

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: P243247

Luminaire Tested: S122RDRP-H290D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243247
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-H290D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

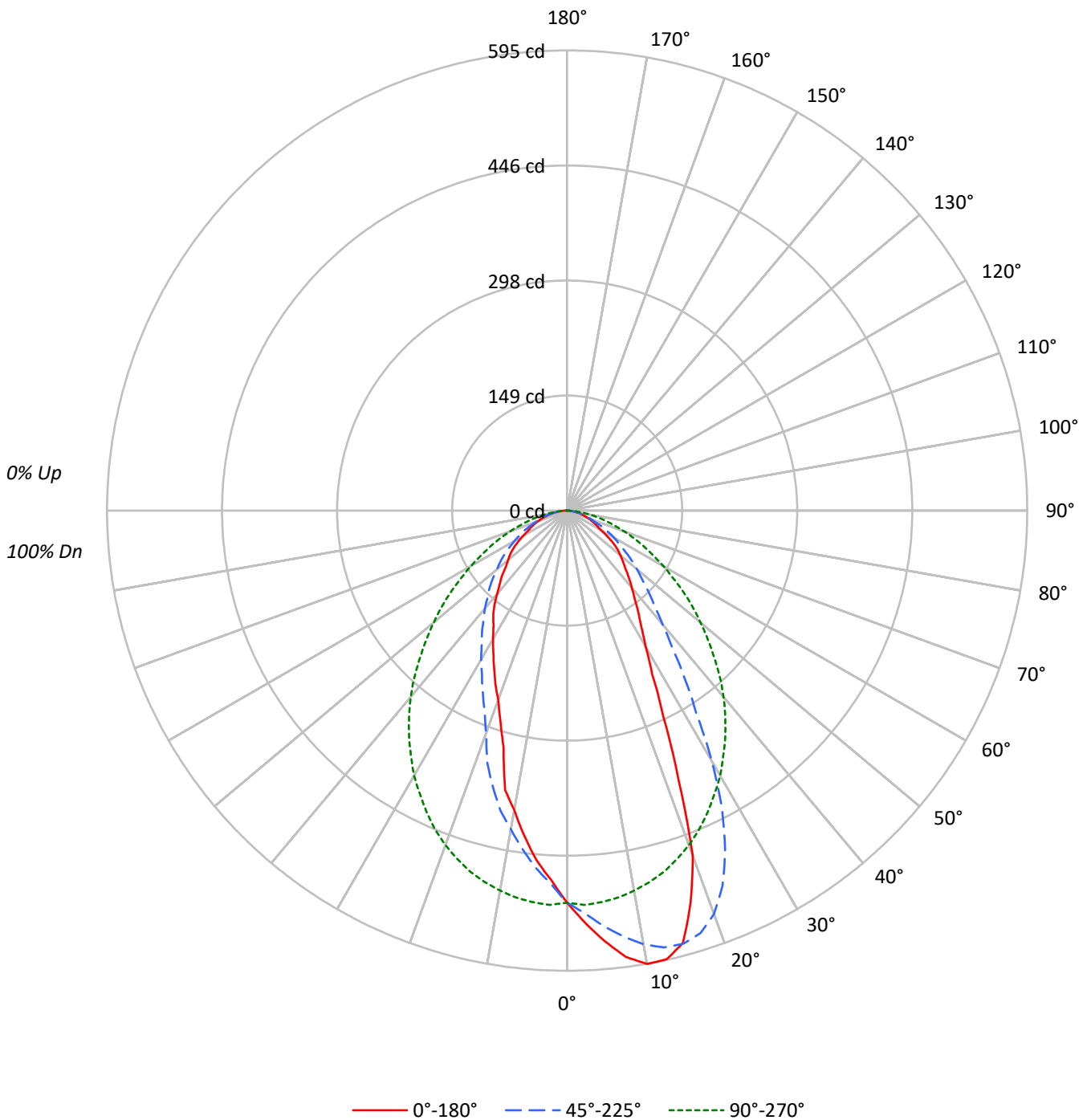
Lumens per Lamp: N/A
Luminaire Lumens: 854.1 lumens
Efficiency: N/A
Efficacy: 76.3 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P243247

CATALOG NUMBER: S122RDRP-H290D927-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P243247

