

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: P242639

Luminaire Tested: S124DRP-S575D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242639
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S575D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

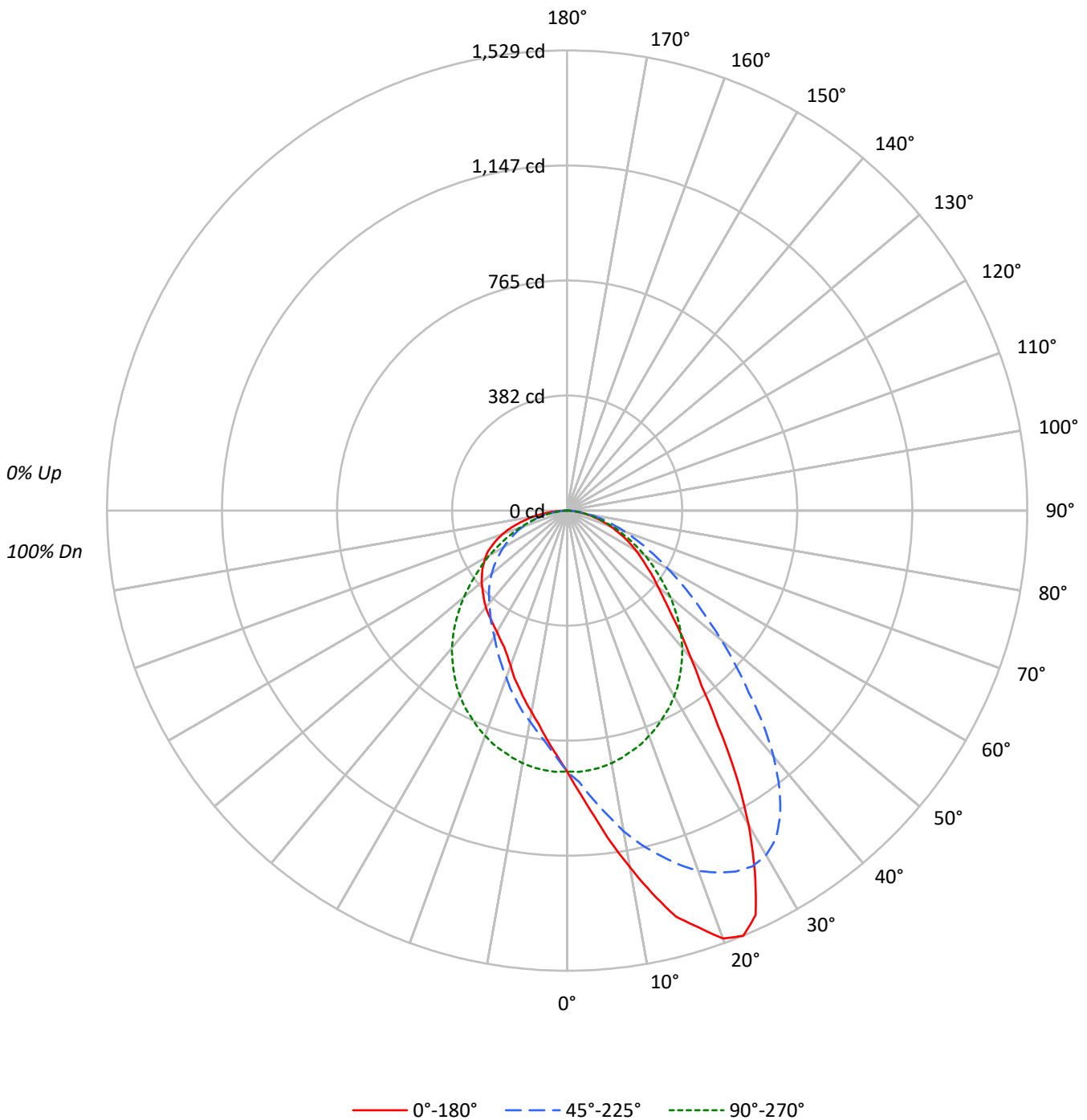
Lumens per Lamp: N/A
Luminaire Lumens: 2391.5 lumens
Efficiency: N/A
Efficacy: 127.2 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
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	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	95	92	90	91	89	87	85				85
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72				72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62				62
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53				53
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46				46
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41				41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36				36
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33				33
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30				30
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27				27

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	7704	7704	7704	7704	7704
5°	9072	8570	7724	6942	6817
10°	10862	9763	7689	6423	6138
15°	12852	10906	7612	6000	5637
20°	14311	12056	7533	5583	5189
25°	14542	12983	7416	5257	4880
30°	12374	13568	7304	4964	4783
35°	9513	13398	7122	4804	4784
40°	7415	12381	6906	4670	4874
45°	6184	10714	6585	4612	4955
50°	5442	9239	6191	4528	5124
55°	4985	7950	5720	4446	5330
60°	4672	6880	5298	4334	5579
65°	4350	6011	4825	4192	5784
70°	3974	5310	4358	4078	5915
75°	3551	4575	3836	3809	5845
80°	2979	3711	3143	3476	5662
85°	2193	2815	2274	3223	5416

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 11829 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.3	3.5
10°-20°	260.4	10.9
20°-30°	413.6	17.3
30°-40°	459.6	19.2
40°-50°	417.9	17.5
50°-60°	341.5	14.3
60°-70°	243.8	10.2
70°-80°	134.1	5.6
80°-90°	36.2	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°	758.3	31.7
0°-40°	1217.8	50.9
0°-60°	1977.3	82.7
