

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: P242393

Luminaire Tested: S122RDRP-S485D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242393  
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-S485D830-X4F0-XX-UDD-A-W  
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

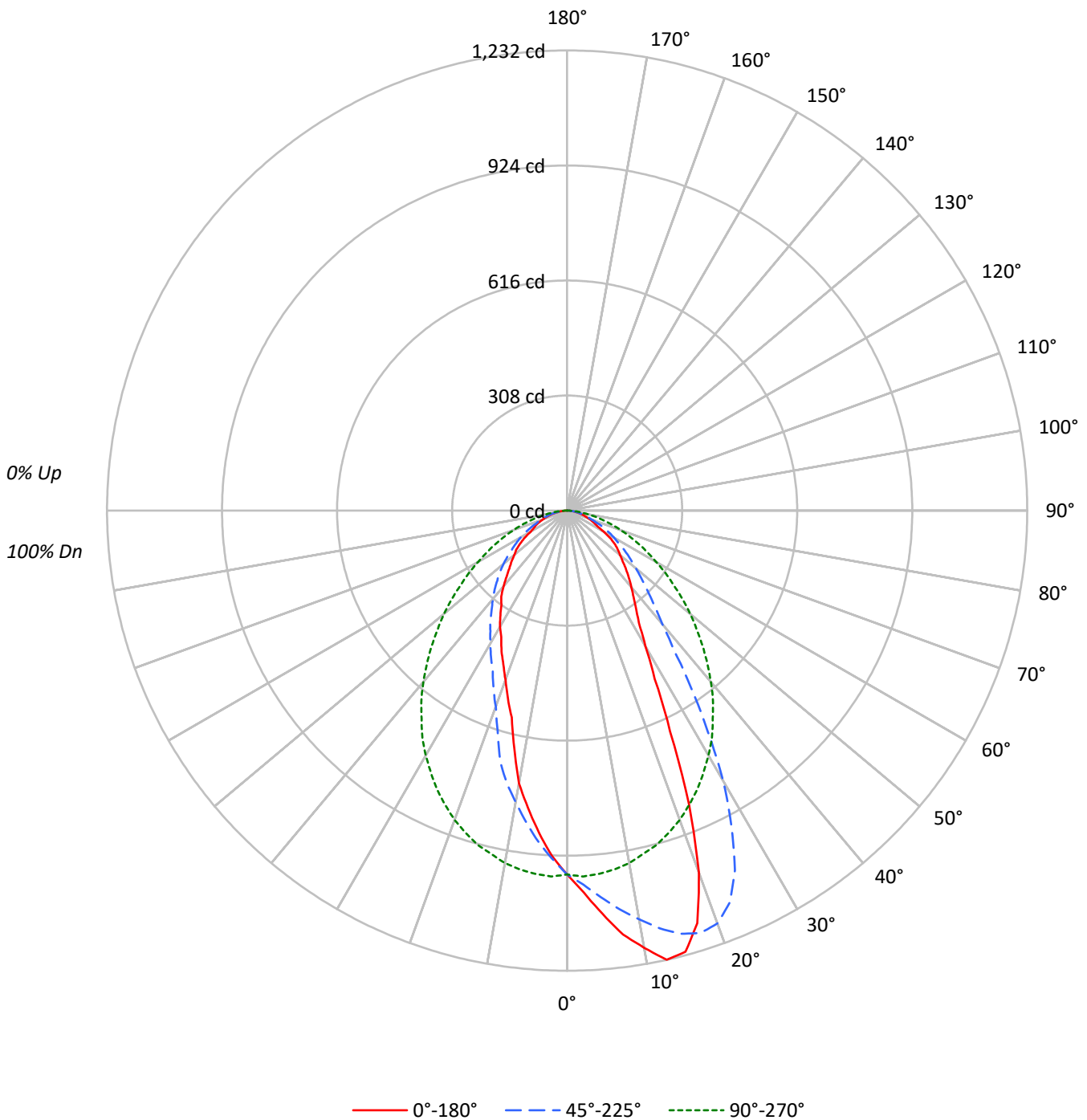
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1683.0 lumens  
Efficiency: N/A  
Efficacy: 89.5 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 (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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### 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	18551	18551	18551	18551	18551
5°	20719	19864	18667	17011	16551
10°	22987	21488	18537	15328	14348
15°	24117	23129	18264	13674	11305
20°	20909	23844	17862	11325	9782
25°	13711	22339	17312	9914	8735
30°	9229	18392	16643	9029	7905
35°	7476	13433	15800	8325	7129
40°	6646	9869	14884	7683	6597
45°	6015	8205	13811	7120	5889
50°	5476	7109	12745	6579	5455
55°	5147	6293	11563	5944	5081
60°	4305	5478	10480	5451	4255
65°	3628	4881	9519	4850	4119
70°	3353	3882	8499	4277	3882
75°	3135	3510	7396	4033	3584
80°	2896	3192	6088	3521	3192
85°	2666	2732	4808	2819	2819

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 70°  
 Vertical Angle: 45°  
 Luminance: 20120 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.4	5.5
10°-20°	257.8	15.3
20°-30°	331.8	19.7
30°-40°	314.8	18.7
40°-50°	269.7	16.0
50°-60°	205.5	12.2
60°-70°	129.6	7.7
70°-80°	64.7	3.8
80°-90°	16.6	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°	682.1	40.5
0°-40°	996.9	59.2
0°-60°	1472.1	87.5
0°-90°	1683.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1683.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	974	974	974	974	974	
5°	1084	1039	976	890	866	107
15°	1223	1173	926	693	573	332
25°	652	1063	824	472	416	308
35°	322	578	680	358	307	205
45°	223	305	513	264	219	173
55°	155	190	348	179	153	136
65°	80	108	211	108	91	81
75°	43	48	100	55	49	45
85°	12	12	22	13	13	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°	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9
2.5°	1023.3	1024.3	1025.4	1023.0	1023.0	1021.0	1016.6	1013.2	1003.7	1002.4	1002.4
5°	1083.6	1082.9	1084.2	1079.8	1073.8	1072.4	1066.0	1057.5	1048.7	1038.9	1036.9
7.5°	1144.5	1140.4	1138.7	1140.8	1134.3	1125.5	1114.7	1104.5	1089.3	1076.8	1069.0
10°	1188.5	1199.6	1192.9	1181.0	1183.4	1167.5	1159.0	1144.5	1132.3	1111.0	1106.2
