

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: P332118-930

Luminaire Tested: **S123DIW-S340D1535U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332118-930  
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-S340D1535U930-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6157.3 lumens  
Efficiency: N/A  
Efficacy: 115.3 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

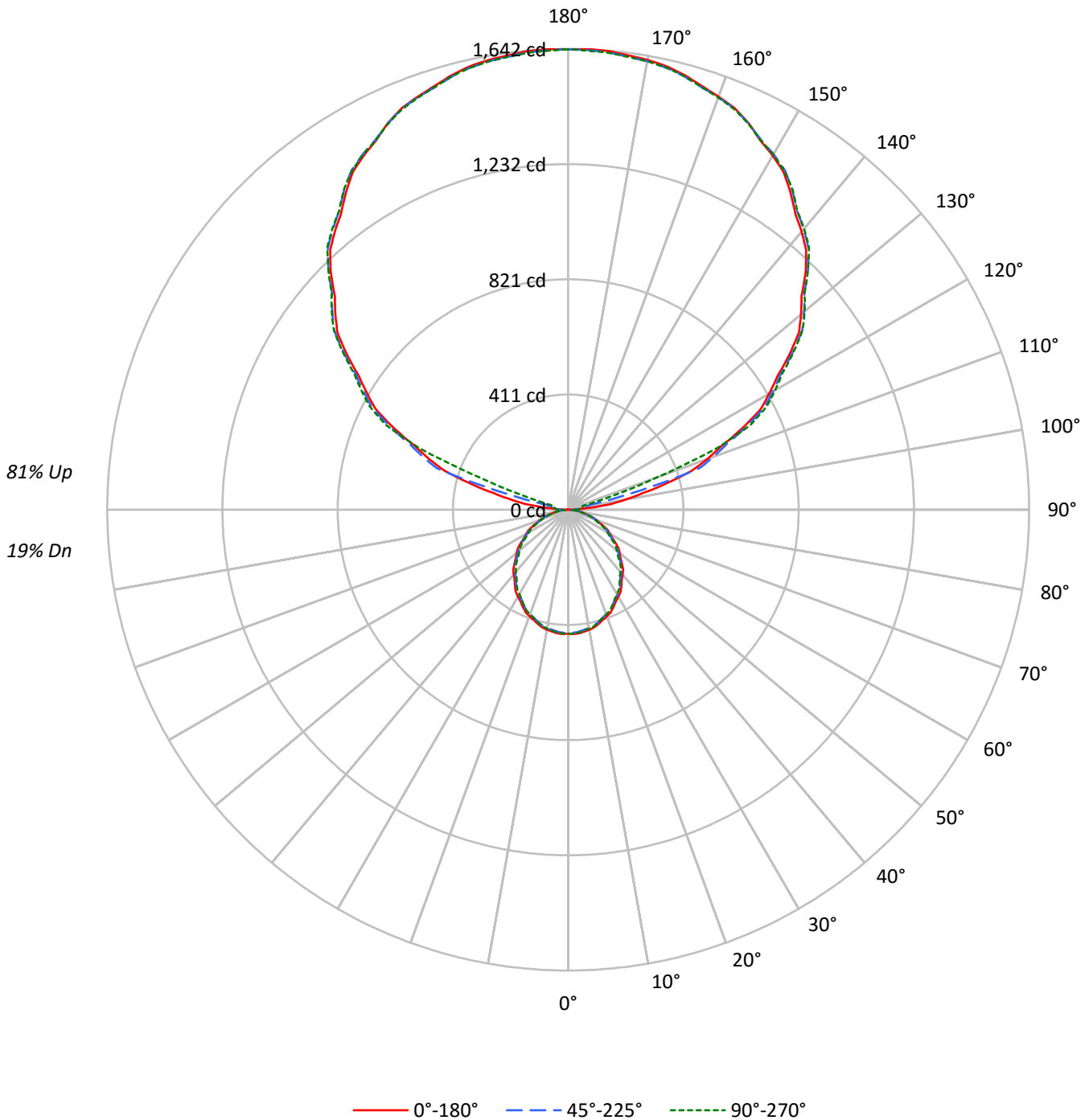
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	100	100	100	100	88	88	88	88	66	66	66	46	46	46	27	27	27	19					19			
1	91	87	83	80	80	76	73	71	58	56	54	40	39	38	24	24	23	16					16			
2	83	76	70	65	73	67	62	58	50	47	44	35	33	32	21	20	19	13					13			
3	75	66	59	54	66	59	53	48	44	40	37	31	29	27	19	17	16	11					11			
4	69	58	51	45	60	52	46	41	39	35	32	28	25	23	17	15	14	10					10			
5	63	52	44	39	55	46	40	35	35	30	27	25	22	20	15	13	12	8					8			
6	58	46	39	33	51	41	35	30	31	27	23	22	19	17	14	12	11	7					7			
7	53	42	34	29	47	37	31	26	28	24	20	20	17	15	12	11	9	6					6			
8	49	38	30	25	43	33	27	23	26	21	18	18	15	13	11	10	8	6					6			
9	46	34	27	22	40	30	24	20	23	19	16	17	14	12	10	9	8	5					5			
10	43	31	24	20	37	28	22	18	21	17	14	15	12	10	10	8	7	5					5			

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

	0°	45°	90°
0°	4755	4755	4755
5°	4778	4712	4744
10°	4746	4671	4701
15°	4690	4619	4627
20°	4625	4543	4548
25°	4538	4454	4444
30°	4443	4354	4320
35°	4343	4248	4193
40°	4239	4131	4068
45°	4122	4025	3927
50°	4007	3893	3785
55°	3856	3757	3643
60°	3705	3597	3483
65°	3568	3423	3319
70°	3371	3229	3084
75°	3082	2969	2845
80°	2777	2665	2641
85°	2433	2347	2260



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.6	0.7
10°-20°	117.5	1.9
20°-30°	173.6	2.8
30°-40°	202.8	3.3
40°-50°	203.9	3.3
50°-60°	179.1	2.9
60°-70°	133.4	2.2
70°-80°	76.0	1.2
80°-90°	26.4	0.4
90°-100°	59.6	1.0
100°-110°	284.3	4.6
110°-120°	682.8	11.1
120°-130°	869.5	14.1
130°-140°	929.1	15.1
140°-150°	868.8	14.1
150°-160°	700.8	11.4
160°-170°	452.3	7.3
170°-180°	155.9	2.5
0°-30°	332.7	5.4
