

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : 3421-BK-35K-12-BK-00.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] 3296  
 [ECN] 3314  
 [TESTLAB] Tempo LLC  
 [ISSUE DATE] 12/5/2017 12:52:29 PM  
 [MANUFAC] Tempo LLC  
 [LUMCAT] 3401-BK-35K-12-BK-00  
 [LUMINAIRE] Black aluminum housing with baffle, no graphic black plate  
 [LAMP] Three (3) white LEDs (3500K)  
 [ELECTRICALS] 12.08 VAC, 0.04 A, 0.9308 PF, 25% ATHD

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	26
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	55
Total Luminaire Watts	0.48
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.48
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.56
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.04 ft
Luminous Width (90-270)	0.25 ft
Luminous Height	0.02 ft



**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	14415	12579	4056
55	16035	13818	724
65	17883	15322	249
75	10355	15331	122
85	0	622	0

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**CANDELA TABULATION**

	<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>
<b>0.0</b>	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53
<b>2.5</b>	8.16	8.16	8.16	8.16	8.12	8.10	8.08	8.05	8.04	7.98
<b>5.0</b>	8.78	8.78	8.78	8.74	8.71	8.66	8.61	8.55	8.49	8.42
<b>7.5</b>	9.36	9.36	9.33	9.30	9.26	9.19	9.12	9.04	8.94	8.84
<b>10.0</b>	9.92	9.92	9.88	9.84	9.78	9.70	9.61	9.50	9.38	9.24
<b>12.5</b>	10.45	10.45	10.40	10.35	10.27	10.18	10.07	9.94	9.79	9.62
<b>15.0</b>	10.94	10.94	10.89	10.83	10.74	10.64	10.52	10.36	10.21	9.97
<b>17.5</b>	11.40	11.40	11.35	11.28	11.20	11.08	10.93	10.76	10.53	10.27
<b>20.0</b>	11.85	11.85	11.79	11.71	11.61	11.49	11.32	11.09	10.84	10.55
<b>22.5</b>	12.26	12.25	12.19	12.12	12.01	11.88	11.65	11.40	11.12	10.82
<b>25.0</b>	12.65	12.63	12.58	12.49	12.38	12.19	11.97	11.69	11.39	11.06
<b>27.5</b>	13.00	12.98	12.92	12.84	12.71	12.50	12.25	11.96	11.64	11.29
<b>30.0</b>	13.33	13.31	13.26	13.17	13.02	12.79	12.52	12.21	11.86	11.46
<b>32.5</b>	13.65	13.63	13.58	13.49	13.30	13.06	12.78	12.46	12.06	11.63
<b>35.0</b>	13.95	13.93	13.86	13.77	13.55	13.30	13.02	12.65	12.24	11.79
<b>37.5</b>	14.21	14.19	14.13	14.00	13.77	13.52	13.21	12.84	12.40	11.93
<b>40.0</b>	14.44	14.42	14.36	14.21	13.98	13.72	13.37	12.98	12.54	12.04
<b>42.5</b>	14.65	14.62	14.55	14.39	14.17	13.88	13.51	13.11	12.66	12.11
<b>45.0</b>	14.81	14.79	14.73	14.55	14.33	14.01	13.64	13.23	12.73	12.17
<b>47.5</b>	14.97	14.95	14.89	14.70	14.46	14.14	13.75	13.30	12.79	12.23
<b>50.0</b>	15.10	15.08	15.00	14.81	14.56	14.23	13.84	13.36	12.85	12.25
<b>52.5</b>	15.20	15.18	15.08	14.89	14.62	14.29	13.88	13.39	12.88	12.24
<b>55.0</b>	15.27	15.24	15.12	14.93	14.65	14.33	13.90	13.41	12.85	12.20
<b>57.5</b>	15.29	15.26	15.13	14.94	14.66	14.32	13.90	13.38	12.80	12.15
<b>60.0</b>	15.28	15.25	15.13	14.91	14.64	14.28	13.87	13.33	12.75	12.08
<b>62.5</b>	15.24	15.22	15.09	14.87	14.58	14.22	13.78	13.25	12.66	11.96
<b>65.0</b>	15.17	15.14	14.99	14.79	14.47	14.11	13.68	13.15	12.53	11.82
<b>67.5</b>	15.03	14.85	14.67	14.46	14.29	13.86	13.51	12.91	12.36	11.68
<b>70.0</b>	13.97	13.43	13.39	13.31	13.18	13.29	12.67	12.54	12.04	11.23
<b>72.5</b>	11.90	10.82	10.79	10.99	10.96	10.91	11.29	11.29	10.61	10.58
<b>75.0</b>	7.44	6.18	6.30	6.50	7.25	7.41	8.48	8.22	8.79	9.76
<b>77.5</b>	3.04	2.43	2.48	2.64	3.27	3.87	4.61	4.79	6.38	7.10
<b>80.0</b>	0.93	0.55	0.62	0.78	1.01	1.34	1.34	2.49	3.64	3.99
<b>82.5</b>	0.02	0.02	0.03	0.04	0.13	0.20	0.59	0.95	1.08	0.92
<b>85.0</b>	0.00	0.00	0.02	0.02	0.02	0.05	0.02	0.02	0.07	0.30
<b>87.5</b>	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.03	0.15
<b>90.0</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**

