

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: P893490

Luminaire Tested: 4MB-4SL-ASML-UNV-L835

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P893490  
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-L835  
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 3500K CCT  
Light Source: -  
Ballast/Driver: -

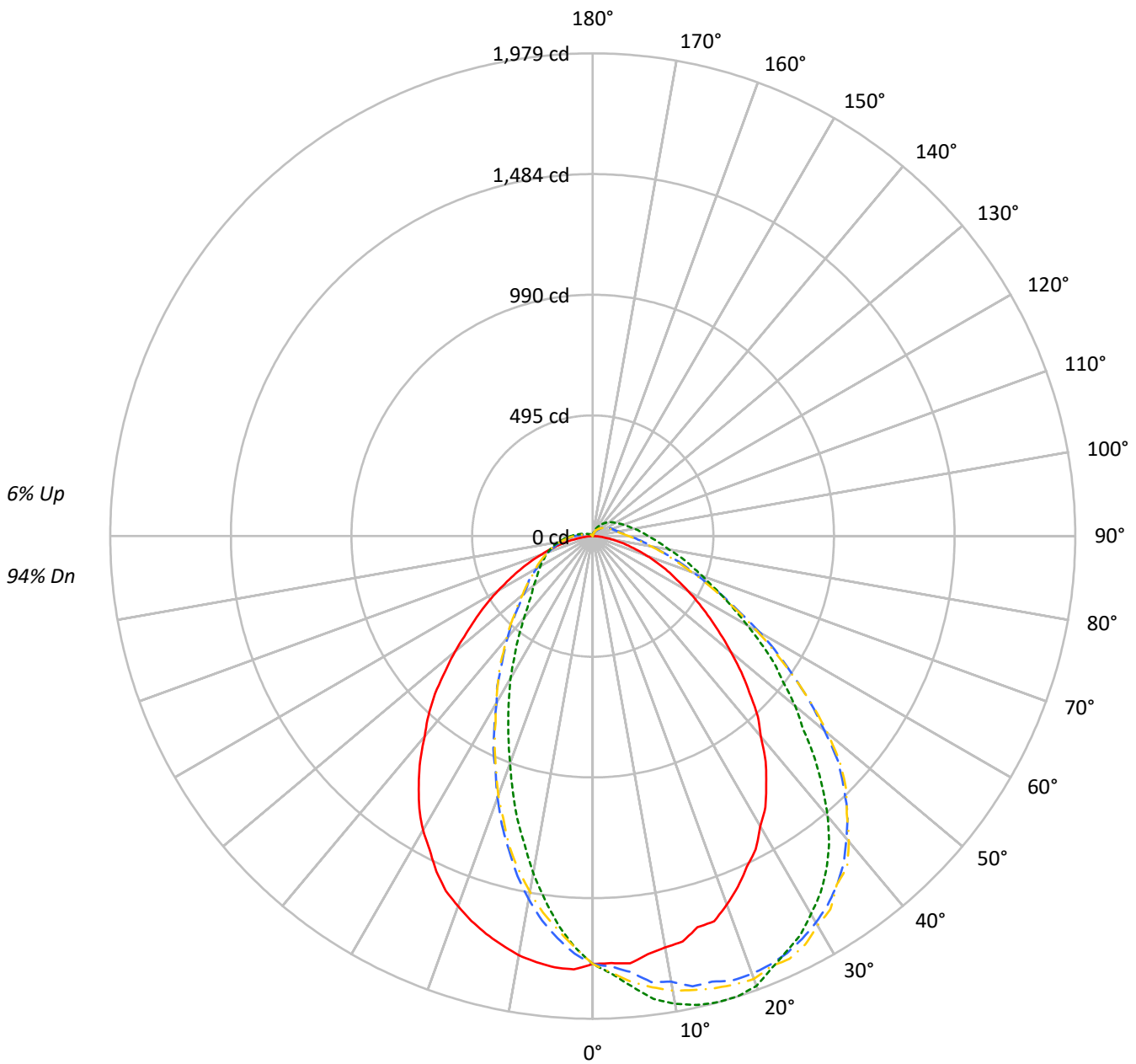
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4372.0 lumens  
Efficiency: N/A  
Efficacy: 146.7 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: P893490  
CATALOG NUMBER: 4MB-4SL-ASML-UNV-L835

