

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: P332171-940

Luminaire Tested: **S123DIW-S775D1320U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332171-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S775D1320U940-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6963.8 lumens  
Efficiency: N/A  
Efficacy: 113.4 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

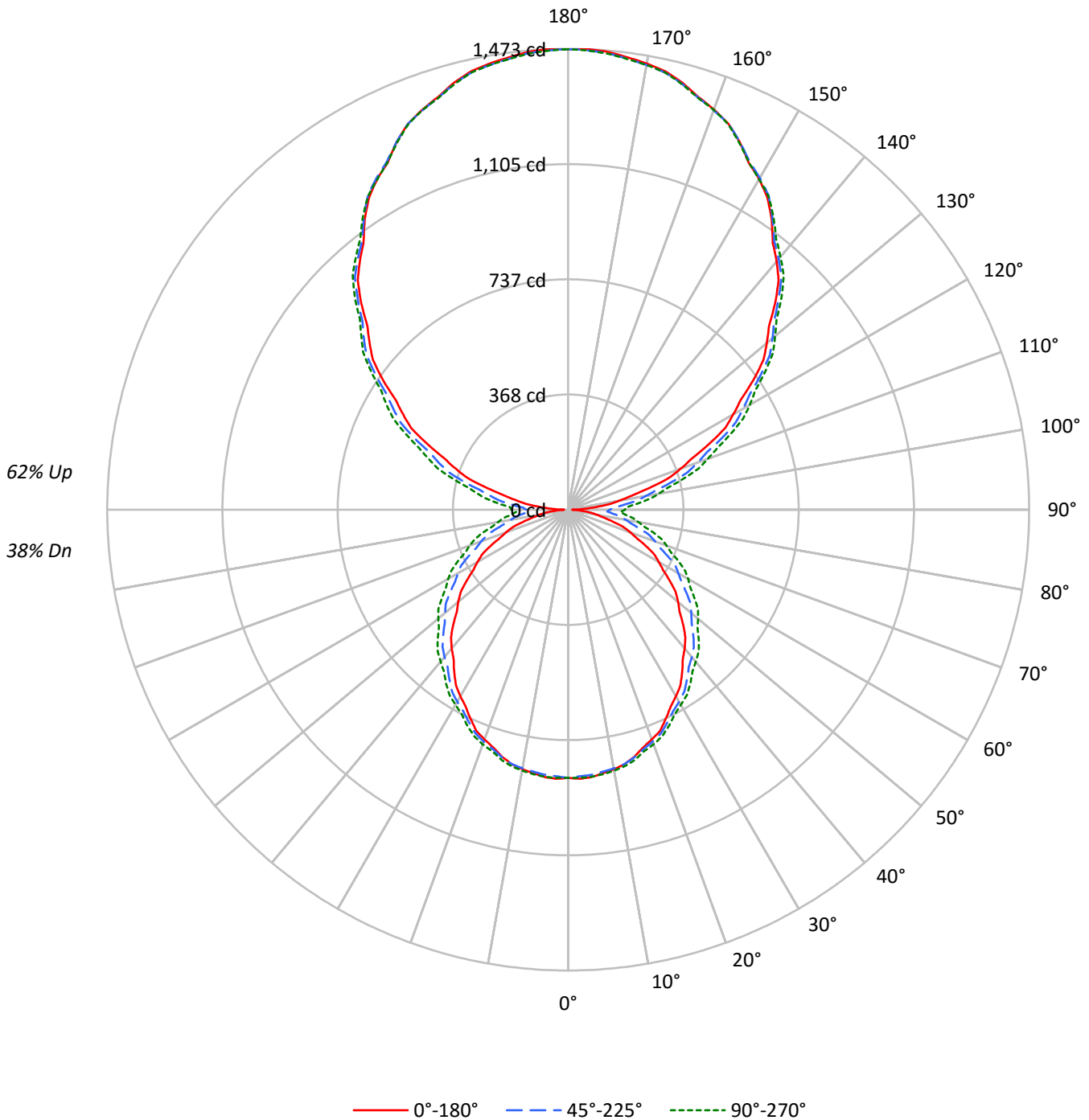
Input Watts (W): 61.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20			20			20			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	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	94	90	86	82	85	81	78	75	66	63	61	52	50	48	39	37	36	30
2	85	78	71	66	77	71	65	61	57	53	50	45	42	40	33	32	30	25
3	78	68	61	55	70	62	55	50	50	45	42	39	36	33	29	27	25	21
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	24	21	17
5	65	53	45	39	59	49	41	36	40	34	30	31	27	24	23	21	19	15
6	60	48	40	34	54	43	36	31	36	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	25	22	19	19	16	14	12
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	18	15	13	10
9	48	35	28	23	43	32	26	21	27	22	18	21	17	15	16	14	12	9
10	44	32	25	20	40	30	23	19	24	19	16	20	16	13	15	12	10	8

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

	0°	45°	90°
0°	9226	9226	9226
5°	9255	8994	8999
10°	9172	8787	8743
15°	9054	8552	8462
20°	8884	8283	8155
25°	8676	7974	7832
30°	8462	7695	7504
35°	8223	7401	7242
40°	7995	7134	6961
45°	7742	6877	6737
50°	7490	6622	6490
55°	7215	6363	6268
60°	6946	6099	6041
65°	6670	5818	5769
70°	6254	5502	5492
75°	5730	5140	5210
80°	5128	4782	4885
85°	4559	4540	4699



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	81.3	1.2
10°-20°	231.6	3.3
20°-30°	346.4	5.0
30°-40°	413.7	5.9
40°-50°	432.9	6.2
50°-60°	406.2	5.8
60°-70°	339.3	4.9
70°-80°	242.7	3.5
80°-90°	149.1	2.1
90°-100°	186.7	2.7
100°-110°	353.8	5.1
110°-120°	532.8	7.7
120°-130°	667.7	9.6
130°-140°	733.3	10.5
140°-150°	712.0	10.2
150°-160°	597.4	8.6
160°-170°	397.6	5.7
170°-180°	139.2	2.0
0°-30°	659.3	9.5
0°-40°	1073.0	15.4
0°-60°	1912.1	27.5
0°-90°	2643.2	38.0
