

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: P242285

Luminaire Tested: S122DRP-S485D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242285
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-S485D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

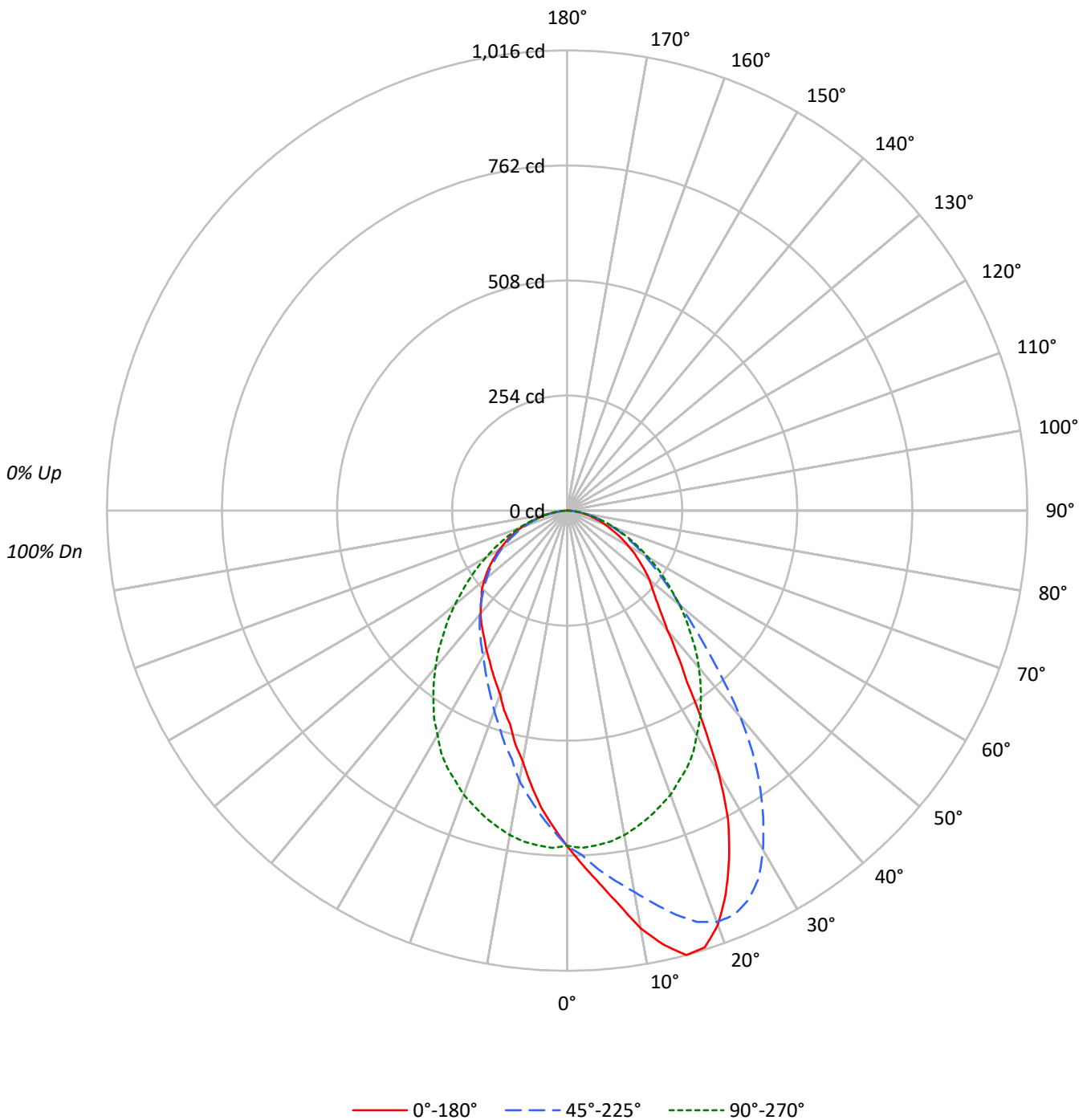
Lumens per Lamp: N/A
Luminaire Lumens: 1632.7 lumens
Efficiency: N/A
Efficacy: 86.8 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	14097	14097	14097	14097	14097
5°	15805	15212	14189	12889	12574
10°	18111	16537	14073	11723	10882
15°	20035	18201	13816	10505	9613
20°	19729	19591	13538	9537	8763
25°	17791	19918	13169	8758	8226
30°	14701	19025	12581	8151	7832
35°	10715	17263	11964	7778	7553
40°	8559	14802	11239	7455	7397
45°	7478	11839	10398	7125	7187
50°	7029	9660	9583	6851	7047
55°	6479	8398	8757	6602	6858
60°	5939	7478	7878	6305	6568
65°	5408	6756	7090	5922	6283
70°	4912	6037	6321	5463	5859
75°	4357	5336	5461	4901	5188
80°	3740	4519	4519	4026	4179
85°	3366	3672	3366	2797	2491

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 18137 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.5	4.3
10°-20°	205.2	12.6
20°-30°	297.8	18.2
30°-40°	313.9	19.2
40°-50°	277.7	17.0
50°-60°	221.7	13.6
60°-70°	150.6	9.2
70°-80°	77.1	4.7
80°-90°	18.2	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°	573.4	35.1
0°-40°	887.4	54.3
0°-60°	1386.8	84.9
0°-90°	1632.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1632.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	740	740	740	740	740	
5°	827	796	742	674	658	82
15°	1016	923	701	533	488	282
25°	846	948	627	417	391	384
35°	461	742	514	334	325	298
45°	278	440	386	264	267	218
55°	195	253	264	199	206	175
65°	120	150	157	131	139	119
75°	59	72	74	67	70	63
85°	15	17	15	13	11	18
90°	0	0	0	0	0	

TEST NUMBER: P242285

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1
2.5°	782.8	783.1	783.6	779.1	778.5	778.5	774.5	771.1	767.1	761.7	762.3
5°	826.6	829.7	830.8	827.4	822.3	821.7	816.9	808.9	801.5	795.6	791.3
7.5°	877.2	878.3	876.1	872.1	868.7	862.1	854.2	846.5	835.1	824.9	817.5
10°	936.4	938.1	933.2	926.7	921.3	913.3	900.2	886.9	870.7	855.0	842.5
12.5°	981.3	986.1	979.6	980.2	969.9	958.3	942.1	936.9	912.5	889.1	875.5
15°	1016.0	1015.7	1016.3	1010.9	1004.1	1002.4	985.9	967.9	935.8	923.0	900.8
17.5°	1010.9	1014.9	1017.1	1015.4	1014.3	1011.7	1004.6	991.3	973.6	952.0	925.6
