

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: P242560

Luminaire Tested: S123RDRP-S560D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242560
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-S560D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

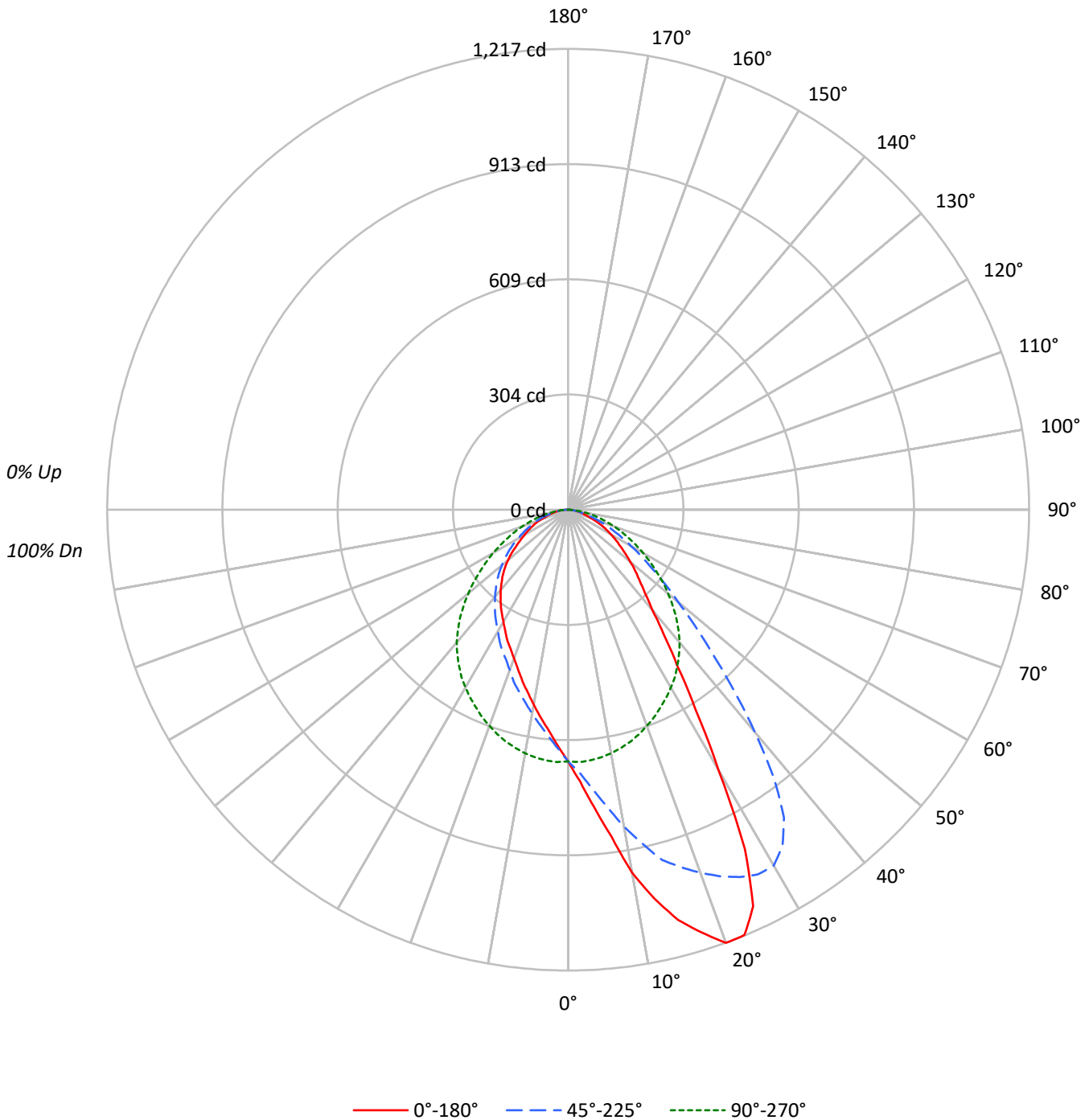
Lumens per Lamp: N/A
Luminaire Lumens: 1654.3 lumens
Efficiency: N/A
Efficacy: 88.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	8053	8053	8053	8053	8053
5°	9600	9004	8088	7302	7122
10°	11986	10460	8041	6728	6434
15°	14068	12013	7958	6257	5868
20°	15702	13156	7836	5815	5385
25°	15451	14317	7706	5508	5089
30°	11106	15190	7587	5191	4785
35°	7415	14697	7433	4975	4587
40°	5464	12114	7245	4756	4383
45°	4582	9243	6919	4553	4183
50°	4043	7128	6489	4307	3905
55°	3546	5687	5997	4051	3523
60°	3159	4640	5530	3724	3227
65°	2773	3800	5025	3433	3003
70°	2176	3055	4575	3154	2743
75°	1920	2253	3995	2852	2506
80°	1668	1927	3392	2499	2464
85°	1349	1460	2726	2531	2615

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 60°
 Vertical Angle: 45°
 Luminance: 13007 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.2	3.9
10°-20°	204.2	12.3
20°-30°	321.7	19.4
30°-40°	334.5	20.2
40°-50°	286.2	17.3
50°-60°	218.1	13.2
60°-70°	139.7	8.4
70°-80°	67.0	4.0
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°	591.2	35.7
0°-40°	925.7	56.0
0°-60°	1430.0	86.4
0°-90°	1654.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1654.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	664	664	664	664	664	
5°	789	740	665	600	585	81
15°	1121	957	634	499	468	318
25°	1155	1070	576	412	380	502
35°	501	993	502	336	310	326
45°	267	539	404	266	244	210
55°	168	269	284	192	167	151
65°	97	132	175	120	105	95
75°	41	48	85	61	54	44
85°	10	10	20	18	19	11
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°	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4
2.5°	718.4	719.6	715.9	715.3	711.0	709.9	709.9	703.9	700.2	695.4	692.5
5°	789.0	793.5	791.2	786.1	777.6	775.6	770.2	761.6	752.0	740.0	734.3
7.5°	869.7	879.1	877.4	869.4	860.3	854.7	839.6	827.3	808.9	792.1	779.0
10°	973.8	967.3	962.2	954.5	946.2	932.9	916.9	895.0	869.7	849.8	827.6
12.5°	1051.7	1052.0	1045.2	1037.2	1024.7	1012.2	991.7	963.9	933.4	902.4	876.3
15°	1121.1	1122.8	1118.6	1110.3	1093.8	1071.4	1041.8	1030.7	988.6	957.3	926.0
17.5°	1170.6	1170.9	1170.1	1159.0	1141.1	1125.7	1098.1	1072.2	1032.4	990.0	948.2
