

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: P893603

Luminaire Tested: 4MB-5SL-ASML-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893603
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-L840
Description: 5000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 4000K CCT
Light Source: -
Ballast/Driver: -

Summary

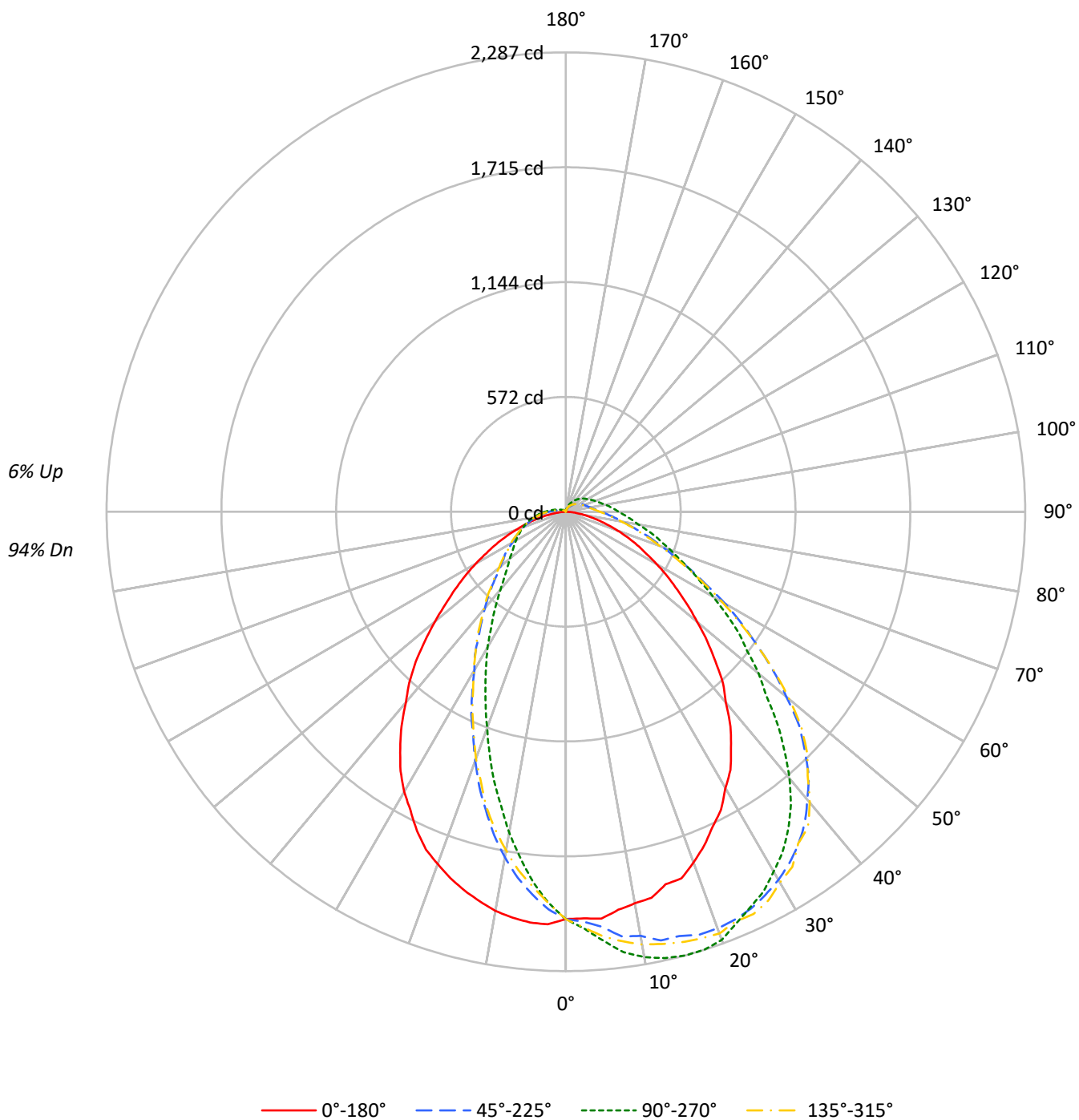
Lumens per Lamp: N/A
Luminaire Lumens: 5054.0 lumens
Efficiency: N/A
Efficacy: 144.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.07 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 3.98' x H: 0.12')
CIE Type: Direct

Input Watts (W): 35
Input Voltage (V): 120
Input Current (Ain): 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



