

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: P242315

Luminaire Tested: S122DRP-S485D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242315
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-S485D940-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

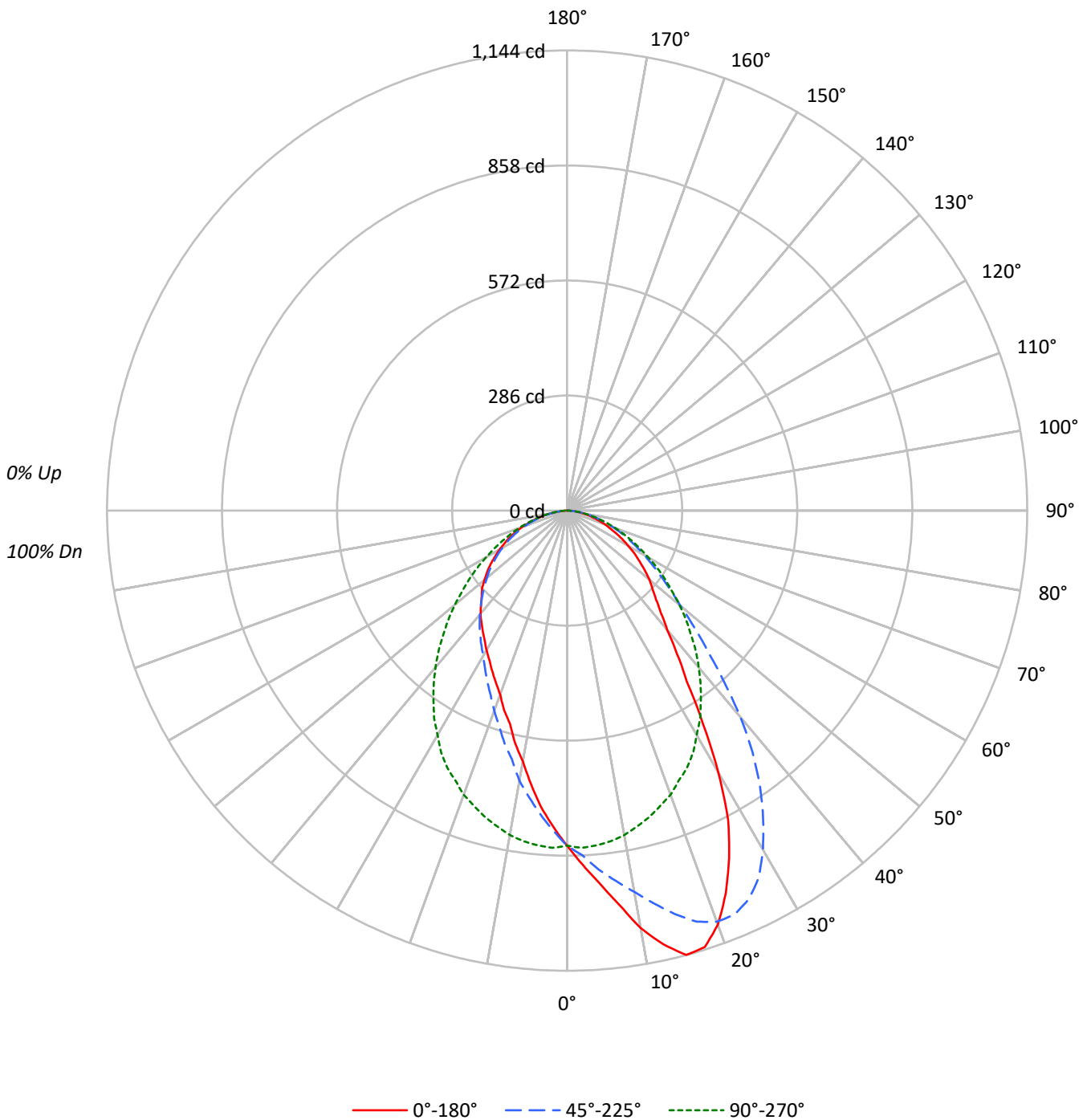
Lumens per Lamp: N/A
Luminaire Lumens: 1837.8 lumens
Efficiency: N/A
Efficacy: 97.8 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
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: P242315