12.5°	1231.8	1234.5	1233.5	1228.1	1223.7	1213.9	1201.7	1189.5	1164.4	1145.8	1126.2
15°	1223.0	1229.4	1231.1	1229.1	1230.8	1230.1	1224.0	1213.5	1193.9	1172.9	1154.6
17.5°	1158.0	1165.5	1171.6	1177.0	1185.4	1202.0	1207.1	1209.1	1201.0	1186.1	1170.9
20°	1031.5	1024.0	1055.1	1071.0	1084.6	1118.4	1147.5	1158.7	1176.6	1176.3	1172.9
22.5°	852.1	856.2	885.3	904.9	950.9	984.8	1018.9	1068.7	1107.6	1136.4	1154.0
25°	652.4	665.3	694.7	720.5	764.5	827.4	884.6	950.9	1013.5	1062.9	1110.0
27.5°	507.6	509.3	536.0	562.1	589.2	643.6	720.1	799.6	889.0	953.3	1034.5
30°	419.6	417.6	427.4	442.0	464.3	504.2	558.4	636.2	725.2	836.2	935.0
32.5°	357.4	358.0	364.8	374.6	392.2	415.9	448.7	508.3	591.2	699.8	820.0
35°	321.5	321.1	326.6	334.3	342.1	359.4	384.8	417.9	475.8	577.7	696.1
37.5°	291.7	293.4	295.8	300.8	310.3	320.5	336.4	359.7	403.7	467.0	573.3
40°	267.3	268.0	271.7	275.8	280.9	288.3	300.8	318.8	348.9	396.9	469.7
42.5°	245.0	245.7	248.0	251.8	255.5	262.9	272.8	287.6	310.7	345.5	402.4
45°	223.3	223.3	225.7	227.4	231.8	238.6	247.0	259.9	276.8	304.6	344.5
47.5°	202.4	202.4	204.1	207.1	210.1	215.6	224.4	235.2	247.4	270.0	305.6
50°	184.8	185.1	186.1	188.5	190.2	194.9	201.3	210.5	223.3	239.9	268.4
52.5°	170.6	170.2	171.6	172.2	173.3	176.3	180.7	188.5	199.7	213.5	235.9
55°	155.0	153.6	155.7	157.4	158.4	159.7	162.4	167.5	177.3	189.5	207.1
57.5°	136.7	136.0	137.1	138.7	141.8	145.2	146.9	150.3	155.3	164.8	183.4
60°	113.0	113.0	116.1	117.1	120.8	125.5	130.3	133.0	138.1	143.8	156.7
62.5°	92.0	92.4	93.4	94.4	96.1	102.2	109.3	116.1	120.8	126.2	133.7
65°	80.5	81.2	81.2	81.9	83.2	84.6	87.3	92.0	100.5	108.3	114.7
67.5°	70.4	70.4	70.7	71.4	71.7	73.4	74.4	76.8	78.5	87.3	96.1
70°	60.2	61.3	60.9	61.6	61.9	62.6	64.0	65.0	68.0	69.7	74.4
72.5°	50.8	51.4	51.4	51.8	52.8	52.8	53.8	54.8	56.5	57.9	59.9
75°	42.6	42.3	42.6	43.3	43.7	44.0	44.0	45.3	46.4	47.7	49.4
77.5°	34.5	34.9	34.9	34.9	34.9	35.5	35.5	36.2	37.2	37.9	38.9
80°	26.4	26.7	26.4	26.7	27.1	27.4	27.1	27.4	28.4	29.1	29.1
82.5°	19.0	19.0	19.3	19.3	19.3	19.3	20.0	20.0	20.6	20.3	20.6
85°	12.2	11.8	11.8	11.8	12.2	12.5	12.2	12.2	12.5	12.5	12.5
87.5°	5.4	5.8	5.8	5.8	5.8	5.8	5.8	6.1	5.8	6.1	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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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9
2.5°	1003.0	1000.3	998.0	991.9	988.8	982.0	981.0	980.7	971.9	963.4	961.1
5°	1031.5	1026.0	1017.9	1008.4	998.6	988.5	981.7	976.3	962.8	949.9	942.5
