

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: P243488

Luminaire Tested: S124DRP-H350D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243488
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-H350D927-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

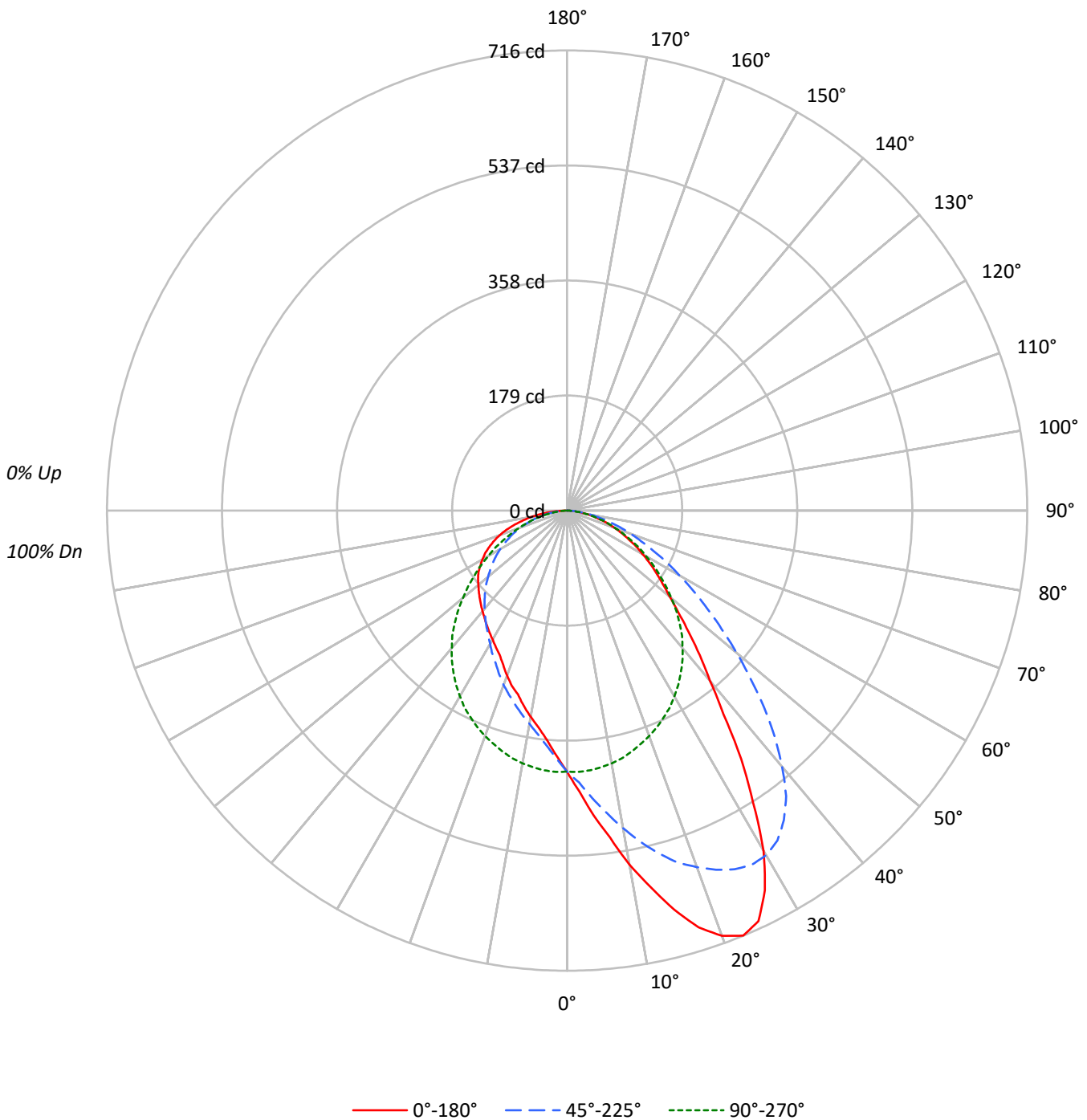
Lumens per Lamp: N/A
Luminaire Lumens: 1164.9 lumens
Efficiency: N/A
Efficacy: 104.0 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

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: S124DRP-H350D927-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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85				85
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72				72
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61				61
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53				53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46				46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41				41
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36				36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32				32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29				29
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26				26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	3611	3611	3611	3611	3611
5°	4249	4006	3621	3273	3196
10°	5050	4530	3604	3041	2942
15°	5914	5082	3572	2875	2725
20°	6660	5584	3531	2731	2585
25°	6912	6042	3484	2577	2433
30°	6276	6355	3424	2461	2379
35°	5121	6381	3343	2379	2365
40°	4010	6040	3239	2322	2374
45°	3356	5447	3108	2270	2417
50°	2881	4763	2926	2220	2491
55°	2631	4127	2729	2182	2611
60°	2411	3582	2526	2146	2706
65°	2211	3104	2312	2076	2810
70°	2035	2718	2087	2009	2895
75°	1810	2342	1834	1875	2892
80°	1510	1899	1500	1730	2887
85°	1152	1418	1132	1560	2703

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 50°
 Vertical Angle: 45°
 Luminance: 5692 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.5	3.4
10°-20°	122.5	10.5
20°-30°	196.7	16.9
30°-40°	224.9	19.3
40°-50°	207.0	17.8
50°-60°	169.3	14.5
60°-70°	120.7	10.4
70°-80°	66.3	5.7
80°-90°	17.8	1.5
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	30.8
0°-40°	583.7	50.1
0°-60°	960.1	82.4
0°-90°	1164.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1164.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	406	406	406	406	406	
5°	476	449	406	367	358	48
15°	643	552	388	312	296	183
25°	705	616	355	263	248	316
35°	472	588	308	219	218	293
45°	267	433	247	181	192	208
55°	170	266	176	141	168	152
65°	105	148	110	99	134	105
