

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: P243165

Luminaire Tested: S122DRP-H485D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243165
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-H485D930-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

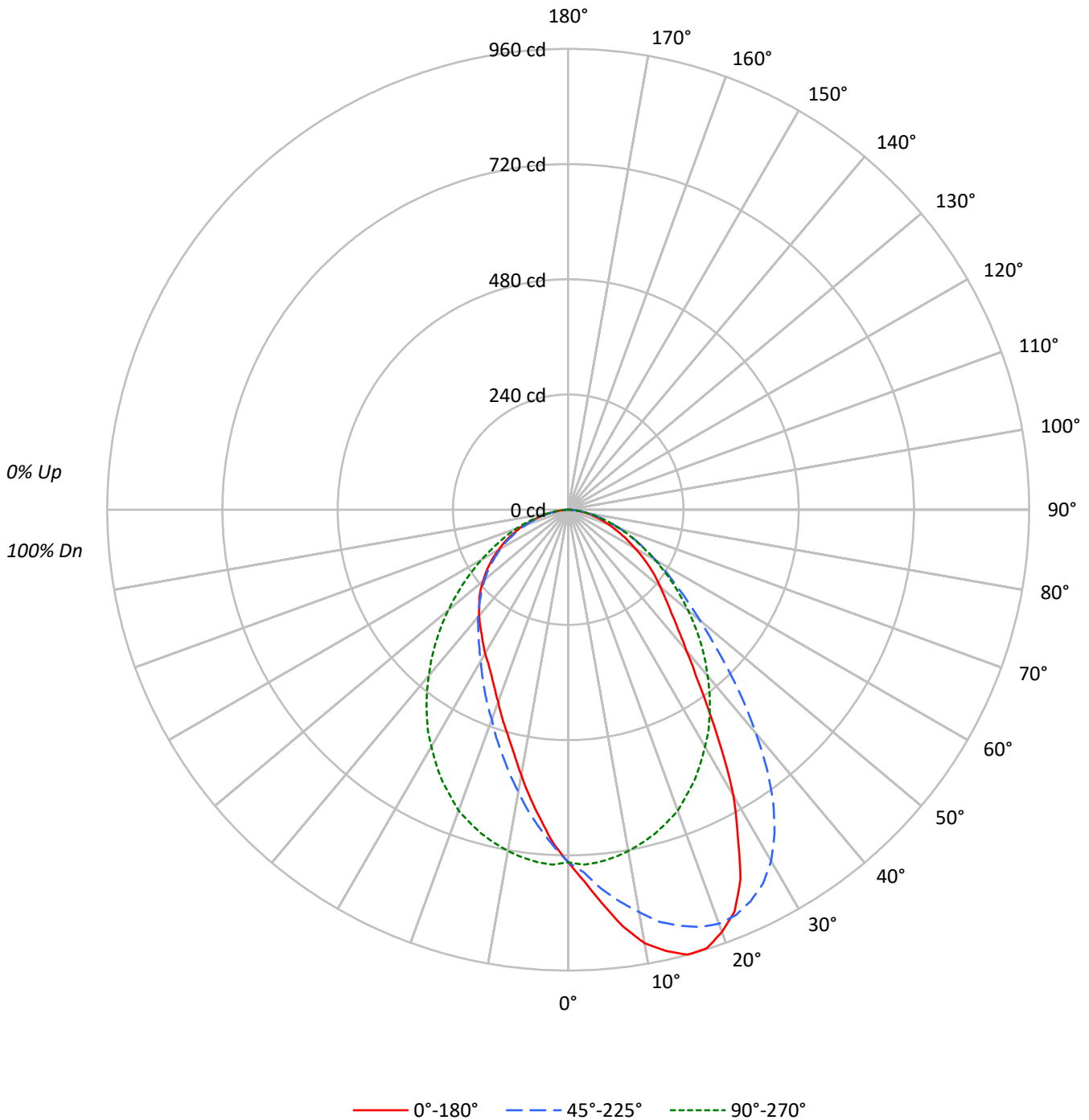
Lumens per Lamp: N/A
Luminaire Lumens: 1629.7 lumens
Efficiency: N/A
Efficacy: 94.7 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P243165

CATALOG NUMBER: S122DRP-H485D930-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P243165

