

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: P332119

Luminaire Tested: **S123DIW-S340D1535U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332119  
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-S340D1535U835-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6734.4 lumens  
Efficiency: N/A  
Efficacy: 126.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

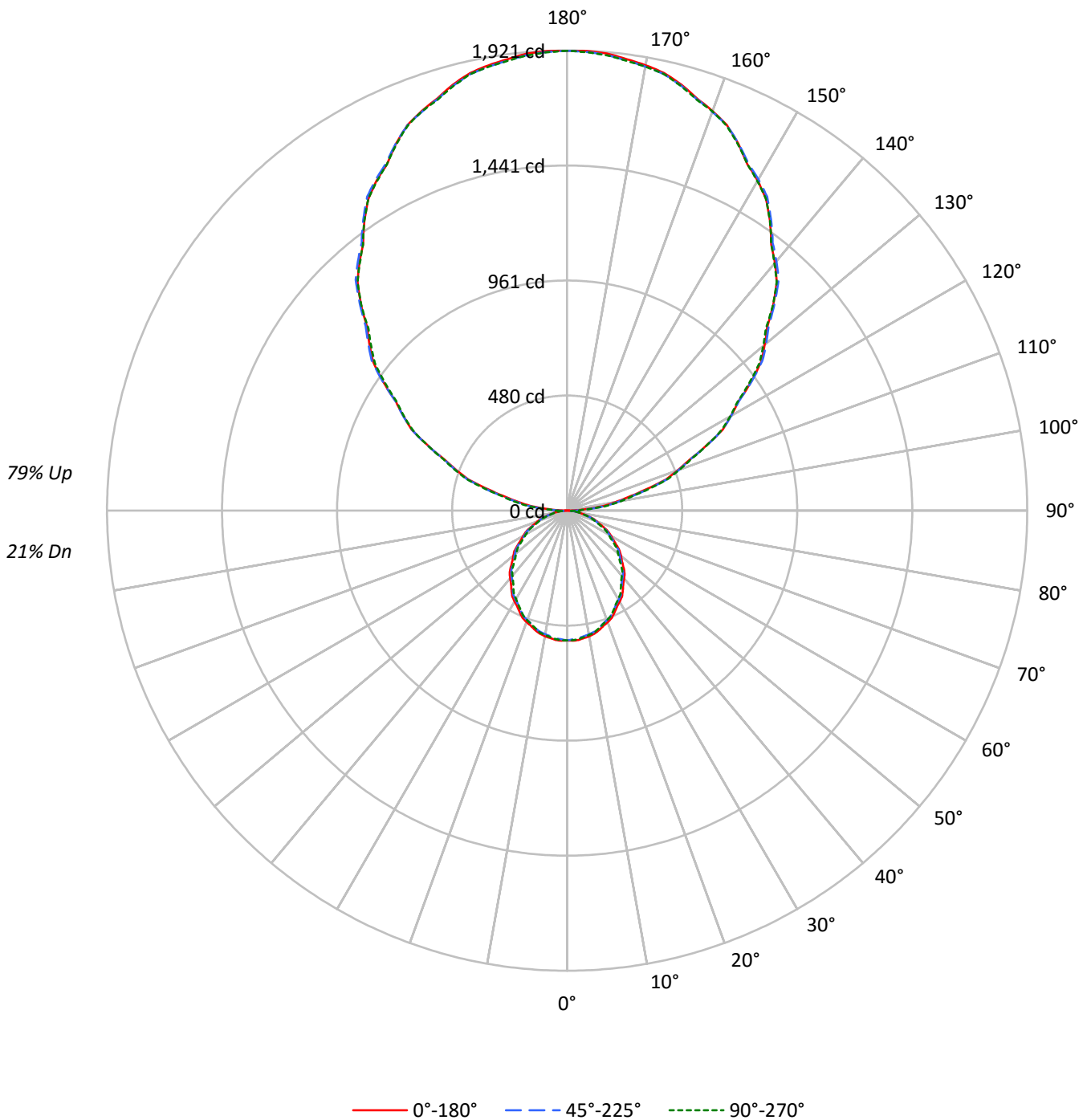
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21				
1	91	87	83	80	81	77	74	71	59	57	55	42	40	39	26	25	25	18				
2	83	76	70	65	73	67	63	58	51	48	45	37	35	33	23	22	21	15				
3	76	67	60	54	67	59	53	49	45	41	38	32	30	28	20	19	18	12				
4	69	59	51	46	61	52	46	41	40	36	32	29	26	24	18	16	15	11				
5	63	52	45	39	56	46	40	35	36	31	28	26	23	20	16	14	13	9				
6	58	47	39	33	51	42	35	30	32	27	24	23	20	18	15	13	12	8				
7	54	42	34	29	47	37	31	26	29	24	21	21	18	15	13	12	10	7				
8	50	38	30	25	44	34	27	23	26	22	18	19	16	14	12	10	9	6				
9	46	34	27	22	41	31	25	20	24	19	16	17	14	12	11	9	8	6				
10	43	31	24	20	38	28	22	18	22	17	14	16	13	11	10	9	7	5				

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

	0°	45°	90°
0°	5833	5833	5833
5°	5861	5780	5820
10°	5821	5729	5766
15°	5753	5665	5675
20°	5674	5573	5577
25°	5567	5462	5451
30°	5450	5340	5299
35°	5327	5210	5143
40°	5199	5067	4990
45°	5057	4937	4816
50°	4915	4776	4642
55°	4731	4609	4468
60°	4545	4413	4273
65°	4378	4200	4070
70°	4135	3959	3783
75°	3780	3643	3489
80°	3409	3267	3236
85°	2989	2878	2766



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.0	0.8
10°-20°	144.1	2.1
20°-30°	212.9	3.2
30°-40°	248.7	3.7
40°-50°	250.0	3.7
50°-60°	219.6	3.3
60°-70°	163.6	2.4
70°-80°	93.2	1.4
80°-90°	32.4	0.5
90°-100°	125.1	1.9
100°-110°	374.3	5.6
110°-120°	636.6	9.5
120°-130°	837.4	12.4
130°-140°	941.2	14.0
140°-150°	925.2	13.7
150°-160°	778.9	11.6
160°-170°	518.5	7.7
170°-180°	181.6	2.7
0°-30°	408.1	6.1
0°-40°	656.8	9.8
0°-60°	1126.5	16.7
0°-90°	1415.8	21.0
90°-120°	1136.0	16.9
90°-150°	3839.7	57.0
90°-180°	5319.0	79.0