CATALOG NUMBER: S122DRP-S485D940-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



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CATALOG NUMBER: S122DRP-S485D940-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	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76					74				
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66					64				
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58					55				
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51					49				
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45					43				
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41					39				
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37					35				
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34					32				
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31					29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	15869	15869	15869	15869	15869
5°	17790	17122	15971	14509	14153
10°	20386	18614	15841	13197	12249
15°	22553	20489	15551	11826	10822
20°	22208	22052	15239	10735	9865
25°	20025	22421	14823	9859	9260
30°	16549	21414	14162	9176	8818
35°	12061	19430	13468	8755	8501
40°	9633	16662	12651	8392	8327
45°	8418	13326	11704	8022	8089
50°	7912	10872	10786	7713	7933
55°	7293	9451	9856	7432	7718
60°	6686	8415	8869	7097	7391
65°	6089	7603	7982	6666	7072
70°	5530	6794	7112	6154	6599
75°	4901	6005	6153	5512	5843
80°	4212	5090	5090	4530	4706
85°	3781	4131	3781	3147	2797

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 20413 cd/sqm

TEST NUMBER: P242315

CATALOG NUMBER: S122DRP-S485D940-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.4	4.3
10°-20°	230.9	12.6
20°-30°	335.2	18.2
30°-40°	353.3	19.2
40°-50°	312.6	17.0
50°-60°	249.6	13.6
60°-70°	169.5	9.2
70°-80°	86.8	4.7
80°-90°	20.5	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°	645.5	35.1
0°-40°	998.8	54.3
0°-60°	1561.0	84.9
0°-90°	1837.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1837.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	833	833	833	833	833	
5°	930	896	835	759	740	93
15°	1144	1039	789	600	549	317
25°	953	1067	705	469	441	432
35°	519	836	579	376	366	336
45°	312	495	434	298	300	245
55°	220	285	297	224	232	197
65°	135	169	177	148	157	134
75°	67	82	84	75	79	71
85°	17	19	17	14	13	20
90°	0	0	0	0	0	



