

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: P243145

Luminaire Tested: S122DRP-H485D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243145  
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-H485D927-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

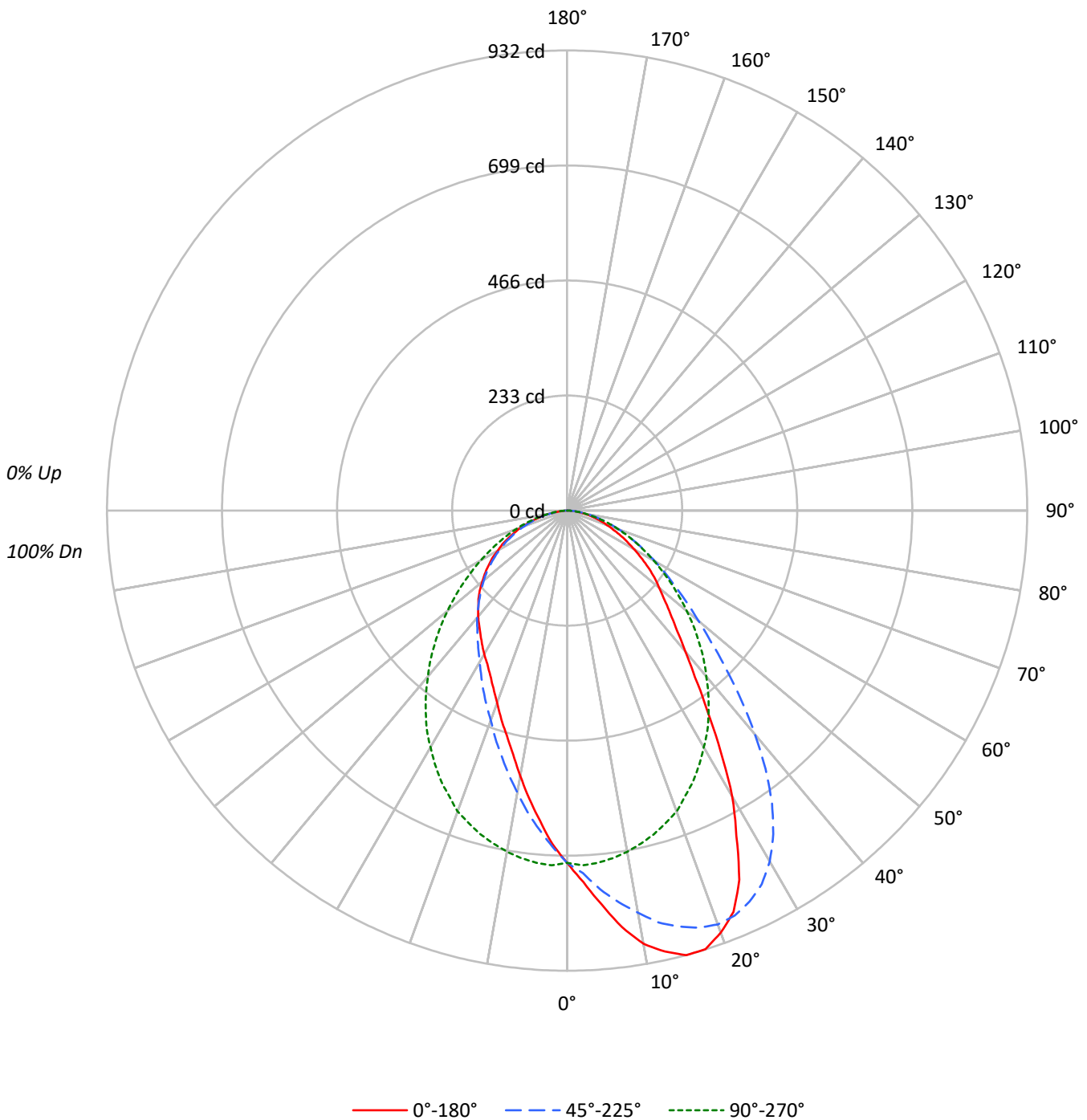
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1583.5 lumens  
Efficiency: N/A  
Efficacy: 92.1 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	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°	13592	13592	13592	13592	13592
5°	15312	14725	13690	12398	12059
10°	17235	15994	13568	11222	10553
15°	18385	17192	13384	10130	9302
20°	18438	18079	13143	9160	8394
25°	17341	18367	12705	8436	7738
30°	14719	18053	12176	7784	7388
35°	11508	16814	11608	7350	7111
40°	9247	14703	10908	7052	6975
45°	7955	12321	10188	6759	6845
50°	7216	10277	9376	6534	6653
55°	6648	8834	8541	6280	6472
60°	5977	7787	7695	5985	6179
65°	5381	6963	6914	5607	5882
70°	4795	6176	6148	5135	5502
75°	4313	5387	5284	4548	4820
80°	3762	4464	4256	3708	3762
85°	3235	3693	3169	2491	2076

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 65°  
 Vertical Angle: 45°  
 Luminance: 17038 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.0	4.3
10°-20°	195.4	12.3
20°-30°	284.2	17.9
30°-40°	304.8	19.3
40°-50°	273.2	17.3
50°-60°	217.8	13.8
60°-70°	147.3	9.3
70°-80°	75.1	4.7
80°-90°	17.6	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°	547.6	34.6
0°-40°	852.4	53.8
0°-60°	1343.4	84.8
0°-90°	1583.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1583.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	714	714	714	714	714	
5°	801	770	716	648	631	79
15°	932	872	679	514	472	261
25°	825	874	604	401	368	371
35°	495	723	499	316	306	314
45°	295	457	378	251	254	231
55°	200	266	257	189	195	179
65°	119	154	153	124	130	118
75°	59	73	72	62	66	63
85°	15	17	14	11	10	17
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°	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6
2.5°	753.2	755.6	753.5	752.7	751.1	750.6	746.4	742.9	740.8	735.0	735.5
5°	800.8	806.0	803.1	802.9	797.1	793.4	789.7	784.4	776.5	770.1	765.1
7.5°	850.9	848.3	847.5	844.6	840.4	835.1	826.9	819.2	809.2	800.0	793.1
10°	891.1	890.3	891.6	884.2	881.6	873.4	866.3	854.4	841.4	826.9	817.9
12.5°	914.8	917.2	919.1	916.2	909.8	907.5	895.6	878.9	874.4	854.6	843.8
15°	932.3	933.3	933.6	930.4	927.3	921.2	914.1	903.5	889.0	871.8	863.6
