

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: P894168

Luminaire Tested: 4MB-SC3-ASML-UNV-CC93-MID-3500K

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894168
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-SC3-ASML-UNV-CC93-MID-3500K
Description: Selectable 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 90CRI, 3500K CCT, MID lumen setting
Light Source: -
Ballast/Driver: -

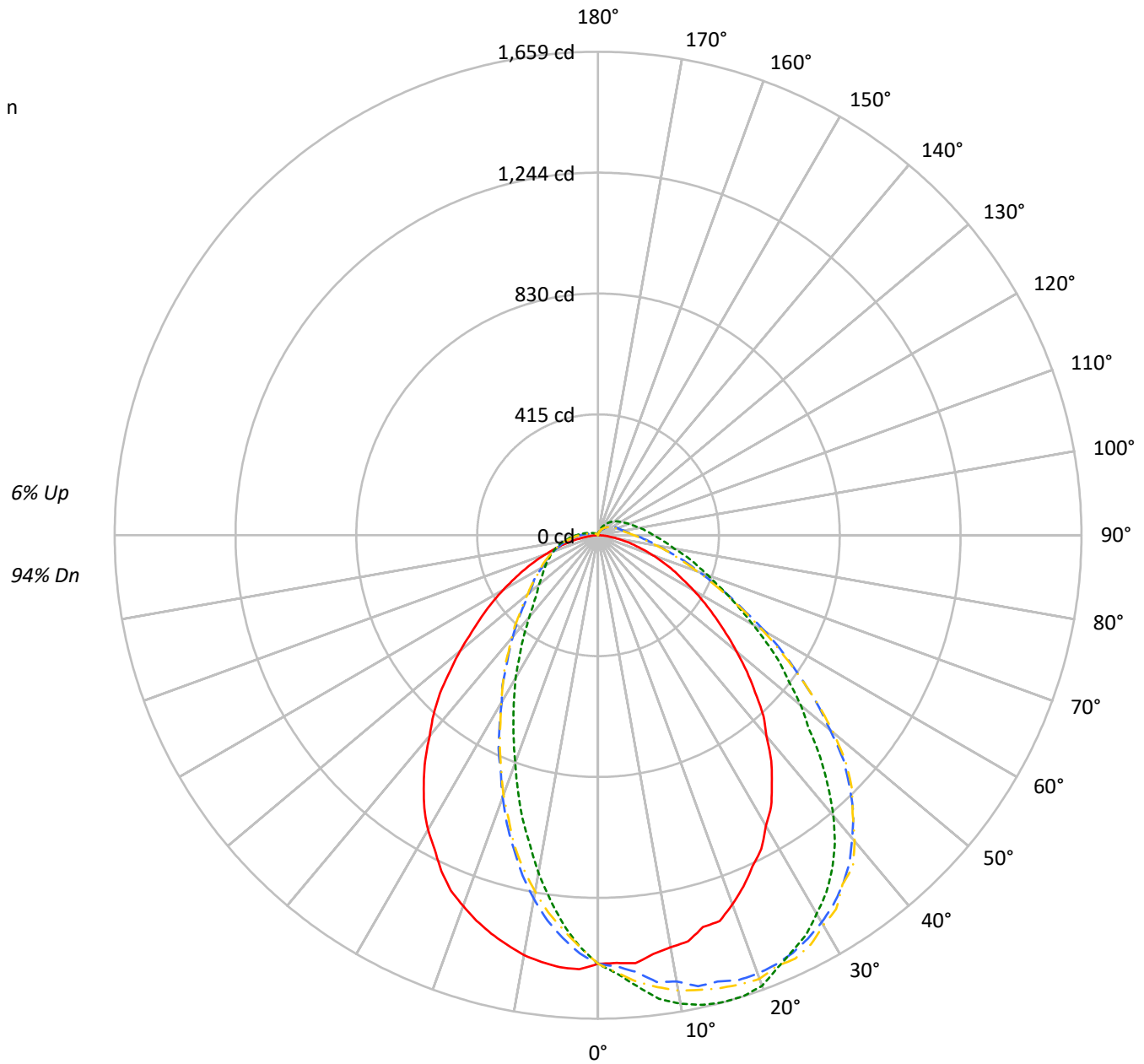
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3665.0 lumens
Efficiency: N/A
Efficacy: 109.4 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): 33.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9948
Total Harmonic Distortion (THDi): 5.65231997856897
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	81	81	81	79
2	98	90	83	78	95	88	82	76	83	78	74	79	75	71	75	72	69	69	69	69	66
3	90	80	72	65	87	78	70	64	74	68	63	70	65	61	67	63	59	59	59	59	57
4	83	71	63	56	80	69	61	55	66	59	54	63	57	53	60	55	51	51	51	51	49
5	76	64	55	49	74	62	54	48	60	53	47	57	51	46	55	49	45	45	45	45	43
6	71	58	49	43	68	56	48	42	54	47	42	52	46	41	50	44	40	40	40	40	38
7	66	53	44	38	64	51	43	38	49	42	37	48	41	36	46	40	36	36	36	36	34
8	61	48	40	34	59	47	39	34	45	38	33	44	37	33	42	37	32	32	32	32	30
9	57	44	36	31	56	43	36	31	42	35	30	40	34	30	39	33	29	29	29	29	28
10	54	41	33	28	52	40	33	28	39	32	28	38	31	27	36	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	14976	14976	14976	14976
5°	15031	15260	15173	13190
10°	14761	15586	15048	11241
15°	14554	15530	14801	9399
20°	14441	15223	14503	7689
25°	13891	14517	14083	6327
30°	13308	13874	13480	5227
35°	12652	13094	12687	4260
40°	11644	11978	11638	3492
45°	10650	10572	10703	2975
50°	9472	9227	9427	2688
55°	8345	8083	8288	2470
60°	7319	6895	7256	2334
65°	6414	5937	6261	2218
70°	5452	5202	5266	2119
75°	4441	4730	4325	2041
80°	3430	4257	3116	1901
85°	2356	4111	1900	1782