0°-180°	6734.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	542	542	542	542	542	
5°	542	540	535	539	539	51
15°	516	514	508	512	509	145
25°	469	466	460	460	459	216
35°	405	402	396	394	391	254
45°	332	330	324	319	316	256
55°	252	251	246	241	238	226
65°	172	170	165	161	160	170
75°	91	89	88	85	84	97
85°	24	23	23	22	22	27
90°	2	17	36	42	45	7
95°	89	100	112	117	118	100
105°	339	343	356	356	359	363
115°	641	645	642	644	642	634
125°	938	942	940	933	927	836
135°	1217	1225	1224	1219	1215	937
145°	1476	1479	1484	1482	1476	922
155°	1690	1690	1692	1697	1687	778
165°	1841	1837	1837	1845	1835	519
175°	1915	1909	1909	1917	1908	182
180°	1920	1920	1920	1920	1920	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	543.8	543.4	543.1	542.8	542.4	541.8	540.9	540.0	539.1	538.2	539.0
5°	542.4	541.8	541.3	540.8	540.3	539.5	538.3	537.2	536.0	534.9	535.9
7.5°	537.1	536.5	536.0	535.5	535.0	534.1	533.0	531.8	530.6	529.4	530.3
10°	532.6	532.1	531.5	531.0	530.5	529.6	528.2	526.9	525.5	524.2	525.1
12.5°	526.6	526.2	525.7	525.3	524.9	524.0	522.8	521.5	520.2	519.0	519.7
15°	516.3	515.9	515.4	515.0	514.6	513.7	512.4	511.0	509.7	508.4	509.2
17.5°	504.2	503.7	503.2	502.6	502.1	501.2	499.8	498.5	497.1	495.8	496.3
20°	495.3	494.7	494.1	493.4	492.8	491.8	490.5	489.1	487.8	486.5	486.9
22.5°	485.2	484.6	484.0	483.4	482.8	481.8	480.4	479.1	477.7	476.4	476.7
25°	468.7	468.1	467.5	466.9	466.3	465.3	463.9	462.6	461.2	459.9	460.0
27.5°	451.1	450.5	449.9	449.3	448.7	447.7	446.3	444.8	443.4	441.9	442.0
30°	438.5	437.9	437.4	436.9	436.4	435.4	434.0	432.5	431.1	429.6	429.6
32.5°	425.8	425.1	424.4	423.7	423.1	422.1	421.0	419.9	418.8	417.7	417.1
35°	405.4	404.8	404.1	403.5	402.9	401.9	400.6	399.2	397.9	396.5	395.9
37.5°	384.5	383.7	382.9	382.1	381.4	380.3	378.9	377.5	376.2	374.8	374.1
40°	370.0	369.3	368.7	368.1	367.5	366.4	365.0	363.5	362.1	360.6	359.8
42.5°	355.4	354.7	354.0	353.3	352.6	351.5	350.1	348.6	347.2	345.7	344.9
45°	332.2	331.8	331.4	331.0	330.6	329.7	328.3	327.0	325.6	324.3	323.1
47.5°	309.2	308.6	308.0	307.4	306.8	305.9	304.6	303.3	302.1	300.8	299.6