17.5°	931.2	931.0	932.5	930.7	928.8	927.0	921.5	913.3	901.9	885.8	872.1
20°	909.6	914.3	918.0	918.8	918.5	919.6	917.0	911.7	903.5	891.9	876.3
22.5°	880.0	878.1	886.1	885.5	889.0	896.9	900.3	898.2	895.0	887.6	875.2
25°	825.1	826.9	832.4	838.3	851.7	856.5	866.8	874.7	875.8	873.9	866.3
27.5°	742.7	755.9	758.8	766.4	785.2	800.8	821.6	834.0	851.7	853.3	849.9
30°	669.2	668.7	673.2	686.9	704.1	727.6	754.5	786.5	806.8	820.8	825.8
32.5°	578.9	581.0	592.6	609.5	627.0	650.5	681.6	720.7	747.9	777.0	793.4
35°	494.9	501.5	512.6	524.2	543.3	575.5	610.1	642.6	684.3	723.1	749.5
37.5°	425.7	434.7	443.2	454.3	472.7	497.6	528.7	571.8	613.2	660.0	698.8
40°	371.9	375.3	381.1	391.9	404.3	429.2	460.6	492.8	537.7	591.3	642.3
42.5°	329.6	328.8	335.1	342.0	353.4	371.9	399.3	431.5	476.2	523.7	575.2
45°	295.3	295.5	298.2	305.3	314.3	324.8	346.0	376.3	410.2	457.4	512.1
47.5°	267.3	268.1	272.0	277.0	282.3	292.1	306.1	325.9	357.6	397.2	448.4
50°	243.5	244.8	247.5	251.2	255.1	262.0	272.6	288.1	313.2	346.8	393.2
52.5°	222.4	222.9	223.7	227.1	230.3	236.6	244.6	256.7	276.5	304.5	340.7
55°	200.2	199.7	201.5	204.4	207.3	211.8	220.0	229.8	243.8	266.0	295.8
57.5°	177.5	178.3	179.6	181.2	186.5	191.2	197.3	206.3	217.4	234.8	259.6
60°	156.9	156.9	158.5	160.6	164.0	167.2	173.0	181.2	190.9	204.4	225.3
62.5°	136.8	137.9	139.4	140.5	143.7	147.6	152.1	158.5	167.4	178.3	193.9
65°	119.4	118.8	120.4	122.5	124.9	127.6	132.6	137.9	144.7	154.5	167.4
67.5°	101.4	103.0	103.5	104.6	106.4	109.9	112.2	117.8	123.3	132.1	142.9
70°	86.1	87.2	87.9	89.3	90.9	92.4	94.8	99.3	104.8	110.9	118.6
72.5°	72.4	73.2	72.4	73.7	74.5	76.1	79.2	81.3	85.6	90.9	97.7
75°	58.6	59.2	58.9	60.2	60.5	62.1	63.6	65.5	70.3	73.2	77.9
77.5°	46.0	46.5	46.7	47.3	47.8	48.6	49.4	51.2	53.9	56.5	60.2
80°	34.3	34.3	35.1	35.4	35.7	36.2	37.5	38.0	39.9	40.7	43.6
82.5°	23.8	24.0	24.3	24.3	24.6	25.1	25.4	26.4	26.9	28.3	29.6
85°	14.8	15.1	15.1	15.1	15.8	15.6	15.6	16.1	16.9	16.9	17.4
87.5°	7.4	7.7	7.7	7.7	7.9	7.9	7.9	7.9	7.9	8.5	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°	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6
2.5°	735.3	735.0	733.9	729.2	725.5	720.7	719.9	719.1	712.5	705.4	703.3
5°	761.1	756.4	749.8	741.9	733.9	725.2	720.2	716.0	705.9	694.9	688.5
7.5°	786.5	777.3	767.0	754.5	741.3	727.3	718.4	709.9	696.2	681.6	672.9
10°	808.2	795.7	781.5	765.1	746.9	727.9	714.7	701.5	684.0	666.3	654.7
