

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: P243622

Luminaire Tested: S124RDRP-H575D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243622
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDRP-H575D940-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

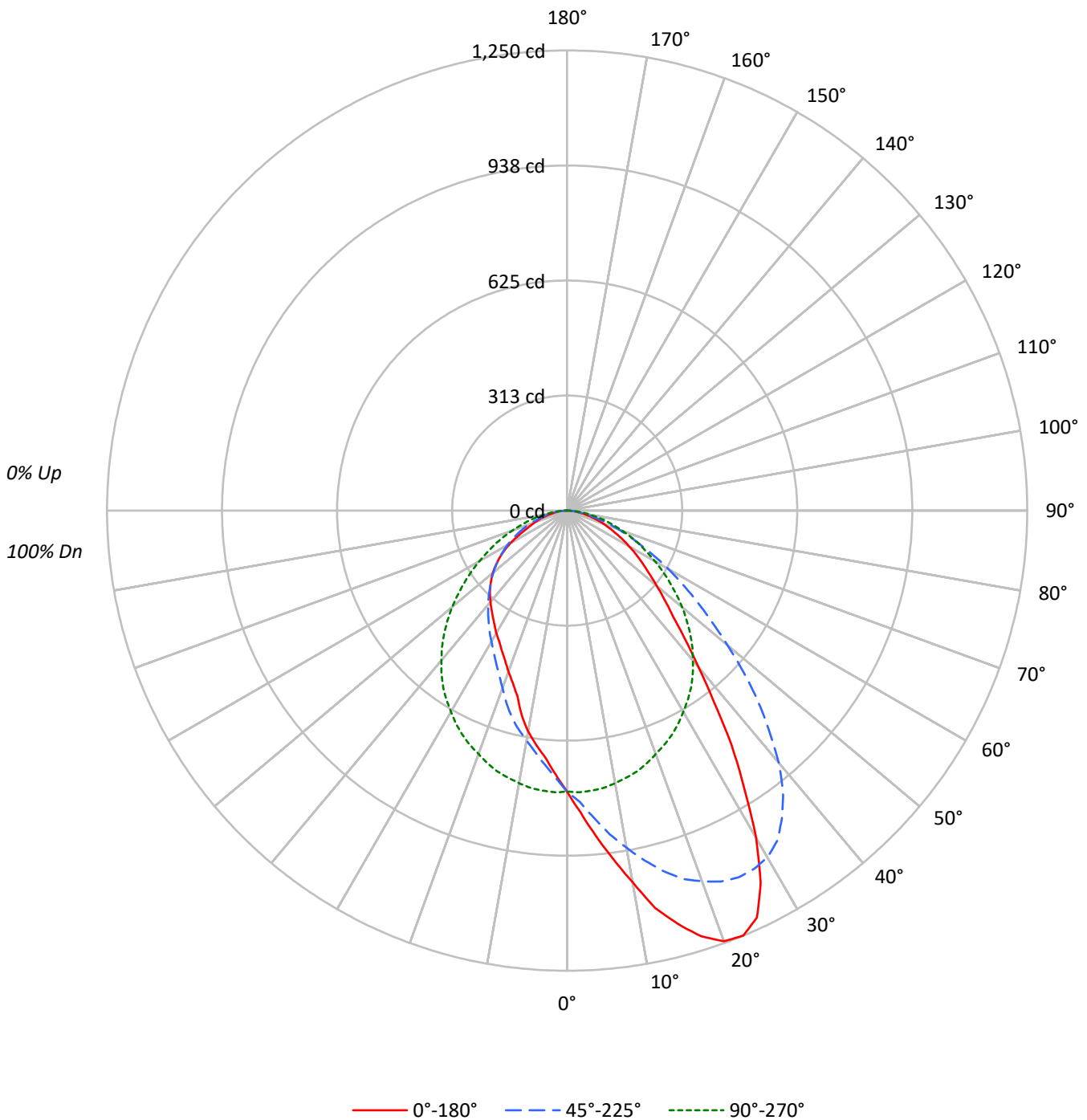
Lumens per Lamp: N/A
Luminaire Lumens: 1970.1 lumens
Efficiency: N/A
Efficacy: 114.5 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

