

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: P893601

Luminaire Tested: 4MB-5SL-ASML-UNV-L830

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893601
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-L830
Description: 5000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 3000K CCT
Light Source: -
Ballast/Driver: -

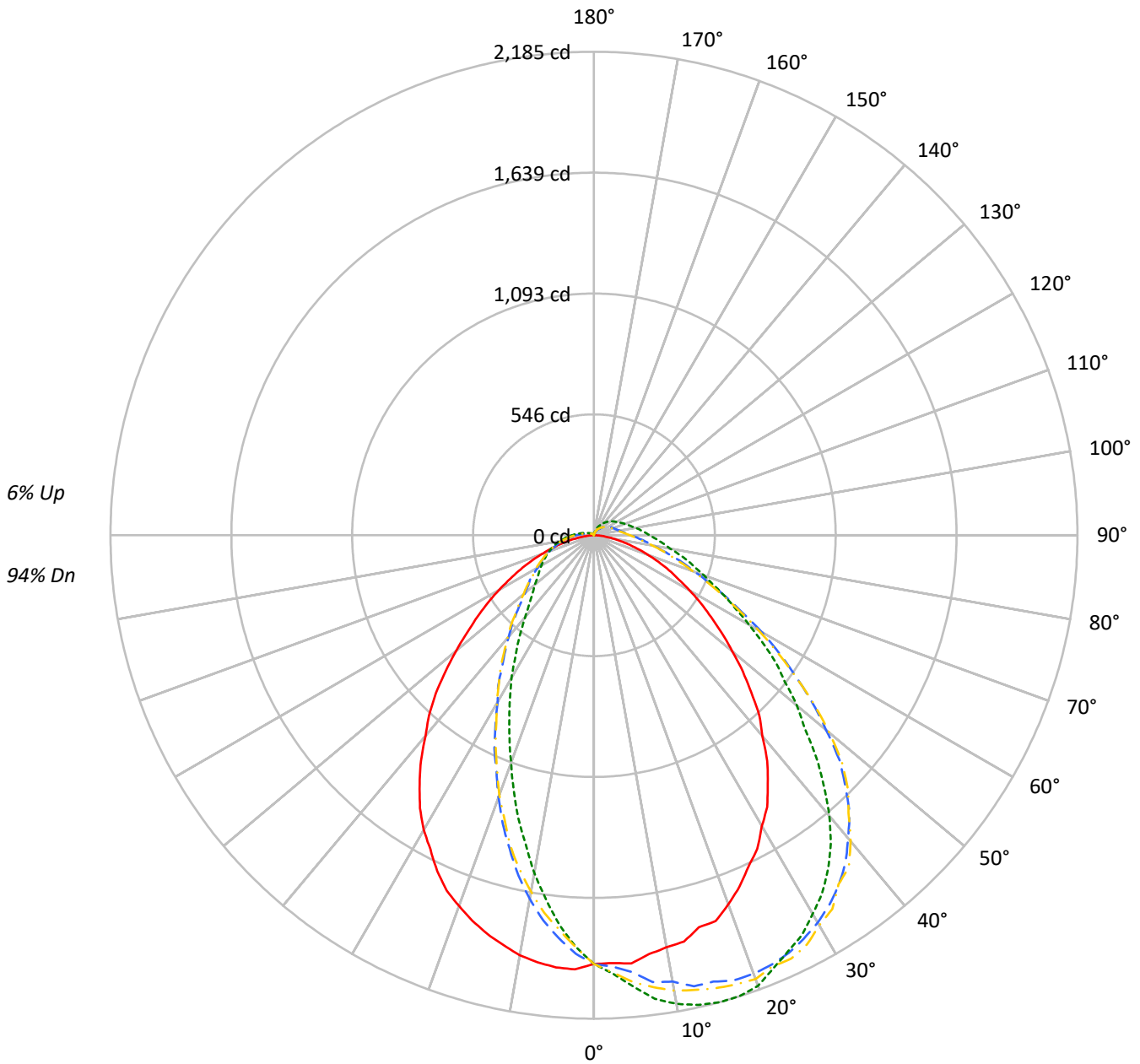
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4828.0 lumens
Efficiency: N/A
Efficacy: 137.9 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
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°	19728	19728	19728	19728
5°	19800	20103	19987	17375
10°	19446	20532	19824	14809
15°	19172	20459	19497	12382
20°	19023	20054	19104	10130
25°	18299	19124	18551	8335
30°	17531	18276	17758	6886
35°	16666	17248	16712	5611
40°	15339	15779	15331	4601
45°	14030	13927	14101	3919
50°	12476	12156	12418	3542
55°	10995	10649	10918	3254
60°	9643	9082	9556	3075
65°	8448	7820	8247	2922
70°	7182	6853	6938	2792
75°	5853	6230	5695	2690
80°	4515	5608	4107	2505
85°	3112	5415	2511	2347

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 19515 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.0	3.8
10°-20°	505.9	10.5
20°-30°	727.6	15.1
30°-40°	825.8	17.1
40°-50°	789.2	16.3
50°-60°	641.2	13.3
60°-70°	447.4	9.3
70°-80°	277.2	5.7
80°-90°	159.0	3.3
90°-100°	95.0	2.0
100°-110°	62.4	1.3
110°-120°	43.7	0.9
120°-130°	31.7	0.7
130°-140°	21.1	0.4
140°-150°	11.9	0.2
150°-160°	5.3	0.1
160°-170°	1.5	0.0
170°-180°	0.1	0.0
0°-30°	1415.5	29.3
0°-40°	2241.3	46.4
0°-60°	3671.7	76.1
0°-90°	4555.3	94.4
90°-120°	201.2	4.2
90°-150°	265.8	5.5
90°-180°	273.0	5.7
0°-180°	4828.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1937	1937	1937	1937	1937	
5°	1942	2047	1960	1770	1942	183
15°	1834	2185	1865	1322	1834	521
25°	1652	2075	1675	904	1652	762
35°	1370	1844	1374	600	1370	854
45°	1005	1422	1010	400	1005	775
55°	647	1003	642	306	647	582
65°	374	652	365	244	374	371
75°	166	436	162	188	166	179
85°	36	296	29	128	36	41
90°	1	250	0	98	1	3
95°	2	218	0	75	2	1
105°	1	167	0	41	1	1
115°	1	133	0	22	1	1
125°	1	108	0	15	1	1
135°	1	86	0	11	1	1
145°	1	61	0	8	1	1
155°	2	38	0	4	2	1
165°	2	18	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°	1937.1	1937.1	1937.1	1937.1	1937.1	1937.1	1937.1	1937.1	1937.1	1937.1	1937.1
