

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: P893604

Luminaire Tested: 4MB-5SL-ASML-UNV-L850

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893604
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-5SL-ASML-UNV-L850
Description: 5000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 5000K CCT
Light Source: -
Ballast/Driver: -

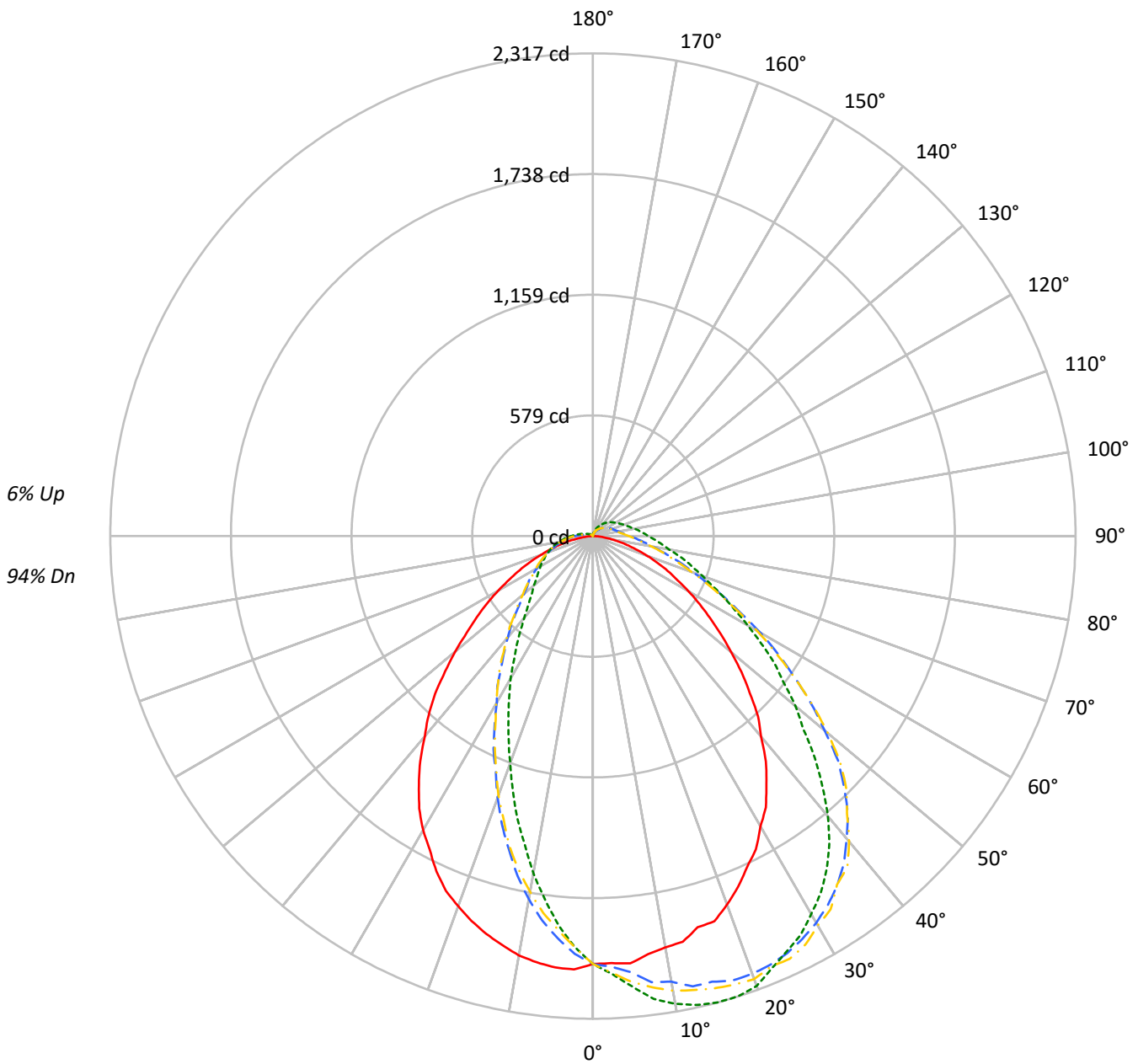
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5119.0 lumens
Efficiency: N/A
Efficacy: 146.3 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): 35
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.995
Total Harmonic Distortion (THDi): 9.55
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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°	20916	20916	20916	20916
5°	20994	21315	21193	18423
10°	20617	21770	21018	15701
15°	20328	21692	20673	13129
20°	20169	21262	20256	10740
25°	19402	20277	19670	8837
30°	18588	19378	18829	7301
35°	17671	18287	17720	5949
40°	16264	16729	16255	4878
45°	14874	14767	14950	4156
50°	13229	12889	13168	3755
55°	11657	11290	11576	3449
60°	10225	9629	10134	3260
65°	8959	8291	8746	3097
70°	7612	7266	7354	2961
75°	6206	6606	6040	2851
80°	4789	5945	4351	2655
85°	3293	5741	2657	2488

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 20692 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.0	3.8
10°-20°	536.4	10.5
20°-30°	771.5	15.1
30°-40°	875.5	17.1
40°-50°	836.7	16.3
50°-60°	679.9	13.3
60°-70°	474.4	9.3
70°-80°	293.9	5.7
80°-90°	168.6	3.3
90°-100°	100.8	2.0
100°-110°	66.1	1.3
110°-120°	46.4	0.9
120°-130°	33.6	0.7
130°-140°	22.3	0.4
140°-150°	12.6	0.2
150°-160°	5.6	0.1
160°-170°	1.6	0.0
170°-180°	0.1	0.0
0°-30°	1500.9	29.3
0°-40°	2376.4	46.4
0°-60°	3893.0	76.1
0°-90°	4829.8	94.4
90°-120°	213.3	4.2
90°-150°	281.8	5.5
90°-180°	289.0	5.6
0°-180°	5119.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2054	2054	2054	2054	2054	
5°	2059	2171	2079	1876	2059	194
