

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: P243341

Luminaire Tested: S123DRP-H340D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243341
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-59)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-H340D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

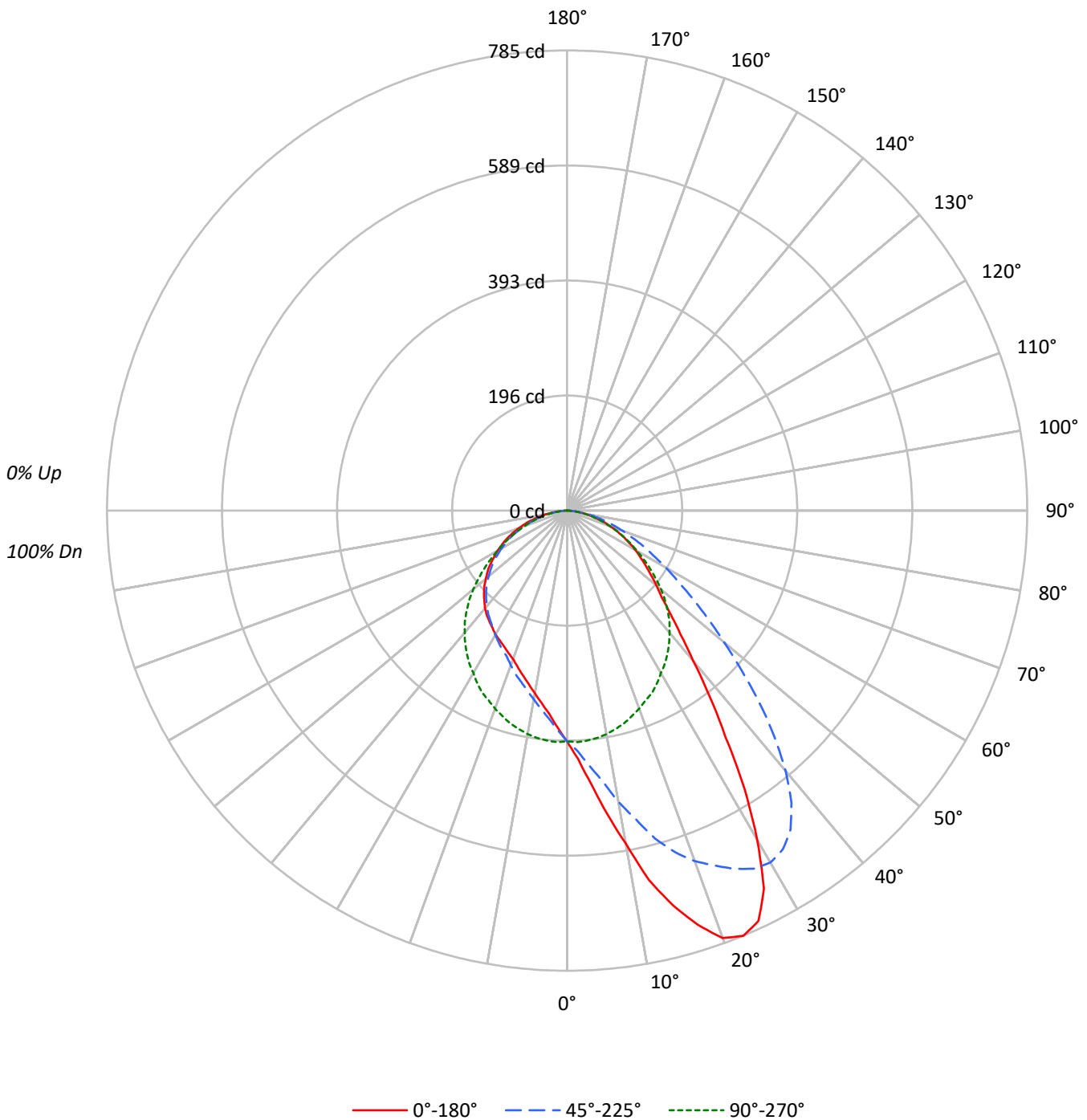
Lumens per Lamp: N/A
Luminaire Lumens: 1186.2 lumens
Efficiency: N/A
Efficacy: 105.9 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.21 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 11.2
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: P243341

CATALOG NUMBER: S123DRP-H340D935-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P243341

