



8165 E. Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
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Photometric Test Report

IES ROAD REPORT

PHOTOMETRIC FILENAME : L031601305.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L031601305
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 3/14/2016
[MANUFAC] VIVA RAILINGS
[LUMCAT] 3000K LED Med/Clear
[LUMINAIRE] 1.5"L. X 40"W. X 1.25"H. RAIL LIGHT
[MORE] 3000K LED Med 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.
[TEST CONDITION] CANDELA VALUES ARE GENERATED FROM LIGHT LABORATORY L031601301
[MORE] BY USING TILT OF 30 DEGREES
[POWER SUPPLY] 12VDC CONSTANT VOLTAGE SOURCE
[INPUT] 12VDC, 9.84W
[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	619
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	63
Total Luminaire Watts	9.84
Ballast Factor	1.00
Upward Waste Light Ratio	0.04
Maximum Candela	304.98
Maximum Candela Angle	10H 30V
Maximum Candela (<90 Degrees Vertical)	304.98
Maximum Candela Angle (<90 Degrees Vertical)	10H 30V
Maximum Candela At 90 Degrees Vertical	61.92 (10.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	90.11 (14.6% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	97.5	N.A.	15.7
FM - Front-Medium (30-60)	251.6	N.A.	40.6
FH - Front-High (60-80)	108.5	N.A.	17.5
FVH - Front-Very High (80-90)	26.3	N.A.	4.3
BL - Back-Low (0-30)	47.8	N.A.	7.7
BM - Back-Medium (30-60)	57.2	N.A.	9.2
BH - Back-High (60-80)	6.3	N.A.	1.0
BVH - Back-Very High (80-90)	0.1	N.A.	0.0
UL - Uplight-Low (90-100)	14.6	N.A.	2.4
UH - Uplight-High (100-180)	9.3	N.A.	1.5
Total	619.2	N.A.	100.0
BUG Rating	B0-U2-G1		

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CANDELA TABULATION

Vert. Angles	Horizontal Angles									
	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96
5	193.65	193.67	193.68	193.07	192.60	192.00	191.30	190.48	189.56	188.55
10	223.69	223.71	222.41	220.55	218.15	215.37	212.23	208.78	205.53	201.82
15	257.33	256.88	254.81	251.88	247.23	242.40	237.50	232.01	226.33	220.26
20	292.32	291.15	287.78	281.02	276.03	270.60	263.90	256.24	247.83	239.36
25	304.23	303.72	302.92	301.62	299.76	293.81	288.03	277.72	265.73	255.10
30	299.79	302.93	304.98	303.51	302.56	298.41	294.94	287.49	277.86	271.66
35	304.23	304.42	303.17	303.27	300.20	294.78	287.33	279.93	278.23	278.08
40	292.32	290.74	286.32	286.31	286.29	281.96	278.23	278.19	278.03	274.82
45	257.33	256.45	253.47	253.24	252.74	252.92	257.78	263.71	266.96	267.75
50	223.69	221.62	220.54	220.94	222.36	227.26	230.36	234.54	238.37	244.41
55	193.65	193.23	193.39	194.16	194.17	195.51	198.46	201.77	205.65	207.65
60	177.96	177.06	175.74	174.46	173.85	173.00	170.65	168.52	166.62	169.26
65	148.01	148.15	148.52	148.97	149.23	149.97	149.09	145.71	140.44	135.34
70	119.98	119.65	119.34	120.13	120.69	120.26	121.82	122.45	119.24	112.52
75	108.66	107.98	106.37	104.29	102.89	101.49	98.77	97.80	96.43	92.28
80	90.11	89.92	89.71	89.39	88.57	87.03	84.57	80.73	77.04	72.64
85	73.58	73.28	72.68	71.94	71.28	70.19	68.30	66.13	62.23	57.89
90	61.92	61.31	60.09	58.73	57.15	54.93	52.15	49.75	46.89	42.65
95	51.94	51.32	49.84	47.93	45.51	42.49	39.29	36.03	32.64	28.86
100	41.20	40.62	39.18	37.13	34.47	31.57	28.24	24.60	21.27	18.02
105	36.41	35.40	32.77	29.54	25.98	22.34	18.65	15.20	12.40	9.68
110	31.55	30.85	28.70	25.24	20.86	16.44	12.00	8.00	5.11	2.82
115	16.70	16.81	15.96	14.73	11.87	7.58	3.41	0.50	0.00	0.00
120	0.00	0.00	0.00	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	0.00	0.00	0.00
130	0.00	0.00	0.00	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	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>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96
5	187.46	186.29	185.06	183.78	182.46	181.12	179.76	178.39	176.07	173.63
10	197.74	194.57	192.02	189.35	186.59	183.75	180.89	177.00	172.75	168.47
15	213.70	206.79	200.71	195.44	190.07	184.72	179.76	174.88	169.85	164.65
20	231.30	222.69	213.29	203.56	193.97	185.64	178.88	172.40	165.50	156.86
25	246.73	238.02	226.12	213.53	199.94	187.29	176.07	166.81	158.56	150.30
30	263.29	250.90	237.19	222.37	205.67	187.92	171.66	158.99	149.25	139.50
35	273.26	262.91	246.86	228.74	209.34	187.43	165.00	149.75	138.17	127.96
40	270.00	264.44	255.25	233.61	209.32	184.64	158.98	138.35	124.30	114.40
45	263.00	255.39	247.16	232.18	207.78	179.56	151.45	125.43	109.14	98.01
50	247.59	242.34	229.92	219.78	202.45	174.75	143.37	113.90	94.50	82.68
55	210.67	215.02	213.26	200.09	189.56	166.12	132.96	101.51	78.02	66.40