0°-40°	535.5	8.7
0°-60°	918.4	14.9
0°-90°	1154.2	18.7
90°-120°	1026.8	16.7
90°-150°	3694.1	60.0
90°-180°	5003.0	81.3
0°-180°	6157.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	442	442	442	442	442	
5°	442	440	436	440	439	42
15°	421	419	414	417	415	119
25°	382	380	375	375	374	176
35°	330	328	323	321	319	207
45°	271	269	264	260	258	209
55°	206	205	200	196	194	184
65°	140	138	134	132	130	138
75°	74	73	71	70	68	79
85°	20	19	19	18	18	22
90°	1	14	29	34	36	5
95°	74	28	38	46	46	92
105°	363	370	267	63	54	385
115°	681	689	700	711	717	672
125°	960	970	975	978	980	857
135°	1196	1203	1208	1211	1208	920
145°	1380	1388	1391	1393	1393	863
155°	1520	1518	1519	1524	1518	700
165°	1603	1599	1598	1607	1599	453
175°	1640	1635	1636	1643	1634	156
180°	1640	1640	1640	1640	1640	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	443.4	443.0	442.8	442.5	442.2	441.7	441.0	440.3	439.5	438.8	439.4
5°	442.2	441.7	441.3	440.9	440.5	439.9	438.9	438.0	437.0	436.1	436.9
7.5°	437.9	437.4	437.0	436.6	436.2	435.5	434.6	433.6	432.6	431.6	432.4
10°	434.2	433.8	433.3	432.9	432.5	431.8	430.6	429.6	428.4	427.4	428.1
12.5°	429.3	429.0	428.6	428.3	428.0	427.2	426.2	425.2	424.1	423.1	423.7
15°	420.9	420.6	420.2	419.9	419.6	418.8	417.8	416.6	415.6	414.5	415.2
17.5°	411.1	410.7	410.3	409.8	409.4	408.6	407.5	406.4	405.3	404.2	404.6
20°	403.8	403.3	402.8	402.3	401.8	401.0	399.9	398.8	397.7	396.6	397.0
22.5°	395.6	395.1	394.6	394.1	393.6	392.8	391.7	390.6	389.5	388.4	388.7
25°	382.1	381.6	381.2	380.7	380.2	379.4	378.2	377.2	376.0	375.0	375.0
27.5°	367.8	367.3	366.8	366.3	365.8	365.0	363.9	362.6	361.5	360.3	360.4
30°	357.5	357.0	356.6	356.2	355.8	355.0	353.8	352.6	351.5	350.3	350.3
32.5°	347.2	346.6	346.0	345.4	345.0	344.1	343.2	342.3	341.4	340.6	340.1
35°	330.5	330.0	329.5	329.0	328.5	327.7	326.6	325.5	324.4	323.3	322.8
37.5°	313.5	312.8	312.2	311.5	311.0	310.1	308.9	307.8	306.7	305.6	305.0
40°	301.7	301.1	300.6	300.1	299.6	298.7	297.6	296.4	295.2	294.0	293.3
42.5°	289.8	289.2	288.6	288.0	287.5	286.6	285.4	284.2	283.1	281.8	281.2