90°-120°	1073.4	15.4
90°-150°	3186.4	45.8
90°-180°	4321.0	62.0
0°-180°	6963.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	857	857	857	857	857	
5°	858	856	851	858	857	81
15°	817	820	819	828	827	230
25°	738	747	750	761	762	340
35°	635	650	662	675	680	397
45°	519	542	565	582	590	400
55°	396	427	460	484	493	354
65°	274	310	351	378	388	270
75°	148	192	239	269	281	159
85°	46	93	142	172	183	48
90°	13	71	133	168	181	12
95°	78	124	178	210	221	85
105°	268	294	343	368	380	286
115°	496	512	542	565	572	491
125°	722	727	750	765	767	644
135°	935	941	950	962	965	720
145°	1133	1135	1138	1144	1143	707
155°	1296	1297	1298	1302	1294	597
165°	1412	1409	1409	1415	1408	398
175°	1469	1464	1464	1470	1463	139
180°	1472	1472	1472	1472	1472	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	857.1	857.1	857.1	857.1	857.1	857.1	857.1	857.1	857.1	857.1	857.1
2.5°	860.9	860.3	859.9	859.3	858.9	857.9	856.7	855.3	854.0	852.7	854.0
5°	858.1	857.6	857.2	856.8	856.4	855.6	854.3	853.1	851.9	850.6	852.3
7.5°	849.6	849.7	849.8	849.9	850.0	849.4	848.2	847.0	845.8	844.6	846.7
10°	842.2	842.6	843.0	843.5	843.8	843.6	842.5	841.5	840.4	839.4	841.5
12.5°	833.2	833.8	834.4	835.0	835.5	835.5	834.8	834.1	833.4	832.7	834.6
15°	817.0	817.6	818.2	818.9	819.5	819.7	819.5	819.3	819.0	818.9	820.9
17.5°	796.5	797.7	799.0	800.1	801.4	802.0	801.9	801.8	801.7	801.6	803.5
20°	781.5	782.7	784.0	785.2	786.5	787.3	787.7	788.2	788.5	789.0	790.9
22.5°	765.8	767.0	768.3	769.5	770.8	771.7	772.3	772.8	773.5	774.0	776.4
25°	737.6	739.7	741.7	743.9	745.9	747.3	747.9	748.5	749.1	749.8	752.4
27.5°	709.3	711.6	714.0	716.3	718.7	720.5	721.8	723.2	724.5	725.9	728.2
30°	689.0	691.8	694.5	697.1	699.8	702.0	703.6	705.3	707.0	708.6	711.1
32.5°	666.6	669.7	672.7	675.7	678.8	681.4	683.5	685.7	687.9	690.0	692.7
35°	634.9	638.2	641.6	644.9	648.2	651.2	653.9	656.6	659.3	662.0	665.1
37.5°	601.3	605.0	608.8	612.5	616.3	619.7	623.1	626.4	629.7	633.0	636.6
40°	578.9	582.6	586.4	590.1	593.8	597.8	601.9	606.1	610.2	614.4	617.9
42.5°	554.2	558.8	563.4	567.9	572.5	576.9	581.2	585.6	589.9	594.2	598.1