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	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88					86				
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75					73				
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65					63				
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57					55				
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50					48				
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44					42				
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40					38				
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36					34				
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32					31				
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	6785	6785	6785	6785	6785
5°	7904	7476	6813	6185	6015
10°	9256	8395	6785	5723	5500
15°	10695	9333	6751	5348	4804
20°	11776	10137	6656	4856	4403
25°	11965	10784	6595	4481	4116
30°	10532	11166	6477	4216	3948
35°	8451	11041	6368	4029	3819
40°	6430	10371	6164	3866	3760
45°	5104	9214	5937	3732	3715
50°	4382	7855	5643	3613	3651
55°	3870	6670	5278	3487	3473
60°	3467	5639	4898	3330	3180
65°	3052	4640	4526	3100	2675
70°	2718	3823	4109	2843	2409
75°	2370	3002	3737	2500	2143
80°	2007	2298	3210	2114	1976
85°	1754	1877	2754	2060	1999

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 9917 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.1	3.8
10°-20°	224.6	11.4
20°-30°	350.5	17.8
30°-40°	390.9	19.8
40°-50°	351.4	17.8
50°-60°	277.6	14.1
60°-70°	184.4	9.4
70°-80°	92.5	4.7
80°-90°	24.1	1.2
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°	649.2	33.0
0°-40°	1040.1	52.8
0°-60°	1669.1	84.7
0°-90°	1970.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1970.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	763	763	763	763	763	
5°	886	838	764	693	674	89
15°	1162	1014	734	581	522	330
25°	1220	1100	672	457	420	546
35°	779	1018	587	371	352	484
45°	406	733	472	297	296	322
55°	250	430	341	225	224	225
65°	145	221	215	147	127	145
75°	69	87	109	73	62	74
85°	17	18	27	20	20	19
90°	0	0	0	0	0	



