

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: P893602

Luminaire Tested: 4MB-5SL-ASML-UNV-L835

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893602
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-L835
Description: 5000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 3500K CCT
Light Source: -
Ballast/Driver: -

Summary

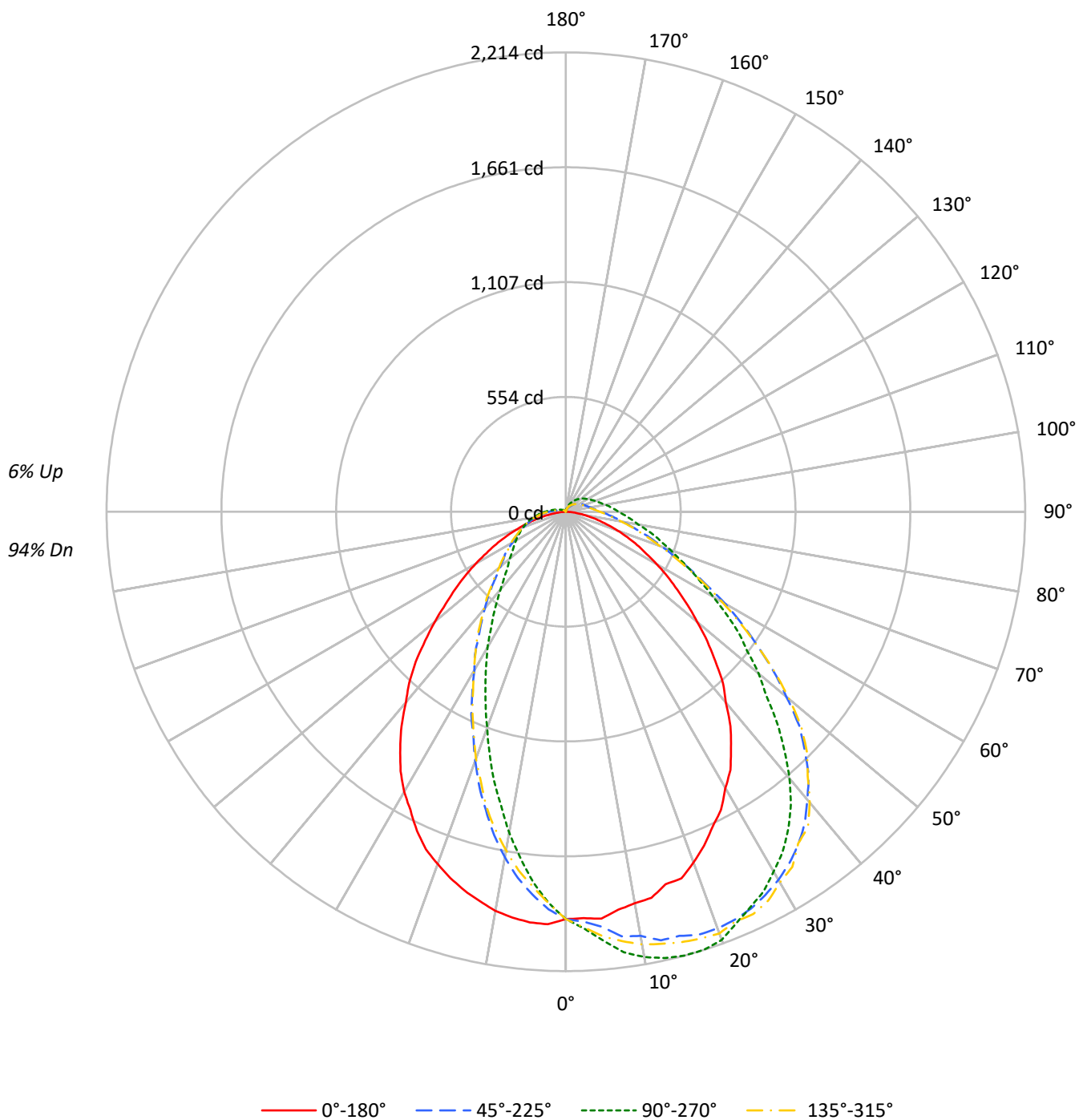
Lumens per Lamp: N/A
Luminaire Lumens: 4892.0 lumens
Efficiency: N/A
Efficacy: 139.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.07 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 3.98' x H: 0.12')
CIE Type: Direct