0°-90°	2391.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2391.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	867	867	867	867	867	
5°	1017	960	866	778	764	103
15°	1397	1185	827	652	612	395
25°	1483	1324	756	536	498	658
35°	877	1235	656	443	441	555
45°	492	852	524	367	394	387
55°	322	513	369	287	344	290
65°	207	286	229	199	275	205
75°	103	133	112	111	170	110
85°	22	28	22	32	53	26
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°	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7
2.5°	936.3	936.0	932.4	931.6	929.1	925.9	925.2	919.4	907.9	902.6	901.1
5°	1016.7	1023.9	1014.6	1012.8	1011.7	999.9	993.8	986.6	970.1	960.4	952.8
7.5°	1110.8	1111.2	1107.2	1103.3	1096.4	1086.4	1072.7	1056.9	1037.9	1018.5	1004.9
10°	1203.4	1206.3	1201.6	1200.9	1182.6	1171.1	1148.1	1128.7	1106.5	1081.7	1059.1
12.5°	1301.1	1295.3	1293.5	1274.5	1274.9	1251.5	1223.9	1203.8	1166.4	1137.0	1105.0
15°	1396.6	1388.7	1383.6	1362.5	1352.1	1323.0	1294.6	1272.7	1227.8	1185.1	1152.8
17.5°	1451.9	1461.6	1448.6	1440.0	1411.6	1392.6	1364.3	1319.4	1286.0	1232.9	1195.9
20°	1512.9	1513.6	1507.1	1498.2	1477.0	1451.1	1419.5	1369.3	1327.3	1274.5	1218.5
22.5°	1529.4	1529.4	1527.6	1519.4	1504.6	1484.9	1452.9	1413.1	1359.9	1301.4	1245.4
25°	1482.7	1481.3	1484.5	1493.9	1487.8	1481.3	1463.0	1431.8	1384.4	1323.7	1263.4
27.5°	1350.6	1359.9	1379.3	1402.3	1418.8	1433.5	1432.5	1419.2	1385.4	1333.0	1268.8
30°	1205.6	1217.8	1231.4	1254.4	1298.9	1324.4	1352.4	1373.6	1361.7	1321.9	1263.0
32.5°	1046.2	1046.9	1068.8	1095.7	1135.6	1190.5	1239.0	1287.4	1308.3	1292.1	1245.4
35°	876.7	881.7	903.6	929.5	979.4	1039.3	1106.1	1165.7	1214.9	1234.7	1209.5
37.5°	734.5	750.3	766.9	796.3	841.9	896.1	967.9	1042.2	1114.4	1158.2	1162.9
40°	639.0	648.0	659.2	680.3	717.7	770.8	830.4	918.7	996.6	1067.0	1090.0
42.5°	563.7	568.0	573.7	592.4	618.6	671.4	724.5	799.5	877.8	965.4	1007.8
45°	491.9	497.2	508.7	519.9	541.4	578.0	628.6	692.5	771.2	852.3	923.4
47.5°	438.0	441.6	448.8	461.0	480.4	505.1	548.2	602.4	679.3	757.9	834.0
50°	393.5	396.4	401.7	412.5	426.5	448.1	481.8	531.7	588.8	668.1	742.4
52.5°	358.3	359.0	362.6	369.1	379.5	396.7	422.9	462.1	514.1	582.7	656.6
55°	321.7	323.1	326.7	332.1	341.8	353.3	374.5	405.3	451.6	513.0	577.3
