

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: P242466

Luminaire Tested: S123DRP-S340D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242466
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-S340D835-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

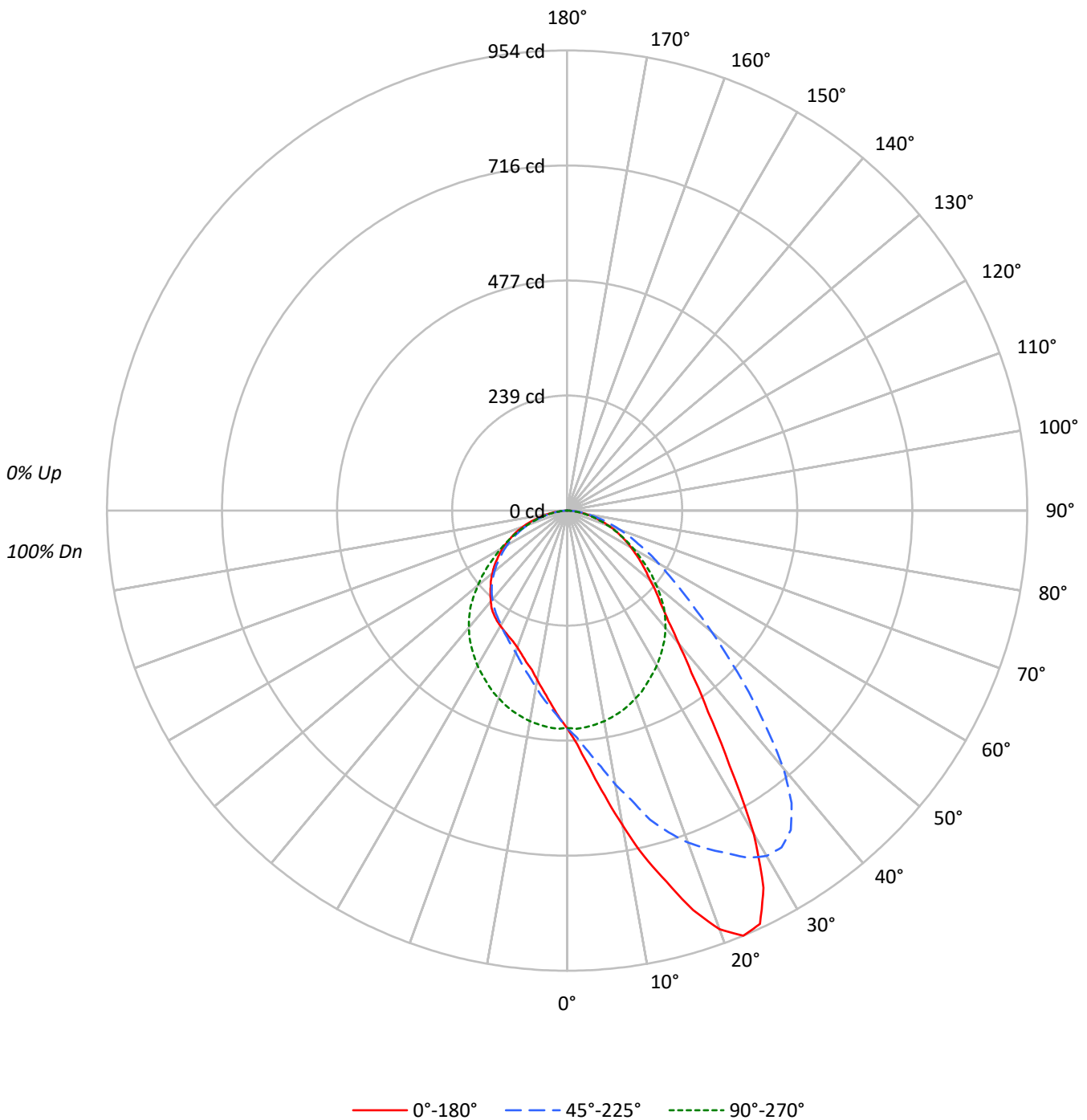
Lumens per Lamp: N/A
Luminaire Lumens: 1360.0 lumens
Efficiency: N/A
Efficacy: 117.2 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (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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CATALOG NUMBER: S123DRP-S340D835-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P242466

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	5462	5462	5462	5462	5462
5°	6513	6104	5485	4967	4861
10°	8152	7096	5457	4576	4390
15°	9999	8322	5414	4268	4087
20°	11911	9450	5344	4027	3892
25°	12648	10481	5261	3909	3848
30°	10840	11574	5201	3835	3869
35°	7539	11959	5114	3822	3908
40°	5679	11040	5013	3813	3896
45°	4716	9132	4861	3787	3847
50°	4224	7369	4552	3713	3811
55°	3950	6114	4220	3607	3764
60°	3704	5287	3874	3503	3726
65°	3482	4652	3531	3324	3605
70°	3264	4154	3140	3055	3434
75°	2922	3597	2749	2730	3147
80°	2562	2960	2255	2213	2715
85°	2003	2309	1641	1613	1822

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 10793 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.3	3.3
10°-20°	142.3	10.5
20°-30°	239.5	17.6
30°-40°	270.7	19.9
40°-50°	242.4	17.8
50°-60°	195.7	14.4
60°-70°	136.4	10.0
70°-80°	71.6	5.3
80°-90°	17.1	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°	426.1	31.3
0°-40°	696.8	51.2
0°-60°	1134.9	83.5
0°-90°	1360.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1360.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	451	451	451	451	451	
5°	535	502	451	408	400	55
15°	797	663	431	340	326	230
25°	946	784	393	292	288	418
35°	510	808	346	258	264	329
45°	275	533	284	221	224	217
55°	187	289	200	171	178	168
65°	121	162	123	116	126	121
75°	62	77	59	58	67	67
85°	14	17	12	12	13	17
90°	0	0	0	0	0	



TEST NUMBER: P242466

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
2.5°	485.1	484.6	483.5	484.4	482.7	480.3	480.0	477.9	471.5	471.1	469.4
5°	535.3	533.5	533.3	533.1	530.0	525.9	518.0	517.4	506.9	501.7	495.3
7.5°	596.0	595.3	593.6	591.6	581.3	576.3	568.9	559.3	547.1	535.3	527.9
10°	662.3	669.5	660.6	654.5	648.8	638.1	625.7	610.2	594.7	576.5	562.8
