

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: P242746

Luminaire Tested: S124RDRP-S350D840-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242746
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDRP-S350D840-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

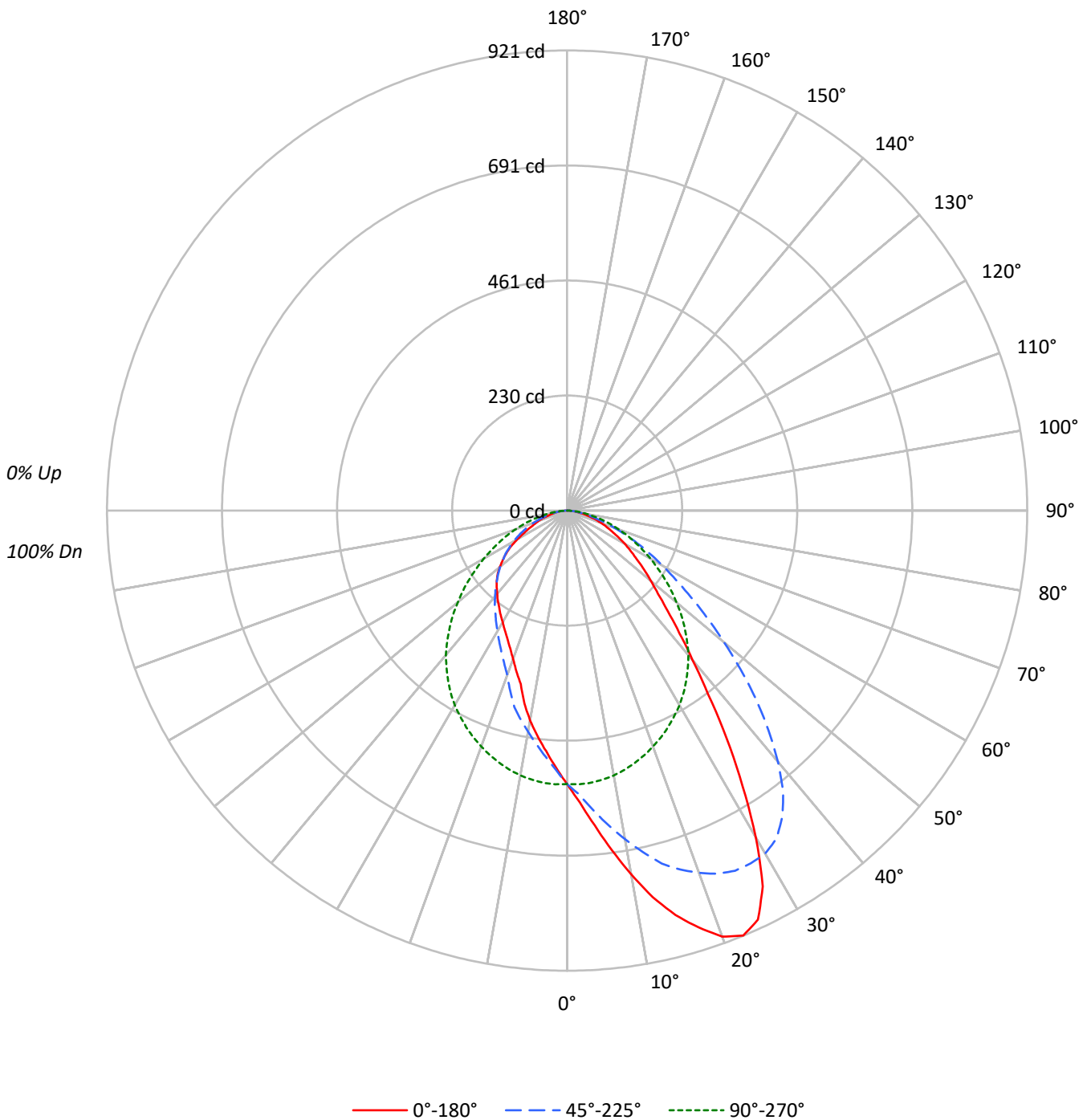
Lumens per Lamp: N/A
Luminaire Lumens: 1383.2 lumens
Efficiency: N/A
Efficacy: 119.2 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
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

TEST NUMBER: P242746

CATALOG NUMBER: S124RDRP-S350D840-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P242746

