

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: P893489

Luminaire Tested: 4MB-4SL-ASML-UNV-L830

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893489
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-L830
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 3000K CCT
Light Source: -
Ballast/Driver: -

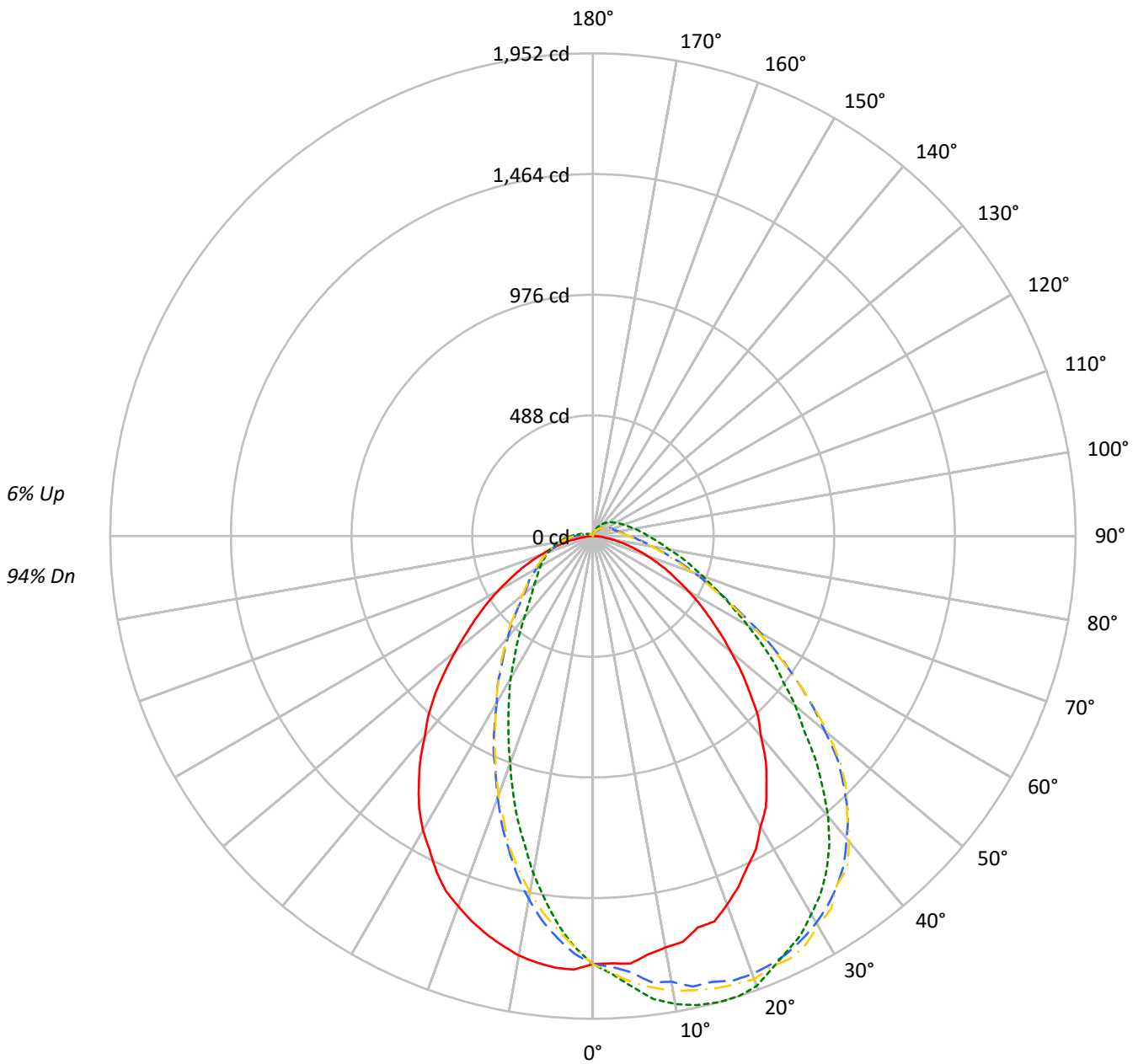
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4314.0 lumens
Efficiency: N/A
Efficacy: 144.8 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 (Ain): 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: P893489
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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	85	83	81	79
2	98	90	83	78	95	88	82	76	83	78	74	79	75	71	75	72	69	75	72	69	66
3	90	80	72	65	87	78	70	64	74	68	63	70	65	61	67	63	59	67	63	59	57
4	83	71	63	56	80	69	61	55	66	59	54	63	57	53	60	55	51	60	55	51	49
5	76	64	55	49	74	62	54	48	60	53	47	57	51	46	55	49	45	55	49	45	43
6	71	58	49	43	68	56	48	42	54	47	42	52	46	41	50	44	40	50	44	40	38
7	66	53	44	38	64	51	43	38	49	42	37	48	41	36	46	40	36	46	40	36	34
8	61	48	40	34	59	47	39	34	45	38	33	44	37	33	42	37	32	42	37	32	30
9	57	44	36	31	56	43	36	31	42	35	30	40	34	30	39	33	29	39	33	29	28
10	54	41	33	28	52	40	33	28	39	32	28	38	31	27	36	31	27	36	31	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17627	17627	17627	17627
5°	17693	17964	17860	15526
10°	17375	18346	17713	13232
15°	17131	18280	17421	11064
20°	16998	17919	17071	9051
25°	16351	17088	16577	7447
30°	15664	16331	15868	6153
35°	14892	15412	14934	5013
40°	13706	14098	13699	4111
45°	12535	12445	12600	3502
50°	11149	10861	11097	3164
55°	9824	9515	9756	2906
60°	8616	8116	8540	2747
65°	7550	6988	7369	2610
70°	6417	6123	6198	2495
75°	5230	5566	5089	2403
80°	4032	5010	3669	2238
85°	2777	4838	2244	2097

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 17438 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.6	3.8
10°-20°	452.0	10.5
20°-30°	650.2	15.1
30°-40°	737.8	17.1
