

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P831739

Luminaire Tested: S123DP-S340D835-4F0-1E-UDD-G

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831739
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, -)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DP-S340D835-4F0-1E-UDD-G
Description: DEFINE 3 DIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, GRAZE OPTIC

Light Source: -
Ballast/Driver: -

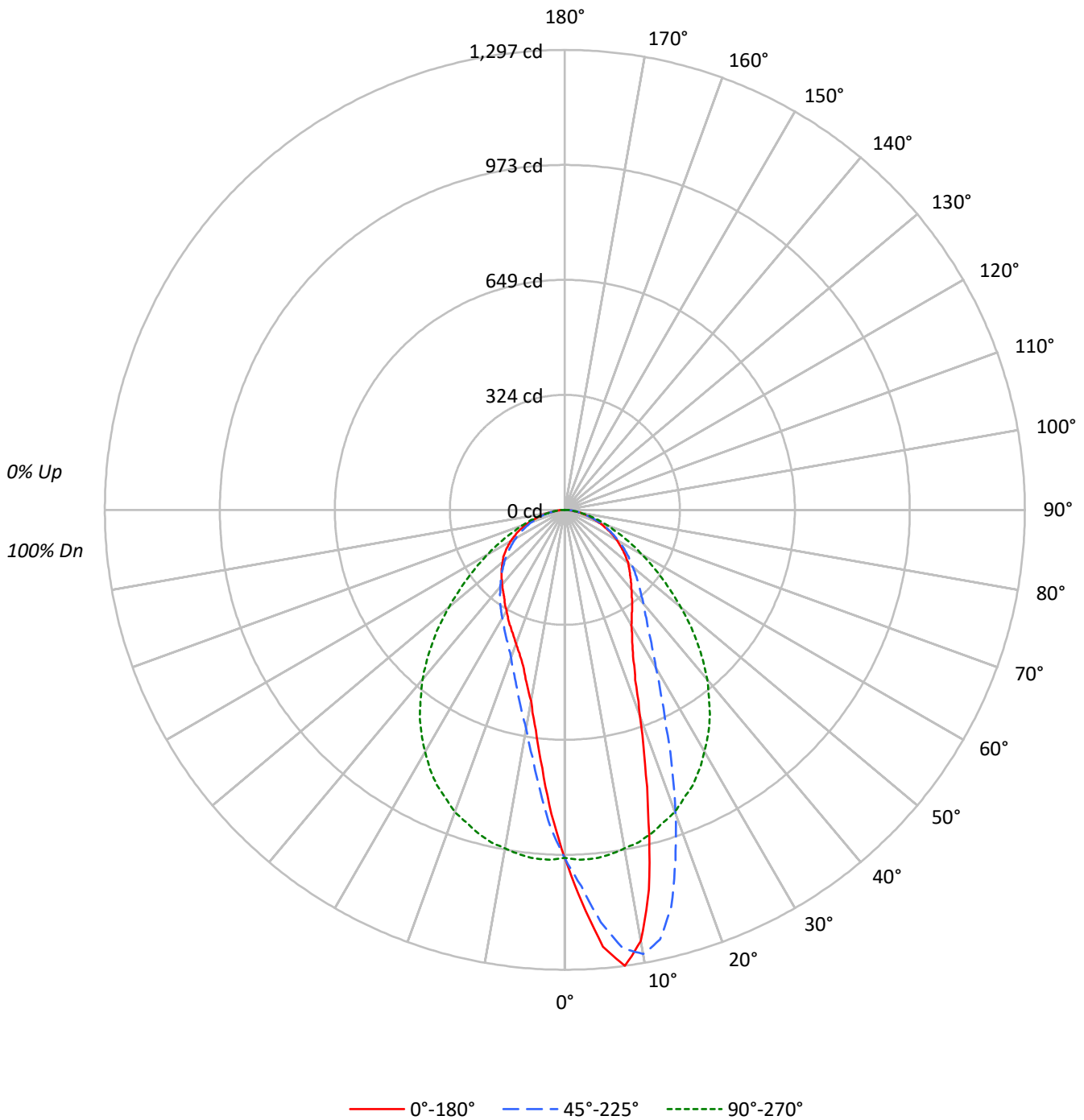
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1578.3 lumens
Efficiency: N/A
Efficacy: 127.3 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: Direct

