

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P243499

Luminaire Tested: S124DRP-H575D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243499
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-H575D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

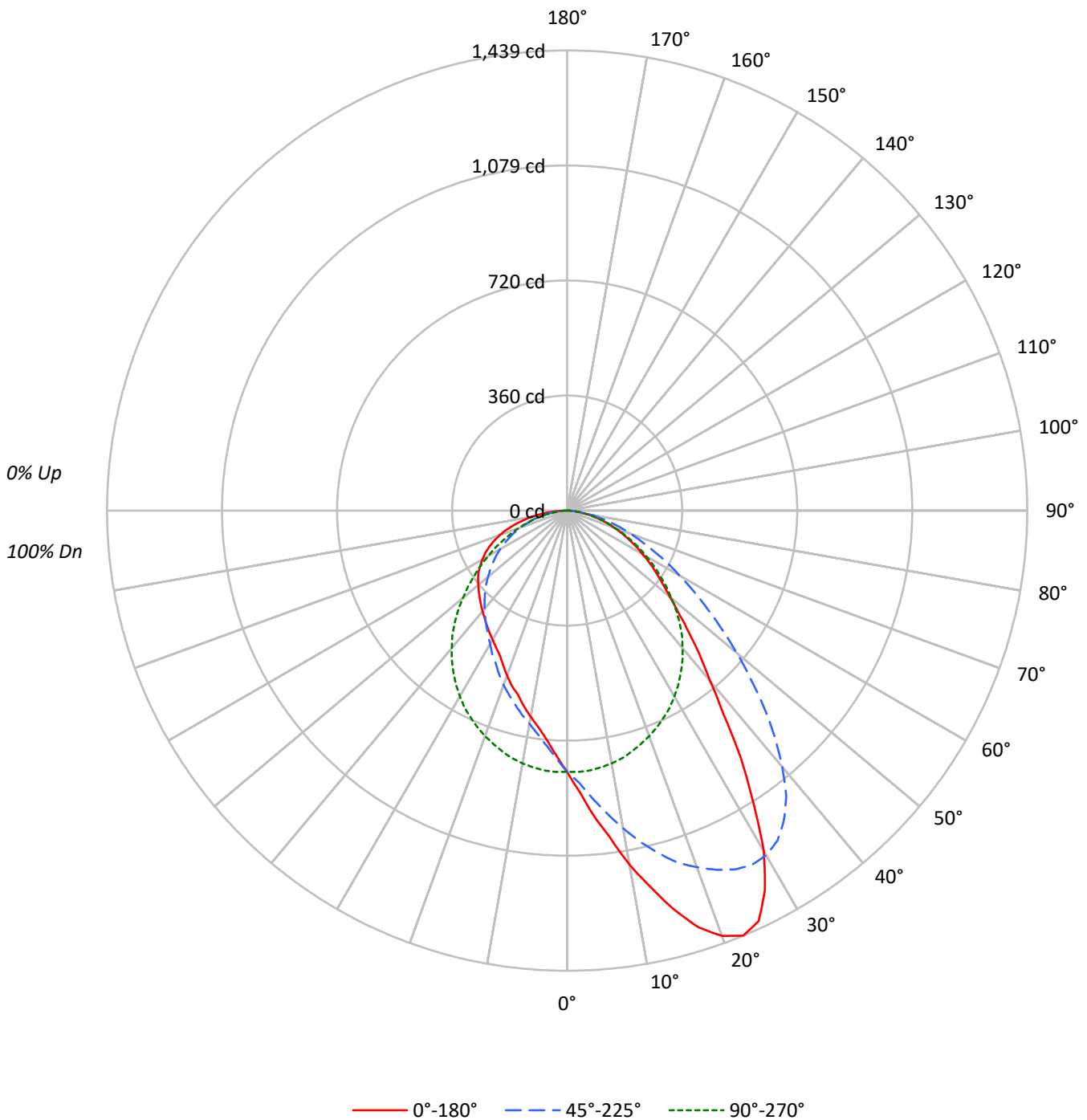
Lumens per Lamp: N/A
Luminaire Lumens: 2341.7 lumens
Efficiency: N/A
Efficacy: 136.1 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
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



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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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85					85			
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72					72			
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61					61			
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53					53			
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26					26			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	7260	7260	7260	7260	7260
5°	8543	8055	7278	6580	6424
10°	10152	9107	7245	6113	5915
15°	11890	10215	7182	5779	5478
20°	13389	11225	7098	5489	5196
25°	13895	12146	7003	5179	4891
30°	12619	12776	6884	4947	4783
35°	10295	12826	6720	4782	4753
40°	8061	12142	6510	4668	4773
45°	6747	10949	6248	4563	4861
50°	5790	9574	5881	4463	5006
55°	5289	8296	5486	4386	5249
60°	4848	7200	5079	4315	5440
65°	4444	6240	4648	4171	5652
70°	4088	5466	4192	4036	5822
75°	3640	4705	3685	3768	5814
80°	3036	3824	3020	3481	5800
85°	2315	2856	2274	3131	5436

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 50°
 Vertical Angle: 45°
 Luminance: 11444 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.5	3.4
10°-20°	246.2	10.5
20°-30°	395.5	16.9
30°-40°	452.1	19.3
40°-50°	416.2	17.8
50°-60°	340.4	14.5
60°-70°	242.6	10.4
70°-80°	133.3	5.7
80°-90°	35.8	1.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	721.2	30.8
0°-40°	1173.4	50.1
0°-60°	1930.0	82.4
0°-90°	2341.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2341.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	817	817	817	817	817	
5°	957	903	816	737	720	96
15°	1292	1110	780	628	595	368
25°	1417	1238	714	528	499	636
35°	949	1182	619	441	438	590
45°	537	871	497	363	387	419
55°	341	535	354	283	339	306
65°	211	297	221	198	269	211
75°	106	137	107	110	169	113
85°	23	28	22	31	53	27
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7
2.5°	879.4	876.7	875.4	873.7	873.4	871.7	868.4	863.7	857.7	851.4	851.4
5°	957.4	956.7	951.7	952.0	945.7	938.7	933.4	926.7	913.7	902.7	895.0