CATALOG NUMBER: S122DRP-H485D930-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	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°	13989	13989	13989	13989	13989
5°	15757	15155	14090	12759	12411
10°	17738	16460	13963	11551	10862
15°	18921	17692	13774	10426	9574
20°	18975	18606	13526	9428	8639
25°	17845	18903	13077	8682	7963
30°	15150	18581	12530	8010	7603
35°	11845	17305	11945	7567	7320
40°	9516	15133	11227	7258	7179
45°	8186	12682	10484	6955	7044
50°	7426	10576	9648	6727	6845
55°	6841	9089	8790	6462	6662
60°	6152	8015	7920	6160	6358
65°	5539	7166	7117	5769	6053
70°	4934	6360	6327	5285	5664
75°	4438	5542	5439	4681	4960
80°	3872	4596	4388	3817	3872
85°	3322	3803	3256	2557	2142

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 17536 cd/sqm



TEST NUMBER: P243165

CATALOG NUMBER: S122DRP-H485D930-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.0	4.3
10°-20°	201.1	12.3
20°-30°	292.5	17.9
30°-40°	313.7	19.3
40°-50°	281.2	17.3
50°-60°	224.2	13.8
60°-70°	151.6	9.3
70°-80°	77.3	4.7
80°-90°	18.1	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°	563.5	34.6
0°-40°	877.3	53.8
0°-60°	1382.6	84.8
0°-90°	1629.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1629.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	734	734	734	734	734	
5°	824	793	737	667	649	82
15°	960	897	698	529	486	269
25°	849	899	622	413	379	382
35°	509	744	514	325	315	323
45°	304	471	389	258	262	238
55°	206	274	265	195	201	184
65°	123	159	158	128	134	122
75°	60	75	74	64	67	64
85°	15	17	15	12	10	18
90°	0	0	0	0	0	



TEST NUMBER: P243165

CATALOG NUMBER: S122DRP-H485D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4
2.5°	775.2	777.6	775.5	774.7	773.0	772.5	768.1	764.6	762.4	756.4	757.0
5°	824.1	829.6	826.6	826.3	820.3	816.5	812.7	807.3	799.1	792.6	787.4
7.5°	875.8	873.0	872.2	869.2	864.9	859.5	851.0	843.2	832.8	823.3	816.2
10°	917.1	916.3	917.6	910.0	907.3	898.9	891.5	879.3	866.0	851.0	841.8
12.5°	941.5	944.0	945.9	942.9	936.4	933.9	921.7	904.6	900.0	879.6	868.4
15°	959.5	960.6	960.8	957.6	954.3	948.1	940.7	929.9	914.9	897.2	888.8
17.5°	958.4	958.1	959.8	957.9	956.0	954.0	948.3	939.9	928.2	911.6	897.5
20°	936.1	941.0	944.8	945.6	945.4	946.4	943.7	938.3	929.9	917.9	901.9
22.5°	905.7	903.8	911.9	911.4	914.9	923.1	926.6	924.4	921.2	913.5	900.8
25°	849.1	851.0	856.7	862.7	876.6	881.5	892.1	900.2	901.3	899.4	891.5
27.5°	764.3	777.9	780.9	788.8	808.1	824.1	845.6	858.4	876.6	878.2	874.7
30°	688.8	688.2	692.8	707.0	724.6	748.8	776.6	809.4	830.4	844.8	849.9
32.5°	595.8	598.0	609.9	627.3	645.3	669.5	701.5	741.8	769.8	799.7	816.5
35°	509.4	516.2	527.6	539.5	559.1	592.3	627.9	661.3	704.3	744.2	771.4
37.5°	438.2	447.4	456.1	467.5	486.5	512.1	544.2	588.5	631.1	679.3	719.2
40°	382.7	386.2	392.2	403.4	416.1	441.7	474.0	507.2	553.4	608.6	661.0
42.5°	339.2	338.4	344.9	352.0	363.7	382.7	411.0	444.1	490.1	539.0	592.0
45°	303.9	304.2	306.9	314.2	323.5	334.3	356.1	387.3	422.1	470.8	527.0
47.5°	275.1	275.9	280.0	285.1	290.6	300.6	315.0	335.4	368.0	408.8	461.5
50°	250.6	252.0	254.7	258.5	262.6	269.6	280.5	296.5	322.4	356.9	404.7
52.5°	228.9	229.4	230.2	233.8	237.0	243.5	251.7	264.2	284.6	313.4	350.6
55°	206.0	205.5	207.4	210.4	213.4	218.0	226.4	236.5	250.9	273.7	304.4
57.5°	182.7	183.5	184.8	186.5	191.9	196.8	203.0	212.3	223.7	241.6	267.2
60°	161.5	161.5	163.1	165.3	168.8	172.1	178.0	186.5	196.5	210.4	231.9
62.5°	140.8	141.9	143.5	144.6	147.9	151.9	156.6	163.1	172.3	183.5	199.5
65°	122.9	122.3	123.9	126.1	128.6	131.3	136.4	141.9	149.0	159.0	172.3
67.5°	104.4	106.0	106.5	107.6	109.5	113.1	115.5	121.2	126.9	135.9	147.0
70°	88.6	89.7	90.5	91.9	93.5	95.1	97.6	102.2	107.9	114.2	122.0
72.5°	74.5	75.3	74.5	75.8	76.7	78.3	81.5	83.7	88.1	93.5	100.6
75°	60.3	60.9	60.6	62.0	62.2	63.9	65.5	67.4	72.3	75.3	80.2
77.5°	47.3	47.8	48.1	48.7	49.2	50.0	50.8	52.7	55.4	58.2	62.0
80°	35.3	35.3	36.2	36.4	36.7	37.2	38.6	39.1	41.0	41.9	44.8
82.5°	24.5	24.7	25.0	25.0	25.3	25.8	26.1	27.2	27.7	29.1	30.4
85°	15.2	15.5	15.5	15.5	16.3	16.0	16.0	16.6	17.4	17.4	17.9
87.5°	7.6	7.9	7.9	7.9	8.2	8.2	8.2	8.2	8.2	8.7	8.4
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: P243165