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 14815 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	3.8
10°-20°	384.0	10.5
20°-30°	552.4	15.1
30°-40°	626.8	17.1
40°-50°	599.1	16.3
50°-60°	486.8	13.3
60°-70°	339.6	9.3
70°-80°	210.4	5.7
80°-90°	120.7	3.3
90°-100°	72.1	2.0
100°-110°	47.4	1.3
110°-120°	33.2	0.9
120°-130°	24.0	0.7
130°-140°	16.0	0.4
140°-150°	9.0	0.2
150°-160°	4.0	0.1
160°-170°	1.2	0.0
170°-180°	0.1	0.0
0°-30°	1074.6	29.3
0°-40°	1701.4	46.4
0°-60°	2787.2	76.1
0°-90°	3458.0	94.4
90°-120°	152.7	4.2
90°-150°	201.8	5.5
90°-180°	207.0	5.6
0°-180°	3665.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1470	1470	1470	1470	1470	
5°	1474	1554	1488	1343	1474	139
15°	1392	1659	1416	1004	1392	396
25°	1254	1575	1272	687	1254	579
35°	1040	1400	1043	456	1040	648
45°	763	1080	766	304	763	589
55°	491	761	488	233	491	442
65°	284	495	277	185	284	282
75°	126	331	123	143	126	136
85°	27	224	22	97	27	31
90°	1	190	0	75	1	2
95°	1	165	0	57	1	1
105°	1	127	0	31	1	1
115°	1	101	0	17	1	1
125°	1	82	0	11	1	1
135°	1	66	0	9	1	1
145°	1	46	0	6	1	1
155°	1	29	0	3	1	1
165°	1	14	0	1	1	0
175°	1	0	0	0	1	0
180°	0	0	0	0	0	



