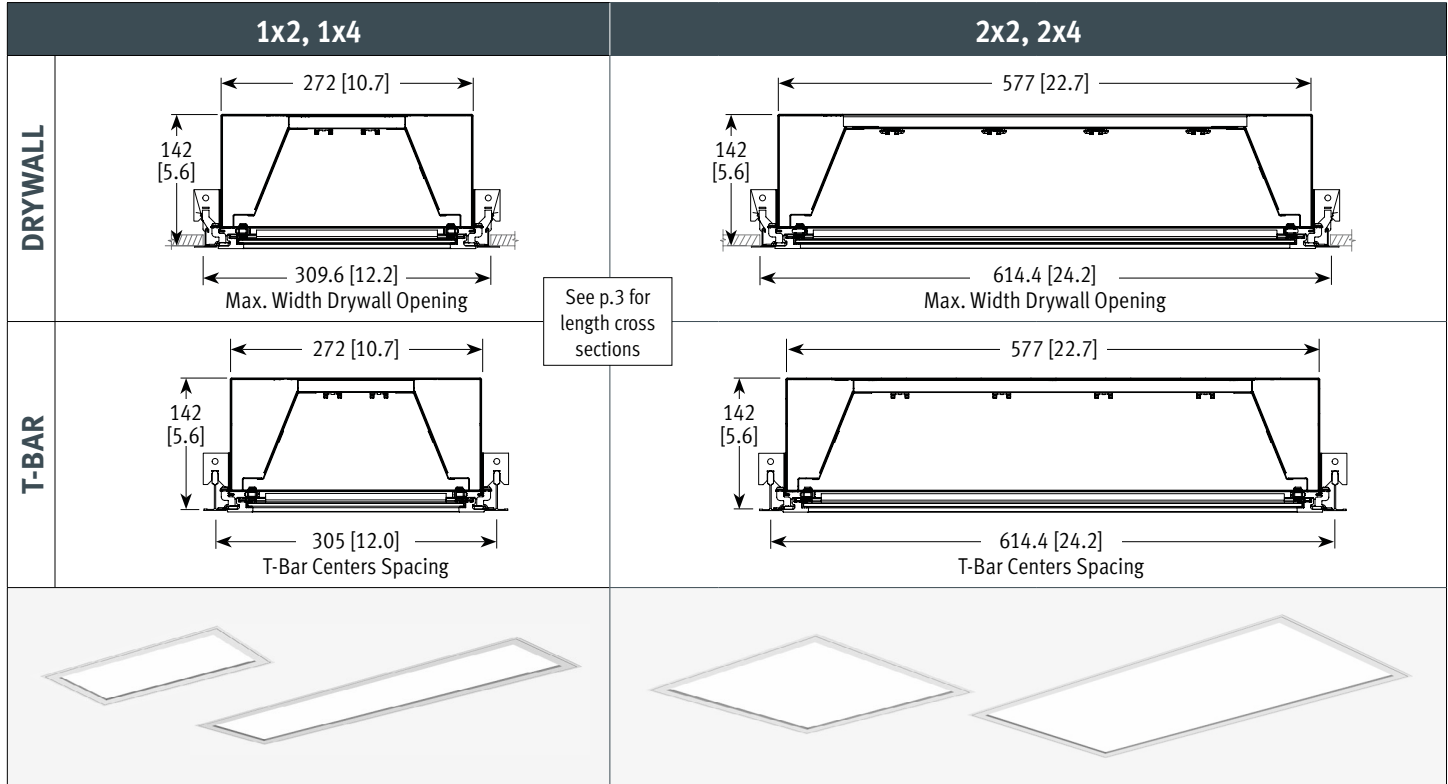


# Secureseal HC04

LED . Recessed



CAT #:	
PREP BY:	NOTES:
DATE:	
PROJECT:	
TYPE:	



