

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: P332176-840

Luminaire Tested: **S123DIW-S775D1535U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332176-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S775D1535U840-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9464.6 lumens  
Efficiency: N/A  
Efficacy: 139.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

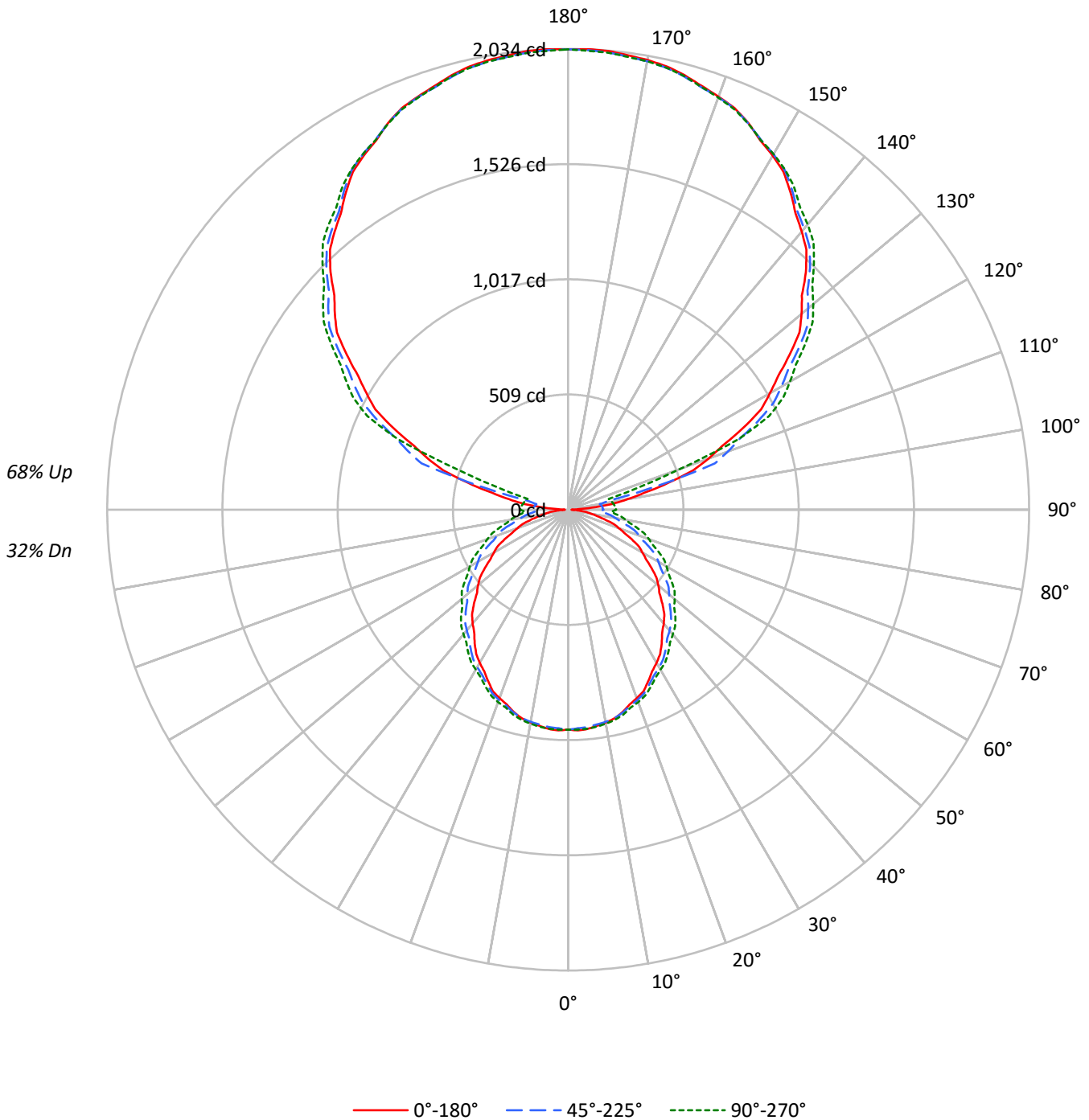
Input Watts (W): 68.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	39	39	39	32	
1	93	88	84	81	83	80	76	73	63	61	58	48	46	45	34	33	32	34	33	32	25	
2	84	77	71	65	75	69	64	59	55	51	48	41	39	37	29	28	26	29	28	26	21	
3	77	67	60	54	69	61	54	49	48	44	40	36	33	31	26	24	22	26	24	22	17	
4	70	59	51	45	63	53	47	41	42	38	34	32	29	26	23	21	19	23	21	19	15	
5	64	53	45	39	57	48	41	35	38	33	29	29	25	22	20	18	16	20	18	16	13	
6	59	47	39	33	53	42	36	30	34	29	25	26	22	19	18	16	14	18	16	14	11	
7	54	42	34	29	49	38	31	27	31	26	22	23	20	17	17	14	13	17	14	13	10	
8	50	38	31	25	45	35	28	23	28	23	19	21	18	15	15	13	11	15	13	11	9	
9	47	35	27	22	42	32	25	21	25	20	17	20	16	13	14	12	10	14	12	10	8	
10	44	32	25	20	39	29	23	18	23	19	15	18	15	12	13	11	9	13	11	9	7	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10449	10449	10449
5°	10481	10185	10191
10°	10387	9951	9901
15°	10253	9685	9584
20°	10061	9380	9236
25°	9826	9030	8869
30°	9583	8714	8498
35°	9312	8382	8201
40°	9054	8079	7884
45°	8767	7788	7630
50°	8484	7501	7350
55°	8172	7206	7099
60°	7867	6907	6840
65°	7553	6588	6534
70°	7082	6231	6219
75°	6487	5819	5899
80°	5804	5417	5533
85°	5167	5142	5320



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.0	1.0
10°-20°	262.3	2.8
20°-30°	392.3	4.1
30°-40°	468.5	5.0
40°-50°	490.2	5.2
50°-60°	460.0	4.9
60°-70°	384.2	4.1
70°-80°	274.9	2.9
80°-90°	169.6	1.8
90°-100°	176.7	1.9
100°-110°	427.7	4.5
110°-120°	896.3	9.5
120°-130°	1105.9	11.7
130°-140°	1163.7	12.3
140°-150°	1078.9	11.4
150°-160°	868.0	9.2
160°-170°	560.2	5.9
170°-180°	193.1	2.0
0°-30°	746.7	7.9
0°-40°	1215.2	12.8
0°-60°	2165.4	22.9
0°-90°	2994.2	31.6
90°-120°	1500.7	15.9
90°-150°	4849.1	51.2
