

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: P242736

Luminaire Tested: S124RDRP-S350D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242736
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDRP-S350D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

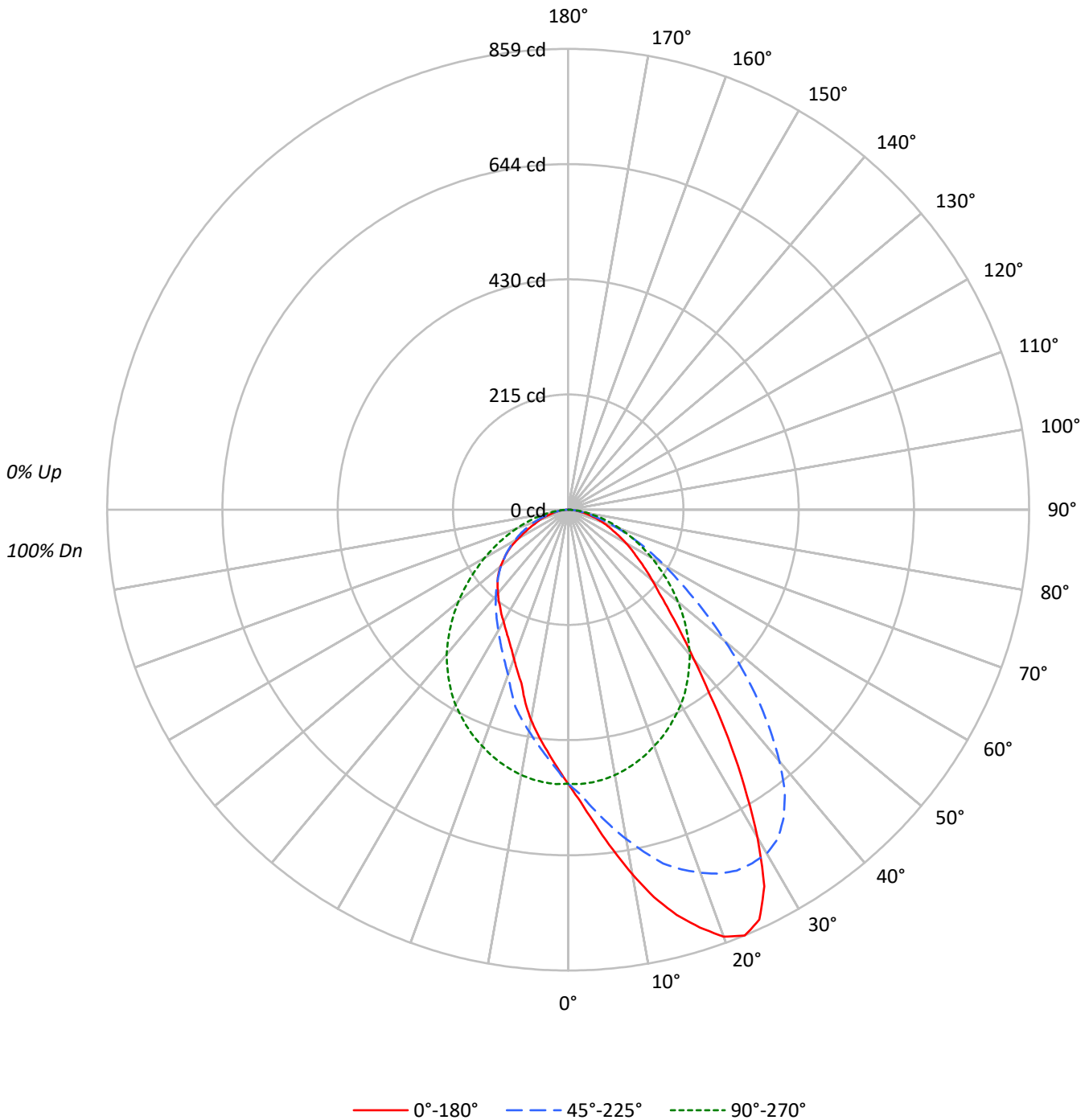
Lumens per Lamp: N/A
Luminaire Lumens: 1291.0 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