## ORDERING LOGIC

Series	Color Temp	Size	Optics	Up	Down	Finish	LL/Driver	Circuitry	Mounting	Voltage	Controls	Options																													
<b>HC04</b>			<del>Optics</del>					<b>1</b>																																	
<b>Color Temp</b>	<b>Size</b>	<b>Optics Up</b>	<b>Light Level (LL) / Driver</b>				<b>Circuitry</b>	<b>Controls</b>																																	
<i>1x2 &amp; 1x4 only</i>	<b>12 = 1 x 2'</b>	<b>_ = None (leave space empty)</b>	<b>Fixture Lumens</b> Light level measured at 3500K. Add 3% lumen output for 4000K or subtract 2% lumen output for 3000K.				<b>1 = 1 Circuit</b>	<b>_ = None (leave space empty)</b>																																	
<b>2L30K = 3000K</b>	<b>14 = 1 x 4'</b>	<b>Optics Down</b>					<b>Mounting</b>				<b>D2 = DALI</b>																														
<b>2L35K = 3500K</b>	<b>22 = 2 x 2'</b>	<b>M = Meta Ice (High output semi-diffuse lens)</b>	<table border="1"> <thead> <tr> <th rowspan="2">0-10V Dimming (Standard)</th> <th colspan="4">3500k</th> </tr> <tr> <th>1X2</th> <th>1X4</th> <th>2X2</th> <th>2X4</th> </tr> </thead> <tbody> <tr> <td><b>L1</b></td> <td>= 1429</td> <td>3041</td> <td>2956</td> <td>6223</td> </tr> <tr> <td><b>L2</b></td> <td>= 1823</td> <td>3882</td> <td>3679</td> <td>7746</td> </tr> <tr> <td><b>L3</b></td> <td>= 2394</td> <td>5094</td> <td>4934</td> <td>10386</td> </tr> <tr> <td><b>L4</b></td> <td>= 4560</td> <td>9711</td> <td>9112</td> <td>19184</td> </tr> </tbody> </table> Based on 4ft sections				0-10V Dimming (Standard)	3500k				1X2	1X4	2X2	2X4	<b>L1</b>	= 1429	3041	2956	6223	<b>L2</b>	= 1823	3882	3679	7746	<b>L3</b>	= 2394	5094	4934	10386	<b>L4</b>	= 4560	9711	9112	19184	<b>D = Recessed Drywall</b>	<b>Options</b>				
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<b>2L40K = 4000K</b>	<b>24 = 2 x 4'</b>	<b>Finish</b>	<table border="1"> <thead> <tr> <th rowspan="2">0-10V Dimming (Standard)</th> <th colspan="4">3500k</th> </tr> <tr> <th>1X2</th> <th>1X4</th> <th>2X2</th> <th>2X4</th> </tr> </thead> <tbody> <tr> <td><b>L1</b></td> <td>= 1429</td> <td>3041</td> <td>2956</td> <td>6223</td> </tr> <tr> <td><b>L2</b></td> <td>= 1823</td> <td>3882</td> <td>3679</td> <td>7746</td> </tr> <tr> <td><b>L3</b></td> <td>= 2394</td> <td>5094</td> <td>4934</td> <td>10386</td> </tr> <tr> <td><b>L4</b></td> <td>= 4560</td> <td>9711</td> <td>9112</td> <td>19184</td> </tr> </tbody> </table> Based on 4ft sections				0-10V Dimming (Standard)	3500k				1X2	1X4	2X2	2X4	<b>L1</b>	= 1429	3041	2956	6223	<b>L2</b>	= 1823	3882	3679	7746	<b>L3</b>	= 2394	5094	4934	10386	<b>L4</b>	= 4560	9711	9112	19184	<b>T = Recessed T-Bar</b>	<b>_ = None (leave space empty)</b>				
0-10V Dimming (Standard)	3500k																																								
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<i>2x2 &amp; 2x4 only</i>		<b>WM = White matte 15% low gloss</b>	<table border="1"> <thead> <tr> <th rowspan="2">0-10V Dimming (Standard)</th> <th colspan="4">3500k</th> </tr> <tr> <th>1X2</th> <th>1X4</th> <th>2X2</th> <th>2X4</th> </tr> </thead> <tbody> <tr> <td><b>L1</b></td> <td>= 1429</td> <td>3041</td> <td>2956</td> <td>6223</td> </tr> <tr> <td><b>L2</b></td> <td>= 1823</td> <td>3882</td> <td>3679</td> <td>7746</td> </tr> <tr> <td><b>L3</b></td> <td>= 2394</td> <td>5094</td> <td>4934</td> <td>10386</td> </tr> <tr> <td><b>L4</b></td> <td>= 4560</td> <td>9711</td> <td>9112</td> <td>19184</td> </tr> </tbody> </table> Based on 4ft sections				0-10V Dimming (Standard)	3500k				1X2	1X4	2X2	2X4	<b>L1</b>	= 1429	3041	2956	6223	<b>L2</b>	= 1823	3882	3679	7746	<b>L3</b>	= 2394	5094	4934	10386	<b>L4</b>	= 4560	9711	9112	19184	<b>Voltage</b>	<b>RF = RFI (Radio Frequency Interference) / EMI (Electromagnetic Interference) Filter</b>				
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0-10V Dimming (Standard)	3500k																																								
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0-10V Dimming (Standard)	3500k																																								
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APPROVALS Signature \_\_\_\_\_ Date \_\_\_\_\_

