

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: P243429

Luminaire Tested: S123RDRP-H340D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243429
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-H340D835-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

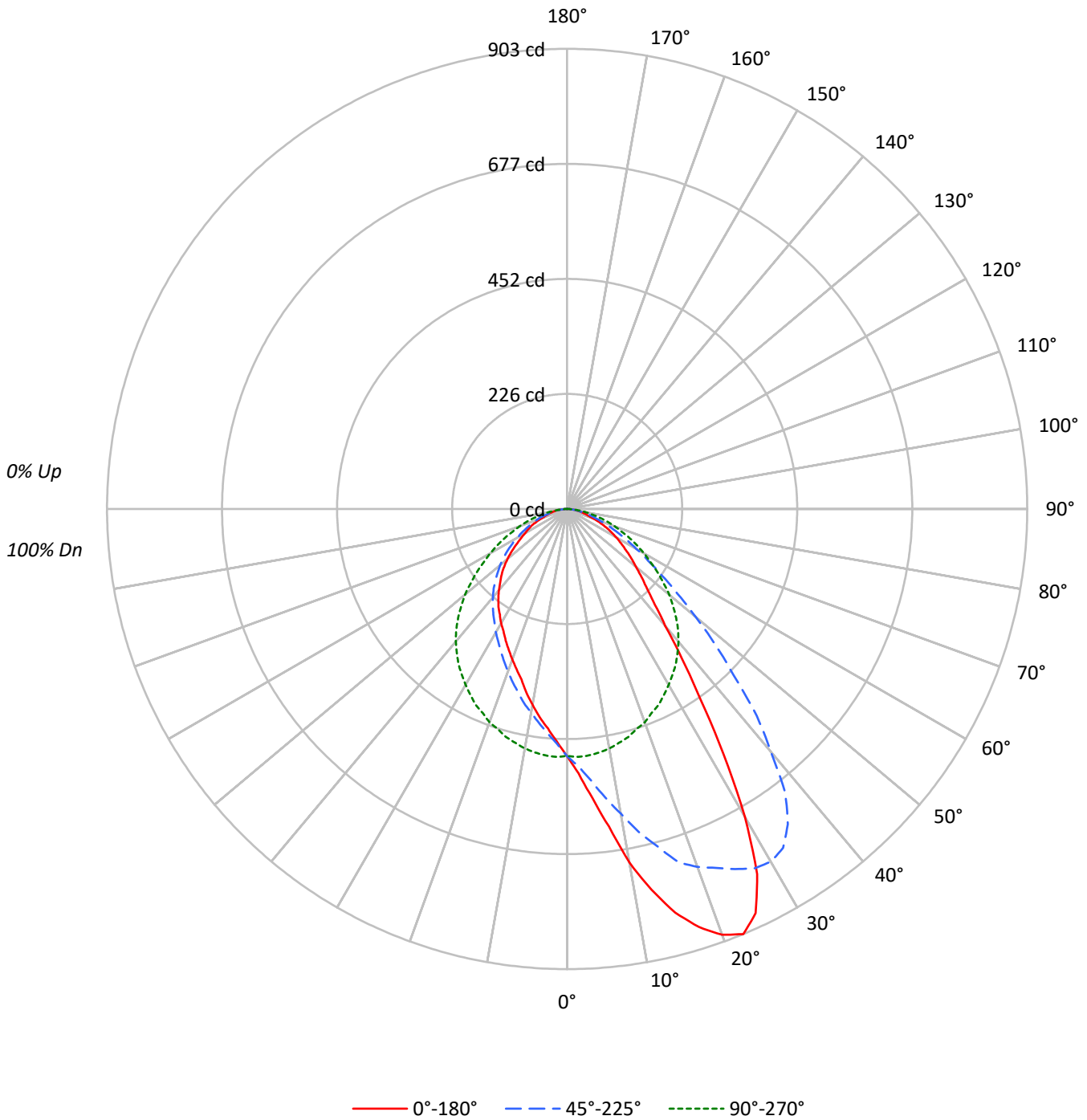
Lumens per Lamp: N/A
Luminaire Lumens: 1263.1 lumens
Efficiency: N/A
Efficacy: 112.8 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

