

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: P893267

Luminaire Tested: 4MB-2SL-ASML-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893267
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-2SL-ASML-UNV-L840
Description: 2000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 4000K CCT
Light Source: -
Ballast/Driver: -

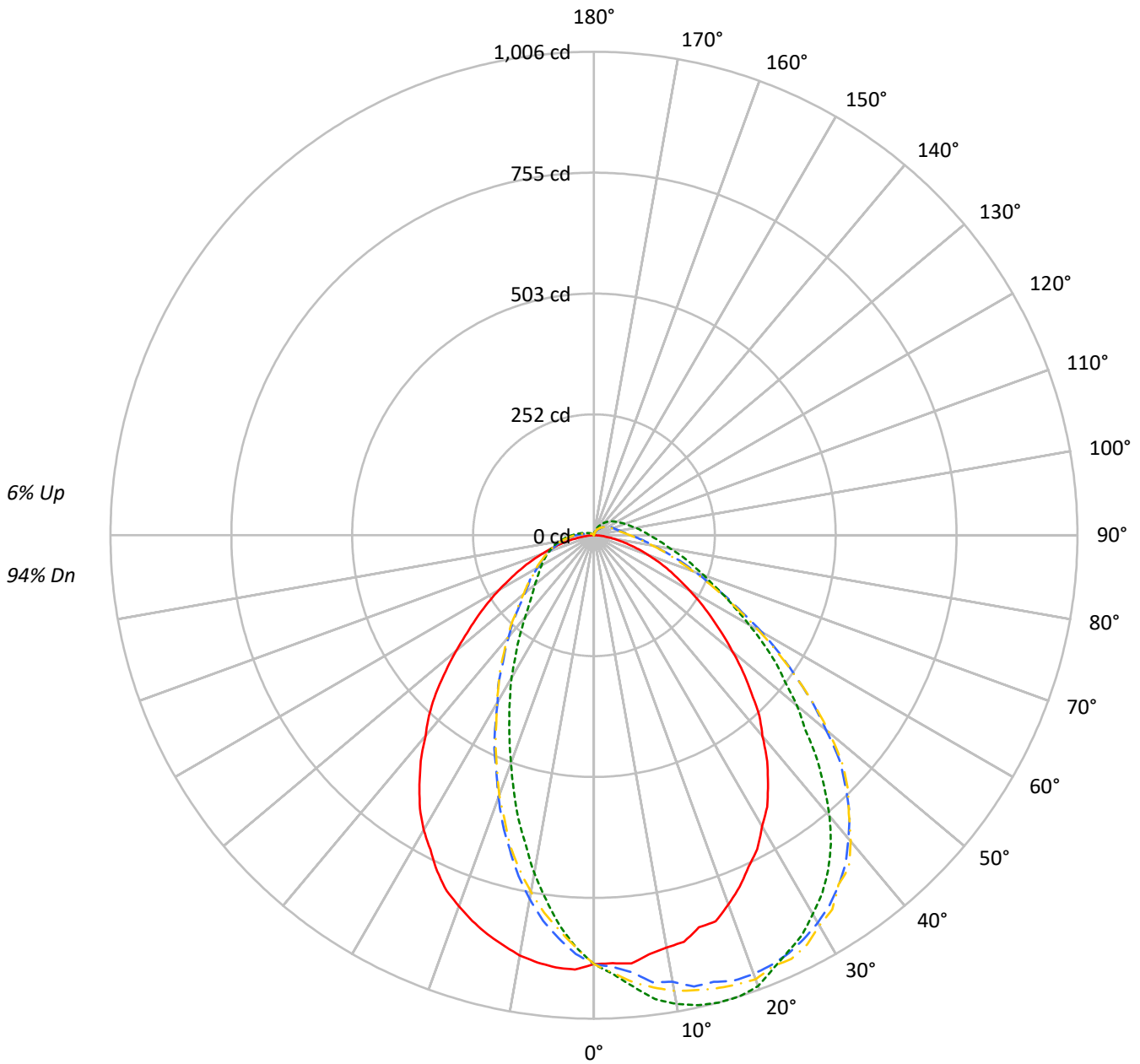
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2224.0 lumens
Efficiency: N/A
Efficacy: 161.2 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): 13.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 5.92
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P893267
CATALOG NUMBER: 4MB-2SL-ASML-UNV-L840