20°	1217.3	1214.4	1215.0	1202.2	1189.7	1171.2	1144.5	1102.1	1070.8	1019.9	976.4
22.5°	1216.1	1216.1	1218.7	1216.4	1208.2	1195.1	1175.5	1141.3	1099.2	1047.8	997.4
25°	1155.3	1153.0	1166.4	1170.1	1184.6	1187.1	1180.9	1161.2	1123.4	1070.5	1009.9
27.5°	1010.2	1002.0	1029.8	1057.4	1094.1	1117.4	1141.3	1146.7	1128.8	1085.6	1022.2
30°	793.5	820.2	832.8	877.7	927.7	987.5	1039.8	1089.6	1101.8	1085.3	1035.5
32.5°	625.1	647.6	657.6	694.5	740.3	812.8	897.9	973.5	1032.7	1052.6	1027.6
35°	501.1	501.4	525.3	542.4	585.6	657.6	733.8	828.2	922.1	993.2	1000.6
37.5°	413.5	414.7	430.0	447.1	481.8	522.2	593.0	672.6	785.5	891.6	946.8
40°	345.3	347.8	358.6	375.4	398.7	427.5	479.8	553.7	644.2	765.6	864.9
42.5°	301.5	306.0	310.3	322.2	334.5	360.9	400.7	453.6	533.8	647.0	765.3
45°	267.3	269.6	273.9	279.9	292.9	311.7	340.2	378.5	446.8	539.2	653.9
47.5°	241.2	239.8	244.6	249.7	258.5	272.2	292.1	325.4	376.6	453.9	553.2
50°	214.4	214.2	217.3	221.0	229.2	238.6	254.3	277.9	316.5	378.0	467.0
52.5°	189.4	190.8	192.8	197.7	203.1	210.2	223.8	239.2	271.0	322.0	392.5
55°	167.8	168.7	171.8	174.3	178.6	186.3	195.1	209.3	232.1	269.1	330.2
57.5°	149.0	148.7	151.9	152.2	157.6	164.1	171.2	182.3	199.7	228.9	271.6
60°	130.3	129.4	132.0	134.0	136.5	141.6	147.3	158.1	171.2	191.4	226.7
62.5°	113.2	112.9	114.6	116.6	118.6	123.1	127.7	135.4	145.0	161.3	187.4
65°	96.7	97.6	98.4	99.3	100.4	103.2	107.8	113.5	120.6	132.5	152.7
67.5°	79.6	80.8	81.1	83.0	85.3	86.7	89.3	94.7	100.1	110.9	122.9
70°	61.4	61.1	61.4	62.3	65.4	68.5	72.2	75.9	79.1	86.2	95.8
72.5°	50.6	50.1	50.9	50.9	52.0	52.3	54.3	57.7	62.0	66.3	72.5
75°	41.0	41.0	41.0	41.0	42.1	42.7	43.5	44.4	45.8	48.1	53.2
77.5°	31.9	31.9	32.4	32.7	33.0	33.3	33.8	34.7	35.3	36.4	39.0
80°	23.9	24.2	23.9	24.2	24.2	24.7	25.0	25.9	26.2	27.6	28.4
82.5°	16.5	16.2	16.5	16.8	16.8	17.3	17.3	17.9	17.9	18.5	19.3
85°	9.7	9.1	9.7	9.4	10.0	9.4	9.7	10.2	10.2	10.5	11.7
87.5°	2.8	3.4	2.8	3.1	3.1	3.4	3.4	3.4	4.0	3.7	4.0
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4
2.5°	691.4	690.5	686.6	682.0	676.0	672.1	668.9	667.2	662.1	655.8	651.6
5°	728.4	719.8	710.7	699.6	689.4	678.9	672.3	664.7	655.3	644.8	637.4
7.5°	765.1	750.3	734.1	717.3	700.2	685.1	671.2	659.8	645.6	631.1	621.2
10°	808.6	784.1	758.8	732.9	709.3	687.1	670.1	653.3	635.4	618.0	604.9
12.5°	848.1	814.0	783.8	750.6	718.7	691.1	664.7	644.2	621.7	602.9	587.6