12.5°	733.5	736.1	736.1	730.4	720.8	703.2	678.7	661.2	647.3	614.1	602.3
15°	796.8	810.1	801.6	782.0	782.4	766.9	738.1	706.4	689.6	663.2	627.2
17.5°	868.4	870.8	868.2	849.9	840.9	818.4	792.4	763.0	731.3	699.2	661.9
20°	923.4	922.1	914.5	906.0	887.2	870.6	841.6	807.7	764.1	732.6	690.9
22.5°	954.0	951.6	949.0	942.2	927.4	909.2	883.9	846.1	805.1	758.8	709.0
25°	945.7	948.5	949.0	947.0	941.5	930.8	910.3	880.9	839.4	783.7	733.5
27.5°	881.5	888.7	897.9	904.0	913.8	920.4	913.8	895.3	861.2	811.4	749.7
30°	774.5	765.8	787.4	814.7	833.3	866.0	884.3	885.4	868.2	826.9	767.1
32.5°	626.1	640.3	646.8	682.0	728.0	765.8	806.8	843.3	851.8	827.8	777.4
35°	509.5	521.5	539.0	556.5	600.1	637.7	701.8	757.7	802.3	808.2	776.1
37.5°	423.5	430.5	441.2	459.7	489.7	536.2	587.0	659.7	721.1	764.3	759.9
40°	358.9	360.6	373.1	386.4	409.5	446.2	491.0	553.4	630.7	697.7	725.6
42.5°	310.4	314.8	318.3	330.9	348.2	373.5	414.3	463.2	532.4	612.1	673.5
45°	275.1	279.4	282.7	291.2	304.3	322.9	351.9	399.1	453.0	532.7	606.2
47.5°	250.6	250.2	253.0	259.8	269.2	284.0	305.4	336.8	388.6	455.2	532.2
50°	224.0	227.5	228.3	233.4	240.4	250.6	267.6	293.4	334.0	390.8	460.2
52.5°	205.2	205.6	208.5	211.8	217.6	225.1	239.3	258.0	287.7	334.0	396.4
55°	186.9	186.9	189.3	192.1	195.6	202.8	212.6	227.5	251.7	289.3	342.1
57.5°	169.8	170.7	172.9	173.6	176.6	181.6	190.1	201.9	220.5	250.8	294.5
60°	152.8	154.8	154.6	156.3	158.9	162.6	169.6	178.8	194.9	218.1	253.4
62.5°	138.0	137.3	137.3	139.5	142.1	145.6	149.5	157.2	170.3	190.1	219.0
65°	121.4	120.9	122.5	123.8	124.7	127.3	130.8	137.7	146.9	162.2	185.6
67.5°	107.0	105.7	106.8	107.2	108.7	110.9	114.4	118.8	126.2	139.1	157.8
70°	92.1	91.0	90.8	91.3	92.6	94.1	96.5	100.6	107.4	117.2	130.1
72.5°	76.8	76.2	76.2	77.3	77.7	78.6	80.1	83.8	88.8	95.6	107.4
75°	62.4	62.4	62.4	62.7	63.3	64.2	65.5	67.5	71.6	76.8	84.9
77.5°	49.3	49.6	49.1	48.9	50.0	50.4	50.6	52.8	55.2	59.2	65.5
80°	36.7	35.6	36.0	36.7	37.1	37.3	38.0	38.4	40.4	42.4	46.5
82.5°	24.9	24.0	24.0	25.1	25.1	25.3	26.0	26.6	27.1	28.8	30.6
85°	14.4	14.4	14.6	14.6	14.8	14.6	15.3	15.5	15.5	16.6	17.9
87.5°	6.5	6.1	6.3	6.5	6.3	6.5	6.8	7.0	7.2	7.4	7.6
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°	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
2.5°	468.0	466.3	464.5	461.5	458.9	455.2	454.1	452.8	448.8	445.3	442.7
5°	492.9	487.7	480.0	473.1	467.4	459.7	455.4	450.8	444.2	438.4	433.5
7.5°	516.7	507.6	496.9	485.3	474.2	463.5	454.9	447.3	438.8	430.5	424.2
