

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: P332170-840

Luminaire Tested: **S123DIW-S775D1320U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332170-840  
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-S775D1320U840-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1320 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8596.8 lumens  
Efficiency: N/A  
Efficacy: 140.0 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

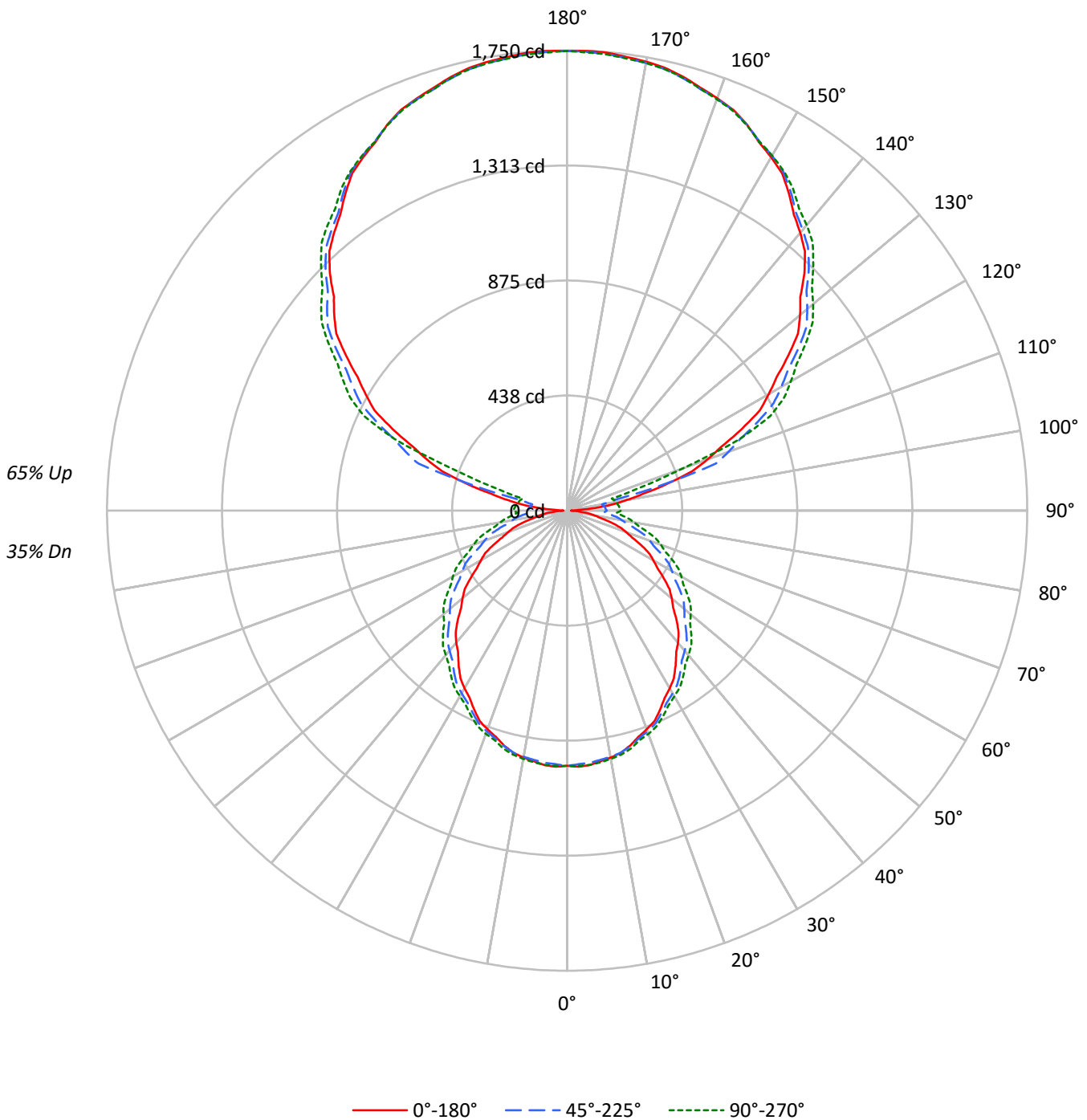
Input Watts (W): 61.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42	35
1	94	89	85	81	84	81	77	74	64	62	60	50	48	47	36	35	34	28
2	85	77	71	66	76	70	65	60	56	52	49	43	41	38	31	30	28	23
3	77	68	60	54	69	61	55	50	49	45	41	38	35	32	27	25	24	19
4	71	60	52	46	63	54	47	42	43	38	34	34	30	27	24	22	20	16
5	65	53	45	39	58	48	41	36	39	33	29	30	26	23	22	19	17	14
6	59	47	39	33	53	43	36	31	35	29	26	27	23	20	20	17	15	12
7	55	43	35	29	49	39	32	27	31	26	22	24	21	18	18	15	13	11
8	51	39	31	26	46	35	28	24	29	23	20	22	19	16	17	14	12	9
9	47	35	28	23	42	32	25	21	26	21	17	20	17	14	15	13	11	8
10	44	32	25	20	40	29	23	19	24	19	16	19	15	13	14	12	10	8

