

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: P242418

Luminaire Tested: S122RDRP-S485D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242418  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122RDRP-S485D940-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

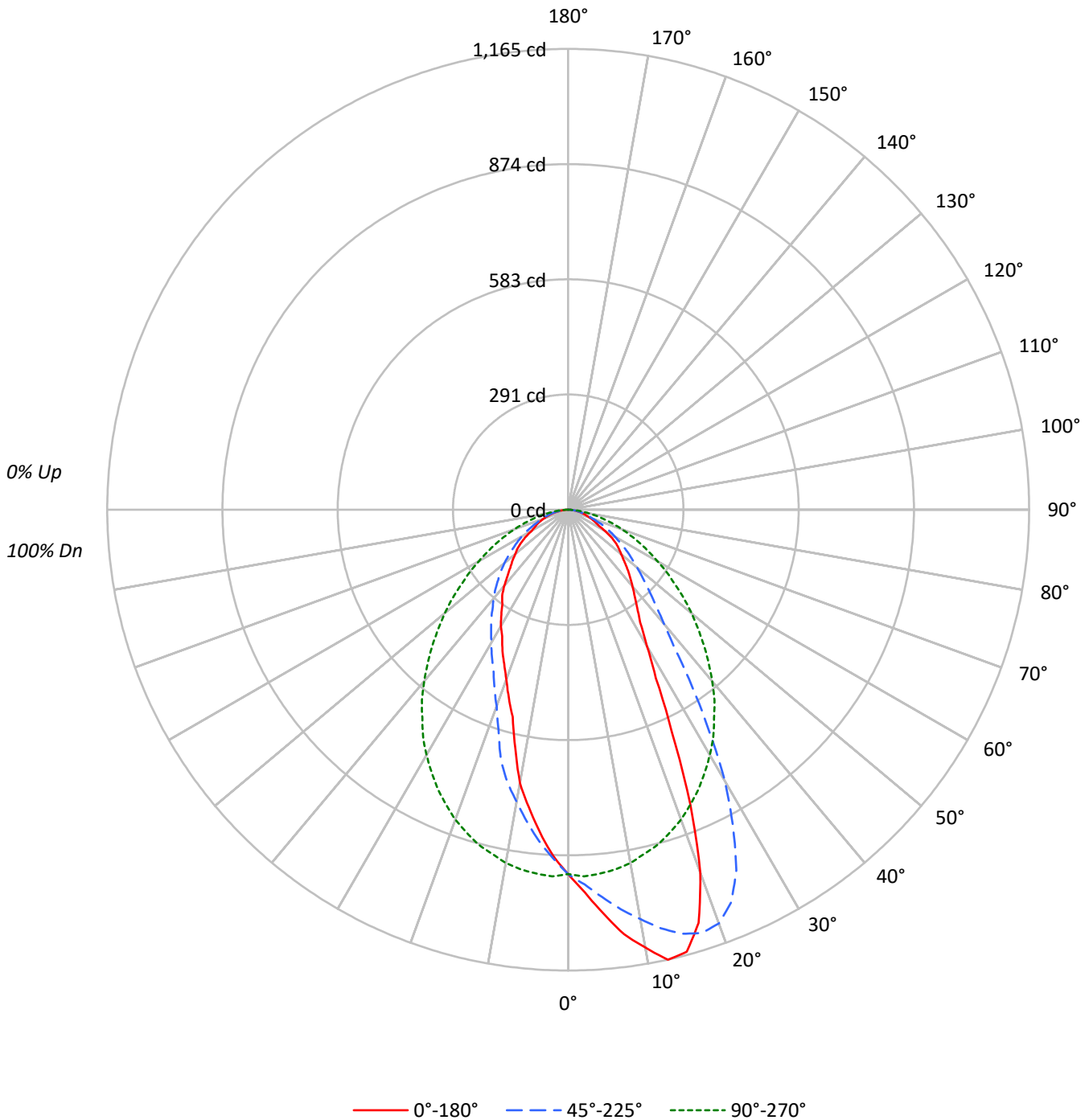
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1592.2 lumens  
Efficiency: N/A  
Efficacy: 84.7 lumens/watt  
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02  
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 (A<sub>in</sub>): 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	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89					87				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78					76				
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68					66				
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60					59				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54					52				
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49					47				
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44					42				
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40					39				
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37					35				
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34					33				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	17551	17551	17551	17551	17551
5°	19600	18794	17660	16094	15660
10°	21748	20330	17537	14502	13574
15°	22816	21883	17280	12936	10694
20°	19780	22559	16899	10715	9253
25°	12974	21135	16378	9380	8262
30°	8732	17400	15746	8540	7478
35°	7071	12708	14949	7876	6746
40°	6288	9337	14084	7268	6241
45°	5692	7761	13065	6734	5571
50°	5180	6727	12058	6223	5162
55°	4868	5954	10939	5626	4805
60°	4072	5185	9916	5158	4027
65°	3434	4615	9005	4588	3894
70°	3174	3676	8042	4049	3676
75°	2966	3319	6999	3820	3393
80°	2742	3017	5759	3335	3017
85°	2513	2579	4546	2666	2666

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 70°  
 Vertical Angle: 45°  
 Luminance: 19034 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.4	5.5
10°-20°	243.9	15.3
20°-30°	313.9	19.7
30°-40°	297.8	18.7
40°-50°	255.2	16.0
50°-60°	194.4	12.2
60°-70°	122.6	7.7
70°-80°	61.2	3.8
80°-90°	15.7	1.0
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°	645.3	40.5
0°-40°	943.1	59.2
0°-60°	1392.7	87.5
0°-90°	1592.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1592.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	921	921	921	921	921	
5°	1025	983	924	842	819	101
15°	1157	1110	876	656	542	315
25°	617	1006	779	446	393	291
