

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: P893265

Luminaire Tested: 4MB-2SL-ASML-UNV-L830

Issue Date: 11/11/2024

**Test Information**

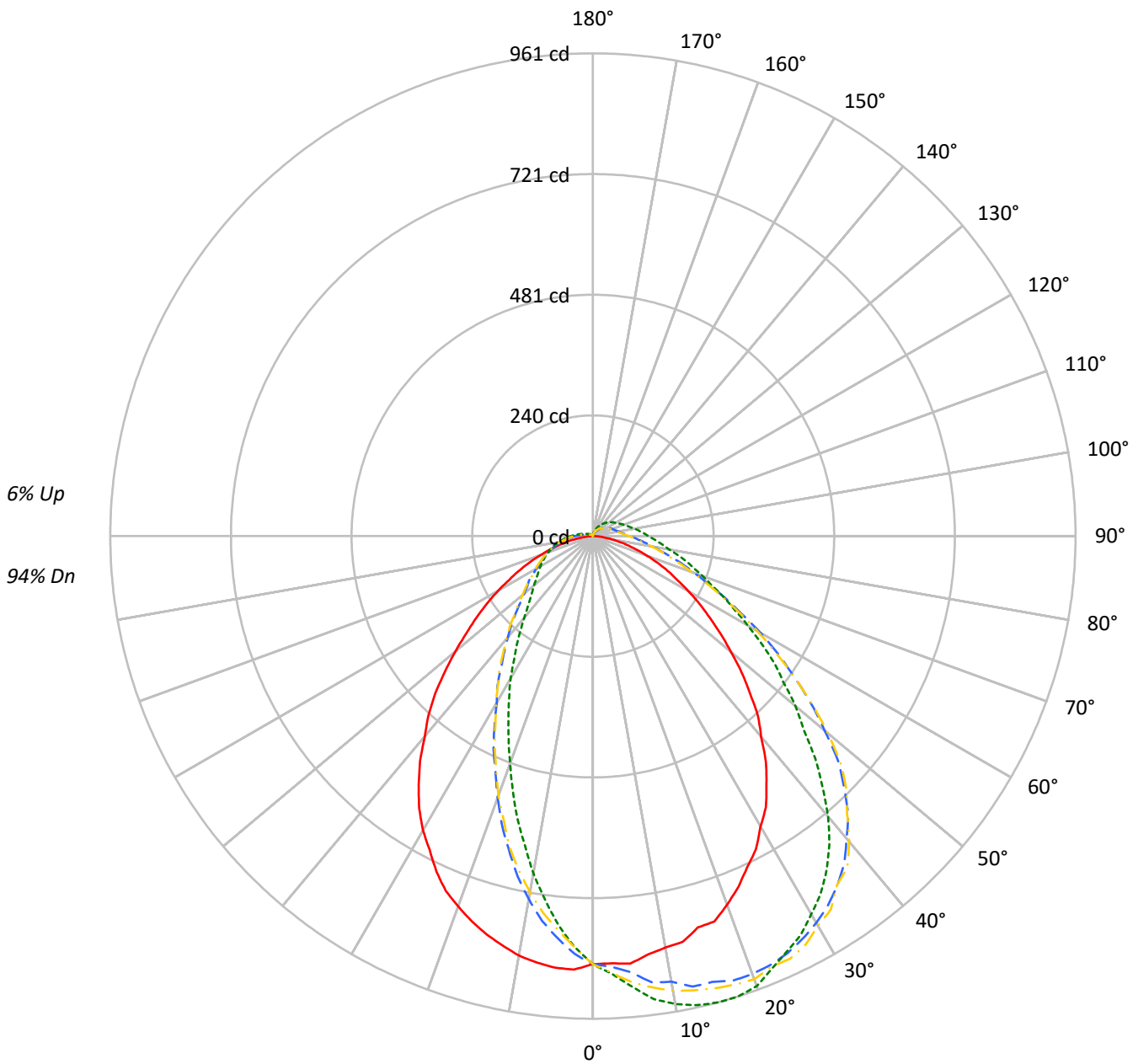
Test Method: LM-79-2019  
Report Number: P893265  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-33)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-2SL-ASML-UNV-L830  
Description: 2000 Lumen 4FT MICROBAY LINEAR BAY with ASYMMETRIC LENS, 80CRI, 3000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2124.0 lumens  
Efficiency: N/A  
Efficacy: 153.9 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): 13.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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: P893265  
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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	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°	8679	8679	8679	8679
5°	8711	8844	8793	7644
10°	8555	9032	8721	6515
15°	8434	9001	8578	5447
20°	8369	8823	8405	4456
25°	8050	8413	8161	3667
30°	7712	8041	7813	3029
35°	7332	7588	7353	2469
40°	6749	6941	6745	2023
45°	6172	6127	6203	1725
50°	5489	5348	5463	1558
55°	4836	4685	4804	1431
60°	4242	3996	4205	1352
65°	3716	3441	3628	1286
70°	3158	3015	3051	1229
75°	2575	2741	2508	1183
80°	1986	2467	1807	1101
85°	1367	2381	1101	1033