CATALOG NUMBER: S124RDRP-S350D840-X4F0-XX-UDD-A-W

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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	81	75	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	4864	4864	4864	4864	4864
5°	5642	5371	4879	4414	4312
10°	6674	6029	4858	4057	3849
15°	7710	6732	4812	3749	3307
20°	8583	7299	4751	3316	2990
25°	8861	7801	4690	3055	2777
30°	7758	8137	4617	2863	2647
35°	6039	8141	4508	2717	2570
40°	4528	7615	4383	2602	2527
45°	3575	6720	4182	2503	2505
50°	3019	5656	3951	2417	2432
55°	2631	4688	3696	2326	2303
60°	2368	3924	3433	2196	2037
65°	2086	3269	3149	2044	1752
70°	1879	2612	2854	1845	1580
75°	1576	2030	2528	1621	1346
80°	1331	1536	2155	1341	1264
85°	1122	1214	1683	1193	1122

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 7178 cd/sqm

TEST NUMBER: P242746

CATALOG NUMBER: S124RDRP-S350D840-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.0	3.8
10°-20°	160.0	11.6
20°-30°	250.6	18.1
30°-40°	278.3	20.1
40°-50°	246.6	17.8
50°-60°	192.2	13.9
60°-70°	125.7	9.1
70°-80°	61.7	4.5
80°-90°	15.0	1.1
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°	463.6	33.5
0°-40°	742.0	53.6
0°-60°	1180.8	85.4
0°-90°	1383.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1383.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	547	547	547	547	547	
5°	632	602	547	495	483	64
15°	838	732	523	407	359	238
25°	904	795	478	312	283	403
35°	556	750	415	250	237	348
45°	284	535	333	199	199	224
55°	170	302	238	150	149	154
65°	99	155	150	97	83	100
75°	46	59	74	47	39	50
85°	11	12	16	12	11	13
90°	0	0	0	0	0	



TEST NUMBER: P242746

CATALOG NUMBER: S124RDRP-S350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	584.7	586.7	584.7	584.5	582.3	581.6	580.7	577.8	572.6	569.5	570.1
5°	632.3	637.8	634.7	634.3	629.4	624.6	621.5	614.4	606.9	601.9	597.7
7.5°	685.2	688.5	686.3	683.9	675.5	672.9	665.6	657.2	644.6	635.2	626.6
10°	739.4	742.1	741.2	735.5	729.7	718.1	711.4	698.4	681.5	668.0	655.4
12.5°	792.8	795.7	786.2	787.9	775.8	767.2	755.8	738.6	718.3	700.0	683.4
15°	837.8	834.2	834.2	829.8	817.7	804.9	794.1	776.9	752.2	731.5	709.7
17.5°	874.8	876.4	874.6	863.3	854.5	841.5	822.1	802.5	781.1	753.3	731.7
20°	907.4	907.4	905.5	898.4	886.1	871.9	850.6	828.7	799.6	771.6	746.5
22.5°	920.7	921.5	919.1	913.6	902.8	889.1	871.7	849.5	819.3	786.8	754.2
25°	903.5	907.7	908.1	906.6	903.2	894.9	879.2	856.5	829.6	795.4	761.9
27.5°	847.9	853.4	855.6	860.5	869.5	872.8	870.8	855.6	829.6	795.9	762.6
30°	755.8	760.2	774.5	793.2	807.8	821.0	832.5	835.6	822.3	792.8	757.3
32.5°	653.5	659.9	674.2	694.7	721.4	746.1	775.4	791.0	793.9	779.1	746.9
35°	556.5	560.9	574.1	595.3	624.4	657.7	698.4	730.2	751.8	750.2	730.2
37.5°	463.4	469.6	483.0	500.5	529.1	571.7	610.3	652.8	691.6	710.6	700.4
40°	390.2	390.4	403.5	421.5	448.0	483.9	526.9	575.4	620.0	656.3	663.4
42.5°	332.5	332.5	340.0	359.8	377.0	410.3	450.9	498.9	552.9	596.4	618.0
45°	284.4	286.4	293.4	305.1	320.1	348.8	381.6	426.4	484.8	534.6	565.7
47.5°	246.5	250.0	254.2	264.8	277.1	297.2	325.2	367.1	415.6	470.9	513.9
50°	218.3	218.7	224.4	229.7	240.1	255.3	279.1	312.6	356.3	409.0	458.1
52.5°	194.0	193.8	196.7	203.7	211.6	222.7	240.7	270.5	308.0	353.8	405.0
55°	169.8	170.9	173.5	178.8	185.2	193.6	208.8	231.7	262.1	302.5	348.6
57.5°	151.2	151.9	154.3	156.3	162.5	168.7	181.0	197.5	224.2	257.9	303.1
60°	133.2	133.4	134.0	137.4	142.0	147.7	155.4	168.9	190.5	220.7	254.6
62.5°	115.5	116.0	117.1	119.3	122.6	126.1	134.3	144.4	161.4	186.1	215.8
65°	99.2	99.4	101.0	101.9	104.7	108.2	114.2	121.5	133.8	155.4	178.6
67.5°	85.5	85.5	85.5	86.9	89.1	91.5	95.5	101.6	111.6	125.4	147.1
70°	72.3	72.3	72.8	73.4	74.5	76.5	78.5	82.9	89.7	100.5	116.2
72.5°	60.0	60.2	60.6	60.6	61.1	62.6	63.9	66.4	71.0	78.5	90.4
75°	45.9	46.5	47.6	48.5	49.6	49.4	50.9	52.7	54.2	59.1	66.4
77.5°	36.2	35.7	35.7	36.6	36.8	37.0	38.1	39.7	41.0	43.7	46.3
80°	26.0	26.0	26.7	26.9	26.7	26.9	28.0	28.7	29.1	30.0	32.4
82.5°	18.1	18.5	18.1	18.3	18.5	18.7	19.6	19.6	20.1	20.3	20.9
85°	11.0	11.2	11.5	11.0	11.0	11.0	11.5	11.7	12.1	11.9	12.3
87.5°	4.9	4.6	4.9	4.9	5.1	4.9	5.1	5.5	5.1	5.3	5.3
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: P242746