	<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>
<b>0.0</b>	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53
<b>2.5</b>	7.94	7.92	7.85	7.80	7.75	7.70	7.66	7.59	7.53	7.48
<b>5.0</b>	8.34	8.25	8.15	8.06	7.96	7.86	7.75	7.65	7.53	7.41
<b>7.5</b>	8.72	8.59	8.46	8.31	8.17	8.02	7.85	7.68	7.52	7.35
<b>10.0</b>	9.11	8.93	8.76	8.56	8.40	8.17	7.95	7.74	7.52	7.29
<b>12.5</b>	9.45	9.24	9.00	8.76	8.50	8.24	7.96	7.69	7.42	7.15
<b>15.0</b>	9.72	9.47	9.21	8.90	8.61	8.29	7.97	7.64	7.31	6.98
<b>17.5</b>	9.99	9.71	9.38	9.05	8.72	8.35	7.98	7.59	7.21	6.82
<b>20.0</b>	10.25	9.91	9.56	9.19	8.79	8.39	8.00	7.54	7.11	6.66
<b>22.5</b>	10.48	10.12	9.74	9.31	8.86	8.39	7.92	7.46	6.95	6.44
<b>25.0</b>	10.71	10.29	9.86	9.38	8.90	8.38	7.86	7.33	6.78	6.23
<b>27.5</b>	10.87	10.43	9.96	9.45	8.93	8.37	7.80	7.22	6.62	6.01
<b>30.0</b>	11.03	10.55	10.06	9.52	8.95	8.37	7.74	7.11	6.46	5.80

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**CANDELA TABULATION - (Cont.)**

