

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: P242417

Luminaire Tested: S122RDRP-S290D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242417  
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-S290D940-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

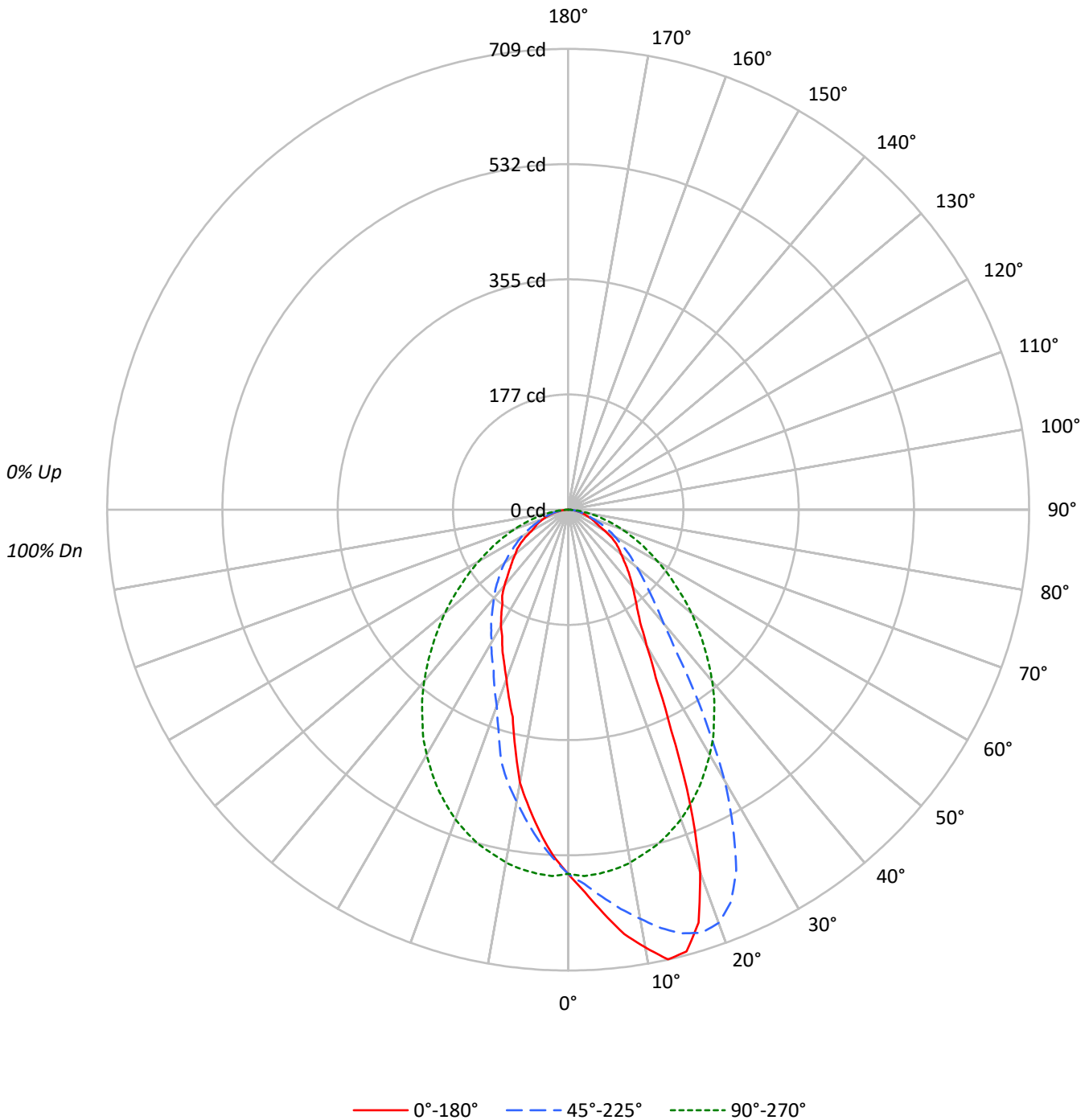
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 968.2 lumens  
Efficiency: N/A  
Efficacy: 83.5 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 (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-S290D940-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	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°	10672	10672	10672	10672	10672
5°	11920	11428	10740	9786	9522
10°	13224	12361	10663	8818	8253
15°	13875	13307	10507	7866	6504
20°	12028	13717	10277	6515	5627
25°	7888	12852	9960	5704	5025
30°	5309	10582	9574	5193	4548
35°	4299	7727	9090	4790	4102
40°	3824	5679	8564	4419	3794
45°	3461	4719	7944	4095	3389
50°	3150	4089	7331	3784	3138
55°	2962	3620	6652	3420	2922
60°	2476	3150	6031	3139	2446
65°	2087	2808	5476	2790	2371
70°	1933	2233	4890	2462	2233
75°	1803	2024	4254	2318	2061
80°	1667	1832	3499	2029	1832
85°	1530	1574	2776	1617	1617

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 70°  
 Vertical Angle: 45°  
 Luminance: 11575 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.1	5.5
10°-20°	148.3	15.3
20°-30°	190.9	19.7
30°-40°	181.1	18.7
40°-50°	155.2	16.0
50°-60°	118.2	12.2
60°-70°	74.6	7.7
70°-80°	37.2	3.8
80°-90°	9.6	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°	392.4	40.5
0°-40°	573.5	59.2
0°-60°	846.9	87.5
0°-90°	968.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	968.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	560	560	560	560	560	
5°	623	598	562	512	498	61
15°	704	675	533	399	330	191
25°	375	612	474	271	239	177
35°	185	332	391	206	176	118
45°	128	175	295	152	126	99
55°	89	109	200	103	88	79
65°	46	62	122	62	53	47
75°	24	28	58	32	28	26
85°	7	7	13	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°	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3
2.5°	588.7	589.3	589.9	588.5	588.5	587.4	584.8	582.9	577.4	576.6	576.6
5°	623.4	623.0	623.8	621.2	617.7	616.9	613.2	608.4	603.3	597.7	596.5
7.5°	658.4	656.1	655.1	656.3	652.6	647.5	641.3	635.4	626.7	619.5	615.0
10°	683.7	690.1	686.3	679.4	680.8	671.7	666.8	658.4	651.4	639.1	636.4