TEST NUMBER: P242315

CATALOG NUMBER: S122DRP-S485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1
2.5°	881.1	881.4	882.1	877.0	876.3	876.3	871.8	868.0	863.5	857.4	858.1
5°	930.4	933.9	935.2	931.4	925.6	925.0	919.5	910.6	902.2	895.5	890.7
7.5°	987.4	988.7	986.1	981.6	977.8	970.4	961.5	952.8	940.0	928.5	920.2
10°	1054.0	1055.9	1050.5	1043.1	1037.0	1028.1	1013.3	998.3	980.0	962.4	948.3
12.5°	1104.6	1110.0	1102.7	1103.3	1091.8	1078.7	1060.4	1054.6	1027.1	1000.9	985.5
15°	1143.7	1143.3	1144.0	1137.9	1130.2	1128.3	1109.7	1089.5	1053.4	1039.0	1014.0
17.5°	1137.9	1142.4	1144.9	1143.0	1141.7	1138.9	1130.8	1115.8	1095.9	1071.6	1041.8
20°	1095.6	1102.0	1103.0	1110.4	1114.5	1120.0	1122.2	1118.7	1107.5	1087.9	1063.0
22.5°	1030.3	1031.0	1034.5	1047.0	1057.2	1072.9	1081.2	1096.9	1094.3	1087.3	1067.5
25°	952.8	949.6	960.8	966.6	987.4	1009.2	1024.9	1042.2	1057.5	1066.8	1060.7
27.5°	867.0	860.3	877.3	892.3	907.0	928.2	951.9	980.0	1001.5	1030.6	1037.7
30°	752.4	755.3	771.3	787.6	813.2	846.5	874.1	905.8	940.0	973.6	997.0
32.5°	628.8	641.9	650.6	677.8	699.6	737.7	781.2	822.8	867.7	907.0	946.4
35°	518.7	531.5	545.6	563.8	595.5	632.3	671.7	725.2	783.5	835.6	878.6
37.5°	448.9	446.6	455.3	468.7	495.9	527.6	574.4	628.8	698.6	756.6	814.2
40°	387.4	386.1	391.9	404.1	423.6	445.4	485.1	531.5	595.2	670.1	742.2
42.5°	345.1	346.4	349.0	356.7	368.5	385.5	412.7	450.5	507.5	576.9	655.7
45°	312.5	314.7	318.3	322.4	330.1	344.8	361.5	389.6	435.8	494.7	570.9
47.5°	286.9	287.5	291.4	295.2	299.7	308.6	323.4	341.3	376.5	426.8	495.0
50°	267.0	264.8	267.3	270.2	275.0	280.8	289.8	306.4	328.2	366.9	421.7
52.5°	242.7	243.3	245.6	246.2	250.4	256.1	264.1	274.4	293.6	321.8	364.4
55°	219.6	221.2	222.5	224.4	228.3	232.4	238.8	246.5	261.9	284.6	317.9
57.5°	197.9	198.5	199.5	203.6	205.9	209.7	216.1	223.2	233.4	251.0	277.3
60°	175.5	175.5	178.0	179.6	182.8	186.7	191.5	198.2	207.2	220.9	241.1
62.5°	155.0	154.6	155.3	158.2	160.4	163.9	168.7	174.2	182.5	194.3	210.0
65°	135.1	134.5	136.4	137.0	139.6	143.1	147.0	153.0	159.8	168.7	183.5
67.5°	115.3	116.2	117.5	118.8	120.1	124.2	126.8	131.3	137.0	144.7	155.0
70°	99.3	99.3	99.3	100.2	102.1	104.1	106.6	110.1	115.6	122.0	131.0
72.5°	81.3	82.6	83.9	82.9	85.5	86.4	89.6	91.2	96.4	99.9	107.6
75°	66.6	66.6	66.6	68.2	69.2	70.1	72.0	74.0	76.5	81.6	85.8
77.5°	52.5	52.2	52.5	52.8	54.1	55.4	56.0	57.6	60.2	62.8	66.6
80°	38.4	39.1	39.4	40.0	40.0	40.7	41.0	43.2	44.8	46.4	48.7
82.5°	27.5	27.5	27.5	27.5	27.9	28.2	29.1	29.5	29.8	31.1	32.7
85°	17.3	17.0	17.0	17.6	17.3	17.3	17.9	18.6	18.6	18.9	19.9
87.5°	8.3	8.3	8.6	8.3	8.3	8.6	8.6	8.3	8.6	9.0	9.3
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: P242315

