

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: METALUX

Report Number: P893491

Luminaire Tested: 4MB-4SL-ASML-UNV-L840

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P893491  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-33)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-4SL-ASML-UNV-L840  
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 4000K CCT  
Light Source: -  
Ballast/Driver: -

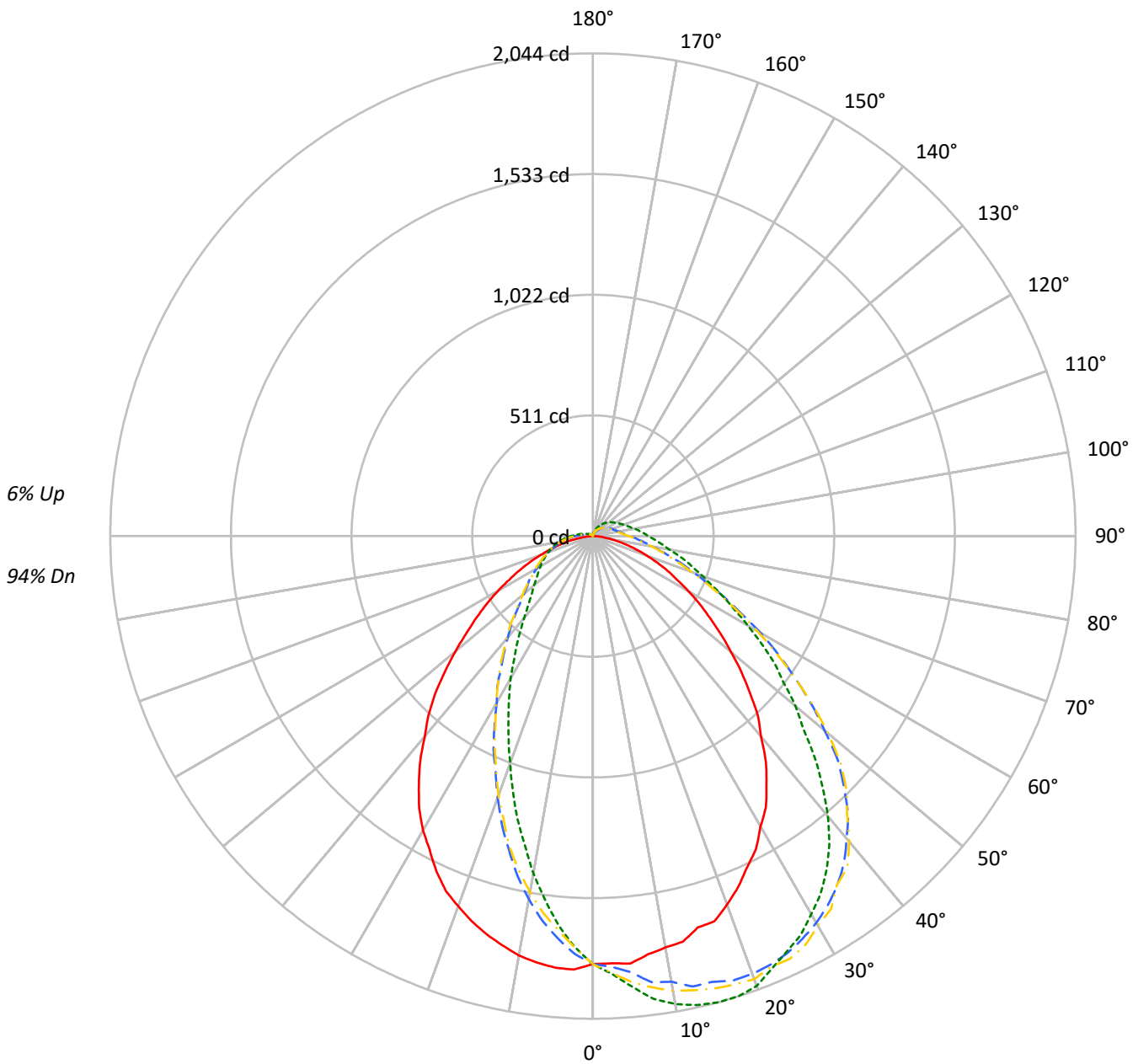
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4517.0 lumens  
Efficiency: N/A  
Efficacy: 151.6 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.07 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 3.98' x H: 0.12')  
CIE Type: Direct

