

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: P242412

Luminaire Tested: S122RDRP-S290D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242412  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122RDRP-S290D935-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

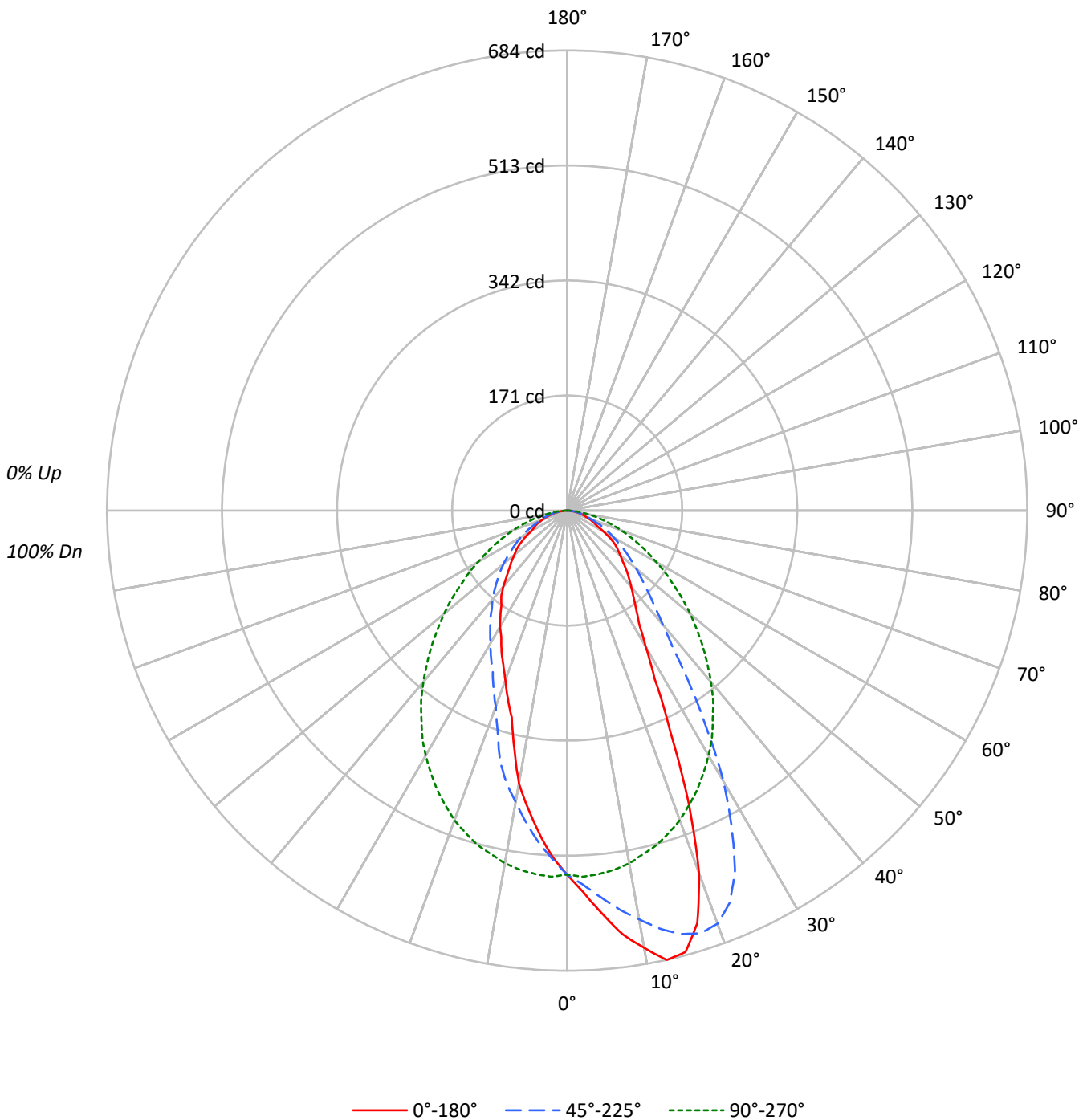
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 934.9 lumens  
Efficiency: N/A  
Efficacy: 80.6 lumens/watt  
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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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### 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	111	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	87	83	80	84	81	78					76				
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68					66				
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60					59				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	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					39				
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	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°	10305	10305	10305	10305	10305
5°	11509	11034	10369	9449	9193
10°	12769	11936	10296	8514	7969
15°	13396	12847	10146	7596	6279
20°	11615	13245	9922	6290	5434
25°	7616	12408	9615	5506	4851
30°	5127	10216	9244	5015	4390
35°	4153	7462	8778	4625	3960
40°	3692	5483	8268	4267	3665
45°	3343	4558	7672	3954	3270
50°	3040	3950	7079	3654	3031
55°	2859	3497	6423	3301	2823
60°	2392	3044	5821	3029	2362
65°	2015	2713	5287	2695	2290
70°	1866	2155	4723	2378	2155
75°	1744	1950	4107	2245	1994
80°	1612	1777	3378	1963	1777
85°	1486	1530	2666	1552	1552

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 70°  
 Vertical Angle: 45°  
 Luminance: 11176 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.3	5.5
10°-20°	143.2	15.3
20°-30°	184.3	19.7
30°-40°	174.9	18.7
40°-50°	149.8	16.0
50°-60°	114.1	12.2
60°-70°	72.0	7.7
70°-80°	35.9	3.8
80°-90°	9.2	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°	378.9	40.5
0°-40°	553.7	59.2
0°-60°	817.7	87.5
0°-90°	934.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	934.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	541	541	541	541	541	
5°	602	577	542	494	481	59
15°	679	652	514	385	318	185
25°	362	590	458	262	231	171
35°	179	321	378	199	170	114
45°	124	169	285	147	121	96
55°	86	105	193	99	85	76
65°	45	60	117	60	51	45
75°	24	26	56	30	27	25
85°	7	7	12	7	7	8
