

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: P242456

Luminaire Tested: S123DRP-S340D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242456
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-S340D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

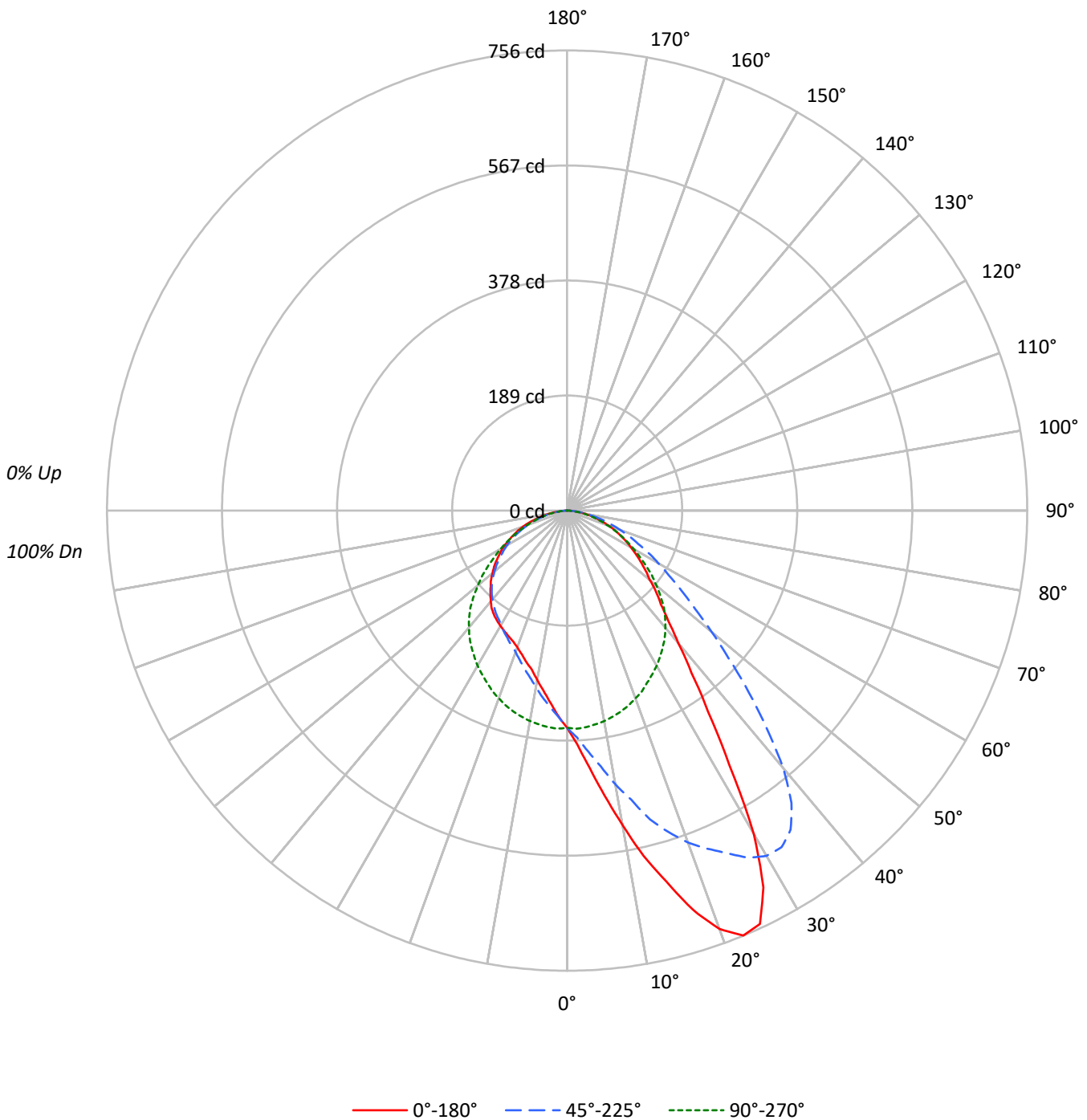
Lumens per Lamp: N/A
Luminaire Lumens: 1077.3 lumens
Efficiency: N/A
Efficacy: 92.9 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (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: P242456

CATALOG NUMBER: S123DRP-S340D927-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



