

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P332744

Luminaire Tested: **S124DIW-S350D1560U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332744
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D1560U835-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6930.8 lumens
Efficiency: N/A
Efficacy: 129.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Indirect

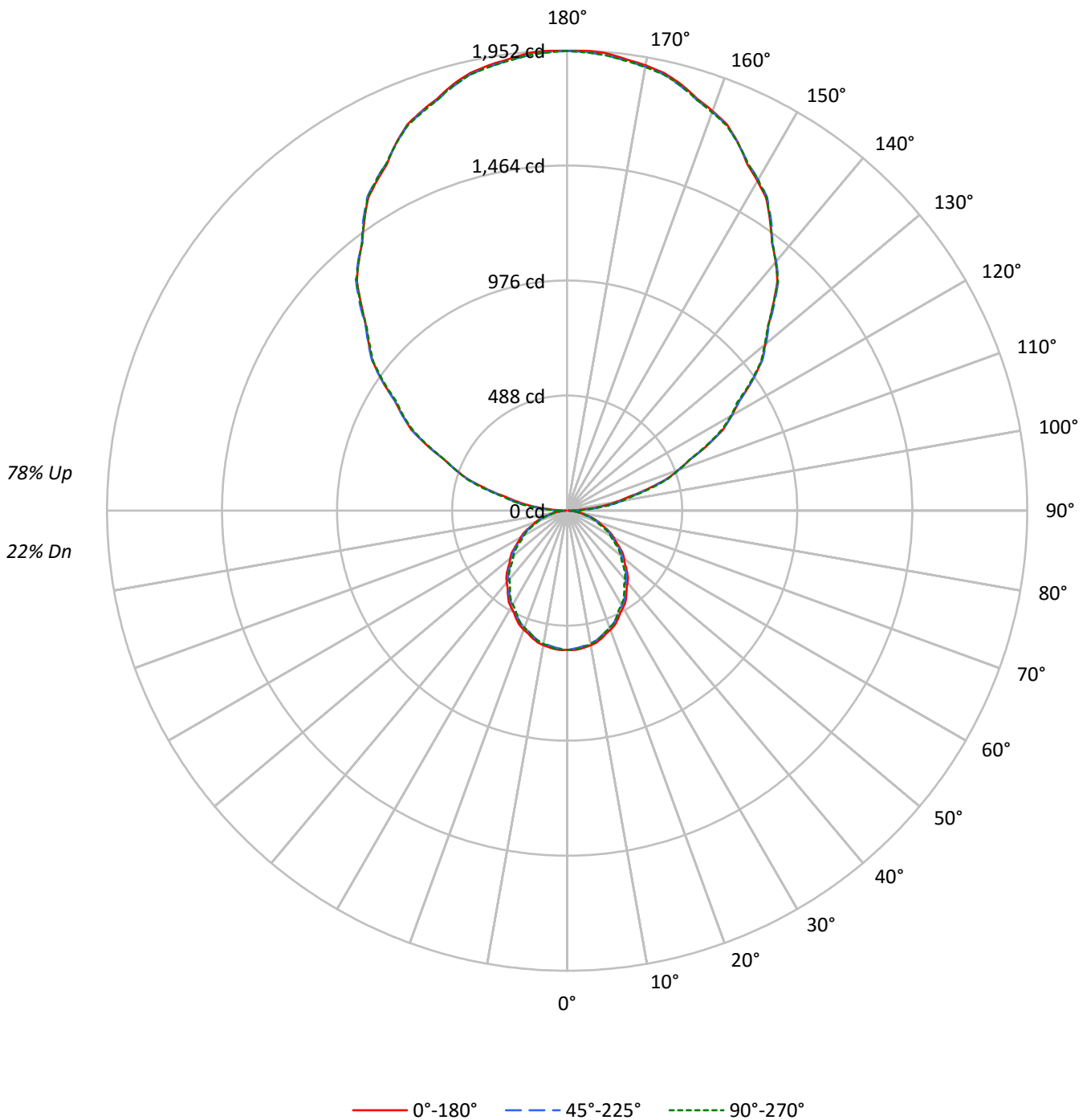
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332744

