

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: P243278

Luminaire Tested: S122RDRP-H485D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243278
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122RDRP-H485D940-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

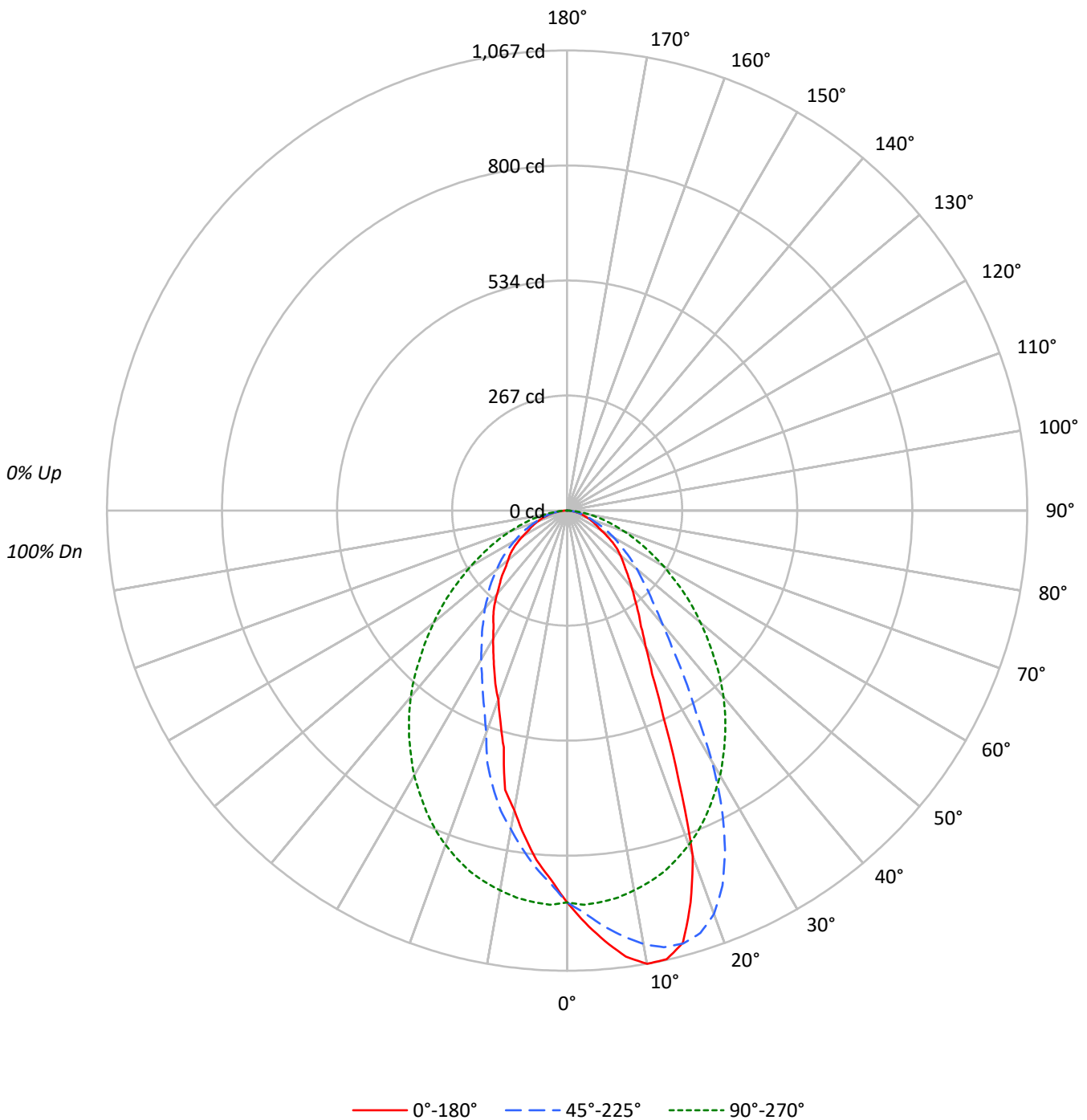
Lumens per Lamp: N/A
Luminaire Lumens: 1531.0 lumens
Efficiency: N/A
Efficacy: 89.0 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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: P243278