**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	1.1
10°-20°	262.3	3.1
20°-30°	392.3	4.6
30°-40°	468.5	5.5
40°-50°	490.2	5.7
50°-60°	460.0	5.4
60°-70°	384.2	4.5
70°-80°	274.9	3.2
80°-90°	168.8	2.0
90°-100°	166.4	1.9
100°-110°	378.4	4.4
110°-120°	777.9	9.0
120°-130°	955.2	11.1
130°-140°	1002.7	11.7
140°-150°	928.3	10.8
150°-160°	746.6	8.7
160°-170°	481.8	5.6
170°-180°	166.1	1.9
0°-30°	746.7	8.7
0°-40°	1215.2	14.1
0°-60°	2165.4	25.2
0°-90°	2993.4	34.8
90°-120°	1322.8	15.4
90°-150°	4209.0	49.0
90°-180°	5603.0	65.2
0°-180°	8596.8	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	80	151	190	205	13
95°	91	83	145	185	197	107
105°	396	429	364	175	176	419
115°	731	753	801	838	853	722
125°	1026	1038	1073	1097	1107	917
135°	1276	1283	1300	1321	1324	982
145°	1471	1479	1482	1492	1497	920
155°	1619	1617	1618	1624	1617	746
165°	1708	1704	1702	1712	1704	482
175°	1748	1742	1743	1751	1741	166
180°	1748	1748	1748	1748	1748	



