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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-70-4K-ME

Order Number
11225212
Test Number
1234536

Revised Date
2016-04-18
Test Date

2016-04-12 - 2016-04-13

Prepared By

A handwritten signature in black ink, appearing to read 'Tony Rubio'.

Tony Rubio, 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 4π 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: 7729 Lumens
Efficacy: 108.8 lm/w
CCT: 3989 K
CRI (Ra): 82.6

Distribution

Total Lamp Output: 7522 Lumens
Lamp Efficacy: 106 lm/w
Maximum Candela: 826 Candela

Electrical Data at 120 VAC

Test Temperature: 25.8 °C
Voltage: 120.1 VAC
Current: 0.5990 A
Power: 71.05 W
Power Factor: 0.986
Frequency: 60 Hz
Current THD: 16.6 %



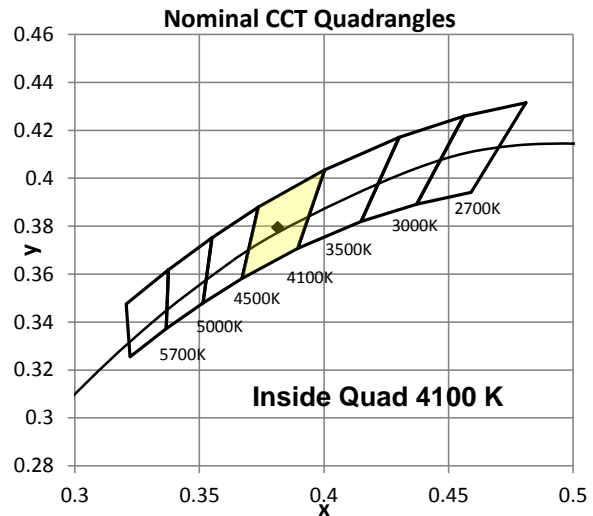
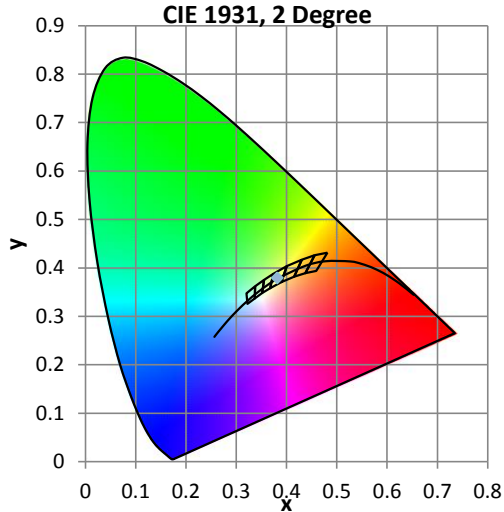
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.8 °C	120.1 VAC	0.5990 A	71.05 W	0.986	60 Hz	16.6 %

