



UL Verification Services Inc.  
7036 Snowdrift Road  
Allentown, PA 18106  
610-774-1300



## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-10-2014, CIE 13.3-1995  
CIE 15-2004, ANSI C78.377-2017, IES TM-30-2018

Prepared For  
**Hubbell Lighting Inc**  
701 Millennium Blvd  
Greenville, SC 29607  
United States

Catalog Number  
**P550104-020-30 (P20.01556)**  
Order Number  
13646774  
Test Number  
13646774.33

Test Date

2021-01-04 - 2021-01-08

Prepared By

Matt Finn, Technician

Approved By

Jeffrey Lockner, Senior Project Engineer

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 3-meter integrating sphere using the  $4\pi$  geometry method.

Absorption correction was employed for Sphere measurement



**Luminaire Description:** Brown aluminum housing, frosted plastic diffuser on top and bottom, clear glass enclosure on top, no enclosure on bottom  
**Lamp:** White LEDs  
**Mounting:** Surface – Wall  
**Ballast/Driver:** N/A

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 6.00 in.  
Luminous Height: 18.250 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 1608 Lumens  
Efficacy: 25.74 lm/w  
CCT: 3074 K  
CRI (Ra): 92.8

**Distribution**

Total Luminaire Output: 1600 Lumens  
Luminaire Efficacy: 25.6 lm/w  
Maximum Candela: 718 Candela

**Electrical Data at 119 VAC**

Test Temperature: 25.2 °C  
Voltage: 119.9 VAC  
Current: 0.5753 A  
Power: 62.47 W  
Power Factor: 0.905  
Frequency: 60 Hz  
Current THD: 46.8 %



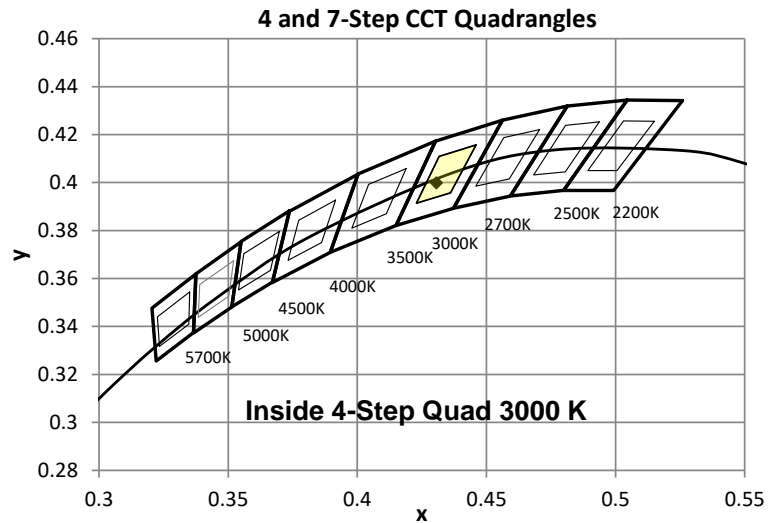
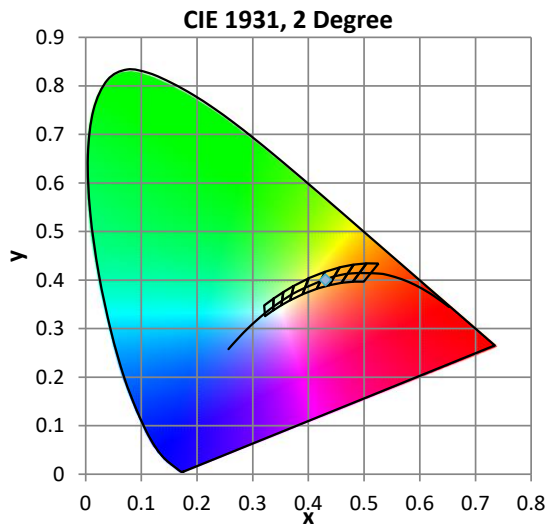
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	119.9 VAC	0.5753 A	62.47 W	0.905	60 Hz	46.8 %

