



8165 E. Kaiser Blvd. Anaheim, CA 92808  
p. 714.282.2270  
f. 714.676.5558

## Photometric Test Report

### IES ROAD REPORT

PHOTOMETRIC FILENAME : L031601308.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L031601208  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 3/14/2016  
[MANUFAC] VIVA RAILINGS  
[LUMCAT] 4000K LED High/Clear  
[LUMINAIRE] 1.5"L. X 40"W. X 1.25"H. RAIL LIGHT  
[MORE] 4000K LED High Power Clear  
[BALLASTCAT] N/A  
[LAMPPOSITION] 0,0  
[LAMPCAT] N/A  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[POWER SUPPLY] 12VDC CONSTANT VOLTAGE SOURCE  
[TEST CONDITION] CANDELA VALUES ARE GENERATED FROM LIGHT LABORATORY L031601304  
[MORE] BY USING TILT OF 30 DEGREES  
[INPUT] 12VDC, 15.40W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

IES Classification	Type III
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	886
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	58
Total Luminaire Watts	15.4
Ballast Factor	1.00
Upward Waste Light Ratio	0.04
Maximum Candela	445
Maximum Candela Angle	0H 30V
Maximum Candela (<90 Degrees Vertical)	445
Maximum Candela Angle (<90 Degrees Vertical)	0H 30V
Maximum Candela At 90 Degrees Vertical	89.02 (10.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	113.78 (12.8% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

**IES ROAD REPORT**  
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**LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	144.4	N.A.	16.3
FM - Front-Medium (30-60)	364.2	N.A.	41.1
FH - Front-High (60-80)	152.4	N.A.	17.2
FVH - Front-Very High (80-90)	35.8	N.A.	4.0
BL - Back-Low (0-30)	65.9	N.A.	7.4
BM - Back-Medium (30-60)	80.0	N.A.	9.0
BH - Back-High (60-80)	8.9	N.A.	1.0
BVH - Back-Very High (80-90)	0.2	N.A.	0.0
UL - Uplight-Low (90-100)	20.8	N.A.	2.3
UH - Uplight-High (100-180)	13.4	N.A.	1.5
Total	886.0	N.A.	100.0
BUG Rating	B0-U2-G1		

