

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: P242584

Luminaire Tested: S123RDRP-S340D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242584
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-S340D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

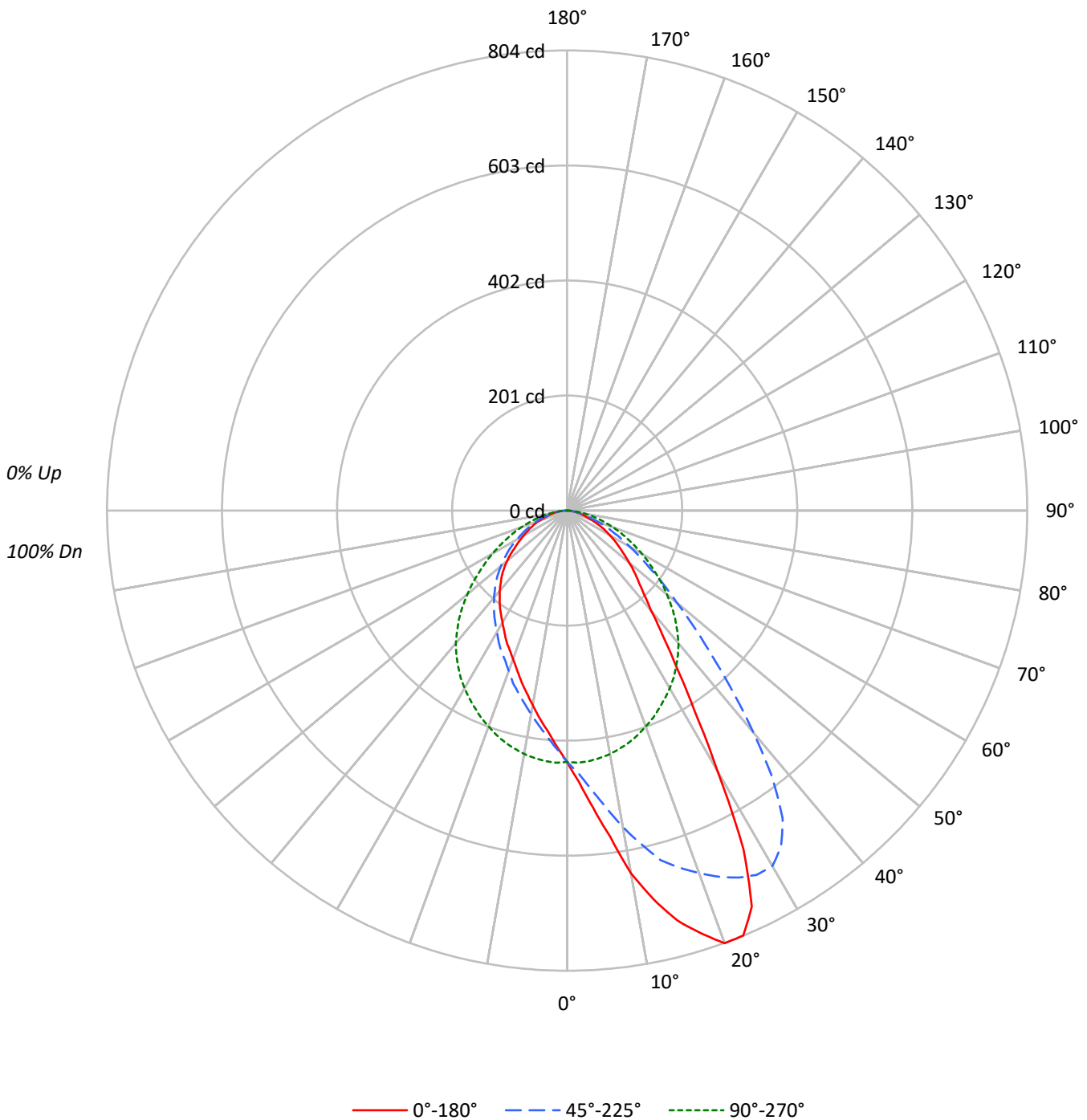
Lumens per Lamp: N/A
Luminaire Lumens: 1093.4 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
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
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°	5322	5322	5322	5322	5322
5°	6344	5951	5345	4826	4706
10°	7922	6914	5315	4447	4252
15°	9299	7940	5260	4135	3878
20°	10377	8695	5179	3843	3559
25°	10211	9462	5093	3640	3364
30°	7340	10040	5015	3431	3162
35°	4901	9713	4913	3288	3032
40°	3611	8007	4788	3144	2897
45°	3029	6109	4572	3010	2765
50°	2672	4711	4288	2846	2580
55°	2344	3757	3964	2678	2329
60°	2087	3067	3656	2461	2133
65°	1833	2512	3321	2269	1985
70°	1439	2020	3023	2084	1811
75°	1269	1489	2641	1883	1653
80°	1103	1270	2241	1654	1626
85°	890	974	1808	1669	1725

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 60°
 Vertical Angle: 45°
 Luminance: 8597 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.1	3.9
10°-20°	135.0	12.3
20°-30°	212.6	19.4
30°-40°	221.1	20.2
40°-50°	189.1	17.3
50°-60°	144.2	13.2
60°-70°	92.4	8.4
70°-80°	44.3	4.0
80°-90°	11.6	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°	390.7	35.7
0°-40°	611.8	56.0
0°-60°	945.1	86.4
0°-90°	1093.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1093.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	439	439	439	439	439	
5°	521	489	439	397	387	53
15°	741	633	419	330	309	210
25°	764	708	381	272	252	332
35°	331	656	332	222	205	215
45°	177	356	267	176	161	139
55°	111	178	188	127	110	100
65°	64	88	116	79	69	63
75°	27	32	56	40	35	29
85°	6	7	13	12	12	7
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°	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1
2.5°	474.8	475.6	473.1	472.7	469.9	469.2	469.2	465.2	462.8	459.6	457.7
5°	521.4	524.4	522.9	519.5	513.9	512.6	509.0	503.4	497.0	489.1	485.3
7.5°	574.8	581.0	579.9	574.6	568.6	564.9	554.9	546.8	534.6	523.5	514.9
10°	643.6	639.3	635.9	630.8	625.4	616.5	606.0	591.5	574.8	561.7	547.0
12.5°	695.1	695.3	690.8	685.5	677.3	669.0	655.5	637.0	616.9	596.4	579.1
15°	741.0	742.1	739.3	733.8	722.9	708.1	688.5	681.2	653.4	632.7	612.0