CATALOG NUMBER: S122DRP-S485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1
2.5°	860.3	857.7	856.1	850.4	845.3	840.1	838.5	839.2	832.1	825.4	822.5
5°	888.2	881.8	875.7	867.0	856.8	845.6	839.8	835.3	824.1	812.0	804.9
7.5°	913.4	905.1	894.2	878.9	864.8	848.1	837.9	829.2	813.6	797.2	787.3
10°	936.2	923.7	908.6	888.8	870.5	849.1	834.0	819.0	799.8	779.3	766.5
12.5°	955.7	937.8	923.1	896.2	873.7	845.6	827.0	804.3	783.8	758.5	746.0
15°	989.0	958.0	929.8	901.0	874.4	836.9	817.1	788.6	762.0	731.9	717.5
17.5°	1013.7	980.0	936.5	901.6	872.1	832.1	803.6	769.7	739.6	706.3	687.1
20°	1034.2	994.1	946.4	902.9	865.7	818.4	786.7	751.8	714.9	676.2	655.1
22.5°	1046.3	1003.7	956.7	898.1	852.9	807.2	765.2	726.1	688.7	646.1	623.7
25°	1047.0	1008.5	958.6	895.8	842.7	790.5	742.5	705.3	660.2	621.1	588.8
27.5°	1036.4	1006.0	957.6	891.4	830.8	771.0	718.8	678.1	630.4	588.2	555.8
30°	1013.0	997.0	950.3	883.7	816.1	750.5	691.6	643.9	596.5	553.6	520.3
32.5°	976.8	976.5	936.8	872.8	800.4	724.5	663.1	614.7	560.9	519.0	487.6
35°	927.2	942.6	916.7	855.5	779.9	700.2	634.3	579.2	524.8	484.4	454.6
37.5°	864.1	899.7	889.4	832.4	753.7	674.3	602.6	544.9	492.7	451.1	422.0
40°	798.5	847.2	854.2	805.2	725.5	643.2	566.1	508.8	458.2	421.0	391.6
42.5°	728.1	787.0	809.4	772.6	694.8	610.6	533.4	473.5	423.6	387.7	362.4
45°	647.7	722.9	757.8	735.4	659.9	574.1	494.7	434.5	389.0	355.1	334.9
47.5°	575.0	656.7	701.2	690.6	622.4	537.2	458.8	400.2	355.1	327.5	308.6
50°	496.9	581.4	638.1	640.7	581.4	497.2	418.5	364.0	323.4	298.1	283.4
52.5°	429.0	508.8	571.8	588.2	535.6	455.6	382.3	328.2	293.6	270.9	258.1
55°	371.7	439.9	508.4	533.4	490.2	413.3	344.5	296.8	263.2	247.2	235.6
57.5°	317.3	377.2	442.2	468.4	440.9	373.3	306.7	264.8	236.3	221.9	212.9
60°	276.0	320.8	377.2	410.1	387.1	328.5	272.1	232.8	210.4	197.9	189.5
62.5°	237.6	276.0	321.5	350.9	341.0	286.6	237.6	203.9	185.4	173.9	168.4
65°	202.3	233.7	270.5	298.4	290.1	248.1	206.8	177.1	161.7	152.4	147.6
67.5°	172.3	196.3	222.5	248.1	241.1	210.0	175.1	151.1	139.3	131.0	128.1
70°	144.1	161.4	184.1	203.6	198.2	173.9	147.6	127.7	117.8	111.1	108.2
72.5°	117.2	130.6	146.6	161.7	158.5	139.3	118.5	104.7	97.7	91.6	89.3
75°	92.5	103.4	114.0	124.5	123.6	107.9	95.1	83.6	77.5	72.7	71.7
77.5°	72.4	79.1	86.8	93.5	91.9	81.6	71.1	64.0	59.2	56.0	55.7
80°	52.2	55.7	60.8	65.3	63.1	59.2	51.2	46.4	43.2	40.0	38.7
82.5°	34.3	37.8	40.3	42.3	40.7	37.1	33.0	30.1	28.5	26.6	26.3
85°	19.9	21.8	23.1	23.7	23.1	20.8	18.6	17.3	15.7	14.7	14.4
87.5°	9.6	9.6	9.6	10.2	9.3	9.3	8.0	7.0	6.7	6.4	5.8