57.5°	291.5	293.0	295.8	298.0	306.6	316.3	333.5	355.8	392.0	446.6	505.1
60°	262.8	262.1	265.7	267.5	272.9	280.7	293.3	314.5	345.0	387.0	439.8
62.5°	234.8	233.7	236.6	239.1	241.6	248.1	257.8	273.2	296.5	333.5	377.3
65°	206.8	205.4	207.2	210.0	212.9	216.5	224.0	238.7	258.5	285.8	320.6
67.5°	178.1	179.9	179.9	181.7	183.5	188.5	193.9	205.4	219.4	241.6	272.5
70°	152.9	153.3	154.7	154.7	155.8	160.1	164.4	170.5	184.2	204.3	228.3
72.5°	127.8	129.6	128.5	130.0	130.7	133.2	136.1	141.8	152.9	166.6	186.0
75°	103.4	104.5	104.5	104.8	105.9	107.0	109.5	113.8	122.1	133.2	147.2
77.5°	79.7	79.7	80.4	81.9	81.9	83.7	85.8	89.0	93.7	102.0	110.9
80°	58.2	58.9	58.5	59.2	59.2	60.7	61.4	65.7	67.5	72.5	79.3
82.5°	38.8	39.5	39.5	40.6	41.3	41.3	42.4	43.4	45.2	49.5	51.3
85°	21.5	22.3	21.5	22.3	23.3	23.7	24.8	25.1	26.6	27.6	30.2
87.5°	7.9	9.0	9.0	9.3	10.1	10.4	10.8	10.4	11.8	12.2	13.6
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°	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7
2.5°	901.5	896.5	892.9	890.0	882.1	877.4	873.8	868.8	863.1	857.0	849.4
5°	945.3	933.1	924.1	910.5	897.5	886.8	875.6	865.6	853.4	840.1	830.4
7.5°	990.2	973.3	950.7	933.1	911.9	893.6	877.4	860.6	842.6	825.4	809.2
10°	1032.5	1009.2	983.3	952.8	924.1	898.6	874.9	851.9	829.7	807.4	788.4
12.5°	1078.1	1047.6	1006.3	969.3	936.3	900.1	870.3	840.8	812.8	789.1	766.1
15°	1118.0	1076.0	1031.8	984.1	941.7	901.8	862.7	827.2	797.0	766.1	744.6
17.5°	1143.1	1091.0	1043.7	993.8	944.9	895.0	854.5	814.6	777.3	747.1	720.2
20°	1167.9	1116.2	1053.4	1003.4	942.4	890.7	841.9	796.3	756.8	724.1	696.1
22.5°	1189.4	1127.7	1064.8	995.2	934.5	878.9	824.3	778.3	737.8	703.0	676.4
25°	1194.4	1125.9	1057.7	992.3	923.4	858.4	809.9	756.1	713.0	676.7	648.0
27.5°	1196.2	1123.7	1048.0	976.9	905.8	846.6	783.4	736.3	691.8	653.4	626.1
30°	1192.3	1115.8	1032.9	954.3	882.8	817.1	764.0	711.6	666.0	627.9	599.2
32.5°	1179.7	1099.3	1013.5	929.1	854.5	790.6	735.3	686.1	641.9	604.6	574.1
35°	1153.2	1074.5	983.7	897.2	821.4	756.4	706.9	656.3	611.8	576.2	547.1
37.5°	1117.6	1044.4	952.1	862.0	789.1	723.1	673.2	626.5	586.3	549.7	519.5
40°	1068.1	1005.6	913.0	825.7	745.3	683.2	637.3	595.2	555.4	521.3	492.9