20°	973.3	979.0	979.9	986.4	990.1	995.0	996.9	993.8	983.9	966.5	944.3
22.5°	915.3	915.9	919.0	930.1	939.2	953.1	960.5	974.5	972.2	965.9	948.3
25°	846.5	843.6	853.6	858.7	877.2	896.5	910.5	925.8	939.5	947.7	942.3
27.5°	770.3	764.3	779.4	792.7	805.8	824.6	845.6	870.7	889.7	915.6	921.9
30°	668.4	671.0	685.2	699.7	722.5	752.0	776.5	804.7	835.1	865.0	885.7
32.5°	558.6	570.3	578.0	602.2	621.5	655.3	694.0	731.0	770.8	805.8	840.8
35°	460.8	472.2	484.7	500.9	529.1	561.8	596.7	644.2	696.0	742.4	780.5
37.5°	398.8	396.8	404.5	416.4	440.6	468.8	510.3	558.6	620.6	672.1	723.3
40°	344.2	343.0	348.1	359.0	376.3	395.7	430.9	472.2	528.8	595.3	659.3
42.5°	306.6	307.8	310.0	316.9	327.4	342.5	366.6	400.2	450.8	512.6	582.5
45°	277.6	279.6	282.7	286.4	293.3	306.3	321.1	346.2	387.1	439.5	507.1
47.5°	254.9	255.4	258.8	262.2	266.2	274.2	287.3	303.2	334.5	379.2	439.7
50°	237.2	235.2	237.5	240.1	244.3	249.5	257.4	272.2	291.5	326.0	374.6
52.5°	215.6	216.2	218.2	218.7	222.4	227.5	234.7	243.8	260.8	285.9	323.7
55°	195.1	196.5	197.7	199.4	202.8	206.5	212.2	219.0	232.7	252.9	282.4
57.5°	175.8	176.4	177.2	180.9	182.9	186.3	192.0	198.3	207.4	223.0	246.3
60°	155.9	155.9	158.1	159.6	162.4	165.8	170.1	176.1	184.0	196.3	214.2
62.5°	137.7	137.4	138.0	140.5	142.5	145.6	149.9	154.7	162.1	172.7	186.6
65°	120.0	119.5	121.2	121.7	124.0	127.1	130.6	136.0	141.9	149.9	163.0
67.5°	102.4	103.3	104.4	105.5	106.7	110.4	112.6	116.6	121.7	128.6	137.7
70°	88.2	88.2	88.2	89.0	90.7	92.4	94.7	97.8	102.7	108.4	116.3
72.5°	72.2	73.4	74.5	73.7	75.9	76.8	79.6	81.1	85.6	88.7	95.6
75°	59.2	59.2	59.2	60.6	61.4	62.3	64.0	65.7	68.0	72.5	76.2
77.5°	46.6	46.4	46.6	46.9	48.1	49.2	49.8	51.2	53.5	55.7	59.2
80°	34.1	34.7	35.0	35.6	35.6	36.1	36.4	38.4	39.8	41.2	43.2
82.5°	24.5	24.5	24.5	24.5	24.7	25.0	25.9	26.2	26.5	27.6	29.0
85°	15.4	15.1	15.1	15.6	15.4	15.4	15.9	16.5	16.5	16.8	17.6
87.5°	7.4	7.4	7.7	7.4	7.4	7.7	7.7	7.4	7.7	8.0	8.2
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°	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1
2.5°	764.3	762.0	760.6	755.5	750.9	746.4	744.9	745.5	739.2	733.3	730.7
5°	789.0	783.3	777.9	770.3	761.1	751.2	746.1	742.1	732.1	721.3	715.1
7.5°	811.5	804.1	794.4	780.8	768.3	753.5	744.4	736.7	722.8	708.2	699.4
10°	831.7	820.6	807.2	789.6	773.4	754.3	741.0	727.6	710.5	692.3	680.9
12.5°	849.0	833.1	820.0	796.1	776.2	751.2	734.7	714.5	696.3	673.8	662.7