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	20652	20652	20652	20652
5°	20728	21045	20923	18189
10°	20356	21493	20752	15502
15°	20069	21417	20410	12962
20°	19913	20993	19999	10604
25°	19155	20019	19420	8725
30°	18352	19132	18590	7208
35°	17447	18055	17495	5874
40°	16057	16516	16049	4816
45°	14686	14579	14760	4104
50°	13061	12725	13000	3707
55°	11508	11147	11430	3405
60°	10093	9507	10004	3218
65°	8843	8187	8633	3058
70°	7516	7174	7261	2923
75°	6128	6521	5963	2815
80°	4724	5870	4296	2622
85°	3250	5668	2622	2457

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°

Vertical Angle: 45°

Luminance: 20429 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.5	3.8
10°-20°	529.6	10.5
20°-30°	761.7	15.1
30°-40°	864.4	17.1
40°-50°	826.1	16.3
50°-60°	671.3	13.3
60°-70°	468.4	9.3
70°-80°	290.1	5.7
80°-90°	166.4	3.3
90°-100°	99.5	2.0
100°-110°	65.3	1.3
110°-120°	45.8	0.9
120°-130°	33.2	0.7
130°-140°	22.0	0.4
140°-150°	12.4	0.2
150°-160°	5.5	0.1
160°-170°	1.6	0.0
170°-180°	0.1	0.0
0°-30°	1481.8	29.3
0°-40°	2346.2	46.4
0°-60°	3843.6	76.1
0°-90°	4768.5	94.4
90°-120°	210.6	4.2
90°-150°	278.2	5.5
90°-180°	285.0	5.6
0°-180°	5054.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2028	2028	2028	2028	2028	
5°	2033	2143	2052	1852	2033	192
15°	1920	2287	1952	1384	1920	546
25°	1730	2172	1754	947	1730	798
35°	1434	1931	1438	628	1434	894
45°	1052	1489	1057	419	1052	812
55°	677	1050	673	321	677	609
65°	392	683	382	255	392	389
75°	174	457	169	197	174	188
85°	38	309	30	134	38	42
90°	1	262	0	103	1	3
95°	2	228	0	78	2	1
105°	1	175	0	42	1	1
115°	1	139	0	23	1	1
125°	1	114	0	15	1	1
135°	1	90	0	12	1	1
145°	1	64	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°	2027.8	2027.8	2027.8	2027.8	2027.8	2027.8	2027.8	2027.8	2027.8	2027.8	2027.8
2.5°	2025.8	2041.0	2042.4	2090.2	2076.2	2094.1	2071.6	2075.6	2055.6	2050.3	1981.3
5°	2033.1	2065.6	2074.2	2156.6	2143.3	2152.6	2121.4	2098.8	2052.3	2024.4	1912.9
7.5°	1998.5	2084.2	2132.0	2190.4	2212.3	2219.6	2156.6	2114.7	2037.7	1969.3	1838.5
10°	1979.3	2097.5	2143.9	2231.6	2250.8	2236.9	2187.8	2118.7	2017.8	1907.6	1746.9
12.5°	1968.7	2104.8	2185.8	2275.4	2276.1	2261.5	2203.7	2129.3	1985.3	1841.2	1650.0
15°	1919.5	2103.4	2186.4	2277.4	2287.4	2278.1	2219.0	2122.0	1952.1	1758.8	1538.4
17.5°	1914.2	2100.1	2207.7	2303.3	2286.7	2280.1	2228.3	2118.7	1912.2	1675.2	1433.5
20°	1858.4	2092.8	2207.7	2274.1	2268.8	2271.4	2234.2	2114.1	1866.4	1584.9	1318.6
22.5°	1799.3	2084.2	2198.4	2248.9	2217.0	2265.5	2207.7	2101.5	1819.9	1490.6	1204.4
25°	1729.6	2070.2	2180.5	2213.0	2172.5	2210.3	2209.7	2082.2	1753.5	1389.0	1114.1
27.5°	1673.2	2048.3	2151.2	2200.4	2131.3	2163.9	2182.5	2059.0	1675.2	1288.8	1007.9
30°	1588.9	2020.4	2116.1	2123.4	2068.9	2110.1	2131.3	2029.7	1609.5	1175.2	911.0
32.5°	1524.5	1988.6	2072.9	2062.9	2008.5	2062.9	2097.5	2000.5	1531.1	1075.6	842.6
35°	1434.2	1950.1	2019.1	1966.7	1930.8	1976.0	2016.5	1969.3	1438.1	969.4	754.9
37.5°	1346.5	1916.2	1954.7	1889.6	1840.5	1891.0	1979.9	1910.9	1344.5	885.1	689.9
40°	1239.6	1838.5	1870.4	1782.1	1732.9	1807.3	1889.0	1860.4	1239.0	797.4	626.8
42.5°	1158.6	1780.8	1790.1	1669.2	1610.8	1689.8	1782.7	1788.7	1153.3	718.4	571.0
45°	1051.7	1699.8	1682.5	1549.7	1488.6	1559.7	1699.1	1715.0	1057.0	650.0	516.6
47.5°	955.4	1609.5	1575.6	1420.2	1351.8	1436.2	1590.9	1632.7	949.5	586.9	465.4
50°	855.2	1508.5	1433.5	1299.4	1253.6	1295.4	1453.4	1522.5	851.2	524.5	426.3
52.5°	763.6	1397.0	1304.0	1183.9	1138.0	1172.6	1309.3	1412.9	753.6	472.1	391.7
55°	677.2	1285.4	1165.3	1059.0	1049.7	1060.4	1163.3	1282.1	672.6	425.6	369.8
57.5°	600.2	1150.0	1040.4	962.1	945.5	954.1	1025.2	1147.3	594.2	379.1	338.0
60°	522.5	1011.2	916.9	856.5	847.2	853.9	899.7	1015.9	517.9	340.0	308.1
62.5°	452.2	871.8	788.1	765.6	758.9	758.9	778.2	884.4	446.2	300.1	285.5
65°	391.7	752.3	689.2	680.6	682.6	681.9	669.9	738.3	382.4	264.9	265.6
67.5°	330.7	625.5	590.3	600.9	608.9	605.5	580.3	614.2	322.7	233.1	247.7
70°	274.2	516.6	509.9	533.8	552.4	535.2	498.6	502.0	264.9	201.8	224.4
72.5°	221.1	417.6	448.2	481.4	499.3	480.0	429.6	415.0	213.1	173.3	203.2
75°	174.0	336.0	384.4	433.6	456.8	432.2	373.8	324.0	169.3	146.1	185.9
77.5°	132.8	266.3	328.7	385.8	408.3	387.1	325.3	253.0	124.2	122.8	167.3
80°	94.9	210.5	291.5	346.6	367.2	346.6	282.2	199.9	86.3	98.3	147.4
82.5°	62.4	162.7	253.6	315.4	338.0	312.7	245.0	154.0	55.1	79.7	132.8
85°	37.8	128.8	221.1	283.5	309.4	284.8	214.5	116.9	30.5	61.1	115.5
87.5°	16.6	99.6	197.2	261.6	284.8	262.3	191.2	91.6	12.6	47.8	98.9
90°	1.3	79.0	174.0	241.0	261.6	240.4	169.3	74.4	0.0	34.5	85.0
92.5°	1.3	67.7	159.4	223.1	246.3	222.4	152.7	61.1	0.0	25.2	71.7
95°	2.0	57.1	144.7	209.1	227.7	207.2	139.4	52.5	0.0	17.3	60.4
97.5°	2.0	51.8	132.8	195.2	215.8	193.9	127.5	47.1	0.0	12.6	49.1
100°	1.3	47.8	123.5	181.9	201.2	180.6	118.2	42.5	0.0	8.0	39.8
102.5°	1.3	44.5	115.5	170.6	185.9	168.6	110.2	39.8	0.0	6.6	32.5
105°	1.3	42.5	108.2	157.4	175.3	157.4	103.6	37.2	0.0	5.3	25.2
107.5°	1.3	39.8	102.9	150.1	164.7	148.7	98.3	35.2	0.0	5.3	20.6
110°	1.3	37.8	98.3	139.4	156.0	140.8	93.6	31.9	0.0	3.3	16.6

