

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: P893492

Luminaire Tested: 4MB-4SL-ASML-UNV-L850

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893492
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-L850
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 5000K CCT
Light Source: -
Ballast/Driver: -

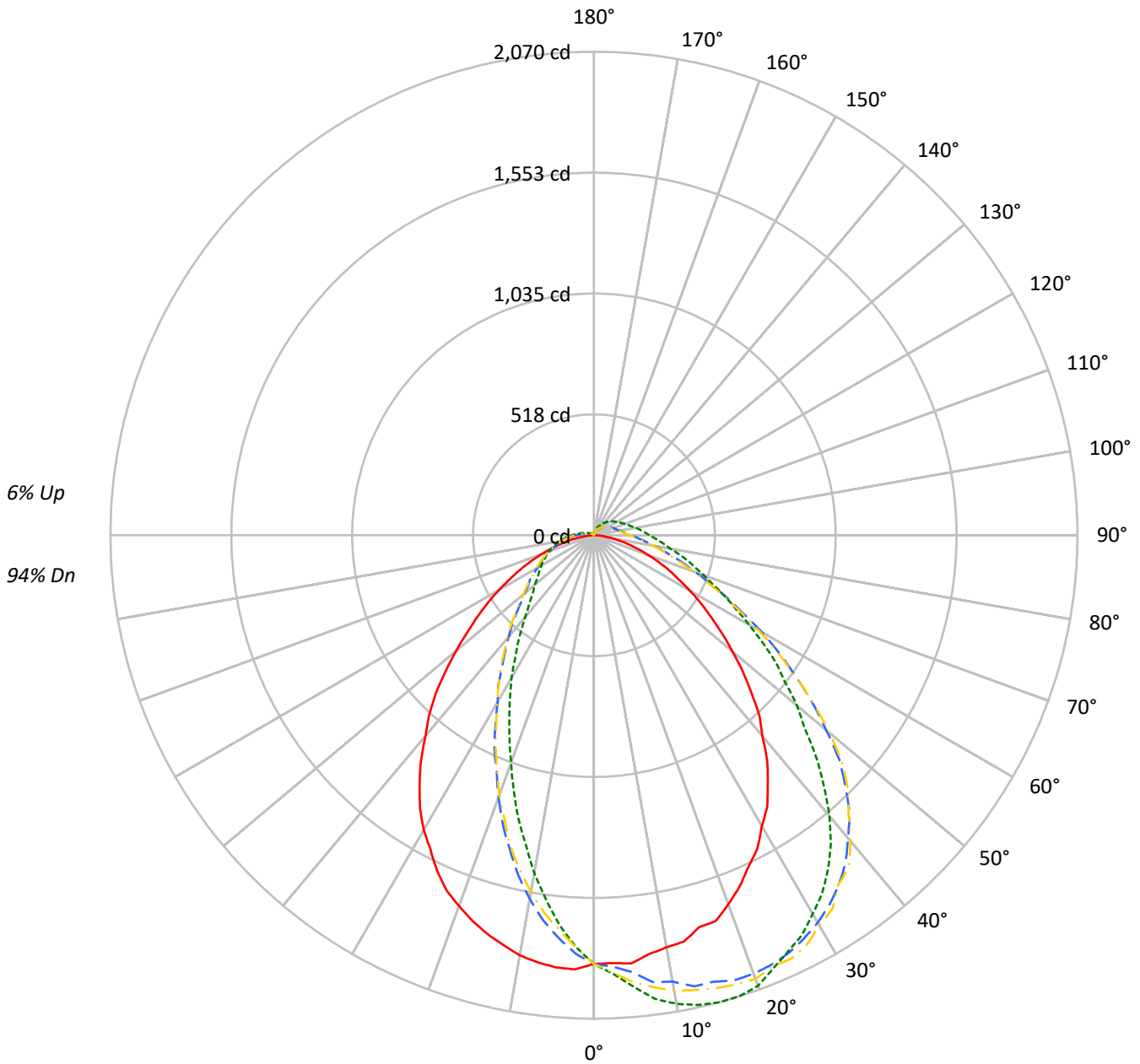
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4574.0 lumens
Efficiency: N/A
Efficacy: 153.5 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_{in}): 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: P893492
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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°	18690	18690	18690	18690
5°	18759	19046	18936	16461
10°	18422	19452	18781	14029
15°	18163	19382	18472	11731
20°	18022	18999	18099	9597
25°	17336	18118	17576	7896
30°	16609	17315	16824	6524
35°	15790	16340	15834	5316
40°	14532	14948	14524	4359
45°	13291	13194	13358	3714
50°	11821	11516	11766	3355
55°	10415	10088	10344	3082
60°	9135	8605	9054	2913
65°	8004	7409	7814	2767
70°	6803	6493	6573	2645
75°	5544	5902	5396	2548
80°	4276	5312	3888	2372
85°	2949	5129	2373	2224

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 18488 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.4	3.8
10°-20°	479.3	10.5
20°-30°	689.4	15.1
30°-40°	782.3	17.1
40°-50°	747.6	16.3
50°-60°	607.5	13.3
60°-70°	423.9	9.3
70°-80°	262.6	5.7
80°-90°	150.6	3.3
90°-100°	90.0	2.0
100°-110°	59.1	1.3
110°-120°	41.4	0.9
120°-130°	30.0	0.7
130°-140°	19.9	0.4
140°-150°	11.2	0.2
150°-160°	5.0	0.1
160°-170°	1.4	0.0
170°-180°	0.1	0.0
0°-30°	1341.1	29.3
0°-40°	2123.4	46.4
0°-60°	3478.5	76.1
0°-90°	4315.6	94.4
90°-120°	190.6	4.2
90°-150°	251.7	5.5
90°-180°	258.0	5.6
0°-180°	4574.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1835	1835	1835	1835	1835	
5°	1840	1940	1857	1676	1840	173
15°	1737	2070	1767	1253	1737	494
25°	1565	1966	1587	857	1565	722
35°	1298	1747	1302	568	1298	809
45°	952	1347	957	379	952	734
55°	613	950	609	290	613	552
65°	354	618	346	231	354	352
75°	157	413	153	178	157	170
85°	34	280	28	121	34	38
90°	1	237	0	93	1	3
95°	2	206	0	71	2	1
105°	1	159	0	38	1	1
115°	1	126	0	21	1	1
125°	1	103	0	14	1	1
135°	1	82	0	11	1	1