75°	53	68	53	55	84	56
85°	11	14	11	15	26	14
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°	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2
2.5°	437.4	436.1	435.4	434.6	434.4	433.6	432.0	429.6	426.6	423.5	423.5
5°	476.2	475.9	473.4	473.6	470.4	466.9	464.3	461.0	454.5	449.0	445.2
7.5°	513.4	516.8	516.0	513.4	508.7	503.7	498.4	493.8	481.9	475.2	469.8
10°	559.5	560.8	558.5	554.7	550.5	540.9	533.9	526.1	513.2	501.9	492.0
12.5°	599.9	603.1	598.9	595.3	585.5	578.4	571.4	555.8	542.2	528.0	513.5
15°	642.7	639.4	641.5	632.6	625.6	618.8	601.1	585.2	569.7	552.2	537.1
17.5°	679.8	679.8	675.9	670.1	662.8	650.0	632.3	614.7	597.6	574.6	553.2
20°	704.1	705.9	701.2	695.1	686.3	673.0	659.0	639.9	617.2	590.3	566.1
22.5°	715.7	716.0	714.3	709.2	702.1	690.8	676.4	657.8	633.7	604.9	579.5
25°	704.7	706.5	706.0	705.7	702.1	695.6	684.0	666.7	644.9	616.0	588.6
27.5°	666.2	670.7	674.5	676.2	680.2	680.5	677.0	666.6	648.7	621.5	591.0
30°	611.5	609.2	619.5	624.6	638.2	646.4	652.2	651.5	641.2	619.2	590.1
32.5°	538.6	544.9	552.2	564.3	580.4	599.3	613.5	624.1	623.1	608.7	584.5
35°	471.9	471.9	481.2	496.1	513.2	535.9	559.8	579.5	591.6	588.0	570.9
37.5°	399.6	404.1	414.7	426.3	447.2	469.1	500.6	526.8	552.2	559.8	551.0
40°	345.6	347.6	358.8	368.6	390.0	412.7	439.1	472.6	501.8	520.5	521.7
42.5°	305.4	305.3	309.9	318.7	335.9	356.2	384.7	417.5	451.7	478.2	490.7
45°	267.0	266.6	271.4	280.4	292.7	310.6	335.3	368.1	403.1	433.3	452.8
47.5°	234.5	237.4	239.6	246.6	256.7	271.9	293.2	319.4	353.0	386.8	413.2
50°	208.3	209.6	214.2	217.6	228.8	239.4	256.5	280.1	308.9	344.4	372.9
52.5°	187.4	188.2	191.0	195.3	201.8	211.1	224.7	246.4	272.4	303.3	332.8
55°	169.8	169.3	171.1	173.9	179.6	187.4	197.3	213.9	236.6	266.3	293.5
57.5°	152.6	152.6	154.2	156.2	159.3	165.8	175.6	188.7	206.9	233.3	257.3
60°	135.6	136.8	137.5	139.5	142.1	146.9	154.2	164.5	179.9	201.5	225.3
62.5°	120.7	120.7	121.9	122.5	126.0	129.5	134.8	143.6	155.7	174.9	193.5
65°	105.1	106.1	106.1	107.4	110.4	113.1	117.2	123.9	133.8	147.6	165.0
67.5°	91.9	91.9	92.7	93.4	95.0	96.8	100.5	105.6	114.1	125.0	140.8
70°	78.3	78.8	78.4	79.3	80.3	82.1	84.7	89.0	95.2	104.6	116.2
72.5°	66.0	65.3	65.7	66.5	67.0	68.2	69.8	73.1	78.1	85.7	94.2
75°	52.7	52.4	53.6	53.2	54.1	55.1	56.5	59.0	62.8	68.2	74.6
77.5°	41.1	40.6	41.1	41.5	41.8	42.6	43.8	45.3	47.9	51.4	57.2
80°	29.5	29.3	29.7	30.0	30.2	31.5	31.8	33.3	34.5	37.1	40.0
82.5°	19.6	19.9	20.1	20.4	20.2	20.9	21.2	22.2	23.2	24.5	26.7
85°	11.3	10.8	11.3	11.3	11.3	12.1	11.9	12.6	13.3	13.9	15.4
