

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: P242579

Luminaire Tested: S123RDRP-S340D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242579
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-S340D930-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

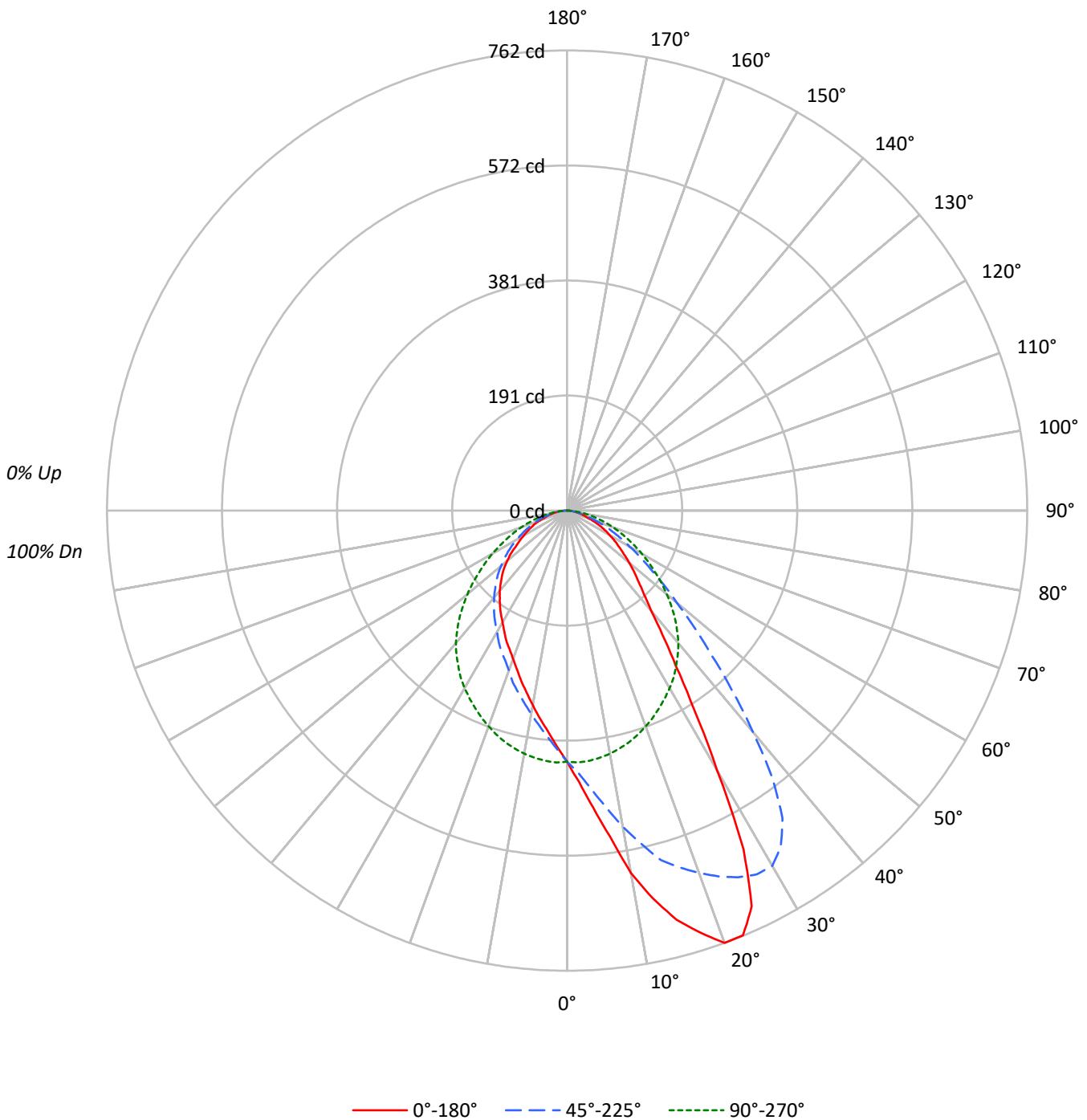
Lumens per Lamp: N/A
Luminaire Lumens: 1035.3 lumens
Efficiency: N/A
Efficacy: 89.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P242579

CATALOG NUMBER: S123RDRP-S340D930-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242579