15°	880.2	847.3	812.0	763.6	723.5	690.0	660.1	634.2	608.1	585.3	570.8
17.5°	913.8	863.8	817.4	779.9	727.5	686.8	651.9	621.7	593.3	570.0	551.8
20°	933.1	885.1	833.6	782.1	730.9	684.0	641.6	607.5	577.6	550.3	533.8
22.5°	944.8	888.8	833.9	777.6	722.4	673.2	631.4	593.0	560.0	534.4	513.1
25°	953.3	888.5	828.8	774.2	718.7	665.8	616.0	576.2	541.2	513.6	492.0
27.5°	960.2	885.1	816.5	757.1	701.1	647.3	602.4	559.7	524.7	496.0	472.4
30°	961.9	880.8	802.0	736.3	679.2	630.8	582.5	542.1	504.5	473.5	451.9
32.5°	964.1	870.3	782.4	711.6	652.7	604.9	562.3	524.2	485.5	455.1	432.9
35°	956.2	867.7	762.5	682.3	623.7	577.4	537.8	502.3	464.4	434.9	412.4
37.5°	932.0	853.8	742.6	649.6	589.0	546.4	513.4	480.9	446.0	413.5	392.8
40°	891.3	831.0	718.7	620.3	556.3	512.2	483.2	457.9	424.3	394.5	371.7
42.5°	830.8	800.0	695.9	589.6	519.3	477.2	453.9	430.6	402.2	371.7	350.7
45°	754.0	758.8	663.2	556.6	485.8	443.1	420.1	403.6	377.4	352.4	330.5
47.5°	660.7	701.1	628.3	521.9	449.4	409.3	389.1	374.0	355.8	329.9	309.7
50°	569.7	634.2	584.5	486.9	415.5	375.7	355.8	344.1	328.8	309.4	290.4
52.5°	485.8	556.3	531.6	447.9	378.8	343.3	323.9	314.8	303.5	285.5	268.8
55°	409.8	480.1	473.3	408.7	342.1	309.4	294.6	283.8	275.6	261.9	248.3
57.5°	343.9	411.8	413.2	365.2	310.3	277.0	264.2	255.7	250.0	239.2	225.8
60°	282.1	343.3	355.2	321.1	275.6	247.2	234.6	228.1	223.8	215.6	205.9
62.5°	230.9	280.7	294.6	272.5	242.3	216.2	207.1	200.8	198.2	191.4	183.2
65°	184.6	227.8	240.9	227.2	209.9	188.6	180.6	175.2	172.6	168.7	162.4
67.5°	145.6	179.2	193.4	182.0	175.5	160.4	155.0	151.9	149.6	146.8	141.4
70°	111.5	134.8	149.6	147.0	141.9	134.8	131.1	129.1	126.8	124.6	120.0
72.5°	84.2	98.4	112.1	114.3	110.4	110.4	107.2	106.7	105.5	102.7	100.7
75°	59.4	70.5	80.2	83.9	85.6	87.0	85.6	85.3	85.0	82.8	81.3
77.5°	41.2	48.3	54.9	61.4	63.7	65.7	66.0	67.1	66.3	64.8	64.3
80°	29.9	31.3	35.6	41.0	45.2	46.9	48.1	48.6	48.3	48.1	46.9
82.5°	19.6	20.8	22.2	25.6	29.0	32.1	32.7	32.4	33.3	33.6	32.7
85°	11.7	11.9	12.5	13.1	15.1	18.2	19.1	19.6	20.2	20.2	18.5
87.5°	4.6	4.3	4.8	4.8	5.7	6.0	7.7	9.1	9.4	8.2	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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4
2.5°	650.2	646.5	643.9	638.2	634.5	630.5	626.6	629.1	628.8	628.5	628.5
5°	631.1	624.6	618.6	610.9	606.1	600.1	595.6	595.0	596.1	592.1	589.9
7.5°	613.2	604.7	596.1	588.2	579.3	572.5	568.3	566.5	563.4	560.9	558.6
