

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: P243150

Luminaire Tested: S122DRP-H485D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243150  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-H485D830-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

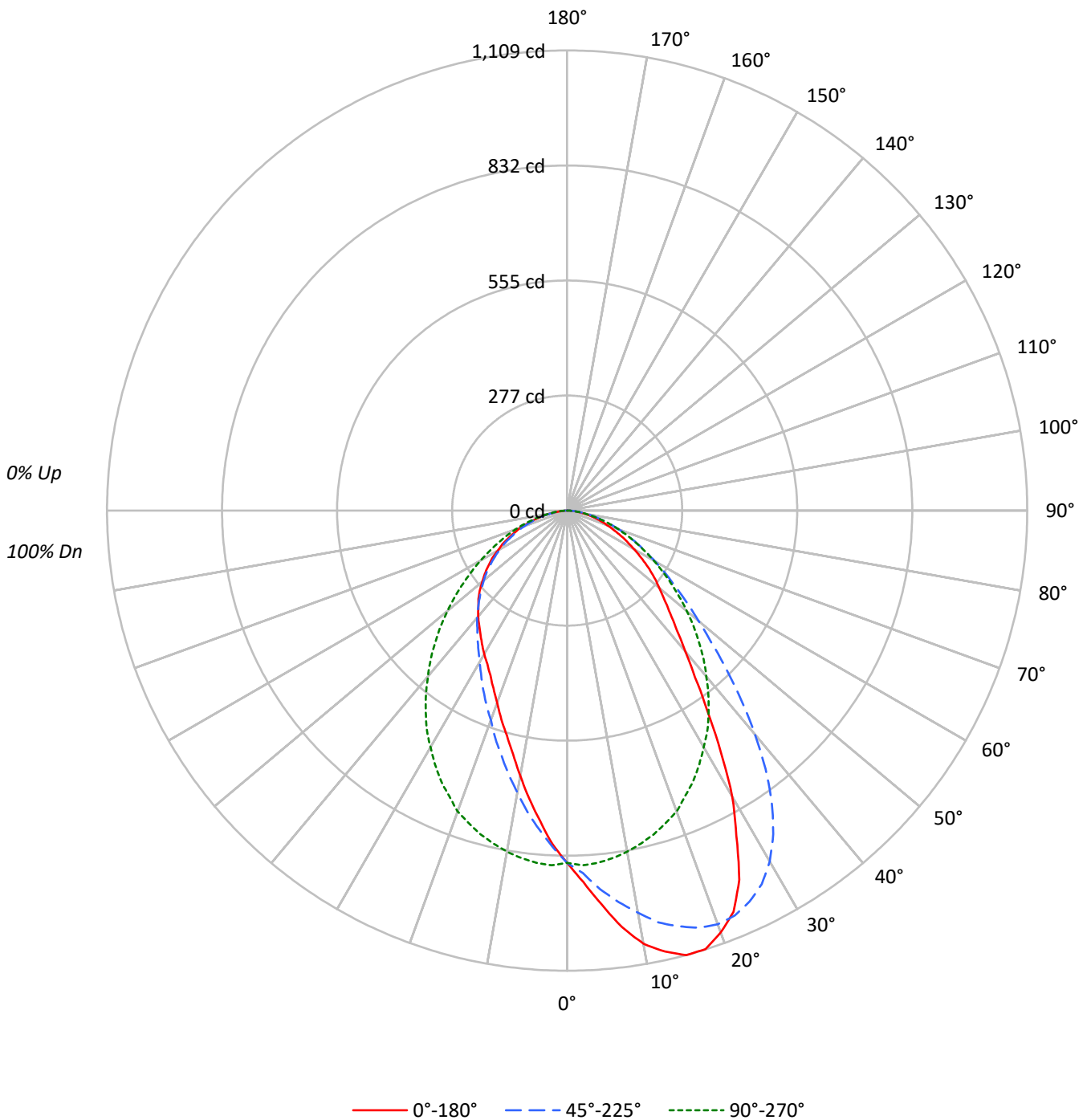
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1884.0 lumens  
Efficiency: N/A  
Efficacy: 109.5 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 17.2  
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	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	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76					74				
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66					63				
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57					55				
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51					49				
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45					43				
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40					39				
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37					35				
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33					32				
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31					29				

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

	0°	45°	90°	135°	180°
0°	16172	16172	16172	16172	16172
5°	18216	17520	16289	14750	14348
10°	20506	19030	16142	13353	12557
15°	21873	20455	15926	12053	11067
20°	21936	21511	15636	10897	9987
25°	20632	21853	15117	10038	9205
30°	17514	21480	14486	9262	8791
35°	13694	20007	13810	8745	8462
40°	11000	17495	12977	8392	8297
45°	9463	14659	12122	8041	8143
50°	8585	12227	11154	7776	7915
55°	7910	10507	10165	7472	7701
60°	7112	9265	9158	7124	7349
65°	6400	8284	8230	6670	6995
70°	5703	7351	7312	6109	6544
75°	5137	6403	6292	5409	5733
80°	4475	5309	5068	4410	4475
85°	3846	4393	3781	2950	2470

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 65°  
 Vertical Angle: 45°  
 Luminance: 20273 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	80.9	4.3
10°-20°	232.5	12.3
20°-30°	338.1	17.9
30°-40°	362.7	19.3
40°-50°	325.1	17.3
50°-60°	259.1	13.8
60°-70°	175.3	9.3
70°-80°	89.4	4.7
80°-90°	20.9	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°	651.5	34.6
0°-40°	1014.2	53.8
0°-60°	1598.4	84.8
0°-90°	1884.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1884.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	849	849	849	849	849	
5°	953	916	852	771	750	94
15°	1109	1037	808	611	561	311
25°	982	1040	719	478	438	442
35°	589	860	594	376	364	373
45°	351	544	450	298	302	275
55°	238	316	306	225	232	213