90°-180°	6470.0	68.4
0°-180°	9464.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	971	971	971	971	971	
5°	972	969	963	971	971	92
15°	925	928	927	937	937	260
25°	835	846	849	862	863	385
35°	719	736	750	765	770	450
45°	588	613	640	659	668	453
55°	448	483	521	549	558	401
65°	310	351	398	428	440	306
75°	168	218	271	304	318	180
85°	52	105	161	195	207	54
90°	15	83	156	196	211	14
95°	104	88	152	193	205	123
105°	458	493	410	186	185	486
115°	849	873	923	962	978	838
125°	1193	1206	1242	1266	1277	1065
135°	1483	1492	1509	1531	1533	1141
145°	1710	1719	1723	1734	1738	1070
155°	1883	1880	1881	1888	1880	867
165°	1985	1981	1979	1990	1981	561
175°	2032	2025	2026	2035	2025	193
180°	2032	2032	2032	2032	2032	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7
2.5°	974.9	974.3	973.8	973.2	972.7	971.6	970.2	968.7	967.1	965.6	967.1
5°	971.8	971.3	970.8	970.4	969.9	969.0	967.6	966.1	964.7	963.3	965.2
7.5°	962.2	962.3	962.4	962.5	962.6	962.0	960.6	959.3	957.9	956.5	958.9
10°	953.8	954.2	954.7	955.2	955.6	955.3	954.1	953.0	951.8	950.6	953.0
12.5°	943.6	944.3	944.9	945.6	946.2	946.2	945.4	944.6	943.8	943.0	945.1
15°	925.2	925.9	926.7	927.4	928.1	928.3	928.1	927.9	927.6	927.4	929.7
17.5°	902.0	903.4	904.8	906.2	907.6	908.3	908.2	908.1	908.0	907.9	910.0
20°	885.0	886.5	887.9	889.3	890.7	891.6	892.1	892.6	893.0	893.5	895.6
22.5°	867.3	868.7	870.1	871.5	872.9	873.9	874.6	875.3	876.0	876.6	879.3
25°	835.4	837.7	840.0	842.4	844.8	846.3	847.0	847.7	848.4	849.1	852.1
27.5°	803.2	805.9	808.6	811.2	814.0	816.0	817.5	819.0	820.5	822.0	824.7
30°	780.3	783.5	786.5	789.5	792.5	795.1	796.9	798.8	800.7	802.5	805.4
32.5°	755.0	758.4	761.8	765.3	768.7	771.6	774.1	776.6	779.0	781.4	784.5
35°	719.0	722.8	726.6	730.3	734.1	737.5	740.5	743.6	746.7	749.7	753.3
37.5°	681.0	685.2	689.4	693.7	697.9	701.9	705.7	709.4	713.2	716.9	720.9
40°	655.6	659.8	664.1	668.3	672.5	677.0	681.7	686.4	691.1	695.8	699.7
42.5°	627.6	632.9	638.0	643.2	648.3	653.4	658.2	663.2	668.0	673.0	677.3
45°	587.9	593.6	599.2	604.8	610.5	616.2	622.1	627.9	633.9	639.7	644.2
47.5°	546.2	552.7	559.1	565.4	571.8	578.3	585.1	591.8	598.5	605.2	610.3
