

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: P332146-927

Luminaire Tested: **S123DIW-S560D1535U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332146-927  
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-S560D1535U927-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6737.6 lumens  
Efficiency: N/A  
Efficacy: 111.2 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

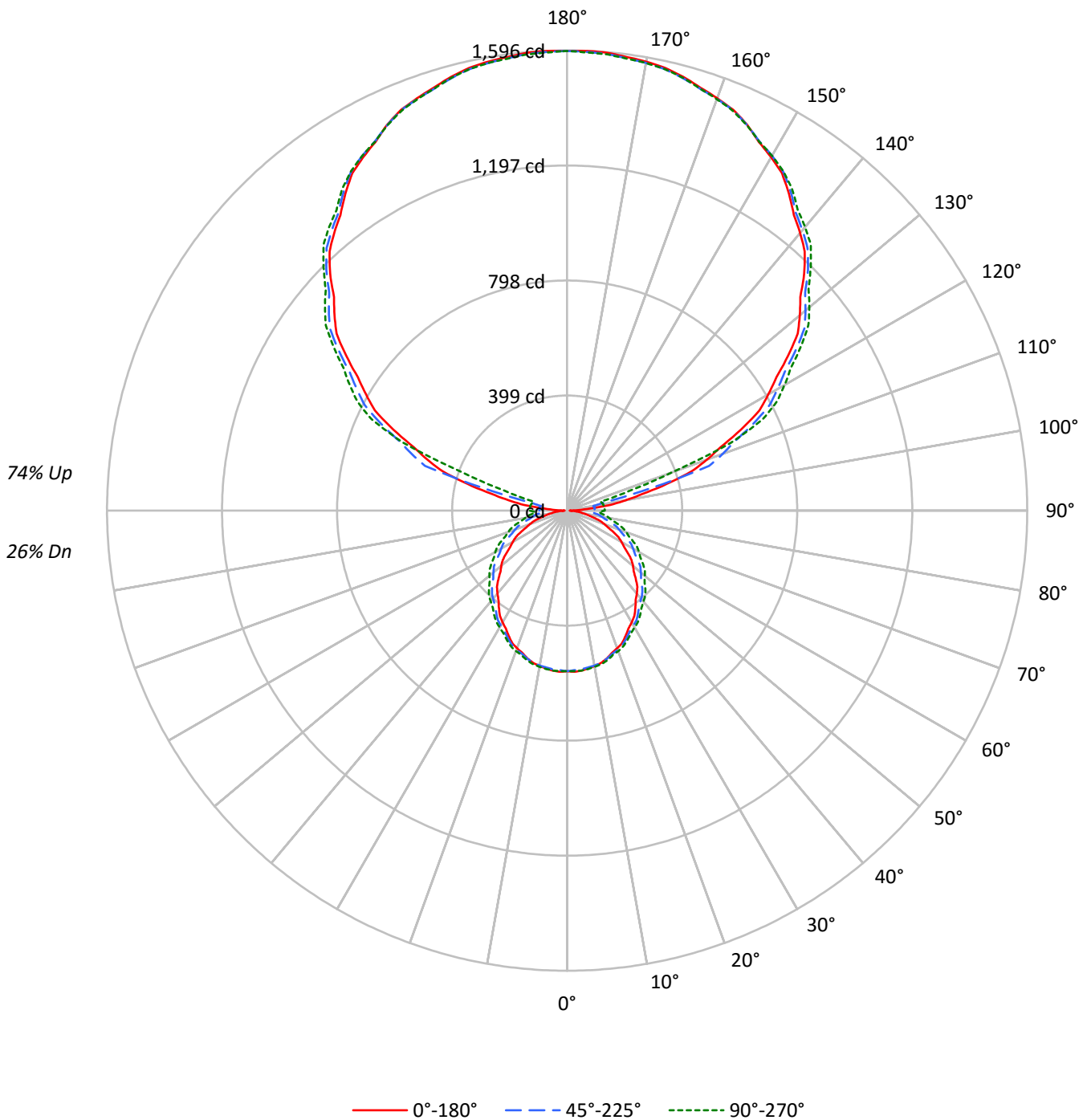
Input Watts (W): 60.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332146-927

