

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: P243616

Luminaire Tested: S124RDRP-H350D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243616
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDRP-H350D935-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

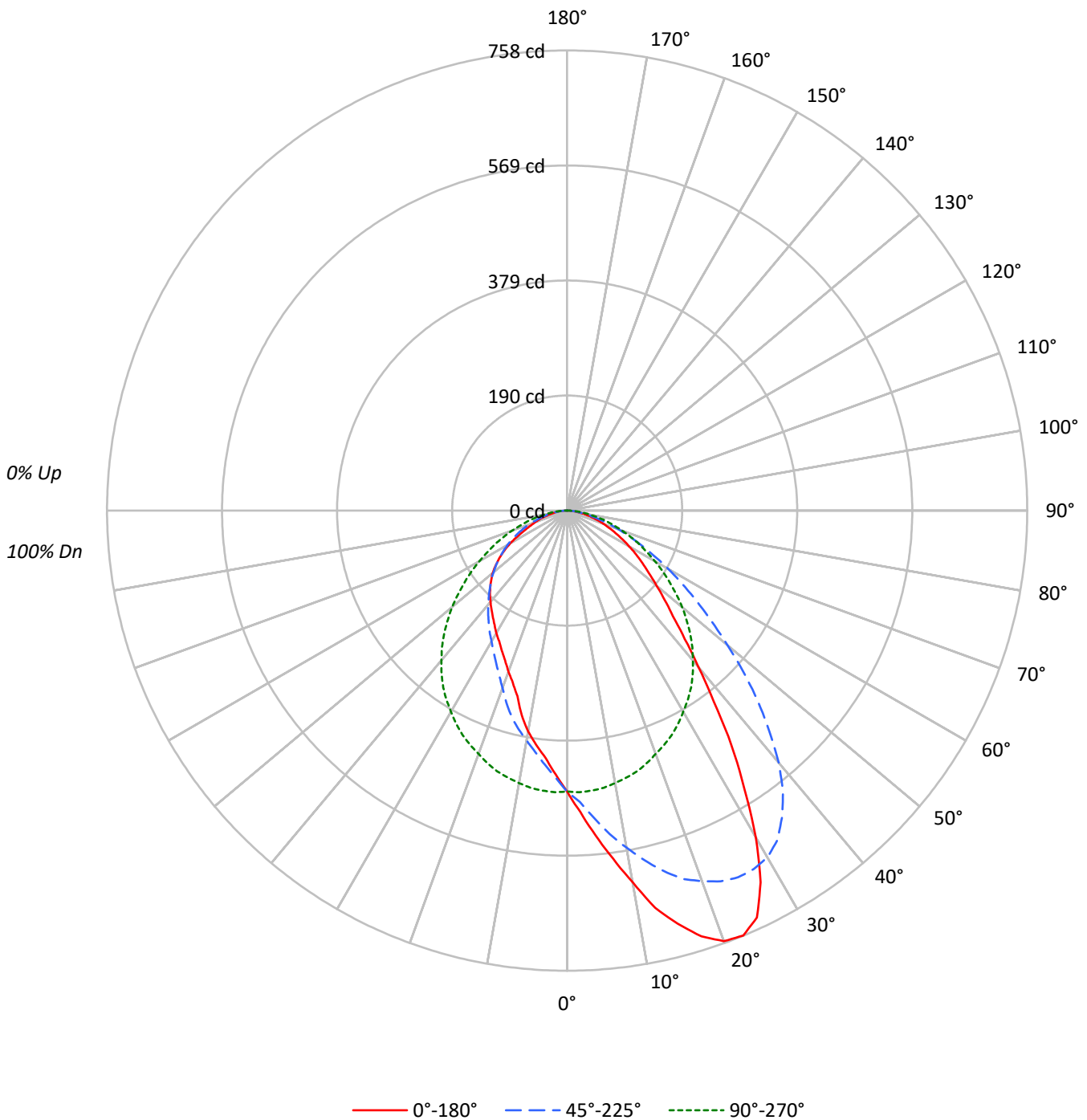
Lumens per Lamp: N/A
Luminaire Lumens: 1194.5 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 11.2
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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CATALOG NUMBER: S124RDRP-H350D935-X4F0-XX-UDD-A-W

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	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88					86				
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75					73				
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65					63				
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57					55				
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50					48				
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44					42				
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40					38				
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36					34				
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32					31				
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	4114	4114	4114	4114	4114
5°	4792	4533	4131	3750	3647
10°	5612	5090	4114	3470	3335
15°	6485	5659	4093	3242	2913
20°	7140	6146	4035	2944	2669
25°	7254	6538	3999	2717	2496
30°	6385	6770	3927	2557	2394
35°	5124	6694	3861	2443	2316
40°	3898	6288	3738	2344	2279
45°	3095	5586	3600	2263	2251
50°	2656	4763	3421	2190	2213
55°	2346	4045	3200	2114	2106
60°	2101	3419	2971	2018	1929
65°	1849	2812	2745	1880	1622
70°	1648	2318	2492	1723	1461
75°	1436	1820	2267	1518	1298
80°	1218	1392	1945	1285	1198
85°	1071	1142	1673	1254	1214

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 6013 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.9	3.8
10°-20°	136.2	11.4
20°-30°	212.5	17.8
30°-40°	237.0	19.8
40°-50°	213.1	17.8
50°-60°	168.3	14.1
60°-70°	111.8	9.4
70°-80°	56.1	4.7
80°-90°	14.6	1.2
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°	393.6	33.0
0°-40°	630.6	52.8
0°-60°	1012.0	84.7
0°-90°	1194.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1194.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	463	463	463	463	463	
5°	537	508	463	420	409	54
15°	705	615	445	352	316	200
25°	740	667	408	277	254	331
35°	472	617	356	225	213	293
45°	246	444	286	180	179	195
55°	151	261	206	136	136	136