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

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

	0°	90°	180°	270°
0°	17864	17864	17864	17864
5°	17930	18205	18100	15735
10°	17609	18593	17951	13410
15°	17361	18526	17655	11213
20°	17227	18160	17300	9173
25°	16570	17318	16799	7547
30°	15876	16550	16081	6235
35°	15092	15619	15135	5081
40°	13890	14288	13883	4166
45°	12704	12611	12769	3549
50°	11298	11008	11245	3207
55°	9956	9643	9887	2946
60°	8731	8224	8654	2784
65°	7651	7082	7468	2646
70°	6502	6206	6283	2528
75°	5301	5642	5160	2436
80°	4087	5077	3719	2268
85°	2811	4904	2270	2125

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 157.5°  
 Vertical Angle: 45°  
 Luminance: 17672 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.8	3.8
10°-20°	458.1	10.5
20°-30°	658.9	15.1
30°-40°	747.8	17.1
40°-50°	714.6	16.3
50°-60°	580.7	13.3
60°-70°	405.2	9.3
70°-80°	251.0	5.7
80°-90°	144.0	3.3
90°-100°	86.1	2.0
100°-110°	56.5	1.3
110°-120°	39.6	0.9
120°-130°	28.7	0.7
130°-140°	19.1	0.4
140°-150°	10.7	0.2
150°-160°	4.8	0.1
160°-170°	1.4	0.0
170°-180°	0.1	0.0
0°-30°	1281.8	29.3
0°-40°	2029.6	46.4
0°-60°	3324.9	76.1
0°-90°	4125.1	94.4
90°-120°	182.1	4.2
90°-150°	240.6	5.5
90°-180°	247.0	5.6
0°-180°	4372.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1754	1754	1754	1754	1754	
5°	1759	1854	1775	1602	1759	166
15°	1660	1979	1689	1198	1660	472
25°	1496	1879	1517	819	1496	690
35°	1241	1670	1244	543	1241	773
45°	910	1288	914	362	910	702
55°	586	908	582	277	586	527
65°	339	590	331	221	339	336
75°	150	395	146	171	150	162
85°	33	268	26	116	33	37
90°	1	226	0	89	1	2
95°	2	197	0	68	2	1
105°	1	152	0	37	1	1
115°	1	121	0	20	1	1
125°	1	98	0	13	1	1
135°	1	78	0	10	1	1
145°	1	55	0	7	1	1
155°	2	34	0	4	2	1
165°	2	16	0	2	2	0
175°	2	1	0	0	2	0
180°	1	1	1	1	1	