32.5	11.16	10.68	10.13	9.57	8.95	8.28	7.55	6.85	6.16	5.49
35.0	11.29	10.77	10.18	9.56	8.90	8.18	7.36	6.58	5.87	5.17
37.5	11.40	10.83	10.20	9.57	8.86	8.09	7.17	6.31	5.58	4.87
40.0	11.49	10.86	10.21	9.53	8.80	8.02	7.02	6.05	5.28	4.56
42.5	11.52	10.89	10.21	9.50	8.51	7.26	5.85	4.78	4.14	3.64
45.0	11.55	10.92	10.19	9.26	7.78	6.13	4.50	3.45	3.01	2.72
47.5	11.58	10.89	10.13	9.13	7.22	5.06	3.16	2.11	1.87	1.81
50.0	11.57	10.84	10.06	9.06	6.83	4.09	1.83	0.74	0.73	0.94
52.5	11.53	10.78	9.99	9.02	6.37	3.30	1.42	0.58	0.59	0.71
55.0	11.49	10.73	9.70	8.04	5.39	2.59	1.09	0.46	0.45	0.52
57.5	11.42	10.63	9.27	7.03	4.31	1.78	0.74	0.35	0.31	0.32
60.0	11.31	10.49	8.98	6.13	3.19	0.89	0.31	0.22	0.17	0.12
62.5	11.19	10.35	8.84	5.30	2.35	0.53	0.23	0.19	0.14	0.10
65.0	11.05	10.13	8.09	4.30	1.88	0.47	0.21	0.17	0.12	0.08
67.5	10.87	9.58	6.89	3.18	1.29	0.38	0.19	0.14	0.09	0.06
70.0	10.60	9.22	5.78	1.94	0.54	0.23	0.17	0.11	0.06	0.04
72.5	10.27	8.95	4.74	1.02	0.17	0.18	0.14	0.09	0.05	0.03
75.0	9.34	7.47	3.73	0.88	0.18	0.17	0.12	0.07	0.04	0.03
77.5	6.50	5.10	2.53	0.63	0.18	0.15	0.10	0.04	0.02	0.02
80.0	3.59	2.60	1.15	0.28	0.18	0.15	0.07	0.02	0.00	0.00
82.5	0.84	0.70	0.33	0.11	0.14	0.12	0.06	0.00	0.00	0.00
85.0	0.55	0.49	0.23	0.07	0.10	0.08	0.05	0.00	0.00	0.00
87.5	0.28	0.25	0.13	0.04	0.06	0.05	0.03	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert. Horizontal Angles**  
**Angles**

	<b>100</b>	<b>105</b>	<b>110</b>	<b>115</b>	<b>120</b>	<b>125</b>	<b>130</b>	<b>135</b>	<b>140</b>	<b>145</b>
0.0	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53
2.5	7.42	7.37	7.31	7.27	7.21	7.16	7.12	7.08	7.04	7.02
5.0	7.30	7.19	7.08	6.98	6.88	6.78	6.69	6.62	6.53	6.48
7.5	7.18	7.01	6.87	6.69	6.54	6.39	6.25	6.12	6.00	5.89
10.0	7.06	6.86	6.62	6.40	6.20	5.99	5.80	5.64	5.47	5.32
12.5	6.85	6.58	6.31	6.06	5.81	5.58	5.35	5.13	4.94	4.74
15.0	6.66	6.31	6.01	5.68	5.38	5.11	4.86	4.62	4.39	4.15
17.5	6.43	6.04	5.66	5.29	4.95	4.62	4.32	4.03	3.77	3.54
20.0	6.22	5.80	5.34	4.92	4.52	4.15	3.79	3.45	3.14	2.80
22.5	5.95	5.46	4.99	4.54	4.11	3.66	3.25	2.81	2.35	1.95
25.0	5.68	5.13	4.61	4.10	3.62	3.16	2.63	2.06	1.62	1.21
27.5	5.43	4.81	4.26	3.67	3.13	2.54	1.91	1.45	0.84	0.53
30.0	5.14	4.49	3.85	3.23	2.60	1.88	1.28	0.69	0.41	0.24
32.5	4.80	4.12	3.48	2.80	2.03	1.32	0.66	0.34	0.20	0.13
35.0	4.46	3.75	3.02	2.28	1.46	0.69	0.31	0.19	0.13	0.11
37.5	4.14	3.37	2.59	1.72	0.94	0.34	0.17	0.13	0.10	0.09
40.0	3.78	3.00	2.13	1.21	0.49	0.18	0.13	0.10	0.08	0.07
42.5	3.10	2.47	1.62	0.78	0.20	0.12	0.09	0.08	0.07	0.05
45.0	2.39	1.85	1.07	0.41	0.10	0.09	0.06	0.05	0.05	0.03
47.5	1.71	1.25	0.64	0.20	0.08	0.06	0.04	0.03	0.03	0.00
50.0	1.07	0.70	0.29	0.11	0.06	0.05	0.04	0.01	0.00	0.00
52.5	0.78	0.39	0.09	0.07	0.05	0.03	0.02	0.00	0.00	0.00
55.0	0.55	0.26	0.07	0.05	0.04	0.02	0.00	0.00	0.00	0.00
57.5	0.33	0.16	0.06	0.04	0.02	0.00	0.00	0.00	0.00	0.00
60.0	0.10	0.08	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00
62.5	0.06	0.05	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00
65.0	0.05	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67.5	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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**CANDELA TABULATION - (Cont.)**