**IES ROAD REPORT**  
**PHOTOMETRIC FILENAME : L031601308.IES**

**CANDELA TABULATION**

<b>Vert. Angles</b>	<b>Horizontal Angles</b>									
	<u><b>0</b></u>	<u><b>5</b></u>	<u><b>10</b></u>	<u><b>15</b></u>	<u><b>20</b></u>	<u><b>25</b></u>	<u><b>30</b></u>	<u><b>35</b></u>	<u><b>40</b></u>	<u><b>45</b></u>
<b>0</b>	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46
<b>5</b>	289.80	289.90	290.01	288.57	287.49	286.09	284.59	282.80	280.73	278.38
<b>10</b>	340.90	341.07	338.99	337.04	334.04	330.38	325.83	320.34	314.39	307.62
<b>15</b>	388.39	387.04	385.68	382.41	378.36	372.98	366.47	359.31	350.46	340.08
<b>20</b>	423.96	423.76	420.46	416.71	412.59	407.92	401.11	391.84	382.05	370.05
<b>25</b>	439.07	438.07	436.34	434.54	431.84	426.77	421.61	413.66	404.64	392.62
<b>30</b>	445.00	443.32	441.60	439.11	436.52	432.09	427.04	419.90	412.71	401.75
<b>35</b>	439.07	438.15	436.72	435.26	432.41	429.24	423.50	417.28	408.16	397.88
<b>40</b>	423.96	423.14	421.58	420.70	420.12	416.59	412.94	405.37	397.26	387.00
<b>45</b>	388.39	388.21	388.03	388.04	389.50	389.57	387.41	384.77	377.87	369.55
<b>50</b>	340.90	341.03	341.17	341.29	342.41	343.07	343.17	343.36	344.05	343.26
<b>55</b>	289.80	290.49	290.50	291.13	290.03	289.28	289.82	290.61	293.24	297.84
<b>60</b>	251.46	251.15	250.16	248.90	246.91	243.70	240.71	238.89	238.03	242.38
<b>65</b>	210.18	210.65	211.28	210.90	209.52	207.79	203.24	198.97	194.09	193.34
<b>70</b>	171.67	171.78	171.94	172.51	172.94	171.44	170.00	167.57	162.58	156.33
<b>75</b>	138.69	139.33	139.98	140.77	140.98	140.69	139.84	138.44	135.27	129.68
<b>80</b>	113.61	113.78	113.69	113.66	112.97	111.97	112.24	111.70	109.40	104.72
<b>85</b>	98.59	98.26	97.08	94.92	92.56	90.70	88.06	86.95	85.65	81.72
<b>90</b>	89.02	88.09	86.09	82.66	78.19	74.01	70.34	66.37	62.45	57.77
<b>95</b>	78.79	77.73	74.54	69.57	64.14	58.86	53.68	48.55	43.57	38.48
<b>100</b>	71.74	70.24	66.08	60.25	53.96	46.72	39.73	33.75	28.85	24.05
<b>105</b>	55.71	55.05	53.35	50.05	44.57	37.79	30.27	22.79	17.50	13.02
<b>110</b>	32.81	32.80	32.59	31.62	29.66	26.40	21.53	15.35	8.36	3.91
<b>115</b>	15.86	15.82	14.69	13.47	12.12	9.69	5.73	1.00	0.00	0.00
<b>120</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>125</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>130</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>135</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>140</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>145</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>150</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>155</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>160</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>165</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>170</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>175</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<b>Vert. Angles</b>	<b>Horizontal Angles</b>									
	<u><b>50</b></u>	<u><b>55</b></u>	<u><b>60</b></u>	<u><b>65</b></u>	<u><b>70</b></u>	<u><b>75</b></u>	<u><b>80</b></u>	<u><b>85</b></u>	<u><b>90</b></u>	<u><b>95</b></u>
<b>0</b>	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46
<b>5</b>	275.79	272.99	270.00	266.86	263.61	260.26	256.85	253.42	249.95	246.48
<b>10</b>	300.23	293.41	286.96	280.30	273.43	266.39	259.29	252.60	246.06	239.56
<b>15</b>	329.07	317.52	305.71	293.72	281.49	269.22	258.67	249.23	239.89	230.71
<b>20</b>	355.51	340.31	323.64	305.78	287.57	270.81	256.58	243.00	230.49	218.74
<b>25</b>	376.49	359.52	338.06	316.04	293.13	271.16	250.43	233.29	218.83	205.53
<b>30</b>	388.30	370.23	348.11	323.10	296.40	269.17	244.05	221.88	204.41	189.54
<b>35</b>	385.70	371.88	352.75	328.47	298.71	266.96	235.67	210.45	188.44	173.79
<b>40</b>	375.39	362.99	348.89	329.08	300.71	265.14	229.14	198.36	173.86	156.53
<b>45</b>	360.08	349.86	337.52	321.83	298.19	264.16	220.70	184.19	156.65	136.89
<b>50</b>	339.14	331.60	321.50	307.36	286.83	255.92	210.32	166.64	136.61	117.18
<b>55</b>	304.67	304.97	297.80	283.84	264.81	236.25	195.55	146.82	114.23	95.01