Input Watts (W): 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

TEST NUMBER: P893602

CATALOG NUMBER: 4MB-5SL-ASML-UNV-L835

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			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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°	19990	19990	19990	19990
5°	20063	20370	20253	17606
10°	19703	20804	20086	15005
15°	19426	20729	19756	12546
20°	19276	20320	19358	10264
25°	18541	19378	18797	8445
30°	17763	18519	17994	6977
35°	16887	17477	16935	5686
40°	15542	15987	15533	4662
45°	14215	14112	14288	3971
50°	12642	12317	12583	3588
55°	11139	10790	11063	3296
60°	9771	9203	9684	3115
65°	8561	7924	8358	2960
70°	7275	6944	7028	2830
75°	5931	6313	5772	2725
80°	4575	5681	4157	2537
85°	3147	5486	2545	2378

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°

Vertical Angle: 45°

Luminance: 19774 cd/sqm

TEST NUMBER: P893602

CATALOG NUMBER: 4MB-5SL-ASML-UNV-L835

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.4	3.8
10°-20°	512.6	10.5
20°-30°	737.3	15.1
30°-40°	836.7	17.1
40°-50°	799.6	16.3
50°-60°	649.7	13.3
60°-70°	453.4	9.3
70°-80°	280.8	5.7
80°-90°	161.1	3.3
90°-100°	96.3	2.0
100°-110°	63.2	1.3
110°-120°	44.3	0.9
120°-130°	32.1	0.7
130°-140°	21.3	0.4
140°-150°	12.0	0.2
150°-160°	5.4	0.1
160°-170°	1.5	0.0
170°-180°	0.1	0.0
0°-30°	1434.3	29.3
0°-40°	2271.0	46.4
0°-60°	3720.4	76.1
0°-90°	4615.7	94.4
90°-120°	203.8	4.2
90°-150°	269.3	5.5
90°-180°	276.0	5.6
0°-180°	4892.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1963	1963	1963	1963	1963	
5°	1968	2075	1986	1793	1968	185
15°	1858	2214	1890	1340	1858	528
25°	1674	2103	1697	916	1674	772
35°	1388	1869	1392	608	1388	865
45°	1018	1441	1023	406	1018	786
55°	656	1016	651	310	656	590
65°	379	661	370	247	379	376
75°	168	442	164	191	168	182
85°	37	300	30	130	37	41
90°	1	253	0	100	1	3
95°	2	220	0	76	2	1
105°	1	170	0	41	1	1
115°	1	135	0	22	1	1
125°	1	110	0	15	1	1
135°	1	87	0	12	1	1
145°	1	62	0	8	1	1
155°	2	39	0	4	2	1
165°	2	18	0	2	2	1
175°	2	1	0	0	2	0
180°	1	1	1	1	1	