CATALOG NUMBER: S123RDRP-S340D930-X4F0-XX-UDD-A-W

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	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°	5040	5040	5040	5040	5040
5°	6008	5635	5062	4570	4457
10°	7501	6546	5032	4211	4027
15°	8804	7518	4981	3915	3672
20°	9827	8234	4904	3639	3371
25°	9670	8961	4823	3447	3186
30°	6951	9506	4749	3249	2994
35°	4640	9198	4651	3113	2871
40°	3419	7582	4535	2976	2744
45°	2868	5785	4330	2849	2618
50°	2531	4462	4062	2695	2444
55°	2219	3559	3753	2536	2204
60°	1976	2904	3462	2330	2019
65°	1735	2378	3143	2148	1879
70°	1361	1910	2864	1974	1715
75°	1199	1410	2501	1784	1569
80°	1047	1208	2122	1564	1543
85°	848	918	1711	1585	1627

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 60°
 Vertical Angle: 45°
 Luminance: 8141 cd/sqm



TEST NUMBER: P242579

CATALOG NUMBER: S123RDRP-S340D930-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.8	3.9
10°-20°	127.8	12.3
20°-30°	201.3	19.4
30°-40°	209.4	20.2
40°-50°	179.1	17.3
50°-60°	136.5	13.2
60°-70°	87.5	8.4
70°-80°	41.9	4.0
80°-90°	11.0	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°	370.0	35.7
0°-40°	579.3	56.0
0°-60°	894.9	86.4
0°-90°	1035.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1035.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	416	416	416	416	416	
5°	494	463	416	376	366	51
15°	702	599	397	312	293	199
25°	723	670	361	258	238	314
35°	314	622	314	210	194	204
45°	167	338	253	166	153	131
55°	105	168	178	120	104	95
65°	60	83	110	75	66	60
75°	26	30	53	38	34	27
85°	6	7	12	11	12	7
90°	0	0	0	0	0	



TEST NUMBER: P242579

CATALOG NUMBER: S123RDRP-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8
2.5°	449.6	450.3	448.0	447.7	445.0	444.3	444.3	440.5	438.2	435.2	433.4
5°	493.8	496.6	495.2	492.0	486.6	485.4	482.0	476.7	470.6	463.1	459.6
7.5°	544.3	550.2	549.1	544.1	538.4	534.9	525.4	517.8	506.2	495.7	487.5
10°	609.4	605.4	602.2	597.3	592.2	583.8	573.8	560.1	544.3	531.8	518.0
12.5°	658.2	658.4	654.1	649.1	641.3	633.5	620.7	603.2	584.2	564.8	548.4
15°	701.6	702.7	700.0	694.9	684.6	670.5	652.0	645.0	618.7	599.1	579.5
17.5°	732.6	732.8	732.3	725.3	714.1	704.5	687.2	671.0	646.1	619.6	593.4
20°	761.8	760.0	760.4	752.4	744.5	733.0	716.2	689.7	670.1	638.3	611.0
22.5°	761.1	761.1	762.7	761.3	756.1	747.9	735.6	714.3	687.9	655.7	624.2
25°	723.0	721.6	729.9	732.3	741.3	742.9	739.0	726.7	703.1	670.0	632.1
27.5°	632.2	627.1	644.5	661.8	684.7	699.3	714.3	717.7	706.5	679.4	639.7
30°	496.6	513.3	521.2	549.3	580.6	618.0	650.7	681.9	689.5	679.2	648.1
32.5°	391.2	405.3	411.5	434.7	463.3	508.7	561.9	609.3	646.3	658.8	643.1
35°	313.6	313.8	328.8	339.4	366.5	411.5	459.2	518.3	577.1	621.6	626.2
37.5°	258.8	259.5	269.1	279.8	301.5	326.8	371.1	421.0	491.6	558.0	592.5
40°	216.1	217.7	224.4	235.0	249.5	267.5	300.3	346.6	403.2	479.2	541.3
42.5°	188.7	191.5	194.2	201.7	209.3	225.9	250.8	283.9	334.1	404.9	479.0
45°	167.3	168.7	171.4	175.1	183.3	195.1	212.9	236.9	279.6	337.5	409.2
47.5°	150.9	150.0	153.1	156.3	161.8	170.3	182.8	203.6	235.7	284.1	346.2
50°	134.2	134.0	136.0	138.3	143.5	149.3	159.1	173.9	198.1	236.6	292.3
52.5°	118.5	119.4	120.7	123.7	127.1	131.5	140.1	149.7	169.6	201.5	245.6
55°	105.0	105.5	107.5	109.1	111.8	116.6	122.1	131.0	145.2	168.4	206.6
57.5°	93.3	93.1	95.0	95.2	98.6	102.7	107.2	114.1	125.0	143.3	170.0
60°	81.5	81.0	82.6	83.8	85.4	88.6	92.2	99.0	107.2	119.8	141.9
62.5°	70.8	70.7	71.7	73.0	74.2	77.1	79.9	84.7	90.8	100.9	117.3
65°	60.5	61.1	61.6	62.1	62.8	64.6	67.5	71.0	75.5	82.9	95.6
67.5°	49.8	50.6	50.7	52.0	53.4	54.3	55.9	59.3	62.7	69.4	76.9
70°	38.4	38.3	38.4	39.0	40.9	42.9	45.2	47.5	49.5	53.9	60.0
72.5°	31.7	31.3	31.9	31.9	32.6	32.8	34.0	36.1	38.8	41.5	45.4
75°	25.6	25.6	25.6	25.6	26.3	26.7	27.2	27.8	28.7	30.1	33.3
77.5°	19.9	19.9	20.3	20.5	20.6	20.8	21.2	21.7	22.1	22.8	24.4
80°	15.0	15.1	15.0	15.1	15.1	15.5	15.7	16.2	16.4	17.3	17.8
82.5°	10.3	10.1	10.3	10.5	10.5	10.9	10.9	11.2	11.2	11.6	12.1
85°	6.1	5.7	6.1	5.9	6.2	5.9	6.1	6.4	6.4	6.6	7.3
87.5°	1.8	2.1	1.8	2.0	2.0	2.1	2.1	2.1	2.5	2.3	2.5
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: P242579