CATALOG NUMBER: S122DRP-H485D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4
2.5°	756.7	756.4	755.4	750.5	746.7	741.8	741.0	740.1	733.3	726.0	723.8
5°	783.4	778.5	771.7	763.5	755.4	746.4	741.2	736.9	726.5	715.1	708.6
7.5°	809.4	799.9	789.3	776.6	763.0	748.6	739.3	730.6	716.5	701.5	692.6
10°	831.7	819.0	804.3	787.4	768.7	749.1	735.5	721.9	704.0	685.8	673.8
12.5°	850.2	833.9	814.6	791.8	774.7	747.7	728.7	710.8	690.9	667.3	654.2
15°	864.4	848.3	822.2	799.1	776.6	740.7	717.6	698.5	671.9	648.8	628.2
17.5°	881.5	858.6	832.8	799.7	774.7	733.6	707.5	682.8	654.0	626.8	604.0
20°	889.1	865.2	837.4	800.5	768.7	726.0	691.2	667.3	632.5	601.2	575.4
22.5°	890.2	867.3	837.2	798.0	758.3	714.9	674.9	643.6	608.9	575.7	546.6
25°	885.6	863.8	832.6	793.7	746.9	702.9	658.3	622.2	581.9	547.7	518.1
27.5°	873.0	855.4	825.8	784.2	735.2	684.4	635.8	596.3	556.7	517.8	489.5
30°	852.9	841.2	815.7	771.7	720.3	664.3	615.6	569.7	526.8	490.3	459.9
32.5°	827.1	821.4	800.2	756.7	705.1	642.3	591.5	544.2	497.4	462.9	431.6
35°	794.2	797.2	779.3	739.9	685.8	620.0	563.2	513.7	468.1	431.4	402.5
37.5°	751.6	766.2	754.8	717.8	661.0	597.4	533.6	483.8	436.0	400.6	375.4
40°	703.7	729.5	724.1	693.1	634.4	571.1	505.0	451.5	404.7	371.3	347.1
42.5°	647.4	685.0	690.9	662.9	608.0	538.2	472.9	421.3	376.2	343.3	320.2
45°	584.4	630.9	651.0	629.0	577.3	506.4	440.1	389.2	344.7	316.7	297.4
47.5°	521.1	577.1	604.2	593.6	541.4	472.4	407.4	357.7	315.6	291.1	272.9
50°	458.5	518.6	558.3	551.2	506.1	440.1	374.6	325.6	287.0	264.5	249.0
52.5°	403.6	460.4	503.7	507.2	466.7	403.1	339.8	294.4	261.5	241.1	228.0
55°	349.5	402.3	449.6	458.3	425.4	364.2	307.7	264.7	234.8	218.0	207.4
57.5°	301.2	349.0	396.0	411.2	384.6	329.4	273.2	235.4	209.6	196.5	187.3
60°	260.1	303.3	343.8	359.3	341.1	290.8	241.6	207.9	186.5	174.8	167.4
62.5°	224.2	257.7	293.6	310.7	298.4	254.7	211.7	181.8	164.4	154.4	148.7
65°	191.9	217.7	246.0	265.8	252.2	219.6	183.7	157.9	143.2	134.0	129.9
67.5°	162.0	183.5	206.0	221.8	215.0	185.4	155.2	135.1	122.9	115.8	112.0
70°	134.8	150.9	169.1	181.3	176.4	153.6	129.7	113.6	103.3	98.4	95.1
72.5°	110.6	121.0	134.8	144.9	139.7	123.7	106.5	93.8	86.2	80.5	78.0
75°	87.8	96.8	106.5	113.3	109.3	97.3	83.7	73.9	68.8	65.2	63.6
77.5°	66.6	73.7	80.5	83.7	81.8	73.1	63.9	56.3	51.9	49.7	47.8
80°	47.8	51.9	56.5	59.5	58.4	52.5	45.9	40.0	38.1	35.3	34.8
82.5°	32.1	35.3	36.4	37.8	37.0	34.2	29.6	26.1	24.5	23.1	22.8
85°	19.0	19.8	21.2	21.2	20.4	18.5	16.0	14.9	13.3	13.0	12.2
87.5°	8.4	8.4	8.4	8.4	8.4	7.9	6.8	6.3	5.7	5.4	5.2
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: P243165