65°	142	184	183	148	155	141
75°	70	87	86	74	78	74
85°	18	20	17	14	11	20
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°	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0
2.5°	896.2	899.0	896.5	895.6	893.7	893.0	888.0	883.9	881.4	874.5	875.1
5°	952.7	959.0	955.6	955.3	948.3	943.9	939.5	933.3	923.8	916.3	910.3
7.5°	1012.4	1009.3	1008.4	1004.9	999.9	993.6	983.9	974.7	962.8	951.8	943.6
10°	1060.2	1059.3	1060.8	1052.0	1048.9	1039.2	1030.7	1016.5	1001.1	983.9	973.2
12.5°	1088.5	1091.3	1093.5	1090.1	1082.5	1079.7	1065.6	1045.8	1040.4	1016.8	1004.0
15°	1109.2	1110.5	1110.8	1107.0	1103.3	1096.0	1087.5	1075.0	1057.7	1037.3	1027.5
17.5°	1108.0	1107.7	1109.5	1107.3	1105.1	1102.9	1096.3	1086.6	1073.1	1053.9	1037.6
20°	1082.2	1087.9	1092.3	1093.2	1092.9	1094.1	1091.0	1084.7	1075.0	1061.2	1042.6
22.5°	1047.0	1044.8	1054.2	1053.6	1057.7	1067.1	1071.2	1068.7	1064.9	1056.1	1041.4
25°	981.7	983.9	990.5	997.4	1013.4	1019.0	1031.3	1040.7	1042.0	1039.8	1030.7
27.5°	883.6	899.3	902.8	911.9	934.2	952.7	977.6	992.3	1013.4	1015.3	1011.2
30°	796.3	795.6	801.0	817.3	837.7	865.7	897.8	935.8	960.0	976.6	982.6
32.5°	688.8	691.3	705.1	725.2	746.0	773.9	811.0	857.5	889.9	924.5	943.9
35°	588.9	596.7	609.9	623.7	646.4	684.7	725.9	764.5	814.2	860.4	891.8
37.5°	506.5	517.2	527.3	540.5	562.5	592.0	629.1	680.3	729.6	785.3	831.5
40°	442.4	446.5	453.4	466.3	481.1	510.6	548.0	586.4	639.8	703.6	764.2
42.5°	392.2	391.2	398.8	406.9	420.4	442.4	475.1	513.5	566.6	623.1	684.4
45°	351.3	351.6	354.8	363.2	373.9	386.5	411.6	447.8	488.0	544.2	609.3
47.5°	318.0	318.9	323.7	329.6	335.9	347.5	364.2	387.8	425.5	472.6	533.6
50°	289.7	291.3	294.4	298.8	303.5	311.7	324.3	342.8	372.7	412.6	467.9
52.5°	264.6	265.2	266.2	270.2	274.0	281.5	291.0	305.4	329.0	362.3	405.4
55°	238.2	237.6	239.8	243.2	246.7	252.0	261.8	273.4	290.0	316.4	351.9
57.5°	211.2	212.1	213.7	215.6	221.8	227.5	234.7	245.4	258.6	279.4	308.9
60°	186.7	186.7	188.5	191.1	195.1	198.9	205.8	215.6	227.2	243.2	268.0
62.5°	162.8	164.0	165.9	167.2	170.9	175.7	181.0	188.5	199.2	212.1	230.6
65°	142.0	141.4	143.3	145.8	148.6	151.8	157.7	164.0	172.2	183.8	199.2
67.5°	120.7	122.5	123.2	124.4	126.6	130.7	133.5	140.1	146.7	157.1	170.0
70°	102.4	103.7	104.6	106.2	108.1	110.0	112.8	118.2	124.7	132.0	141.1
72.5°	86.1	87.0	86.1	87.7	88.6	90.5	94.3	96.8	101.8	108.1	116.3
75°	69.8	70.4	70.1	71.6	72.0	73.8	75.7	77.9	83.6	87.0	92.7
77.5°	54.7	55.3	55.6	56.2	56.9	57.8	58.8	61.0	64.1	67.2	71.6
80°	40.8	40.8	41.8	42.1	42.4	43.0	44.6	45.2	47.4	48.4	51.8
82.5°	28.3	28.6	28.9	28.9	29.2	29.9	30.2	31.4	32.1	33.6	35.2
