

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: P243262

Luminaire Tested: S122RDRP-H290D840-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243262
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-H290D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

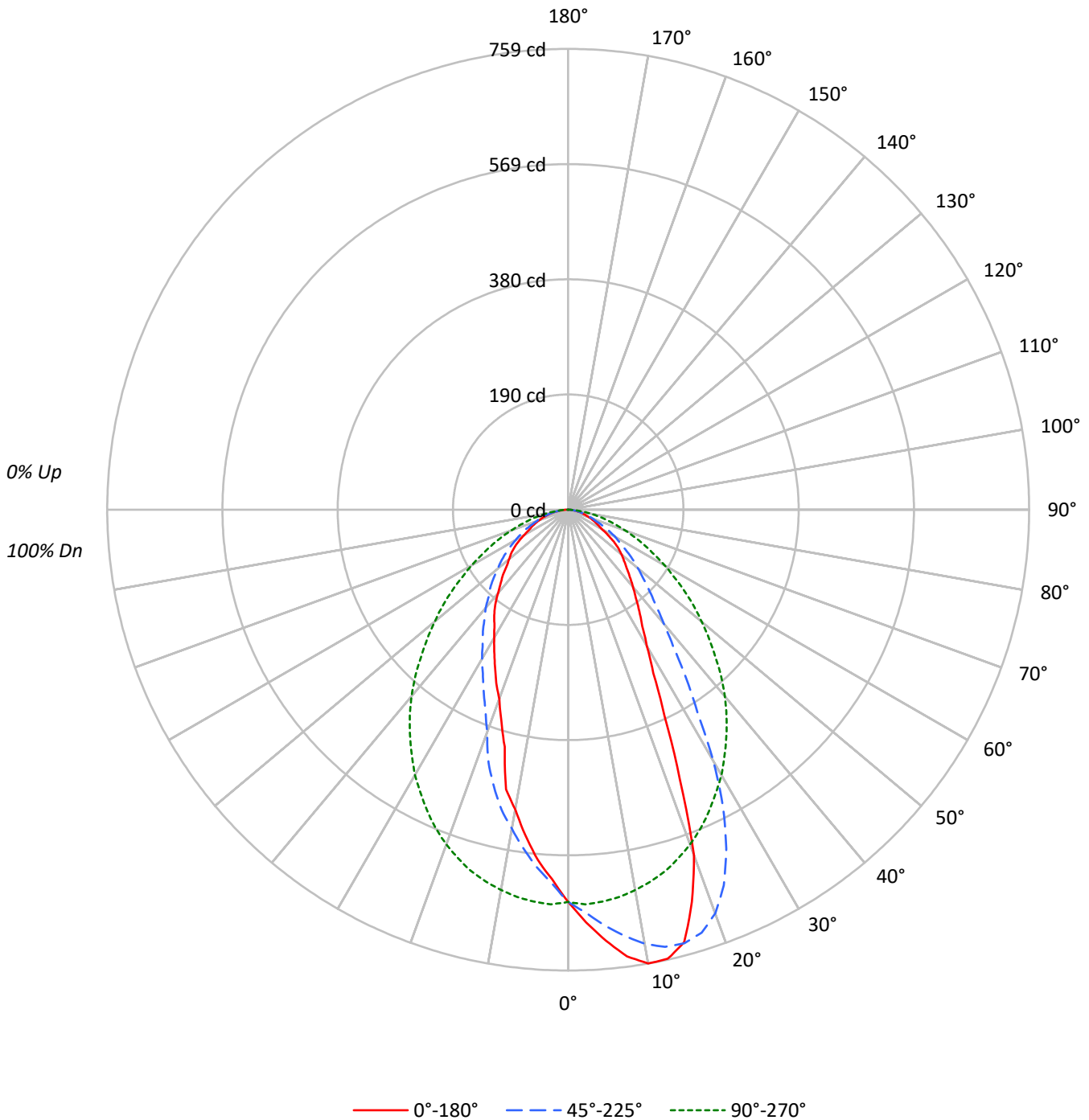
Lumens per Lamp: N/A
Luminaire Lumens: 1088.7 lumens
Efficiency: N/A
Efficacy: 97.2 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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

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CATALOG NUMBER: S122RDRP-H290D840-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P243262