CATALOG NUMBER: S122RDRP-H485D940-X4F0-XX-UDD-A-W

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	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	86	83	79	84	80	78					76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68					66				
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60					58				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	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					38				
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	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°	17303	17303	17303	17303	17303
5°	19153	18484	17421	15897	15551
10°	20639	19744	17299	14518	13638
15°	20457	20499	17099	13096	11207
20°	17256	20173	16721	11122	9460
25°	11095	18205	16206	9733	8421
30°	8015	14763	15605	8767	7544
35°	6676	11052	14854	8004	6939
40°	5794	8566	14029	7385	6283
45°	5172	7173	12979	6869	5748
50°	4774	6247	11954	6306	5287
55°	4284	5390	10919	5885	5034
60°	3421	4743	9829	5345	4530
65°	3137	4034	8829	4904	4178
70°	2879	3325	7797	4355	3971
75°	2627	2973	6822	4136	3761
80°	2282	2611	5671	3784	3521
85°	1814	2142	4546	3453	3256

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 75°
 Vertical Angle: 45°
 Luminance: 17183 cd/sqm



TEST NUMBER: P243278

CATALOG NUMBER: S122RDRP-H485D940-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.0	5.6
10°-20°	235.3	15.4
20°-30°	296.6	19.4
30°-40°	284.7	18.6
40°-50°	245.2	16.0
50°-60°	187.5	12.2
60°-70°	119.3	7.8
70°-80°	60.5	3.9
80°-90°	16.0	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°	617.8	40.4
0°-40°	902.5	59.0
0°-60°	1335.2	87.2
0°-90°	1531.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1531.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	908	908	908	908	908	
5°	1002	967	911	831	813	98
15°	1037	1040	867	664	568	281
25°	528	866	771	463	401	252
35°	287	475	639	344	298	181
45°	192	266	482	255	213	149
55°	129	162	329	177	152	114
65°	70	90	196	109	93	69
75°	36	40	93	56	51	38
85°	8	10	21	16	15	10
90°	0	0	0	0	0	