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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CATALOG NUMBER: S122DRP-S485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1	833.1
2.5°	819.3	817.4	810.7	807.2	801.4	795.9	792.4	794.0	795.3	794.7	793.7
5°	798.5	792.4	783.1	775.1	769.4	758.8	754.3	752.1	750.2	747.9	745.7
7.5°	775.5	766.8	753.7	743.4	733.2	719.7	713.0	709.2	705.0	700.2	695.7
10°	750.5	737.0	722.9	706.9	694.1	682.3	671.7	664.7	658.3	652.2	647.7
12.5°	724.2	708.2	690.0	666.6	652.2	633.9	634.6	620.8	609.9	606.7	601.3
15°	696.1	674.3	652.2	626.3	615.0	599.7	590.1	580.5	571.8	565.7	564.1
17.5°	665.3	636.2	614.7	595.5	577.3	561.6	553.3	545.6	538.2	529.2	528.9
20°	629.1	604.8	580.8	564.5	545.6	529.6	518.7	511.0	504.9	500.1	495.9
22.5°	594.9	567.7	546.2	528.0	509.4	497.2	489.2	481.9	477.1	471.6	467.8
25°	557.7	536.9	512.9	492.7	477.4	469.1	462.0	455.6	452.4	448.9	444.4
27.5°	526.0	503.0	479.3	463.6	449.5	442.2	436.7	431.9	429.0	426.8	423.9
30°	492.1	468.7	451.1	435.8	424.5	417.2	414.0	411.4	407.9	406.6	405.3
32.5°	459.4	439.0	424.5	411.7	401.2	397.0	394.1	391.9	389.3	388.0	385.2
35°	429.0	411.4	396.7	389.3	380.7	376.5	374.3	371.1	368.5	367.2	366.9
37.5°	399.9	383.9	374.0	364.0	359.9	357.6	354.4	352.2	351.2	350.9	350.6
40°	371.7	359.2	350.6	342.9	341.3	337.5	334.9	333.0	333.0	333.3	333.0
42.5°	346.1	335.2	327.9	321.5	319.5	317.6	315.0	315.4	316.0	317.3	316.0
45°	320.2	312.2	306.7	303.5	300.0	297.8	297.4	298.4	298.7	299.0	300.0
47.5°	295.8	290.7	285.6	281.8	280.2	279.8	279.2	280.8	282.4	282.7	284.3
50°	274.7	268.6	264.5	262.2	260.9	260.3	260.9	262.9	264.1	265.7	266.7
52.5°	251.0	247.2	244.6	243.0	242.7	243.3	243.3	245.6	247.8	248.1	248.5
55°	229.6	226.4	225.7	222.8	224.1	223.8	225.4	226.7	228.6	230.5	230.8
57.5°	207.8	204.9	203.0	203.3	203.6	204.9	206.2	208.4	210.7	212.9	212.9
60°	186.0	184.7	183.8	183.8	184.4	186.3	187.9	190.2	191.5	192.7	193.7
62.5°	166.2	164.9	163.9	164.6	166.5	167.4	169.4	170.3	171.6	172.9	173.2
65°	145.0	144.4	145.4	146.0	146.3	147.9	150.2	151.1	152.4	153.0	155.3
67.5°	125.8	125.8	125.5	126.5	128.4	128.7	131.0	133.5	133.5	134.8	136.4
70°	106.3	106.9	107.6	108.2	109.8	110.5	112.1	113.0	114.3	115.3	116.2
72.5°	88.4	88.4	89.0	88.7	90.0	91.6	92.8	93.8	95.1	96.4	97.3
75°	70.8	70.8	71.4	71.7	73.3	74.9	74.6	75.2	76.5	77.8	78.4
77.5°	54.7	54.1	54.7	55.1	55.7	57.0	57.3	58.3	59.9	59.6	60.2
80°	39.4	38.4	39.4	39.7	39.7	41.3	41.3	41.9	42.9	41.9	42.9
82.5°	25.3	25.0	25.6	25.6	26.3	25.9	26.6	26.6	27.5	27.2	27.5
85°	14.1	13.8	14.1	13.8	14.1	14.4	14.4	14.1	14.1	14.7	13.8
87.5°	5.4	5.1	4.8	4.8	4.5	4.2	3.8	3.8	3.8	3.2	3.2
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: P242315

