

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: P242658

Luminaire Tested: S124DRP-S350D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242658
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S350D940-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

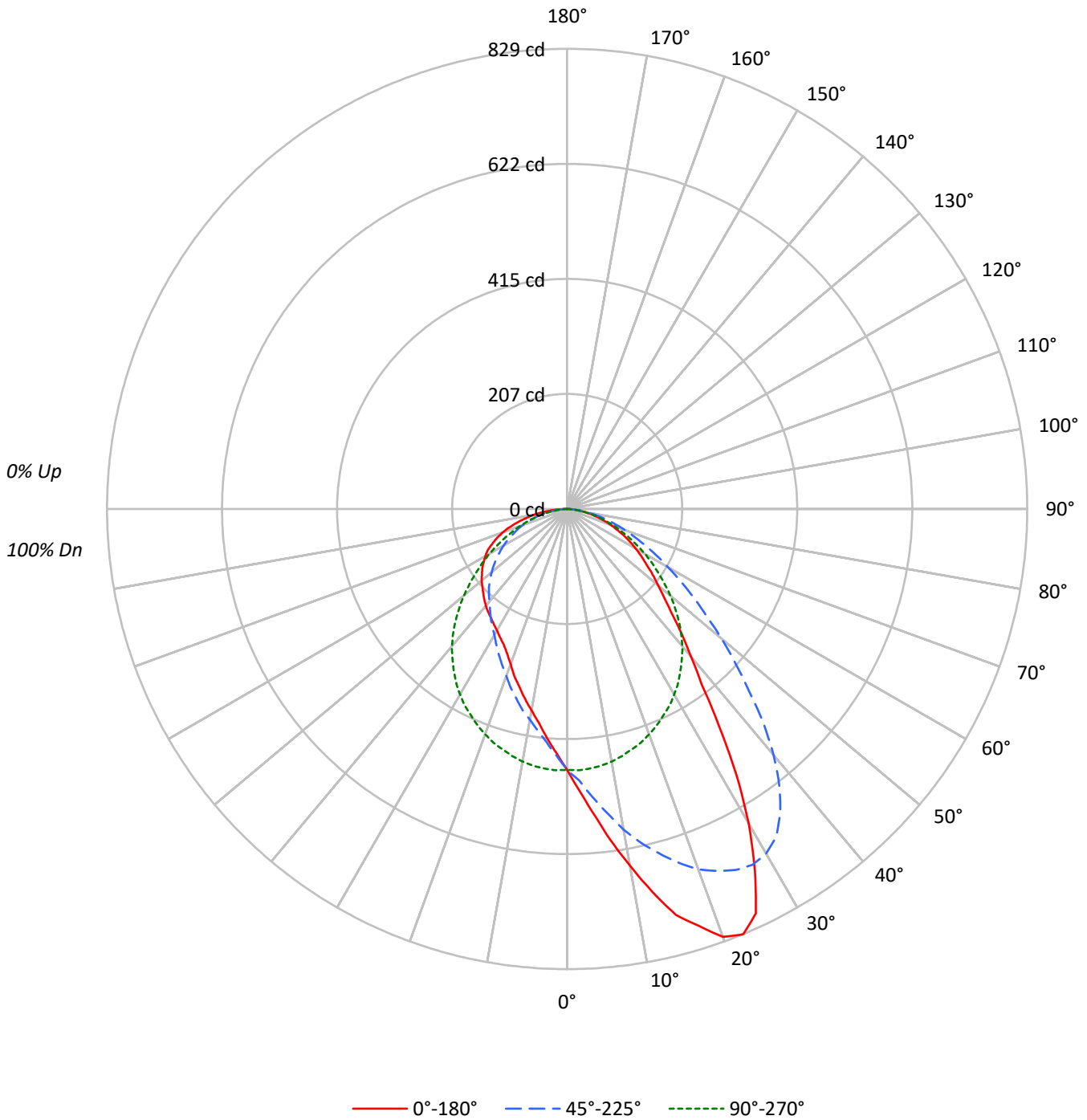
Lumens per Lamp: N/A
Luminaire Lumens: 1296.8 lumens
Efficiency: N/A
Efficacy: 111.8 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): 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: P242658

CATALOG NUMBER: S124DRP-S350D940-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P242658