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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	34.5	93.6	132.1	148.1	132.8	89.6	29.2	0.0	3.3	14.6
115°	1.3	31.2	89.6	127.5	139.4	126.2	85.7	25.9	0.0	2.7	13.3
117.5°	1.3	29.2	87.0	121.5	133.5	120.2	82.3	24.6	0.0	2.7	12.6
120°	1.3	27.9	83.0	115.5	124.8	114.2	78.3	23.2	0.0	2.7	12.0
122.5°	1.3	26.6	79.7	110.2	120.2	109.6	75.0	22.6	0.0	2.0	10.6
125°	1.3	25.2	75.0	104.2	113.5	102.9	69.1	21.9	0.0	1.3	9.3
127.5°	1.3	23.9	70.4	99.6	108.2	98.3	65.1	21.2	0.0	1.3	8.6
130°	1.3	23.2	64.4	93.6	102.3	92.3	60.4	21.2	0.0	1.3	8.0
132.5°	1.3	22.6	57.8	87.6	96.9	86.3	55.8	20.6	0.0	1.3	6.6
135°	1.3	21.9	51.1	81.7	90.3	80.3	51.8	19.9	0.0	1.3	6.0
137.5°	1.3	20.6	45.1	75.0	83.7	73.7	49.1	18.6	0.0	1.3	5.3
140°	1.3	19.3	40.5	69.7	77.0	67.7	45.1	17.3	0.0	0.7	4.0
142.5°	1.3	17.3	36.5	63.1	70.4	61.7	40.5	14.6	0.0	0.7	4.0
145°	1.3	15.3	33.2	55.1	63.7	55.1	37.8	13.3	0.0	0.7	3.3
147.5°	1.3	13.9	29.9	46.5	57.8	50.5	33.9	11.3	0.0	0.7	2.7
150°	1.3	12.6	25.9	39.2	51.1	44.5	31.2	10.0	0.0	0.0	2.0
152.5°	1.3	11.3	22.6	32.5	45.8	40.5	27.9	8.6	0.0	0.0	1.3
155°	2.0	10.6	19.3	28.6	39.8	35.2	23.2	7.3	0.0	0.0	1.3
157.5°	2.0	9.3	15.9	23.2	35.2	30.5	18.6	6.0	0.0	0.0	0.7
160°	2.0	8.6	13.3	17.9	29.2	25.2	15.3	4.6	0.0	0.0	0.7
162.5°	2.0	8.0	11.3	13.3	23.9	19.9	12.0	3.3	0.0	0.0	0.7
165°	2.0	6.6	10.0	9.3	18.6	15.3	9.3	2.0	0.0	0.0	0.0
167.5°	2.0	6.0	8.0	6.6	13.9	11.3	6.6	1.3	0.0	0.0	0.0
170°	2.0	4.6	6.6	4.6	4.0	7.3	4.0	0.7	0.0	0.0	0.0
172.5°	2.0	4.0	5.3	3.3	1.3	4.0	2.0	0.0	0.0	0.0	0.0
175°	2.0	3.3	3.3	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-L840