70.0	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
72.5	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
77.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
82.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert. Horizontal Angles**  
**Angles**

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	7.53	7.53	7.53	7.53	7.53	7.53	7.53
2.5	6.97	6.95	6.93	6.91	6.90	6.89	6.89
5.0	6.39	6.35	6.30	6.26	6.24	6.23	6.22
7.5	5.80	5.71	5.65	5.59	5.56	5.54	5.53
10.0	5.19	5.10	4.99	4.92	4.86	4.83	4.82
12.5	4.58	4.43	4.32	4.24	4.16	4.12	4.11
15.0	3.95	3.80	3.65	3.51	3.44	3.39	3.38
17.5	3.34	3.07	2.85	2.65	2.50	2.42	2.39
20.0	2.46	2.18	1.93	1.77	1.65	1.58	1.56
22.5	1.66	1.42	1.17	0.91	0.76	0.72	0.73
25.0	0.87	0.55	0.44	0.37	0.27	0.22	0.20
27.5	0.35	0.24	0.17	0.14	0.13	0.12	0.11
30.0	0.15	0.13	0.12	0.10	0.09	0.07	0.05
32.5	0.12	0.10	0.08	0.04	0.00	0.00	0.00
35.0	0.09	0.06	0.03	0.00	0.00	0.00	0.00
37.5	0.06	0.03	0.00	0.00	0.00	0.00	0.00
40.0	0.03	0.00	0.00	0.00	0.00	0.00	0.00
42.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
52.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
57.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
62.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
72.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
77.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
82.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	2.76	N.A.	10.50
0-30	5.81	N.A.	22.10
0-40	9.75	N.A.	37.10
0-60	18.81	N.A.	71.70
0-80	26.09	N.A.	99.40
0-90	26.25	N.A.	100.00
10-90	25.54	N.A.	97.30
20-40	6.99	N.A.	26.60
20-50	11.45	N.A.	43.60
40-70	13.66	N.A.	52.00
60-80	7.28	N.A.	27.70
70-80	2.68	N.A.	10.20
80-90	0.16	N.A.	0.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	26.25	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	0.71
10-20	2.04
20-30	3.06
30-40	3.94
40-50	4.45
50-60	4.61
60-70	4.60
70-80	2.68
80-90	0.16
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