45°	519.2	524.1	529.1	534.0	539.0	544.1	549.3	554.5	559.7	564.9	568.8
47.5°	482.3	488.0	493.7	499.3	504.9	510.7	516.7	522.5	528.5	534.4	538.9
50°	458.4	464.2	470.0	475.9	481.7	487.8	494.3	500.7	507.1	513.5	518.3
52.5°	433.0	439.2	445.3	451.5	457.6	464.2	471.4	478.4	485.5	492.6	497.6
55°	395.9	402.7	409.6	416.4	423.3	430.4	437.9	445.4	452.8	460.3	465.9
57.5°	359.6	366.8	373.9	381.0	388.3	395.8	404.0	412.2	420.4	428.6	434.2
60°	334.3	341.7	349.2	356.7	364.2	372.1	380.7	389.1	397.6	406.2	412.0
62.5°	310.3	318.0	325.7	333.2	340.9	349.2	358.2	367.2	376.2	385.2	391.0
65°	273.6	281.7	289.7	297.8	305.9	314.5	323.7	332.8	342.0	351.1	357.3
67.5°	236.2	244.8	253.4	262.0	270.5	279.6	288.8	298.1	307.4	316.7	323.5
70°	210.1	219.0	227.9	236.8	245.8	255.2	265.2	275.1	285.1	295.1	301.7
72.5°	186.2	195.1	204.0	212.9	221.9	231.5	241.7	252.1	262.3	272.6	279.5
75°	148.5	158.2	168.0	177.7	187.4	197.5	207.9	218.3	228.6	239.1	245.8
77.5°	115.6	125.5	135.3	145.1	154.9	165.1	175.6	186.0	196.4	206.9	214.1
80°	92.5	102.6	112.8	123.0	133.1	143.6	154.4	165.1	175.9	186.7	193.8
82.5°	72.2	82.6	92.9	103.3	113.6	124.2	135.2	146.2	157.1	168.1	175.1
85°	45.7	56.1	66.5	76.9	87.2	97.9	109.0	119.9	130.9	142.0	149.0
87.5°	25.1	35.9	46.7	57.6	68.5	79.5	90.8	102.0	113.2	124.5	131.8
90°	13.3	26.0	38.8	51.5	64.2	77.6	91.5	105.4	119.3	133.2	141.3
92.5°	39.4	50.3	61.3	72.1	83.0	94.7	107.0	119.3	131.6	143.9	151.7
95°	78.5	88.4	98.3	108.2	118.1	129.1	141.3	153.6	165.8	178.0	185.5
97.5°	130.4	139.0	147.7	156.3	164.9	174.9	186.0	197.2	208.5	219.6	227.0
100°	165.7	173.9	182.1	190.2	198.4	207.9	218.7	229.6	240.4	251.3	258.1
102.5°	206.6	213.5	220.3	227.3	234.2	243.2	254.2	265.3	276.4	287.5	294.1
105°	267.7	273.2	278.7	284.2	289.6	298.0	309.2	320.5	331.7	343.0	348.7
107.5°	337.8	342.3	346.9	351.4	356.0	362.9	372.3	381.7	391.1	400.5	406.9
110°	381.5	385.8	389.9	394.2	398.5	405.0	413.8	422.7	431.4	440.2	446.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	427.8	431.1	434.5	437.8	441.2	447.0	455.0	463.2	471.2	479.3	485.7
115°	496.2	499.4	502.7	506.0	509.3	514.3	521.3	528.2	535.2	542.2	547.4