**IES ROAD REPORT**  
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**CANDELA TABULATION - (Cont.)**

<b>60</b>	249.00	257.41	261.62	251.11	232.32	207.24	170.33	124.68	88.29	70.41
<b>65</b>	194.08	197.75	202.54	203.46	191.42	168.10	136.72	94.14	63.49	47.49
<b>70</b>	150.33	144.78	143.26	144.24	137.31	119.92	96.32	66.51	39.75	27.89
<b>75</b>	120.31	109.86	100.25	88.96	81.93	75.43	59.94	39.05	23.75	14.80
<b>80</b>	96.51	84.82	71.50	57.72	46.07	37.44	29.86	20.54	11.56	6.67
<b>85</b>	73.85	64.06	51.18	37.76	26.40	18.31	12.65	8.49	3.98	1.68
<b>90</b>	52.12	43.94	33.34	23.59	14.58	9.13	4.64	2.26	0.00	0.00
<b>95</b>	32.85	26.94	19.35	12.82	6.59	3.12	0.60	0.00	0.00	0.00
<b>100</b>	19.14	14.35	8.89	4.66	1.28	0.00	0.00	0.00	0.00	0.00
<b>105</b>	8.80	5.12	1.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>110</b>	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>115</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>120</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>125</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>130</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>135</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>140</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>145</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>150</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>155</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>160</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>165</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>170</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>175</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert.  
Angles**

**Horizontal Angles**

	<b><u>100</u></b>	<b><u>105</u></b>	<b><u>110</u></b>	<b><u>115</u></b>	<b><u>120</u></b>	<b><u>125</u></b>	<b><u>130</u></b>	<b><u>135</u></b>	<b><u>140</u></b>	<b><u>145</u></b>
<b>0</b>	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46	251.46
<b>5</b>	243.06	239.70	236.42	233.24	230.19	227.26	224.50	221.90	219.49	217.27
<b>10</b>	233.14	226.81	220.62	214.48	208.47	202.90	197.69	192.85	188.41	184.55
<b>15</b>	221.41	211.82	202.48	193.44	184.74	177.19	170.97	165.10	159.80	155.14
<b>20</b>	206.99	195.23	184.22	174.04	164.54	155.91	148.08	141.26	135.16	129.64
<b>25</b>	192.22	178.60	165.44	154.67	144.71	135.47	126.73	119.33	113.33	108.87
<b>30</b>	175.38	161.99	149.22	137.34	126.29	115.56	106.37	98.87	95.27	92.67
<b>35</b>	159.73	145.74	132.70	120.66	108.55	98.36	90.97	85.95	81.95	79.40
<b>40</b>	142.79	128.96	115.97	103.89	91.35	82.38	75.64	70.30	66.32	64.25
<b>45</b>	124.50	111.68	99.45	87.66	76.09	66.49	60.03	55.00	51.80	50.93
<b>50</b>	104.56	92.76	81.62	70.29	58.21	49.76	44.24	39.97	37.62	38.54
<b>55</b>	82.57	73.14	62.43	51.43	42.07	34.85	29.91	26.76	26.10	27.69
<b>60</b>	60.53	52.26	43.37	34.30	27.58	21.89	17.87	15.58	15.39	16.27
<b>65</b>	39.19	32.53	26.88	20.11	15.47	11.25	7.81	5.11	2.69	0.00
<b>70</b>	22.51	17.30	13.59	9.15	5.77	2.65	0.00	0.00	0.00	0.00
<b>75</b>	10.78	7.20	4.54	1.70	0.00	0.00	0.00	0.00	0.00	0.00
<b>80</b>	3.67	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>85</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>90</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>95</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>100</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>105</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>110</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>115</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>120</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>125</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>130</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES ROAD REPORT**  
**PHOTOMETRIC FILENAME : L031601308.IES**