40°-50°	705.1	16.3
50°-60°	573.0	13.3
60°-70°	399.8	9.3
70°-80°	247.7	5.7
80°-90°	142.1	3.3
90°-100°	84.9	2.0
100°-110°	55.7	1.3
110°-120°	39.1	0.9
120°-130°	28.3	0.7
130°-140°	18.8	0.4
140°-150°	10.6	0.2
150°-160°	4.7	0.1
160°-170°	1.4	0.0
170°-180°	0.1	0.0
0°-30°	1264.8	29.3
0°-40°	2002.7	46.4
0°-60°	3280.8	76.1
0°-90°	4070.3	94.4
90°-120°	179.7	4.2
90°-150°	237.4	5.5
90°-180°	244.0	5.7
0°-180°	4314.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1731	1731	1731	1731	1731	
5°	1735	1830	1752	1581	1735	164
15°	1638	1952	1666	1182	1638	466
25°	1476	1854	1497	808	1476	681
35°	1224	1648	1228	536	1224	763
45°	898	1271	902	358	898	693
55°	578	896	574	274	578	520
65°	334	583	326	218	334	332
75°	148	390	144	168	148	160
85°	32	264	26	114	32	36
90°	1	223	0	88	1	2
95°	2	194	0	67	2	1
105°	1	150	0	36	1	1
115°	1	119	0	20	1	1
125°	1	97	0	13	1	1
135°	1	77	0	10	1	1
145°	1	54	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: P893489
 CATALOG NUMBER: 4MB-4SL-ASML-UNV-L830

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1730.8	1730.8	1730.8	1730.8	1730.8	1730.8	1730.8	1730.8	1730.8	1730.8	1730.8
2.5°	1729.1	1742.2	1743.3	1784.1	1772.2	1787.5	1768.3	1771.7	1754.7	1750.1	1691.2
5°	1735.4	1763.2	1770.5	1840.8	1829.5	1837.4	1810.8	1791.5	1751.8	1728.0	1632.8
7.5°	1705.9	1779.0	1819.8	1869.7	1888.4	1894.6	1840.8	1805.1	1739.4	1681.0	1569.3
10°	1689.5	1790.4	1830.0	1904.8	1921.3	1909.4	1867.4	1808.5	1722.3	1628.3	1491.1
12.5°	1680.4	1796.6	1865.7	1942.2	1942.8	1930.3	1881.0	1817.6	1694.6	1571.6	1408.4
15°	1638.5	1795.5	1866.3	1943.9	1952.4	1944.5	1894.1	1811.3	1666.2	1501.3	1313.2
17.5°	1633.9	1792.6	1884.4	1966.1	1951.9	1946.2	1902.0	1808.5	1632.2	1429.9	1223.6
20°	1586.3	1786.4	1884.4	1941.1	1936.6	1938.8	1907.1	1804.5	1593.1	1352.8	1125.6
22.5°	1535.9	1779.0	1876.5	1919.6	1892.4	1933.7	1884.4	1793.8	1553.5	1272.4	1028.1
25°	1476.4	1767.1	1861.2	1889.0	1854.4	1886.7	1886.1	1777.3	1496.8	1185.6	951.0
27.5°	1428.2	1748.4	1836.3	1878.2	1819.3	1847.0	1862.9	1757.5	1429.9	1100.1	860.3