42.5°	1011.0	958.6	874.9	781.2	704.4	641.9	597.4	560.8	523.8	492.9	464.6
45°	941.0	905.1	824.7	739.2	658.4	599.6	556.8	523.8	492.2	461.3	437.6
47.5°	863.1	843.0	773.0	691.1	613.6	554.7	517.7	486.1	457.4	430.5	409.3
50°	784.4	775.8	717.3	639.0	565.8	511.2	473.9	447.7	424.0	401.0	381.3
52.5°	706.9	708.7	657.4	587.3	520.9	468.9	431.9	407.8	388.1	370.5	353.3
55°	627.6	637.6	596.3	532.4	471.7	424.4	391.0	369.1	354.7	339.3	326.0
57.5°	554.7	571.6	535.7	477.1	425.8	380.6	351.1	334.2	318.4	308.4	298.0
60°	483.6	499.4	472.8	425.4	377.7	340.3	312.7	298.0	284.7	278.2	271.4
62.5°	420.4	434.0	416.1	373.0	333.2	297.6	275.4	261.4	253.5	246.3	242.3
65°	360.8	372.7	355.8	323.8	288.3	259.6	240.5	229.4	220.8	217.9	212.9
67.5°	301.9	312.7	303.7	275.7	245.6	222.9	207.9	196.0	191.0	188.1	184.9
70°	250.6	261.4	251.7	228.0	206.1	187.8	173.8	167.7	162.3	161.2	156.2
72.5°	207.2	213.6	203.9	186.7	168.7	154.0	144.0	137.5	135.3	133.2	131.0
75°	161.9	168.4	161.9	147.6	134.3	123.5	114.2	111.7	108.4	107.3	105.6
77.5°	121.3	127.5	122.4	112.7	102.3	93.3	88.0	84.4	84.0	81.9	82.6
80°	87.6	91.2	86.5	80.4	72.5	66.8	63.2	61.4	59.2	58.5	60.0
82.5°	56.7	57.8	56.0	52.4	47.0	43.8	41.6	39.5	39.5	39.9	39.5
85°	32.7	32.3	32.0	28.4	26.6	24.1	22.6	22.3	21.9	22.6	23.3
87.5°	13.6	14.0	13.6	12.2	11.1	10.1	9.7	9.3	9.7	10.1	10.4
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°	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7	866.7
2.5°	845.8	842.6	837.9	831.5	826.1	820.3	818.9	816.8	821.1	817.5	816.4
5°	822.1	814.6	804.9	793.8	787.3	778.0	776.2	772.6	769.0	768.7	765.1
7.5°	797.4	787.0	774.8	763.3	753.2	743.2	736.7	736.0	730.2	727.4	723.8
10°	773.7	760.0	745.3	734.5	722.3	711.6	704.0	699.7	696.1	692.2	688.6
12.5°	745.7	731.0	719.5	707.6	692.5	685.0	671.4	663.1	663.1	664.2	653.4
15°	725.2	710.9	692.2	675.7	667.8	652.0	645.2	636.5	631.1	625.8	621.5
17.5°	700.1	682.5	668.1	649.5	634.7	622.9	613.6	608.9	600.3	592.4	587.0
20°	676.7	657.7	642.3	622.2	605.7	590.2	582.7	575.5	569.4	562.9	556.8
22.5°	653.0	632.9	613.2	593.8	578.7	562.2	555.0	544.6	538.9	536.0	529.9
25°	627.9	606.4	584.8	566.2	550.4	536.0	526.3	518.8	512.3	509.4	505.5
