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## Photometric Test Report

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

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

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Catalog Number  
**OMNI-40-2K-ME**

Order Number  
11225212  
Test Number  
1234530

Revised Date  
2016-04-18  
Test Date

2016-04-13 - 2016-04-18

Prepared By

A handwritten signature in black ink, appearing to read 'Khang Nguyen'.

Khang Nguyen, Technician

Approved By

A handwritten signature in black ink, appearing to read 'Eric M. Gaudreau'.

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



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

**Luminaire**



**Luminaire Characteristics**  
Luminous Diameter: 3.50 in.  
Luminous Height: 1.500 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 3509 Lumens  
Efficacy: 85.4 lm/w  
CCT: 2022 K  
CRI (Ra): 84.0

#### Distribution

Total Luminaire Output: 3402 Lumens  
Luminaire Efficacy: 82.8 lm/w  
Maximum Candela: 378 Candela

#### Electrical Data at 120 VAC

Test Temperature: 25.1 °C  
Voltage: 120.0 VAC  
Current: 0.3450 A  
Power: 41.09 W  
Power Factor: 0.991  
Frequency: 60 Hz  
Current THD: 13.8 %



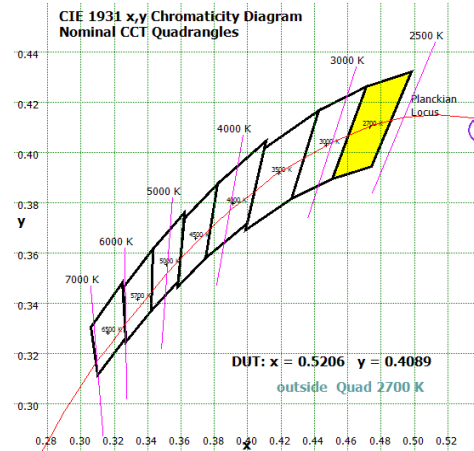
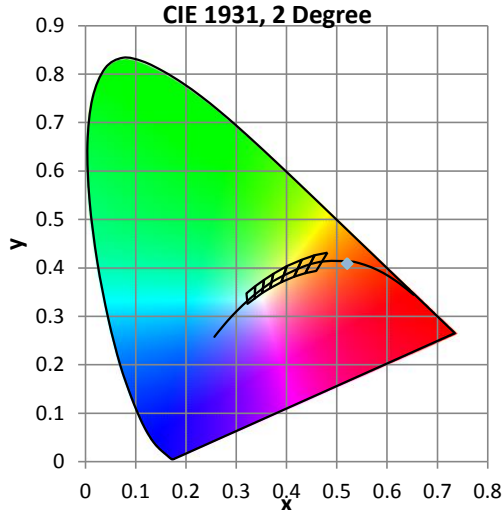
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.0 VAC	0.3450 A	41.09 W	0.991	60 Hz	13.8 %