17.5°	773.7	773.9	773.3	766.0	754.1	744.0	725.8	708.6	682.3	654.3	626.7
20°	804.5	802.6	803.0	794.6	786.3	774.1	756.4	728.4	707.7	674.1	645.3
22.5°	803.8	803.8	805.5	803.9	798.5	789.9	776.9	754.3	726.5	692.5	659.2
25°	763.5	762.0	770.9	773.3	782.9	784.6	780.5	767.5	742.5	707.5	667.5
27.5°	667.7	662.2	680.6	698.9	723.1	738.5	754.3	757.9	746.1	717.5	675.6
30°	524.4	542.1	550.4	580.1	613.2	652.6	687.2	720.1	728.2	717.3	684.4
32.5°	413.2	428.0	434.6	459.0	489.3	537.2	593.4	643.4	682.5	695.7	679.1
35°	331.2	331.4	347.2	358.5	387.0	434.6	485.0	547.4	609.4	656.4	661.3
37.5°	273.3	274.1	284.2	295.5	318.4	345.1	391.9	444.5	519.2	589.3	625.8
40°	228.2	229.9	237.0	248.1	263.5	282.5	317.1	366.0	425.8	506.0	571.6
42.5°	199.2	202.3	205.1	213.0	221.1	238.5	264.9	299.8	352.8	427.6	505.8
45°	176.7	178.2	181.0	185.0	193.6	206.0	224.8	250.2	295.3	356.4	432.1
47.5°	159.4	158.5	161.7	165.0	170.9	179.9	193.0	215.0	248.9	300.0	365.6
50°	141.7	141.5	143.6	146.1	151.5	157.7	168.0	183.6	209.2	249.8	308.6
52.5°	125.2	126.1	127.4	130.6	134.2	138.9	147.9	158.1	179.1	212.8	259.4
55°	110.9	111.5	113.5	115.2	118.0	123.1	128.9	138.3	153.4	177.8	218.2
57.5°	98.5	98.3	100.4	100.6	104.1	108.5	113.2	120.5	132.0	151.3	179.5
60°	86.1	85.5	87.2	88.5	90.2	93.6	97.4	104.5	113.2	126.5	149.8
62.5°	74.8	74.6	75.8	77.1	78.4	81.4	84.4	89.5	95.9	106.6	123.9
65°	63.9	64.5	65.0	65.6	66.4	68.2	71.2	75.0	79.7	87.6	100.9
67.5°	52.6	53.4	53.6	54.9	56.4	57.3	59.0	62.6	66.2	73.3	81.2
70°	40.6	40.4	40.6	41.2	43.2	45.3	47.7	50.2	52.3	57.0	63.3
72.5°	33.5	33.1	33.6	33.6	34.4	34.6	35.9	38.2	41.0	43.8	47.9
75°	27.1	27.1	27.1	27.1	27.8	28.2	28.8	29.3	30.3	31.8	35.2
77.5°	21.1	21.1	21.4	21.6	21.8	22.0	22.4	22.9	23.3	24.1	25.8
80°	15.8	16.0	15.8	16.0	16.0	16.4	16.5	17.1	17.3	18.2	18.8
82.5°	10.9	10.7	10.9	11.1	11.1	11.5	11.5	11.8	11.8	12.2	12.8
85°	6.4	6.0	6.4	6.2	6.6	6.2	6.4	6.8	6.8	7.0	7.7
87.5°	1.9	2.3	1.9	2.1	2.1	2.3	2.3	2.3	2.6	2.4	2.6
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°	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1
2.5°	457.0	456.4	453.8	450.8	446.8	444.2	442.1	441.0	437.6	433.5	430.6
5°	481.4	475.8	469.7	462.4	455.6	448.7	444.4	439.3	433.1	426.1	421.2
7.5°	505.6	495.9	485.2	474.1	462.8	452.8	443.6	436.1	426.7	417.1	410.5
10°	534.4	518.2	501.5	484.4	468.8	454.1	442.9	431.8	419.9	408.5	399.8
