

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: P242731

Luminaire Tested: S124RDRP-S350D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242731  
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-S350D927-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

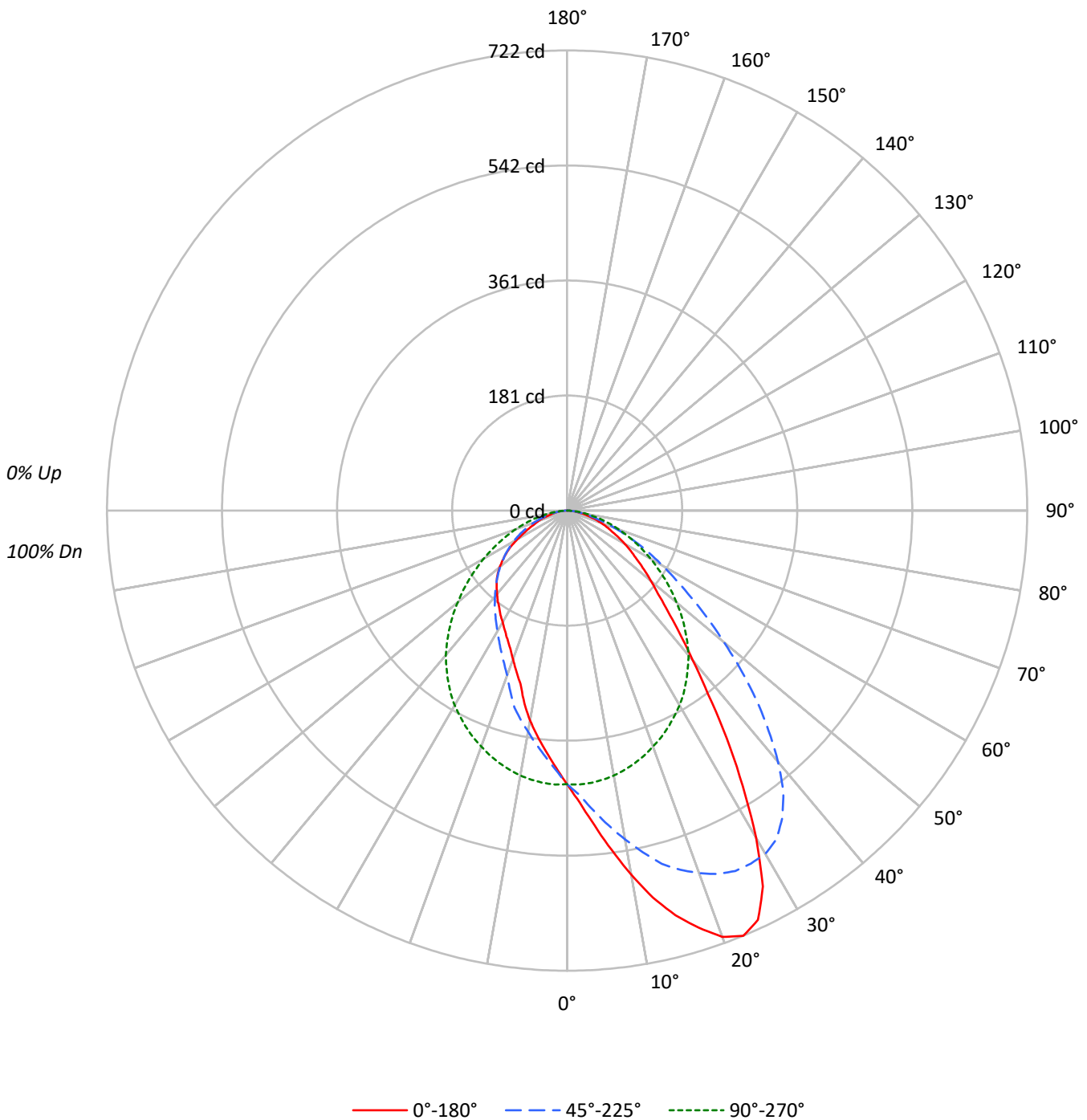
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1085.1 lumens  
Efficiency: N/A  
Efficacy: 93.5 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

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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	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°	3815	3815	3815	3815	3815
5°	4426	4212	3827	3463	3383
10°	5236	4730	3811	3183	3019
15°	6048	5280	3775	2941	2594
20°	6733	5726	3727	2601	2346
25°	6951	6120	3679	2397	2178
30°	6085	6383	3621	2246	2076
35°	4737	6386	3535	2132	2015
40°	3552	5975	3438	2041	1983
45°	2805	5272	3281	1964	1965
50°	2367	4436	3099	1896	1908
55°	2064	3678	2900	1826	1807
60°	1858	3077	2693	1721	1598
65°	1636	2564	2469	1605	1376
70°	1474	2051	2238	1448	1240
75°	1236	1590	1985	1271	1058
80°	1044	1203	1689	1054	993
85°	877	948	1326	938	877

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 5630 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.6	3.8
10°-20°	125.5	11.6
20°-30°	196.6	18.1
30°-40°	218.3	20.1
40°-50°	193.5	17.8
50°-60°	150.8	13.9
60°-70°	98.6	9.1
70°-80°	48.4	4.5
80°-90°	11.8	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°	363.7	33.5
0°-40°	582.0	53.6
0°-60°	926.3	85.4
0°-90°	1085.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1085.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	429	429	429	429	429	
5°	496	472	429	388	379	50
15°	657	574	410	320	282	187
25°	709	624	375	244	222	316
35°	436	588	326	196	186	273
45°	223	419	261	156	156	176
55°	133	237	187	118	117	121
65°	78	122	117	76	65	78
75°	36	46	58	37	31	40
85°	9	9	13	9	9	10
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°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2
2.5°	458.6	460.2	458.6	458.5	456.7	456.2	455.5	453.3	449.1	446.7	447.2
5°	496.0	500.3	497.9	497.6	493.8	489.9	487.5	482.0	476.1	472.1	468.8
7.5°	537.5	540.1	538.4	536.5	529.9	527.8	522.1	515.5	505.7	498.2	491.5
10°	580.1	582.1	581.4	576.9	572.4	563.3	558.1	547.9	534.6	524.0	514.2
12.5°	621.9	624.2	616.7	618.1	608.6	601.8	592.8	579.4	563.4	549.1	536.1