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: P243429

CATALOG NUMBER: S123RDRP-H340D835-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	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87					87			
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74					74			
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64					64			
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56					56			
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49					49			
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44					44			
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39					39			
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35					35			
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32					32			
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29					29			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	5876	5876	5876	5876	5876
5°	6927	6502	5909	5371	5261
10°	8671	7476	5873	4992	4801
15°	10291	8602	5815	4669	4349
20°	11469	9641	5745	4382	4050
25°	11707	10428	5675	4121	3813
30°	9755	11187	5578	3916	3626
35°	6740	11172	5500	3735	3474
40°	4736	9836	5375	3584	3293
45°	3804	7923	5184	3423	3115
50°	3315	6200	4937	3232	2881
55°	2973	4787	4569	3022	2566
60°	2688	3811	4221	2739	2325
65°	2352	3126	3889	2478	2174
70°	1900	2545	3501	2279	1839
75°	1649	2000	3049	1920	1803
80°	1522	1633	2604	1843	1815
85°	1335	1391	2100	1655	1572

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 9929 cd/sqm



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CATALOG NUMBER: S123RDRP-H340D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.5	3.8
10°-20°	149.7	11.9
20°-30°	239.9	19.0
30°-40°	260.4	20.6
40°-50°	223.1	17.7
50°-60°	169.1	13.4
60°-70°	108.1	8.6
70°-80°	51.7	4.1
80°-90°	13.6	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°	437.1	34.6
0°-40°	697.6	55.2
0°-60°	1089.8	86.3
0°-90°	1263.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1263.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	485	485	485	485	485	
5°	569	534	486	441	432	58
15°	820	686	463	372	347	232
25°	875	780	424	308	285	388
35°	456	755	372	252	235	293
45°	222	462	302	200	182	175
55°	141	226	216	143	121	127
65°	82	109	136	86	76	82
75°	35	43	65	41	38	38
85°	10	10	15	12	11	11
90°	0	0	0	0	0	