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CANDELA TABULATION - (Cont.)

60	172.28	174.82	179.96	181.89	163.80	149.69	119.43	86.57	61.37	48.88
65	132.70	134.58	138.54	141.18	138.31	120.01	101.74	68.79	44.24	32.65
70	104.78	99.26	98.83	98.89	99.93	89.24	69.41	45.86	27.03	18.57
75	85.60	76.78	68.88	62.38	59.07	52.73	41.15	26.00	15.48	9.76
80	68.27	60.08	50.03	39.82	31.48	25.05	19.65	13.93	7.39	4.33
85	52.75	46.11	36.59	26.39	17.62	12.02	8.09	5.69	2.67	1.11
90	38.58	32.22	24.53	16.92	10.06	6.07	3.04	1.50	0.00	0.00
95	24.70	19.96	14.09	9.27	4.61	2.10	0.39	0.00	0.00	0.00
100	14.52	10.83	6.61	3.37	0.91	0.00	0.00	0.00	0.00	0.00
105	6.79	3.97	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.45	0.00	0.00	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	0.00	0.00	0.00
120	0.00	0.00	0.00	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	0.00	0.00	0.00
130	0.00	0.00	0.00	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	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>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96	177.96
5	171.21	168.85	166.54	164.30	162.15	160.09	158.13	156.29	154.58	153.01
10	164.19	159.89	155.61	151.04	146.30	142.01	138.05	134.45	131.20	128.46
15	158.08	150.02	142.17	134.64	127.45	122.09	119.11	116.59	114.61	113.08
20	147.68	138.02	129.00	121.49	115.24	110.51	107.16	104.73	102.33	99.87
25	138.71	126.67	115.39	108.35	103.78	100.55	97.48	93.47	89.06	85.12
30	128.37	115.66	105.47	98.24	93.63	89.19	84.08	78.67	74.00	70.13
35	115.93	103.36	94.15	87.36	82.23	76.46	70.42	64.88	60.59	57.79
40	102.99	91.31	82.04	75.59	70.17	63.16	56.96	51.99	48.73	46.41
45	88.38	78.06	69.20	63.40	56.85	49.94	44.40	40.31	37.27	35.09
50	74.43	65.17	57.74	50.90	43.74	37.40	32.81	29.19	26.54	24.86
55	58.51	52.28	45.57	38.13	31.53	25.96	22.03	19.12	16.80	15.74
60	42.97	37.86	31.87	25.64	20.84	16.45	13.18	10.66	8.75	7.96
65	27.75	23.99	19.65	14.88	11.71	8.61	5.86	3.58	1.53	0.00
70	15.66	12.42	9.90	6.81	4.48	2.06	0.00	0.00	0.00	0.00
75	7.35	5.05	3.24	1.24	0.00	0.00	0.00	0.00	0.00	0.00
80	2.44	0.98	0.00	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	0.00	0.00	0.00
90	0.00	0.00	0.00	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	0.00	0.00	0.00
100	0.00	0.00	0.00	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	0.00	0.00	0.00
110	0.00	0.00	0.00	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	0.00	0.00	0.00
120	0.00	0.00	0.00	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	0.00	0.00	0.00
130	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 : L031601305.IES