15°	657.2	654.4	654.4	651.0	641.4	631.4	622.9	609.5	590.1	573.8	556.7
17.5°	686.2	687.4	686.1	677.2	670.3	660.1	644.9	629.5	612.7	590.9	574.0
20°	711.8	711.8	710.3	704.7	695.1	684.0	667.2	650.1	627.3	605.3	585.6
22.5°	722.2	722.9	721.0	716.7	708.2	697.5	683.8	666.4	642.7	617.2	591.6
25°	708.7	712.0	712.4	711.1	708.5	702.0	689.7	671.9	650.8	624.0	597.7
27.5°	665.1	669.5	671.2	675.0	682.1	684.7	683.1	671.2	650.8	624.3	598.2
30°	592.8	596.3	607.5	622.2	633.7	644.0	653.0	655.5	645.1	621.9	594.1
32.5°	512.6	517.6	528.9	544.9	565.9	585.2	608.2	620.5	622.8	611.2	585.9
35°	436.5	440.0	450.3	466.9	489.8	515.9	547.9	572.8	589.7	588.5	572.8
37.5°	363.5	368.4	378.9	392.6	415.1	448.4	478.7	512.1	542.5	557.4	549.4
40°	306.1	306.3	316.5	330.7	351.4	379.6	413.3	451.4	486.3	514.9	520.4
42.5°	260.8	260.8	266.7	282.2	295.7	321.8	353.7	391.4	433.7	467.8	484.8
45°	223.1	224.7	230.2	239.4	251.1	273.6	299.4	334.5	380.3	419.4	443.8
47.5°	193.4	196.1	199.4	207.7	217.4	233.1	255.1	288.0	326.0	369.4	403.1
50°	171.2	171.6	176.1	180.2	188.3	200.3	218.9	245.2	279.5	320.8	359.4
52.5°	152.2	152.0	154.3	159.8	166.0	174.7	188.9	212.2	241.6	277.6	317.7
55°	133.2	134.0	136.1	140.3	145.3	151.8	163.8	181.8	205.6	237.3	273.4
57.5°	118.6	119.2	121.1	122.6	127.5	132.3	142.0	155.0	175.9	202.3	237.8
60°	104.5	104.6	105.1	107.7	111.4	115.9	121.9	132.5	149.4	173.1	199.7
62.5°	90.6	91.0	91.8	93.6	96.2	98.9	105.3	113.3	126.6	146.0	169.3
65°	77.8	78.0	79.2	79.9	82.1	84.9	89.6	95.3	105.0	121.9	140.1
67.5°	67.1	67.1	67.1	68.1	69.9	71.8	74.9	79.7	87.5	98.4	115.4
70°	56.7	56.7	57.1	57.6	58.5	60.0	61.6	65.0	70.4	78.9	91.1
72.5°	47.0	47.2	47.6	47.6	47.9	49.1	50.2	52.1	55.7	61.6	70.9
75°	36.0	36.5	37.4	38.0	38.9	38.7	39.9	41.3	42.5	46.3	52.1
77.5°	28.4	28.0	28.0	28.7	28.9	29.1	29.9	31.1	32.2	34.2	36.3
80°	20.4	20.4	20.9	21.1	20.9	21.1	22.0	22.5	22.8	23.5	25.4
82.5°	14.2	14.5	14.2	14.4	14.5	14.7	15.4	15.4	15.7	15.9	16.4
85°	8.6	8.8	9.0	8.6	8.6	8.6	9.0	9.2	9.5	9.3	9.7
87.5°	3.8	3.6	3.8	3.8	4.0	3.8	4.0	4.3	4.0	4.2	4.2
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°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2
2.5°	445.5	443.1	441.9	439.1	435.8	434.1	432.5	430.3	427.3	424.2	422.0
5°	464.7	460.5	455.4	449.1	443.6	438.2	433.6	428.9	423.5	418.0	412.5
7.5°	483.7	476.3	468.3	458.8	449.7	441.2	433.6	426.1	417.7	410.0	403.0
10°	503.8	492.7	480.4	467.5	454.5	443.3	432.2	422.2	411.1	401.2	392.9