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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	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°	12305	12305	12305	12305	12305
5°	13621	13143	12388	11306	11059
10°	14678	14040	12303	10325	9698
15°	14547	14577	12159	9312	7971
20°	12272	14345	11890	7909	6728
25°	7890	12946	11524	6921	5990
30°	5701	10498	11098	6235	5364
35°	4748	7860	10564	5692	4934
40°	4120	6092	9976	5251	4468
45°	3680	5102	9231	4886	4089
50°	3396	4442	8502	4486	3757
55°	3045	3832	7764	4184	3580
60°	2430	3375	6991	3802	3223
65°	2231	2866	6278	3488	2975
70°	2049	2367	5547	3096	2824
75°	1869	2112	4857	2944	2679
80°	1623	1854	4037	2687	2501
85°	1289	1530	3235	2448	2317

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 75°
 Vertical Angle: 45°
 Luminance: 12219 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.2	5.6
10°-20°	167.3	15.4
20°-30°	210.9	19.4
30°-40°	202.5	18.6
40°-50°	174.4	16.0
50°-60°	133.3	12.2
60°-70°	84.8	7.8
70°-80°	43.0	3.9
80°-90°	11.3	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°	439.4	40.4
0°-40°	641.8	59.0
0°-60°	949.5	87.2
0°-90°	1088.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1088.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	646	646	646	646	646	
5°	712	687	648	591	578	69
15°	738	739	617	472	404	200
25°	375	616	548	329	285	179
35°	204	338	454	245	212	129
45°	137	189	343	181	152	106
55°	92	115	234	126	108	81
65°	50	64	139	77	66	49
75°	25	29	66	40	36	27
85°	6	7	15	11	11	7
90°	0	0	0	0	0	