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



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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	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86					86			
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74					74			
3	93	83	76	70	90	81	75	69	79	73	68	76	71	67	73	69	65	63					63			
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55					55			
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48					48			
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43					43			
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38					38			
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34					34			
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31					31			
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28					28			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	4540	4540	4540	4540	4540
5°	5265	5012	4553	4120	4024
10°	6229	5628	4534	3787	3592
15°	7195	6283	4492	3500	3087
20°	8011	6813	4434	3095	2791
25°	8270	7281	4377	2852	2591
30°	7240	7594	4309	2672	2471
35°	5636	7598	4207	2537	2398
40°	4226	7108	4090	2429	2359
45°	3336	6273	3903	2336	2338
50°	2817	5278	3688	2257	2271
55°	2455	4375	3450	2171	2149
60°	2210	3662	3205	2048	1902
65°	1948	3052	2938	1908	1636
70°	1754	2438	2664	1723	1476
75°	1470	1892	2359	1511	1257
80°	1244	1433	2012	1254	1177
85°	1050	1132	1571	1112	1050

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 6699 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.5	3.8
10°-20°	149.3	11.6
20°-30°	233.9	18.1
30°-40°	259.8	20.1
40°-50°	230.2	17.8
50°-60°	179.4	13.9
60°-70°	117.3	9.1
70°-80°	57.6	4.5
80°-90°	14.0	1.1
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°	432.7	33.5
0°-40°	692.5	53.6
0°-60°	1102.1	85.4
0°-90°	1291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1291.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	511	511	511	511	511	
5°	590	562	510	462	451	59
15°	782	683	488	380	335	222
25°	843	742	446	291	264	377
35°	519	700	388	234	221	325
45°	265	499	310	186	186	209
55°	158	282	223	140	139	144
65°	93	145	140	91	78	93
75°	43	55	69	44	37	47
85°	10	11	15	11	10	12
90°	0	0	0	0	0	