35°	304	546	643	339	290	194
45°	211	288	485	250	207	163
55°	147	179	329	169	145	129
65°	76	102	200	102	86	77
75°	40	45	95	52	46	43
85°	12	12	21	12	12	13
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°	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4
2.5°	968.1	969.1	970.1	967.8	967.8	965.9	961.7	958.5	949.6	948.3	948.3
5°	1025.1	1024.5	1025.8	1021.6	1015.8	1014.6	1008.5	1000.5	992.2	982.9	980.9
7.5°	1082.8	1078.9	1077.3	1079.2	1073.2	1064.8	1054.6	1045.0	1030.6	1018.7	1011.4
10°	1124.4	1134.9	1128.5	1117.3	1119.6	1104.5	1096.5	1082.8	1071.2	1051.1	1046.6
12.5°	1165.4	1167.9	1167.0	1161.8	1157.7	1148.4	1136.9	1125.3	1101.6	1084.0	1065.5
15°	1157.0	1163.1	1164.7	1162.8	1164.4	1163.8	1158.0	1148.1	1129.5	1109.7	1092.4
17.5°	1095.6	1102.6	1108.4	1113.5	1121.5	1137.2	1142.0	1143.9	1136.2	1122.1	1107.7
20°	975.8	968.8	998.2	1013.3	1026.1	1058.1	1085.6	1096.2	1113.2	1112.9	1109.7
22.5°	806.1	810.0	837.5	856.1	899.6	931.6	964.0	1011.0	1047.9	1075.1	1091.7
25°	617.3	629.4	657.3	681.6	723.2	782.8	836.9	899.6	958.9	1005.6	1050.1
27.5°	480.2	481.8	507.1	531.8	557.4	608.9	681.3	756.5	841.0	901.9	978.7
30°	397.0	395.1	404.4	418.1	439.3	477.0	528.3	601.9	686.1	791.1	884.6
32.5°	338.1	338.7	345.1	354.4	371.1	393.5	424.5	480.9	559.3	662.1	775.7
35°	304.1	303.8	308.9	316.3	323.7	340.0	364.0	395.4	450.1	546.5	658.6
37.5°	276.0	277.6	279.8	284.6	293.6	303.2	318.2	340.3	381.9	441.8	542.3
40°	252.9	253.6	257.1	260.9	265.7	272.8	284.6	301.6	330.1	375.5	444.4
42.5°	231.8	232.4	234.7	238.2	241.7	248.8	258.0	272.1	293.9	326.9	380.7
45°	211.3	211.3	213.5	215.1	219.3	225.7	233.7	245.9	261.9	288.1	325.9
47.5°	191.5	191.5	193.1	195.9	198.8	203.9	212.3	222.5	234.0	255.5	289.1
50°	174.8	175.1	176.1	178.3	179.9	184.4	190.5	199.1	211.3	227.0	253.9
52.5°	161.4	161.0	162.3	163.0	163.9	166.8	171.0	178.3	188.9	202.0	223.1
55°	146.6	145.3	147.3	148.9	149.8	151.1	153.7	158.5	167.8	179.3	195.9
57.5°	129.3	128.7	129.7	131.3	134.1	137.3	138.9	142.1	147.0	155.9	173.5
60°	106.9	106.9	109.8	110.8	114.3	118.8	123.3	125.8	130.6	136.1	148.2
62.5°	87.1	87.4	88.4	89.3	90.9	96.7	103.4	109.8	114.3	119.4	126.5
65°	76.2	76.8	76.8	77.5	78.8	80.0	82.6	87.1	95.1	102.4	108.5
67.5°	66.6	66.6	66.9	67.6	67.9	69.5	70.4	72.7	74.3	82.6	90.9
70°	57.0	57.9	57.6	58.3	58.6	59.2	60.5	61.5	64.4	66.0	70.4
72.5°	48.0	48.7	48.7	49.0	49.9	49.9	50.9	51.9	53.5	54.7	56.7
75°	40.3	40.0	40.3	41.0	41.3	41.6	41.6	42.9	43.9	45.1	46.7
77.5°	32.7	33.0	33.0	33.0	33.0	33.6	33.6	34.3	35.2	35.9	36.8
80°	25.0	25.3	25.0	25.3	25.6	25.9	25.6	25.9	26.9	27.5	27.5
