

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: P242756

Luminaire Tested: S124RDRP-S350D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242756  
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-S350D935-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

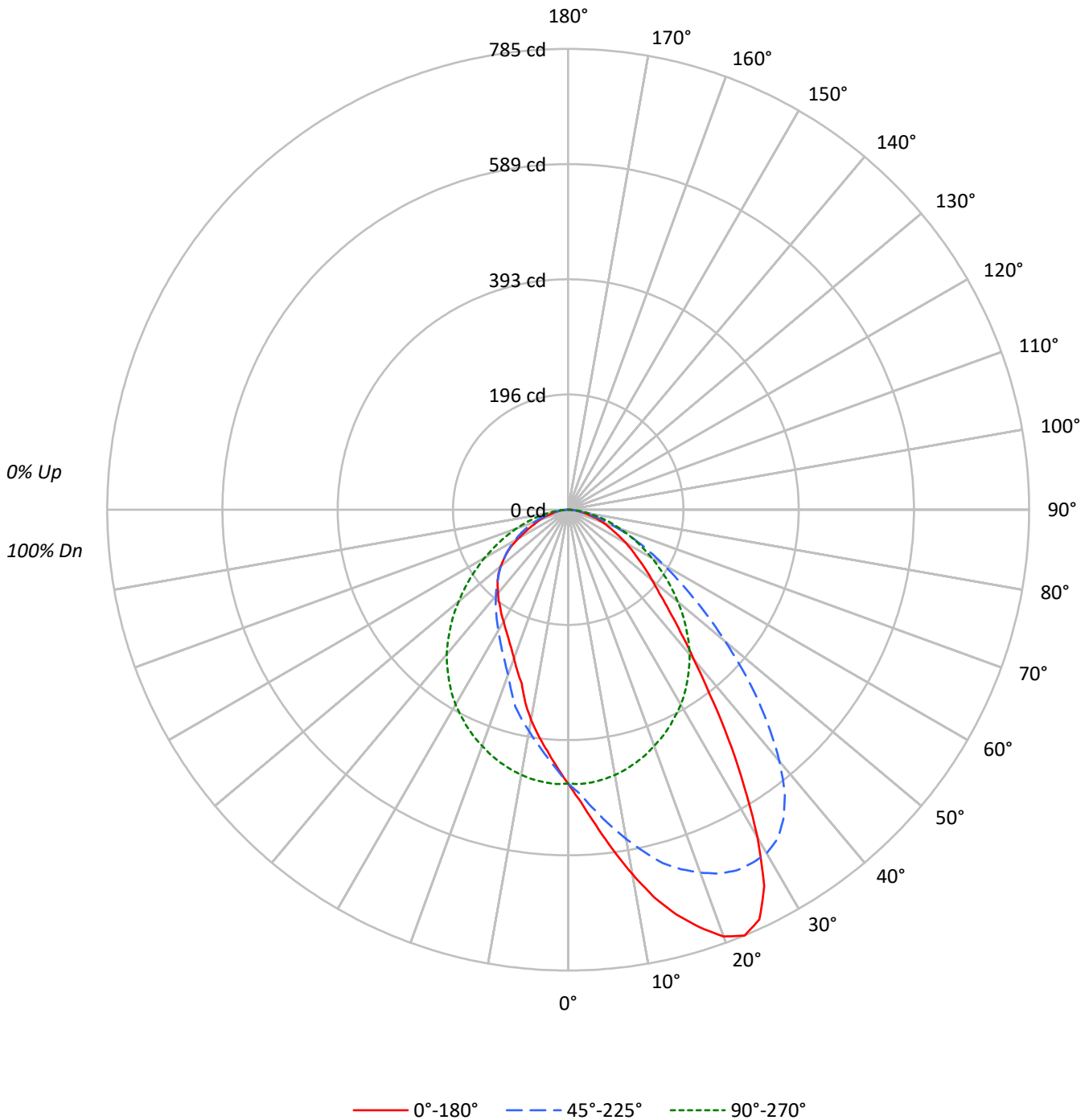
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1179.3 lumens  
Efficiency: N/A  
Efficacy: 101.7 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

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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	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°	4147	4147	4147	4147	4147
5°	4810	4579	4160	3764	3676
10°	5690	5140	4141	3460	3281
15°	6573	5740	4103	3197	2820
20°	7319	6223	4051	2827	2549
25°	7555	6652	3999	2605	2367
30°	6614	6937	3936	2441	2257
35°	5148	6942	3842	2317	2191
40°	3861	6493	3736	2219	2155
45°	3048	5730	3565	2133	2136
50°	2574	4822	3369	2062	2074
55°	2242	3997	3152	1984	1964
60°	2018	3346	2928	1872	1737
65°	1779	2787	2684	1744	1495
70°	1604	2227	2433	1572	1349
75°	1343	1731	2157	1381	1151
80°	1136	1310	1838	1147	1080
85°	959	1040	1438	1020	959

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 6119 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	45.2	3.8
10°-20°	136.4	11.6
20°-30°	213.7	18.1
30°-40°	237.3	20.1
40°-50°	210.3	17.8
50°-60°	163.9	13.9
60°-70°	107.2	9.1
70°-80°	52.6	4.5
80°-90°	12.8	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°	395.3	33.5
0°-40°	632.6	53.6
0°-60°	1006.7	85.4
0°-90°	1179.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1179.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	466	466	466	466	466	
5°	539	513	466	422	412	54
15°	714	624	446	347	306	203
25°	770	678	408	266	241	344
35°	474	640	354	214	202	297
45°	242	456	284	170	170	191
55°	145	258	203	128	127	131
65°	85	132	128	83	71	85
75°	39	50	63	40	34	43
85°	9	10	14	10	9	11
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°	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5
2.5°	498.5	500.2	498.5	498.3	496.4	495.9	495.1	492.7	488.2	485.5	486.1
5°	539.1	543.8	541.2	540.8	536.6	532.5	529.9	523.9	517.5	513.2	509.6
7.5°	584.2	587.0	585.1	583.1	575.9	573.7	567.5	560.3	549.6	541.5	534.2
10°	630.4	632.7	631.9	627.1	622.2	612.2	606.6	595.5	581.0	569.5	558.8
12.5°	675.9	678.4	670.3	671.8	661.5	654.1	644.4	629.7	612.4	596.8	582.7