CATALOG NUMBER: S124DIW-S350D1560U835-4F0-1E-UDD-F1

Luminous Intensity Polar Plot





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CATALOG NUMBER: S124DIW-S350D1560U835-4F0-1E-UDD-F1

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	100	100	100	100	89	89	89	89	68	68	68	48	48	48	30	30	30	22				
1	91	87	84	80	81	77	74	72	59	57	55	42	41	40	27	26	25	18				
2	83	76	70	65	74	68	63	59	52	48	46	37	35	33	23	22	21	15				
3	76	67	60	54	67	59	54	49	46	42	38	33	30	28	21	19	18	13				
4	69	59	52	46	61	53	46	41	40	36	32	29	26	24	19	17	16	11				
5	63	52	45	39	56	47	40	35	36	31	28	26	23	21	17	15	14	10				
6	58	47	39	34	51	42	35	30	32	28	24	23	20	18	15	13	12	9				
7	54	42	34	29	47	38	31	26	29	24	21	21	18	16	14	12	11	8				
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	13	11	9	7				
9	46	35	27	23	41	31	25	21	24	20	16	18	15	12	12	10	8	6				
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	11	9	8	6				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4769	4769	4769
5°	4783	4725	4760
10°	4753	4687	4710
15°	4695	4621	4633
20°	4619	4538	4542
25°	4532	4444	4431
30°	4426	4333	4294
35°	4315	4217	4161
40°	4200	4086	4011
45°	4080	3956	3881
50°	3947	3841	3721
55°	3804	3690	3571
60°	3660	3523	3416
65°	3500	3364	3228
70°	3319	3151	3028
75°	3041	2895	2820
80°	2706	2599	2529
85°	2371	2279	2232



TEST NUMBER: P332744

CATALOG NUMBER: S124DIW-S350D1560U835-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.6	0.8
10°-20°	156.7	2.3
20°-30°	230.7	3.3
30°-40°	268.2	3.9
40°-50°	268.2	3.9
50°-60°	234.6	3.4
60°-70°	174.2	2.5
70°-80°	99.0	1.4
80°-90°	34.4	0.5
90°-100°	128.6	1.9
100°-110°	380.9	5.5
110°-120°	646.6	9.3
120°-130°	852.5	12.3
130°-140°	957.5	13.8
140°-150°	940.9	13.6
150°-160°	791.3	11.4
160°-170°	526.5	7.6
170°-180°	184.4	2.7
0°-30°	443.1	6.4
0°-40°	711.3	10.3
0°-60°	1214.1	17.5
0°-90°	1521.7	22.0
90°-120°	1156.1	16.7
90°-150°	3906.9	56.4
90°-180°	5409.0	78.0
0°-180°	6930.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	591	591	591	591	591	
5°	590	588	583	588	587	56
15°	562	560	553	555	554	158
25°	509	505	499	499	498	234
35°	438	434	428	425	422	274
45°	357	354	346	342	340	275
55°	270	269	262	257	254	242
65°	183	181	176	172	169	181
75°	98	95	93	91	90	104
85°	26	26	25	25	24	28
90°	4	21	33	42	45	7
95°	90	104	115	119	119	101
105°	351	353	359	363	368	373
115°	657	657	654	653	651	648
125°	958	957	956	953	950	853
135°	1235	1244	1244	1241	1236	955
145°	1500	1506	1508	1506	1502	939
155°	1719	1719	1717	1723	1717	791
165°	1871	1867	1864	1872	1867	527
175°	1947	1939	1938	1947	1938	185
180°	1950	1950	1950	1950	1950	