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 157.5°  
 Vertical Angle: 45°  
 Luminance: 8586 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	80.1	3.8
10°-20°	222.6	10.5
20°-30°	320.1	15.1
30°-40°	363.3	17.1
40°-50°	347.2	16.3
50°-60°	282.1	13.3
60°-70°	196.8	9.3
70°-80°	121.9	5.7
80°-90°	69.9	3.3
90°-100°	41.8	2.0
100°-110°	27.5	1.3
110°-120°	19.2	0.9
120°-130°	13.9	0.7
130°-140°	9.3	0.4
140°-150°	5.2	0.2
150°-160°	2.3	0.1
160°-170°	0.7	0.0
170°-180°	0.1	0.0
0°-30°	622.7	29.3
0°-40°	986.0	46.4
0°-60°	1615.3	76.0
0°-90°	2004.0	94.4
90°-120°	88.5	4.2
90°-150°	116.9	5.5
90°-180°	120.0	5.6
0°-180°	2124.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	852	852	852	852	852	
5°	854	901	862	778	854	81
15°	807	961	820	582	807	229
25°	727	913	737	398	727	335
35°	603	811	604	264	603	376
45°	442	626	444	176	442	341
55°	285	441	283	135	285	256
65°	165	287	161	107	165	163
75°	73	192	71	83	73	79
85°	16	130	13	56	16	18
90°	1	110	0	43	1	1
95°	1	96	0	33	1	1
105°	1	74	0	18	1	1
115°	1	59	0	10	1	1
125°	1	48	0	6	1	1
135°	1	38	0	5	1	0
145°	1	27	0	3	1	0
155°	1	17	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°	852.2	852.2	852.2	852.2	852.2	852.2	852.2	852.2	852.2	852.2	852.2
2.5°	851.3	857.8	858.3	878.4	872.6	880.1	870.6	872.3	863.9	861.7	832.7
5°	854.4	868.1	871.7	906.3	900.7	904.6	891.5	882.0	862.5	850.8	803.9
7.5°	839.9	875.9	896.0	920.5	929.8	932.8	906.3	888.7	856.4	827.6	772.7
10°	831.8	881.5	901.0	937.8	945.9	940.1	919.4	890.4	848.0	801.7	734.2
12.5°	827.4	884.6	918.6	956.3	956.5	950.4	926.1	894.9	834.3	773.8	693.4
15°	806.7	884.0	918.9	957.1	961.3	957.4	932.5	891.8	820.4	739.2	646.5
17.5°	804.5	882.6	927.8	968.0	961.0	958.2	936.5	890.4	803.6	704.0	602.4
20°	781.0	879.5	927.8	955.7	953.5	954.6	939.0	888.5	784.4	666.1	554.2
22.5°	756.2	875.9	923.9	945.1	931.7	952.1	927.8	883.2	764.8	626.4	506.2
25°	726.9	870.0	916.4	930.0	913.0	928.9	928.6	875.1	736.9	583.7	468.2
27.5°	703.2	860.8	904.1	924.7	895.7	909.4	917.2	865.3	704.0	541.6	423.6
30°	667.7	849.1	889.3	892.4	869.5	886.8	895.7	853.0	676.4	493.9	382.8
