

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: P242407

Luminaire Tested: S122RDRP-S290D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242407
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-S290D930-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

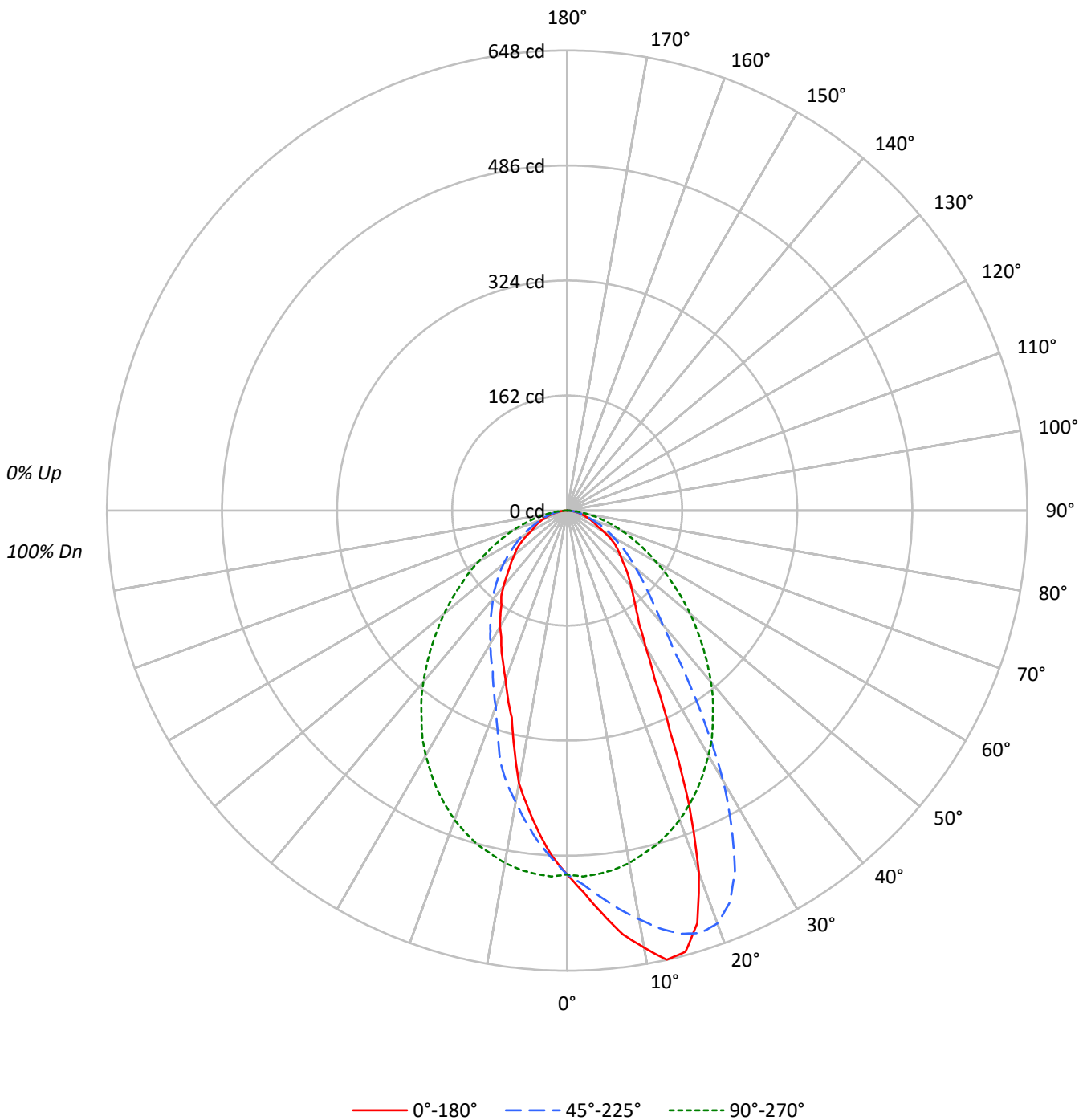
Lumens per Lamp: N/A
Luminaire Lumens: 885.2 lumens
Efficiency: N/A
Efficacy: 76.3 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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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Luminous Intensity Polar Plot



TEST NUMBER: P242407

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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°	9758	9758	9758	9758	9758
5°	10899	10449	9818	8948	8706
10°	12090	11303	9750	8063	7547
15°	12686	12165	9607	7192	5945
20°	10997	12541	9395	5957	5145
25°	7213	11751	9104	5214	4594
30°	4854	9673	8754	4749	4157
35°	3932	7064	8311	4379	3751
40°	3496	5192	7830	4041	3471
45°	3165	4315	7265	3744	3098
50°	2880	3740	6703	3461	2868
55°	2707	3311	6084	3128	2673
60°	2267	2880	5512	2869	2236
65°	1911	2569	5007	2551	2168
70°	1765	2044	4472	2250	2044
75°	1649	1847	3893	2120	1884
80°	1525	1678	3203	1854	1678
85°	1399	1442	2535	1486	1486

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 70°
 Vertical Angle: 45°
 Luminance: 10581 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.6	5.5
10°-20°	135.6	15.3
20°-30°	174.5	19.7
30°-40°	165.6	18.7
40°-50°	141.9	16.0
50°-60°	108.1	12.2
60°-70°	68.2	7.7
70°-80°	34.0	3.8
80°-90°	8.7	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°	358.8	40.5
0°-40°	524.3	59.2
0°-60°	774.3	87.5
0°-90°	885.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	885.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	512	512	512	512	512	
5°	570	546	514	468	455	56
15°	643	617	487	365	302	175
25°	343	559	433	248	219	162
35°	169	304	357	188	161	108
45°	118	160	270	139	115	91
55°	82	100	183	94	80	72
65°	42	57	111	57	48	43
75°	22	25	53	29	26	24
85°	6	7	12	7	7	7
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°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	538.3	538.8	539.3	538.1	538.1	537.0	534.7	532.9	527.9	527.2	527.2
5°	570.0	569.6	570.3	568.0	564.8	564.1	560.7	556.2	551.6	546.5	545.4
7.5°	602.0	599.9	599.0	600.0	596.7	592.0	586.3	581.0	573.0	566.4	562.3
10°	625.1	631.0	627.4	621.2	622.5	614.1	609.6	602.0	595.6	584.4	581.9