TEST NUMBER: P243622

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3
2.5°	819.8	816.8	816.5	812.7	812.4	808.5	807.3	804.0	797.5	792.5	792.7
5°	885.8	883.4	883.1	879.2	878.1	873.3	865.9	857.0	846.5	837.9	832.3
7.5°	953.6	957.7	953.3	953.3	944.6	939.0	924.4	917.0	899.2	886.7	873.6
10°	1025.5	1029.4	1027.6	1024.0	1012.7	1001.1	986.0	971.4	949.7	930.1	917.0
12.5°	1105.7	1094.2	1101.6	1090.6	1081.4	1062.9	1048.4	1019.2	1002.0	973.5	947.9
15°	1162.2	1157.8	1157.5	1150.0	1139.9	1119.7	1104.0	1073.6	1044.2	1014.2	985.4
17.5°	1212.8	1213.3	1209.2	1197.3	1184.2	1164.6	1143.2	1116.1	1082.6	1049.3	1015.1
20°	1244.9	1245.2	1242.2	1235.9	1221.7	1203.8	1181.8	1146.5	1108.4	1071.6	1037.4
22.5°	1249.6	1250.5	1249.6	1245.7	1235.9	1221.4	1201.2	1171.1	1132.8	1090.6	1049.9
25°	1219.9	1222.9	1223.2	1228.5	1223.5	1217.8	1202.9	1177.7	1142.3	1099.5	1055.2
27.5°	1138.4	1146.8	1154.5	1164.0	1172.6	1180.4	1181.5	1168.2	1137.8	1098.0	1055.8
30°	1026.1	1035.9	1051.3	1061.5	1088.2	1105.2	1128.0	1133.1	1118.5	1087.9	1047.2
32.5°	895.3	905.7	911.6	944.9	983.3	1010.9	1049.0	1071.6	1077.2	1062.6	1029.4
35°	778.8	780.6	785.0	822.8	860.8	902.7	950.0	989.2	1016.0	1017.5	1001.1
37.5°	653.9	656.0	673.6	702.4	735.4	781.5	835.8	891.7	940.8	963.4	958.6
40°	554.1	553.5	572.2	597.2	629.3	677.1	733.3	794.2	846.5	893.8	905.1
42.5°	473.2	475.3	491.3	505.9	536.8	570.4	630.5	693.8	760.9	812.7	847.1
45°	406.0	411.4	422.4	436.1	459.2	490.2	539.2	602.2	670.9	733.0	774.3
47.5°	359.7	361.2	366.8	383.7	399.2	424.2	466.1	519.6	580.5	650.1	704.5
50°	316.9	320.4	322.5	332.6	347.8	371.6	404.0	443.8	504.1	568.0	636.1
52.5°	280.0	282.1	285.9	295.2	307.1	323.7	349.3	384.3	434.6	493.7	557.9
55°	249.7	250.0	253.8	260.4	269.6	282.4	306.8	332.0	376.6	430.4	488.7
57.5°	222.3	220.6	224.1	228.0	236.9	247.9	263.7	289.5	324.3	370.1	422.7
60°	195.0	196.5	196.2	200.6	205.4	216.4	229.8	246.7	275.2	317.2	361.7
62.5°	169.4	169.1	172.1	174.8	178.0	187.0	198.0	211.9	234.2	265.1	308.2
65°	145.1	145.6	148.0	150.1	153.7	159.3	167.6	178.9	196.8	220.6	256.8
67.5°	123.1	125.1	126.3	126.9	130.2	134.4	141.5	150.7	162.9	181.9	212.2
70°	104.6	105.2	105.8	107.9	109.4	111.8	117.1	122.2	133.2	147.1	169.1
72.5°	87.4	86.8	88.6	89.2	89.8	92.1	95.4	98.1	105.2	117.1	130.8
75°	69.0	69.3	69.6	70.4	72.8	73.1	74.6	77.6	82.6	87.4	96.6
77.5°	51.7	52.6	52.3	53.2	54.1	55.0	55.6	58.3	61.8	65.7	70.1
80°	39.2	39.2	39.2	39.8	39.2	41.3	41.3	42.2	43.1	44.9	48.2
82.5°	26.8	27.3	27.6	27.9	28.2	28.2	28.5	29.1	30.3	30.9	31.8
85°	17.2	16.6	16.9	16.9	16.9	16.9	17.5	18.1	18.1	18.4	19.3
87.5°	7.7	7.7	7.7	7.7	7.4	7.7	8.0	8.0	8.3	8.3	8.9
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°	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3
2.5°	791.0	790.1	785.6	780.9	776.4	771.9	770.5	766.0	760.6	755.9	750.5
5°	826.3	819.2	809.4	799.3	788.9	779.4	771.9	763.6	754.1	742.8	733.9
7.5°	862.0	848.9	832.9	818.0	800.2	785.9	771.6	759.8	746.1	730.0	717.8
10°	896.8	875.1	855.5	832.0	809.4	789.8	771.6	751.7	733.6	716.4	699.4
12.5°	924.4	902.7	874.5	845.7	816.5	791.0	766.6	743.1	720.5	699.7	681.0
15°	955.9	924.7	889.9	858.1	818.3	786.8	758.9	733.6	707.7	682.5	662.0
17.5°	979.1	942.3	899.2	862.6	824.3	785.0	751.4	719.6	689.9	663.4	642.3
20°	997.0	953.3	910.2	863.8	818.0	777.9	740.1	703.6	673.6	644.7	622.4
22.5°	1004.7	958.6	910.8	860.5	811.8	766.3	727.1	689.3	655.4	625.7	599.8
25°	1008.0	957.4	907.8	850.7	801.4	755.0	711.3	672.4	637.6	604.0	578.4
27.5°	1005.3	951.2	894.1	840.3	784.4	738.9	692.6	653.0	616.8	584.4	555.8
30°	998.1	936.9	880.1	819.8	766.0	718.1	673.0	631.0	594.5	561.5	533.3
32.5°	979.7	920.9	856.4	797.5	739.5	692.3	651.3	609.9	572.8	538.3	511.0
35°	956.8	899.2	831.7	770.2	712.8	664.9	623.6	586.8	550.2	513.6	485.7
37.5°	928.0	869.4	804.3	738.1	681.9	635.5	597.8	560.6	524.3	490.7	459.5
40°	889.1	835.6	770.2	703.6	647.1	602.5	565.4	531.2	499.1	466.1	432.5
