

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P831740

Luminaire Tested: S123DP-S340D840-4F0-1E-UDD-G

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831740
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, -)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DP-S340D840-4F0-1E-UDD-G
Description: DEFINE 3 DIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, GRAZE OPTIC

Light Source: -
Ballast/Driver: -

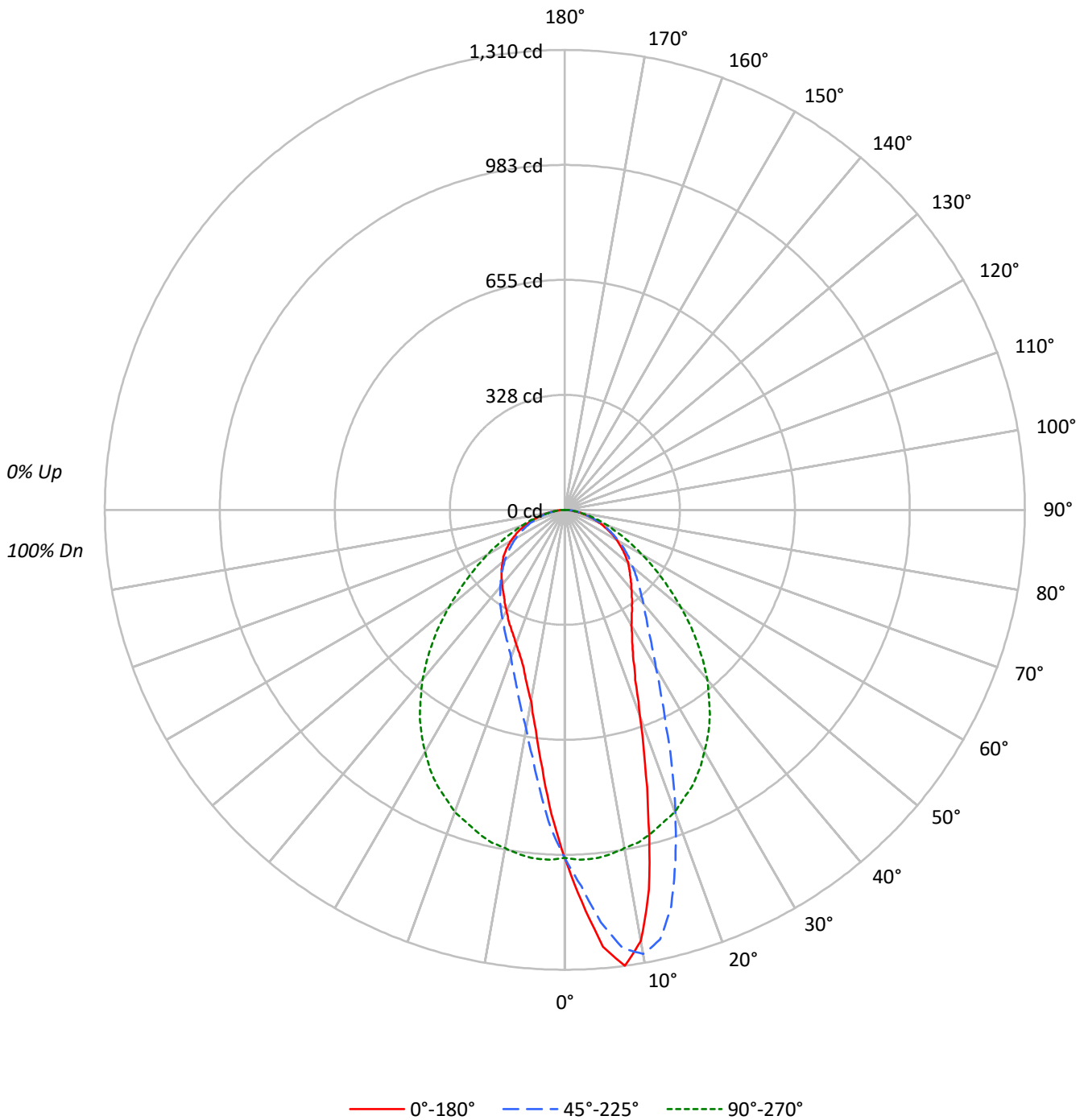
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1593.9 lumens
Efficiency: N/A
Efficacy: 128.5 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: Direct