TEST NUMBER: P893602

CATALOG NUMBER: 4MB-5SL-ASML-UNV-L835

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1962.8	1962.8	1962.8	1962.8	1962.8	1962.8	1962.8	1962.8	1962.8	1962.8	1962.8
2.5°	1960.8	1975.6	1976.9	2023.2	2009.7	2027.0	2005.2	2009.0	1989.7	1984.6	1917.8
5°	1967.9	1999.4	2007.7	2087.4	2074.6	2083.6	2053.4	2031.5	1986.5	1959.5	1851.6
7.5°	1934.5	2017.4	2063.7	2120.2	2141.4	2148.5	2087.4	2046.9	1972.4	1906.2	1779.6
10°	1915.8	2030.2	2075.2	2160.1	2178.7	2165.2	2117.6	2050.8	1953.1	1846.4	1690.9
12.5°	1905.6	2037.3	2115.7	2202.5	2203.1	2189.0	2133.1	2061.1	1921.6	1782.2	1597.1
15°	1858.0	2036.0	2116.4	2204.4	2214.0	2205.0	2147.8	2054.0	1889.5	1702.5	1489.1
17.5°	1852.9	2032.8	2136.9	2229.5	2213.4	2207.0	2156.8	2050.8	1850.9	1621.5	1387.6
20°	1798.9	2025.7	2136.9	2201.2	2196.0	2198.6	2162.6	2046.3	1806.6	1534.1	1276.4
22.5°	1741.7	2017.4	2127.9	2176.8	2145.9	2192.8	2136.9	2034.1	1761.6	1442.8	1165.8
25°	1674.2	2003.9	2110.6	2142.1	2102.9	2139.5	2138.8	2015.5	1697.3	1344.5	1078.4
27.5°	1619.6	1982.7	2082.3	2129.9	2063.0	2094.5	2112.5	1993.0	1621.5	1247.4	975.6
30°	1537.9	1955.7	2048.2	2055.3	2002.6	2042.4	2063.0	1964.7	1557.9	1137.5	881.8
32.5°	1475.6	1924.8	2006.5	1996.8	1944.1	1996.8	2030.2	1936.4	1482.0	1041.1	815.6
35°	1388.2	1887.6	1954.4	1903.6	1868.9	1912.6	1951.8	1906.2	1392.1	938.3	730.7
37.5°	1303.4	1854.8	1892.1	1829.1	1781.5	1830.4	1916.5	1849.6	1301.4	856.7	667.7
40°	1199.9	1779.6	1810.4	1725.0	1677.4	1749.4	1828.4	1800.8	1199.2	771.9	606.7
42.5°	1121.5	1723.7	1732.7	1615.7	1559.1	1635.6	1725.6	1731.4	1116.3	695.4	552.7
45°	1018.0	1645.3	1628.6	1500.0	1440.9	1509.7	1644.6	1660.0	1023.2	629.2	500.0
47.5°	924.8	1557.9	1525.1	1374.7	1308.5	1390.1	1539.9	1580.4	919.0	568.1	450.5
50°	827.8	1460.2	1387.6	1257.7	1213.4	1253.9	1406.8	1473.7	823.9	507.7	412.6
52.5°	739.1	1352.2	1262.2	1145.9	1101.6	1135.0	1267.4	1367.6	729.4	456.9	379.2
55°	655.5	1244.2	1127.9	1025.1	1016.1	1026.4	1126.0	1241.0	651.0	412.0	358.0
57.5°	581.0	1113.1	1007.1	931.2	915.2	923.5	992.3	1110.6	575.2	367.0	327.1
60°	505.8	978.8	887.5	829.1	820.1	826.5	870.8	983.3	501.3	329.1	298.2
62.5°	437.7	843.8	762.9	741.0	734.6	734.6	753.2	856.1	431.9	290.5	276.4
65°	379.2	728.2	667.1	658.7	660.7	660.0	648.5	714.7	370.2	256.4	257.1
67.5°	320.1	605.4	571.3	581.6	589.3	586.1	561.7	594.5	312.3	225.6	239.7
70°	265.4	500.0	493.6	516.7	534.7	518.0	482.7	485.9	256.4	195.4	217.2
72.5°	214.0	404.2	433.8	465.9	483.3	464.7	415.8	401.7	206.3	167.7	196.7
75°	168.4	325.2	372.1	419.7	442.2	418.4	361.8	313.6	163.9	141.4	180.0
77.5°	128.5	257.7	318.1	373.4	395.2	374.7	314.9	244.9	120.2	118.9	162.0
80°	91.9	203.7	282.1	335.5	355.4	335.5	273.1	193.4	83.5	95.1	142.7
82.5°	60.4	157.5	245.5	305.3	327.1	302.7	237.1	149.1	53.3	77.1	128.5
85°	36.6	124.7	214.0	274.4	299.5	275.7	207.6	113.1	29.6	59.1	111.8
87.5°	16.1	96.4	190.9	253.2	275.7	253.9	185.1	88.7	12.2	46.3	95.8
90°	1.3	76.5	168.4	233.3	253.2	232.7	163.9	72.0	0.0	33.4	82.3
92.5°	1.3	65.6	154.2	215.9	238.4	215.3	147.8	59.1	0.0	24.4	69.4
95°	1.9	55.3	140.1	202.4	220.4	200.5	135.0	50.8	0.0	16.7	58.5
97.5°	1.9	50.1	128.5	188.9	208.9	187.7	123.4	45.6	0.0	12.2	47.6
100°	1.3	46.3	119.5	176.1	194.7	174.8	114.4	41.1	0.0	7.7	38.6
102.5°	1.3	43.1	111.8	165.2	180.0	163.2	106.7	38.6	0.0	6.4	31.5
105°	1.3	41.1	104.8	152.3	169.7	152.3	100.3	36.0	0.0	5.1	24.4
107.5°	1.3	38.6	99.6	145.2	159.4	144.0	95.1	34.1	0.0	5.1	19.9
110°	1.3	36.6	95.1	135.0	151.0	136.2	90.6	30.8	0.0	3.2	16.1