32.5°	640.7	835.7	871.2	867.0	844.1	867.0	881.5	840.7	643.5	452.0	354.1
35°	602.7	819.5	848.6	826.5	811.4	830.4	847.4	827.6	604.4	407.4	317.3
37.5°	565.9	805.3	821.5	794.1	773.5	794.7	832.1	803.1	565.1	372.0	289.9
40°	521.0	772.7	786.1	748.9	728.3	759.5	793.9	781.9	520.7	335.1	263.4
42.5°	486.9	748.4	752.3	701.5	676.9	710.2	749.2	751.7	484.7	301.9	240.0
45°	442.0	714.3	707.1	651.3	625.6	655.5	714.1	720.8	444.2	273.2	217.1
47.5°	401.5	676.4	662.2	596.9	568.1	603.6	668.6	686.2	399.0	246.7	195.6
50°	359.4	634.0	602.4	546.1	526.8	544.4	610.8	639.8	357.7	220.4	179.1
52.5°	320.9	587.1	548.0	497.5	478.3	492.8	550.3	593.8	316.7	198.4	164.6
55°	284.6	540.2	489.7	445.1	441.2	445.6	488.9	538.8	282.7	178.9	155.4
57.5°	252.3	483.3	437.3	404.3	397.4	401.0	430.8	482.2	249.7	159.3	142.0
60°	219.6	425.0	385.4	360.0	356.1	358.8	378.1	426.9	217.7	142.9	129.5
62.5°	190.0	366.4	331.2	321.7	318.9	318.9	327.0	371.7	187.5	126.1	120.0
65°	164.6	316.2	289.6	286.0	286.9	286.6	281.6	310.3	160.7	111.3	111.6
67.5°	139.0	262.9	248.1	252.5	255.9	254.5	243.9	258.1	135.6	97.9	104.1
70°	115.2	217.1	214.3	224.3	232.2	224.9	209.6	211.0	111.3	84.8	94.3
72.5°	92.9	175.5	188.4	202.3	209.8	201.7	180.5	174.4	89.6	72.8	85.4
75°	73.1	141.2	161.6	182.2	192.0	181.7	157.1	136.2	71.2	61.4	78.1
77.5°	55.8	111.9	138.1	162.1	171.6	162.7	136.7	106.3	52.2	51.6	70.3
80°	39.9	88.5	122.5	145.7	154.3	145.7	118.6	84.0	36.3	41.3	61.9
82.5°	26.2	68.4	106.6	132.5	142.0	131.4	103.0	64.7	23.2	33.5	55.8
85°	15.9	54.1	92.9	119.1	130.0	119.7	90.1	49.1	12.8	25.7	48.6
87.5°	7.0	41.9	82.9	109.9	119.7	110.2	80.4	38.5	5.3	20.1	41.6
90°	0.6	33.2	73.1	101.3	109.9	101.0	71.2	31.3	0.0	14.5	35.7
92.5°	0.6	28.5	67.0	93.8	103.5	93.5	64.2	25.7	0.0	10.6	30.1
95°	0.8	24.0	60.8	87.9	95.7	87.1	58.6	22.0	0.0	7.3	25.4
97.5°	0.8	21.8	55.8	82.0	90.7	81.5	53.6	19.8	0.0	5.3	20.6
100°	0.6	20.1	51.9	76.5	84.5	75.9	49.7	17.9	0.0	3.3	16.7
102.5°	0.6	18.7	48.6	71.7	78.1	70.9	46.3	16.7	0.0	2.8	13.7
105°	0.6	17.9	45.5	66.1	73.7	66.1	43.5	15.6	0.0	2.2	10.6
107.5°	0.6	16.7	43.3	63.1	69.2	62.5	41.3	14.8	0.0	2.2	8.7
110°	0.6	15.9	41.3	58.6	65.6	59.2	39.3	13.4	0.0	1.4	7.0