CATALOG NUMBER: S124RDRP-S350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	567.9	564.8	563.3	559.8	555.6	553.4	551.4	548.5	544.8	540.8	537.9
5°	592.4	587.1	580.5	572.6	565.5	558.7	552.7	546.8	539.9	532.9	525.8
7.5°	616.6	607.2	597.0	584.9	573.2	562.4	552.7	543.2	532.4	522.7	513.7
10°	642.2	628.1	612.5	595.9	579.4	565.1	550.9	538.2	524.0	511.5	500.9
12.5°	662.9	645.7	626.1	604.5	583.8	565.7	549.0	531.3	514.8	500.9	485.9
15°	686.3	663.6	638.2	613.6	587.8	564.2	542.3	522.9	504.6	485.5	472.0
17.5°	702.4	676.2	646.2	617.5	588.0	560.6	536.0	513.5	492.5	473.3	457.5
20°	716.5	686.8	652.6	618.8	584.7	554.9	527.8	502.2	480.4	459.2	442.7
22.5°	724.5	690.7	652.6	616.9	581.1	548.3	517.9	491.0	466.7	445.6	426.8
25°	724.9	689.6	651.5	610.9	572.1	537.9	507.1	478.2	451.7	430.6	411.2
27.5°	723.1	682.3	644.0	602.8	562.9	526.5	494.5	463.9	437.6	415.1	395.3
30°	717.8	673.3	631.4	588.2	547.6	513.0	478.9	449.8	422.2	398.6	378.5
32.5°	706.4	662.3	616.4	571.9	530.7	494.7	462.8	433.4	406.5	382.3	360.7
35°	690.5	645.7	596.8	551.4	511.0	474.0	443.6	415.4	389.6	363.8	341.3
37.5°	672.2	625.5	577.2	527.4	487.2	452.0	423.5	396.4	371.3	347.7	322.8
40°	644.0	602.3	552.0	502.7	461.2	427.5	401.7	377.7	352.3	328.9	304.0
42.5°	609.8	575.9	524.9	475.3	434.5	402.4	378.8	355.4	332.9	310.4	284.2
45°	571.0	544.1	496.5	448.9	407.6	375.5	353.4	332.7	312.4	290.8	266.3
47.5°	527.8	508.0	466.5	416.7	378.1	348.6	327.4	310.2	292.3	270.5	248.5
50°	482.4	470.7	431.0	386.5	350.1	323.4	301.6	285.7	271.4	250.7	231.5
52.5°	433.9	429.0	397.1	355.0	320.1	294.1	276.2	262.4	247.8	231.5	213.9
55°	384.5	387.8	359.4	322.5	289.5	267.4	250.4	238.5	226.2	211.6	197.8
57.5°	333.1	345.7	324.5	291.2	259.3	238.5	225.5	215.0	204.6	192.2	179.7
60°	287.9	298.1	287.3	258.8	231.7	212.7	200.8	193.1	182.8	171.7	162.7
62.5°	243.8	254.9	249.6	228.0	203.3	187.6	177.5	170.4	163.4	154.1	144.6
65°	208.3	215.4	212.3	196.4	178.6	164.7	155.0	149.7	142.6	135.6	127.2
67.5°	166.7	180.6	178.4	169.5	152.3	141.3	134.5	129.6	123.0	117.7	111.8
70°	131.2	143.7	143.5	136.7	128.3	118.2	113.8	109.8	104.1	99.0	94.4
72.5°	101.4	112.7	114.9	110.0	104.9	97.9	93.7	91.3	85.8	82.7	79.1
75°	75.2	83.6	85.8	85.8	83.1	79.1	75.4	73.6	69.7	66.6	64.4
77.5°	52.9	58.6	62.0	62.6	62.8	61.3	57.8	56.4	53.4	52.3	49.8
80°	34.8	38.4	42.3	43.7	44.8	44.3	43.0	42.1	39.2	38.1	37.3
82.5°	21.4	22.9	26.0	29.3	28.7	30.2	29.1	28.4	26.5	26.2	25.4
85°	12.6	12.8	13.2	15.2	16.3	16.8	17.0	16.5	15.9	15.9	14.3
87.5°	5.3	5.1	5.5	5.5	5.7	6.6	7.3	7.5	6.8	6.2	5.5
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: P242746

