

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: P243419

Luminaire Tested: S123RDRP-H340D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243419  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDRP-H340D927-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

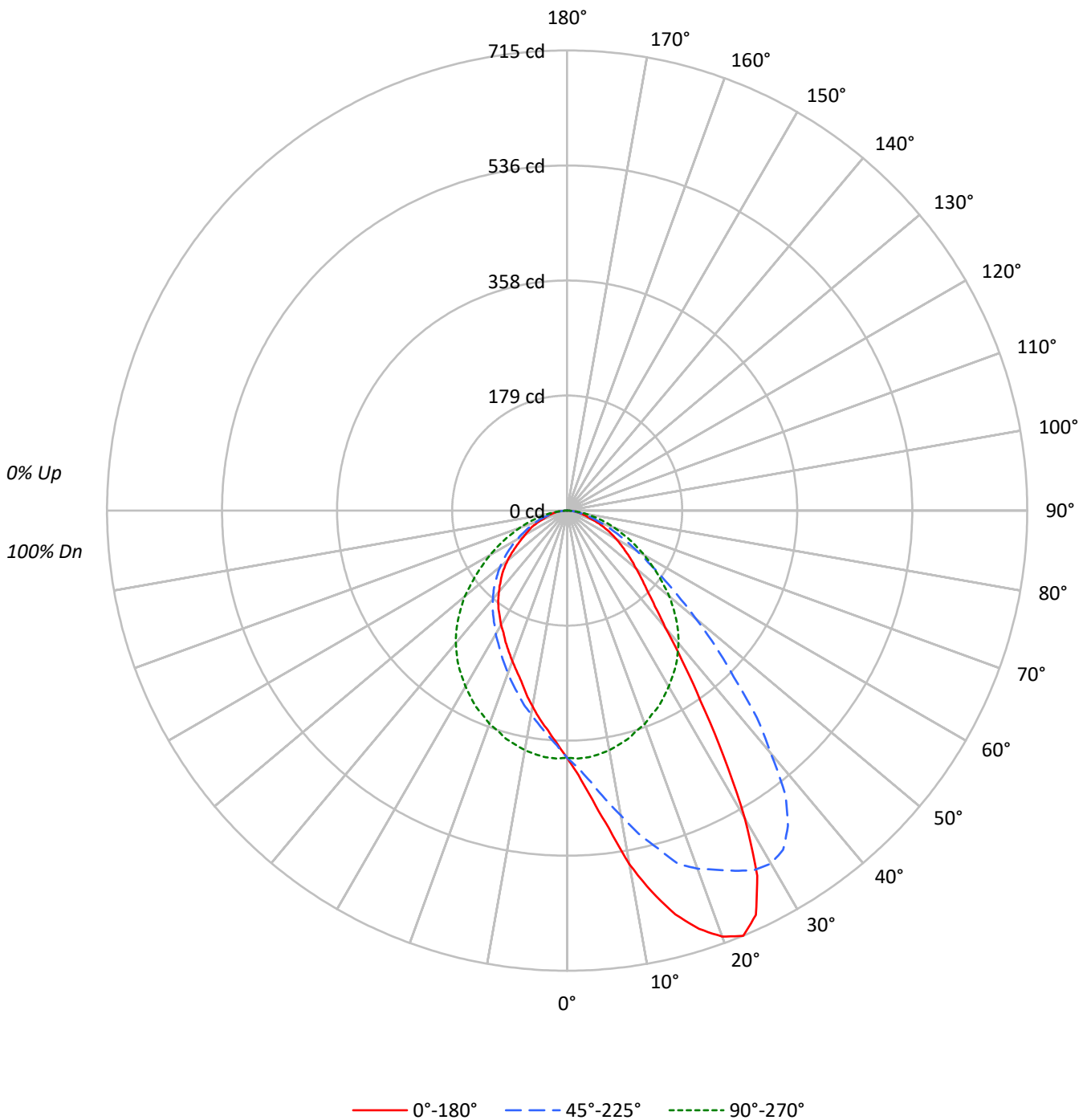
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1000.6 lumens  
Efficiency: N/A  
Efficacy: 89.3 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' 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

TEST NUMBER: P243419

CATALOG NUMBER: S123RDRP-H340D927-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot



TEST NUMBER: P243419

CATALOG NUMBER: S123RDRP-H340D927-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	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	4655	4655	4655	4655	4655
5°	5488	5151	4681	4255	4169
10°	6869	5923	4653	3955	3804
15°	8152	6814	4607	3699	3446
20°	9086	7638	4551	3471	3208
25°	9274	8260	4495	3265	3020
30°	7727	8863	4419	3103	2873
35°	5339	8850	4358	2959	2752
40°	3752	7793	4258	2839	2608
45°	3014	6276	4107	2712	2467
50°	2627	4912	3911	2561	2282
55°	2354	3791	3620	2392	2033
60°	2131	3018	3345	2170	1840
65°	1864	2478	3080	1965	1721
70°	1503	2017	2775	1804	1457
75°	1307	1583	2417	1522	1428
80°	1201	1298	2059	1459	1438
85°	1057	1113	1655	1321	1252

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 7865 cd/sqm



TEST NUMBER: P243419

CATALOG NUMBER: S123RDRP-H340D927-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.7	3.8
10°-20°	118.6	11.9
20°-30°	190.0	19.0
30°-40°	206.3	20.6
40°-50°	176.7	17.7
50°-60°	134.0	13.4
60°-70°	85.6	8.6
70°-80°	40.9	4.1
80°-90°	10.7	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°	346.3	34.6
0°-40°	552.6	55.2
0°-60°	863.3	86.3
0°-90°	1000.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1000.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	384	384	384	384	384	
5°	451	423	385	350	343	46
15°	650	543	367	295	275	184
25°	693	618	336	244	226	308
35°	361	598	294	200	186	232
45°	176	366	240	158	144	139
55°	111	179	171	113	96	100
65°	65	86	107	68	60	65
75°	28	34	52	32	30	30
85°	8	8	12	10	9	9
90°	0	0	0	0	0	



TEST NUMBER: P243419

CATALOG NUMBER: S123RDRP-H340D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0
2.5°	411.5	412.0	411.2	411.0	410.9	408.2	407.4	406.1	401.4	400.3	399.4
5°	451.0	449.7	451.2	448.4	445.2	443.4	440.4	433.8	428.0	423.3	420.3
7.5°	497.8	498.3	496.8	494.1	487.8	485.2	477.0	469.1	461.4	451.8	444.7
10°	558.1	554.1	555.0	546.7	540.0	532.1	521.0	508.2	494.8	481.2	471.1
12.5°	606.2	609.0	607.0	603.1	590.3	582.5	572.4	553.8	532.6	514.3	498.9
15°	649.6	645.8	646.3	636.7	632.1	624.9	608.2	589.8	576.0	543.0	524.8
17.5°	681.5	681.1	680.7	672.5	666.9	652.0	634.9	616.0	598.7	575.9	553.0
20°	704.4	706.8	706.2	699.6	689.6	675.2	664.9	641.4	613.0	592.1	564.1
22.5°	715.3	715.5	715.8	712.7	706.0	696.7	682.1	663.2	638.0	603.9	572.7
25°	693.4	694.2	698.6	701.2	703.0	698.9	691.3	674.2	652.5	617.6	585.3
27.5°	639.7	642.3	647.2	663.1	669.5	678.5	681.6	674.8	658.8	629.7	592.9
30°	552.1	559.6	564.3	582.3	607.7	631.6	642.8	654.0	652.5	633.2	595.9
32.5°	452.0	456.8	470.2	489.6	509.7	544.7	583.8	610.7	625.8	624.8	598.4
35°	360.8	367.8	379.2	394.0	421.7	458.0	502.2	544.5	582.3	598.1	588.6
37.5°	292.8	293.5	304.3	325.2	342.4	374.4	414.4	466.6	516.2	557.3	566.4
40°	237.1	241.8	247.4	260.5	280.9	311.6	338.1	389.5	440.9	492.5	529.3
42.5°	202.0	202.0	208.3	216.5	230.1	248.5	280.2	326.8	373.1	436.4	477.9
45°	175.8	177.4	180.2	185.5	195.2	209.4	234.0	265.6	312.9	366.1	428.5
47.5°	156.9	156.7	159.2	162.3	169.8	180.6	195.0	220.7	255.7	313.0	368.1
50°	139.3	139.9	141.8	144.4	149.4	157.0	166.1	185.5	215.1	260.5	318.2
52.5°	125.7	125.5	127.0	128.7	132.5	136.8	144.9	159.3	179.7	215.9	263.8
55°	111.4	112.1	113.9	114.9	118.1	120.9	127.7	135.8	152.2	179.4	223.0
57.5°	99.2	100.0	101.0	102.0	104.1	106.9	112.6	117.6	129.5	149.1	183.9
60°	87.9	87.5	88.7	90.4	91.5	94.0	97.2	102.3	110.6	124.5	150.1
62.5°	76.6	76.8	76.9	77.9	80.1	82.2	85.1	88.9	93.8	104.1	122.2
65°	65.0	65.2	65.5	66.5	68.6	70.0	73.0	76.3	80.3	86.4	99.0
67.5°	54.7	55.4	55.4	56.2	57.0	58.4	60.5	63.0	66.3	70.8	78.9
70°	42.4	42.3	43.1	44.8	45.6	47.9	49.4	51.1	54.1	56.9	63.8
72.5°	34.2	34.2	34.2	34.8	35.0	35.5	36.5	40.0	42.3	45.1	48.9
75°	27.9	28.0	28.0	28.2	28.4	28.9	29.2	30.2	30.8	33.8	36.1
77.5°	22.2	22.4	22.4	22.6	22.7	22.9	23.5	23.5	24.0	24.7	25.7
80°	17.2	17.1	17.1	17.2	17.2	17.7	17.7	18.1	18.2	18.6	19.1
82.5°	12.3	12.1	12.3	12.1	12.3	12.4	12.8	12.6	12.9	13.3	13.4
85°	7.6	7.8	7.8	8.1	8.0	7.8	8.0	8.0	8.0	8.0	8.3
87.5°	3.3	3.6	3.6	3.5	3.6	3.6	3.3	3.6	3.6	3.6	3.8
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: P243419