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°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0
2.5°	568.4	569.0	569.6	568.3	568.3	567.1	564.7	562.8	557.5	556.8	556.8
5°	601.9	601.5	602.3	599.8	596.4	595.7	592.1	587.4	582.5	577.1	576.0
7.5°	635.7	633.5	632.5	633.7	630.1	625.2	619.2	613.6	605.1	598.1	593.8
10°	660.2	666.4	662.6	656.0	657.4	648.5	643.8	635.7	629.0	617.1	614.5
12.5°	684.2	685.7	685.2	682.2	679.7	674.3	667.5	660.7	646.8	636.5	625.6
15°	679.3	682.9	683.9	682.7	683.7	683.3	679.9	674.1	663.2	651.5	641.4
17.5°	643.3	647.4	650.8	653.8	658.5	667.7	670.5	671.6	667.1	658.9	650.4
20°	573.0	568.8	586.1	594.9	602.5	621.3	637.4	643.6	653.6	653.4	651.5
22.5°	473.3	475.6	491.7	502.6	528.2	547.0	566.0	593.6	615.2	631.2	641.0
25°	362.4	369.6	385.9	400.2	424.6	459.6	491.4	528.2	563.0	590.4	616.6
27.5°	282.0	282.9	297.8	312.2	327.3	357.5	400.0	444.2	493.8	529.5	574.6
30°	233.1	232.0	237.4	245.5	257.9	280.1	310.2	353.4	402.8	464.5	519.4
32.5°	198.5	198.9	202.6	208.1	217.9	231.0	249.3	282.3	328.4	388.7	455.5
35°	178.6	178.4	181.4	185.7	190.0	199.6	213.7	232.2	264.3	320.9	386.7
37.5°	162.0	163.0	164.3	167.1	172.4	178.0	186.8	199.8	224.3	259.4	318.4
40°	148.5	148.9	150.9	153.2	156.0	160.2	167.1	177.1	193.8	220.5	260.9
42.5°	136.1	136.5	137.8	139.9	141.9	146.1	151.5	159.8	172.6	191.9	223.5
45°	124.1	124.1	125.4	126.3	128.8	132.5	137.2	144.4	153.8	169.2	191.4
47.5°	112.4	112.4	113.3	115.0	116.7	119.7	124.6	130.6	137.4	150.0	169.7
50°	102.6	102.8	103.4	104.7	105.6	108.3	111.8	116.9	124.1	133.3	149.1
52.5°	94.7	94.6	95.3	95.7	96.2	97.9	100.4	104.7	110.9	118.6	131.0
55°	86.1	85.3	86.5	87.4	88.0	88.7	90.2	93.0	98.5	105.3	115.0
57.5°	75.9	75.6	76.1	77.1	78.8	80.6	81.6	83.5	86.3	91.5	101.9
60°	62.8	62.8	64.5	65.0	67.1	69.7	72.4	73.9	76.7	79.9	87.0
62.5°	51.1	51.3	51.9	52.4	53.4	56.8	60.7	64.5	67.1	70.1	74.3
65°	44.7	45.1	45.1	45.5	46.2	47.0	48.5	51.1	55.8	60.2	63.7
67.5°	39.1	39.1	39.3	39.7	39.9	40.8	41.4	42.7	43.6	48.5	53.4
70°	33.5	34.0	33.8	34.2	34.4	34.8	35.5	36.1	37.8	38.7	41.4
72.5°	28.2	28.6	28.6	28.8	29.3	29.3	29.9	30.5	31.4	32.1	33.3
75°	23.7	23.5	23.7	24.1	24.2	24.4	24.4	25.2	25.8	26.5	27.4
77.5°	19.2	19.4	19.4	19.4	19.4	19.7	19.7	20.1	20.7	21.1	21.6
80°	14.7	14.9	14.7	14.9	15.0	15.2	15.0	15.2	15.8	16.2	16.2
82.5°	10.5	10.5	10.7	10.7	10.7	10.7	11.1	11.1	11.5	11.3	11.5
85°	6.8	6.6	6.6	6.6	6.8	7.0	6.8	6.8	7.0	7.0	7.0
87.5°	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.2	3.4	3.2
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0