FILE NAME: HC04\_LED\_SPEC\_SHEET\_20200204

570 Southgate Drive, Guelph, Ontario N1G 4P6  
 Mailing Address: P.O. Box 1779 Guelph, Ontario, N1H 6Z9

1.800.621.6785 | T 519.822.4381 | F 519.822.4589  
[www.metalumen.com](http://www.metalumen.com)



## SPECIFICATIONS

Due to the Continuous Improvement Policy at Metalumen, we reserve the right to change our specifications without notice.

**Housing:** The nominal 5" deep recessed housing consists of a welded and sealed, code gauge, prime cold rolled steel body and end plates. The end plates are securely welded and completely sealed and gasketed for air-tight and water-tight construction. Extruded aluminum door frame and flange.

**Optical System:** Metalumen luminaires are designed to utilize leading edge LED technology combined with luminaire optimized reflectors and our custom

diffusers, resulting in industry leading optical performance.  
**CRI:** 84 (4000K) (80 minimum)  
**Lumen Maintenance:** At an ambient operating temperature of 35°C the LED lifetime expectancy  $\geq$  60 000hrs at L86.  
**Finish:** White matte 15% low gloss high reflectance white or antimicrobial white paint are available finishes.  
**Mounting:** Suitable for 9/16" & 15/16" T-Bars, maximum height 1.5". Mounting

brackets provided.

**Electrical:** Factory prewired with easy wire quick connect sections.

**Driver:** Metalumen offers 0-10V dimming\* as a standard on our entire LED product offering. Dimming range is 1%-100%. Power factor is  $>$  90%. Class 2 rating.

**Approvals:** All components are UL/CSA/QPS recognized or listed. RoHS compliant. IP65 rating applicable to sizes 2x2 and 2x4 only.

**Environment:**

1x2, 1x4 - Suitable for dry locations.  
 2x4, 2x2 - Suitable for dry and wet locations.

\* Standard drivers compatible with passive/sinking dimmers. Please contact Metalumen if active/sourcing dimmer support is required.

## WARRANTY

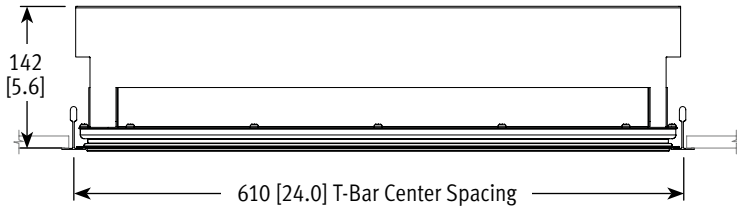
Metalumen will warrant defective luminaires for 5 years from date of purchase. Warranty is valid if luminaire is installed and used according to specification. If defective, Metalumen will send replacement boards or drivers at no cost along with detailed replacement instructions and instructions on how to return defective components to Metalumen.

## LUMINAIRE WATTAGE AND OUTPUT SPECIFICATION

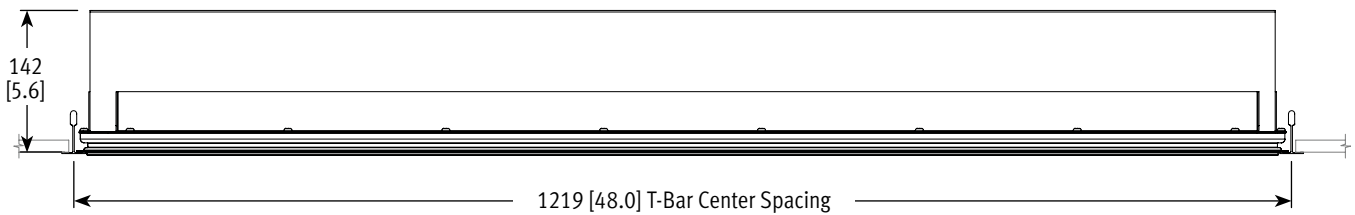
Light Level	1x2			1x4			2x2			2x4		
	Wattage	Lumens Delivered	Efficacy (lm/W)	Wattage	Lumens Delivered	Efficacy (lm/W)	Wattage	Lumens Delivered	Efficacy (lm/W)	Wattage	Lumens Delivered	Efficacy (lm/W)
L1	14	1429	103	28	3041	110	28	2956	107	55	6223	112
L2	18	1823	103	35	3882	110	35	3679	104	71	7746	109
L3	24	2394	99	48	5094	105	48	4934	102	97	10386	107
L4	48	4560	94	97	9711	101	97	9112	94	195	19184	99