12.5°	826.1	810.3	791.5	769.3	752.7	726.5	708.1	690.6	671.3	648.4	635.7
15°	839.8	824.3	798.9	776.5	754.5	719.7	697.2	678.7	652.9	630.4	610.3
17.5°	856.5	834.3	809.2	777.0	752.7	712.8	687.5	663.4	635.4	609.0	586.8
20°	863.9	840.6	813.7	777.8	746.9	705.4	671.6	648.4	614.6	584.2	559.1
22.5°	864.9	842.7	813.4	775.4	736.8	694.6	655.8	625.4	591.6	559.4	531.1
25°	860.4	839.3	808.9	771.2	725.8	683.0	639.7	604.5	565.4	532.2	503.4
27.5°	848.3	831.1	802.3	761.9	714.4	665.0	617.7	579.4	540.9	503.1	475.6
30°	828.8	817.4	792.6	749.8	699.9	645.5	598.2	553.6	511.8	476.4	446.9
32.5°	803.7	798.1	777.5	735.3	685.1	624.1	574.7	528.7	483.3	449.8	419.4
35°	771.7	774.6	757.2	718.9	666.3	602.4	547.2	499.2	454.8	419.1	391.1
37.5°	730.2	744.5	733.4	697.5	642.3	580.5	518.4	470.1	423.6	389.3	364.7
40°	683.8	708.8	703.6	673.5	616.4	554.9	490.7	438.7	393.2	360.8	337.3
42.5°	629.1	665.5	671.3	644.1	590.8	522.9	459.5	409.4	365.5	333.6	311.1
45°	567.8	613.0	632.5	611.1	561.0	492.0	427.6	378.2	334.9	307.7	288.9
47.5°	506.3	560.7	587.1	576.8	526.1	459.0	395.9	347.6	306.6	282.9	265.2
50°	445.5	503.9	542.5	535.6	491.8	427.6	363.9	316.4	278.9	257.0	241.9
52.5°	392.2	447.4	489.4	492.8	453.5	391.7	330.1	286.0	254.1	234.3	221.6
55°	339.6	390.9	436.8	445.3	413.3	353.9	299.0	257.2	228.2	211.8	201.5
57.5°	292.6	339.1	384.8	399.6	373.7	320.1	265.4	228.7	203.6	190.9	182.0
60°	252.7	294.7	334.1	349.1	331.4	282.6	234.8	202.0	181.2	169.8	162.7
62.5°	217.9	250.4	285.2	301.9	290.0	247.5	205.7	176.7	159.8	150.0	144.5
65°	186.5	211.5	239.0	258.3	245.1	213.4	178.5	153.4	139.2	130.2	126.2
67.5°	157.4	178.3	200.2	215.5	208.9	180.1	150.8	131.3	119.4	112.5	108.8
70°	131.0	146.6	164.3	176.2	171.4	149.2	126.0	110.4	100.4	95.6	92.4
72.5°	107.5	117.5	131.0	140.8	135.7	120.2	103.5	91.1	83.7	78.2	75.8
75°	85.3	94.0	103.5	110.1	106.2	94.5	81.3	71.8	66.8	63.4	61.8
77.5°	64.7	71.6	78.2	81.3	79.5	71.0	62.1	54.7	50.4	48.3	46.5
80°	46.5	50.4	54.9	57.8	56.8	51.0	44.6	38.8	37.0	34.3	33.8
82.5°	31.2	34.3	35.4	36.7	35.9	33.3	28.8	25.4	23.8	22.4	22.2
85°	18.5	19.3	20.6	20.6	19.8	18.0	15.6	14.5	12.9	12.7	11.9
87.5°	8.2	8.2	8.2	8.2	8.2	7.7	6.6	6.1	5.5	5.3	5.0
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°	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6	713.6
2.5°	701.5	698.8	695.1	690.9	687.2	681.4	679.5	679.5	680.9	679.3	677.9
5°	683.2	677.9	672.7	664.5	657.6	648.4	645.7	643.1	642.8	640.2	636.7