CATALOG NUMBER: S123RDRP-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8
2.5°	432.7	432.2	429.7	426.8	423.1	420.6	418.6	417.6	414.4	410.5	407.8
5°	455.8	450.5	444.8	437.9	431.5	424.9	420.8	416.0	410.1	403.5	398.9
7.5°	478.8	469.5	459.4	448.9	438.2	428.8	420.1	412.9	404.0	395.0	388.7
10°	506.0	490.7	474.9	458.7	443.9	430.0	419.4	408.8	397.6	386.8	378.6
12.5°	530.8	509.4	490.5	469.7	449.8	432.5	416.0	403.2	389.1	377.3	367.7
15°	550.9	530.2	508.2	477.9	452.8	431.8	413.1	396.9	380.5	366.3	357.2
17.5°	571.9	540.6	511.6	488.1	455.3	429.9	408.0	389.1	371.3	356.7	345.3
20°	584.0	553.9	521.7	489.5	457.4	428.1	401.6	380.2	361.5	344.4	334.1
22.5°	591.3	556.2	521.9	486.6	452.1	421.3	395.1	371.1	350.5	334.4	321.1
25°	596.6	556.1	518.7	484.5	449.8	416.7	385.5	360.6	338.7	321.5	307.9
27.5°	600.9	553.9	511.0	473.8	438.8	405.1	377.0	350.3	328.4	310.4	295.6
30°	602.0	551.2	501.9	460.8	425.0	394.8	364.5	339.3	315.8	296.4	282.8
32.5°	603.4	544.7	489.7	445.3	408.5	378.6	351.9	328.0	303.8	284.8	270.9
35°	598.4	543.1	477.2	427.0	390.3	361.3	336.6	314.3	290.7	272.2	258.1
37.5°	583.3	534.3	464.7	406.5	368.6	341.9	321.3	301.0	279.1	258.8	245.8
40°	557.8	520.1	449.8	388.2	348.2	320.6	302.4	286.6	265.6	246.9	232.6
42.5°	519.9	500.7	435.5	369.0	325.0	298.7	284.1	269.5	251.7	232.6	219.5
45°	471.9	474.9	415.1	348.3	304.0	277.3	262.9	252.6	236.2	220.5	206.8
47.5°	413.5	438.8	393.2	326.6	281.2	256.1	243.5	234.1	222.7	206.5	193.8
50°	356.5	396.9	365.8	304.7	260.0	235.1	222.7	215.4	205.8	193.7	181.7
52.5°	304.0	348.2	332.7	280.3	237.1	214.8	202.7	197.0	189.9	178.7	168.2
55°	256.5	300.5	296.2	255.8	214.1	193.7	184.4	177.6	172.5	163.9	155.4
57.5°	215.2	257.7	258.6	228.5	194.2	173.4	165.4	160.0	156.5	149.7	141.3
60°	176.6	214.8	222.3	201.0	172.5	154.7	146.8	142.8	140.1	134.9	128.9
62.5°	144.5	175.7	184.4	170.5	151.7	135.3	129.6	125.7	124.1	119.8	114.6
65°	115.5	142.6	150.8	142.2	131.4	118.0	113.0	109.6	108.0	105.5	101.6
67.5°	91.1	112.1	121.0	113.9	109.8	100.4	97.0	95.0	93.6	91.8	88.5
70°	69.8	84.4	93.6	92.0	88.8	84.4	82.1	80.8	79.4	78.0	75.1
72.5°	52.7	61.6	70.1	71.6	69.1	69.1	67.1	66.7	66.0	64.3	63.0
75°	37.2	44.1	50.2	52.5	53.6	54.5	53.6	53.4	53.2	51.8	50.9
77.5°	25.8	30.3	34.4	38.4	39.9	41.1	41.3	42.0	41.5	40.6	40.2
80°	18.7	19.6	22.2	25.6	28.3	29.4	30.1	30.4	30.3	30.1	29.4
82.5°	12.3	13.0	13.9	16.0	18.2	20.1	20.5	20.3	20.8	21.0	20.5
85°	7.3	7.5	7.8	8.2	9.4	11.4	11.9	12.3	12.6	12.6	11.6
87.5°	2.8	2.7	3.0	3.0	3.6	3.7	4.8	5.7	5.9	5.2	5.2
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: P242579

