

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: P242751

Luminaire Tested: S124RDRP-S350D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242751  
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-S350D930-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

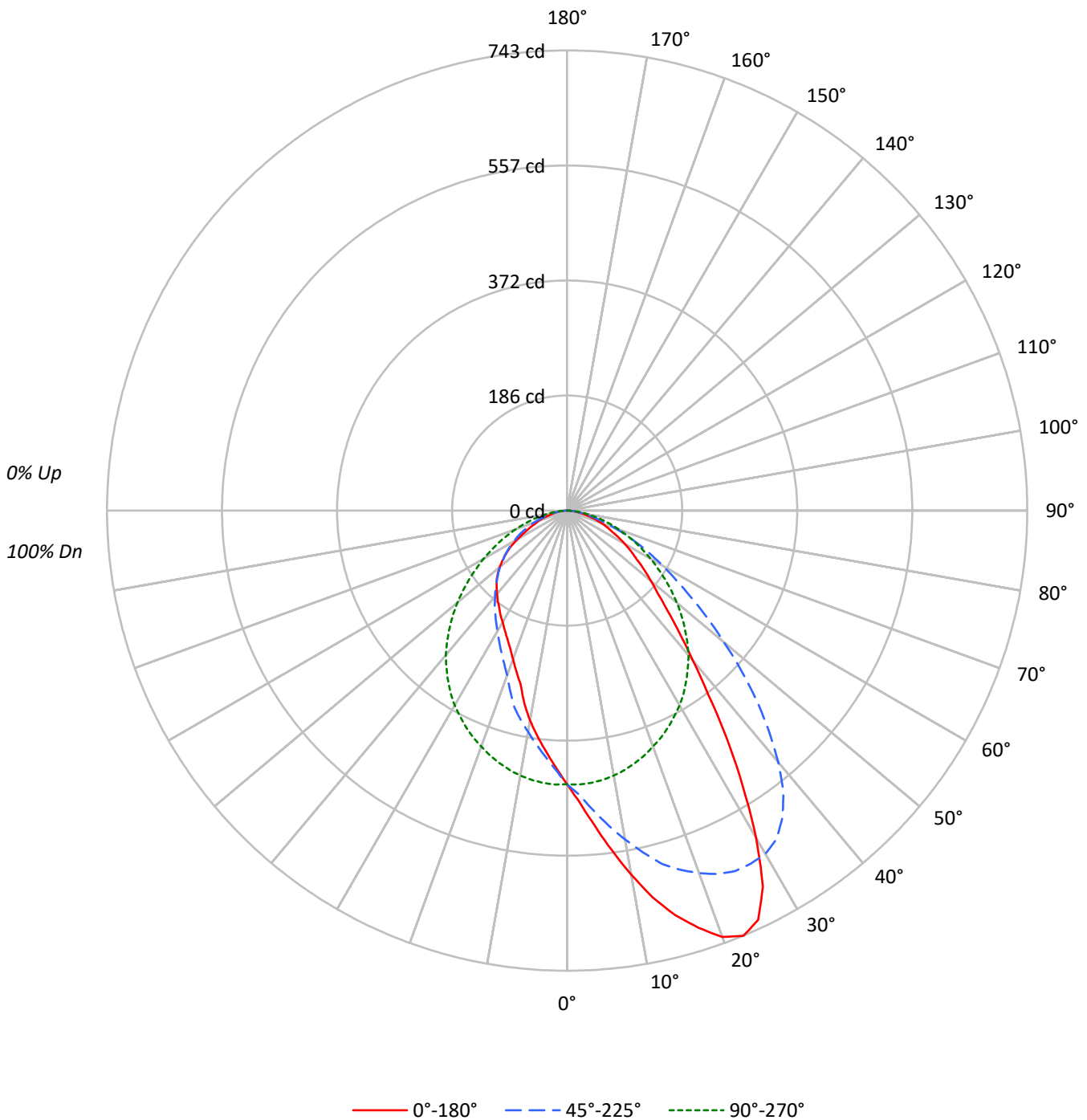
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1116.8 lumens  
Efficiency: N/A  
Efficacy: 96.3 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 (A<sub>in</sub>): 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: P242751

CATALOG NUMBER: S124RDRP-S350D930-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242751