82.5°	17.9	17.9	18.2	18.2	18.2	18.2	18.9	18.9	19.5	19.2	19.5
85°	11.5	11.2	11.2	11.2	11.5	11.8	11.5	11.5	11.8	11.8	11.8
87.5°	5.1	5.4	5.4	5.4	5.4	5.4	5.4	5.8	5.4	5.8	5.4
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°	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4
2.5°	948.9	946.4	944.1	938.4	935.5	929.1	928.1	927.8	919.5	911.5	909.2
5°	975.8	970.7	963.0	954.1	944.8	935.2	928.8	923.6	910.8	898.7	891.6
7.5°	1002.4	993.1	980.9	965.6	952.5	937.1	926.5	916.9	899.3	883.3	872.7
10°	1032.8	1014.9	997.3	973.9	955.7	937.7	921.1	906.7	886.2	863.1	846.8
12.5°	1051.7	1031.5	1005.6	982.9	957.9	933.9	910.2	890.7	865.7	841.7	821.5
15°	1068.4	1047.2	1017.8	985.1	954.7	924.9	899.3	876.3	844.9	816.4	792.7
17.5°	1083.7	1054.6	1024.2	986.4	952.8	916.6	884.3	855.4	821.2	787.6	760.7
20°	1090.4	1061.6	1025.1	987.4	945.7	901.2	865.7	833.7	796.2	758.8	726.7
22.5°	1086.3	1065.5	1023.8	976.8	933.9	886.8	845.5	807.1	764.5	726.1	687.7
25°	1064.5	1056.8	1018.4	969.1	920.4	866.3	819.9	779.3	731.9	690.9	650.6
27.5°	1024.5	1035.7	1008.5	955.0	902.5	844.2	793.7	747.9	699.5	653.8	613.4
30°	961.1	999.2	989.0	940.3	879.8	822.8	764.2	715.9	663.4	616.0	576.3
32.5°	874.3	943.5	958.5	919.8	856.7	792.7	730.6	682.6	627.2	576.6	538.2
35°	781.2	875.3	918.5	892.6	829.8	762.3	698.9	642.9	587.8	538.5	500.1
37.5°	670.7	796.2	862.8	859.9	800.1	731.2	662.4	607.0	550.3	501.7	461.7
40°	563.8	702.7	796.5	817.4	768.7	692.8	623.0	566.4	511.3	463.9	416.2
42.5°	467.7	606.0	726.7	766.8	730.6	655.4	585.2	525.4	472.2	428.0	379.1
45°	393.8	514.8	641.9	706.6	685.1	615.3	541.4	485.0	434.8	396.0	349.3
47.5°	341.0	429.0	556.7	641.3	638.7	572.4	498.8	444.7	397.3	361.5	321.8
50°	297.1	371.4	475.4	574.7	583.0	529.5	460.4	406.9	363.4	325.3	294.9
52.5°	257.7	315.7	406.6	500.7	528.3	483.8	417.2	368.8	326.9	292.6	267.6
55°	224.4	271.8	342.9	431.9	467.7	435.1	375.5	329.4	295.2	265.7	243.3
57.5°	195.3	232.4	291.7	366.3	406.9	384.8	333.9	295.8	265.4	237.9	219.9
60°	168.1	197.2	245.6	305.4	351.5	337.1	295.2	260.3	235.3	212.3	195.6
62.5°	142.5	166.5	206.2	252.0	293.3	289.4	257.1	229.2	208.1	187.6	174.2
65°	118.8	137.0	169.4	207.5	241.4	244.3	219.6	199.8	180.2	163.6	151.1
67.5°	98.3	110.8	135.1	168.7	194.7	203.6	187.0	171.0	155.0	141.5	130.3
70°	79.7	89.3	106.0	131.9	155.3	164.9	156.2	144.4	130.9	120.4	111.1
72.5°	60.8	70.1	81.3	98.6	117.8	128.4	126.8	119.1	108.9	100.5	91.9
75°	48.7	51.5	59.9	72.7	88.4	97.3	99.6	95.1	86.4	79.7	74.6
77.5°	37.8	39.7	44.2	51.9	62.8	70.8	74.3	73.6	67.2	62.8	57.9
80°	28.8	29.8	31.7	34.6	42.3	50.3	52.5	52.5	48.3	46.7	41.9
82.5°	20.2	20.8	21.8	23.1	25.6	32.3	34.9	35.5	33.3	31.1	27.5