12.5°	708.6	710.2	709.6	706.5	704.0	698.3	691.3	684.3	669.9	659.2	647.9
15°	703.6	707.3	708.3	707.1	708.1	707.7	704.2	698.1	686.8	674.8	664.3
17.5°	666.2	670.5	674.0	677.1	682.0	691.5	694.4	695.6	690.9	682.4	673.6
20°	593.4	589.1	607.0	616.2	624.0	643.4	660.2	666.6	676.9	676.7	674.8
22.5°	490.2	492.5	509.3	520.6	547.1	566.5	586.2	614.8	637.2	653.7	663.9
25°	375.3	382.7	399.7	414.5	439.8	476.0	508.9	547.1	583.1	611.5	638.6
27.5°	292.0	293.0	308.4	323.4	338.9	370.3	414.3	460.0	511.4	548.4	595.1
30°	241.4	240.2	245.9	254.3	267.1	290.1	321.2	366.0	417.2	481.1	537.9
32.5°	205.6	206.0	209.9	215.5	225.6	239.3	258.1	292.4	340.1	402.6	471.7
35°	184.9	184.8	187.9	192.3	196.8	206.8	221.4	240.4	273.7	332.3	400.5
37.5°	167.8	168.8	170.2	173.1	178.5	184.4	193.5	206.9	232.3	268.7	329.8
40°	153.8	154.2	156.3	158.7	161.6	165.9	173.1	183.4	200.7	228.4	270.2
42.5°	140.9	141.3	142.7	144.8	147.0	151.3	156.9	165.5	178.7	198.8	231.5
45°	128.5	128.5	129.9	130.8	133.4	137.3	142.1	149.5	159.2	175.2	198.2
47.5°	116.4	116.4	117.4	119.1	120.9	124.0	129.1	135.3	142.3	155.4	175.8
50°	106.3	106.5	107.1	108.4	109.4	112.1	115.8	121.1	128.5	138.0	154.4
52.5°	98.1	97.9	98.7	99.1	99.7	101.4	104.0	108.4	114.9	122.8	135.7
55°	89.2	88.4	89.6	90.5	91.1	91.9	93.4	96.4	102.0	109.0	119.1
57.5°	78.7	78.3	78.8	79.8	81.6	83.5	84.5	86.4	89.4	94.8	105.5
60°	65.0	65.0	66.8	67.4	69.5	72.2	75.0	76.5	79.4	82.7	90.1
62.5°	53.0	53.1	53.7	54.3	55.3	58.8	62.9	66.8	69.5	72.6	76.9
65°	46.3	46.7	46.7	47.1	47.9	48.7	50.2	53.0	57.8	62.3	66.0
67.5°	40.5	40.5	40.7	41.1	41.3	42.2	42.8	44.2	45.2	50.2	55.3
70°	34.7	35.2	35.0	35.4	35.6	36.0	36.8	37.4	39.1	40.1	42.8
72.5°	29.2	29.6	29.6	29.8	30.4	30.4	31.0	31.5	32.5	33.3	34.5
75°	24.5	24.3	24.5	24.9	25.1	25.3	25.3	26.1	26.7	27.5	28.4
77.5°	19.9	20.1	20.1	20.1	20.1	20.4	20.4	20.8	21.4	21.8	22.4
80°	15.2	15.4	15.2	15.4	15.6	15.8	15.6	15.8	16.4	16.7	16.7
82.5°	10.9	10.9	11.1	11.1	11.1	11.1	11.5	11.5	11.9	11.7	11.9
85°	7.0	6.8	6.8	6.8	7.0	7.2	7.0	7.0	7.2	7.2	7.2
87.5°	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.3	3.5	3.3
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°	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3
2.5°	577.0	575.5	574.1	570.6	568.9	565.0	564.4	564.2	559.1	554.3	552.9
5°	593.4	590.3	585.6	580.2	574.5	568.7	564.8	561.7	553.9	546.5	542.2
7.5°	609.5	603.9	596.5	587.2	579.2	569.8	563.4	557.6	546.9	537.1	530.7
