

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: P243252

Luminaire Tested: S122RDRP-H290D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243252
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-H290D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

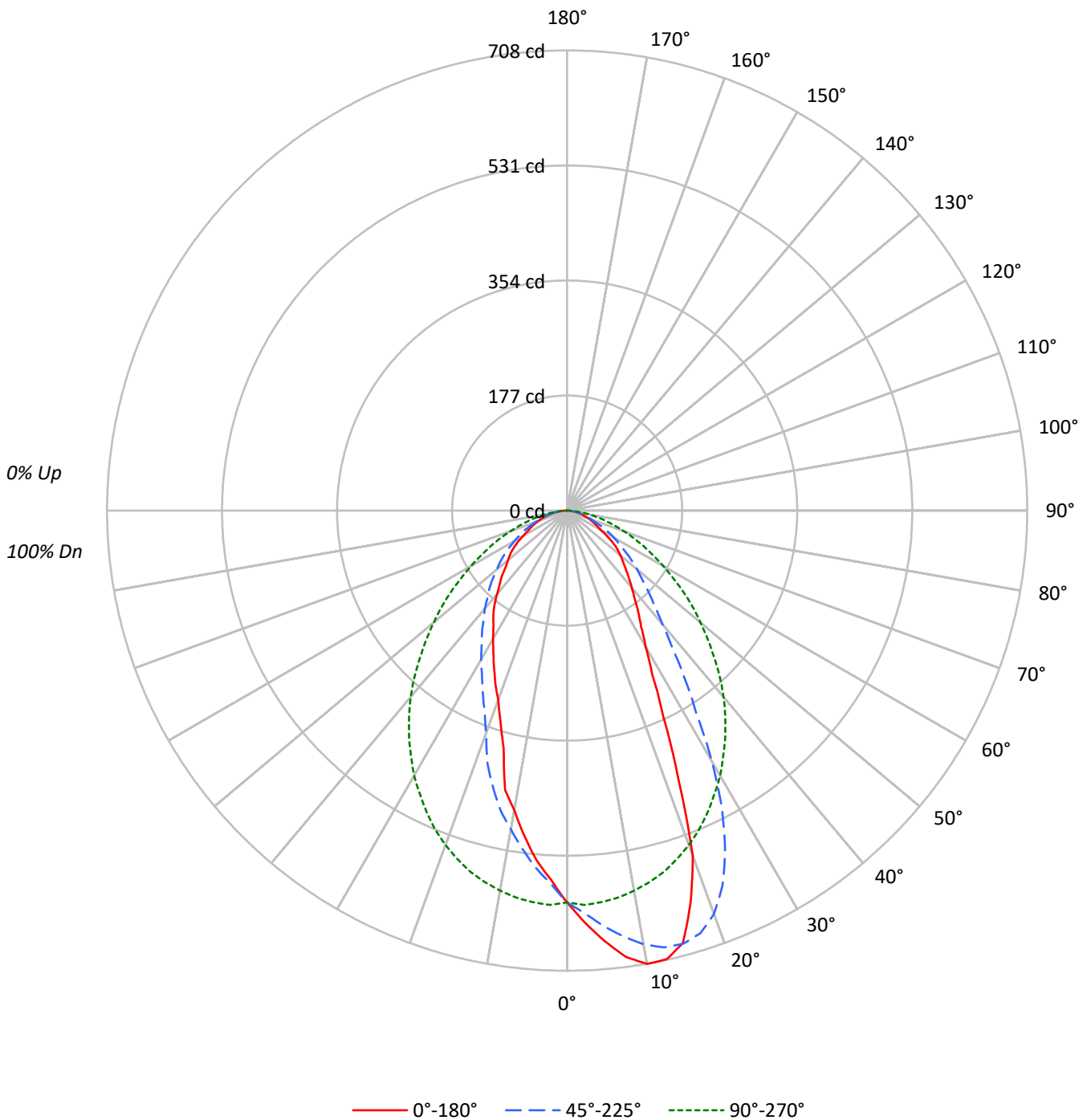
Lumens per Lamp: N/A
Luminaire Lumens: 1016.2 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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-H290D830-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	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°	11484	11484	11484	11484	11484
5°	12713	12268	11562	10551	10321
10°	13700	13104	11483	9636	9052
15°	13579	13605	11349	8692	7438
20°	11455	13388	11098	7382	6280
25°	7364	12083	10756	6461	5590
30°	5320	9799	10357	5820	5008
35°	4432	7336	9859	5313	4606
40°	3847	5687	9312	4901	4170
45°	3435	4763	8615	4561	3817
50°	3168	4146	7933	4187	3509
55°	2843	3577	7246	3905	3341
60°	2270	3150	6526	3547	3006
65°	2082	2677	5859	3254	2776
70°	1910	2211	5174	2890	2640
75°	1744	1972	4533	2745	2495
80°	1514	1733	3762	2512	2336
85°	1202	1421	3016	2295	2164

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 75°
 Vertical Angle: 45°
 Luminance: 11405 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.1	5.6
10°-20°	156.2	15.4
20°-30°	196.8	19.4
30°-40°	189.0	18.6
40°-50°	162.8	16.0
50°-60°	124.4	12.2
60°-70°	79.2	7.8
70°-80°	40.1	3.9
80°-90°	10.6	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°	410.1	40.4
0°-40°	599.0	59.0
0°-60°	886.2	87.2
0°-90°	1016.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1016.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	603	603	603	603	603	
5°	665	642	605	552	540	65
15°	689	690	576	441	377	187
25°	350	575	512	307	266	167
35°	191	316	424	228	198	120
45°	128	177	320	169	142	99
55°	86	108	218	118	101	76
65°	46	59	130	72	62	46
75°	24	27	62	37	34	25
85°	6	6	14	10	10	6
90°	0	0	0	0	0	



TEST NUMBER: P243252

CATALOG NUMBER: S122RDRP-H290D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9
2.5°	634.9	635.7	636.1	635.1	632.9	633.1	631.1	627.8	623.7	619.9	622.1
5°	664.9	665.9	665.7	663.9	661.7	659.8	656.4	651.7	646.7	641.6	640.6
7.5°	692.5	694.7	694.1	690.7	689.2	686.4	680.7	675.3	667.8	660.5	657.6
10°	708.3	710.1	709.1	708.3	706.5	703.8	698.6	693.5	685.2	677.5	673.2
12.5°	707.1	708.7	709.5	710.3	709.7	708.7	706.5	702.2	695.5	688.4	682.8