50°	519.2	525.7	532.3	539.0	545.5	552.4	559.8	567.0	574.3	581.6	586.9
52.5°	490.4	497.4	504.3	511.3	518.3	525.7	533.8	541.8	549.9	557.8	563.5
55°	448.4	456.1	463.8	471.6	479.4	487.5	495.9	504.4	512.8	521.3	527.7
57.5°	407.3	415.4	423.4	431.5	439.7	448.3	457.6	466.9	476.1	485.3	491.7
60°	378.6	387.0	395.5	403.9	412.4	421.4	431.1	440.7	450.3	460.0	466.6
62.5°	351.4	360.1	368.8	377.4	386.1	395.5	405.7	415.9	426.1	436.3	442.8
65°	309.8	319.0	328.1	337.3	346.5	356.2	366.6	376.9	387.3	397.6	404.7
67.5°	267.5	277.2	287.0	296.7	306.4	316.6	327.1	337.6	348.1	358.7	366.4
70°	237.9	248.0	258.1	268.2	278.3	289.0	300.3	311.5	322.9	334.2	341.6
72.5°	210.9	221.0	231.1	241.2	251.3	262.2	273.8	285.5	297.1	308.7	316.5
75°	168.1	179.2	190.3	201.3	212.3	223.7	235.4	247.2	258.9	270.7	278.4
77.5°	130.9	142.1	153.2	164.3	175.4	186.9	198.8	210.7	222.5	234.3	242.5
80°	104.7	116.2	127.7	139.3	150.8	162.6	174.8	187.0	199.2	211.5	219.4
82.5°	81.8	93.5	105.2	116.9	128.7	140.7	153.1	165.5	177.9	190.4	198.3
85°	51.8	63.5	75.3	87.1	98.8	110.9	123.4	135.8	148.2	160.8	168.7
87.5°	28.5	40.8	53.2	65.5	78.0	90.6	103.4	116.2	129.1	142.0	150.3
90°	15.2	30.1	45.0	59.9	74.7	90.4	106.6	123.0	139.4	155.7	165.0
92.5°	41.0	50.4	59.9	69.3	78.8	91.0	106.1	121.2	136.3	151.4	161.3
95°	103.7	99.2	94.5	90.0	85.3	90.7	105.8	121.1	136.2	151.5	161.1
97.5°	195.4	197.5	199.7	201.8	203.9	198.3	185.2	172.0	158.9	145.7	155.4
100°	264.7	278.9	293.2	307.3	321.5	307.9	266.4	224.9	183.4	141.8	151.3
102.5°	343.6	355.2	366.7	378.3	389.9	372.4	325.9	279.3	232.8	186.2	184.6
105°	458.4	467.7	477.1	486.4	495.6	490.3	470.2	450.1	430.0	409.9	357.1
107.5°	578.5	586.2	594.0	601.7	609.5	620.5	634.9	649.2	663.6	677.9	640.7
110°	658.5	665.5	672.4	679.3	686.2	696.2	709.3	722.4	735.5	748.6	743.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	735.9	741.7	747.6	753.6	759.4	768.7	781.4	794.2	806.9	819.6	825.7
115°	849.2	854.0	858.9	863.7	868.6	876.7	888.2	899.7	911.1	922.6	931.6
117.5°	959.9	964.0	968.3	972.5	976.7	983.6	993.1	1002.5	1012.0	1021.5	1029.8