TEST NUMBER: P332744

CATALOG NUMBER: S124DIW-S350D1560U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	592.2	592.0	591.7	591.5	591.2	590.6	589.7	588.8	587.9	586.9	587.8
5°	590.2	589.8	589.4	589.0	588.6	587.8	586.6	585.5	584.3	583.1	584.3
7.5°	584.8	584.3	583.9	583.5	583.1	582.2	580.9	579.7	578.4	577.1	578.0
10°	579.8	579.4	579.0	578.6	578.2	577.3	575.9	574.5	573.2	571.8	572.6
12.5°	573.4	573.0	572.6	572.1	571.7	570.8	569.3	567.9	566.4	565.0	565.9
15°	561.8	561.4	561.0	560.6	560.2	559.2	557.6	556.0	554.4	552.9	553.5
17.5°	547.9	547.4	546.9	546.4	545.8	544.8	543.3	541.8	540.3	538.8	539.2
20°	537.7	537.2	536.7	536.1	535.6	534.6	533.0	531.4	529.8	528.2	528.6
22.5°	526.7	526.0	525.3	524.6	523.9	522.8	521.2	519.7	518.1	516.5	517.1
25°	508.8	508.1	507.4	506.6	505.9	504.8	503.3	501.8	500.4	498.9	499.0
27.5°	488.4	487.6	486.9	486.1	485.4	484.3	482.9	481.6	480.2	478.8	478.6
30°	474.8	473.9	473.1	472.2	471.4	470.3	468.9	467.5	466.2	464.8	464.4
32.5°	460.4	459.6	458.8	458.1	457.3	456.2	454.8	453.3	451.9	450.4	449.9
35°	437.8	437.1	436.4	435.6	434.9	433.8	432.3	430.8	429.4	427.9	427.2
37.5°	414.1	413.4	412.7	412.1	411.4	410.3	408.7	407.1	405.5	403.9	403.1
40°	398.5	397.7	396.9	396.0	395.2	394.0	392.4	390.8	389.2	387.7	386.6
42.5°	381.9	381.4	380.9	380.4	379.9	378.7	377.0	375.2	373.5	371.8	370.5
45°	357.4	356.6	355.9	355.2	354.4	353.2	351.5	349.8	348.2	346.5	345.3
47.5°	331.7	331.2	330.7	330.2	329.7	328.7	327.1	325.5	324.0	322.4	321.1
50°	314.3	313.9	313.5	313.0	312.6	311.7	310.2	308.7	307.2	305.8	304.3
52.5°	297.3	296.7	296.2	295.7	295.2	294.2	292.6	291.1	289.5	288.0	286.7
55°	270.3	270.0	269.6	269.3	269.0	268.1	266.6	265.2	263.7	262.2	261.0
57.5°	244.5	244.2	243.8	243.5	243.1	242.2	240.7	239.3	237.8	236.4	235.2
60°	226.7	226.2	225.7	225.1	224.6	223.7	222.3	220.9	219.6	218.2	217.3
62.5°	209.3	208.9	208.4	208.0	207.5	206.6	205.1	203.7	202.2	200.8	199.9
65°	183.2	182.7	182.1	181.6	181.1	180.3	179.2	178.2	177.1	176.1	175.0
67.5°	156.9	156.4	155.9	155.4	154.9	154.2	153.2	152.2	151.2	150.1	149.1
70°	140.6	139.8	139.1	138.4	137.6	136.8	136.0	135.2	134.3	133.5	132.6
72.5°	123.2	122.4	121.7	121.0	120.2	119.5	118.8	118.2	117.5	116.8	116.1
75°	97.5	97.0	96.5	95.9	95.4	94.9	94.4	93.8	93.3	92.8	92.4
77.5°	73.0	72.8	72.5	72.3	72.1	71.7	71.3	70.8	70.3	69.9	69.7
80°	58.2	57.9	57.6	57.3	57.0	56.7	56.5	56.3	56.1	55.9	55.6
82.5°	43.8	43.7	43.5	43.4	43.2	43.1	43.1	43.1	43.0	43.0	42.9
85°	25.6	25.6	25.6	25.6	25.6	25.5	25.2	25.0	24.8	24.6	24.6
87.5°	10.8	11.4	12.1	12.7	13.4	13.9	14.4	14.8	15.3	15.7	16.1
90°	4.5	8.2	11.9	15.6	19.3	22.5	25.1	27.8	30.5	33.2	35.2
92.5°	32.3	36.5	40.7	44.9	49.2	52.2	54.1	56.0	57.8	59.7	60.9
95°	90.5	93.5	96.5	99.5	102.5	105.2	107.6	109.9	112.3	114.6	115.6
97.5°	158.0	160.4	162.8	165.3	167.7	170.3	173.0	175.7	178.5	181.2	182.4
100°	211.1	212.4	213.8	215.1	216.5	218.6	221.7	224.7	227.7	230.7	231.4
102.5°	266.6	267.1	267.7	268.2	268.7	270.4	273.1	275.9	278.6	281.4	282.3
105°	351.3	351.7	352.0	352.3	352.7	353.5	354.8	356.2	357.5	358.9	359.9
107.5°	440.3	440.7	441.1	441.5	441.9	442.2	442.4	442.6	442.8	443.0	443.9
110°	500.6	501.3	501.9	502.6	503.3	503.5	503.1	502.8	502.4	502.1	501.4