50°	293.5	293.0	292.5	292.0	291.5	290.5	289.2	287.9	286.5	285.2	284.0
52.5°	277.1	276.8	276.4	276.1	275.7	274.8	273.4	272.0	270.6	269.1	268.2
55°	252.1	252.0	251.9	251.8	251.7	250.9	249.6	248.2	246.9	245.6	244.4
57.5°	228.2	227.9	227.5	227.2	226.8	226.1	225.0	223.9	222.9	221.8	220.8
60°	211.1	211.0	210.9	210.8	210.7	210.0	208.7	207.5	206.3	205.0	204.1
62.5°	195.8	195.5	195.3	195.0	194.7	194.0	192.7	191.5	190.2	189.0	188.1
65°	171.9	171.4	170.9	170.4	169.9	169.1	168.1	167.0	166.0	164.9	164.1
67.5°	146.7	146.2	145.8	145.3	144.9	144.2	143.5	142.7	141.9	141.1	140.4
70°	131.4	130.8	130.2	129.5	128.9	128.3	127.7	127.0	126.4	125.8	125.1
72.5°	115.4	114.9	114.5	114.0	113.5	113.0	112.3	111.6	110.9	110.2	109.5
75°	90.9	90.4	90.0	89.6	89.2	88.8	88.5	88.2	87.9	87.6	87.1
77.5°	69.1	68.9	68.7	68.5	68.2	67.9	67.6	67.2	66.8	66.4	66.1
80°	55.0	54.7	54.4	54.1	53.7	53.5	53.3	53.1	52.9	52.7	52.5
82.5°	41.2	41.1	41.1	41.0	40.9	40.9	40.8	40.8	40.8	40.7	40.5
85°	24.2	24.0	23.8	23.6	23.4	23.3	23.3	23.3	23.3	23.3	23.1
87.5°	10.0	10.4	10.8	11.3	11.7	12.3	13.1	13.9	14.7	15.4	15.6
90°	1.5	4.9	8.2	11.6	14.9	18.8	23.1	27.5	31.8	36.2	37.5
92.5°	36.5	38.8	41.0	43.3	45.6	48.0	50.5	52.9	55.4	57.9	59.0
95°	89.0	91.3	93.7	96.0	98.4	100.9	103.5	106.2	108.9	111.6	112.9
97.5°	158.0	159.8	161.5	163.3	165.0	166.8	168.8	170.7	172.7	174.6	176.2
100°	205.1	207.1	209.1	211.1	213.1	215.0	216.6	218.3	220.0	221.7	222.7
102.5°	259.4	260.6	261.8	263.0	264.2	265.9	268.1	270.3	272.5	274.7	275.8
105°	339.3	340.0	340.6	341.3	342.0	343.8	346.8	349.8	352.9	355.9	355.9
107.5°	432.2	432.6	433.0	433.4	433.8	434.6	435.8	437.0	438.2	439.4	440.5
110°	490.1	490.8	491.4	492.1	492.8	493.4	494.1	494.8	495.4	496.1	497.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	550.4	550.8	551.2	551.6	552.0	552.3	552.4	552.5	552.7	552.8	554.4
115°	640.9	641.9	642.9	643.9	644.9	645.1	644.4	643.7	643.1	642.4	642.7
117.5°	732.0	732.6	733.3	734.0	734.6	734.5	733.7	732.8	731.9	731.1	731.0
120°	788.7	790.7	792.7	794.7	796.7	796.9	795.2	793.5	791.8	790.2	789.8