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CATALOG NUMBER: 4MB-2SL-ASML-UNV-L830

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	0.6	14.5	39.3	55.5	62.2	55.8	37.7	12.3	0.0	1.4	6.1
115°	0.6	13.1	37.7	53.6	58.6	53.0	36.0	10.9	0.0	1.1	5.6
117.5°	0.6	12.3	36.6	51.1	56.1	50.5	34.6	10.3	0.0	1.1	5.3
120°	0.6	11.7	34.9	48.6	52.5	48.0	32.9	9.8	0.0	1.1	5.0
122.5°	0.6	11.2	33.5	46.3	50.5	46.0	31.5	9.5	0.0	0.8	4.5
125°	0.6	10.6	31.5	43.8	47.7	43.3	29.0	9.2	0.0	0.6	3.9
127.5°	0.6	10.0	29.6	41.9	45.5	41.3	27.3	8.9	0.0	0.6	3.6
130°	0.6	9.8	27.1	39.3	43.0	38.8	25.4	8.9	0.0	0.6	3.3
132.5°	0.6	9.5	24.3	36.8	40.7	36.3	23.4	8.7	0.0	0.6	2.8
135°	0.6	9.2	21.5	34.3	37.9	33.8	21.8	8.4	0.0	0.6	2.5
137.5°	0.6	8.7	19.0	31.5	35.2	31.0	20.6	7.8	0.0	0.6	2.2
140°	0.6	8.1	17.0	29.3	32.4	28.5	19.0	7.3	0.0	0.3	1.7
142.5°	0.6	7.3	15.3	26.5	29.6	26.0	17.0	6.1	0.0	0.3	1.7
145°	0.6	6.4	14.0	23.2	26.8	23.2	15.9	5.6	0.0	0.3	1.4
147.5°	0.6	5.9	12.6	19.5	24.3	21.2	14.2	4.7	0.0	0.3	1.1
150°	0.6	5.3	10.9	16.5	21.5	18.7	13.1	4.2	0.0	0.0	0.8
152.5°	0.6	4.7	9.5	13.7	19.3	17.0	11.7	3.6	0.0	0.0	0.6
155°	0.8	4.5	8.1	12.0	16.7	14.8	9.8	3.1	0.0	0.0	0.6
157.5°	0.8	3.9	6.7	9.8	14.8	12.8	7.8	2.5	0.0	0.0	0.3
160°	0.8	3.6	5.6	7.5	12.3	10.6	6.4	2.0	0.0	0.0	0.3
162.5°	0.8	3.3	4.7	5.6	10.0	8.4	5.0	1.4	0.0	0.0	0.3
165°	0.8	2.8	4.2	3.9	7.8	6.4	3.9	0.8	0.0	0.0	0.0
167.5°	0.8	2.5	3.3	2.8	5.9	4.7	2.8	0.6	0.0	0.0	0.0
170°	0.8	2.0	2.8	2.0	1.7	3.1	1.7	0.3	0.0	0.0	0.0
172.5°	0.8	1.7	2.2	1.4	0.6	1.7	0.8	0.0	0.0	0.0	0.0
175°	0.8	1.4	1.4	0.8	0.3	0.6	0.0	0.0	0.0	0.0	0.0
177.5°	0.8	1.1	0.8	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



TEST NUMBER: P893265

CATALOG NUMBER: 4MB-2SL-ASML-UNV-L830

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	852.2	852.2	852.2	852.2	852.2	852.2
2.5°	828.7	819.5	811.2	820.1	826.5	851.3
5°	788.3	778.5	779.6	787.7	809.2	854.4
7.5°	746.4	730.2	734.2	756.8	788.6	839.9
10°	697.0	682.3	685.9	719.9	764.6	831.8
12.5°	653.0	628.1	649.3	681.4	736.7	827.4
15°	601.3	581.8	593.2	640.7	709.9	806.7
17.5°	545.5	530.5	544.1	591.3	676.9	804.5
20°	502.5	481.6	497.8	549.7	636.2	781.0
22.5°	454.3	438.4	455.4	503.1	594.6	756.2
25°	414.7	397.9	414.9	462.4	557.8	726.9
27.5°	376.1	360.8	376.1	419.7	521.2	703.2
30°	342.4	327.6	343.2	385.1	478.6	667.7
32.5°	310.8	291.9	312.0	352.4	440.9	640.7
35°	278.2	264.0	279.0	324.0	399.0	602.7
37.5°	251.1	236.3	254.2	292.7	363.6	565.9
40°	225.5	212.3	226.6	267.6	333.5	521.0
42.5°	205.4	192.3	206.8	244.7	303.0	486.9
45°	185.8	176.1	187.8	219.6	272.3	442.0
47.5°	171.6	163.2	173.0	201.2	246.7	401.5
50°	159.3	153.5	160.4	182.8	220.2	359.4
52.5°	148.4	142.6	150.7	168.5	199.2	320.9
55°	140.1	134.8	140.9	155.1	178.3	284.6
57.5°	130.9	127.5	132.3	140.9	161.8	252.3
60°	124.2	120.5	125.6	132.5	143.1	219.6
62.5°	116.6	114.7	117.8	123.3	128.9	190.0
65°	109.9	107.2	111.1	113.0	112.5	164.6
67.5°	102.7	101.8	104.1	104.4	100.2	139.0
70°	95.2	94.6	97.4	95.7	87.1	115.2
72.5°	89.0	89.0	90.7	87.3	75.9	92.9
75°	82.3	82.9	84.3	80.4	63.9	73.1
77.5°	76.2	76.7	77.0	71.7	53.6	55.8
80°	69.2	68.9	71.7	65.0	43.5	39.9
82.5°	63.1	61.9	63.6	56.9	35.2	26.2
85°	56.1	56.4	57.5	49.7	28.2	15.9
87.5°	50.5	50.5	51.6	43.8	21.2	7.0
90°	43.8	43.3	44.9	37.1	15.9	0.6
92.5°	38.2	38.2	39.3	31.8	11.7	0.6
95°	32.6	32.9	33.8	26.2	8.9	0.8
97.5°	27.9	28.2	29.3	22.3	6.4	0.8
100°	23.7	24.0	24.6	17.9	5.0	0.6
102.5°	19.8	20.6	20.6	14.8	3.9	0.6
105°	16.7	17.9	17.3	12.0	3.6	0.6
107.5°	14.0	15.1	15.1	9.8	3.6	0.6
110°	11.4	13.1	12.8	8.4	2.8	0.6