CATALOG NUMBER: S123DRP-H340D935-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	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	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	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46					46			
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36					36			
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33					33			
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29					29			
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27					27			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	4771	4771	4771	4771	4771
5°	5683	5315	4793	4335	4237
10°	7098	6208	4765	4026	3894
15°	8747	7263	4713	3797	3654
20°	10010	8208	4637	3623	3478
25°	10330	9017	4586	3497	3413
30°	9075	9705	4477	3428	3415
35°	6965	9831	4411	3384	3418
40°	5298	9176	4302	3373	3445
45°	4263	7957	4164	3355	3442
50°	3751	6583	3941	3296	3411
55°	3457	5507	3652	3244	3390
60°	3258	4701	3343	3137	3321
65°	3029	4084	3055	3014	3255
70°	2771	3558	2740	2771	3115
75°	2463	3039	2388	2482	2904
80°	2066	2506	1975	2129	2541
85°	1460	1850	1432	1599	1905

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 8934 cd/sqm



TEST NUMBER: P243341

CATALOG NUMBER: S123DRP-H340D935-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.7	3.3
10°-20°	124.3	10.5
20°-30°	205.3	17.3
30°-40°	235.0	19.8
40°-50°	213.0	18.0
50°-60°	172.1	14.5
60°-70°	119.9	10.1
70°-80°	62.9	5.3
80°-90°	15.0	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°	368.4	31.1
0°-40°	603.4	50.9
0°-60°	988.4	83.3
0°-90°	1186.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1186.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	394	394	394	394	394	
5°	467	437	394	356	348	48
15°	697	579	376	303	291	198
25°	772	674	343	262	255	345
35°	471	664	298	229	231	298
45°	249	464	243	196	201	196
55°	164	261	173	154	160	147
65°	106	142	106	105	114	105
75°	53	65	51	53	62	56
85°	10	13	10	12	14	13
90°	0	0	0	0	0	



TEST NUMBER: P243341

CATALOG NUMBER: S123DRP-H340D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6
2.5°	423.8	424.8	423.3	424.2	422.0	420.8	418.8	417.9	413.6	410.5	409.4
5°	467.1	467.1	467.5	465.3	462.8	458.3	452.3	448.5	444.2	436.8	433.0
7.5°	521.5	518.8	517.0	513.1	509.6	502.2	495.8	488.0	477.9	465.7	459.2
10°	576.7	579.5	577.7	573.6	564.8	552.7	543.1	532.0	516.3	504.4	487.5
12.5°	645.5	641.7	638.8	632.5	622.8	610.0	595.2	578.6	558.5	538.8	519.9
15°	697.0	697.6	697.4	689.1	679.6	662.3	648.6	621.0	595.4	578.8	547.5
17.5°	740.7	743.0	740.3	727.9	719.4	709.1	691.6	661.0	637.8	610.9	576.3
20°	776.0	776.3	772.0	762.8	753.1	741.6	718.5	695.1	672.4	636.3	603.3
22.5°	785.3	786.2	785.3	781.4	773.5	761.2	743.9	722.3	693.6	655.2	624.6
25°	772.4	771.8	774.9	772.6	772.2	768.2	756.9	739.4	711.1	674.2	635.2
27.5°	727.0	723.2	730.9	741.0	742.5	748.8	748.9	740.8	720.5	688.9	646.6
30°	648.4	652.0	655.8	676.9	688.6	705.0	719.2	724.4	716.7	693.4	653.8
32.5°	563.0	574.5	585.1	599.7	616.9	644.6	667.1	687.0	695.4	685.2	653.8
35°	470.7	476.8	493.6	512.2	536.8	558.5	603.2	632.0	657.8	664.4	645.5
37.5°	398.6	404.2	410.0	424.4	452.1	488.2	525.1	563.0	601.2	628.6	627.5
40°	334.8	336.1	341.1	353.6	376.6	408.7	447.5	493.0	542.6	579.9	595.6
42.5°	285.8	285.8	292.1	306.5	319.9	343.3	380.8	421.0	475.2	523.1	556.7
45°	248.7	249.0	254.1	264.4	274.8	293.2	321.0	358.8	414.7	464.2	510.9
47.5°	218.4	221.8	224.7	230.1	240.6	256.8	277.0	309.2	349.1	403.1	457.5
50°	198.9	199.7	201.8	205.1	213.2	223.8	241.3	265.8	301.1	349.1	404.0
52.5°	179.8	179.8	182.0	186.0	190.7	199.3	211.9	232.3	258.8	302.2	351.6
55°	163.6	164.2	164.5	167.8	171.7	178.2	188.1	201.5	225.8	260.6	303.7
57.5°	147.8	149.8	149.2	151.7	154.6	159.3	166.3	177.9	196.4	222.9	261.7
60°	134.4	134.1	135.0	136.1	138.0	141.3	147.8	156.2	171.7	193.9	225.6
62.5°	119.3	118.9	120.0	121.3	123.1	125.8	130.5	137.0	149.2	165.8	193.4
65°	105.6	105.2	105.8	106.5	108.5	110.6	114.3	119.7	127.8	142.4	163.4
67.5°	91.9	91.9	92.3	93.0	94.2	95.9	98.8	102.0	110.1	119.8	136.4
70°	78.2	78.4	78.4	79.1	80.2	81.5	83.8	86.7	91.7	100.4	113.7
72.5°	66.3	66.3	66.0	66.3	67.0	67.6	69.0	71.7	75.5	81.8	91.9
75°	52.6	53.5	53.3	53.2	53.7	54.6	55.9	58.0	60.4	64.9	72.4
77.5°	40.4	40.9	40.9	41.1	41.6	42.3	42.7	44.9	47.0	49.7	55.3
80°	29.6	29.9	29.6	29.7	30.1	30.8	31.5	31.9	33.5	35.9	38.6
82.5°	19.8	19.3	20.0	19.8	20.2	20.4	20.7	20.9	22.0	23.4	25.2
85°	10.5	11.4	11.2	11.5	11.2	11.4	11.5	12.3	12.4	13.3	14.4
87.5°	4.0	4.3	4.3	4.3	4.3	4.3	4.7	4.9	5.2	5.4	5.8
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: P243341