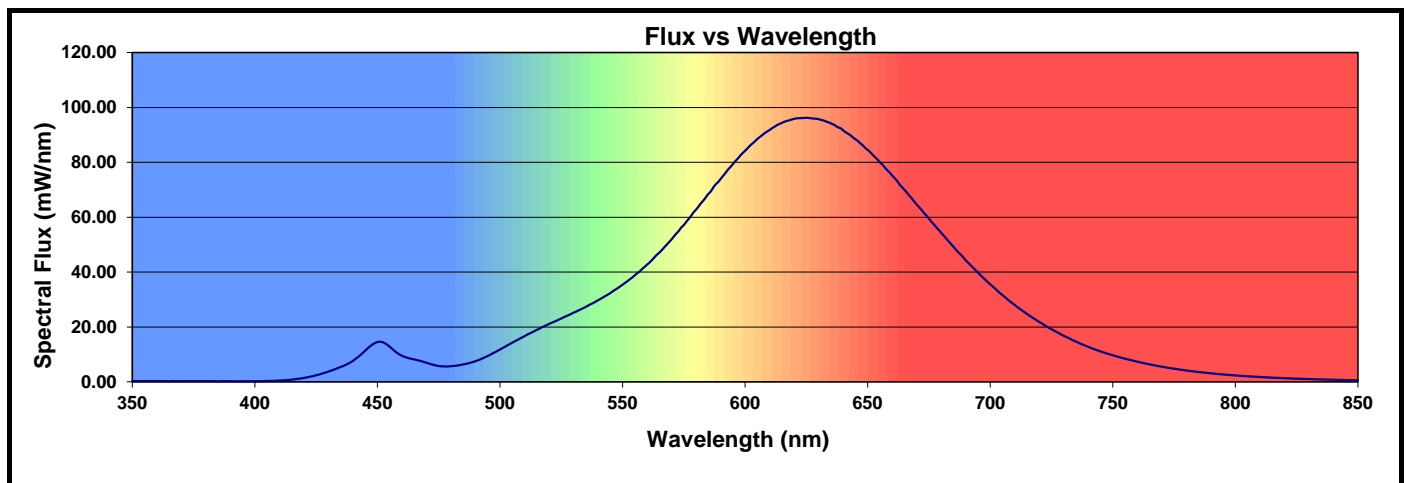
### Summary of Results

<b>Total Output:</b>	3509 Lumens	<b>Chromaticity (x):</b>	0.5206
<b>Efficacy:</b>	85.4 lm/w	<b>Chromaticity (y):</b>	0.4089
<b>CCT:</b>	2022 K	<b>Chromaticity (u'):</b>	0.3033
<b>CRI (Ra):</b>	84.0	<b>Chromaticity (v'):</b>	0.5360
<b>CRI (R9):</b>	27.8	<b>TM-30 R<sub>f</sub>:</b>	80.3
<b>Peak Wavelength:</b>	624.7 nm	<b>TM-30 R<sub>g</sub>:</b>	96.2
<b>Dominant Wavelength:</b>	589.2 nm	<b>Duv:</b>	-0.0017
<b>S/P Ratio:</b>	0.867		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
84.0	82.8	92.9	96.0	80.3	82.2	93.0	82.2	62.5	27.8	84.4	79.9	83.9	84.9	98.9





## Distribution - Goniophotometer

### Distribution Test Conditions

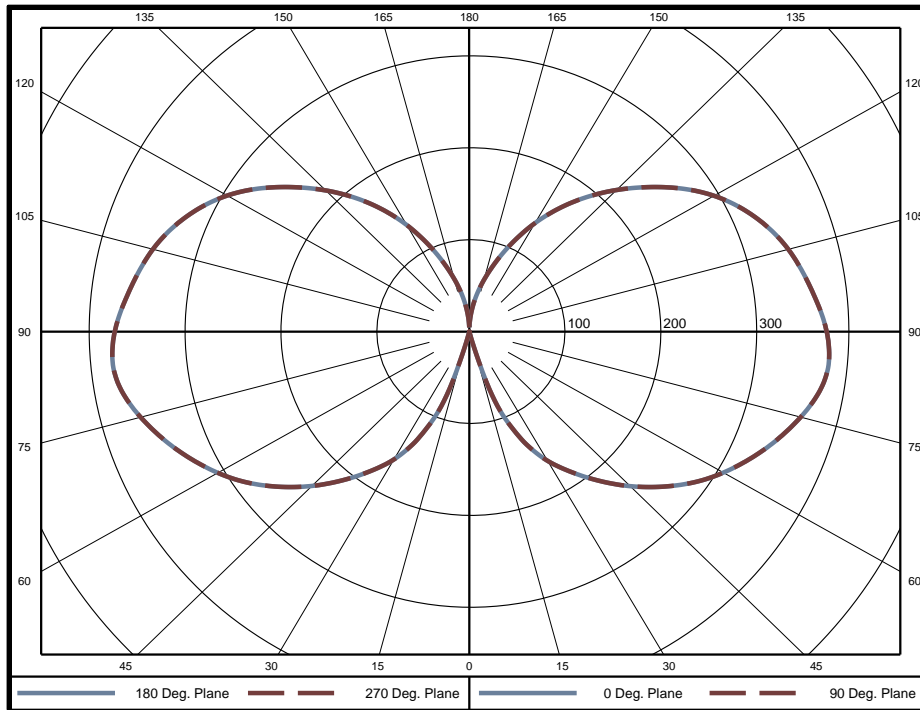
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.6 °C	120.0 VAC	0.3458 A	41.11 W	0.991	60 Hz	13.7 %

### Summary of Results

**Spacing Criteria**  
 0-180: 45.18  
 90-270: 45.18

**Total Lumen Output:** 3402 Lumens  
**Luminaire Efficacy:** 82.8 lm/w  
**Maximum Candela:** 378 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.0	0.0%	60-65	153.8	4.5%	120-125	131.2	3.9%
5-10	0.0	0.0%	65-70	169.4	5.0%	125-130	112.2	3.3%
10-15	0.1	0.0%	70-75	183.6	5.4%	130-135	93.4	2.7%
15-20	7.9	0.2%	75-80	196.0	5.8%	135-140	75.7	2.2%
20-25	23.0	0.7%	80-85	204.3	6.0%	140-145	59.2	1.7%
25-30	37.1	1.1%	85-90	206.2	6.1%	145-150	44.1	1.3%
30-35	51.4	1.5%	90-95	202.6	6.0%	150-155	30.7	0.9%
35-40	66.6	2.0%	95-100	195.9	5.8%	155-160	19.6	0.6%
40-45	83.4	2.5%	100-105	187.8	5.5%	160-165	11.3	0.3%
45-50	101.2	3.0%	105-110	177.4	5.2%	165-170	5.6	0.2%
50-55	119.4	3.5%	110-115	164.2	4.8%	170-175	2.0	0.1%
55-60	137.3	4.0%	115-120	148.7	4.4%	175-180	0.3	0.0%