10°	628.0	617.1	606.4	592.2	581.1	570.2	560.1	551.3	538.9	524.9	514.9
12.5°	639.5	627.3	611.5	597.7	582.5	567.9	553.5	541.6	526.4	511.8	499.6
15°	649.7	636.8	618.9	599.0	580.5	562.4	546.9	532.8	513.8	496.4	482.0
17.5°	659.0	641.3	622.8	599.8	579.4	557.4	537.7	520.2	499.4	478.9	462.6
20°	663.1	645.6	623.4	600.4	575.1	548.0	526.4	507.0	484.2	461.4	441.9
22.5°	660.6	647.9	622.6	594.0	567.9	539.3	514.2	490.8	464.9	441.5	418.2
25°	647.3	642.6	619.3	589.3	559.7	526.8	498.6	473.9	445.0	420.1	395.6
27.5°	623.0	629.8	613.2	580.7	548.8	513.4	482.6	454.8	425.4	397.5	373.0
30°	584.4	607.6	601.4	571.8	535.0	500.3	464.7	435.3	403.4	374.6	350.4
32.5°	531.7	573.7	582.9	559.3	521.0	482.0	444.3	415.1	381.4	350.6	327.3
35°	475.0	532.3	558.5	542.8	504.6	463.5	425.0	390.9	357.4	327.5	304.1
37.5°	407.9	484.2	524.7	522.9	486.5	444.7	402.8	369.1	334.7	305.1	280.7
40°	342.8	427.3	484.4	497.0	467.4	421.3	378.9	344.4	310.9	282.1	253.1
42.5°	284.4	368.5	441.9	466.3	444.3	398.5	355.9	319.5	287.2	260.3	230.5
45°	239.5	313.0	390.3	429.7	416.6	374.2	329.2	294.9	264.4	240.8	212.4
47.5°	207.3	260.9	338.6	389.9	388.4	348.1	303.3	270.4	241.6	219.8	195.7
50°	180.7	225.8	289.1	349.5	354.5	322.0	280.0	247.4	221.0	197.8	179.3
52.5°	156.7	192.0	247.2	304.5	321.2	294.2	253.7	224.3	198.8	177.9	162.8
55°	136.5	165.3	208.5	262.6	284.4	264.6	228.4	200.3	179.5	161.6	148.0
57.5°	118.8	141.3	177.4	222.7	247.4	234.0	203.1	179.9	161.4	144.6	133.7
60°	102.2	119.9	149.3	185.7	213.8	205.0	179.5	158.3	143.1	129.1	119.0
62.5°	86.6	101.2	125.4	153.2	178.3	176.0	156.3	139.4	126.5	114.1	105.9
65°	72.2	83.3	103.0	126.2	146.8	148.5	133.6	121.5	109.6	99.5	91.9
67.5°	59.8	67.4	82.2	102.6	118.4	123.8	113.7	104.0	94.2	86.0	79.2
70°	48.5	54.3	64.4	80.2	94.4	100.3	95.0	87.8	79.6	73.2	67.6
72.5°	37.0	42.6	49.4	60.0	71.6	78.1	77.1	72.4	66.2	61.1	55.9
75°	29.6	31.3	36.4	44.2	53.7	59.2	60.5	57.8	52.6	48.5	45.4
77.5°	23.0	24.1	26.9	31.5	38.2	43.0	45.2	44.8	40.9	38.2	35.2
80°	17.5	18.1	19.3	21.0	25.7	30.6	31.9	31.9	29.4	28.4	25.5
82.5°	12.3	12.7	13.2	14.0	15.6	19.7	21.2	21.6	20.2	18.9	16.7
85°	7.6	7.4	7.8	8.4	8.8	9.9	12.3	12.7	12.3	10.7	10.1
87.5°	3.3	3.5	3.5	3.3	3.5	3.7	4.7	5.6	4.9	4.3	3.9
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°	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3	560.3
2.5°	550.4	549.0	546.5	542.6	540.2	536.2	533.4	535.0	535.4	535.0	534.6
5°	537.5	533.4	527.8	522.3	517.3	511.8	508.7	507.3	504.6	503.1	502.3