15°	714.3	711.3	711.3	707.5	697.2	686.3	677.1	662.4	641.3	623.7	605.1
17.5°	745.9	747.2	745.7	736.1	728.6	717.5	700.9	684.2	666.0	642.3	623.9
20°	773.7	773.7	772.0	766.0	755.4	743.4	725.2	706.6	681.8	657.9	636.5
22.5°	785.0	785.7	783.6	778.9	769.7	758.1	743.2	724.2	698.5	670.9	643.0
25°	770.3	773.9	774.2	772.9	770.1	763.0	749.6	730.3	707.3	678.2	649.6
27.5°	722.9	727.6	729.5	733.6	741.3	744.2	742.5	729.5	707.3	678.6	650.2
30°	644.4	648.1	660.3	676.3	688.7	700.0	709.8	712.4	701.1	675.9	645.7
32.5°	557.1	562.6	574.8	592.3	615.0	636.1	661.1	674.4	676.9	664.3	636.8
35°	474.4	478.2	489.5	507.5	532.3	560.7	595.5	622.5	641.0	639.7	622.5
37.5°	395.1	400.4	411.8	426.7	451.1	487.4	520.3	556.6	589.7	605.8	597.2
40°	332.7	332.9	344.0	359.4	381.9	412.6	449.2	490.6	528.6	559.6	565.6
42.5°	283.5	283.5	289.8	306.8	321.4	349.8	384.4	425.4	471.4	508.5	526.9
45°	242.5	244.2	250.2	260.1	272.9	297.4	325.4	363.5	413.3	455.8	482.3
47.5°	210.1	213.2	216.7	225.7	236.3	253.4	277.3	313.0	354.3	401.5	438.2
50°	186.1	186.5	191.4	195.9	204.7	217.7	238.0	266.5	303.8	348.7	390.6
52.5°	165.4	165.2	167.7	173.7	180.4	189.8	205.3	230.6	262.6	301.7	345.3
55°	144.7	145.7	147.9	152.4	157.9	165.0	178.0	197.6	223.5	257.9	297.2
57.5°	128.9	129.5	131.6	133.3	138.5	143.8	154.3	168.4	191.2	219.9	258.5
60°	113.5	113.7	114.3	117.1	121.1	125.9	132.5	144.0	162.4	188.2	217.1
62.5°	98.5	98.9	99.8	101.7	104.5	107.5	114.5	123.1	137.6	158.6	184.0
65°	84.6	84.8	86.1	86.8	89.3	92.3	97.4	103.6	114.1	132.5	152.3
67.5°	72.9	72.9	72.9	74.1	75.9	78.0	81.4	86.7	95.1	107.0	125.4
70°	61.7	61.7	62.0	62.6	63.5	65.2	66.9	70.7	76.5	85.7	99.1
72.5°	51.1	51.3	51.7	51.7	52.1	53.4	54.5	56.6	60.5	66.9	77.1
75°	39.1	39.7	40.6	41.4	42.3	42.1	43.4	44.9	46.2	50.4	56.6
77.5°	30.8	30.5	30.5	31.2	31.4	31.6	32.5	33.8	35.0	37.2	39.5
80°	22.2	22.2	22.7	22.9	22.7	22.9	23.9	24.4	24.8	25.6	27.6
82.5°	15.4	15.8	15.4	15.6	15.8	16.0	16.7	16.7	17.1	17.3	17.9
85°	9.4	9.6	9.8	9.4	9.4	9.4	9.8	10.0	10.3	10.2	10.5
87.5°	4.1	3.9	4.1	4.1	4.3	4.1	4.3	4.7	4.3	4.5	4.5
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°	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5
2.5°	484.2	481.6	480.3	477.2	473.7	471.8	470.1	467.7	464.5	461.1	458.6
5°	505.1	500.6	494.9	488.2	482.1	476.3	471.2	466.2	460.3	454.3	448.3
7.5°	525.7	517.7	509.0	498.7	488.7	479.5	471.2	463.2	453.9	445.7	438.0
10°	547.5	535.5	522.2	508.1	494.0	481.8	469.7	458.8	446.8	436.1	427.1