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CATALOG NUMBER: S123DRP-S340D927-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	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85					85			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53					53			
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47					47			
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43	41					41			
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36					36			
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35	33					33			
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29					29			
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27					27			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	4326	4326	4326	4326	4326
5°	5159	4835	4345	3935	3851
10°	6458	5621	4323	3625	3478
15°	7921	6593	4288	3381	3238
20°	9436	7487	4233	3190	3083
25°	10020	8303	4167	3097	3048
30°	8588	9169	4119	3037	3064
35°	5972	9473	4051	3028	3097
40°	4499	8745	3970	3021	3087
45°	3735	7234	3850	3000	3048
50°	3345	5838	3607	2942	3019
55°	3128	4842	3343	2857	2982
60°	2936	4189	3069	2776	2950
65°	2759	3686	2796	2633	2857
70°	2587	3292	2488	2421	2722
75°	2318	2852	2178	2164	2496
80°	2031	2338	1787	1752	2150
85°	1585	1822	1293	1279	1446

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 8549 cd/sqm



TEST NUMBER: P242456

CATALOG NUMBER: S123DRP-S340D927-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.1	3.3
10°-20°	112.8	10.5
20°-30°	189.7	17.6
30°-40°	214.4	19.9
40°-50°	192.0	17.8
50°-60°	155.0	14.4
60°-70°	108.0	10.0
70°-80°	56.7	5.3
80°-90°	13.6	1.3
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°	337.6	31.3
0°-40°	552.0	51.2
0°-60°	899.0	83.5
0°-90°	1077.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1077.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	357	357	357	357	357	
5°	424	397	357	323	316	44
15°	631	525	342	269	258	182
25°	749	621	312	232	228	331
35°	404	640	274	205	209	260
45°	218	422	225	175	178	172
55°	148	229	158	135	141	133
65°	96	128	98	92	100	96
75°	50	61	46	46	53	53
85°	11	13	9	9	10	14
90°	0	0	0	0	0	



TEST NUMBER: P242456

CATALOG NUMBER: S123DRP-S340D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9
2.5°	384.3	383.9	383.1	383.7	382.4	380.5	380.3	378.6	373.5	373.2	371.8
5°	424.0	422.7	422.5	422.3	419.9	416.6	410.4	409.9	401.6	397.4	392.4
7.5°	472.1	471.6	470.2	468.7	460.5	456.6	450.7	443.1	433.4	424.0	418.2
10°	524.7	530.4	523.3	518.5	514.0	505.5	495.6	483.4	471.1	456.7	445.8
12.5°	581.1	583.1	583.1	578.6	571.0	557.0	537.7	523.8	512.8	486.5	477.1
15°	631.2	641.8	635.0	619.5	619.8	607.5	584.7	559.6	546.3	525.4	496.8
17.5°	687.9	689.8	687.8	673.2	666.1	648.3	627.8	604.4	579.3	553.9	524.3
20°	731.5	730.5	724.4	717.7	702.8	689.7	666.7	639.9	605.3	580.4	547.3
22.5°	755.7	753.8	751.8	746.4	734.6	720.3	700.2	670.3	637.8	601.1	561.7
25°	749.2	751.4	751.8	750.2	745.9	737.4	721.1	697.8	664.9	620.8	581.1
27.5°	698.3	704.0	711.3	716.1	723.9	729.1	723.9	709.2	682.2	642.8	593.9
30°	613.6	606.7	623.8	645.4	660.1	686.0	700.6	701.4	687.8	655.1	607.7
32.5°	496.0	507.2	512.4	540.3	576.7	606.7	639.2	668.1	674.8	655.8	615.8
35°	403.6	413.1	427.0	440.8	475.4	505.1	556.0	600.3	635.5	640.2	614.8
37.5°	335.5	341.0	349.5	364.2	387.9	424.7	465.0	522.6	571.2	605.4	602.0
40°	284.3	285.7	295.5	306.1	324.4	353.5	388.9	438.4	499.6	552.7	574.8
42.5°	245.9	249.4	252.1	262.2	275.8	295.9	328.2	367.0	421.8	484.9	533.5
45°	217.9	221.4	224.0	230.7	241.1	255.8	278.8	316.1	358.8	422.0	480.2
47.5°	198.5	198.2	200.4	205.8	213.2	225.0	241.9	266.8	307.8	360.6	421.6
50°	177.4	180.2	180.9	184.9	190.4	198.5	212.0	232.4	264.6	309.6	364.5
52.5°	162.6	162.9	165.2	167.7	172.4	178.3	189.5	204.4	227.9	264.6	314.1
55°	148.0	148.0	149.9	152.2	155.0	160.7	168.4	180.2	199.4	229.1	271.0
57.5°	134.5	135.2	137.0	137.5	139.9	143.9	150.6	160.0	174.7	198.7	233.3
60°	121.1	122.6	122.4	123.8	125.9	128.8	134.4	141.6	154.4	172.8	200.8
62.5°	109.3	108.8	108.8	110.5	112.6	115.3	118.5	124.5	134.9	150.6	173.5
65°	96.2	95.8	97.0	98.1	98.7	100.8	103.6	109.1	116.4	128.5	147.0
67.5°	84.7	83.7	84.6	84.9	86.1	87.9	90.6	94.1	100.0	110.2	125.0
70°	73.0	72.1	71.9	72.3	73.3	74.5	76.4	79.7	85.1	92.9	103.1
72.5°	60.9	60.4	60.4	61.2	61.6	62.3	63.5	66.4	70.4	75.7	85.1
75°	49.5	49.5	49.5	49.6	50.2	50.8	51.9	53.4	56.7	60.9	67.3
77.5°	39.1	39.3	38.9	38.7	39.6	39.9	40.1	41.9	43.8	46.9	51.9
80°	29.1	28.2	28.5	29.1	29.4	29.6	30.1	30.4	32.0	33.5	36.8
82.5°	19.7	19.0	19.0	19.9	19.9	20.1	20.6	21.1	21.4	22.8	24.2
85°	11.4	11.4	11.6	11.6	11.8	11.6	12.1	12.3	12.3	13.1	14.2
87.5°	5.2	4.8	5.0	5.2	5.0	5.2	5.4	5.5	5.7	5.9	6.1
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: P242456