7.5°	1059.5	1049.7	1036.9	1020.6	1006.7	990.5	979.3	969.2	950.6	933.7	922.5
10°	1091.7	1072.7	1054.1	1029.4	1010.1	991.2	973.6	958.4	936.7	912.3	895.1
12.5°	1111.7	1090.3	1062.9	1038.9	1012.5	987.1	962.1	941.4	915.0	889.7	868.3
15°	1129.3	1106.9	1075.8	1041.3	1009.1	977.6	950.6	926.2	893.0	862.9	837.9
17.5°	1145.5	1114.7	1082.6	1042.6	1007.1	968.8	934.7	904.2	868.0	832.5	804.0
20°	1152.6	1122.1	1083.6	1043.6	999.6	952.6	915.0	881.2	841.6	802.0	768.2
22.5°	1148.2	1126.2	1082.2	1032.5	987.1	937.4	893.7	853.1	808.1	767.5	726.9
25°	1125.2	1117.1	1076.5	1024.3	972.9	915.7	866.7	823.7	773.6	730.3	687.6
27.5°	1082.9	1094.7	1066.0	1009.5	954.0	892.4	838.9	790.5	739.4	691.0	648.4
30°	1015.9	1056.2	1045.3	993.9	929.9	869.7	807.8	756.7	701.2	651.1	609.1
32.5°	924.2	997.3	1013.2	972.2	905.6	837.9	772.2	721.5	662.9	609.5	568.9
35°	825.7	925.2	970.9	943.5	877.1	805.7	738.7	679.5	621.3	569.2	528.6
37.5°	709.0	841.6	912.0	909.0	845.7	772.9	700.2	641.6	581.7	530.3	488.0
40°	595.9	742.8	841.9	863.9	812.5	732.3	658.5	598.6	540.4	490.3	439.9
42.5°	494.4	640.6	768.2	810.5	772.2	692.7	618.6	555.3	499.1	452.4	400.7
45°	416.2	544.2	678.5	746.9	724.2	650.4	572.2	512.7	459.6	418.6	369.2
47.5°	360.4	453.5	588.5	677.8	675.1	605.1	527.2	470.0	420.0	382.1	340.1
50°	314.0	392.5	502.5	607.4	616.2	559.7	486.6	430.1	384.1	343.8	311.7
52.5°	272.4	333.7	429.8	529.3	558.4	511.3	440.9	389.8	345.5	309.3	282.9
55°	237.2	287.3	362.4	456.5	494.4	459.9	396.9	348.2	312.0	280.9	257.2
57.5°	206.4	245.7	308.3	387.1	430.1	406.8	353.0	312.7	280.5	251.4	232.5
60°	177.7	208.5	259.6	322.8	371.6	356.3	312.0	275.1	248.7	224.4	206.8
62.5°	150.6	176.0	217.9	266.3	310.0	305.9	271.7	242.3	220.0	198.3	184.1
65°	125.5	144.8	179.0	219.3	255.2	258.2	232.1	211.2	190.5	172.9	159.7
67.5°	103.9	117.1	142.8	178.3	205.7	215.2	197.6	180.7	163.8	149.6	137.7
70°	84.3	94.4	112.0	139.4	164.1	174.3	165.1	152.6	138.4	127.2	117.4
72.5°	64.3	74.1	86.0	104.2	124.5	135.7	134.0	125.9	115.1	106.3	97.1
75°	51.4	54.5	63.3	76.8	93.4	102.9	105.2	100.5	91.4	84.3	78.8
77.5°	39.9	42.0	46.7	54.8	66.3	74.8	78.5	77.8	71.1	66.3	61.3
80°	30.5	31.5	33.5	36.5	44.7	53.1	55.5	55.5	51.1	49.4	44.3
82.5°	21.3	22.0	23.0	24.4	27.1	34.2	36.9	37.6	35.2	32.8	29.1
85°	13.2	12.9	13.5	14.6	15.2	17.3	21.3	22.0	21.3	18.6	17.6
87.5°	5.8	6.1	6.1	5.8	6.1	6.4	8.1	9.8	8.5	7.4	6.8
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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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9	973.9
