

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: P243277

Luminaire Tested: S122RDRP-H290D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243277
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122RDRP-H290D940-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

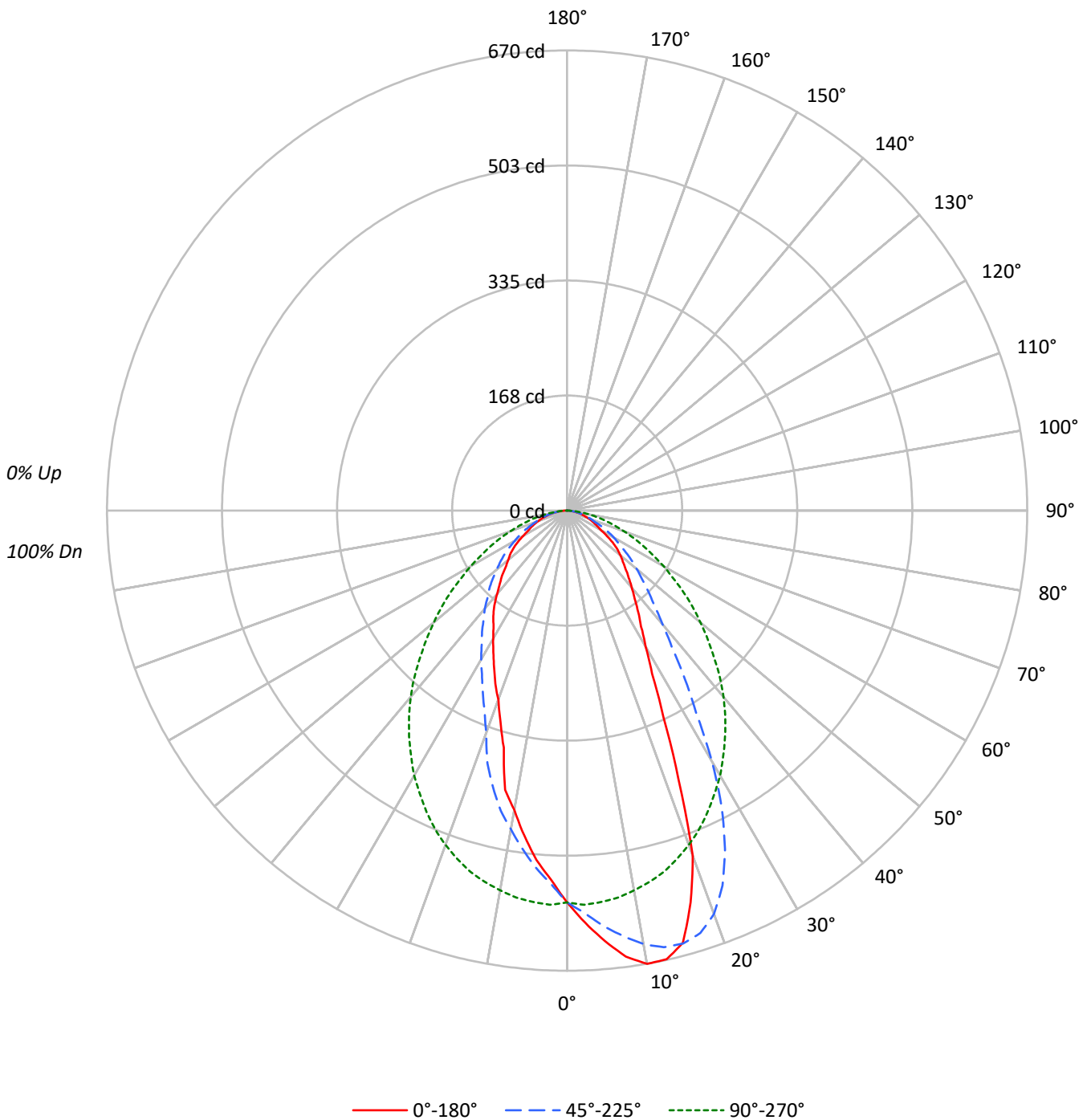
Lumens per Lamp: N/A
Luminaire Lumens: 961.3 lumens
Efficiency: N/A
Efficacy: 85.8 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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: P243277

CATALOG NUMBER: S122RDRP-H290D940-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P243277