12.5°	560.5	538.0	518.0	496.1	475.0	456.8	439.3	425.8	410.9	398.5	388.3
15°	581.8	560.0	536.7	504.7	478.2	456.0	436.3	419.2	401.9	386.8	377.3
17.5°	603.9	570.9	540.2	515.4	480.8	453.9	430.8	410.9	392.1	376.7	364.7
20°	616.7	585.0	550.9	516.9	483.1	452.1	424.1	401.5	381.8	363.7	352.8
22.5°	624.4	587.4	551.1	513.9	477.4	444.9	417.3	391.9	370.1	353.2	339.1
25°	630.1	587.2	547.7	511.7	475.0	440.0	407.1	380.8	357.7	339.5	325.2
27.5°	634.6	585.0	539.7	500.4	463.3	427.8	398.1	369.9	346.8	327.8	312.2
30°	635.7	582.1	530.1	486.7	448.9	416.9	385.0	358.3	333.5	313.0	298.7
32.5°	637.2	575.2	517.1	470.3	431.4	399.8	371.6	346.4	320.9	300.8	286.1
35°	632.0	573.5	503.9	450.9	412.2	381.6	355.5	332.0	307.0	287.4	272.6
37.5°	616.0	564.3	490.8	429.3	389.3	361.1	339.3	317.9	294.7	273.3	259.6
40°	589.1	549.2	475.0	410.0	367.7	338.5	319.4	302.6	280.5	260.7	245.7
42.5°	549.1	528.8	460.0	389.7	343.2	315.4	300.0	284.6	265.8	245.7	231.8
45°	498.3	501.5	438.3	367.9	321.1	292.9	277.6	266.7	249.4	232.9	218.4
47.5°	436.7	463.3	415.2	344.9	297.0	270.5	257.1	247.2	235.2	218.0	204.7
50°	376.5	419.2	386.3	321.8	274.6	248.3	235.2	227.4	217.3	204.5	191.9
52.5°	321.1	367.7	351.3	296.1	250.4	226.9	214.1	208.1	200.6	188.7	177.6
55°	270.9	317.3	312.8	270.1	226.1	204.5	194.7	187.6	182.1	173.1	164.1
57.5°	227.3	272.2	273.1	241.4	205.1	183.1	174.6	169.0	165.2	158.1	149.2
60°	186.5	226.9	234.8	212.2	182.1	163.3	155.1	150.8	147.9	142.5	136.1
62.5°	152.6	185.5	194.7	180.1	160.2	142.9	136.8	132.7	131.0	126.5	121.1
65°	122.0	150.6	159.2	150.2	138.7	124.6	119.4	115.8	114.1	111.5	107.3
67.5°	96.2	118.4	127.8	120.3	116.0	106.0	102.4	100.4	98.9	97.0	93.4
70°	73.7	89.1	98.9	97.2	93.8	89.1	86.7	85.3	83.8	82.3	79.3
72.5°	55.6	65.0	74.1	75.6	72.9	72.9	70.9	70.5	69.7	67.9	66.5
75°	39.3	46.6	53.0	55.5	56.6	57.5	56.6	56.4	56.2	54.7	53.8
77.5°	27.3	32.0	36.3	40.6	42.1	43.4	43.6	44.4	43.8	42.9	42.5
80°	19.7	20.7	23.5	27.1	29.9	31.0	31.8	32.1	32.0	31.8	31.0
82.5°	13.0	13.7	14.7	16.9	19.2	21.2	21.6	21.4	22.0	22.2	21.6
85°	7.7	7.9	8.3	8.6	10.0	12.0	12.6	13.0	13.3	13.3	12.2
87.5°	3.0	2.8	3.2	3.2	3.8	3.9	5.1	6.0	6.2	5.5	5.5
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°	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1	439.1
2.5°	429.7	427.3	425.6	421.8	419.4	416.7	414.1	415.8	415.6	415.4	415.4
5°	417.1	412.8	408.8	403.8	400.6	396.6	393.6	393.2	394.0	391.4	389.9