45°	270.8	270.5	270.2	269.9	269.5	268.8	267.7	266.6	265.5	264.4	263.4
47.5°	252.1	251.6	251.1	250.6	250.1	249.4	248.3	247.3	246.3	245.2	244.3
50°	239.3	238.9	238.5	238.1	237.7	236.8	235.8	234.7	233.6	232.5	231.5
52.5°	225.9	225.7	225.3	225.1	224.8	224.0	222.9	221.8	220.6	219.4	218.7
55°	205.5	205.5	205.4	205.3	205.2	204.6	203.5	202.4	201.3	200.2	199.3
57.5°	186.1	185.8	185.5	185.2	184.9	184.3	183.4	182.5	181.7	180.8	180.0
60°	172.1	172.0	171.9	171.9	171.8	171.2	170.2	169.2	168.2	167.1	166.4
62.5°	159.6	159.4	159.2	159.0	158.7	158.2	157.1	156.1	155.1	154.1	153.4
65°	140.1	139.7	139.3	138.9	138.5	137.9	137.1	136.2	135.3	134.4	133.8
67.5°	119.6	119.2	118.9	118.5	118.1	117.6	117.0	116.3	115.7	115.0	114.5
70°	107.1	106.6	106.2	105.6	105.1	104.6	104.1	103.5	103.1	102.6	102.0
72.5°	94.1	93.7	93.4	92.9	92.5	92.1	91.6	91.0	90.4	89.8	89.3
75°	74.1	73.7	73.4	73.1	72.7	72.4	72.2	71.9	71.7	71.4	71.0
77.5°	56.3	56.2	56.0	55.8	55.6	55.4	55.1	54.8	54.5	54.1	53.9
80°	44.8	44.6	44.4	44.1	43.8	43.6	43.5	43.3	43.1	43.0	42.8
82.5°	33.6	33.5	33.5	33.4	33.3	33.3	33.3	33.3	33.3	33.2	33.0
85°	19.7	19.6	19.4	19.2	19.1	19.0	19.0	19.0	19.0	19.0	18.8
87.5°	8.2	8.5	8.8	9.1	9.5	10.0	10.6	11.3	11.9	12.6	12.7
90°	1.2	3.9	6.6	9.4	12.1	15.2	18.7	22.2	25.8	29.3	30.3
92.5°	22.7	21.9	21.1	20.4	19.6	20.5	23.2	25.9	28.5	31.2	32.9
95°	74.4	63.3	52.2	41.0	29.9	25.8	28.9	31.8	34.8	37.7	39.7
97.5°	149.4	144.5	139.5	134.4	129.5	117.2	97.8	78.3	58.8	39.2	41.4
100°	206.0	211.4	216.8	222.3	227.6	209.2	167.0	124.7	82.5	40.2	42.4
102.5°	270.4	274.3	278.2	282.0	285.9	264.8	218.7	172.5	126.4	80.2	73.5
105°	363.2	366.2	369.2	372.2	375.1	364.4	340.1	315.7	291.3	266.9	219.0
107.5°	461.2	463.6	465.9	468.4	470.8	473.9	477.7	481.6	485.4	489.3	454.1
110°	526.5	528.7	530.8	533.0	535.2	537.8	540.8	543.7	546.7	549.7	540.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	589.0	590.9	592.9	594.8	596.7	599.2	602.2	605.2	608.1	611.1	611.3
115°	681.3	683.0	684.6	686.2	687.9	689.9	692.4	694.7	697.2	699.6	702.3
117.5°	770.8	772.8	774.8	776.8	778.9	780.5	781.7	782.9	784.2	785.5	787.6