**CANDELA TABULATION - (Cont.)**

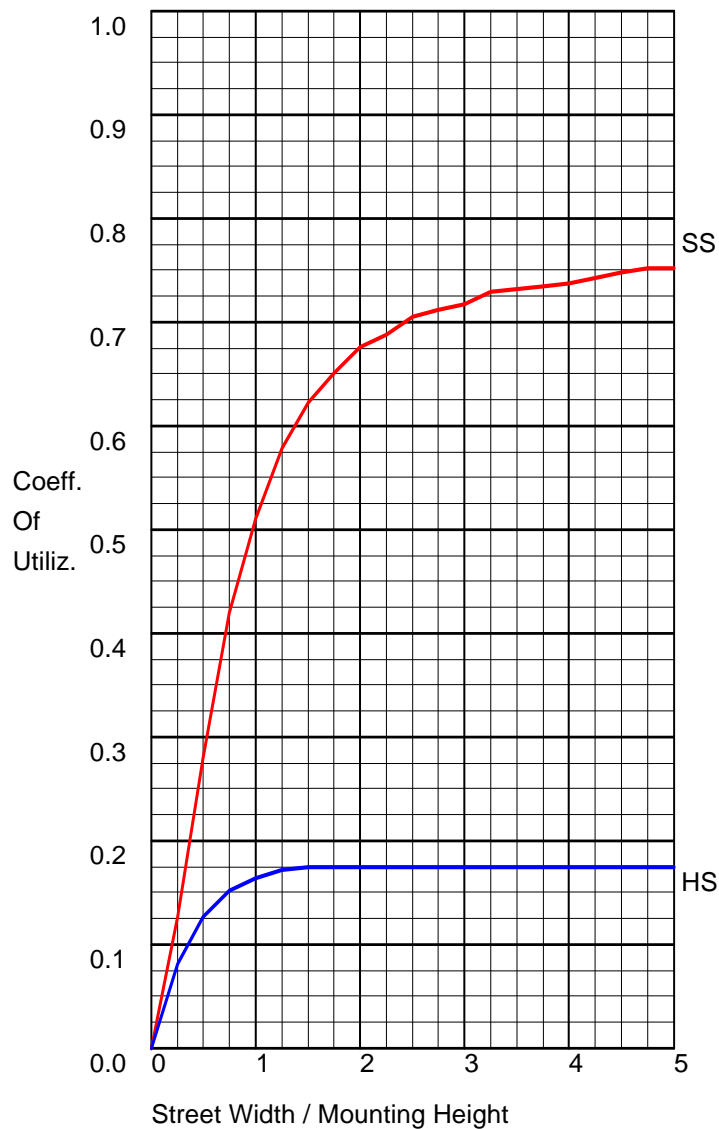
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert.  
Angles**

**Horizontal Angles**

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0	251.46	251.46	251.46	251.46	251.46	251.46	251.46
5	215.46	213.93	212.65	211.63	210.88	210.39	210.18
10	181.20	178.29	175.83	174.05	172.80	172.01	171.67
15	150.94	147.37	144.40	141.93	140.26	139.22	138.69
20	125.24	121.56	118.66	116.52	114.96	114.04	113.61
25	105.49	103.08	101.28	100.06	99.28	98.76	98.59
30	91.29	90.30	89.52	89.06	88.86	88.83	89.02
35	77.72	77.05	77.08	77.66	78.15	78.50	78.79
40	63.81	64.68	66.32	68.53	70.05	71.16	71.74
45	52.20	54.27	56.12	56.56	56.26	55.83	55.71
50	40.56	41.44	40.08	37.59	35.20	33.48	32.81
55	28.39	25.89	22.23	19.20	17.20	16.14	15.86
60	12.79	8.69	5.19	2.76	1.20	0.30	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00