TEST NUMBER: P894168
 CATALOG NUMBER: 4MB-SC3-ASML-UNV-CC93-MID-3500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1470.5	1470.5	1470.5	1470.5	1470.5	1470.5	1470.5	1470.5	1470.5	1470.5	1470.5
2.5°	1469.0	1480.1	1481.1	1515.7	1505.6	1518.6	1502.2	1505.1	1490.7	1486.8	1436.8
5°	1474.3	1497.9	1504.2	1563.9	1554.2	1561.0	1538.3	1522.0	1488.3	1468.1	1387.2
7.5°	1449.3	1511.4	1546.1	1588.4	1604.3	1609.6	1563.9	1533.5	1477.7	1428.1	1333.2
10°	1435.3	1521.0	1554.7	1618.3	1632.2	1622.1	1586.5	1536.4	1463.2	1383.3	1266.8
12.5°	1427.6	1526.3	1585.1	1650.1	1650.5	1639.9	1598.1	1544.1	1439.6	1335.2	1196.5
15°	1392.0	1525.3	1585.5	1651.5	1658.7	1652.0	1609.1	1538.8	1415.6	1275.5	1115.6
17.5°	1388.1	1522.9	1600.9	1670.3	1658.2	1653.4	1615.9	1536.4	1386.7	1214.8	1039.5
20°	1347.7	1517.6	1600.9	1649.1	1645.2	1647.2	1620.2	1533.1	1353.5	1149.3	956.2
22.5°	1304.8	1511.4	1594.2	1630.8	1607.7	1642.8	1600.9	1523.9	1319.8	1080.9	873.4
25°	1254.3	1501.3	1581.2	1604.8	1575.4	1602.9	1602.4	1509.9	1271.6	1007.3	807.9
27.5°	1213.3	1485.4	1560.0	1595.6	1545.6	1569.2	1582.6	1493.1	1214.8	934.6	730.9
30°	1152.2	1465.2	1534.5	1539.8	1500.3	1530.2	1545.6	1471.9	1167.1	852.2	660.6
32.5°	1105.5	1442.1	1503.2	1496.0	1456.5	1496.0	1521.0	1450.7	1110.3	780.0	611.0
35°	1040.0	1414.1	1464.2	1426.2	1400.2	1432.9	1462.3	1428.1	1042.9	703.0	547.5
37.5°	976.5	1389.6	1417.5	1370.3	1334.7	1371.3	1435.8	1385.7	975.0	641.8	500.3
40°	898.9	1333.2	1356.3	1292.3	1256.7	1310.6	1369.8	1349.1	898.5	578.3	454.5
42.5°	840.2	1291.3	1298.1	1210.5	1168.1	1225.4	1292.8	1297.1	836.3	521.0	414.1
45°	762.7	1232.6	1220.1	1123.8	1079.5	1131.0	1232.1	1243.7	766.5	471.4	374.6
47.5°	692.9	1167.1	1142.6	1029.9	980.3	1041.5	1153.6	1184.0	688.5	425.6	337.5
50°	620.2	1093.9	1039.5	942.3	909.0	939.4	1054.0	1104.0	617.3	380.4	309.1
52.5°	553.7	1013.0	945.6	858.5	825.3	850.3	949.5	1024.6	546.5	342.3	284.1
55°	491.1	932.2	845.0	768.0	761.2	768.9	843.6	929.8	487.7	308.6	268.2
57.5°	435.3	833.9	754.5	697.7	685.6	691.9	743.4	832.0	430.9	274.9	245.1
60°	378.9	733.3	664.9	621.1	614.4	619.2	652.4	736.7	375.6	246.5	223.4
62.5°	327.9	632.2	571.5	555.2	550.3	550.3	564.3	641.3	323.6	217.6	207.0
65°	284.1	545.5	499.8	493.5	495.0	494.5	485.8	535.4	277.3	192.1	192.6
67.5°	239.8	453.6	428.0	435.7	441.5	439.1	420.8	445.4	234.0	169.0	179.6
70°	198.9	374.6	369.8	387.1	400.6	388.1	361.6	364.0	192.1	146.4	162.7
72.5°	160.3	302.9	325.0	349.1	362.1	348.1	311.5	300.9	154.6	125.7	147.3
75°	126.1	243.6	278.8	314.4	331.3	313.4	271.1	235.0	122.8	105.9	134.8
77.5°	96.3	193.1	238.3	279.7	296.1	280.7	235.9	183.4	90.0	89.1	121.3
80°	68.9	152.6	211.4	251.3	266.3	251.3	204.6	144.9	62.6	71.3	106.9
82.5°	45.3	118.0	183.9	228.7	245.1	226.8	177.7	111.7	40.0	57.8	96.3
85°	27.4	93.4	160.3	205.6	224.4	206.6	155.5	84.7	22.1	44.3	83.8
87.5°	12.0	72.2	143.0	189.7	206.6	190.2	138.7	66.4	9.1	34.7	71.7
90°	1.0	57.3	126.1	174.8	189.7	174.3	122.8	53.9	0.0	25.0	61.6
92.5°	1.0	49.1	115.6	161.8	178.6	161.3	110.7	44.3	0.0	18.3	52.0
95°	1.4	41.4	105.0	151.7	165.1	150.2	101.1	38.0	0.0	12.5	43.8
97.5°	1.4	37.6	96.3	141.6	156.5	140.6	92.4	34.2	0.0	9.1	35.6
100°	1.0	34.7	89.6	131.9	145.9	131.0	85.7	30.8	0.0	5.8	28.9
102.5°	1.0	32.3	83.8	123.7	134.8	122.3	79.9	28.9	0.0	4.8	23.6
105°	1.0	30.8	78.5	114.1	127.1	114.1	75.1	27.0	0.0	3.9	18.3
107.5°	1.0	28.9	74.6	108.8	119.4	107.9	71.3	25.5	0.0	3.9	14.9
110°	1.0	27.4	71.3	101.1	113.1	102.1	67.9	23.1	0.0	2.4	12.0