TEST NUMBER: P243429

CATALOG NUMBER: S123RDRP-H340D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8
2.5°	519.5	520.1	519.1	518.9	518.7	515.3	514.3	512.6	506.7	505.3	504.2
5°	569.3	567.6	569.5	566.0	562.0	559.7	555.9	547.5	540.2	534.4	530.6
7.5°	628.3	629.0	627.1	623.7	615.8	612.4	602.2	592.1	582.5	570.4	561.4
10°	704.5	699.5	700.6	690.1	681.7	671.7	657.6	641.5	624.6	607.4	594.6
12.5°	765.2	768.8	766.3	761.3	745.1	735.3	722.5	699.1	672.3	649.3	629.8
15°	820.1	815.3	815.9	803.7	797.9	788.9	767.7	744.5	727.1	685.5	662.5
17.5°	860.3	859.8	859.2	849.0	841.8	823.0	801.4	777.6	755.8	726.9	698.0
20°	889.1	892.3	891.4	883.1	870.5	852.3	839.3	809.6	773.8	747.4	712.1
22.5°	903.0	903.2	903.6	899.6	891.2	879.5	861.1	837.2	805.4	762.3	722.9
25°	875.3	876.4	881.8	885.2	887.5	882.2	872.6	851.0	823.6	779.7	738.9
27.5°	807.5	810.9	816.9	837.0	845.2	856.5	860.5	851.9	831.6	795.0	748.5
30°	697.0	706.4	712.3	735.1	767.1	797.3	811.5	825.5	823.6	799.3	752.3
32.5°	570.6	576.6	593.6	618.1	643.4	687.6	737.0	770.9	789.9	788.7	755.4
35°	455.5	464.2	478.7	497.3	532.3	578.1	634.0	687.4	735.1	755.0	743.0
37.5°	369.6	370.5	384.1	410.5	432.2	472.6	523.1	589.0	651.6	703.5	715.0
40°	299.3	305.2	312.3	328.8	354.6	393.3	426.8	491.7	556.5	621.6	668.1
42.5°	254.9	254.9	262.9	273.4	290.5	313.8	353.7	412.5	470.9	550.9	603.2
45°	221.9	224.0	227.5	234.2	246.4	264.4	295.3	335.3	395.0	462.2	540.9
47.5°	198.0	197.8	200.9	204.9	214.3	227.9	246.1	278.6	322.8	395.2	464.7
50°	175.8	176.7	179.0	182.3	188.6	198.2	209.7	234.2	271.5	328.8	401.7
52.5°	158.7	158.4	160.3	162.4	167.2	172.7	182.9	201.1	226.9	272.5	333.0
55°	140.7	141.5	143.8	145.1	149.0	152.6	161.2	171.4	192.1	226.5	281.5
57.5°	125.2	126.2	127.5	128.7	131.4	135.0	142.1	148.4	163.5	188.2	232.1
60°	110.9	110.5	112.0	114.1	115.5	118.7	122.7	129.1	139.6	157.2	189.4
62.5°	96.7	96.9	97.1	98.4	101.1	103.8	107.4	112.2	118.5	131.4	154.3
65°	82.0	82.3	82.7	83.9	86.7	88.3	92.1	96.3	101.3	109.0	125.0
67.5°	69.1	69.9	69.9	71.0	72.0	73.7	76.4	79.5	83.7	89.4	99.6
70°	53.6	53.4	54.4	56.5	57.6	60.5	62.4	64.5	68.2	71.8	80.6
72.5°	43.1	43.1	43.1	44.0	44.2	44.8	46.0	50.4	53.4	56.9	61.7
75°	35.2	35.4	35.4	35.6	35.8	36.4	36.8	38.1	38.9	42.7	45.6
77.5°	28.0	28.3	28.3	28.5	28.7	28.9	29.7	29.7	30.3	31.2	32.4
80°	21.8	21.6	21.6	21.8	21.8	22.4	22.4	22.8	23.0	23.4	24.1
82.5°	15.5	15.3	15.5	15.3	15.5	15.7	16.1	15.9	16.3	16.7	17.0
85°	9.6	9.8	9.8	10.3	10.0	9.8	10.0	10.0	10.0	10.0	10.5
87.5°	4.2	4.6	4.6	4.4	4.6	4.6	4.2	4.6	4.6	4.6	4.8
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°	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8
2.5°	503.6	502.8	499.6	496.7	492.3	490.4	487.9	486.9	483.5	478.9	476.8
5°	527.0	520.8	514.7	507.4	501.3	494.2	490.2	485.6	478.5	472.0	467.4
7.5°	551.9	542.7	531.4	519.3	508.4	498.2	489.4	482.0	472.8	463.8	456.7
10°	579.4	563.7	545.5	530.0	514.3	499.4	488.3	477.2	465.3	454.0	445.4
12.5°	608.9	586.7	564.7	541.5	518.0	500.9	484.3	470.1	456.7	444.8	434.5
15°	639.4	609.1	581.0	554.9	522.2	499.2	481.0	463.4	446.7	432.0	422.0
17.5°	661.2	626.5	591.1	554.0	526.0	497.5	474.9	452.7	437.2	422.2	408.6
20°	681.3	641.9	599.9	565.3	526.2	491.5	466.8	445.4	423.8	407.7	396.2
22.5°	689.9	654.3	611.8	563.9	524.7	489.2	457.3	433.3	414.0	396.4	381.4
25°	691.6	651.8	608.2	562.0	519.1	480.6	448.3	424.3	399.2	380.9	369.2
27.5°	698.9	644.5	601.8	555.7	512.2	472.0	438.1	411.3	387.8	368.4	353.3
30°	700.8	641.3	587.9	544.0	499.2	459.8	425.5	398.5	373.0	353.1	339.5
32.5°	701.6	637.1	573.5	525.4	482.7	445.6	414.2	384.9	360.6	339.7	325.7
35°	698.7	631.3	556.1	504.2	463.2	426.8	397.7	371.7	344.7	325.1	310.2
37.5°	687.2	622.1	546.3	479.5	440.4	406.1	381.4	355.8	330.9	309.6	294.3
40°	665.4	608.7	527.9	458.8	414.4	383.7	360.6	339.7	314.6	294.1	279.0
