



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-70-2K-ME

Order Number
11225212
Test Number
1234534

Revised Date
2016-04-18
Test Date

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.
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.
This report must not be used by the client to claim product certification, approval, or endorsement by
NVLAP, NIST, or any agency of the Federal Government.



Table of Contents

Summary of Results	Page 3
Integrating Sphere Results	Page 4
Distribution Results	
Conditions / Summary of Results / Polar Plot / Zonal Lumens	Page 5
Candela Tabulation / Average Luminance	Page 6
Coefficients of Utilization / Cone of Light	Page 7
ISOFootcandle Plot	Page 8

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 Characteristics

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

Summary of Results

Integrating Sphere

Luminous Flux: 5409 Lumens
Efficacy: 75.8 lm/w
CCT: 2030 K
CRI (Ra): 83.9

Distribution

Total Lamp Output: 5193 Lumens
Lamp Efficacy: 73 lm/w
Maximum Candela: 579 Candela

Electrical Data at 120 VAC

Test Temperature: 25.3 °C
Voltage: 120.1 VAC
Current: 0.6034 A
Power: 71.33 W
Power Factor: 0.984
Frequency: 60 Hz
Current THD: 17.9 %



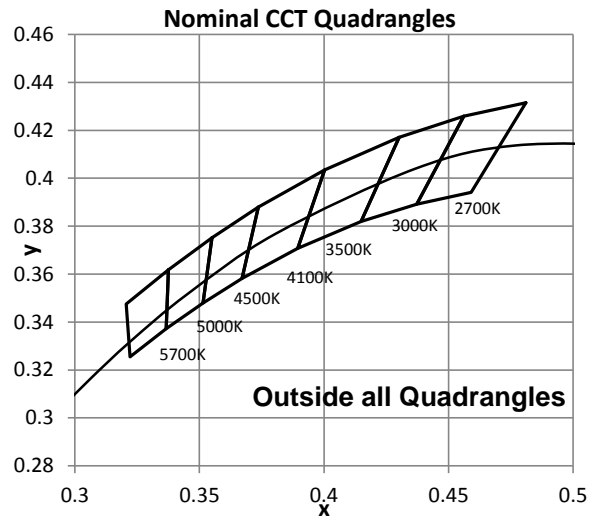
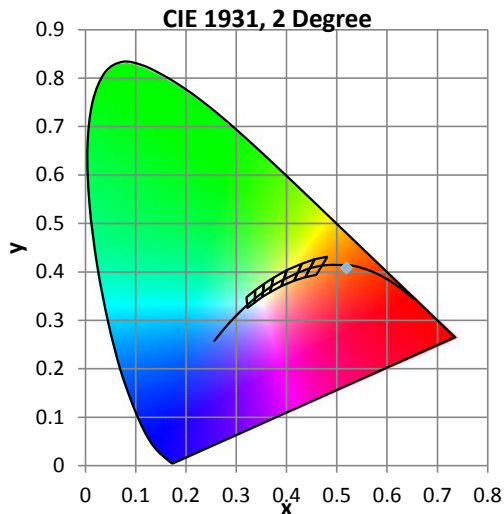
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.1 VAC	0.6034 A	71.33 W	0.984	60 Hz	17.9 %

