

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

Luminaire Tested: **S123DIW-S775D1320U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332170  
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-S775D1320U835-4F0-1E-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: 8512.8 lumens  
Efficiency: N/A  
Efficacy: 138.6 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

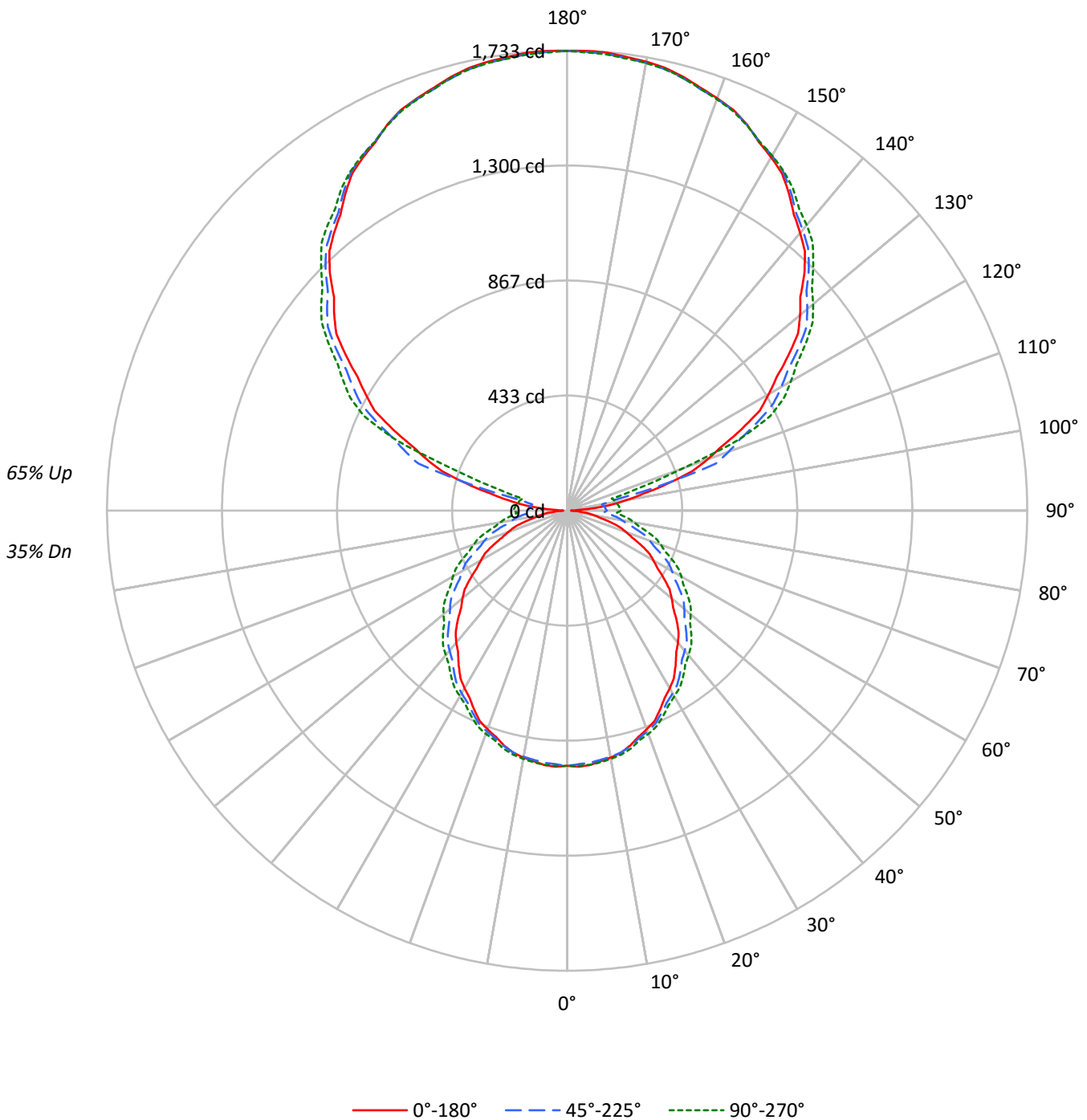
Input Watts (W): 61.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	10346	10346	10346
5°	10379	10086	10092
10°	10286	9853	9804
15°	10153	9590	9490
20°	9963	9288	9146
25°	9730	8942	8782
30°	9490	8630	8415
35°	9221	8300	8121
40°	8965	8000	7807
45°	8682	7712	7556
50°	8400	7427	7278
55°	8091	7135	7030
60°	7790	6839	6774
65°	7480	6524	6470
70°	7013	6169	6159
75°	6425	5763	5842
80°	5749	5363	5479
85°	5117	5090	5269