30°	1356.2	1724.6	1806.2	1812.5	1766.0	1801.1	1819.3	1732.6	1373.8	1003.1	777.6
32.5°	1301.3	1697.4	1769.4	1760.9	1714.4	1760.9	1790.4	1707.6	1306.9	918.1	719.2
35°	1224.2	1664.5	1723.5	1678.7	1648.1	1686.6	1721.2	1681.0	1227.6	827.5	644.4
37.5°	1149.4	1635.6	1668.5	1613.0	1571.0	1614.1	1690.0	1631.1	1147.7	755.5	588.9
40°	1058.1	1569.3	1596.5	1521.2	1479.2	1542.7	1612.4	1588.0	1057.6	680.7	535.0
42.5°	989.0	1520.0	1528.0	1424.8	1374.9	1442.4	1521.7	1526.8	984.4	613.2	487.4
45°	897.7	1450.9	1436.1	1322.8	1270.7	1331.3	1450.3	1463.9	902.3	554.8	440.9
47.5°	815.6	1373.8	1344.9	1212.3	1153.9	1225.9	1357.9	1393.6	810.5	501.0	397.3
50°	730.0	1287.7	1223.6	1109.1	1070.0	1105.7	1240.6	1299.6	726.6	447.7	363.9
52.5°	651.8	1192.4	1113.1	1010.5	971.4	1000.9	1117.6	1206.0	643.3	403.0	334.4
55°	578.1	1097.2	994.6	904.0	896.0	905.1	992.9	1094.4	574.1	363.3	315.7
57.5°	512.3	981.6	888.1	821.2	807.0	814.4	875.1	979.3	507.2	323.6	288.5
60°	446.0	863.2	782.7	731.1	723.2	728.8	767.9	867.1	442.1	290.2	263.0
62.5°	386.0	744.1	672.7	653.5	647.8	647.8	664.2	754.9	380.9	256.2	243.7
65°	334.4	642.1	588.3	580.9	582.6	582.1	571.8	630.2	326.4	226.1	226.7
67.5°	282.2	533.9	503.8	512.9	519.7	516.9	495.3	524.2	275.4	198.9	211.4
70°	234.1	440.9	435.3	455.7	471.5	456.8	425.6	428.5	226.1	172.3	191.6
72.5°	188.7	356.5	382.6	410.9	426.2	409.8	366.7	354.2	181.9	147.9	173.4
75°	148.5	286.8	328.1	370.1	389.9	369.0	319.1	276.6	144.5	124.7	158.7
77.5°	113.3	227.3	280.5	329.3	348.6	330.4	277.7	215.9	106.0	104.8	142.8
80°	81.0	179.7	248.8	295.8	313.4	295.8	240.9	170.6	73.7	83.9	125.8
82.5°	53.3	138.9	216.5	269.2	288.5	266.9	209.1	131.5	47.0	68.0	113.3
85°	32.3	109.9	188.7	242.0	264.1	243.1	183.1	99.7	26.1	52.1	98.6
87.5°	14.2	85.0	168.3	223.3	243.1	223.9	163.2	78.2	10.8	40.8	84.4
90°	1.1	67.4	148.5	205.7	223.3	205.2	144.5	63.5	0.0	29.5	72.5
92.5°	1.1	57.8	136.0	190.4	210.3	189.9	130.4	52.1	0.0	21.5	61.2
95°	1.7	48.7	123.6	178.5	194.4	176.8	119.0	44.8	0.0	14.7	51.6