15°	1944	2317	1977	1402	1944	553
25°	1752	2200	1776	959	1752	808
35°	1453	1956	1457	636	1453	905
45°	1065	1508	1071	424	1065	822
55°	686	1063	681	325	686	617
65°	397	691	387	258	397	394
75°	176	463	172	200	176	190
85°	38	313	31	136	38	43
90°	1	265	0	104	1	3
95°	2	231	0	79	2	1
105°	1	178	0	43	1	1
115°	1	141	0	24	1	1
125°	1	115	0	16	1	1
135°	1	92	0	12	1	1
145°	1	65	0	8	1	1
155°	2	40	0	5	2	1
165°	2	19	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°	2053.8	2053.8	2053.8	2053.8	2053.8	2053.8	2053.8	2053.8	2053.8	2053.8	2053.8
2.5°	2051.8	2067.3	2068.6	2117.0	2102.9	2121.1	2098.2	2102.2	2082.1	2076.7	2006.8
5°	2059.2	2092.2	2100.9	2184.3	2170.8	2180.3	2148.7	2125.8	2078.7	2050.5	1937.5
7.5°	2024.2	2111.0	2159.4	2218.6	2240.8	2248.2	2184.3	2141.9	2063.9	1994.6	1862.2
10°	2004.7	2124.4	2171.5	2260.3	2279.8	2265.7	2215.9	2146.0	2043.7	1932.1	1769.4
12.5°	1994.0	2131.8	2213.9	2304.7	2305.3	2290.6	2232.0	2156.7	2010.8	1864.9	1671.2
15°	1944.2	2130.5	2214.6	2306.7	2316.8	2307.4	2247.5	2149.3	1977.2	1781.5	1558.2
17.5°	1938.8	2127.1	2236.1	2332.9	2316.1	2309.4	2256.9	2146.0	1936.8	1696.7	1451.9
20°	1882.3	2119.7	2236.1	2303.3	2297.9	2300.6	2263.0	2141.3	1890.4	1605.3	1335.6
22.5°	1822.5	2111.0	2226.7	2277.8	2245.5	2294.6	2236.1	2128.5	1843.3	1509.8	1219.9
25°	1751.9	2096.9	2208.5	2241.5	2200.4	2238.8	2238.1	2109.0	1776.1	1406.9	1128.5
27.5°	1694.7	2074.7	2178.9	2228.7	2158.7	2191.7	2210.5	2085.4	1696.7	1305.3	1020.9
30°	1609.3	2046.4	2143.3	2150.7	2095.5	2137.2	2158.7	2055.8	1630.2	1190.3	922.7
32.5°	1544.1	2014.2	2099.6	2089.5	2034.3	2089.5	2124.4	2026.3	1550.8	1089.5	853.4
35°	1452.6	1975.1	2045.1	1992.0	1955.6	2001.4	2042.4	1994.6	1456.6	981.9	764.6
37.5°	1363.8	1940.8	1979.9	1913.9	1864.2	1915.3	2005.4	1935.5	1361.8	896.4	698.7
40°	1255.6	1862.2	1894.4	1805.0	1755.2	1830.6	1913.3	1884.4	1254.9	807.7	634.8
42.5°	1173.5	1803.7	1813.1	1690.7	1631.5	1711.5	1805.7	1811.7	1168.1	727.7	578.4