7.5°	405.3	399.6	394.0	388.7	382.9	378.4	375.6	374.4	372.4	370.7	369.2
10°	392.7	385.7	380.3	373.3	366.9	361.3	357.7	355.3	353.9	352.6	350.2
12.5°	379.7	372.9	365.6	357.5	351.5	344.7	342.3	339.5	336.7	335.2	331.6
15°	367.1	358.3	350.9	342.7	335.9	329.5	325.8	320.3	319.5	317.7	314.3
17.5°	354.9	345.1	334.4	328.8	322.0	315.2	309.2	307.5	301.9	300.0	296.8
20°	339.9	331.0	323.3	315.2	304.1	297.9	293.4	291.0	286.7	284.0	282.1
22.5°	326.9	317.9	308.6	298.9	290.2	283.1	280.1	275.9	274.1	270.1	268.0
25°	314.7	304.9	294.2	284.0	277.4	272.2	266.9	263.5	260.2	258.5	254.7
27.5°	299.8	290.0	279.7	271.8	264.3	259.0	253.9	251.1	246.8	244.0	241.9
30°	288.0	275.9	267.3	260.3	250.0	245.1	241.5	237.8	234.8	231.8	229.7
32.5°	274.2	263.5	255.5	246.4	239.1	233.6	228.8	225.6	223.1	220.3	218.2
35°	259.8	250.6	242.1	233.5	227.6	222.2	216.7	213.9	211.5	208.8	207.0
37.5°	246.6	238.0	230.1	221.8	214.7	210.0	205.5	203.6	200.2	198.3	196.4
40°	234.6	226.1	217.5	209.6	202.1	198.7	194.7	191.5	188.5	187.2	185.2
42.5°	221.4	213.0	206.0	197.4	191.5	186.7	183.1	179.5	177.4	175.4	174.4
45°	208.5	200.9	193.8	185.3	179.5	175.6	171.4	168.2	166.2	164.8	162.8
47.5°	196.1	188.3	181.2	173.7	168.0	163.5	159.2	157.1	154.3	152.8	151.3
50°	182.3	175.6	167.9	161.1	155.5	150.9	147.6	144.7	142.3	140.2	139.3
52.5°	169.7	162.4	156.0	149.8	143.8	138.5	135.5	132.5	130.8	128.4	127.3
55°	155.6	148.7	143.0	136.8	131.0	126.7	122.9	120.3	118.4	115.8	114.3
57.5°	142.7	136.7	129.7	124.2	118.0	114.7	111.5	107.7	105.5	103.4	101.9
60°	129.5	122.4	116.5	111.5	106.2	101.5	98.7	95.9	93.4	91.4	90.0
62.5°	115.8	109.8	104.3	98.7	94.0	90.0	86.7	84.4	82.3	81.2	79.9
65°	101.7	96.8	91.2	86.7	82.1	79.1	76.5	74.4	72.9	72.0	70.9
67.5°	88.7	84.0	78.9	74.2	71.2	68.8	66.9	65.0	64.3	63.2	62.4
70°	76.1	71.2	66.9	63.5	60.5	58.8	57.7	56.4	55.6	54.1	53.4
72.5°	62.4	59.2	56.4	53.8	51.5	50.0	48.5	46.8	45.5	43.8	43.0
75°	51.3	48.1	45.7	43.8	42.3	40.2	38.2	36.5	35.9	35.3	35.2
77.5°	40.0	38.0	36.1	34.6	32.5	30.6	30.1	29.7	29.5	29.1	29.1
80°	29.9	28.0	26.7	24.8	23.7	23.7	23.7	23.3	23.5	23.5	23.5
82.5°	20.3	18.6	18.0	17.7	17.7	17.9	17.9	18.0	17.9	18.2	18.0
85°	11.5	11.7	12.0	11.8	12.0	12.0	12.4	12.2	12.4	12.0	12.4
87.5°	5.3	5.8	6.0	6.2	6.4	6.2	6.4	6.4	6.6	6.6	6.6
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: P242584

CATALOG NUMBER: S123RDRP-S340D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	439.1	439.1	439.1	439.1