TEST NUMBER: P332744

CATALOG NUMBER: S124DIW-S350D1560U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	563.3	563.5	563.6	563.7	563.9	563.6	563.0	562.4	561.8	561.2	561.1
115°	657.4	657.4	657.4	657.4	657.4	657.1	656.4	655.7	655.1	654.4	654.1
117.5°	746.1	746.3	746.6	746.9	747.2	747.1	746.6	746.1	745.6	745.2	744.0
120°	805.2	806.5	807.9	809.2	810.5	810.7	809.7	808.7	807.7	806.7	805.0
122.5°	866.7	867.2	867.8	868.3	868.8	868.9	868.4	867.9	867.5	867.0	865.9
125°	957.5	957.5	957.5	957.5	957.5	957.3	957.0	956.6	956.3	956.0	955.3
127.5°	1039.8	1040.8	1041.8	1042.8	1043.8	1044.1	1043.5	1043.0	1042.5	1041.9	1041.2
130°	1097.7	1098.7	1099.7	1100.7	1101.7	1102.2	1102.2	1102.2	1102.2	1102.2	1101.6
132.5°	1156.8	1157.6	1158.3	1159.0	1159.8	1160.0	1159.7	1159.5	1159.2	1158.9	1158.3
135°	1234.9	1236.9	1238.9	1241.0	1243.0	1244.0	1244.0	1244.0	1244.0	1244.0	1243.3
137.5°	1320.0	1320.9	1321.8	1322.8	1323.7	1324.5	1325.0	1325.5	1326.1	1326.6	1325.7
140°	1376.7	1377.3	1378.0	1378.7	1379.3	1379.7	1379.7	1379.7	1379.7	1379.7	1379.3
142.5°	1428.5	1429.2	1429.9	1430.5	1431.2	1431.4	1431.1	1430.9	1430.6	1430.3	1430.3
145°	1500.3	1501.6	1503.0	1504.3	1505.7	1506.5	1506.8	1507.2	1507.5	1507.8	1507.5
147.5°	1571.5	1573.1	1574.7	1576.3	1577.9	1578.6	1578.3	1578.0	1577.8	1577.5	1577.2
150°	1614.9	1616.2	1617.6	1618.9	1620.3	1620.9	1620.9	1620.9	1620.9	1620.9	1620.9
152.5°	1655.9	1656.7	1657.5	1658.3	1659.1	1659.7	1659.9	1660.2	1660.5	1660.7	1661.5
155°	1718.9	1718.9	1718.9	1718.9	1718.9	1718.8	1718.4	1718.1	1717.8	1717.4	1718.8
157.5°	1772.0	1771.4	1770.8	1770.2	1769.6	1769.3	1769.2	1769.1	1769.1	1769.0	1770.0
160°	1803.4	1803.0	1802.7	1802.4	1802.0	1801.7	1801.4	1801.0	1800.7	1800.4	1801.4
162.5°	1832.3	1831.5	1830.6	1829.7	1828.8	1828.2	1827.9	1827.6	1827.2	1826.9	1828.7
165°	1871.2	1870.2	1869.2	1868.2	1867.2	1866.4	1865.7	1865.0	1864.4	1863.7	1865.7
167.5°	1901.1	1899.7	1898.3	1896.9	1895.5	1894.8	1894.9	1894.9	1895.0	1895.1	1897.1
170°	1918.0	1916.3	1914.6	1912.9	1911.3	1910.6	1910.9	1911.3	1911.6	1911.9	1913.9
172.5°	1930.0	1928.6	1927.2	1925.8	1924.4	1923.7	1923.8	1923.9	1923.9	1924.0	1926.3
175°	1946.6	1944.9	1943.3	1941.6	1939.9	1938.9	1938.6	1938.2	1937.9	1937.6	1939.9
177.5°	1952.0	1950.7	1949.4	1948.0	1946.7	1946.0	1946.0	1946.0	1946.0	1946.0	1947.9
180°	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6