TEST NUMBER: P242736

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7
2.5°	545.7	547.6	545.7	545.5	543.4	542.8	542.0	539.3	534.4	531.5	532.1
5°	590.1	595.3	592.4	592.0	587.5	582.9	580.1	573.5	566.5	561.7	557.8
7.5°	639.5	642.6	640.6	638.3	630.5	628.0	621.2	613.4	601.7	592.8	584.8
10°	690.1	692.6	691.8	686.4	681.1	670.2	664.0	651.9	636.0	623.5	611.8
12.5°	739.9	742.6	733.8	735.4	724.1	716.1	705.4	689.3	670.4	653.3	637.9
15°	781.9	778.6	778.6	774.5	763.2	751.3	741.2	725.1	702.1	682.7	662.4
17.5°	816.5	817.9	816.3	805.8	797.6	785.4	767.3	749.0	729.0	703.1	682.9
20°	846.9	846.9	845.1	838.5	827.0	813.8	793.9	773.5	746.3	720.2	696.7
22.5°	859.3	860.1	857.9	852.7	842.6	829.9	813.6	792.8	764.6	734.4	703.9
25°	843.2	847.2	847.6	846.1	843.0	835.2	820.6	799.4	774.3	742.4	711.1
27.5°	791.4	796.5	798.6	803.1	811.6	814.6	812.8	798.6	774.3	742.8	711.8
30°	705.4	709.5	722.9	740.4	753.9	766.3	777.0	779.9	767.5	739.9	706.8
32.5°	609.9	615.9	629.2	648.4	673.3	696.3	723.7	738.3	741.0	727.2	697.1
35°	519.4	523.5	535.8	555.6	582.7	613.8	651.9	681.5	701.7	700.2	681.5
37.5°	432.5	438.3	450.8	467.1	493.8	533.6	569.6	609.3	645.5	663.2	653.7
40°	364.2	364.4	376.6	393.4	418.1	451.7	491.8	537.1	578.6	612.6	619.2
42.5°	310.3	310.3	317.3	335.8	351.9	382.9	420.8	465.7	516.1	556.6	576.8
45°	265.4	267.3	273.9	284.8	298.8	325.5	356.2	398.0	452.5	499.0	528.0
47.5°	230.0	233.3	237.3	247.1	258.7	277.4	303.5	342.6	387.9	439.5	479.6
50°	203.7	204.1	209.5	214.4	224.1	238.3	260.5	291.8	332.5	381.7	427.6
52.5°	181.1	180.9	183.5	190.1	197.5	207.8	224.7	252.5	287.5	330.3	378.0
55°	158.4	159.5	161.9	166.9	172.8	180.7	194.9	216.3	244.7	282.3	325.3
57.5°	141.2	141.8	144.0	145.9	151.7	157.4	168.9	184.4	209.3	240.7	282.9
60°	124.3	124.5	125.1	128.2	132.5	137.9	145.1	157.6	177.8	206.0	237.7
62.5°	107.8	108.2	109.3	111.3	114.4	117.7	125.3	134.8	150.6	173.7	201.4
65°	92.6	92.8	94.2	95.1	97.7	101.0	106.6	113.4	124.9	145.1	166.7
67.5°	79.8	79.8	79.8	81.1	83.1	85.4	89.1	94.9	104.1	117.1	137.2
70°	67.5	67.5	67.9	68.5	69.5	71.4	73.3	77.4	83.7	93.8	108.4
72.5°	56.0	56.2	56.6	56.6	57.0	58.4	59.7	61.9	66.3	73.3	84.4
75°	42.8	43.4	44.4	45.3	46.3	46.1	47.5	49.2	50.6	55.1	61.9
77.5°	33.7	33.3	33.3	34.2	34.4	34.6	35.6	37.0	38.3	40.7	43.2
80°	24.3	24.3	24.9	25.1	24.9	25.1	26.1	26.7	27.2	28.0	30.2
82.5°	16.9	17.3	16.9	17.1	17.3	17.5	18.3	18.3	18.7	18.9	19.5
85°	10.3	10.5	10.7	10.3	10.3	10.3	10.7	10.9	11.3	11.1	11.5
87.5°	4.5	4.3	4.5	4.5	4.7	4.5	4.7	5.1	4.7	4.9	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7
2.5°	530.1	527.2	525.7	522.4	518.5	516.5	514.6	512.0	508.5	504.8	502.1
5°	552.9	548.0	541.8	534.4	527.8	521.4	515.9	510.3	503.9	497.3	490.8
7.5°	575.5	566.7	557.2	545.9	535.0	524.9	515.9	507.0	496.9	487.9	479.4
10°	599.4	586.2	571.6	556.2	540.8	527.4	514.2	502.3	489.1	477.4	467.5
12.5°	618.7	602.7	584.4	564.2	544.9	528.0	512.4	495.9	480.5	467.5	453.5
15°	640.6	619.4	595.7	572.7	548.6	526.6	506.2	488.1	471.0	453.1	440.6
17.5°	655.6	631.1	603.1	576.4	548.8	523.3	500.2	479.2	459.7	441.8	427.0
20°	668.7	641.0	609.1	577.6	545.7	517.9	492.6	468.7	448.4	428.6	413.2
22.5°	676.2	644.7	609.1	575.7	542.4	511.7	483.4	458.2	435.6	415.9	398.4
25°	676.6	643.6	608.0	570.2	534.0	502.1	473.3	446.3	421.6	401.9	383.8
27.5°	674.9	636.9	601.1	562.6	525.3	491.4	461.5	432.9	408.5	387.5	368.9
30°	670.0	628.4	589.3	549.0	511.1	478.8	446.9	419.8	394.0	372.0	353.3
32.5°	659.3	618.1	575.3	533.8	495.3	461.7	431.9	404.5	379.4	356.8	336.6
35°	644.5	602.7	557.0	514.6	477.0	442.4	414.0	387.7	363.6	339.5	318.5
37.5°	627.4	583.8	538.7	492.2	454.7	421.8	395.3	370.0	346.5	324.5	301.2
40°	601.1	562.2	515.2	469.2	430.5	399.0	374.9	352.5	328.8	307.0	283.8
42.5°	569.2	537.5	489.9	443.6	405.6	375.5	353.5	331.7	310.7	289.7	265.2