2.5°	557.2	555.7	554.3	551.0	549.3	545.5	544.9	544.8	539.9	535.2	533.9
5°	573.0	569.9	565.4	560.2	554.7	549.1	545.3	542.3	534.8	527.7	523.5
7.5°	588.6	583.1	576.0	566.9	559.2	550.2	544.0	538.4	528.0	518.6	512.4
10°	606.4	595.9	585.5	571.8	561.1	550.6	540.8	532.3	520.3	506.8	497.2
12.5°	617.5	605.7	590.4	577.1	562.4	548.3	534.4	523.0	508.3	494.2	482.3
15°	627.3	614.9	597.6	578.4	560.5	543.1	528.0	514.5	496.1	479.3	465.4
17.5°	636.3	619.2	601.3	579.2	559.4	538.2	519.2	502.3	482.2	462.4	446.6
20°	640.2	623.3	601.9	579.7	555.3	529.2	508.3	489.5	467.5	445.5	426.7
22.5°	637.8	625.6	601.1	573.5	548.3	520.7	496.4	473.9	448.9	426.3	403.8
25°	625.0	620.5	598.0	569.0	540.4	508.7	481.4	457.5	429.7	405.7	382.0
27.5°	601.5	608.1	592.1	560.7	529.9	495.7	466.0	439.1	410.7	383.8	360.2
30°	564.3	586.7	580.7	552.1	516.6	483.1	448.7	420.3	389.5	361.7	338.4
32.5°	513.4	554.0	562.8	540.1	503.0	465.4	429.0	400.8	368.2	338.5	316.0
35°	458.7	513.9	539.3	524.1	487.2	447.6	410.4	377.5	345.1	316.2	293.6
37.5°	393.8	467.5	506.6	504.9	469.8	429.3	388.9	356.4	323.1	294.6	271.1
40°	331.0	412.6	467.7	479.9	451.3	406.8	365.8	332.5	300.2	272.4	244.4
42.5°	274.6	355.8	426.7	450.2	429.0	384.8	343.6	308.5	277.3	251.3	222.6
45°	231.2	302.3	376.9	414.9	402.3	361.3	317.9	284.8	255.3	232.5	205.1
47.5°	200.2	251.9	326.9	376.5	375.0	336.1	292.9	261.1	233.3	212.2	188.9
50°	174.4	218.1	279.1	337.4	342.3	310.9	270.3	238.9	213.4	191.0	173.1
52.5°	151.3	185.3	238.7	294.0	310.2	284.0	244.9	216.5	191.9	171.8	157.1
55°	131.8	159.6	201.3	253.6	274.6	255.5	220.5	193.4	173.3	156.0	142.9
57.5°	114.7	136.5	171.2	215.0	238.9	225.9	196.1	173.7	155.8	139.7	129.1
60°	98.7	115.8	144.2	179.3	206.4	197.9	173.3	152.8	138.2	124.6	114.9
62.5°	83.6	97.7	121.1	147.9	172.2	169.9	150.9	134.6	122.2	110.2	102.3
65°	69.7	80.5	99.4	121.8	141.7	143.4	129.0	117.3	105.8	96.1	88.7
67.5°	57.7	65.0	79.3	99.1	114.3	119.6	109.8	100.4	91.0	83.1	76.5
70°	46.8	52.4	62.2	77.4	91.2	96.8	91.7	84.8	76.9	70.7	65.2
72.5°	35.7	41.2	47.7	57.9	69.2	75.4	74.4	69.9	63.9	59.0	53.9
75°	28.6	30.3	35.2	42.7	51.9	57.1	58.5	55.8	50.8	46.8	43.8
77.5°	22.2	23.3	25.9	30.5	36.8	41.5	43.6	43.2	39.5	36.8	34.0
80°	16.9	17.5	18.6	20.3	24.8	29.5	30.8	30.8	28.4	27.4	24.6
82.5°	11.8	12.2	12.8	13.5	15.0	19.0	20.5	20.9	19.5	18.2	16.2
85°	7.3	7.1	7.5	8.1	8.5	9.6	11.8	12.2	11.8	10.3	9.8
87.5°	3.2	3.4	3.4	3.2	3.4	3.6	4.5	5.5	4.7	4.1	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