65°	88	134	130	89	77	88
75°	42	53	66	44	38	45
85°	10	11	16	12	12	12
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°	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8
2.5°	497.0	495.2	495.1	492.7	492.5	490.2	489.5	487.5	483.5	480.5	480.6
5°	537.1	535.6	535.4	533.1	532.4	529.5	525.0	519.6	513.3	508.0	504.6
7.5°	578.1	580.7	578.0	578.0	572.7	569.3	560.5	556.0	545.2	537.6	529.7
10°	621.8	624.1	623.0	620.9	614.0	607.0	597.8	589.0	575.8	563.9	556.0
12.5°	670.4	663.4	667.9	661.2	655.6	644.5	635.6	618.0	607.5	590.2	574.7
15°	704.7	702.0	701.8	697.3	691.1	678.9	669.3	651.0	633.1	614.9	597.4
17.5°	735.3	735.7	733.1	725.9	718.0	706.1	693.1	676.7	656.4	636.2	615.5
20°	754.8	754.9	753.1	749.4	740.7	729.9	716.6	695.1	672.0	649.7	629.0
22.5°	757.6	758.2	757.6	755.3	749.4	740.5	728.3	710.1	686.8	661.2	636.5
25°	739.6	741.4	741.6	744.9	741.8	738.4	729.4	714.0	692.6	666.6	639.8
27.5°	690.2	695.3	700.0	705.7	711.0	715.7	716.4	708.3	689.9	665.7	640.1
30°	622.1	628.1	637.4	643.6	659.8	670.1	683.9	687.0	678.2	659.6	634.9
32.5°	542.8	549.1	552.7	572.9	596.2	612.9	636.0	649.7	653.1	644.3	624.1
35°	472.2	473.3	476.0	498.9	521.9	547.3	576.0	599.8	616.0	616.9	607.0
37.5°	396.5	397.7	408.4	425.9	445.9	473.8	506.8	540.7	570.4	584.1	581.2
40°	335.9	335.6	346.9	362.1	381.5	410.5	444.6	481.5	513.3	541.9	548.8
42.5°	286.9	288.2	297.9	306.7	325.5	345.8	382.2	420.6	461.4	492.7	513.6
45°	246.2	249.4	256.1	264.4	278.4	297.2	326.9	365.1	406.8	444.4	469.5
47.5°	218.1	219.0	222.4	232.7	242.0	257.2	282.6	315.0	352.0	394.1	427.1
50°	192.1	194.3	195.5	201.7	210.9	225.3	244.9	269.1	305.7	344.4	385.7
52.5°	169.8	171.0	173.4	179.0	186.2	196.3	211.8	233.0	263.5	299.3	338.3
55°	151.4	151.6	153.9	157.9	163.5	171.2	186.0	201.3	228.3	261.0	296.3
57.5°	134.8	133.7	135.9	138.2	143.6	150.3	159.9	175.5	196.6	224.4	256.3
60°	118.2	119.1	118.9	121.6	124.5	131.2	139.3	149.6	166.9	192.3	219.3
62.5°	102.7	102.5	104.3	106.0	108.0	113.4	120.0	128.5	142.0	160.8	186.9
65°	87.9	88.3	89.7	91.0	93.2	96.6	101.6	108.5	119.3	133.7	155.7
67.5°	74.6	75.9	76.6	77.0	78.9	81.5	85.8	91.4	98.8	110.3	128.7
70°	63.4	63.8	64.2	65.4	66.3	67.8	71.0	74.1	80.7	89.2	102.5
72.5°	53.0	52.6	53.7	54.1	54.4	55.9	57.9	59.5	63.8	71.0	79.3
75°	41.8	42.0	42.2	42.7	44.2	44.3	45.2	47.0	50.1	53.0	58.6
77.5°	31.4	31.9	31.7	32.3	32.8	33.3	33.7	35.3	37.5	39.8	42.5
80°	23.8	23.8	23.8	24.1	23.8	25.1	25.1	25.6	26.1	27.2	29.2
82.5°	16.2	16.6	16.8	16.9	17.1	17.1	17.3	17.7	18.4	18.7	19.3
85°	10.5	10.1	10.3	10.3	10.3	10.3	10.6	11.0	11.0	11.2	11.7
