

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: P242761

Luminaire Tested: S124RDRP-S350D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242761
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-S350D940-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

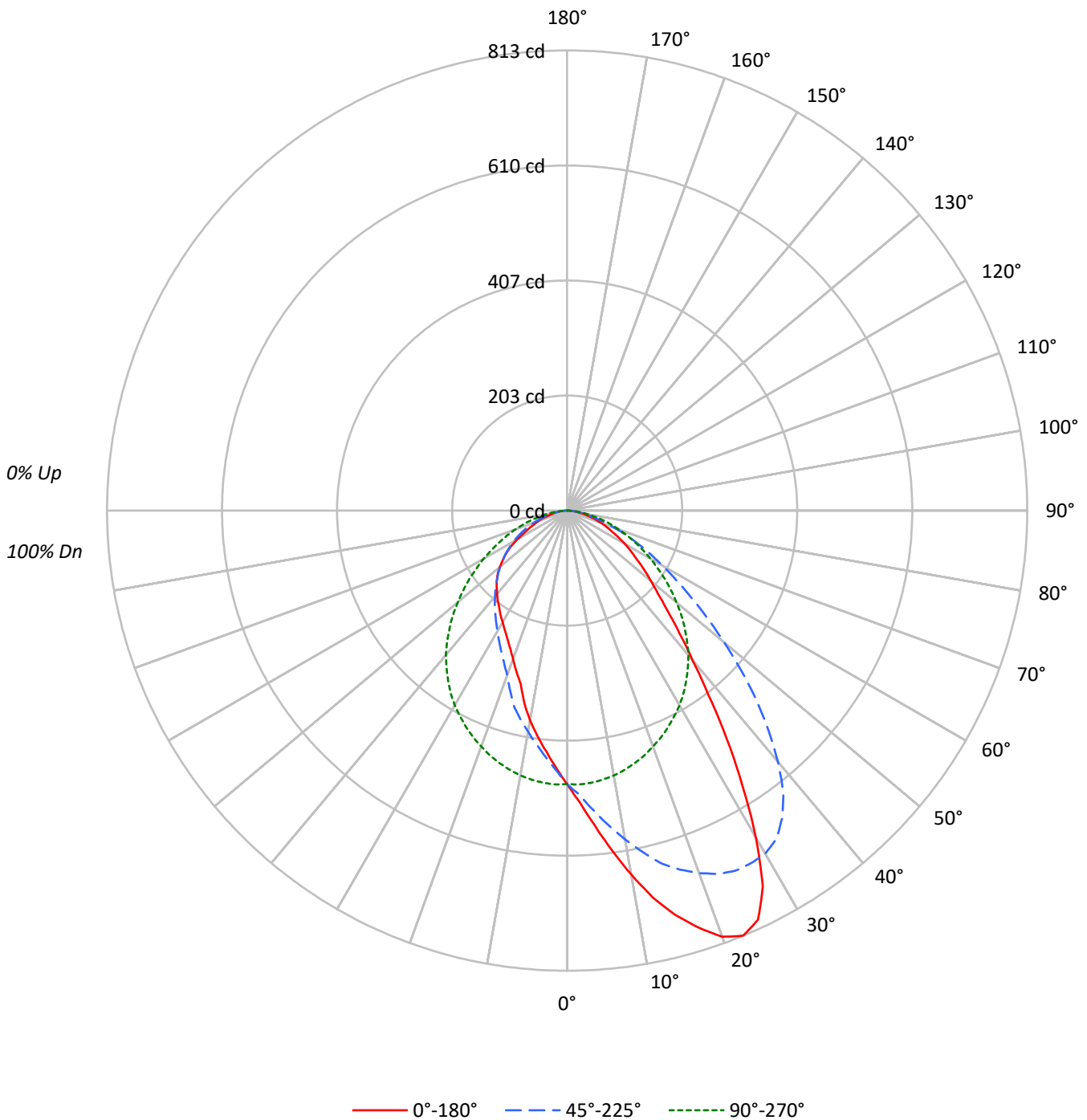
Lumens per Lamp: N/A
Luminaire Lumens: 1221.4 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): 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°	4295	4295	4295	4295	4295
5°	4982	4743	4308	3898	3807
10°	5893	5324	4289	3582	3398
15°	6808	5944	4250	3311	2920
20°	7580	6446	4195	2928	2641
25°	7825	6889	4141	2698	2452
30°	6849	7185	4076	2528	2338
35°	5332	7189	3980	2399	2269
40°	3999	6724	3870	2298	2231
45°	3157	5935	3693	2210	2212
50°	2665	4994	3489	2135	2148
55°	2323	4139	3264	2055	2033
60°	2091	3465	3031	1938	1799
65°	1842	2886	2781	1807	1548
70°	1661	2308	2518	1630	1396
75°	1391	1793	2232	1432	1192
80°	1177	1357	1904	1188	1116
85°	989	1071	1489	1050	989

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 6338 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.8	3.8
10°-20°	141.3	11.6
20°-30°	221.3	18.1
30°-40°	245.8	20.1
40°-50°	217.8	17.8
50°-60°	169.7	13.9
60°-70°	111.0	9.1
70°-80°	54.5	4.5
80°-90°	13.3	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°	409.4	33.5
0°-40°	655.2	53.6
0°-60°	1042.7	85.4
0°-90°	1221.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1221.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	483	483	483	483	483	
5°	558	532	483	437	427	56
15°	740	646	462	360	317	210
25°	798	702	422	275	250	356
35°	491	662	367	221	209	308
45°	251	472	294	176	176	198
55°	150	267	211	133	131	136
65°	88	137	132	86	74	88
75°	40	52	65	42	35	44
85°	10	10	15	10	10	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°	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2
2.5°	516.3	518.0	516.3	516.1	514.1	513.5	512.8	510.2	505.6	502.8	503.4
5°	558.3	563.2	560.5	560.1	555.8	551.5	548.8	542.5	535.9	531.5	527.8
7.5°	605.0	608.0	606.0	603.9	596.5	594.1	587.7	580.3	569.2	560.8	553.3
10°	652.9	655.3	654.5	649.4	644.4	634.0	628.2	616.7	601.7	589.9	578.8
12.5°	700.0	702.6	694.2	695.8	685.0	677.5	667.3	652.1	634.2	618.1	603.5
15°	739.8	736.6	736.6	732.7	722.0	710.7	701.2	686.0	664.2	645.9	626.6
17.5°	772.5	773.8	772.3	762.3	754.5	743.1	725.9	708.6	689.7	665.2	646.1