CATALOG NUMBER: S123RDRP-H340D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0
2.5°	398.9	398.3	395.8	393.5	390.0	388.5	386.5	385.7	383.0	379.4	377.7
5°	417.5	412.5	407.7	401.9	397.1	391.5	388.3	384.7	379.0	373.9	370.3
7.5°	437.2	429.9	421.0	411.4	402.8	394.6	387.7	381.9	374.6	367.4	361.8
10°	459.0	446.5	432.1	419.8	407.4	395.6	386.8	378.0	368.6	359.6	352.8
12.5°	482.3	464.8	447.4	429.0	410.4	396.8	383.7	372.4	361.8	352.3	344.2
15°	506.5	482.5	460.3	439.6	413.7	395.5	381.0	367.1	353.8	342.2	334.3
17.5°	523.8	496.3	468.2	438.9	416.7	394.1	376.2	358.6	346.4	334.4	323.7
20°	539.7	508.5	475.2	447.9	416.8	389.3	369.8	352.8	335.8	323.0	313.9
22.5°	546.5	518.3	484.7	446.7	415.7	387.5	362.3	343.2	328.0	314.0	302.1
25°	547.8	516.3	481.8	445.2	411.2	380.7	355.2	336.1	316.2	301.8	292.5
27.5°	553.6	510.5	476.7	440.2	405.7	373.9	347.0	325.8	307.2	291.8	279.9
30°	555.1	508.0	465.8	430.9	395.5	364.3	337.1	315.7	295.5	279.7	268.9
32.5°	555.8	504.7	454.3	416.2	382.4	353.0	328.1	304.9	285.7	269.1	258.0
35°	553.5	500.1	440.6	399.4	366.9	338.1	315.0	294.5	273.1	257.5	245.7
37.5°	544.4	492.8	432.8	379.9	348.9	321.7	302.1	281.9	262.1	245.2	233.1
40°	527.1	482.2	418.2	363.5	328.3	303.9	285.7	269.1	249.2	233.0	221.0
42.5°	499.6	467.8	404.7	344.9	307.9	284.9	269.6	255.3	237.4	222.0	208.9
45°	458.8	447.5	386.8	326.0	285.7	264.0	250.7	239.6	223.3	209.3	197.1
47.5°	414.7	417.2	368.8	306.7	265.5	244.7	233.1	223.3	211.1	196.0	184.9
50°	363.8	377.4	343.4	287.3	245.2	224.8	213.4	207.4	196.0	183.4	172.9
52.5°	317.2	338.7	317.7	266.1	225.3	205.3	194.7	188.7	181.1	170.6	160.0
55°	268.9	296.3	281.0	243.2	205.1	184.9	175.9	171.3	165.0	156.9	147.2
57.5°	229.0	258.2	248.5	219.2	185.4	167.1	159.2	153.9	150.1	142.6	134.8
60°	189.9	216.9	213.1	191.5	165.8	148.4	142.3	138.0	134.8	129.3	121.7
62.5°	153.2	179.4	181.7	164.8	146.7	131.0	125.4	122.4	119.9	115.6	108.6
65°	121.5	144.6	149.4	136.5	126.7	114.7	109.3	107.4	105.6	100.6	95.3
67.5°	95.2	113.2	119.5	112.3	105.3	98.3	94.0	91.5	90.2	87.2	83.6
70°	72.8	88.4	93.7	90.5	85.9	83.2	79.9	78.3	76.9	73.1	71.1
72.5°	54.6	65.2	71.8	70.8	69.8	68.0	66.0	65.5	63.5	61.0	59.2
75°	40.0	46.1	52.1	54.2	53.9	54.6	52.4	51.6	50.4	48.6	47.1
77.5°	28.7	32.3	36.5	39.1	40.5	40.6	40.6	40.1	39.3	38.0	36.8
80°	19.9	20.7	24.5	27.0	28.4	29.3	29.3	29.5	28.7	28.2	27.4
82.5°	13.8	14.3	15.1	17.1	18.7	19.9	20.1	19.9	19.6	19.4	18.2
85°	8.6	8.5	8.5	9.0	10.3	11.4	11.6	11.9	11.8	11.6	10.4
87.5°	3.6	3.6	3.8	3.6	4.1	4.3	4.6	5.5	5.3	4.5	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: P243419