120°	1027.8	1032.0	1036.2	1040.4	1044.6	1051.1	1059.9	1068.6	1077.3	1086.1	1094.2
122.5°	1097.9	1101.0	1104.1	1107.1	1110.2	1116.1	1124.8	1133.5	1142.1	1150.7	1157.8
125°	1192.9	1195.5	1198.2	1200.9	1203.6	1209.0	1217.2	1225.3	1233.4	1241.6	1247.2
127.5°	1285.9	1288.3	1290.7	1293.2	1295.7	1300.5	1307.8	1314.9	1322.2	1329.5	1335.2
130°	1343.8	1346.3	1348.7	1351.2	1353.6	1357.9	1363.9	1370.0	1375.9	1382.0	1387.9
132.5°	1398.6	1401.2	1403.8	1406.4	1409.1	1412.8	1417.6	1422.5	1427.3	1432.2	1437.7
135°	1483.2	1484.9	1486.7	1488.5	1490.3	1493.1	1497.0	1501.0	1504.9	1508.8	1514.1
137.5°	1555.4	1557.8	1560.1	1562.5	1564.9	1567.1	1569.3	1571.6	1573.8	1575.9	1581.2
140°	1602.9	1604.9	1606.9	1608.9	1610.9	1612.8	1614.5	1616.2	1617.9	1619.6	1624.5
142.5°	1647.6	1649.4	1651.2	1653.0	1654.9	1656.4	1657.5	1658.6	1659.8	1660.9	1665.2
145°	1710.1	1712.2	1714.3	1716.4	1718.5	1719.9	1720.6	1721.2	1721.9	1722.6	1725.2
147.5°	1767.9	1769.5	1771.0	1772.5	1774.0	1775.1	1775.8	1776.6	1777.2	1777.9	1779.1
150°	1804.1	1805.1	1806.1	1807.2	1808.2	1809.0	1809.7	1810.4	1811.0	1811.7	1812.3
152.5°	1836.7	1837.2	1837.7	1838.2	1838.7	1839.1	1839.5	1839.9	1840.3	1840.7	1841.9
155°	1882.6	1882.0	1881.3	1880.7	1880.0	1879.8	1880.2	1880.5	1880.8	1881.1	1882.8
157.5°	1918.2	1918.2	1918.1	1918.0	1918.0	1917.8	1917.4	1917.1	1916.8	1916.4	1918.4
160°	1940.1	1939.6	1939.3	1939.0	1938.6	1938.3	1938.0	1937.6	1937.3	1937.0	1939.0
162.5°	1960.6	1959.6	1958.8	1957.9	1957.0	1956.4	1956.1	1955.8	1955.4	1955.1	1957.4
165°	1985.3	1984.3	1983.3	1982.3	1981.3	1980.6	1980.2	1979.9	1979.6	1979.2	1982.0
167.5°	2004.6	2003.3	2002.0	2000.6	1999.2	1998.6	1998.6	1998.6	1998.6	1998.6	2001.2
170°	2015.5	2014.2	2012.8	2011.4	2010.1	2009.4	2009.4	2009.4	2009.4	2009.4	2012.2
172.5°	2022.8	2021.1	2019.5	2017.9	2016.3	2015.6	2015.9	2016.2	2016.4	2016.7	2019.4
175°	2032.1	2030.4	2028.7	2027.1	2025.4	2024.7	2025.1	2025.4	2025.7	2026.1	2028.4
177.5°	2034.5	2033.2	2031.8	2030.5	2029.1	2028.6	2028.9	2029.1	2029.4	2029.7	2031.8
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	970.7	970.7	970.7	970.7	970.7	970.7	970.7	970.7