7.5°	663.7	655.8	644.9	633.3	625.9	615.9	610.3	608.8	603.7	599.0	593.4
10°	641.0	628.8	615.9	604.8	593.2	580.2	573.6	569.1	564.1	558.3	554.3
12.5°	613.5	599.8	587.9	574.9	565.2	547.0	544.8	539.0	529.0	520.3	517.1
15°	596.6	572.6	559.1	547.2	532.4	513.7	506.8	500.5	491.0	485.4	480.9
17.5°	566.8	545.1	528.2	512.4	498.1	483.6	473.3	468.0	460.3	455.6	451.1
20°	539.6	516.1	498.4	479.9	465.1	451.9	443.2	436.6	432.6	427.8	423.4
22.5°	512.1	487.5	470.6	451.9	434.4	426.5	416.2	410.7	405.4	401.7	396.9
25°	480.1	460.6	439.5	424.9	409.6	401.4	391.7	386.4	382.2	377.9	375.6
27.5°	451.6	431.8	412.3	397.7	384.8	376.9	370.8	365.8	360.5	357.3	355.5
30°	422.0	403.8	386.6	372.6	362.6	353.9	350.2	345.4	341.5	340.2	337.3
32.5°	395.6	375.3	361.6	348.9	340.4	334.4	331.7	326.7	325.9	324.6	323.0
35°	369.2	351.8	338.6	327.8	320.6	316.1	312.7	311.4	310.1	308.7	307.4
37.5°	343.1	329.3	316.9	308.2	302.4	299.0	298.2	295.5	295.3	293.4	293.4
40°	319.6	305.6	296.9	290.0	285.2	283.6	281.5	281.0	280.2	279.7	280.7
42.5°	296.1	286.6	279.2	272.0	268.3	267.0	266.5	265.7	265.2	266.7	267.3
45°	274.1	266.0	259.6	254.6	252.5	250.9	250.9	251.7	251.4	252.2	252.2
47.5°	253.8	246.4	241.1	239.3	236.6	236.1	236.4	236.1	237.4	238.5	239.5
50°	234.5	227.9	223.7	221.8	221.3	220.5	221.6	222.1	222.9	224.0	224.5
52.5°	213.1	210.0	207.3	205.5	205.2	205.5	205.2	207.1	207.8	209.4	209.2
55°	194.9	192.5	190.7	188.6	188.3	189.1	189.6	191.2	192.3	193.6	193.3
57.5°	177.7	175.9	173.8	173.3	173.0	173.3	175.6	175.4	176.9	178.0	178.5
60°	159.0	157.7	155.8	155.8	156.6	157.1	157.9	159.3	160.8	160.6	162.4
62.5°	141.8	140.2	139.7	140.5	140.2	141.6	142.4	142.4	144.5	145.3	145.8
65°	124.7	124.1	123.3	123.3	124.1	124.4	125.7	126.5	127.3	128.9	130.2
67.5°	108.5	107.2	107.2	106.7	107.8	108.5	109.3	110.4	110.9	112.8	113.6
70°	91.6	91.1	90.9	91.4	91.4	92.2	93.5	94.8	95.9	96.1	97.7
72.5°	75.3	75.3	75.3	76.1	76.6	77.4	77.6	78.7	80.3	80.6	81.3
75°	60.5	60.7	60.5	60.7	61.0	61.8	62.3	63.4	64.4	64.7	65.2
77.5°	46.7	46.2	45.7	46.5	47.0	48.6	48.3	48.9	49.9	49.4	49.9
80°	32.7	33.5	32.5	34.1	34.1	33.8	34.3	35.1	34.9	35.4	34.9
82.5°	22.2	21.4	21.4	22.2	22.4	21.7	22.2	22.4	22.7	22.2	21.9
85°	12.1	11.9	12.4	11.6	11.9	11.4	11.4	10.8	11.4	10.8	10.3
87.5°	4.5	4.2	4.5	3.7	3.4	3.2	2.9	2.9	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: P243145

CATALOG NUMBER: S122DRP-H485D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	713.6	713.6	713.6	713.6