12.5°	520.0	506.6	491.2	474.2	458.0	443.8	430.6	416.8	403.8	392.9	381.2
15°	538.4	520.6	500.7	481.3	461.1	442.6	425.4	410.2	395.9	380.8	370.3
17.5°	551.0	530.4	506.9	484.4	461.2	439.8	420.4	402.8	386.4	371.3	358.9
20°	562.1	538.7	511.9	485.5	458.6	435.3	414.0	394.0	376.8	360.2	347.3
22.5°	568.3	541.8	511.9	483.9	455.9	430.1	406.2	385.1	366.1	349.5	334.8
25°	568.6	541.0	511.0	479.2	448.8	422.0	397.8	375.1	354.4	337.8	322.5
27.5°	567.3	535.3	505.2	472.8	441.5	413.0	387.9	363.9	343.3	325.7	310.1
30°	563.1	528.2	495.3	461.4	429.6	402.4	375.6	352.8	331.2	312.7	296.9
32.5°	554.1	519.5	483.5	448.6	416.3	388.1	363.0	340.0	318.9	299.9	282.9
35°	541.7	506.6	468.2	432.5	400.9	371.8	348.0	325.8	305.6	285.4	267.7
37.5°	527.3	490.6	452.8	413.7	382.2	354.5	332.2	311.0	291.2	272.7	253.2
40°	505.2	472.5	433.0	394.3	361.8	335.3	315.1	296.3	276.4	258.0	238.5
42.5°	478.4	451.7	411.8	372.9	340.9	315.6	297.1	278.8	261.1	243.5	222.9
45°	447.9	426.8	389.5	352.1	319.8	294.5	277.2	261.0	245.1	228.1	208.9
47.5°	414.0	398.5	365.9	326.9	296.6	273.4	256.8	243.3	229.3	212.2	194.9
50°	378.4	369.2	338.1	303.2	274.6	253.7	236.6	224.1	212.9	196.6	181.6
52.5°	340.4	336.5	311.5	278.4	251.1	230.7	216.7	205.8	194.4	181.6	167.8
55°	301.6	304.2	281.9	253.0	227.1	209.8	196.5	187.1	177.4	166.0	155.1
57.5°	261.3	271.2	254.6	228.5	203.4	187.1	176.9	168.6	160.5	150.8	140.9
60°	225.9	233.8	225.3	203.0	181.8	166.9	157.6	151.5	143.4	134.7	127.6
62.5°	191.3	199.9	195.8	178.8	159.5	147.2	139.2	133.7	128.2	120.9	113.5
65°	163.4	169.0	166.5	154.1	140.1	129.2	121.6	117.4	111.9	106.4	99.8
67.5°	130.7	141.6	139.9	133.0	119.5	110.9	105.5	101.7	96.5	92.4	87.7
70°	102.9	112.8	112.6	107.2	100.7	92.7	89.2	86.1	81.6	77.7	74.0
72.5°	79.6	88.4	90.1	86.3	82.3	76.8	73.5	71.6	67.3	64.9	62.1
75°	59.0	65.5	67.3	67.3	65.2	62.1	59.1	57.8	54.7	52.2	50.5
77.5°	41.5	46.0	48.6	49.1	49.3	48.1	45.3	44.3	41.9	41.0	39.1
80°	27.3	30.1	33.2	34.2	35.1	34.8	33.7	33.0	30.8	29.9	29.2
82.5°	16.8	18.0	20.4	23.0	22.5	23.7	22.8	22.3	20.8	20.6	19.9
85°	9.9	10.0	10.4	11.9	12.8	13.1	13.3	13.0	12.5	12.5	11.2
87.5°	4.2	4.0	4.3	4.3	4.5	5.2	5.7	5.9	5.4	4.8	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



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2
2.5°	419.6	417.8	415.6	413.0	409.9	407.1	405.9	406.9	407.5	406.1	405.9
5°	408.7	404.3	400.9	395.7	391.5	388.1	385.7	384.6	385.0	382.2	381.5