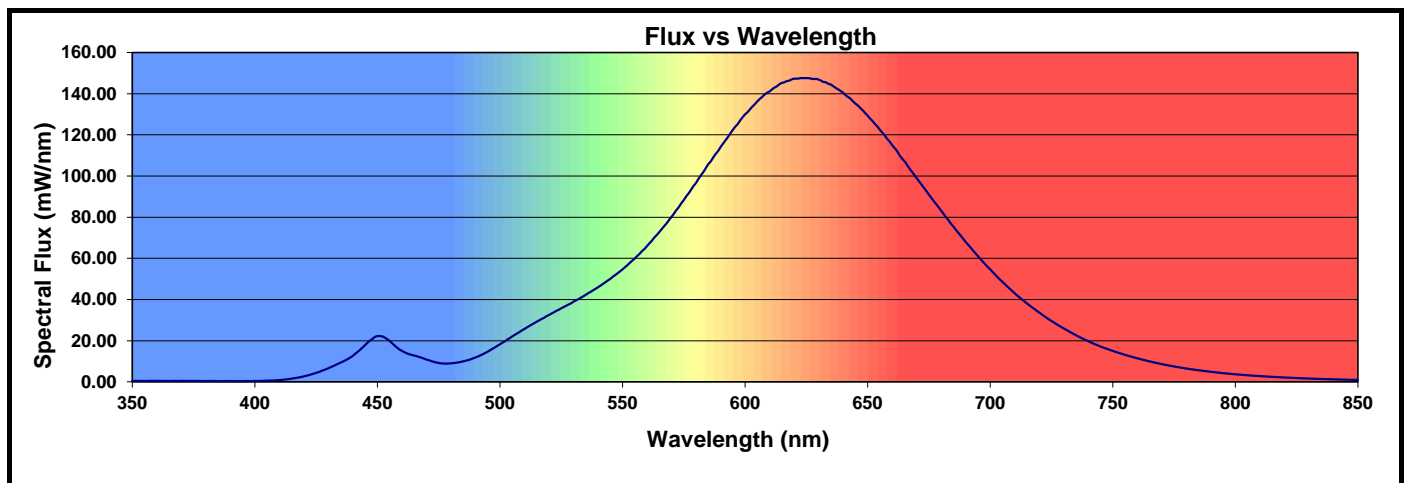
Summary of Results

Total Output:	5409 Lumens	Chromaticity (x):	0.5192
Efficacy:	75.8 lm/w	Chromaticity (y):	0.4083
CCT:	2030 K	Chromaticity (u'):	0.3027
CRI (Ra):	83.9	Chromaticity (v'):	0.5356
CRI (R9):	27.5	TM-30 R_f:	80.3
Peak Wavelength:	624.1 nm	TM-30 R_g:	101.5
Dominant Wavelength:	589.2 nm	Duv:	-0.0019
S/P Ratio:	0.872		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.9	82.7	92.9	95.9	80.2	82.2	92.9	82.1	62.4	27.5	84.3	79.7	84.1	84.8	98.9





Distribution - Goniophotometer

Distribution Test Conditions

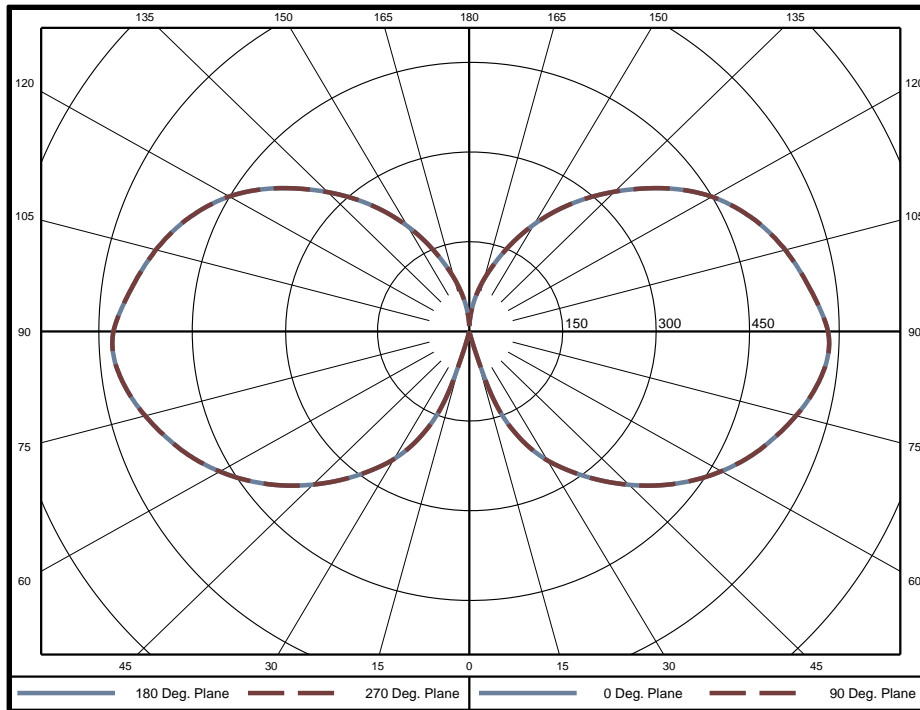
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	0.6024 A	71.16 W	0.984	60 Hz	17.9 %

Summary of Results

Spacing Criteria
 0-180: 13.56
 90-270: 13.56

Total Lumen Output: 5193 Lumens
Lamp Efficacy: 73.0 lm/w
Maximum Candela: 579 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	234.8	4.5%	120-125	199.9	3.8%
5-10	0.3	0.0%	65-70	258.1	5.0%	125-130	170.9	3.3%
10-15	0.6	0.0%	70-75	278.8	5.4%	130-135	141.9	2.7%
15-20	13.5	0.3%	75-80	296.8	5.7%	135-140	114.7	2.2%
20-25	36.4	0.7%	80-85	310.5	6.0%	140-145	89.6	1.7%
25-30	57.3	1.1%	85-90	316.9	6.1%	145-150	66.7	1.3%
30-35	78.8	1.5%	90-95	312.0	6.0%	150-155	46.6	0.9%
35-40	102.0	2.0%	95-100	300.3	5.8%	155-160	29.9	0.6%
40-45	127.3	2.5%	100-105	286.4	5.5%	160-165	17.5	0.3%
45-50	154.3	3.0%	105-110	269.8	5.2%	165-170	8.8	0.2%
50-55	181.9	3.5%	110-115	249.8	4.8%	170-175	3.3	0.1%
55-60	209.1	4.0%	115-120	226.5	4.4%	175-180	0.5	0.0%