20°	801.3	801.3	799.5	793.3	782.4	769.9	751.0	731.8	706.1	681.4	659.2
22.5°	812.9	813.7	811.6	806.7	797.2	785.1	769.7	750.1	723.4	694.8	666.0
25°	797.8	801.5	801.9	800.5	797.6	790.2	776.4	756.3	732.5	702.4	672.8
27.5°	748.7	753.6	755.5	759.8	767.8	770.7	769.0	755.5	732.5	702.8	673.4
30°	667.3	671.2	683.9	700.4	713.3	725.0	735.1	737.8	726.1	700.0	668.7
32.5°	577.0	582.7	595.3	613.4	637.0	658.8	684.7	698.5	701.0	688.0	659.5
35°	491.4	495.2	506.9	525.6	551.3	580.7	616.7	644.8	663.8	662.5	644.8
37.5°	409.2	414.7	426.5	441.9	467.2	504.8	538.9	576.4	610.7	627.4	618.5
40°	344.6	344.8	356.2	372.2	395.6	427.3	465.3	508.1	547.4	579.5	585.8
42.5°	293.6	293.6	300.2	317.7	332.9	362.3	398.1	440.5	488.2	526.6	545.7
45°	251.1	252.9	259.1	269.4	282.7	308.0	337.0	376.5	428.1	472.1	499.5
47.5°	217.6	220.8	224.5	233.8	244.7	262.4	287.1	324.1	367.0	415.8	453.8
50°	192.7	193.1	198.2	202.8	212.0	225.4	246.5	276.0	314.6	361.1	404.5
52.5°	171.3	171.1	173.6	179.9	186.9	196.6	212.6	238.9	272.0	312.4	357.6
55°	149.9	150.9	153.2	157.9	163.5	170.9	184.4	204.6	231.5	267.1	307.8
57.5°	133.5	134.1	136.3	138.0	143.5	148.9	159.8	174.4	198.0	227.8	267.7
60°	117.6	117.8	118.4	121.3	125.4	130.4	137.2	149.1	168.2	194.9	224.8
62.5°	102.0	102.4	103.4	105.3	108.2	111.4	118.6	127.5	142.5	164.3	190.6
65°	87.6	87.8	89.2	89.9	92.5	95.6	100.8	107.3	118.2	137.2	157.7
67.5°	75.5	75.5	75.5	76.7	78.6	80.8	84.3	89.7	98.5	110.8	129.8
70°	63.9	63.9	64.2	64.8	65.8	67.6	69.3	73.2	79.2	88.8	102.6
72.5°	53.0	53.1	53.5	53.5	53.9	55.3	56.5	58.6	62.7	69.3	79.8
75°	40.5	41.1	42.0	42.8	43.8	43.6	45.0	46.5	47.9	52.2	58.6
77.5°	31.9	31.5	31.5	32.3	32.5	32.7	33.7	35.0	36.2	38.5	40.9
80°	23.0	23.0	23.6	23.7	23.6	23.7	24.7	25.3	25.7	26.5	28.6
82.5°	16.0	16.4	16.0	16.2	16.4	16.5	17.3	17.3	17.7	17.9	18.5
85°	9.7	9.9	10.1	9.7	9.7	9.7	10.1	10.3	10.7	10.5	10.9
87.5°	4.3	4.1	4.3	4.3	4.5	4.3	4.5	4.9	4.5	4.7	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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2
2.5°	501.5	498.7	497.4	494.3	490.6	488.6	486.9	484.3	481.0	477.5	475.0
5°	523.1	518.4	512.6	505.6	499.3	493.3	488.0	482.8	476.8	470.5	464.3
7.5°	544.5	536.1	527.2	516.5	506.1	496.6	488.0	479.7	470.1	461.6	453.6
10°	567.1	554.6	540.8	526.2	511.6	498.9	486.5	475.2	462.7	451.6	442.3
12.5°	585.4	570.2	552.9	533.8	515.5	499.5	484.7	469.2	454.6	442.3	429.1