Input Watts (W): 29.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.99  
Total Harmonic Distortion (THDi): 5.5  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P893491  
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### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    ··· 90°-270°    - · 135°-315°



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				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	50	30	10	0
RCR																					
0	118	118	118	118	114	114	114	114	108	108	108	102	102	102	97	97	97	97	97	97	94
1	107	103	98	94	104	100	96	92	95	91	88	90	87	85	85	83	81	81	81	81	79
2	98	90	83	78	95	88	82	76	83	78	74	79	75	71	75	72	69	69	69	69	66
3	90	80	72	65	87	78	70	64	74	68	63	70	65	61	67	63	59	59	59	59	57
4	83	71	63	56	80	69	61	55	66	59	54	63	57	53	60	55	51	51	51	51	49
5	76	64	55	49	74	62	54	48	60	53	47	57	51	46	55	49	45	45	45	45	43
6	71	58	49	43	68	56	48	42	54	47	42	52	46	41	50	44	40	40	40	40	38
7	66	53	44	38	64	51	43	38	49	42	37	48	41	36	46	40	36	36	36	36	34
8	61	48	40	34	59	47	39	34	45	38	33	44	37	33	42	37	32	32	32	32	30
9	57	44	36	31	56	43	36	31	42	35	30	40	34	30	39	33	29	29	29	29	28
10	54	41	33	28	52	40	33	28	39	32	28	38	31	27	36	31	27	27	27	27	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	18457	18457	18457	18457
5°	18524	18809	18701	16256
10°	18193	19210	18547	13855
15°	17937	19141	18241	11585
20°	17798	18762	17874	9477
25°	17121	17893	17356	7798
30°	16401	17099	16614	6443
35°	15593	16138	15636	5250
40°	14351	14762	14343	4304
45°	13126	13030	13192	3667
50°	11672	11373	11619	3313
55°	10286	9963	10215	3043
60°	9021	8497	8942	2877
65°	7904	7316	7717	2733
70°	6718	6411	6491	2613
75°	5477	5829	5329	2515
80°	4226	5246	3838	2343
85°	2906	5065	2347	2196

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 157.5°  
 Vertical Angle: 45°  
 Luminance: 18258 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.3	3.8
10°-20°	473.3	10.5
20°-30°	680.8	15.1
30°-40°	772.6	17.1
40°-50°	738.3	16.3
50°-60°	599.9	13.3
60°-70°	418.6	9.3
70°-80°	259.3	5.7
80°-90°	148.8	3.3
90°-100°	88.9	2.0
100°-110°	58.4	1.3
110°-120°	40.9	0.9
120°-130°	29.6	0.7
130°-140°	19.7	0.4
140°-150°	11.1	0.2
150°-160°	5.0	0.1
160°-170°	1.4	0.0
170°-180°	0.1	0.0
0°-30°	1324.4	29.3
0°-40°	2096.9	46.4
0°-60°	3435.2	76.0
0°-90°	4261.9	94.4
90°-120°	188.2	4.2
90°-150°	248.6	5.5
90°-180°	255.0	5.6
0°-180°	4517.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1812	1812	1812	1812	1812	
5°	1817	1916	1834	1656	1817	171
15°	1716	2044	1745	1237	1716	488
25°	1546	1942	1567	846	1546	713
35°	1282	1726	1285	561	1282	799
45°	940	1330	945	374	940	725
55°	605	938	601	287	605	545
65°	350	610	342	228	350	347
75°	156	408	151	176	156	168
85°	34	276	27	120	34	38
90°	1	234	0	92	1	3
95°	2	204	0	70	2	1
105°	1	157	0	38	1	1
115°	1	125	0	21	1	1
125°	1	102	0	14	1	1
135°	1	81	0	11	1	1
145°	1	57	0	7	1	1
155°	2	36	0	4	2	1
165°	2	17	0	2	2	1
175°	2	1	0	0	2	0
180°	1	1	1	1	1	



