



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  
**P550103-020-30 (P20.01554)**  
Order Number  
13646774  
Test Number  
13646774.32A

Revision of report #13646774.32 on 1/12/2021

Test Date

2021-01-05 - 2021-01-08

Prepared By

Jesse Litchfield, Technician

Approved By

Jeffrey Lockner, Senior Project Engineer

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

<b>Summary of Results</b>	Page 3
<b>Integrating Sphere Results</b>	Page 4
<b>Distribution Results</b>	
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  $4\pi$  geometry method.

Absorption correction was employed for Sphere measurement



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

Luminaire



**Luminaire Characteristics**  
Luminous Diameter: 6.00 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 908.5 Lumens  
Efficacy: 29.14 lm/w  
CCT: 3047 K  
CRI (Ra): 92.9

#### Distribution

Total Luminaire Output: 945.5 Lumens  
Luminaire Efficacy: 30.4 lm/w  
Maximum Candela: 689 Candela

#### Electrical Data at 120 VAC

Test Temperature: 25.0 °C  
Voltage: 120.0 VAC  
Current: 0.2870 A  
Power: 31.18 W  
Power Factor: 0.905  
Frequency: 60 Hz  
Current THD: 46.9 %



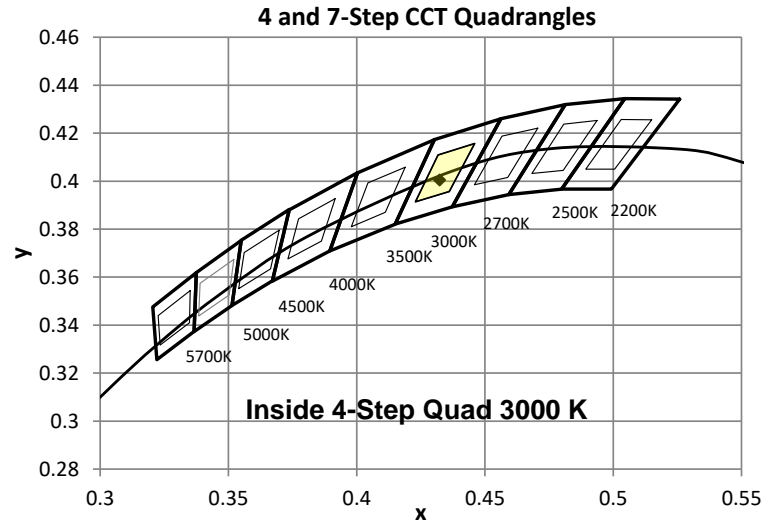
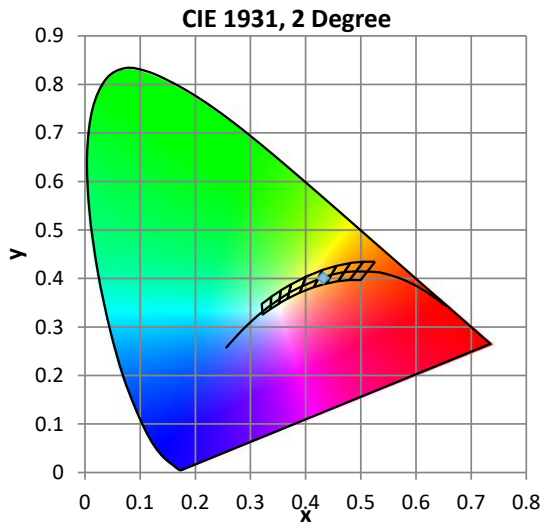
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.2870 A	31.18 W	0.905	60 Hz	46.9 %