15°	606.0	586.0	563.6	541.8	519.0	498.2	478.9	461.8	445.6	428.7	416.8
17.5°	620.2	597.1	570.6	545.3	519.2	495.0	473.2	453.4	434.9	418.0	403.9
20°	632.7	606.4	576.2	546.4	516.3	490.0	466.0	443.5	424.2	405.5	390.9
22.5°	639.7	609.9	576.2	544.7	513.2	484.1	457.3	433.5	412.1	393.4	376.9
25°	640.1	608.9	575.3	539.4	505.2	475.0	447.7	422.2	398.9	380.2	363.1
27.5°	638.5	602.5	568.6	532.2	497.0	464.9	436.6	409.6	386.4	366.6	349.0
30°	633.9	594.5	557.5	519.4	483.6	453.0	422.8	397.1	372.8	352.0	334.3
32.5°	623.7	584.8	544.3	505.0	468.6	436.8	408.6	382.7	359.0	337.6	318.5
35°	609.7	570.2	527.0	486.9	451.2	418.5	391.7	366.8	344.0	321.2	301.4
37.5°	593.6	552.3	509.7	465.7	430.2	399.1	374.0	350.0	327.8	307.0	285.0
40°	568.6	531.8	487.5	443.9	407.3	377.5	354.7	333.5	311.1	290.5	268.5
42.5°	538.5	508.5	463.5	419.7	383.7	355.3	334.4	313.8	294.0	274.1	250.9
45°	504.2	480.4	438.4	396.4	359.9	331.5	312.1	293.8	275.8	256.8	235.2
47.5°	466.0	448.5	411.9	367.9	333.9	307.8	289.1	273.9	258.1	238.9	219.4
50°	425.9	415.6	380.6	341.3	309.1	285.6	266.3	252.3	239.6	221.3	204.4
52.5°	383.1	378.8	350.6	313.4	282.7	259.7	243.9	231.7	218.8	204.4	188.8
55°	339.5	342.4	317.3	284.8	255.6	236.1	221.1	210.6	199.7	186.9	174.6
57.5°	294.1	305.2	286.6	257.2	228.9	210.6	199.1	189.8	180.7	169.8	158.7
60°	254.2	263.2	253.7	228.5	204.6	187.9	177.3	170.5	161.4	151.6	143.7
62.5°	215.3	225.0	220.4	201.3	179.5	165.7	156.7	150.5	144.3	136.1	127.7
65°	184.0	190.2	187.5	173.5	157.7	145.4	136.9	132.2	126.0	119.7	112.3
67.5°	147.2	159.4	157.5	149.7	134.5	124.8	118.7	114.5	108.6	104.0	98.7
70°	115.8	126.9	126.7	120.7	113.3	104.3	100.5	96.9	91.9	87.4	83.3
72.5°	89.5	99.5	101.4	97.1	92.7	86.4	82.7	80.6	75.7	73.0	69.9
75°	66.4	73.8	75.7	75.7	73.4	69.9	66.6	65.0	61.5	58.8	56.8
77.5°	46.7	51.8	54.7	55.3	55.5	54.1	51.0	49.8	47.1	46.1	44.0
80°	30.8	33.9	37.4	38.5	39.5	39.1	38.0	37.2	34.7	33.7	32.9
82.5°	18.9	20.2	23.0	25.9	25.3	26.7	25.7	25.1	23.4	23.2	22.4
85°	11.1	11.3	11.7	13.4	14.4	14.8	15.0	14.6	14.0	14.0	12.7
87.5°	4.7	4.5	4.9	4.9	5.1	5.8	6.4	6.6	6.0	5.5	4.9
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2
2.5°	472.3	470.3	467.8	464.9	461.4	458.3	456.9	458.1	458.6	457.1	456.9
5°	460.0	455.1	451.2	445.4	440.7	436.8	434.1	432.9	433.3	430.2	429.4
7.5°	446.4	441.1	434.7	428.1	421.9	416.4	413.5	412.1	408.8	407.4	405.3