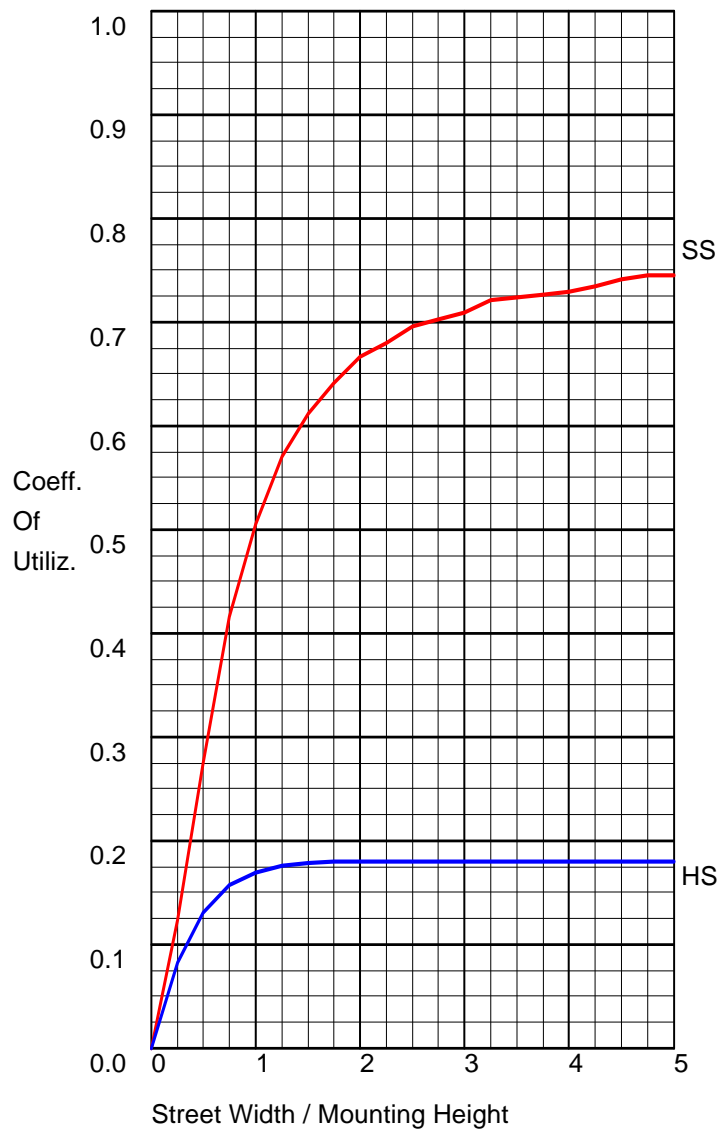
CANDELA TABULATION - (Cont.)

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. Horizontal Angles

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0	177.96	177.96	177.96	177.96	177.96	177.96	177.96
5	151.72	150.64	149.73	149.01	148.48	148.15	148.01
10	126.15	124.20	122.62	121.44	120.62	120.13	119.98
15	111.81	110.79	109.98	109.35	108.93	108.70	108.66
20	97.53	95.35	93.48	92.01	90.90	90.33	90.11
25	81.66	79.02	76.93	75.41	74.30	73.75	73.58
30	67.35	65.16	63.70	62.70	62.16	61.90	61.92
35	55.67	54.07	53.00	52.33	52.03	51.89	51.94
40	44.55	43.03	41.98	41.35	41.11	41.07	41.20
45	33.54	32.68	32.67	33.55	34.75	35.82	36.41
50	24.18	24.87	27.06	29.09	30.53	31.30	31.55
55	16.53	18.66	19.84	19.41	18.15	17.06	16.70
60	8.16	7.27	5.24	3.01	1.30	0.32	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