CATALOG NUMBER: S123DRP-S340D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9
2.5°	370.8	369.4	368.0	365.6	363.5	360.6	359.7	358.7	355.6	352.8	350.7
5°	390.5	386.3	380.3	374.8	370.3	364.2	360.7	357.1	351.9	347.3	343.5
7.5°	409.3	402.1	393.6	384.4	375.6	367.1	360.4	354.3	347.6	341.0	336.0
10°	432.7	420.9	407.8	393.6	381.5	369.7	359.9	351.2	341.9	333.8	327.0
12.5°	459.3	440.5	421.1	403.1	388.2	370.8	358.3	346.7	335.8	325.6	317.9
15°	479.2	457.1	435.6	411.9	390.1	369.7	355.6	341.7	329.4	319.4	309.7
17.5°	498.9	474.7	447.4	418.9	393.3	369.7	350.4	335.5	320.4	308.3	299.0
20°	515.2	486.6	454.6	424.7	395.7	368.7	346.9	328.2	311.6	298.7	287.8
22.5°	529.2	494.6	461.2	428.7	395.5	365.9	340.5	321.1	302.8	290.2	278.4
25°	538.0	498.1	464.9	427.3	391.2	361.1	333.4	311.6	293.6	278.8	266.8
27.5°	546.3	497.5	460.0	419.5	386.0	356.1	326.3	303.0	284.1	268.1	255.8
30°	554.6	498.4	451.5	411.6	377.7	346.6	317.9	294.3	274.3	257.8	246.4
32.5°	559.8	497.9	443.8	400.5	364.5	337.9	308.7	284.1	263.4	247.3	236.4
35°	561.2	494.9	434.6	384.4	350.2	323.4	299.0	273.8	252.1	237.1	224.6
37.5°	558.2	489.6	424.6	369.9	332.9	306.3	285.0	263.4	242.6	225.9	215.0
40°	548.7	484.4	412.5	354.3	314.9	289.5	272.0	250.9	230.5	214.8	204.8
42.5°	530.6	473.8	399.1	337.1	296.2	270.8	255.1	238.3	219.3	204.8	194.7
45°	498.7	457.6	385.8	319.8	277.9	251.6	237.4	224.6	207.2	192.8	184.2
47.5°	458.1	435.6	366.6	301.6	258.7	233.3	218.4	207.9	194.2	182.6	174.1
50°	415.4	407.3	347.1	282.9	239.5	214.8	200.6	191.3	182.1	170.5	162.9
52.5°	366.1	374.4	324.3	263.6	220.0	195.8	182.6	175.7	167.6	158.6	152.2
55°	320.4	338.6	297.3	241.4	200.6	177.4	164.8	158.2	153.4	146.3	140.6
57.5°	276.2	299.4	269.3	219.1	181.6	161.3	148.9	141.5	138.3	134.4	129.7
60°	237.6	260.4	238.8	196.6	162.4	143.4	132.6	126.6	123.5	120.9	117.1
62.5°	203.2	226.4	209.1	173.8	143.5	126.2	117.3	111.4	109.1	108.1	105.0
65°	172.2	192.1	180.0	149.9	125.7	110.2	101.7	97.5	95.3	94.8	92.7
67.5°	145.4	160.8	151.5	128.8	109.1	94.9	87.5	83.9	82.0	81.8	80.1
70°	119.2	133.3	126.6	106.5	90.1	79.6	73.3	70.2	69.2	69.0	68.1
72.5°	98.7	107.6	102.6	86.6	74.9	65.5	61.4	58.1	56.9	57.2	56.7
75°	76.1	83.5	80.4	68.8	58.6	52.4	48.6	46.5	45.5	46.0	45.3
77.5°	58.1	63.3	60.2	51.4	44.8	40.1	37.2	35.8	34.8	34.8	34.4
80°	41.3	44.1	42.5	37.7	32.5	28.7	26.5	25.6	25.1	24.9	24.7
82.5°	26.5	28.7	26.8	23.9	20.8	18.8	17.8	16.6	16.3	16.4	16.3
85°	14.9	15.7	15.0	13.0	11.6	10.5	9.9	9.3	9.0	9.2	8.8
87.5°	6.4	6.6	6.1	5.4	5.0	4.5	4.5	4.2	3.8	3.8	3.6
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: P242456