15°	878.6	851.0	826.0	800.4	776.8	743.5	725.9	700.6	677.0	650.2	637.4
17.5°	900.5	870.7	832.0	801.0	774.8	739.2	713.9	683.8	657.0	627.5	610.4
20°	918.7	883.2	840.8	802.1	769.1	727.0	698.9	667.9	635.1	600.7	582.0
22.5°	929.5	891.7	849.9	797.8	757.7	717.1	679.8	645.1	611.8	574.0	554.1
25°	930.1	896.0	851.6	795.9	748.6	702.3	659.6	626.6	586.5	551.8	523.1
27.5°	920.7	893.7	850.7	791.9	738.1	684.9	638.6	602.4	560.1	522.5	493.8
30°	900.0	885.7	844.2	785.0	725.0	666.7	614.4	572.0	529.9	491.8	462.2
32.5°	867.8	867.5	832.3	775.4	711.1	643.7	589.1	546.1	498.3	461.1	433.2
35°	823.7	837.4	814.3	760.0	692.9	622.1	563.5	514.5	466.2	430.4	403.9
37.5°	767.7	799.3	790.2	739.5	669.6	599.0	535.3	484.1	437.7	400.8	374.9
40°	709.4	752.6	758.9	715.4	644.5	571.4	502.9	452.0	407.0	374.0	347.9
42.5°	646.8	699.1	719.1	686.3	617.2	542.4	473.9	420.7	376.3	344.5	322.0
45°	575.4	642.3	673.3	653.3	586.2	510.0	439.5	386.0	345.6	315.4	297.5
47.5°	510.8	583.4	622.9	613.5	552.9	477.3	407.6	355.5	315.4	291.0	274.2
50°	441.4	516.5	566.9	569.2	516.5	441.7	371.8	323.4	287.3	264.8	251.7
52.5°	381.1	452.0	508.0	522.5	475.9	404.8	339.6	291.5	260.8	240.6	229.3
55°	330.2	390.8	451.7	473.9	435.5	367.2	306.1	263.7	233.8	219.6	209.3
57.5°	281.9	335.1	392.8	416.1	391.7	331.7	272.5	235.2	209.9	197.1	189.1
60°	245.2	285.0	335.1	364.4	343.9	291.8	241.8	206.8	186.9	175.8	168.4
62.5°	211.1	245.2	285.6	311.7	302.9	254.6	211.1	181.2	164.7	154.4	149.6
65°	179.8	207.6	240.3	265.1	257.7	220.4	183.7	157.3	143.6	135.4	131.1
67.5°	153.0	174.4	197.7	220.4	214.2	186.6	155.6	134.3	123.7	116.3	113.8
70°	128.0	143.4	163.6	180.9	176.1	154.4	131.1	113.5	104.7	98.7	96.1
72.5°	104.1	116.0	130.3	143.6	140.8	123.7	105.2	93.0	86.8	81.3	79.4
75°	82.2	91.9	101.3	110.6	109.8	95.9	84.5	74.2	68.8	64.6	63.7
77.5°	64.3	70.3	77.1	83.1	81.6	72.5	63.1	56.9	52.6	49.8	49.5
80°	46.4	49.5	54.0	58.0	56.0	52.6	45.5	41.2	38.4	35.6	34.4
82.5°	30.4	33.6	35.8	37.5	36.1	33.0	29.3	26.7	25.3	23.6	23.3
85°	17.6	19.3	20.5	21.0	20.5	18.5	16.5	15.4	13.9	13.1	12.8
87.5°	8.5	8.5	8.5	9.1	8.2	8.2	7.1	6.3	6.0	5.7	5.1
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°	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1	740.1
2.5°	727.9	726.2	720.2	717.1	711.9	707.1	704.0	705.4	706.5	706.0	705.1
5°	709.4	704.0	695.7	688.6	683.5	674.1	670.1	668.1	666.4	664.4	662.5
7.5°	688.9	681.2	669.6	660.5	651.4	639.4	633.4	630.0	626.3	622.1	618.1