CATALOG NUMBER: S122DRP-H485D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4	734.4
2.5°	721.9	719.2	715.4	711.1	707.2	701.3	699.4	699.4	700.7	699.1	697.7
5°	703.2	697.7	692.3	683.9	676.8	667.3	664.6	661.9	661.6	658.9	655.3
7.5°	683.1	674.9	663.8	651.8	644.2	633.9	628.2	626.5	621.4	616.5	610.8
10°	659.7	647.2	633.9	622.4	610.5	597.2	590.4	585.7	580.6	574.6	570.5
12.5°	631.4	617.3	605.0	591.7	581.7	562.9	560.7	554.8	544.4	535.5	532.2
15°	614.0	589.3	575.4	563.2	548.0	528.7	521.6	515.1	505.3	499.6	495.0
17.5°	583.3	561.0	543.6	527.3	512.6	497.7	487.1	481.6	473.8	468.9	464.2
20°	555.3	531.1	512.9	493.9	478.7	465.1	456.1	449.3	445.2	440.3	435.7
22.5°	527.0	501.8	484.4	465.1	447.1	439.0	428.4	422.7	417.2	413.4	408.5
25°	494.1	474.0	452.3	437.3	421.6	413.1	403.1	397.7	393.3	389.0	386.5
27.5°	464.8	444.4	424.3	409.3	396.0	387.9	381.6	376.5	371.0	367.8	365.9
30°	434.4	415.6	397.9	383.5	373.2	364.2	360.4	355.5	351.4	350.1	347.1
32.5°	407.2	386.2	372.1	359.1	350.4	344.1	341.4	336.2	335.4	334.1	332.4
35°	380.0	362.0	348.5	337.3	330.0	325.4	321.8	320.5	319.1	317.7	316.4
37.5°	353.1	338.9	326.2	317.2	311.2	307.7	306.9	304.2	303.9	302.0	302.0
40°	328.9	314.5	305.5	298.4	293.6	291.9	289.7	289.2	288.4	287.8	288.9
42.5°	304.7	294.9	287.3	280.0	276.2	274.8	274.3	273.4	272.9	274.5	275.1
45°	282.1	273.7	267.2	262.0	259.8	258.2	258.2	259.0	258.8	259.6	259.6
47.5°	261.2	253.6	248.2	246.3	243.5	243.0	243.3	243.0	244.4	245.4	246.5
50°	241.4	234.6	230.2	228.3	227.8	227.0	228.0	228.6	229.4	230.5	231.0
52.5°	219.3	216.1	213.4	211.5	211.2	211.5	211.2	213.1	213.9	215.5	215.3
55°	200.6	198.1	196.2	194.1	193.8	194.6	195.2	196.8	197.9	199.2	199.0
57.5°	182.9	181.0	178.9	178.3	178.0	178.3	180.8	180.5	182.1	183.2	183.7
60°	163.6	162.3	160.4	160.4	161.2	161.7	162.5	163.9	165.5	165.3	167.2
62.5°	146.0	144.3	143.8	144.6	144.3	145.7	146.5	146.5	148.7	149.5	150.0
65°	128.3	127.8	126.9	126.9	127.8	128.0	129.4	130.2	131.0	132.6	134.0
67.5°	111.7	110.4	110.4	109.8	110.9	111.7	112.5	113.6	114.2	116.1	116.9
70°	94.3	93.8	93.5	94.0	94.0	94.9	96.2	97.6	98.7	98.9	100.6
72.5°	77.5	77.5	77.5	78.3	78.8	79.6	79.9	81.0	82.6	82.9	83.7
75°	62.2	62.5	62.2	62.5	62.8	63.6	64.1	65.2	66.3	66.6	67.1
77.5°	48.1	47.6	47.0	47.8	48.4	50.0	49.7	50.3	51.4	50.8	51.4
80°	33.7	34.5	33.4	35.1	35.1	34.8	35.3	36.2	35.9	36.4	35.9
82.5°	22.8	22.0	22.0	22.8	23.1	22.3	22.8	23.1	23.4	22.8	22.6
85°	12.5	12.2	12.8	12.0	12.2	11.7	11.7	11.1	11.7	11.1	10.6
87.5°	4.6	4.3	4.6	3.8	3.5	3.3	3.0	3.0	2.4	2.4	2.4
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: P243165