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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	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	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89				87	
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78				76	
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68				66	
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60				58	
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54				52	
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49				47	
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44				42	
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40				38	
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	41	37				35	
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34				33	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	10865	10865	10865	10865	10865
5°	12027	11606	10939	9983	9765
10°	12961	12398	10862	9116	8563
15°	12845	12871	10737	8223	7038
20°	10836	12667	10500	6985	5939
25°	6967	11431	10176	6112	5288
30°	5032	9271	9799	5505	4738
35°	4193	6941	9327	5025	4358
40°	3638	5378	8810	4637	3946
45°	3249	4504	8151	4315	3610
50°	2999	3920	7506	3959	3319
55°	2690	3384	6854	3693	3161
60°	2149	2979	6171	3356	2846
65°	1970	2533	5544	3078	2623
70°	1810	2088	4895	2734	2495
75°	1649	1869	4283	2598	2362
80°	1437	1634	3565	2380	2216
85°	1136	1355	2863	2164	2032

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 75°
 Vertical Angle: 45°
 Luminance: 10791 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.0	5.6
10°-20°	147.7	15.4
20°-30°	186.2	19.4
30°-40°	178.8	18.6
40°-50°	154.0	16.0
50°-60°	117.7	12.2
60°-70°	74.9	7.8
70°-80°	38.0	3.9
80°-90°	10.0	1.0
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°	388.0	40.4
0°-40°	566.7	59.0
0°-60°	838.4	87.2
0°-90°	961.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	961.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	570	570	570	570	570	
5°	629	607	572	522	511	61
15°	651	653	544	417	357	177
25°	332	544	484	291	252	158
35°	180	298	401	216	187	114
45°	121	167	303	160	134	94
55°	81	102	206	111	95	71
65°	44	56	123	68	58	44
75°	22	25	58	35	32	24
85°	5	6	13	10	9	6
90°	0	0	0	0	0	