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	91.1	1.1
10°-20°	259.8	3.1
20°-30°	388.5	4.6
30°-40°	464.0	5.5
40°-50°	485.4	5.7
50°-60°	455.5	5.4
60°-70°	380.5	4.5
70°-80°	272.2	3.2
80°-90°	167.2	2.0
90°-100°	164.8	1.9
100°-110°	374.7	4.4
110°-120°	770.3	9.0
120°-130°	945.8	11.1
130°-140°	992.9	11.7
140°-150°	919.2	10.8
150°-160°	739.3	8.7
160°-170°	477.1	5.6
170°-180°	164.4	1.9
0°-30°	739.4	8.7
0°-40°	1203.3	14.1
0°-60°	2144.3	25.2
0°-90°	2964.1	34.8
90°-120°	1309.9	15.4
90°-150°	4167.9	49.0
90°-180°	5549.0	65.2
0°-180°	8512.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	961	961	961	961	961	
5°	962	960	954	962	961	91
15°	916	919	918	928	928	258
25°	827	837	841	854	854	381
35°	712	729	742	757	762	445
45°	582	607	634	653	662	449
55°	444	479	516	543	553	397
65°	307	348	394	424	436	303
75°	166	216	268	301	315	178
85°	51	104	159	193	205	54
90°	15	79	149	188	203	13
95°	90	82	144	183	196	106
105°	392	425	360	174	174	415
115°	724	746	794	830	845	715
125°	1016	1028	1062	1086	1097	908
135°	1264	1271	1287	1308	1311	972
145°	1457	1464	1467	1478	1482	911
155°	1603	1601	1602	1608	1601	738
165°	1691	1687	1686	1695	1687	478
175°	1731	1725	1726	1734	1724	165
180°	1731	1731	1731	1731	1731	