45°	1065.2	1721.6	1704.1	1569.6	1507.8	1579.7	1720.9	1737.1	1070.6	658.4	523.2
47.5°	967.7	1630.2	1595.9	1438.5	1369.2	1454.6	1611.3	1653.7	961.7	594.5	471.4
50°	866.2	1527.9	1451.9	1316.1	1269.7	1312.1	1472.1	1542.1	862.2	531.3	431.7
52.5°	773.4	1414.9	1320.8	1199.1	1152.7	1187.6	1326.2	1431.1	763.3	478.2	396.8
55°	686.0	1302.0	1180.2	1072.6	1063.2	1074.0	1178.2	1298.6	681.2	431.1	374.6
57.5°	607.9	1164.8	1053.8	974.5	957.6	966.4	1038.3	1162.1	601.9	384.0	342.3
60°	529.3	1024.2	928.7	867.5	858.1	864.8	911.2	1028.9	524.6	344.3	312.0
62.5°	458.0	883.0	798.3	775.4	768.7	768.7	788.2	895.8	451.9	304.0	289.2
65°	396.8	761.9	698.1	689.3	691.3	690.7	678.6	747.8	387.4	268.3	269.0
67.5°	334.9	633.5	597.9	608.6	616.7	613.3	587.8	622.1	326.8	236.0	250.8
70°	277.7	523.2	516.5	540.7	559.5	542.0	505.1	508.4	268.3	204.4	227.3
72.5°	223.9	423.0	453.9	487.6	505.7	486.2	435.1	420.3	215.9	175.5	205.8
75°	176.2	340.3	389.4	439.1	462.7	437.8	378.6	328.2	171.5	148.0	188.3
77.5°	134.5	269.7	332.9	390.7	413.6	392.1	329.5	256.2	125.8	124.4	169.5
80°	96.2	213.2	295.2	351.0	371.9	351.0	285.8	202.4	87.4	99.5	149.3
82.5°	63.2	164.8	256.9	319.4	342.3	316.7	248.2	156.0	55.8	80.7	134.5
85°	38.3	130.5	223.9	287.2	313.4	288.5	217.2	118.4	30.9	61.9	117.0
87.5°	16.8	100.9	199.7	265.0	288.5	265.6	193.7	92.8	12.8	48.4	100.2
90°	1.3	80.0	176.2	244.1	265.0	243.4	171.5	75.3	0.0	35.0	86.1
92.5°	1.3	68.6	161.4	226.0	249.5	225.3	154.7	61.9	0.0	25.6	72.6
95°	2.0	57.8	146.6	211.8	230.7	209.8	141.2	53.1	0.0	17.5	61.2
97.5°	2.0	52.5	134.5	197.7	218.6	196.4	129.1	47.7	0.0	12.8	49.8
100°	1.3	48.4	125.1	184.3	203.8	182.9	119.7	43.0	0.0	8.1	40.4
102.5°	1.3	45.1	117.0	172.8	188.3	170.8	111.6	40.4	0.0	6.7	33.0
105°	1.3	43.0	109.6	159.4	177.5	159.4	104.9	37.7	0.0	5.4	25.6
107.5°	1.3	40.4	104.2	152.0	166.8	150.6	99.5	35.6	0.0	5.4	20.8
110°	1.3	38.3	99.5	141.2	158.0	142.6	94.8	32.3	0.0	3.4	16.8



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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°	1.3	35.0	94.8	133.8	150.0	134.5	90.8	29.6	0.0	3.4	14.8