7.5°	1032.0	1039.0	1037.4	1032.0	1022.7	1012.7	1002.0	992.7	968.7	955.4	944.4
10°	1124.7	1127.4	1122.7	1115.0	1106.7	1087.4	1073.4	1057.7	1031.7	1009.0	989.0
12.5°	1206.0	1212.4	1204.0	1196.7	1177.0	1162.7	1148.7	1117.4	1090.0	1061.4	1032.4
15°	1292.0	1285.4	1289.7	1271.7	1257.7	1244.0	1208.4	1176.4	1145.4	1110.0	1079.7
17.5°	1366.7	1366.7	1358.7	1347.0	1332.4	1306.7	1271.0	1235.7	1201.4	1155.0	1112.0
20°	1415.4	1419.0	1409.7	1397.4	1379.7	1353.0	1324.7	1286.4	1240.7	1186.7	1138.0
22.5°	1438.7	1439.4	1436.0	1425.7	1411.4	1388.7	1359.7	1322.4	1274.0	1216.0	1165.0
25°	1416.7	1420.4	1419.4	1418.7	1411.4	1398.4	1375.0	1340.4	1296.4	1238.4	1183.4
27.5°	1339.4	1348.4	1356.0	1359.4	1367.4	1368.0	1361.0	1340.0	1304.0	1249.4	1188.0
30°	1229.4	1224.7	1245.4	1255.7	1283.0	1299.4	1311.0	1309.7	1289.0	1244.7	1186.4
32.5°	1082.7	1095.4	1110.0	1134.4	1166.7	1204.7	1233.4	1254.7	1252.7	1223.7	1175.0
35°	948.7	948.7	967.4	997.4	1031.7	1077.4	1125.4	1165.0	1189.4	1182.0	1147.7
37.5°	803.4	812.4	833.7	857.0	899.0	943.0	1006.4	1059.0	1110.0	1125.4	1107.7
40°	694.7	698.7	721.3	741.0	784.0	829.7	882.7	950.0	1008.7	1046.4	1048.7
42.5°	614.0	613.7	623.0	640.7	675.3	716.0	773.4	839.4	908.0	961.4	986.4
45°	536.7	536.0	545.7	563.7	588.3	624.3	674.0	740.0	810.4	871.0	910.4
47.5°	471.3	477.3	481.7	495.7	516.0	546.7	589.3	642.0	709.7	777.7	830.7
50°	418.7	421.3	430.7	437.3	460.0	481.3	515.7	563.0	621.0	692.3	749.7
52.5°	376.7	378.3	384.0	392.7	405.7	424.3	451.7	495.3	547.7	609.7	669.0
55°	341.3	340.3	344.0	349.7	361.0	376.7	396.7	430.0	475.7	535.3	590.0
57.5°	306.7	306.7	310.0	314.0	320.3	333.3	353.0	379.3	416.0	469.0	517.3
60°	272.7	275.0	276.3	280.3	285.7	295.3	310.0	330.7	361.7	405.0	453.0
62.5°	242.7	242.7	245.0	246.3	253.3	260.3	271.0	288.7	313.0	351.7	389.0
65°	211.3	213.3	213.3	216.0	222.0	227.3	235.7	249.0	269.0	296.7	331.7
67.5°	184.7	184.7	186.3	187.7	191.0	194.7	202.0	212.3	229.3	251.3	283.0
70°	157.3	158.3	157.7	159.3	161.3	165.0	170.3	179.0	191.3	210.3	233.7
72.5°	132.7	131.3	132.0	133.7	134.7	137.0	140.3	147.0	157.0	172.3	189.3
75°	106.0	105.3	107.7	107.0	108.7	110.7	113.7	118.7	126.3	137.0	150.0
77.5°	82.7	81.7	82.7	83.3	84.0	85.7	88.0	91.0	96.3	103.3	115.0
80°	59.3	59.0	59.7	60.3	60.7	63.3	64.0	67.0	69.3	74.7	80.3
82.5°	39.3	40.0	40.3	41.0	40.7	42.0	42.7	44.7	46.7	49.3	53.7
85°	22.7	21.7	22.7	22.7	22.7	24.3	24.0	25.3	26.7	28.0	31.0
87.5°	8.0	8.0	8.3	8.7	8.7	9.7	9.3	10.0	11.3	11.3	12.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7