CATALOG NUMBER: S122RDRP-H290D927-X4F0-XX-UDD-A-W

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°	9653	9653	9653	9653	9653
5°	10685	10312	9717	8868	8675
10°	11514	11013	9651	8098	7607
15°	11412	11435	9538	7304	6253
20°	9626	11254	9328	6205	5276
25°	6189	10155	9039	5431	4697
30°	4471	8235	8705	4892	4210
35°	3725	6164	8287	4465	3872
40°	3232	4779	7825	4120	3503
45°	2885	4003	7241	3833	3208
50°	2664	3485	6667	3517	2948
55°	2391	3005	6090	3281	2809
60°	1909	2648	5482	2983	2526
65°	1749	2249	4926	2736	2330
70°	1609	1855	4350	2428	2217
75°	1465	1663	3805	2304	2097
80°	1272	1459	3170	2106	1963
85°	1005	1202	2535	1923	1814

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 75°
 Vertical Angle: 45°
 Luminance: 9587 cd/sqm



TEST NUMBER: P243247

CATALOG NUMBER: S122RDRP-H290D927-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.0	5.6
10°-20°	131.2	15.4
20°-30°	165.4	19.4
30°-40°	158.8	18.6
40°-50°	136.8	16.0
50°-60°	104.6	12.2
60°-70°	66.6	7.8
70°-80°	33.7	3.9
80°-90°	8.9	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°	344.7	40.4
0°-40°	503.5	59.0
0°-60°	744.9	87.2
0°-90°	854.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	854.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	507	507	507	507	507	
5°	559	539	508	464	454	54
15°	579	580	484	370	317	157
25°	294	483	430	258	224	141
35°	160	265	356	192	166	101
45°	107	149	269	142	119	83
55°	72	90	183	99	85	63
65°	39	50	109	61	52	39
75°	20	23	52	31	28	21
85°	5	6	12	9	8	5
90°	0	0	0	0	0	



TEST NUMBER: P243247

CATALOG NUMBER: S122RDRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8
2.5°	533.6	534.3	534.6	533.8	532.0	532.1	530.5	527.6	524.2	521.0	522.8
5°	558.8	559.6	559.5	558.0	556.2	554.5	551.7	547.7	543.6	539.3	538.4
7.5°	582.0	583.9	583.4	580.5	579.2	576.9	572.1	567.6	561.3	555.2	552.7
10°	595.3	596.8	596.0	595.3	593.8	591.5	587.2	582.9	575.9	569.4	565.8
12.5°	594.3	595.6	596.3	597.0	596.5	595.6	593.8	590.2	584.5	578.6	573.9
15°	578.7	576.6	575.1	579.2	580.7	586.3	587.7	588.2	584.4	579.9	578.7
17.5°	531.3	532.0	543.4	541.6	544.1	557.8	563.3	570.8	573.9	572.9	574.9
20°	474.9	467.1	472.8	481.0	488.8	508.9	522.2	533.9	547.5	555.2	562.5
22.5°	376.7	376.9	390.5	404.1	421.7	443.4	463.6	486.2	510.4	525.2	542.2
25°	294.5	302.5	308.4	314.4	339.9	360.8	394.5	421.9	455.2	483.2	511.9
27.5°	238.1	246.4	247.4	260.8	275.9	292.8	314.9	358.0	392.2	433.3	468.8
30°	203.3	205.0	208.4	211.9	223.0	238.8	262.5	289.5	327.5	374.4	422.0
32.5°	178.1	177.8	181.2	186.7	192.9	203.5	216.9	239.3	273.6	310.9	366.5
35°	160.2	159.7	162.2	164.2	167.8	176.4	188.5	203.3	228.0	265.1	308.3
37.5°	143.3	144.3	145.8	147.9	152.7	158.2	166.3	178.6	198.2	222.7	264.0
40°	130.0	131.2	132.8	134.3	138.0	142.4	147.9	157.7	170.8	192.2	223.9
42.5°	118.1	118.6	119.9	122.0	124.7	128.7	134.0	141.4	152.4	167.3	195.0
45°	107.1	107.1	108.6	110.6	112.3	116.1	120.2	127.4	135.8	148.6	168.3
47.5°	97.8	98.0	98.8	99.2	101.0	104.5	108.9	114.6	121.5	131.3	149.7
50°	89.9	90.5	90.9	91.4	92.0	93.9	97.0	101.3	108.9	117.6	129.8
52.5°	81.6	82.4	83.1	84.1	85.1	85.2	87.6	90.4	95.7	104.6	114.6
55°	72.0	72.6	74.0	74.8	76.1	77.3	79.1	81.1	84.6	90.5	100.8
57.5°	61.0	61.2	62.5	63.3	66.0	68.7	70.3	72.5	75.0	79.1	86.9
60°	50.1	50.6	50.7	51.4	53.7	56.5	59.9	63.2	65.8	69.5	75.0
62.5°	44.1	44.3	44.8	45.4	45.6	46.9	47.9	51.9	56.5	60.2	63.8
65°	38.8	39.0	39.0	39.5	40.1	40.8	41.3	42.8	44.8	49.9	54.4
67.5°	33.8	33.7	34.0	34.5	34.7	35.2	36.0	36.8	38.1	39.6	44.3
70°	28.9	28.9	28.7	29.2	29.7	29.8	30.3	31.2	32.0	33.3	34.8
72.5°	23.9	24.2	24.2	24.5	24.7	25.4	25.7	26.0	27.2	27.9	29.0
75°	19.9	19.7	20.2	20.1	20.4	20.6	21.1	21.6	21.9	22.6	23.5
77.5°	15.9	15.6	15.9	15.8	16.1	16.4	16.4	16.9	17.2	17.9	18.4
80°	11.6	11.6	11.8	12.1	12.1	12.3	12.6	12.4	13.1	13.3	13.8
82.5°	8.0	8.1	8.1	8.3	8.3	8.3	8.6	8.6	8.8	9.1	9.3
85°	4.6	4.5	4.6	4.6	4.6	4.8	5.0	4.8	5.1	5.5	5.5
87.5°	1.3	1.3	1.5	1.7	1.7	1.8	1.8	1.8	2.0	2.0	2.2
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: P243247