TEST NUMBER: P243277

CATALOG NUMBER: S122RDRP-H290D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4
2.5°	600.7	601.4	601.8	600.8	598.8	599.0	597.1	593.9	590.0	586.5	588.5
5°	629.0	630.0	629.8	628.1	626.0	624.2	621.0	616.5	611.9	607.0	606.1
7.5°	655.2	657.2	656.7	653.5	652.0	649.4	644.0	638.9	631.8	624.9	622.1
10°	670.1	671.8	670.8	670.1	668.4	665.8	660.9	656.1	648.3	641.0	636.9
12.5°	669.0	670.5	671.2	672.0	671.4	670.5	668.4	664.3	658.0	651.2	646.0
15°	651.4	649.0	647.3	652.0	653.7	660.0	661.5	662.1	657.8	652.7	651.4
17.5°	598.0	598.8	611.7	609.6	612.4	627.9	634.1	642.5	646.0	644.9	647.1
20°	534.6	525.8	532.2	541.5	550.3	572.8	587.8	601.0	616.3	624.9	633.1
22.5°	424.1	424.3	439.6	454.9	474.7	499.1	521.9	547.3	574.5	591.1	610.4
25°	331.5	340.5	347.2	353.9	382.6	406.2	444.1	474.9	512.4	543.9	576.2
27.5°	268.0	277.4	278.5	293.6	310.6	329.6	354.5	403.0	441.4	487.7	527.7
30°	228.8	230.7	234.6	238.5	251.1	268.8	295.5	325.9	368.6	421.5	475.0
32.5°	200.5	200.1	204.0	210.2	217.1	229.0	244.1	269.3	308.0	350.0	412.5
35°	180.3	179.7	182.5	184.8	188.9	198.6	212.2	228.8	256.7	298.5	347.0
37.5°	161.3	162.4	164.1	166.5	171.9	178.1	187.2	201.0	223.1	250.7	297.2
40°	146.3	147.6	149.5	151.2	155.3	160.3	166.5	177.5	192.3	216.3	252.0
42.5°	132.9	133.5	135.0	137.4	140.4	144.8	150.8	159.2	171.5	188.3	219.5
45°	120.6	120.6	122.3	124.5	126.4	130.7	135.3	143.4	152.9	167.2	189.5
47.5°	110.1	110.3	111.2	111.6	113.7	117.6	122.6	129.0	136.8	147.8	168.6
50°	101.2	101.9	102.3	102.8	103.6	105.6	109.2	114.0	122.6	132.3	146.2
52.5°	91.8	92.8	93.5	94.6	95.8	95.9	98.6	101.7	107.7	117.8	129.0
55°	81.0	81.8	83.2	84.2	85.7	87.0	89.0	91.3	95.2	101.9	113.5
57.5°	68.7	68.9	70.4	71.3	74.3	77.3	79.1	81.6	84.4	89.0	97.8
60°	56.4	56.9	57.1	57.9	60.5	63.6	67.4	71.1	74.1	78.2	84.4
62.5°	49.7	49.8	50.4	51.1	51.3	52.8	53.9	58.4	63.6	67.8	71.9
65°	43.7	43.9	43.9	44.4	45.2	45.9	46.5	48.2	50.4	56.2	61.2
67.5°	38.1	37.9	38.3	38.8	39.0	39.6	40.5	41.4	42.9	44.6	49.8
70°	32.5	32.5	32.3	32.9	33.4	33.6	34.2	35.1	36.0	37.5	39.2
72.5°	26.9	27.3	27.3	27.6	27.8	28.6	28.9	29.3	30.6	31.4	32.7
75°	22.4	22.2	22.8	22.6	23.0	23.1	23.7	24.3	24.6	25.4	26.5
77.5°	17.9	17.5	17.9	17.7	18.1	18.5	18.5	19.0	19.4	20.2	20.7
80°	13.1	13.1	13.3	13.6	13.6	13.8	14.2	14.0	14.7	14.9	15.5
82.5°	9.0	9.1	9.1	9.3	9.3	9.3	9.7	9.7	9.9	10.3	10.5
85°	5.2	5.0	5.2	5.2	5.2	5.4	5.6	5.4	5.8	6.2	6.2
87.5°	1.5	1.5	1.7	1.9	1.9	2.1	2.1	2.1	2.2	2.2	2.4
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°	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4
2.5°	588.5	587.6	585.2	582.9	578.8	575.5	574.3	574.5	569.5	564.3	562.8
5°	604.8	601.4	596.6	591.5	585.4	579.2	575.3	572.1	564.3	556.4	551.9
7.5°	618.2	612.8	605.7	597.7	589.6	580.5	574.2	568.2	557.4	546.7	540.9
10°	630.5	622.9	613.2	602.7	592.1	580.1	571.0	561.6	548.0	536.1	526.2
12.5°	642.3	630.1	620.3	605.1	593.4	577.1	564.6	553.8	537.8	522.8	511.8
15°	643.4	634.8	621.6	605.9	588.0	572.8	557.2	544.5	526.2	509.6	490.7
17.5°	643.2	636.5	622.7	606.6	585.2	565.4	548.4	531.8	510.9	491.5	475.2
20°	636.5	631.8	619.9	600.8	579.2	556.4	537.6	518.0	493.5	473.5	455.8
22.5°	620.6	621.8	612.4	595.4	572.1	546.7	524.9	502.3	477.3	454.3	431.9
25°	593.8	605.7	602.9	587.0	562.2	534.4	509.6	484.2	457.3	432.9	412.1
27.5°	560.3	582.7	587.6	575.3	551.6	520.4	492.2	464.6	437.1	410.8	389.6
30°	520.8	554.2	566.5	559.8	537.9	505.3	472.6	445.5	415.5	387.5	365.1
32.5°	470.9	517.8	539.4	541.5	523.6	488.5	452.3	423.1	392.4	365.8	341.8
35°	415.3	472.8	508.1	517.6	504.7	470.0	431.9	401.1	368.3	341.6	317.3
37.5°	359.3	426.9	473.2	491.7	483.1	449.5	409.1	378.0	345.5	318.2	295.5
40°	307.8	372.0	432.1	461.0	458.4	427.3	386.6	354.3	321.2	296.0	271.0
42.5°	261.7	323.7	389.7	428.6	430.6	403.4	361.7	329.3	297.5	272.5	246.4