CATALOG NUMBER: S123DRP-H340D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6
2.5°	410.2	408.5	406.2	403.7	401.0	398.3	397.0	395.4	392.1	388.9	386.4
5°	430.0	425.5	419.3	414.8	408.4	402.2	397.4	393.9	388.7	382.4	378.3
7.5°	452.1	444.0	434.3	424.4	414.7	405.5	397.9	391.4	383.3	375.6	369.2
10°	478.3	462.6	449.1	434.7	420.2	407.3	396.5	387.1	376.6	367.3	359.5
12.5°	501.3	483.1	464.4	444.0	424.6	407.8	393.9	381.7	369.1	358.3	350.3
15°	526.7	501.2	475.2	452.1	428.5	408.0	389.8	375.6	361.1	348.9	339.7
17.5°	555.9	521.7	489.1	455.9	435.0	408.5	386.2	367.4	352.7	340.4	328.5
20°	573.2	539.2	499.2	465.1	430.5	403.3	378.4	359.5	342.2	328.2	318.4
22.5°	582.6	546.8	504.9	470.0	429.6	399.2	372.7	350.3	331.8	317.7	306.7
25°	595.8	546.8	508.0	466.0	431.1	394.3	364.4	342.9	323.5	307.3	295.7
27.5°	601.7	551.6	508.4	458.4	422.4	385.1	354.8	332.1	310.5	294.6	284.7
30°	606.6	552.5	501.2	452.5	412.3	374.8	345.3	319.9	299.7	284.5	274.1
32.5°	606.9	550.2	491.4	441.3	398.8	362.8	333.9	310.0	288.9	272.8	262.6
35°	603.7	544.4	480.3	424.2	383.1	350.3	321.5	298.1	276.6	261.3	250.8
37.5°	595.4	537.9	469.8	408.2	364.6	332.7	308.2	285.8	264.5	249.2	240.6
40°	577.7	527.5	456.1	391.1	345.8	313.9	292.5	271.9	253.0	237.2	228.5
42.5°	554.3	511.8	439.5	372.9	324.9	294.1	275.2	258.6	239.3	225.6	216.8
45°	521.2	490.5	422.9	353.7	304.2	273.9	256.6	242.9	226.3	212.6	204.9
47.5°	483.7	464.9	401.5	332.3	282.4	253.9	237.5	226.5	212.5	200.8	193.0
50°	441.5	434.5	377.9	310.7	262.0	232.8	217.7	209.0	197.1	187.8	181.1
52.5°	395.7	400.1	353.0	288.7	242.4	212.8	198.4	190.5	182.9	175.0	168.7
55°	349.2	359.5	322.9	264.7	219.9	194.1	180.0	172.8	167.2	160.6	156.1
57.5°	305.6	321.7	291.8	239.1	199.1	174.4	161.1	154.8	150.7	147.0	142.9
60°	263.3	281.8	259.7	215.2	178.4	155.9	144.0	137.9	135.9	133.2	129.2
62.5°	225.8	244.7	228.1	190.5	157.5	138.2	127.4	122.4	119.5	118.6	116.2
65°	190.7	208.3	195.7	164.7	137.7	120.6	111.0	106.5	104.9	104.7	102.9
67.5°	160.2	177.3	165.8	139.7	116.8	102.9	95.7	92.1	90.5	90.6	89.4
70°	132.1	144.2	137.3	116.8	99.1	86.9	81.3	77.3	76.0	76.0	75.7
72.5°	106.0	115.5	110.3	94.6	80.7	71.4	66.5	64.2	63.1	62.9	63.1
75°	82.9	91.2	86.5	74.2	63.8	56.8	52.6	51.0	50.5	50.1	50.3
77.5°	62.0	67.2	64.3	56.4	47.8	42.9	40.9	39.3	38.7	38.9	39.3
80°	43.8	46.7	45.1	40.0	34.2	31.0	29.6	28.3	27.8	28.3	28.3
82.5°	27.8	29.9	28.5	25.2	22.3	20.2	18.7	18.4	18.2	17.8	18.4
85°	15.1	16.2	15.5	14.4	12.4	11.5	10.5	10.3	10.3	10.3	10.3
87.5°	5.9	6.7	5.8	5.8	5.4	4.5	4.5	4.3	4.1	4.3	4.3
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: P243341