87.5°	4.7	4.7	4.7	4.7	4.5	4.7	4.9	4.9	5.0	5.0	5.4
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°	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8
2.5°	479.6	479.0	476.3	473.4	470.7	468.0	467.1	464.4	461.2	458.3	455.1
5°	501.0	496.7	490.7	484.6	478.3	472.5	468.0	463.0	457.2	450.4	445.0
7.5°	522.6	514.7	505.0	496.0	485.2	476.5	467.9	460.6	452.4	442.6	435.2
10°	543.7	530.6	518.7	504.4	490.7	478.8	467.9	455.8	444.8	434.3	424.1
12.5°	560.5	547.3	530.2	512.7	495.1	479.6	464.8	450.6	436.9	424.2	412.9
15°	579.6	560.7	539.6	520.3	496.1	477.0	460.1	444.8	429.1	413.8	401.4
17.5°	593.6	571.3	545.2	523.0	499.8	476.0	455.6	436.3	418.3	402.3	389.5
20°	604.5	578.0	551.8	523.7	496.0	471.6	448.7	426.6	408.4	390.9	377.4
22.5°	609.1	581.2	552.2	521.7	492.2	464.6	440.8	417.9	397.4	379.4	363.7
25°	611.1	580.5	550.4	515.8	485.9	457.8	431.3	407.7	386.6	366.2	350.7
27.5°	609.5	576.7	542.1	509.5	475.6	448.0	419.9	395.9	374.0	354.3	337.0
30°	605.2	568.1	533.6	497.0	464.4	435.4	408.0	382.6	360.4	340.4	323.3
32.5°	594.0	558.3	519.2	483.5	448.4	419.7	394.9	369.8	347.3	326.4	309.8
35°	580.1	545.2	504.3	467.0	432.2	403.2	378.1	355.8	333.6	311.4	294.5
37.5°	562.6	527.1	487.7	447.5	413.4	385.3	362.4	339.9	317.9	297.5	278.6
40°	539.0	506.6	467.0	426.6	392.3	365.3	342.8	322.1	302.6	282.6	262.2
42.5°	509.7	485.0	444.1	404.2	370.7	343.9	323.9	305.3	286.6	266.0	247.6
45°	478.3	457.2	420.1	379.9	348.0	321.9	302.8	286.4	268.7	250.5	231.2
47.5°	443.0	427.3	395.2	355.4	321.9	299.5	281.9	266.9	250.9	234.6	215.9
50°	403.2	393.6	366.2	330.0	298.1	275.4	260.8	247.4	233.7	217.5	201.5
52.5°	363.3	361.5	335.9	304.0	273.9	252.8	238.6	226.4	215.2	199.9	186.3
55°	321.5	326.9	305.7	276.3	249.4	229.1	216.4	206.5	196.8	183.8	170.8
57.5°	284.4	290.5	275.9	248.9	223.8	206.5	195.7	186.7	178.2	166.3	157.7
60°	243.3	254.5	246.7	222.0	199.9	184.4	174.3	167.1	160.0	149.8	142.2
62.5°	210.9	218.6	214.1	195.7	176.1	163.5	154.4	147.8	142.2	134.3	126.9
65°	176.1	185.8	183.5	171.4	154.1	142.6	135.7	130.5	124.7	118.4	112.3
67.5°	144.7	154.8	154.3	146.0	133.2	123.6	117.1	113.4	108.7	102.5	98.8
70°	116.4	125.8	126.2	122.0	113.0	104.0	99.3	95.9	92.3	87.8	85.1
72.5°	90.5	98.9	100.4	98.4	92.6	86.7	82.5	80.2	77.1	73.3	71.0
75°	67.6	73.7	77.1	76.2	73.9	69.9	67.6	66.0	62.9	60.2	58.2
77.5°	48.1	53.0	56.4	57.9	56.8	55.1	53.0	51.7	48.5	47.2	46.1
80°	32.3	36.6	39.6	40.5	41.1	40.7	38.7	38.0	36.4	35.9	34.8
82.5°	19.8	22.2	24.3	26.7	27.8	27.8	26.7	26.9	25.4	24.7	24.3
85°	12.1	12.6	13.0	14.8	16.2	16.8	16.2	16.4	15.9	15.3	14.8