12.5°	565.2	550.6	533.8	515.4	497.7	482.3	468.0	453.0	438.9	427.1	414.3
15°	585.1	565.8	544.2	523.1	501.1	481.0	462.4	445.9	430.3	413.9	402.4
17.5°	598.9	576.5	550.9	526.5	501.3	478.0	456.9	437.8	419.9	403.6	390.0
20°	610.9	585.5	556.4	527.6	498.5	473.1	450.0	428.2	409.6	391.5	377.4
22.5°	617.7	588.9	556.4	525.9	495.5	467.5	441.5	418.6	397.9	379.9	363.9
25°	618.0	588.0	555.4	520.9	487.8	458.6	432.3	407.7	385.1	367.1	350.6
27.5°	616.5	581.8	549.1	513.9	479.9	448.9	421.6	395.5	373.1	353.9	337.0
30°	612.0	574.1	538.3	501.5	466.9	437.4	408.3	383.5	360.0	339.8	322.7
32.5°	602.2	564.7	525.6	487.6	452.4	421.8	394.5	369.5	346.6	325.9	307.5
35°	588.7	550.6	508.8	470.1	435.7	404.1	378.2	354.1	332.1	310.1	291.0
37.5°	573.1	533.3	492.1	449.6	415.4	385.3	361.1	338.0	316.5	296.4	275.2
40°	549.1	513.5	470.7	428.6	393.2	364.5	342.5	322.0	300.4	280.4	259.2
42.5°	519.9	491.0	447.5	405.3	370.5	343.0	322.9	303.0	283.8	264.7	242.3
45°	486.8	463.9	423.3	382.7	347.6	320.1	301.3	283.6	266.3	247.9	227.1
47.5°	450.0	433.1	397.7	355.3	322.4	297.2	279.1	264.5	249.2	230.6	211.8
50°	411.3	401.3	367.5	329.5	298.5	275.7	257.1	243.6	231.4	213.7	197.4
52.5°	369.9	365.8	338.5	302.6	272.9	250.7	235.5	223.7	211.3	197.4	182.3
55°	327.8	330.6	306.4	275.0	246.8	228.0	213.5	203.4	192.9	180.4	168.6
57.5°	284.0	294.7	276.7	248.3	221.0	203.4	192.3	183.3	174.4	163.9	153.2
60°	245.5	254.1	244.9	220.7	197.6	181.4	171.2	164.7	155.8	146.4	138.7
62.5°	207.9	217.3	212.8	194.4	173.3	160.0	151.3	145.3	139.3	131.4	123.3
65°	177.6	183.6	181.0	167.5	152.3	140.4	132.1	127.6	121.6	115.6	108.5
67.5°	142.1	153.9	152.1	144.5	129.9	120.5	114.7	110.5	104.9	100.4	95.3
70°	111.8	122.6	122.4	116.5	109.4	100.8	97.0	93.6	88.7	84.4	80.4
72.5°	86.5	96.1	97.9	93.8	89.5	83.5	79.9	77.8	73.1	70.5	67.5
75°	64.1	71.2	73.1	73.1	70.9	67.5	64.3	62.8	59.4	56.8	54.9
77.5°	45.1	50.0	52.8	53.4	53.6	52.3	49.2	48.1	45.5	44.5	42.5
80°	29.7	32.7	36.1	37.2	38.2	37.8	36.7	35.9	33.5	32.5	31.8
82.5°	18.2	19.5	22.2	25.0	24.4	25.8	24.8	24.2	22.6	22.4	21.6
85°	10.7	10.9	11.3	13.0	13.9	14.3	14.5	14.1	13.5	13.5	12.2
87.5°	4.5	4.3	4.7	4.7	4.9	5.6	6.2	6.4	5.8	5.3	4.7
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°	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5	466.5
2.5°	456.0	454.1	451.7	448.9	445.5	442.5	441.2	442.3	442.9	441.3	441.2
5°	444.2	439.5	435.7	430.1	425.6	421.8	419.2	418.0	418.4	415.4	414.7