TEST NUMBER: P332744

CATALOG NUMBER: S124DIW-S350D1560U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	588.6	589.5	590.3	590.7	590.6	590.5	590.4	590.3
5°	585.5	586.6	587.8	588.2	588.0	587.8	587.6	587.4
7.5°	578.9	579.9	580.8	581.2	581.1	580.9	580.8	580.7
10°	573.5	574.3	575.2	575.5	575.3	575.0	574.8	574.6
12.5°	566.8	567.7	568.7	569.0	568.7	568.4	568.1	567.8
15°	554.1	554.7	555.4	555.5	555.2	554.9	554.6	554.3
17.5°	539.6	540.0	540.4	540.5	540.3	540.1	539.9	539.7
20°	528.9	529.2	529.5	529.6	529.3	529.1	528.9	528.7
22.5°	517.6	518.2	518.8	518.9	518.5	518.1	517.7	517.4
25°	499.1	499.2	499.3	499.2	498.7	498.3	497.9	497.5
27.5°	478.3	478.1	477.8	477.4	476.9	476.4	475.8	475.3
30°	464.0	463.6	463.1	462.7	462.1	461.6	461.1	460.6
32.5°	449.4	448.9	448.4	447.9	447.4	446.8	446.3	445.8
35°	426.4	425.7	424.9	424.3	423.8	423.3	422.7	422.2
37.5°	402.3	401.5	400.7	400.0	399.3	398.6	397.9	397.2
40°	385.6	384.5	383.5	382.7	382.1	381.6	381.1	380.6
42.5°	369.3	368.1	366.9	366.1	365.7	365.4	365.0	364.7
45°	344.2	343.0	341.9	341.1	340.8	340.5	340.2	339.9
47.5°	319.8	318.5	317.2	316.2	315.4	314.6	313.8	313.0
50°	302.8	301.4	299.9	298.8	298.2	297.6	296.9	296.3
52.5°	285.4	284.1	282.8	281.7	280.9	280.1	279.3	278.5
55°	259.7	258.4	257.2	256.2	255.6	255.0	254.3	253.7
57.5°	234.0	232.8	231.6	230.7	230.1	229.5	228.9	228.2
60°	216.3	215.4	214.4	213.7	213.2	212.6	212.1	211.6
62.5°	199.1	198.2	197.3	196.6	196.1	195.6	195.1	194.5
65°	174.0	172.9	171.9	171.1	170.6	170.0	169.5	169.0
67.5°	148.1	147.1	146.1	145.5	145.4	145.2	145.1	144.9
70°	131.8	131.0	130.1	129.5	129.2	128.9	128.6	128.3
72.5°	115.5	114.8	114.1	113.6	113.3	113.0	112.7	112.4
75°	91.9	91.5	91.1	90.8	90.7	90.6	90.5	90.4
77.5°	69.6	69.5	69.4	69.2	68.9	68.6	68.3	68.1
80°	55.4	55.2	55.0	54.9	54.7	54.6	54.5	54.4
82.5°	42.7	42.6	42.5	42.4	42.3	42.1	42.0	41.9
85°	24.6	24.6	24.6	24.6	24.5	24.4	24.2	24.1
87.5°	16.5	16.9	17.3	17.6	17.7	17.9	18.0	18.1
90°	37.2	39.2	41.2	42.6	43.2	43.9	44.6	45.2
92.5°	62.1	63.3	64.5	65.3	65.7	66.1	66.5	66.9
95°	116.6	117.6	118.6	119.1	119.1	119.1	119.1	119.1
97.5°	183.7	184.9	186.1	186.7	186.7	186.7	186.7	186.7
100°	232.0	232.7	233.4	233.7	233.7	233.7	233.7	233.7
102.5°	283.2	284.2	285.1	285.7	286.0	286.3	286.5	286.8
105°	360.9	361.9	362.9	363.9	364.9	365.9	366.9	367.9
107.5°	444.9	445.8	446.8	447.2	447.1	447.1	447.0	446.9
110°	500.8	500.1	499.4	499.6	500.6	501.6	502.6	503.6