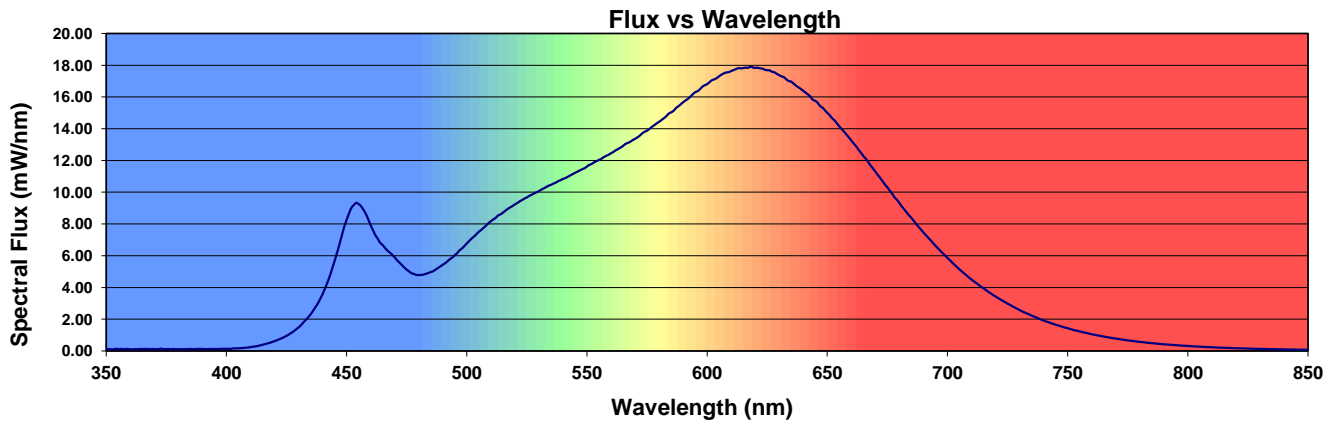
### Summary of Results

<b>Total Output:</b>	909 Lumens	<b>Chromaticity (x):</b>	0.4323
<b>Efficacy:</b>	29.1 lm/w	<b>Chromaticity (y):</b>	0.4005
<b>CCT:</b>	3047 K	<b>Chromaticity (u'):</b>	0.2492
<b>CRI (Ra):</b>	92.9	<b>Chromaticity (v'):</b>	0.5193
<b>CRI (R9):</b>	59.3	<b>TM-30 Rf:</b>	92
<b>Peak Wavelength:</b>	618 nm	<b>TM-30 Rg:</b>	99
<b>Dominant Wavelength:</b>	583 nm	<b>TM-30 Rcs,h1:</b>	-5%
<b>S/P Ratio:</b>	1.45	<b>Duv:</b>	-0.0008



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
92.9	93.2	97.1	98.5	92.4	92.8	95.9	91.5	81.6	59.3	92.0	93.0	82.0	94.4	99.1	89.3





## Distribution - Goniophotometer

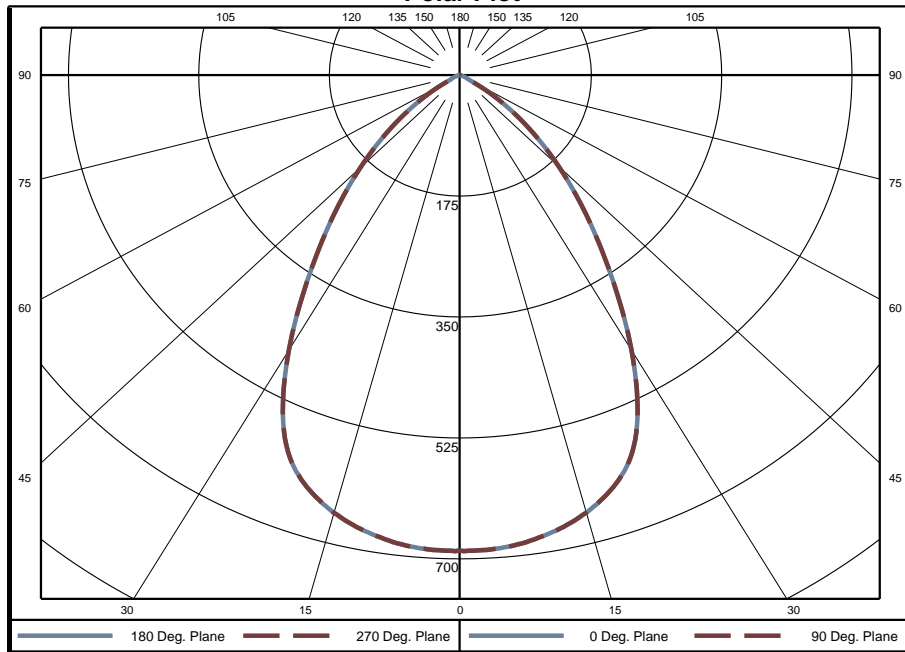
### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	119.9 VAC	0.2868 A	31.12 W	0.905	60 Hz	47.0 %