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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	33.4	90.6	127.9	143.3	128.5	86.8	28.3	0.0	3.2	14.1
115°	1.3	30.2	86.8	123.4	135.0	122.1	82.9	25.1	0.0	2.6	12.9
117.5°	1.3	28.3	84.2	117.6	129.2	116.3	79.7	23.8	0.0	2.6	12.2
120°	1.3	27.0	80.3	111.8	120.8	110.5	75.8	22.5	0.0	2.6	11.6
122.5°	1.3	25.7	77.1	106.7	116.3	106.0	72.6	21.9	0.0	1.9	10.3
125°	1.3	24.4	72.6	100.9	109.9	99.6	66.8	21.2	0.0	1.3	9.0
127.5°	1.3	23.1	68.1	96.4	104.8	95.1	63.0	20.6	0.0	1.3	8.4
130°	1.3	22.5	62.3	90.6	99.0	89.3	58.5	20.6	0.0	1.3	7.7
132.5°	1.3	21.9	55.9	84.8	93.8	83.5	54.0	19.9	0.0	1.3	6.4
135°	1.3	21.2	49.5	79.0	87.4	77.8	50.1	19.3	0.0	1.3	5.8
137.5°	1.3	19.9	43.7	72.6	81.0	71.3	47.6	18.0	0.0	1.3	5.1
140°	1.3	18.6	39.2	67.5	74.6	65.6	43.7	16.7	0.0	0.6	3.9
142.5°	1.3	16.7	35.3	61.1	68.1	59.8	39.2	14.1	0.0	0.6	3.9
145°	1.3	14.8	32.1	53.3	61.7	53.3	36.6	12.9	0.0	0.6	3.2
147.5°	1.3	13.5	28.9	45.0	55.9	48.8	32.8	10.9	0.0	0.6	2.6
150°	1.3	12.2	25.1	37.9	49.5	43.1	30.2	9.6	0.0	0.0	1.9
152.5°	1.3	10.9	21.9	31.5	44.3	39.2	27.0	8.4	0.0	0.0	1.3
155°	1.9	10.3	18.6	27.6	38.6	34.1	22.5	7.1	0.0	0.0	1.3
157.5°	1.9	9.0	15.4	22.5	34.1	29.6	18.0	5.8	0.0	0.0	0.6
160°	1.9	8.4	12.9	17.4	28.3	24.4	14.8	4.5	0.0	0.0	0.6
162.5°	1.9	7.7	10.9	12.9	23.1	19.3	11.6	3.2	0.0	0.0	0.6
165°	1.9	6.4	9.6	9.0	18.0	14.8	9.0	1.9	0.0	0.0	0.0
167.5°	1.9	5.8	7.7	6.4	13.5	10.9	6.4	1.3	0.0	0.0	0.0
170°	1.9	4.5	6.4	4.5	3.9	7.1	3.9	0.6	0.0	0.0	0.0
172.5°	1.9	3.9	5.1	3.2	1.3	3.9	1.9	0.0	0.0	0.0	0.0
175°	1.9	3.2	3.2	1.9	0.6	1.3	0.0	0.0	0.0	0.0	0.0
177.5°	1.9	2.6	1.9	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: P893602