2.5°	849.4	845.7	843.0	835.4	830.7	826.4	822.4	818.0	813.4	807.4	803.7
5°	887.0	879.0	867.4	856.7	844.7	834.0	825.4	815.7	805.0	794.0	784.4
7.5°	928.7	913.7	895.7	876.0	857.4	841.7	825.4	810.0	795.0	780.4	766.7
10°	970.4	944.4	920.7	893.7	869.0	845.4	824.0	802.7	784.0	764.7	747.4
12.5°	1009.0	977.7	943.0	909.4	876.4	845.7	819.4	793.4	769.4	746.4	726.0
15°	1038.7	999.4	958.4	918.4	880.4	848.4	814.0	780.4	755.4	727.3	705.0
17.5°	1072.7	1026.0	985.4	937.4	890.0	838.4	802.0	765.4	735.4	708.3	686.0
20°	1095.4	1044.0	985.4	931.0	882.4	836.0	792.4	750.4	718.7	687.3	660.3
22.5°	1113.4	1060.4	995.7	939.0	878.0	822.0	774.7	733.4	696.0	666.3	640.7
25°	1122.7	1058.0	996.4	927.7	866.7	813.0	759.7	714.0	676.3	643.3	621.3
27.5°	1123.0	1056.7	983.7	915.7	850.4	792.4	739.7	694.7	652.3	620.7	594.3
30°	1121.4	1048.0	971.0	896.7	831.7	772.4	717.3	670.7	632.0	598.3	573.3
32.5°	1110.7	1036.0	952.0	874.0	803.4	743.7	693.0	646.7	605.3	574.7	548.3
35°	1086.7	1009.7	925.4	845.0	778.0	716.0	666.0	619.3	582.3	549.0	522.0
37.5°	1056.0	984.0	898.4	814.4	742.0	683.3	636.3	592.3	553.7	523.0	496.0
40°	1017.4	949.7	865.4	778.0	705.7	646.3	602.0	561.0	528.0	496.7	470.3
42.5°	964.4	912.4	825.7	740.7	665.0	609.0	566.0	532.0	498.0	469.7	443.3
45°	907.7	860.4	783.4	699.0	626.3	568.7	528.3	497.0	468.0	439.3	418.0
47.5°	845.0	806.4	735.0	652.7	581.0	530.0	490.3	462.3	435.7	413.7	392.3
50°	770.4	750.0	683.3	608.7	539.0	486.7	454.0	425.3	405.7	384.3	364.3
52.5°	701.0	684.7	630.3	557.0	493.7	447.7	412.7	390.0	370.7	355.0	339.0
55°	625.7	617.3	571.3	508.0	450.7	404.7	374.7	354.0	338.7	324.0	312.3
57.5°	556.3	555.7	515.0	460.7	404.7	365.7	337.0	320.0	306.7	296.3	286.3
60°	485.3	491.0	457.7	408.0	363.7	327.0	301.0	285.7	276.7	267.0	258.7
62.5°	421.0	429.7	399.3	360.3	316.7	286.7	266.7	255.0	245.0	238.0	231.7
65°	359.3	370.3	345.7	310.7	277.3	249.0	232.0	221.0	213.3	209.3	205.0
67.5°	305.0	311.0	294.3	267.0	239.3	214.7	200.7	191.0	184.3	182.7	177.7
70°	250.7	257.7	246.0	221.0	199.7	181.7	169.0	161.3	157.3	155.0	151.7
72.5°	207.0	210.0	198.3	181.0	164.0	149.0	139.7	134.0	129.3	128.3	126.7
75°	162.0	166.3	157.0	143.7	129.7	119.0	112.0	107.3	105.0	103.3	103.3
77.5°	122.3	126.0	120.7	109.0	100.7	91.3	86.7	82.3	81.3	79.7	80.3
80°	87.0	88.7	85.7	77.7	70.3	65.3	61.3	59.0	58.7	57.3	58.7
82.5°	57.7	58.0	54.7	51.0	45.3	42.7	40.0	39.0	38.7	38.7	38.0
85°	32.0	32.7	30.3	28.0	26.0	23.7	23.0	22.3	21.7	22.7	23.3
87.5°	12.3	12.7	12.3	11.3	10.7	10.0	9.7	10.3	9.3	10.0	10.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7	816.7