85°	17.6	17.9	17.9	17.9	18.9	18.5	18.5	19.2	20.1	20.1	20.7
87.5°	8.8	9.1	9.1	9.1	9.4	9.4	9.4	9.4	9.4	10.1	9.7
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°	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0
2.5°	874.8	874.5	873.2	867.6	863.2	857.5	856.6	855.6	847.8	839.3	836.8
5°	905.6	900.0	892.1	882.7	873.2	862.9	856.9	851.9	839.9	826.7	819.2
7.5°	935.8	924.8	912.5	897.8	882.0	865.4	854.7	844.6	828.3	811.0	800.7
10°	961.5	946.8	929.8	910.3	888.6	866.0	850.3	834.6	813.9	792.8	779.0
12.5°	982.9	964.1	941.7	915.4	895.6	864.4	842.5	821.7	798.8	771.4	756.4
15°	999.3	980.7	950.5	923.8	897.8	856.3	829.6	807.6	776.8	750.1	726.2
17.5°	1019.0	992.7	962.8	924.5	895.6	848.1	817.9	789.3	756.0	724.6	698.2
20°	1027.8	1000.2	968.1	925.4	888.6	839.3	799.1	771.4	731.2	695.1	665.2
22.5°	1029.1	1002.7	967.8	922.6	876.7	826.4	780.2	744.1	703.9	665.5	631.9
25°	1023.8	998.6	962.5	917.6	863.5	812.6	761.1	719.3	672.8	633.2	598.9
27.5°	1009.3	988.9	954.6	906.6	850.0	791.2	735.0	689.4	643.5	598.6	565.9
30°	986.1	972.5	943.0	892.1	832.7	768.0	711.7	658.6	609.0	566.9	531.7
32.5°	956.2	949.6	925.1	874.8	815.1	742.5	683.8	629.1	575.0	535.1	499.0
35°	918.2	921.6	900.9	855.3	792.8	716.8	651.1	593.9	541.1	498.7	465.4
37.5°	868.8	885.8	872.6	829.9	764.2	690.7	616.8	559.3	504.0	463.2	434.0
40°	813.5	843.4	837.1	801.3	733.4	660.2	583.8	521.9	467.9	429.2	401.3
42.5°	748.5	791.9	798.8	766.4	702.9	622.2	546.8	487.1	434.9	396.9	370.2
45°	675.6	729.3	752.6	727.1	667.4	585.4	508.7	450.0	398.4	366.1	343.8
47.5°	602.4	667.1	698.5	686.3	625.9	546.1	471.0	413.5	364.8	336.5	315.5
50°	530.1	599.6	645.4	637.3	585.1	508.7	433.0	376.4	331.8	305.7	287.8
52.5°	466.6	532.3	582.3	586.4	539.5	466.0	392.8	340.3	302.3	278.7	263.6
55°	404.1	465.1	519.7	529.8	491.8	421.1	355.7	306.1	271.5	252.0	239.8
57.5°	348.2	403.5	457.8	475.4	444.6	380.8	315.8	272.1	242.3	227.2	216.5
60°	300.7	350.7	397.5	415.4	394.4	336.2	279.4	240.4	215.6	202.0	193.6
62.5°	259.2	297.9	339.4	359.2	345.0	294.4	244.8	210.2	190.1	178.5	171.9
65°	221.8	251.7	284.4	307.3	291.6	253.9	212.4	182.6	165.6	154.9	150.2
67.5°	187.3	212.1	238.2	256.4	248.6	214.3	179.4	156.2	142.0	133.9	129.5
70°	155.9	174.4	195.5	209.6	203.9	177.5	149.9	131.3	119.4	113.8	110.0
72.5°	127.9	139.8	155.9	167.5	161.5	143.0	123.2	108.4	99.6	93.0	90.2
75°	101.5	111.9	123.2	131.0	126.3	112.5	96.8	85.5	79.5	75.4	73.5
77.5°	77.0	85.2	93.0	96.8	94.6	84.5	73.8	65.0	60.0	57.5	55.3
80°	55.3	60.0	65.4	68.8	67.6	60.6	53.1	46.2	44.0	40.8	40.2
82.5°	37.1	40.8	42.1	43.7	42.7	39.6	34.3	30.2	28.3	26.7	26.4
85°	22.0	22.9	24.5	24.5	23.6	21.4	18.5	17.3	15.4	15.1	14.1