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### Luminous Intensity Polar Plot





TEST NUMBER: P332146-927

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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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	92	87	83	80	82	78	75	72	60	58	56	44	42	41	29	28	27	20
2	83	76	70	65	74	68	63	58	52	49	46	38	36	34	25	24	23	17
3	76	66	59	54	67	59	53	48	46	42	38	34	31	28	22	20	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	46	40	35	36	31	28	26	23	21	17	16	14	10
6	58	46	38	33	52	42	35	30	32	27	24	24	20	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	14	12	11	8
8	50	38	30	25	44	34	27	23	26	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	19	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	8	6

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

	0°	45°	90°
0°	5997	5997	5997
5°	6015	5845	5849
10°	5961	5711	5682
15°	5884	5558	5501
20°	5774	5383	5300
25°	5639	5182	5090
30°	5500	5002	4877
35°	5344	4810	4707
40°	5195	4636	4524
45°	5031	4469	4378
50°	4868	4304	4219
55°	4689	4134	4074
60°	4513	3964	3925
65°	4335	3780	3750
70°	4066	3576	3568
75°	3724	3338	3386
80°	3326	3109	3176
85°	2963	2948	3053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.8	0.8
10°-20°	150.5	2.2
20°-30°	225.2	3.3
30°-40°	268.9	4.0
40°-50°	281.3	4.2
50°-60°	264.0	3.9
60°-70°	220.5	3.3
70°-80°	157.8	2.3
80°-90°	98.5	1.5
90°-100°	117.0	1.7
100°-110°	319.6	4.7
110°-120°	692.4	10.3
120°-130°	861.4	12.8
130°-140°	910.1	13.5
140°-150°	845.7	12.6
150°-160°	680.9	10.1
160°-170°	439.5	6.5
170°-180°	151.5	2.2
0°-30°	428.5	6.4
0°-40°	697.4	10.4
0°-60°	1242.7	18.4
0°-90°	1719.5	25.5
90°-120°	1129.0	16.8
90°-150°	3746.3	55.6
90°-180°	5018.0	74.5
0°-180°	6737.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	558	556	553	557	557	53
15°	531	533	532	538	538	149
25°	479	485	487	495	495	221
35°	413	422	430	439	442	258
45°	337	352	367	378	384	260
55°	257	277	299	315	320	230
65°	178	202	228	246	252	176
75°	96	125	155	175	183	103
85°	30	60	92	112	119	31
90°	9	51	97	121	131	9
95°	79	58	97	123	130	94
105°	358	379	305	123	120	379
115°	665	680	712	737	748	656
125°	935	945	967	982	989	835
135°	1163	1170	1181	1195	1195	895
145°	1341	1349	1351	1358	1361	839
155°	1477	1475	1476	1481	1474	680
165°	1557	1554	1553	1561	1554	440
175°	1594	1588	1589	1597	1588	152
180°	1594	1594	1594	1594	1594	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	559.5	559.2	558.9	558.5	558.2	557.6	556.7	555.9	555.0	554.1	555.0
5°	557.7	557.4	557.1	556.9	556.6	556.0	555.2	554.4	553.7	552.8	553.9