27.5°	600.6	579.5	559.0	537.4	519.1	508.7	500.8	494.7	490.8	486.5	484.7
30°	574.8	552.5	530.3	510.5	494.0	483.6	476.4	472.5	469.6	467.8	466.0
32.5°	548.6	526.7	503.0	485.4	471.0	462.1	457.0	453.1	452.0	451.6	451.3
35°	520.2	498.0	476.4	460.3	446.3	442.7	438.0	435.8	435.1	437.6	438.7
37.5°	492.9	472.1	452.0	435.8	426.5	420.8	419.0	418.6	421.1	423.3	425.8
40°	466.7	446.6	427.9	414.3	405.7	402.5	401.7	403.5	406.4	408.9	411.8
42.5°	441.2	421.5	405.0	392.4	387.0	384.1	384.9	386.7	391.0	394.2	398.9
45°	414.7	398.1	381.6	371.2	366.2	366.9	366.9	370.1	374.1	378.8	383.4
47.5°	389.9	373.0	359.0	350.0	347.5	346.4	348.2	352.6	357.9	363.3	369.8
50°	364.8	349.0	337.1	329.2	326.3	327.4	330.3	334.2	341.1	348.2	355.1
52.5°	339.3	325.3	314.5	307.3	305.5	307.7	310.5	317.4	323.1	331.0	339.6
55°	312.7	300.5	291.9	286.5	285.8	286.9	290.1	296.9	305.5	315.2	323.1
57.5°	286.5	276.1	267.8	263.9	264.2	265.0	270.0	278.2	286.9	297.3	307.3
60°	259.9	250.6	244.1	241.3	241.6	243.8	250.2	257.8	269.3	279.3	290.1
62.5°	234.8	226.9	220.8	218.3	217.6	222.9	229.1	237.0	248.4	259.9	271.8
65°	207.5	201.0	196.0	194.6	195.7	199.3	207.2	217.6	227.3	239.1	251.3
67.5°	180.9	175.6	172.0	172.7	173.8	178.8	185.6	194.6	205.4	217.6	230.1
70°	155.8	150.8	147.9	148.3	150.4	156.9	162.6	171.6	183.5	196.0	206.1
72.5°	130.0	127.1	124.6	126.4	128.5	132.5	140.0	149.0	159.0	170.5	181.3
75°	103.8	103.8	102.3	103.4	106.6	110.9	116.3	125.7	136.1	145.4	154.0
77.5°	81.5	80.4	81.1	82.2	84.4	89.8	95.9	102.7	110.9	120.6	127.8
80°	58.9	59.2	61.0	63.2	63.9	67.9	74.3	80.4	86.5	94.4	101.2
82.5°	40.6	40.9	41.6	44.5	45.2	49.5	53.1	59.2	64.6	69.3	74.7
85°	24.1	24.1	25.8	26.9	28.7	31.6	34.1	37.7	42.7	46.3	51.7
87.5°	11.5	11.5	12.9	13.6	14.7	16.5	17.2	21.2	22.6	24.4	27.6
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: P242639

CATALOG NUMBER: S124DRP-S575D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	866.7	866.7	866.7	866.7
2.5°	815.7	815.0	812.5	812.1
5°	762.9	761.1	760.0	764.0
7.5°	723.1	721.6	718.4	717.3
10°	685.0	683.6	680.7	680.0
12.5°	648.4	645.2	645.2	646.2
15°	616.8	615.4	611.4	612.5
17.5°	584.5	583.0	577.7	583.0
20°	554.3	551.4	548.9	548.6