45°	532.9	507.8	463.4	418.9	380.5	350.4	329.8	310.5	291.6	271.4	248.6
47.5°	492.6	474.1	435.4	388.9	352.9	325.3	305.6	289.5	272.8	252.5	231.9
50°	450.2	439.3	402.3	360.7	326.8	301.9	281.5	266.7	253.3	234.0	216.1
52.5°	405.0	400.4	370.6	331.3	298.8	274.5	257.8	244.9	231.3	216.1	199.6
55°	358.9	361.9	335.4	301.0	270.2	249.6	233.8	222.6	211.1	197.5	184.6
57.5°	310.9	322.6	302.9	271.8	242.0	222.6	210.5	200.6	191.0	179.4	167.7
60°	268.7	278.2	268.1	241.6	216.3	198.6	187.5	180.3	170.6	160.3	151.9
62.5°	227.6	237.9	232.9	212.8	189.7	175.1	165.6	159.1	152.5	143.8	135.0
65°	194.5	201.0	198.2	183.3	166.7	153.7	144.7	139.7	133.1	126.5	118.7
67.5°	155.6	168.5	166.5	158.2	142.2	131.9	125.5	121.0	114.8	109.9	104.3
70°	122.4	134.2	134.0	127.6	119.8	110.3	106.2	102.5	97.1	92.4	88.1
72.5°	94.7	105.1	107.2	102.7	97.9	91.4	87.5	85.2	80.0	77.2	73.9
75°	70.2	78.0	80.0	80.0	77.6	73.9	70.4	68.7	65.0	62.1	60.1
77.5°	49.4	54.7	57.8	58.4	58.6	57.2	53.9	52.7	49.8	48.8	46.5
80°	32.5	35.8	39.5	40.7	41.8	41.4	40.1	39.3	36.6	35.6	34.8
82.5°	20.0	21.4	24.3	27.4	26.7	28.2	27.2	26.5	24.7	24.5	23.7
85°	11.7	11.9	12.3	14.2	15.2	15.6	15.8	15.4	14.8	14.8	13.4
87.5°	4.9	4.7	5.1	5.1	5.3	6.2	6.8	7.0	6.4	5.8	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°	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7	510.7
2.5°	499.2	497.1	494.5	491.4	487.7	484.4	482.9	484.2	484.8	483.1	482.9
5°	486.2	481.1	477.0	470.8	465.9	461.7	458.9	457.6	458.0	454.7	453.9
7.5°	471.8	466.3	459.5	452.5	445.9	440.1	437.1	435.6	432.1	430.7	428.4
10°	458.0	449.8	443.2	434.6	426.8	419.6	416.1	413.2	409.7	408.0	404.5
12.5°	443.8	434.0	426.6	417.5	409.5	400.4	397.1	391.2	385.2	381.3	376.6
15°	430.7	419.2	410.3	399.6	390.1	380.3	371.4	361.5	357.8	350.0	345.5
17.5°	415.0	403.1	393.2	379.4	365.2	353.3	343.4	333.1	327.6	322.2	320.0
20°	399.6	388.9	373.7	357.0	340.8	327.2	319.6	313.4	307.2	303.7	301.2
22.5°	385.0	370.6	352.3	334.0	317.7	307.8	301.7	295.3	290.5	287.3	283.8
25°	368.3	350.4	331.7	311.1	300.0	290.8	283.8	278.6	275.5	271.2	269.6
27.5°	352.1	330.5	309.3	295.3	283.8	274.9	268.5	264.8	260.7	257.8	255.6
30°	332.7	310.7	292.2	279.0	267.3	260.3	255.4	250.8	247.7	245.5	243.8
32.5°	313.6	291.6	276.8	262.4	253.7	246.9	241.6	238.5	236.2	233.1	232.3
35°	295.3	275.7	262.1	249.4	239.9	233.8	229.6	226.1	224.1	223.3	222.6
37.5°	277.4	261.1	246.1	235.8	227.0	222.2	216.9	215.2	213.8	211.9	212.8
40°	260.5	245.5	232.5	221.4	214.6	209.3	206.4	204.3	203.1	203.1	203.1
42.5°	245.9	231.3	218.7	209.1	202.3	197.9	194.7	193.0	192.8	192.6	193.8
45°	230.7	217.1	204.3	196.1	190.3	185.8	184.0	182.5	182.5	183.3	183.5
47.5°	215.4	202.7	192.4	182.9	177.6	174.7	173.1	172.2	172.2	173.3	174.1
50°	201.7	189.1	179.0	170.8	165.8	163.2	161.7	161.3	161.7	161.7	163.2
52.5°	186.6	175.7	165.8	159.3	153.5	151.0	150.4	149.8	150.0	150.8	151.2
55°	172.0	161.9	152.5	145.9	141.8	140.1	138.3	138.5	138.1	138.5	138.5
57.5°	157.2	148.4	139.1	133.7	130.3	127.8	125.7	126.3	125.7	125.7	125.5
60°	143.0	133.1	126.1	121.4	117.3	115.2	113.4	113.8	113.2	112.8	111.9
62.5°	127.6	119.8	113.2	108.6	105.6	103.1	101.2	100.6	99.0	97.3	95.3
65°	112.8	106.0	100.0	95.7	92.6	90.7	89.3	88.1	85.0	81.7	80.0
67.5°	98.2	93.2	87.5	83.7	81.3	78.8	76.1	73.9	70.8	68.7	67.7
70°	84.2	79.4	74.7	71.2	68.5	66.3	63.2	61.7	59.7	58.8	57.8
72.5°	70.8	66.5	62.1	59.1	56.2	54.5	52.3	50.8	50.2	50.0	49.0
75°	57.2	53.7	50.4	47.5	45.3	44.0	43.0	42.0	41.6	39.7	38.7
77.5°	44.0	41.6	39.5	37.2	35.8	35.0	32.7	31.3	30.5	29.4	29.2
80°	32.5	30.9	28.8	27.6	25.3	24.5	23.7	23.5	23.3	23.0	22.8
82.5°	22.4	20.8	18.7	18.1	17.9	17.5	17.1	16.9	16.7	16.9	16.9
85°	12.3	11.5	11.5	11.3	11.1	10.9	10.7	10.7	10.5	10.7	10.5
87.5°	5.1	4.9	4.9	4.5	4.7	4.7	4.5	4.5	4.7	4.3	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: P242736