CROSS SECTIONS

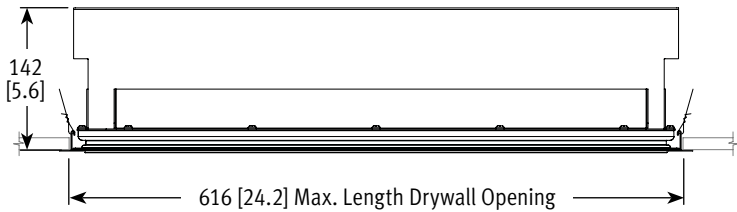
1x2 & 2x2 Recessed T-Bar



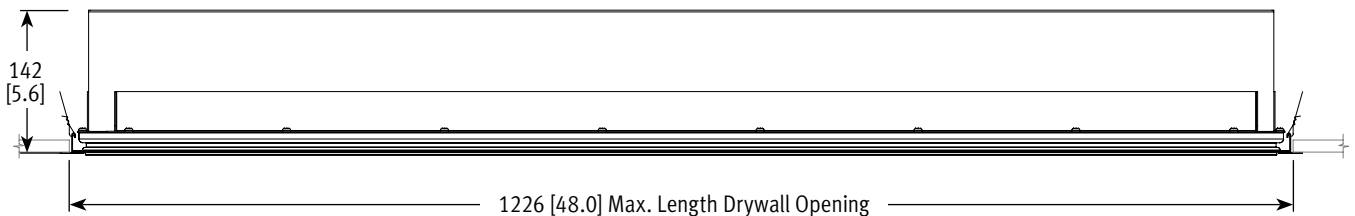
1x4 & 2x4 Recessed T-Bar



1x2 & 2x2 Recessed Drywall



1x4 & 2x4 Recessed Drywall



PHOTOMETRIC DATA - 3500K

L3  
1x2

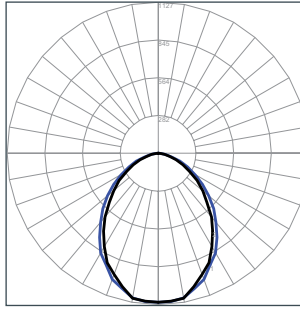
File Name: HC04-2L35K-12-M-L3  
 Luminaire Lumens: 2394  
 Total Watts: 24  
 Efficacy: 99 lm/W  
 Optics Down: Metalce

COEFFICIENTS OF UTILIZATION

Zonal Cavity Method  
 Effective Floor Cavity Reflectance = .20

RC	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
RCR												
0	119	119	119	119	116	116	116	116	111	111	111	111
1	110	106	102	98	107	103	100	97	99	96	94	94
2	101	93	87	82	98	91	86	81	88	83	79	79
3	93	83	75	69	90	81	74	69	78	73	68	68
4	85	74	66	60	83	73	65	59	70	64	59	59
5	79	67	58	52	77	66	58	52	64	57	51	51
6	73	61	52	46	71	60	52	46	58	51	46	46
7	68	55	47	41	66	54	47	41	53	46	41	41
8	64	51	43	37	62	50	42	37	49	42	37	37
9	60	47	39	34	58	46	39	34	45	38	33	33
10	56	43	36	31	55	43	36	31	42	35	30	30

PHOTOMETRIC CURVE



CANDLE DISTRIBUTION

Vertical Angle	Horizontal Angle			
	0	30	60	90
0	1110.45	1110.45	1110.45	1110.45
5	1109.7	1109.25	1127.09	1107.45
10	1094.77	1083.41	1078.71	1098.38
15	1044.19	1044.37	1030.29	1028.36
20	1001.62	979.07	979.89	959.06
25	916.92	912.09	902	898.98
30	858.14	834.69	822.81	802.64
35	764.15	751.59	728.07	710.08
40	669.21	661.52	633.17	618.96
45	585.22	570.41	536.21	514.07
50	492.53	480.4	446.26	434.67
55	405.54	391.17	363.13	353.9
60	321.05	306.39	284.01	270.67
65	241.61	232.96	214.4	203.87
70	174.05	163.1	147.37	141.94
75	108.68	102.94	92.62	89.38
80	58.16	55.39	48.88	47.27
85	22.86	20.75	18.89	18.78
90	2.43	2.2	2.5	2.84