7.5°	431.0	425.9	419.7	413.3	407.3	402.1	399.2	397.9	394.7	393.4	391.3
10°	418.4	410.9	404.9	397.0	389.8	383.3	380.1	377.4	374.2	372.7	369.5
12.5°	405.4	396.4	389.7	381.4	374.1	365.8	362.8	357.3	351.9	348.3	344.0
15°	393.4	382.9	374.8	365.0	356.4	347.4	339.3	330.3	326.9	319.7	315.6
17.5°	379.1	368.2	359.2	346.6	333.6	322.7	313.7	304.3	299.2	294.4	292.3
20°	365.0	355.3	341.3	326.1	311.3	298.9	291.9	286.3	280.6	277.4	275.2
22.5°	351.7	338.5	321.8	305.1	290.2	281.2	275.6	269.7	265.4	262.4	259.2
25°	336.5	320.1	303.0	284.2	274.1	265.6	259.2	254.5	251.7	247.7	246.2
27.5°	321.6	301.9	282.5	269.7	259.2	251.1	245.3	241.9	238.2	235.5	233.5
30°	303.9	283.8	266.9	254.9	244.2	237.8	233.3	229.1	226.3	224.2	222.7
32.5°	286.5	266.3	252.8	239.7	231.8	225.6	220.7	217.9	215.8	213.0	212.2
35°	269.7	251.9	239.5	227.8	219.2	213.5	209.8	206.6	204.7	203.9	203.4
37.5°	253.4	238.5	224.8	215.4	207.3	203.0	198.1	196.6	195.3	193.6	194.4
40°	238.0	224.2	212.4	202.3	196.0	191.2	188.5	186.7	185.5	185.5	185.5
42.5°	224.6	211.3	199.8	191.0	184.8	180.8	177.8	176.3	176.1	175.9	177.1
45°	210.7	198.3	186.7	179.1	173.9	169.7	168.0	166.7	166.7	167.5	167.7
47.5°	196.8	185.1	175.7	167.1	162.2	159.6	158.1	157.3	157.3	158.3	159.0
50°	184.2	172.7	163.5	156.0	151.5	149.1	147.7	147.4	147.7	147.7	149.1
52.5°	170.5	160.5	151.5	145.5	140.2	138.0	137.4	136.8	137.0	137.8	138.2
55°	157.1	147.9	139.3	133.3	129.5	128.0	126.3	126.5	126.1	126.5	126.5
57.5°	143.6	135.5	127.1	122.2	119.0	116.7	114.8	115.4	114.8	114.8	114.7
60°	130.6	121.6	115.2	110.9	107.1	105.3	103.6	103.9	103.4	103.0	102.3
62.5°	116.5	109.4	103.4	99.2	96.4	94.2	92.5	91.9	90.4	88.9	87.0
65°	103.0	96.8	91.4	87.4	84.6	82.9	81.6	80.4	77.6	74.6	73.1
67.5°	89.7	85.1	79.9	76.5	74.2	72.0	69.5	67.5	64.7	62.8	61.8
70°	76.9	72.6	68.2	65.0	62.6	60.5	57.7	56.4	54.5	53.8	52.8
72.5°	64.7	60.7	56.8	53.9	51.3	49.8	47.7	46.4	45.9	45.7	44.7
75°	52.3	49.1	46.1	43.4	41.4	40.2	39.3	38.3	38.0	36.3	35.3
77.5°	40.2	38.0	36.1	34.0	32.7	32.0	29.9	28.6	27.8	26.9	26.7
80°	29.7	28.2	26.3	25.2	23.1	22.4	21.6	21.4	21.2	21.1	20.9
82.5°	20.5	19.0	17.1	16.5	16.4	16.0	15.6	15.4	15.2	15.4	15.4
85°	11.3	10.5	10.5	10.3	10.2	10.0	9.8	9.8	9.6	9.8	9.6
87.5°	4.7	4.5	4.5	4.1	4.3	4.3	4.1	4.1	4.3	3.9	3.9
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: P242756

CATALOG NUMBER: S124RDRP-S350D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	466.5	466.5	466.5	466.5