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 CATALOG NUMBER: 4MB-2SL-ASML-UNV-L830

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	9.8	11.2	10.3	7.3	2.8	0.6
115°	8.4	9.8	9.2	6.7	2.5	0.6
117.5°	7.5	8.4	8.4	6.4	2.5	0.6
120°	7.0	7.8	7.5	6.1	2.5	0.6
122.5°	6.4	7.0	7.0	5.6	2.2	0.6
125°	6.1	6.4	6.7	5.0	2.2	0.6
127.5°	5.9	6.4	6.4	4.7	2.0	0.6
130°	5.3	5.9	5.9	4.5	2.0	0.6
132.5°	4.7	5.3	5.3	4.2	2.0	0.6
135°	4.5	5.0	5.0	3.9	2.0	0.6
137.5°	4.2	4.5	4.5	3.6	2.0	0.6
140°	3.6	4.2	4.2	3.3	2.0	0.6
142.5°	3.3	3.9	3.9	3.1	1.7	0.6
145°	3.1	3.3	3.6	2.8	1.7	0.6
147.5°	2.5	3.1	3.3	2.5	1.7	0.6
150°	2.0	2.8	2.8	2.5	1.7	0.6
152.5°	1.4	2.5	2.5	2.2	1.4	0.6
155°	1.1	2.0	2.2	2.0	1.4	0.8
157.5°	0.8	1.7	2.0	2.0	1.4	0.8
160°	0.6	1.4	1.7	1.7	1.1	0.8
162.5°	0.3	1.1	1.4	1.7	1.1	0.8
165°	0.0	0.8	1.1	1.4	1.1	0.8
167.5°	0.0	0.6	0.8	1.1	0.8	0.8
170°	0.0	0.3	0.6	0.8	0.8	0.8
172.5°	0.0	0.0	0.3	0.6	0.6	0.8
175°	0.0	0.0	0.0	0.3	0.6	0.8
177.5°	0.0	0.0	0.0	0.3	0.6	0.8
180°	0.3	0.3	0.3	0.3	0.3	0.3



TEST NUMBER: P893265  
 CATALOG NUMBER: 4MB-2SL-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	16.43	17.89	16.88	18.32	18.77	18.68	20.14	19.14	20.57	21.03
	3H	17.25	18.57	17.71	19.01	19.51	20.38	21.70	20.85	22.15	22.64
	4H	17.45	18.69	17.94	19.15	19.67	21.22	22.47	21.71	22.93	23.44
	6H	17.54	18.69	18.04	19.17	19.70	22.10	23.25	22.60	23.73	24.25
	8H	17.54	18.64	18.06	19.14	19.68	22.57	23.67	23.08	24.17	24.70
	12H	17.53	18.58	18.05	19.08	19.64	23.11	24.17	23.63	24.66	25.22
4H	2H	16.86	18.10	17.35	18.56	19.08	19.05	20.29	19.54	20.75	21.27
	3H	17.96	19.00	18.46	19.51	20.04	20.93	21.98	21.43	22.48	23.02
	4H	18.30	19.25	18.82	19.76	20.33	21.91	22.85	22.43	23.37	23.94
	6H	18.49	19.32	19.03	19.86	20.45	22.95	23.78	23.49	24.32	24.90
	8H	18.52	19.30	19.06	19.84	20.43	23.51	24.29	24.06	24.83	25.43
	12H	18.52	19.23	19.09	19.80	20.40	24.17	24.87	24.73	25.44	26.04
8H	4H	18.63	19.41	19.18	19.95	20.54	22.05	22.83	22.60	23.37	23.96
	6H	18.95	19.60	19.53	20.19	20.79	23.22	23.87	23.80	24.46	25.06
	8H	19.04	19.63	19.63	20.23	20.84	23.90	24.49	24.49	25.09	25.70
	12H	19.09	19.62	19.69	20.20	20.89	24.71	25.24	25.31	25.82	26.51
12H	4H	18.70	19.41	19.27	19.98	20.58	22.04	22.74	22.61	23.32	23.91
	6H	19.08	19.67	19.68	20.27	20.89	23.23	23.82	23.83	24.42	25.03
	8H	19.24	19.77	19.84	20.35	21.04	23.97	24.49	24.56	25.08	25.76