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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-40-3K-ME

Order Number
11225212
Test Number
1234531

Revised Date
2016-04-18
Test Date

2016-04-11 - 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: 4798 Lumens
Efficacy: 117.3 lm/w
CCT: 2976 K
CRI (Ra): 81.4

Distribution

Total Lamp Output: 4629 Lumens
Lamp Efficacy: 113.3 lm/w
Maximum Candela: 509 Candela

Electrical Data at 120 VAC

Test Temperature: 25.3 °C
Voltage: 120.0 VAC
Current: 0.3440 A
Power: 40.89 W
Power Factor: 0.990
Frequency: 60 Hz
Current THD: 14.1 %



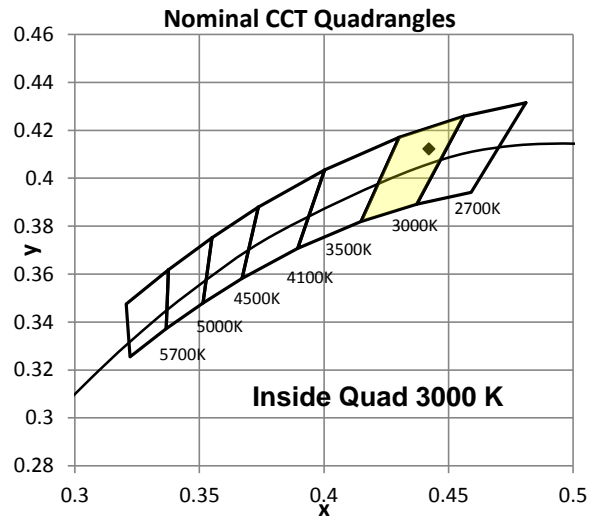
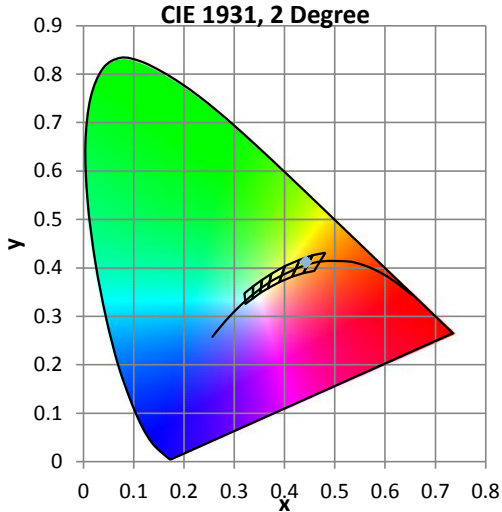
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.0 VAC	0.3440 A	40.89 W	0.990	60 Hz	14.1 %