10°	594.1	583.6	575.4	564.8	555.2	546.6	541.2	537.5	535.5	533.6	529.9
12.5°	574.5	564.3	553.2	540.9	531.8	521.6	517.9	513.6	509.4	507.1	501.7
15°	555.5	542.1	531.0	518.5	508.2	498.6	492.9	484.6	483.5	480.7	475.5
17.5°	537.0	522.2	506.0	497.4	487.2	477.0	467.9	465.3	456.8	453.9	449.1
20°	514.2	500.8	489.2	477.0	460.2	450.8	444.0	440.3	433.7	429.7	426.9
22.5°	494.6	480.9	467.0	452.2	439.1	428.3	423.8	417.5	414.7	408.7	405.6
25°	476.1	461.3	445.1	429.7	419.8	411.8	403.9	398.7	393.6	391.1	385.4
27.5°	453.6	438.8	423.2	411.3	399.9	391.9	384.2	380.0	373.4	369.2	366.0
30°	435.7	417.5	404.4	393.9	378.3	370.9	365.5	359.8	355.2	350.7	347.5
32.5°	415.0	398.7	386.5	372.9	361.8	353.5	346.1	341.3	337.6	333.3	330.2
35°	393.1	379.1	366.3	353.2	344.4	336.2	327.9	323.7	320.0	316.0	313.1
37.5°	373.1	360.1	348.1	335.6	324.8	317.7	310.9	308.0	302.9	300.1	297.2
40°	354.9	342.1	329.1	317.1	305.7	300.6	294.6	289.8	285.3	283.3	280.1
42.5°	335.0	322.2	311.7	298.6	289.8	282.4	277.0	271.6	268.5	265.4	263.9
45°	315.4	304.0	293.2	280.4	271.6	265.6	259.4	254.5	251.4	249.4	246.3
47.5°	296.6	285.0	274.2	262.8	254.3	247.4	240.9	237.8	233.5	231.2	228.9
50°	275.9	265.6	254.0	243.7	235.2	228.4	223.3	219.0	215.3	212.2	210.7
52.5°	256.8	245.7	236.1	226.7	217.6	209.6	205.1	200.5	197.9	194.3	192.5
55°	235.5	225.0	216.4	207.1	198.2	191.7	186.0	182.0	179.2	175.2	172.9
57.5°	215.9	206.8	196.2	188.0	178.6	173.5	168.7	163.0	159.6	156.4	154.1
60°	196.0	185.2	176.3	168.7	160.7	153.6	149.3	145.0	141.4	138.2	136.2
62.5°	175.2	166.1	157.8	149.3	142.2	136.2	131.1	127.7	124.6	122.9	120.9
65°	153.9	146.5	137.9	131.1	124.3	119.7	115.8	112.6	110.4	108.9	107.2
67.5°	134.2	127.1	119.5	112.3	107.8	104.1	101.2	98.4	97.3	95.6	94.4
70°	115.2	107.8	101.2	96.1	91.6	89.0	87.3	85.3	84.2	81.9	80.8
72.5°	94.4	89.6	85.3	81.3	77.9	75.7	73.4	70.8	68.8	66.3	65.1
75°	77.6	72.8	69.1	66.3	64.0	60.9	57.7	55.2	54.3	53.5	53.2
77.5°	60.6	57.5	54.6	52.3	49.2	46.4	45.5	44.9	44.7	44.1	44.1
80°	45.2	42.4	40.4	37.5	35.8	35.8	35.8	35.3	35.6	35.6	35.6
82.5°	30.7	28.2	27.3	26.7	26.7	27.0	27.0	27.3	27.0	27.6	27.3
85°	17.3	17.6	18.2	17.9	18.2	18.2	18.8	18.5	18.8	18.2	18.8
87.5°	8.0	8.8	9.1	9.4	9.7	9.4	9.7	9.7	10.0	10.0	10.0
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: P242560

CATALOG NUMBER: S123RDRP-S560D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	664.4	664.4	664.4	664.4