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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°	1.0	25.0	67.9	95.8	107.4	96.3	65.0	21.2	0.0	2.4	10.6
115°	1.0	22.6	65.0	92.4	101.1	91.5	62.1	18.8	0.0	1.9	9.6
117.5°	1.0	21.2	63.1	88.1	96.8	87.1	59.7	17.8	0.0	1.9	9.1
120°	1.0	20.2	60.2	83.8	90.5	82.8	56.8	16.9	0.0	1.9	8.7
122.5°	1.0	19.3	57.8	79.9	87.1	79.4	54.4	16.4	0.0	1.4	7.7
125°	1.0	18.3	54.4	75.6	82.3	74.6	50.1	15.9	0.0	1.0	6.7
127.5°	1.0	17.3	51.0	72.2	78.5	71.3	47.2	15.4	0.0	1.0	6.3
130°	1.0	16.9	46.7	67.9	74.1	66.9	43.8	15.4	0.0	1.0	5.8
132.5°	1.0	16.4	41.9	63.6	70.3	62.6	40.4	14.9	0.0	1.0	4.8
135°	1.0	15.9	37.1	59.2	65.5	58.3	37.6	14.4	0.0	1.0	4.3
137.5°	1.0	14.9	32.7	54.4	60.7	53.4	35.6	13.5	0.0	1.0	3.9
140°	1.0	14.0	29.4	50.6	55.9	49.1	32.7	12.5	0.0	0.5	2.9
142.5°	1.0	12.5	26.5	45.7	51.0	44.8	29.4	10.6	0.0	0.5	2.9
145°	1.0	11.1	24.1	40.0	46.2	40.0	27.4	9.6	0.0	0.5	2.4
147.5°	1.0	10.1	21.7	33.7	41.9	36.6	24.6	8.2	0.0	0.5	1.9
150°	1.0	9.1	18.8	28.4	37.1	32.3	22.6	7.2	0.0	0.0	1.4
152.5°	1.0	8.2	16.4	23.6	33.2	29.4	20.2	6.3	0.0	0.0	1.0
155°	1.4	7.7	14.0	20.7	28.9	25.5	16.9	5.3	0.0	0.0	1.0
157.5°	1.4	6.7	11.6	16.9	25.5	22.1	13.5	4.3	0.0	0.0	0.5
160°	1.4	6.3	9.6	13.0	21.2	18.3	11.1	3.4	0.0	0.0	0.5
162.5°	1.4	5.8	8.2	9.6	17.3	14.4	8.7	2.4	0.0	0.0	0.5
165°	1.4	4.8	7.2	6.7	13.5	11.1	6.7	1.4	0.0	0.0	0.0
167.5°	1.4	4.3	5.8	4.8	10.1	8.2	4.8	1.0	0.0	0.0	0.0
170°	1.4	3.4	4.8	3.4	2.9	5.3	2.9	0.5	0.0	0.0	0.0
172.5°	1.4	2.9	3.9	2.4	1.0	2.9	1.4	0.0	0.0	0.0	0.0
175°	1.4	2.4	2.4	1.4	0.5	1.0	0.0	0.0	0.0	0.0	0.0
177.5°	1.4	1.9	1.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5