120°	826.4	828.8	831.3	833.7	836.2	837.8	838.5	839.4	840.2	841.0	843.2
122.5°	883.0	884.9	887.0	888.9	891.0	892.5	893.5	894.5	895.5	896.6	898.1
125°	960.4	962.6	964.8	966.9	969.1	970.8	971.8	972.9	974.0	975.1	975.7
127.5°	1035.5	1037.7	1039.9	1042.0	1044.2	1045.9	1047.3	1048.6	1049.9	1051.2	1052.0
130°	1082.3	1084.5	1086.7	1088.8	1091.0	1092.7	1093.7	1094.8	1095.9	1097.0	1098.0
132.5°	1127.2	1129.4	1131.6	1133.7	1135.9	1137.4	1138.2	1139.1	1140.0	1140.8	1141.9
135°	1195.7	1197.3	1199.0	1200.6	1202.2	1203.5	1204.6	1205.7	1206.8	1207.9	1208.7
137.5°	1254.2	1256.3	1258.3	1260.4	1262.4	1263.8	1264.4	1264.9	1265.6	1266.2	1267.5
140°	1293.2	1294.9	1296.5	1298.1	1299.8	1300.9	1301.7	1302.5	1303.3	1304.2	1305.3
142.5°	1329.3	1330.9	1332.5	1334.2	1335.8	1337.0	1337.8	1338.6	1339.5	1340.3	1341.1
145°	1379.7	1381.6	1383.6	1385.4	1387.3	1388.5	1389.1	1389.6	1390.2	1390.7	1391.2
147.5°	1427.3	1428.6	1429.8	1431.0	1432.2	1433.1	1433.7	1434.3	1434.8	1435.3	1435.9
150°	1456.5	1457.3	1458.2	1459.0	1459.8	1460.4	1461.0	1461.6	1462.1	1462.6	1463.1
152.5°	1482.9	1483.3	1483.6	1484.0	1484.4	1484.7	1485.1	1485.4	1485.7	1486.0	1487.0
155°	1519.9	1519.4	1518.8	1518.3	1517.8	1517.6	1517.9	1518.2	1518.4	1518.7	1520.0
157.5°	1548.7	1548.7	1548.6	1548.5	1548.5	1548.3	1548.0	1547.8	1547.5	1547.2	1548.8
160°	1566.3	1565.9	1565.7	1565.5	1565.1	1564.9	1564.6	1564.3	1564.1	1563.8	1565.5
162.5°	1582.8	1582.1	1581.4	1580.7	1580.0	1579.5	1579.2	1579.0	1578.7	1578.4	1580.3
165°	1602.8	1602.0	1601.2	1600.4	1599.5	1599.0	1598.7	1598.5	1598.2	1597.9	1600.1
167.5°	1618.4	1617.3	1616.2	1615.2	1614.0	1613.6	1613.6	1613.6	1613.6	1613.6	1615.7
170°	1627.2	1626.1	1625.0	1623.9	1622.9	1622.3	1622.3	1622.3	1622.3	1622.3	1624.5
172.5°	1633.0	1631.7	1630.4	1629.1	1627.8	1627.3	1627.5	1627.7	1627.9	1628.2	1630.4
175°	1640.5	1639.2	1637.9	1636.6	1635.2	1634.6	1634.9	1635.2	1635.4	1635.7	1637.6
177.5°	1642.5	1641.4	1640.4	1639.3	1638.2	1637.8	1638.0	1638.2	1638.4	1638.7	1640.4