7.5°	552.2	552.2	552.3	552.4	552.5	552.1	551.3	550.5	549.7	548.9	550.2
10°	547.4	547.6	547.9	548.2	548.4	548.3	547.6	546.9	546.2	545.6	546.9
12.5°	541.5	541.9	542.3	542.6	543.0	543.0	542.6	542.1	541.6	541.1	542.4
15°	531.0	531.4	531.8	532.2	532.6	532.7	532.6	532.4	532.3	532.2	533.5
17.5°	517.6	518.4	519.3	520.1	520.9	521.3	521.2	521.1	521.1	521.0	522.2
20°	507.9	508.7	509.5	510.3	511.1	511.7	512.0	512.2	512.5	512.8	514.0
22.5°	497.7	498.5	499.3	500.2	501.0	501.5	501.9	502.3	502.7	503.0	504.6
25°	479.4	480.8	482.1	483.5	484.8	485.7	486.1	486.5	486.9	487.3	489.0
27.5°	461.0	462.5	464.1	465.6	467.1	468.3	469.1	470.0	470.9	471.7	473.2
30°	447.8	449.6	451.3	453.1	454.9	456.3	457.3	458.4	459.5	460.6	462.2
32.5°	433.2	435.2	437.2	439.2	441.2	442.8	444.3	445.6	447.0	448.5	450.2
35°	412.6	414.8	416.9	419.1	421.3	423.3	425.0	426.7	428.5	430.2	432.3
37.5°	390.8	393.2	395.6	398.1	400.5	402.8	405.0	407.1	409.2	411.5	413.8
40°	376.2	378.7	381.1	383.5	386.0	388.5	391.2	393.9	396.6	399.3	401.6
42.5°	360.2	363.2	366.1	369.1	372.1	374.9	377.8	380.6	383.4	386.2	388.7
45°	337.4	340.6	343.9	347.1	350.3	353.6	357.0	360.4	363.8	367.1	369.7
47.5°	313.5	317.2	320.8	324.5	328.1	331.9	335.8	339.6	343.5	347.4	350.2
50°	297.9	301.7	305.5	309.3	313.1	317.0	321.2	325.4	329.5	333.7	336.8
52.5°	281.5	285.4	289.5	293.4	297.4	301.7	306.3	310.9	315.5	320.2	323.4
55°	257.3	261.7	266.2	270.6	275.1	279.7	284.6	289.5	294.3	299.1	302.8
57.5°	233.8	238.4	243.0	247.6	252.3	257.3	262.6	267.9	273.2	278.5	282.2
60°	217.2	222.1	227.0	231.8	236.6	241.9	247.4	252.9	258.4	264.0	267.8
62.5°	201.7	206.7	211.7	216.6	221.6	227.0	232.8	238.7	244.5	250.4	254.1
65°	177.8	183.1	188.3	193.6	198.8	204.5	210.4	216.3	222.2	228.1	232.2
67.5°	153.5	159.1	164.7	170.2	175.9	181.6	187.7	193.8	199.8	205.8	210.2
70°	136.6	142.4	148.1	153.9	159.7	165.9	172.3	178.8	185.3	191.8	196.1
72.5°	121.0	126.8	132.6	138.4	144.2	150.4	157.1	163.8	170.5	177.2	181.6
75°	96.5	102.8	109.2	115.5	121.8	128.4	135.1	141.9	148.6	155.3	159.8
77.5°	75.1	81.5	87.9	94.3	100.7	107.3	114.1	120.9	127.7	134.5	139.2
80°	60.0	66.7	73.3	79.9	86.5	93.3	100.3	107.3	114.4	121.4	126.0
82.5°	47.0	53.7	60.4	67.1	73.8	80.7	87.9	95.0	102.1	109.2	113.8
85°	29.7	36.4	43.3	50.0	56.7	63.6	70.8	78.0	85.1	92.2	96.8
87.5°	16.4	23.6	30.9	38.1	45.3	52.8	60.3	67.9	75.4	83.0	87.8
90°	9.1	18.3	27.6	36.8	46.0	55.8	66.1	76.4	86.7	97.0	102.7
92.5°	29.5	34.6	39.8	45.1	50.3	57.6	66.9	76.3	85.6	95.0	101.2
95°	78.9	73.4	67.9	62.3	56.8	58.8	68.3	77.8	87.3	96.8	102.8