TEST NUMBER: P332170

CATALOG NUMBER: S123DIW-S775D1320U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	961.2	961.2	961.2	961.2	961.2	961.2	961.2	961.2	961.2	961.2	961.2
2.5°	965.4	964.8	964.3	963.7	963.2	962.1	960.7	959.2	957.7	956.2	957.7
5°	962.3	961.8	961.3	960.9	960.4	959.5	958.1	956.7	955.3	953.9	955.8
7.5°	952.8	952.9	953.0	953.1	953.2	952.6	951.2	949.9	948.5	947.2	949.5
10°	944.5	944.9	945.4	945.9	946.3	946.0	944.8	943.7	942.5	941.3	943.7
12.5°	934.4	935.1	935.7	936.4	937.0	937.0	936.2	935.4	934.6	933.8	935.9
15°	916.2	916.9	917.6	918.3	919.0	919.2	919.0	918.8	918.5	918.3	920.6
17.5°	893.2	894.6	896.0	897.3	898.7	899.4	899.3	899.2	899.1	899.0	901.1
20°	876.4	877.8	879.2	880.6	882.0	882.9	883.4	883.9	884.3	884.8	886.9
22.5°	858.8	860.2	861.6	863.0	864.4	865.4	866.1	866.7	867.4	868.0	870.7
25°	827.2	829.5	831.8	834.2	836.5	838.0	838.7	839.4	840.1	840.8	843.8
27.5°	795.4	798.0	800.7	803.3	806.0	808.0	809.5	811.0	812.5	814.0	816.6
30°	772.7	775.8	778.8	781.8	784.8	787.3	789.1	791.0	792.9	794.7	797.5
32.5°	747.6	751.0	754.4	757.8	761.2	764.1	766.5	769.0	771.4	773.8	776.8
35°	712.0	715.7	719.5	723.2	726.9	730.3	733.3	736.3	739.4	742.4	745.9
37.5°	674.3	678.5	682.7	686.9	691.1	695.0	698.8	702.5	706.2	709.9	713.9
40°	649.2	653.4	657.6	661.8	665.9	670.4	675.0	679.7	684.3	689.0	692.9
42.5°	621.5	626.7	631.8	636.9	642.0	647.0	651.8	656.7	661.5	666.4	670.7
45°	582.2	587.8	593.3	598.9	604.5	610.2	616.0	621.8	627.7	633.5	637.9
47.5°	540.9	547.3	553.6	559.9	566.2	572.7	579.4	586.0	592.7	599.3	604.3
50°	514.1	520.6	527.1	533.7	540.2	547.0	554.3	561.5	568.7	575.9	581.2
52.5°	485.6	492.5	499.4	506.3	513.2	520.6	528.6	536.5	544.5	552.4	558.0
55°	444.0	451.6	459.3	467.0	474.7	482.7	491.1	499.5	507.8	516.2	522.5
57.5°	403.3	411.3	419.3	427.3	435.4	443.9	453.1	462.3	471.4	480.6	486.9
60°	374.9	383.2	391.6	400.0	408.4	417.3	426.9	436.4	445.9	455.5	462.0
62.5°	348.0	356.6	365.2	373.7	382.3	391.6	401.7	411.8	421.9	432.0	438.5
65°	306.8	315.9	324.9	334.0	343.1	352.7	363.0	373.2	383.5	393.7	400.7
67.5°	264.9	274.5	284.2	293.8	303.4	313.5	323.9	334.3	344.7	355.2	362.8
70°	235.6	245.6	255.6	265.6	275.6	286.2	297.4	308.5	319.7	330.9	338.3
72.5°	208.8	218.8	228.8	238.8	248.8	259.6	271.1	282.7	294.2	305.7	313.4
75°	166.5	177.4	188.4	199.3	210.2	221.5	233.1	244.8	256.4	268.1	275.7
77.5°	129.6	140.7	151.7	162.7	173.7	185.1	196.9	208.6	220.3	232.0	240.1
80°	103.7	115.1	126.5	137.9	149.3	161.0	173.1	185.2	197.3	209.4	217.3
82.5°	81.0	92.6	104.2	115.8	127.4	139.3	151.6	163.9	176.2	188.5	196.4
85°	51.3	62.9	74.6	86.2	97.8	109.8	122.2	134.5	146.8	159.2	167.1
87.5°	28.1	40.3	52.4	64.6	76.7	89.1	101.7	114.4	127.0	139.6	147.7
90°	14.9	29.2	43.4	57.7	71.9	86.9	102.4	118.0	133.6	149.2	158.2
92.5°	36.7	46.2	55.7	65.1	74.6	86.6	101.1	115.6	130.1	144.5	154.1
95°	90.0	87.3	84.7	82.0	79.4	85.3	99.9	114.4	129.0	143.5	152.7
97.5°	167.9	170.8	173.8	176.7	179.6	176.3	166.6	156.9	147.2	137.5	146.7
100°	226.7	239.9	253.0	266.2	279.4	269.0	235.1	201.3	167.4	133.5	142.6
102.5°	293.8	304.6	315.4	326.2	337.0	323.4	285.2	247.0	208.9	170.7	170.2
105°	391.6	400.3	409.0	417.7	426.5	423.0	407.3	391.5	375.8	360.1	316.1
107.5°	493.7	500.9	508.2	515.5	522.7	533.1	546.7	560.2	573.8	587.3	556.5
110°	561.8	568.2	574.7	581.2	587.7	597.1	609.6	622.0	634.5	646.9	643.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	627.6	633.1	638.6	644.1	649.6	658.4	670.5	682.5	694.6	706.7	712.7
115°	724.0	728.5	733.0	737.5	742.0	749.8	760.7	771.7	782.6	793.6	802.0
117.5°	818.2	822.0	825.9	829.7	833.5	840.0	849.2	858.4	867.6	876.8	884.6
120°	876.0	879.7	883.4	887.2	890.9	897.1	905.6	914.1	922.7	931.2	938.8
122.5°	935.6	938.4	941.1	943.8	946.5	952.1	960.5	968.9	977.3	985.6	992.4
125°	1016.4	1018.7	1020.9	1023.2	1025.5	1030.6	1038.5	1046.4	1054.3	1062.2	1067.6
127.5°	1095.6	1097.6	1099.7	1101.7	1103.8	1108.3	1115.3	1122.2	1129.2	1136.1	1141.6
130°	1145.0	1147.0	1149.1	1151.1	1153.2	1157.1	1162.9	1168.7	1174.5	1180.3	1185.8
132.5°	1191.4	1193.7	1195.9	1198.2	1200.4	1203.8	1208.5	1213.1	1217.7	1222.4	1227.8