87.5°	4.0	4.0	4.1	4.3	4.3	4.8	4.6	5.0	5.6	5.6	6.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2
2.5°	422.5	420.7	419.3	415.5	413.2	411.1	409.1	406.9	404.6	401.6	399.8
5°	441.2	437.3	431.5	426.1	420.2	414.9	410.6	405.8	400.4	395.0	390.2
7.5°	462.0	454.5	445.5	435.8	426.5	418.7	410.6	402.9	395.5	388.2	381.4
10°	482.7	469.8	458.0	444.6	432.3	420.5	409.9	399.3	390.0	380.4	371.8
12.5°	501.9	486.3	469.1	452.3	435.9	420.7	407.6	394.6	382.7	371.3	361.1
15°	516.7	497.1	476.7	456.8	437.9	422.0	404.9	388.2	375.7	361.8	350.7
17.5°	533.6	510.4	490.2	466.3	442.7	417.0	399.0	380.7	365.8	352.4	341.2
20°	544.9	519.3	490.2	463.1	438.9	415.9	394.1	373.3	357.5	341.9	328.5
22.5°	553.8	527.5	495.3	467.1	436.8	408.9	385.4	364.8	346.2	331.5	318.7
25°	558.5	526.3	495.6	461.5	431.1	404.4	377.9	355.2	336.4	320.0	309.1
27.5°	558.6	525.6	489.3	455.5	423.0	394.1	367.9	345.6	324.5	308.7	295.7
30°	557.8	521.3	483.0	446.0	413.7	384.2	356.8	333.6	314.4	297.6	285.2
32.5°	552.5	515.4	473.6	434.8	399.6	369.9	344.7	321.7	301.1	285.9	272.8
35°	540.6	502.3	460.3	420.3	387.0	356.2	331.3	308.1	289.7	273.1	259.7
37.5°	525.3	489.5	446.9	405.1	369.1	339.9	316.5	294.7	275.4	260.2	246.7
40°	506.1	472.4	430.5	387.0	351.0	321.5	299.5	279.1	262.7	247.1	234.0
42.5°	479.7	453.8	410.7	368.4	330.8	302.9	281.6	264.6	247.7	233.6	220.5
45°	451.5	428.0	389.7	347.7	311.6	282.9	262.8	247.2	232.8	218.5	207.9
47.5°	420.3	401.1	365.6	324.7	289.0	263.6	243.9	230.0	216.7	205.8	195.2
50°	383.2	373.1	339.9	302.8	268.1	242.1	225.8	211.6	201.8	191.2	181.2
52.5°	348.7	340.6	313.6	277.1	245.6	222.7	205.3	194.0	184.4	176.6	168.6
55°	311.2	307.1	284.2	252.7	224.2	201.3	186.4	176.1	168.5	161.2	155.4
57.5°	276.7	276.4	256.2	229.2	201.3	181.9	167.6	159.2	152.6	147.4	142.4
60°	241.4	244.2	227.7	203.0	180.9	162.7	149.7	142.1	137.6	132.8	128.7
62.5°	209.4	213.7	198.6	179.2	157.5	142.6	132.7	126.8	121.9	118.4	115.2
65°	178.7	184.2	172.0	154.5	138.0	123.9	115.4	109.9	106.1	104.1	102.0
67.5°	151.7	154.7	146.4	132.8	119.1	106.8	99.8	95.0	91.7	90.9	88.4
70°	124.7	128.2	122.4	109.9	99.3	90.4	84.1	80.3	78.3	77.1	75.4
72.5°	103.0	104.5	98.7	90.0	81.6	74.1	69.5	66.7	64.3	63.8	63.0
75°	80.6	82.7	78.1	71.5	64.5	59.2	55.7	53.4	52.2	51.4	51.4
77.5°	60.9	62.7	60.0	54.2	50.1	45.4	43.1	41.0	40.5	39.6	40.0
80°	43.3	44.1	42.6	38.6	35.0	32.5	30.5	29.3	29.2	28.5	29.2
82.5°	28.7	28.9	27.2	25.4	22.6	21.2	19.9	19.4	19.2	19.2	18.9
85°	15.9	16.2	15.1	13.9	12.9	11.8	11.4	11.1	10.8	11.3	11.6