Zone	Lumens	% of Luminaire
0-40	186	5.5%
0-60	627	18.4%
0-90	1741	51.2%
90-180	1662	48.9%



**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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
15	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
20	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1
25	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4
30	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5	161.5
35	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6
40	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0	212.0
45	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8	237.8
50	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6	262.6
55	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2
60	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9	306.9
65	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6	325.6
70	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1	343.1
75	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2	359.2
80	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4	372.4
85	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7
90	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0
95	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3
100	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8	355.8
105	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6	345.6
110	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2
115	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6
120	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4	295.4
125	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1	271.1
130	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3	244.3
135	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6	217.6
140	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8	190.8
145	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3	163.3
150	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1
155	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5	106.5
160	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9
165	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1
170	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
175	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
180	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6

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

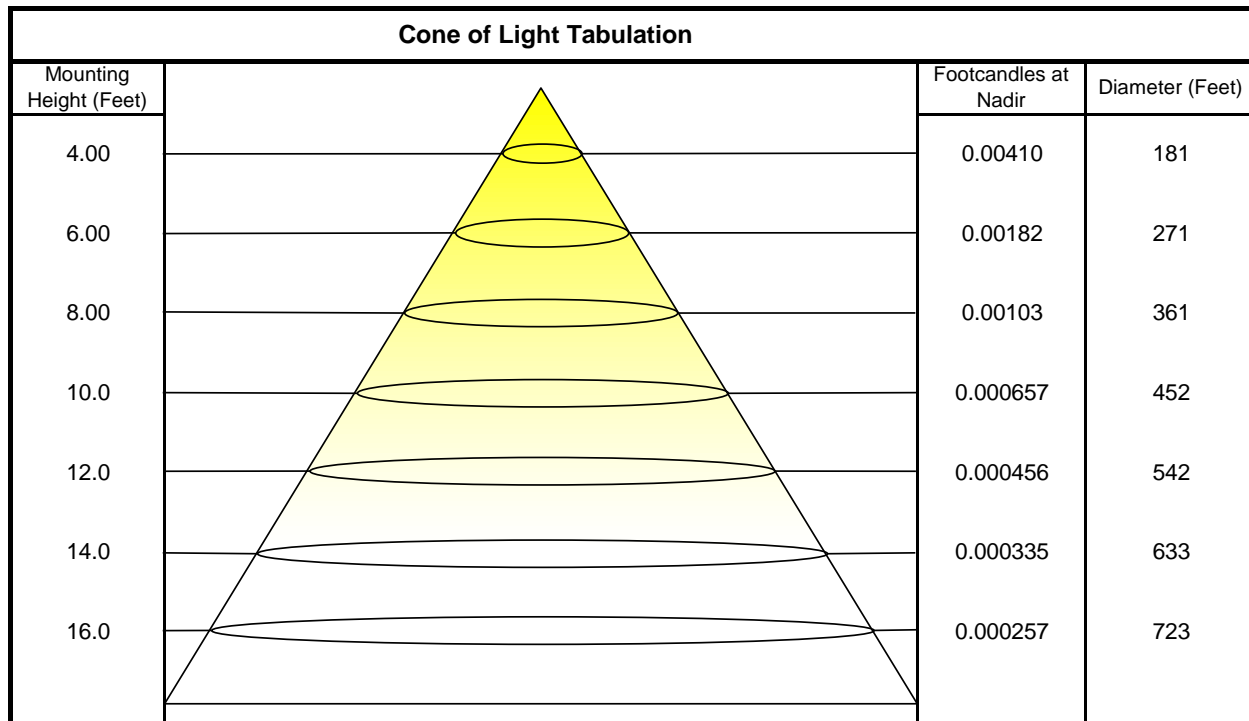
	0	45	90
0	11	11	11
45	52690	52690	52690
55	64200	64200	64200
65	76310	76310	76310
75	90480	90480	90480
85	105100	105100	105100