Input Watts (W): 12.4
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

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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	0
RW	70	50	30	10	70	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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86				86
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74				74
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66	64				64
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52	50				50
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45				45
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40				40
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37				37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34				34
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	10568	10568	10568	10568	10568
5°	13366	12615	10662	8593	7896
10°	13495	13903	10592	6850	5985
15°	10164	12909	10520	5800	5061
20°	7082	10446	10386	5072	4598
25°	5400	8032	10157	4668	4312
30°	4672	6382	9790	4380	4083
35°	4335	5388	9369	4173	3921
40°	4103	4834	8776	3975	3867
45°	3967	4474	8024	3821	3842
50°	3898	4188	7134	3681	3823
55°	3753	3980	6259	3549	3840
60°	3619	3757	5395	3423	3776
65°	3400	3545	4653	3291	3701
70°	3141	3276	3956	3068	3484
75°	2840	2936	3394	2853	3182
80°	2343	2572	2684	2486	2684
85°	1853	2087	1964	2112	2137

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 9162 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.8	5.9
10°-20°	230.9	14.6
20°-30°	273.4	17.3
30°-40°	274.9	17.4
40°-50°	252.2	16.0
50°-60°	208.2	13.2
60°-70°	147.3	9.3
70°-80°	78.6	5.0
80°-90°	19.9	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°	597.2	37.8
0°-40°	872.1	55.3
0°-60°	1332.5	84.4
0°-90°	1578.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1578.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	982	982	982	982	982	
5°	1237	1168	987	795	731	118
15°	912	1158	944	520	454	252
25°	455	676	855	393	363	215
35°	330	410	713	318	298	207
45°	261	294	527	251	252	202
55°	200	212	334	189	205	179
65°	134	139	183	129	145	133
75°	68	71	82	69	76	72
85°	15	17	16	17	17	18
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°	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8
2.5°	1106.7	1105.5	1104.4	1098.7	1093.0	1090.3	1087.5	1079.3	1071.1	1062.0	1052.9
5°	1237.0	1240.2	1243.3	1239.7	1236.1	1224.9	1213.7	1198.9	1184.1	1167.5	1150.9
7.5°	1297.1	1298.9	1300.7	1298.5	1296.2	1293.2	1290.3	1277.1	1263.8	1246.8	1229.7
10°	1234.7	1238.8	1242.9	1251.8	1260.7	1270.7	1280.7	1278.9	1277.1	1272.0	1267.0
12.5°	1097.5	1102.6	1107.6	1125.3	1143.1	1165.9	1188.7	1208.3	1227.9	1241.5	1255.2
15°	912.1	926.0	939.9	956.1	972.3	1005.7	1039.2	1080.5	1121.7	1158.4	1195.0
17.5°	751.3	756.5	761.8	779.1	796.4	838.5	880.7	928.3	975.9	1036.7	1097.5
20°	618.3	623.0	627.8	650.6	673.4	706.4	739.4	793.0	846.5	911.9	977.3
22.5°	519.4	526.9	534.4	547.2	559.9	591.6	623.3	670.9	718.5	790.7	862.9
25°	454.7	460.2	465.6	473.4	481.1	506.4	531.7	570.9	610.1	676.3	742.6
27.5°	410.5	412.8	415.1	422.8	430.5	446.9	463.3	497.1	530.8	587.0	643.3
30°	375.9	377.5	379.1	385.9	392.7	403.9	415.1	439.4	463.8	513.5	563.1
32.5°	351.7	352.9	354.0	359.2	364.5	372.5	380.4	398.2	416.0	457.0	498.0
35°	329.9	330.5	331.2	335.1	339.0	344.9	350.8	364.3	377.7	410.0	442.4