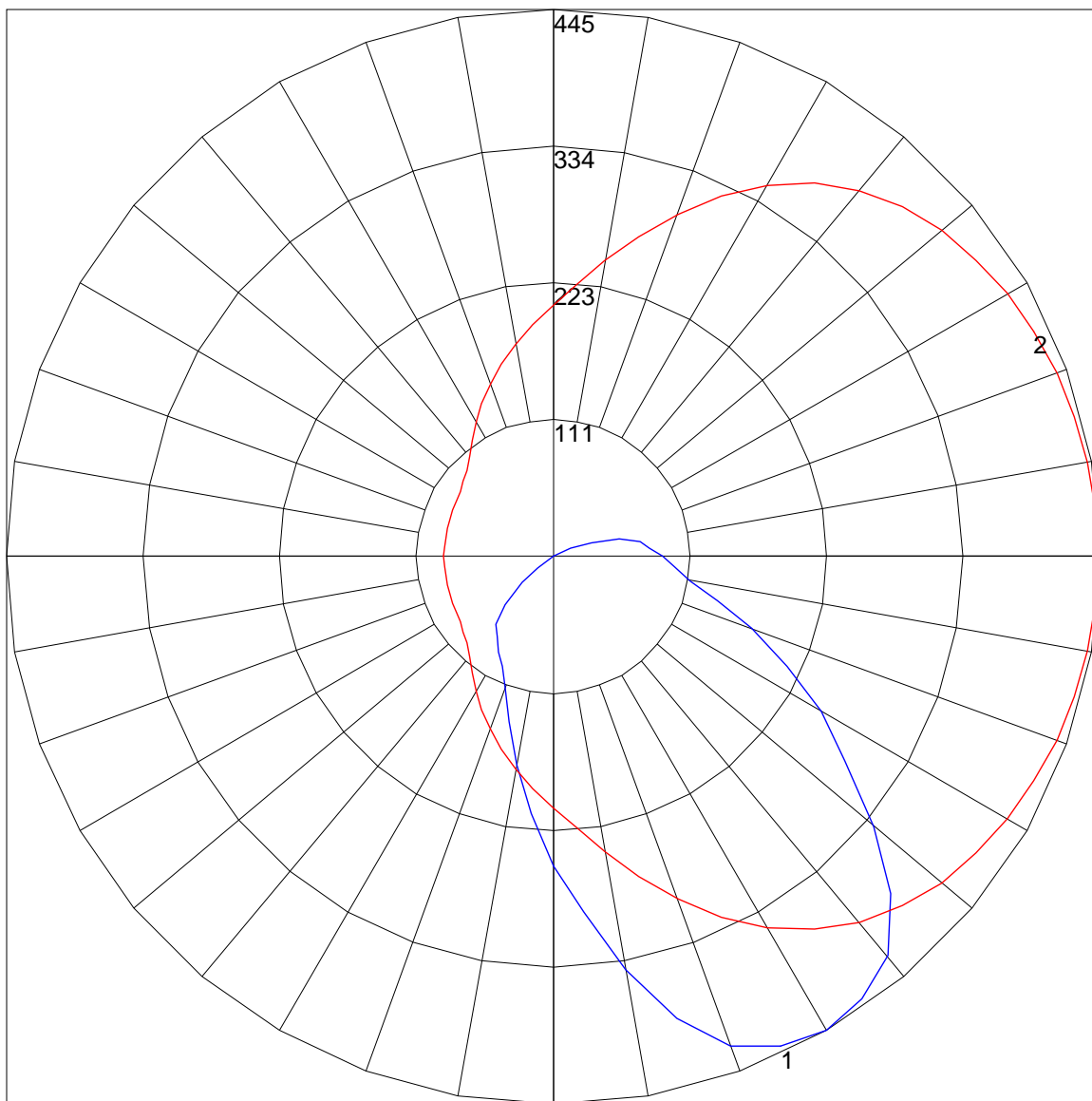
### COEFFICIENTS OF UTILIZATION



### FLUX DISTRIBUTION

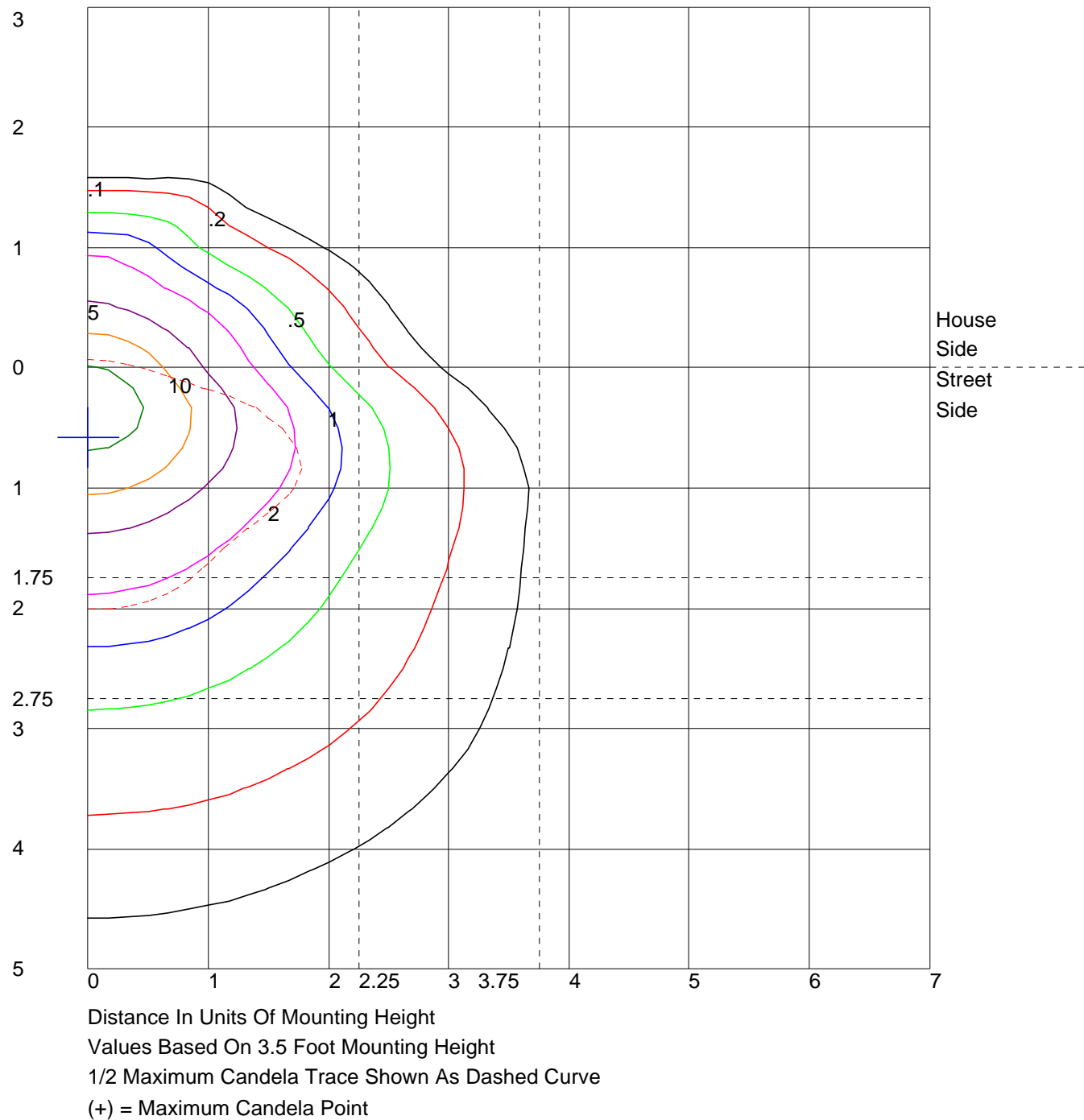
	Lumens	Percent Of Luminaire
Downward Street Side	696.8	78.6
Downward House Side	155.0	17.5
Downward Total	851.8	96.1
Upward Street Side	34.2	3.9
Upward House Side	0.0	0.0
Upward Total	34.2	3.9
Total Flux	886.0	100.0