15°	688.6	686.0	684.2	689.2	690.9	697.6	699.2	699.8	695.3	689.9	688.6
17.5°	632.1	632.9	646.5	644.4	647.3	663.7	670.2	679.1	682.8	681.7	684.0
20°	565.1	555.8	562.5	572.4	581.6	605.5	621.3	635.3	651.5	660.5	669.2
22.5°	448.3	448.5	464.6	480.8	501.7	527.6	551.6	578.5	607.3	624.8	645.2
25°	350.4	359.9	367.0	374.1	404.5	429.3	469.4	501.9	541.6	574.9	609.1
27.5°	283.3	293.2	294.4	310.3	328.3	348.4	374.7	426.0	466.6	515.5	557.8
30°	241.9	243.9	248.0	252.1	265.4	284.1	312.3	344.5	389.7	445.5	502.1
32.5°	211.9	211.5	215.6	222.2	229.5	242.1	258.1	284.7	325.5	369.9	436.0
35°	190.6	190.0	193.0	195.3	199.7	209.9	224.3	241.9	271.3	315.5	366.8
37.5°	170.5	171.6	173.4	176.0	181.7	188.2	197.9	212.5	235.8	265.0	314.1
40°	154.7	156.1	158.0	159.8	164.2	169.5	176.0	187.6	203.2	228.7	266.3
42.5°	140.5	141.1	142.6	145.2	148.4	153.1	159.4	168.3	181.3	199.1	232.0
45°	127.5	127.5	129.2	131.6	133.6	138.1	143.0	151.5	161.6	176.8	200.3
47.5°	116.4	116.6	117.6	118.0	120.2	124.3	129.6	136.3	144.6	156.3	178.2
50°	106.9	107.7	108.1	108.7	109.5	111.7	115.4	120.5	129.6	139.9	154.5
52.5°	97.1	98.1	98.8	100.0	101.2	101.4	104.2	107.5	113.8	124.5	136.3
55°	85.6	86.4	88.0	89.0	90.6	91.9	94.1	96.5	100.6	107.7	120.0
57.5°	72.6	72.8	74.4	75.4	78.5	81.7	83.7	86.2	89.2	94.1	103.4
60°	59.6	60.2	60.4	61.2	63.9	67.3	71.2	75.2	78.3	82.7	89.2
62.5°	52.5	52.7	53.3	54.1	54.3	55.8	57.0	61.8	67.3	71.6	76.0
65°	46.2	46.4	46.4	47.0	47.7	48.5	49.1	50.9	53.3	59.4	64.7
67.5°	40.2	40.1	40.4	41.0	41.2	41.8	42.8	43.8	45.4	47.2	52.7
70°	34.3	34.3	34.1	34.7	35.3	35.5	36.1	37.1	38.1	39.7	41.4
72.5°	28.4	28.8	28.8	29.2	29.4	30.2	30.6	31.0	32.4	33.1	34.5
75°	23.7	23.5	24.1	23.9	24.3	24.5	25.1	25.6	26.0	26.8	28.0
77.5°	18.9	18.5	18.9	18.7	19.1	19.5	19.5	20.1	20.5	21.3	21.9
80°	13.8	13.8	14.0	14.4	14.4	14.6	15.0	14.8	15.6	15.8	16.4
82.5°	9.5	9.7	9.7	9.9	9.9	9.9	10.3	10.3	10.5	10.9	11.0
85°	5.5	5.3	5.5	5.5	5.5	5.7	5.9	5.7	6.1	6.5	6.5
87.5°	1.6	1.6	1.8	2.0	2.0	2.2	2.2	2.2	2.4	2.4	2.6
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9
2.5°	622.1	621.1	618.5	616.2	611.8	608.3	607.1	607.3	602.0	596.4	594.8
5°	639.2	635.7	630.6	625.2	618.7	612.2	608.1	604.7	596.4	588.1	583.4
7.5°	653.4	647.7	640.2	631.7	623.3	613.6	606.9	600.6	589.1	577.9	571.8
10°	666.5	658.4	648.1	637.1	625.8	613.2	603.5	593.7	579.3	566.6	556.2