42.5°	630.6	590.5	510.9	435.4	388.7	359.6	340.3	322.3	299.7	280.3	263.7
45°	579.2	564.9	488.3	411.5	360.6	333.2	316.5	302.4	281.9	264.1	248.9
47.5°	523.5	526.6	465.5	387.2	335.1	308.9	294.3	281.9	266.4	247.4	233.4
50°	459.2	476.4	433.5	362.7	309.6	283.8	269.4	261.8	247.4	231.5	218.3
52.5°	400.4	427.6	401.0	335.9	284.4	259.1	245.7	238.2	228.6	215.4	202.0
55°	339.5	374.0	354.8	307.1	258.9	233.4	222.1	216.2	208.3	198.0	185.9
57.5°	289.1	325.9	313.8	276.7	234.0	211.0	200.9	194.2	189.4	180.0	170.2
60°	239.7	273.8	269.0	241.8	209.3	187.3	179.6	174.1	170.2	163.3	153.6
62.5°	193.4	226.5	229.4	208.1	185.2	165.4	158.2	154.5	151.3	145.9	137.1
65°	153.4	182.5	188.6	172.3	159.9	144.8	137.9	135.6	133.3	127.0	120.4
67.5°	120.1	143.0	150.9	141.7	132.9	124.1	118.7	115.5	113.9	110.1	105.5
70°	91.9	111.6	118.3	114.3	108.4	105.1	100.9	98.8	97.1	92.3	89.8
72.5°	68.9	82.3	90.6	89.4	88.1	85.8	83.3	82.7	80.2	77.0	74.7
75°	50.4	58.2	65.7	68.4	68.0	68.9	66.1	65.1	63.6	61.3	59.4
77.5°	36.2	40.8	46.0	49.4	51.1	51.3	51.3	50.7	49.6	47.9	46.5
80°	25.1	26.2	31.0	34.1	35.8	37.0	37.0	37.3	36.2	35.6	34.5
82.5°	17.4	18.0	19.0	21.6	23.7	25.1	25.3	25.1	24.7	24.5	23.0
85°	10.9	10.7	10.7	11.3	13.0	14.4	14.7	15.1	14.9	14.7	13.2
87.5°	4.6	4.6	4.8	4.6	5.2	5.4	5.9	6.9	6.7	5.7	5.2
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8
2.5°	475.5	472.8	470.3	467.6	464.2	461.1	460.7	460.3	461.3	459.2	458.4
5°	463.8	458.6	454.6	449.6	446.0	441.4	438.9	438.3	438.1	436.8	435.2
7.5°	451.1	445.4	439.8	434.1	428.2	423.4	420.7	419.2	418.0	415.9	414.2
10°	439.1	432.0	425.9	418.2	411.9	405.6	403.1	401.0	399.8	396.8	394.5
12.5°	425.7	416.7	410.0	401.7	396.0	390.6	386.6	382.6	379.7	375.3	373.4
15°	414.0	404.6	393.3	388.3	380.3	372.1	367.8	367.8	361.7	358.1	355.8
17.5°	398.3	390.1	382.2	371.9	360.6	355.8	350.8	346.4	342.2	341.2	337.0
20°	384.5	374.9	366.7	355.6	345.4	339.7	333.8	329.0	325.9	323.0	320.7
22.5°	370.9	361.3	348.7	337.8	330.9	323.4	317.1	312.9	310.2	305.8	303.7
25°	356.7	345.1	333.8	323.2	314.6	308.1	301.6	299.3	294.5	292.2	289.3
27.5°	342.4	328.6	317.9	308.7	299.1	292.8	288.4	284.2	280.1	278.8	277.1
30°	326.5	313.8	303.5	294.5	285.3	279.8	274.6	270.8	267.3	264.6	262.7
32.5°	310.6	299.9	290.1	279.6	271.3	265.4	261.0	257.7	256.0	251.4	249.7
35°	296.0	285.1	274.6	264.8	258.1	252.4	248.4	245.3	241.8	238.8	237.1
37.5°	280.9	271.1	260.4	252.0	244.5	239.9	235.5	231.3	228.6	226.9	224.8
40°	266.2	255.8	247.6	238.4	231.7	226.5	221.9	218.7	215.4	213.9	211.2
42.5°	252.4	242.4	233.0	224.6	218.5	213.5	209.1	205.5	202.8	200.1	198.6
45°	236.5	227.7	219.1	210.8	205.1	199.7	194.9	191.7	188.0	185.7	184.8
47.5°	223.1	213.9	204.7	197.0	191.1	185.2	181.3	177.5	174.4	172.1	170.8
50°	207.2	198.6	191.1	183.4	177.7	171.4	166.6	163.1	159.5	157.8	155.7
52.5°	193.6	185.2	176.0	169.1	162.6	157.2	152.8	149.9	146.7	144.2	142.7
55°	176.7	168.5	161.2	153.8	147.4	143.0	139.4	134.4	131.7	129.1	125.2
57.5°	161.8	154.1	146.3	139.2	133.1	127.9	123.5	120.1	116.6	114.7	112.0
60°	146.1	137.9	130.8	125.4	118.7	113.0	110.1	106.1	103.2	100.3	99.4
62.5°	130.6	123.1	116.0	110.3	104.2	99.8	96.1	94.2	91.3	89.0	88.1
65°	114.5	108.2	101.5	95.2	91.5	86.4	84.4	81.2	79.5	78.5	78.3
67.5°	98.6	92.9	86.9	82.0	78.5	75.1	72.6	71.4	69.7	68.4	67.4
70°	84.1	78.7	73.5	69.5	66.8	64.3	62.6	60.3	58.6	56.9	54.6
72.5°	69.9	65.5	61.1	58.0	55.3	53.8	51.5	47.9	46.3	45.8	45.6
75°	56.7	51.9	48.8	47.1	44.6	41.0	39.6	39.1	38.9	38.5	38.5
77.5°	43.7	40.8	38.7	35.2	33.9	33.7	32.7	32.4	32.0	32.2	32.2
80°	31.8	30.1	27.6	26.6	26.2	26.4	26.0	26.2	25.7	26.0	25.5
82.5°	21.1	19.7	20.1	19.5	19.5	19.9	19.7	19.0	19.0	18.8	18.8
85°	12.6	12.3	12.8	12.8	12.6	11.9	12.3	12.1	11.5	11.7	11.7
87.5°	5.4	5.4	5.4	5.2	5.4	5.2	5.2	5.2	4.6	4.6	4.6
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: P243429