115°	1.3	31.6	90.8	129.1	141.2	127.8	86.8	26.2	0.0	2.7	13.5
117.5°	1.3	29.6	88.1	123.1	135.2	121.7	83.4	24.9	0.0	2.7	12.8
120°	1.3	28.2	84.1	117.0	126.4	115.7	79.4	23.5	0.0	2.7	12.1
122.5°	1.3	26.9	80.7	111.6	121.7	111.0	76.0	22.9	0.0	2.0	10.8
125°	1.3	25.6	76.0	105.6	115.0	104.2	69.9	22.2	0.0	1.3	9.4
127.5°	1.3	24.2	71.3	100.9	109.6	99.5	65.9	21.5	0.0	1.3	8.7
130°	1.3	23.5	65.2	94.8	103.6	93.5	61.2	21.5	0.0	1.3	8.1
132.5°	1.3	22.9	58.5	88.8	98.2	87.4	56.5	20.8	0.0	1.3	6.7
135°	1.3	22.2	51.8	82.7	91.5	81.4	52.5	20.2	0.0	1.3	6.1
137.5°	1.3	20.8	45.7	76.0	84.7	74.6	49.8	18.8	0.0	1.3	5.4
140°	1.3	19.5	41.0	70.6	78.0	68.6	45.7	17.5	0.0	0.7	4.0
142.5°	1.3	17.5	37.0	63.9	71.3	62.5	41.0	14.8	0.0	0.7	4.0
145°	1.3	15.5	33.6	55.8	64.6	55.8	38.3	13.5	0.0	0.7	3.4
147.5°	1.3	14.1	30.3	47.1	58.5	51.1	34.3	11.4	0.0	0.7	2.7
150°	1.3	12.8	26.2	39.7	51.8	45.1	31.6	10.1	0.0	0.0	2.0
152.5°	1.3	11.4	22.9	33.0	46.4	41.0	28.2	8.7	0.0	0.0	1.3
155°	2.0	10.8	19.5	28.9	40.4	35.6	23.5	7.4	0.0	0.0	1.3
157.5°	2.0	9.4	16.1	23.5	35.6	30.9	18.8	6.1	0.0	0.0	0.7
160°	2.0	8.7	13.5	18.2	29.6	25.6	15.5	4.7	0.0	0.0	0.7
162.5°	2.0	8.1	11.4	13.5	24.2	20.2	12.1	3.4	0.0	0.0	0.7
165°	2.0	6.7	10.1	9.4	18.8	15.5	9.4	2.0	0.0	0.0	0.0
167.5°	2.0	6.1	8.1	6.7	14.1	11.4	6.7	1.3	0.0	0.0	0.0
170°	2.0	4.7	6.7	4.7	4.0	7.4	4.0	0.7	0.0	0.0	0.0
172.5°	2.0	4.0	5.4	3.4	1.3	4.0	2.0	0.0	0.0	0.0	0.0
175°	2.0	3.4	3.4	2.0	0.7	1.3	0.0	0.0	0.0	0.0	0.0
177.5°	2.0	2.7	2.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7



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CATALOG NUMBER: 4MB-5SL-ASML-UNV-L850

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2053.8	2053.8	2053.8	2053.8	2053.8	2053.8
2.5°	1997.3	1975.1	1955.0	1976.5	1992.0	2051.8
5°	1899.8	1876.3	1879.0	1898.5	1950.3	2059.2
7.5°	1799.0	1759.9	1769.4	1823.8	1900.5	2024.2
10°	1679.9	1644.3	1653.0	1735.1	1842.7	2004.7