2.5°	798.0	795.4	791.4	784.7	780.0	775.0	773.0	773.7	771.7	769.0	769.7
5°	777.0	769.4	762.7	753.4	744.7	737.4	735.0	732.0	729.3	727.7	726.0
7.5°	754.7	744.0	734.0	724.7	714.7	705.3	701.7	699.0	697.7	693.0	691.0
10°	733.4	721.0	709.0	698.0	687.7	677.3	673.7	670.3	665.7	663.7	661.3
12.5°	710.7	698.3	685.3	672.0	661.7	653.3	647.0	644.7	640.0	638.0	636.7
15°	688.7	673.7	663.3	653.0	637.3	628.0	625.3	617.0	614.3	610.3	607.7
17.5°	666.7	652.7	637.3	625.3	615.7	604.0	597.7	594.0	589.0	585.3	580.3
20°	645.0	628.7	616.7	601.7	591.0	580.3	572.3	569.0	564.7	559.7	552.7
22.5°	624.0	606.0	594.3	580.3	567.0	554.7	548.0	543.3	534.7	533.7	527.3
25°	599.3	583.3	568.0	553.3	540.3	528.0	523.7	516.3	513.3	507.3	506.3
27.5°	576.0	559.0	542.3	526.3	515.0	506.3	498.7	494.0	491.0	486.3	486.7
30°	551.7	533.0	517.3	502.7	490.3	482.0	477.0	474.7	470.3	469.7	467.3
32.5°	525.7	508.7	492.3	479.3	466.7	459.3	457.0	454.7	452.0	452.3	451.7
35°	499.7	484.7	467.3	455.3	445.0	440.7	437.0	436.3	435.3	436.0	436.0
37.5°	474.3	458.0	443.7	432.7	426.7	420.7	419.0	418.7	419.0	419.7	421.3
40°	449.7	434.7	420.7	411.7	405.0	402.3	400.0	401.0	402.3	404.7	406.7
42.5°	425.0	410.7	399.0	390.0	383.7	382.3	382.7	384.7	385.0	388.3	392.0
45°	399.0	386.7	375.7	368.7	364.7	363.0	363.7	365.7	368.0	372.7	377.3
47.5°	375.0	364.0	354.3	347.3	344.3	343.7	345.0	347.7	353.0	357.7	363.0
50°	350.7	340.7	331.7	325.3	325.0	322.7	325.7	329.0	335.3	341.7	349.7
52.5°	326.7	317.0	309.3	304.3	303.0	303.0	306.7	312.7	318.3	326.7	334.0
55°	301.7	293.0	285.7	284.0	282.0	283.0	287.0	293.0	301.0	310.3	318.3
57.5°	276.0	268.7	263.3	261.0	260.0	263.3	268.0	274.3	284.7	294.0	302.7
60°	251.7	245.3	239.7	239.0	238.3	242.7	248.3	255.0	265.3	274.7	285.3
62.5°	225.7	220.7	217.0	216.0	216.0	220.3	226.7	235.3	245.0	255.0	266.3
65°	199.3	195.0	194.0	192.7	195.7	198.3	204.7	213.0	223.3	234.3	246.3
67.5°	175.0	172.3	170.3	170.3	172.7	177.7	183.3	191.7	202.3	214.0	224.7
70°	150.7	148.0	146.3	148.0	149.3	155.3	161.3	169.3	179.3	190.7	202.0
72.5°	125.3	125.7	126.0	125.7	127.0	132.7	138.7	146.3	156.0	167.0	177.3
75°	103.0	101.3	101.7	102.3	106.7	109.7	115.7	123.0	133.3	143.3	152.0
77.5°	80.0	79.3	81.0	81.0	85.0	88.7	93.7	101.0	110.0	119.0	126.0
80°	58.7	59.0	60.3	60.7	64.0	68.0	73.3	78.3	86.3	92.7	99.3
82.5°	39.7	40.3	42.0	44.3	45.7	48.0	52.7	58.0	63.7	70.3	74.3
85°	23.0	24.0	25.3	27.0	28.3	30.7	34.0	38.3	42.3	46.0	49.3
87.5°	11.3	11.3	12.3	13.0	14.0	15.3	17.7	19.3	22.0	24.7	26.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243499