42.5°	840.6	799.9	732.4	666.7	611.4	567.1	534.1	503.5	472.6	438.7	408.4
45°	788.9	754.1	692.9	626.6	574.0	530.9	499.4	472.3	443.2	413.2	381.4
47.5°	730.6	704.8	651.9	586.2	530.9	494.0	464.9	440.2	413.8	387.0	356.1
50°	664.9	649.2	604.0	544.3	491.6	454.2	430.1	408.1	385.5	358.8	332.3
52.5°	599.2	596.3	554.1	501.4	451.8	417.0	393.6	373.3	354.9	329.6	307.3
55°	530.3	539.2	504.1	455.7	411.4	377.8	357.0	340.6	324.6	303.2	281.8
57.5°	469.0	479.2	455.1	410.5	369.2	340.6	322.8	307.9	294.0	274.4	260.1
60°	401.3	419.7	406.9	366.2	329.6	304.1	287.4	275.5	264.0	247.0	234.5
62.5°	347.8	360.6	353.1	322.8	290.4	269.6	254.7	243.7	234.5	221.4	209.3
65°	290.4	306.5	302.6	282.7	254.1	235.1	223.8	215.2	205.7	195.3	185.2
67.5°	238.7	255.3	254.4	240.8	219.7	203.9	193.2	187.0	179.2	169.1	162.9
70°	192.0	207.5	208.1	201.2	186.4	171.5	163.8	158.1	152.2	144.8	140.3
72.5°	149.2	163.2	165.6	162.3	152.8	143.0	136.1	132.3	127.2	121.0	117.1
75°	111.5	121.6	127.2	125.7	121.9	115.3	111.5	108.8	103.7	99.3	96.0
77.5°	79.4	87.4	93.0	95.4	93.6	91.0	87.4	85.3	80.0	77.9	76.1
80°	53.2	60.3	65.4	66.9	67.8	67.2	63.9	62.7	60.0	59.2	57.4
82.5°	32.7	36.6	40.1	44.0	45.8	45.8	44.0	44.3	41.9	40.7	40.1
85°	19.9	20.8	21.4	24.4	26.8	27.6	26.8	27.0	26.2	25.3	24.4
87.5°	9.2	9.2	9.5	10.1	10.7	12.5	13.1	14.0	12.8	12.8	10.7
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°	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3	763.3
2.5°	747.3	743.4	740.4	735.7	731.8	725.6	723.5	723.5	724.7	723.2	724.7
5°	727.7	720.5	712.8	706.0	698.5	693.2	687.8	686.6	686.0	682.5	682.8
7.5°	708.0	698.5	688.7	679.8	670.6	662.3	656.6	654.2	652.2	649.8	647.1
10°	686.9	675.9	664.3	654.2	645.3	634.0	628.4	626.6	620.6	619.5	615.3
12.5°	664.6	653.3	641.7	628.7	620.0	609.1	600.7	596.9	591.2	587.1	580.8
15°	647.1	632.8	617.4	604.6	593.3	581.1	569.8	562.4	555.0	543.4	537.7
17.5°	625.4	609.1	595.7	582.0	565.7	547.8	534.4	523.4	515.4	505.9	500.3
20°	601.9	586.8	570.1	550.8	533.6	513.3	501.2	491.9	485.7	480.0	477.1
22.5°	581.1	563.6	540.7	522.3	498.2	482.1	472.3	466.4	460.4	454.5	451.5
25°	558.5	538.0	510.1	487.5	469.3	456.9	447.4	441.7	435.5	431.9	427.4
27.5°	536.2	509.8	481.8	461.3	447.1	432.5	424.5	420.0	415.2	410.2	406.6
30°	509.2	479.2	456.0	437.2	423.0	410.8	404.8	398.3	394.1	391.2	389.1
32.5°	480.9	452.1	431.0	415.0	401.0	391.8	384.3	380.2	376.6	373.3	371.0
35°	454.5	426.5	408.7	393.3	381.7	371.3	365.6	361.7	358.8	356.1	354.9
37.5°	428.3	404.5	385.2	373.0	360.9	352.5	347.2	343.6	341.8	339.2	339.5
40°	402.5	381.1	365.6	351.6	340.3	333.2	329.0	327.6	324.9	324.0	324.9
42.5°	379.3	359.7	344.8	331.7	321.9	315.1	311.8	309.7	308.8	308.5	308.8
45°	356.7	338.3	324.0	313.3	303.2	296.9	294.3	292.8	291.9	293.4	293.7
47.5°	334.1	317.5	304.7	292.2	283.9	279.4	276.7	275.5	276.4	277.0	279.1
50°	311.8	296.4	283.0	272.0	265.4	261.3	260.4	258.3	259.8	260.7	262.2
52.5°	289.2	275.2	263.4	253.0	246.1	243.4	241.4	240.5	242.6	242.6	244.0
55°	266.3	254.1	243.1	233.6	228.3	225.0	223.5	222.3	223.5	223.8	223.5
57.5°	244.9	233.3	221.7	213.7	209.3	205.7	204.2	203.6	203.3	204.5	204.2
60°	222.3	211.3	202.1	193.8	189.3	187.3	184.0	184.6	184.6	184.6	181.6
62.5°	199.7	188.7	180.7	175.1	169.7	166.2	165.6	164.7	162.9	162.6	158.7
65°	176.6	168.2	161.4	155.8	150.4	147.4	146.5	143.9	141.8	137.9	135.2
67.5°	155.2	149.2	141.2	136.4	132.0	128.4	125.1	123.1	118.9	115.0	112.7
70°	133.8	127.5	122.2	117.1	112.7	109.4	105.5	101.7	99.0	96.6	94.8
72.5°	112.4	107.0	102.5	97.8	93.0	89.8	86.8	83.8	82.6	81.4	80.6
75°	92.4	87.4	83.2	79.4	76.7	72.8	71.3	70.1	69.0	67.5	65.7
77.5°	73.1	69.3	66.0	62.7	60.3	58.3	57.1	53.5	50.5	49.9	49.3
80°	54.4	51.4	49.3	47.0	44.3	41.3	40.4	39.2	38.6	38.6	38.9
82.5°	38.0	36.3	33.9	31.8	30.9	29.7	29.7	29.4	29.1	29.4	29.4
85°	23.2	20.8	20.2	19.9	20.2	20.2	20.2	20.2	19.9	20.2	19.6
87.5°	10.1	11.0	11.3	10.4	10.7	10.1	10.4	10.4	10.4	10.7	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