145°	1	58	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	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2
2.5°	1833.4	1847.2	1848.4	1891.7	1879.0	1895.3	1874.8	1878.4	1860.4	1855.6	1793.1
5°	1840.0	1869.4	1877.2	1951.7	1939.7	1948.1	1919.9	1899.5	1857.4	1832.2	1731.2
7.5°	1808.7	1886.2	1929.5	1982.4	2002.2	2008.8	1951.7	1913.9	1844.2	1782.3	1663.9
10°	1791.3	1898.3	1940.3	2019.6	2037.1	2024.5	1980.0	1917.5	1826.2	1726.4	1581.0
12.5°	1781.7	1904.9	1978.2	2059.3	2059.9	2046.7	1994.4	1927.1	1796.7	1666.3	1493.3
15°	1737.2	1903.7	1978.8	2061.1	2070.1	2061.7	2008.2	1920.5	1766.7	1591.8	1392.3
17.5°	1732.4	1900.7	1998.0	2084.5	2069.5	2063.5	2016.6	1917.5	1730.6	1516.1	1297.4
20°	1681.9	1894.1	1998.0	2058.1	2053.3	2055.7	2022.0	1913.3	1689.1	1434.4	1193.4
22.5°	1628.5	1886.2	1989.6	2035.3	2006.4	2050.3	1998.0	1901.9	1647.1	1349.0	1090.0
25°	1565.4	1873.6	1973.4	2002.8	1966.2	2000.4	1999.8	1884.4	1587.0	1257.1	1008.3
27.5°	1514.3	1853.8	1946.9	1991.4	1928.9	1958.4	1975.2	1863.4	1516.1	1166.4	912.2
30°	1438.0	1828.6	1915.1	1921.7	1872.4	1909.7	1928.9	1837.0	1456.6	1063.6	824.4
32.5°	1379.7	1799.7	1876.0	1867.0	1817.7	1867.0	1898.3	1810.5	1385.7	973.5	762.5
35°	1298.0	1764.9	1827.4	1779.9	1747.4	1788.3	1825.0	1782.3	1301.6	877.3	683.2
37.5°	1218.6	1734.2	1769.1	1710.2	1665.7	1711.4	1791.9	1729.4	1216.8	801.0	624.3
40°	1121.9	1663.9	1692.8	1612.8	1568.4	1635.7	1709.6	1683.7	1121.3	721.7	567.3
42.5°	1048.6	1611.6	1620.0	1510.7	1457.8	1529.3	1613.4	1618.8	1043.8	650.2	516.8
45°	951.8	1538.3	1522.7	1402.5	1347.2	1411.5	1537.7	1552.1	956.6	588.3	467.5
47.5°	864.7	1456.6	1425.9	1285.3	1223.4	1299.8	1439.8	1477.6	859.3	531.2	421.2
50°	774.0	1365.3	1297.4	1176.0	1134.5	1172.4	1315.4	1377.9	770.4	474.7	385.8
52.5°	691.0	1264.3	1180.2	1071.4	1030.0	1061.2	1185.0	1278.7	682.0	427.2	354.5
55°	612.9	1163.4	1054.6	958.4	950.0	959.6	1052.8	1160.3	608.7	385.2	334.7
57.5°	543.2	1040.8	941.6	870.7	855.7	863.5	927.8	1038.4	537.8	343.1	305.9
60°	472.9	915.2	829.9	775.2	766.8	772.8	814.2	919.4	468.7	307.7	278.8
62.5°	409.2	789.0	713.3	692.8	686.8	686.8	704.3	800.4	403.8	271.6	258.4
65°	354.5	680.8	623.7	615.9	617.7	617.1	606.3	668.2	346.1	239.8	240.4
67.5°	299.3	566.1	534.2	543.8	551.0	548.0	525.2	555.8	292.0	210.9	224.1