87.5°	9.7	9.7	9.7	9.7	9.7	9.1	7.9	7.2	6.6	6.3	6.0
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°	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0	849.0
2.5°	834.6	831.5	827.1	822.0	817.6	810.7	808.5	808.5	810.1	808.2	806.6
5°	812.9	806.6	800.3	790.6	782.4	771.4	768.3	765.1	764.8	761.7	757.6
7.5°	789.7	780.2	767.3	753.5	744.7	732.8	726.2	724.3	718.3	712.7	706.1
10°	762.6	748.2	732.8	719.6	705.8	690.4	682.5	677.2	671.2	664.3	659.6
12.5°	730.0	713.6	699.5	684.1	672.5	650.8	648.3	641.3	629.4	619.0	615.3
15°	709.8	681.3	665.2	651.1	633.5	611.2	603.0	595.5	584.2	577.6	572.2
17.5°	674.3	648.6	628.5	609.6	592.6	575.4	563.1	556.8	547.7	542.0	536.7
20°	642.0	614.0	593.0	571.0	553.4	537.6	527.3	519.4	514.7	509.1	503.7
22.5°	609.3	580.1	560.0	537.6	516.9	507.5	495.2	488.6	482.3	477.9	472.3
25°	571.3	548.0	522.9	505.6	487.4	477.6	466.0	459.7	454.7	449.7	446.8
27.5°	537.3	513.8	490.5	473.2	457.8	448.4	441.2	435.2	428.9	425.2	423.0
30°	502.1	480.5	460.0	443.4	431.4	421.1	416.7	411.0	406.3	404.7	401.3
32.5°	470.7	446.5	430.2	415.1	405.0	397.8	394.7	388.7	387.8	386.2	384.3
35°	439.3	418.6	402.8	390.0	381.5	376.1	372.0	370.5	368.9	367.3	365.8
37.5°	408.2	391.8	377.1	366.7	359.8	355.7	354.8	351.6	351.3	349.1	349.1
40°	380.2	363.6	353.2	345.0	339.4	337.5	335.0	334.3	333.4	332.8	334.0
42.5°	352.3	340.9	332.1	323.7	319.3	317.7	317.1	316.1	315.5	317.4	318.0
45°	326.2	316.4	308.9	302.9	300.4	298.5	298.5	299.5	299.1	300.1	300.1
47.5°	302.0	293.2	286.9	284.7	281.5	280.9	281.2	280.9	282.5	283.7	285.0
50°	279.0	271.2	266.2	264.0	263.3	262.4	263.6	264.3	265.2	266.5	267.1
52.5°	253.6	249.8	246.7	244.5	244.2	244.5	244.2	246.4	247.3	249.2	248.9
55°	231.9	229.1	226.9	224.4	224.0	225.0	225.6	227.5	228.8	230.3	230.0
57.5°	211.5	209.3	206.8	206.1	205.8	206.1	209.0	208.6	210.5	211.8	212.4
60°	189.2	187.6	185.4	185.4	186.3	187.0	187.9	189.5	191.4	191.1	193.3
62.5°	168.7	166.9	166.2	167.2	166.9	168.4	169.4	169.4	171.9	172.8	173.5
65°	148.3	147.7	146.7	146.7	147.7	148.0	149.6	150.5	151.5	153.3	154.9
67.5°	129.1	127.6	127.6	126.9	128.2	129.1	130.1	131.3	132.0	134.2	135.1
70°	109.0	108.4	108.1	108.7	108.7	109.7	111.2	112.8	114.1	114.4	116.3
72.5°	89.6	89.6	89.6	90.5	91.1	92.1	92.4	93.6	95.5	95.8	96.8
75°	72.0	72.3	72.0	72.3	72.6	73.5	74.2	75.4	76.7	77.0	77.6
77.5°	55.6	55.0	54.4	55.3	55.9	57.8	57.5	58.1	59.4	58.8	59.4
80°	39.0	39.9	38.7	40.5	40.5	40.2	40.8	41.8	41.5	42.1	41.5
82.5°	26.4	25.5	25.5	26.4	26.7	25.8	26.4	26.7	27.0	26.4	26.1
85°	14.5	14.1	14.8	13.8	14.1	13.5	13.5	12.9	13.5	12.9	12.3