TEST NUMBER: P893490  
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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1754.1	1754.1	1754.1	1754.1	1754.1	1754.1	1754.1	1754.1	1754.1	1754.1	1754.1
2.5°	1752.4	1765.6	1766.8	1808.1	1796.0	1811.6	1792.0	1795.5	1778.2	1773.6	1713.9
5°	1758.7	1786.9	1794.3	1865.5	1854.1	1862.1	1835.1	1815.6	1775.4	1751.2	1654.8
7.5°	1728.8	1802.9	1844.3	1894.8	1913.8	1920.1	1865.5	1829.4	1762.7	1703.6	1590.4
10°	1712.2	1814.4	1854.6	1930.5	1947.1	1935.0	1892.5	1832.8	1745.5	1650.2	1511.2
12.5°	1703.0	1820.7	1890.8	1968.4	1968.9	1956.3	1906.3	1842.0	1717.4	1592.7	1427.3
15°	1660.5	1819.6	1891.4	1970.1	1978.7	1970.7	1919.5	1835.7	1688.6	1521.5	1330.8
17.5°	1655.9	1816.7	1909.8	1992.5	1978.1	1972.4	1927.6	1832.8	1654.2	1449.1	1240.1
20°	1607.7	1810.4	1909.8	1967.2	1962.6	1964.9	1932.7	1828.8	1614.5	1371.0	1140.7
22.5°	1556.5	1802.9	1901.7	1945.4	1917.8	1959.7	1909.8	1817.9	1574.3	1289.5	1041.9
25°	1496.2	1790.9	1886.2	1914.4	1879.3	1912.1	1911.5	1801.2	1516.9	1201.6	963.8
27.5°	1447.4	1771.9	1861.0	1903.5	1843.7	1871.9	1887.9	1781.1	1449.1	1114.8	871.9
30°	1374.5	1747.8	1830.5	1836.8	1789.7	1825.3	1843.7	1755.8	1392.3	1016.6	788.0
32.5°	1318.7	1720.2	1793.2	1784.6	1737.5	1784.6	1814.4	1730.6	1324.5	930.5	728.9
35°	1240.6	1686.9	1746.7	1701.3	1670.3	1709.3	1744.4	1703.6	1244.1	838.6	653.1
37.5°	1164.8	1657.6	1690.9	1634.7	1592.1	1635.8	1712.8	1653.0	1163.1	765.6	596.8
40°	1072.3	1590.4	1618.0	1541.6	1499.1	1563.4	1634.1	1609.4	1071.8	689.8	542.2
42.5°	1002.3	1540.5	1548.5	1444.0	1393.4	1461.8	1542.2	1547.3	997.7	621.5	494.0
45°	909.8	1470.4	1455.4	1340.6	1287.7	1349.2	1469.8	1483.6	914.4	562.3	446.9
47.5°	826.5	1392.3	1363.0	1228.6	1169.4	1242.4	1376.2	1412.4	821.3	507.7	402.6
50°	739.8	1305.0	1240.1	1124.0	1084.4	1120.6	1257.3	1317.0	736.3	453.8	368.7
52.5°	660.5	1208.5	1128.1	1024.1	984.5	1014.3	1132.7	1222.3	651.9	408.4	338.9
55°	585.9	1112.0	1008.0	916.1	908.1	917.3	1006.3	1109.1	581.8	368.2	319.9
57.5°	519.2	994.8	900.0	832.3	817.9	825.4	886.8	992.5	514.1	328.0	292.4
60°	452.0	874.8	793.2	740.9	732.9	738.6	778.3	878.8	448.0	294.1	266.5
62.5°	391.1	754.1	681.8	662.2	656.5	656.5	673.2	765.1	386.0	259.6	247.0
65°	338.9	650.8	596.2	588.7	590.5	589.9	579.5	638.7	330.8	229.2	229.7
67.5°	286.0	541.1	510.6	519.8	526.7	523.8	502.0	531.3	279.1	201.6	214.2
70°	237.2	446.9	441.1	461.8	477.9	462.9	431.4	434.2	229.2	174.6	194.1
72.5°	191.3	361.3	387.7	416.4	431.9	415.3	371.6	359.0	184.4	149.9	175.8
75°	150.5	290.6	332.6	375.1	395.2	373.9	323.4	280.3	146.5	126.4	160.8
77.5°	114.9	230.3	284.3	333.7	353.2	334.9	281.4	218.8	107.4	106.3	144.7
80°	82.1	182.1	252.1	299.8	317.6	299.8	244.1	172.9	74.7	85.0	127.5
82.5°	54.0	140.7	219.4	272.8	292.4	270.5	211.9	133.3	47.7	68.9	114.9
85°	32.7	111.4	191.3	245.3	267.7	246.4	185.5	101.1	26.4	52.8	99.9
87.5°	14.4	86.2	170.6	226.3	246.4	226.9	165.4	79.3	10.9	41.4	85.6
90°	1.1	68.3	150.5	208.5	226.3	207.9	146.5	64.3	0.0	29.9	73.5
92.5°	1.1	58.6	137.8	193.0	213.1	192.4	132.1	52.8	0.0	21.8	62.0
95°	1.7	49.4	125.2	180.9	197.0	179.2	120.6	45.4	0.0	14.9	52.3
97.5°	1.7	44.8	114.9	168.9	186.7	167.7	110.3	40.8	0.0	10.9	42.5
100°	1.1	41.4	106.8	157.4	174.0	156.2	102.2	36.8	0.0	6.9	34.5
102.5°	1.1	38.5	99.9	147.6	160.8	145.9	95.3	34.5	0.0	5.7	28.1
105°	1.1	36.8	93.6	136.1	151.6	136.1	89.6	32.2	0.0	4.6	21.8
107.5°	1.1	34.5	89.0	129.8	142.4	128.7	85.0	30.4	0.0	4.6	17.8
110°	1.1	32.7	85.0	120.6	135.0	121.8	81.0	27.6	0.0	2.9	14.4