12.5°	647.9	649.3	648.8	646.0	643.6	638.5	632.1	625.7	612.5	602.7	592.4
15°	643.3	646.7	647.6	646.5	647.4	647.0	643.8	638.3	628.0	616.9	607.3
17.5°	609.1	613.0	616.2	619.1	623.5	632.3	634.9	636.0	631.7	623.9	615.9
20°	542.5	538.6	555.0	563.4	570.5	588.3	603.6	609.5	618.9	618.7	616.9
22.5°	448.2	450.3	465.6	476.0	500.2	518.0	536.0	562.1	582.6	597.7	607.0
25°	343.2	349.9	365.4	379.0	402.1	435.2	465.3	500.2	533.1	559.1	583.8
27.5°	267.0	267.9	282.0	295.7	309.9	338.6	378.8	420.6	467.6	501.4	544.1
30°	220.7	219.7	224.8	232.5	244.2	265.2	293.7	334.6	381.5	439.8	491.8
32.5°	188.0	188.3	191.9	197.0	206.3	218.8	236.0	267.4	311.0	368.1	431.3
35°	169.1	168.9	171.8	175.9	180.0	189.0	202.4	219.8	250.3	303.8	366.1
37.5°	153.4	154.3	155.6	158.2	163.2	168.6	176.9	189.2	212.4	245.6	301.5
40°	140.6	141.0	142.9	145.1	147.7	151.7	158.2	167.7	183.5	208.8	247.1
42.5°	128.9	129.2	130.5	132.4	134.4	138.3	143.5	151.3	163.4	181.7	211.6
45°	117.5	117.5	118.7	119.6	121.9	125.5	129.9	136.7	145.6	160.2	181.2
47.5°	106.4	106.4	107.3	108.9	110.5	113.4	118.0	123.7	130.1	142.0	160.7
50°	97.2	97.4	97.9	99.1	100.0	102.5	105.9	110.7	117.5	126.2	141.2
52.5°	89.7	89.5	90.2	90.6	91.1	92.7	95.1	99.1	105.0	112.3	124.1
55°	81.5	80.8	81.9	82.8	83.3	84.0	85.4	88.1	93.3	99.7	108.9
57.5°	71.9	71.6	72.1	73.0	74.6	76.4	77.3	79.0	81.7	86.7	96.5
60°	59.5	59.5	61.1	61.6	63.5	66.0	68.5	70.0	72.6	75.6	82.4
62.5°	48.4	48.6	49.1	49.7	50.6	53.8	57.5	61.1	63.5	66.4	70.3
65°	42.4	42.7	42.7	43.1	43.8	44.5	45.9	48.4	52.9	57.0	60.3
67.5°	37.0	37.0	37.2	37.6	37.7	38.6	39.2	40.4	41.3	45.9	50.6
70°	31.7	32.2	32.0	32.4	32.6	32.9	33.6	34.2	35.8	36.7	39.2
72.5°	26.7	27.1	27.1	27.2	27.8	27.8	28.3	28.8	29.7	30.4	31.5
75°	22.4	22.2	22.4	22.8	23.0	23.1	23.1	23.9	24.4	25.1	26.0
77.5°	18.2	18.3	18.3	18.3	18.3	18.7	18.7	19.0	19.6	19.9	20.5
80°	13.9	14.1	13.9	14.1	14.2	14.4	14.2	14.4	15.0	15.3	15.3
82.5°	10.0	10.0	10.1	10.1	10.1	10.1	10.5	10.5	10.9	10.7	10.9
85°	6.4	6.2	6.2	6.2	6.4	6.6	6.4	6.4	6.6	6.6	6.6
87.5°	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.0	3.2	3.0
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°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	527.6	526.2	524.9	521.7	520.1	516.6	516.0	515.8	511.2	506.8	505.5
5°	542.5	539.7	535.4	530.4	525.3	519.9	516.4	513.5	506.4	499.6	495.7
7.5°	557.3	552.2	545.4	536.8	529.5	521.0	515.1	509.8	500.0	491.1	485.2