45°	225.3	279.8	345.3	391.6	400.6	378.2	336.0	302.6	273.6	250.1	224.0
47.5°	196.2	238.5	299.4	353.7	369.6	350.0	309.7	277.9	250.7	230.5	205.9
50°	171.0	210.7	262.4	312.6	336.0	321.2	283.5	253.3	228.7	209.2	187.6
52.5°	148.6	179.4	224.2	272.3	303.7	290.2	258.1	230.3	207.2	189.1	171.0
55°	130.1	155.9	195.4	238.4	267.3	259.8	231.3	206.4	186.1	168.9	154.2
57.5°	111.1	132.7	164.6	202.9	231.3	230.1	206.6	182.7	166.7	150.4	139.8
60°	94.4	112.0	137.9	170.4	199.0	199.2	180.9	162.0	148.2	134.2	124.1
62.5°	79.7	93.7	116.3	142.4	165.2	171.0	157.4	140.9	129.7	118.9	110.3
65°	67.0	77.5	94.4	118.2	136.1	143.9	135.0	123.0	113.7	104.0	96.3
67.5°	55.3	62.9	75.4	94.1	112.0	117.8	114.0	104.9	98.2	90.2	84.4
70°	43.5	50.0	58.8	72.8	87.5	95.6	94.4	87.9	82.3	76.5	71.1
72.5°	34.5	38.3	45.0	55.1	66.8	75.8	76.2	72.8	68.1	63.3	59.7
75°	27.8	29.5	32.7	40.5	49.8	57.3	59.9	58.2	54.5	51.5	49.1
77.5°	21.5	23.0	25.0	28.7	36.0	41.8	45.0	45.2	42.9	40.3	38.5
80°	16.1	16.6	18.1	20.0	23.7	28.7	32.5	32.5	31.2	29.9	28.7
82.5°	11.0	11.6	12.3	13.3	15.1	18.1	21.5	22.0	21.3	20.9	19.4
85°	6.2	6.7	7.1	7.7	8.4	9.9	12.3	13.1	13.3	12.1	11.4
87.5°	2.4	2.4	2.6	2.8	3.0	3.5	4.5	5.6	5.6	5.0	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°	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4	570.4
2.5°	560.9	558.3	554.9	551.9	547.8	543.7	543.0	544.5	544.8	543.0	543.5
5°	547.6	542.8	538.7	532.0	527.7	522.1	518.3	518.3	518.3	515.5	512.9
7.5°	533.8	527.3	519.5	513.1	504.3	497.1	493.5	491.8	488.5	485.7	482.5
10°	517.8	508.6	498.9	489.0	481.4	471.3	465.3	461.6	455.8	453.4	448.7
12.5°	498.9	489.8	478.0	462.0	459.7	447.4	439.0	432.1	425.0	419.2	417.2
15°	483.8	467.9	452.3	440.9	424.3	417.0	404.7	403.5	397.8	380.8	367.5
17.5°	459.4	445.2	427.8	415.1	401.9	385.6	372.6	359.7	347.4	335.4	335.0
20°	437.7	421.1	404.7	390.9	367.7	344.6	336.5	324.8	317.5	308.0	305.2
22.5°	414.0	396.6	376.1	356.0	328.9	314.3	305.6	296.2	288.9	284.6	280.4
25°	390.1	372.8	345.5	320.7	302.2	290.8	283.3	273.3	268.0	264.3	258.7
27.5°	366.8	344.8	316.0	296.2	281.3	268.4	261.7	253.5	247.7	242.8	239.3
30°	343.6	313.4	288.9	273.6	258.3	250.3	241.5	235.4	231.1	226.6	220.8
32.5°	318.2	286.5	270.7	251.8	242.8	231.3	224.9	218.6	213.0	209.8	207.7
35°	288.8	263.2	249.0	235.2	223.8	216.1	207.2	203.3	200.3	194.1	191.5
37.5°	263.7	245.3	230.3	218.0	207.6	199.3	195.2	188.5	184.2	182.2	179.4
40°	243.0	226.6	213.7	201.2	192.4	186.5	179.2	175.6	170.0	168.0	165.8
42.5°	225.1	210.0	196.5	187.0	179.4	171.2	167.4	161.5	159.0	154.0	152.1
45°	207.0	193.6	181.8	172.5	165.2	160.2	153.4	149.7	145.4	142.8	137.8
47.5°	188.9	176.9	167.2	159.4	153.1	146.9	141.3	138.1	132.7	129.9	127.3
50°	174.9	163.3	154.2	146.3	139.8	133.6	130.1	124.9	120.0	116.8	115.9
52.5°	158.3	148.2	139.8	133.8	127.3	122.8	118.0	112.2	109.8	106.6	105.8
55°	143.5	135.3	128.2	121.9	116.3	111.2	105.6	101.5	99.7	98.2	97.1
57.5°	129.7	121.9	115.4	109.6	104.7	99.5	94.8	92.4	90.7	89.0	87.9
60°	116.1	109.0	103.0	98.2	93.1	88.1	84.7	82.7	81.4	79.0	78.2
62.5°	104.0	97.4	91.3	86.8	82.1	78.2	75.4	72.6	70.6	68.7	64.8
65°	90.7	84.9	80.3	75.8	71.3	68.3	65.1	62.0	59.4	59.4	59.4
67.5°	79.0	73.9	69.1	65.1	61.2	57.7	54.5	54.3	53.4	53.0	52.5
70°	67.0	63.5	59.0	54.7	50.8	49.1	48.5	47.6	46.5	46.3	45.5
72.5°	56.2	52.1	48.0	44.2	43.5	42.7	41.6	40.7	39.9	39.4	39.0
75°	45.9	41.8	38.5	37.5	36.6	35.3	34.3	33.6	33.2	33.2	33.0
77.5°	35.1	32.7	31.2	29.7	28.9	28.2	27.6	27.3	26.7	26.9	26.5
80°	25.8	25.0	23.7	22.8	22.4	21.7	21.3	21.1	20.7	20.7	20.5
82.5°	18.5	17.2	16.6	16.1	15.7	15.3	15.5	15.3	15.1	14.9	15.1
85°	10.6	10.5	10.1	10.1	10.1	9.9	9.9	9.9	9.7	9.5	9.5
87.5°	4.7	4.9	4.9	4.5	5.0	5.0	4.9	4.9	4.7	5.0	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