TEST NUMBER: P332744

CATALOG NUMBER: S124DIW-S350D1560U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	560.9	560.8	560.7	560.7	560.9	561.1	561.3	561.5
115°	653.7	653.4	653.1	652.7	652.4	652.1	651.7	651.4
117.5°	742.9	741.8	740.6	739.7	739.0	738.4	737.7	737.0
120°	803.3	801.7	800.0	799.5	800.2	800.8	801.5	802.2
122.5°	864.7	863.6	862.5	861.3	860.1	858.9	857.7	856.5
125°	954.6	954.0	953.3	952.6	951.9	951.3	950.6	949.9
127.5°	1040.6	1039.9	1039.2	1038.6	1038.1	1037.6	1037.0	1036.5
130°	1100.9	1100.2	1099.5	1098.5	1097.2	1095.9	1094.5	1093.2
132.5°	1157.6	1156.9	1156.2	1155.6	1155.1	1154.6	1154.0	1153.5
135°	1242.6	1242.0	1241.3	1240.4	1239.4	1238.4	1237.4	1236.4
137.5°	1324.9	1324.0	1323.1	1322.8	1323.0	1323.2	1323.4	1323.6
140°	1379.0	1378.7	1378.3	1378.0	1377.7	1377.3	1377.0	1376.7
142.5°	1430.2	1430.1	1430.1	1430.0	1429.9	1429.9	1429.8	1429.7
145°	1507.2	1506.8	1506.5	1505.8	1504.8	1503.8	1502.8	1501.8
147.5°	1577.0	1576.7	1576.4	1576.1	1575.8	1575.5	1575.1	1574.8
150°	1620.9	1620.9	1620.9	1620.8	1620.4	1620.1	1619.8	1619.4
152.5°	1662.3	1663.1	1663.9	1663.9	1663.0	1662.2	1661.3	1660.4
155°	1720.1	1721.4	1722.8	1722.8	1721.4	1720.1	1718.8	1717.4
157.5°	1771.0	1772.0	1773.0	1772.9	1771.8	1770.7	1769.5	1768.4
160°	1802.4	1803.4	1804.4	1804.0	1802.4	1800.7	1799.0	1797.3
162.5°	1830.5	1832.3	1834.1	1834.2	1832.5	1830.9	1829.2	1827.5
165°	1867.7	1869.7	1871.7	1872.1	1870.7	1869.4	1868.0	1866.7
167.5°	1899.1	1901.1	1903.1	1903.1	1901.0	1898.9	1896.8	1894.7
170°	1916.0	1918.0	1920.0	1919.8	1917.5	1915.1	1912.8	1910.4
172.5°	1928.6	1930.8	1933.1	1933.1	1930.7	1928.4	1926.0	1923.7
175°	1942.3	1944.6	1947.0	1947.0	1944.6	1942.3	1939.9	1937.6
177.5°	1949.8	1951.6	1953.5	1953.4	1951.2	1949.1	1947.0	1944.8
180°	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6

(END OF REPORT)