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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°	28.4	40.7	52.9	65.2	77.5	90.0	102.7	115.5	128.3	141.0	149.2
90°	15.0	29.5	43.8	58.3	72.6	87.8	103.4	119.2	134.9	150.7	159.8
92.5°	37.1	46.7	56.2	65.7	75.3	87.5	102.1	116.7	131.4	145.9	155.6
95°	90.9	88.2	85.5	82.8	80.2	86.1	100.9	115.5	130.3	144.9	154.2
97.5°	169.6	172.5	175.5	178.4	181.4	178.0	168.2	158.4	148.7	138.9	148.1
100°	228.9	242.3	255.5	268.8	282.2	271.7	237.4	203.3	169.1	134.8	144.0
102.5°	296.7	307.6	318.5	329.4	340.3	326.6	288.0	249.4	211.0	172.4	171.9
105°	395.5	404.2	413.0	421.8	430.7	427.2	411.3	395.4	379.5	363.7	319.2
107.5°	498.6	505.8	513.2	520.6	527.9	538.4	552.1	565.7	579.5	593.1	562.0
110°	567.3	573.8	580.4	586.9	593.5	603.0	615.6	628.1	640.8	653.3	649.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	633.8	639.3	644.9	650.5	656.0	664.9	677.1	689.2	701.5	713.7	719.7
115°	731.1	735.7	740.2	744.8	749.3	757.2	768.2	779.3	790.3	801.4	809.9
117.5°	826.3	830.1	834.0	837.9	841.7	848.3	857.6	866.9	876.2	885.4	893.3
120°	884.6	888.4	892.1	896.0	899.7	905.9	914.5	923.1	931.8	940.4	948.1
122.5°	944.8	947.7	950.4	953.1	955.8	961.5	970.0	978.5	986.9	995.3	1002.2
125°	1026.4	1028.7	1031.0	1033.3	1035.6	1040.8	1048.7	1056.7	1064.7	1072.7	1078.1
127.5°	1106.4	1108.4	1110.5	1112.6	1114.7	1119.2	1126.3	1133.3	1140.3	1147.3	1152.9
130°	1156.3	1158.3	1160.4	1162.5	1164.6	1168.5	1174.4	1180.2	1186.1	1191.9	1197.5
132.5°	1203.2	1205.5	1207.7	1210.0	1212.2	1215.7	1220.4	1225.1	1229.7	1234.5	1239.9
135°	1276.0	1277.5	1279.0	1280.4	1281.9	1284.5	1288.3	1292.0	1295.8	1299.5	1304.6
137.5°	1338.1	1340.1	1342.1	1344.1	1346.0	1348.2	1350.2	1352.3	1354.4	1356.6	1361.6
140°	1378.8	1380.5	1382.2	1384.0	1385.7	1387.4	1389.0	1390.5	1392.1	1393.6	1398.4
142.5°	1417.2	1418.8	1420.3	1421.9	1423.4	1424.6	1425.6	1426.6	1427.6	1428.7	1432.8
145°	1471.0	1472.8	1474.5	1476.3	1478.1	1479.3	1479.9	1480.5	1481.1	1481.6	1484.1
147.5°	1520.6	1521.9	1523.2	1524.5	1525.9	1526.8	1527.4	1527.9	1528.5	1529.1	1530.2
150°	1551.8	1552.6	1553.5	1554.3	1555.2	1555.9	1556.5	1557.0	1557.6	1558.2	1558.8
152.5°	1579.7	1580.1	1580.5	1580.9	1581.3	1581.8	1582.2	1582.5	1582.8	1583.2	1584.2
155°	1619.2	1618.7	1618.1	1617.5	1616.9	1616.8	1617.1	1617.4	1617.7	1617.9	1619.4
157.5°	1649.9	1649.8	1649.8	1649.7	1649.6	1649.5	1649.2	1648.9	1648.6	1648.3	1650.0
160°	1668.6	1668.3	1668.0	1667.7	1667.4	1667.2	1666.9	1666.6	1666.3	1666.0	1667.7
162.5°	1686.3	1685.5	1684.8	1683.9	1683.2	1682.7	1682.4	1682.1	1681.8	1681.5	1683.5
165°	1707.6	1706.7	1705.8	1705.0	1704.0	1703.5	1703.2	1702.9	1702.6	1702.3	1704.7
167.5°	1724.1	1723.0	1721.8	1720.7	1719.5	1719.0	1719.0	1719.0	1719.0	1719.0	1721.3
170°	1733.5	1732.3	1731.2	1730.1	1728.9	1728.3	1728.3	1728.3	1728.3	1728.3	1730.6
172.5°	1739.8	1738.4	1737.0	1735.6	1734.2	1733.6	1733.8	1734.1	1734.3	1734.5	1736.9
175°	1747.8	1746.4	1744.9	1743.4	1742.0	1741.4	1741.7	1742.0	1742.3	1742.6	1744.6
177.5°	1749.9	1748.7	1747.6	1746.5	1745.2	1744.8	1745.0	1745.2	1745.5	1745.8	1747.6
180°	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8