CATALOG NUMBER: S123RDRP-H340D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	484.8	484.8	484.8	484.8
2.5°	458.8	458.4	457.8	457.1
5°	435.2	433.3	433.1	432.4
7.5°	413.0	412.1	410.7	412.3
10°	392.7	393.3	391.8	390.1
12.5°	371.5	370.3	368.0	369.2
15°	352.9	350.8	349.5	346.6
17.5°	333.4	331.8	331.8	329.9
20°	316.5	314.8	315.2	314.0
22.5°	302.2	301.0	299.1	299.3
25°	288.8	287.0	284.9	285.1
27.5°	274.0	272.3	271.9	270.4
30°	260.8	259.3	259.1	259.1
32.5°	248.0	247.4	246.4	245.7
35°	236.9	236.1	234.4	234.8
37.5°	223.1	222.3	222.1	221.9
40°	210.1	209.5	207.8	208.1
42.5°	197.2	196.1	195.1	194.7
45°	183.1	182.9	181.3	181.7
47.5°	169.7	169.3	168.5	167.4
50°	154.9	154.7	154.1	152.8
52.5°	140.4	139.8	138.6	137.3
55°	124.1	122.2	122.4	121.4
57.5°	110.7	109.9	108.2	107.6
60°	97.7	96.9	96.7	95.9
62.5°	86.9	86.0	85.4	85.4
65°	77.0	76.0	75.8	75.8
67.5°	66.1	65.1	64.9	64.5
70°	52.5	52.3	51.9	51.9
72.5°	45.2	45.0	45.2	44.4
75°	38.5	38.3	38.3	38.5
77.5°	32.0	32.0	31.8	31.8
80°	25.3	25.5	25.3	26.0
82.5°	19.0	18.6	18.8	18.4
85°	11.7	11.7	11.3	11.3
87.5°	4.6	4.6	4.6	4.6
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243429
 CATALOG NUMBER: S123RDRP-H340D835-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	14.54	16.04	14.90	16.35	16.67	17.24	18.74	17.61	19.06	19.37
	3H	15.73	17.07	16.10	17.40	17.76	18.67	20.01	19.04	20.34	20.70
	4H	16.08	17.34	16.48	17.69	18.07	19.17	20.43	19.57	20.78	21.16
	6H	16.36	17.52	16.77	17.89	18.28	19.51	20.68	19.93	21.04	21.44
	8H	16.45	17.55	16.87	17.94	18.34	19.62	20.72	20.04	21.11	21.51
	12H	16.51	17.57	16.94	17.95	18.38	19.67	20.73	20.11	21.12	21.55
4H	2H	15.49	16.75	15.89	17.10	17.48	17.52	18.78	17.92	19.13	19.51
	3H	16.76	17.80	17.17	18.20	18.60	19.24	20.28	19.65	20.68	21.08
	4H	17.17	18.10	17.60	18.52	18.96	19.85	20.79	20.28	21.21	21.64
	6H	17.51	18.33	17.97	18.77	19.23	20.31	21.12	20.77	21.57	22.03
	8H	17.63	18.39	18.09	18.83	19.30	20.45	21.21	20.91	21.65	22.12
	12H	17.72	18.40	18.20	18.88	19.35	20.54	21.22	21.02	21.70	22.17
8H	4H	17.53	18.29	17.99	18.73	19.20	19.91	20.67	20.37	21.12	21.58
	6H	17.95	18.58	18.44	19.07	19.55	20.44	21.07	20.94	21.56	22.04
	8H	18.11	18.67	18.63	19.19	19.67	20.63	21.19	21.14	21.70	22.19
	12H	18.26	18.76	18.77	19.25	19.81	20.78	21.28	21.29	21.77	22.34
12H	4H	17.56	18.24	18.04	18.71	19.19	19.90	20.58	20.38	21.06	21.53
	6H	17.99	18.56	18.51	19.07	19.56	20.43	20.99	20.94	21.50	21.99
	8H	18.20	18.70	18.71	19.19	19.76	20.66	21.16	21.17	21.65	22.21