2.5°	413.2	413.0	413.2	412.4
5°	389.3	389.1	388.5	386.8
7.5°	367.7	367.3	365.8	366.2
10°	348.9	349.1	346.8	345.5
12.5°	330.6	329.5	327.8	326.3
15°	315.0	313.2	308.6	309.0
17.5°	295.7	294.2	294.0	291.4
20°	279.1	278.2	278.6	275.9
22.5°	266.2	265.2	263.2	262.8
25°	253.6	252.1	250.6	251.5
27.5°	240.8	239.7	238.0	238.0
30°	228.8	227.6	226.9	225.9
32.5°	216.5	216.5	215.0	215.0
35°	206.2	205.1	204.7	204.9
37.5°	196.2	194.7	194.0	193.2
40°	185.3	183.8	183.5	183.1
42.5°	173.1	172.7	172.6	171.8
45°	162.2	162.0	160.9	161.3
47.5°	150.6	149.6	149.1	149.6
50°	138.5	138.2	136.5	136.8
52.5°	126.5	124.8	124.4	124.1
55°	113.0	111.3	110.5	110.2
57.5°	99.6	99.1	98.3	98.9
60°	88.2	88.2	88.2	88.0
62.5°	79.3	78.8	78.6	78.9
65°	70.3	70.1	69.4	69.2
67.5°	62.0	61.3	61.3	60.9
70°	52.4	52.1	50.9	51.1
72.5°	42.1	41.7	41.7	41.4
75°	35.0	34.8	34.6	35.3
77.5°	29.1	29.1	29.3	28.9
80°	23.5	23.5	23.3	23.3
82.5°	17.7	17.9	18.0	17.7
85°	12.4	12.2	12.6	12.4
87.5°	7.0	6.6	6.6	6.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242584
 CATALOG NUMBER: S123RDRP-S340D935-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	13.45	14.94	13.81	15.25	15.57	16.84	18.34	17.21	18.65	18.97
	3H	14.54	15.88	14.92	16.20	16.57	18.25	19.59	18.63	19.92	20.28
	4H	14.88	16.13	15.28	16.48	16.86	18.75	20.01	19.15	20.36	20.73
	6H	15.12	16.28	15.54	16.65	17.04	19.10	20.26	19.52	20.63	21.02
	8H	15.19	16.29	15.62	16.68	17.08	19.21	20.31	19.63	20.70	21.10
	12H	15.23	16.28	15.66	16.66	17.09	19.27	20.32	19.70	20.70	21.13
4H	2H	14.43	15.68	14.83	16.03	16.41	17.08	18.34	17.48	18.69	19.06
	3H	15.60	16.63	16.01	17.03	17.43	18.77	19.81	19.19	20.21	20.61
	4H	15.98	16.92	16.42	17.33	17.77	19.39	20.32	19.82	20.74	21.18
	6H	16.29	17.10	16.75	17.55	18.01	19.86	20.67	20.31	21.11	21.57
	8H	16.38	17.14	16.85	17.59	18.05	20.00	20.76	20.46	21.20	21.67
	12H	16.44	17.12	16.92	17.60	18.07	20.10	20.77	20.58	21.25	21.72
8H	4H	16.35	17.11	16.81	17.55	18.02	19.44	20.20	19.91	20.64	21.11
	6H	16.72	17.35	17.22	17.84	18.32	19.98	20.60	20.48	21.09	21.57
	8H	16.86	17.42	17.37	17.93	18.42	20.17	20.73	20.69	21.24	21.73
	12H	16.96	17.45	17.47	17.94	18.51	20.33	20.82	20.84	21.31	21.88
12H	4H	16.38	17.06	16.86	17.53	18.01	19.43	20.10	19.91	20.58	21.05
	6H	16.77	17.33	17.28	17.84	18.33	19.96	20.53	20.48	21.04	21.52
	8H	16.94	17.44	17.45	17.93	18.50	20.20	20.69	20.71	21.18	21.75