Input Watts (W): 12.4
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: P831740
CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

Luminous Intensity Polar Plot





TEST NUMBER: P831740

CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88				86	
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76				74	
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66				64	
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58				56	
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52				50	
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47				45	
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42				40	
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39				37	
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35				34	
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33				31	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	10672	10672	10672	10672	10672
5°	13498	12739	10768	8678	7974
10°	13629	14041	10696	6918	6044
15°	10264	13036	10623	5858	5112
20°	7152	10549	10488	5123	4643
25°	5454	8112	10257	4713	4355
30°	4718	6444	9887	4424	4123
35°	4377	5441	9462	4214	3960
40°	4144	4881	8864	4014	3905
45°	4007	4518	8103	3859	3880
50°	3937	4230	7204	3718	3860
55°	3791	4020	6320	3582	3877
60°	3655	3793	5449	3457	3813
65°	3433	3581	4699	3321	3739
70°	3172	3308	3997	3100	3519
75°	2870	2965	3427	2878	3215
80°	2368	2597	2709	2510	2709
85°	1877	2100	1988	2137	2161

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 9252 cd/sqm



TEST NUMBER: P831740

CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	93.7	5.9
10°-20°	233.2	14.6
20°-30°	276.1	17.3
30°-40°	277.6	17.4
40°-50°	254.7	16.0
50°-60°	210.2	13.2
60°-70°	148.7	9.3
70°-80°	79.4	5.0
80°-90°	20.1	1.3
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°	603.1	37.8
0°-40°	880.7	55.3
0°-60°	1345.6	84.4
0°-90°	1593.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1593.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	992	992	992	992	992	
5°	1249	1179	997	803	738	119
15°	921	1170	953	526	459	254
25°	459	683	864	397	367	217
35°	333	414	720	321	301	209
45°	263	297	532	254	255	204
55°	202	214	337	191	207	181
65°	135	141	184	130	147	134
75°	69	71	82	69	77	73
85°	15	17	16	17	18	18
90°	0	0	0	0	0	