10°	574.2	564.3	554.5	541.5	531.3	521.4	512.1	504.1	492.7	479.9	470.8
12.5°	584.7	573.5	559.1	546.5	532.6	519.2	506.1	495.2	481.3	468.0	456.7
15°	594.0	582.2	565.9	547.7	530.8	514.2	500.0	487.2	469.7	453.9	440.7
17.5°	602.5	586.3	569.4	548.4	529.7	509.6	491.6	475.6	456.6	437.9	422.9
20°	606.3	590.2	570.0	548.9	525.8	501.1	481.3	463.5	442.7	421.9	404.1
22.5°	604.0	592.4	569.2	543.1	519.2	493.1	470.1	448.7	425.1	403.7	382.3
25°	591.8	587.6	566.2	538.8	511.7	481.7	455.9	433.2	406.9	384.1	361.7
27.5°	569.6	575.8	560.7	531.0	501.8	469.4	441.3	415.8	388.9	363.5	341.0
30°	534.4	555.5	549.8	522.8	489.1	457.5	424.9	398.0	368.8	342.5	320.4
32.5°	486.1	524.6	532.9	511.4	476.3	440.7	406.2	379.5	348.7	320.6	299.2
35°	434.3	486.6	510.7	496.3	461.4	423.8	388.6	357.4	326.8	299.4	278.0
37.5°	372.9	442.7	479.7	478.1	444.8	406.5	368.3	337.5	306.0	278.9	256.7
40°	313.5	390.7	442.9	454.4	427.4	385.2	346.4	314.9	284.3	257.9	231.4
42.5°	260.1	337.0	404.1	426.3	406.2	364.4	325.4	292.1	262.5	238.0	210.8
45°	218.9	286.2	356.9	392.8	380.9	342.1	301.0	269.7	241.7	220.2	194.2
47.5°	189.6	238.5	309.5	356.5	355.1	318.3	277.3	247.2	220.9	201.0	178.9
50°	165.2	206.5	264.3	319.5	324.1	294.4	256.0	226.2	202.0	180.8	163.9
52.5°	143.3	175.5	226.1	278.4	293.7	269.0	231.9	205.1	181.7	162.7	148.8
55°	124.8	151.1	190.6	240.1	260.1	241.9	208.8	183.2	164.1	147.7	135.3
57.5°	108.6	129.2	162.2	203.6	226.2	214.0	185.7	164.5	147.6	132.3	122.3
60°	93.4	109.6	136.5	169.8	195.4	187.4	164.1	144.7	130.8	118.0	108.8
62.5°	79.2	92.6	114.6	140.1	163.0	160.9	142.9	127.4	115.7	104.3	96.8
65°	66.0	76.2	94.2	115.3	134.2	135.8	122.1	111.1	100.2	91.0	84.0
67.5°	54.6	61.6	75.1	93.8	108.2	113.2	104.0	95.1	86.2	78.7	72.4
70°	44.3	49.7	58.9	73.3	86.3	91.7	86.9	80.3	72.8	66.9	61.8
72.5°	33.8	39.0	45.2	54.8	65.5	71.4	70.5	66.2	60.5	55.9	51.1
75°	27.1	28.7	33.3	40.4	49.1	54.1	55.4	52.9	48.1	44.3	41.5
77.5°	21.0	22.1	24.6	28.8	34.9	39.3	41.3	40.9	37.4	34.9	32.2
80°	16.0	16.6	17.6	19.2	23.5	27.9	29.2	29.2	26.9	26.0	23.3
82.5°	11.2	11.6	12.1	12.8	14.2	18.0	19.4	19.8	18.5	17.3	15.3
85°	6.9	6.8	7.1	7.7	8.0	9.1	11.2	11.6	11.2	9.8	9.3
87.5°	3.0	3.2	3.2	3.0	3.2	3.4	4.3	5.2	4.4	3.9	3.6
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°	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3	512.3
2.5°	503.2	502.0	499.6	496.1	493.9	490.2	487.7	489.1	489.5	489.1	488.8