CATALOG NUMBER: S124RDRP-S350D930-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°	3927	3927	3927	3927	3927
5°	4555	4336	3939	3564	3482
10°	5389	4868	3922	3276	3107
15°	6225	5435	3885	3027	2670
20°	6930	5893	3836	2677	2414
25°	7154	6299	3787	2467	2241
30°	6262	6570	3727	2311	2137
35°	4874	6573	3638	2194	2075
40°	3655	6149	3538	2100	2041
45°	2886	5426	3377	2020	2023
50°	2437	4566	3190	1951	1964
55°	2125	3784	2985	1878	1860
60°	1911	3168	2772	1772	1646
65°	1685	2640	2543	1651	1416
70°	1518	2110	2303	1489	1276
75°	1271	1638	2040	1309	1089
80°	1075	1239	1740	1085	1019
85°	908	979	1356	959	908

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 5795 cd/sqm



TEST NUMBER: P242751

CATALOG NUMBER: S124RDRP-S350D930-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.8	3.8
10°-20°	129.2	11.6
20°-30°	202.3	18.1
30°-40°	224.7	20.1
40°-50°	199.1	17.8
50°-60°	155.2	13.9
60°-70°	101.5	9.1
70°-80°	49.8	4.5
80°-90°	12.1	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°	374.3	33.5
0°-40°	599.0	53.6
0°-60°	953.3	85.4
0°-90°	1116.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1116.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	442	442	442	442	442	
5°	510	486	441	399	390	51
15°	676	591	422	329	290	192
25°	729	642	386	252	228	326
35°	449	606	335	202	191	281
45°	230	432	269	161	161	181
55°	137	244	193	121	120	124
65°	80	126	121	78	67	80
75°	37	48	59	38	32	41
85°	9	10	13	9	9	10
90°	0	0	0	0	0	



TEST NUMBER: P242751

CATALOG NUMBER: S124RDRP-S350D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	472.0	473.6	472.0	471.9	470.1	469.5	468.8	466.5	462.2	459.7	460.3
5°	510.5	514.9	512.4	512.1	508.2	504.2	501.8	496.1	490.0	485.9	482.5
7.5°	553.2	555.9	554.1	552.1	545.4	543.2	537.4	530.6	520.4	512.8	505.8
10°	597.0	599.1	598.4	593.8	589.1	579.7	574.4	563.9	550.2	539.3	529.2
12.5°	640.1	642.4	634.7	636.1	626.3	619.4	610.1	596.3	579.9	565.1	551.8
15°	676.4	673.5	673.5	670.0	660.2	649.8	641.1	627.2	607.3	590.6	572.9
17.5°	706.3	707.5	706.1	697.0	689.9	679.4	663.7	647.9	630.6	608.2	590.7
20°	732.6	732.6	731.0	725.3	715.3	704.0	686.7	669.1	645.6	623.0	602.7
22.5°	743.3	744.0	742.0	737.6	728.9	717.8	703.8	685.8	661.4	635.2	608.9
25°	729.4	732.8	733.1	731.9	729.2	722.5	709.8	691.5	669.8	642.2	615.1
27.5°	684.5	689.0	690.8	694.7	702.0	704.7	703.1	690.8	669.8	642.5	615.7
30°	610.1	613.7	625.3	640.4	652.2	662.8	672.1	674.6	663.9	640.1	611.4
32.5°	527.6	532.7	544.3	560.8	582.4	602.3	626.0	638.6	640.9	629.0	603.0
35°	449.2	452.8	463.5	480.6	504.1	530.9	563.9	589.5	606.9	605.7	589.5
37.5°	374.1	379.1	390.0	404.0	427.2	461.5	492.7	527.0	558.4	573.7	565.5
40°	315.0	315.2	325.7	340.3	361.7	390.7	425.4	464.6	500.5	529.9	535.6
42.5°	268.4	268.4	274.5	290.5	304.4	331.2	364.0	402.8	446.4	481.5	498.9
45°	229.6	231.2	236.9	246.3	258.4	281.6	308.1	344.2	391.4	431.6	456.7
47.5°	199.0	201.8	205.2	213.8	223.7	239.9	262.5	296.4	335.5	380.2	414.9
50°	176.2	176.6	181.2	185.5	193.8	206.1	225.3	252.4	287.6	330.2	369.9
52.5°	156.6	156.5	158.8	164.5	170.9	179.8	194.4	218.4	248.7	285.7	327.0
55°	137.1	137.9	140.1	144.3	149.5	156.3	168.6	187.1	211.6	244.2	281.4
57.5°	122.1	122.6	124.6	126.2	131.2	136.2	146.1	159.5	181.0	208.2	244.7
60°	107.5	107.7	108.2	110.9	114.6	119.3	125.5	136.3	153.8	178.2	205.6
62.5°	93.3	93.6	94.5	96.3	99.0	101.8	108.4	116.6	130.3	150.2	174.3
65°	80.1	80.3	81.5	82.2	84.5	87.4	92.2	98.1	108.0	125.5	144.2
67.5°	69.1	69.1	69.1	70.1	71.9	73.9	77.1	82.1	90.1	101.3	118.7
70°	58.4	58.4	58.7	59.3	60.2	61.8	63.4	66.9	72.4	81.2	93.8
72.5°	48.4	48.6	48.9	48.9	49.3	50.5	51.6	53.6	57.3	63.4	73.0
75°	37.0	37.6	38.4	39.2	40.0	39.9	41.1	42.5	43.8	47.7	53.6
77.5°	29.2	28.8	28.8	29.5	29.7	29.9	30.8	32.0	33.1	35.2	37.4
80°	21.0	21.0	21.5	21.7	21.5	21.7	22.6	23.1	23.5	24.2	26.2
82.5°	14.6	15.0	14.6	14.8	15.0	15.1	15.8	15.8	16.2	16.4	16.9
85°	8.9	9.1	9.3	8.9	8.9	8.9	9.3	9.4	9.8	9.6	10.0
87.5°	3.9	3.7	3.9	3.9	4.1	3.9	4.1	4.4	4.1	4.3	4.3
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: P242751