2.5°	1935.2	1949.8	1951.0	1996.7	1983.4	2000.5	1978.9	1982.7	1963.7	1958.6	1892.7
5°	1942.1	1973.2	1981.5	2060.1	2047.4	2056.3	2026.5	2004.9	1960.5	1933.9	1827.3
7.5°	1909.2	1991.0	2036.7	2092.5	2113.4	2120.4	2060.1	2020.2	1946.6	1881.3	1756.3
10°	1890.8	2003.7	2048.1	2131.8	2150.2	2136.9	2089.9	2024.0	1927.6	1822.3	1668.8
12.5°	1880.6	2010.7	2088.0	2173.7	2174.3	2160.3	2105.2	2034.1	1896.5	1758.8	1576.2
15°	1833.7	2009.4	2088.7	2175.6	2185.1	2176.2	2119.7	2027.1	1864.8	1680.2	1469.6
17.5°	1828.6	2006.2	2109.0	2200.3	2184.4	2178.1	2128.6	2024.0	1826.7	1600.3	1369.4
20°	1775.3	1999.2	2109.0	2172.4	2167.3	2169.9	2134.3	2019.5	1782.9	1514.0	1259.7
22.5°	1718.9	1991.0	2100.1	2148.3	2117.8	2164.1	2109.0	2007.5	1738.5	1423.9	1150.6
25°	1652.3	1977.7	2083.0	2114.0	2075.3	2111.5	2110.9	1989.1	1675.1	1326.9	1064.3
27.5°	1598.4	1956.7	2055.1	2102.0	2036.0	2067.1	2084.9	1966.9	1600.3	1231.1	962.8
30°	1517.8	1930.1	2021.4	2028.4	1976.4	2015.7	2036.0	1939.0	1537.5	1122.7	870.2
32.5°	1456.3	1899.7	1980.2	1970.7	1918.7	1970.7	2003.7	1911.1	1462.6	1027.5	804.9
35°	1370.0	1862.9	1928.8	1878.7	1844.5	1887.6	1926.3	1881.3	1373.8	926.0	721.2
37.5°	1286.3	1830.5	1867.3	1805.1	1758.2	1806.4	1891.4	1825.4	1284.4	845.5	659.0
40°	1184.2	1756.3	1786.8	1702.4	1655.5	1726.5	1804.5	1777.2	1183.6	761.8	598.8
42.5°	1106.8	1701.1	1710.0	1594.6	1538.8	1614.2	1703.0	1708.7	1101.7	686.3	545.5
45°	1004.7	1623.7	1607.3	1480.4	1422.0	1489.9	1623.1	1638.3	1009.8	621.0	493.5
47.5°	912.7	1537.5	1505.1	1356.7	1291.4	1371.9	1519.7	1559.7	907.0	560.7	444.6
50°	816.9	1441.1	1369.4	1241.3	1197.5	1237.5	1388.4	1454.4	813.1	501.1	407.2
52.5°	729.4	1334.5	1245.7	1130.9	1087.1	1120.1	1250.8	1349.7	719.9	451.0	374.2
55°	647.0	1228.0	1113.2	1011.7	1002.8	1012.9	1111.2	1224.8	642.5	406.6	353.3
57.5°	573.4	1098.6	993.9	919.1	903.2	911.5	979.3	1096.0	567.7	362.2	322.8
60°	499.2	966.0	875.9	818.2	809.3	815.7	859.4	970.4	494.7	324.7	294.3
62.5°	431.9	832.8	752.9	731.3	725.0	725.0	743.4	844.9	426.2	286.7	272.7
65°	374.2	718.6	658.4	650.1	652.0	651.4	640.0	705.3	365.3	253.1	253.7
67.5°	315.9	597.5	563.9	574.0	581.6	578.5	554.4	586.7	308.3	222.6	236.6
70°	262.0	493.5	487.1	510.0	527.7	511.2	476.3	479.5	253.1	192.8	214.4