CATALOG NUMBER: S124RDRP-S350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	534.9	532.6	529.8	526.5	522.5	519.0	517.4	518.8	519.4	517.7	517.4
5°	521.0	515.4	511.0	504.4	499.1	494.7	491.6	490.3	490.8	487.2	486.3
7.5°	505.5	499.6	492.3	484.8	477.8	471.6	468.3	466.7	463.0	461.4	459.0
10°	490.8	481.9	474.9	465.6	457.2	449.5	445.8	442.7	438.9	437.2	433.4
12.5°	475.5	465.0	457.0	447.3	438.7	429.0	425.5	419.1	412.7	408.5	403.5
15°	461.4	449.1	439.6	428.1	418.0	407.4	397.9	387.4	383.4	375.0	370.2
17.5°	444.7	431.9	421.3	406.5	391.3	378.5	368.0	356.9	351.0	345.2	342.8
20°	428.1	416.7	400.4	382.5	365.1	350.5	342.4	335.8	329.2	325.4	322.8
22.5°	412.5	397.1	377.4	357.8	340.4	329.8	323.2	316.4	311.3	307.8	304.0
25°	394.6	375.5	355.4	333.3	321.4	311.5	304.0	298.5	295.2	290.6	288.8
27.5°	377.2	354.1	331.4	316.4	304.0	294.5	287.7	283.7	279.3	276.2	273.8
30°	356.5	332.9	313.1	299.0	286.4	278.9	273.6	268.7	265.4	263.0	261.3
32.5°	336.0	312.4	296.5	281.1	271.8	264.6	258.8	255.5	253.1	249.8	248.9
35°	316.4	295.4	280.9	267.2	257.1	250.4	246.0	242.3	240.1	239.2	238.5
37.5°	297.2	279.8	263.7	252.7	243.2	238.1	232.4	230.6	229.1	227.1	228.0
40°	279.1	263.0	249.1	237.2	229.9	224.2	221.1	218.9	217.6	217.6	217.6
42.5°	263.5	247.8	234.4	224.0	216.7	212.1	208.6	206.8	206.6	206.4	207.7
45°	247.1	232.6	218.9	210.1	203.9	199.1	197.1	195.6	195.6	196.4	196.7
47.5°	230.8	217.2	206.1	196.0	190.3	187.2	185.4	184.5	184.5	185.6	186.5
50°	216.1	202.6	191.8	183.0	177.7	174.8	173.3	172.8	173.3	173.3	174.8
52.5°	200.0	188.3	177.7	170.6	164.5	161.8	161.2	160.5	160.7	161.6	162.0
55°	184.3	173.5	163.4	156.3	151.9	150.1	148.2	148.4	147.9	148.4	148.4
57.5°	168.4	159.0	149.0	143.3	139.6	136.9	134.7	135.4	134.7	134.7	134.5
60°	153.2	142.6	135.1	130.1	125.7	123.5	121.5	121.9	121.3	120.8	119.9
62.5°	136.7	128.3	121.3	116.4	113.1	110.5	108.5	107.8	106.0	104.3	102.1
65°	120.8	113.5	107.1	102.5	99.2	97.2	95.7	94.4	91.1	87.5	85.8
67.5°	105.2	99.9	93.7	89.7	87.1	84.4	81.6	79.1	75.8	73.6	72.5
70°	90.2	85.1	80.0	76.3	73.4	71.0	67.7	66.1	63.9	63.1	62.0
72.5°	75.8	71.2	66.6	63.3	60.2	58.4	56.0	54.5	53.8	53.6	52.5
75°	61.3	57.5	54.0	50.9	48.5	47.2	46.1	45.0	44.5	42.5	41.4
77.5°	47.2	44.5	42.3	39.9	38.4	37.5	35.1	33.5	32.6	31.5	31.3
80°	34.8	33.1	30.9	29.5	27.1	26.2	25.4	25.1	24.9	24.7	24.5
82.5°	24.0	22.3	20.1	19.4	19.2	18.7	18.3	18.1	17.9	18.1	18.1
85°	13.2	12.3	12.3	12.1	11.9	11.7	11.5	11.5	11.2	11.5	11.2
87.5°	5.5	5.3	5.3	4.9	5.1	5.1	4.9	4.9	5.1	4.6	4.6
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: P242746