TEST NUMBER: P894168

CATALOG NUMBER: 4MB-SC3-ASML-UNV-CC93-MID-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1470.5	1470.5	1470.5	1470.5	1470.5	1470.5
2.5°	1430.0	1414.1	1399.7	1415.1	1426.2	1469.0
5°	1360.2	1343.3	1345.3	1359.2	1396.3	1474.3
7.5°	1288.0	1260.1	1266.8	1305.8	1360.7	1449.3
10°	1202.8	1177.2	1183.5	1242.2	1319.3	1435.3
12.5°	1126.7	1083.8	1120.4	1175.8	1271.1	1427.6
15°	1037.6	1003.9	1023.6	1105.5	1224.9	1392.0
17.5°	941.3	915.3	938.9	1020.3	1168.1	1388.1
20°	867.2	831.0	859.0	948.5	1097.8	1347.7
22.5°	783.9	756.4	785.8	868.1	1026.0	1304.8
25°	715.5	686.6	716.0	797.8	962.5	1254.3
27.5°	649.0	622.6	649.0	724.2	899.4	1213.3
30°	590.8	565.3	592.2	664.5	825.7	1152.2
32.5°	536.4	503.6	538.3	608.1	760.7	1105.5
35°	480.0	455.5	481.5	559.0	688.5	1040.0
37.5°	433.3	407.8	438.6	505.1	627.4	976.5
40°	389.0	366.4	391.0	461.7	575.4	898.9
42.5°	354.4	331.7	356.8	422.3	522.9	840.2
45°	320.7	303.8	324.0	378.9	469.9	762.7
47.5°	296.1	281.7	298.5	347.2	425.6	692.9
50°	274.9	264.8	276.9	315.4	379.9	620.2
52.5°	256.2	246.0	260.0	290.8	343.8	553.7
55°	241.7	232.6	243.2	267.7	307.7	491.1
57.5°	225.8	220.0	228.2	243.2	279.3	435.3
60°	214.3	208.0	216.7	228.7	247.0	378.9
62.5°	201.3	197.9	203.2	212.8	222.4	327.9
65°	189.7	184.9	191.6	195.0	194.0	284.1
67.5°	177.2	175.7	179.6	180.1	172.9	239.8
70°	164.2	163.2	168.0	165.1	150.2	198.9
72.5°	153.6	153.6	156.5	150.7	131.0	160.3
75°	142.0	143.0	145.4	138.7	110.3	126.1
77.5°	131.4	132.4	132.9	123.7	92.4	96.3
80°	119.4	118.9	123.7	112.2	75.1	68.9
82.5°	108.8	106.9	109.8	98.2	60.7	45.3
85°	96.8	97.3	99.2	85.7	48.6	27.4
87.5°	87.1	87.1	89.1	75.6	36.6	12.0
90°	75.6	74.6	77.5	64.0	27.4	1.0
92.5°	66.0	66.0	67.9	54.9	20.2	1.0
95°	56.3	56.8	58.3	45.3	15.4	1.4
97.5°	48.1	48.6	50.6	38.5	11.1	1.4
100°	40.9	41.4	42.4	30.8	8.7	1.0
102.5°	34.2	35.6	35.6	25.5	6.7	1.0
105°	28.9	30.8	29.9	20.7	6.3	1.0
107.5°	24.1	26.0	26.0	16.9	6.3	1.0
110°	19.7	22.6	22.1	14.4	4.8	1.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	16.9	19.3	17.8	12.5	4.8	1.0
115°	14.4	16.9	15.9	11.6	4.3	1.0
117.5°	13.0	14.4	14.4	11.1	4.3	1.0
120°	12.0	13.5	13.0	10.6	4.3	1.0
122.5°	11.1	12.0	12.0	9.6	3.9	1.0
125°	10.6	11.1	11.6	8.7	3.9	1.0
127.5°	10.1	11.1	11.1	8.2	3.4	1.0
130°	9.1	10.1	10.1	7.7	3.4	1.0
132.5°	8.2	9.1	9.1	7.2	3.4	1.0
135°	7.7	8.7	8.7	6.7	3.4	1.0
137.5°	7.2	7.7	7.7	6.3	3.4	1.0
140°	6.3	7.2	7.2	5.8	3.4	1.0
142.5°	5.8	6.7	6.7	5.3	2.9	1.0
145°	5.3	5.8	6.3	4.8	2.9	1.0
147.5°	4.3	5.3	5.8	4.3	2.9	1.0
150°	3.4	4.8	4.8	4.3	2.9	1.0
152.5°	2.4	4.3	4.3	3.9	2.4	1.0
155°	1.9	3.4	3.9	3.4	2.4	1.4
157.5°	1.4	2.9	3.4	3.4	2.4	1.4
160°	1.0	2.4	2.9	2.9	1.9	1.4
162.5°	0.5	1.9	2.4	2.9	1.9	1.4
165°	0.0	1.4	1.9	2.4	1.9	1.4
167.5°	0.0	1.0	1.4	1.9	1.4	1.4
170°	0.0	0.5	1.0	1.4	1.4	1.4
172.5°	0.0	0.0	0.5	1.0	1.0	1.4
175°	0.0	0.0	0.0	0.5	1.0	1.4
177.5°	0.0	0.0	0.0	0.5	1.0	1.4
180°	0.5	0.5	0.5	0.5	0.5	0.5