12.5°	1573.7	1513.8	1564.9	1642.3	1775.4	1994.0
15°	1449.2	1402.2	1429.7	1544.1	1710.9	1944.2
17.5°	1314.7	1278.4	1311.4	1425.0	1631.5	1938.8
20°	1211.2	1160.7	1199.7	1324.8	1533.3	1882.3
22.5°	1094.8	1056.5	1097.5	1212.5	1433.1	1822.5
25°	999.3	959.0	1000.0	1114.3	1344.3	1751.9
27.5°	906.5	869.5	906.5	1011.4	1256.2	1694.7
30°	825.2	789.5	827.2	928.1	1153.3	1609.3
32.5°	749.2	703.4	751.9	849.4	1062.6	1544.1
35°	670.5	636.2	672.5	780.8	961.7	1452.6
37.5°	605.3	569.6	612.7	705.5	876.3	1363.8
40°	543.4	511.8	546.1	644.9	803.6	1255.6
42.5°	495.0	463.4	498.3	589.8	730.3	1173.5
45°	447.9	424.4	452.6	529.3	656.4	1065.2
47.5°	413.6	393.4	417.0	484.9	594.5	967.7
50°	384.0	369.9	386.7	440.5	530.6	866.2
52.5°	357.8	343.6	363.2	406.2	480.2	773.4
55°	337.6	324.8	339.6	373.9	429.7	686.0
57.5°	315.4	307.3	318.8	339.6	390.1	607.9
60°	299.3	290.5	302.6	319.4	345.0	529.3
62.5°	281.1	276.4	283.8	297.2	310.7	458.0
65°	265.0	258.2	267.7	272.4	271.0	396.8
67.5°	247.5	245.5	250.8	251.5	241.4	334.9
70°	229.3	228.0	234.7	230.7	209.8	277.7
72.5°	214.5	214.5	218.6	210.5	182.9	223.9
75°	198.4	199.7	203.1	193.7	154.0	176.2
77.5°	183.6	184.9	185.6	172.8	129.1	134.5
80°	166.8	166.1	172.8	156.7	104.9	96.2
82.5°	152.0	149.3	153.3	137.2	84.7	63.2
85°	135.2	135.8	138.5	119.7	67.9	38.3
87.5°	121.7	121.7	124.4	105.6	51.1	16.8
90°	105.6	104.2	108.3	89.4	38.3	1.3
92.5°	92.1	92.1	94.8	76.7	28.2	1.3
95°	78.7	79.4	81.4	63.2	21.5	2.0
97.5°	67.3	67.9	70.6	53.8	15.5	2.0
100°	57.2	57.8	59.2	43.0	12.1	1.3
102.5°	47.7	49.8	49.8	35.6	9.4	1.3
105°	40.4	43.0	41.7	28.9	8.7	1.3
107.5°	33.6	36.3	36.3	23.5	8.7	1.3
110°	27.6	31.6	30.9	20.2	6.7	1.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	23.5	26.9	24.9	17.5	6.7	1.3
115°	20.2	23.5	22.2	16.1	6.1	1.3
117.5°	18.2	20.2	20.2	15.5	6.1	1.3
120°	16.8	18.8	18.2	14.8	6.1	1.3
122.5°	15.5	16.8	16.8	13.5	5.4	1.3
125°	14.8	15.5	16.1	12.1	5.4	1.3
127.5°	14.1	15.5	15.5	11.4	4.7	1.3
130°	12.8	14.1	14.1	10.8	4.7	1.3
