

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: P332149-935

Luminaire Tested: **S123DIW-S560D1535U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332149-935  
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-S560D1535U935-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

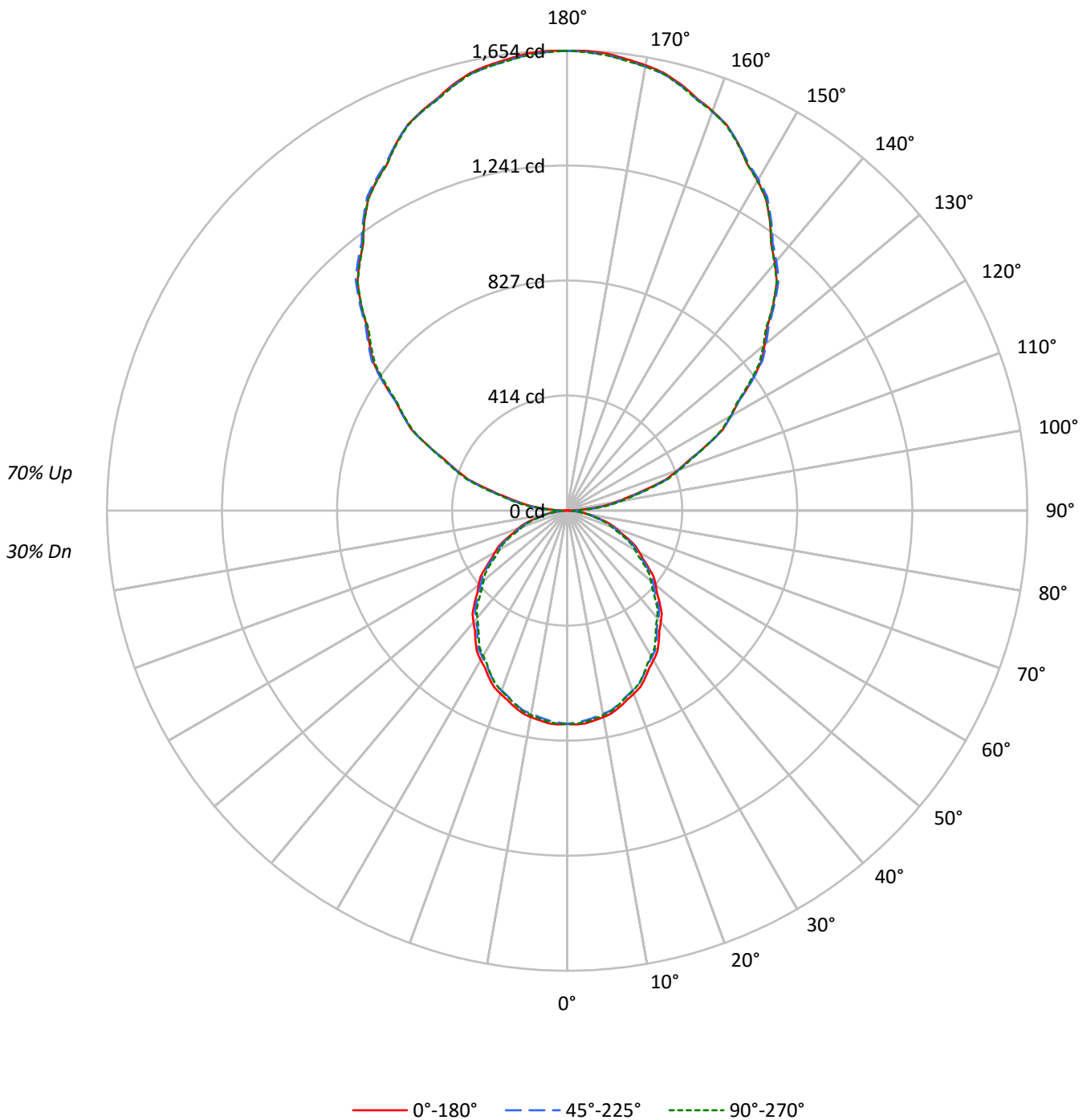
Lumens per Lamp: N/A  
Luminaire Lumens: 6580.1 lumens  
Efficiency: N/A  
Efficacy: 108.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 60.6  
Input Voltage (V): 120  
Input Current (Ain): 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	102	102	102	102	92	92	92	92	72	72	72	55	55	55	38	38	38	30
1	93	89	85	82	84	80	77	74	63	61	59	48	46	45	34	33	32	25
2	85	78	72	67	76	70	65	61	55	52	49	42	40	38	30	28	27	21
3	77	68	61	56	69	62	55	51	49	45	41	37	34	32	26	24	23	18
4	71	60	53	47	63	54	48	43	43	39	35	33	30	27	23	21	20	15
5	65	54	46	40	58	48	42	37	39	34	30	29	26	23	21	19	17	13
6	60	48	40	34	53	43	37	32	35	30	26	27	23	20	19	17	15	12
7	55	43	35	30	49	39	32	28	31	26	23	24	21	18	17	15	13	10
8	51	39	32	26	46	35	29	24	28	24	20	22	19	16	16	14	12	9
9	47	36	28	23	42	32	26	22	26	21	18	20	17	14	15	12	11	8
10	44	32	25	21	40	30	23	19	24	19	16	19	15	13	14	11	10	8

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

	0°	45°	90°
0°	8257	8257	8257
5°	8295	8182	8238
10°	8240	8110	8160
15°	8143	8018	8033
20°	8031	7887	7895
25°	7880	7732	7715
30°	7713	7558	7501
35°	7540	7376	7281
40°	7359	7173	7062
45°	7159	6987	6817
50°	6958	6759	6571
55°	6696	6523	6324
60°	6433	6247	6047
65°	6199	5947	5761
70°	5854	5605	5353
75°	5348	5157	4937
80°	4823	4624	4581
85°	4236	4076	3915



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.3	1.1
10°-20°	204.0	3.1
20°-30°	301.4	4.6
30°-40°	352.0	5.3
40°-50°	353.9	5.4
50°-60°	310.9	4.7
60°-70°	231.6	3.5
70°-80°	132.0	2.0
80°-90°	42.8	0.6
90°-100°	107.7	1.6
100°-110°	322.3	4.9
110°-120°	548.1	8.3
120°-130°	721.0	11.0
130°-140°	810.4	12.3
140°-150°	796.6	12.1
150°-160°	670.6	10.2
160°-170°	446.4	6.8
170°-180°	156.3	2.4
0°-30°	577.6	8.8
0°-40°	929.7	14.1
0°-60°	1594.5	24.2
0°-90°	2000.8	30.4
90°-120°	978.1	14.9
90°-150°	3306.0	50.2
90°-180°	4579.0	69.6
0°-180°	6580.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	767	767	767	767	767	
5°	768	764	757	763	762	73
15°	731	728	720	724	721	206
25°	664	659	651	651	650	305
35°	574	570	561	557	554	359
45°	470	467	459	451	448	363
