

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: P332428-930

Luminaire Tested: **S123RDIW-S560D1535U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332428-930  
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: S123RDIW-S560D1535U930-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6747.2 lumens  
Efficiency: N/A  
Efficacy: 111.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

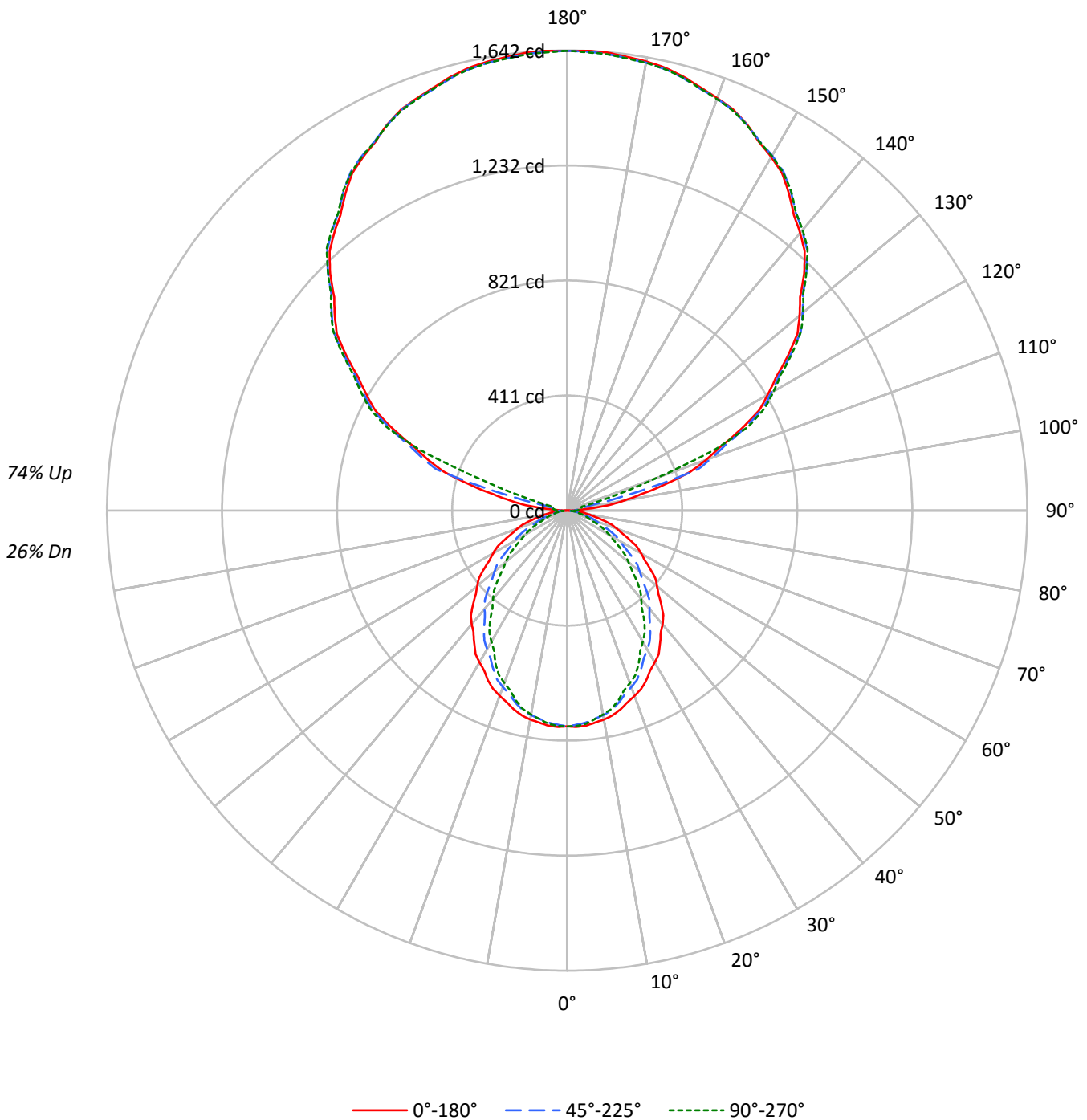
Input Watts (W): 60.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	93	88	85	81	82	79	76	73	61	59	57	45	44	43	30	30	29	22
2	84	77	72	67	75	69	64	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	56	68	61	55	50	48	44	40	35	33	31	24	22	21	16
4	70	60	53	47	63	54	48	43	42	38	34	31	29	26	21	20	18	14
5	65	54	46	40	57	48	42	37	38	33	30	28	25	23	19	17	16	12
6	59	48	40	35	53	43	36	32	34	29	26	25	22	20	18	16	14	11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	13	10
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	15	13	11	9
9	47	36	28	24	42	32	26	22	26	21	18	19	16	14	14	12	10	8
10	44	32	26	21	39	29	23	19	23	19	16	18	15	13	13	11	9	7