CATALOG NUMBER: S122RDRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8
2.5°	522.8	522.0	519.9	517.9	514.2	511.2	510.2	510.4	505.9	501.3	500.0
5°	537.3	534.3	530.0	525.5	520.0	514.5	511.1	508.2	501.3	494.3	490.3
7.5°	549.2	544.4	538.1	531.0	523.8	515.7	510.1	504.8	495.1	485.7	480.6
10°	560.1	553.3	544.7	535.4	526.0	515.4	507.2	499.0	486.9	476.2	467.5
12.5°	570.6	559.8	551.0	537.6	527.1	512.7	501.6	492.0	477.7	464.5	454.7
15°	571.6	564.0	552.2	538.3	522.3	508.9	495.0	483.7	467.5	452.7	435.9
17.5°	571.4	565.5	553.2	538.9	519.9	502.3	487.2	472.4	453.9	436.6	422.2
20°	565.5	561.3	550.7	533.8	514.5	494.3	477.6	460.2	438.4	420.7	404.9
22.5°	551.4	552.4	544.1	529.0	508.2	485.7	466.3	446.2	424.0	403.6	383.7
25°	527.5	538.1	535.6	521.5	499.5	474.7	452.7	430.1	406.3	384.5	366.1
27.5°	497.8	517.7	522.0	511.1	490.0	462.3	437.3	412.7	388.4	365.0	346.1
30°	462.6	492.3	503.3	497.3	477.9	448.9	419.9	395.8	369.1	344.2	324.3
32.5°	418.4	460.0	479.2	481.0	465.1	434.0	401.8	375.9	348.6	325.0	303.6
35°	369.0	420.0	451.4	459.8	448.4	417.5	383.7	356.4	327.2	303.5	281.9
37.5°	319.2	379.2	420.4	436.8	429.1	399.3	363.5	335.8	306.9	282.7	262.5
40°	273.4	330.5	383.9	409.6	407.3	379.6	343.4	314.7	285.4	263.0	240.8
42.5°	232.5	287.5	346.2	380.7	382.6	358.3	321.4	292.5	264.3	242.1	218.9
45°	200.1	248.6	306.8	347.9	355.9	336.0	298.5	268.8	243.1	222.2	199.0
47.5°	174.3	211.9	266.0	314.2	328.3	310.9	275.1	246.9	222.7	204.8	182.9
50°	151.9	187.2	233.1	277.8	298.5	285.4	251.9	225.0	203.1	185.9	166.7
52.5°	132.0	159.4	199.2	241.9	269.8	257.9	229.3	204.6	184.1	168.0	151.9
55°	115.6	138.5	173.6	211.8	237.5	230.8	205.5	183.4	165.3	150.1	137.0
57.5°	98.7	117.9	146.3	180.2	205.5	204.5	183.6	162.3	148.1	133.7	124.2
60°	83.9	99.5	122.5	151.4	176.8	176.9	160.7	143.9	131.7	119.2	110.3
62.5°	70.8	83.2	103.3	126.5	146.8	151.9	139.8	125.2	115.2	105.6	98.0
65°	59.5	68.8	83.9	105.0	120.9	127.8	119.9	109.3	101.0	92.4	85.6
67.5°	49.1	55.9	67.0	83.6	99.5	104.6	101.3	93.2	87.2	80.1	75.0
70°	38.6	44.4	52.2	64.7	77.8	84.9	83.9	78.1	73.1	68.0	63.2
72.5°	30.7	34.0	40.0	48.9	59.4	67.3	67.7	64.7	60.5	56.2	53.1
75°	24.7	26.2	29.0	36.0	44.3	50.9	53.2	51.7	48.4	45.8	43.6
77.5°	19.1	20.4	22.2	25.5	32.0	37.1	40.0	40.1	38.1	35.8	34.2
80°	14.3	14.8	16.1	17.7	21.1	25.5	28.9	28.9	27.7	26.5	25.5
82.5°	9.8	10.3	10.9	11.8	13.4	16.1	19.1	19.6	18.9	18.6	17.2
85°	5.5	6.0	6.3	6.8	7.5	8.8	10.9	11.6	11.8	10.8	10.1
87.5°	2.2	2.2	2.3	2.5	2.7	3.2	4.0	5.0	5.0	4.5	4.3
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: P243247