CATALOG NUMBER: S124RDRP-S350D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	510.7	510.7	510.7	510.7
2.5°	481.7	482.1	480.7	480.3
5°	452.3	451.9	450.8	451.0
7.5°	426.8	425.3	426.4	424.7
10°	403.7	401.5	399.6	398.0
12.5°	372.2	370.4	367.7	368.7
15°	342.8	339.7	334.8	335.4
17.5°	316.5	316.9	314.0	314.8
20°	296.9	295.5	295.7	295.1
22.5°	283.3	281.5	279.6	278.2
25°	267.7	266.5	264.6	264.2
27.5°	253.9	253.7	252.9	251.9
30°	242.2	241.8	241.4	240.7
32.5°	231.7	231.5	231.1	231.3
35°	221.8	221.6	221.2	221.0
37.5°	212.6	213.2	212.8	212.8
40°	202.9	203.1	203.5	203.3
42.5°	194.9	194.9	195.5	194.7
45°	185.0	186.2	186.0	186.0
47.5°	174.5	175.9	176.1	176.1
50°	164.2	163.8	164.4	164.2
52.5°	151.7	151.9	151.7	151.4
55°	138.7	138.9	138.5	138.7
57.5°	124.9	124.1	124.7	124.3
60°	109.9	108.2	107.8	107.0
62.5°	93.0	92.0	90.3	91.4
65°	78.4	77.6	77.0	77.8
67.5°	66.7	66.3	66.3	65.8
70°	57.8	57.2	57.2	56.8
72.5°	48.8	48.1	48.4	48.1
75°	37.4	36.4	36.4	36.6
77.5°	29.2	29.0	29.4	28.8
80°	22.8	22.6	22.4	23.0
82.5°	16.5	16.5	16.5	17.3
85°	10.7	10.3	10.7	10.3
87.5°	4.7	4.5	4.3	4.5
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242736
 CATALOG NUMBER: S124RDRP-S350D830-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	14.36	15.88	14.72	16.20	16.51	16.18	17.70	16.54	18.01	18.33
	3H	15.59	16.95	15.96	17.28	17.64	17.63	19.00	18.01	19.32	19.69
	4H	16.02	17.30	16.42	17.65	18.03	18.15	19.43	18.55	19.78	20.15
	6H	16.29	17.47	16.70	17.84	18.23	18.50	19.68	18.91	20.05	20.44
	8H	16.37	17.50	16.80	17.89	18.29	18.60	19.73	19.03	20.12	20.52
	12H	16.42	17.50	16.85	17.88	18.31	18.66	19.74	19.09	20.12	20.55
4H	2H	15.62	16.90	16.02	17.25	17.63	16.68	17.96	17.08	18.31	18.69
	3H	16.85	17.92	17.27	18.32	18.72	18.43	19.49	18.84	19.89	20.29
	4H	17.32	18.27	17.75	18.69	19.13	19.05	20.01	19.49	20.42	20.86
	6H	17.64	18.47	18.10	18.91	19.37	19.51	20.34	19.97	20.78	21.24
	8H	17.74	18.51	18.20	18.96	19.42	19.64	20.42	20.11	20.86	21.33
	12H	17.81	18.50	18.29	18.98	19.45	19.73	20.43	20.22	20.91	21.38
8H	4H	17.72	18.50	18.18	18.94	19.41	19.16	19.94	19.63	20.38	20.85
	6H	18.11	18.75	18.60	19.24	19.72	19.71	20.35	20.20	20.84	21.32
	8H	18.24	18.82	18.76	19.33	19.81	19.90	20.47	20.41	20.98	21.47
	12H	18.35	18.86	18.86	19.35	19.92	20.04	20.55	20.55	21.04	21.61
12H	4H	17.76	18.45	18.24	18.93	19.40	19.15	19.85	19.63	20.32	20.79
	6H	18.15	18.73	18.67	19.24	19.73	19.70	20.27	20.21	20.78	21.27
	8H	18.33	18.84	18.84	19.33	19.90	19.93	20.43	20.43	20.93	21.49