CATALOG NUMBER: S124DRP-S350D940-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	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85					85			
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62					62			
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46					46			
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36					36			
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33					33			
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30					30			
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27					27			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	4177	4177	4177	4177	4177
5°	4919	4646	4188	3765	3697
10°	5889	5294	4170	3482	3328
15°	6969	5914	4127	3253	3056
20°	7760	6537	4085	3027	2814
25°	7885	7040	4021	2850	2646
30°	6710	7357	3960	2691	2594
35°	5159	7265	3862	2604	2595
40°	4021	6714	3746	2532	2643
45°	3353	5810	3570	2502	2688
50°	2951	5010	3358	2455	2778
55°	2703	4311	3101	2410	2890
60°	2533	3732	2873	2350	3024
65°	2358	3260	2616	2272	3136
70°	2155	2880	2362	2212	3207
75°	1927	2480	2078	2068	3170
80°	1612	2012	1705	1884	3071
85°	1193	1530	1234	1744	2937

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 6414 cd/sqm



TEST NUMBER: P242658

CATALOG NUMBER: S124DRP-S350D940-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.7	3.5
10°-20°	141.2	10.9
20°-30°	224.3	17.3
30°-40°	249.2	19.2
40°-50°	226.6	17.5
50°-60°	185.2	14.3
60°-70°	132.2	10.2
70°-80°	72.7	5.6
80°-90°	19.7	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°	411.2	31.7
0°-40°	660.4	50.9
0°-60°	1072.2	82.7
0°-90°	1296.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1296.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	470	470	470	470	470	
5°	551	521	469	422	414	56
15°	757	643	448	354	332	214
25°	804	718	410	291	270	357
35°	475	670	356	240	239	301
45°	267	462	284	199	214	210
55°	174	278	200	156	186	157
65°	112	155	124	108	149	111
75°	56	72	60	60	92	60
85°	12	15	12	17	29	14
90°	0	0	0	0	0	



TEST NUMBER: P242658

CATALOG NUMBER: S124DRP-S350D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9
2.5°	507.7	507.5	505.6	505.2	503.8	502.1	501.7	498.6	492.3	489.4	488.6
5°	551.3	555.2	550.1	549.2	548.6	542.2	538.9	535.0	526.0	520.7	516.7
7.5°	602.3	602.5	600.4	598.2	594.5	589.1	581.7	573.1	562.8	552.3	544.9
10°	652.5	654.1	651.6	651.2	641.3	635.0	622.6	612.0	600.0	586.5	574.3
12.5°	705.5	702.4	701.4	691.1	691.3	678.6	663.6	652.7	632.5	616.5	599.2
15°	757.3	753.0	750.3	738.8	733.1	717.4	702.0	690.1	665.8	642.6	625.1
17.5°	787.3	792.5	785.5	780.8	765.5	755.1	739.8	715.4	697.3	668.5	648.5
20°	820.3	820.7	817.2	812.4	800.9	786.9	769.7	742.5	719.7	691.1	660.7
22.5°	829.3	829.3	828.3	823.9	815.9	805.2	787.8	766.2	737.4	705.7	675.3
25°	804.0	803.2	805.0	810.0	806.7	803.2	793.3	776.4	750.7	717.8	685.1
27.5°	732.4	737.4	747.9	760.4	769.3	777.3	776.7	769.5	751.2	722.8	688.0
30°	653.7	660.3	667.7	680.2	704.3	718.1	733.3	744.8	738.4	716.8	684.9
32.5°	567.3	567.7	579.5	594.1	615.7	645.5	671.8	698.1	709.4	700.6	675.3
35°	475.4	478.1	490.0	504.0	531.1	563.6	599.8	632.1	658.8	669.5	655.9
37.5°	398.3	406.9	415.8	431.8	456.5	485.9	524.8	565.1	604.3	628.0	630.5
40°	346.5	351.4	357.4	368.9	389.1	418.0	450.3	498.2	540.4	578.6	591.0
42.5°	305.6	308.0	311.1	321.2	335.4	364.0	392.8	433.5	476.0	523.5	546.4
45°	266.7	269.6	275.9	281.9	293.6	313.4	340.9	375.5	418.2	462.2	500.7
47.5°	237.5	239.4	243.3	250.0	260.5	273.9	297.3	326.7	368.3	411.0	452.2
50°	213.4	214.9	217.8	223.7	231.3	243.0	261.3	288.3	319.3	362.3	402.6
52.5°	194.3	194.7	196.6	200.1	205.8	215.1	229.3	250.5	278.8	316.0	356.1
55°	174.4	175.2	177.2	180.1	185.3	191.6	203.0	219.8	244.9	278.2	313.0
57.5°	158.1	158.9	160.4	161.6	166.3	171.5	180.9	192.9	212.6	242.2	273.9
60°	142.5	142.1	144.1	145.0	148.0	152.2	159.0	170.5	187.1	209.9	238.5
62.5°	127.3	126.7	128.3	129.7	131.0	134.5	139.8	148.1	160.8	180.9	204.6
65°	112.1	111.4	112.3	113.9	115.4	117.4	121.5	129.5	140.2	155.0	173.8
67.5°	96.6	97.5	97.5	98.5	99.5	102.2	105.1	111.4	118.9	131.0	147.8
70°	82.9	83.1	83.9	83.9	84.5	86.8	89.2	92.5	99.9	110.8	123.8
72.5°	69.3	70.3	69.7	70.5	70.9	72.2	73.8	76.9	82.9	90.3	100.8
75°	56.1	56.6	56.6	56.8	57.4	58.0	59.4	61.7	66.2	72.2	79.8
77.5°	43.2	43.2	43.6	44.4	44.4	45.4	46.5	48.3	50.8	55.3	60.2
80°	31.5	31.9	31.7	32.1	32.1	32.9	33.3	35.6	36.6	39.3	43.0
82.5°	21.0	21.4	21.4	22.0	22.4	22.4	23.0	23.6	24.5	26.9	27.8
85°	11.7	12.1	11.7	12.1	12.7	12.8	13.4	13.6	14.4	15.0	16.4
87.5°	4.3	4.9	4.9	5.1	5.5	5.6	5.8	5.6	6.4	6.6	7.4
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: P242658