55°	357	356	348	340	337	319
65°	243	240	234	228	226	240
75°	129	126	124	121	119	138
85°	34	33	33	32	32	38
90°	1	14	31	36	39	7
95°	77	86	96	101	101	86
105°	292	295	306	307	309	313
115°	552	555	553	554	553	546
125°	808	811	809	804	798	720
135°	1048	1055	1054	1049	1046	807
145°	1271	1274	1278	1276	1271	794
155°	1455	1456	1457	1461	1453	670
165°	1585	1582	1581	1588	1580	447
175°	1649	1644	1644	1651	1642	157
180°	1653	1653	1653	1653	1653	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1
2.5°	769.6	769.2	768.8	768.3	767.8	766.9	765.6	764.3	763.1	761.8	762.9
5°	767.7	767.0	766.2	765.5	764.7	763.6	762.0	760.3	758.8	757.2	758.6
7.5°	760.2	759.5	758.7	758.0	757.2	756.0	754.4	752.7	751.1	749.4	750.7
10°	753.9	753.1	752.4	751.7	751.0	749.6	747.7	745.8	743.9	742.0	743.3
12.5°	745.5	744.8	744.2	743.6	743.0	741.8	739.9	738.1	736.4	734.6	735.6
15°	730.7	730.2	729.6	729.0	728.4	727.2	725.3	723.4	721.4	719.5	720.7
17.5°	713.8	713.0	712.2	711.4	710.7	709.4	707.5	705.6	703.7	701.7	702.6
20°	701.1	700.3	699.3	698.4	697.6	696.2	694.3	692.4	690.4	688.5	689.1
22.5°	686.8	686.0	685.1	684.2	683.3	681.9	680.0	678.1	676.2	674.3	674.8
25°	663.5	662.6	661.8	660.9	660.0	658.6	656.7	654.8	652.9	651.0	651.1
27.5°	638.6	637.7	636.9	636.0	635.2	633.7	631.6	629.6	627.6	625.5	625.6
30°	620.6	619.9	619.1	618.5	617.7	616.3	614.2	612.2	610.2	608.1	608.1
32.5°	602.7	601.8	600.7	599.8	598.8	597.5	596.0	594.3	592.8	591.2	590.4
35°	573.8	572.9	572.0	571.2	570.3	568.9	567.0	565.1	563.2	561.3	560.4
37.5°	544.2	543.1	542.0	540.9	539.8	538.3	536.3	534.4	532.4	530.5	529.5
40°	523.7	522.8	521.9	521.1	520.1	518.7	516.6	514.6	512.6	510.5	509.3
42.5°	503.1	502.1	501.1	500.1	499.1	497.6	495.5	493.5	491.5	489.4	488.2
45°	470.3	469.7	469.1	468.5	467.9	466.7	464.8	462.9	461.0	459.0	457.3
47.5°	437.6	436.8	436.0	435.1	434.3	432.9	431.2	429.4	427.6	425.8	424.0
50°	415.5	414.7	414.1	413.3	412.6	411.3	409.3	407.4	405.5	403.6	402.0
52.5°	392.3	391.8	391.3	390.8	390.3	389.0	387.0	385.0	383.0	381.0	379.6
55°	356.8	356.6	356.5	356.4	356.2	355.2	353.3	351.4	349.5	347.6	345.9
57.5°	323.0	322.5	322.0	321.6	321.1	320.0	318.5	317.0	315.5	313.9	312.5
60°	298.8	298.6	298.5	298.3	298.2	297.2	295.5	293.7	292.0	290.2	288.9
62.5°	277.2	276.7	276.4	276.0	275.6	274.6	272.8	271.0	269.2	267.5	266.2
65°	243.4	242.6	241.9	241.2	240.5	239.4	237.9	236.4	235.0	233.5	232.3
