

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: P332170-830

Luminaire Tested: **S123DIW-S775D1320U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332170-830  
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-S775D1320U830-4F0-1E-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: 8023.7 lumens  
Efficiency: N/A  
Efficacy: 130.7 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

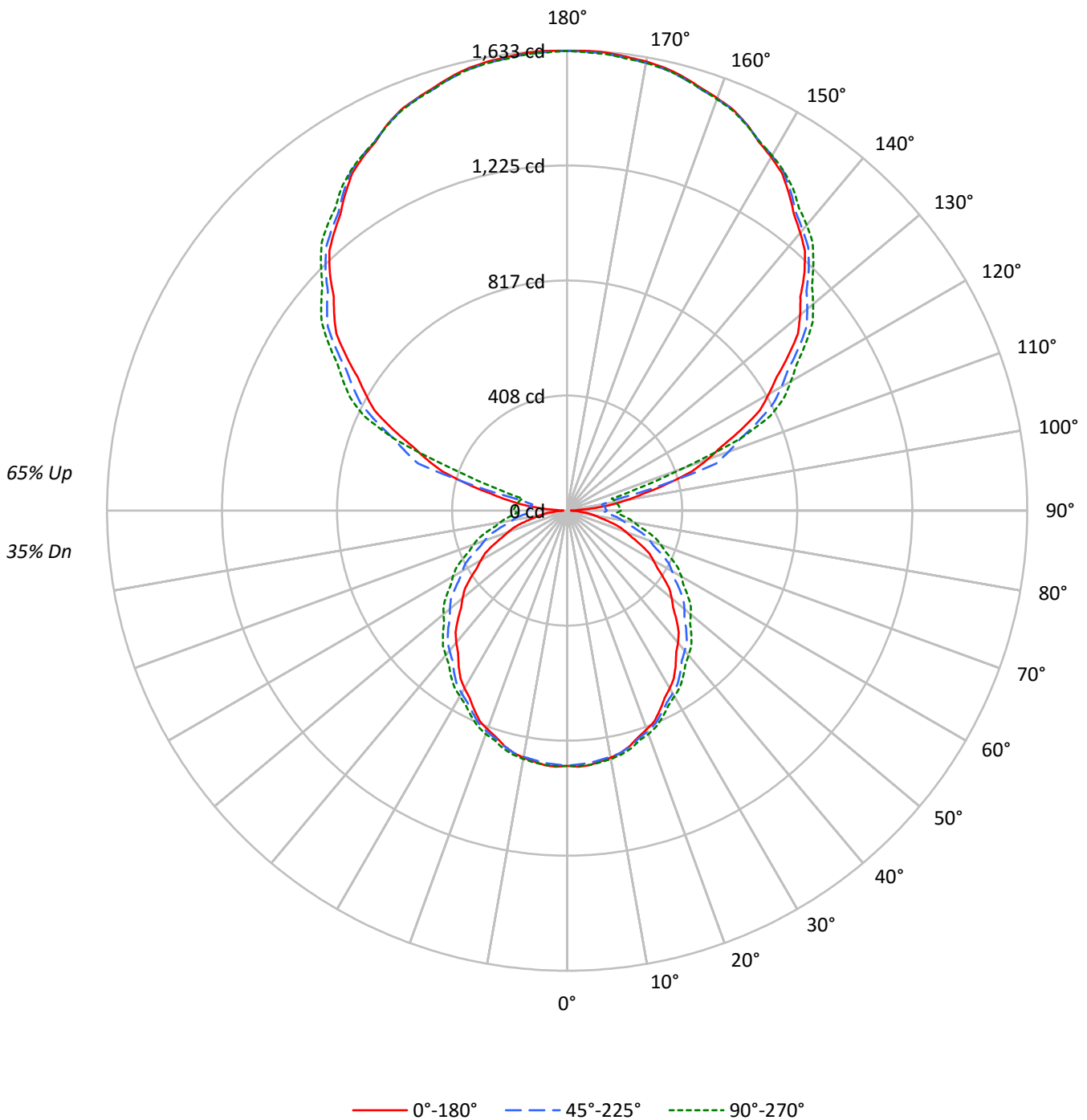
Input Watts (W): 61.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	9752	9752	9752
5°	9782	9507	9512
10°	9694	9287	9240
15°	9570	9038	8945
20°	9390	8755	8621
25°	9171	8428	8278
30°	8945	8133	7931
35°	8692	7823	7655
40°	8450	7540	7358
45°	8182	7269	7122
50°	7918	7000	6860
55°	7627	6725	6625
60°	7343	6446	6385
65°	7051	6149	6098
70°	6611	5815	5805
75°	6055	5432	5506
80°	5416	5056	5164
85°	4828	4799	4966



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.9	1.1
10°-20°	244.8	3.1
20°-30°	366.2	4.6
30°-40°	437.3	5.5
40°-50°	457.5	5.7
50°-60°	429.4	5.4
60°-70°	358.6	4.5
70°-80°	256.6	3.2
80°-90°	157.6	2.0
90°-100°	155.3	1.9
100°-110°	353.2	4.4
110°-120°	726.1	9.0
120°-130°	891.5	11.1
130°-140°	935.9	11.7
140°-150°	866.4	10.8
150°-160°	696.8	8.7
160°-170°	449.7	5.6
170°-180°	155.0	1.9
0°-30°	696.9	8.7
0°-40°	1134.2	14.1
0°-60°	2021.1	25.2
0°-90°	2793.8	34.8
90°-120°	1234.6	15.4
90°-150°	3928.4	49.0
90°-180°	5230.0	65.2
0°-180°	8023.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	906	906	906	906	906	
5°	907	905	899	906	906	86
15°	864	866	866	875	874	243
25°	780	789	792	805	805	359
35°	671	687	700	714	718	420
45°	549	572	597	615	624	423
55°	418	451	486	512	521	375
65°	289	328	371	400	411	286
75°	157	203	253	284	297	168
85°	48	98	150	182	193	51
90°	14	75	141	178	191	12
95°	85	78	135	173	184	100
105°	369	400	339	164	164	391
115°	682	703	748	782	796	674
125°	958	969	1001	1024	1034	856
135°	1191	1198	1213	1233	1236	916
145°	1373	1380	1383	1393	1397	859
155°	1511	1509	1510	1515	1509	696
165°	1594	1590	1589	1598	1590	450
175°	1631	1626	1626	1634	1625	155
180°	1631	1631	1631	1631	1631	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0
2.5°	909.9	909.4	908.9	908.3	907.9	906.8	905.5	904.1	902.7	901.3	902.7
5°	907.0	906.5	906.1	905.7	905.2	904.4	903.1	901.7	900.4	899.1	900.9
7.5°	898.1	898.1	898.2	898.3	898.4	897.9	896.5	895.3	894.0	892.8	894.9