10°	546.2	531.3	514.8	496.9	481.6	466.7	454.3	443.4	431.6	421.3	412.8
12.5°	579.8	556.0	531.6	508.9	490.1	468.0	452.3	437.7	423.9	411.1	401.2
15°	604.9	577.0	549.9	520.0	492.5	466.7	448.8	431.4	415.9	403.2	391.0
17.5°	629.8	599.2	564.7	528.7	496.4	466.7	442.3	423.5	404.5	389.2	377.4
20°	650.3	614.3	573.9	536.2	499.5	465.4	437.9	414.3	393.4	377.0	363.3
22.5°	668.0	624.3	582.2	541.2	499.3	461.9	429.8	405.4	382.2	366.3	351.5
25°	679.1	628.7	586.8	539.4	493.8	455.8	420.9	393.4	370.7	351.9	336.8
27.5°	689.6	628.1	580.7	529.6	487.3	449.5	411.9	382.5	358.7	338.4	322.9
30°	700.1	629.1	570.0	519.6	476.8	437.5	401.2	371.6	346.2	325.5	311.1
32.5°	706.6	628.5	560.2	505.6	460.2	426.6	389.7	358.7	332.5	312.2	298.4
35°	708.4	624.8	548.6	485.3	442.1	408.2	377.4	345.6	318.3	299.3	283.6
37.5°	704.7	618.0	535.9	466.9	420.2	386.6	359.8	332.5	306.3	285.1	271.4
40°	692.7	611.5	520.7	447.3	397.5	365.4	343.4	316.8	291.0	271.1	258.5
42.5°	669.8	598.1	503.8	425.5	374.0	341.9	322.0	300.8	276.8	258.5	245.8
45°	629.6	577.6	487.0	403.6	350.8	317.6	299.7	283.6	261.5	243.4	232.5
47.5°	578.3	549.9	462.8	380.7	326.6	294.5	275.7	262.4	245.2	230.5	219.8
50°	524.4	514.1	438.1	357.1	302.3	271.1	253.2	241.4	229.9	215.2	205.6
52.5°	462.1	472.6	409.3	332.7	277.7	247.1	230.5	221.8	211.5	200.2	192.1
55°	404.5	427.4	375.3	304.8	253.2	224.0	208.0	199.7	193.6	184.7	177.5
57.5°	348.6	377.9	339.9	276.6	229.2	203.7	188.0	178.6	174.6	169.6	163.7
60°	299.9	328.8	301.5	248.2	205.0	181.0	167.4	159.8	155.9	152.6	147.8
62.5°	256.5	285.8	263.9	219.4	181.2	159.4	148.0	140.6	137.7	136.4	132.5
65°	217.4	242.5	227.3	189.3	158.7	139.1	128.4	123.1	120.3	119.6	117.0
67.5°	183.6	203.0	191.2	162.6	137.7	119.8	110.5	105.9	103.5	103.3	101.1
70°	150.4	168.3	159.8	134.5	113.7	100.4	92.6	88.6	87.3	87.1	86.0
72.5°	124.7	135.8	129.5	109.4	94.5	82.7	77.5	73.3	71.8	72.3	71.6
75°	96.1	105.4	101.5	86.9	74.0	66.1	61.3	58.7	57.4	58.1	57.2
77.5°	73.3	79.9	76.0	64.8	56.5	50.6	46.9	45.2	43.9	43.9	43.4
80°	52.2	55.7	53.7	47.6	41.0	36.2	33.4	32.3	31.7	31.4	31.2
82.5°	33.4	36.2	33.8	30.1	26.2	23.8	22.5	21.0	20.5	20.7	20.5
85°	18.8	19.9	19.0	16.4	14.6	13.3	12.4	11.8	11.4	11.6	11.1
87.5°	8.1	8.3	7.6	6.8	6.3	5.7	5.7	5.2	4.8	4.8	4.6
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
2.5°	441.2	439.7	437.5	434.2	431.6	427.4	427.4	428.1	428.1	427.9	427.4
5°	429.6	426.3	422.4	417.8	413.0	408.2	407.4	405.6	404.3	403.4	402.3