135°	1263.5	1265.0	1266.5	1267.9	1269.4	1272.0	1275.7	1279.4	1283.1	1286.8	1291.9
137.5°	1325.0	1327.0	1329.0	1331.0	1332.9	1335.0	1337.0	1339.1	1341.2	1343.3	1348.3
140°	1365.3	1367.0	1368.7	1370.5	1372.2	1373.8	1375.4	1376.9	1378.5	1380.0	1384.7
142.5°	1403.4	1404.9	1406.4	1408.0	1409.5	1410.7	1411.7	1412.7	1413.7	1414.7	1418.8
145°	1456.6	1458.4	1460.1	1461.9	1463.7	1464.8	1465.4	1466.0	1466.6	1467.1	1469.6
147.5°	1505.7	1507.0	1508.3	1509.6	1511.0	1511.9	1512.5	1513.0	1513.6	1514.2	1515.3
150°	1536.6	1537.4	1538.3	1539.1	1540.0	1540.7	1541.3	1541.8	1542.4	1543.0	1543.6
152.5°	1564.3	1564.7	1565.1	1565.5	1565.9	1566.3	1566.7	1567.0	1567.3	1567.7	1568.7
155°	1603.4	1602.9	1602.3	1601.7	1601.1	1601.0	1601.3	1601.6	1601.9	1602.1	1603.6
157.5°	1633.8	1633.7	1633.7	1633.6	1633.5	1633.4	1633.1	1632.8	1632.5	1632.2	1633.9
160°	1652.3	1652.0	1651.7	1651.4	1651.1	1650.9	1650.6	1650.3	1650.0	1649.7	1651.4
162.5°	1669.8	1669.0	1668.3	1667.5	1666.8	1666.3	1666.0	1665.7	1665.4	1665.1	1667.1
165°	1690.9	1690.0	1689.1	1688.3	1687.4	1686.9	1686.6	1686.3	1686.0	1685.7	1688.0
167.5°	1707.3	1706.2	1705.0	1703.9	1702.7	1702.2	1702.2	1702.2	1702.2	1702.2	1704.5
170°	1716.6	1715.4	1714.3	1713.2	1712.0	1711.4	1711.4	1711.4	1711.4	1711.4	1713.7
172.5°	1722.8	1721.4	1720.0	1718.6	1717.3	1716.7	1716.9	1717.2	1717.4	1717.6	1719.9
175°	1730.7	1729.3	1727.9	1726.4	1725.0	1724.4	1724.7	1725.0	1725.3	1725.6	1727.6
177.5°	1732.8	1731.6	1730.5	1729.4	1728.2	1727.8	1728.0	1728.2	1728.4	1728.7	1730.5
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	961.2	961.2	961.2	961.2	961.2	961.2	961.2	961.2
2.5°	959.2	960.7	962.1	962.8	962.6	962.4	962.2	962.1
5°	957.6	959.5	961.3	962.1	961.9	961.7	961.5	961.2
7.5°	951.8	954.2	956.5	957.5	957.2	957.0	956.7	956.4
10°	946.0	948.3	950.6	951.6	951.1	950.6	950.2	949.7
12.5°	938.1	940.2	942.3	943.2	942.7	942.3	941.8	941.3
15°	922.9	925.3	927.6	928.6	928.4	928.2	927.9	927.7
17.5°	903.2	905.3	907.4	908.3	908.0	907.6	907.3	907.0
20°	889.0	891.1	893.2	894.3	894.6	894.8	895.0	895.3
22.5°	873.3	876.0	878.6	879.9	879.8	879.6	879.5	879.3
25°	846.9	849.9	852.9	854.4	854.4	854.4	854.4	854.4
27.5°	819.2	821.8	824.4	825.8	826.0	826.2	826.4	826.6
30°	800.3	803.1	805.9	807.3	807.3	807.3	807.3	807.3
32.5°	779.7	782.7	785.7	787.5	788.0	788.6	789.1	789.7
35°	749.4	752.9	756.3	758.6	759.5	760.4	761.3	762.3
37.5°	717.8	721.8	725.7	728.1	728.8	729.6	730.3	731.1
40°	696.9	700.8	704.8	707.2	708.2	709.1	710.0	711.0
42.5°	675.0	679.3	683.7	686.5	687.8	689.1	690.4	691.7
45°	642.3	646.7	651.2	654.3	656.2	658.0	659.9	661.8
47.5°	609.3	614.3	619.3	622.5	623.9	625.4	626.8	628.2
50°	586.6	591.9	597.3	600.8	602.4	604.0	605.7	607.3
52.5°	563.5	569.1	574.6	578.4	580.4	582.4	584.4	586.4
55°	528.8	535.1	541.3	545.4	547.3	549.1	551.0	552.9
57.5°	493.3	499.6	505.9	510.2	512.4	514.6	516.7	518.9
60°	468.5	475.0	481.5	486.1	488.6	491.2	493.8	496.3
62.5°	445.1	451.6	458.1	462.5	464.9	467.3	469.7	472.0
65°	407.7	414.6	421.6	426.3	428.6	430.9	433.3	435.6
67.5°	370.4	378.1	385.7	390.5	392.4	394.4	396.4	398.3
70°	345.8	353.2	360.7	365.5	367.9	370.2	372.5	374.9
72.5°	321.0	328.6	336.3	341.3	343.6	345.9	348.2	350.6
75°	283.4	291.1	298.8	304.0	306.8	309.6	312.4	315.2
77.5°	248.2	256.3	264.4	269.5	271.7	273.8	276.0	278.1
80°	225.2	233.1	241.1	246.2	248.5	250.8	253.2	255.5
82.5°	204.3	212.2	220.1	225.2	227.6	229.9	232.2	234.5
85°	175.0	182.9	190.8	195.9	198.2	200.6	202.9	205.2
87.5°	155.8	164.0	172.1	177.4	179.9	182.3	184.7	187.2
90°	167.3	176.3	185.4	191.4	194.3	197.2	200.1	203.0
92.5°	163.6	173.2	182.8	188.8	191.3	193.7	196.2	198.7
95°	161.9	171.2	180.4	186.1	188.5	190.8	193.1	195.5
97.5°	156.0	165.2	174.4	180.3	182.9	185.5	188.2	190.8
100°	151.6	160.6	169.7	175.5	178.1	180.7	183.3	185.9
102.5°	169.6	169.1	168.6	169.7	172.6	175.4	178.3	181.1
105°	272.0	227.9	183.9	163.2	165.9	168.5	171.2	173.8
107.5°	525.6	494.8	463.9	430.5	394.4	358.3	322.2	286.2
110°	640.2	636.8	633.4	612.2	573.2	534.2	495.2	456.2