10°	890.2	890.6	891.1	891.6	891.9	891.6	890.5	889.5	888.3	887.2	889.5
12.5°	880.7	881.4	881.9	882.6	883.2	883.2	882.4	881.7	880.9	880.1	882.1
15°	863.6	864.2	864.9	865.5	866.2	866.4	866.2	866.0	865.7	865.5	867.7
17.5°	841.9	843.2	844.5	845.7	847.1	847.7	847.6	847.5	847.4	847.3	849.3
20°	826.0	827.4	828.7	830.0	831.3	832.2	832.6	833.1	833.5	834.0	835.9
22.5°	809.5	810.8	812.1	813.4	814.7	815.7	816.3	816.9	817.6	818.1	820.7
25°	779.7	781.8	784.0	786.3	788.4	789.9	790.5	791.2	791.8	792.5	795.3
27.5°	749.7	752.1	754.7	757.1	759.7	761.6	763.0	764.4	765.8	767.2	769.7
30°	728.3	731.2	734.1	736.9	739.7	742.1	743.8	745.6	747.3	749.0	751.7
32.5°	704.6	707.8	711.1	714.3	717.5	720.2	722.5	724.8	727.1	729.3	732.2
35°	671.1	674.6	678.2	681.6	685.1	688.3	691.2	694.0	696.9	699.7	703.0
37.5°	635.6	639.5	643.5	647.4	651.4	655.1	658.6	662.1	665.6	669.1	672.9
40°	611.9	615.9	619.8	623.8	627.6	631.9	636.2	640.6	645.0	649.4	653.1
42.5°	585.8	590.7	595.5	600.3	605.1	609.8	614.3	619.0	623.5	628.1	632.2
45°	548.7	554.0	559.2	564.5	569.8	575.1	580.6	586.1	591.6	597.1	601.2
47.5°	509.8	515.9	521.8	527.7	533.7	539.8	546.1	552.3	558.6	564.9	569.6
50°	484.6	490.7	496.8	503.0	509.2	515.6	522.5	529.2	536.0	542.8	547.8
52.5°	457.7	464.2	470.7	477.2	483.7	490.7	498.2	505.7	513.2	520.7	525.9
55°	418.5	425.7	432.9	440.2	447.4	455.0	462.9	470.8	478.6	486.5	492.5
57.5°	380.1	387.7	395.2	402.7	410.4	418.4	427.1	435.7	444.3	453.0	458.9
60°	353.4	361.2	369.1	377.0	384.9	393.3	402.4	411.3	420.3	429.3	435.5
62.5°	328.0	336.1	344.2	352.2	360.3	369.1	378.6	388.1	397.7	407.2	413.3
65°	289.2	297.7	306.2	314.8	323.4	332.4	342.1	351.8	361.5	371.1	377.7
67.5°	249.7	258.7	267.9	276.9	286.0	295.5	305.3	315.1	324.9	334.8	342.0
70°	222.1	231.5	240.9	250.3	259.8	269.8	280.3	290.8	301.3	311.9	318.9
72.5°	196.8	206.2	215.7	225.1	234.5	244.7	255.5	266.5	277.3	288.1	295.4
75°	156.9	167.2	177.6	187.8	198.1	208.8	219.7	230.7	241.7	252.7	259.9
77.5°	122.2	132.6	143.0	153.4	163.7	174.5	185.6	196.6	207.6	218.7	226.3
80°	97.7	108.5	119.2	130.0	140.7	151.7	163.2	174.6	186.0	197.4	204.8
82.5°	76.3	87.3	98.2	109.1	120.1	131.3	142.9	154.5	166.1	177.7	185.1
85°	48.4	59.3	70.3	81.2	92.2	103.5	115.2	126.8	138.4	150.1	157.5
87.5°	26.5	38.0	49.4	60.9	72.3	84.0	95.9	107.8	119.7	131.6	139.2
90°	14.0	27.5	40.9	54.4	67.8	81.9	96.5	111.2	125.9	140.6	149.1