87.5°	6.1	6.3	6.1	5.6	5.3	5.0	4.8	5.1	4.6	5.0	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°	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2	406.2
2.5°	397.0	395.6	393.6	390.3	388.0	385.5	384.5	384.9	383.9	382.5	382.9
5°	386.5	382.7	379.4	374.7	370.4	366.8	365.6	364.1	362.8	362.0	361.1
7.5°	375.4	370.1	365.1	360.5	355.5	350.9	349.0	347.7	347.1	344.7	343.7
10°	364.8	358.7	352.7	347.2	342.1	336.9	335.1	333.5	331.1	330.1	329.0
12.5°	353.5	347.4	340.9	334.3	329.1	325.0	321.8	320.7	318.4	317.4	316.7
15°	342.6	335.1	330.0	324.8	317.0	312.4	311.1	306.9	305.6	303.6	302.3
17.5°	331.6	324.7	317.0	311.1	306.3	300.5	297.3	295.5	293.0	291.2	288.7
20°	320.9	312.7	306.8	299.3	294.0	288.7	284.7	283.0	280.9	278.4	274.9
22.5°	310.4	301.5	295.7	288.7	282.1	275.9	272.6	270.3	266.0	265.5	262.3
25°	298.1	290.2	282.6	275.3	268.8	262.7	260.5	256.8	255.4	252.4	251.9
27.5°	286.5	278.1	269.8	261.8	256.2	251.9	248.1	245.7	244.2	241.9	242.1
30°	274.4	265.1	257.3	250.1	243.9	239.8	237.3	236.1	234.0	233.6	232.5
32.5°	261.5	253.0	244.9	238.4	232.1	228.5	227.3	226.2	224.8	225.0	224.7
35°	248.6	241.1	232.5	226.5	221.4	219.2	217.4	217.1	216.6	216.9	216.9
37.5°	236.0	227.8	220.7	215.2	212.2	209.3	208.4	208.3	208.4	208.8	209.6
40°	223.7	216.2	209.3	204.8	201.5	200.1	199.0	199.5	200.1	201.3	202.3
42.5°	211.4	204.3	198.5	194.0	190.9	190.2	190.4	191.4	191.5	193.2	195.0
45°	198.5	192.3	186.9	183.4	181.4	180.6	180.9	181.9	183.1	185.4	187.7
47.5°	186.5	181.1	176.3	172.8	171.3	171.0	171.6	172.9	175.6	177.9	180.6
50°	174.4	169.5	165.0	161.8	161.7	160.5	162.0	163.7	166.8	170.0	173.9
52.5°	162.5	157.7	153.9	151.4	150.7	150.7	152.6	155.5	158.4	162.5	166.1
55°	150.1	145.8	142.1	141.3	140.3	140.8	142.8	145.8	149.7	154.4	158.4
57.5°	137.3	133.6	131.0	129.8	129.3	131.0	133.3	136.5	141.6	146.2	150.6
60°	125.2	122.0	119.2	118.9	118.6	120.7	123.5	126.8	132.0	136.6	141.9
62.5°	112.3	109.8	107.9	107.4	107.4	109.6	112.8	117.1	121.9	126.8	132.5
65°	99.2	97.0	96.5	95.8	97.3	98.7	101.8	106.0	111.1	116.6	122.5
67.5°	87.1	85.7	84.7	84.7	85.9	88.4	91.2	95.3	100.7	106.5	111.8
70°	74.9	73.6	72.8	73.6	74.3	77.3	80.3	84.2	89.2	94.8	100.5
72.5°	62.3	62.5	62.7	62.5	63.2	66.0	69.0	72.8	77.6	83.1	88.2
75°	51.2	50.4	50.6	50.9	53.1	54.6	57.5	61.2	66.3	71.3	75.6
77.5°	39.8	39.5	40.3	40.3	42.3	44.1	46.6	50.2	54.7	59.2	62.7
80°	29.2	29.3	30.0	30.2	31.8	33.8	36.5	39.0	42.9	46.1	49.4
82.5°	19.7	20.1	20.9	22.1	22.7	23.9	26.2	28.9	31.7	35.0	37.0
85°	11.4	11.9	12.6	13.4	14.1	15.3	16.9	19.1	21.1	22.9	24.5
87.5°	5.6	5.6	6.1	6.5	7.0	7.6	8.8	9.6	10.9	12.3	12.9