CATALOG NUMBER: S124DRP-S350D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9
2.5°	488.8	486.1	484.1	482.6	478.3	475.8	473.8	471.1	468.0	464.7	460.6
5°	512.6	506.0	501.1	493.7	486.7	480.8	474.8	469.4	462.7	455.5	450.3
7.5°	536.9	527.8	515.5	506.0	494.5	484.5	475.8	466.6	456.9	447.6	438.8
10°	559.9	547.2	533.2	516.7	501.1	487.3	474.4	462.0	449.9	437.8	427.5
12.5°	584.6	568.1	545.7	525.6	507.7	488.0	471.9	455.9	440.7	427.9	415.4
15°	606.2	583.4	559.5	533.6	510.6	489.0	467.8	448.5	432.2	415.4	403.8
17.5°	619.8	591.6	565.9	538.9	512.4	485.3	463.3	441.7	421.5	405.1	390.5
20°	633.3	605.2	571.2	544.1	511.0	483.0	456.5	431.8	410.4	392.7	377.5
22.5°	644.9	611.5	577.4	539.6	506.7	476.6	447.0	422.0	400.1	381.2	366.8
25°	647.7	610.5	573.5	538.1	500.7	465.5	439.2	410.0	386.6	367.0	351.4
27.5°	648.6	609.3	568.2	529.7	491.2	459.0	424.8	399.3	375.1	354.3	339.5
30°	646.5	605.0	560.1	517.4	478.7	443.1	414.3	385.8	361.1	340.5	324.9
32.5°	639.7	596.1	549.6	503.8	463.3	428.7	398.7	372.0	348.1	327.8	311.3
35°	625.3	582.7	533.4	486.5	445.4	410.2	383.3	355.9	331.7	312.4	296.7
37.5°	606.0	566.3	516.3	467.4	427.9	392.1	365.0	339.7	317.9	298.0	281.7
40°	579.1	545.3	495.1	447.7	404.1	370.5	345.5	322.8	301.2	282.7	267.3
42.5°	548.2	519.8	474.4	423.6	381.9	348.1	323.9	304.1	284.0	267.3	251.9
45°	510.2	490.8	447.2	400.8	357.0	325.1	301.9	284.0	266.9	250.2	237.3
47.5°	468.0	457.1	419.1	374.7	332.7	300.8	280.7	263.6	248.0	233.4	221.9
50°	425.4	420.7	389.0	346.5	306.8	277.2	257.0	242.8	229.9	217.4	206.7
52.5°	383.3	384.3	356.4	318.5	282.5	254.2	234.2	221.1	210.4	200.9	191.6
55°	340.3	345.7	323.4	288.7	255.8	230.1	212.0	200.1	192.3	184.0	176.8
57.5°	300.8	309.9	290.5	258.7	230.9	206.4	190.4	181.2	172.7	167.2	161.6
60°	262.2	270.8	256.4	230.7	204.8	184.5	169.6	161.6	154.4	150.9	147.2
62.5°	228.0	235.4	225.6	202.3	180.7	161.4	149.3	141.7	137.4	133.5	131.4
65°	195.6	202.1	192.9	175.6	156.3	140.7	130.4	124.4	119.7	118.2	115.4
67.5°	163.7	169.6	164.7	149.5	133.2	120.9	112.7	106.3	103.6	102.0	100.3
70°	135.9	141.7	136.5	123.6	111.7	101.8	94.2	90.9	88.0	87.4	84.7
72.5°	112.3	115.8	110.6	101.2	91.5	83.5	78.1	74.6	73.4	72.2	71.1
75°	87.8	91.3	87.8	80.0	72.8	67.0	61.9	60.5	58.8	58.2	57.2
77.5°	65.8	69.1	66.4	61.1	55.5	50.6	47.7	45.7	45.6	44.4	44.8
80°	47.5	49.4	46.9	43.6	39.3	36.2	34.3	33.3	32.1	31.7	32.5
82.5°	30.8	31.3	30.4	28.4	25.5	23.8	22.6	21.4	21.4	21.6	21.4
85°	17.7	17.5	17.3	15.4	14.4	13.0	12.3	12.1	11.9	12.3	12.7
87.5°	7.4	7.6	7.4	6.6	6.0	5.5	5.3	5.1	5.3	5.5	5.6
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: P242658