92.5°	34.6	43.5	52.5	61.4	70.3	81.6	95.3	109.0	122.6	136.2	145.2
95°	84.8	82.3	79.8	77.3	74.8	80.4	94.2	107.8	121.6	135.3	143.9
97.5°	158.3	161.0	163.8	166.5	169.3	166.2	157.0	147.9	138.7	129.6	138.3
100°	213.7	226.1	238.5	250.9	263.3	253.5	221.6	189.7	157.8	125.8	134.4
102.5°	276.9	287.1	297.3	307.5	317.6	304.8	268.8	232.8	196.9	160.9	160.4
105°	369.1	377.3	385.5	393.7	402.0	398.7	383.9	369.0	354.2	339.4	297.9
107.5°	465.3	472.1	479.0	485.9	492.7	502.5	515.3	528.0	540.8	553.6	524.5
110°	529.5	535.6	541.7	547.8	553.9	562.8	574.6	586.3	598.0	609.7	606.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	591.5	596.7	601.9	607.1	612.3	620.6	632.0	643.3	654.7	666.1	671.8
115°	682.4	686.6	690.9	695.1	699.4	706.7	717.0	727.4	737.6	748.0	755.9
117.5°	771.2	774.8	778.4	782.0	785.6	791.7	800.4	809.1	817.7	826.4	833.8
120°	825.7	829.2	832.6	836.2	839.7	845.6	853.6	861.6	869.7	877.7	884.9
122.5°	881.8	884.5	887.0	889.6	892.1	897.4	905.3	913.2	921.1	929.0	935.4
125°	958.0	960.2	962.2	964.4	966.6	971.4	978.8	986.3	993.7	1001.2	1006.3
127.5°	1032.6	1034.5	1036.5	1038.4	1040.4	1044.6	1051.2	1057.7	1064.3	1070.8	1076.0
130°	1079.2	1081.1	1083.1	1085.0	1086.9	1090.6	1096.1	1101.5	1107.0	1112.5	1117.7
132.5°	1122.9	1125.1	1127.2	1129.4	1131.4	1134.6	1139.1	1143.4	1147.7	1152.2	1157.3
135°	1190.9	1192.3	1193.7	1195.0	1196.5	1198.9	1202.4	1205.9	1209.4	1212.9	1217.7
137.5°	1248.9	1250.8	1252.6	1254.5	1256.3	1258.3	1260.2	1262.2	1264.1	1266.1	1270.8
140°	1286.9	1288.5	1290.1	1291.8	1293.4	1294.9	1296.4	1297.8	1299.3	1300.7	1305.1
142.5°	1322.8	1324.2	1325.6	1327.1	1328.5	1329.6	1330.6	1331.5	1332.5	1333.4	1337.3
145°	1372.9	1374.6	1376.2	1377.9	1379.6	1380.6	1381.2	1381.8	1382.3	1382.8	1385.2
147.5°	1419.2	1420.4	1421.6	1422.9	1424.2	1425.0	1425.6	1426.1	1426.6	1427.2	1428.2
150°	1448.3	1449.1	1449.9	1450.7	1451.5	1452.2	1452.7	1453.2	1453.8	1454.3	1454.9
152.5°	1474.4	1474.8	1475.2	1475.6	1475.9	1476.3	1476.7	1477.0	1477.2	1477.6	1478.6
155°	1511.3	1510.8	1510.2	1509.7	1509.1	1509.0	1509.3	1509.6	1509.9	1510.0	1511.5
157.5°	1539.9	1539.8	1539.8	1539.7	1539.6	1539.5	1539.3	1539.0	1538.7	1538.4	1540.0
160°	1557.4	1557.1	1556.8	1556.5	1556.2	1556.0	1555.8	1555.5	1555.2	1554.9	1556.5
162.5°	1573.9	1573.1	1572.4	1571.7	1571.0	1570.6	1570.3	1570.0	1569.7	1569.4	1571.3
165°	1593.7	1592.9	1592.0	1591.3	1590.4	1590.0	1589.7	1589.4	1589.1	1588.8	1591.0