CATALOG NUMBER: S124RDRP-S350D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	458.5	456.0	454.8	451.9	448.5	446.8	445.2	442.8	439.8	436.6	434.3
5°	478.3	474.0	468.6	462.2	456.5	451.0	446.2	441.4	435.9	430.2	424.5
7.5°	497.8	490.2	482.0	472.2	462.8	454.1	446.2	438.6	429.8	422.0	414.7
10°	518.5	507.1	494.5	481.1	467.8	456.2	444.8	434.5	423.1	412.9	404.4
12.5°	535.2	521.3	505.5	488.0	471.3	456.7	443.2	429.0	415.6	404.4	392.3
15°	554.1	535.7	515.3	495.3	474.5	455.5	437.9	422.2	407.4	391.9	381.1
17.5°	567.1	545.9	521.7	498.6	474.7	452.6	432.7	414.5	397.6	382.1	369.3
20°	578.5	554.4	526.9	499.6	472.0	448.0	426.1	405.5	387.8	370.8	357.4
22.5°	584.9	557.6	526.9	498.0	469.2	442.7	418.1	396.4	376.8	359.7	344.6
25°	585.2	556.8	526.0	493.2	461.9	434.3	409.4	386.1	364.7	347.6	332.0
27.5°	583.8	550.9	519.9	486.6	454.4	425.0	399.2	374.5	353.3	335.2	319.1
30°	579.5	543.6	509.8	474.9	442.1	414.2	386.6	363.1	340.9	321.8	305.6
32.5°	570.3	534.7	497.7	461.7	428.4	399.4	373.6	349.9	328.2	308.6	291.2
35°	557.5	521.3	481.8	445.2	412.6	382.7	358.1	335.3	314.5	293.7	275.5
37.5°	542.7	505.0	466.0	425.8	393.4	364.9	341.9	320.0	299.7	280.7	260.6
40°	519.9	486.3	445.7	405.8	372.4	345.1	324.3	304.9	284.4	265.6	245.4
42.5°	492.3	464.9	423.8	383.7	350.8	324.8	305.8	286.9	268.8	250.6	229.4
45°	461.0	439.3	400.8	362.4	329.1	303.1	285.3	268.6	252.2	234.8	215.0
47.5°	426.1	410.1	376.6	336.4	305.3	281.4	264.3	250.4	236.0	218.4	200.6
50°	389.4	380.0	348.0	312.0	282.6	261.1	243.5	230.7	219.1	202.4	186.9
52.5°	350.3	346.4	320.6	286.6	258.4	237.4	223.0	211.8	200.1	186.9	172.7
55°	310.4	313.1	290.1	260.4	233.7	215.9	202.2	192.6	182.6	170.9	159.7
57.5°	268.9	279.1	262.0	235.1	209.3	192.6	182.1	173.5	165.2	155.2	145.1
60°	232.5	240.6	231.9	209.0	187.1	171.8	162.1	155.9	147.6	138.7	131.4
62.5°	196.9	205.8	201.5	184.0	164.1	151.5	143.3	137.6	131.9	124.4	116.8
65°	168.2	173.9	171.4	158.6	144.2	133.0	125.1	120.9	115.2	109.5	102.7
67.5°	134.6	145.8	144.0	136.9	123.0	114.1	108.6	104.7	99.3	95.0	90.2
70°	105.9	116.0	115.9	110.4	103.6	95.4	91.8	88.6	84.0	79.9	76.2
72.5°	81.9	91.0	92.7	88.8	84.7	79.0	75.6	73.7	69.2	66.7	63.9
75°	60.7	67.5	69.2	69.2	67.1	63.9	60.9	59.4	56.2	53.8	52.0
77.5°	42.7	47.3	50.0	50.5	50.7	49.5	46.6	45.6	43.1	42.2	40.2
80°	28.1	31.0	34.2	35.2	36.1	35.8	34.7	34.0	31.7	30.8	30.1
82.5°	17.3	18.5	21.0	23.7	23.1	24.4	23.5	23.0	21.4	21.2	20.5
85°	10.1	10.3	10.7	12.3	13.2	13.5	13.7	13.3	12.8	12.8	11.6
87.5°	4.3	4.1	4.4	4.4	4.6	5.3	5.9	6.1	5.5	5.0	4.4
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: P242751