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

	0°	45°	90°
0°	8289	8289	8289
5°	8321	8206	8253
10°	8273	8103	8075
15°	8184	7913	7830
20°	8062	7676	7497
25°	7936	7410	7172
30°	7771	7102	6714
35°	7599	6795	6294
40°	7442	6433	5774
45°	7234	6075	5305
50°	7006	5668	4779
55°	6775	5204	4290
60°	6562	4706	3750
65°	6283	4167	3212
70°	5936	3500	2593
75°	5427	2753	2441
80°	4841	2442	2244
85°	4088	2149	2001



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.3	1.1
10°-20°	201.2	3.0
20°-30°	289.7	4.3
30°-40°	326.3	4.8
40°-50°	312.2	4.6
50°-60°	255.7	3.8
60°-70°	172.5	2.6
70°-80°	86.8	1.3
80°-90°	27.5	0.4
90°-100°	59.6	0.9
100°-110°	284.3	4.2
110°-120°	682.8	10.1
120°-130°	869.5	12.9
130°-140°	929.1	13.8
140°-150°	868.8	12.9
150°-160°	700.8	10.4
160°-170°	452.3	6.7
170°-180°	155.9	2.3
0°-30°	563.2	8.3
0°-40°	889.5	13.2
0°-60°	1457.4	21.6
0°-90°	1744.2	25.9
90°-120°	1026.8	15.2
90°-150°	3694.1	54.7
90°-180°	5003.0	74.1
0°-180°	6747.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	770	770	770	770	770	
5°	770	767	760	765	764	73
15°	734	727	710	707	703	207
25°	668	652	624	611	604	307
35°	578	555	517	491	479	362
45°	475	446	399	365	348	367
55°	361	329	277	242	229	324
65°	247	212	164	134	126	244
75°	130	100	66	60	59	139
85°	33	20	17	16	16	37
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°	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1
2.5°	772.6	772.1	771.7	771.2	770.8	769.9	768.6	767.2	765.9	764.6	765.8
5°	770.1	769.4	768.7	768.0	767.3	766.1	764.4	762.8	761.1	759.5	760.7
7.5°	763.0	762.2	761.4	760.7	759.9	758.5	756.4	754.2	752.0	749.8	750.5
10°	756.9	755.9	755.0	754.0	753.1	751.3	748.9	746.3	743.8	741.4	741.4
12.5°	748.4	747.4	746.2	745.2	744.1	742.1	739.0	736.0	732.9	729.9	729.8
15°	734.4	733.0	731.4	729.9	728.4	725.6	721.8	717.9	714.0	710.1	709.4
17.5°	716.8	715.1	713.3	711.5	709.7	706.4	701.4	696.5	691.5	686.6	685.2
20°	703.8	701.6	699.4	697.2	695.0	691.2	685.9	680.7	675.4	670.1	668.3
22.5°	689.3	686.8	684.3	681.7	679.1	675.1	669.4	663.8	658.3	652.6	650.4
25°	668.2	664.8	661.3	657.9	654.4	649.5	643.0	636.7	630.3	623.9	621.0
27.5°	642.6	638.8	635.0	631.1	627.3	621.8	614.7	607.6	600.5	593.5	589.4
30°	625.2	621.0	616.9	612.7	608.5	602.5	594.8	587.0	579.2	571.4	566.7
32.5°	607.6	603.0	598.3	593.5	588.8	582.4	574.1	565.9	557.7	549.4	544.3
35°	578.3	573.3	568.3	563.4	558.3	551.5	542.9	534.3	525.7	517.1	511.1
37.5°	548.6	543.1	537.5	531.9	526.4	519.0	509.8	500.7	491.5	482.2	475.5
40°	529.6	523.5	517.4	511.3	505.2	497.2	487.4	477.5	467.7	457.8	450.5
42.5°	508.1	502.0	495.9	489.8	483.7	475.6	465.4	455.2	445.0	434.8	426.9
45°	475.2	469.0	462.8	456.6	450.3	441.8	431.1	420.4	409.8	399.1	391.2
47.5°	442.4	435.5	428.7	421.8	415.0	406.3	395.5	384.8	374.1	363.5	354.9
50°	418.4	411.9	405.4	398.8	392.3	383.4	372.2	361.0	349.8	338.5	329.9
52.5°	397.0	389.9	382.8	375.7	368.7	359.5	348.4	337.3	326.1	315.0	306.1
55°	361.0	354.2	347.4	340.6	333.8	324.5	312.7	300.9	289.1	277.3	269.2