TEST NUMBER: P243278

CATALOG NUMBER: S122RDRP-H485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4
2.5°	956.6	957.8	958.3	956.9	953.6	953.9	950.9	945.9	939.6	934.0	937.2
5°	1001.7	1003.2	1002.9	1000.3	997.0	994.0	989.0	981.8	974.4	966.7	965.2
7.5°	1043.4	1046.6	1045.7	1040.7	1038.3	1034.1	1025.5	1017.5	1006.2	995.2	990.7
10°	1067.1	1069.8	1068.3	1067.1	1064.5	1060.3	1052.6	1044.8	1032.4	1020.8	1014.2
12.5°	1065.4	1067.7	1068.9	1070.1	1069.2	1067.7	1064.5	1057.9	1047.8	1037.1	1028.8
15°	1037.4	1033.6	1030.9	1038.3	1041.0	1051.1	1053.5	1054.4	1047.5	1039.5	1037.4
17.5°	952.4	953.6	974.1	970.8	975.3	1000.0	1009.8	1023.1	1028.8	1027.0	1030.6
20°	851.3	837.4	847.5	862.3	876.3	912.3	936.1	957.2	981.5	995.2	1008.3
22.5°	675.4	675.7	700.0	724.4	755.9	794.9	831.1	871.5	914.9	941.4	972.0
25°	527.9	542.2	552.9	563.6	609.4	646.8	707.2	756.2	816.0	866.2	917.6
27.5°	426.9	441.7	443.5	467.6	494.6	525.0	564.5	641.8	703.0	776.7	840.3
30°	364.4	367.4	373.6	379.9	399.8	428.0	470.6	519.0	587.1	671.2	756.5
32.5°	319.3	318.7	324.9	334.7	345.7	364.7	388.8	428.9	490.5	557.4	656.9
35°	287.1	286.3	290.7	294.3	300.8	316.3	338.0	364.4	408.7	475.3	552.6
37.5°	256.8	258.6	261.3	265.2	273.8	283.6	298.1	320.1	355.2	399.2	473.2
40°	233.0	235.1	238.1	240.8	247.3	255.3	265.2	282.7	306.2	344.5	401.3
42.5°	211.6	212.5	214.9	218.8	223.5	230.7	240.2	253.6	273.2	299.9	349.6
45°	192.0	192.0	194.7	198.3	201.2	208.1	215.5	228.3	243.5	266.3	301.7
47.5°	175.4	175.7	177.2	177.8	181.0	187.3	195.3	205.4	217.9	235.4	268.4
50°	161.1	162.3	162.9	163.8	165.0	168.2	173.9	181.6	195.3	210.8	232.8
52.5°	146.2	147.7	148.9	150.7	152.5	152.8	157.0	162.0	171.5	187.6	205.4
55°	129.0	130.2	132.6	134.1	136.4	138.5	141.8	145.4	151.6	162.3	180.7
57.5°	109.4	109.7	112.1	113.6	118.3	123.1	126.0	129.9	134.4	141.8	155.8
60°	89.8	90.7	91.0	92.1	96.3	101.4	107.3	113.3	118.0	124.5	134.4
62.5°	79.1	79.4	80.3	81.4	81.7	84.1	85.9	93.0	101.4	107.9	114.4
65°	69.6	69.9	69.9	70.7	71.9	73.1	74.0	76.7	80.3	89.5	97.5
67.5°	60.6	60.3	60.9	61.8	62.1	63.0	64.5	66.0	68.4	71.0	79.4
70°	51.7	51.7	51.4	52.3	53.2	53.5	54.4	55.9	57.4	59.7	62.4
72.5°	42.8	43.4	43.4	44.0	44.3	45.5	46.1	46.7	48.7	49.9	52.0
75°	35.7	35.4	36.3	36.0	36.6	36.9	37.8	38.6	39.2	40.4	42.2
77.5°	28.5	27.9	28.5	28.2	28.8	29.4	29.4	30.3	30.9	32.1	33.0
80°	20.8	20.8	21.1	21.7	21.7	22.0	22.6	22.3	23.5	23.8	24.7
82.5°	14.3	14.6	14.6	14.9	14.9	14.9	15.5	15.5	15.8	16.3	16.6
85°	8.3	8.0	8.3	8.3	8.3	8.6	8.9	8.6	9.2	9.8	9.8
87.5°	2.4	2.4	2.7	3.0	3.0	3.3	3.3	3.3	3.6	3.6	3.9
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: P243278