5°	491.5	487.7	482.6	477.6	472.9	468.0	465.1	463.9	461.4	459.9	459.2
7.5°	478.1	472.6	465.3	457.3	449.8	442.7	439.5	437.0	432.4	429.9	427.6
10°	462.8	452.7	445.4	434.0	427.0	416.9	409.9	410.1	403.2	399.3	396.4
12.5°	445.9	434.5	421.1	411.2	400.9	393.2	384.5	380.2	372.7	369.0	360.1
15°	426.8	413.8	401.0	387.1	377.4	364.7	352.6	337.8	325.9	315.6	312.7
17.5°	406.5	390.5	377.9	363.7	348.3	325.4	310.4	301.4	294.2	288.9	284.6
20°	385.5	369.2	355.5	330.9	308.3	293.9	283.6	277.0	269.5	263.6	260.4
22.5°	363.5	346.2	326.3	298.1	281.8	270.9	262.0	254.2	249.7	245.5	242.6
25°	342.8	324.1	293.3	274.5	260.2	248.1	241.7	237.1	231.8	225.5	222.7
27.5°	321.3	291.6	268.2	254.5	239.9	232.3	226.8	219.1	214.3	212.0	208.8
30°	296.5	266.8	249.6	234.2	224.6	215.9	209.1	205.2	200.6	195.8	193.8
32.5°	269.0	246.7	230.3	218.2	208.4	201.3	196.3	189.4	186.4	183.9	179.2
35°	247.1	229.1	214.0	203.6	194.4	188.3	182.1	178.4	172.3	169.8	168.2
37.5°	227.1	211.5	200.1	188.7	181.6	174.4	170.9	164.6	162.3	158.4	155.2
40°	210.8	195.4	184.6	175.7	167.5	162.5	157.7	152.9	149.0	147.4	143.3
42.5°	194.0	182.3	171.4	161.4	156.6	151.3	144.9	141.7	137.6	134.7	132.6
45°	178.9	167.9	158.6	150.6	144.5	139.0	135.1	129.2	126.9	121.8	119.6
47.5°	165.5	154.9	146.0	138.1	132.1	128.9	123.2	118.0	114.8	111.2	108.2
50°	151.1	142.6	134.0	127.3	121.9	116.8	110.9	108.6	102.9	101.3	99.7
52.5°	137.9	129.9	122.3	115.7	110.4	105.4	100.4	97.2	93.8	92.2	91.1
55°	125.8	118.0	110.5	104.7	99.3	94.2	91.0	87.2	85.4	84.2	82.8
57.5°	113.4	106.3	100.4	94.3	89.0	84.7	80.8	78.7	76.9	75.5	73.5
60°	101.6	94.9	89.7	84.2	78.7	75.3	72.4	69.8	67.6	65.1	64.4
62.5°	89.2	83.5	78.9	73.5	68.9	65.9	63.2	60.7	58.0	54.1	53.0
65°	78.0	73.3	68.4	63.9	59.6	56.6	52.7	49.8	48.8	48.4	48.2
67.5°	67.6	63.2	58.9	54.3	50.4	47.0	44.7	44.3	43.6	43.4	42.9
70°	57.3	53.2	48.9	44.7	40.9	40.4	39.7	39.0	38.1	37.7	37.4
72.5°	48.1	43.8	39.5	36.3	35.2	34.5	33.8	33.1	32.6	32.2	32.0
75°	38.3	34.4	31.5	30.3	29.4	28.8	27.8	27.2	26.9	26.3	26.2
77.5°	29.2	26.7	25.3	24.6	23.5	23.0	22.2	21.7	21.2	21.2	20.8
80°	21.0	19.9	19.0	18.0	17.6	16.9	16.7	16.2	16.4	15.8	15.8
82.5°	15.1	13.7	13.0	12.6	12.3	11.7	11.6	11.4	11.4	11.0	11.0
85°	8.4	8.0	7.7	7.3	7.3	6.8	6.9	6.8	6.8	6.4	6.2
87.5°	3.4	3.2	2.8	2.8	2.8	2.7	2.7	2.5	2.5	2.5	2.3
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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CATALOG NUMBER: S122RDRP-S290D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	512.3	512.3	512.3	512.3