7.5°	396.6	391.9	386.2	380.3	374.8	369.9	367.3	366.1	363.2	362.0	360.1
10°	385.0	378.1	372.5	365.3	358.7	352.6	349.7	347.3	344.3	342.9	340.0
12.5°	373.0	364.7	358.5	350.9	344.2	336.5	333.8	328.8	323.7	320.5	316.5
15°	362.0	352.3	344.8	335.9	327.9	319.6	312.2	303.9	300.7	294.2	290.4
17.5°	348.8	338.8	330.5	318.9	307.0	296.9	288.6	280.0	275.3	270.8	268.9
20°	335.9	326.9	314.1	300.1	286.4	275.0	268.6	263.4	258.2	255.3	253.2
22.5°	323.6	311.5	296.1	280.7	267.0	258.7	253.5	248.2	244.2	241.4	238.5
25°	309.6	294.5	278.8	261.5	252.2	244.4	238.5	234.2	231.6	227.9	226.6
27.5°	295.9	277.7	259.9	248.2	238.5	231.1	225.7	222.6	219.1	216.7	214.8
30°	279.6	261.1	245.6	234.5	224.7	218.8	214.6	210.8	208.2	206.3	204.9
32.5°	263.6	245.1	232.6	220.5	213.2	207.5	203.0	200.4	198.5	195.9	195.3
35°	248.2	231.7	220.3	209.6	201.7	196.5	193.0	190.1	188.3	187.6	187.1
37.5°	233.1	219.5	206.8	198.2	190.8	186.8	182.3	180.9	179.7	178.1	178.8
40°	218.9	206.3	195.4	186.1	180.4	175.9	173.5	171.7	170.7	170.7	170.7
42.5°	206.7	194.4	183.8	175.7	170.0	166.4	163.6	162.2	162.0	161.9	162.9
45°	193.9	182.5	171.7	164.8	160.0	156.2	154.6	153.4	153.4	154.1	154.3
47.5°	181.1	170.3	161.7	153.7	149.3	146.8	145.4	144.8	144.8	145.6	146.3
50°	169.5	158.9	150.5	143.5	139.4	137.1	135.9	135.6	135.9	135.9	137.1
52.5°	156.9	147.7	139.4	133.9	129.0	126.9	126.4	125.9	126.1	126.8	127.1
55°	144.6	136.1	128.2	122.6	119.2	117.8	116.2	116.4	116.0	116.4	116.4
57.5°	132.1	124.7	116.9	112.4	109.5	107.4	105.7	106.2	105.7	105.7	105.5
60°	120.2	111.9	106.0	102.0	98.6	96.8	95.3	95.6	95.1	94.8	94.1
62.5°	107.2	100.7	95.1	91.3	88.7	86.6	85.1	84.6	83.2	81.8	80.1
65°	94.8	89.1	84.1	80.4	77.8	76.3	75.1	74.0	71.4	68.7	67.3
67.5°	82.5	78.3	73.5	70.4	68.3	66.2	64.0	62.1	59.5	57.8	56.9
70°	70.7	66.8	62.8	59.8	57.6	55.7	53.1	51.9	50.2	49.5	48.6
72.5°	59.5	55.9	52.2	49.6	47.2	45.8	43.9	42.7	42.2	42.0	41.2
75°	48.1	45.1	42.4	39.9	38.0	37.0	36.1	35.3	34.9	33.4	32.5
77.5°	37.0	34.9	33.2	31.3	30.1	29.4	27.5	26.3	25.6	24.7	24.6
80°	27.3	25.9	24.2	23.2	21.3	20.6	19.9	19.7	19.5	19.4	19.2
82.5°	18.9	17.5	15.7	15.2	15.0	14.7	14.4	14.2	14.0	14.2	14.2
85°	10.4	9.7	9.7	9.5	9.3	9.2	9.0	9.0	8.8	9.0	8.8
87.5°	4.3	4.2	4.2	3.8	4.0	4.0	3.8	3.8	4.0	3.6	3.6
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: P242731

CATALOG NUMBER: S124RDRP-S350D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	429.2	429.2	429.2	429.2