### Summary of Results

<b>Spacing Criteria</b>	<b>Total Lumen Output:</b>	945.5 Lumens
0-180: 1.07	<b>Luminaire Efficacy:</b>	30.4 lm/w
90-270: 1.07	<b>Maximum Candela:</b>	689 Candela
<b>Corrected UGR (Room Dimension: X=4H, Y=8H, Reflectances: 70/50/20%, S/H: 1)</b>	<b>Endwise:</b>	13.3
<b>Crosswise:</b> 13.3		

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	16.4	1.7%	60-65	6.9	0.7%	120-125	0	0.0%
5-10	48.7	5.2%	65-70	4.2	0.4%	125-130	0	0.0%
10-15	78.9	8.3%	70-75	1.7	0.2%	130-135	0	0.0%
15-20	105.4	11.1%	75-80	0.6	0.1%	135-140	0	0.0%
20-25	124.7	13.2%	80-85	0.2	0.0%	140-145	0	0.0%
25-30	129.1	13.7%	85-90	0.1	0.0%	145-150	0	0.0%
30-35	118.8	12.6%	90-95	0	0.0%	150-155	0	0.0%
35-40	101.7	10.8%	95-100	0	0.0%	155-160	0	0.0%
40-45	82.8	8.8%	100-105	0	0.0%	160-165	0	0.0%
45-50	62.5	6.6%	105-110	0	0.0%	165-170	0	0.0%
50-55	41.5	4.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	21.2	2.2%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	724	76.5%
0-60	932	98.5%
0-90	945	100.0%
90-180	0	0.0%



**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	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0	688.0
5	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9
10	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9	674.9
15	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3	655.3
20	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8	622.8
25	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5	560.5
30	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1
35	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7	351.7
40	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7	262.7
45	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7	187.7
50	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7
55	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1
60	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
65	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
70	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
75	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
80	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

	0	45	90
0	37720	37720	37720
45	14560	14560	14560
55	6607	6607	6607
65	1385	1385	1385
75	381	381	381
85	163	163	163