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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°	1.1	29.9	81.0	114.3	128.1	114.9	77.5	25.3	0.0	2.9	12.6
115°	1.1	27.0	77.5	110.3	120.6	109.1	74.1	22.4	0.0	2.3	11.5
117.5°	1.1	25.3	75.2	105.1	115.4	104.0	71.2	21.3	0.0	2.3	10.9
120°	1.1	24.1	71.8	99.9	108.0	98.8	67.8	20.1	0.0	2.3	10.3
122.5°	1.1	23.0	68.9	95.3	104.0	94.8	64.9	19.5	0.0	1.7	9.2
125°	1.1	21.8	64.9	90.2	98.2	89.0	59.7	19.0	0.0	1.1	8.0
127.5°	1.1	20.7	60.9	86.2	93.6	85.0	56.3	18.4	0.0	1.1	7.5
130°	1.1	20.1	55.7	81.0	88.5	79.8	52.3	18.4	0.0	1.1	6.9
132.5°	1.1	19.5	50.0	75.8	83.9	74.7	48.2	17.8	0.0	1.1	5.7
135°	1.1	19.0	44.2	70.6	78.1	69.5	44.8	17.2	0.0	1.1	5.2
137.5°	1.1	17.8	39.1	64.9	72.4	63.8	42.5	16.1	0.0	1.1	4.6
140°	1.1	16.7	35.0	60.3	66.6	58.6	39.1	14.9	0.0	0.6	3.4
142.5°	1.1	14.9	31.6	54.6	60.9	53.4	35.0	12.6	0.0	0.6	3.4
145°	1.1	13.2	28.7	47.7	55.1	47.7	32.7	11.5	0.0	0.6	2.9
147.5°	1.1	12.1	25.8	40.2	50.0	43.7	29.3	9.8	0.0	0.6	2.3
150°	1.1	10.9	22.4	33.9	44.2	38.5	27.0	8.6	0.0	0.0	1.7
152.5°	1.1	9.8	19.5	28.1	39.6	35.0	24.1	7.5	0.0	0.0	1.1
155°	1.7	9.2	16.7	24.7	34.5	30.4	20.1	6.3	0.0	0.0	1.1
157.5°	1.7	8.0	13.8	20.1	30.4	26.4	16.1	5.2	0.0	0.0	0.6
160°	1.7	7.5	11.5	15.5	25.3	21.8	13.2	4.0	0.0	0.0	0.6
162.5°	1.7	6.9	9.8	11.5	20.7	17.2	10.3	2.9	0.0	0.0	0.6
165°	1.7	5.7	8.6	8.0	16.1	13.2	8.0	1.7	0.0	0.0	0.0
167.5°	1.7	5.2	6.9	5.7	12.1	9.8	5.7	1.1	0.0	0.0	0.0
170°	1.7	4.0	5.7	4.0	3.4	6.3	3.4	0.6	0.0	0.0	0.0
172.5°	1.7	3.4	4.6	2.9	1.1	3.4	1.7	0.0	0.0	0.0	0.0
175°	1.7	2.9	2.9	1.7	0.6	1.1	0.0	0.0	0.0	0.0	0.0
177.5°	1.7	2.3	1.7	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