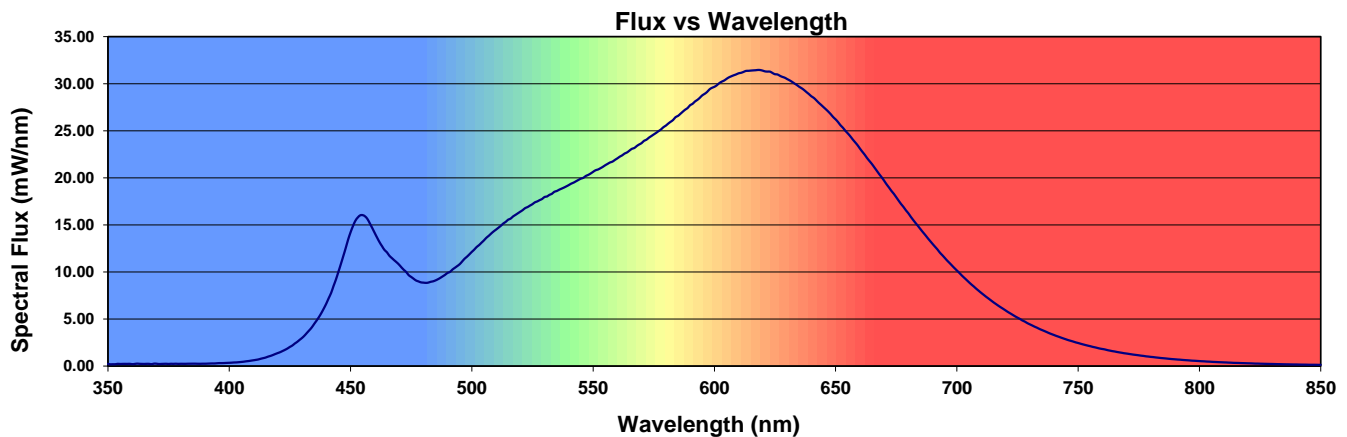
### Summary of Results

<b>Total Output:</b>	1608 Lumens	<b>Chromaticity (x):</b>	0.4306
<b>Efficacy:</b>	25.7 lm/w	<b>Chromaticity (y):</b>	0.3999
<b>CCT:</b>	3074 K	<b>Chromaticity (u'):</b>	0.2482
<b>CRI (Ra):</b>	92.8	<b>Chromaticity (v'):</b>	0.5188
<b>CRI (R9):</b>	58.9	<b>TM-30 Rf:</b>	92
<b>Peak Wavelength:</b>	618 nm	<b>TM-30 Rg:</b>	98
<b>Dominant Wavelength:</b>	583 nm	<b>TM-30 Rcs,h1:</b>	-5%
<b>S/P Ratio:</b>	1.46	<b>Duv:</b>	-0.0007



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
92.8	93.1	97.1	98.5	92.3	92.8	96.0	91.5	81.5	58.9	92.1	92.9	82.7	94.4	99.2	89.5





## Distribution - Goniophotometer

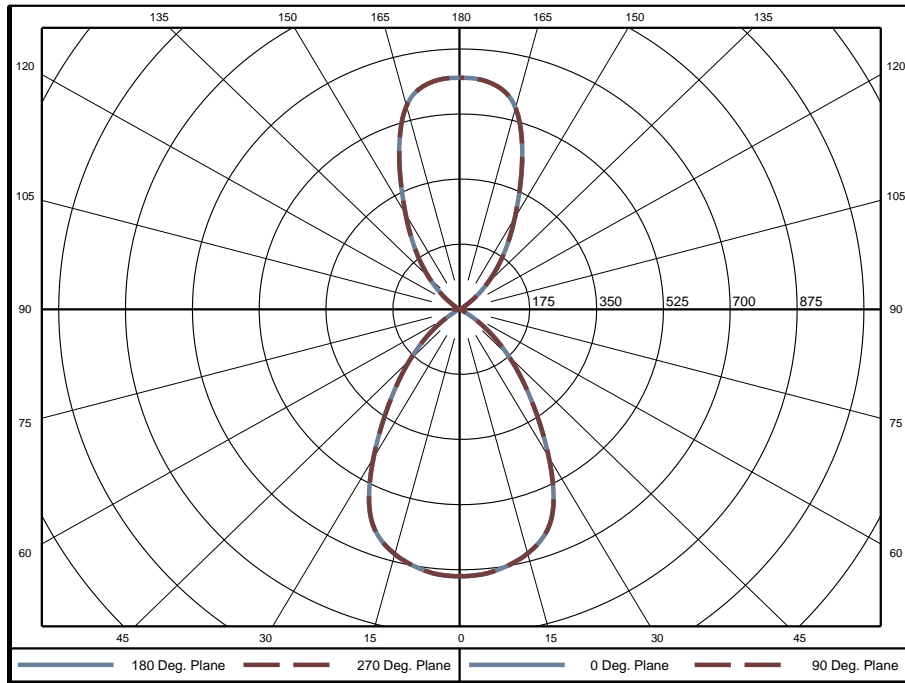
### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.5 °C	119.9 VAC	0.5750 A	62.43 W	0.906	60 Hz	46.7 %

### Summary of Results

<b>Spacing Criteria</b>	<b>Total Lumen Output:</b>	1600 Lumens
0-180: 1.05	<b>Luminaire Efficacy:</b>	25.6 lm/w
90-270: 1.05	<b>Maximum Candela:</b>	718 Candela
<b>Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)</b>	<b>Endwise:</b>	1.8
<b>Crosswise:</b> 1.8		