Zone	Lumens	% of Luminaire
0-40	289	5.6%
0-60	962	18.5%
0-90	2658	51.2%
90-180	2535	48.8%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	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	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
10	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
15	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
20	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7
25	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5	201.5
30	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0	248.0
35	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1
40	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4
45	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7	362.7
50	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4	400.4
55	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6
60	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0
65	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9	496.9
70	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6	521.6
75	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3	544.3
80	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0	564.0
85	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2	577.2
90	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1	577.1
95	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3	561.3
100	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0	544.0
105	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3	526.3
110	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4	505.4
115	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2	480.2
120	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3
125	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3	413.3
130	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8
135	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0
140	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9	288.9
145	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1	247.1
150	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8
155	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4	162.4
160	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5	122.5
165	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0
170	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7
175	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
180	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0

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

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	571	571	571
45	80400	80400	80400
55	97730	97730	97730
65	116500	116500	116500
75	137100	137100	137100
85	160600	160600	160600



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	5578	5578	5578	5578	5154	5154	5154	5154	4361	4361	4361	3636	3636	3636	2970	2970	2970	2657
1	4768	4405	4080	3787	4354	4035	3747	3485	3341	3117	2911	2704	2532	2373	2117	1987	1866	1574
2	4215	3670	3219	2840	3828	3350	2949	2609	2748	2435	2164	2193	1951	1739	1680	1497	1333	1071
3	3771	3123	2621	2221	3415	2845	2398	2037	2322	1969	1679	1838	1564	1333	1389	1179	1000	766
4	3403	2698	2182	1788	3078	2457	1995	1638	2001	1634	1343	1578	1290	1057	1184	962	778	570
5	3093	2360	1848	1470	2796	2149	1689	1345	1750	1381	1099	1378	1087	858	1031	805	623	438
6	2827	2085	1587	1230	2556	1900	1450	1124	1548	1186	915	1220	931	711	912	687	510	344
7	2598	1858	1379	1043	2351	1694	1261	953	1383	1031	774	1091	809	598	817	595	425	276
8	2398	1668	1210	894	2172	1523	1106	816	1245	905	662	985	710	510	740	522	360	225
9	2223	1508	1070	775	2017	1378	980	707	1130	802	572	896	630	439	675	463	308	186
10	2069	1371	954	676	1879	1255	873	616	1031	716	499	820	563	382	620	415	267	156

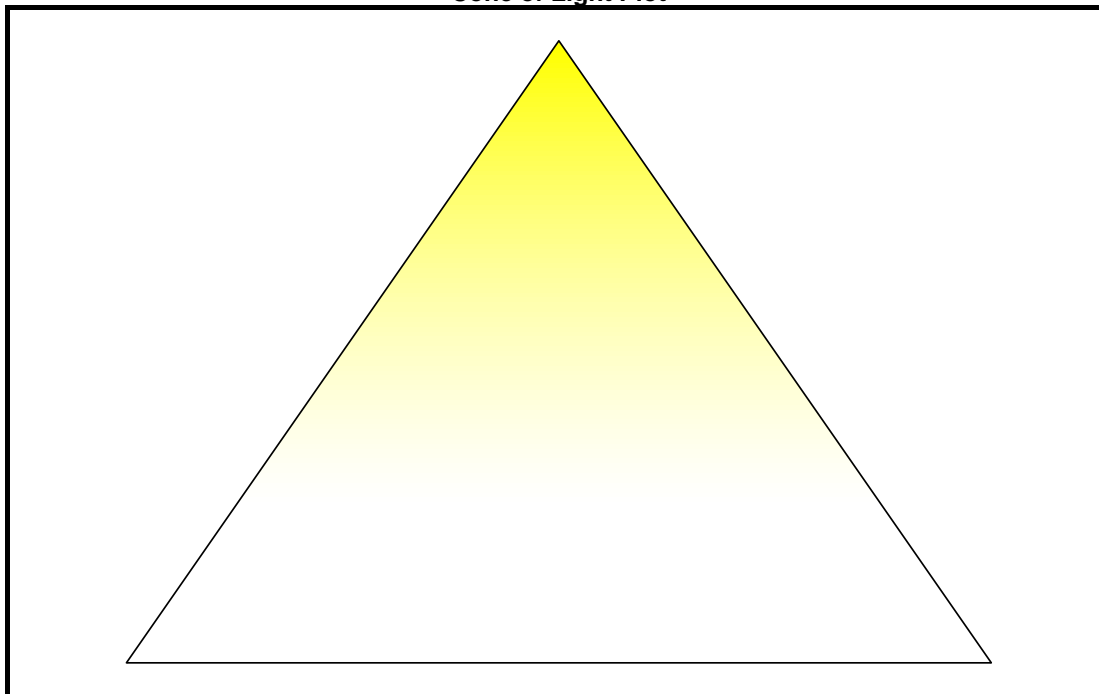
Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	0.221	54.2
6.00	0.0984	81.4
8.00	0.0553	108
10.0	0.0354	136
12.0	0.0246	163
14.0	0.0181	190
16.0	0.0138	217