37.5°	310.7	311.6	312.5	314.8	317.1	322.3	327.6	338.3	349.0	373.8	398.7
40°	292.0	293.6	295.2	296.8	298.4	302.7	307.1	315.3	323.5	344.0	364.5
42.5°	276.1	277.7	279.3	280.0	280.7	283.2	285.7	293.2	300.7	316.0	331.2
45°	260.6	261.3	262.0	262.7	263.3	265.4	267.4	274.0	280.7	293.9	307.1
47.5°	246.5	246.5	246.5	246.9	247.4	249.2	251.0	255.8	260.6	270.9	281.1
50°	232.8	232.8	232.8	232.1	231.4	232.6	233.7	237.4	241.0	250.1	259.2
52.5°	216.4	216.4	216.4	216.6	216.9	216.9	216.9	220.1	223.2	231.4	239.6
55°	200.0	200.9	201.8	201.1	200.5	200.9	201.4	203.4	205.5	212.1	218.7
57.5°	183.6	184.1	184.5	184.3	184.1	184.3	184.5	186.3	188.2	193.2	198.2
60°	168.1	168.1	168.1	167.7	167.2	167.7	168.1	169.0	169.9	174.5	179.1
62.5°	150.8	151.0	151.3	151.5	151.7	151.3	150.8	151.9	153.1	156.5	159.9
65°	133.5	133.7	133.9	134.6	135.3	134.9	134.4	135.5	136.7	139.2	141.7
67.5°	118.0	117.5	117.1	117.3	117.5	118.2	118.9	119.1	119.4	122.1	124.8
70°	99.8	100.2	100.7	100.5	100.2	100.5	100.7	101.4	102.1	104.1	106.2
72.5°	83.4	83.6	83.8	83.8	83.8	84.3	84.7	85.4	86.1	87.2	88.4
75°	68.3	68.3	68.3	68.8	69.3	69.5	69.7	69.7	69.7	70.6	71.5
77.5°	51.9	53.1	54.2	54.0	53.8	54.2	54.7	55.4	56.0	56.5	57.0
80°	37.8	37.8	37.8	38.0	38.3	39.0	39.6	40.1	40.5	41.5	42.4
82.5°	24.1	24.4	24.6	25.3	26.0	26.4	26.9	27.6	28.2	28.2	28.2
85°	15.0	14.6	14.1	14.6	15.0	15.5	15.9	16.2	16.4	16.9	17.3
87.5°	7.3	7.3	7.3	7.3	7.3	7.5	7.7	7.7	7.7	7.7	7.7
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°	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8
2.5°	1050.2	1047.4	1037.4	1027.4	1016.0	1004.6	996.2	987.7	975.2	962.7	952.4
5°	1138.1	1125.3	1104.2	1083.0	1054.3	1025.6	1006.2	986.8	960.9	934.9	914.2
7.5°	1207.8	1185.9	1156.3	1126.7	1089.1	1051.5	1016.0	980.5	940.8	901.2	868.8
10°	1252.2	1237.4	1203.2	1169.1	1118.7	1068.4	1018.7	969.1	918.0	867.0	824.2
12.5°	1256.6	1257.9	1226.5	1195.0	1138.1	1081.1	1020.8	960.4	896.2	831.9	782.0
15°	1218.5	1242.0	1224.7	1207.3	1149.9	1092.5	1018.3	944.0	870.0	795.9	738.3
17.5°	1147.9	1198.2	1200.7	1203.2	1145.8	1088.4	1006.2	924.0	840.1	756.3	695.7
20°	1051.5	1125.8	1151.3	1176.8	1130.1	1083.4	995.0	906.7	812.8	718.9	655.4
22.5°	953.1	1043.3	1090.0	1136.7	1102.1	1067.5	973.4	879.3	780.2	681.1	616.7
25°	841.0	939.5	1011.2	1083.0	1061.8	1040.6	947.9	855.2	749.7	644.2	578.4
27.5°	743.3	843.3	929.9	1016.5	1011.9	1007.3	915.3	823.3	715.3	607.3	543.8
30°	656.3	749.5	846.3	943.1	954.3	965.4	876.6	787.7	679.5	571.3	510.0
32.5°	579.3	660.6	764.5	868.4	890.2	912.1	831.9	751.7	644.7	537.6	478.6
35°	516.2	590.0	693.9	797.8	825.1	852.4	782.7	713.0	608.7	504.4	448.1
37.5°	460.4	522.1	623.5	724.9	758.4	791.8	729.4	667.0	569.3	471.5	419.8
40°	414.1	463.8	557.0	650.1	688.9	727.6	676.1	624.6	531.9	439.2	391.6
42.5°	375.4	419.6	504.1	588.6	625.8	662.9	619.4	575.9	493.4	411.0	367.4
45°	342.4	377.7	454.5	531.2	566.5	601.9	564.5	527.1	454.5	381.8	341.2
47.5°	311.4	341.7	407.3	472.9	504.4	535.8	506.6	477.5	416.0	354.5	317.8
50°	283.6	308.0	365.4	422.8	450.1	477.5	451.7	426.0	375.4	324.8	293.0
52.5°	259.5	279.3	327.4	375.4	398.9	422.3	400.2	378.2	338.1	298.0	270.2
55°	235.5	252.4	294.1	335.8	351.7	367.7	350.6	333.5	301.2	268.8	245.3
57.5°	213.2	228.3	262.4	296.6	308.9	321.2	305.7	290.2	265.8	241.5	221.9
60°	191.4	203.7	232.1	260.6	268.1	275.6	263.1	250.6	233.5	216.4	198.9