CATALOG NUMBER: S123DRP-S340D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9	356.9
2.5°	349.5	348.3	346.6	344.0	341.9	338.6	338.6	339.1	339.1	339.0	338.6
5°	340.3	337.7	334.6	331.0	327.2	323.4	322.7	321.3	320.3	319.6	318.7
7.5°	331.0	326.7	322.4	317.3	313.0	309.4	306.8	304.5	303.2	301.6	300.4
10°	321.5	315.8	310.4	305.1	299.2	294.5	291.6	289.5	287.9	286.6	285.9
12.5°	310.2	303.5	297.4	292.4	285.9	281.0	278.3	277.6	275.7	272.4	270.6
15°	299.4	293.3	286.2	278.4	275.3	269.4	266.1	264.6	263.6	261.3	260.6
17.5°	290.4	282.2	274.1	268.4	262.7	258.0	256.1	254.0	252.7	250.6	250.1
20°	279.1	272.0	264.8	258.5	252.5	247.3	245.7	244.4	243.0	242.1	241.4
22.5°	267.7	260.6	254.9	249.2	242.6	239.7	238.0	236.4	235.5	235.0	234.3
25°	257.2	250.9	244.2	239.0	233.8	231.6	230.5	229.7	229.0	228.1	227.9
27.5°	247.8	240.9	235.2	230.2	226.4	224.5	223.3	222.7	222.7	223.1	223.3
30°	237.1	230.9	226.4	222.2	218.8	217.0	216.9	216.9	217.6	217.7	218.1
32.5°	227.2	222.4	217.9	213.9	211.5	210.5	211.3	211.3	211.8	212.4	213.1
35°	217.7	213.2	209.8	206.3	204.1	204.6	204.9	205.3	206.1	207.2	207.9
37.5°	208.7	204.6	201.0	198.2	196.8	197.8	198.7	199.4	200.4	201.3	202.0
40°	198.9	195.9	192.5	190.1	190.4	190.9	191.6	192.5	193.3	193.9	194.6
42.5°	189.7	186.6	184.2	182.3	182.8	183.5	183.8	184.2	185.2	186.3	186.6
45°	180.4	178.0	175.5	174.3	174.7	175.0	175.4	175.9	176.7	177.4	177.6
47.5°	169.8	168.1	166.5	165.2	165.8	165.7	166.2	167.2	167.6	167.9	169.0
50°	159.8	158.2	156.3	156.0	156.0	156.0	156.2	157.5	157.5	158.2	158.9
52.5°	148.7	147.9	146.8	146.1	145.8	145.8	146.6	147.2	147.5	148.6	149.2
55°	137.8	136.8	135.8	135.2	134.9	135.2	136.6	137.0	137.8	138.3	138.9
57.5°	126.4	125.7	124.9	124.5	124.5	124.7	125.7	126.6	126.8	128.5	129.2
60°	115.2	114.0	113.3	113.3	112.9	114.5	114.1	115.9	116.2	117.3	118.5
62.5°	103.6	101.9	101.7	101.7	102.4	102.6	103.2	103.8	104.8	106.2	107.0
65°	91.0	90.1	91.3	91.1	90.8	91.8	91.8	92.7	93.7	94.9	96.8
67.5°	79.2	78.5	78.9	78.7	79.2	79.9	80.4	81.1	82.3	83.7	84.9
70°	67.3	67.8	66.9	67.6	68.1	68.3	68.7	69.7	71.1	71.9	73.3
72.5°	55.7	55.5	55.9	56.0	56.5	56.9	57.2	58.5	60.0	60.7	61.7
75°	44.6	44.4	45.0	45.0	45.8	46.2	46.5	47.0	48.4	49.5	50.3
77.5°	34.6	34.8	34.6	35.3	34.9	35.1	36.1	36.7	36.8	39.1	39.4
80°	24.6	24.9	25.1	25.2	25.4	25.1	26.3	26.8	26.8	28.0	28.9
82.5°	15.9	16.1	16.6	16.8	16.8	17.3	17.1	17.5	18.0	18.3	19.5
85°	8.8	9.3	9.5	9.3	9.5	9.2	9.7	9.9	10.0	10.0	10.0
87.5°	3.5	3.6	3.5	3.6	3.5	3.6	3.6	3.3	3.3	3.8	3.1
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: P242456