87.5°	5.6	5.6	5.8	6.1	6.5	7.6	7.9	8.5	7.7	7.7	6.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8
2.5°	453.1	450.7	448.9	446.0	443.7	439.9	438.7	438.7	439.4	438.5	439.4
5°	441.2	436.9	432.2	428.0	423.5	420.3	417.0	416.3	415.9	413.8	414.0
7.5°	429.3	423.5	417.6	412.2	406.6	401.5	398.1	396.7	395.4	394.0	392.3
10°	416.5	409.8	402.8	396.7	391.3	384.4	381.0	379.9	376.3	375.6	373.1
12.5°	403.0	396.1	389.1	381.2	375.9	369.3	364.2	361.9	358.5	355.9	352.2
15°	392.3	383.7	374.3	366.6	359.7	352.3	345.5	341.0	336.5	329.4	326.0
17.5°	379.2	369.3	361.2	352.9	343.0	332.1	324.0	317.4	312.5	306.7	303.3
20°	364.9	355.8	345.7	333.9	323.5	311.2	303.9	298.3	294.5	291.1	289.3
22.5°	352.3	341.7	327.8	316.6	302.0	292.3	286.4	282.8	279.2	275.6	273.8
25°	338.6	326.2	309.3	295.6	284.6	277.0	271.2	267.8	264.0	261.9	259.2
27.5°	325.1	309.1	292.1	279.7	271.1	262.2	257.4	254.7	251.8	248.7	246.5
30°	308.7	290.5	276.5	265.1	256.5	249.1	245.5	241.5	239.0	237.2	235.9
32.5°	291.6	274.1	261.3	251.6	243.1	237.5	233.0	230.5	228.3	226.4	224.9
35°	275.6	258.6	247.8	238.4	231.4	225.1	221.7	219.3	217.5	215.9	215.2
37.5°	259.7	245.3	233.6	226.2	218.8	213.7	210.5	208.3	207.3	205.6	205.8
40°	244.0	231.0	221.7	213.2	206.4	202.0	199.5	198.6	197.0	196.4	197.0
42.5°	230.0	218.1	209.1	201.1	195.2	191.0	189.1	187.8	187.2	187.1	187.2
45°	216.3	205.1	196.4	190.0	183.8	180.0	178.4	177.5	177.0	177.9	178.1
47.5°	202.6	192.5	184.7	177.2	172.1	169.4	167.8	167.1	167.6	168.0	169.2
50°	189.1	179.7	171.6	164.9	160.9	158.4	157.9	156.6	157.5	158.1	159.0
52.5°	175.4	166.9	159.7	153.4	149.2	147.6	146.3	145.8	147.1	147.1	148.0
55°	161.5	154.1	147.4	141.7	138.4	136.4	135.5	134.8	135.5	135.7	135.5
57.5°	148.5	141.5	134.4	129.6	126.9	124.7	123.8	123.5	123.3	124.0	123.8
60°	134.8	128.1	122.6	117.5	114.8	113.5	111.6	111.9	111.9	111.9	110.1
62.5°	121.1	114.4	109.6	106.1	102.9	100.7	100.4	99.8	98.8	98.6	96.2
65°	107.1	102.0	97.9	94.4	91.2	89.4	88.8	87.2	86.0	83.6	82.0
67.5°	94.1	90.5	85.6	82.7	80.0	77.9	75.9	74.6	72.1	69.7	68.3
70°	81.1	77.3	74.1	71.0	68.3	66.3	64.0	61.6	60.0	58.6	57.5
72.5°	68.1	64.9	62.2	59.3	56.4	54.4	52.6	50.8	50.1	49.4	48.8
75°	56.0	53.0	50.5	48.1	46.5	44.2	43.3	42.5	41.8	40.9	39.8
77.5°	44.3	42.0	40.0	38.0	36.6	35.3	34.6	32.4	30.6	30.3	29.9
80°	33.0	31.2	29.9	28.5	26.9	25.1	24.5	23.8	23.4	23.4	23.6
82.5°	23.1	22.0	20.5	19.3	18.7	18.0	18.0	17.8	17.7	17.8	17.8
85°	14.1	12.6	12.3	12.1	12.3	12.3	12.3	12.3	12.1	12.3	11.9
87.5°	6.1	6.7	6.8	6.3	6.5	6.1	6.3	6.3	6.3	6.5	6.3