97.5°	1.7	44.2	113.3	166.6	184.2	165.5	108.8	40.2	0.0	10.8	41.9
100°	1.1	40.8	105.4	155.3	171.7	154.2	100.9	36.3	0.0	6.8	34.0
102.5°	1.1	38.0	98.6	145.7	158.7	144.0	94.1	34.0	0.0	5.7	27.8
105°	1.1	36.3	92.4	134.3	149.6	134.3	88.4	31.7	0.0	4.5	21.5
107.5°	1.1	34.0	87.8	128.1	140.6	127.0	83.9	30.0	0.0	4.5	17.6
110°	1.1	32.3	83.9	119.0	133.2	120.2	79.9	27.2	0.0	2.8	14.2



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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	29.5	79.9	112.8	126.4	113.3	76.5	24.9	0.0	2.8	12.5
115°	1.1	26.6	76.5	108.8	119.0	107.7	73.1	22.1	0.0	2.3	11.3
117.5°	1.1	24.9	74.2	103.7	113.9	102.6	70.3	21.0	0.0	2.3	10.8
120°	1.1	23.8	70.8	98.6	106.5	97.5	66.9	19.8	0.0	2.3	10.2
122.5°	1.1	22.7	68.0	94.1	102.6	93.5	64.0	19.3	0.0	1.7	9.1
125°	1.1	21.5	64.0	89.0	96.9	87.8	58.9	18.7	0.0	1.1	7.9
127.5°	1.1	20.4	60.1	85.0	92.4	83.9	55.5	18.1	0.0	1.1	7.4
130°	1.1	19.8	55.0	79.9	87.3	78.8	51.6	18.1	0.0	1.1	6.8
132.5°	1.1	19.3	49.3	74.8	82.7	73.7	47.6	17.6	0.0	1.1	5.7
135°	1.1	18.7	43.6	69.7	77.1	68.6	44.2	17.0	0.0	1.1	5.1
137.5°	1.1	17.6	38.5	64.0	71.4	62.9	41.9	15.9	0.0	1.1	4.5
140°	1.1	16.4	34.6	59.5	65.7	57.8	38.5	14.7	0.0	0.6	3.4
142.5°	1.1	14.7	31.2	53.8	60.1	52.7	34.6	12.5	0.0	0.6	3.4
145°	1.1	13.0	28.3	47.0	54.4	47.0	32.3	11.3	0.0	0.6	2.8
147.5°	1.1	11.9	25.5	39.7	49.3	43.1	28.9	9.6	0.0	0.6	2.3
150°	1.1	10.8	22.1	33.4	43.6	38.0	26.6	8.5	0.0	0.0	1.7
152.5°	1.1	9.6	19.3	27.8	39.1	34.6	23.8	7.4	0.0	0.0	1.1
155°	1.7	9.1	16.4	24.4	34.0	30.0	19.8	6.2	0.0	0.0	1.1
157.5°	1.7	7.9	13.6	19.8	30.0	26.1	15.9	5.1	0.0	0.0	0.6
160°	1.7	7.4	11.3	15.3	24.9	21.5	13.0	4.0	0.0	0.0	0.6
162.5°	1.7	6.8	9.6	11.3	20.4	17.0	10.2	2.8	0.0	0.0	0.6
165°	1.7	5.7	8.5	7.9	15.9	13.0	7.9	1.7	0.0	0.0	0.0
167.5°	1.7	5.1	6.8	5.7	11.9	9.6	5.7	1.1	0.0	0.0	0.0
170°	1.7	4.0	5.7	4.0	3.4	6.2	3.4	0.6	0.0	0.0	0.0
172.5°	1.7	3.4	4.5	2.8	1.1	3.4	1.7	0.0	0.0	0.0	0.0
175°	1.7	2.8	2.8	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