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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0
2.5°	531.4	530.1	527.7	523.9	521.6	517.7	515.1	516.6	516.9	516.6	516.2
5°	519.0	515.1	509.6	504.3	499.5	494.2	491.2	489.9	487.2	485.7	485.0
7.5°	504.9	499.1	491.4	482.9	475.0	467.5	464.1	461.5	456.6	454.0	451.5
10°	488.7	478.0	470.3	458.3	451.0	440.2	432.9	433.1	425.8	421.6	418.6
12.5°	470.9	458.9	444.8	434.2	423.3	415.2	406.0	401.5	393.6	389.7	380.3
15°	450.8	437.0	423.5	408.8	398.5	385.2	372.4	356.8	344.2	333.3	330.3
17.5°	429.3	412.4	399.1	384.0	367.9	343.6	327.8	318.2	310.7	305.1	300.6
20°	407.2	389.9	375.4	349.4	325.6	310.3	299.4	292.5	284.6	278.4	275.0
22.5°	383.8	365.6	344.6	314.9	297.6	286.1	276.7	268.4	263.7	259.2	256.2
25°	362.0	342.3	309.8	289.9	274.8	262.0	255.3	250.4	244.7	238.2	235.2
27.5°	339.3	307.9	283.3	268.8	253.4	245.3	239.5	231.4	226.3	223.9	220.5
30°	313.2	281.8	263.5	247.4	237.2	228.0	220.9	216.7	211.8	206.8	204.7
32.5°	284.0	260.5	243.2	230.5	220.1	212.6	207.3	200.0	196.8	194.2	189.3
35°	260.9	241.9	225.9	215.0	205.3	198.9	192.3	188.4	182.0	179.3	177.6
37.5°	239.9	223.3	211.3	199.3	191.7	184.2	180.5	173.9	171.4	167.3	163.9
40°	222.6	206.4	194.9	185.5	176.9	171.6	166.5	161.5	157.3	155.6	151.3
42.5°	204.9	192.5	181.0	170.5	165.4	159.8	153.0	149.6	145.3	142.3	140.0
45°	188.9	177.3	167.5	159.0	152.6	146.8	142.7	136.5	134.0	128.6	126.3
47.5°	174.8	163.5	154.1	145.9	139.5	136.1	130.1	124.6	121.2	117.5	114.3
50°	159.6	150.6	141.5	134.4	128.8	123.3	117.1	114.7	108.7	107.0	105.3
52.5°	145.7	137.2	129.1	122.2	116.5	111.3	106.0	102.6	99.1	97.4	96.2
55°	132.9	124.6	116.7	110.5	104.9	99.4	96.1	92.1	90.2	88.9	87.4
57.5°	119.7	112.2	106.0	99.6	94.0	89.5	85.3	83.1	81.2	79.7	77.6
60°	107.3	100.2	94.7	88.9	83.1	79.5	76.5	73.7	71.4	68.8	68.0
62.5°	94.2	88.2	83.3	77.6	72.7	69.6	66.7	64.1	61.3	57.1	56.0
65°	82.3	77.4	72.2	67.5	63.0	59.8	55.6	52.6	51.5	51.1	50.9
67.5°	71.4	66.7	62.2	57.3	53.2	49.6	47.2	46.8	46.1	45.9	45.3
70°	60.5	56.2	51.7	47.2	43.2	42.7	41.9	41.2	40.2	39.9	39.5
72.5°	50.8	46.2	41.7	38.3	37.2	36.5	35.7	35.0	34.4	34.0	33.8
75°	40.4	36.3	33.3	32.0	31.0	30.5	29.3	28.8	28.4	27.8	27.6
77.5°	30.8	28.2	26.7	25.9	24.8	24.2	23.5	22.9	22.4	22.4	22.0
80°	22.2	21.1	20.1	19.0	18.6	17.9	17.7	17.1	17.3	16.7	16.7
82.5°	16.0	14.5	13.7	13.3	13.0	12.4	12.2	12.0	12.0	11.7	11.7
85°	8.8	8.5	8.1	7.7	7.7	7.1	7.3	7.1	7.1	6.8	6.6
87.5°	3.6	3.4	3.0	3.0	3.0	2.8	2.8	2.6	2.6	2.6	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