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: P243616

CATALOG NUMBER: S124RDRP-H350D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	462.8	462.8	462.8	462.8
2.5°	438.3	438.3	436.5	435.1
5°	413.6	411.3	410.9	408.7
7.5°	390.5	390.2	389.3	389.3
10°	372.2	370.9	369.6	369.5
12.5°	346.2	348.0	345.8	345.3
15°	323.5	322.1	320.3	316.5
17.5°	302.4	299.7	299.0	297.4
20°	285.8	283.8	283.1	282.2
22.5°	270.2	269.8	267.6	267.1
25°	258.6	256.8	255.4	254.5
27.5°	246.0	244.7	244.0	242.6
30°	234.5	234.1	233.2	233.2
32.5°	224.0	222.9	222.9	222.8
35°	214.5	214.8	213.7	213.4
37.5°	205.5	204.9	205.1	204.7
40°	196.6	196.3	196.3	196.4
42.5°	187.6	187.8	188.2	188.2
45°	178.6	178.8	179.1	179.1
47.5°	170.1	169.8	170.1	169.8
50°	159.3	160.4	160.2	160.0
52.5°	148.3	148.0	148.7	148.5
55°	136.4	135.9	136.6	135.9
57.5°	123.1	123.3	123.3	122.9
60°	109.8	109.2	108.5	108.5
62.5°	94.3	92.6	91.6	92.3
65°	79.3	78.0	77.7	77.1
67.5°	67.4	66.0	65.4	65.2
70°	57.1	56.4	56.2	56.2
72.5°	48.5	48.5	47.9	47.6
75°	39.5	38.7	37.8	37.8
77.5°	29.6	29.4	29.2	29.2
80°	23.1	23.1	23.2	23.4
82.5°	17.3	17.5	17.7	17.7
85°	11.7	11.7	11.9	11.9
87.5°	6.3	6.3	6.3	6.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243616
 CATALOG NUMBER: S124RDRP-H350D935-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	14.25	15.79	14.62	16.10	16.42	15.95	17.48	16.31	17.80	18.11
	3H	15.49	16.86	15.86	17.19	17.55	17.43	18.81	17.81	19.14	19.50
	4H	15.92	17.21	16.32	17.56	17.94	17.97	19.27	18.37	19.61	19.99
	6H	16.20	17.39	16.61	17.76	18.15	18.36	19.56	18.77	19.92	20.31
	8H	16.28	17.42	16.71	17.81	18.21	18.48	19.62	18.91	20.01	20.41
	12H	16.34	17.43	16.77	17.81	18.24	18.56	19.65	18.99	20.03	20.46
4H	2H	15.46	16.75	15.86	17.10	17.48	16.48	17.77	16.88	18.12	18.50
	3H	16.73	17.80	17.14	18.20	18.60	18.25	19.33	18.66	19.73	20.13
	4H	17.20	18.17	17.63	18.58	19.02	18.91	19.88	19.34	20.29	20.73
	6H	17.53	18.37	17.99	18.82	19.28	19.41	20.25	19.87	20.69	21.15
	8H	17.64	18.42	18.10	18.87	19.33	19.57	20.35	20.03	20.80	21.26
	12H	17.71	18.41	18.19	18.89	19.36	19.68	20.38	20.16	20.86	21.33
8H	4H	17.61	18.40	18.08	18.84	19.31	19.04	19.83	19.50	20.27	20.74
	6H	18.01	18.66	18.51	19.15	19.63	19.64	20.29	20.13	20.78	21.25
	8H	18.16	18.74	18.67	19.25	19.74	19.86	20.44	20.37	20.95	21.44
	12H	18.28	18.79	18.79	19.29	19.85	20.04	20.55	20.55	21.04	21.61
12H	4H	17.66	18.36	18.14	18.84	19.31	19.03	19.73	19.51	20.21	20.68
	6H	18.07	18.65	18.58	19.16	19.65	19.63	20.21	20.14	20.72	21.21
	8H	18.26	18.77	18.77	19.27	19.83	19.89	20.41	20.40	20.90	21.46