62.5°	171.1	182.2	203.4	224.6	229.6	234.6	225.1	215.5	202.5	189.5	175.9
65°	150.1	158.5	175.9	193.2	196.4	199.6	191.1	182.7	172.9	163.1	153.1
67.5°	130.8	136.7	150.8	164.9	165.2	165.4	158.5	151.7	146.2	140.8	132.8
70°	111.9	117.5	126.9	136.2	136.5	136.7	131.2	125.7	121.6	117.5	111.6
72.5°	92.5	96.6	103.6	110.7	110.3	109.8	106.4	103.0	99.8	96.6	92.3
75°	74.9	78.4	83.1	87.9	86.6	85.2	83.4	81.6	78.8	76.1	73.4
77.5°	59.0	61.1	63.8	66.5	65.6	64.7	63.1	61.5	59.5	57.4	56.3
80°	43.3	44.2	46.0	47.8	47.4	46.9	45.1	43.3	42.8	42.4	40.8
82.5°	29.4	30.5	31.0	31.4	31.2	31.0	29.6	28.2	27.8	27.3	27.1
85°	17.5	17.8	18.0	18.2	17.5	16.9	16.4	15.9	15.9	15.9	15.7
87.5°	8.0	8.2	8.2	8.2	8.0	7.7	7.3	6.8	7.1	7.3	7.3
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°	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8	981.8
2.5°	942.2	933.3	924.4	917.6	910.8	899.1	887.5	884.8	882.0	878.2	874.3
5°	893.4	871.6	849.7	830.1	810.5	795.3	780.0	770.0	759.9	752.7	745.4
7.5°	836.5	803.7	770.9	747.6	724.4	702.3	680.2	673.2	666.1	656.5	647.0
10°	781.4	745.1	708.9	678.6	648.3	626.7	605.0	596.4	587.7	575.7	563.6
12.5°	732.2	692.5	652.9	622.4	591.8	570.9	549.9	537.4	524.9	518.0	511.2
15°	680.7	638.3	595.9	567.7	539.4	520.5	501.6	490.7	479.8	473.1	466.5
17.5°	635.1	593.2	551.3	524.2	497.1	479.8	462.4	452.9	443.3	438.3	433.3
20°	591.8	550.8	509.8	483.4	457.0	442.8	428.7	422.6	416.4	412.3	408.2
22.5°	552.2	511.9	471.5	449.0	426.4	415.1	403.7	399.3	395.0	391.6	388.2
25°	512.6	476.6	440.6	421.4	402.3	393.0	383.6	379.3	375.0	371.5	368.1
27.5°	480.2	445.8	411.4	395.0	378.6	371.3	364.0	360.6	357.2	354.0	350.8
30°	448.8	418.0	387.3	373.1	359.0	352.4	345.8	342.4	339.0	336.0	333.0
32.5°	419.6	393.2	366.8	353.8	340.8	335.3	329.9	325.8	321.7	319.4	317.1
35°	391.8	368.1	344.4	333.7	323.0	317.6	312.1	308.7	305.3	303.4	301.6
37.5°	368.1	346.9	325.8	315.5	305.3	300.0	294.8	291.8	288.9	288.2	287.5
40°	344.0	325.8	307.5	297.5	287.5	282.9	278.4	276.6	274.7	274.3	273.8
42.5°	323.9	306.2	288.4	279.3	270.2	266.3	262.4	261.5	260.6	261.3	262.0
45°	300.7	285.9	271.1	262.7	254.2	251.0	247.8	247.2	246.5	247.8	249.2
47.5°	281.1	267.4	253.8	245.8	237.8	235.5	233.3	233.0	232.8	234.6	236.5
50°	261.1	247.8	234.6	228.3	221.9	219.8	217.8	218.5	219.1	222.1	225.1
52.5°	242.4	230.1	217.8	211.9	205.9	204.6	203.2	204.8	206.4	209.6	212.8
55°	221.9	210.7	199.6	195.0	190.4	189.1	187.7	190.9	194.1	197.0	200.0
57.5°	202.3	192.5	182.7	178.6	174.5	174.3	174.0	177.0	180.0	183.2	186.3
60°	181.3	173.1	164.9	161.7	158.5	159.0	159.5	162.9	166.3	168.8	171.3
62.5°	162.2	155.4	148.5	145.6	142.6	143.7	144.9	148.3	151.7	154.7	157.6
65°	143.1	137.4	131.7	129.6	127.6	129.2	130.8	133.7	136.7	138.7	140.8
67.5°	124.8	120.1	115.3	113.7	112.1	113.7	115.3	118.2	121.2	123.2	125.3
70°	105.7	101.8	98.0	96.8	95.7	97.5	99.3	101.8	104.3	106.4	108.4
72.5°	87.9	85.0	82.0	81.8	81.6	83.1	84.7	87.2	89.8	91.1	92.5
75°	70.6	69.0	67.4	67.2	67.0	68.6	70.2	71.5	72.9	74.0	75.2
77.5°	55.1	53.8	52.4	52.6	52.8	54.0	55.1	56.5	57.9	58.5	59.2
80°	39.2	38.7	38.3	38.7	39.2	40.1	41.0	41.9	42.8	43.3	43.7
82.5°	26.9	26.4	26.0	26.7	27.3	28.0	28.7	29.4	30.1	30.3	30.5
85°	15.5	16.2	16.9	16.9	16.9	17.1	17.3	17.5	17.8	17.5	17.3
87.5°	7.3	7.5	7.7	7.7	7.7	8.0	8.2	8.2	8.2	8.0	7.7
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):