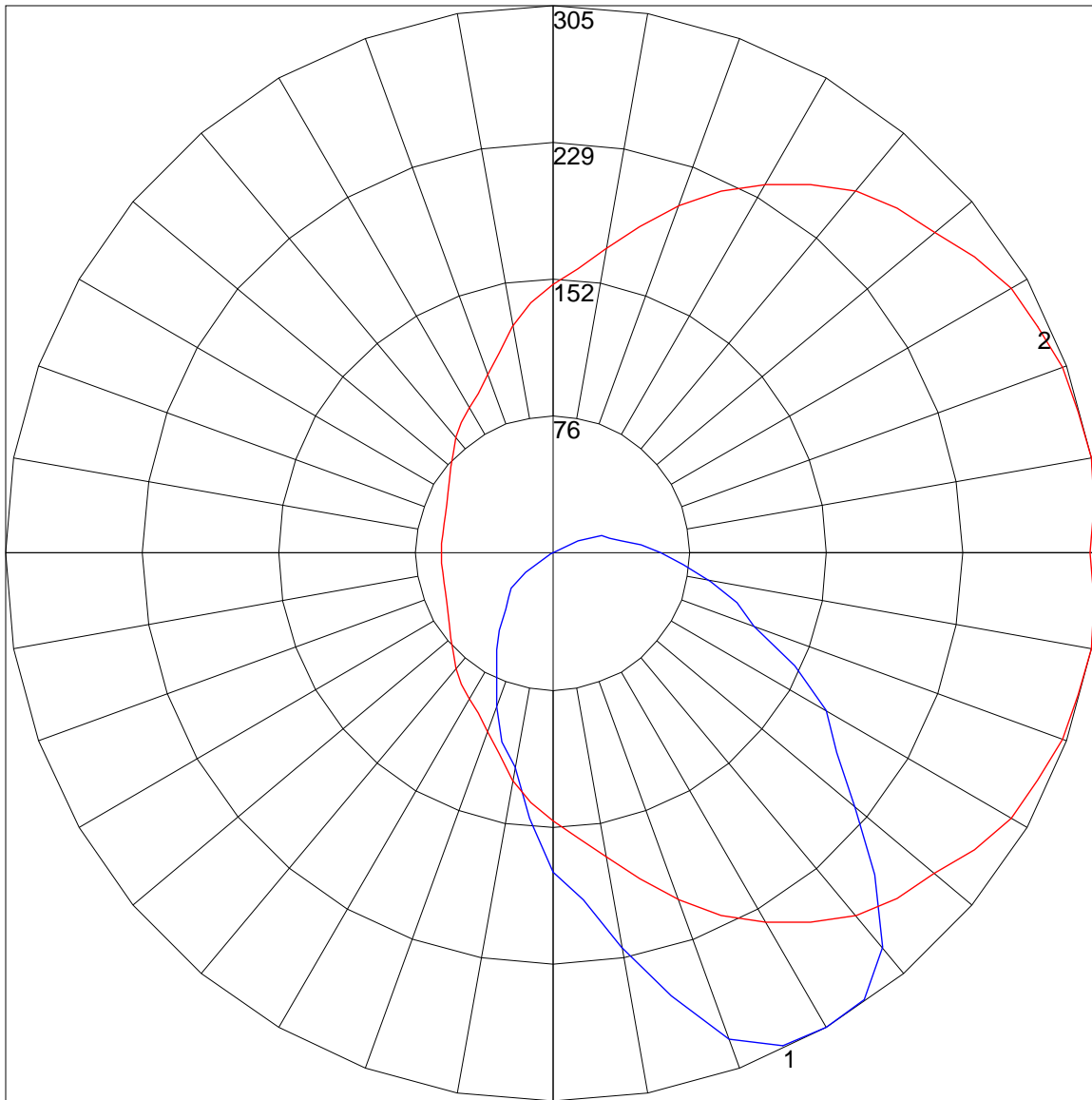
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