TEST NUMBER: P893490

CATALOG NUMBER: 4MB-4SL-ASML-UNV-L835

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1754.1	1754.1	1754.1	1754.1	1754.1	1754.1
2.5°	1705.9	1686.9	1669.7	1688.1	1701.3	1752.4
5°	1622.6	1602.5	1604.8	1621.4	1665.7	1758.7
7.5°	1536.4	1503.1	1511.2	1557.7	1623.2	1728.8
10°	1434.8	1404.3	1411.8	1481.9	1573.8	1712.2
12.5°	1344.0	1292.9	1336.6	1402.6	1516.3	1703.0
15°	1237.8	1197.6	1221.1	1318.7	1461.2	1660.5
17.5°	1122.9	1091.9	1120.0	1217.1	1393.4	1655.9
20°	1034.4	991.4	1024.7	1131.5	1309.6	1607.7
22.5°	935.1	902.3	937.4	1035.6	1224.0	1556.5
25°	853.5	819.0	854.1	951.7	1148.2	1496.2
27.5°	774.2	742.7	774.2	863.8	1072.9	1447.4
30°	704.7	674.3	706.5	792.6	985.0	1374.5
32.5°	639.8	600.8	642.1	725.4	907.5	1318.7
35°	572.6	543.4	574.4	666.8	821.3	1240.6
37.5°	516.9	486.5	523.2	602.5	748.4	1164.8
40°	464.1	437.1	466.4	550.8	686.4	1072.3
42.5°	422.7	395.7	425.6	503.7	623.8	1002.3
45°	382.5	362.4	386.5	452.0	560.6	909.8
47.5°	353.2	336.0	356.1	414.1	507.7	826.5
50°	328.0	315.9	330.3	376.2	453.2	739.8
52.5°	305.6	293.5	310.2	346.9	410.1	660.5
55°	288.3	277.4	290.1	319.3	367.0	585.9
57.5°	269.4	262.5	272.3	290.1	333.1	519.2
60°	255.6	248.1	258.5	272.8	294.7	452.0
62.5°	240.1	236.1	242.4	253.9	265.4	391.1
65°	226.3	220.6	228.6	232.6	231.5	338.9
67.5°	211.4	209.6	214.2	214.8	206.2	286.0
70°	195.9	194.7	200.5	197.0	179.2	237.2
72.5°	183.2	183.2	186.7	179.8	156.2	191.3
75°	169.4	170.6	173.5	165.4	131.5	150.5
77.5°	156.8	158.0	158.5	147.6	110.3	114.9
80°	142.4	141.9	147.6	133.8	89.6	82.1
82.5°	129.8	127.5	131.0	117.2	72.4	54.0
85°	115.4	116.0	118.3	102.2	58.0	32.7
87.5°	104.0	104.0	106.3	90.2	43.7	14.4
90°	90.2	89.0	92.5	76.4	32.7	1.1
92.5°	78.7	78.7	81.0	65.5	24.1	1.1
95°	67.2	67.8	69.5	54.0	18.4	1.7
97.5°	57.4	58.0	60.3	45.9	13.2	1.7
100°	48.8	49.4	50.5	36.8	10.3	1.1
102.5°	40.8	42.5	42.5	30.4	8.0	1.1
105°	34.5	36.8	35.6	24.7	7.5	1.1
107.5°	28.7	31.0	31.0	20.1	7.5	1.1
110°	23.5	27.0	26.4	17.2	5.7	1.1