TEST NUMBER: P243277

CATALOG NUMBER: S122RDRP-H290D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	570.4	570.4	570.4	570.4
2.5°	541.1	540.9	539.8	537.9
5°	511.8	511.1	509.2	510.7
7.5°	480.5	478.4	476.5	477.5
10°	446.9	446.1	445.0	442.7
12.5°	409.7	412.7	409.5	416.6
15°	354.6	367.9	351.3	356.9
17.5°	327.2	327.4	325.2	322.5
20°	301.4	294.9	297.3	293.0
22.5°	276.6	275.1	274.4	272.9
25°	254.4	251.6	250.7	251.6
27.5°	238.0	236.7	233.1	232.6
30°	217.5	216.9	215.8	215.4
32.5°	204.6	202.1	201.6	199.3
35°	190.2	188.9	188.0	187.4
37.5°	175.8	175.1	173.4	174.3
40°	164.1	160.3	158.8	158.7
42.5°	151.2	149.1	146.2	145.2
45°	136.3	135.3	134.4	134.0
47.5°	123.2	122.6	121.5	121.0
50°	113.9	112.4	112.2	112.0
52.5°	104.9	104.3	103.8	104.5
55°	96.5	95.8	95.2	95.2
57.5°	87.4	86.0	84.9	85.1
60°	76.7	76.0	75.0	74.7
62.5°	64.4	64.4	64.2	64.2
65°	58.6	58.2	58.0	58.2
67.5°	52.3	51.9	51.3	51.5
70°	45.0	44.8	45.0	44.8
72.5°	38.5	38.3	38.5	38.8
75°	32.5	32.3	32.1	32.1
77.5°	26.3	26.1	25.8	26.1
80°	20.5	20.3	20.2	20.2
82.5°	14.6	14.7	14.6	14.6
85°	9.5	9.7	9.5	9.3
87.5°	4.9	5.0	4.7	4.5
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243277
 CATALOG NUMBER: S122RDRP-H290D940-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	13.13	14.59	13.50	14.90	15.21	19.46	20.92	19.83	21.23	21.54
	3H	14.30	15.61	14.68	15.93	16.30	20.71	22.01	21.09	22.34	22.71
	4H	14.76	15.98	15.16	16.33	16.71	21.14	22.36	21.54	22.71	23.09
	6H	15.09	16.22	15.50	16.58	16.98	21.44	22.57	21.85	22.93	23.33
	8H	15.19	16.26	15.62	16.65	17.05	21.52	22.59	21.95	22.98	23.39
	12H	15.24	16.27	15.67	16.65	17.08	21.57	22.60	22.00	22.98	23.41
4H	2H	13.85	15.07	14.25	15.42	15.80	19.44	20.66	19.84	21.01	21.39
	3H	15.18	16.19	15.59	16.59	17.00	20.83	21.84	21.24	22.24	22.64
	4H	15.73	16.64	16.17	17.06	17.50	21.36	22.26	21.79	22.68	23.12
	6H	16.16	16.95	16.62	17.40	17.86	21.77	22.56	22.23	23.01	23.47
	8H	16.29	17.03	16.76	17.47	17.94	21.91	22.64	22.37	23.09	23.55
	12H	16.37	17.03	16.86	17.51	17.98	22.00	22.65	22.48	23.13	23.61
8H	4H	16.08	16.81	16.54	17.26	17.73	21.35	22.09	21.82	22.54	23.00
	6H	16.60	17.21	17.10	17.70	18.18	21.82	22.43	22.32	22.92	23.40
	8H	16.79	17.33	17.30	17.84	18.33	21.99	22.53	22.51	23.04	23.53
	12H	16.92	17.40	17.43	17.89	18.46	22.13	22.61	22.64	23.11	23.67
12H	4H	16.12	16.78	16.60	17.26	17.73	21.33	21.99	21.82	22.47	22.94
	6H	16.66	17.21	17.18	17.72	18.21	21.80	22.34	22.31	22.85	23.34
	8H	16.90	17.38	17.41	17.87	18.44	22.00	22.48	22.51	22.98	23.54