7.5°	522.9	516.9	508.9	500.1	492.0	484.2	480.7	477.9	472.9	470.2	467.6
10°	506.2	495.1	487.1	474.6	467.0	455.9	448.4	448.5	441.0	436.7	433.6
12.5°	487.7	475.2	460.6	449.7	438.4	430.1	420.5	415.8	407.7	403.6	393.8
15°	466.8	452.6	438.6	423.4	412.7	398.9	385.7	369.5	356.5	345.2	342.1
17.5°	444.7	427.1	413.3	397.7	381.0	355.9	339.5	329.6	321.8	316.0	311.3
20°	421.7	403.8	388.8	361.9	337.2	321.4	310.1	302.9	294.7	288.3	284.8
22.5°	397.5	378.7	356.9	326.1	308.2	296.3	286.6	278.0	273.1	268.5	265.4
25°	375.0	354.5	320.8	300.2	284.6	271.4	264.4	259.3	253.5	246.7	243.5
27.5°	351.4	318.9	293.4	278.4	262.4	254.1	248.0	239.7	234.4	231.9	228.4
30°	324.3	291.8	272.9	256.2	245.7	236.1	228.8	224.5	219.4	214.1	212.0
32.5°	294.2	269.8	251.9	238.7	228.0	220.2	214.7	207.1	203.8	201.1	196.0
35°	270.2	250.6	234.0	222.7	212.6	206.0	199.2	195.1	188.5	185.7	184.0
37.5°	248.4	231.3	218.8	206.4	198.6	190.8	186.9	180.1	177.5	173.3	169.8
40°	230.5	213.8	201.9	192.2	183.2	177.7	172.5	167.2	162.9	161.2	156.7
42.5°	212.2	199.4	187.5	176.6	171.3	165.5	158.5	155.0	150.5	147.4	145.0
45°	195.7	183.6	173.5	164.7	158.1	152.0	147.8	141.3	138.8	133.2	130.8
47.5°	181.1	169.4	159.6	151.1	144.5	140.9	134.7	129.1	125.6	121.7	118.4
50°	165.3	155.9	146.6	139.2	133.4	127.7	121.3	118.8	112.5	110.8	109.0
52.5°	150.9	142.1	133.7	126.5	120.7	115.3	109.8	106.3	102.6	100.8	99.7
55°	137.6	129.1	120.9	114.5	108.6	103.0	99.5	95.4	93.4	92.1	90.5
57.5°	124.0	116.2	109.8	103.2	97.3	92.7	88.4	86.0	84.1	82.5	80.4
60°	111.2	103.8	98.1	92.1	86.0	82.4	79.2	76.3	74.0	71.3	70.5
62.5°	97.5	91.3	86.2	80.4	75.3	72.0	69.1	66.4	63.5	59.2	58.0
65°	85.3	80.2	74.8	69.9	65.2	61.9	57.6	54.5	53.3	53.0	52.8
67.5°	74.0	69.1	64.4	59.4	55.1	51.4	48.9	48.5	47.7	47.5	46.9
70°	62.7	58.2	53.5	48.9	44.8	44.2	43.4	42.6	41.7	41.3	40.9
72.5°	52.6	47.9	43.2	39.7	38.5	37.8	37.0	36.2	35.6	35.2	35.0
75°	41.9	37.6	34.5	33.1	32.1	31.5	30.4	29.8	29.4	28.8	28.6
77.5°	31.9	29.2	27.6	26.9	25.7	25.1	24.3	23.8	23.2	23.2	22.8
80°	23.0	21.8	20.8	19.7	19.3	18.5	18.3	17.7	17.9	17.3	17.3
82.5°	16.5	15.0	14.2	13.8	13.4	12.8	12.7	12.5	12.5	12.1	12.1
85°	9.2	8.8	8.4	8.0	8.0	7.4	7.6	7.4	7.4	7.0	6.8
87.5°	3.7	3.5	3.1	3.1	3.1	2.9	2.9	2.7	2.7	2.7	2.5
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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CATALOG NUMBER: S122RDRP-S290D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	560.3	560.3	560.3	560.3