22.5°	525.6	523.1	523.4	520.6
25°	502.6	500.1	499.4	497.6
27.5°	484.0	482.5	481.1	481.8
30°	467.1	466.7	466.0	466.0
32.5°	453.1	453.1	453.8	453.8
35°	440.2	441.2	441.9	440.9
37.5°	428.7	429.4	430.5	431.5
40°	415.0	417.5	418.3	420.0
42.5°	402.1	405.0	407.1	407.1
45°	388.8	391.7	394.2	394.2
47.5°	375.2	379.1	381.6	382.0
50°	361.2	366.2	368.7	370.5
52.5°	347.5	352.6	356.1	356.9
55°	331.4	338.6	342.5	343.9
57.5°	317.0	323.5	327.8	328.9
60°	299.8	307.0	312.7	313.8
62.5°	282.2	289.7	294.8	298.0
65°	261.4	268.9	273.9	275.0
67.5°	239.5	247.4	250.6	252.7
70°	216.1	222.2	225.8	227.6
72.5°	189.6	196.0	200.3	200.3
75°	162.3	168.0	170.2	170.2
77.5°	133.9	137.1	140.0	140.7
80°	106.6	108.4	110.6	110.6
82.5°	78.6	80.1	82.2	81.9
85°	51.0	54.2	53.9	53.1
87.5°	28.7	29.1	30.2	30.9
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242639
 CATALOG NUMBER: S124DRP-S575D835-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	17.06	18.62	17.43	18.94	19.25	17.97	19.53	18.34	19.85	20.16
	3H	18.54	19.95	18.92	20.28	20.64	19.34	20.75	19.72	21.07	21.43
	4H	19.08	20.40	19.48	20.75	21.13	19.81	21.13	20.21	21.48	21.86
	6H	19.44	20.67	19.85	21.03	21.42	20.12	21.34	20.53	21.71	22.10
	8H	19.54	20.71	19.97	21.10	21.50	20.20	21.36	20.62	21.75	22.15
	12H	19.60	20.71	20.03	21.10	21.53	20.24	21.36	20.67	21.74	22.17
4H	2H	18.22	19.54	18.62	19.89	20.27	18.66	19.98	19.06	20.33	20.71
	3H	19.75	20.85	20.16	21.25	21.65	20.37	21.47	20.78	21.87	22.27
	4H	20.34	21.33	20.77	21.75	22.19	20.95	21.95	21.39	22.36	22.80
	6H	20.77	21.63	21.22	22.07	22.53	21.35	22.22	21.81	22.66	23.12
	8H	20.89	21.70	21.35	22.14	22.61	21.46	22.27	21.92	22.71	23.18
	12H	20.97	21.69	21.45	22.17	22.64	21.52	22.25	22.00	22.72	23.19
8H	4H	20.79	21.60	21.26	22.05	22.51	21.27	22.08	21.73	22.52	22.99
	6H	21.30	21.97	21.80	22.46	22.94	21.80	22.47	22.29	22.96	23.44
	8H	21.47	22.07	21.98	22.58	23.07	21.96	22.56	22.47	23.07	23.56
	12H	21.59	22.13	22.10	22.62	23.18	22.07	22.61	22.58	23.10	23.66
12H	4H	20.84	21.57	21.32	22.05	22.52	21.30	22.03	21.78	22.50	22.97
	6H	21.37	21.98	21.89	22.49	22.97	21.85	22.46	22.37	22.97	23.45
	8H	21.59	22.13	22.10	22.62	23.18	22.07	22.61	22.58	23.10	23.66