CATALOG NUMBER: S124DRP-H575D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	816.7	816.7	816.7	816.7
2.5°	768.4	768.0	766.7	767.4
5°	725.0	721.7	721.3	720.0
7.5°	687.7	686.7	686.7	684.0
10°	659.0	656.0	656.7	655.3
12.5°	631.7	630.0	628.0	626.0
15°	601.0	601.0	601.0	595.3
17.5°	577.0	576.7	575.0	574.7
20°	552.0	550.7	546.3	549.3
22.5°	526.7	525.7	522.0	522.7
25°	503.0	502.0	501.3	498.7
27.5°	482.7	483.0	483.7	482.0
30°	467.3	466.3	467.7	466.0
32.5°	453.0	453.0	451.7	452.0
35°	436.7	438.0	438.3	438.0
37.5°	422.3	424.0	425.3	424.0
40°	409.0	410.3	411.7	411.3
42.5°	395.0	397.3	398.3	399.3
45°	381.7	384.7	386.3	386.7
47.5°	368.0	371.7	375.0	374.7
50°	354.7	359.3	362.3	362.0
52.5°	341.3	346.0	349.7	351.3
55°	326.3	332.3	335.7	338.7
57.5°	311.3	318.0	321.3	322.7
60°	294.7	300.7	305.0	306.0
62.5°	276.0	282.3	288.0	289.3
65°	256.7	263.7	268.0	268.7
67.5°	234.3	241.0	245.3	247.3
70°	211.3	216.3	221.0	224.0
72.5°	185.7	191.7	196.0	198.0
75°	159.0	165.7	168.0	169.3
77.5°	131.3	135.3	139.0	139.3
80°	103.7	108.7	110.0	113.3
82.5°	76.3	81.0	80.0	81.3
85°	50.3	52.0	53.0	53.3
87.5°	26.7	27.7	28.3	28.7
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243499
 CATALOG NUMBER: S124DRP-H575D835-X4F0-XX-UDD-A-W

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	17.45	19.03	17.82	19.34	19.65	17.74	19.32	18.11	19.63	19.94
	3H	18.90	20.31	19.27	20.64	21.00	19.13	20.55	19.51	20.87	21.23
	4H	19.42	20.75	19.81	21.09	21.47	19.61	20.94	20.01	21.29	21.67
	6H	19.76	20.99	20.17	21.36	21.75	19.93	21.16	20.34	21.53	21.92
	8H	19.86	21.03	20.28	21.42	21.82	20.01	21.19	20.44	21.58	21.98
	12H	19.91	21.03	20.34	21.41	21.84	20.06	21.18	20.49	21.56	21.99
4H	2H	18.59	19.92	18.99	20.27	20.65	18.53	19.86	18.93	20.21	20.59
	3H	20.09	21.21	20.50	21.60	22.00	20.24	21.35	20.65	21.75	22.15
	4H	20.67	21.67	21.10	22.08	22.52	20.83	21.83	21.26	22.25	22.69
	6H	21.08	21.95	21.54	22.40	22.85	21.23	22.11	21.69	22.55	23.01
	8H	21.20	22.02	21.66	22.46	22.92	21.34	22.16	21.80	22.60	23.07
	12H	21.27	22.00	21.75	22.48	22.95	21.41	22.14	21.89	22.62	23.09
8H	4H	21.09	21.91	21.56	22.36	22.82	21.17	21.99	21.63	22.43	22.90
	6H	21.59	22.27	22.09	22.76	23.24	21.70	22.38	22.20	22.87	23.35
	8H	21.76	22.36	22.27	22.87	23.36	21.87	22.48	22.38	22.98	23.47
	12H	21.87	22.41	22.38	22.90	23.46	21.98	22.52	22.49	23.01	23.57
12H	4H	21.14	21.87	21.62	22.35	22.82	21.21	21.94	21.69	22.42	22.89
	6H	21.66	22.27	22.17	22.78	23.26	21.77	22.38	22.28	22.88	23.37
	8H	21.87	22.41	22.38	22.90	23.46	21.99	22.53	22.50	23.02	23.58