10°	666.7	654.8	642.3	628.0	616.7	606.1	596.7	590.5	584.8	579.4	575.4
12.5°	643.4	629.2	613.0	592.2	579.4	563.2	563.8	551.5	541.9	539.0	534.2
15°	618.4	599.0	579.4	556.4	546.4	532.7	524.2	515.7	508.0	502.6	501.2
17.5°	591.1	565.2	546.1	529.1	512.8	498.9	491.5	484.7	478.1	470.2	469.9
20°	558.9	537.3	516.0	501.5	484.7	470.5	460.8	454.0	448.6	444.3	440.6
22.5°	528.5	504.3	485.2	469.0	452.5	441.7	434.6	428.1	423.8	419.0	415.6
25°	495.5	477.0	455.7	437.7	424.1	416.7	410.4	404.8	401.9	398.8	394.8
27.5°	467.3	446.8	425.8	411.9	399.3	392.8	388.0	383.7	381.1	379.2	376.6
30°	437.2	416.4	400.8	387.1	377.2	370.6	367.8	365.5	362.4	361.2	360.1
32.5°	408.2	390.0	377.2	365.8	356.4	352.7	350.1	348.1	345.9	344.7	342.2
35°	381.1	365.5	352.4	345.9	338.2	334.5	332.5	329.7	327.4	326.2	326.0
37.5°	355.3	341.0	332.2	323.4	319.7	317.7	314.9	312.9	312.0	311.7	311.5
40°	330.2	319.1	311.5	304.6	303.2	299.8	297.5	295.8	295.8	296.1	295.8
42.5°	307.5	297.8	291.3	285.6	283.9	282.2	279.9	280.2	280.7	281.9	280.7
45°	284.4	277.3	272.5	269.6	266.5	264.5	264.2	265.1	265.4	265.7	266.5
47.5°	262.8	258.3	253.7	250.3	248.9	248.6	248.0	249.5	250.9	251.2	252.6
50°	244.0	238.6	234.9	233.0	231.8	231.2	231.8	233.5	234.7	236.1	236.9
52.5°	223.0	219.6	217.3	215.9	215.6	216.2	216.2	218.2	220.2	220.4	220.7
55°	203.9	201.1	200.5	198.0	199.1	198.8	200.2	201.4	203.1	204.8	205.1
57.5°	184.6	182.0	180.3	180.6	180.9	182.0	183.2	185.2	187.2	189.1	189.1
60°	165.3	164.1	163.3	163.3	163.8	165.5	167.0	169.0	170.1	171.2	172.1
62.5°	147.6	146.5	145.6	146.2	147.9	148.8	150.5	151.3	152.5	153.6	153.9
65°	128.8	128.3	129.1	129.7	130.0	131.4	133.4	134.3	135.4	136.0	138.0
67.5°	111.8	111.8	111.5	112.4	114.1	114.3	116.3	118.6	118.6	119.7	121.2
70°	94.4	95.0	95.6	96.1	97.6	98.1	99.6	100.4	101.5	102.4	103.3
72.5°	78.5	78.5	79.1	78.8	79.9	81.3	82.5	83.3	84.5	85.6	86.5
75°	62.9	62.9	63.4	63.7	65.1	66.6	66.3	66.8	68.0	69.1	69.7
77.5°	48.6	48.1	48.6	48.9	49.5	50.6	50.9	51.8	53.2	52.9	53.5
80°	35.0	34.1	35.0	35.3	35.3	36.7	36.7	37.3	38.1	37.3	38.1
82.5°	22.5	22.2	22.8	22.8	23.3	23.0	23.6	23.6	24.5	24.2	24.5
85°	12.5	12.2	12.5	12.2	12.5	12.8	12.8	12.5	12.5	13.1	12.2
87.5°	4.8	4.6	4.3	4.3	4.0	3.7	3.4	3.4	3.4	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: P242285

CATALOG NUMBER: S122DRP-S485D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	740.1	740.1	740.1	740.1