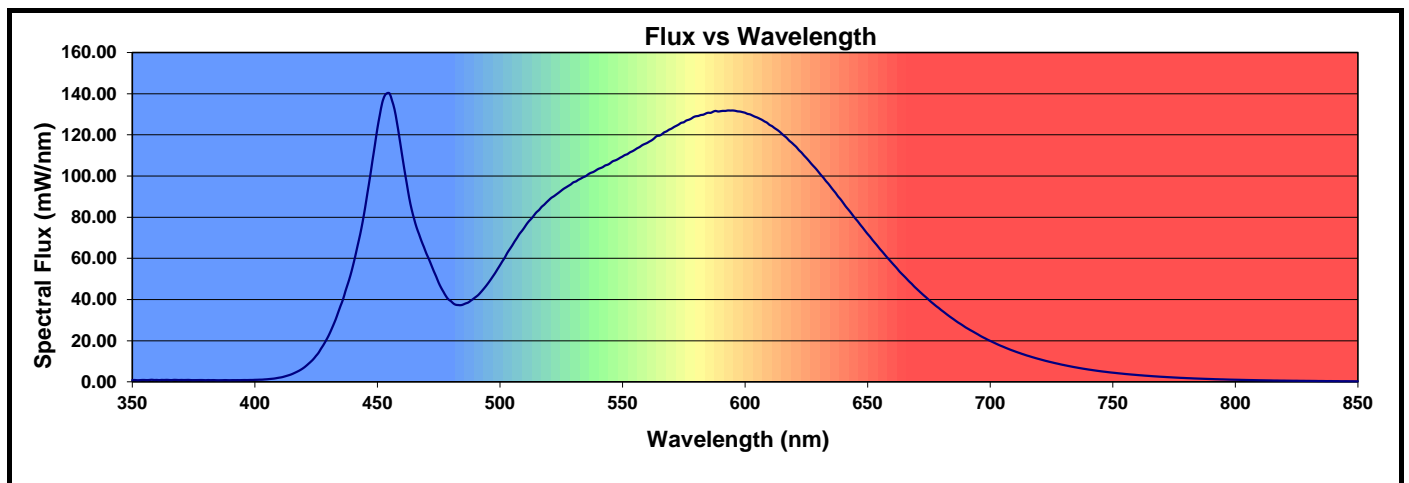
Summary of Results

Total Output:	7729 Lumens	Chromaticity (x):	0.3815
Efficacy:	108.8 lm/w	Chromaticity (y):	0.3794
CCT:	3989 K	Chromaticity (u'):	0.2247
CRI (Ra):	82.6	Chromaticity (v'):	0.5029
CRI (R9):	11.5	TM-30 R_f:	81.5
Peak Wavelength:	454.1 nm	TM-30 R_g:	94.9
Dominant Wavelength:	578.6 nm	Duv:	0.0009
S/P Ratio:	1.672		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82.6	80.9	88.8	94.0	80.8	80.4	83.8	86.8	65.7	11.5	72.5	78.7	58.8	82.8	96.7





Distribution - Goniophotometer

Distribution Test Conditions

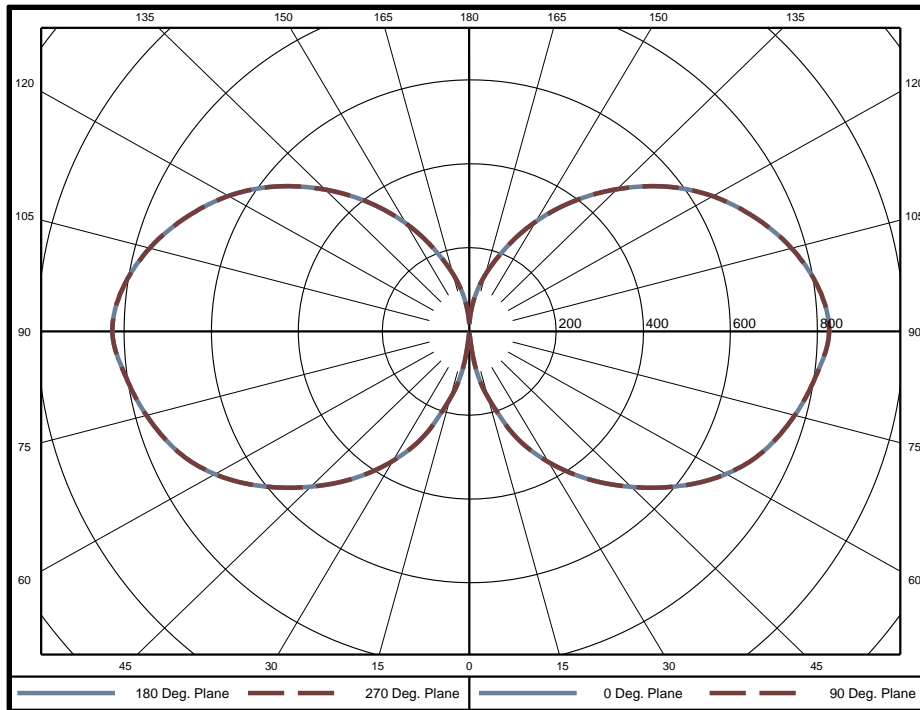
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.6 VAC	0.5990 A	70.98 W	0.986	60 Hz	16.5 %

Summary of Results

Spacing Criteria
 0-180: 13.32
 90-270: 13.32

Total Lumen Output: 7522 Lumens
Lamp Efficacy: 106.0 lm/w
Maximum Candela: 826 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	341.1	4.5%	120-125	286.7	3.8%
5-10	3.8	0.1%	65-70	372.6	5.0%	125-130	246.6	3.3%
10-15	15.8	0.2%	70-75	398.2	5.3%	130-135	205.7	2.7%
15-20	32.0	0.4%	75-80	419.7	5.6%	135-140	166.6	2.2%
20-25	56.1	0.7%	80-85	436.6	5.8%	140-145	130.2	1.7%
25-30	83.6	1.1%	85-90	449.7	6.0%	145-150	97.2	1.3%
30-35	114.2	1.5%	90-95	450.7	6.0%	150-155	68.5	0.9%
35-40	148.0	2.0%	95-100	438.6	5.8%	155-160	44.6	0.6%
40-45	184.4	2.5%	100-105	418.1	5.6%	160-165	26.7	0.4%
45-50	223.3	3.0%	105-110	391.1	5.2%	165-170	13.9	0.2%
50-55	263.8	3.5%	110-115	359.2	4.8%	170-175	5.3	0.1%
55-60	304.0	4.0%	115-120	324.5	4.3%	175-180	0.9	0.0%