12.5°	678.9	666.1	655.6	639.6	627.2	610.0	596.8	585.4	568.4	552.6	541.0
15°	680.1	671.0	657.0	640.4	621.5	605.5	588.9	575.5	556.2	538.6	518.7
17.5°	679.9	672.8	658.2	641.2	618.5	597.6	579.7	562.1	540.0	519.5	502.3
20°	672.8	667.8	655.2	635.1	612.2	588.1	568.2	547.5	521.7	500.5	481.8
22.5°	656.0	657.2	647.3	629.4	604.7	577.9	554.8	530.9	504.5	480.2	456.5
25°	627.6	640.2	637.3	620.5	594.3	564.9	538.6	511.8	483.4	457.5	435.6
27.5°	592.3	616.0	621.1	608.1	583.0	550.1	520.3	491.1	462.1	434.2	411.8
30°	550.5	585.8	598.8	591.7	568.6	534.1	499.6	470.9	439.2	409.6	385.9
32.5°	497.8	547.3	570.2	572.4	553.4	516.3	478.0	447.3	414.7	386.7	361.2
35°	439.0	499.8	537.0	547.1	533.5	496.8	456.5	424.0	389.3	361.1	335.4
37.5°	379.8	451.2	500.1	519.7	510.6	475.1	432.5	399.5	365.2	336.4	312.3
40°	325.3	393.2	456.7	487.3	484.6	451.6	408.6	374.5	339.5	312.9	286.5
42.5°	276.6	342.1	412.0	453.0	455.2	426.4	382.4	348.0	314.5	288.1	260.4
45°	238.1	295.7	365.0	413.9	423.4	399.7	355.1	319.8	289.2	264.4	236.8
47.5°	207.4	252.1	316.5	373.9	390.6	369.9	327.3	293.8	265.0	243.7	217.6
50°	180.7	222.7	277.4	330.5	355.1	339.5	299.7	267.7	241.7	221.2	198.3
52.5°	157.0	189.6	237.0	287.9	321.0	306.8	272.9	243.5	219.0	199.9	180.7
55°	137.5	164.7	206.6	251.9	282.5	274.6	244.4	218.2	196.7	178.6	163.0
57.5°	117.4	140.3	174.0	214.5	244.4	243.3	218.4	193.2	176.2	159.0	147.8
60°	99.8	118.4	145.8	180.1	210.3	210.5	191.2	171.3	156.7	141.9	131.2
62.5°	84.2	99.0	122.9	150.5	174.6	180.7	166.3	149.0	137.1	125.7	116.6
65°	70.8	81.9	99.8	124.9	143.8	152.1	142.6	130.0	120.2	109.9	101.8
67.5°	58.4	66.5	79.7	99.4	118.4	124.5	120.5	110.9	103.8	95.3	89.2
70°	46.0	52.9	62.1	76.9	92.5	101.0	99.8	92.9	87.0	80.9	75.2
72.5°	36.5	40.4	47.5	58.2	70.6	80.1	80.5	76.9	72.0	66.9	63.1
75°	29.4	31.2	34.5	42.8	52.7	60.6	63.3	61.6	57.6	54.5	51.9
77.5°	22.7	24.3	26.4	30.4	38.1	44.2	47.5	47.7	45.4	42.6	40.6
80°	17.0	17.6	19.1	21.1	25.1	30.4	34.3	34.3	32.9	31.6	30.4
82.5°	11.6	12.2	13.0	14.0	16.0	19.1	22.7	23.3	22.5	22.1	20.5
85°	6.5	7.1	7.5	8.1	8.9	10.5	13.0	13.8	14.0	12.8	12.0
87.5°	2.6	2.6	2.8	3.0	3.2	3.7	4.7	5.9	5.9	5.3	5.1
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°	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9	602.9
2.5°	592.9	590.1	586.6	583.4	579.1	574.7	573.9	575.5	575.9	573.9	574.5
5°	578.9	573.7	569.4	562.3	557.8	551.8	547.9	547.9	547.9	544.9	542.2