TEST NUMBER: P894168
 CATALOG NUMBER: 4MB-SC3-ASML-UNV-CC93-MID-3500K

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	18.32	19.78	18.77	20.21	20.67	20.58	22.04	21.03	22.47	22.92
	3H	19.14	20.46	19.61	20.90	21.40	22.28	23.60	22.75	24.04	24.54
	4H	19.35	20.59	19.83	21.05	21.56	23.12	24.36	23.61	24.82	25.33
	6H	19.44	20.59	19.94	21.06	21.59	23.99	25.15	24.50	25.62	26.15
	8H	19.44	20.54	19.95	21.04	21.57	24.47	25.57	24.98	26.06	26.60
	12H	19.43	20.48	19.95	20.97	21.53	25.01	26.06	25.53	26.55	27.12
4H	2H	18.76	20.00	19.25	20.46	20.97	20.94	22.19	21.43	22.65	23.16
	3H	19.85	20.90	20.35	21.40	21.94	22.83	23.87	23.33	24.38	24.91
	4H	20.19	21.14	20.71	21.66	22.23	23.80	24.75	24.32	25.27	25.83
	6H	20.38	21.21	20.93	21.76	22.34	24.84	25.67	25.38	26.22	26.80
	8H	20.41	21.19	20.96	21.73	22.33	25.40	26.18	25.95	26.73	27.32
	12H	20.42	21.12	20.99	21.69	22.29	26.06	26.76	26.63	27.34	27.94
8H	4H	20.52	21.30	21.07	21.84	22.44	23.94	24.72	24.49	25.26	25.86
	6H	20.84	21.50	21.42	22.08	22.69	25.11	25.77	25.69	26.36	26.96
	8H	20.93	21.52	21.53	22.12	22.73	25.79	26.38	26.39	26.98	27.60
	12H	20.99	21.51	21.58	22.10	22.78	26.61	27.13	27.20	27.72	28.40
12H	4H	20.60	21.30	21.17	21.88	22.47	23.93	24.64	24.50	25.21	25.81
	6H	20.98	21.57	21.58	22.17	22.78	25.13	25.72	25.72	26.32	26.93
	8H	21.14	21.66	21.73	22.25	22.93	25.86	26.39	26.46	26.97	27.66