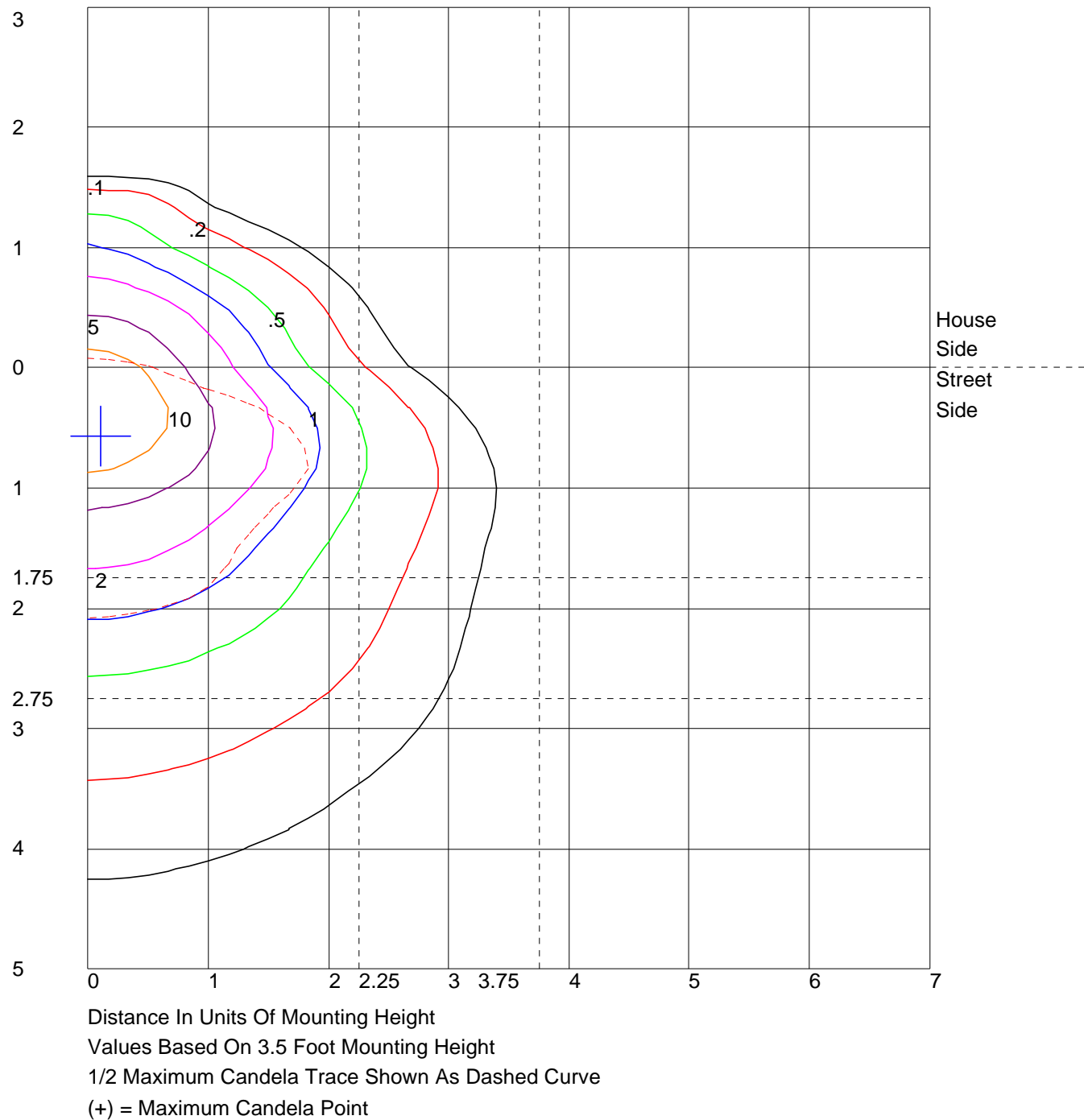
	Lumens	Percent Of Luminaire
Downward Street Side	484.0	78.1
Downward House Side	111.4	18.0
Downward Total	595.4	96.1
Upward Street Side	24.0	3.9
Upward House Side	0.0	0.0
Upward Total	24.0	3.9
Total Flux	619.4	100.0