TEST NUMBER: P893491  
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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1812.3	1812.3	1812.3	1812.3	1812.3	1812.3	1812.3	1812.3	1812.3	1812.3	1812.3
2.5°	1810.5	1824.2	1825.4	1868.1	1855.6	1871.6	1851.5	1855.0	1837.2	1832.5	1770.8
5°	1817.0	1846.1	1853.8	1927.4	1915.6	1923.9	1896.0	1875.8	1834.3	1809.3	1709.6
7.5°	1786.2	1862.7	1905.5	1957.7	1977.3	1983.8	1927.4	1890.0	1821.2	1760.1	1643.2
10°	1769.0	1874.6	1916.1	1994.5	2011.7	1999.2	1955.3	1893.6	1803.4	1704.9	1561.3
12.5°	1759.5	1881.1	1953.5	2033.6	2034.2	2021.2	1969.6	1903.1	1774.3	1645.5	1474.6
15°	1715.6	1879.9	1954.1	2035.4	2044.3	2036.0	1983.2	1896.6	1744.6	1572.0	1374.9
17.5°	1710.8	1877.0	1973.1	2058.6	2043.7	2037.8	1991.5	1893.6	1709.0	1497.2	1281.2
20°	1661.0	1870.5	1973.1	2032.5	2027.7	2030.1	1996.8	1889.4	1668.1	1416.5	1178.5
22.5°	1608.2	1862.7	1964.8	2009.9	1981.4	2024.7	1973.1	1878.2	1626.6	1332.2	1076.5
25°	1545.9	1850.3	1948.8	1977.9	1941.7	1975.5	1974.9	1861.0	1567.2	1241.4	995.8
27.5°	1495.4	1830.7	1922.7	1966.6	1904.9	1933.9	1950.6	1840.2	1497.2	1151.8	900.8
30°	1420.0	1805.8	1891.2	1897.7	1849.1	1885.9	1904.9	1814.1	1438.4	1050.3	814.2
32.5°	1362.5	1777.3	1852.6	1843.7	1795.1	1843.7	1874.6	1788.0	1368.4	961.3	753.0
35°	1281.8	1742.9	1804.6	1757.7	1725.7	1766.0	1802.2	1760.1	1285.3	866.4	674.7
37.5°	1203.5	1712.6	1747.0	1688.9	1645.0	1690.1	1769.6	1707.9	1201.7	791.0	616.6
40°	1107.9	1643.2	1671.7	1592.7	1548.8	1615.3	1688.3	1662.8	1107.3	712.7	560.2
42.5°	1035.5	1591.5	1599.9	1491.9	1439.6	1510.2	1593.3	1598.7	1030.8	642.1	510.3
45°	940.0	1519.1	1503.7	1385.0	1330.4	1393.9	1518.6	1532.8	944.7	581.0	461.7
47.5°	853.9	1438.4	1408.2	1269.3	1208.2	1283.6	1421.8	1459.2	848.6	524.6	416.0
50°	764.3	1348.2	1281.2	1161.3	1120.4	1157.8	1299.0	1360.7	760.8	468.8	381.0
52.5°	682.4	1248.6	1165.5	1058.1	1017.1	1048.0	1170.2	1262.8	673.5	421.9	350.1
55°	605.3	1148.9	1041.4	946.5	938.2	947.7	1039.7	1145.9	601.1	380.4	330.5
57.5°	536.4	1027.8	929.9	859.9	845.0	852.7	916.2	1025.4	531.1	338.8	302.0
60°	467.0	903.8	819.5	765.5	757.2	763.1	804.1	907.9	462.9	303.8	275.3
62.5°	404.1	779.2	704.4	684.2	678.3	678.3	695.5	790.4	398.8	268.2	255.2
65°	350.1	672.3	616.0	608.3	610.0	609.4	598.8	659.9	341.8	236.8	237.4
67.5°	295.5	559.0	527.5	537.0	544.2	541.2	518.6	548.9	288.4	208.3	221.3
70°	245.1	461.7	455.7	477.1	493.7	478.3	445.7	448.6	236.8	180.4	200.6
72.5°	197.6	373.3	400.6	430.2	446.2	429.0	383.9	370.9	190.5	154.9	181.6
75°	155.5	300.3	343.6	387.5	408.3	386.3	334.1	289.6	151.3	130.6	166.2
77.5°	118.7	238.0	293.7	344.8	365.0	346.0	290.8	226.1	111.0	109.8	149.5
80°	84.9	188.1	260.5	309.8	328.2	309.8	252.2	178.6	77.1	87.8	131.7
82.5°	55.8	145.4	226.7	281.9	302.0	279.5	219.0	137.7	49.3	71.2	118.7
85°	33.8	115.1	197.6	253.4	276.5	254.6	191.7	104.4	27.3	54.6	103.3
87.5°	14.8	89.0	176.2	233.8	254.6	234.4	170.9	81.9	11.3	42.7	88.4
90°	1.2	70.6	155.5	215.4	233.8	214.8	151.3	66.5	0.0	30.9	76.0
92.5°	1.2	60.5	142.4	199.4	220.2	198.8	136.5	54.6	0.0	22.5	64.1
95°	1.8	51.0	129.4	186.9	203.5	185.1	124.6	46.9	0.0	15.4	54.0
97.5°	1.8	46.3	118.7	174.5	192.9	173.3	113.9	42.1	0.0	11.3	43.9
100°	1.2	42.7	110.4	162.6	179.8	161.4	105.6	38.0	0.0	7.1	35.6
102.5°	1.2	39.8	103.3	152.5	166.2	150.7	98.5	35.6	0.0	5.9	29.1
105°	1.2	38.0	96.7	140.6	156.7	140.6	92.6	33.2	0.0	4.7	22.5
107.5°	1.2	35.6	92.0	134.1	147.2	132.9	87.8	31.5	0.0	4.7	18.4