TEST NUMBER: P332170

CATALOG NUMBER: S123DIW-S775D1320U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	718.8	724.8	730.8	730.6	724.0	717.4	710.8	704.2
115°	810.4	818.9	827.3	833.1	836.1	839.1	842.1	845.1
117.5°	892.4	900.2	908.0	913.0	915.0	917.1	919.1	921.2
120°	946.5	954.1	961.7	966.4	968.0	969.6	971.3	972.9
122.5°	999.2	1005.9	1012.7	1017.0	1018.9	1020.7	1022.6	1024.4
125°	1073.1	1078.5	1084.0	1087.8	1090.0	1092.2	1094.4	1096.6
127.5°	1147.2	1152.7	1158.2	1161.5	1162.5	1163.5	1164.5	1165.5
130°	1191.4	1197.0	1202.5	1205.7	1206.6	1207.4	1208.2	1209.0
132.5°	1233.1	1238.5	1243.9	1247.0	1247.8	1248.5	1249.3	1250.1
135°	1296.9	1302.0	1307.0	1309.7	1310.0	1310.3	1310.6	1310.9
137.5°	1353.4	1358.4	1363.4	1366.3	1366.9	1367.5	1368.0	1368.6
140°	1389.3	1393.9	1398.6	1401.2	1401.8	1402.4	1402.9	1403.5
142.5°	1422.8	1426.8	1430.9	1433.1	1433.4	1433.8	1434.2	1434.5
145°	1472.0	1474.4	1476.9	1478.5	1479.5	1480.4	1481.3	1482.3
147.5°	1516.5	1517.6	1518.7	1519.0	1518.6	1518.1	1517.6	1517.1
150°	1544.1	1544.7	1545.3	1545.4	1545.0	1544.6	1544.2	1543.8
152.5°	1569.7	1570.8	1571.8	1571.7	1570.5	1569.3	1568.0	1566.8
155°	1605.0	1606.4	1607.9	1607.7	1606.0	1604.3	1602.6	1600.9
157.5°	1635.7	1637.4	1639.1	1638.8	1636.6	1634.4	1632.1	1629.9
160°	1653.1	1654.9	1656.6	1656.4	1654.4	1652.4	1650.4	1648.4
162.5°	1669.0	1671.0	1672.9	1673.0	1671.2	1669.5	1667.7	1665.9
165°	1690.3	1692.6	1694.9	1695.0	1693.0	1691.0	1689.0	1687.0
167.5°	1706.8	1709.0	1711.3	1711.3	1709.0	1706.8	1704.5	1702.2
170°	1716.0	1718.3	1720.6	1720.6	1718.3	1716.0	1713.7	1711.4
172.5°	1722.2	1724.5	1726.8	1726.6	1724.1	1721.6	1719.1	1716.6
175°	1729.6	1731.6	1733.6	1733.4	1731.2	1728.9	1726.6	1724.3
177.5°	1732.3	1734.2	1736.0	1735.8	1733.5	1731.2	1728.9	1726.6
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7

(END OF REPORT)