2.5°	956.7	954.3	949.9	943.1	939.1	932.0	927.2	929.9	930.6	929.9	929.3
5°	934.3	927.2	917.4	907.9	899.1	889.7	884.2	881.9	877.1	874.4	873.1
7.5°	909.0	898.5	884.6	869.4	855.1	841.6	835.5	830.8	822.0	817.2	812.8
10°	879.8	860.6	846.7	825.0	811.8	792.5	779.3	779.7	766.5	759.0	753.6
12.5°	847.7	826.0	800.7	781.7	762.1	747.5	731.0	722.8	708.6	701.5	684.6
15°	811.5	786.8	762.4	736.0	717.4	693.4	670.4	642.3	619.6	600.0	594.6
17.5°	772.9	742.5	718.4	691.4	662.3	618.6	590.2	572.9	559.4	549.2	541.1
20°	733.0	701.8	675.8	629.1	586.1	558.7	539.1	526.6	512.3	501.2	495.1
22.5°	691.0	658.2	620.3	566.8	535.7	515.0	498.1	483.2	474.8	466.7	461.2
25°	651.8	616.2	557.7	521.8	494.7	471.7	459.6	450.8	440.6	428.8	423.3
27.5°	610.8	554.3	510.0	483.9	456.2	441.6	431.1	416.6	407.4	403.0	396.9
30°	563.8	507.3	474.4	445.3	427.1	410.5	397.6	390.2	381.4	372.2	368.5
32.5°	511.3	469.0	437.9	414.9	396.3	382.7	373.3	360.1	354.3	349.6	340.8
35°	469.7	435.5	406.8	387.1	369.5	358.0	346.2	339.1	327.6	322.8	319.8
37.5°	431.8	402.0	380.4	358.7	345.2	331.6	324.9	313.0	308.6	301.2	295.1
40°	400.7	371.6	350.9	334.0	318.4	309.0	299.8	290.7	283.2	280.2	272.4
42.5°	368.9	346.5	325.9	306.9	297.8	287.6	275.5	269.4	261.6	256.2	252.1
45°	340.1	319.1	301.5	286.3	274.8	264.3	256.8	245.7	241.3	231.5	227.4
47.5°	314.7	294.4	277.5	262.6	251.1	245.0	234.2	224.4	218.3	211.5	205.7
50°	287.3	271.1	254.8	242.0	231.8	222.0	210.8	206.4	195.6	192.6	189.5
52.5°	262.3	247.0	232.5	220.0	209.8	200.3	190.9	184.8	178.3	175.3	173.3
55°	239.3	224.4	210.1	199.0	188.8	179.0	172.9	165.8	162.4	160.1	157.4
57.5°	215.6	202.0	190.9	179.4	169.2	161.1	153.6	149.6	146.2	143.5	139.8
60°	193.2	180.4	170.6	160.1	149.6	143.1	137.7	132.7	128.6	123.9	122.5
62.5°	169.5	158.7	149.9	139.8	131.0	125.2	120.1	115.4	110.3	102.9	100.8
65°	148.2	139.4	129.9	121.5	113.4	107.6	100.2	94.8	92.7	92.0	91.7
67.5°	128.6	120.1	112.0	103.2	95.8	89.3	84.9	84.3	82.9	82.6	81.6
70°	109.0	101.2	93.1	84.9	77.8	76.8	75.5	74.1	72.4	71.7	71.1
72.5°	91.4	83.2	75.1	69.0	67.0	65.7	64.3	62.9	61.9	61.3	60.9
75°	72.8	65.3	59.9	57.5	55.8	54.8	52.8	51.8	51.1	50.1	49.7
77.5°	55.5	50.8	48.1	46.7	44.7	43.7	42.3	41.3	40.3	40.3	39.6
80°	39.9	37.9	36.2	34.2	33.5	32.1	31.8	30.8	31.1	30.1	30.1
82.5°	28.8	26.1	24.7	24.0	23.3	22.3	22.0	21.7	21.7	21.0	21.0
85°	15.9	15.2	14.6	13.9	13.9	12.9	13.2	12.9	12.9	12.2	11.8
87.5°	6.4	6.1	5.4	5.4	5.4	5.1	5.1	4.7	4.7	4.7	4.4
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: P242393