7.5°	417.8	412.4	406.9	400.6	395.1	390.5	387.3	384.4	382.7	380.7	379.2
10°	405.8	398.6	391.9	385.1	377.7	371.8	368.1	365.4	363.5	361.7	360.9
12.5°	391.6	383.1	375.5	369.2	360.9	354.7	351.2	350.4	348.0	343.8	341.6
15°	377.9	370.2	361.3	351.5	347.5	340.1	336.0	334.0	332.7	329.9	329.0
17.5°	366.5	356.3	346.0	338.8	331.6	325.7	323.3	320.7	318.9	316.3	315.7
20°	352.3	343.4	334.2	326.4	318.7	312.2	310.2	308.5	306.7	305.6	304.8
22.5°	337.9	329.0	321.8	314.6	306.3	302.6	300.4	298.4	297.3	296.7	295.8
25°	324.6	316.8	308.2	301.7	295.1	292.3	291.0	289.9	289.0	287.9	287.7
27.5°	312.8	304.1	296.9	290.6	285.8	283.4	281.8	281.2	281.2	281.6	281.8
30°	299.3	291.4	285.8	280.5	276.2	274.0	273.8	273.8	274.6	274.8	275.3
32.5°	286.8	280.7	275.1	270.0	267.0	265.7	266.8	266.8	267.4	268.1	268.9
35°	274.8	269.2	264.8	260.4	257.6	258.3	258.7	259.1	260.2	261.5	262.4
37.5°	263.5	258.3	253.7	250.2	248.4	249.7	250.8	251.7	253.0	254.1	255.0
40°	251.0	247.3	243.0	239.9	240.4	241.0	241.9	243.0	244.1	244.7	245.6
42.5°	239.5	235.5	232.5	230.1	230.7	231.6	232.1	232.5	233.8	235.1	235.5
45°	227.7	224.6	221.6	220.0	220.5	220.9	221.4	222.0	223.1	224.0	224.2
47.5°	214.4	212.2	210.2	208.5	209.4	209.1	209.8	211.1	211.5	212.0	213.3
50°	201.7	199.7	197.3	196.9	196.9	196.9	197.1	198.9	198.9	199.7	200.6
52.5°	187.7	186.6	185.3	184.5	184.0	184.0	185.1	185.8	186.2	187.5	188.4
55°	174.0	172.7	171.4	170.7	170.3	170.7	172.5	172.9	174.0	174.6	175.3
57.5°	159.6	158.7	157.6	157.2	157.2	157.4	158.7	159.8	160.0	162.2	163.1
60°	145.4	143.9	143.0	143.0	142.6	144.5	144.1	146.3	146.7	148.0	149.5
62.5°	130.8	128.6	128.4	128.4	129.2	129.5	130.3	131.0	132.3	134.0	135.1
65°	114.8	113.7	115.3	115.0	114.6	115.9	115.9	117.0	118.3	119.8	122.2
67.5°	100.0	99.1	99.5	99.3	100.0	100.9	101.5	102.4	103.9	105.7	107.2
70°	84.9	85.6	84.5	85.4	86.0	86.2	86.7	88.0	89.7	90.8	92.6
72.5°	70.3	70.1	70.5	70.7	71.4	71.8	72.3	73.8	75.8	76.6	77.9
75°	56.3	56.1	56.8	56.8	57.9	58.3	58.7	59.4	61.1	62.4	63.5
77.5°	43.7	43.9	43.7	44.5	44.1	44.3	45.6	46.3	46.5	49.3	49.8
80°	31.0	31.4	31.7	31.9	32.1	31.7	33.2	33.8	33.8	35.4	36.5
82.5°	20.1	20.3	21.0	21.2	21.2	21.8	21.6	22.0	22.7	23.1	24.7
85°	11.1	11.8	12.0	11.8	12.0	11.6	12.2	12.4	12.7	12.7	12.7
87.5°	4.4	4.6	4.4	4.6	4.4	4.6	4.6	4.1	4.1	4.8	3.9
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: P242466

CATALOG NUMBER: S123DRP-S340D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	450.6	450.6	450.6	450.6