CATALOG NUMBER: S124RDRP-S350D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	431.8	430.0	427.7	425.0	421.8	419.0	417.7	418.8	419.3	417.9	417.7
5°	420.6	416.1	412.6	407.2	403.0	399.4	396.9	395.8	396.2	393.4	392.6
7.5°	408.1	403.3	397.5	391.4	385.7	380.7	378.1	376.8	373.8	372.5	370.6
10°	396.2	389.1	383.4	375.9	369.2	362.9	359.9	357.4	354.4	353.0	349.9
12.5°	383.9	375.4	369.0	361.1	354.2	346.4	343.5	338.4	333.2	329.8	325.7
15°	372.5	362.6	354.9	345.7	337.5	328.9	321.3	312.7	309.5	302.8	298.8
17.5°	359.0	348.7	340.1	328.2	315.9	305.6	297.1	288.2	283.4	278.7	276.8
20°	345.7	336.4	323.2	308.8	294.8	283.0	276.4	271.1	265.7	262.7	260.6
22.5°	333.0	320.6	304.7	288.9	274.8	266.3	260.9	255.4	251.3	248.5	245.4
25°	318.6	303.1	286.9	269.1	259.5	251.5	245.4	241.0	238.3	234.6	233.2
27.5°	304.5	285.9	267.5	255.4	245.4	237.8	232.3	229.1	225.5	223.0	221.1
30°	287.8	268.8	252.7	241.4	231.2	225.2	220.9	217.0	214.3	212.3	210.9
32.5°	271.3	252.2	239.4	226.9	219.5	213.6	209.0	206.3	204.3	201.7	201.0
35°	255.4	238.5	226.8	215.7	207.5	202.2	198.6	195.6	193.8	193.1	192.6
37.5°	239.9	225.9	212.9	204.0	196.3	192.2	187.6	186.2	184.9	183.3	184.0
40°	225.3	212.3	201.1	191.5	185.6	181.0	178.5	176.7	175.7	175.7	175.7
42.5°	212.7	200.1	189.2	180.8	175.0	171.2	168.4	167.0	166.8	166.6	167.7
45°	199.5	187.8	176.7	169.6	164.6	160.7	159.1	157.9	157.9	158.6	158.8
47.5°	186.4	175.3	166.4	158.2	153.6	151.1	149.7	149.0	149.0	149.9	150.6
50°	174.4	163.6	154.9	147.7	143.5	141.1	139.9	139.5	139.9	139.9	141.1
52.5°	161.4	152.0	143.5	137.8	132.8	130.6	130.1	129.6	129.8	130.5	130.8
55°	148.8	140.1	131.9	126.2	122.6	121.2	119.6	119.8	119.4	119.8	119.8
57.5°	136.0	128.3	120.3	115.7	112.7	110.5	108.8	109.3	108.8	108.8	108.6
60°	123.7	115.2	109.1	105.0	101.5	99.7	98.1	98.4	97.9	97.5	96.8
62.5°	110.4	103.6	97.9	94.0	91.3	89.2	87.6	87.0	85.6	84.2	82.4
65°	97.5	91.7	86.5	82.8	80.1	78.5	77.2	76.2	73.5	70.7	69.2
67.5°	84.9	80.6	75.6	72.4	70.3	68.2	65.9	63.9	61.2	59.4	58.6
70°	72.8	68.7	64.6	61.6	59.3	57.3	54.6	53.4	51.6	50.9	50.0
72.5°	61.2	57.5	53.8	51.1	48.6	47.2	45.2	44.0	43.4	43.3	42.4
75°	49.5	46.5	43.6	41.1	39.2	38.1	37.2	36.3	36.0	34.4	33.5
77.5°	38.1	36.0	34.2	32.2	31.0	30.3	28.3	27.1	26.3	25.5	25.3
80°	28.1	26.7	24.9	23.9	21.9	21.2	20.5	20.3	20.1	19.9	19.8
82.5°	19.4	18.0	16.2	15.7	15.5	15.1	14.8	14.6	14.4	14.6	14.6
85°	10.7	10.0	10.0	9.8	9.6	9.4	9.3	9.3	9.1	9.3	9.1
87.5°	4.4	4.3	4.3	3.9	4.1	4.1	3.9	3.9	4.1	3.7	3.7
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: P242751