167.5°	1609.2	1608.2	1607.0	1606.0	1604.9	1604.4	1604.4	1604.4	1604.4	1604.4	1606.6
170°	1618.0	1616.8	1615.8	1614.8	1613.6	1613.1	1613.1	1613.1	1613.1	1613.1	1615.2
172.5°	1623.8	1622.5	1621.2	1619.9	1618.6	1618.1	1618.3	1618.5	1618.7	1618.9	1621.1
175°	1631.3	1629.9	1628.6	1627.2	1625.9	1625.3	1625.6	1625.9	1626.2	1626.5	1628.3
177.5°	1633.2	1632.1	1631.1	1630.0	1628.9	1628.5	1628.7	1628.9	1629.1	1629.4	1631.1
180°	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0
2.5°	904.1	905.5	906.8	907.5	907.3	907.1	906.9	906.8
5°	902.6	904.4	906.1	906.8	906.6	906.4	906.3	906.0
7.5°	897.1	899.4	901.5	902.5	902.2	902.0	901.7	901.4
10°	891.6	893.8	896.0	896.9	896.5	896.0	895.6	895.1
12.5°	884.2	886.2	888.2	889.0	888.5	888.2	887.7	887.2
15°	869.9	872.1	874.3	875.2	875.1	874.9	874.6	874.4
17.5°	851.3	853.3	855.3	856.1	855.8	855.5	855.2	854.9
20°	837.9	839.9	841.9	842.9	843.2	843.4	843.6	843.9
22.5°	823.1	825.7	828.1	829.3	829.2	829.1	829.0	828.8
25°	798.2	801.1	803.9	805.3	805.3	805.3	805.3	805.3
27.5°	772.1	774.6	777.0	778.4	778.5	778.7	778.9	779.1
30°	754.3	757.0	759.6	760.9	760.9	760.9	760.9	760.9
32.5°	734.9	737.7	740.6	742.3	742.7	743.3	743.8	744.3
35°	706.3	709.6	712.8	715.0	715.9	716.7	717.6	718.5
37.5°	676.6	680.3	684.0	686.3	686.9	687.7	688.3	689.1
40°	656.9	660.5	664.3	666.6	667.5	668.4	669.2	670.1
42.5°	636.2	640.3	644.4	647.1	648.3	649.5	650.7	652.0
45°	605.4	609.5	613.8	616.7	618.5	620.2	622.0	623.8
47.5°	574.3	579.0	583.7	586.7	588.1	589.5	590.8	592.1
50°	552.9	557.9	563.0	566.3	567.8	569.3	570.9	572.4
52.5°	531.1	536.4	541.6	545.2	547.1	548.9	550.8	552.7
55°	498.4	504.4	510.2	514.1	515.9	517.6	519.3	521.1
57.5°	465.0	470.9	476.8	480.9	483.0	485.0	487.0	489.1
60°	441.6	447.7	453.8	458.2	460.5	463.0	465.4	467.8
62.5°	419.5	425.7	431.8	435.9	438.2	440.5	442.7	444.9
65°	384.3	390.8	397.4	401.8	404.0	406.1	408.4	410.6
67.5°	349.1	356.4	363.5	368.1	369.9	371.7	373.6	375.4
70°	325.9	332.9	340.0	344.5	346.8	348.9	351.1	353.4
72.5°	302.6	309.7	317.0	321.7	323.9	326.0	328.2	330.5
75°	267.1	274.4	281.6	286.5	289.2	291.8	294.5	297.1
77.5°	233.9	241.6	249.2	254.0	256.1	258.1	260.1	262.1
80°	212.3	219.7	227.2	232.1	234.2	236.4	238.7	240.8
82.5°	192.6	200.0	207.5	212.3	214.5	216.7	218.9	221.0
85°	164.9	172.4	179.8	184.6	186.8	189.1	191.2	193.4
87.5°	146.8	154.6	162.2	167.2	169.6	171.8	174.1	176.4