CATALOG NUMBER: S124DRP-S350D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9	469.9
2.5°	458.6	456.9	454.4	450.9	447.9	444.8	444.0	442.9	445.2	443.3	442.7
5°	445.8	441.7	436.5	430.4	426.9	421.9	420.9	418.9	417.0	416.8	414.8
7.5°	432.4	426.7	420.1	413.9	408.4	403.0	399.5	399.1	396.0	394.4	392.5
10°	419.5	412.1	404.1	398.3	391.7	385.8	381.8	379.4	377.5	375.3	373.4
12.5°	404.3	396.4	390.1	383.7	375.5	371.4	364.0	359.6	359.6	360.1	354.3
15°	393.2	385.5	375.3	366.4	362.1	353.5	349.8	345.2	342.2	339.3	337.0
17.5°	379.6	370.1	362.3	352.2	344.2	337.8	332.7	330.2	325.5	321.2	318.3
20°	367.0	356.6	348.3	337.4	328.4	320.0	316.0	312.1	308.8	305.2	301.9
22.5°	354.1	343.2	332.5	322.0	313.8	304.9	301.0	295.3	292.2	290.6	287.3
25°	340.5	328.8	317.1	307.0	298.4	290.6	285.4	281.3	277.8	276.2	274.1
27.5°	325.7	314.2	303.1	291.4	281.5	275.9	271.6	268.3	266.1	263.8	262.8
30°	311.7	299.6	287.5	276.8	267.9	262.2	258.3	256.2	254.6	253.7	252.7
32.5°	297.5	285.6	272.7	263.2	255.4	250.5	247.8	245.7	245.1	244.9	244.7
35°	282.1	270.0	258.3	249.6	242.0	240.0	237.5	236.3	235.9	237.3	237.9
37.5°	267.3	256.0	245.1	236.3	231.3	228.2	227.2	227.0	228.4	229.5	230.9
40°	253.1	242.2	232.0	224.7	220.0	218.2	217.8	218.8	220.4	221.7	223.3
42.5°	239.3	228.5	219.6	212.8	209.9	208.3	208.7	209.7	212.0	213.8	216.3
45°	224.8	215.9	206.9	201.3	198.6	199.0	199.0	200.7	202.8	205.4	207.9
47.5°	211.4	202.3	194.7	189.8	188.4	187.9	188.8	191.2	194.1	197.0	200.5
50°	197.8	189.2	182.8	178.5	177.0	177.5	179.1	181.2	184.9	188.8	192.5
52.5°	184.0	176.4	170.5	166.6	165.7	166.8	168.4	172.1	175.2	179.5	184.2
55°	169.6	162.9	158.3	155.3	155.0	155.5	157.3	161.0	165.7	170.9	175.2
57.5°	155.3	149.7	145.2	143.1	143.3	143.7	146.4	150.9	155.5	161.2	166.6
60°	140.9	135.9	132.4	130.8	131.0	132.2	135.7	139.8	146.0	151.5	157.3
62.5°	127.3	123.0	119.7	118.4	118.0	120.9	124.2	128.5	134.7	140.9	147.4
65°	112.5	109.0	106.3	105.5	106.1	108.0	112.3	118.0	123.2	129.7	136.3
67.5°	98.1	95.2	93.2	93.6	94.2	96.9	100.6	105.5	111.4	118.0	124.8
70°	84.5	81.8	80.2	80.4	81.6	85.1	88.2	93.1	99.5	106.3	111.7
72.5°	70.5	68.9	67.6	68.5	69.7	71.8	75.9	80.8	86.2	92.5	98.3
75°	56.3	56.3	55.5	56.1	57.8	60.2	63.1	68.1	73.8	78.8	83.5
77.5°	44.2	43.6	44.0	44.6	45.7	48.7	52.0	55.7	60.2	65.4	69.3
80°	31.9	32.1	33.1	34.3	34.7	36.8	40.3	43.6	46.9	51.2	54.9
82.5°	22.0	22.2	22.6	24.1	24.5	26.9	28.8	32.1	35.0	37.6	40.5
85°	13.0	13.0	14.0	14.6	15.6	17.1	18.5	20.4	23.2	25.1	28.0
87.5°	6.2	6.2	7.0	7.4	8.0	9.0	9.3	11.5	12.3	13.2	15.0
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: P242658