	165°	170°	175°	180°
0°	981.8	981.8	981.8	981.8
2.5°	872.7	871.1	864.7	858.4
5°	739.9	734.4	732.6	730.8
7.5°	646.5	646.0	636.5	626.9
10°	564.3	564.9	556.3	547.6
12.5°	505.5	499.8	499.1	498.4
15°	461.3	456.1	455.1	454.2
17.5°	430.1	426.9	426.0	425.1
20°	406.4	404.6	403.0	401.4
22.5°	385.9	383.6	382.3	380.9
25°	366.1	364.0	363.6	363.1
27.5°	348.3	345.8	345.8	345.8
30°	331.5	329.9	329.2	328.5
32.5°	315.7	314.4	314.4	314.4
35°	300.9	300.2	299.3	298.4
37.5°	287.5	287.5	287.0	286.6
40°	274.5	275.2	275.2	275.2
42.5°	262.7	263.3	263.3	263.3
45°	250.4	251.5	251.9	252.4
47.5°	238.3	240.1	240.6	241.0
50°	226.4	227.8	228.0	228.3
52.5°	214.4	216.0	217.1	218.2
55°	201.6	203.2	203.9	204.6
57.5°	187.9	189.5	189.8	190.0
60°	172.9	174.5	175.0	175.4
62.5°	158.5	159.5	159.9	160.4
65°	142.1	143.5	144.4	145.3
67.5°	126.4	127.6	127.6	127.6
70°	108.9	109.3	110.0	110.7
72.5°	92.7	92.9	92.9	92.9
75°	75.6	76.1	76.3	76.5
77.5°	59.5	59.7	59.7	59.7
80°	43.5	43.3	43.3	43.3
82.5°	29.8	29.2	29.2	29.2
85°	17.1	16.9	17.1	17.3
87.5°	7.7	7.7	7.7	7.7
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P831739