57.5°	327.8	320.3	312.9	305.5	298.1	288.5	276.6	264.8	252.9	241.1	233.5
60°	304.8	297.2	289.5	281.8	274.3	264.6	253.2	241.7	230.1	218.6	211.1
62.5°	281.8	274.2	266.5	258.9	251.3	241.7	230.2	218.7	207.1	195.6	188.6
65°	246.7	239.0	231.5	223.8	216.1	206.9	196.1	185.3	174.5	163.6	156.9
67.5°	211.6	203.9	196.2	188.4	180.8	171.7	161.3	150.9	140.6	130.1	125.1
70°	188.6	181.1	173.7	166.2	158.7	150.0	140.3	130.6	120.9	111.2	106.3
72.5°	165.6	158.2	150.8	143.5	136.1	128.0	119.2	110.3	101.5	92.7	88.7
75°	130.5	123.8	117.2	110.6	103.9	96.7	89.1	81.4	73.9	66.2	64.8
77.5°	98.6	92.5	86.5	80.5	74.4	69.0	64.1	59.2	54.2	49.3	48.6
80°	78.1	72.4	66.7	61.0	55.3	51.0	48.1	45.2	42.2	39.4	38.9
82.5°	58.6	53.6	48.8	43.9	38.9	35.8	34.4	33.1	31.7	30.3	29.9
85°	33.1	30.1	27.0	24.0	20.9	19.2	18.8	18.3	17.9	17.4	17.2
87.5°	12.2	11.6	10.8	10.2	9.5	9.5	10.3	10.9	11.7	12.3	12.5
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°	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1
2.5°	767.0	768.3	769.5	770.0	769.7	769.5	769.3	769.1
5°	761.9	763.2	764.4	764.9	764.7	764.3	764.1	763.8
7.5°	751.2	751.9	752.6	752.7	752.2	751.8	751.3	750.8
10°	741.6	741.8	741.8	741.6	740.9	740.2	739.6	738.8
12.5°	729.7	729.6	729.5	729.0	728.2	727.4	726.7	725.9
15°	708.7	708.0	707.4	706.5	705.5	704.6	703.6	702.6
17.5°	683.7	682.2	680.7	679.3	677.8	676.4	674.9	673.5
20°	666.5	664.7	662.9	661.2	659.5	657.9	656.2	654.5
22.5°	648.2	645.9	643.7	641.7	640.2	638.6	637.1	635.5
25°	618.1	615.1	612.3	610.0	608.5	607.0	605.4	603.9
27.5°	585.3	581.3	577.2	574.1	571.7	569.4	567.0	564.7
30°	562.0	557.3	552.6	549.1	546.9	544.7	542.4	540.2
32.5°	539.2	533.9	528.8	525.1	522.8	520.4	518.0	515.8
35°	505.2	499.2	493.3	489.0	486.5	484.0	481.5	479.0
37.5°	468.7	461.9	455.2	450.3	447.2	444.1	441.0	437.9
40°	443.4	436.1	428.9	423.7	420.5	417.4	414.2	410.9
42.5°	419.1	411.2	403.2	397.9	395.0	392.2	389.3	386.5
45°	383.3	375.4	367.5	361.8	358.5	355.1	351.8	348.5
47.5°	346.3	337.7	329.1	323.3	320.3	317.3	314.4	311.4
50°	321.3	312.7	304.1	298.2	295.0	291.8	288.6	285.4
52.5°	297.2	288.2	279.2	273.4	270.5	267.7	264.8	262.0
55°	261.2	253.2	245.1	239.7	236.9	234.2	231.4	228.6
57.5°	225.8	218.3	210.7	205.7	203.3	201.0	198.6	196.2
60°	203.6	196.1	188.6	183.7	181.3	179.0	176.6	174.2
62.5°	181.5	174.5	167.4	162.7	160.2	157.7	155.2	152.8
65°	150.0	143.2	136.4	132.2	130.8	129.2	127.7	126.1
67.5°	120.0	114.9	109.8	106.5	104.8	103.2	101.6	100.0
70°	101.4	96.6	91.7	88.5	87.0	85.5	84.0	82.4
72.5°	84.7	80.8	76.8	74.5	73.9	73.2	72.6	71.9
75°	63.4	62.0	60.7	59.8	59.5	59.3	58.9	58.7
77.5°	47.9	47.1	46.3	45.8	45.6	45.2	45.0	44.7
80°	38.5	38.1	37.7	37.3	37.1	36.8	36.5	36.2
82.5°	29.5	29.1	28.7	28.5	28.4	28.4	28.3	28.2
85°	17.0	16.6	16.4	16.2	16.2	16.2	16.2	16.2
87.5°	12.6	12.6	12.8	12.8	12.8	12.8	12.8	12.8
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: P332428-930

CATALOG NUMBER: S123RDIW-S560D1535U930-4F0-1E-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)