72.5°	211.2	399.0	428.1	459.8	477.0	458.6	410.4	396.4	203.6	165.5	194.1
75°	166.2	320.9	367.2	414.2	436.4	412.9	357.1	309.5	161.7	139.5	177.6
77.5°	126.9	254.3	314.0	368.5	390.1	369.8	310.8	241.7	118.6	117.3	159.8
80°	90.7	201.1	278.4	331.1	350.8	331.1	269.6	190.9	82.5	93.9	140.8
82.5°	59.6	155.4	242.3	301.3	322.8	298.7	234.0	147.2	52.6	76.1	126.9
85°	36.2	123.0	211.2	270.8	295.6	272.1	204.9	111.6	29.2	58.4	110.4
87.5°	15.9	95.1	188.4	249.9	272.1	250.5	182.7	87.5	12.1	45.7	94.5
90°	1.3	75.5	166.2	230.2	249.9	229.6	161.7	71.0	0.0	33.0	81.2
92.5°	1.3	64.7	152.2	213.1	235.3	212.5	145.9	58.4	0.0	24.1	68.5
95°	1.9	54.5	138.3	199.8	217.6	197.9	133.2	50.1	0.0	16.5	57.7
97.5°	1.9	49.5	126.9	186.5	206.1	185.2	121.8	45.0	0.0	12.1	46.9
100°	1.3	45.7	118.0	173.8	192.2	172.5	112.9	40.6	0.0	7.6	38.1
102.5°	1.3	42.5	110.4	163.0	177.6	161.1	105.3	38.1	0.0	6.3	31.1
105°	1.3	40.6	103.4	150.3	167.4	150.3	98.9	35.5	0.0	5.1	24.1
107.5°	1.3	38.1	98.3	143.3	157.3	142.1	93.9	33.6	0.0	5.1	19.7
110°	1.3	36.2	93.9	133.2	149.1	134.5	89.4	30.4	0.0	3.2	15.9



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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	33.0	89.4	126.2	141.4	126.9	85.6	27.9	0.0	3.2	14.0
115°	1.3	29.8	85.6	121.8	133.2	120.5	81.8	24.7	0.0	2.5	12.7
117.5°	1.3	27.9	83.1	116.1	127.5	114.8	78.7	23.5	0.0	2.5	12.1
120°	1.3	26.6	79.3	110.4	119.2	109.1	74.8	22.2	0.0	2.5	11.4
122.5°	1.3	25.4	76.1	105.3	114.8	104.7	71.7	21.6	0.0	1.9	10.1
125°	1.3	24.1	71.7	99.6	108.5	98.3	66.0	20.9	0.0	1.3	8.9
127.5°	1.3	22.8	67.2	95.1	103.4	93.9	62.2	20.3	0.0	1.3	8.2
130°	1.3	22.2	61.5	89.4	97.7	88.2	57.7	20.3	0.0	1.3	7.6
132.5°	1.3	21.6	55.2	83.7	92.6	82.5	53.3	19.7	0.0	1.3	6.3
135°	1.3	20.9	48.8	78.0	86.3	76.7	49.5	19.0	0.0	1.3	5.7
137.5°	1.3	19.7	43.1	71.7	79.9	70.4	46.9	17.8	0.0	1.3	5.1
140°	1.3	18.4	38.7	66.6	73.6	64.7	43.1	16.5	0.0	0.6	3.8
142.5°	1.3	16.5	34.9	60.3	67.2	59.0	38.7	14.0	0.0	0.6	3.8
145°	1.3	14.6	31.7	52.6	60.9	52.6	36.2	12.7	0.0	0.6	3.2
147.5°	1.3	13.3	28.5	44.4	55.2	48.2	32.3	10.8	0.0	0.6	2.5
150°	1.3	12.1	24.7	37.4	48.8	42.5	29.8	9.5	0.0	0.0	1.9
152.5°	1.3	10.8	21.6	31.1	43.8	38.7	26.6	8.2	0.0	0.0	1.3
155°	1.9	10.1	18.4	27.3	38.1	33.6	22.2	7.0	0.0	0.0	1.3