CATALOG NUMBER: S123RDRP-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8	415.8
2.5°	406.9	404.6	403.0	399.4	397.1	394.6	392.1	393.7	393.5	393.4	393.4
5°	395.0	390.9	387.1	382.3	379.3	375.6	372.7	372.4	373.1	370.6	369.2
7.5°	383.8	378.4	373.1	368.1	362.6	358.3	355.6	354.6	352.6	351.0	349.6
10°	371.8	365.2	360.1	353.5	347.4	342.1	338.7	336.4	335.2	333.9	331.6
12.5°	359.5	353.1	346.2	338.5	332.8	326.4	324.1	321.5	318.8	317.4	314.0
15°	347.6	339.3	332.3	324.5	318.1	312.0	308.5	303.3	302.6	300.8	297.6
17.5°	336.1	326.8	316.6	311.3	304.9	298.5	292.8	291.2	285.9	284.1	281.1
20°	321.8	313.4	306.1	298.5	288.0	282.1	277.8	275.5	271.4	268.9	267.2
22.5°	309.5	301.0	292.3	283.0	274.8	268.1	265.2	261.3	259.5	255.8	253.8
25°	298.0	288.7	278.6	268.9	262.7	257.7	252.8	249.5	246.3	244.7	241.2
27.5°	283.9	274.6	264.9	257.4	250.3	245.3	240.5	237.8	233.7	231.0	229.1
30°	272.7	261.3	253.1	246.5	236.7	232.1	228.7	225.2	222.3	219.5	217.5
32.5°	259.7	249.5	241.9	233.3	226.4	221.2	216.6	213.6	211.3	208.6	206.6
35°	246.0	237.3	229.3	221.1	215.5	210.4	205.2	202.6	200.2	197.8	196.0
37.5°	233.5	225.3	217.9	210.0	203.3	198.8	194.5	192.8	189.6	187.8	186.0
40°	222.1	214.1	205.9	198.5	191.3	188.1	184.4	181.4	178.5	177.3	175.3
42.5°	209.7	201.7	195.1	186.9	181.4	176.7	173.4	170.0	168.0	166.1	165.2
45°	197.4	190.3	183.5	175.5	170.0	166.2	162.3	159.3	157.3	156.1	154.1
47.5°	185.6	178.3	171.6	164.5	159.1	154.9	150.8	148.8	146.1	144.7	143.3
50°	172.7	166.2	158.9	152.5	147.2	142.9	139.7	137.1	134.7	132.8	131.9
52.5°	160.7	153.8	147.7	141.9	136.2	131.2	128.3	125.5	123.9	121.6	120.5
55°	147.4	140.8	135.5	129.6	124.1	120.0	116.4	113.9	112.1	109.6	108.2
57.5°	135.1	129.4	122.8	117.7	111.8	108.6	105.5	102.0	99.9	97.9	96.5
60°	122.6	115.9	110.4	105.5	100.6	96.1	93.4	90.8	88.5	86.5	85.3
62.5°	109.6	103.9	98.8	93.4	89.0	85.3	82.1	79.9	78.0	76.9	75.6
65°	96.3	91.7	86.3	82.1	77.8	74.9	72.4	70.5	69.1	68.2	67.1
67.5°	84.0	79.6	74.8	70.3	67.5	65.1	63.4	61.6	60.9	59.8	59.1
70°	72.1	67.5	63.4	60.2	57.3	55.7	54.6	53.4	52.7	51.3	50.6
72.5°	59.1	56.1	53.4	50.9	48.8	47.3	45.9	44.3	43.1	41.5	40.8
75°	48.6	45.6	43.3	41.5	40.0	38.1	36.1	34.5	34.0	33.5	33.3
77.5°	37.9	36.0	34.2	32.8	30.8	29.0	28.5	28.1	27.9	27.6	27.6
80°	28.3	26.5	25.3	23.5	22.4	22.4	22.4	22.1	22.2	22.2	22.2
82.5°	19.2	17.6	17.1	16.7	16.7	16.9	16.9	17.1	16.9	17.3	17.1
85°	10.9	11.0	11.4	11.2	11.4	11.4	11.7	11.6	11.7	11.4	11.7
87.5°	5.0	5.5	5.7	5.9	6.1	5.9	6.1	6.1	6.2	6.2	6.2
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: P242579