67.5°	207.6	207.0	206.3	205.7	205.0	204.1	203.0	201.9	200.8	199.8	198.7
70°	186.0	185.1	184.3	183.4	182.4	181.6	180.7	179.9	178.9	178.1	177.0
72.5°	163.3	162.6	162.0	161.4	160.7	159.9	158.9	157.9	156.9	155.9	155.0
75°	128.6	128.0	127.4	126.8	126.3	125.8	125.3	124.8	124.4	124.0	123.3
77.5°	97.9	97.6	97.2	96.9	96.6	96.2	95.7	95.1	94.5	94.0	93.6
80°	77.8	77.4	77.0	76.5	76.0	75.7	75.4	75.1	74.8	74.6	74.4
82.5°	58.3	58.2	58.1	58.0	57.9	57.9	57.9	57.8	57.7	57.7	57.3
85°	34.3	34.0	33.8	33.4	33.1	33.0	33.0	33.0	33.0	33.0	32.7
87.5°	13.9	14.2	14.5	14.6	14.9	15.3	15.9	16.5	17.2	17.8	18.0
90°	1.3	4.2	7.1	10.0	12.8	16.2	19.9	23.7	27.4	31.2	32.3
92.5°	31.4	33.4	35.3	37.3	39.3	41.3	43.5	45.5	47.7	49.9	50.8
95°	76.6	78.6	80.7	82.7	84.7	86.9	89.1	91.4	93.8	96.1	97.2
97.5°	136.0	137.6	139.1	140.6	142.1	143.6	145.3	147.0	148.7	150.3	151.7
100°	176.6	178.3	180.0	181.8	183.5	185.1	186.5	188.0	189.4	190.9	191.7
102.5°	223.3	224.4	225.4	226.4	227.5	228.9	230.8	232.7	234.6	236.5	237.5
105°	292.1	292.7	293.3	293.9	294.5	296.0	298.6	301.2	303.8	306.4	306.4
107.5°	372.1	372.5	372.8	373.2	373.5	374.2	375.2	376.3	377.3	378.3	379.3
110°	422.0	422.6	423.1	423.7	424.3	424.8	425.4	426.0	426.5	427.1	428.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	473.9	474.2	474.6	474.9	475.3	475.5	475.6	475.7	475.9	476.0	477.3
115°	551.8	552.7	553.5	554.4	555.3	555.4	554.8	554.2	553.7	553.1	553.4
117.5°	630.3	630.8	631.4	632.0	632.5	632.4	631.7	630.9	630.2	629.5	629.4
120°	679.1	680.8	682.5	684.2	686.0	686.1	684.7	683.2	681.7	680.4	680.0
122.5°	730.0	731.2	732.5	733.7	735.0	735.3	734.5	733.7	733.1	732.3	731.5
125°	807.5	808.4	809.3	810.2	811.1	811.1	810.6	810.0	809.4	808.9	807.7
127.5°	879.3	881.1	883.0	884.8	886.7	887.3	886.6	886.0	885.4	884.7	883.0
130°	927.0	929.4	931.6	933.9	936.3	936.9	936.1	935.2	934.4	933.5	932.4
132.5°	974.8	977.1	979.4	981.7	984.0	984.9	984.2	983.6	982.9	982.3	980.9
135°	1047.8	1049.5	1051.2	1052.9	1054.7	1055.4	1055.2	1054.8	1054.6	1054.3	1053.1
137.5°	1115.3	1116.7	1118.2	1119.6	1121.0	1122.1	1122.9	1123.6	1124.4	1125.2	1123.9
140°	1162.0	1163.5	1164.9	1166.3	1167.8	1168.6	1169.0	1169.2	1169.5	1169.8	1169.5
142.5°	1204.6	1206.0	1207.5	1208.9	1210.4	1211.3	1211.9	1212.4	1212.9	1213.4	1213.1
145°	1271.1	1271.7	1272.2	1272.8	1273.4	1274.1	1275.0	1275.8	1276.7	1277.6	1277.3
147.5°	1329.2	1330.2	1331.3	1332.4	1333.4	1334.3	1335.2	1335.9	1336.7	1337.6	1337.6