97.5°	151.1	151.1	151.0	150.8	150.8	144.4	131.7	119.1	106.5	93.9	100.0
100°	205.6	215.2	224.7	234.3	243.9	231.3	196.5	161.6	126.7	91.9	97.9
102.5°	267.7	275.4	283.0	290.7	298.3	282.8	244.1	205.3	166.6	127.8	125.1
105°	357.7	363.9	370.0	376.2	382.3	376.4	358.5	340.6	322.7	304.9	262.1
107.5°	452.3	457.3	462.4	467.5	472.5	479.7	488.9	498.2	507.4	516.7	486.1
110°	515.2	519.8	524.3	528.9	533.4	539.8	548.1	556.3	564.7	573.0	567.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	575.9	579.8	583.7	587.6	591.4	597.5	605.5	613.6	621.6	629.7	633.3
115°	665.0	668.3	671.5	674.6	677.9	683.0	690.3	697.5	704.7	711.9	717.8
117.5°	751.9	754.8	757.7	760.7	763.7	768.0	773.8	779.5	785.3	791.1	796.4
120°	805.4	808.4	811.4	814.5	817.5	821.7	827.0	832.2	837.4	842.6	847.9
122.5°	860.3	862.6	864.9	867.2	869.5	873.3	878.5	883.8	889.0	894.2	898.7
125°	935.0	937.2	939.3	941.4	943.5	947.0	952.0	957.0	961.9	966.9	970.2
127.5°	1008.0	1010.0	1011.9	1013.9	1015.9	1019.1	1023.7	1028.1	1032.6	1037.1	1040.6
130°	1053.4	1055.4	1057.4	1059.4	1061.4	1064.2	1067.9	1071.7	1075.5	1079.2	1082.8
132.5°	1096.5	1098.7	1100.7	1102.8	1104.9	1107.4	1110.4	1113.4	1116.4	1119.4	1122.9
135°	1163.0	1164.4	1165.9	1167.4	1168.8	1170.8	1173.3	1175.8	1178.4	1180.9	1184.2
137.5°	1219.7	1221.6	1223.5	1225.4	1227.3	1229.0	1230.3	1231.8	1233.2	1234.6	1238.0
140°	1257.1	1258.7	1260.3	1261.9	1263.5	1264.9	1266.1	1267.3	1268.4	1269.6	1272.7
142.5°	1292.2	1293.7	1295.1	1296.6	1298.1	1299.3	1300.1	1301.0	1301.9	1302.7	1305.4
145°	1341.2	1342.9	1344.7	1346.4	1348.1	1349.2	1349.7	1350.2	1350.8	1351.3	1352.9
147.5°	1386.8	1388.1	1389.3	1390.4	1391.6	1392.5	1393.1	1393.6	1394.1	1394.6	1395.5
150°	1415.2	1416.0	1416.8	1417.6	1418.4	1419.0	1419.6	1420.1	1420.6	1421.2	1421.7
152.5°	1440.8	1441.2	1441.5	1441.9	1442.3	1442.6	1443.0	1443.3	1443.6	1443.9	1444.9
155°	1476.8	1476.3	1475.8	1475.3	1474.7	1474.6	1474.9	1475.1	1475.4	1475.6	1476.9
157.5°	1504.8	1504.8	1504.7	1504.6	1504.6	1504.4	1504.1	1503.9	1503.6	1503.3	1504.9
160°	1521.9	1521.5	1521.3	1521.1	1520.8	1520.5	1520.3	1520.0	1519.7	1519.5	1521.1
162.5°	1537.9	1537.2	1536.6	1535.9	1535.2	1534.7	1534.5	1534.2	1533.9	1533.7	1535.5
165°	1557.4	1556.6	1555.8	1555.0	1554.2	1553.7	1553.4	1553.2	1552.9	1552.6	1554.7
167.5°	1572.5	1571.5	1570.4	1569.4	1568.3	1567.8	1567.8	1567.8	1567.8	1567.8	1569.9
170°	1581.0	1580.0	1578.9	1577.9	1576.8	1576.3	1576.3	1576.3	1576.3	1576.3	1578.4
172.5°	1586.7	1585.5	1584.2	1582.9	1581.7	1581.1	1581.4	1581.6	1581.8	1582.0	1584.1