CATALOG NUMBER: S124DRP-S350D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	469.9	469.9	469.9	469.9
2.5°	442.3	441.9	440.5	440.3
5°	413.7	412.7	412.1	414.3
7.5°	392.1	391.3	389.5	389.0
10°	371.4	370.7	369.1	368.7
12.5°	351.6	349.8	349.8	350.4
15°	334.4	333.7	331.5	332.1
17.5°	316.9	316.1	313.2	316.1
20°	300.6	299.0	297.7	297.5
22.5°	285.0	283.6	283.8	282.3
25°	272.5	271.2	270.8	269.8
27.5°	262.4	261.6	260.9	261.3
30°	253.3	253.1	252.7	252.7
32.5°	245.7	245.7	246.1	246.1
35°	238.7	239.3	239.6	239.1
37.5°	232.4	232.8	233.4	234.0
40°	225.0	226.4	226.8	227.8
42.5°	218.0	219.6	220.8	220.8
45°	210.8	212.4	213.8	213.8
47.5°	203.4	205.6	206.9	207.1
50°	195.8	198.6	199.9	200.9
52.5°	188.4	191.2	193.1	193.5
55°	179.7	183.6	185.7	186.5
57.5°	171.9	175.4	177.7	178.3
60°	162.6	166.4	169.6	170.1
62.5°	153.0	157.1	159.8	161.6
65°	141.7	145.8	148.5	149.1
67.5°	129.8	134.1	135.9	137.0
70°	117.2	120.5	122.4	123.4
72.5°	102.8	106.3	108.6	108.6
75°	88.0	91.1	92.3	92.3
77.5°	72.6	74.4	75.9	76.3
80°	57.8	58.8	60.0	60.0
82.5°	42.6	43.4	44.6	44.4
85°	27.6	29.4	29.2	28.8
87.5°	15.6	15.8	16.4	16.7
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P242658
 CATALOG NUMBER: S124DRP-S350D940-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	14.93	16.50	15.30	16.81	17.12	15.85	17.41	16.21	17.72	18.04
	3H	16.42	17.82	16.80	18.15	18.51	17.21	18.62	17.59	18.95	19.31
	4H	16.96	18.28	17.35	18.63	19.00	17.68	19.01	18.08	19.35	19.73
	6H	17.32	18.54	17.73	18.90	19.30	17.99	19.21	18.40	19.58	19.97
	8H	17.42	18.58	17.84	18.97	19.37	18.07	19.24	18.50	19.63	20.03
	12H	17.47	18.59	17.90	18.97	19.40	18.11	19.23	18.54	19.61	20.04
4H	2H	16.10	17.42	16.49	17.77	18.14	16.53	17.85	16.93	18.20	18.58
	3H	17.62	18.73	18.04	19.13	19.53	18.24	19.34	18.65	19.74	20.14
	4H	18.21	19.21	18.64	19.62	20.06	18.83	19.82	19.26	20.24	20.67
	6H	18.64	19.51	19.09	19.95	20.41	19.23	20.09	19.68	20.53	20.99
	8H	18.76	19.57	19.22	20.02	20.48	19.33	20.14	19.79	20.58	21.05
	12H	18.84	19.57	19.32	20.04	20.51	19.39	20.12	19.88	20.60	21.07
8H	4H	18.67	19.48	19.13	19.92	20.39	19.14	19.95	19.60	20.40	20.86
	6H	19.17	19.85	19.67	20.34	20.81	19.67	20.34	20.17	20.83	21.31
	8H	19.34	19.95	19.86	20.46	20.94	19.83	20.44	20.35	20.94	21.43
	12H	19.47	20.00	19.98	20.49	21.05	19.95	20.48	20.46	20.97	21.53
12H	4H	18.72	19.44	19.20	19.92	20.39	19.17	19.90	19.66	20.38	20.85
	6H	19.25	19.85	19.76	20.36	20.85	19.73	20.33	20.24	20.84	21.33
	8H	19.47	20.00	19.98	20.49	21.06	19.95	20.48	20.46	20.97	21.54