CATALOG NUMBER: S122RDRP-S485D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	973.9	973.9	973.9	973.9
2.5°	925.5	926.2	925.2	925.9
5°	871.4	867.3	866.7	865.6
7.5°	807.4	807.1	805.1	802.7
10°	746.2	744.5	744.1	741.8
12.5°	674.4	661.2	659.9	653.1
15°	586.5	584.4	577.7	573.3
17.5°	537.4	530.6	528.2	527.2
20°	490.3	484.3	483.2	482.6
22.5°	457.9	451.4	448.4	446.0
25°	420.0	417.6	416.2	415.6
27.5°	390.2	384.1	383.4	381.7
30°	365.5	363.8	361.4	359.4
32.5°	336.4	335.0	333.0	332.3
35°	316.4	311.7	309.6	306.6
37.5°	294.4	291.7	288.3	289.7
40°	268.0	266.3	265.6	265.3
42.5°	247.0	241.6	239.6	239.6
45°	225.7	221.3	218.3	218.6
47.5°	202.7	203.0	201.0	201.7
50°	187.1	185.1	183.8	184.1
52.5°	172.2	170.6	169.5	171.2
55°	155.7	153.6	153.3	153.0
57.5°	137.7	136.7	135.0	134.0
60°	118.1	115.4	112.0	111.7
62.5°	100.2	100.2	100.2	100.2
65°	91.0	90.7	91.0	91.4
67.5°	81.6	80.9	80.2	80.5
70°	70.4	70.0	69.7	69.7
72.5°	59.6	59.6	59.2	58.9
75°	49.4	48.7	48.7	48.7
77.5°	39.6	39.3	38.9	38.6
80°	29.8	29.4	29.1	29.1
82.5°	21.0	20.6	20.6	20.3
85°	12.2	12.5	12.2	12.9
87.5°	4.4	4.1	4.4	4.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242393  
 CATALOG NUMBER: S122RDRP-S485D830-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	15.68	17.13	16.05	17.45	17.76	21.58	23.03	21.95	23.35	23.66
	3H	16.79	18.09	17.17	18.42	18.78	22.74	24.04	23.12	24.37	24.73
	4H	17.25	18.46	17.65	18.81	19.19	23.13	24.35	23.53	24.70	25.08
	6H	17.62	18.74	18.03	19.11	19.50	23.40	24.52	23.81	24.89	25.28
	8H	17.74	18.81	18.17	19.20	19.60	23.47	24.54	23.90	24.93	25.33
	12H	17.82	18.84	18.25	19.22	19.65	23.51	24.53	23.94	24.91	25.34
4H	2H	16.39	17.61	16.79	17.96	18.34	21.54	22.76	21.95	23.11	23.49
	3H	17.66	18.67	18.07	19.07	19.47	22.84	23.85	23.25	24.25	24.65
	4H	18.21	19.12	18.65	19.53	19.97	23.33	24.24	23.77	24.66	25.10
	6H	18.68	19.47	19.14	19.91	20.37	23.72	24.50	24.18	24.95	25.41
	8H	18.84	19.58	19.31	20.02	20.49	23.83	24.57	24.30	25.01	25.48
	12H	18.96	19.61	19.45	20.09	20.57	23.91	24.56	24.39	25.04	25.51
8H	4H	18.56	19.29	19.02	19.73	20.20	23.32	24.05	23.78	24.50	24.97
	6H	19.13	19.73	19.62	20.22	20.70	23.75	24.35	24.25	24.84	25.32
	8H	19.35	19.89	19.87	20.40	20.89	23.90	24.44	24.41	24.95	25.44
	12H	19.54	20.01	20.05	20.51	21.07	24.02	24.50	24.53	24.99	25.56
12H	4H	18.60	19.25	19.08	19.73	20.20	23.30	23.95	23.78	24.43	24.90
	6H	19.19	19.73	19.70	20.24	20.73	23.72	24.26	24.24	24.77	25.26
	8H	19.47	19.94	19.98	20.44	21.00	23.90	24.38	24.41	24.87	25.44