CATALOG NUMBER: S122RDRP-H485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4
2.5°	937.2	935.8	931.9	928.3	921.8	916.4	914.7	914.9	906.9	898.6	896.2
5°	963.1	957.8	950.0	942.0	932.2	922.4	916.1	911.1	898.6	886.1	879.0
7.5°	984.5	975.9	964.6	951.8	939.0	924.5	914.4	904.8	887.6	870.7	861.4
10°	1004.1	991.9	976.5	959.8	942.9	923.9	909.3	894.4	872.7	853.7	838.0
12.5°	1022.9	1003.5	987.8	963.7	945.0	919.1	899.2	882.0	856.4	832.6	815.1
15°	1024.6	1011.0	989.9	964.9	936.4	912.3	887.3	867.1	838.0	811.5	781.5
17.5°	1024.3	1013.6	991.6	966.1	931.9	900.4	873.3	846.9	813.6	782.7	756.8
20°	1013.6	1006.2	987.2	956.9	922.4	886.1	856.1	824.9	785.9	754.1	725.9
22.5°	988.4	990.2	975.3	948.2	911.1	870.7	835.9	799.9	760.1	723.5	687.8
25°	945.6	964.6	960.1	934.9	895.3	851.0	811.5	771.1	728.3	689.3	656.3
27.5°	892.4	928.0	935.8	916.1	878.4	828.7	783.9	739.9	696.2	654.3	620.4
30°	829.3	882.5	902.2	891.5	856.7	804.7	752.6	709.5	661.7	617.1	581.4
32.5°	750.0	824.6	859.1	862.3	833.8	777.9	720.2	673.9	624.8	582.6	544.3
35°	661.4	752.9	809.1	824.3	803.8	748.5	687.8	638.8	586.5	544.0	505.3
37.5°	572.2	679.8	753.5	783.0	769.3	715.8	651.6	601.9	550.2	506.8	470.6
40°	490.2	592.4	688.1	734.2	730.1	680.4	615.6	564.2	511.6	471.4	431.6
42.5°	416.8	515.4	620.7	682.5	685.8	642.4	576.1	524.4	473.8	434.0	392.4
45°	358.8	445.6	549.9	623.6	637.9	602.2	535.1	481.8	435.8	398.3	356.7
47.5°	312.4	379.9	476.8	563.3	588.6	557.4	493.1	442.6	399.2	367.1	327.9
50°	272.3	335.6	417.9	497.9	535.1	511.6	451.5	403.4	364.1	333.2	298.7
52.5°	236.6	285.7	357.0	433.7	483.6	462.2	411.1	366.8	330.0	301.1	272.3
55°	207.2	248.2	311.2	379.6	425.7	413.8	368.3	328.8	296.4	269.0	245.5
57.5°	176.9	211.3	262.2	323.1	368.3	366.5	329.1	291.0	265.4	239.6	222.6
60°	150.4	178.4	219.7	271.4	316.9	317.2	288.0	258.0	236.0	213.7	197.7
62.5°	126.9	149.2	185.2	226.8	263.1	272.3	250.6	224.4	206.6	189.4	175.7
65°	106.7	123.4	150.4	188.2	216.7	229.2	214.9	195.9	181.0	165.6	153.4
67.5°	88.0	100.2	120.1	149.8	178.4	187.6	181.6	167.1	156.4	143.6	134.4
70°	69.3	79.7	93.6	115.9	139.4	152.2	150.4	140.0	131.1	121.9	113.3
72.5°	55.0	60.9	71.6	87.7	106.4	120.7	121.3	115.9	108.5	100.8	95.1
75°	44.3	47.0	52.0	64.5	79.4	91.3	95.4	92.7	86.8	82.0	78.2
77.5°	34.2	36.6	39.8	45.8	57.4	66.6	71.6	71.9	68.4	64.2	61.2
80°	25.6	26.5	28.8	31.8	37.8	45.8	51.7	51.7	49.6	47.6	45.8
82.5°	17.5	18.4	19.6	21.1	24.1	28.8	34.2	35.1	33.9	33.3	30.9
85°	9.8	10.7	11.3	12.2	13.4	15.8	19.6	20.8	21.1	19.3	18.1
87.5°	3.9	3.9	4.2	4.5	4.8	5.6	7.1	8.9	8.9	8.0	7.7