85°	12.5	12.2	12.8	13.8	14.4	16.3	20.2	20.8	20.2	17.6	16.6
87.5°	5.4	5.8	5.8	5.4	5.8	6.1	7.7	9.3	8.0	7.0	6.4
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°	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4
2.5°	905.1	902.8	898.7	892.3	888.4	881.7	877.2	879.8	880.4	879.8	879.1
5°	883.9	877.2	867.9	859.0	850.6	841.7	836.6	834.3	829.8	827.3	826.0
7.5°	859.9	850.0	836.9	822.5	809.0	796.2	790.5	786.0	777.7	773.2	769.0
10°	832.4	814.1	801.0	780.5	768.0	749.8	737.3	737.6	725.1	718.1	713.0
12.5°	802.0	781.5	757.5	739.6	721.0	707.2	691.5	683.8	670.4	663.7	647.7
15°	767.7	744.4	721.3	696.3	678.7	656.0	634.2	607.7	586.2	567.6	562.5
17.5°	731.2	702.4	679.7	654.1	626.5	585.2	558.3	542.0	529.2	519.6	511.9
20°	693.5	664.0	639.3	595.2	554.5	528.6	510.0	498.2	484.7	474.1	468.4
22.5°	653.8	622.7	586.8	536.3	506.8	487.3	471.3	457.2	449.2	441.5	436.4
25°	616.6	583.0	527.6	493.7	468.1	446.3	434.8	426.4	416.8	405.6	400.5
27.5°	577.9	524.4	482.5	457.8	431.6	417.8	407.9	394.1	385.5	381.3	375.5
30°	533.4	479.9	448.9	421.3	404.0	388.3	376.2	369.1	360.8	352.2	348.6
32.5°	483.8	443.7	414.3	392.5	374.9	362.1	353.1	340.6	335.2	330.7	322.4
35°	444.4	412.0	384.8	366.3	349.6	338.7	327.5	320.8	309.9	305.4	302.5
37.5°	408.5	380.3	359.9	339.4	326.6	313.8	307.3	296.1	292.0	284.9	279.2
40°	379.1	351.5	332.0	316.0	301.3	292.3	283.7	275.0	268.0	265.1	257.7
42.5°	349.0	327.8	308.3	290.4	281.7	272.1	260.6	254.8	247.5	242.4	238.5
45°	321.8	301.9	285.3	270.8	260.0	250.0	243.0	232.4	228.3	219.0	215.1
47.5°	297.7	278.5	262.5	248.4	237.6	231.8	221.5	212.3	206.5	200.1	194.7
50°	271.8	256.4	241.1	228.9	219.3	210.0	199.5	195.3	185.0	182.2	179.3
52.5°	248.1	233.7	219.9	208.1	198.5	189.5	180.6	174.8	168.7	165.8	163.9
55°	226.3	212.3	198.8	188.3	178.6	169.4	163.6	156.9	153.7	151.4	148.9
57.5°	203.9	191.1	180.6	169.7	160.1	152.4	145.3	141.5	138.3	135.7	132.2
60°	182.8	170.6	161.4	151.4	141.5	135.4	130.3	125.5	121.7	117.2	115.9
62.5°	160.4	150.2	141.8	132.2	123.9	118.5	113.7	109.2	104.4	97.3	95.4
65°	140.2	131.9	122.9	114.9	107.3	101.8	94.8	89.6	87.7	87.1	86.8
67.5°	121.7	113.7	106.0	97.6	90.6	84.5	80.4	79.7	78.4	78.1	77.2
70°	103.1	95.7	88.0	80.4	73.6	72.7	71.4	70.1	68.5	67.9	67.2
72.5°	86.4	78.8	71.1	65.3	63.4	62.1	60.8	59.5	58.6	57.9	57.6
75°	68.8	61.8	56.7	54.4	52.8	51.9	49.9	49.0	48.3	47.4	47.1
77.5°	52.5	48.0	45.5	44.2	42.3	41.3	40.0	39.1	38.1	38.1	37.5
80°	37.8	35.9	34.3	32.3	31.7	30.4	30.1	29.1	29.5	28.5	28.5
82.5°	27.2	24.7	23.4	22.7	22.1	21.1	20.8	20.5	20.5	19.8	19.8
85°	15.0	14.4	13.8	13.1	13.1	12.2	12.5	12.2	12.2	11.5	11.2