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	0
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°	9087	9087	9087	9087
5°	9121	9260	9207	8004
10°	8958	9458	9131	6822
15°	8832	9424	8981	5704
20°	8763	9238	8800	4666
25°	8429	8809	8545	3839
30°	8076	8419	8180	3172
35°	7677	7945	7699	2585
40°	7066	7268	7062	2119
45°	6463	6416	6495	1806
50°	5747	5599	5721	1631
55°	5064	4905	5030	1498
60°	4441	4183	4402	1416
65°	3892	3603	3800	1346
70°	3308	3157	3196	1286
75°	2698	2870	2624	1239
80°	2081	2583	1892	1154
85°	1436	2495	1152	1081

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°

Vertical Angle: 45°

Luminance: 8990 cd/sqm



TEST NUMBER: P893267
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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.8	3.8
10°-20°	233.0	10.5
20°-30°	335.2	15.1
30°-40°	380.4	17.1
40°-50°	363.5	16.3
50°-60°	295.4	13.3
60°-70°	206.1	9.3
70°-80°	127.7	5.7
80°-90°	73.2	3.3
90°-100°	43.8	2.0
100°-110°	28.7	1.3
110°-120°	20.1	0.9
120°-130°	14.6	0.7
130°-140°	9.7	0.4
140°-150°	5.5	0.2
150°-160°	2.4	0.1
160°-170°	0.7	0.0
170°-180°	0.1	0.0
0°-30°	652.1	29.3
0°-40°	1032.4	46.4
0°-60°	1691.4	76.0
0°-90°	2098.4	94.4
90°-120°	92.7	4.2
90°-150°	122.4	5.5
90°-180°	126.0	5.7
0°-180°	2224.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	892	892	892	892	892	
5°	895	943	903	815	895	84
15°	845	1006	859	609	845	240
25°	761	956	772	417	761	351
35°	631	850	633	276	631	393
45°	463	655	465	184	463	357
55°	298	462	296	141	298	268
65°	172	300	168	112	172	171
75°	77	201	74	87	77	83
85°	17	136	13	59	17	19
90°	1	115	0	45	1	1
95°	1	100	0	34	1	1
105°	1	77	0	19	1	1
115°	1	61	0	10	1	1
125°	1	50	0	7	1	1
135°	1	40	0	5	1	0
145°	1	28	0	4	1	0
155°	1	18	0	2	1	0
165°	1	8	0	1	1	0
175°	1	0	0	0	1	0
180°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	892.3	892.3	892.3	892.3	892.3	892.3	892.3	892.3	892.3	892.3	892.3
2.5°	891.4	898.1	898.7	919.8	913.6	921.5	911.6	913.3	904.6	902.2	871.9
5°	894.6	909.0	912.8	949.0	943.1	947.2	933.5	923.6	903.1	890.8	841.8
7.5°	879.5	917.1	938.2	963.9	973.5	976.7	949.0	930.6	896.7	866.6	809.0
10°	871.0	923.0	943.4	982.0	990.5	984.3	962.7	932.3	887.9	839.4	768.7
12.5°	866.3	926.2	961.8	1001.3	1001.6	995.2	969.7	937.0	873.6	810.2	726.1
15°	844.7	925.6	962.1	1002.2	1006.5	1002.5	976.5	933.8	859.0	774.0	677.0
17.5°	842.3	924.2	971.5	1013.6	1006.3	1003.3	980.5	932.3	841.5	737.2	630.8
20°	817.8	920.9	971.5	1000.7	998.4	999.5	983.2	930.3	821.3	697.4	580.3
22.5°	791.8	917.1	967.4	989.6	975.6	996.9	971.5	924.7	800.9	655.9	530.0
25°	761.1	911.0	959.5	973.8	956.0	972.7	972.4	916.3	771.6	611.2	490.3
27.5°	736.3	901.4	946.7	968.3	937.9	952.2	960.4	906.0	737.2	567.1	443.5
30°	699.2	889.1	931.2	934.4	910.4	928.5	937.9	893.2	708.2	517.2	400.9
32.5°	670.8	875.1	912.2	907.8	883.8	907.8	923.0	880.3	673.8	473.3	370.8
35°	631.1	858.1	888.5	865.4	849.6	869.5	887.3	866.6	632.9	426.6	332.2
37.5°	592.5	843.2	860.2	831.5	809.9	832.1	871.3	840.9	591.7	389.5	303.6
40°	545.5	809.0	823.1	784.2	762.6	795.3	831.2	818.7	545.2	350.9	275.8
42.5°	509.8	783.6	787.7	734.5	708.8	743.6	784.5	787.1	507.5	316.1	251.3
45°	462.8	748.0	740.4	681.9	655.1	686.3	747.7	754.7	465.1	286.0	227.3
47.5°	420.4	708.2	693.3	625.0	594.9	632.0	700.1	718.5	417.8	258.3	204.8
50°	376.3	663.8	630.8	571.8	551.6	570.0	639.6	670.0	374.6	230.8	187.6
52.5°	336.0	614.7	573.8	521.0	500.8	516.0	576.2	621.8	331.6	207.7	172.4
55°	298.0	565.7	512.8	466.0	461.9	466.6	511.9	564.2	296.0	187.3	162.7
57.5°	264.1	506.0	457.8	423.4	416.1	419.9	451.1	504.9	261.5	166.8	148.7
60°	229.9	445.0	403.5	376.9	372.8	375.7	395.9	447.0	227.9	149.6	135.6
62.5°	199.0	383.6	346.8	336.9	334.0	334.0	342.4	389.2	196.3	132.1	125.6
65°	172.4	331.0	303.3	299.5	300.4	300.1	294.8	324.9	168.3	116.6	116.9
67.5°	145.5	275.2	259.7	264.4	267.9	266.5	255.4	270.3	142.0	102.6	109.0
70°	120.7	227.3	224.4	234.9	243.1	235.5	219.4	220.9	116.6	88.8	98.8
72.5°	97.3	183.8	197.2	211.8	219.7	211.2	189.0	182.6	93.8	76.3	89.4
75°	76.6	147.8	169.2	190.8	201.0	190.2	164.5	142.6	74.5	64.3	81.8
77.5°	58.4	117.2	144.6	169.8	179.7	170.3	143.2	111.3	54.6	54.1	73.6
80°	41.8	92.6	128.3	152.5	161.6	152.5	124.2	87.9	38.0	43.2	64.9
82.5°	27.5	71.6	111.6	138.8	148.7	137.6	107.8	67.8	24.3	35.1	58.4
85°	16.7	56.7	97.3	124.8	136.2	125.3	94.4	51.4	13.4	26.9	50.8
87.5°	7.3	43.8	86.8	115.1	125.3	115.4	84.1	40.3	5.6	21.0	43.5
90°	0.6	34.8	76.6	106.1	115.1	105.8	74.5	32.7	0.0	15.2	37.4
92.5°	0.6	29.8	70.1	98.2	108.4	97.9	67.2	26.9	0.0	11.1	31.6
95°	0.9	25.1	63.7	92.0	100.2	91.2	61.4	23.1	0.0	7.6	26.6
97.5°	0.9	22.8	58.4	85.9	95.0	85.3	56.1	20.7	0.0	5.6	21.6
100°	0.6	21.0	54.3	80.1	88.5	79.5	52.0	18.7	0.0	3.5	17.5
102.5°	0.6	19.6	50.8	75.1	81.8	74.2	48.5	17.5	0.0	2.9	14.3
105°	0.6	18.7	47.6	69.2	77.1	69.2	45.6	16.4	0.0	2.3	11.1
107.5°	0.6	17.5	45.3	66.0	72.5	65.4	43.2	15.5	0.0	2.3	9.1
110°	0.6	16.7	43.2	61.4	68.7	61.9	41.2	14.0	0.0	1.5	7.3