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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CATALOG NUMBER: S122RDRP-H485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4	908.4
2.5°	893.2	889.1	883.7	879.0	872.4	865.9	864.7	867.1	867.7	864.7	865.6
5°	872.1	864.4	857.9	847.2	840.3	831.4	825.5	825.5	825.5	821.0	816.9
7.5°	850.1	839.7	827.3	817.2	803.2	791.6	785.9	783.3	777.9	773.5	768.4
10°	824.6	810.0	794.6	778.8	766.6	750.6	741.1	735.1	725.9	722.0	714.6
12.5°	794.6	780.0	761.3	735.7	732.1	712.5	699.1	688.1	676.8	667.6	664.4
15°	770.5	745.2	720.2	702.1	675.7	664.1	644.4	642.7	633.4	606.4	585.3
17.5°	731.5	709.0	681.3	661.1	640.0	614.1	593.3	572.8	553.2	534.2	533.6
20°	697.1	670.6	644.4	622.5	585.6	548.7	535.9	517.2	505.6	490.5	486.0
22.5°	659.3	631.7	599.0	566.9	523.8	500.6	486.6	471.7	460.1	453.3	446.5
25°	621.3	593.6	550.2	510.7	481.3	463.1	451.2	435.2	426.9	420.9	412.0
27.5°	584.1	549.0	503.3	471.7	448.0	427.5	416.8	403.7	394.5	386.7	381.1
30°	547.2	499.1	460.1	435.8	411.4	398.6	384.6	374.8	368.0	360.9	351.7
32.5°	506.8	456.3	431.0	401.0	386.7	368.3	358.2	348.1	339.2	334.1	330.8
35°	459.9	419.1	396.5	374.5	356.4	344.2	330.0	323.7	319.0	309.1	305.0
37.5°	420.0	390.6	366.8	347.2	330.5	317.5	310.9	300.2	293.4	290.1	285.7
40°	387.0	360.9	340.4	320.4	306.5	297.0	285.4	279.7	270.8	267.5	264.0
42.5°	358.5	334.4	313.0	297.8	285.7	272.6	266.6	257.1	253.3	245.2	242.3
45°	329.7	308.3	289.5	274.7	263.1	255.0	244.3	238.4	231.6	227.4	219.4
47.5°	300.8	281.8	266.3	253.9	243.7	233.9	225.0	220.0	211.3	206.9	202.7
50°	278.5	260.1	245.5	233.0	222.6	212.8	207.2	198.9	191.1	186.1	184.6
52.5°	252.1	236.0	222.6	213.1	202.7	195.6	187.9	178.6	174.8	169.7	168.5
55°	228.6	215.5	204.2	194.1	185.2	177.2	168.2	161.7	158.7	156.4	154.6
57.5°	206.6	194.1	183.7	174.5	166.8	158.4	151.0	147.1	144.5	141.8	140.0
60°	184.9	173.6	164.1	156.4	148.3	140.3	135.0	131.7	129.6	125.7	124.5
62.5°	165.6	155.2	145.4	138.2	130.8	124.5	120.1	115.6	112.4	109.4	103.1
65°	144.5	135.3	127.8	120.7	113.6	108.8	103.7	98.7	94.5	94.5	94.5
67.5°	125.7	117.7	110.0	103.7	97.5	91.9	86.8	86.5	85.0	84.4	83.5
70°	106.7	101.1	93.9	87.1	80.9	78.2	77.3	75.8	74.0	73.7	72.5
72.5°	89.5	82.9	76.4	70.4	69.3	68.1	66.3	64.8	63.6	62.7	62.1
75°	73.1	66.6	61.2	59.7	58.3	56.2	54.7	53.5	52.9	52.9	52.6
77.5°	55.9	52.0	49.6	47.3	46.1	44.9	44.0	43.4	42.5	42.8	42.2
80°	41.0	39.8	37.8	36.3	35.7	34.5	33.9	33.6	33.0	33.0	32.7
82.5°	29.4	27.3	26.5	25.6	25.0	24.4	24.7	24.4	24.1	23.8	24.1
85°	16.9	16.6	16.1	16.1	16.1	15.8	15.8	15.8	15.5	15.2	15.2
87.5°	7.4	7.7	7.7	7.1	8.0	8.0	7.7	7.7	7.4	8.0	7.4
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: P243278