CATALOG NUMBER: S124RDRP-S350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	547.2	547.2	547.2	547.2
2.5°	516.1	516.6	515.0	514.6
5°	484.6	484.1	483.0	483.3
7.5°	457.2	455.7	456.8	455.0
10°	432.6	430.1	428.1	426.4
12.5°	398.8	396.8	394.0	395.1
15°	367.3	364.0	358.7	359.4
17.5°	339.1	339.5	336.4	337.3
20°	318.1	316.6	316.8	316.1
22.5°	303.6	301.6	299.6	298.1
25°	286.8	285.5	283.5	283.1
27.5°	272.1	271.8	271.0	269.9
30°	259.5	259.0	258.6	257.9
32.5°	248.2	248.0	247.6	247.8
35°	237.7	237.4	237.0	236.8
37.5°	227.7	228.4	228.0	228.0
40°	217.4	217.6	218.0	217.8
42.5°	208.8	208.8	209.4	208.6
45°	198.2	199.5	199.3	199.3
47.5°	187.0	188.5	188.7	188.7
50°	175.9	175.5	176.2	175.9
52.5°	162.5	162.7	162.5	162.3
55°	148.6	148.8	148.4	148.6
57.5°	133.8	132.9	133.6	133.2
60°	117.7	116.0	115.5	114.6
62.5°	99.7	98.5	96.8	97.9
65°	84.0	83.1	82.5	83.3
67.5°	71.4	71.0	71.0	70.5
70°	62.0	61.3	61.3	60.8
72.5°	52.3	51.6	51.8	51.6
75°	40.1	39.0	39.0	39.2
77.5°	31.3	31.1	31.5	30.9
80°	24.5	24.3	24.0	24.7
82.5°	17.6	17.6	17.6	18.5
85°	11.5	11.0	11.5	11.0
87.5°	5.1	4.9	4.6	4.9
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242746
 CATALOG NUMBER: S124RDRP-S350D840-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	14.60	16.12	14.96	16.43	16.75	16.42	17.94	16.78	18.25	18.57
	3H	15.83	17.19	16.20	17.52	17.88	17.87	19.24	18.25	19.56	19.93
	4H	16.26	17.54	16.66	17.89	18.27	18.39	19.67	18.79	20.02	20.39
	6H	16.53	17.71	16.94	18.08	18.47	18.74	19.92	19.15	20.29	20.68
	8H	16.61	17.74	17.04	18.13	18.53	18.84	19.97	19.27	20.36	20.76
	12H	16.66	17.74	17.09	18.12	18.55	18.90	19.98	19.33	20.36	20.79
4H	2H	15.86	17.14	16.26	17.49	17.87	16.92	18.20	17.32	18.55	18.93
	3H	17.09	18.16	17.50	18.56	18.96	18.67	19.73	19.08	20.13	20.53
	4H	17.56	18.51	17.99	18.93	19.37	19.29	20.25	19.73	20.66	21.10
	6H	17.88	18.71	18.34	19.15	19.61	19.75	20.58	20.21	21.02	21.48
	8H	17.98	18.75	18.44	19.20	19.66	19.88	20.66	20.35	21.10	21.57
	12H	18.04	18.74	18.53	19.22	19.69	19.97	20.67	20.46	21.15	21.62
8H	4H	17.96	18.74	18.42	19.18	19.65	19.40	20.18	19.87	20.62	21.09
	6H	18.35	18.99	18.84	19.48	19.96	19.95	20.59	20.44	21.08	21.56
	8H	18.48	19.06	19.00	19.57	20.05	20.14	20.71	20.65	21.22	21.71
	12H	18.59	19.10	19.10	19.59	20.16	20.28	20.79	20.79	21.28	21.85
12H	4H	18.00	18.69	18.48	19.17	19.64	19.39	20.08	19.87	20.56	21.03
	6H	18.39	18.97	18.91	19.48	19.97	19.94	20.51	20.45	21.02	21.51
	8H	18.57	19.08	19.08	19.57	20.14	20.16	20.67	20.67	21.16	21.73