110°	1.2	33.8	87.8	124.6	139.5	125.8	83.7	28.5	0.0	3.0	14.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	1.2	30.9	83.7	118.1	132.3	118.7	80.1	26.1	0.0	3.0	13.1
115°	1.2	27.9	80.1	113.9	124.6	112.7	76.6	23.1	0.0	2.4	11.9
117.5°	1.2	26.1	77.7	108.6	119.3	107.4	73.6	22.0	0.0	2.4	11.3
120°	1.2	24.9	74.2	103.3	111.6	102.1	70.0	20.8	0.0	2.4	10.7
122.5°	1.2	23.7	71.2	98.5	107.4	97.9	67.1	20.2	0.0	1.8	9.5
125°	1.2	22.5	67.1	93.2	101.5	92.0	61.7	19.6	0.0	1.2	8.3
127.5°	1.2	21.4	62.9	89.0	96.7	87.8	58.2	19.0	0.0	1.2	7.7
130°	1.2	20.8	57.6	83.7	91.4	82.5	54.0	19.0	0.0	1.2	7.1
132.5°	1.2	20.2	51.6	78.3	86.6	77.1	49.8	18.4	0.0	1.2	5.9
135°	1.2	19.6	45.7	73.0	80.7	71.8	46.3	17.8	0.0	1.2	5.3
137.5°	1.2	18.4	40.4	67.1	74.8	65.9	43.9	16.6	0.0	1.2	4.7
140°	1.2	17.2	36.2	62.3	68.8	60.5	40.4	15.4	0.0	0.6	3.6
142.5°	1.2	15.4	32.6	56.4	62.9	55.2	36.2	13.1	0.0	0.6	3.6
145°	1.2	13.6	29.7	49.3	57.0	49.3	33.8	11.9	0.0	0.6	3.0
147.5°	1.2	12.5	26.7	41.5	51.6	45.1	30.3	10.1	0.0	0.6	2.4
150°	1.2	11.3	23.1	35.0	45.7	39.8	27.9	8.9	0.0	0.0	1.8
152.5°	1.2	10.1	20.2	29.1	40.9	36.2	24.9	7.7	0.0	0.0	1.2
155°	1.8	9.5	17.2	25.5	35.6	31.5	20.8	6.5	0.0	0.0	1.2
157.5°	1.8	8.3	14.2	20.8	31.5	27.3	16.6	5.3	0.0	0.0	0.6
160°	1.8	7.7	11.9	16.0	26.1	22.5	13.6	4.2	0.0	0.0	0.6
162.5°	1.8	7.1	10.1	11.9	21.4	17.8	10.7	3.0	0.0	0.0	0.6
165°	1.8	5.9	8.9	8.3	16.6	13.6	8.3	1.8	0.0	0.0	0.0
167.5°	1.8	5.3	7.1	5.9	12.5	10.1	5.9	1.2	0.0	0.0	0.0
170°	1.8	4.2	5.9	4.2	3.6	6.5	3.6	0.6	0.0	0.0	0.0
172.5°	1.8	3.6	4.7	3.0	1.2	3.6	1.8	0.0	0.0	0.0	0.0
175°	1.8	3.0	3.0	1.8	0.6	1.2	0.0	0.0	0.0	0.0	0.0
177.5°	1.8	2.4	1.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1812.3	1812.3	1812.3	1812.3	1812.3	1812.3
2.5°	1762.4	1742.9	1725.1	1744.1	1757.7	1810.5
5°	1676.4	1655.6	1658.0	1675.2	1720.9	1817.0
7.5°	1587.4	1553.0	1561.3	1609.3	1677.0	1786.2
10°	1482.4	1450.9	1458.6	1531.0	1626.0	1769.0
12.5°	1388.6	1335.8	1380.9	1449.1	1566.6	1759.5
15°	1278.8	1237.3	1261.6	1362.5	1509.7	1715.6
17.5°	1160.1	1128.1	1157.2	1257.5	1439.6	1710.8
20°	1068.7	1024.2	1058.7	1169.0	1353.0	1661.0
22.5°	966.1	932.3	968.5	1069.9	1264.6	1608.2
25°	881.8	846.2	882.4	983.3	1186.2	1545.9
27.5°	799.9	767.3	799.9	892.5	1108.5	1495.4
30°	728.1	696.7	729.9	818.9	1017.7	1420.0
32.5°	661.1	620.7	663.4	749.5	937.6	1362.5
35°	591.6	561.4	593.4	689.0	848.6	1281.8
37.5°	534.1	502.6	540.6	622.5	773.2	1203.5
40°	479.5	451.6	481.9	569.1	709.1	1107.9
42.5°	436.8	408.9	439.7	520.4	644.5	1035.5
45°	395.2	374.4	399.4	467.0	579.2	940.0
47.5°	365.0	347.1	367.9	427.9	524.6	853.9
50°	338.8	326.4	341.2	388.7	468.2	764.3
52.5°	315.7	303.2	320.4	358.4	423.7	682.4
55°	297.9	286.6	299.7	329.9	379.2	605.3
57.5°	278.3	271.2	281.3	299.7	344.2	536.4
60°	264.1	256.4	267.0	281.9	304.4	467.0
62.5°	248.0	243.9	250.4	262.3	274.2	404.1
65°	233.8	227.9	236.2	240.3	239.1	350.1
67.5°	218.4	216.6	221.3	221.9	213.0	295.5
70°	202.4	201.2	207.1	203.5	185.1	245.1
72.5°	189.3	189.3	192.9	185.7	161.4	197.6
75°	175.1	176.2	179.2	170.9	135.9	155.5
77.5°	162.0	163.2	163.8	152.5	113.9	118.7
80°	147.2	146.6	152.5	138.3	92.6	84.9
82.5°	134.1	131.7	135.3	121.1	74.8	55.8
85°	119.3	119.9	122.2	105.6	59.9	33.8
87.5°	107.4	107.4	109.8	93.2	45.1	14.8
90°	93.2	92.0	95.5	78.9	33.8	1.2
92.5°	81.3	81.3	83.7	67.6	24.9	1.2
95°	69.4	70.0	71.8	55.8	19.0	1.8
97.5°	59.3	59.9	62.3	47.5	13.6	1.8
100°	50.4	51.0	52.2	38.0	10.7	1.2
102.5°	42.1	43.9	43.9	31.5	8.3	1.2
105°	35.6	38.0	36.8	25.5	7.7	1.2
107.5°	29.7	32.0	32.0	20.8	7.7	1.2
110°	24.3	27.9	27.3	17.8	5.9	1.2