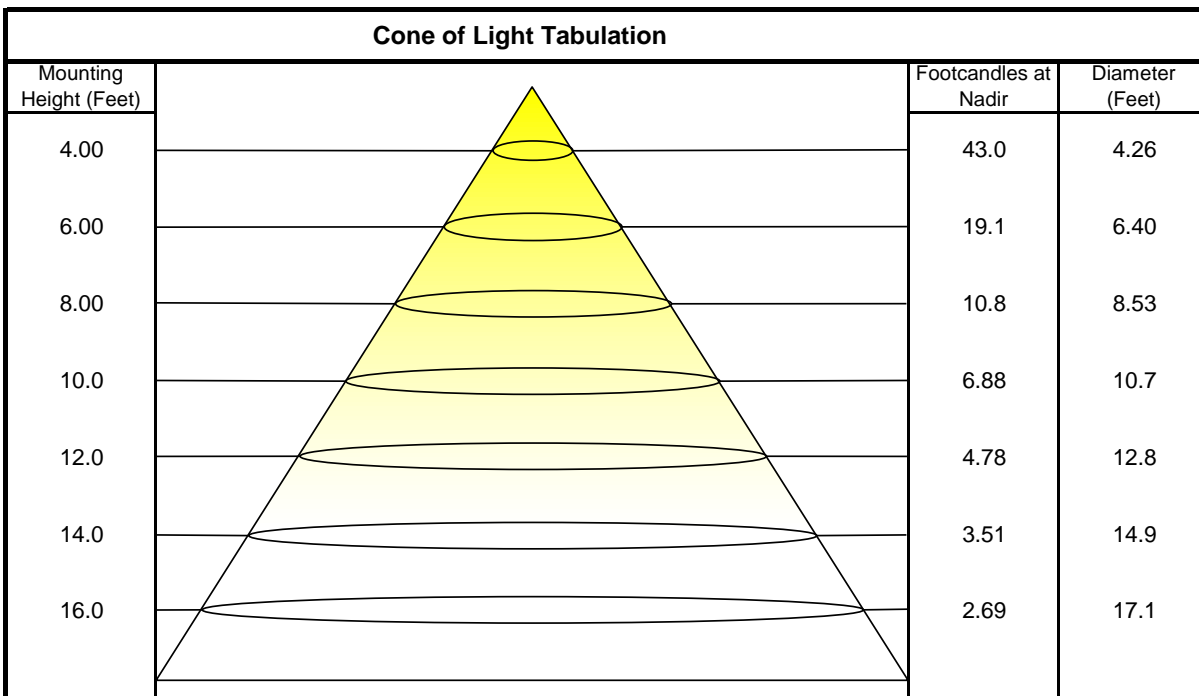


### Coefficients of Utilization - Zonal Cavity Method

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	93	92
2	106	100	96	92	104	98	94	91	95	92	89	92	89	87	89	87	85	83
3	99	92	86	81	97	90	85	81	88	83	79	85	81	78	83	80	77	75
4	93	84	78	73	91	83	77	73	81	76	72	79	74	71	77	73	70	68
5	87	78	71	66	86	77	70	66	75	69	65	73	68	64	71	67	64	62
6	82	72	65	60	80	71	64	60	69	63	59	68	63	59	66	62	58	57
7	77	66	60	55	76	66	59	54	64	58	54	63	58	54	62	57	54	52
8	73	62	55	50	71	61	55	50	60	54	50	59	54	50	58	53	49	48
9	69	58	51	46	67	57	51	46	56	50	46	55	50	46	54	49	46	44
10	65	54	47	43	64	53	47	43	53	47	43	52	46	43	51	46	42	41

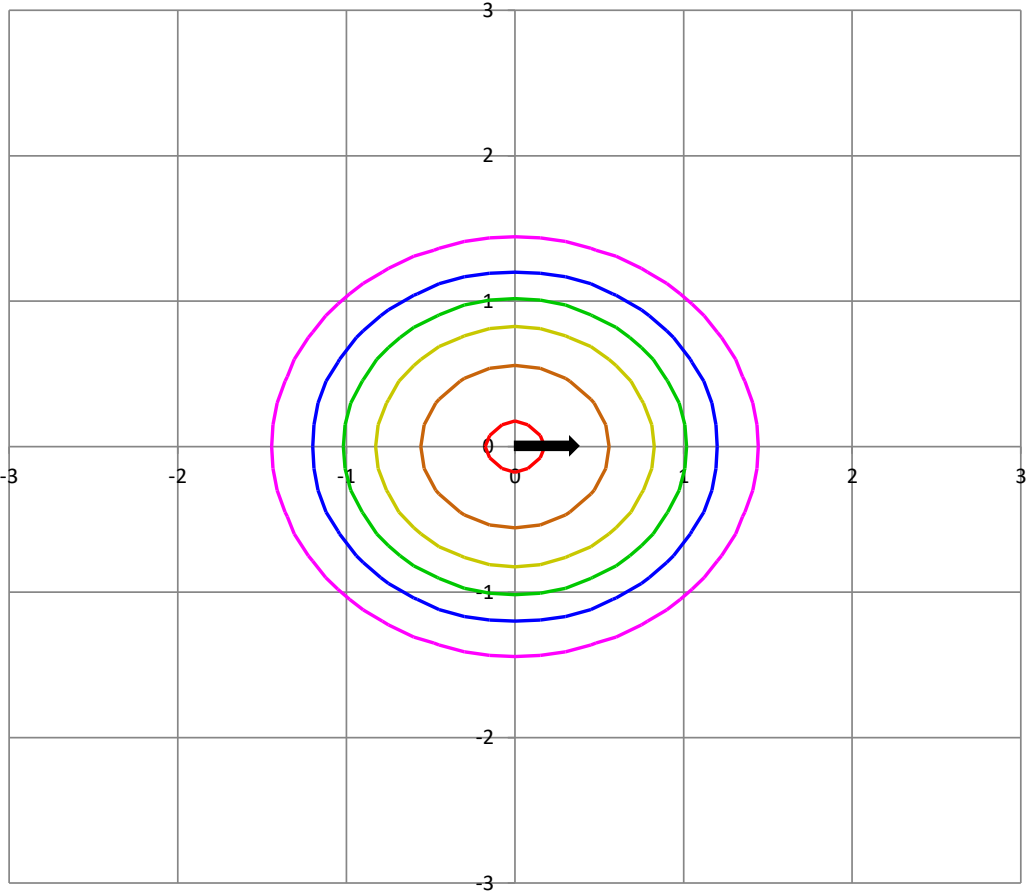
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	688.0 Candela
Central Cone Intensity:	688 Candela
Beam Flux:	631.9 Lumens
Beam Angle (0-180):	70.8 Degrees
Beam Angle (90-270):	70.8 Degrees
Field Angle (0-180):	110.1 Degrees
Field Angle (90-270):	110.1 Degrees





### ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height