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2027.8	2027.8	2027.8	2027.8	2027.8	2027.8
2.5°	1972.0	1950.1	1930.1	1951.4	1966.7	2025.8
5°	1875.7	1852.5	1855.1	1874.4	1925.5	2033.1
7.5°	1776.1	1737.6	1746.9	1800.7	1876.4	1998.5
10°	1658.6	1623.4	1632.0	1713.0	1819.3	1979.3
12.5°	1553.7	1494.6	1545.0	1621.4	1752.9	1968.7
15°	1430.8	1384.4	1411.6	1524.5	1689.1	1919.5
17.5°	1298.1	1262.2	1294.7	1406.9	1610.8	1914.2
20°	1195.8	1146.0	1184.5	1308.0	1513.8	1858.4
22.5°	1080.9	1043.1	1083.6	1197.1	1414.9	1799.3
25°	986.7	946.8	987.3	1100.2	1327.3	1729.6
27.5°	895.0	858.5	895.0	998.6	1240.3	1673.2
30°	814.7	779.5	816.7	916.3	1138.7	1588.9
32.5°	739.7	694.5	742.3	838.6	1049.1	1524.5
35°	662.0	628.1	664.0	770.9	949.5	1434.2
37.5°	597.6	562.4	604.9	696.5	865.1	1346.5
40°	536.5	505.3	539.1	636.7	793.4	1239.6
42.5°	488.7	457.5	492.0	582.3	721.1	1158.6
45°	442.2	419.0	446.8	522.5	648.0	1051.7
47.5°	408.3	388.4	411.7	478.7	586.9	955.4
50°	379.1	365.2	381.8	434.9	523.9	855.2
52.5°	353.2	339.3	358.5	401.0	474.1	763.6
55°	333.3	320.7	335.3	369.2	424.3	677.2
57.5°	311.4	303.4	314.7	335.3	385.1	600.2
60°	295.5	286.8	298.8	315.4	340.6	522.5
62.5°	277.5	272.9	280.2	293.5	306.8	452.2
65°	261.6	255.0	264.3	268.9	267.6	391.7
67.5°	244.3	242.3	247.7	248.3	238.4	330.7
70°	226.4	225.1	231.7	227.7	207.2	274.2
72.5°	211.8	211.8	215.8	207.8	180.6	221.1
75°	195.9	197.2	200.5	191.2	152.0	174.0
77.5°	181.3	182.6	183.3	170.6	127.5	132.8
80°	164.7	164.0	170.6	154.7	103.6	94.9
82.5°	150.1	147.4	151.4	135.4	83.7	62.4
85°	133.5	134.1	136.8	118.2	67.1	37.8
87.5°	120.2	120.2	122.8	104.2	50.5	16.6
90°	104.2	102.9	106.9	88.3	37.8	1.3
92.5°	91.0	91.0	93.6	75.7	27.9	1.3
95°	77.7	78.3	80.3	62.4	21.2	2.0
97.5°	66.4	67.1	69.7	53.1	15.3	2.0
100°	56.4	57.1	58.4	42.5	12.0	1.3
102.5°	47.1	49.1	49.1	35.2	9.3	1.3
105°	39.8	42.5	41.2	28.6	8.6	1.3
107.5°	33.2	35.9	35.9	23.2	8.6	1.3
110°	27.2	31.2	30.5	19.9	6.6	1.3