2.5°	679.8	676.9	675.6	676.6
5°	633.1	633.8	629.1	630.7
7.5°	592.6	589.2	590.3	588.4
10°	549.9	548.0	545.1	545.6
12.5°	521.1	508.7	507.9	505.5
15°	480.7	473.8	472.2	471.7
17.5°	448.4	442.6	444.7	443.2
20°	419.4	419.7	416.2	414.1
22.5°	393.8	393.2	391.9	389.8
25°	372.1	372.1	369.0	368.2
27.5°	352.3	352.8	350.2	350.2
30°	337.5	335.7	335.4	335.9
32.5°	322.7	320.6	320.9	320.6
35°	306.9	307.4	306.6	305.8
37.5°	293.4	293.4	293.4	292.6
40°	280.2	280.7	279.9	280.5
42.5°	267.0	267.3	267.3	266.2
45°	253.8	253.5	253.0	254.1
47.5°	240.1	240.1	239.8	240.3
50°	225.0	225.5	224.8	224.5
52.5°	209.7	210.0	209.7	210.2
55°	194.1	194.1	194.4	194.9
57.5°	178.0	179.9	178.5	179.6
60°	162.2	162.4	162.7	162.2
62.5°	147.1	146.8	147.1	147.9
65°	130.7	131.3	131.0	130.5
67.5°	114.6	114.1	114.9	114.1
70°	97.5	98.5	97.7	98.8
72.5°	81.9	81.6	82.1	80.8
75°	65.5	65.5	65.8	65.5
77.5°	50.2	49.7	49.4	48.6
80°	34.6	34.6	33.5	34.3
82.5°	21.1	21.4	21.7	20.1
85°	10.0	10.0	9.8	9.5
87.5°	2.1	2.1	2.4	2.6
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243145  
 CATALOG NUMBER: S122DRP-H485D927-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	17.72	19.24	18.08	19.55	19.87	20.55	22.07	20.92	22.39	22.70
	3H	19.07	20.43	19.44	20.76	21.12	21.57	22.94	21.95	23.27	23.63
	4H	19.55	20.83	19.95	21.18	21.56	21.90	23.18	22.30	23.53	23.91
	6H	19.90	21.09	20.31	21.45	21.84	22.09	23.28	22.51	23.64	24.04
	8H	20.01	21.14	20.43	21.53	21.93	22.14	23.26	22.56	23.65	24.05
	12H	20.08	21.16	20.51	21.54	21.97	22.15	23.23	22.58	23.61	24.04
4H	2H	18.60	19.88	19.00	20.23	20.61	20.79	22.07	21.19	22.42	22.80
	3H	20.09	21.16	20.50	21.56	21.96	22.16	23.23	22.57	23.63	24.03
	4H	20.66	21.62	21.09	22.04	22.47	22.68	23.64	23.11	24.05	24.49
	6H	21.10	21.93	21.56	22.37	22.83	23.01	23.84	23.47	24.29	24.74
	8H	21.23	22.01	21.70	22.46	22.92	23.08	23.86	23.55	24.31	24.77
	12H	21.33	22.03	21.81	22.51	22.98	23.12	23.82	23.60	24.30	24.77
8H	4H	21.10	21.88	21.56	22.32	22.79	22.81	23.59	23.28	24.04	24.50
	6H	21.62	22.26	22.12	22.76	23.23	23.26	23.90	23.75	24.39	24.87
	8H	21.81	22.38	22.32	22.89	23.38	23.39	23.97	23.90	24.48	24.96
	12H	21.96	22.47	22.47	22.96	23.53	23.48	23.99	23.99	24.48	25.05
12H	4H	21.15	21.85	21.64	22.33	22.80	22.81	23.50	23.29	23.98	24.45
	6H	21.70	22.28	22.21	22.79	23.27	23.26	23.84	23.77	24.35	24.83
	8H	21.94	22.44	22.45	22.94	23.50	23.44	23.95	23.95	24.44	25.00