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1962.8	1962.8	1962.8	1962.8	1962.8	1962.8
2.5°	1908.8	1887.6	1868.3	1888.8	1903.6	1960.8
5°	1815.6	1793.1	1795.7	1814.3	1863.8	1967.9
7.5°	1719.2	1681.9	1690.9	1743.0	1816.2	1934.5
10°	1605.4	1571.4	1579.7	1658.1	1761.0	1915.8
12.5°	1503.9	1446.7	1495.5	1569.4	1696.7	1905.6
15°	1385.0	1340.0	1366.3	1475.6	1635.0	1858.0
17.5°	1256.4	1221.7	1253.2	1361.8	1559.1	1852.9
20°	1157.5	1109.3	1146.5	1266.1	1465.3	1798.9
22.5°	1046.3	1009.7	1048.9	1158.8	1369.6	1741.7
25°	955.0	916.5	955.7	1064.9	1284.7	1674.2
27.5°	866.3	831.0	866.3	966.6	1200.5	1619.6
30°	788.6	754.5	790.5	886.9	1102.2	1537.9
32.5°	715.9	672.2	718.5	811.7	1015.4	1475.6
35°	640.8	608.0	642.7	746.2	919.0	1388.2
37.5°	578.4	544.4	585.5	674.2	837.4	1303.4
40°	519.3	489.1	521.9	616.3	768.0	1199.9
42.5°	473.0	442.8	476.2	563.6	698.0	1121.5
45°	428.0	405.5	432.5	505.8	627.3	1018.0
47.5°	395.2	376.0	398.5	463.4	568.1	924.8
50°	367.0	353.5	369.5	421.0	507.1	827.8
52.5°	341.9	328.4	347.0	388.2	458.9	739.1
55°	322.6	310.4	324.6	357.3	410.7	655.5
57.5°	301.4	293.7	304.6	324.6	372.8	581.0
60°	286.0	277.6	289.2	305.3	329.7	505.8
62.5°	268.6	264.1	271.2	284.1	296.9	437.7
65°	253.2	246.8	255.8	260.3	259.0	379.2
67.5°	236.5	234.6	239.7	240.4	230.7	320.1
70°	219.2	217.9	224.3	220.4	200.5	265.4
72.5°	205.0	205.0	208.9	201.2	174.8	214.0
75°	189.6	190.9	194.1	185.1	147.2	168.4
77.5°	175.5	176.7	177.4	165.2	123.4	128.5
80°	159.4	158.7	165.2	149.7	100.3	91.9
82.5°	145.2	142.7	146.5	131.1	81.0	60.4
85°	129.2	129.8	132.4	114.4	64.9	36.6
87.5°	116.3	116.3	118.9	100.9	48.8	16.1
90°	100.9	99.6	103.5	85.5	36.6	1.3
92.5°	88.0	88.0	90.6	73.3	27.0	1.3
95°	75.2	75.8	77.8	60.4	20.6	1.9
97.5°	64.3	64.9	67.5	51.4	14.8	1.9
100°	54.6	55.3	56.6	41.1	11.6	1.3
102.5°	45.6	47.6	47.6	34.1	9.0	1.3
105°	38.6	41.1	39.8	27.6	8.4	1.3
107.5°	32.1	34.7	34.7	22.5	8.4	1.3
110°	26.3	30.2	29.6	19.3	6.4	1.3