132.5°	11.4	12.8	12.8	10.1	4.7	1.3
135°	10.8	12.1	12.1	9.4	4.7	1.3
137.5°	10.1	10.8	10.8	8.7	4.7	1.3
140°	8.7	10.1	10.1	8.1	4.7	1.3
142.5°	8.1	9.4	9.4	7.4	4.0	1.3
145°	7.4	8.1	8.7	6.7	4.0	1.3
147.5°	6.1	7.4	8.1	6.1	4.0	1.3
150°	4.7	6.7	6.7	6.1	4.0	1.3
152.5°	3.4	6.1	6.1	5.4	3.4	1.3
155°	2.7	4.7	5.4	4.7	3.4	2.0
157.5°	2.0	4.0	4.7	4.7	3.4	2.0
160°	1.3	3.4	4.0	4.0	2.7	2.0
162.5°	0.7	2.7	3.4	4.0	2.7	2.0
165°	0.0	2.0	2.7	3.4	2.7	2.0
167.5°	0.0	1.3	2.0	2.7	2.0	2.0
170°	0.0	0.7	1.3	2.0	2.0	2.0
172.5°	0.0	0.0	0.7	1.3	1.3	2.0
175°	0.0	0.0	0.0	0.7	1.3	2.0
177.5°	0.0	0.0	0.0	0.7	1.3	2.0
180°	0.7	0.7	0.7	0.7	0.7	0.7



TEST NUMBER: P893604
 CATALOG NUMBER: 4MB-5SL-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	19.48	20.94	19.94	21.37	21.83	21.74	23.20	22.19	23.63	24.09
	3H	20.30	21.62	20.77	22.06	22.56	23.44	24.76	23.91	25.20	25.70
	4H	20.51	21.75	20.99	22.21	22.72	24.28	25.52	24.77	25.98	26.50
	6H	20.60	21.75	21.10	22.23	22.75	25.15	26.31	25.66	26.78	27.31
	8H	20.60	21.70	21.11	22.20	22.73	25.63	26.73	26.14	27.23	27.76
	12H	20.59	21.64	21.11	22.13	22.69	26.17	27.22	26.69	27.71	28.28
4H	2H	19.92	21.16	20.41	21.62	22.13	22.11	23.35	22.59	23.81	24.32
	3H	21.01	22.06	21.52	22.56	23.10	23.99	25.03	24.49	25.54	26.07
	4H	21.35	22.30	21.87	22.82	23.39	24.96	25.91	25.48	26.43	27.00
	6H	21.54	22.38	22.09	22.92	23.50	26.00	26.83	26.54	27.38	27.96
	8H	21.57	22.35	22.12	22.90	23.49	26.57	27.34	27.11	27.89	28.48
	12H	21.58	22.28	22.15	22.86	23.45	27.22	27.92	27.79	28.50	29.10
8H	4H	21.68	22.46	22.23	23.01	23.60	25.10	25.88	25.65	26.43	27.02
	6H	22.00	22.66	22.58	23.24	23.85	26.27	26.93	26.86	27.52	28.12
	8H	22.09	22.68	22.69	23.28	23.90	26.95	27.54	27.55	28.14	28.76
	12H	22.15	22.67	22.74	23.26	23.94	27.77	28.29	28.36	28.88	29.56
12H	4H	21.76	22.46	22.33	23.04	23.64	25.10	25.80	25.66	26.37	26.97
	6H	22.14	22.73	22.74	23.33	23.94	26.29	26.88	26.88	27.48	28.09
	8H	22.30	22.82	22.89	23.41	24.09	27.02	27.55	27.62	28.13	28.82