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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°	0.6	15.2	41.2	58.1	65.2	58.4	39.4	12.9	0.0	1.5	6.4
115°	0.6	13.7	39.4	56.1	61.4	55.5	37.7	11.4	0.0	1.2	5.8
117.5°	0.6	12.9	38.3	53.5	58.7	52.9	36.2	10.8	0.0	1.2	5.6
120°	0.6	12.3	36.5	50.8	54.9	50.3	34.5	10.2	0.0	1.2	5.3
122.5°	0.6	11.7	35.1	48.5	52.9	48.2	33.0	9.9	0.0	0.9	4.7
125°	0.6	11.1	33.0	45.9	50.0	45.3	30.4	9.6	0.0	0.6	4.1
127.5°	0.6	10.5	31.0	43.8	47.6	43.2	28.6	9.3	0.0	0.6	3.8
130°	0.6	10.2	28.3	41.2	45.0	40.6	26.6	9.3	0.0	0.6	3.5
132.5°	0.6	9.9	25.4	38.6	42.7	38.0	24.5	9.1	0.0	0.6	2.9
135°	0.6	9.6	22.5	35.9	39.7	35.4	22.8	8.8	0.0	0.6	2.6
137.5°	0.6	9.1	19.9	33.0	36.8	32.4	21.6	8.2	0.0	0.6	2.3
140°	0.6	8.5	17.8	30.7	33.9	29.8	19.9	7.6	0.0	0.3	1.8
142.5°	0.6	7.6	16.1	27.8	31.0	27.2	17.8	6.4	0.0	0.3	1.8
145°	0.6	6.7	14.6	24.3	28.0	24.3	16.7	5.8	0.0	0.3	1.5
147.5°	0.6	6.1	13.1	20.5	25.4	22.2	14.9	5.0	0.0	0.3	1.2
150°	0.6	5.6	11.4	17.2	22.5	19.6	13.7	4.4	0.0	0.0	0.9
152.5°	0.6	5.0	9.9	14.3	20.2	17.8	12.3	3.8	0.0	0.0	0.6
155°	0.9	4.7	8.5	12.6	17.5	15.5	10.2	3.2	0.0	0.0	0.6
157.5°	0.9	4.1	7.0	10.2	15.5	13.4	8.2	2.6	0.0	0.0	0.3
160°	0.9	3.8	5.8	7.9	12.9	11.1	6.7	2.0	0.0	0.0	0.3
162.5°	0.9	3.5	5.0	5.8	10.5	8.8	5.3	1.5	0.0	0.0	0.3
165°	0.9	2.9	4.4	4.1	8.2	6.7	4.1	0.9	0.0	0.0	0.0
167.5°	0.9	2.6	3.5	2.9	6.1	5.0	2.9	0.6	0.0	0.0	0.0
170°	0.9	2.0	2.9	2.0	1.8	3.2	1.8	0.3	0.0	0.0	0.0
172.5°	0.9	1.8	2.3	1.5	0.6	1.8	0.9	0.0	0.0	0.0	0.0
175°	0.9	1.5	1.5	0.9	0.3	0.6	0.0	0.0	0.0	0.0	0.0
177.5°	0.9	1.2	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3