CATALOG NUMBER: S123RDRP-S340D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	415.8	415.8	415.8	415.8
2.5°	391.2	391.1	391.2	390.5
5°	368.6	368.4	367.9	366.3
7.5°	348.2	347.8	346.4	346.7
10°	330.4	330.5	328.4	327.2
12.5°	313.1	312.0	310.4	309.0
15°	298.3	296.5	292.3	292.6
17.5°	280.0	278.6	278.4	275.9
20°	264.3	263.4	263.8	261.3
22.5°	252.0	251.1	249.2	248.8
25°	240.1	238.7	237.3	238.2
27.5°	228.0	226.9	225.3	225.3
30°	216.6	215.5	214.8	213.9
32.5°	205.0	205.0	203.6	203.6
35°	195.3	194.2	193.8	194.0
37.5°	185.8	184.4	183.7	183.0
40°	175.5	174.1	173.7	173.4
42.5°	163.9	163.6	163.4	162.7
45°	153.6	153.4	152.4	152.7
47.5°	142.6	141.7	141.1	141.7
50°	131.2	130.8	129.2	129.6
52.5°	119.8	118.2	117.8	117.5
55°	107.0	105.4	104.7	104.3
57.5°	94.3	93.8	93.1	93.6
60°	83.5	83.5	83.5	83.3
62.5°	75.1	74.6	74.4	74.8
65°	66.6	66.4	65.7	65.5
67.5°	58.7	58.0	58.0	57.7
70°	49.7	49.3	48.2	48.4
72.5°	39.9	39.5	39.5	39.2
75°	33.1	32.9	32.8	33.5
77.5°	27.6	27.6	27.8	27.4
80°	22.2	22.2	22.1	22.1
82.5°	16.7	16.9	17.1	16.7
85°	11.7	11.6	11.9	11.7
87.5°	6.6	6.2	6.2	6.4
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242579
 CATALOG NUMBER: S123RDRP-S340D930-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	13.26	14.75	13.62	15.06	15.38	16.65	18.15	17.02	18.46	18.78
	3H	14.35	15.69	14.73	16.01	16.38	18.06	19.40	18.44	19.73	20.09
	4H	14.68	15.94	15.08	16.29	16.67	18.56	19.82	18.96	20.17	20.55
	6H	14.93	16.09	15.34	16.45	16.85	18.91	20.07	19.33	20.44	20.83
	8H	15.00	16.10	15.43	16.49	16.89	19.02	20.12	19.44	20.51	20.91
	12H	15.04	16.09	15.47	16.47	16.90	19.08	20.13	19.51	20.51	20.94
4H	2H	14.24	15.49	14.64	15.84	16.22	16.89	18.15	17.29	18.50	18.87
	3H	15.40	16.44	15.82	16.84	17.24	18.59	19.62	19.00	20.02	20.42
	4H	15.79	16.72	16.23	17.14	17.58	19.20	20.13	19.63	20.55	20.99
	6H	16.10	16.91	16.56	17.36	17.82	19.67	20.48	20.12	20.92	21.38
	8H	16.19	16.95	16.66	17.39	17.86	19.81	20.57	20.27	21.01	21.48
	12H	16.25	16.92	16.73	17.40	17.88	19.91	20.58	20.39	21.06	21.53
8H	4H	16.16	16.91	16.62	17.36	17.83	19.25	20.01	19.72	20.45	20.92
	6H	16.53	17.16	17.03	17.65	18.13	19.79	20.41	20.29	20.90	21.38
	8H	16.67	17.22	17.18	17.74	18.22	19.98	20.54	20.50	21.05	21.54
	12H	16.77	17.26	17.28	17.75	18.32	20.14	20.63	20.65	21.12	21.69
12H	4H	16.19	16.86	16.67	17.34	17.81	19.24	19.91	19.72	20.39	20.86
	6H	16.58	17.14	17.09	17.65	18.14	19.78	20.34	20.29	20.85	21.33
	8H	16.75	17.25	17.26	17.74	18.31	20.01	20.50	20.52	20.99	21.56