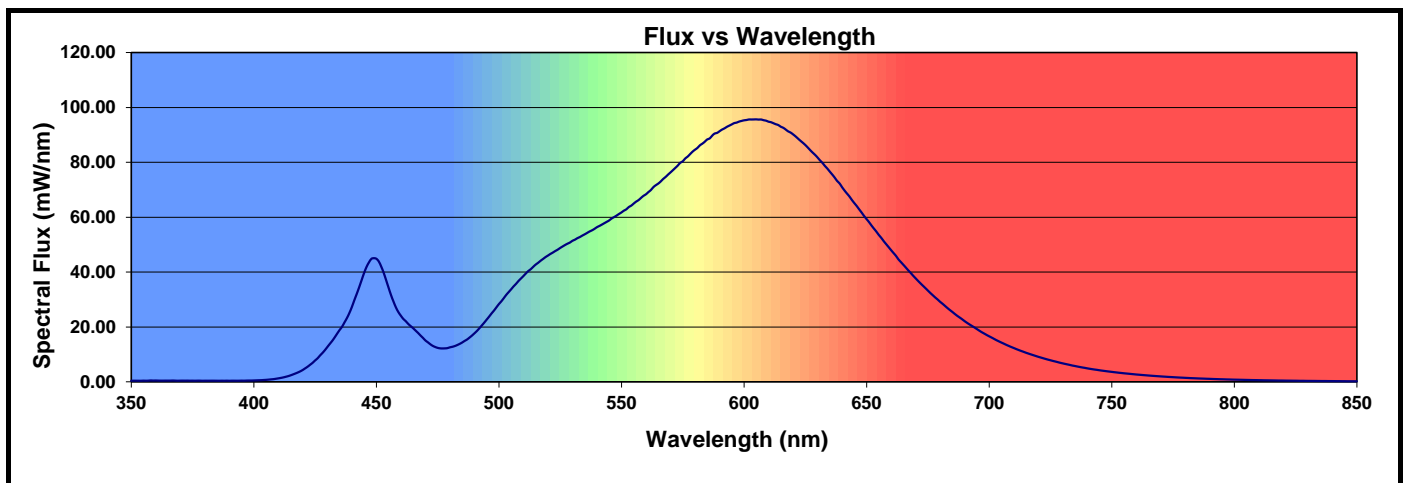
Summary of Results

Total Output:	4798 Lumens	Chromaticity (x):	0.4422
Efficacy:	117.3 lm/w	Chromaticity (y):	0.4122
CCT:	2976 K	Chromaticity (u'):	0.2505
CRI (Ra):	81.4	Chromaticity (v'):	0.5253
CRI (R9):	6.9	TM-30 R_f:	81.9
Peak Wavelength:	604.5 nm	TM-30 R_g:	96.9
Dominant Wavelength:	582.1 nm	Duv:	0.0023
S/P Ratio:	1.275		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81.4	79.3	87.5	95.5	80.8	78.8	84.1	84.9	60.5	6.9	71.4	79.6	65.2	80.7	97.2





Distribution - Goniophotometer

Distribution Test Conditions

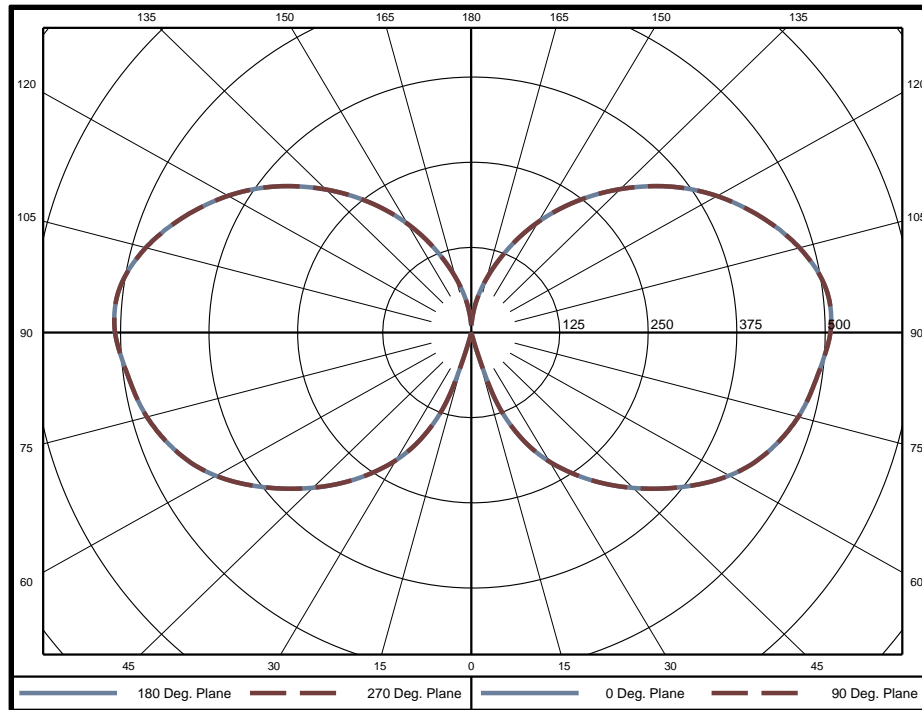
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	120.0 VAC	0.3438 A	40.85 W	0.990	60 Hz	14.1 %

Summary of Results

Spacing Criteria
 0-180: 13.52
 90-270: 13.52

Total Lumen Output: 4629 Lumens
Lamp Efficacy: 113.3 lm/w
Maximum Candela: 509 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	210.7	4.6%	120-125	177.9	3.8%
5-10	0.2	0.0%	65-70	230.2	5.0%	125-130	152.9	3.3%
10-15	0.6	0.0%	70-75	246.3	5.3%	130-135	127.6	2.8%
15-20	11.7	0.3%	75-80	258.8	5.6%	135-140	103.4	2.2%
20-25	31.5	0.7%	80-85	267.8	5.8%	140-145	80.8	1.7%
25-30	50.2	1.1%	85-90	275.3	5.9%	145-150	60.3	1.3%
30-35	69.7	1.5%	90-95	278.3	6.0%	150-155	42.4	0.9%
35-40	90.8	2.0%	95-100	273.9	5.9%	155-160	27.4	0.6%
40-45	113.4	2.4%	100-105	261.9	5.7%	160-165	15.9	0.3%
45-50	137.3	3.0%	105-110	244.8	5.3%	165-170	8.0	0.2%
50-55	162.2	3.5%	110-115	224.2	4.8%	170-175	2.9	0.1%
55-60	187.4	4.0%	115-120	201.8	4.4%	175-180	0.5	0.0%