CATALOG NUMBER: S123DRP-H340D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6	393.6
2.5°	385.3	382.9	381.5	379.5	377.2	374.1	372.9	374.1	373.4	372.1	372.7
5°	374.7	371.6	367.6	364.4	360.8	356.3	354.8	354.1	353.0	352.5	351.6
7.5°	364.2	359.7	354.8	350.3	345.1	341.1	339.3	338.1	337.7	335.0	333.9
10°	353.4	347.8	342.9	336.8	332.3	327.1	324.9	323.5	321.9	320.0	318.8
12.5°	342.0	336.4	330.3	324.6	320.0	314.3	311.4	309.8	308.5	307.3	305.8
15°	332.1	326.5	318.1	313.7	308.3	302.6	300.8	297.2	297.5	295.4	293.9
17.5°	321.7	313.4	307.4	300.9	297.0	292.8	289.4	285.6	285.1	283.5	282.9
20°	310.0	301.3	297.2	290.5	285.1	280.9	277.9	277.5	276.4	274.1	273.2
22.5°	298.4	291.4	285.6	279.5	274.6	269.2	267.8	268.3	266.3	265.8	263.8
25°	288.0	281.8	274.6	268.9	264.9	261.5	259.5	258.8	258.1	257.5	256.6
27.5°	276.8	270.3	264.2	259.5	255.7	253.4	252.1	250.5	250.3	250.3	249.9
30°	265.6	259.9	255.7	249.8	246.3	244.9	243.8	243.3	243.8	243.8	244.0
32.5°	255.4	249.8	244.9	240.8	237.3	236.3	236.1	236.1	236.8	236.8	237.3
35°	244.7	239.1	234.6	231.7	228.9	228.7	228.9	229.2	230.1	230.3	231.0
37.5°	233.2	228.9	225.4	221.8	221.1	221.5	221.8	222.2	222.6	224.0	224.0
40°	222.6	219.3	215.9	213.5	212.3	213.2	213.7	213.9	215.0	215.9	216.6
42.5°	212.1	209.0	206.3	204.4	203.8	204.5	205.1	205.6	206.7	207.4	208.7
45°	200.4	198.4	196.1	194.4	194.6	195.7	195.7	197.5	198.2	198.6	199.5
47.5°	189.6	187.4	185.8	185.1	184.9	185.8	186.3	187.8	188.1	189.4	190.1
50°	178.0	176.4	175.2	174.3	174.4	174.8	176.1	177.5	177.9	179.3	180.6
52.5°	166.0	164.5	163.4	163.8	164.3	164.3	165.6	166.5	167.4	168.5	169.8
55°	154.1	152.1	152.3	151.7	152.3	153.5	154.1	155.5	156.2	156.8	158.6
57.5°	141.1	140.7	140.2	139.7	140.7	141.3	142.2	143.1	144.3	145.1	146.3
60°	127.8	127.2	127.2	127.9	128.3	129.4	130.8	131.4	131.7	133.2	134.8
62.5°	115.5	115.0	114.8	115.9	115.9	117.0	117.5	118.4	119.8	120.4	122.5
65°	102.4	102.0	102.0	102.9	103.1	105.1	105.1	105.1	106.0	107.9	109.0
67.5°	88.7	88.8	89.4	89.9	90.6	91.2	91.4	92.4	93.9	95.1	97.3
70°	75.0	75.9	76.9	76.8	77.3	78.2	78.4	79.5	80.7	82.4	84.9
72.5°	62.7	63.3	64.3	64.3	65.1	65.6	66.5	67.2	68.8	70.3	71.4
75°	50.5	50.6	51.5	52.1	52.6	53.0	53.9	55.1	56.0	57.3	58.9
77.5°	39.6	39.3	40.0	40.2	40.5	41.3	42.0	43.2	44.0	45.4	46.0
80°	28.1	28.8	29.0	29.2	29.6	30.5	31.0	31.5	32.3	33.5	34.1
82.5°	18.6	18.9	19.5	19.6	20.0	20.2	20.4	21.3	21.8	22.2	24.0
85°	10.8	11.4	11.0	11.0	11.4	11.5	12.3	12.3	13.0	12.6	13.5
87.5°	4.7	4.5	4.5	4.7	4.5	4.3	4.9	4.9	4.7	4.9	4.9
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: P243341