TEST NUMBER: P243262

CATALOG NUMBER: S122RDRP-H290D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0
2.5°	680.2	681.1	681.5	680.5	678.1	678.3	676.2	672.6	668.2	664.2	666.5
5°	712.4	713.4	713.2	711.3	709.0	706.9	703.3	698.2	692.9	687.4	686.4
7.5°	742.0	744.3	743.7	740.1	738.4	735.4	729.3	723.6	715.5	707.7	704.6
10°	758.9	760.8	759.7	758.9	757.0	754.0	748.5	743.0	734.2	725.9	721.3
12.5°	757.6	759.3	760.2	761.0	760.4	759.3	757.0	752.3	745.1	737.5	731.6
15°	737.7	735.0	733.1	738.4	740.3	747.5	749.2	749.8	744.9	739.2	737.7
17.5°	677.3	678.1	692.7	690.4	693.6	711.1	718.1	727.6	731.6	730.3	732.9
20°	605.4	595.5	602.7	613.2	623.2	648.8	665.7	680.7	698.0	707.7	717.0
22.5°	480.3	480.5	497.8	515.2	537.6	565.3	591.0	619.8	650.7	669.5	691.2
25°	375.4	385.6	393.2	400.8	433.3	460.0	502.9	537.8	580.3	616.0	652.6
27.5°	303.6	314.1	315.4	332.5	351.7	373.3	401.4	456.4	499.9	552.4	597.6
30°	259.2	261.3	265.7	270.2	284.3	304.4	334.6	369.1	417.5	477.3	538.0
32.5°	227.0	226.6	231.0	238.0	245.8	259.4	276.5	305.0	348.8	396.4	467.2
35°	204.2	203.6	206.7	209.3	213.9	224.9	240.3	259.2	290.7	338.0	393.0
37.5°	182.6	183.9	185.8	188.6	194.7	201.7	212.0	227.7	252.6	283.9	336.5
40°	165.7	167.2	169.3	171.2	175.9	181.6	188.6	201.0	217.7	245.0	285.4
42.5°	150.5	151.1	152.8	155.6	159.0	164.0	170.8	180.3	194.3	213.3	248.6
45°	136.6	136.6	138.5	141.0	143.1	148.0	153.3	162.3	173.1	189.4	214.6
47.5°	124.7	124.9	126.0	126.4	128.7	133.2	138.9	146.1	154.9	167.4	190.9
50°	114.6	115.4	115.8	116.5	117.3	119.6	123.7	129.2	138.9	149.9	165.5
52.5°	104.0	105.1	105.9	107.2	108.4	108.7	111.6	115.2	122.0	133.4	146.1
55°	91.7	92.6	94.3	95.3	97.0	98.5	100.8	103.4	107.8	115.4	128.5
57.5°	77.8	78.0	79.7	80.8	84.1	87.5	89.6	92.4	95.5	100.8	110.8
60°	63.8	64.5	64.7	65.5	68.5	72.1	76.3	80.5	83.9	88.6	95.5
62.5°	56.2	56.4	57.1	57.9	58.1	59.8	61.1	66.2	72.1	76.7	81.4
65°	49.5	49.7	49.7	50.3	51.2	52.0	52.6	54.5	57.1	63.6	69.3
67.5°	43.1	42.9	43.3	44.0	44.2	44.8	45.9	46.9	48.6	50.5	56.4
70°	36.8	36.8	36.6	37.2	37.8	38.0	38.7	39.7	40.8	42.5	44.4
72.5°	30.4	30.9	30.9	31.3	31.5	32.3	32.8	33.2	34.7	35.5	37.0
75°	25.4	25.2	25.8	25.6	26.0	26.2	26.8	27.5	27.9	28.7	30.0
77.5°	20.3	19.9	20.3	20.1	20.5	20.9	20.9	21.6	22.0	22.8	23.5
80°	14.8	14.8	15.0	15.4	15.4	15.6	16.1	15.9	16.7	16.9	17.5
82.5°	10.1	10.4	10.4	10.6	10.6	10.6	11.0	11.0	11.2	11.6	11.8
85°	5.9	5.7	5.9	5.9	5.9	6.1	6.3	6.1	6.6	7.0	7.0
87.5°	1.7	1.7	1.9	2.1	2.1	2.3	2.3	2.3	2.5	2.5	2.7
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°	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0
2.5°	666.5	665.4	662.7	660.2	655.5	651.7	650.4	650.7	644.9	639.0	637.3
5°	684.9	681.1	675.6	669.9	662.9	655.9	651.5	647.9	639.0	630.1	625.1
7.5°	700.1	694.0	686.0	676.9	667.8	657.4	650.2	643.5	631.2	619.2	612.6
10°	714.1	705.4	694.4	682.6	670.5	657.0	646.6	636.1	620.6	607.1	595.9
12.5°	727.4	713.6	702.4	685.3	672.0	653.6	639.4	627.2	609.0	592.1	579.6
15°	728.7	718.9	703.9	686.2	665.9	648.8	631.0	616.6	595.9	577.1	555.7
17.5°	728.4	720.8	705.2	687.0	662.7	640.3	621.1	602.2	578.6	556.6	538.2
20°	720.8	715.5	702.0	680.5	655.9	630.1	608.8	586.6	558.9	536.3	516.2
22.5°	702.9	704.1	693.6	674.3	647.9	619.2	594.4	568.8	540.5	514.5	489.2
25°	672.4	686.0	682.8	664.8	636.7	605.2	577.1	548.3	517.9	490.2	466.7
27.5°	634.6	660.0	665.4	651.5	624.7	589.4	557.4	526.1	495.1	465.3	441.2
30°	589.8	627.6	641.6	634.0	609.2	572.2	535.2	504.6	470.6	438.8	413.5
32.5°	533.3	586.4	610.9	613.2	592.9	553.2	512.2	479.2	444.3	414.3	387.1
35°	470.3	535.4	575.4	586.2	571.6	532.3	489.2	454.3	417.1	386.8	359.4
37.5°	406.9	483.4	535.9	556.8	547.1	509.0	463.4	428.1	391.3	360.4	334.6
40°	348.6	421.3	489.4	522.1	519.2	483.9	437.8	401.2	363.8	335.3	306.9
42.5°	296.4	366.5	441.4	485.3	487.7	456.8	409.7	372.9	337.0	308.6	279.0