Zone	Lumens	% of Luminaire
0-40	454	6.0%
0-60	1429	19.0%
0-90	3847	51.1%
90-180	3675	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	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
5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
10	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3
15	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8	160.8
20	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3	228.3
25	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8
30	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6
35	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4
40	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5	470.5
45	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6	524.6
50	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6	579.6
55	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7	632.7
60	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5	680.5
65	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3	720.3
70	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5	749.5
75	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2	773.2
80	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2	794.2
85	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2	813.2
90	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0	826.0
95	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1	817.1
100	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5
105	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3	765.3
110	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3
115	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1	689.1
120	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5	644.5
125	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9	593.9
130	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2	538.2
135	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8
140	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4	419.4
145	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6	359.6
150	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6	299.6
155	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2	240.2
160	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6	184.6
165	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1	138.1
170	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
175	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4
180	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

	0	45	90
0	845	845	845
45	116300	116300	116300
55	141900	141900	141900
65	168800	168800	168800
75	194800	194800	194800
85	226300	226300	226300



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	8080	8080	8080	8080	7465	7465	7465	7465	6316	6316	6316	5265	5265	5265	4301	4301	4301	3847
1	6919	6398	5932	5511	6320	5862	5449	5074	4857	4536	4242	3934	3688	3460	3084	2899	2726	2303
2	6121	5338	4689	4144	5562	4874	4298	3810	4003	3553	3164	3199	2852	2548	2456	2194	1959	1581
3	5479	4546	3825	3249	4964	4144	3501	2982	3387	2880	2463	2686	2292	1961	2036	1735	1477	1140
4	4948	3932	3189	2621	4477	3583	2917	2403	2922	2394	1975	2309	1895	1560	1739	1420	1156	856
5	4498	3442	2703	2159	4068	3136	2473	1977	2558	2027	1620	2020	1600	1271	1517	1192	930	663
6	4113	3043	2325	1809	3721	2774	2127	1656	2265	1743	1354	1790	1374	1057	1344	1020	766	526
7	3781	2714	2023	1538	3424	2477	1851	1407	2025	1518	1148	1603	1196	893	1206	886	642	427
8	3491	2438	1776	1321	3165	2228	1627	1208	1826	1335	985	1448	1053	764	1093	780	546	352
9	3238	2206	1574	1147	2939	2018	1442	1049	1658	1185	854	1318	936	661	999	694	470	294
10	3015	2007	1404	1003	2740	1838	1287	917	1514	1059	746	1208	838	577	919	623	410	249

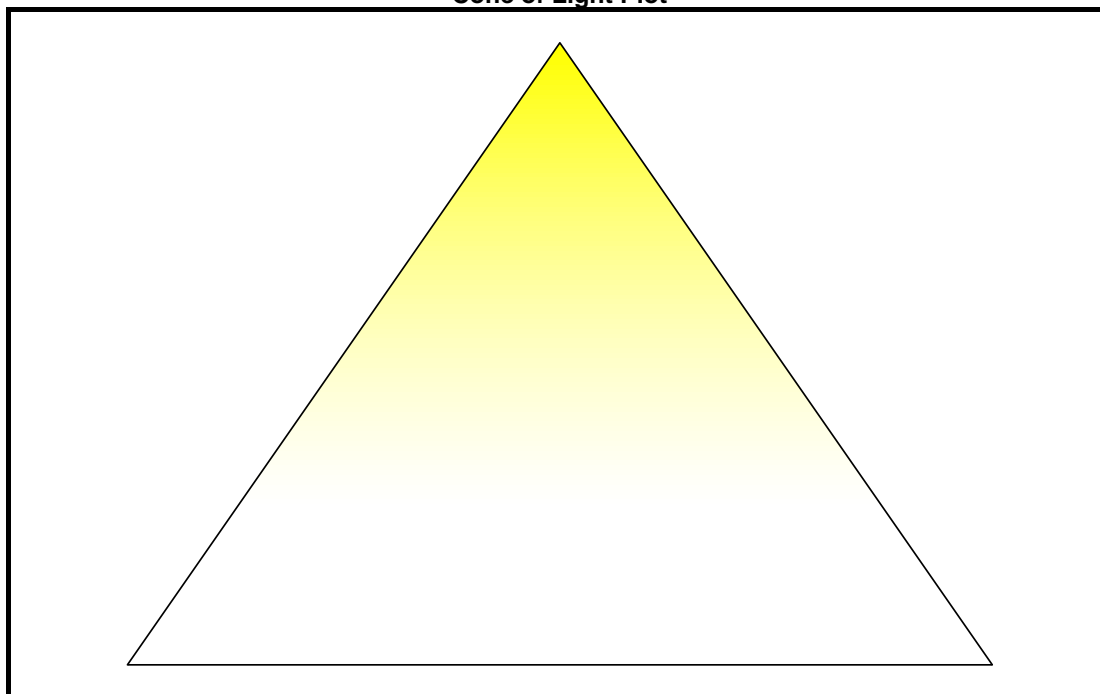
Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	0.328	53.3
6.00	0.146	79.9
8.00	0.0819	107
10.0	0.0524	133
12.0	0.0364	160
14.0	0.0268	186
16.0	0.0205	213