2.5°	404.9	405.2	404.0	403.6
5°	380.1	379.8	378.9	379.1
7.5°	358.7	357.5	358.3	357.0
10°	339.3	337.4	335.9	334.5
12.5°	312.9	311.3	309.0	309.9
15°	288.1	285.5	281.4	281.9
17.5°	266.0	266.3	263.9	264.6
20°	249.6	248.3	248.5	248.0
22.5°	238.1	236.6	235.0	233.8
25°	225.0	224.0	222.4	222.1
27.5°	213.4	213.2	212.5	211.7
30°	203.6	203.2	202.9	202.3
32.5°	194.7	194.6	194.2	194.4
35°	186.4	186.3	185.9	185.7
37.5°	178.7	179.2	178.8	178.8
40°	170.5	170.7	171.0	170.9
42.5°	163.8	163.8	164.3	163.6
45°	155.5	156.5	156.3	156.3
47.5°	146.7	147.9	148.0	148.0
50°	138.0	137.7	138.2	138.0
52.5°	127.5	127.6	127.5	127.3
55°	116.6	116.7	116.4	116.6
57.5°	105.0	104.3	104.8	104.5
60°	92.4	91.0	90.6	89.9
62.5°	78.2	77.3	75.9	76.8
65°	65.9	65.2	64.7	65.4
67.5°	56.0	55.7	55.7	55.3
70°	48.6	48.1	48.1	47.7
72.5°	41.0	40.5	40.6	40.5
75°	31.5	30.6	30.6	30.8
77.5°	24.6	24.4	24.7	24.2
80°	19.2	19.0	18.9	19.4
82.5°	13.8	13.8	13.8	14.5
85°	9.0	8.6	9.0	8.6
87.5°	4.0	3.8	3.6	3.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242731  
 CATALOG NUMBER: S124RDRP-S350D927-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	13.76	15.28	14.12	15.59	15.91	15.57	17.09	15.94	17.41	17.72
	3H	14.98	16.35	15.36	16.67	17.04	17.03	18.39	17.40	18.72	19.08
	4H	15.42	16.70	15.81	17.04	17.42	17.54	18.82	17.94	19.17	19.55
	6H	15.69	16.87	16.10	17.24	17.63	17.89	19.08	18.31	19.44	19.84
	8H	15.77	16.89	16.19	17.28	17.68	18.00	19.12	18.42	19.51	19.91
	12H	15.82	16.89	16.25	17.28	17.71	18.06	19.13	18.49	19.52	19.94
4H	2H	15.01	16.30	15.41	16.64	17.02	16.08	17.36	16.48	17.71	18.09
	3H	16.25	17.31	16.66	17.71	18.11	17.82	18.88	18.23	19.28	19.68
	4H	16.71	17.67	17.15	18.09	18.52	18.45	19.40	18.88	19.82	20.26
	6H	17.04	17.87	17.49	18.31	18.77	18.90	19.73	19.36	20.18	20.64
	8H	17.13	17.91	17.60	18.35	18.82	19.04	19.82	19.50	20.26	20.73
	12H	17.20	17.89	17.68	18.37	18.84	19.13	19.82	19.61	20.30	20.77
8H	4H	17.12	17.89	17.58	18.34	18.80	18.56	19.34	19.02	19.78	20.25
	6H	17.50	18.14	18.00	18.63	19.11	19.10	19.74	19.60	20.23	20.71
	8H	17.64	18.21	18.15	18.72	19.21	19.29	19.87	19.81	20.38	20.87
	12H	17.75	18.26	18.26	18.75	19.31	19.44	19.95	19.95	20.44	21.00
12H	4H	17.15	17.84	17.63	18.32	18.79	18.55	19.24	19.03	19.72	20.19
	6H	17.55	18.13	18.06	18.64	19.12	19.09	19.67	19.61	20.18	20.66
	8H	17.73	18.24	18.24	18.73	19.30	19.32	19.83	19.83	20.32	20.89