CATALOG NUMBER: S122RDRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8
2.5°	498.3	496.0	493.0	490.3	486.7	483.0	482.4	483.7	484.0	482.4	482.9
5°	486.5	482.2	478.6	472.6	468.8	463.8	460.5	460.5	460.5	458.0	455.7
7.5°	474.3	468.4	461.5	455.8	448.1	441.6	438.4	436.9	434.0	431.5	428.7
10°	460.0	451.9	443.2	434.5	427.7	418.7	413.4	410.1	404.9	402.8	398.6
12.5°	443.2	435.1	424.7	410.4	408.4	397.5	390.0	383.9	377.6	372.4	370.6
15°	429.8	415.7	401.8	391.7	376.9	370.4	359.5	358.5	353.4	338.3	326.5
17.5°	408.1	395.5	380.1	368.8	357.0	342.6	331.0	319.5	308.6	298.0	297.7
20°	388.9	374.1	359.5	347.2	326.7	306.1	299.0	288.5	282.1	273.6	271.1
22.5°	367.8	352.4	334.1	316.2	292.2	279.2	271.5	263.2	256.7	252.9	249.1
25°	346.6	331.1	306.9	284.9	268.5	258.4	251.7	242.8	238.1	234.8	229.8
27.5°	325.8	306.3	280.7	263.2	249.9	238.5	232.5	225.2	220.0	215.7	212.6
30°	305.3	278.4	256.7	243.1	229.5	222.4	214.6	209.1	205.3	201.3	196.2
32.5°	282.7	254.5	240.4	223.7	215.7	205.5	199.8	194.2	189.2	186.4	184.6
35°	256.5	233.8	221.2	208.9	198.8	192.0	184.1	180.6	177.9	172.5	170.1
37.5°	234.3	217.9	204.6	193.7	184.4	177.1	173.4	167.5	163.7	161.8	159.4
40°	215.9	201.3	189.9	178.8	171.0	165.7	159.2	156.0	151.1	149.2	147.3
42.5°	200.0	186.5	174.6	166.2	159.4	152.1	148.7	143.4	141.3	136.8	135.1
45°	183.9	172.0	161.5	153.2	146.8	142.3	136.3	133.0	129.2	126.9	122.4
47.5°	167.8	157.2	148.6	141.6	136.0	130.5	125.5	122.7	117.9	115.4	113.1
50°	155.4	145.1	137.0	130.0	124.2	118.7	115.6	110.9	106.6	103.8	103.0
52.5°	140.6	131.7	124.2	118.9	113.1	109.1	104.8	99.7	97.5	94.7	94.0
55°	127.5	120.2	113.9	108.3	103.3	98.8	93.9	90.2	88.5	87.2	86.2
57.5°	115.2	108.3	102.5	97.3	93.0	88.4	84.2	82.1	80.6	79.1	78.1
60°	103.1	96.8	91.5	87.2	82.7	78.3	75.3	73.5	72.3	70.1	69.5
62.5°	92.4	86.6	81.1	77.1	73.0	69.5	67.0	64.5	62.7	61.0	57.5
65°	80.6	75.4	71.3	67.3	63.3	60.7	57.9	55.1	52.7	52.7	52.7
67.5°	70.1	65.7	61.4	57.9	54.4	51.2	48.4	48.3	47.4	47.1	46.6
70°	59.5	56.4	52.4	48.6	45.1	43.6	43.1	42.3	41.3	41.1	40.5
72.5°	49.9	46.3	42.6	39.3	38.6	38.0	37.0	36.1	35.5	35.0	34.7
75°	40.8	37.1	34.2	33.3	32.5	31.3	30.5	29.8	29.5	29.5	29.4
77.5°	31.2	29.0	27.7	26.4	25.7	25.0	24.5	24.2	23.7	23.9	23.5
80°	22.9	22.2	21.1	20.2	19.9	19.2	18.9	18.7	18.4	18.4	18.2
82.5°	16.4	15.3	14.8	14.3	13.9	13.6	13.8	13.6	13.4	13.3	13.4
85°	9.5	9.3	9.0	9.0	9.0	8.8	8.8	8.8	8.6	8.5	8.5
87.5°	4.1	4.3	4.3	4.0	4.5	4.5	4.3	4.3	4.1	4.5	4.1
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: P243247