70°	248.2	467.5	461.5	483.1	500.0	484.3	451.3	454.3	239.8	182.7	203.1
72.5°	200.1	378.0	405.6	435.7	451.9	434.5	388.8	375.6	192.9	156.8	183.9
75°	157.4	304.1	347.9	392.4	413.4	391.2	338.3	293.2	153.2	132.2	168.3
77.5°	120.2	241.0	297.4	349.1	369.6	350.3	294.4	228.9	112.4	111.2	151.4
80°	85.9	190.5	263.8	313.7	332.3	313.7	255.4	180.9	78.1	88.9	133.4
82.5°	56.5	147.2	229.5	285.4	305.9	283.0	221.7	139.4	49.9	72.1	120.2
85°	34.3	116.6	200.1	256.6	280.0	257.8	194.1	105.8	27.6	55.3	104.6
87.5°	15.0	90.1	178.5	236.8	257.8	237.4	173.1	82.9	11.4	43.3	89.5
90°	1.2	71.5	157.4	218.1	236.8	217.5	153.2	67.3	0.0	31.2	76.9
92.5°	1.2	61.3	144.2	201.9	222.9	201.3	138.2	55.3	0.0	22.8	64.9
95°	1.8	51.7	131.0	189.3	206.1	187.5	126.2	47.5	0.0	15.6	54.7
97.5°	1.8	46.9	120.2	176.7	195.3	175.5	115.4	42.7	0.0	11.4	44.5
100°	1.2	43.3	111.8	164.6	182.1	163.4	107.0	38.5	0.0	7.2	36.1
102.5°	1.2	40.3	104.6	154.4	168.3	152.6	99.8	36.1	0.0	6.0	29.4
105°	1.2	38.5	97.9	142.4	158.6	142.4	93.7	33.7	0.0	4.8	22.8
107.5°	1.2	36.1	93.1	135.8	149.0	134.6	88.9	31.8	0.0	4.8	18.6
110°	1.2	34.3	88.9	126.2	141.2	127.4	84.7	28.8	0.0	3.0	15.0



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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	31.2	84.7	119.6	134.0	120.2	81.1	26.4	0.0	3.0	13.2
115°	1.2	28.2	81.1	115.4	126.2	114.2	77.5	23.4	0.0	2.4	12.0
117.5°	1.2	26.4	78.7	110.0	120.8	108.8	74.5	22.2	0.0	2.4	11.4
120°	1.2	25.2	75.1	104.6	113.0	103.4	70.9	21.0	0.0	2.4	10.8
122.5°	1.2	24.0	72.1	99.8	108.8	99.1	67.9	20.4	0.0	1.8	9.6
125°	1.2	22.8	67.9	94.3	102.8	93.1	62.5	19.8	0.0	1.2	8.4
127.5°	1.2	21.6	63.7	90.1	97.9	88.9	58.9	19.2	0.0	1.2	7.8
130°	1.2	21.0	58.3	84.7	92.5	83.5	54.7	19.2	0.0	1.2	7.2
132.5°	1.2	20.4	52.3	79.3	87.7	78.1	50.5	18.6	0.0	1.2	6.0
135°	1.2	19.8	46.3	73.9	81.7	72.7	46.9	18.0	0.0	1.2	5.4
137.5°	1.2	18.6	40.9	67.9	75.7	66.7	44.5	16.8	0.0	1.2	4.8
140°	1.2	17.4	36.7	63.1	69.7	61.3	40.9	15.6	0.0	0.6	3.6
142.5°	1.2	15.6	33.0	57.1	63.7	55.9	36.7	13.2	0.0	0.6	3.6
145°	1.2	13.8	30.0	49.9	57.7	49.9	34.3	12.0	0.0	0.6	3.0
147.5°	1.2	12.6	27.0	42.1	52.3	45.7	30.6	10.2	0.0	0.6	2.4
150°	1.2	11.4	23.4	35.5	46.3	40.3	28.2	9.0	0.0	0.0	1.8
152.5°	1.2	10.2	20.4	29.4	41.5	36.7	25.2	7.8	0.0	0.0	1.2