7.5°	564.3	557.4	549.1	542.4	533.1	525.4	521.7	519.9	516.3	513.4	510.0
10°	547.3	537.6	527.4	516.9	508.8	498.2	491.9	487.9	481.8	479.2	474.3
12.5°	527.4	517.7	505.3	488.3	485.9	472.9	464.0	456.7	449.2	443.1	441.0
15°	511.4	494.6	478.0	466.0	448.5	440.8	427.7	426.6	420.4	402.5	388.5
17.5°	485.5	470.6	452.2	438.8	424.8	407.6	393.8	380.2	367.2	354.5	354.1
20°	462.7	445.1	427.7	413.1	388.7	364.2	355.7	343.3	335.6	325.5	322.6
22.5°	437.6	419.3	397.6	376.2	347.6	332.2	323.0	313.1	305.4	300.9	296.3
25°	412.3	394.0	365.2	339.0	319.4	307.4	299.5	288.8	283.3	279.4	273.5
27.5°	387.7	364.4	334.0	313.1	297.3	283.7	276.6	267.9	261.8	256.7	252.9
30°	363.2	331.3	305.4	289.2	273.1	264.6	255.3	248.8	244.3	239.5	233.4
32.5°	336.4	302.8	286.1	266.2	256.7	244.4	237.7	231.0	225.1	221.8	219.6
35°	305.2	278.2	263.2	248.6	236.6	228.5	219.0	214.9	211.7	205.2	202.4
37.5°	278.8	259.2	243.5	230.4	219.4	210.7	206.4	199.3	194.7	192.6	189.6
40°	256.9	239.5	225.9	212.7	203.4	197.1	189.4	185.7	179.7	177.6	175.2
42.5°	237.9	222.0	207.8	197.7	189.6	180.9	177.0	170.7	168.1	162.8	160.8
45°	218.8	204.6	192.2	182.3	174.6	169.3	162.2	158.2	153.7	150.9	145.6
47.5°	199.7	187.0	176.8	168.5	161.8	155.3	149.4	146.0	140.3	137.3	134.6
50°	184.9	172.6	163.0	154.7	147.8	141.3	137.5	132.0	126.9	123.5	122.5
52.5°	167.3	156.7	147.8	141.5	134.6	129.8	124.7	118.6	116.0	112.7	111.9
55°	151.7	143.0	135.5	128.8	122.9	117.6	111.7	107.3	105.4	103.8	102.6
57.5°	137.1	128.8	121.9	115.8	110.7	105.2	100.2	97.7	95.9	94.1	92.9
60°	122.7	115.2	108.9	103.8	98.5	93.1	89.6	87.4	86.0	83.5	82.7
62.5°	109.9	103.0	96.5	91.7	86.8	82.7	79.7	76.7	74.6	72.6	68.5
65°	95.9	89.8	84.8	80.1	75.4	72.2	68.9	65.5	62.7	62.7	62.7
67.5°	83.5	78.1	73.0	68.9	64.7	61.0	57.6	57.4	56.4	56.0	55.4
70°	70.8	67.1	62.3	57.8	53.7	51.9	51.3	50.3	49.1	48.9	48.1
72.5°	59.4	55.0	50.7	46.8	46.0	45.2	44.0	43.0	42.2	41.6	41.2
75°	48.5	44.2	40.6	39.7	38.7	37.3	36.3	35.5	35.1	35.1	34.9
77.5°	37.1	34.5	32.9	31.4	30.6	29.8	29.2	28.8	28.2	28.4	28.0
80°	27.2	26.4	25.1	24.1	23.7	22.9	22.5	22.3	21.9	21.9	21.7
82.5°	19.5	18.2	17.6	17.0	16.6	16.2	16.4	16.2	16.0	15.8	16.0
85°	11.2	11.0	10.7	10.7	10.7	10.5	10.5	10.5	10.3	10.1	10.1
87.5°	4.9	5.1	5.1	4.7	5.3	5.3	5.1	5.1	4.9	5.3	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



TEST NUMBER: P243252

CATALOG NUMBER: S122RDRP-H290D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	602.9	602.9	602.9	602.9