TEST NUMBER: P831740

CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5
2.5°	1117.6	1116.4	1115.3	1109.5	1103.8	1101.0	1098.3	1090.0	1081.7	1072.5	1063.3
5°	1249.2	1252.4	1255.6	1251.9	1248.2	1237.0	1225.7	1210.7	1195.8	1179.0	1162.2
7.5°	1309.9	1311.7	1313.6	1311.3	1309.0	1306.0	1303.0	1289.7	1276.3	1259.1	1241.8
10°	1246.9	1251.0	1255.1	1264.1	1273.1	1283.2	1293.3	1291.5	1289.7	1284.6	1279.5
12.5°	1108.4	1113.4	1118.5	1136.4	1154.4	1177.4	1200.4	1220.2	1240.0	1253.8	1267.6
15°	921.1	935.1	949.2	965.5	981.8	1015.7	1049.5	1091.1	1132.8	1169.8	1206.8
17.5°	758.7	764.0	769.3	786.8	804.3	846.8	889.4	937.4	985.5	1047.0	1108.4
20°	624.4	629.2	634.0	657.0	680.0	713.4	746.7	800.8	854.9	920.9	986.9
22.5°	524.5	532.1	539.7	552.6	565.5	597.4	629.4	677.5	725.6	798.5	871.4
25°	459.2	464.7	470.2	478.0	485.9	511.4	536.9	576.5	616.1	683.0	750.0
27.5°	414.5	416.8	419.1	427.0	434.8	451.4	467.9	502.0	536.0	592.8	649.7
30°	379.6	381.2	382.8	389.7	396.6	407.9	419.1	443.8	468.4	518.5	568.7
32.5°	355.2	356.3	357.5	362.8	368.1	376.1	384.2	402.1	420.1	461.5	502.9
35°	333.1	333.8	334.5	338.4	342.3	348.3	354.3	367.8	381.4	414.1	446.8
37.5°	313.8	314.7	315.6	317.9	320.2	325.5	330.8	341.6	352.4	377.5	402.6
40°	294.9	296.5	298.1	299.8	301.4	305.7	310.1	318.4	326.7	347.4	368.1
42.5°	278.8	280.4	282.0	282.7	283.4	286.0	288.5	296.1	303.7	319.1	334.5
45°	263.2	263.9	264.6	265.2	265.9	268.0	270.1	276.7	283.4	296.8	310.1
47.5°	248.9	248.9	248.9	249.4	249.8	251.7	253.5	258.3	263.2	273.5	283.9
50°	235.1	235.1	235.1	234.4	233.7	234.9	236.0	239.7	243.4	252.6	261.8
52.5°	218.5	218.5	218.5	218.8	219.0	219.0	219.0	222.2	225.4	233.7	242.0
55°	202.0	202.9	203.8	203.1	202.4	202.9	203.4	205.4	207.5	214.2	220.8
57.5°	185.4	185.9	186.3	186.1	185.9	186.1	186.3	188.2	190.0	195.1	200.1
60°	169.8	169.8	169.8	169.3	168.9	169.3	169.8	170.7	171.6	176.2	180.8
62.5°	152.3	152.5	152.8	153.0	153.2	152.8	152.3	153.4	154.6	158.0	161.5
65°	134.8	135.0	135.3	136.0	136.6	136.2	135.7	136.9	138.0	140.6	143.1
67.5°	119.2	118.7	118.2	118.5	118.7	119.4	120.1	120.3	120.5	123.3	126.1
70°	100.8	101.2	101.7	101.5	101.2	101.5	101.7	102.4	103.1	105.1	107.2
72.5°	84.2	84.4	84.7	84.7	84.7	85.1	85.6	86.3	87.0	88.1	89.3
75°	69.0	69.0	69.0	69.5	69.9	70.2	70.4	70.4	70.4	71.3	72.2
77.5°	52.5	53.6	54.8	54.5	54.3	54.8	55.2	55.9	56.6	57.1	57.5
80°	38.2	38.2	38.2	38.4	38.6	39.3	40.0	40.5	40.9	41.9	42.8
82.5°	24.4	24.6	24.8	25.5	26.2	26.7	27.1	27.8	28.5	28.5	28.5
85°	15.2	14.7	14.3	14.7	15.2	15.6	16.1	16.3	16.6	17.0	17.5
87.5°	7.4	7.4	7.4	7.4	7.4	7.6	7.8	7.8	7.8	7.8	7.8
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: P831740

CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5
2.5°	1060.5	1057.8	1047.6	1037.5	1026.0	1014.5	1006.0	997.5	984.8	972.2	961.8
5°	1149.3	1136.4	1115.0	1093.7	1064.7	1035.7	1016.1	996.6	970.3	944.1	923.2
7.5°	1219.7	1197.6	1167.7	1137.8	1099.9	1061.9	1026.0	990.1	950.1	910.1	877.4
10°	1264.6	1249.6	1215.1	1180.6	1129.8	1078.9	1028.8	978.6	927.1	875.6	832.3
12.5°	1269.0	1270.3	1238.6	1206.8	1149.3	1091.8	1030.8	969.9	905.0	840.1	789.8
15°	1230.5	1254.2	1236.7	1219.3	1161.3	1103.3	1028.3	953.3	878.6	803.8	745.6
17.5°	1159.2	1210.1	1212.6	1215.1	1157.1	1099.2	1016.1	933.1	848.4	763.8	702.6
20°	1061.9	1136.9	1162.7	1188.4	1141.3	1094.1	1004.9	915.6	820.8	726.0	661.9
22.5°	962.5	1053.6	1100.8	1147.9	1113.0	1078.0	983.0	888.0	787.9	687.8	622.7
25°	849.3	948.7	1021.2	1093.7	1072.3	1050.9	957.2	863.6	757.1	650.6	584.1
27.5°	750.7	851.6	939.1	1026.5	1021.9	1017.3	924.3	831.4	722.4	613.3	549.1
30°	662.8	756.9	854.6	952.4	963.7	974.9	885.2	795.5	686.2	577.0	515.1
32.5°	585.0	667.1	772.0	876.9	899.0	921.1	840.1	759.2	651.0	542.9	483.3
35°	521.3	595.8	700.7	805.6	833.2	860.8	790.4	720.1	614.7	509.3	452.5
37.5°	464.9	527.3	629.6	732.0	765.8	799.7	736.6	673.6	574.9	476.2	424.0
40°	418.2	468.4	562.5	656.6	695.7	734.8	682.8	630.8	537.2	443.5	395.5
42.5°	379.1	423.8	509.1	594.4	631.9	669.4	625.5	581.6	498.3	415.0	371.1
45°	345.8	381.4	458.9	536.5	572.1	607.8	570.1	532.3	458.9	385.6	344.6
47.5°	314.5	345.1	411.3	477.6	509.3	541.1	511.6	482.2	420.1	358.0	320.9
50°	286.4	311.0	369.0	427.0	454.6	482.2	456.2	430.2	379.1	328.0	295.8
52.5°	262.0	282.0	330.6	379.1	402.8	426.5	404.2	381.9	341.4	300.9	272.8
55°	237.9	254.9	297.0	339.1	355.2	371.3	354.0	336.8	304.1	271.5	247.8
57.5°	215.3	230.5	265.0	299.5	311.9	324.4	308.7	293.1	268.5	243.9	224.1
60°	193.2	205.7	234.4	263.2	270.8	278.4	265.7	253.1	235.8	218.5	200.8
62.5°	172.8	184.0	205.4	226.8	231.9	237.0	227.3	217.6	204.5	191.4	177.6
65°	151.6	160.1	177.6	195.1	198.3	201.5	193.0	184.5	174.6	164.7	154.6
67.5°	132.0	138.0	152.3	166.6	166.8	167.0	160.1	153.2	147.7	142.2	134.1
70°	113.0	118.7	128.1	137.6	137.8	138.0	132.5	127.0	122.8	118.7	112.7
72.5°	93.4	97.5	104.7	111.8	111.3	110.9	107.4	104.0	100.8	97.5	93.2
75°	75.7	79.1	84.0	88.8	87.4	86.0	84.2	82.4	79.6	76.8	74.1
77.5°	59.6	61.7	64.4	67.2	66.3	65.3	63.7	62.1	60.0	58.0	56.8
80°	43.7	44.6	46.5	48.3	47.9	47.4	45.5	43.7	43.2	42.8	41.2
82.5°	29.7	30.8	31.3	31.7	31.5	31.3	29.9	28.5	28.1	27.6	27.4
85°	17.7	17.9	18.2	18.4	17.7	17.0	16.6	16.1	16.1	16.1	15.9
87.5°	8.1	8.3	8.3	8.3	8.1	7.8	7.4	6.9	7.1	7.4	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: P831740

CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5	991.5
2.5°	951.5	942.5	933.5	926.6	919.7	908.0	896.3	893.5	890.7	886.8	882.9
5°	902.3	880.2	858.1	838.3	818.5	803.1	787.7	777.6	767.4	760.1	752.7
7.5°	844.7	811.6	778.5	755.0	731.6	709.2	686.9	679.8	672.7	663.0	653.3
10°	789.1	752.5	715.9	685.3	654.7	632.9	611.0	602.3	593.5	581.3	569.1
12.5°	739.4	699.3	659.3	628.5	597.7	576.5	555.3	542.7	530.0	523.1	516.2
15°	687.4	644.6	601.8	573.3	544.8	525.7	506.6	495.5	484.5	477.8	471.1
17.5°	641.4	599.0	556.7	529.3	502.0	484.5	467.0	457.3	447.7	442.6	437.6
20°	597.7	556.3	514.8	488.2	461.5	447.2	433.0	426.7	420.5	416.4	412.2
22.5°	557.6	516.9	476.2	453.4	430.7	419.1	407.6	403.3	398.9	395.5	392.0
25°	517.6	481.3	444.9	425.6	406.3	396.8	387.4	383.0	378.7	375.2	371.8
27.5°	484.9	450.2	415.5	398.9	382.3	375.0	367.6	364.2	360.7	357.5	354.3
30°	453.2	422.1	391.1	376.8	362.6	355.9	349.2	345.8	342.3	339.3	336.3
32.5°	423.8	397.1	370.4	357.3	344.2	338.6	333.1	329.0	324.8	322.5	320.2
35°	395.7	371.8	347.8	337.0	326.2	320.7	315.2	311.7	308.3	306.4	304.6
37.5°	371.8	350.4	329.0	318.6	308.3	303.0	297.7	294.7	291.7	291.0	290.3
40°	347.4	329.0	310.6	300.4	290.3	285.7	281.1	279.3	277.4	277.0	276.5
42.5°	327.1	309.2	291.2	282.0	272.8	268.9	265.0	264.1	263.2	263.9	264.6
45°	303.7	288.7	273.8	265.2	256.7	253.5	250.3	249.6	248.9	250.3	251.7
47.5°	283.9	270.1	256.3	248.2	240.2	237.9	235.6	235.3	235.1	237.0	238.8
50°	263.6	250.3	237.0	230.5	224.1	222.0	219.9	220.6	221.3	224.3	227.3
52.5°	244.8	232.3	219.9	213.9	208.0	206.6	205.2	206.8	208.4	211.6	214.9
55°	224.1	212.8	201.5	196.9	192.3	190.9	189.6	192.8	196.0	199.0	202.0
57.5°	204.3	194.4	184.5	180.4	176.2	176.0	175.8	178.7	181.7	185.0	188.2
60°	183.1	174.8	166.6	163.3	160.1	160.6	161.0	164.5	167.9	170.5	173.0
62.5°	163.8	156.9	150.0	147.0	144.0	145.2	146.3	149.8	153.2	156.2	159.2
65°	144.5	138.7	133.0	130.9	128.8	130.4	132.0	135.0	138.0	140.1	142.2
67.5°	126.1	121.2	116.4	114.8	113.2	114.8	116.4	119.4	122.4	124.5	126.5
70°	106.7	102.8	98.9	97.8	96.6	98.5	100.3	102.8	105.4	107.4	109.5
72.5°	88.8	85.8	82.8	82.6	82.4	84.0	85.6	88.1	90.6	92.0	93.4
75°	71.3	69.7	68.1	67.9	67.6	69.2	70.9	72.2	73.6	74.8	75.9
77.5°	55.7	54.3	52.9	53.1	53.4	54.5	55.7	57.1	58.4	59.1	59.8
80°	39.6	39.1	38.6	39.1	39.6	40.5	41.4	42.3	43.2	43.7	44.2
82.5°	27.1	26.7	26.2	26.9	27.6	28.3	29.0	29.7	30.4	30.6	30.8
85°	15.6	16.3	17.0	17.0	17.0	17.3	17.5	17.7	17.9	17.7	17.5
87.5°	7.4	7.6	7.8	7.8	7.8	8.1	8.3	8.3	8.3	8.1	7.8
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: P831740

CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	991.5	991.5	991.5	991.5
2.5°	881.3	879.7	873.3	866.8
5°	747.2	741.7	739.8	738.0
7.5°	652.9	652.4	642.8	633.1
10°	569.8	570.5	561.8	553.0
12.5°	510.5	504.7	504.0	503.3
15°	465.8	460.6	459.6	458.7
17.5°	434.3	431.1	430.2	429.3
20°	410.4	408.6	407.0	405.3
22.5°	389.7	387.4	386.0	384.6
25°	369.7	367.6	367.2	366.7
27.5°	351.7	349.2	349.2	349.2
30°	334.7	333.1	332.4	331.7
32.5°	318.8	317.5	317.5	317.5
35°	303.9	303.2	302.3	301.4
37.5°	290.3	290.3	289.9	289.4
40°	277.2	277.9	277.9	277.9
42.5°	265.2	265.9	265.9	265.9
45°	252.8	254.0	254.4	254.9
47.5°	240.6	242.5	242.9	243.4
50°	228.7	230.0	230.3	230.5
52.5°	216.5	218.1	219.2	220.4
55°	203.6	205.2	205.9	206.6
57.5°	189.8	191.4	191.6	191.9
60°	174.6	176.2	176.7	177.1
62.5°	160.1	161.0	161.5	162.0
65°	143.6	144.9	145.9	146.8
67.5°	127.7	128.8	128.8	128.8
70°	110.0	110.4	111.1	111.8
72.5°	93.6	93.9	93.9	93.9
75°	76.4	76.8	77.1	77.3
77.5°	60.0	60.3	60.3	60.3
80°	43.9	43.7	43.7	43.7
82.5°	30.1	29.4	29.4	29.4
85°	17.3	17.0	17.3	17.5
87.5°	7.8	7.8	7.8	7.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P831740

CATALOG NUMBER: S123DP-S340D840-4F0-1E-UDD-G

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	15.71	17.22	16.07	17.53	17.84	17.94	19.45	18.31	19.77	20.08
	3H	17.40	18.75	17.78	19.08	19.44	19.41	20.77	19.79	21.09	21.46
	4H	18.00	19.28	18.40	19.62	20.00	19.89	21.16	20.29	21.51	21.89
	6H	18.40	19.58	18.82	19.95	20.34	20.20	21.37	20.61	21.74	22.13
	8H	18.52	19.64	18.94	20.03	20.43	20.28	21.39	20.70	21.78	22.19
	12H	18.58	19.65	19.01	20.04	20.46	20.31	21.39	20.74	21.77	22.20
4H	2H	16.35	17.62	16.75	17.97	18.35	18.18	19.45	18.58	19.80	20.18
	3H	18.24	19.29	18.65	19.69	20.09	19.85	20.91	20.26	21.31	21.71
	4H	18.96	19.91	19.39	20.33	20.76	20.46	21.41	20.89	21.83	22.26
	6H	19.46	20.29	19.92	20.74	21.20	20.89	21.72	21.35	22.17	22.63
	8H	19.61	20.39	20.08	20.83	21.30	21.02	21.79	21.48	22.24	22.70
	12H	19.71	20.40	20.19	20.88	21.35	21.09	21.78	21.57	22.26	22.73
8H	4H	19.27	20.04	19.73	20.49	20.95	20.61	21.38	21.07	21.83	22.29
	6H	19.88	20.52	20.38	21.01	21.49	21.13	21.77	21.63	22.26	22.74
	8H	20.09	20.66	20.60	21.17	21.66	21.32	21.89	21.83	22.40	22.89
	12H	20.24	20.75	20.75	21.24	21.80	21.45	21.95	21.96	22.44	23.01
12H	4H	19.30	19.99	19.78	20.47	20.94	20.61	21.30	21.09	21.78	22.25
	6H	19.93	20.51	20.45	21.02	21.50	21.15	21.72	21.66	22.23	22.72
	8H	20.20	20.70	20.71	21.19	21.76	21.38	21.88	21.89	22.38	22.94