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CATALOG NUMBER: 4MB-2SL-ASML-UNV-L840

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	892.3	892.3	892.3	892.3	892.3	892.3
2.5°	867.8	858.1	849.4	858.7	865.4	891.4
5°	825.4	815.2	816.3	824.8	847.3	894.6
7.5°	781.6	764.6	768.7	792.4	825.7	879.5
10°	729.9	714.4	718.2	753.8	800.6	871.0
12.5°	683.7	657.7	679.9	713.5	771.3	866.3
15°	629.6	609.2	621.2	670.8	743.3	844.7
17.5°	571.2	555.4	569.7	619.1	708.8	842.3
20°	526.2	504.3	521.2	575.6	666.2	817.8
22.5°	475.7	459.0	476.8	526.8	622.6	791.8
25°	434.2	416.6	434.5	484.1	584.1	761.1
27.5°	393.9	377.8	393.9	439.4	545.8	736.3
30°	358.5	343.0	359.4	403.2	501.1	699.2
32.5°	325.5	305.6	326.7	369.0	461.6	670.8
35°	291.3	276.4	292.2	339.2	417.8	631.1
37.5°	263.0	247.5	266.2	306.5	380.7	592.5
40°	236.1	222.3	237.2	280.2	349.2	545.5
42.5°	215.0	201.3	216.5	256.2	317.3	509.8
45°	194.6	184.4	196.6	229.9	285.2	462.8
47.5°	179.7	170.9	181.1	210.7	258.3	420.4
50°	166.8	160.7	168.0	191.4	230.5	376.3
52.5°	155.4	149.3	157.8	176.5	208.6	336.0
55°	146.7	141.1	147.5	162.5	186.7	298.0
57.5°	137.0	133.5	138.5	147.5	169.5	264.1
60°	130.0	126.2	131.5	138.8	149.9	229.9
62.5°	122.1	120.1	123.3	129.1	135.0	199.0
65°	115.1	112.2	116.3	118.3	117.7	172.4
67.5°	107.5	106.6	109.0	109.3	104.9	145.5
70°	99.6	99.0	102.0	100.2	91.2	120.7
72.5°	93.2	93.2	95.0	91.5	79.5	97.3
75°	86.2	86.8	88.2	84.1	66.9	76.6
77.5°	79.8	80.3	80.6	75.1	56.1	58.4
80°	72.5	72.2	75.1	68.1	45.6	41.8
82.5°	66.0	64.9	66.6	59.6	36.8	27.5
85°	58.7	59.0	60.2	52.0	29.5	16.7
87.5°	52.9	52.9	54.1	45.9	22.2	7.3
90°	45.9	45.3	47.0	38.9	16.7	0.6
92.5°	40.0	40.0	41.2	33.3	12.3	0.6
95°	34.2	34.5	35.4	27.5	9.3	0.9
97.5°	29.2	29.5	30.7	23.4	6.7	0.9
100°	24.8	25.1	25.7	18.7	5.3	0.6
102.5°	20.7	21.6	21.6	15.5	4.1	0.6
105°	17.5	18.7	18.1	12.6	3.8	0.6
107.5°	14.6	15.8	15.8	10.2	3.8	0.6
110°	12.0	13.7	13.4	8.8	2.9	0.6