117.5°	565.9	567.9	570.0	572.0	574.1	578.3	584.6	590.9	597.3	603.6	608.5
120°	608.6	611.2	613.8	616.4	618.9	622.9	628.6	634.1	639.7	645.2	649.8
122.5°	653.9	655.6	657.3	659.0	660.6	664.4	670.2	676.1	681.9	687.8	691.7
125°	722.2	722.9	723.7	724.5	725.2	728.3	733.9	739.4	744.9	750.4	753.8
127.5°	786.0	787.5	788.9	790.3	791.8	794.7	799.1	803.5	807.9	812.3	815.0
130°	828.6	830.5	832.2	834.1	836.0	838.6	842.0	845.3	848.7	852.1	855.0
132.5°	870.4	872.4	874.4	876.5	878.4	880.8	883.6	886.4	889.1	891.8	894.4
135°	935.2	936.6	937.8	939.1	940.5	942.2	944.2	946.3	948.2	950.3	953.0
137.5°	995.1	996.2	997.4	998.5	999.6	1001.1	1003.1	1005.0	1007.0	1009.0	1011.2
140°	1036.0	1037.3	1038.6	1039.9	1041.2	1042.2	1043.1	1044.0	1044.9	1045.8	1048.7
142.5°	1074.0	1075.0	1076.2	1077.3	1078.4	1079.3	1079.9	1080.5	1081.0	1081.6	1084.1
145°	1133.2	1133.5	1133.8	1134.1	1134.4	1135.0	1135.7	1136.5	1137.3	1138.0	1139.4
147.5°	1184.0	1185.0	1185.9	1186.9	1187.8	1188.6	1189.3	1190.0	1190.7	1191.4	1191.9
150°	1220.1	1220.7	1221.2	1221.6	1222.2	1222.7	1223.2	1223.7	1224.2	1224.8	1224.8
152.5°	1249.7	1250.4	1251.2	1251.9	1252.6	1253.1	1253.5	1253.7	1254.1	1254.4	1254.8
155°	1296.5	1296.5	1296.5	1296.5	1296.5	1296.6	1296.8	1297.1	1297.4	1297.6	1298.7
157.5°	1336.2	1336.0	1335.6	1335.3	1335.0	1335.0	1335.2	1335.3	1335.6	1335.8	1336.9
160°	1361.2	1360.8	1360.2	1359.7	1359.1	1358.9	1358.9	1358.9	1358.9	1358.9	1360.2
162.5°	1383.4	1382.7	1382.0	1381.3	1380.5	1380.3	1380.5	1380.7	1380.9	1381.1	1382.4
165°	1412.1	1411.3	1410.6	1409.8	1409.1	1408.6	1408.6	1408.6	1408.6	1408.6	1410.2
167.5°	1435.0	1434.0	1433.0	1431.9	1430.9	1430.5	1430.7	1430.9	1431.1	1431.3	1432.9
170°	1448.0	1447.0	1445.9	1444.9	1443.9	1443.3	1443.3	1443.3	1443.3	1443.3	1445.1
172.5°	1458.1	1457.1	1456.1	1455.1	1454.0	1453.5	1453.5	1453.5	1453.5	1453.5	1455.1
175°	1468.8	1467.8	1466.8	1465.7	1464.6	1464.2	1464.2	1464.2	1464.2	1464.2	1465.7
177.5°	1473.2	1472.4	1471.5	1470.7	1469.9	1469.5	1469.5	1469.5	1469.5	1469.5	1470.7
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	857.1	857.1	857.1	857.1	857.1	857.1	857.1	857.1