### 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	3655	3655	3655	3655	3377	3377	3377	3377	2857	2857	2857	2382	2382	2382	1946	1946	1946	1741
1	3124	2886	2673	2480	2853	2643	2454	2283	2189	2042	1907	1771	1658	1554	1386	1301	1222	1030
2	2761	2404	2108	1859	2508	2194	1931	1708	1799	1594	1416	1436	1277	1138	1099	979	872	700
3	2470	2045	1716	1454	2236	1863	1569	1333	1520	1289	1098	1203	1023	872	908	771	653	500
4	2229	1767	1428	1170	2015	1608	1305	1071	1309	1069	878	1032	843	690	774	628	508	371
5	2025	1545	1209	961	1831	1406	1105	879	1145	903	718	901	710	560	674	525	406	285
6	1851	1365	1038	804	1674	1243	949	734	1013	775	598	797	608	464	596	448	332	224
7	1701	1216	902	682	1539	1109	824	622	904	673	505	713	528	390	534	388	277	179
8	1570	1092	791	584	1422	996	723	533	814	591	432	644	464	332	483	340	234	146
9	1456	987	700	506	1320	902	640	461	739	524	373	585	411	286	440	302	200	120
10	1355	897	623	441	1230	821	571	402	674	467	325	536	367	249	405	270	173	100

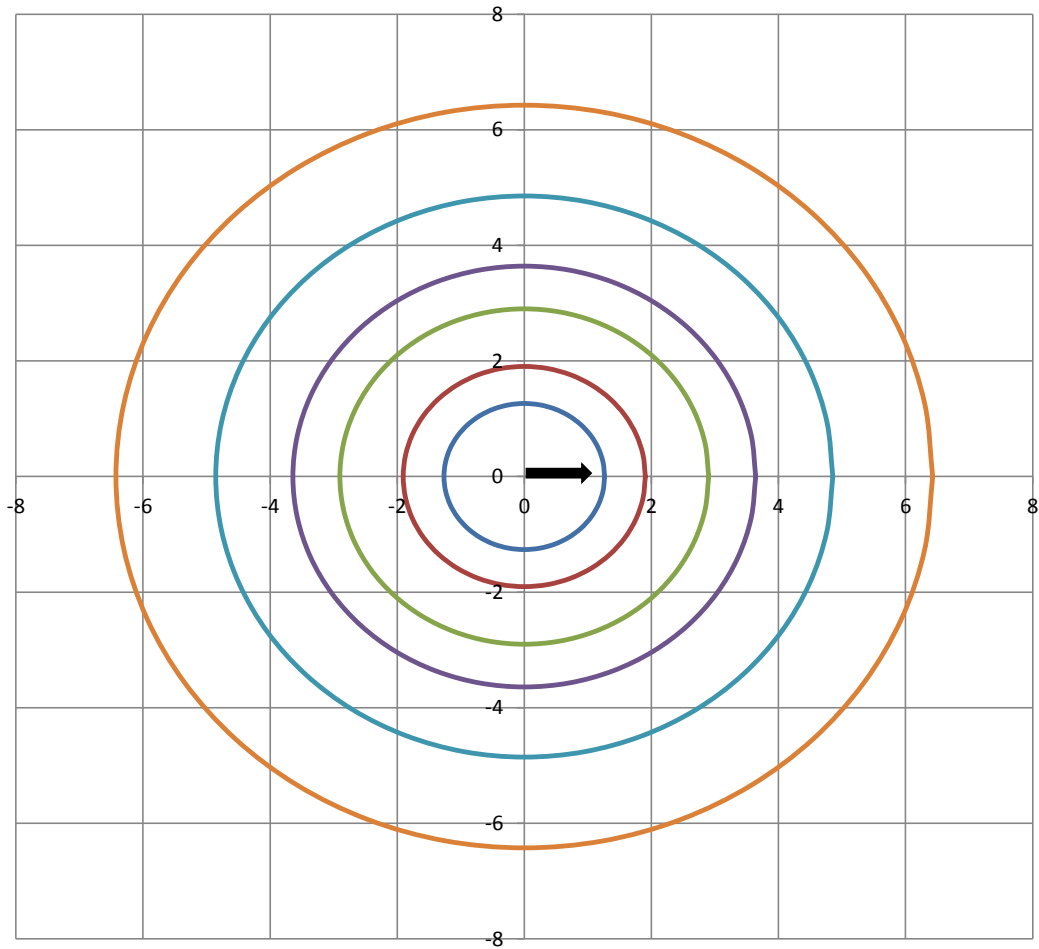
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	0.1 Candela
Central Cone Intensity:	0 Candela
Beam Flux:	3402.5 Lumens
Beam Angle (0-180):	#REF! Degrees
Beam Angle (90-270):	#REF! Degrees
Field Angle (0-180):	#REF! Degrees
Field Angle (90-270):	#REF! Degrees





# ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