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	17.1	1.1%	60-65	6.4	0.4%	120-125	6.7	0.4%
5-10	50.7	3.2%	65-70	4.2	0.3%	125-130	18.3	1.1%
10-15	81.9	5.1%	70-75	2.1	0.1%	130-135	33.7	2.1%
15-20	109.2	6.8%	75-80	1.3	0.1%	135-140	48.6	3.0%
20-25	128.4	8.0%	80-85	1.0	0.1%	140-145	62.2	3.9%
25-30	131.0	8.2%	85-90	0.8	0.1%	145-150	73.5	4.6%
30-35	118.5	7.4%	90-95	7.2	0.5%	150-155	82.4	5.2%
35-40	100.3	6.3%	95-100	4.6	0.3%	155-160	88.0	5.5%
40-45	80.5	5.0%	100-105	3.0	0.2%	160-165	85.1	5.3%
45-50	59.5	3.7%	105-110	2.6	0.2%	165-170	69.3	4.3%
50-55	37.9	2.4%	110-115	3.3	0.2%	170-175	43.8	2.7%
55-60	17.7	1.1%	115-120	4.7	0.3%	175-180	14.9	0.9%

Zone	Lumens	% of Luminaire
0-40	737	46.1%
0-60	933	58.3%
0-90	949	59.3%
90-180	652	40.7%



**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	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0	718.0
5	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4	714.4
10	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2	701.2
15	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5	679.5
20	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1	644.1
25	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6	573.6
30	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8	460.8
35	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3
40	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0
45	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1	181.1
50	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8
55	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9
60	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
65	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
70	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
75	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
80	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
85	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
90	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
95	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
100	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	6.5
105	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
110	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	5.3
115	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
120	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
125	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9
130	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9
135	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
140	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1
145	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9	216.9
150	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9	285.9
155	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0	371.0
160	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7
165	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5	559.5
170	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8	603.8
175	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0	620.0
180	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4	622.4

Vertical Angle (Degrees)

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

Horizontal Angle (Degrees)

	0	45	90
0	39360	39360	39360
45	2882	2882	2882
55	892	892	892
65	153	153	153
75	40	40	40
85	23	23	23

Vertical Angle (Degrees)