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	20.8	23.7	22.0	15.4	5.9	1.2
115°	17.8	20.8	19.6	14.2	5.3	1.2
117.5°	16.0	17.8	17.8	13.6	5.3	1.2
120°	14.8	16.6	16.0	13.1	5.3	1.2
122.5°	13.6	14.8	14.8	11.9	4.7	1.2
125°	13.1	13.6	14.2	10.7	4.7	1.2
127.5°	12.5	13.6	13.6	10.1	4.2	1.2
130°	11.3	12.5	12.5	9.5	4.2	1.2
132.5°	10.1	11.3	11.3	8.9	4.2	1.2
135°	9.5	10.7	10.7	8.3	4.2	1.2
137.5°	8.9	9.5	9.5	7.7	4.2	1.2
140°	7.7	8.9	8.9	7.1	4.2	1.2
142.5°	7.1	8.3	8.3	6.5	3.6	1.2
145°	6.5	7.1	7.7	5.9	3.6	1.2
147.5°	5.3	6.5	7.1	5.3	3.6	1.2
150°	4.2	5.9	5.9	5.3	3.6	1.2
152.5°	3.0	5.3	5.3	4.7	3.0	1.2
155°	2.4	4.2	4.7	4.2	3.0	1.8
157.5°	1.8	3.6	4.2	4.2	3.0	1.8
160°	1.2	3.0	3.6	3.6	2.4	1.8
162.5°	0.6	2.4	3.0	3.6	2.4	1.8
165°	0.0	1.8	2.4	3.0	2.4	1.8
167.5°	0.0	1.2	1.8	2.4	1.8	1.8
170°	0.0	0.6	1.2	1.8	1.8	1.8
172.5°	0.0	0.0	0.6	1.2	1.2	1.8
175°	0.0	0.0	0.0	0.6	1.2	1.8
177.5°	0.0	0.0	0.0	0.6	1.2	1.8
180°	0.6	0.6	0.6	0.6	0.6	0.6