175°	1594.0	1592.8	1591.4	1590.1	1588.8	1588.2	1588.6	1588.8	1589.0	1589.4	1591.2
177.5°	1595.9	1594.9	1593.9	1592.8	1591.7	1591.3	1591.6	1591.7	1592.0	1592.2	1593.9
180°	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	555.9	556.7	557.6	558.0	557.9	557.8	557.7	557.5
5°	555.0	556.0	557.1	557.6	557.5	557.3	557.2	557.1
7.5°	551.6	552.9	554.4	554.9	554.8	554.6	554.4	554.3
10°	548.3	549.6	551.0	551.4	551.2	551.0	550.6	550.4
12.5°	543.7	544.9	546.1	546.6	546.4	546.1	545.8	545.6
15°	534.9	536.2	537.6	538.2	538.1	537.9	537.8	537.7
17.5°	523.5	524.7	525.9	526.4	526.2	526.0	525.9	525.6
20°	515.2	516.4	517.6	518.3	518.4	518.6	518.7	518.8
22.5°	506.1	507.7	509.2	509.9	509.8	509.8	509.7	509.6
25°	490.8	492.6	494.3	495.2	495.2	495.2	495.2	495.2
27.5°	474.8	476.3	477.8	478.6	478.7	478.8	479.0	479.0
30°	463.8	465.4	467.1	467.9	467.9	467.9	467.9	467.9
32.5°	451.9	453.6	455.3	456.4	456.7	457.0	457.3	457.6
35°	434.3	436.3	438.3	439.6	440.1	440.7	441.2	441.8
37.5°	416.0	418.3	420.6	422.0	422.4	422.8	423.3	423.7
40°	403.9	406.2	408.4	409.9	410.4	411.0	411.5	412.0
42.5°	391.2	393.7	396.2	397.8	398.6	399.3	400.1	400.8
45°	372.2	374.8	377.4	379.2	380.2	381.4	382.5	383.5
47.5°	353.2	356.0	358.9	360.8	361.6	362.4	363.3	364.1
50°	339.9	343.1	346.2	348.2	349.1	350.1	351.0	352.0
52.5°	326.6	329.8	333.0	335.2	336.4	337.5	338.7	339.8
55°	306.4	310.1	313.7	316.1	317.2	318.2	319.3	320.4
57.5°	285.9	289.5	293.2	295.6	296.9	298.2	299.4	300.7
60°	271.6	275.3	279.1	281.7	283.2	284.6	286.1	287.6
62.5°	257.9	261.7	265.5	268.1	269.4	270.8	272.2	273.5
65°	236.2	240.3	244.4	247.1	248.4	249.8	251.1	252.5
67.5°	214.7	219.1	223.6	226.3	227.4	228.5	229.7	230.8
70°	200.4	204.7	209.1	211.8	213.2	214.5	215.9	217.2
72.5°	186.0	190.4	194.9	197.8	199.2	200.5	201.8	203.2
75°	164.2	168.7	173.2	176.2	177.8	179.4	181.0	182.7
77.5°	143.9	148.5	153.2	156.2	157.5	158.7	159.9	161.2
80°	130.6	135.1	139.7	142.7	144.0	145.4	146.7	148.1
82.5°	118.4	122.9	127.5	130.6	131.9	133.2	134.6	135.9
85°	101.4	106.0	110.6	113.5	114.9	116.2	117.6	118.9
87.5°	92.6	97.4	102.2	105.3	106.8	108.2	109.6	111.1
90°	108.3	113.9	119.5	123.3	125.2	127.1	128.9	130.8
92.5°	107.3	113.5	119.6	123.5	125.1	126.6	128.2	129.8
95°	108.8	114.9	120.9	124.5	125.9	127.2	128.7	130.0
97.5°	106.1	112.3	118.4	122.2	123.8	125.4	127.1	128.7
100°	103.9	110.0	116.0	119.8	121.4	122.9	124.6	126.2
102.5°	122.4	119.6	116.9	116.5	118.3	120.1	121.9	123.7
105°	219.3	176.4	133.6	113.1	114.9	116.6	118.4	120.1
107.5°	455.6	425.0	394.4	362.2	328.3	294.4	260.5	226.6
110°	562.6	557.5	552.2	531.4	494.8	458.3	421.7	385.2