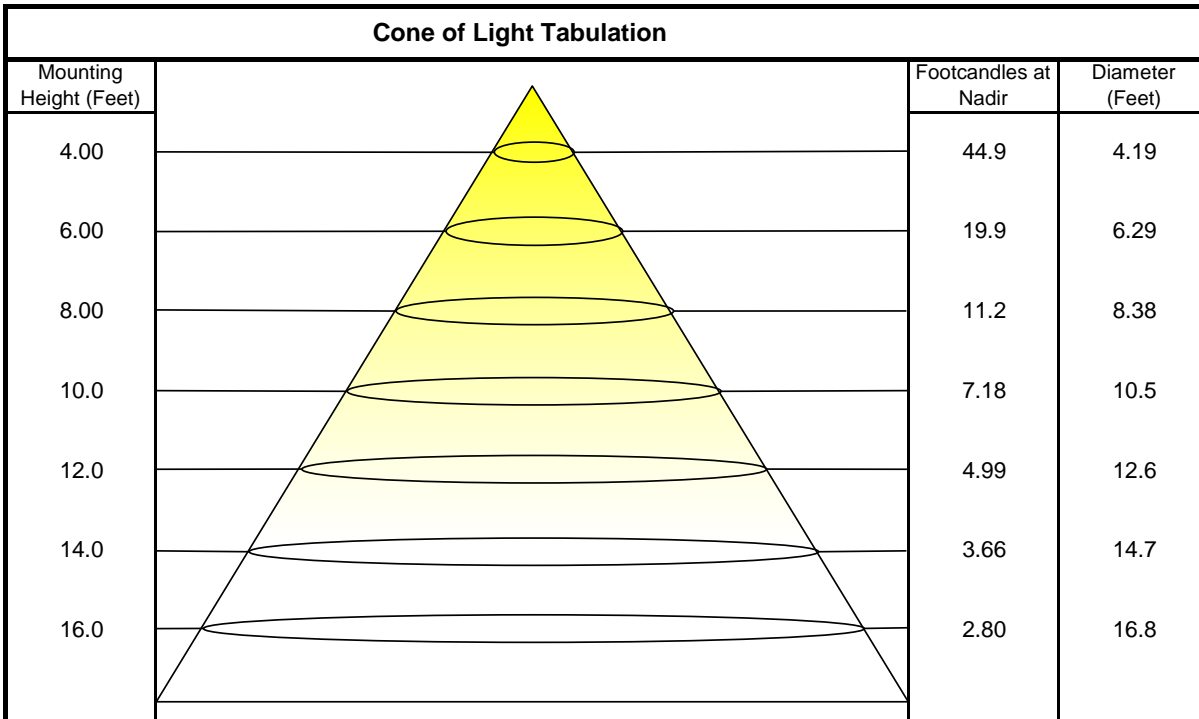


### Coefficients of Utilization - Zonal Cavity Method

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 percent of total lumen output delivered to the task surface **																	
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	65	65	65	59
1	102	99	95	93	95	92	90	87	81	79	77	70	69	68	60	60	59	54
2	95	89	84	80	89	84	79	75	74	70	68	65	62	60	56	55	53	49
3	88	80	74	69	83	76	70	66	67	63	60	59	56	54	52	50	48	45
4	82	73	66	61	77	69	63	58	62	57	53	55	51	49	48	46	44	41
5	76	66	59	54	72	63	57	52	56	52	48	50	47	44	45	42	40	37
6	71	61	54	49	67	58	51	47	52	47	43	47	43	40	42	39	36	34
7	67	56	49	44	63	53	47	42	48	43	39	43	39	36	39	36	33	31
8	62	51	44	40	59	49	43	38	44	39	36	40	36	33	36	33	31	29
9	59	48	41	36	55	45	39	35	41	36	33	38	34	31	34	31	29	27
10	55	44	38	33	52	42	36	32	39	34	30	35	31	28	32	29	26	25

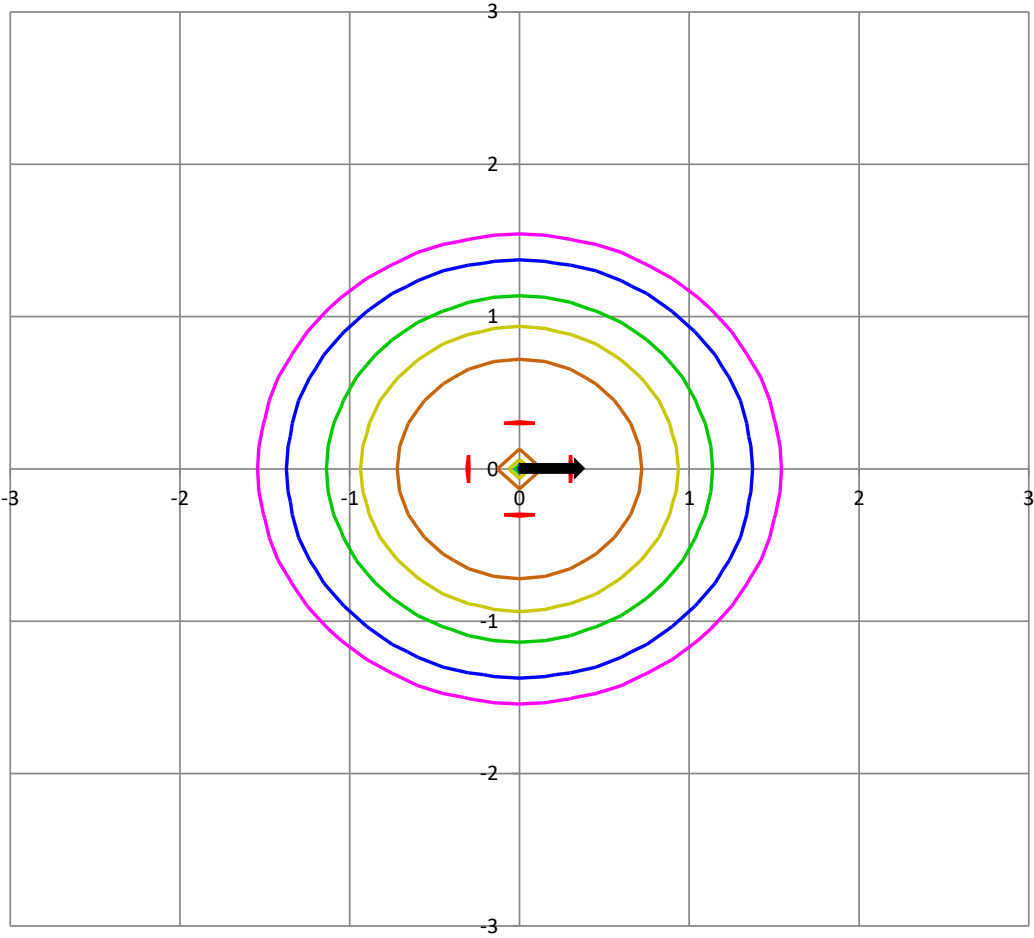
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	718.0 Candela
Central Cone Intensity:	717 Candela
Beam Flux:	938.9 Lumens
Beam Angle (0-180):	69.0 Degrees
Beam Angle (90-270):	69.0 Degrees
Field Angle (0-180):	107.8 Degrees
Field Angle (90-270):	107.8 Degrees





### ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