CATALOG NUMBER: S123DRP-H340D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	393.6	393.6	393.6	393.6
2.5°	371.8	371.8	370.3	370.9
5°	349.8	350.5	348.7	348.2
7.5°	333.6	332.8	331.6	331.6
10°	317.7	317.0	316.4	316.4
12.5°	304.0	303.3	302.2	303.1
15°	291.8	291.9	291.2	291.2
17.5°	282.4	280.8	280.2	280.0
20°	271.2	271.6	270.9	269.6
22.5°	264.2	263.3	262.6	262.4
25°	257.0	256.1	255.9	255.2
27.5°	249.8	249.9	249.4	249.4
30°	243.8	244.4	243.8	244.0
32.5°	237.9	237.9	237.9	237.2
35°	231.4	231.6	231.4	231.0
37.5°	224.7	224.7	224.9	225.3
40°	217.3	217.3	217.7	217.7
42.5°	208.5	209.4	209.9	209.0
45°	200.6	200.8	200.9	200.8
47.5°	191.7	191.2	191.4	191.7
50°	180.7	182.0	182.0	180.9
52.5°	170.1	170.5	171.2	171.2
55°	159.7	159.8	160.0	160.4
57.5°	147.8	148.0	148.0	147.8
60°	135.9	137.0	136.8	137.0
62.5°	123.1	124.7	125.2	125.1
65°	111.0	111.4	112.3	113.5
67.5°	98.2	99.1	100.6	100.2
70°	85.6	86.9	87.2	87.9
72.5°	73.0	74.6	75.0	75.3
75°	60.7	61.5	62.2	62.0
77.5°	47.4	48.5	49.7	49.0
80°	35.5	35.7	36.8	36.4
82.5°	23.4	24.9	24.9	24.1
85°	13.7	13.7	13.7	13.7
87.5°	4.7	4.5	4.9	4.7
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243341
 CATALOG NUMBER: S123DRP-H340D935-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	15.83	17.39	16.19	17.70	18.01	16.36	17.92	16.72	18.23	18.54
	3H	17.35	18.75	17.72	19.08	19.44	17.70	19.10	18.07	19.43	19.79
	4H	17.89	19.21	18.29	19.56	19.94	18.15	19.47	18.55	19.82	20.20
	6H	18.25	19.47	18.67	19.84	20.23	18.45	19.67	18.87	20.04	20.43
	8H	18.35	19.51	18.78	19.90	20.30	18.53	19.69	18.95	20.08	20.48
	12H	18.40	19.52	18.83	19.90	20.33	18.57	19.68	19.00	20.06	20.49
4H	2H	16.99	18.31	17.39	18.66	19.03	17.15	18.47	17.55	18.82	19.19
	3H	18.55	19.64	18.96	20.04	20.44	18.94	20.04	19.35	20.44	20.84
	4H	19.14	20.13	19.58	20.55	20.99	19.50	20.49	19.93	20.91	21.34
	6H	19.57	20.43	20.03	20.87	21.33	19.87	20.73	20.33	21.17	21.63
	8H	19.69	20.49	20.15	20.94	21.40	19.96	20.77	20.42	21.21	21.68
	12H	19.77	20.49	20.25	20.96	21.43	20.01	20.73	20.50	21.21	21.68
8H	4H	19.61	20.41	20.07	20.86	21.32	19.81	20.61	20.27	21.05	21.52
	6H	20.11	20.77	20.60	21.26	21.74	20.32	20.98	20.81	21.47	21.95
	8H	20.27	20.87	20.78	21.37	21.86	20.46	21.06	20.98	21.57	22.06
	12H	20.39	20.91	20.90	21.41	21.97	20.56	21.09	21.07	21.58	22.14
12H	4H	19.66	20.38	20.14	20.85	21.32	19.82	20.54	20.30	21.02	21.49
	6H	20.18	20.77	20.69	21.28	21.77	20.35	20.95	20.86	21.46	21.94
	8H	20.38	20.91	20.89	21.40	21.97	20.55	21.08	21.06	21.57	22.14