TEST NUMBER: P893490  
 CATALOG NUMBER: 4MB-4SL-ASML-UNV-L835

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	20.1	23.0	21.3	14.9	5.7	1.1
115°	17.2	20.1	19.0	13.8	5.2	1.1
117.5°	15.5	17.2	17.2	13.2	5.2	1.1
120°	14.4	16.1	15.5	12.6	5.2	1.1
122.5°	13.2	14.4	14.4	11.5	4.6	1.1
125°	12.6	13.2	13.8	10.3	4.6	1.1
127.5°	12.1	13.2	13.2	9.8	4.0	1.1
130°	10.9	12.1	12.1	9.2	4.0	1.1
132.5°	9.8	10.9	10.9	8.6	4.0	1.1
135°	9.2	10.3	10.3	8.0	4.0	1.1
137.5°	8.6	9.2	9.2	7.5	4.0	1.1
140°	7.5	8.6	8.6	6.9	4.0	1.1
142.5°	6.9	8.0	8.0	6.3	3.4	1.1
145°	6.3	6.9	7.5	5.7	3.4	1.1
147.5°	5.2	6.3	6.9	5.2	3.4	1.1
150°	4.0	5.7	5.7	5.2	3.4	1.1
152.5°	2.9	5.2	5.2	4.6	2.9	1.1
155°	2.3	4.0	4.6	4.0	2.9	1.7
157.5°	1.7	3.4	4.0	4.0	2.9	1.7
160°	1.1	2.9	3.4	3.4	2.3	1.7
162.5°	0.6	2.3	2.9	3.4	2.3	1.7
165°	0.0	1.7	2.3	2.9	2.3	1.7
167.5°	0.0	1.1	1.7	2.3	1.7	1.7
170°	0.0	0.6	1.1	1.7	1.7	1.7
172.5°	0.0	0.0	0.6	1.1	1.1	1.7
175°	0.0	0.0	0.0	0.6	1.1	1.7
177.5°	0.0	0.0	0.0	0.6	1.1	1.7
180°	0.6	0.6	0.6	0.6	0.6	0.6



TEST NUMBER: P893490  
 CATALOG NUMBER: 4MB-4SL-ASML-UNV-L835

**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	18.93	20.39	19.39	20.82	21.28	21.19	22.65	21.65	23.08	23.54
	3H	19.75	21.07	20.22	21.52	22.01	22.89	24.21	23.36	24.65	25.15
	4H	19.96	21.20	20.45	21.66	22.17	23.73	24.97	24.22	25.43	25.95
	6H	20.05	21.20	20.55	21.68	22.20	24.61	25.76	25.11	26.23	26.76
	8H	20.05	21.15	20.57	21.65	22.18	25.08	26.18	25.59	26.68	27.21
	12H	20.04	21.09	20.56	21.58	22.15	25.62	26.68	26.14	27.17	27.73
4H	2H	19.37	20.61	19.86	21.07	21.59	21.56	22.80	22.05	23.26	23.77
	3H	20.47	21.51	20.97	22.02	22.55	23.44	24.49	23.94	24.99	25.53
	4H	20.81	21.75	21.33	22.27	22.84	24.41	25.36	24.94	25.88	26.45
	6H	21.00	21.83	21.54	22.37	22.96	25.45	26.28	26.00	26.83	27.41
	8H	21.02	21.80	21.57	22.35	22.94	26.02	26.80	26.57	27.34	27.94
	12H	21.03	21.73	21.60	22.31	22.91	26.67	27.38	27.24	27.95	28.55
8H	4H	21.13	21.91	21.68	22.46	23.05	24.55	25.33	25.10	25.88	26.47
	6H	21.46	22.11	22.04	22.70	23.30	25.73	26.38	26.31	26.97	27.57
	8H	21.54	22.13	22.14	22.73	23.35	26.41	26.99	27.00	27.59	28.21
	12H	21.60	22.13	22.20	22.71	23.39	27.22	27.75	27.82	28.33	29.02
12H	4H	21.21	21.91	21.78	22.49	23.09	24.55	25.25	25.12	25.82	26.42
	6H	21.59	22.18	22.19	22.78	23.40	25.74	26.33	26.33	26.93	27.54
	8H	21.75	22.28	22.35	22.86	23.55	26.48	27.00	27.07	27.59	28.27