2.5°	486.8	487.2	486.6	487.0
5°	458.3	456.2	455.9	455.3
7.5°	424.7	424.5	423.5	422.2
10°	392.5	391.6	391.4	390.2
12.5°	354.8	347.8	347.1	343.5
15°	308.5	307.4	303.8	301.5
17.5°	282.7	279.1	277.9	277.3
20°	257.9	254.7	254.2	253.8
22.5°	240.8	237.5	235.8	234.6
25°	220.9	219.7	218.9	218.6
27.5°	205.2	202.0	201.7	200.8
30°	192.2	191.3	190.1	189.0
32.5°	176.9	176.2	175.2	174.8
35°	166.4	163.9	162.9	161.3
37.5°	154.9	153.4	151.7	152.4
40°	141.0	140.1	139.7	139.6
42.5°	129.9	127.1	126.0	126.0
45°	118.7	116.4	114.8	115.0
47.5°	106.6	106.8	105.7	106.1
50°	98.4	97.4	96.7	96.8
52.5°	90.6	89.7	89.2	90.1
55°	81.9	80.8	80.6	80.5
57.5°	72.4	71.9	71.0	70.5
60°	62.1	60.7	58.9	58.7
62.5°	52.7	52.7	52.7	52.7
65°	47.9	47.7	47.9	48.1
67.5°	42.9	42.5	42.2	42.4
70°	37.0	36.8	36.7	36.7
72.5°	31.3	31.3	31.1	31.0
75°	26.0	25.6	25.6	25.6
77.5°	20.8	20.6	20.5	20.3
80°	15.7	15.5	15.3	15.3
82.5°	11.0	10.9	10.9	10.7
85°	6.4	6.6	6.4	6.8
87.5°	2.3	2.1	2.3	2.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242407
 CATALOG NUMBER: S122RDRP-S290D930-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	13.45	14.90	13.82	15.22	15.53	19.35	20.80	19.71	21.11	21.43
	3H	14.56	15.86	14.94	16.19	16.55	20.51	21.81	20.89	22.13	22.50
	4H	15.02	16.23	15.42	16.58	16.96	20.90	22.12	21.30	22.47	22.85
	6H	15.38	16.51	15.80	16.87	17.27	21.17	22.29	21.58	22.66	23.05
	8H	15.51	16.57	15.93	16.96	17.37	21.24	22.31	21.67	22.70	23.10
	12H	15.59	16.61	16.02	16.99	17.42	21.28	22.30	21.71	22.68	23.11
4H	2H	14.16	15.38	14.56	15.73	16.11	19.31	20.53	19.71	20.88	21.26
	3H	15.43	16.44	15.84	16.84	17.24	20.61	21.62	21.02	22.02	22.42
	4H	15.98	16.88	16.41	17.30	17.74	21.10	22.01	21.54	22.42	22.86
	6H	16.45	17.23	16.91	17.68	18.14	21.49	22.27	21.95	22.72	23.18
	8H	16.61	17.34	17.08	17.79	18.26	21.60	22.33	22.07	22.78	23.25
	12H	16.73	17.38	17.21	17.86	18.33	21.68	22.33	22.16	22.81	23.28
8H	4H	16.32	17.06	16.79	17.50	17.97	21.09	21.82	21.55	22.27	22.73
	6H	16.89	17.50	17.39	17.99	18.47	21.52	22.12	22.01	22.61	23.09
	8H	17.12	17.66	17.63	18.17	18.66	21.66	22.21	22.18	22.72	23.21
	12H	17.30	17.78	17.81	18.27	18.84	21.79	22.26	22.30	22.76	23.32
12H	4H	16.36	17.02	16.85	17.50	17.97	21.07	21.72	21.55	22.20	22.67
	6H	16.96	17.50	17.47	18.01	18.50	21.49	22.03	22.01	22.54	23.03
	8H	17.23	17.71	17.74	18.20	18.77	21.67	22.15	22.18	22.64	23.21