CATALOG NUMBER: S122DRP-H485D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	734.4	734.4	734.4	734.4
2.5°	699.6	696.6	695.3	696.4
5°	651.5	652.3	647.4	649.1
7.5°	609.9	606.4	607.5	605.6
10°	565.9	564.0	561.0	561.6
12.5°	536.3	523.5	522.7	520.2
15°	494.7	487.6	486.0	485.5
17.5°	461.5	455.6	457.7	456.1
20°	431.6	431.9	428.4	426.2
22.5°	405.3	404.7	403.4	401.2
25°	383.0	383.0	379.7	378.9
27.5°	362.6	363.1	360.4	360.4
30°	347.4	345.5	345.2	345.7
32.5°	332.2	330.0	330.2	330.0
35°	315.8	316.4	315.6	314.8
37.5°	302.0	302.0	302.0	301.2
40°	288.4	288.9	288.1	288.7
42.5°	274.8	275.1	275.1	274.0
45°	261.2	260.9	260.4	261.5
47.5°	247.1	247.1	246.8	247.3
50°	231.6	232.1	231.3	231.0
52.5°	215.8	216.1	215.8	216.4
55°	199.8	199.8	200.1	200.6
57.5°	183.2	185.1	183.7	184.8
60°	166.9	167.2	167.4	166.9
62.5°	151.4	151.1	151.4	152.2
65°	134.5	135.1	134.8	134.3
67.5°	118.0	117.4	118.2	117.4
70°	100.3	101.4	100.6	101.7
72.5°	84.3	84.0	84.5	83.2
75°	67.4	67.4	67.7	67.4
77.5°	51.6	51.1	50.8	50.0
80°	35.6	35.6	34.5	35.3
82.5°	21.7	22.0	22.3	20.7
85°	10.3	10.3	10.1	9.8
87.5°	2.2	2.2	2.4	2.7
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243165
 CATALOG NUMBER: S122DRP-H485D930-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	17.82	19.34	18.18	19.65	19.97	20.65	22.17	21.02	22.49	22.80
	3H	19.17	20.53	19.54	20.86	21.22	21.67	23.04	22.05	23.37	23.73
	4H	19.65	20.93	20.05	21.28	21.66	22.00	23.28	22.40	23.63	24.01
	6H	20.00	21.19	20.41	21.55	21.94	22.19	23.38	22.61	23.74	24.14
	8H	20.11	21.24	20.53	21.63	22.03	22.24	23.36	22.66	23.75	24.15
	12H	20.18	21.26	20.61	21.64	22.07	22.25	23.33	22.68	23.71	24.14
4H	2H	18.70	19.98	19.10	20.33	20.70	20.89	22.17	21.29	22.52	22.90
	3H	20.19	21.26	20.60	21.66	22.06	22.26	23.33	22.67	23.73	24.13
	4H	20.76	21.72	21.19	22.13	22.57	22.78	23.74	23.21	24.15	24.59
	6H	21.20	22.03	21.66	22.47	22.93	23.11	23.94	23.57	24.39	24.84
	8H	21.33	22.11	21.80	22.56	23.02	23.18	23.96	23.65	24.41	24.87
	12H	21.43	22.13	21.91	22.61	23.08	23.22	23.92	23.70	24.40	24.87
8H	4H	21.20	21.98	21.66	22.42	22.89	22.91	23.69	23.38	24.14	24.60
	6H	21.72	22.36	22.22	22.85	23.33	23.36	24.00	23.85	24.49	24.97
	8H	21.91	22.48	22.42	22.99	23.48	23.49	24.07	24.00	24.58	25.06
	12H	22.06	22.57	22.57	23.06	23.63	23.58	24.09	24.09	24.58	25.15
12H	4H	21.25	21.95	21.74	22.43	22.90	22.91	23.60	23.39	24.08	24.55
	6H	21.80	22.37	22.31	22.88	23.37	23.36	23.94	23.87	24.45	24.93
	8H	22.04	22.54	22.54	23.04	23.60	23.54	24.05	24.05	24.54	25.10