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	22.5	25.7	23.8	16.7	6.4	1.3
115°	19.3	22.5	21.2	15.4	5.8	1.3
117.5°	17.4	19.3	19.3	14.8	5.8	1.3
120°	16.1	18.0	17.4	14.1	5.8	1.3
122.5°	14.8	16.1	16.1	12.9	5.1	1.3
125°	14.1	14.8	15.4	11.6	5.1	1.3
127.5°	13.5	14.8	14.8	10.9	4.5	1.3
130°	12.2	13.5	13.5	10.3	4.5	1.3
132.5°	10.9	12.2	12.2	9.6	4.5	1.3
135°	10.3	11.6	11.6	9.0	4.5	1.3
137.5°	9.6	10.3	10.3	8.4	4.5	1.3
140°	8.4	9.6	9.6	7.7	4.5	1.3
142.5°	7.7	9.0	9.0	7.1	3.9	1.3
145°	7.1	7.7	8.4	6.4	3.9	1.3
147.5°	5.8	7.1	7.7	5.8	3.9	1.3
150°	4.5	6.4	6.4	5.8	3.9	1.3
152.5°	3.2	5.8	5.8	5.1	3.2	1.3
155°	2.6	4.5	5.1	4.5	3.2	1.9
157.5°	1.9	3.9	4.5	4.5	3.2	1.9
160°	1.3	3.2	3.9	3.9	2.6	1.9
162.5°	0.6	2.6	3.2	3.9	2.6	1.9
165°	0.0	1.9	2.6	3.2	2.6	1.9
167.5°	0.0	1.3	1.9	2.6	1.9	1.9
170°	0.0	0.6	1.3	1.9	1.9	1.9
172.5°	0.0	0.0	0.6	1.3	1.3	1.9
175°	0.0	0.0	0.0	0.6	1.3	1.9
177.5°	0.0	0.0	0.0	0.6	1.3	1.9
180°	0.6	0.6	0.6	0.6	0.6	0.6

TEST NUMBER: P893602

CATALOG NUMBER: 4MB-5SL-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	19.32	20.78	19.78	21.22	21.67	21.58	23.04	22.04	23.47	23.93
	3H	20.15	21.46	20.61	21.91	22.40	23.28	24.60	23.75	25.04	25.54
	4H	20.35	21.59	20.84	22.05	22.57	24.12	25.36	24.61	25.83	26.34
	6H	20.44	21.59	20.94	22.07	22.59	25.00	26.15	25.50	26.62	27.15
	8H	20.44	21.54	20.96	22.04	22.57	25.47	26.57	25.98	27.07	27.60
	12H	20.43	21.48	20.95	21.97	22.54	26.01	27.07	26.53	27.56	28.12
4H	2H	19.76	21.00	20.25	21.46	21.98	21.95	23.19	22.44	23.65	24.16
	3H	20.86	21.90	21.36	22.41	22.94	23.83	24.88	24.33	25.38	25.92
	4H	21.20	22.14	21.72	22.66	23.23	24.80	25.75	25.33	26.27	26.84
	6H	21.39	22.22	21.93	22.76	23.35	25.84	26.67	26.39	27.22	27.80
	8H	21.41	22.19	21.96	22.74	23.33	26.41	27.19	26.96	27.73	28.33
	12H	21.42	22.12	21.99	22.70	23.30	27.06	27.77	27.63	28.34	28.94
8H	4H	21.52	22.30	22.07	22.85	23.44	24.94	25.72	25.49	26.27	26.86
	6H	21.85	22.50	22.43	23.09	23.69	26.12	26.77	26.70	27.36	27.96
	8H	21.93	22.52	22.53	23.12	23.74	26.80	27.39	27.39	27.99	28.60
	12H	21.99	22.52	22.59	23.10	23.79	27.61	28.14	28.21	28.72	29.41
12H	4H	21.60	22.30	22.17	22.88	23.48	24.94	25.64	25.51	26.21	26.81
	6H	21.98	22.57	22.58	23.17	23.79	26.13	26.72	26.72	27.32	27.93
	8H	22.14	22.67	22.74	23.25	23.94	26.87	27.39	27.46	27.98	28.66