CATALOG NUMBER: S122RDRP-H485D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	908.4	908.4	908.4	908.4
2.5°	861.7	861.4	859.7	856.7
5°	815.1	813.9	810.9	813.3
7.5°	765.1	761.9	758.9	760.4
10°	711.6	710.4	708.7	705.1
12.5°	652.5	657.2	652.2	663.5
15°	564.8	585.9	559.4	568.3
17.5°	521.1	521.4	517.8	513.7
20°	480.1	469.7	473.5	466.7
22.5°	440.5	438.2	437.0	434.6
25°	405.2	400.7	399.2	400.7
27.5°	379.0	376.9	371.3	370.4
30°	346.3	345.4	343.6	343.0
32.5°	325.8	321.9	321.0	317.5
35°	302.9	300.8	299.3	298.4
37.5°	280.0	278.8	276.1	277.6
40°	261.3	255.3	253.0	252.7
42.5°	240.8	237.5	232.8	231.3
45°	217.0	215.5	214.0	213.4
47.5°	196.2	195.3	193.5	192.6
50°	181.3	178.9	178.6	178.4
52.5°	167.1	166.2	165.3	166.5
55°	153.7	152.5	151.6	151.6
57.5°	139.1	137.0	135.3	135.5
60°	122.2	121.0	119.5	118.9
62.5°	102.6	102.6	102.3	102.3
65°	93.3	92.7	92.4	92.7
67.5°	83.2	82.6	81.7	82.0
70°	71.6	71.3	71.6	71.3
72.5°	61.2	60.9	61.2	61.8
75°	51.7	51.4	51.1	51.1
77.5°	41.9	41.6	41.0	41.6
80°	32.7	32.4	32.1	32.1
82.5°	23.2	23.5	23.2	23.2
85°	15.2	15.5	15.2	14.9
87.5°	7.7	8.0	7.4	7.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243278
 CATALOG NUMBER: S122RDRP-H485D940-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	14.75	16.20	15.11	16.52	16.83	21.08	22.53	21.44	22.85	23.16
	3H	15.92	17.22	16.30	17.55	17.91	22.33	23.63	22.71	23.96	24.32
	4H	16.38	17.60	16.78	17.95	18.33	22.76	23.98	23.16	24.33	24.71
	6H	16.71	17.83	17.12	18.20	18.59	23.06	24.18	23.47	24.55	24.94
	8H	16.80	17.88	17.23	18.27	18.67	23.14	24.21	23.57	24.60	25.00
	12H	16.86	17.88	17.29	18.26	18.69	23.19	24.21	23.62	24.59	25.02
4H	2H	15.47	16.69	15.87	17.04	17.42	21.06	22.28	21.46	22.63	23.01
	3H	16.80	17.81	17.21	18.21	18.61	22.45	23.46	22.86	23.86	24.26
	4H	17.35	18.26	17.78	18.67	19.11	22.97	23.88	23.41	24.30	24.74
	6H	17.78	18.57	18.24	19.01	19.47	23.39	24.18	23.85	24.62	25.08
	8H	17.91	18.65	18.38	19.09	19.56	23.52	24.26	23.99	24.70	25.17
	12H	17.99	18.65	18.48	19.13	19.60	23.61	24.27	24.10	24.75	25.22
8H	4H	17.69	18.43	18.16	18.88	19.34	22.97	23.71	23.44	24.15	24.62
	6H	18.22	18.82	18.72	19.32	19.80	23.44	24.04	23.93	24.53	25.01
	8H	18.40	18.95	18.92	19.46	19.95	23.61	24.15	24.12	24.66	25.15
	12H	18.54	19.02	19.05	19.51	20.08	23.75	24.23	24.26	24.72	25.29
12H	4H	17.74	18.39	18.22	18.87	19.34	22.95	23.61	23.43	24.09	24.56
	6H	18.28	18.82	18.80	19.34	19.83	23.41	23.96	23.93	24.47	24.96
	8H	18.52	19.00	19.03	19.49	20.06	23.62	24.10	24.13	24.59	25.16