10°	433.3	425.6	419.3	411.1	403.7	396.9	393.6	390.9	387.6	386.0	382.7
12.5°	419.9	410.6	403.6	395.0	387.4	378.8	375.7	370.1	364.4	360.7	356.2
15°	407.4	396.5	388.2	378.1	369.1	359.8	351.4	342.0	338.5	331.1	326.9
17.5°	392.7	381.4	372.0	359.0	345.5	334.3	324.9	315.2	309.9	304.9	302.7
20°	378.1	367.9	353.5	337.8	322.4	309.5	302.3	296.5	290.6	287.3	285.0
22.5°	364.2	350.6	333.3	316.0	300.6	291.2	285.4	279.4	274.9	271.8	268.5
25°	348.5	331.5	313.8	294.3	283.8	275.1	268.5	263.6	260.7	256.6	255.0
27.5°	333.1	312.6	292.6	279.4	268.5	260.1	254.0	250.5	246.6	243.9	241.8
30°	314.8	294.0	276.4	264.0	252.9	246.3	241.6	237.3	234.4	232.2	230.7
32.5°	296.7	275.8	261.8	248.2	240.0	233.6	228.5	225.6	223.5	220.6	219.8
35°	279.4	260.9	248.0	235.9	227.0	221.1	217.3	213.9	212.0	211.2	210.6
37.5°	262.4	247.0	232.8	223.1	214.7	210.2	205.2	203.6	202.3	200.5	201.3
40°	246.5	232.2	220.0	209.5	203.0	198.0	195.3	193.3	192.1	192.1	192.1
42.5°	232.6	218.8	206.9	197.8	191.4	187.3	184.2	182.6	182.4	182.2	183.4
45°	218.2	205.4	193.3	185.5	180.1	175.8	174.0	172.7	172.7	173.5	173.6
47.5°	203.8	191.8	182.0	173.1	168.0	165.3	163.7	162.9	162.9	163.9	164.7
50°	190.8	178.9	169.4	161.6	156.9	154.4	153.0	152.6	153.0	153.0	154.4
52.5°	176.6	166.2	156.9	150.7	145.2	142.9	142.3	141.7	141.9	142.7	143.1
55°	162.7	153.2	144.3	138.0	134.1	132.6	130.8	131.0	130.6	131.0	131.0
57.5°	148.7	140.4	131.6	126.5	123.2	120.9	118.9	119.5	118.9	118.9	118.7
60°	135.3	126.0	119.3	114.9	111.0	109.0	107.3	107.7	107.1	106.7	105.9
62.5°	120.7	113.3	107.1	102.8	99.9	97.5	95.8	95.2	93.6	92.1	90.1
65°	106.7	100.3	94.6	90.5	87.6	85.9	84.5	83.3	80.4	77.3	75.7
67.5°	92.9	88.2	82.7	79.2	76.9	74.6	72.0	69.9	67.0	65.0	64.0
70°	79.6	75.1	70.7	67.4	64.8	62.7	59.8	58.4	56.5	55.7	54.7
72.5°	67.0	62.9	58.8	55.9	53.1	51.6	49.4	48.1	47.5	47.3	46.3
75°	54.1	50.8	47.7	45.0	42.8	41.7	40.7	39.7	39.3	37.6	36.6
77.5°	41.7	39.3	37.4	35.2	33.9	33.1	31.0	29.6	28.8	27.8	27.6
80°	30.8	29.2	27.3	26.1	23.9	23.2	22.4	22.2	22.0	21.8	21.6
82.5°	21.2	19.7	17.7	17.1	16.9	16.5	16.2	16.0	15.8	16.0	16.0
85°	11.7	10.9	10.9	10.7	10.5	10.3	10.1	10.1	9.9	10.1	9.9
87.5°	4.9	4.7	4.7	4.3	4.5	4.5	4.3	4.3	4.5	4.1	4.1
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: P242761

CATALOG NUMBER: S124RDRP-S350D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	483.2	483.2	483.2	483.2