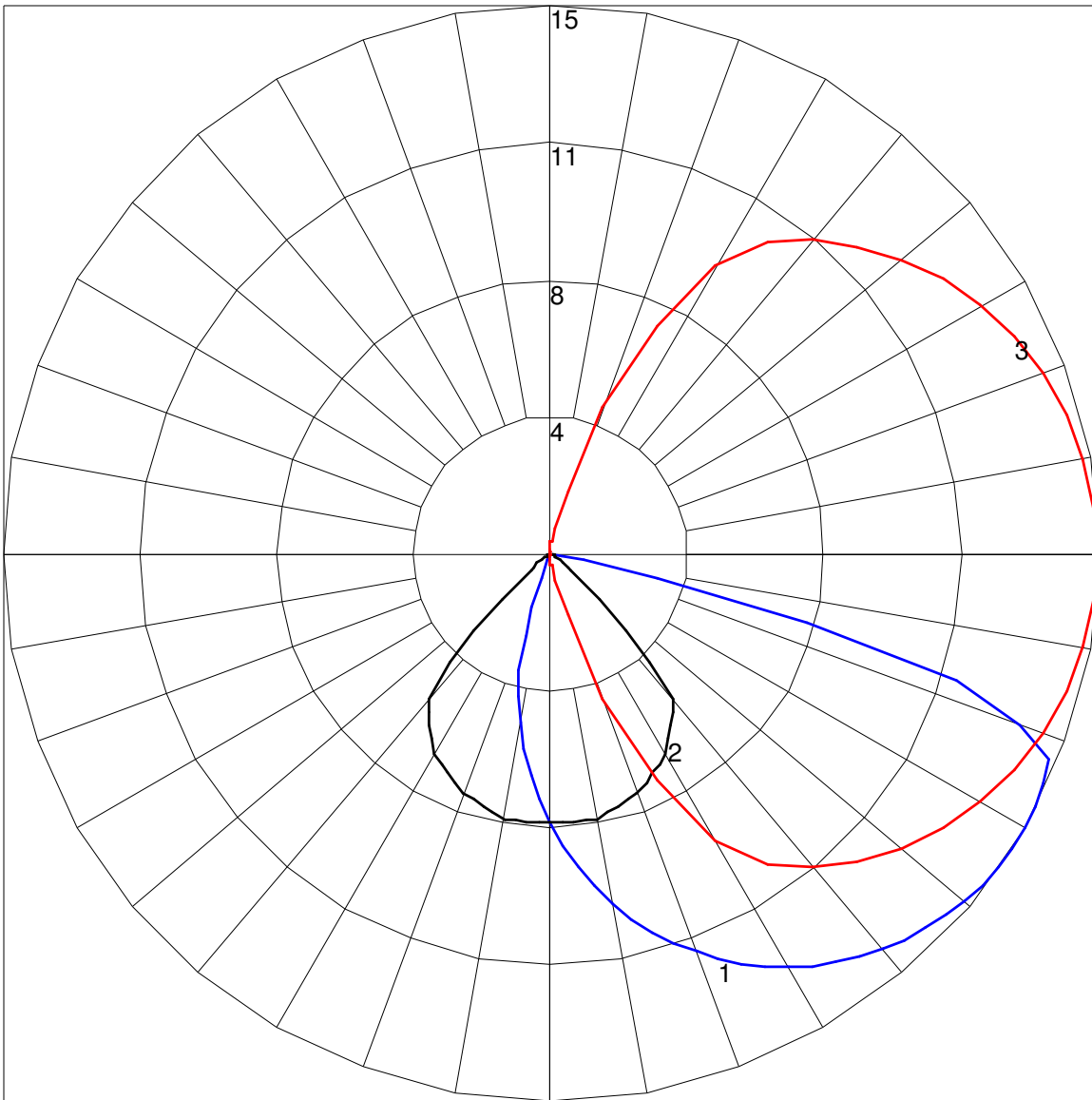
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : 3421-BK-35K-12-BK-00.IES**

**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	120	120	120	120	117	117	117	117	112	112	112	107	107	107	103	103	103	101
1	109	104	99	95	106	102	97	94	97	94	91	93	90	88	90	87	85	83
2	98	89	81	75	95	87	80	74	83	78	72	80	75	71	77	73	69	67
3	88	77	68	61	86	75	67	60	72	65	59	69	63	58	67	61	57	55
4	80	67	58	50	78	66	57	50	63	56	49	61	54	49	59	53	48	46
5	73	60	50	43	71	58	49	42	56	48	42	54	47	41	52	46	41	39
6	68	53	44	37	65	52	43	37	50	42	36	49	41	36	47	40	35	33
7	62	48	39	32	61	47	38	32	46	37	32	44	37	31	43	36	31	29
8	58	44	35	28	56	43	34	28	41	34	28	40	33	28	39	32	28	26
9	54	40	31	25	53	39	31	25	38	30	25	37	30	25	36	29	25	23
10	51	37	28	23	49	36	28	23	35	28	23	34	27	23	33	27	22	21

POLAR GRAPH



Maximum Candela = 15.29 Located At Horizontal Angle = 0, Vertical Angle = 57.5

# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

# 2 - Vertical Plane Through Horizontal Angles (90 - 270)

# 3 - Horizontal Cone Through Vertical Angle (57.5) (Through Max. Cd.)