87.5°	6.1	5.8	5.1	5.1	5.1	4.8	4.8	4.5	4.5	4.5	4.2
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: P242418

CATALOG NUMBER: S122RDRP-S485D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	921.4	921.4	921.4	921.4
2.5°	875.6	876.3	875.3	875.9
5°	824.4	820.6	819.9	819.0
7.5°	763.9	763.6	761.6	759.4
10°	705.9	704.3	704.0	701.8
12.5°	638.1	625.6	624.3	617.9
15°	554.8	552.9	546.5	542.3
17.5°	508.4	502.0	499.8	498.8
20°	463.9	458.1	457.2	456.5
22.5°	433.2	427.1	424.2	422.0
25°	397.3	395.1	393.8	393.1
27.5°	369.1	363.4	362.7	361.1
30°	345.8	344.2	341.9	340.0
32.5°	318.2	317.0	315.0	314.4
35°	299.3	294.9	292.9	290.1
37.5°	278.5	276.0	272.8	274.1
40°	253.6	252.0	251.3	251.0
42.5°	233.7	228.6	226.7	226.7
45°	213.5	209.4	206.5	206.8
47.5°	191.8	192.1	190.2	190.8
50°	177.0	175.1	173.8	174.2
52.5°	163.0	161.4	160.4	162.0
55°	147.3	145.3	145.0	144.7
57.5°	130.3	129.3	127.7	126.8
60°	111.7	109.2	106.0	105.7
62.5°	94.8	94.8	94.8	94.8
65°	86.1	85.8	86.1	86.4
67.5°	77.2	76.5	75.9	76.2
70°	66.6	66.3	66.0	66.0
72.5°	56.3	56.3	56.0	55.7
75°	46.7	46.1	46.1	46.1
77.5°	37.5	37.1	36.8	36.5
80°	28.2	27.9	27.5	27.5
82.5°	19.8	19.5	19.5	19.2
85°	11.5	11.8	11.5	12.2
87.5°	4.2	3.8	4.2	3.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242418  
 CATALOG NUMBER: S122RDRP-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	15.49	16.94	15.85	17.25	17.57	21.39	22.84	21.75	23.15	23.47
	3H	16.60	17.90	16.98	18.23	18.59	22.55	23.84	22.92	24.17	24.54
	4H	17.06	18.27	17.46	18.62	19.00	22.94	24.16	23.34	24.51	24.89
	6H	17.42	18.54	17.84	18.91	19.31	23.21	24.33	23.62	24.70	25.09
	8H	17.55	18.61	17.97	19.00	19.40	23.28	24.34	23.71	24.73	25.14
	12H	17.63	18.65	18.06	19.03	19.46	23.31	24.33	23.75	24.72	25.15
4H	2H	16.20	17.41	16.60	17.76	18.14	21.35	22.57	21.75	22.92	23.30
	3H	17.47	18.47	17.88	18.88	19.28	22.65	23.65	23.06	24.06	24.46
	4H	18.02	18.92	18.45	19.34	19.78	23.14	24.05	23.58	24.46	24.90
	6H	18.49	19.27	18.95	19.72	20.18	23.53	24.31	23.99	24.76	25.22
	8H	18.65	19.38	19.12	19.83	20.30	23.64	24.37	24.11	24.82	25.29
	12H	18.77	19.42	19.25	19.90	20.37	23.72	24.37	24.20	24.85	25.32
8H	4H	18.36	19.09	18.83	19.54	20.01	23.13	23.86	23.59	24.30	24.77
	6H	18.93	19.54	19.43	20.03	20.51	23.55	24.16	24.05	24.65	25.13
	8H	19.16	19.70	19.67	20.21	20.70	23.70	24.24	24.22	24.76	25.25
	12H	19.34	19.82	19.85	20.31	20.88	23.83	24.30	24.34	24.80	25.36
12H	4H	18.40	19.06	18.89	19.54	20.01	23.10	23.76	23.59	24.24	24.71
	6H	18.99	19.54	19.51	20.05	20.54	23.53	24.07	24.04	24.58	25.07
	8H	19.27	19.75	19.78	20.24	20.81	23.71	24.19	24.22	24.68	25.25