TEST NUMBER: P332146-927

CATALOG NUMBER: S123DIW-S560D1535U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	636.8	640.4	644.0	642.4	635.6	628.8	622.1	615.3
115°	723.7	729.5	735.5	739.4	741.6	743.7	745.8	748.0
117.5°	801.7	807.0	812.3	815.6	816.9	818.2	819.4	820.7
120°	853.1	858.3	863.5	866.6	867.5	868.5	869.4	870.4
122.5°	903.2	907.6	912.1	914.9	916.1	917.2	918.4	919.6
125°	973.6	976.9	980.3	982.7	984.2	985.6	987.1	988.6
127.5°	1044.2	1047.7	1051.1	1053.1	1053.5	1053.9	1054.3	1054.7
130°	1086.5	1090.0	1093.7	1095.7	1095.9	1096.2	1096.5	1096.8
132.5°	1126.4	1130.0	1133.5	1135.3	1135.5	1135.7	1135.8	1136.0
135°	1187.3	1190.6	1193.8	1195.3	1195.2	1195.1	1195.0	1194.8
137.5°	1241.4	1244.8	1248.2	1250.0	1250.1	1250.3	1250.4	1250.5
140°	1275.8	1278.8	1281.9	1283.6	1283.7	1283.8	1284.0	1284.1
142.5°	1308.1	1310.7	1313.4	1314.6	1314.5	1314.5	1314.5	1314.4
145°	1354.5	1356.1	1357.7	1358.8	1359.3	1359.9	1360.4	1361.0
147.5°	1396.3	1397.2	1398.0	1398.1	1397.3	1396.6	1395.9	1395.2
150°	1422.2	1422.8	1423.2	1423.2	1422.8	1422.2	1421.7	1421.2
152.5°	1445.8	1446.8	1447.7	1447.6	1446.4	1445.3	1444.1	1443.0
155°	1478.3	1479.6	1480.9	1480.7	1479.2	1477.6	1476.0	1474.5
157.5°	1506.5	1508.1	1509.7	1509.4	1507.4	1505.3	1503.2	1501.2
160°	1522.7	1524.2	1525.7	1525.7	1523.8	1521.9	1520.1	1518.3
162.5°	1537.2	1539.1	1540.8	1540.9	1539.3	1537.6	1536.0	1534.4
165°	1556.8	1558.9	1561.1	1561.2	1559.3	1557.5	1555.6	1553.8
167.5°	1572.0	1574.1	1576.2	1576.2	1574.1	1572.0	1569.9	1567.8
170°	1580.5	1582.6	1584.8	1584.8	1582.6	1580.5	1578.4	1576.3
172.5°	1586.2	1588.3	1590.4	1590.3	1588.0	1585.7	1583.3	1581.0
175°	1593.0	1594.8	1596.7	1596.6	1594.4	1592.4	1590.2	1588.2
177.5°	1595.5	1597.2	1598.9	1598.7	1596.6	1594.5	1592.4	1590.3
180°	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0

(END OF REPORT)