POLAR GRAPH

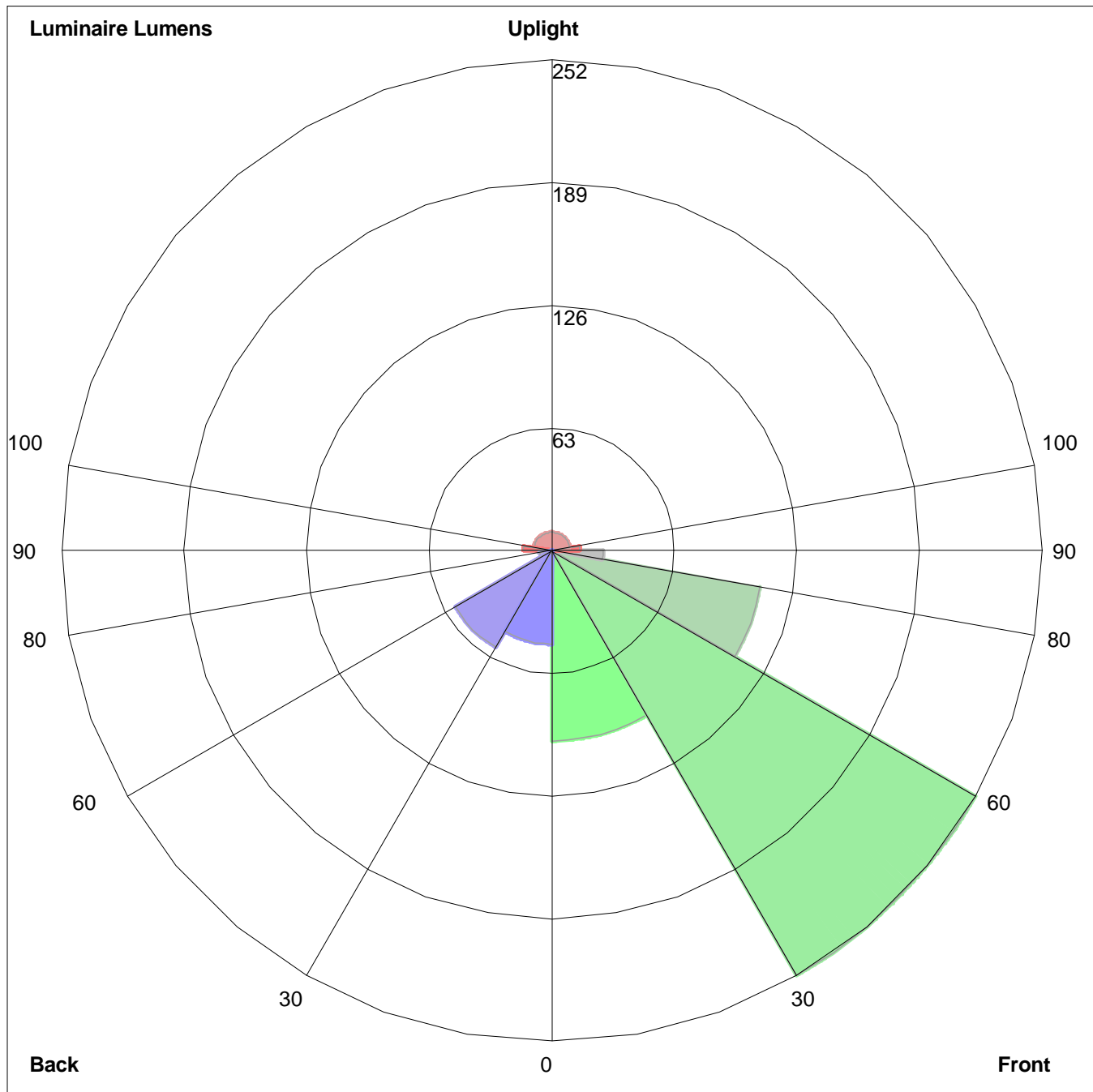


Maximum Candela = 304.98 Located At Horizontal Angle = 10, Vertical Angle = 30
1 - Vertical Plane Through Horizontal Angles (10 - 190) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (30) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=97.5, Medium=251.6, High=108.5, Very High=26.3
Back: Low=47.8, Medium=57.2, High=6.3, Very High=0.1
Uplight: Low=14.6, High=9.3

BUG Rating : B0-U2-G1