157.5°	1.9	8.9	15.2	22.2	33.6	29.2	17.8	5.7	0.0	0.0	0.6
160°	1.9	8.2	12.7	17.1	27.9	24.1	14.6	4.4	0.0	0.0	0.6
162.5°	1.9	7.6	10.8	12.7	22.8	19.0	11.4	3.2	0.0	0.0	0.6
165°	1.9	6.3	9.5	8.9	17.8	14.6	8.9	1.9	0.0	0.0	0.0
167.5°	1.9	5.7	7.6	6.3	13.3	10.8	6.3	1.3	0.0	0.0	0.0
170°	1.9	4.4	6.3	4.4	3.8	7.0	3.8	0.6	0.0	0.0	0.0
172.5°	1.9	3.8	5.1	3.2	1.3	3.8	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	2.5	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



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1937.1	1937.1	1937.1	1937.1	1937.1	1937.1
2.5°	1883.8	1862.9	1843.8	1864.1	1878.7	1935.2
5°	1791.8	1769.6	1772.2	1790.6	1839.4	1942.1
7.5°	1696.7	1659.9	1668.8	1720.2	1792.5	1909.2
10°	1584.4	1550.8	1559.0	1636.4	1737.9	1890.8
12.5°	1484.2	1427.8	1476.0	1548.9	1674.5	1880.6
15°	1366.9	1322.5	1348.5	1456.3	1613.6	1833.7
17.5°	1240.0	1205.8	1236.8	1344.0	1538.8	1828.6
20°	1142.3	1094.8	1131.5	1249.5	1446.1	1775.3
22.5°	1032.6	996.4	1035.1	1143.6	1351.6	1718.9
25°	942.5	904.5	943.2	1051.0	1267.9	1652.3
27.5°	855.0	820.1	855.0	953.9	1184.8	1598.4
30°	778.3	744.6	780.2	875.3	1087.8	1517.8
32.5°	706.6	663.5	709.1	801.1	1002.2	1456.3
35°	632.4	600.0	634.3	736.4	907.0	1370.0
37.5°	570.8	537.2	577.8	665.4	826.5	1286.3
40°	512.5	482.7	515.0	608.3	758.0	1184.2
42.5°	466.8	437.0	470.0	556.3	688.8	1106.8
45°	422.4	400.2	426.9	499.2	619.1	1004.7
47.5°	390.1	371.1	393.3	457.3	560.7	912.7
50°	362.2	348.9	364.7	415.5	500.4	816.9
52.5°	337.4	324.1	342.5	383.1	452.9	729.4
55°	318.4	306.4	320.3	352.7	405.3	647.0
57.5°	297.5	289.9	300.6	320.3	367.9	573.4
60°	282.3	274.0	285.4	301.3	325.4	499.2
62.5°	265.1	260.7	267.7	280.3	293.0	431.9
65°	249.9	243.6	252.4	256.9	255.6	374.2
67.5°	233.4	231.5	236.6	237.2	227.7	315.9
70°	216.3	215.0	221.4	217.6	197.9	262.0
72.5°	202.3	202.3	206.1	198.5	172.5	211.2
75°	187.1	188.4	191.6	182.7	145.2	166.2
77.5°	173.2	174.4	175.1	163.0	121.8	126.9
80°	157.3	156.7	163.0	147.8	98.9	90.7
82.5°	143.3	140.8	144.6	129.4	79.9	59.6
85°	127.5	128.1	130.7	112.9	64.1	36.2
87.5°	114.8	114.8	117.3	99.6	48.2	15.9
90°	99.6	98.3	102.1	84.4	36.2	1.3
92.5°	86.9	86.9	89.4	72.3	26.6	1.3
95°	74.2	74.8	76.7	59.6	20.3	1.9
97.5°	63.4	64.1	66.6	50.7	14.6	1.9
100°	53.9	54.5	55.8	40.6	11.4	1.3
102.5°	45.0	46.9	46.9	33.6	8.9	1.3