Beam and Field Information

CIE Type:	Direct/Indirect
Center Beam Intensity:	3.5 Candela
Central Cone Intensity:	4 Candela
Beam Flux:	5192.6 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

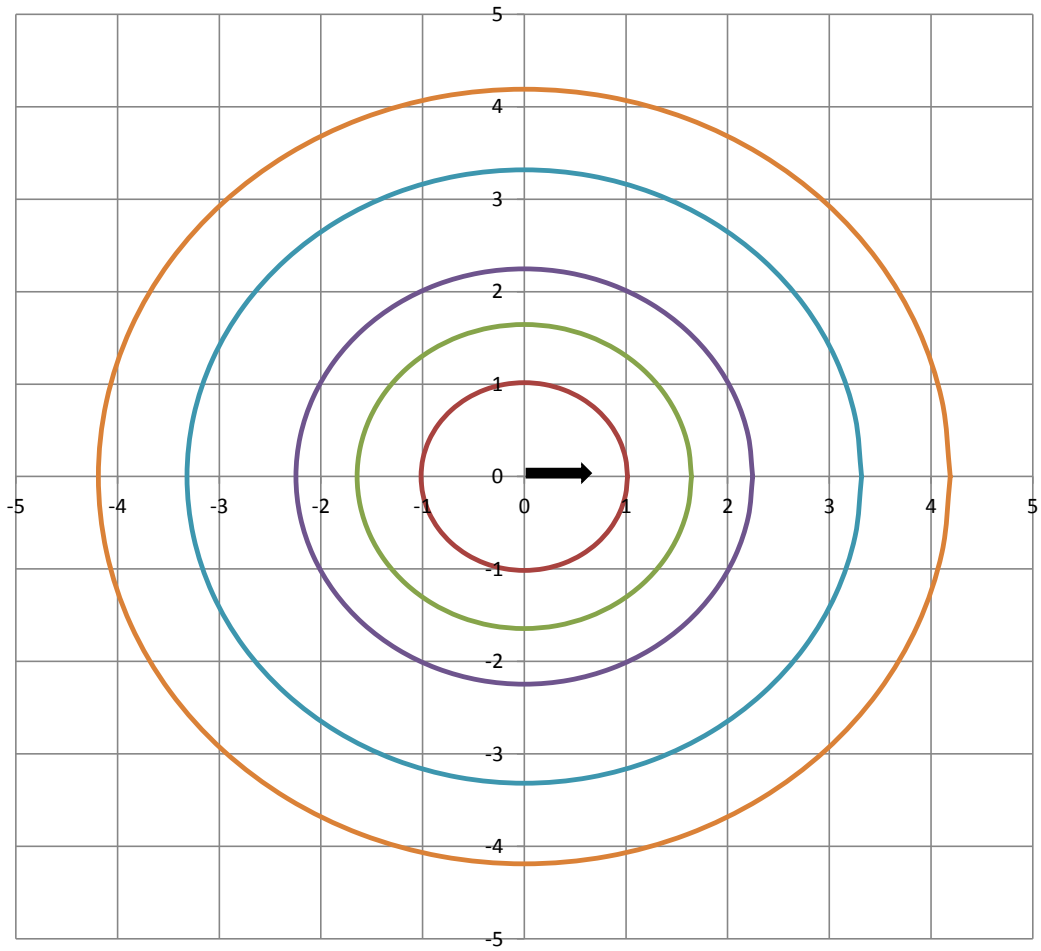
Cone of Light Plot





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