2.5°	440.0	440.4	439.1	438.7
5°	413.2	412.8	411.8	412.0
7.5°	389.8	388.5	389.5	388.0
10°	368.8	366.7	365.0	363.5
12.5°	340.0	338.3	335.9	336.8
15°	313.2	310.3	305.8	306.4
17.5°	289.1	289.5	286.8	287.6
20°	271.2	269.9	270.1	269.5
22.5°	258.8	257.1	255.4	254.1
25°	244.5	243.4	241.7	241.3
27.5°	232.0	231.8	231.0	230.1
30°	221.2	220.9	220.5	219.9
32.5°	211.7	211.5	211.1	211.3
35°	202.6	202.4	202.1	201.9
37.5°	194.2	194.7	194.4	194.4
40°	185.3	185.5	185.9	185.7
42.5°	178.0	178.0	178.6	177.8
45°	169.0	170.1	169.9	169.9
47.5°	159.4	160.7	160.9	160.9
50°	150.0	149.6	150.2	150.0
52.5°	138.5	138.7	138.5	138.3
55°	126.7	126.9	126.5	126.7
57.5°	114.1	113.3	113.9	113.5
60°	100.4	98.9	98.5	97.7
62.5°	85.0	84.0	82.5	83.5
65°	71.6	70.9	70.3	71.1
67.5°	60.9	60.5	60.5	60.1
70°	52.8	52.3	52.3	51.9
72.5°	44.5	44.0	44.2	44.0
75°	34.2	33.3	33.3	33.5
77.5°	26.7	26.5	26.9	26.3
80°	20.9	20.7	20.5	21.1
82.5°	15.0	15.0	15.0	15.8
85°	9.8	9.4	9.8	9.4
87.5°	4.3	4.1	3.9	4.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242756  
 CATALOG NUMBER: S124RDRP-S350D935-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	14.04	15.57	14.41	15.88	16.19	15.86	17.38	16.23	17.70	18.01
	3H	15.27	16.64	15.65	16.96	17.33	17.32	18.68	17.69	19.01	19.37
	4H	15.70	16.98	16.10	17.33	17.71	17.83	19.11	18.23	19.46	19.84
	6H	15.98	17.16	16.39	17.53	17.92	18.18	19.37	18.60	19.73	20.12
	8H	16.06	17.18	16.48	17.57	17.97	18.29	19.41	18.71	19.80	20.20
	12H	16.11	17.18	16.54	17.57	18.00	18.34	19.42	18.77	19.80	20.23
4H	2H	15.30	16.58	15.70	16.93	17.31	16.37	17.65	16.77	18.00	18.38
	3H	16.54	17.60	16.95	18.00	18.40	18.11	19.17	18.52	19.57	19.97
	4H	17.00	17.96	17.44	18.37	18.81	18.74	19.69	19.17	20.11	20.55
	6H	17.33	18.16	17.78	18.60	19.06	19.19	20.02	19.65	20.47	20.93
	8H	17.42	18.20	17.88	18.64	19.11	19.33	20.11	19.79	20.55	21.02
	12H	17.49	18.18	17.97	18.66	19.13	19.42	20.11	19.90	20.59	21.06
8H	4H	17.41	18.18	17.87	18.63	19.09	18.85	19.63	19.31	20.07	20.54
	6H	17.79	18.43	18.29	18.92	19.40	19.39	20.03	19.89	20.52	21.00
	8H	17.93	18.50	18.44	19.01	19.50	19.58	20.16	20.10	20.67	21.16
	12H	18.04	18.55	18.55	19.04	19.60	19.73	20.24	20.24	20.73	21.29
12H	4H	17.44	18.13	17.92	18.61	19.08	18.84	19.53	19.32	20.01	20.48
	6H	17.84	18.42	18.35	18.92	19.41	19.38	19.96	19.89	20.47	20.95
	8H	18.02	18.53	18.53	19.02	19.58	19.61	20.12	20.12	20.61	21.18