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CATALOG NUMBER: 4MB-5SL-ASML-UNV-L840

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	23.2	26.6	24.6	17.3	6.6	1.3
115°	19.9	23.2	21.9	15.9	6.0	1.3
117.5°	17.9	19.9	19.9	15.3	6.0	1.3
120°	16.6	18.6	17.9	14.6	6.0	1.3
122.5°	15.3	16.6	16.6	13.3	5.3	1.3
125°	14.6	15.3	15.9	12.0	5.3	1.3
127.5°	13.9	15.3	15.3	11.3	4.6	1.3
130°	12.6	13.9	13.9	10.6	4.6	1.3
132.5°	11.3	12.6	12.6	10.0	4.6	1.3
135°	10.6	12.0	12.0	9.3	4.6	1.3
137.5°	10.0	10.6	10.6	8.6	4.6	1.3
140°	8.6	10.0	10.0	8.0	4.6	1.3
142.5°	8.0	9.3	9.3	7.3	4.0	1.3
145°	7.3	8.0	8.6	6.6	4.0	1.3
147.5°	6.0	7.3	8.0	6.0	4.0	1.3
150°	4.6	6.6	6.6	6.0	4.0	1.3
152.5°	3.3	6.0	6.0	5.3	3.3	1.3
155°	2.7	4.6	5.3	4.6	3.3	2.0
157.5°	2.0	4.0	4.6	4.6	3.3	2.0
160°	1.3	3.3	4.0	4.0	2.7	2.0
162.5°	0.7	2.7	3.3	4.0	2.7	2.0
165°	0.0	2.0	2.7	3.3	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: P893603

CATALOG NUMBER: 4MB-5SL-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	19.44	20.90	19.89	21.33	21.78	21.70	23.16	22.15	23.59	24.04
	3H	20.26	21.58	20.73	22.02	22.52	23.40	24.71	23.86	25.16	25.65
	4H	20.46	21.71	20.95	22.17	22.68	24.23	25.48	24.72	25.94	26.45
	6H	20.55	21.71	21.05	22.18	22.71	25.11	26.26	25.61	26.74	27.26
	8H	20.56	21.66	21.07	22.15	22.69	25.58	26.68	26.10	27.18	27.71
	12H	20.54	21.60	21.06	22.09	22.65	26.13	27.18	26.64	27.67	28.23
4H	2H	19.87	21.12	20.36	21.58	22.09	22.06	23.30	22.55	23.76	24.28
	3H	20.97	22.01	21.47	22.52	23.05	23.95	24.99	24.45	25.50	26.03
	4H	21.31	22.26	21.83	22.77	23.34	24.92	25.87	25.44	26.38	26.95
	6H	21.50	22.33	22.04	22.88	23.46	25.96	26.79	26.50	27.33	27.92
	8H	21.53	22.31	22.08	22.85	23.45	26.52	27.30	27.07	27.84	28.44
	12H	21.53	22.24	22.10	22.81	23.41	27.18	27.88	27.75	28.45	29.05
8H	4H	21.64	22.42	22.19	22.96	23.56	25.06	25.84	25.61	26.38	26.98
	6H	21.96	22.61	22.54	23.20	23.80	26.23	26.88	26.81	27.47	28.07
	8H	22.05	22.64	22.64	23.24	23.85	26.91	27.50	27.51	28.10	28.71
	12H	22.10	22.63	22.70	23.21	23.90	27.73	28.25	28.32	28.84	29.52
12H	4H	21.72	22.42	22.28	22.99	23.59	25.05	25.75	25.62	26.33	26.93
	6H	22.10	22.69	22.69	23.29	23.90	26.24	26.83	26.84	27.43	28.05
	8H	22.26	22.78	22.85	23.37	24.05	26.98	27.50	27.57	28.09	28.77