122.5°	847.8	849.2	850.7	852.2	853.7	854.0	853.1	852.2	851.4	850.5	849.6
125°	937.9	938.9	940.0	941.0	942.0	942.1	941.5	940.8	940.1	939.5	938.1
127.5°	1021.2	1023.3	1025.5	1027.6	1029.8	1030.5	1029.7	1029.0	1028.3	1027.5	1025.6
130°	1076.7	1079.4	1082.0	1084.7	1087.4	1088.2	1087.2	1086.2	1085.2	1084.2	1082.9
132.5°	1132.2	1134.8	1137.5	1140.2	1142.9	1143.9	1143.1	1142.4	1141.6	1140.9	1139.3
135°	1216.9	1218.9	1220.9	1222.9	1225.0	1225.8	1225.5	1225.1	1224.8	1224.5	1223.1
137.5°	1295.3	1297.0	1298.7	1300.4	1302.0	1303.3	1304.2	1305.0	1305.9	1306.8	1305.4
140°	1349.6	1351.3	1353.0	1354.6	1356.3	1357.3	1357.7	1358.0	1358.3	1358.7	1358.3
142.5°	1399.1	1400.7	1402.4	1404.1	1405.8	1406.9	1407.5	1408.1	1408.7	1409.3	1409.0
145°	1476.3	1477.0	1477.6	1478.3	1479.0	1479.8	1480.8	1481.8	1482.8	1483.8	1483.5
147.5°	1543.8	1545.0	1546.2	1547.5	1548.7	1549.7	1550.7	1551.6	1552.5	1553.5	1553.5
150°	1590.9	1591.6	1592.2	1592.9	1593.6	1594.2	1594.9	1595.6	1596.2	1596.9	1596.9
152.5°	1629.5	1630.4	1631.4	1632.3	1633.2	1633.9	1634.3	1634.7	1635.1	1635.5	1636.1
155°	1690.4	1690.4	1690.4	1690.4	1690.4	1690.6	1690.9	1691.2	1691.6	1691.9	1693.3
157.5°	1742.3	1741.9	1741.5	1741.1	1740.7	1740.6	1740.9	1741.1	1741.4	1741.7	1743.1
160°	1774.9	1774.2	1773.5	1772.8	1772.2	1771.8	1771.8	1771.8	1771.8	1771.8	1773.5
162.5°	1803.8	1802.9	1801.9	1801.0	1800.1	1799.7	1800.0	1800.3	1800.5	1800.8	1802.5
165°	1841.2	1840.2	1839.2	1838.2	1837.2	1836.7	1836.7	1836.7	1836.7	1836.7	1838.7
167.5°	1871.1	1869.7	1868.4	1867.0	1865.7	1865.2	1865.4	1865.7	1866.0	1866.2	1868.3
170°	1887.9	1886.6	1885.3	1883.9	1882.6	1881.9	1881.9	1881.9	1881.9	1881.9	1884.3
172.5°	1901.2	1899.9	1898.5	1897.2	1895.9	1895.2	1895.2	1895.2	1895.2	1895.2	1897.3
175°	1915.1	1913.8	1912.4	1911.1	1909.7	1909.1	1909.1	1909.1	1909.1	1909.1	1911.1
177.5°	1920.8	1919.8	1918.7	1917.6	1916.5	1916.0	1916.0	1916.0	1916.0	1916.0	1917.6
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	539.8	540.7	541.5	541.9	541.8	541.7	541.6	541.5