180°	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	440.1	440.8	441.5	441.8	441.7	441.6	441.6	441.5
5°	437.8	438.6	439.5	439.9	439.7	439.5	439.3	439.1
7.5°	433.2	433.9	434.6	435.0	434.9	434.8	434.7	434.6
10°	428.9	429.7	430.4	430.7	430.6	430.4	430.2	430.1
12.5°	424.2	424.8	425.3	425.6	425.5	425.3	425.3	425.2
15°	415.8	416.5	417.2	417.3	416.7	416.2	415.7	415.2
17.5°	405.1	405.6	406.1	406.3	406.0	405.9	405.7	405.5
20°	397.3	397.6	397.9	398.0	397.7	397.5	397.2	397.0
22.5°	388.9	389.2	389.5	389.5	389.1	388.8	388.5	388.2
25°	375.1	375.2	375.3	375.2	375.0	374.7	374.5	374.2
27.5°	360.4	360.5	360.5	360.4	360.1	359.8	359.5	359.1
30°	350.3	350.3	350.3	349.9	349.4	348.8	348.2	347.6
32.5°	339.6	339.1	338.7	338.3	337.9	337.6	337.3	337.0
35°	322.3	321.8	321.2	320.8	320.4	319.9	319.5	319.1
37.5°	304.4	303.8	303.1	302.7	302.5	302.1	301.9	301.7
40°	292.7	292.0	291.3	290.8	290.5	290.2	289.8	289.5
42.5°	280.5	279.8	279.2	278.7	278.3	278.0	277.7	277.3
45°	262.4	261.4	260.3	259.7	259.2	258.8	258.4	258.0
47.5°	243.3	242.3	241.2	240.6	240.2	239.9	239.5	239.1
50°	230.6	229.7	228.8	228.0	227.6	227.1	226.6	226.0
52.5°	217.8	217.0	216.2	215.6	215.1	214.6	214.1	213.6
55°	198.4	197.4	196.5	195.8	195.4	194.9	194.5	194.1
57.5°	179.2	178.3	177.5	176.8	176.3	175.9	175.4	174.9
60°	165.7	164.9	164.1	163.5	163.1	162.7	162.2	161.8
62.5°	152.5	151.8	151.1	150.5	150.3	149.9	149.7	149.4
65°	133.1	132.5	131.8	131.3	131.1	130.8	130.5	130.3
67.5°	113.8	113.2	112.7	112.2	111.9	111.5	111.1	110.8
70°	101.4	100.8	100.2	99.7	99.3	98.9	98.4	98.0
72.5°	88.8	88.2	87.7	87.3	87.2	86.9	86.7	86.4
75°	70.6	70.1	69.7	69.4	69.1	68.9	68.6	68.4
77.5°	53.6	53.3	53.0	52.9	52.9	52.9	52.9	52.9
80°	42.7	42.6	42.6	42.6	42.6	42.6	42.6	42.6
82.5°	32.9	32.8	32.6	32.4	32.4	32.4	32.3	32.2
85°	18.7	18.5	18.3	18.3	18.3	18.3	18.3	18.3
87.5°	12.8	13.0	13.1	13.3	13.4	13.5	13.6	13.7
90°	31.4	32.5	33.6	34.4	35.0	35.5	36.0	36.5
92.5°	34.7	36.4	38.2	39.1	39.5	39.8	40.1	40.4
95°	41.6	43.5	45.3	46.3	46.3	46.3	46.3	46.3
97.5°	43.6	45.7	47.9	49.2	49.4	49.7	50.0	50.2
100°	44.5	46.7	48.9	50.1	50.4	50.6	51.0	51.2