CATALOG NUMBER: S124RDRP-S350D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	441.8	441.8	441.8	441.8
2.5°	416.7	417.0	415.8	415.4
5°	391.2	390.9	390.0	390.2
7.5°	369.2	367.9	368.8	367.4
10°	349.2	347.3	345.7	344.2
12.5°	322.0	320.4	318.1	319.0
15°	296.5	293.9	289.6	290.1
17.5°	273.7	274.1	271.6	272.3
20°	256.8	255.6	255.8	255.2
22.5°	245.1	243.5	241.9	240.6
25°	231.6	230.5	228.9	228.5
27.5°	219.6	219.5	218.7	217.9
30°	209.5	209.1	208.8	208.2
32.5°	200.4	200.2	199.9	200.1
35°	191.9	191.7	191.3	191.2
37.5°	183.9	184.4	184.0	184.0
40°	175.5	175.7	176.0	175.9
42.5°	168.6	168.6	169.1	168.4
45°	160.0	161.1	160.9	160.9
47.5°	150.9	152.2	152.4	152.4
50°	142.0	141.7	142.2	142.0
52.5°	131.2	131.4	131.2	131.0
55°	120.0	120.1	119.8	120.0
57.5°	108.0	107.3	107.9	107.5
60°	95.0	93.6	93.3	92.6
62.5°	80.5	79.6	78.1	79.0
65°	67.8	67.1	66.6	67.3
67.5°	57.7	57.3	57.3	57.0
70°	50.0	49.5	49.5	49.1
72.5°	42.2	41.6	41.8	41.6
75°	32.4	31.5	31.5	31.7
77.5°	25.3	25.1	25.5	24.9
80°	19.8	19.6	19.4	19.9
82.5°	14.2	14.2	14.2	15.0
85°	9.3	8.9	9.3	8.9
87.5°	4.1	3.9	3.7	3.9
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242751  
 CATALOG NUMBER: S124RDRP-S350D930-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	13.86	15.38	14.22	15.69	16.01	15.67	17.19	16.04	17.51	17.82
	3H	15.08	16.45	15.46	16.78	17.14	17.13	18.49	17.50	18.82	19.18
	4H	15.51	16.80	15.91	17.14	17.52	17.64	18.92	18.04	19.27	19.65
	6H	15.79	16.97	16.20	17.34	17.73	17.99	19.18	18.41	19.54	19.94
	8H	15.87	16.99	16.29	17.38	17.78	18.10	19.22	18.52	19.61	20.01
	12H	15.92	16.99	16.35	17.38	17.81	18.16	19.23	18.59	19.61	20.04
4H	2H	15.12	16.40	15.52	16.74	17.12	16.18	17.46	16.58	17.81	18.19
	3H	16.35	17.41	16.76	17.81	18.21	17.92	18.98	18.33	19.38	19.78
	4H	16.81	17.77	17.25	18.19	18.62	18.55	19.50	18.98	19.92	20.36
	6H	17.14	17.97	17.59	18.41	18.87	19.00	19.83	19.46	20.28	20.74
	8H	17.23	18.01	17.70	18.45	18.92	19.14	19.92	19.60	20.36	20.83
	12H	17.30	17.99	17.78	18.47	18.94	19.23	19.92	19.71	20.40	20.87
8H	4H	17.22	17.99	17.68	18.44	18.90	18.66	19.44	19.12	19.88	20.35
	6H	17.60	18.24	18.10	18.73	19.21	19.20	19.84	19.70	20.33	20.81
	8H	17.74	18.31	18.25	18.82	19.31	19.39	19.97	19.91	20.48	20.97
	12H	17.85	18.36	18.36	18.85	19.41	19.54	20.05	20.05	20.54	21.10
12H	4H	17.25	17.94	17.73	18.42	18.89	18.65	19.34	19.13	19.82	20.29
	6H	17.65	18.22	18.16	18.73	19.22	19.19	19.77	19.71	20.28	20.76
	8H	17.83	18.34	18.34	18.83	19.39	19.42	19.93	19.93	20.42	20.99