2.5°	625.1	624.8	625.1	624.0
5°	589.0	588.7	587.9	585.3
7.5°	556.3	555.7	553.5	554.0
10°	527.9	528.1	524.7	522.7
12.5°	500.3	498.6	496.0	493.7
15°	476.7	473.8	467.0	467.6
17.5°	447.4	445.1	444.8	440.8
20°	422.3	420.9	421.5	417.5
22.5°	402.7	401.3	398.2	397.6
25°	383.7	381.4	379.1	380.5
27.5°	364.3	362.6	360.1	360.1
30°	346.1	344.4	343.3	341.9
32.5°	327.6	327.6	325.4	325.4
35°	312.0	310.3	309.7	310.0
37.5°	296.9	294.6	293.5	292.4
40°	280.4	278.2	277.6	277.0
42.5°	261.9	261.4	261.1	260.0
45°	245.4	245.2	243.5	244.0
47.5°	227.8	226.4	225.5	226.4
50°	209.6	209.0	206.5	207.1
52.5°	191.4	188.8	188.3	187.7
55°	170.9	168.4	167.2	166.7
57.5°	150.7	149.9	148.7	149.6
60°	133.4	133.4	133.4	133.1
62.5°	120.0	119.2	118.9	119.5
65°	106.4	106.1	104.9	104.7
67.5°	93.9	92.7	92.7	92.1
70°	79.4	78.8	77.1	77.4
72.5°	63.7	63.1	63.1	62.6
75°	52.9	52.6	52.3	53.5
77.5°	44.1	44.1	44.4	43.8
80°	35.6	35.6	35.3	35.3
82.5°	26.7	27.0	27.3	26.7
85°	18.8	18.5	19.1	18.8
87.5°	10.5	10.0	10.0	10.2
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P242560
 CATALOG NUMBER: S123RDRP-S560D927-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	14.89	16.38	15.25	16.69	17.01	18.28	19.78	18.65	20.09	20.40
	3H	15.98	17.32	16.36	17.64	18.01	19.69	21.03	20.07	21.36	21.72
	4H	16.31	17.57	16.72	17.92	18.30	20.19	21.44	20.59	21.79	22.17
	6H	16.56	17.72	16.97	18.08	18.48	20.54	21.70	20.96	22.07	22.46
	8H	16.63	17.73	17.06	18.12	18.52	20.64	21.74	21.07	22.13	22.54
	12H	16.67	17.72	17.10	18.10	18.53	20.71	21.76	21.14	22.14	22.57
4H	2H	15.87	17.12	16.27	17.47	17.85	18.52	19.77	18.92	20.12	20.50
	3H	17.03	18.07	17.44	18.47	18.87	20.21	21.25	20.62	21.65	22.05
	4H	17.42	18.35	17.86	18.77	19.21	20.83	21.76	21.26	22.18	22.62
	6H	17.73	18.54	18.19	18.99	19.45	21.29	22.10	21.75	22.55	23.01
	8H	17.82	18.58	18.29	19.02	19.49	21.44	22.19	21.90	22.64	23.11
	12H	17.88	18.56	18.36	19.03	19.51	21.54	22.21	22.02	22.69	23.16
8H	4H	17.79	18.54	18.25	18.99	19.46	20.88	21.64	21.34	22.08	22.55
	6H	18.16	18.79	18.66	19.28	19.76	21.42	22.04	21.91	22.53	23.01
	8H	18.29	18.85	18.81	19.36	19.85	21.61	22.17	22.12	22.68	23.17
	12H	18.39	18.89	18.90	19.38	19.95	21.77	22.26	22.28	22.75	23.32
12H	4H	17.82	18.49	18.30	18.97	19.44	20.87	21.54	21.35	22.02	22.49
	6H	18.21	18.77	18.72	19.28	19.77	21.40	21.96	21.92	22.47	22.96
	8H	18.38	18.88	18.89	19.37	19.93	21.63	22.13	22.14	22.62	23.19