155°	1.8	9.6	17.4	25.8	36.1	31.8	21.0	6.6	0.0	0.0	1.2
157.5°	1.8	8.4	14.4	21.0	31.8	27.6	16.8	5.4	0.0	0.0	0.6
160°	1.8	7.8	12.0	16.2	26.4	22.8	13.8	4.2	0.0	0.0	0.6
162.5°	1.8	7.2	10.2	12.0	21.6	18.0	10.8	3.0	0.0	0.0	0.6
165°	1.8	6.0	9.0	8.4	16.8	13.8	8.4	1.8	0.0	0.0	0.0
167.5°	1.8	5.4	7.2	6.0	12.6	10.2	6.0	1.2	0.0	0.0	0.0
170°	1.8	4.2	6.0	4.2	3.6	6.6	3.6	0.6	0.0	0.0	0.0
172.5°	1.8	3.6	4.8	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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CATALOG NUMBER: 4MB-4SL-ASML-UNV-L850

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1835.2	1835.2	1835.2	1835.2	1835.2	1835.2
2.5°	1784.7	1764.9	1746.8	1766.1	1779.9	1833.4
5°	1697.6	1676.5	1678.9	1696.4	1742.6	1840.0
7.5°	1607.4	1572.6	1581.0	1629.7	1698.2	1808.7
10°	1501.1	1469.2	1477.0	1550.3	1646.5	1791.3
12.5°	1406.1	1352.6	1398.3	1467.4	1586.4	1781.7
15°	1295.0	1252.9	1277.5	1379.7	1528.7	1737.2
17.5°	1174.8	1142.3	1171.8	1273.3	1457.8	1732.4
20°	1082.2	1037.2	1072.0	1183.8	1370.1	1681.9
22.5°	978.3	944.0	980.7	1083.4	1280.5	1628.5
25°	892.9	856.9	893.5	995.7	1201.2	1565.4
27.5°	810.0	777.0	810.0	903.8	1122.5	1514.3
30°	737.3	705.5	739.1	829.2	1030.6	1438.0
32.5°	669.4	628.5	671.8	758.9	949.4	1379.7
35°	599.1	568.5	600.9	697.7	859.3	1298.0
37.5°	540.8	509.0	547.4	630.4	783.0	1218.6
40°	485.5	457.3	487.9	576.3	718.1	1121.9
42.5°	442.3	414.0	445.3	527.0	652.6	1048.6
45°	400.2	379.2	404.4	472.9	586.5	951.8
47.5°	369.6	351.5	372.6	433.3	531.2	864.7
50°	343.1	330.5	345.5	393.6	474.1	774.0
52.5°	319.7	307.1	324.5	362.9	429.0	691.0
55°	301.7	290.2	303.5	334.1	384.0	612.9
57.5°	281.8	274.6	284.8	303.5	348.5	543.2
60°	267.4	259.6	270.4	285.4	308.3	472.9
62.5°	251.2	247.0	253.6	265.6	277.6	409.2
65°	236.8	230.7	239.2	243.4	242.2	354.5
67.5°	221.1	219.3	224.1	224.7	215.7	299.3
70°	204.9	203.7	209.7	206.1	187.5	248.2
72.5°	191.7	191.7	195.3	188.1	163.4	200.1
75°	177.3	178.5	181.5	173.1	137.6	157.4
77.5°	164.0	165.2	165.8	154.4	115.4	120.2
80°	149.0	148.4	154.4	140.0	93.7	85.9
82.5°	135.8	133.4	137.0	122.6	75.7	56.5
85°	120.8	121.4	123.8	107.0	60.7	34.3
87.5°	108.8	108.8	111.2	94.3	45.7	15.0
90°	94.3	93.1	96.7	79.9	34.3	1.2
92.5°	82.3	82.3	84.7	68.5	25.2	1.2