POLAR GRAPH



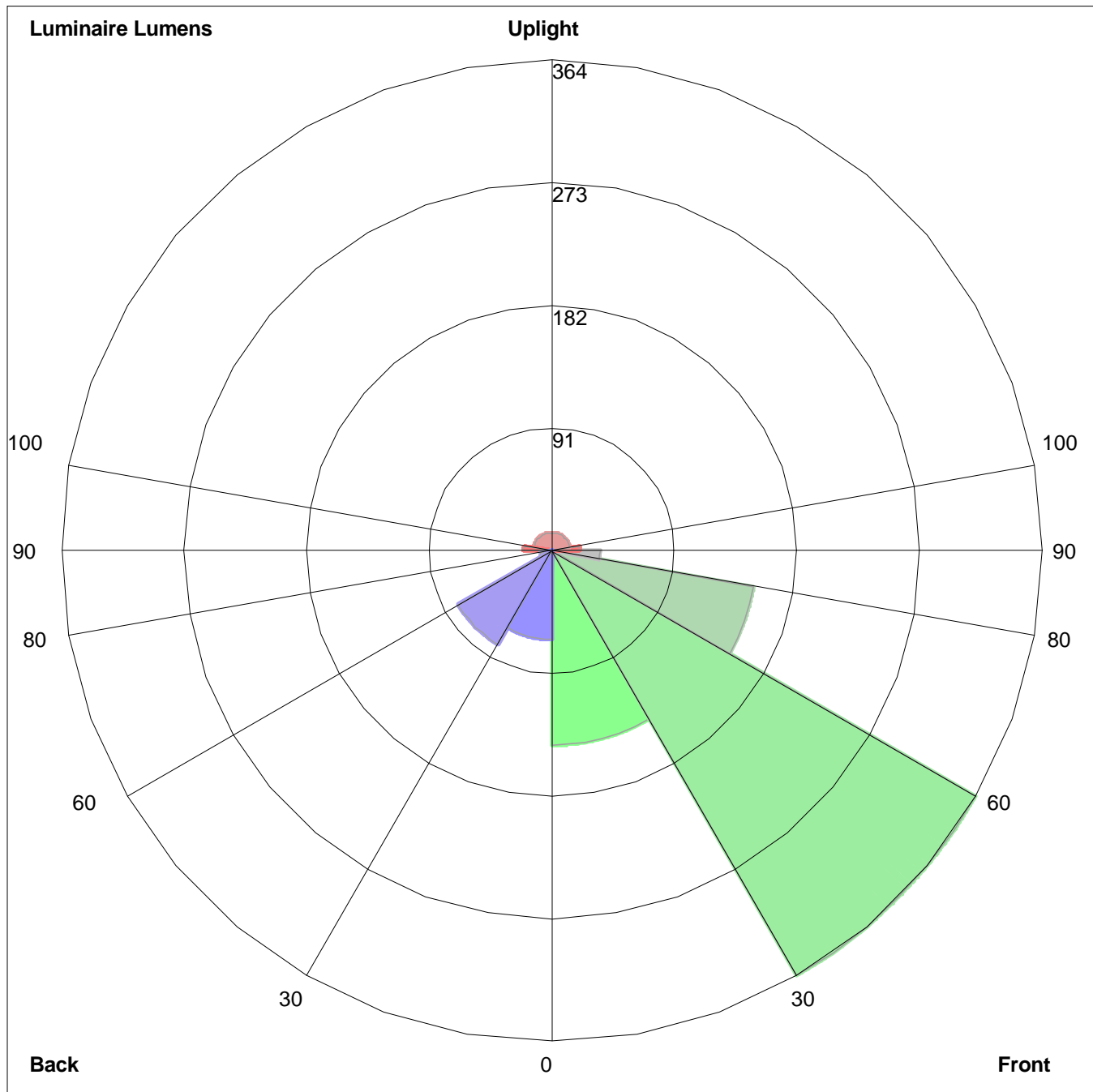
Maximum Candela = 445 Located At Horizontal Angle = 0, Vertical Angle = 30  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (30) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE





LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:  
Front: Low=144.4, Medium=364.2, High=152.4, Very High=35.8  
Back: Low=65.9, Medium=80.0, High=8.9, Very High=0.2  
Uplight: Low=20.8, High=13.4

BUG Rating : B0-U2-G1