TEST NUMBER: P243622

CATALOG NUMBER: S124RDRP-H575D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	763.3	763.3	763.3	763.3
2.5°	722.9	722.9	719.9	717.5
5°	682.2	678.3	677.7	674.1
7.5°	644.1	643.5	642.0	642.0
10°	613.8	611.7	609.6	609.3
12.5°	571.0	574.0	570.4	569.5
15°	533.6	531.2	528.2	522.0
17.5°	498.8	494.3	493.1	490.5
20°	471.4	468.2	467.0	465.5
22.5°	445.6	445.0	441.4	440.5
25°	426.5	423.6	421.2	419.7
27.5°	405.7	403.7	402.5	400.1
30°	386.7	386.1	384.6	384.6
32.5°	369.5	367.7	367.7	367.4
35°	353.7	354.3	352.5	351.9
37.5°	338.9	338.0	338.3	337.7
40°	324.3	323.7	323.7	324.0
42.5°	309.4	309.7	310.3	310.3
45°	294.6	294.9	295.5	295.5
47.5°	280.6	280.0	280.6	280.0
50°	262.8	264.5	264.2	264.0
52.5°	244.6	244.0	245.2	244.9
55°	225.0	224.1	225.3	224.1
57.5°	203.0	203.3	203.3	202.7
60°	181.0	180.1	178.9	178.9
62.5°	155.5	152.8	151.0	152.2
65°	130.8	128.7	128.1	127.2
67.5°	111.2	108.8	107.9	107.6
70°	94.2	93.0	92.7	92.7
72.5°	80.0	80.0	79.1	78.5
75°	65.1	63.9	62.4	62.4
77.5°	48.7	48.5	48.2	48.2
80°	38.0	38.0	38.3	38.6
82.5°	28.5	28.8	29.1	29.1
85°	19.3	19.3	19.6	19.6
87.5°	10.4	10.4	10.4	10.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243622
 CATALOG NUMBER: S124RDRP-H575D940-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	15.99	17.53	16.36	17.84	18.16	17.69	19.22	18.05	19.54	19.85
	3H	17.23	18.60	17.60	18.93	19.29	19.17	20.55	19.55	20.88	21.24
	4H	17.66	18.95	18.06	19.30	19.68	19.71	21.01	20.11	21.35	21.73
	6H	17.94	19.13	18.35	19.50	19.89	20.10	21.29	20.51	21.66	22.05
	8H	18.02	19.16	18.45	19.55	19.95	20.22	21.36	20.65	21.75	22.15
	12H	18.08	19.16	18.51	19.55	19.98	20.30	21.39	20.73	21.77	22.20
4H	2H	17.20	18.49	17.60	18.84	19.22	18.22	19.51	18.62	19.86	20.24
	3H	18.47	19.54	18.88	19.94	20.34	19.99	21.07	20.40	21.47	21.87
	4H	18.94	19.91	19.37	20.32	20.76	20.65	21.62	21.08	22.03	22.47
	6H	19.27	20.11	19.73	20.56	21.01	21.15	21.99	21.61	22.43	22.89
	8H	19.38	20.16	19.84	20.60	21.07	21.30	22.09	21.77	22.53	23.00
	12H	19.45	20.15	19.93	20.63	21.10	21.42	22.12	21.90	22.60	23.07
8H	4H	19.35	20.14	19.82	20.58	21.05	20.78	21.56	21.24	22.01	22.48
	6H	19.75	20.40	20.25	20.89	21.37	21.38	22.03	21.87	22.52	22.99
	8H	19.89	20.48	20.41	20.99	21.47	21.60	22.18	22.11	22.69	23.18
	12H	20.02	20.53	20.53	21.02	21.59	21.78	22.29	22.28	22.78	23.35
12H	4H	19.39	20.10	19.88	20.57	21.05	20.77	21.47	21.25	21.95	22.42
	6H	19.81	20.39	20.32	20.90	21.39	21.37	21.95	21.88	22.46	22.95
	8H	20.00	20.51	20.51	21.00	21.57	21.63	22.15	22.14	22.64	23.20