45°	255.1	316.9	391.1	443.5	453.6	428.3	380.5	342.7	309.9	283.3	253.7
47.5°	222.2	270.2	339.1	400.6	418.5	396.4	350.7	314.8	283.9	261.1	233.2
50°	193.6	238.7	297.2	354.1	380.5	363.8	321.1	286.9	259.0	237.0	212.4
52.5°	168.3	203.1	253.9	308.4	343.9	328.7	292.3	260.9	234.6	214.1	193.6
55°	147.3	176.5	221.3	269.9	302.7	294.3	261.9	233.8	210.8	191.3	174.6
57.5°	125.8	150.3	186.4	229.8	261.9	260.6	234.0	206.9	188.8	170.4	158.3
60°	107.0	126.8	156.2	193.0	225.3	225.6	204.8	183.5	167.8	152.0	140.6
62.5°	90.3	106.1	131.7	161.3	187.1	193.6	178.2	159.6	146.9	134.7	124.9
65°	75.9	87.7	107.0	133.8	154.1	163.0	152.8	139.3	128.7	117.7	109.1
67.5°	62.6	71.2	85.4	106.5	126.8	133.4	129.2	118.8	111.2	102.1	95.5
70°	49.3	56.7	66.6	82.4	99.1	108.2	107.0	99.6	93.2	86.7	80.5
72.5°	39.1	43.3	50.9	62.4	75.7	85.8	86.2	82.4	77.2	71.7	67.6
75°	31.5	33.4	37.0	45.9	56.4	64.9	67.9	66.0	61.7	58.3	55.6
77.5°	24.3	26.0	28.3	32.6	40.8	47.4	50.9	51.2	48.6	45.7	43.5
80°	18.2	18.8	20.5	22.6	26.8	32.6	36.8	36.8	35.3	33.8	32.6
82.5°	12.5	13.1	14.0	15.0	17.1	20.5	24.3	24.9	24.1	23.7	22.0
85°	7.0	7.6	8.0	8.7	9.5	11.2	14.0	14.8	15.0	13.7	12.9
87.5°	2.7	2.7	3.0	3.2	3.4	4.0	5.1	6.3	6.3	5.7	5.5
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°	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0
2.5°	635.2	632.3	628.5	625.1	620.4	615.8	614.9	616.6	617.0	614.9	615.6
5°	620.2	614.7	610.1	602.5	597.6	591.3	587.0	587.0	587.0	583.9	580.9
7.5°	604.6	597.2	588.3	581.1	571.2	562.9	558.9	557.0	553.2	550.0	546.4
10°	586.4	576.0	565.0	553.8	545.2	533.8	527.0	522.8	516.2	513.5	508.2
12.5°	565.0	554.7	541.4	523.2	520.6	506.7	497.2	489.4	481.3	474.8	472.5
15°	547.9	530.0	512.2	499.3	480.5	472.2	458.3	457.0	450.5	431.2	416.2
17.5°	520.2	504.2	484.5	470.1	455.1	436.7	421.9	407.3	393.4	379.9	379.4
20°	495.7	476.9	458.3	442.6	416.4	390.2	381.1	367.8	359.6	348.8	345.6
22.5°	468.9	449.2	425.9	403.1	372.5	356.0	346.0	335.5	327.2	322.4	317.5
25°	441.8	422.1	391.3	363.2	342.2	329.3	320.9	309.5	303.6	299.3	293.0
27.5°	415.4	390.4	357.9	335.5	318.6	304.0	296.4	287.1	280.5	275.0	271.0
30°	389.2	354.9	327.2	309.9	292.6	283.5	273.5	266.6	261.7	256.6	250.1
32.5°	360.4	324.5	306.5	285.2	275.0	261.9	254.7	247.5	241.2	237.6	235.3
35°	327.0	298.1	282.0	266.3	253.5	244.8	234.6	230.2	226.8	219.8	216.9
37.5°	298.7	277.8	260.9	246.9	235.1	225.8	221.1	213.5	208.6	206.3	203.1
40°	275.2	256.6	242.0	227.9	217.9	211.2	202.9	198.9	192.6	190.2	187.7
42.5°	254.9	237.8	222.6	211.8	203.1	193.8	189.6	182.9	180.1	174.4	172.3
45°	234.4	219.2	205.9	195.3	187.1	181.4	173.8	169.5	164.7	161.7	156.0
47.5°	213.9	200.4	189.4	180.5	173.3	166.4	160.0	156.4	150.3	147.1	144.2
50°	198.1	185.0	174.6	165.7	158.3	151.4	147.3	141.4	135.9	132.3	131.3
52.5°	179.3	167.8	158.3	151.6	144.2	139.1	133.6	127.0	124.3	120.7	119.9
55°	162.6	153.3	145.2	138.0	131.7	126.0	119.6	115.0	112.9	111.2	109.9
57.5°	146.9	138.0	130.6	124.1	118.6	112.7	107.4	104.6	102.7	100.8	99.6
60°	131.5	123.5	116.7	111.2	105.5	99.8	96.0	93.6	92.2	89.4	88.6
62.5°	117.7	110.3	103.4	98.3	93.0	88.6	85.4	82.2	79.9	77.8	73.4
65°	102.7	96.2	90.9	85.8	80.8	77.4	73.8	70.2	67.2	67.2	67.2
67.5°	89.4	83.7	78.2	73.8	69.3	65.3	61.7	61.5	60.5	60.0	59.4
70°	75.9	71.9	66.8	61.9	57.5	55.6	55.0	53.9	52.6	52.4	51.6
72.5°	63.6	59.0	54.3	50.1	49.3	48.4	47.1	46.1	45.2	44.6	44.2
75°	52.0	47.4	43.5	42.5	41.4	40.0	38.9	38.0	37.6	37.6	37.4
77.5°	39.7	37.0	35.3	33.6	32.8	31.9	31.3	30.9	30.2	30.4	30.0
80°	29.2	28.3	26.8	25.8	25.4	24.5	24.1	23.9	23.5	23.5	23.3
82.5°	20.9	19.4	18.8	18.2	17.8	17.3	17.5	17.3	17.1	16.9	17.1
85°	12.0	11.8	11.4	11.4	11.4	11.2	11.2	11.2	11.0	10.8	10.8
87.5°	5.3	5.5	5.5	5.1	5.7	5.7	5.5	5.5	5.3	5.7	5.3
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: P243262