2.5°	455.7	456.1	454.8	454.4
5°	427.9	427.5	426.5	426.7
7.5°	403.7	402.4	403.4	401.8
10°	381.9	379.8	378.1	376.5
12.5°	352.2	350.4	347.9	348.9
15°	324.3	321.4	316.7	317.3
17.5°	299.4	299.8	297.1	297.8
20°	280.9	279.5	279.7	279.2
22.5°	268.1	266.3	264.6	263.2
25°	253.3	252.1	250.3	250.0
27.5°	240.2	240.0	239.3	238.3
30°	229.1	228.7	228.3	227.8
32.5°	219.2	219.0	218.6	218.8
35°	209.9	209.7	209.3	209.1
37.5°	201.1	201.7	201.3	201.3
40°	191.9	192.1	192.5	192.3
42.5°	184.4	184.4	184.9	184.2
45°	175.0	176.2	176.0	176.0
47.5°	165.1	166.4	166.6	166.6
50°	155.3	155.0	155.5	155.3
52.5°	143.5	143.7	143.5	143.3
55°	131.2	131.4	131.0	131.2
57.5°	118.2	117.4	118.0	117.6
60°	104.0	102.4	102.0	101.2
62.5°	88.0	87.0	85.5	86.4
65°	74.2	73.4	72.8	73.6
67.5°	63.1	62.7	62.7	62.3
70°	54.7	54.1	54.1	53.7
72.5°	46.1	45.6	45.7	45.6
75°	35.4	34.5	34.5	34.7
77.5°	27.6	27.4	27.8	27.3
80°	21.6	21.4	21.2	21.8
82.5°	15.6	15.6	15.6	16.4
85°	10.1	9.7	10.1	9.7
87.5°	4.5	4.3	4.1	4.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242761
 CATALOG NUMBER: S124RDRP-S350D940-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	14.17	15.69	14.53	16.00	16.32	15.98	17.51	16.35	17.82	18.13
	3H	15.39	16.76	15.77	17.08	17.45	17.44	18.80	17.82	19.13	19.49
	4H	15.82	17.10	16.22	17.45	17.83	17.95	19.23	18.35	19.58	19.96
	6H	16.10	17.28	16.51	17.65	18.04	18.31	19.49	18.72	19.85	20.25
	8H	16.18	17.30	16.60	17.69	18.09	18.41	19.53	18.83	19.92	20.32
	12H	16.23	17.30	16.66	17.69	18.12	18.47	19.54	18.90	19.93	20.35
4H	2H	15.43	16.71	15.83	17.05	17.43	16.49	17.77	16.89	18.12	18.50
	3H	16.66	17.72	17.07	18.12	18.52	18.23	19.29	18.64	19.69	20.09
	4H	17.12	18.08	17.56	18.50	18.93	18.86	19.81	19.29	20.23	20.67
	6H	17.45	18.28	17.90	18.72	19.18	19.32	20.15	19.77	20.59	21.05
	8H	17.54	18.32	18.01	18.76	19.23	19.45	20.23	19.91	20.67	21.14
	12H	17.61	18.30	18.09	18.78	19.25	19.54	20.23	20.02	20.71	21.18
8H	4H	17.53	18.30	17.99	18.75	19.21	18.97	19.75	19.43	20.19	20.66
	6H	17.91	18.55	18.41	19.04	19.52	19.51	20.15	20.01	20.65	21.12
	8H	18.05	18.62	18.56	19.13	19.62	19.70	20.28	20.22	20.79	21.28
	12H	18.16	18.67	18.67	19.16	19.72	19.85	20.36	20.36	20.85	21.42
12H	4H	17.56	18.26	18.04	18.73	19.20	18.96	19.65	19.44	20.13	20.60
	6H	17.96	18.54	18.47	19.05	19.53	19.50	20.08	20.02	20.59	21.08
	8H	18.14	18.65	18.65	19.14	19.71	19.73	20.24	20.24	20.73	21.30