2.5°	968.7	970.2	971.6	972.3	972.1	971.9	971.7	971.6
5°	967.0	969.0	970.8	971.6	971.4	971.2	971.0	970.7
7.5°	961.2	963.6	965.9	966.9	966.6	966.4	966.1	965.8
10°	955.3	957.7	960.0	961.0	960.5	960.0	959.6	959.1
12.5°	947.4	949.5	951.6	952.5	952.0	951.6	951.1	950.6
15°	932.0	934.4	936.8	937.8	937.6	937.4	937.1	936.9
17.5°	912.1	914.2	916.4	917.3	917.0	916.6	916.3	915.9
20°	897.8	899.9	902.0	903.1	903.4	903.6	903.8	904.1
22.5°	881.9	884.6	887.3	888.6	888.5	888.3	888.2	888.0
25°	855.3	858.3	861.3	862.8	862.8	862.8	862.8	862.8
27.5°	827.3	829.9	832.5	833.9	834.1	834.4	834.6	834.8
30°	808.2	811.0	813.9	815.3	815.3	815.3	815.3	815.3
32.5°	787.4	790.4	793.5	795.3	795.8	796.4	796.9	797.5
35°	756.8	760.3	763.8	766.1	767.0	767.9	768.8	769.8
37.5°	724.9	728.9	732.9	735.3	736.0	736.8	737.5	738.3
40°	703.8	707.7	711.8	714.2	715.2	716.1	717.0	718.0
42.5°	681.7	686.0	690.4	693.3	694.6	695.9	697.2	698.5
45°	648.6	653.1	657.6	660.8	662.7	664.5	666.4	668.3
47.5°	615.3	620.4	625.4	628.6	630.1	631.6	633.0	634.4
50°	592.4	597.7	603.2	606.7	608.3	610.0	611.7	613.3
52.5°	569.1	574.7	580.3	584.1	586.1	588.1	590.2	592.2
55°	534.0	540.4	546.6	550.8	552.7	554.5	556.4	558.4
57.5°	498.2	504.5	510.9	515.2	517.5	519.7	521.8	524.0
60°	473.1	479.7	486.3	490.9	493.4	496.0	498.7	501.2
62.5°	449.5	456.1	462.6	467.1	469.5	471.9	474.3	476.7
65°	411.7	418.7	425.8	430.5	432.8	435.2	437.6	439.9
67.5°	374.1	381.8	389.5	394.4	396.3	398.3	400.3	402.2
70°	349.2	356.7	364.3	369.1	371.5	373.9	376.2	378.6
72.5°	324.2	331.8	339.6	344.7	347.0	349.3	351.6	354.1
75°	286.2	294.0	301.7	307.0	309.8	312.7	315.5	318.3
77.5°	250.6	258.8	267.0	272.2	274.4	276.5	278.7	280.8
80°	227.4	235.4	243.5	248.6	251.0	253.3	255.7	258.0
82.5°	206.3	214.3	222.3	227.4	229.8	232.2	234.5	236.8
85°	176.7	184.7	192.7	197.8	200.2	202.6	204.9	207.2
87.5°	158.4	166.7	175.0	180.4	182.9	185.3	187.8	190.3
90°	174.4	183.7	193.1	199.2	202.3	205.3	208.2	211.3
92.5°	171.3	181.2	191.2	197.4	200.0	202.6	205.1	207.6
95°	170.8	180.4	190.1	196.0	198.3	200.7	203.1	205.4
97.5°	165.0	174.7	184.4	190.7	193.3	196.0	198.6	201.4
100°	160.8	170.3	179.9	185.9	188.5	191.3	194.0	196.6