CATALOG NUMBER: S122RDRP-H290D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	646.0	646.0	646.0	646.0
2.5°	612.8	612.6	611.3	609.2
5°	579.6	578.8	576.7	578.4
7.5°	544.1	541.8	539.7	540.7
10°	506.1	505.2	503.9	501.4
12.5°	464.0	467.4	463.8	471.8
15°	401.6	416.6	397.8	404.2
17.5°	370.6	370.8	368.2	365.3
20°	341.4	334.0	336.7	331.9
22.5°	313.3	311.6	310.7	309.0
25°	288.1	285.0	283.9	285.0
27.5°	269.5	268.0	264.0	263.4
30°	246.3	245.6	244.4	243.9
32.5°	231.7	228.9	228.3	225.8
35°	215.4	213.9	212.9	212.2
37.5°	199.1	198.3	196.4	197.4
40°	185.8	181.6	179.9	179.7
42.5°	171.2	168.9	165.5	164.5
45°	154.3	153.3	152.2	151.8
47.5°	139.5	138.9	137.6	137.0
50°	128.9	127.3	127.0	126.8
52.5°	118.8	118.2	117.5	118.4
55°	109.3	108.4	107.8	107.8
57.5°	98.9	97.4	96.2	96.4
60°	86.9	86.0	85.0	84.6
62.5°	72.9	72.9	72.7	72.7
65°	66.4	66.0	65.7	66.0
67.5°	59.2	58.8	58.1	58.3
70°	50.9	50.7	50.9	50.7
72.5°	43.5	43.3	43.5	44.0
75°	36.8	36.6	36.4	36.4
77.5°	29.8	29.6	29.2	29.6
80°	23.3	23.0	22.8	22.8
82.5°	16.5	16.7	16.5	16.5
85°	10.8	11.0	10.8	10.6
87.5°	5.5	5.7	5.3	5.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243262
 CATALOG NUMBER: S122RDRP-H290D840-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	13.56	15.02	13.93	15.33	15.64	19.89	21.35	20.26	21.66	21.98
	3H	14.73	16.04	15.11	16.37	16.73	21.14	22.45	21.52	22.78	23.14
	4H	15.19	16.41	15.59	16.76	17.14	21.58	22.80	21.98	23.15	23.53
	6H	15.52	16.65	15.94	17.02	17.41	21.87	23.00	22.28	23.36	23.76
	8H	15.62	16.69	16.05	17.08	17.48	21.96	23.03	22.38	23.42	23.82
	12H	15.67	16.70	16.11	17.08	17.51	22.00	23.03	22.43	23.41	23.84
4H	2H	14.28	15.50	14.68	15.85	16.23	19.87	21.09	20.27	21.44	21.82
	3H	15.61	16.62	16.02	17.02	17.43	21.26	22.27	21.67	22.67	23.07
	4H	16.16	17.07	16.60	17.49	17.93	21.79	22.70	22.22	23.11	23.55
	6H	16.60	17.38	17.05	17.83	18.29	22.21	22.99	22.67	23.44	23.90
	8H	16.73	17.46	17.19	17.91	18.38	22.34	23.07	22.80	23.52	23.99
	12H	16.81	17.46	17.29	17.94	18.41	22.43	23.09	22.91	23.57	24.04
8H	4H	16.51	17.25	16.97	17.69	18.16	21.79	22.52	22.25	22.97	23.44
	6H	17.03	17.64	17.53	18.13	18.61	22.25	22.86	22.75	23.35	23.83
	8H	17.22	17.76	17.74	18.27	18.76	22.42	22.97	22.94	23.48	23.97
	12H	17.35	17.83	17.86	18.33	18.89	22.56	23.04	23.08	23.54	24.10
12H	4H	16.55	17.21	17.04	17.69	18.16	21.77	22.42	22.25	22.90	23.37
	6H	17.10	17.64	17.61	18.15	18.64	22.23	22.77	22.75	23.28	23.77
	8H	17.33	17.81	17.84	18.30	18.87	22.43	22.91	22.95	23.41	23.97