LUMINANCE DATA (CD/M<sup>2</sup>)

Vertical Angle	Horizontal Angle		
	0	45	90
45	3696	2873	2715
55	2923	2114	2026
65	2102	1408	1318
75	1239	727	687
85	396	187	185

L3  
1x4

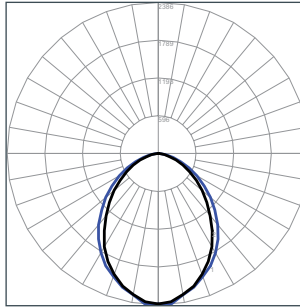
File Name: HC04-2L35K-14-M-L3  
 Luminaire Lumens: 5094  
 Total Watts: 48  
 Efficacy: 105 lm/W  
 Optics Down: Metalce

COEFFICIENTS OF UTILIZATION

Zonal Cavity Method  
 Effective Floor Cavity Reflectance = .20

RC	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
RCR												
0	103	103	103	103	93	93	93	93	75	75	75	75
1	94	90	86	82	85	81	78	75	65	63	60	60
2	85	78	71	66	77	70	65	60	56	52	49	49
3	77	68	60	54	69	61	55	50	49	45	41	41
4	70	59	52	45	63	54	47	42	43	38	34	34
5	64	53	44	38	58	48	41	35	38	33	29	29
6	59	47	39	33	53	42	35	30	34	29	25	25
7	54	42	34	28	49	38	31	26	31	25	22	22
8	50	38	30	25	45	34	28	23	28	23	19	19
9	47	34	27	22	42	31	25	20	25	20	17	17
10	43	31	24	19	39	28	22	18	23	18	15	15

PHOTOMETRIC CURVE



CANDLE DISTRIBUTION

Vertical Angle	Horizontal Angle			
	0	30	60	90
0	2372.69	2372.69	2372.69	2372.69
5	2385.94	2372.31	2362.3	2346.88
10	2266.08	2296.3	2279.94	2258.08
15	2183.3	2184.23	2165.86	2166.11
20	2066.34	2079.88	2055.57	2029.68
25	1954.13	1926.46	1898.38	1878.39
30	1809.8	1790.37	1731.28	1698.4
35	1648.56	1609.43	1533.92	1487.42
40	1467.58	1417.32	1332.22	1281.12
45	1264.33	1220.79	1129.47	1090.05
50	1078.35	1036.43	949.6	910.09
55	891.29	844.71	761.67	733.64
60	709.55	667.65	604.02	572.13
65	540.97	505.28	450.95	430.99
70	381.58	353.58	317.61	299.84
75	243.99	226.52	199.18	187.13
80	132.31	121.07	104.84	101.26
85	50.53	45.96	41.61	40.56
90	5.83	5.35	5.42	5.79

LUMINANCE DATA (CD/M<sup>2</sup>)

Vertical Angle	Horizontal Angle		
	0	45	90
45	4406	3227	2878
55	3666	2415	2100
65	2820	1644	1393
75	1810	886	719
85	687	240	200

PHOTOMETRIC DATA - 3500K

L3  
2x2

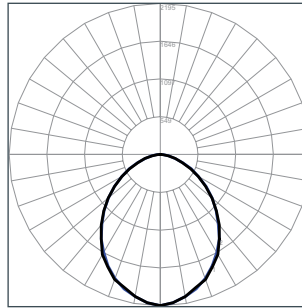
File Name: HC04-2L35K-22-M-L3  
 Luminaire Lumens: 4934  
 Total Watts: 48  
 Efficacy: 102 lm/W  
 Optics Down: Meta Ice

COEFFICIENTS OF UTILIZATION

Zonal Cavity Method  
 Effective Floor Cavity Reflectance = .20

RC	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
RCR												
0	119	119	119	119	116	116	116	116	111	111	111	111
1	110	105	101	98	107	103	100	96	99	96	93	93
2	100	93	87	81	98	91	85	80	87	83	78	78
3	92	82	75	69	90	81	74	68	78	72	67	67
4	85	73	65	59	83	72	64	58	70	63	58	58
5	78	66	58	51	76	65	57	51	63	56	50	50
6	73	60	51	45	71	59	51	45	57	50	45	45
7	67	54	46	40	66	54	46	40	52	45	40	40
8	63	50	42	36	61	49	41	36	48	41	36	36
9	59	46	38	33	58	45	38	33	44	37	32	32
10	55	43	35	30	54	42	35	30	41	34	30	30