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: P243488

CATALOG NUMBER: S124DRP-H350D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	406.2	406.2	406.2	406.2
2.5°	382.2	382.0	381.4	381.7
5°	360.7	359.0	358.8	358.2
7.5°	342.1	341.6	341.6	340.3
10°	327.8	326.3	326.7	326.0
12.5°	314.2	313.4	312.4	311.4
15°	299.0	299.0	299.0	296.1
17.5°	287.0	286.9	286.0	285.9
20°	274.6	273.9	271.8	273.3
22.5°	262.0	261.5	259.7	260.0
25°	250.2	249.7	249.4	248.1
27.5°	240.1	240.3	240.6	239.8
30°	232.5	232.0	232.6	231.8
32.5°	225.3	225.3	224.7	224.8
35°	217.2	217.9	218.0	217.9
37.5°	210.1	210.9	211.6	210.9
40°	203.5	204.1	204.8	204.6
42.5°	196.5	197.7	198.2	198.6
45°	189.9	191.4	192.2	192.3
47.5°	183.1	184.9	186.5	186.4
50°	176.4	178.7	180.2	180.1
52.5°	169.8	172.1	173.9	174.8
55°	162.3	165.3	167.0	168.5
57.5°	154.9	158.2	159.8	160.5
60°	146.6	149.6	151.7	152.2
62.5°	137.3	140.4	143.3	143.9
65°	127.7	131.2	133.3	133.6
67.5°	116.6	119.9	122.0	123.0
70°	105.1	107.6	109.9	111.4
72.5°	92.4	95.3	97.5	98.5
75°	79.1	82.4	83.6	84.2
77.5°	65.3	67.3	69.1	69.3
80°	51.6	54.1	54.7	56.4
82.5°	38.0	40.3	39.8	40.5
85°	25.0	25.9	26.4	26.5
87.5°	13.3	13.8	14.1	14.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243488
 CATALOG NUMBER: S124DRP-H350D927-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	15.03	16.60	15.39	16.91	17.23	15.32	16.89	15.68	17.20	17.52
	3H	16.47	17.89	16.85	18.21	18.57	16.70	18.12	17.08	18.45	18.81
	4H	16.99	18.32	17.39	18.67	19.05	17.19	18.52	17.59	18.86	19.24
	6H	17.34	18.57	17.75	18.93	19.32	17.50	18.73	17.91	19.10	19.49
	8H	17.43	18.61	17.86	19.00	19.40	17.58	18.76	18.01	19.15	19.55
	12H	17.48	18.61	17.91	18.99	19.42	17.63	18.75	18.06	19.14	19.57
4H	2H	16.16	17.50	16.56	17.84	18.22	16.11	17.44	16.51	17.79	18.16
	3H	17.67	18.78	18.08	19.18	19.58	17.81	18.92	18.22	19.32	19.72
	4H	18.24	19.24	18.67	19.66	20.10	18.41	19.41	18.84	19.82	20.26
	6H	18.65	19.53	19.11	19.97	20.43	18.81	19.68	19.26	20.12	20.58
	8H	18.77	19.59	19.23	20.03	20.50	18.91	19.73	19.38	20.17	20.64
	12H	18.85	19.58	19.33	20.05	20.53	18.98	19.71	19.46	20.19	20.66
8H	4H	18.67	19.49	19.13	19.93	20.40	18.75	19.56	19.21	20.01	20.47
	6H	19.17	19.84	19.66	20.33	20.81	19.28	19.96	19.77	20.44	20.92
	8H	19.33	19.94	19.84	20.44	20.93	19.44	20.05	19.95	20.56	21.04
	12H	19.45	19.98	19.95	20.48	21.04	19.56	20.09	20.06	20.59	21.15
12H	4H	18.71	19.44	19.19	19.92	20.39	18.78	19.51	19.26	19.99	20.46
	6H	19.23	19.84	19.74	20.35	20.84	19.34	19.95	19.85	20.46	20.94
	8H	19.45	19.98	19.95	20.47	21.04	19.56	20.10	20.07	20.59	21.15