5°	537.0	538.0	539.1	539.5	539.3	539.1	538.8	538.6
7.5°	531.3	532.2	533.1	533.5	533.4	533.3	533.2	533.0
10°	526.1	527.0	527.9	528.3	528.1	527.9	527.7	527.5
12.5°	520.3	521.0	521.7	522.0	521.9	521.7	521.6	521.5
15°	510.0	510.8	511.7	511.8	511.1	510.5	509.9	509.3
17.5°	496.9	497.5	498.1	498.3	498.0	497.8	497.6	497.4
20°	487.3	487.7	488.1	488.2	487.8	487.5	487.2	486.9
22.5°	477.0	477.4	477.7	477.7	477.3	476.9	476.5	476.1
25°	460.1	460.2	460.3	460.2	459.9	459.6	459.3	459.0
27.5°	442.1	442.2	442.2	442.1	441.7	441.3	440.9	440.5
30°	429.6	429.6	429.6	429.2	428.5	427.8	427.1	426.3
32.5°	416.5	415.9	415.4	414.9	414.5	414.1	413.7	413.3
35°	395.3	394.7	394.0	393.5	393.0	392.4	391.9	391.4
37.5°	373.3	372.6	371.8	371.3	371.0	370.6	370.3	370.0
40°	359.0	358.2	357.3	356.7	356.3	355.9	355.5	355.1
42.5°	344.1	343.2	342.4	341.8	341.4	341.0	340.6	340.1
45°	321.8	320.6	319.3	318.5	317.9	317.4	316.9	316.4
47.5°	298.4	297.2	295.9	295.1	294.6	294.2	293.7	293.3
50°	282.9	281.7	280.6	279.7	279.1	278.5	277.9	277.2
52.5°	267.2	266.2	265.2	264.4	263.8	263.2	262.6	262.0
55°	243.3	242.1	241.0	240.2	239.7	239.1	238.6	238.1
57.5°	219.8	218.7	217.7	216.9	216.3	215.7	215.1	214.5
60°	203.2	202.2	201.3	200.6	200.0	199.5	199.0	198.5
62.5°	187.1	186.2	185.3	184.6	184.3	183.9	183.6	183.2
65°	163.3	162.5	161.6	161.1	160.8	160.4	160.1	159.8
67.5°	139.6	138.9	138.2	137.6	137.2	136.7	136.3	135.9
70°	124.4	123.6	122.9	122.3	121.8	121.3	120.7	120.2
72.5°	108.9	108.2	107.6	107.1	106.9	106.6	106.3	106.0
75°	86.6	86.0	85.5	85.1	84.8	84.5	84.2	83.9
77.5°	65.7	65.4	65.0	64.9	64.9	64.9	64.9	64.9
80°	52.4	52.3	52.2	52.2	52.2	52.2	52.2	52.2
82.5°	40.4	40.2	40.0	39.8	39.8	39.7	39.6	39.5
85°	22.9	22.7	22.5	22.4	22.4	22.4	22.4	22.4
87.5°	15.8	16.0	16.2	16.3	16.5	16.6	16.7	16.9
90°	38.9	40.2	41.6	42.6	43.2	43.9	44.6	45.2
92.5°	60.0	61.1	62.2	62.5	62.1	61.7	61.3	60.9
95°	114.3	115.6	116.9	117.6	117.6	117.6	117.6	117.6
97.5°	177.7	179.2	180.8	181.5	181.4	181.2	181.1	181.0
100°	223.7	224.7	225.7	226.5	227.2	227.9	228.5	229.2