CATALOG NUMBER: S122RDRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	506.8	506.8	506.8	506.8
2.5°	480.7	480.6	479.6	477.9
5°	454.7	454.0	452.4	453.7
7.5°	426.8	425.0	423.3	424.2
10°	397.0	396.3	395.3	393.3
12.5°	364.0	366.6	363.8	370.1
15°	315.1	326.8	312.1	317.1
17.5°	290.7	290.9	288.9	286.5
20°	267.8	262.0	264.2	260.3
22.5°	245.7	244.4	243.8	242.4
25°	226.0	223.5	222.7	223.5
27.5°	211.4	210.3	207.1	206.6
30°	193.2	192.7	191.7	191.4
32.5°	181.7	179.6	179.1	177.1
35°	169.0	167.8	167.0	166.5
37.5°	156.2	155.5	154.0	154.9
40°	145.8	142.4	141.1	140.9
42.5°	134.3	132.5	129.8	129.0
45°	121.1	120.2	119.4	119.1
47.5°	109.4	108.9	108.0	107.5
50°	101.2	99.8	99.7	99.5
52.5°	93.2	92.7	92.2	92.9
55°	85.7	85.1	84.6	84.6
57.5°	77.6	76.4	75.4	75.6
60°	68.2	67.5	66.7	66.3
62.5°	57.2	57.2	57.0	57.0
65°	52.1	51.7	51.6	51.7
67.5°	46.4	46.1	45.6	45.8
70°	40.0	39.8	40.0	39.8
72.5°	34.2	34.0	34.2	34.5
75°	28.9	28.7	28.5	28.5
77.5°	23.4	23.2	22.9	23.2
80°	18.2	18.1	17.9	17.9
82.5°	12.9	13.1	12.9	12.9
85°	8.5	8.6	8.5	8.3
87.5°	4.3	4.5	4.1	4.0
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243247
 CATALOG NUMBER: S122RDRP-H290D927-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	12.72	14.17	13.08	14.49	14.80	19.05	20.51	19.42	20.82	21.13
	3H	13.89	15.20	14.27	15.52	15.89	20.30	21.60	20.68	21.93	22.30
	4H	14.35	15.57	14.75	15.92	16.30	20.73	21.95	21.13	22.30	22.68
	6H	14.68	15.81	15.09	16.17	16.57	21.03	22.15	21.44	22.52	22.91
	8H	14.78	15.85	15.21	16.24	16.64	21.11	22.18	21.54	22.57	22.98
	12H	14.83	15.85	15.26	16.24	16.67	21.16	22.19	21.59	22.57	23.00
4H	2H	13.44	14.66	13.84	15.01	15.39	19.03	20.25	19.43	20.60	20.98
	3H	14.77	15.78	15.18	16.18	16.58	20.42	21.43	20.83	21.83	22.23
	4H	15.32	16.23	15.75	16.65	17.09	20.95	21.85	21.38	22.27	22.71
	6H	15.75	16.54	16.21	16.98	17.45	21.36	22.15	21.82	22.59	23.06
	8H	15.88	16.62	16.35	17.06	17.53	21.49	22.23	21.96	22.68	23.14
	12H	15.96	16.62	16.45	17.10	17.57	21.59	22.24	22.07	22.72	23.20
8H	4H	15.67	16.40	16.13	16.85	17.32	20.94	21.68	21.41	22.12	22.59
	6H	16.19	16.80	16.69	17.29	17.77	21.41	22.01	21.91	22.51	22.99
	8H	16.38	16.92	16.89	17.43	17.92	21.58	22.12	22.10	22.63	23.12
	12H	16.51	16.99	17.02	17.48	18.05	21.72	22.20	22.23	22.69	23.26
12H	4H	15.71	16.37	16.19	16.85	17.32	20.92	21.58	21.41	22.06	22.53
	6H	16.25	16.80	16.77	17.31	17.80	21.39	21.93	21.90	22.44	22.93
	8H	16.49	16.97	17.00	17.46	18.03	21.59	22.07	22.10	22.56	23.13