102.5°	182.9	181.2	179.5	180.2	183.1	186.0	188.9	192.0
105°	304.4	251.6	198.7	173.7	176.5	179.3	182.1	184.9
107.5°	603.4	566.1	528.9	489.0	446.3	403.5	360.9	318.2
110°	738.6	733.7	728.7	703.2	657.1	611.0	564.9	518.8





TEST NUMBER: P332176-840

CATALOG NUMBER: S123DIW-S775D1535U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	831.8	838.0	844.0	843.1	835.1	827.0	818.9	810.8
115°	940.6	949.6	958.6	964.7	968.0	971.2	974.4	977.7
117.5°	1038.0	1046.3	1054.6	1059.9	1061.9	1064.0	1066.1	1068.2
120°	1102.3	1110.3	1118.5	1123.4	1125.0	1126.6	1128.3	1129.9
122.5°	1165.0	1172.0	1179.1	1183.7	1185.6	1187.5	1189.3	1191.2
125°	1252.8	1258.4	1264.0	1268.0	1270.3	1272.6	1275.0	1277.3
127.5°	1340.9	1346.7	1352.4	1355.7	1356.7	1357.6	1358.5	1359.4
130°	1393.6	1399.5	1405.2	1408.6	1409.3	1410.0	1410.8	1411.5
132.5°	1443.4	1449.0	1454.6	1457.7	1458.4	1459.1	1459.8	1460.4
135°	1519.3	1524.5	1529.7	1532.5	1532.7	1532.8	1533.0	1533.2
137.5°	1586.6	1591.9	1597.2	1600.1	1600.6	1601.1	1601.6	1602.2
140°	1629.4	1634.3	1639.1	1641.8	1642.3	1642.8	1643.4	1643.9
142.5°	1669.4	1673.6	1677.8	1680.1	1680.3	1680.5	1680.8	1681.0
145°	1727.7	1730.3	1732.8	1734.5	1735.5	1736.5	1737.4	1738.3
147.5°	1780.3	1781.6	1782.8	1783.1	1782.4	1781.7	1781.0	1780.3
150°	1813.0	1813.7	1814.3	1814.4	1813.9	1813.3	1812.8	1812.3
152.5°	1843.1	1844.3	1845.5	1845.3	1843.9	1842.5	1841.0	1839.6
155°	1884.5	1886.1	1887.8	1887.6	1885.6	1883.6	1881.6	1879.7
157.5°	1920.5	1922.5	1924.5	1924.2	1921.6	1918.9	1916.3	1913.7
160°	1941.1	1943.0	1945.0	1944.9	1942.5	1940.2	1937.8	1935.5
162.5°	1959.6	1962.0	1964.2	1964.3	1962.3	1960.1	1958.1	1956.0
165°	1984.6	1987.3	1990.0	1990.1	1987.8	1985.5	1983.1	1980.7
167.5°	2004.0	2006.6	2009.3	2009.3	2006.6	2004.0	2001.2	1998.6
170°	2014.8	2017.5	2020.2	2020.2	2017.5	2014.8	2012.2	2009.4
172.5°	2022.1	2024.8	2027.4	2027.3	2024.4	2021.4	2018.4	2015.5
175°	2030.7	2033.1	2035.5	2035.3	2032.6	2029.9	2027.2	2024.6
177.5°	2034.0	2036.1	2038.3	2038.0	2035.3	2032.7	2029.9	2027.3
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1

(END OF REPORT)