2.5°	855.3	856.7	857.9	858.5	858.4	858.2	858.0	857.9
5°	853.9	855.6	857.2	857.9	857.7	857.6	857.4	857.1
7.5°	848.7	850.9	852.9	853.8	853.5	853.4	853.1	852.8
10°	843.6	845.6	847.7	848.6	848.1	847.7	847.3	846.9
12.5°	836.5	838.4	840.3	841.1	840.6	840.3	839.8	839.4
15°	823.0	825.1	827.2	828.0	827.9	827.7	827.4	827.2
17.5°	805.4	807.3	809.1	809.9	809.7	809.3	809.0	808.8
20°	792.7	794.6	796.5	797.5	797.7	797.9	798.1	798.3
22.5°	778.7	781.1	783.5	784.6	784.5	784.3	784.3	784.1
25°	755.2	757.9	760.5	761.9	761.9	761.9	761.9	761.9
27.5°	730.5	732.8	735.1	736.4	736.6	736.7	736.9	737.1
30°	713.6	716.1	718.6	719.9	719.9	719.9	719.9	719.9
32.5°	695.3	697.9	700.6	702.2	702.7	703.2	703.6	704.2
35°	668.2	671.4	674.4	676.5	677.3	678.1	678.9	679.8
37.5°	640.1	643.6	647.1	649.3	649.9	650.6	651.2	651.9
40°	621.4	624.9	628.5	630.6	631.5	632.3	633.1	634.0
42.5°	601.9	605.7	609.7	612.2	613.3	614.5	615.6	616.8
45°	572.7	576.7	580.7	583.4	585.1	586.7	588.4	590.1
47.5°	543.3	547.8	552.2	555.1	556.3	557.7	558.9	560.2
50°	523.1	527.8	532.6	535.7	537.2	538.6	540.1	541.5
52.5°	502.5	507.5	512.4	515.8	517.5	519.3	521.1	522.9
55°	471.5	477.2	482.7	486.3	488.0	489.6	491.3	493.0
57.5°	439.9	445.5	451.1	455.0	456.9	458.9	460.7	462.7
60°	417.8	423.6	429.4	433.5	435.7	438.0	440.3	442.6
62.5°	396.9	402.7	408.5	412.4	414.6	416.7	418.8	420.9
65°	363.6	369.7	375.9	380.1	382.2	384.2	386.4	388.4
67.5°	330.3	337.2	343.9	348.2	349.9	351.7	353.5	355.2
70°	308.4	315.0	321.6	325.9	328.1	330.1	332.2	334.3
72.5°	286.2	293.0	299.9	304.3	306.4	308.4	310.5	312.6
75°	252.7	259.6	266.4	271.1	273.6	276.1	278.6	281.1
77.5°	221.3	228.5	235.8	240.3	242.3	244.2	246.1	248.0
80°	200.8	207.9	215.0	219.5	221.6	223.6	225.8	227.8
82.5°	182.2	189.2	196.3	200.8	203.0	205.0	207.1	209.1
85°	156.0	163.1	170.1	174.7	176.7	178.9	180.9	183.0
87.5°	139.0	146.2	153.6	158.3	160.4	162.6	164.8	167.0
90°	149.5	157.5	165.6	170.9	173.5	176.1	178.7	181.3
92.5°	159.3	167.1	174.8	179.4	181.0	182.6	184.2	185.8
95°	193.0	200.4	207.9	212.6	214.7	216.8	218.8	221.0
97.5°	234.3	241.7	249.1	253.8	255.7	257.7	259.7	261.6