CATALOG NUMBER: S123RDRP-H340D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0	384.0
2.5°	376.7	374.6	372.6	370.4	367.8	365.3	364.9	364.6	365.4	363.8	363.1
5°	367.4	363.3	360.1	356.2	353.3	349.7	347.7	347.2	347.0	346.0	344.7
7.5°	357.3	352.8	348.4	343.9	339.2	335.4	333.3	332.1	331.1	329.5	328.1
10°	347.9	342.2	337.4	331.3	326.3	321.3	319.4	317.7	316.7	314.4	312.6
12.5°	337.3	330.1	324.8	318.2	313.7	309.4	306.3	303.1	300.8	297.3	295.8
15°	328.0	320.5	311.6	307.6	301.3	294.8	291.3	291.3	286.5	283.7	281.9
17.5°	315.5	309.1	302.8	294.6	285.7	281.9	277.9	274.4	271.1	270.3	267.0
20°	304.6	297.0	290.5	281.7	273.6	269.1	264.5	260.7	258.2	255.8	254.0
22.5°	293.8	286.2	276.2	267.6	262.1	256.2	251.2	247.9	245.7	242.2	240.6
25°	282.5	273.4	264.5	256.0	249.2	244.1	238.9	237.1	233.3	231.5	229.1
27.5°	271.3	260.3	251.9	244.6	236.9	232.0	228.5	225.2	221.9	220.9	219.5
30°	258.7	248.5	240.4	233.3	226.0	221.7	217.5	214.6	211.7	209.6	208.1
32.5°	246.1	237.6	229.8	221.5	214.9	210.2	206.8	204.1	202.8	199.1	197.8
35°	234.5	225.8	217.5	209.7	204.4	200.0	196.8	194.3	191.5	189.2	187.9
37.5°	222.5	214.7	206.3	199.6	193.7	190.0	186.5	183.2	181.1	179.7	178.1
40°	210.9	202.6	196.2	188.9	183.6	179.4	175.8	173.3	170.6	169.5	167.3
42.5°	200.0	192.0	184.5	177.9	173.1	169.1	165.6	162.8	160.7	158.5	157.4
45°	187.4	180.4	173.6	167.0	162.5	158.2	154.4	151.9	148.9	147.1	146.4
47.5°	176.8	169.5	162.2	156.0	151.4	146.7	143.6	140.6	138.1	136.3	135.3
50°	164.2	157.4	151.4	145.2	140.8	135.8	132.0	129.2	126.3	125.0	123.4
52.5°	153.4	146.7	139.4	134.0	128.8	124.5	121.0	118.7	116.2	114.2	113.1
55°	139.9	133.5	127.7	121.9	116.7	113.2	110.4	106.5	104.3	102.3	99.2
57.5°	128.2	122.0	115.9	110.3	105.5	101.3	97.8	95.2	92.4	90.9	88.7
60°	115.7	109.3	103.6	99.3	94.0	89.5	87.2	84.1	81.7	79.4	78.8
62.5°	103.5	97.5	91.9	87.4	82.6	79.1	76.1	74.6	72.3	70.5	69.8
65°	90.7	85.7	80.4	75.4	72.5	68.5	66.8	64.3	63.0	62.2	62.0
67.5°	78.1	73.6	68.8	65.0	62.2	59.5	57.5	56.5	55.2	54.2	53.4
70°	66.7	62.3	58.2	55.0	52.9	50.9	49.6	47.8	46.4	45.1	43.3
72.5°	55.4	51.9	48.4	45.9	43.8	42.6	40.8	38.0	36.6	36.3	36.1
75°	44.9	41.1	38.6	37.3	35.3	32.5	31.3	31.0	30.8	30.5	30.5
77.5°	34.7	32.3	30.7	27.9	26.9	26.7	25.9	25.7	25.4	25.5	25.5
80°	25.2	23.9	21.9	21.1	20.7	20.9	20.6	20.7	20.4	20.6	20.2
82.5°	16.7	15.6	15.9	15.4	15.4	15.8	15.6	15.1	15.1	14.9	14.9
85°	9.9	9.8	10.1	10.1	9.9	9.5	9.8	9.6	9.1	9.3	9.3
87.5°	4.3	4.3	4.3	4.1	4.3	4.1	4.1	4.1	3.6	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: P243419