CATALOG NUMBER: S123DP-S340D835-4F0-1E-UDD-G

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	15.67	17.18	16.04	17.49	17.81	17.91	19.42	18.27	19.73	20.05
	3H	17.36	18.72	17.74	19.05	19.41	19.38	20.73	19.76	21.06	21.42
	4H	17.97	19.24	18.37	19.59	19.97	19.86	21.13	20.26	21.48	21.86
	6H	18.37	19.54	18.78	19.91	20.30	20.16	21.34	20.57	21.70	22.10
	8H	18.48	19.60	18.91	19.99	20.39	20.24	21.36	20.67	21.75	22.15
	12H	18.55	19.62	18.98	20.00	20.43	20.28	21.35	20.71	21.73	22.16
4H	2H	16.32	17.59	16.72	17.94	18.32	18.14	19.42	18.54	19.76	20.14
	3H	18.20	19.26	18.61	19.66	20.06	19.82	20.87	20.23	21.27	21.67
	4H	18.92	19.87	19.35	20.29	20.73	20.42	21.38	20.86	21.79	22.23
	6H	19.43	20.26	19.89	20.70	21.16	20.86	21.69	21.32	22.13	22.59
	8H	19.58	20.35	20.04	20.80	21.26	20.98	21.76	21.45	22.20	22.67
	12H	19.67	20.37	20.16	20.84	21.32	21.06	21.75	21.54	22.23	22.70
8H	4H	19.23	20.01	19.70	20.45	20.92	20.57	21.35	21.04	21.79	22.26
	6H	19.84	20.48	20.34	20.98	21.45	21.10	21.74	21.60	22.23	22.71
	8H	20.05	20.63	20.57	21.14	21.63	21.28	21.86	21.80	22.37	22.85
	12H	20.21	20.71	20.72	21.20	21.77	21.41	21.92	21.92	22.41	22.98
12H	4H	19.26	19.96	19.75	20.43	20.90	20.58	21.27	21.06	21.75	22.22
	6H	19.90	20.47	20.41	20.98	21.47	21.12	21.69	21.63	22.20	22.69
	8H	20.16	20.67	20.67	21.16	21.72	21.35	21.85	21.86	22.34	22.91