102.5°	66.8	60.1	53.3	50.2	50.7	51.2	51.7	52.2
105°	171.0	123.1	75.2	51.4	52.0	52.6	53.1	53.6
107.5°	418.9	383.8	348.6	313.0	276.9	240.7	204.6	168.4
110°	531.8	522.9	514.0	490.1	451.3	412.6	373.9	335.2





TEST NUMBER: P332118-930

CATALOG NUMBER: S123DIW-S340D1535U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	611.5	611.6	611.8	607.8	599.6	591.4	583.3	575.0
115°	705.1	707.8	710.5	712.3	713.5	714.5	715.6	716.7
117.5°	789.8	791.9	794.1	795.3	795.5	795.7	796.0	796.1
120°	845.4	847.5	849.7	850.8	850.8	850.8	850.8	850.8
122.5°	899.6	901.2	902.7	903.5	903.8	903.9	904.2	904.4
125°	976.2	976.7	977.2	977.8	978.4	978.8	979.4	980.0
127.5°	1052.9	1053.8	1054.6	1054.8	1054.3	1053.7	1053.1	1052.6
130°	1099.1	1100.2	1101.3	1101.6	1101.1	1100.5	1099.9	1099.4
132.5°	1143.0	1144.1	1145.2	1145.3	1144.6	1143.9	1143.0	1142.3
135°	1209.5	1210.3	1211.1	1211.1	1210.3	1209.5	1208.7	1207.9
137.5°	1268.8	1270.1	1271.4	1271.7	1271.2	1270.6	1270.1	1269.6
140°	1306.4	1307.4	1308.5	1308.8	1308.2	1307.7	1307.2	1306.6
142.5°	1342.0	1342.9	1343.7	1343.8	1343.0	1342.2	1341.5	1340.8
145°	1391.8	1392.4	1392.9	1393.2	1393.2	1393.2	1393.2	1393.2
147.5°	1436.4	1437.0	1437.5	1437.1	1435.9	1434.7	1433.4	1432.2
150°	1463.7	1464.3	1464.8	1464.7	1463.9	1463.1	1462.2	1461.4
152.5°	1488.0	1489.0	1490.0	1489.8	1488.6	1487.3	1486.0	1484.8
155°	1521.4	1522.7	1524.1	1524.0	1522.3	1520.7	1519.1	1517.5
157.5°	1550.5	1552.1	1553.7	1553.5	1551.4	1549.2	1547.1	1545.0
160°	1567.1	1568.6	1570.3	1570.2	1568.2	1566.4	1564.5	1562.6
162.5°	1582.1	1584.0	1585.8	1585.8	1584.2	1582.5	1580.9	1579.2
165°	1602.2	1604.4	1606.6	1606.7	1604.8	1603.0	1601.0	1599.1
167.5°	1617.9	1620.0	1622.2	1622.2	1620.0	1617.9	1615.7	1613.6
170°	1626.6	1628.8	1631.0	1631.0	1628.8	1626.6	1624.5	1622.3
172.5°	1632.5	1634.7	1636.8	1636.7	1634.3	1632.0	1629.5	1627.2
175°	1639.5	1641.4	1643.3	1643.2	1641.0	1638.8	1636.6	1634.5
177.5°	1642.1	1643.8	1645.6	1645.4	1643.2	1641.0	1638.8	1636.7
180°	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5

(END OF REPORT)