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	10.2	11.7	10.8	7.6	2.9	0.6
115°	8.8	10.2	9.6	7.0	2.6	0.6
117.5°	7.9	8.8	8.8	6.7	2.6	0.6
120°	7.3	8.2	7.9	6.4	2.6	0.6
122.5°	6.7	7.3	7.3	5.8	2.3	0.6
125°	6.4	6.7	7.0	5.3	2.3	0.6
127.5°	6.1	6.7	6.7	5.0	2.0	0.6
130°	5.6	6.1	6.1	4.7	2.0	0.6
132.5°	5.0	5.6	5.6	4.4	2.0	0.6
135°	4.7	5.3	5.3	4.1	2.0	0.6
137.5°	4.4	4.7	4.7	3.8	2.0	0.6
140°	3.8	4.4	4.4	3.5	2.0	0.6
142.5°	3.5	4.1	4.1	3.2	1.8	0.6
145°	3.2	3.5	3.8	2.9	1.8	0.6
147.5°	2.6	3.2	3.5	2.6	1.8	0.6
150°	2.0	2.9	2.9	2.6	1.8	0.6
152.5°	1.5	2.6	2.6	2.3	1.5	0.6
155°	1.2	2.0	2.3	2.0	1.5	0.9
157.5°	0.9	1.8	2.0	2.0	1.5	0.9
160°	0.6	1.5	1.8	1.8	1.2	0.9
162.5°	0.3	1.2	1.5	1.8	1.2	0.9
165°	0.0	0.9	1.2	1.5	1.2	0.9
167.5°	0.0	0.6	0.9	1.2	0.9	0.9
170°	0.0	0.3	0.6	0.9	0.9	0.9
172.5°	0.0	0.0	0.3	0.6	0.6	0.9
175°	0.0	0.0	0.0	0.3	0.6	0.9
177.5°	0.0	0.0	0.0	0.3	0.6	0.9
180°	0.3	0.3	0.3	0.3	0.3	0.3



TEST NUMBER: P893267
 CATALOG NUMBER: 4MB-2SL-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	16.58	18.04	17.04	18.48	18.93	18.84	20.30	19.30	20.74	21.19
	3H	17.41	18.72	17.87	19.17	19.66	20.54	21.86	21.01	22.31	22.80
	4H	17.61	18.85	18.10	19.31	19.83	21.38	22.63	21.87	23.09	23.60
	6H	17.70	18.85	18.20	19.33	19.86	22.26	23.41	22.76	23.89	24.41
	8H	17.70	18.80	18.22	19.30	19.84	22.73	23.83	23.24	24.33	24.86
	12H	17.69	18.74	18.21	19.24	19.80	23.27	24.33	23.79	24.82	25.38
4H	2H	17.02	18.26	17.51	18.72	19.24	19.21	20.45	19.70	20.91	21.43
	3H	18.12	19.16	18.62	19.67	20.20	21.09	22.14	21.59	22.64	23.18
	4H	18.46	19.40	18.98	19.92	20.49	22.07	23.01	22.59	23.53	24.10
	6H	18.65	19.48	19.19	20.02	20.61	23.11	23.94	23.65	24.48	25.06
	8H	18.68	19.46	19.22	20.00	20.59	23.67	24.45	24.22	24.99	25.59
	12H	18.68	19.38	19.25	19.96	20.56	24.33	25.03	24.90	25.60	26.20
8H	4H	18.79	19.57	19.33	20.11	20.70	22.21	22.99	22.75	23.53	24.12
	6H	19.11	19.76	19.69	20.35	20.95	23.38	24.03	23.96	24.62	25.22
	8H	19.20	19.79	19.79	20.39	21.00	24.06	24.65	24.65	25.25	25.86
	12H	19.25	19.78	19.85	20.36	21.05	24.87	25.40	25.47	25.98	26.67
12H	4H	18.86	19.57	19.43	20.14	20.74	22.20	22.90	22.77	23.47	24.07
	6H	19.24	19.83	19.84	20.43	21.05	23.39	23.98	23.99	24.58	25.19
	8H	19.40	19.93	20.00	20.51	21.20	24.13	24.65	24.72	25.24	25.92