2.5°	425.9	425.7	427.2	426.1
5°	401.0	401.7	399.5	399.5
7.5°	378.5	377.7	377.9	376.4
10°	358.2	356.9	356.5	356.7
12.5°	341.4	341.4	337.9	337.9
15°	329.0	324.8	324.4	325.7
17.5°	315.2	312.8	313.0	312.6
20°	304.8	303.4	303.2	301.7
22.5°	295.1	294.9	295.1	293.4
25°	287.5	288.6	287.7	287.7
27.5°	282.3	282.3	281.6	281.6
30°	276.2	275.9	276.4	276.4
32.5°	270.0	270.5	270.5	270.7
35°	263.7	263.9	264.6	264.1
37.5°	255.4	256.5	256.3	256.7
40°	245.8	246.5	246.2	246.2
42.5°	236.0	236.4	235.8	235.3
45°	225.1	224.6	225.3	224.4
47.5°	213.1	213.3	213.5	214.4
50°	201.1	202.4	202.4	202.1
52.5°	189.3	189.7	190.8	190.8
55°	177.0	177.5	177.9	178.1
57.5°	164.6	164.4	165.3	165.5
60°	151.3	151.3	153.0	153.7
62.5°	137.1	138.0	139.7	138.4
65°	123.3	125.1	124.9	125.7
67.5°	108.9	110.0	111.8	111.8
70°	94.3	95.4	96.3	96.9
72.5°	80.1	80.6	83.0	81.6
75°	65.1	66.6	67.9	67.2
77.5°	50.6	52.6	53.0	52.4
80°	38.0	37.8	39.1	38.9
82.5°	25.3	25.1	25.5	25.8
85°	13.5	14.2	13.3	13.1
87.5°	3.9	3.9	3.7	3.5
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242466
 CATALOG NUMBER: S123DRP-S340D835-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	16.28	17.84	16.65	18.15	18.47	16.84	18.39	17.20	18.71	19.02
	3H	17.83	19.23	18.21	19.56	19.92	18.17	19.57	18.55	19.90	20.26
	4H	18.40	19.71	18.80	20.06	20.44	18.63	19.94	19.03	20.29	20.67
	6H	18.80	20.01	19.21	20.38	20.77	18.92	20.14	19.33	20.50	20.90
	8H	18.91	20.06	19.33	20.45	20.85	19.00	20.15	19.42	20.54	20.94
	12H	18.97	20.08	19.41	20.47	20.89	19.03	20.14	19.46	20.52	20.95
4H	2H	17.43	18.75	17.83	19.10	19.47	17.60	18.91	18.00	19.26	19.64
	3H	19.03	20.12	19.44	20.52	20.92	19.40	20.50	19.81	20.90	21.30
	4H	19.65	20.64	20.08	21.05	21.49	19.97	20.96	20.40	21.37	21.81
	6H	20.12	20.98	20.58	21.42	21.88	20.34	21.19	20.79	21.64	22.09
	8H	20.26	21.06	20.72	21.51	21.97	20.43	21.23	20.89	21.67	22.14
	12H	20.35	21.07	20.84	21.55	22.02	20.48	21.20	20.96	21.67	22.14
8H	4H	20.13	20.94	20.60	21.38	21.85	20.28	21.08	20.74	21.52	21.99
	6H	20.68	21.35	21.18	21.84	22.31	20.79	21.45	21.28	21.94	22.42
	8H	20.87	21.47	21.38	21.97	22.46	20.93	21.53	21.44	22.04	22.52
	12H	21.01	21.54	21.52	22.03	22.60	21.03	21.55	21.54	22.04	22.61
12H	4H	20.19	20.90	20.67	21.38	21.85	20.29	21.01	20.77	21.48	21.95
	6H	20.76	21.36	21.27	21.86	22.35	20.82	21.41	21.33	21.92	22.41
	8H	21.00	21.52	21.51	22.01	22.58	21.02	21.55	21.53	22.04	22.60