CATALOG NUMBER: S123RDRP-H340D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	384.0	384.0	384.0	384.0
2.5°	363.5	363.1	362.6	362.1
5°	344.7	343.2	343.1	342.6
7.5°	327.1	326.5	325.3	326.6
10°	311.1	311.6	310.4	309.1
12.5°	294.3	293.3	291.5	292.5
15°	279.6	277.9	276.9	274.6
17.5°	264.1	262.8	262.8	261.3
20°	250.7	249.4	249.7	248.7
22.5°	239.4	238.4	236.9	237.1
25°	228.8	227.3	225.7	225.8
27.5°	217.0	215.7	215.4	214.2
30°	206.6	205.4	205.3	205.3
32.5°	196.5	196.0	195.2	194.7
35°	187.7	187.0	185.7	186.0
37.5°	176.8	176.1	175.9	175.8
40°	166.5	166.0	164.6	164.8
42.5°	156.2	155.4	154.5	154.2
45°	145.1	144.9	143.6	143.9
47.5°	134.5	134.1	133.5	132.6
50°	122.7	122.5	122.0	121.0
52.5°	111.3	110.8	109.8	108.8
55°	98.3	96.8	97.0	96.2
57.5°	87.7	87.1	85.7	85.2
60°	77.4	76.8	76.6	75.9
62.5°	68.8	68.1	67.7	67.7
65°	61.0	60.2	60.0	60.0
67.5°	52.4	51.6	51.4	51.1
70°	41.6	41.5	41.1	41.1
72.5°	35.8	35.6	35.8	35.2
75°	30.5	30.3	30.3	30.5
77.5°	25.4	25.4	25.2	25.2
80°	20.1	20.2	20.1	20.6
82.5°	15.1	14.8	14.9	14.6
85°	9.3	9.3	9.0	9.0
87.5°	3.6	3.6	3.6	3.6
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243419  
 CATALOG NUMBER: S123RDRP-H340D927-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	13.73	15.23	14.09	15.54	15.86	16.43	17.93	16.80	18.25	18.56
	3H	14.92	16.26	15.30	16.59	16.95	17.86	19.20	18.23	19.53	19.89
	4H	15.27	16.53	15.67	16.88	17.26	18.36	19.62	18.76	19.97	20.35
	6H	15.55	16.71	15.96	17.08	17.47	18.70	19.87	19.12	20.23	20.63
	8H	15.64	16.74	16.06	17.13	17.53	18.81	19.91	19.23	20.30	20.70
	12H	15.70	16.76	16.13	17.14	17.57	18.86	19.92	19.30	20.31	20.74
4H	2H	14.68	15.94	15.08	16.29	16.67	16.71	17.97	17.11	18.32	18.70
	3H	15.95	16.99	16.36	17.39	17.79	18.43	19.47	18.84	19.87	20.27
	4H	16.36	17.30	16.79	17.71	18.15	19.04	19.98	19.47	20.40	20.83
	6H	16.70	17.52	17.16	17.96	18.42	19.50	20.31	19.96	20.76	21.22
	8H	16.82	17.58	17.28	18.02	18.49	19.64	20.40	20.10	20.84	21.31
	12H	16.91	17.59	17.39	18.07	18.54	19.73	20.41	20.21	20.89	21.36
8H	4H	16.72	17.48	17.18	17.92	18.39	19.10	19.86	19.56	20.31	20.77
	6H	17.14	17.77	17.63	18.26	18.74	19.63	20.26	20.13	20.75	21.23
	8H	17.30	17.86	17.82	18.38	18.86	19.82	20.38	20.33	20.89	21.38
	12H	17.45	17.95	17.96	18.44	19.00	19.97	20.47	20.48	20.96	21.53
12H	4H	16.75	17.43	17.23	17.91	18.38	19.09	19.77	19.57	20.25	20.72
	6H	17.18	17.75	17.70	18.26	18.75	19.62	20.18	20.13	20.69	21.18
	8H	17.39	17.89	17.90	18.38	18.95	19.85	20.35	20.36	20.84	21.40