Beam and Field Information

CIE Type:	Direct/Indirect
Center Beam Intensity:	5.2 Candela
Central Cone Intensity:	5 Candela
Beam Flux:	7521.8 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

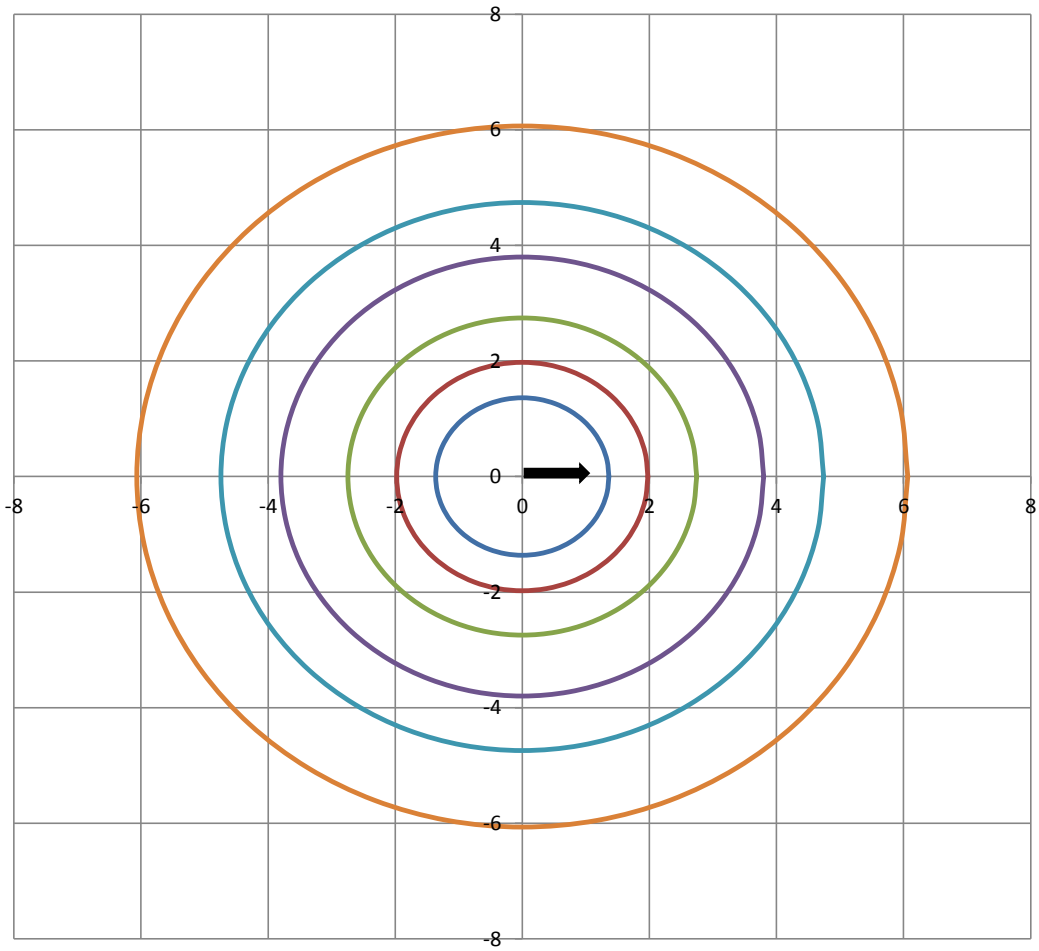
Cone of Light Plot





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