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1730.8	1730.8	1730.8	1730.8	1730.8	1730.8
2.5°	1683.2	1664.5	1647.5	1665.7	1678.7	1729.1
5°	1601.1	1581.2	1583.5	1599.9	1643.6	1735.4
7.5°	1516.1	1483.2	1491.1	1537.0	1601.6	1705.9
10°	1415.7	1385.7	1393.1	1462.2	1552.9	1689.5
12.5°	1326.2	1275.8	1318.8	1384.0	1496.2	1680.4
15°	1221.3	1181.7	1204.9	1301.3	1441.8	1638.5
17.5°	1108.0	1077.4	1105.2	1200.9	1374.9	1633.9
20°	1020.7	978.2	1011.1	1116.5	1292.2	1586.3
22.5°	922.7	890.4	924.9	1021.8	1207.7	1535.9
25°	842.2	808.2	842.8	939.1	1132.9	1476.4
27.5°	764.0	732.8	764.0	852.4	1058.7	1428.2
30°	695.4	665.4	697.1	782.1	972.0	1356.2
32.5°	631.4	592.8	633.6	715.8	895.5	1301.3
35°	565.0	536.1	566.7	658.0	810.5	1224.2
37.5°	510.1	480.0	516.3	594.5	738.5	1149.4
40°	457.9	431.3	460.2	543.5	677.3	1058.1
42.5°	417.1	390.5	420.0	497.0	615.5	989.0
45°	377.5	357.6	381.4	446.0	553.1	897.7
47.5°	348.6	331.5	351.4	408.6	501.0	815.6
50°	323.6	311.7	325.9	371.2	447.2	730.0
52.5°	301.5	289.6	306.0	342.3	404.7	651.8
55°	284.5	273.7	286.2	315.1	362.2	578.1
57.5°	265.8	259.0	268.6	286.2	328.7	512.3
60°	252.2	244.8	255.0	269.2	290.7	446.0
62.5°	236.9	232.9	239.2	250.5	261.8	386.0
65°	223.3	217.6	225.6	229.5	228.4	334.4
67.5°	208.6	206.9	211.4	212.0	203.5	282.2
70°	193.3	192.1	197.8	194.4	176.8	234.1
72.5°	180.8	180.8	184.2	177.4	154.2	188.7
75°	167.2	168.3	171.2	163.2	129.8	148.5
77.5°	154.7	155.9	156.4	145.7	108.8	113.3
80°	140.6	140.0	145.7	132.1	88.4	81.0
82.5°	128.1	125.8	129.2	115.6	71.4	53.3
85°	113.9	114.5	116.8	100.9	57.2	32.3
87.5°	102.6	102.6	104.8	89.0	43.1	14.2
90°	89.0	87.8	91.2	75.4	32.3	1.1
92.5°	77.6	77.6	79.9	64.6	23.8	1.1
95°	66.3	66.9	68.6	53.3	18.1	1.7
97.5°	56.7	57.2	59.5	45.3	13.0	1.7
100°	48.2	48.7	49.9	36.3	10.2	1.1
102.5°	40.2	41.9	41.9	30.0	7.9	1.1
105°	34.0	36.3	35.1	24.4	7.4	1.1
107.5°	28.3	30.6	30.6	19.8	7.4	1.1
110°	23.2	26.6	26.1	17.0	5.7	1.1



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	19.8	22.7	21.0	14.7	5.7	1.1
115°	17.0	19.8	18.7	13.6	5.1	1.1