Zone	Lumens	% of Luminaire
0-40	255	5.5%
0-60	855	18.5%
0-90	2344	50.6%
90-180	2285	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	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
5	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
10	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
15	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
20	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3
25	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6	175.6
30	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0
35	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2	254.2
40	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
45	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7	322.7
50	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2	356.2
55	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4	389.4
60	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3	420.3
65	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0	445.0
70	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7	463.7
75	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3	478.3
80	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2	488.2
85	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8	497.8
90	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1	507.1
95	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0	508.0
100	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2	498.2
105	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7
110	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8	455.8
115	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1	429.1
120	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
125	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6	368.6
130	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8	333.8
135	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2
140	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3
145	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0	223.0
150	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7	185.7
155	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2
160	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0
165	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4	80.4
170	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6
175	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1
180	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8

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

	0	45	90
0	497	497	497
45	71510	71510	71510
55	87360	87360	87360
65	104300	104300	104300
75	120500	120500	120500
85	138500	138500	138500



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	4967	4967	4967	4967	4586	4586	4586	4586	3874	3874	3874	3223	3223	3223	2625	2625	2625	2344
1	4252	3931	3644	3385	3881	3599	3345	3114	2976	2779	2598	2405	2253	2113	1877	1764	1658	1396
2	3760	3277	2878	2542	3413	2989	2635	2334	2449	2173	1933	1952	1738	1551	1491	1330	1186	952
3	3364	2789	2344	1989	3045	2540	2143	1824	2070	1758	1501	1636	1393	1190	1233	1048	889	681
4	3036	2410	1952	1602	2744	2193	1783	1466	1784	1458	1201	1404	1149	943	1050	854	692	506
5	2759	2107	1652	1317	2492	1918	1509	1204	1559	1233	982	1226	968	766	914	714	554	389
6	2521	1862	1419	1101	2279	1695	1296	1006	1379	1058	818	1084	829	634	808	609	453	305
7	2317	1659	1233	934	2095	1512	1126	853	1232	919	692	970	720	533	724	527	378	245
8	2138	1489	1081	801	1936	1359	988	731	1109	807	592	875	632	454	655	463	319	199
9	1983	1346	957	694	1797	1229	875	633	1006	715	511	796	560	392	597	410	273	164
10	1845	1224	852	605	1675	1119	780	552	918	638	445	728	501	340	549	367	236	137

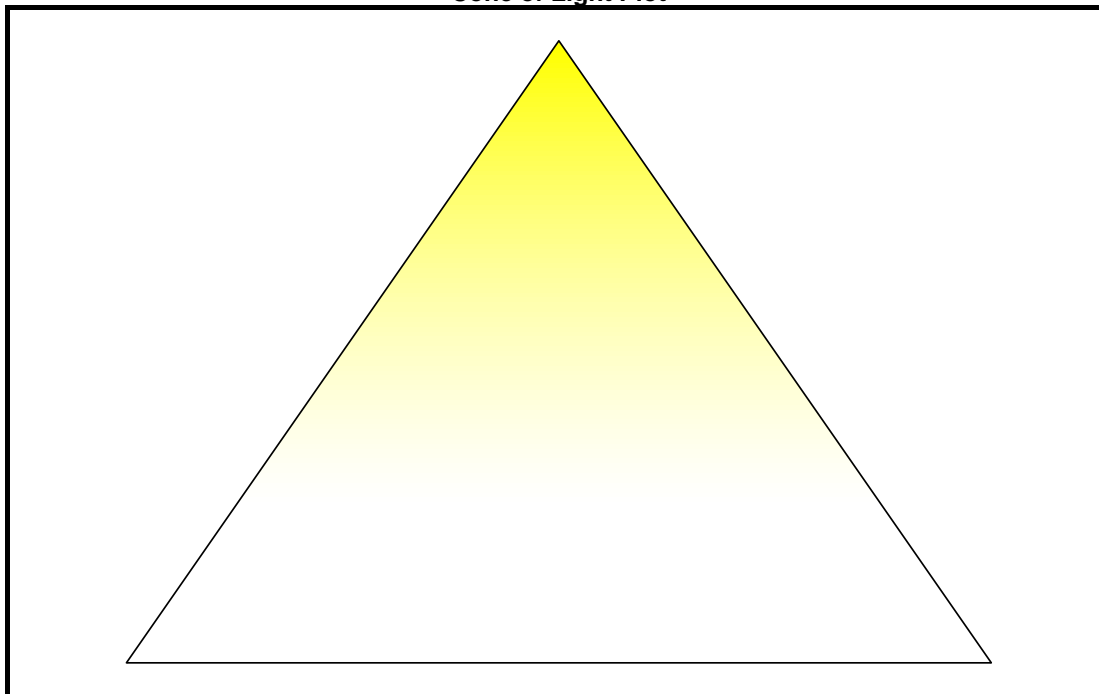
Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	0.193	54.1
6.00	0.0856	81.1
8.00	0.0482	108
10.0	0.0308	135
12.0	0.0214	162
14.0	0.0157	189
16.0	0.0120	216