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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°	157.3	165.6	173.8	179.2	181.7	184.1	186.5	189.0
90°	169.0	178.0	187.2	193.3	196.2	199.1	202.1	205.0
92.5°	165.2	174.9	184.6	190.7	193.2	195.6	198.1	200.7
95°	163.5	172.9	182.2	187.9	190.4	192.7	195.0	197.4
97.5°	157.5	166.8	176.1	182.1	184.7	187.3	190.1	192.7
100°	153.1	162.2	171.4	177.2	179.9	182.5	185.1	187.7
102.5°	171.3	170.8	170.3	171.4	174.3	177.1	180.1	182.9
105°	274.7	230.1	185.7	164.8	167.5	170.2	172.9	175.5
107.5°	530.8	499.7	468.5	434.7	398.3	361.8	325.4	289.0
110°	646.5	643.1	639.6	618.2	578.9	539.5	500.1	460.7





TEST NUMBER: P332170-840

CATALOG NUMBER: S123DIW-S775D1320U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	725.9	732.0	738.0	737.8	731.1	724.5	717.8	711.1
115°	818.4	827.0	835.5	841.3	844.3	847.4	850.4	853.4
117.5°	901.2	909.1	917.0	922.0	924.0	926.1	928.2	930.3
120°	955.8	963.5	971.2	975.9	977.5	979.2	980.9	982.5
122.5°	1009.1	1015.8	1022.7	1027.0	1029.0	1030.8	1032.7	1034.5
125°	1083.7	1089.1	1094.7	1098.5	1100.8	1103.0	1105.2	1107.4
127.5°	1158.5	1164.1	1169.6	1173.0	1174.0	1175.0	1176.0	1177.0
130°	1203.2	1208.8	1214.4	1217.6	1218.5	1219.3	1220.1	1220.9
132.5°	1245.3	1250.7	1256.2	1259.3	1260.1	1260.8	1261.6	1262.4
135°	1309.7	1314.8	1319.9	1322.6	1322.9	1323.2	1323.5	1323.8
137.5°	1366.8	1371.8	1376.8	1379.8	1380.4	1381.0	1381.5	1382.1
140°	1403.0	1407.7	1412.4	1415.0	1415.6	1416.2	1416.7	1417.3
142.5°	1436.8	1440.9	1445.0	1447.2	1447.5	1447.9	1448.3	1448.7
145°	1486.5	1488.9	1491.5	1493.1	1494.1	1495.0	1495.9	1496.9
147.5°	1531.5	1532.6	1533.7	1534.0	1533.6	1533.1	1532.6	1532.1
150°	1559.3	1559.9	1560.5	1560.6	1560.2	1559.8	1559.4	1559.0
152.5°	1585.2	1586.3	1587.3	1587.2	1586.0	1584.8	1583.5	1582.3
155°	1620.8	1622.2	1623.8	1623.6	1621.8	1620.1	1618.4	1616.7
157.5°	1651.8	1653.6	1655.3	1655.0	1652.7	1650.5	1648.2	1646.0
160°	1669.4	1671.2	1672.9	1672.7	1670.7	1668.7	1666.7	1664.7
162.5°	1685.5	1687.5	1689.4	1689.5	1687.7	1686.0	1684.2	1682.3
165°	1707.0	1709.3	1711.6	1711.7	1709.7	1707.7	1705.7	1703.6
167.5°	1723.6	1725.9	1728.2	1728.2	1725.9	1723.6	1721.3	1719.0
170°	1732.9	1735.3	1737.6	1737.6	1735.3	1732.9	1730.6	1728.3
172.5°	1739.2	1741.5	1743.8	1743.6	1741.1	1738.6	1736.1	1733.5
175°	1746.7	1748.7	1750.7	1750.5	1748.3	1746.0	1743.6	1741.3
177.5°	1749.4	1751.3	1753.1	1752.9	1750.6	1748.3	1746.0	1743.6
180°	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8

(END OF REPORT)