117.5°	15.3	17.0	17.0	13.0	5.1	1.1
120°	14.2	15.9	15.3	12.5	5.1	1.1
122.5°	13.0	14.2	14.2	11.3	4.5	1.1
125°	12.5	13.0	13.6	10.2	4.5	1.1
127.5°	11.9	13.0	13.0	9.6	4.0	1.1
130°	10.8	11.9	11.9	9.1	4.0	1.1
132.5°	9.6	10.8	10.8	8.5	4.0	1.1
135°	9.1	10.2	10.2	7.9	4.0	1.1
137.5°	8.5	9.1	9.1	7.4	4.0	1.1
140°	7.4	8.5	8.5	6.8	4.0	1.1
142.5°	6.8	7.9	7.9	6.2	3.4	1.1
145°	6.2	6.8	7.4	5.7	3.4	1.1
147.5°	5.1	6.2	6.8	5.1	3.4	1.1
150°	4.0	5.7	5.7	5.1	3.4	1.1
152.5°	2.8	5.1	5.1	4.5	2.8	1.1
155°	2.3	4.0	4.5	4.0	2.8	1.7
157.5°	1.7	3.4	4.0	4.0	2.8	1.7
160°	1.1	2.8	3.4	3.4	2.3	1.7
162.5°	0.6	2.3	2.8	3.4	2.3	1.7
165°	0.0	1.7	2.3	2.8	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: P893489
 CATALOG NUMBER: 4MB-4SL-ASML-UNV-L830

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	18.89	20.35	19.34	20.78	21.23	21.15	22.61	21.60	23.04	23.49
	3H	19.71	21.03	20.18	21.47	21.97	22.85	24.16	23.31	24.61	25.10
	4H	19.91	21.16	20.40	21.62	22.13	23.68	24.93	24.17	25.39	25.90
	6H	20.00	21.15	20.50	21.63	22.16	24.56	25.71	25.06	26.19	26.71
	8H	20.01	21.11	20.52	21.60	22.14	25.03	26.13	25.55	26.63	27.16
	12H	19.99	21.05	20.51	21.54	22.10	25.57	26.63	26.09	27.12	27.68
4H	2H	19.32	20.57	19.81	21.03	21.54	21.51	22.75	22.00	23.21	23.73
	3H	20.42	21.46	20.92	21.97	22.50	23.39	24.44	23.90	24.95	25.48
	4H	20.76	21.71	21.28	22.22	22.79	24.37	25.32	24.89	25.83	26.40
	6H	20.95	21.78	21.49	22.33	22.91	25.41	26.24	25.95	26.78	27.37
	8H	20.98	21.76	21.53	22.30	22.90	25.97	26.75	26.52	27.29	27.89
	12H	20.98	21.69	21.55	22.26	22.86	26.63	27.33	27.20	27.90	28.50
8H	4H	21.09	21.87	21.64	22.41	23.01	24.51	25.29	25.06	25.83	26.43
	6H	21.41	22.06	21.99	22.65	23.25	25.68	26.33	26.26	26.92	27.52
	8H	21.50	22.09	22.09	22.69	23.30	26.36	26.95	26.95	27.55	28.16
	12H	21.55	22.08	22.15	22.66	23.35	27.18	27.70	27.77	28.29	28.97
12H	4H	21.17	21.87	21.73	22.44	23.04	24.50	25.20	25.07	25.78	26.38
	6H	21.55	22.14	22.14	22.74	23.35	25.69	26.28	26.29	26.88	27.50
	8H	21.71	22.23	22.30	22.82	23.50	26.43	26.95	27.02	27.54	28.22