100°	264.8	271.6	278.4	283.1	285.7	288.3	290.9	293.5
102.5°	300.7	307.4	314.0	318.3	320.2	322.2	324.1	326.1
105°	354.5	360.4	366.2	370.3	372.6	375.1	377.5	379.9
107.5°	413.3	419.6	426.1	430.0	431.5	433.0	434.5	436.0
110°	453.1	459.5	465.9	469.8	470.9	472.0	473.1	474.3





TEST NUMBER: P332171-940

CATALOG NUMBER: S123DIW-S775D1320U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	492.2	498.6	505.1	509.2	511.0	512.6	514.3	516.1
115°	552.7	557.9	563.1	566.4	567.8	569.3	570.6	572.0
117.5°	613.4	618.3	623.2	626.1	627.0	627.9	628.7	629.6
120°	654.2	658.8	663.3	666.0	667.0	667.9	668.9	669.8
122.5°	695.6	699.5	703.5	705.9	706.6	707.3	708.0	708.8
125°	757.1	760.4	763.8	765.6	766.0	766.4	766.9	767.3
127.5°	817.7	820.4	823.0	824.5	824.7	824.9	825.2	825.4
130°	857.9	860.9	863.7	865.0	864.3	863.8	863.3	862.7
132.5°	896.9	899.5	902.0	903.3	903.3	903.3	903.4	903.4
135°	955.7	958.4	961.2	962.8	963.3	963.8	964.3	964.8
137.5°	1013.3	1015.6	1017.8	1018.9	1019.0	1019.0	1019.0	1019.1
140°	1051.5	1054.4	1057.2	1058.2	1057.5	1056.7	1056.0	1055.2
142.5°	1086.7	1089.2	1091.7	1092.8	1092.4	1092.1	1091.8	1091.5
145°	1140.9	1142.2	1143.6	1144.2	1144.1	1143.8	1143.6	1143.4
147.5°	1192.5	1192.9	1193.5	1193.3	1192.5	1191.7	1190.9	1190.1
150°	1224.8	1224.8	1224.8	1224.2	1223.1	1221.9	1220.8	1219.7
152.5°	1255.2	1255.6	1256.0	1255.6	1254.4	1253.1	1251.9	1250.6
155°	1299.7	1300.7	1301.7	1301.4	1299.6	1297.8	1295.9	1294.1
157.5°	1337.9	1339.0	1340.2	1339.9	1338.5	1337.0	1335.6	1334.2
160°	1361.5	1362.8	1364.1	1364.2	1363.2	1362.2	1361.1	1360.0
162.5°	1383.7	1385.0	1386.3	1386.1	1384.5	1382.8	1381.2	1379.5
165°	1411.8	1413.3	1414.8	1414.7	1412.9	1411.1	1409.3	1407.5
167.5°	1434.5	1436.1	1437.7	1437.7	1436.1	1434.5	1432.9	1431.3
170°	1447.0	1448.8	1450.5	1450.5	1448.8	1447.0	1445.1	1443.3
172.5°	1456.7	1458.3	1459.9	1459.8	1458.0	1456.2	1454.4	1452.6
175°	1467.2	1468.8	1470.3	1470.2	1468.4	1466.6	1464.8	1463.0
177.5°	1471.9	1473.2	1474.4	1474.4	1472.8	1471.4	1470.0	1468.6
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3

(END OF REPORT)