2.5°	572.0	571.8	570.6	568.6
5°	541.0	540.2	538.2	539.8
7.5°	507.8	505.7	503.7	504.7
10°	472.3	471.5	470.4	468.0
12.5°	433.1	436.2	432.9	440.4
15°	374.9	388.9	371.3	377.2
17.5°	345.9	346.1	343.7	340.9
20°	318.6	311.7	314.3	309.8
22.5°	292.4	290.8	290.0	288.4
25°	268.9	266.0	265.0	266.0
27.5°	251.6	250.2	246.4	245.8
30°	229.8	229.3	228.1	227.7
32.5°	216.2	213.7	213.1	210.7
35°	201.0	199.7	198.7	198.1
37.5°	185.9	185.1	183.3	184.3
40°	173.4	169.5	167.9	167.7
42.5°	159.8	157.6	154.5	153.5
45°	144.0	143.0	142.1	141.7
47.5°	130.2	129.6	128.4	127.8
50°	120.4	118.8	118.6	118.4
52.5°	110.9	110.3	109.7	110.5
55°	102.0	101.2	100.6	100.6
57.5°	92.3	91.0	89.8	90.0
60°	81.1	80.3	79.3	78.9
62.5°	68.1	68.1	67.9	67.9
65°	62.0	61.6	61.4	61.6
67.5°	55.2	54.8	54.3	54.5
70°	47.5	47.4	47.5	47.4
72.5°	40.6	40.4	40.6	41.0
75°	34.3	34.1	33.9	33.9
77.5°	27.8	27.6	27.2	27.6
80°	21.7	21.5	21.3	21.3
82.5°	15.4	15.6	15.4	15.4
85°	10.1	10.3	10.1	9.9
87.5°	5.1	5.3	4.9	4.7
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243252
 CATALOG NUMBER: S122RDRP-H290D830-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	13.32	14.78	13.69	15.09	15.41	19.65	21.11	20.02	21.42	21.74
	3H	14.49	15.80	14.87	16.12	16.49	20.90	22.21	21.28	22.53	22.90
	4H	14.95	16.17	15.35	16.52	16.90	21.34	22.56	21.74	22.91	23.29
	6H	15.28	16.41	15.69	16.77	17.17	21.63	22.76	22.04	23.12	23.52
	8H	15.38	16.45	15.81	16.84	17.24	21.72	22.79	22.14	23.18	23.58
	12H	15.43	16.46	15.86	16.84	17.27	21.76	22.79	22.19	23.17	23.60
4H	2H	14.05	15.27	14.45	15.62	16.00	19.63	20.85	20.03	21.20	21.58
	3H	15.37	16.38	15.78	16.78	17.19	21.02	22.03	21.43	22.43	22.83
	4H	15.92	16.83	16.36	17.25	17.69	21.55	22.46	21.98	22.87	23.31
	6H	16.35	17.14	16.81	17.59	18.05	21.97	22.75	22.42	23.20	23.66
	8H	16.49	17.22	16.95	17.67	18.14	22.10	22.83	22.56	23.28	23.75
	12H	16.57	17.22	17.05	17.70	18.17	22.19	22.85	22.67	23.33	23.80
8H	4H	16.27	17.01	16.73	17.45	17.92	21.55	22.28	22.01	22.73	23.20
	6H	16.79	17.40	17.29	17.89	18.37	22.01	22.62	22.51	23.11	23.59
	8H	16.98	17.52	17.50	18.03	18.52	22.18	22.73	22.70	23.24	23.73
	12H	17.11	17.59	17.62	18.09	18.65	22.32	22.80	22.84	23.30	23.86
12H	4H	16.31	16.97	16.80	17.45	17.92	21.53	22.18	22.01	22.66	23.13
	6H	16.86	17.40	17.37	17.91	18.40	21.99	22.53	22.50	23.04	23.53
	8H	17.09	17.57	17.60	18.06	18.63	22.19	22.67	22.71	23.17	23.73