2.5°	532.5	532.8	532.3	532.6
5°	501.3	499.0	498.6	498.0
7.5°	464.5	464.3	463.1	461.8
10°	429.3	428.3	428.1	426.7
12.5°	388.0	380.4	379.6	375.7
15°	337.4	336.2	332.3	329.8
17.5°	309.2	305.3	303.9	303.3
20°	282.1	278.6	278.0	277.6
22.5°	263.4	259.7	258.0	256.6
25°	241.6	240.2	239.5	239.1
27.5°	224.5	221.0	220.6	219.6
30°	210.3	209.3	207.9	206.8
32.5°	193.5	192.7	191.6	191.2
35°	182.0	179.3	178.1	176.4
37.5°	169.4	167.8	165.9	166.6
40°	154.2	153.2	152.8	152.6
42.5°	142.1	139.0	137.8	137.8
45°	129.9	127.3	125.6	125.8
47.5°	116.6	116.8	115.6	116.0
50°	107.7	106.5	105.7	105.9
52.5°	99.1	98.1	97.5	98.5
55°	89.6	88.4	88.2	88.0
57.5°	79.2	78.7	77.7	77.1
60°	67.9	66.4	64.4	64.2
62.5°	57.6	57.6	57.6	57.6
65°	52.4	52.2	52.4	52.6
67.5°	46.9	46.5	46.1	46.3
70°	40.5	40.3	40.1	40.1
72.5°	34.3	34.3	34.1	33.9
75°	28.4	28.0	28.0	28.0
77.5°	22.8	22.6	22.4	22.2
80°	17.1	16.9	16.7	16.7
82.5°	12.1	11.9	11.9	11.7
85°	7.0	7.2	7.0	7.4
87.5°	2.5	2.3	2.5	2.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242417  
 CATALOG NUMBER: S122RDRP-S290D940-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	13.76	15.21	14.13	15.53	15.84	19.66	21.11	20.03	21.43	21.74
	3H	14.87	16.17	15.25	16.50	16.86	20.82	22.12	21.20	22.44	22.81
	4H	15.33	16.54	15.73	16.89	17.27	21.21	22.43	21.61	22.78	23.16
	6H	15.70	16.82	16.11	17.19	17.58	21.48	22.60	21.89	22.97	23.36
	8H	15.82	16.89	16.25	17.28	17.68	21.55	22.62	21.98	23.01	23.41
	12H	15.90	16.92	16.33	17.30	17.73	21.59	22.61	22.02	22.99	23.42
4H	2H	14.47	15.69	14.87	16.04	16.42	19.62	20.84	20.02	21.19	21.57
	3H	15.74	16.75	16.15	17.15	17.55	20.92	21.93	21.33	22.33	22.73
	4H	16.29	17.19	16.72	17.61	18.05	21.41	22.32	21.85	22.73	23.17
	6H	16.76	17.55	17.22	17.99	18.45	21.80	22.58	22.26	23.03	23.49
	8H	16.92	17.66	17.39	18.10	18.57	21.91	22.65	22.38	23.09	23.56
	12H	17.04	17.69	17.53	18.17	18.65	21.99	22.64	22.47	23.12	23.59
8H	4H	16.63	17.37	17.10	17.81	18.28	21.40	22.13	21.86	22.58	23.04
	6H	17.21	17.81	17.70	18.30	18.78	21.83	22.43	22.32	22.92	23.40
	8H	17.43	17.97	17.95	18.48	18.97	21.98	22.52	22.49	23.03	23.52
	12H	17.62	18.09	18.13	18.59	19.15	22.10	22.57	22.61	23.07	23.63
12H	4H	16.68	17.33	17.16	17.81	18.28	21.38	22.03	21.86	22.51	22.98
	6H	17.27	17.81	17.78	18.32	18.81	21.80	22.34	22.32	22.85	23.34
	8H	17.55	18.02	18.06	18.52	19.08	21.98	22.46	22.49	22.95	23.52