Beam and Field Information

CIE Type:	Direct/Indirect
Center Beam Intensity:	3.1 Candela
Central Cone Intensity:	3 Candela
Beam Flux:	4629.2 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

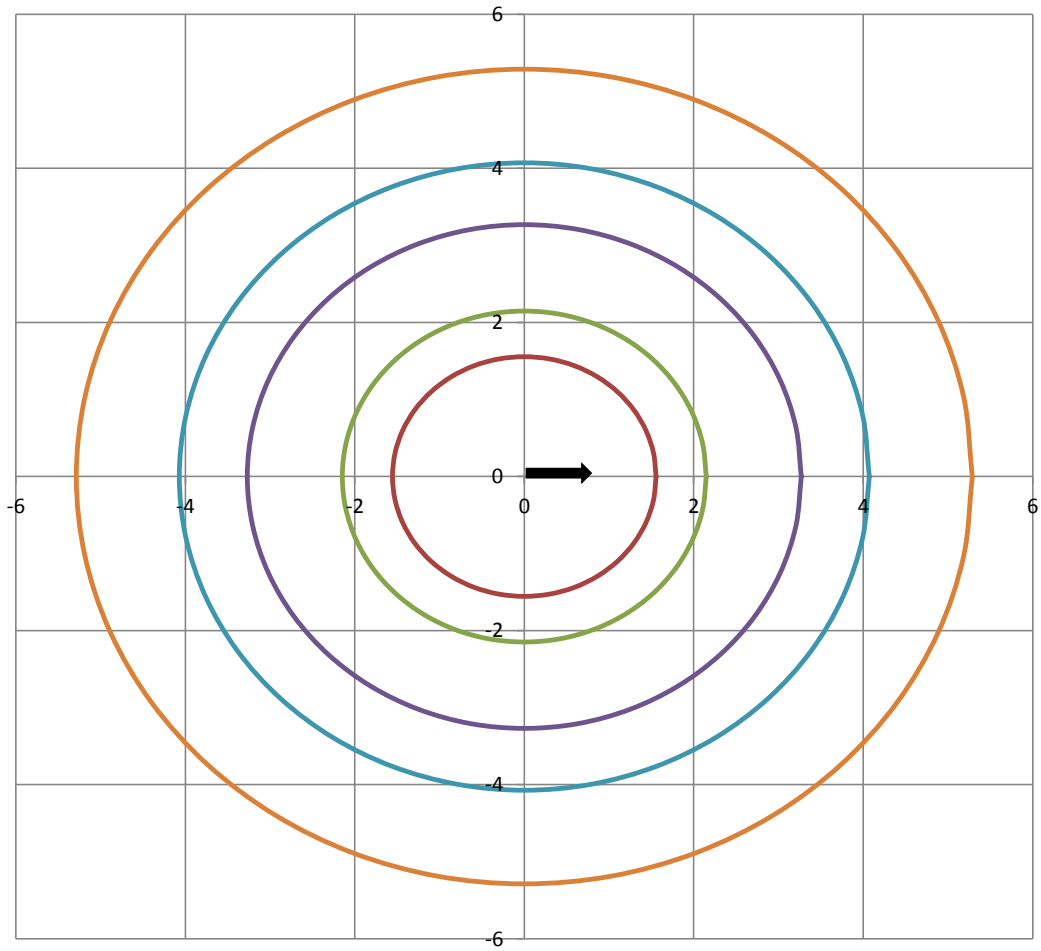
Cone of Light Plot





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

