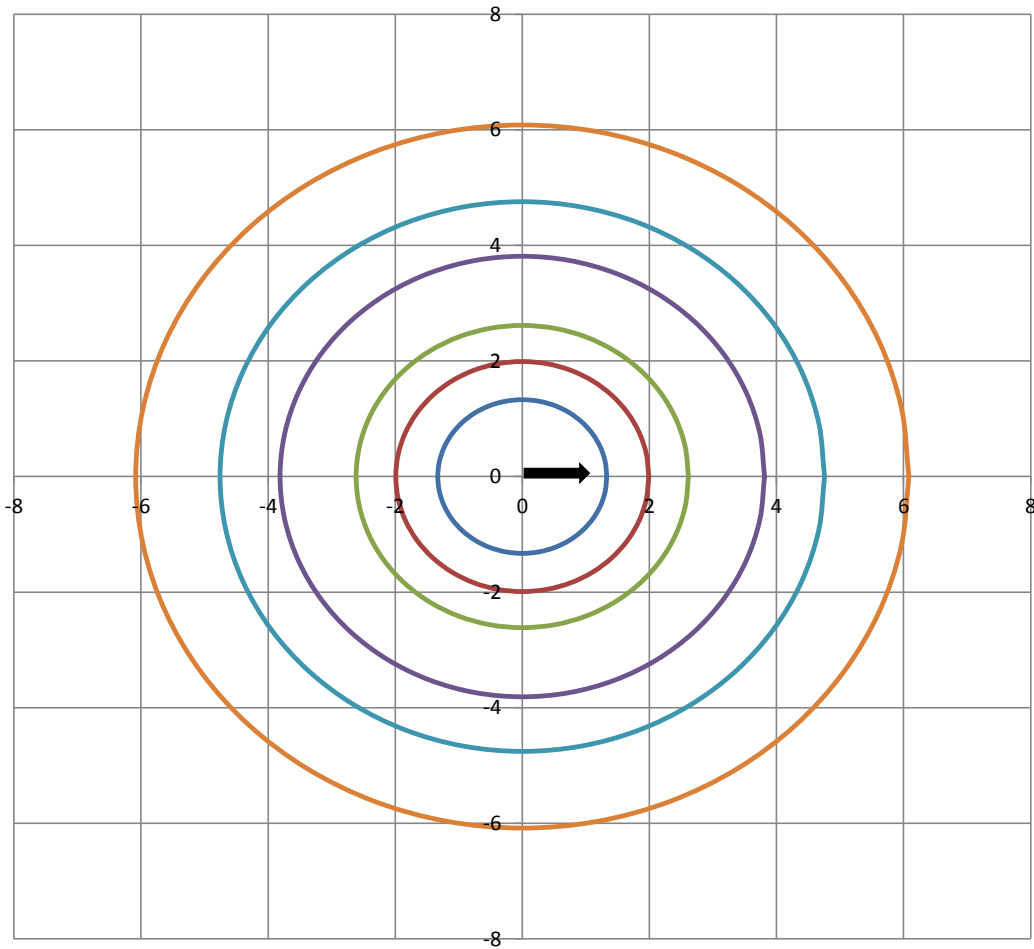
#### Cone of Light Plot





# ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