87.5°	5.3	5.0	5.3	4.4	4.1	3.8	3.5	3.5	2.8	2.8	2.8
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: P243150

CATALOG NUMBER: S122DRP-H485D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	849.0	849.0	849.0	849.0
2.5°	808.8	805.4	803.8	805.1
5°	753.2	754.2	748.5	750.4
7.5°	705.1	701.0	702.3	700.1
10°	654.2	652.0	648.6	649.2
12.5°	620.0	605.2	604.3	601.4
15°	571.9	563.7	561.8	561.2
17.5°	533.6	526.6	529.2	527.3
20°	499.0	499.3	495.2	492.7
22.5°	468.5	467.9	466.3	463.8
25°	442.7	442.7	439.0	438.0
27.5°	419.2	419.8	416.7	416.7
30°	401.6	399.4	399.1	399.7
32.5°	384.0	381.5	381.8	381.5
35°	365.1	365.8	364.8	363.9
37.5°	349.1	349.1	349.1	348.2
40°	333.4	334.0	333.1	333.7
42.5°	317.7	318.0	318.0	316.7
45°	302.0	301.7	301.0	302.3
47.5°	285.6	285.6	285.3	285.9
50°	267.7	268.4	267.4	267.1
52.5°	249.5	249.8	249.5	250.1
55°	231.0	231.0	231.3	231.9
57.5°	211.8	214.0	212.4	213.7
60°	192.9	193.3	193.6	192.9
62.5°	175.0	174.7	175.0	176.0
65°	155.5	156.2	155.9	155.2
67.5°	136.4	135.7	136.7	135.7
70°	116.0	117.2	116.3	117.5
72.5°	97.4	97.1	97.7	96.2
75°	77.9	77.9	78.2	77.9
77.5°	59.7	59.1	58.8	57.8
80°	41.2	41.2	39.9	40.8
82.5°	25.1	25.5	25.8	23.9
85°	11.9	11.9	11.6	11.3
87.5°	2.5	2.5	2.8	3.1
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243150

CATALOG NUMBER: S122DRP-H485D830-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	18.32	19.84	18.68	20.15	20.47	21.16	22.68	21.52	22.99	23.31
	3H	19.67	21.04	20.05	21.36	21.73	22.18	23.54	22.55	23.87	24.23
	4H	20.15	21.44	20.55	21.79	22.16	22.50	23.78	22.90	24.13	24.51
	6H	20.50	21.69	20.92	22.06	22.45	22.70	23.88	23.11	24.25	24.64
	8H	20.61	21.74	21.04	22.13	22.53	22.74	23.87	23.17	24.26	24.66
	12H	20.68	21.76	21.11	22.14	22.57	22.76	23.84	23.19	24.22	24.65
4H	2H	19.20	20.48	19.60	20.83	21.21	21.40	22.68	21.80	23.03	23.41
	3H	20.70	21.76	21.11	22.16	22.56	22.77	23.83	23.18	24.23	24.63
	4H	21.26	22.22	21.70	22.64	23.08	23.28	24.24	23.71	24.65	25.09
	6H	21.70	22.53	22.16	22.98	23.44	23.61	24.45	24.07	24.89	25.35
	8H	21.84	22.61	22.30	23.06	23.53	23.69	24.47	24.15	24.91	25.38
	12H	21.93	22.63	22.42	23.11	23.58	23.73	24.42	24.21	24.90	25.37
8H	4H	21.70	22.48	22.16	22.92	23.39	23.42	24.20	23.88	24.64	25.11
	6H	22.22	22.87	22.72	23.36	23.84	23.86	24.50	24.36	24.99	25.47
	8H	22.41	22.99	22.92	23.50	23.98	23.99	24.57	24.51	25.08	25.57
	12H	22.57	23.07	23.08	23.57	24.13	24.08	24.59	24.59	25.09	25.65
12H	4H	21.76	22.45	22.24	22.93	23.40	23.41	24.11	23.89	24.59	25.06
	6H	22.30	22.88	22.81	23.39	23.88	23.86	24.44	24.38	24.95	25.44
	8H	22.54	23.05	23.05	23.54	24.10	24.04	24.55	24.55	25.04	25.61