PHOTOMETRIC CURVE CANDLE DISTRIBUTION



Vertical Angle	Horizontal Angle			
	0	30	60	90
0	2194.9	2194.9	2194.9	2194.9
5	2159.26	2171.52	2157.26	2159.8
10	2094.84	2093.08	2111	2096.93
15	2020.17	2010.64	2004.71	2000.07
20	1913.4	1888.75	1907.82	1930.32
25	1789.26	1779.17	1794.57	1802.03
30	1642.84	1651.43	1654.35	1678
35	1497.59	1501.42	1509.44	1495.69
40	1316.07	1324.63	1328.06	1336.52
45	1150.18	1153.83	1150.93	1160.55
50	983.18	975.98	983.59	986.98
55	817.7	814.23	811.49	805.13
60	648.48	647.73	646.45	640.69
65	499.34	488.94	487.46	489.76
70	350.71	352.33	347.03	343.4
75	231.47	226.43	222.79	226.22
80	124.61	120.38	118.73	118.31
85	49.45	48.49	46.37	45.32
90	6.27	5.83	5.14	5.07

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal Angle		
	0	45	90
45	3593	3336	3618
55	2915	2623	2863
65	2148	1843	2100
75	1306	1060	1270
85	424	311	385

L3  
2x4

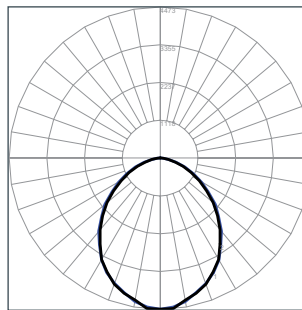
File Name: HC04-2L35K-24-M-L3  
 Luminaire Lumens: 10386  
 Total Watts: 97  
 Efficacy: 107 lm/W  
 Optics Down: Meta Ice

COEFFICIENTS OF UTILIZATION

Zonal Cavity Method  
 Effective Floor Cavity Reflectance = .20

RC	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
RCR												
0	119	119	119	119	116	116	116	116	111	111	111	111
1	110	105	101	98	107	103	99	96	99	96	93	93
2	100	93	86	81	98	91	85	80	87	82	78	78
3	92	82	74	68	90	81	73	68	78	72	66	66
4	85	73	65	59	82	72	64	58	69	63	57	57
5	78	66	57	51	76	65	57	51	63	56	50	50
6	72	60	51	45	70	59	51	45	57	50	44	44
7	67	54	46	40	66	53	45	40	52	45	39	39
8	63	50	41	36	61	49	41	36	48	41	35	35
9	59	46	38	32	57	45	37	32	44	37	32	32
10	55	42	35	29	54	42	34	29	41	34	29	29

PHOTOMETRIC CURVE



CANDLE DISTRIBUTION

Vertical Angle	Horizontal Angle			
	0	30	60	90
0	4473.17	4473.17	4473.17	4473.17
5	4422.26	4398.05	4457.84	4471.6
10	4310.84	4284.32	4344.24	4265.6
15	4115.91	4204.19	4178.51	4136.85
20	3949.78	3982.8	3970.29	3972.16
25	3741.01	3761.18	3730.37	3713.49
30	3477.48	3481.23	3434.07	3462.01
35	3139.86	3147.27	3117.43	3096.93
40	2826.96	2840.25	2797.76	2764.71
45	2453.08	2478.47	2430.85	2404.49
50	2138.04	2090.04	2070.21	2053.4
55	1740.65	1738.44	1701.29	1687.89
60	1421.79	1399.4	1350.53	1339.17
65	1097.13	1067.67	1029.48	1012.94
70	781.97	763.81	737.61	718.89
75	497.2	490.38	471.31	466.17
80	273.59	261.84	251.59	248.26
85	104.24	100.84	100.35	98.56
90	12.11	12.09	11.13	10.93

LUMINANCE DATA (CD/M²)

Vertical Angle	Horizontal Angle		
	0	45	90
45	4228	3785	3748
55	3542	3014	3000
65	2829	2206	2171
75	1825	1315	1308
85	701	411	419