105°	38.1	40.6	39.3	27.3	8.2	1.3
107.5°	31.7	34.3	34.3	22.2	8.2	1.3
110°	26.0	29.8	29.2	19.0	6.3	1.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	22.2	25.4	23.5	16.5	6.3	1.3
115°	19.0	22.2	20.9	15.2	5.7	1.3
117.5°	17.1	19.0	19.0	14.6	5.7	1.3
120°	15.9	17.8	17.1	14.0	5.7	1.3
122.5°	14.6	15.9	15.9	12.7	5.1	1.3
125°	14.0	14.6	15.2	11.4	5.1	1.3
127.5°	13.3	14.6	14.6	10.8	4.4	1.3
130°	12.1	13.3	13.3	10.1	4.4	1.3
132.5°	10.8	12.1	12.1	9.5	4.4	1.3
135°	10.1	11.4	11.4	8.9	4.4	1.3
137.5°	9.5	10.1	10.1	8.2	4.4	1.3
140°	8.2	9.5	9.5	7.6	4.4	1.3
142.5°	7.6	8.9	8.9	7.0	3.8	1.3
145°	7.0	7.6	8.2	6.3	3.8	1.3
147.5°	5.7	7.0	7.6	5.7	3.8	1.3
150°	4.4	6.3	6.3	5.7	3.8	1.3
152.5°	3.2	5.7	5.7	5.1	3.2	1.3
155°	2.5	4.4	5.1	4.4	3.2	1.9
157.5°	1.9	3.8	4.4	4.4	3.2	1.9
160°	1.3	3.2	3.8	3.8	2.5	1.9
162.5°	0.6	2.5	3.2	3.8	2.5	1.9
165°	0.0	1.9	2.5	3.2	2.5	1.9
167.5°	0.0	1.3	1.9	2.5	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: P893601
 CATALOG NUMBER: 4MB-5SL-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	19.28	20.74	19.73	21.17	21.62	21.54	23.00	21.99	23.43	23.88
	3H	20.10	21.42	20.57	21.86	22.36	23.24	24.56	23.70	25.00	25.50
	4H	20.30	21.55	20.79	22.01	22.52	24.08	25.32	24.56	25.78	26.29
	6H	20.39	21.55	20.90	22.02	22.55	24.95	26.10	25.45	26.58	27.11
	8H	20.40	21.50	20.91	21.99	22.53	25.42	26.52	25.94	27.02	27.56
	12H	20.38	21.44	20.90	21.93	22.49	25.97	27.02	26.49	27.51	28.07
4H	2H	19.71	20.96	20.20	21.42	21.93	21.90	23.15	22.39	23.61	24.12
	3H	20.81	21.86	21.31	22.36	22.90	23.79	24.83	24.29	25.34	25.87
	4H	21.15	22.10	21.67	22.62	23.18	24.76	25.71	25.28	26.22	26.79
	6H	21.34	22.17	21.88	22.72	23.30	25.80	26.63	26.34	27.17	27.76
	8H	21.37	22.15	21.92	22.69	23.29	26.36	27.14	26.91	27.69	28.28
	12H	21.38	22.08	21.94	22.65	23.25	27.02	27.72	27.59	28.30	28.89
8H	4H	21.48	22.26	22.03	22.80	23.40	24.90	25.68	25.45	26.22	26.82
	6H	21.80	22.45	22.38	23.04	23.64	26.07	26.73	26.65	27.31	27.91
	8H	21.89	22.48	22.48	23.08	23.69	26.75	27.34	27.35	27.94	28.55
	12H	21.95	22.47	22.54	23.06	23.74	27.57	28.09	28.16	28.68	29.36
12H	4H	21.56	22.26	22.13	22.83	23.43	24.89	25.59	25.46	26.17	26.77
	6H	21.94	22.53	22.53	23.13	23.74	26.08	26.67	26.68	27.27	27.89
	8H	22.10	22.62	22.69	23.21	23.89	26.82	27.35	27.42	27.93	28.61