90°	157.7	166.2	174.7	180.4	183.1	185.9	188.6	191.3
92.5°	154.2	163.2	172.3	178.0	180.3	182.6	184.9	187.3
95°	152.6	161.4	170.0	175.4	177.7	179.8	182.0	184.3
97.5°	147.0	155.7	164.4	169.9	172.4	174.8	177.4	179.8
100°	142.9	151.4	159.9	165.4	167.9	170.3	172.8	175.2
102.5°	159.9	159.4	158.9	159.9	162.7	165.3	168.1	170.7
105°	256.4	214.8	173.3	153.8	156.4	158.8	161.4	163.8
107.5°	495.4	466.4	437.2	405.8	371.7	337.7	303.7	269.8
110°	603.4	600.2	597.0	577.0	540.3	503.5	466.7	430.0





TEST NUMBER: P332170-830

CATALOG NUMBER: S123DIW-S775D1320U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	677.5	683.2	688.8	688.6	682.4	676.2	670.0	663.7
115°	763.8	771.8	779.8	785.2	788.1	790.9	793.7	796.5
117.5°	841.1	848.5	855.8	860.5	862.4	864.4	866.3	868.3
120°	892.1	899.3	906.4	910.9	912.4	913.9	915.5	917.0
122.5°	941.8	948.1	954.5	958.6	960.4	962.1	963.8	965.5
125°	1011.4	1016.5	1021.7	1025.3	1027.4	1029.4	1031.5	1033.6
127.5°	1081.3	1086.5	1091.7	1094.8	1095.7	1096.6	1097.6	1098.5
130°	1122.9	1128.2	1133.4	1136.4	1137.3	1138.0	1138.8	1139.5
132.5°	1162.2	1167.3	1172.4	1175.4	1176.1	1176.8	1177.5	1178.3
135°	1222.4	1227.2	1231.9	1234.4	1234.7	1235.0	1235.3	1235.6
137.5°	1275.6	1280.3	1285.1	1287.8	1288.4	1288.9	1289.4	1290.0
140°	1309.5	1313.8	1318.2	1320.7	1321.3	1321.8	1322.3	1322.9
142.5°	1341.0	1344.8	1348.7	1350.8	1351.0	1351.4	1351.8	1352.1
145°	1387.4	1389.7	1392.0	1393.5	1394.5	1395.3	1396.2	1397.1
147.5°	1429.4	1430.4	1431.4	1431.7	1431.3	1430.9	1430.4	1429.9
150°	1455.4	1455.9	1456.5	1456.6	1456.2	1455.9	1455.5	1455.1
152.5°	1479.5	1480.5	1481.5	1481.4	1480.3	1479.1	1477.9	1476.8
155°	1512.8	1514.1	1515.5	1515.3	1513.7	1512.1	1510.5	1508.9
157.5°	1541.7	1543.3	1544.9	1544.6	1542.6	1540.5	1538.3	1536.3
160°	1558.1	1559.8	1561.4	1561.2	1559.3	1557.5	1555.6	1553.7
162.5°	1573.1	1575.0	1576.8	1576.9	1575.2	1573.6	1571.9	1570.2
165°	1593.2	1595.3	1597.5	1597.6	1595.7	1593.8	1592.0	1590.1
167.5°	1608.7	1610.8	1613.0	1613.0	1610.8	1608.7	1606.6	1604.4
170°	1617.4	1619.6	1621.7	1621.7	1619.6	1617.4	1615.2	1613.1
172.5°	1623.2	1625.4	1627.6	1627.4	1625.0	1622.7	1620.3	1618.0
175°	1630.2	1632.1	1634.0	1633.8	1631.7	1629.6	1627.4	1625.2
177.5°	1632.8	1634.6	1636.3	1636.1	1633.9	1631.7	1629.6	1627.4
180°	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3

(END OF REPORT)