CATALOG NUMBER: S122DRP-S485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	833.1	833.1	833.1	833.1
2.5°	790.5	789.9	789.9	787.0
5°	741.2	740.2	738.6	740.2
7.5°	694.5	690.3	689.6	686.4
10°	642.3	639.7	639.4	633.3
12.5°	602.6	595.5	597.1	594.2
15°	555.5	555.5	554.2	548.8
17.5°	521.9	521.6	518.7	520.6
20°	492.4	490.5	486.7	486.7
22.5°	464.6	464.9	460.7	462.3
25°	444.1	441.5	439.6	440.6
27.5°	422.9	422.0	421.7	418.8
30°	405.0	401.8	402.5	400.9
32.5°	384.5	383.9	382.9	381.6
35°	366.3	366.6	365.0	365.6
37.5°	349.9	351.2	350.3	350.3
40°	333.9	333.9	333.9	334.9
42.5°	318.6	317.9	317.3	317.0
45°	300.6	301.6	301.9	300.3
47.5°	285.0	285.3	285.0	286.9
50°	268.3	267.7	268.3	267.7
52.5°	250.7	251.0	250.4	250.4
55°	232.1	232.8	232.4	232.4
57.5°	213.2	213.6	214.2	212.6
60°	193.4	195.0	194.7	194.0
62.5°	175.1	175.5	175.5	175.5
65°	156.2	156.9	155.9	156.9
67.5°	135.8	136.1	136.7	137.0
70°	116.9	116.5	117.5	118.5
72.5°	97.0	98.0	97.3	98.0
75°	77.8	78.8	78.4	79.4
77.5°	59.6	59.9	59.9	60.2
80°	42.9	42.3	41.6	42.9
82.5°	26.6	27.2	26.6	26.3
85°	13.8	13.4	12.8	12.8
87.5°	3.2	2.9	2.9	2.6
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242315
 CATALOG NUMBER: S122DRP-S485D940-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	17.90	19.42	18.27	19.73	20.05	21.15	22.67	21.52	22.98	23.30
	3H	19.31	20.67	19.69	21.00	21.36	22.16	23.52	22.54	23.85	24.21
	4H	19.81	21.09	20.21	21.44	21.82	22.48	23.76	22.88	24.11	24.49
	6H	20.17	21.35	20.58	21.71	22.10	22.68	23.86	23.09	24.22	24.61
	8H	20.28	21.40	20.70	21.79	22.19	22.72	23.84	23.15	24.23	24.63
	12H	20.35	21.42	20.78	21.81	22.24	22.74	23.81	23.17	24.20	24.62
4H	2H	18.76	20.04	19.16	20.39	20.76	21.36	22.64	21.76	22.99	23.37
	3H	20.31	21.38	20.73	21.77	22.18	22.71	23.77	23.12	24.17	24.57
	4H	20.91	21.86	21.34	22.28	22.71	23.21	24.17	23.64	24.58	25.02
	6H	21.35	22.18	21.81	22.62	23.08	23.55	24.37	24.00	24.82	25.28
	8H	21.49	22.27	21.96	22.71	23.18	23.62	24.40	24.08	24.84	25.31
	12H	21.60	22.29	22.08	22.77	23.24	23.66	24.35	24.14	24.83	25.30
8H	4H	21.34	22.11	21.80	22.56	23.03	23.34	24.11	23.80	24.56	25.03
	6H	21.87	22.51	22.37	23.00	23.48	23.78	24.42	24.27	24.91	25.39
	8H	22.06	22.64	22.58	23.15	23.64	23.91	24.48	24.42	24.99	25.48
	12H	22.22	22.73	22.73	23.22	23.79	24.00	24.51	24.51	25.00	25.57
12H	4H	21.40	22.09	21.88	22.57	23.04	23.33	24.03	23.82	24.50	24.98
	6H	21.95	22.52	22.46	23.03	23.52	23.78	24.35	24.29	24.86	25.35
	8H	22.19	22.70	22.70	23.19	23.76	23.96	24.46	24.47	24.95	25.52