102.5°	276.8	277.8	278.8	279.2	279.1	278.9	278.8	278.7
105°	355.9	355.9	355.9	356.2	356.9	357.6	358.2	358.9
107.5°	441.6	442.6	443.7	444.0	443.6	443.2	442.8	442.4
110°	498.8	500.1	501.5	501.8	501.1	500.5	499.8	499.1





TEST NUMBER: P332119

CATALOG NUMBER: S123DIW-S340D1535U835-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	556.0	557.6	559.2	560.0	559.9	559.7	559.6	559.4
115°	643.1	643.4	643.7	643.7	643.4	643.1	642.7	642.4
117.5°	730.9	730.9	730.8	730.3	729.3	728.4	727.5	726.5
120°	789.5	789.2	788.8	788.3	787.7	787.0	786.3	785.6
122.5°	848.7	847.9	847.0	846.1	845.2	844.2	843.3	842.3
125°	936.8	935.4	934.1	932.7	931.4	930.1	928.7	927.4
127.5°	1023.8	1021.9	1020.0	1018.3	1016.8	1015.2	1013.7	1012.1
130°	1081.5	1080.2	1078.9	1077.0	1074.7	1072.3	1070.0	1067.6
132.5°	1137.7	1136.1	1134.5	1132.8	1131.0	1129.2	1127.3	1125.5
135°	1221.8	1220.4	1219.1	1218.1	1217.4	1216.7	1216.1	1215.4
137.5°	1304.0	1302.6	1301.2	1299.8	1298.5	1297.3	1296.0	1294.7
140°	1358.0	1357.7	1357.3	1356.0	1353.6	1351.3	1348.9	1346.6
142.5°	1408.7	1408.3	1408.0	1406.9	1405.1	1403.3	1401.5	1399.7
145°	1483.1	1482.8	1482.5	1481.6	1480.3	1479.0	1477.6	1476.3
147.5°	1553.5	1553.5	1553.5	1552.5	1550.5	1548.5	1546.4	1544.4
150°	1596.9	1596.9	1596.9	1595.9	1593.9	1591.9	1589.9	1587.9
152.5°	1636.6	1637.1	1637.7	1637.1	1635.3	1633.6	1631.8	1630.1
155°	1694.6	1695.9	1697.3	1696.8	1694.4	1692.1	1689.7	1687.4
157.5°	1744.5	1745.9	1747.3	1747.1	1745.2	1743.3	1741.4	1739.6
160°	1775.2	1776.9	1778.5	1778.7	1777.4	1776.0	1774.7	1773.3
162.5°	1804.1	1805.8	1807.5	1807.3	1805.1	1803.0	1800.8	1798.7
165°	1840.7	1842.7	1844.7	1844.6	1842.2	1839.9	1837.5	1835.2
167.5°	1870.4	1872.5	1874.5	1874.5	1872.5	1870.4	1868.3	1866.2
170°	1886.6	1889.0	1891.3	1891.3	1889.0	1886.6	1884.3	1881.9
172.5°	1899.3	1901.4	1903.5	1903.4	1901.0	1898.7	1896.3	1894.0
175°	1913.1	1915.1	1917.1	1916.9	1914.6	1912.2	1909.9	1907.6
177.5°	1919.2	1920.8	1922.4	1922.3	1920.4	1918.5	1916.7	1914.8
180°	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6	1919.6

(END OF REPORT)