TEST NUMBER: P893491  
 CATALOG NUMBER: 4MB-4SL-ASML-UNV-L840

**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	19.05	20.51	19.50	20.94	21.39	21.31	22.76	21.76	23.20	23.65
	3H	19.87	21.19	20.34	21.63	22.13	23.01	24.32	23.47	24.77	25.26
	4H	20.07	21.31	20.56	21.78	22.29	23.84	25.09	24.33	25.55	26.06
	6H	20.16	21.31	20.66	21.79	22.32	24.72	25.87	25.22	26.35	26.87
	8H	20.16	21.26	20.68	21.76	22.30	25.19	26.29	25.71	26.79	27.32
	12H	20.15	21.21	20.67	21.70	22.26	25.73	26.79	26.25	27.28	27.84
4H	2H	19.48	20.73	19.97	21.19	21.70	21.67	22.91	22.16	23.37	23.89
	3H	20.58	21.62	21.08	22.13	22.66	23.55	24.60	24.06	25.11	25.64
	4H	20.92	21.87	21.44	22.38	22.95	24.53	25.48	25.05	25.99	26.56
	6H	21.11	21.94	21.65	22.48	23.07	25.57	26.40	26.11	26.94	27.53
	8H	21.14	21.92	21.69	22.46	23.06	26.13	26.91	26.68	27.45	28.05
	12H	21.14	21.85	21.71	22.42	23.02	26.79	27.49	27.36	28.06	28.66
8H	4H	21.25	22.03	21.80	22.57	23.17	24.67	25.45	25.22	25.99	26.59
	6H	21.57	22.22	22.15	22.81	23.41	25.84	26.49	26.42	27.08	27.68
	8H	21.66	22.25	22.25	22.85	23.46	26.52	27.11	27.11	27.71	28.32
	12H	21.71	22.24	22.31	22.82	23.51	27.34	27.86	27.93	28.45	29.13
12H	4H	21.33	22.03	21.89	22.60	23.20	24.66	25.36	25.23	25.94	26.54
	6H	21.71	22.30	22.30	22.90	23.51	25.85	26.44	26.45	27.04	27.66
	8H	21.87	22.39	22.46	22.98	23.66	26.59	27.11	27.18	27.70	28.38