CATALOG NUMBER: S123DRP-S340D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	356.9	356.9	356.9	356.9
2.5°	337.4	337.2	338.4	337.6
5°	317.7	318.2	316.5	316.5
7.5°	299.9	299.2	299.4	298.1
10°	283.8	282.7	282.4	282.6
12.5°	270.5	270.5	267.7	267.7
15°	260.6	257.3	257.0	258.0
17.5°	249.7	247.8	248.0	247.6
20°	241.4	240.4	240.2	239.0
22.5°	233.8	233.6	233.8	232.4
25°	227.8	228.6	227.9	227.9
27.5°	223.6	223.6	223.1	223.1
30°	218.8	218.6	218.9	218.9
32.5°	213.9	214.3	214.3	214.4
35°	208.9	209.1	209.6	209.3
37.5°	202.3	203.2	203.0	203.4
40°	194.7	195.2	195.1	195.1
42.5°	186.9	187.3	186.8	186.4
45°	178.3	178.0	178.5	177.8
47.5°	168.8	169.0	169.1	169.8
50°	159.3	160.3	160.3	160.1
52.5°	149.9	150.3	151.1	151.1
55°	140.3	140.6	140.9	141.1
57.5°	130.4	130.2	130.9	131.1
60°	119.8	119.8	121.2	121.7
62.5°	108.6	109.3	110.7	109.6
65°	97.7	99.1	98.9	99.6
67.5°	86.3	87.2	88.5	88.5
70°	74.7	75.6	76.3	76.8
72.5°	63.5	63.8	65.7	64.7
75°	51.5	52.7	53.8	53.3
77.5°	40.1	41.7	42.0	41.5
80°	30.1	29.9	31.0	30.8
82.5°	20.1	19.9	20.2	20.4
85°	10.7	11.2	10.5	10.4
87.5°	3.1	3.1	2.9	2.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242456
 CATALOG NUMBER: S123DRP-S340D927-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	15.47	17.03	15.84	17.34	17.66	16.03	17.58	16.39	17.90	18.21
	3H	17.02	18.42	17.40	18.75	19.11	17.36	18.76	17.74	19.09	19.45
	4H	17.59	18.90	17.99	19.25	19.63	17.82	19.13	18.22	19.48	19.86
	6H	17.99	19.20	18.40	19.57	19.96	18.11	19.33	18.52	19.69	20.09
	8H	18.10	19.26	18.52	19.64	20.05	18.19	19.34	18.61	19.73	20.13
	12H	18.17	19.27	18.60	19.66	20.08	18.22	19.33	18.65	19.71	20.14
4H	2H	16.63	17.94	17.02	18.29	18.67	16.79	18.10	17.19	18.45	18.83
	3H	18.22	19.31	18.63	19.71	20.11	18.59	19.69	19.00	20.09	20.49
	4H	18.84	19.83	19.27	20.24	20.68	19.16	20.15	19.59	20.56	21.00
	6H	19.31	20.17	19.77	20.61	21.07	19.53	20.38	19.98	20.83	21.28
	8H	19.45	20.25	19.91	20.70	21.16	19.62	20.42	20.08	20.86	21.33
	12H	19.55	20.26	20.03	20.74	21.21	19.67	20.39	20.15	20.86	21.33
8H	4H	19.33	20.13	19.79	20.57	21.04	19.47	20.27	19.93	20.71	21.18
	6H	19.87	20.54	20.37	21.03	21.51	19.98	20.64	20.47	21.13	21.61
	8H	20.06	20.66	20.57	21.17	21.65	20.12	20.72	20.63	21.23	21.71
	12H	20.21	20.73	20.71	21.22	21.79	20.22	20.74	20.73	21.24	21.80
12H	4H	19.38	20.10	19.86	20.57	21.04	19.48	20.20	19.96	20.67	21.14
	6H	19.95	20.55	20.46	21.06	21.54	20.01	20.61	20.52	21.11	21.60
	8H	20.19	20.71	20.70	21.21	21.77	20.21	20.74	20.72	21.23	21.79