2.5°	702.3	701.7	701.7	699.1
5°	658.5	657.6	656.2	657.6
7.5°	616.9	613.2	612.7	609.8
10°	570.6	568.3	568.0	562.6
12.5°	535.3	529.1	530.5	527.9
15°	493.5	493.5	492.4	487.5
17.5°	463.6	463.3	460.8	462.5
20°	437.5	435.8	432.3	432.3
22.5°	412.7	413.0	409.3	410.7
25°	394.5	392.2	390.5	391.4
27.5°	375.7	374.9	374.6	372.0
30°	359.8	357.0	357.5	356.1
32.5°	341.6	341.0	340.2	339.0
35°	325.4	325.7	324.3	324.8
37.5°	310.9	312.0	311.2	311.2
40°	296.7	296.7	296.7	297.5
42.5°	283.0	282.4	281.9	281.6
45°	267.1	267.9	268.2	266.8
47.5°	253.1	253.4	253.1	254.9
50°	238.4	237.8	238.4	237.8
52.5°	222.7	223.0	222.4	222.4
55°	206.2	206.8	206.5	206.5
57.5°	189.4	189.7	190.3	188.9
60°	171.8	173.2	172.9	172.4
62.5°	155.6	155.9	155.9	155.9
65°	138.8	139.4	138.5	139.4
67.5°	120.6	120.9	121.5	121.7
70°	103.8	103.5	104.4	105.2
72.5°	86.2	87.0	86.5	87.0
75°	69.1	70.0	69.7	70.5
77.5°	52.9	53.2	53.2	53.5
80°	38.1	37.5	37.0	38.1
82.5°	23.6	24.2	23.6	23.3
85°	12.2	11.9	11.4	11.4
87.5°	2.8	2.6	2.6	2.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242285
 CATALOG NUMBER: S122DRP-S485D927-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	17.49	19.01	17.85	19.32	19.63	20.74	22.26	21.11	22.57	22.89
	3H	18.90	20.26	19.27	20.58	20.95	21.75	23.11	22.13	23.44	23.80
	4H	19.40	20.68	19.80	21.03	21.40	22.07	23.35	22.47	23.70	24.07
	6H	19.75	20.93	20.17	21.30	21.69	22.27	23.45	22.68	23.81	24.20
	8H	19.87	20.99	20.29	21.38	21.78	22.31	23.43	22.74	23.82	24.22
	12H	19.94	21.01	20.37	21.40	21.82	22.33	23.40	22.76	23.78	24.21
4H	2H	18.35	19.63	18.75	19.97	20.35	20.95	22.23	21.35	22.58	22.96
	3H	19.90	20.96	20.31	21.36	21.76	22.29	23.35	22.70	23.75	24.16
	4H	20.50	21.45	20.93	21.86	22.30	22.80	23.76	23.23	24.17	24.61
	6H	20.94	21.77	21.40	22.21	22.67	23.13	23.96	23.59	24.41	24.87
	8H	21.08	21.86	21.55	22.30	22.77	23.21	23.98	23.67	24.43	24.90
	12H	21.19	21.88	21.67	22.36	22.83	23.25	23.94	23.73	24.42	24.89
8H	4H	20.93	21.70	21.39	22.15	22.61	22.93	23.70	23.39	24.15	24.61
	6H	21.46	22.10	21.96	22.59	23.07	23.37	24.01	23.86	24.50	24.97
	8H	21.65	22.23	22.17	22.74	23.23	23.50	24.07	24.01	24.58	25.07
	12H	21.81	22.32	22.32	22.81	23.38	23.59	24.10	24.10	24.59	25.15
12H	4H	20.98	21.68	21.47	22.15	22.63	22.92	23.61	23.41	24.09	24.56
	6H	21.54	22.11	22.05	22.62	23.11	23.37	23.94	23.88	24.45	24.94
	8H	21.78	22.29	22.29	22.78	23.35	23.55	24.05	24.05	24.54	25.11