95°	70.3	70.9	72.7	56.5	19.2	1.8
97.5°	60.1	60.7	63.1	48.1	13.8	1.8
100°	51.1	51.7	52.9	38.5	10.8	1.2
102.5°	42.7	44.5	44.5	31.8	8.4	1.2
105°	36.1	38.5	37.3	25.8	7.8	1.2
107.5°	30.0	32.4	32.4	21.0	7.8	1.2
110°	24.6	28.2	27.6	18.0	6.0	1.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	21.0	24.0	22.2	15.6	6.0	1.2
115°	18.0	21.0	19.8	14.4	5.4	1.2
117.5°	16.2	18.0	18.0	13.8	5.4	1.2
120°	15.0	16.8	16.2	13.2	5.4	1.2
122.5°	13.8	15.0	15.0	12.0	4.8	1.2
125°	13.2	13.8	14.4	10.8	4.8	1.2
127.5°	12.6	13.8	13.8	10.2	4.2	1.2
130°	11.4	12.6	12.6	9.6	4.2	1.2
132.5°	10.2	11.4	11.4	9.0	4.2	1.2
135°	9.6	10.8	10.8	8.4	4.2	1.2
137.5°	9.0	9.6	9.6	7.8	4.2	1.2
140°	7.8	9.0	9.0	7.2	4.2	1.2
142.5°	7.2	8.4	8.4	6.6	3.6	1.2
145°	6.6	7.2	7.8	6.0	3.6	1.2
147.5°	5.4	6.6	7.2	5.4	3.6	1.2
150°	4.2	6.0	6.0	5.4	3.6	1.2
152.5°	3.0	5.4	5.4	4.8	3.0	1.2
155°	2.4	4.2	4.8	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: P893492
 CATALOG NUMBER: 4MB-4SL-ASML-UNV-L850

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	19.09	20.55	19.54	20.98	21.44	21.35	22.81	21.80	23.24	23.69
	3H	19.91	21.23	20.38	21.67	22.17	23.05	24.37	23.52	24.81	25.31
	4H	20.12	21.36	20.60	21.82	22.33	23.89	25.13	24.38	25.59	26.10
	6H	20.21	21.36	20.71	21.83	22.36	24.76	25.92	25.26	26.39	26.92
	8H	20.21	21.31	20.72	21.81	22.34	25.24	26.34	25.75	26.83	27.37
	12H	20.20	21.25	20.72	21.74	22.30	25.78	26.83	26.30	27.32	27.89
4H	2H	19.53	20.77	20.02	21.23	21.74	21.71	22.96	22.20	23.42	23.93
	3H	20.62	21.67	21.12	22.17	22.71	23.60	24.64	24.10	25.15	25.68
	4H	20.96	21.91	21.48	22.43	23.00	24.57	25.52	25.09	26.04	26.60
	6H	21.15	21.98	21.70	22.53	23.11	25.61	26.44	26.15	26.99	27.57
	8H	21.18	21.96	21.73	22.50	23.10	26.17	26.95	26.72	27.50	28.09
	12H	21.19	21.89	21.76	22.46	23.06	26.83	27.53	27.40	28.11	28.71
8H	4H	21.29	22.07	21.84	22.61	23.21	24.71	25.49	25.26	26.03	26.63
	6H	21.61	22.27	22.19	22.85	23.46	25.88	26.54	26.46	27.13	27.73
	8H	21.70	22.29	22.30	22.89	23.50	26.56	27.15	27.16	27.75	28.37
	12H	21.76	22.28	22.35	22.87	23.55	27.38	27.90	27.97	28.49	29.17
12H	4H	21.37	22.07	21.94	22.65	23.24	24.70	25.41	25.27	25.98	26.58
	6H	21.75	22.34	22.35	22.94	23.55	25.90	26.49	26.49	27.09	27.70
	8H	21.91	22.43	22.50	23.02	23.70	26.63	27.16	27.23	27.74	28.43