TEST NUMBER: P242412

CATALOG NUMBER: S122RDRP-S290D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	541.0	541.0	541.0	541.0
2.5°	514.1	514.5	513.9	514.3
5°	484.0	481.8	481.4	480.8
7.5°	448.5	448.3	447.2	445.9
10°	414.5	413.5	413.4	412.0
12.5°	374.6	367.3	366.6	362.8
15°	325.8	324.6	320.9	318.4
17.5°	298.5	294.7	293.4	292.9
20°	272.4	269.0	268.4	268.1
22.5°	254.3	250.8	249.1	247.8
25°	233.3	232.0	231.2	230.8
27.5°	216.7	213.4	213.0	212.0
30°	203.0	202.1	200.8	199.6
32.5°	186.8	186.1	185.0	184.6
35°	175.8	173.1	172.0	170.3
37.5°	163.5	162.0	160.2	160.9
40°	148.9	147.9	147.6	147.4
42.5°	137.2	134.2	133.1	133.1
45°	125.4	122.9	121.2	121.4
47.5°	112.6	112.8	111.7	112.0
50°	104.0	102.8	102.1	102.3
52.5°	95.7	94.7	94.2	95.1
55°	86.5	85.3	85.2	85.0
57.5°	76.5	75.9	75.0	74.4
60°	65.6	64.1	62.2	62.0
62.5°	55.6	55.6	55.6	55.6
65°	50.6	50.4	50.6	50.8
67.5°	45.3	44.9	44.6	44.7
70°	39.1	38.9	38.7	38.7
72.5°	33.1	33.1	32.9	32.7
75°	27.4	27.1	27.1	27.1
77.5°	22.0	21.8	21.6	21.4
80°	16.5	16.4	16.2	16.2
82.5°	11.7	11.5	11.5	11.3
85°	6.8	7.0	6.8	7.1
87.5°	2.4	2.3	2.4	2.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242412  
 CATALOG NUMBER: S122RDRP-S290D935-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	13.64	15.09	14.00	15.40	15.72	19.54	20.99	19.90	21.30	21.62
	3H	14.75	16.05	15.13	16.38	16.74	20.70	21.99	21.07	22.32	22.69
	4H	15.21	16.42	15.61	16.77	17.15	21.09	22.31	21.49	22.66	23.04
	6H	15.58	16.70	15.99	17.07	17.46	21.36	22.48	21.77	22.84	23.24
	8H	15.70	16.77	16.13	17.16	17.56	21.43	22.49	21.85	22.88	23.29
	12H	15.78	16.80	16.21	17.18	17.61	21.46	22.48	21.89	22.87	23.30
4H	2H	14.35	15.57	14.75	15.92	16.30	19.50	20.72	19.90	21.07	21.45
	3H	15.62	16.63	16.03	17.03	17.43	20.80	21.80	21.21	22.20	22.61
	4H	16.17	17.07	16.60	17.49	17.93	21.29	22.20	21.72	22.61	23.05
	6H	16.64	17.43	17.10	17.87	18.33	21.68	22.46	22.14	22.90	23.37
	8H	16.80	17.54	17.27	17.98	18.45	21.79	22.52	22.26	22.97	23.44
	12H	16.92	17.57	17.40	18.05	18.53	21.87	22.52	22.35	23.00	23.47
8H	4H	16.51	17.25	16.98	17.69	18.16	21.28	22.01	21.74	22.45	22.92
	6H	17.08	17.69	17.58	18.18	18.66	21.70	22.31	22.20	22.80	23.28
	8H	17.31	17.85	17.82	18.36	18.85	21.85	22.39	22.37	22.90	23.39
	12H	17.49	17.97	18.01	18.46	19.03	21.97	22.45	22.49	22.94	23.51
12H	4H	16.55	17.21	17.04	17.69	18.16	21.25	21.91	21.74	22.39	22.86
	6H	17.15	17.69	17.66	18.20	18.69	21.68	22.22	22.19	22.73	23.22
	8H	17.43	17.90	17.94	18.40	18.96	21.86	22.34	22.37	22.83	23.40