150°	1369.8	1370.4	1370.9	1371.5	1372.1	1372.6	1373.2	1373.8	1374.3	1374.9	1374.9
152.5°	1403.0	1403.8	1404.6	1405.4	1406.2	1406.8	1407.1	1407.5	1407.8	1408.2	1408.7
155°	1455.4	1455.4	1455.4	1455.4	1455.4	1455.6	1455.9	1456.1	1456.5	1456.7	1457.9
157.5°	1500.1	1499.8	1499.4	1499.1	1498.7	1498.7	1498.9	1499.1	1499.3	1499.6	1500.8
160°	1528.2	1527.6	1527.0	1526.4	1525.9	1525.5	1525.5	1525.5	1525.5	1525.5	1527.0
162.5°	1553.1	1552.3	1551.4	1550.7	1549.9	1549.5	1549.8	1550.1	1550.2	1550.5	1552.0
165°	1585.3	1584.4	1583.6	1582.7	1581.8	1581.4	1581.4	1581.4	1581.4	1581.4	1583.1
167.5°	1611.0	1609.8	1608.7	1607.5	1606.4	1605.9	1606.1	1606.4	1606.6	1606.8	1608.6
170°	1625.5	1624.4	1623.2	1622.0	1620.9	1620.3	1620.3	1620.3	1620.3	1620.3	1622.4
172.5°	1636.9	1635.8	1634.6	1633.5	1632.4	1631.8	1631.8	1631.8	1631.8	1631.8	1633.6
175°	1648.9	1647.8	1646.6	1645.5	1644.3	1643.7	1643.7	1643.7	1643.7	1643.7	1645.5
177.5°	1653.8	1652.9	1652.0	1651.1	1650.1	1649.7	1649.7	1649.7	1649.7	1649.7	1651.1
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	767.1	767.1	767.1	767.1	767.1	767.1	767.1	767.1
2.5°	764.1	765.3	766.5	767.0	766.9	766.7	766.6	766.5
5°	760.1	761.6	763.0	763.6	763.3	763.0	762.8	762.4
7.5°	752.0	753.3	754.7	755.2	755.0	754.8	754.7	754.5
10°	744.6	746.0	747.3	747.8	747.5	747.2	746.9	746.6
12.5°	736.5	737.5	738.5	738.8	738.7	738.5	738.3	738.1
15°	721.9	723.1	724.3	724.4	723.5	722.6	721.8	720.9
17.5°	703.4	704.2	705.1	705.2	705.0	704.6	704.3	704.0
20°	689.7	690.3	690.9	691.0	690.5	690.1	689.7	689.2
22.5°	675.3	675.7	676.2	676.1	675.6	675.0	674.5	673.9
25°	651.3	651.4	651.5	651.4	651.0	650.6	650.1	649.6
27.5°	625.8	625.9	625.9	625.8	625.2	624.7	624.1	623.5
30°	608.1	608.1	608.1	607.6	606.6	605.5	604.5	603.5
32.5°	589.6	588.8	587.9	587.2	586.7	586.2	585.6	585.0
35°	559.5	558.6	557.8	557.0	556.2	555.5	554.7	554.1
37.5°	528.4	527.4	526.3	525.6	525.1	524.6	524.2	523.7
40°	508.2	507.0	505.8	504.9	504.3	503.8	503.2	502.6
42.5°	487.1	485.9	484.7	483.8	483.2	482.7	482.1	481.5
45°	455.6	453.7	452.0	450.7	450.0	449.3	448.6	447.8
47.5°	422.3	420.6	418.9	417.7	417.1	416.4	415.8	415.1
50°	400.5	398.8	397.2	396.0	395.0	394.2	393.3	392.4
52.5°	378.2	376.9	375.5	374.3	373.4	372.6	371.7	370.8
55°	344.3	342.8	341.1	339.9	339.2	338.5	337.8	337.0
57.5°	311.1	309.6	308.2	307.0	306.2	305.4	304.5	303.7
60°	287.6	286.3	284.9	283.9	283.2	282.4	281.7	280.9
62.5°	264.8	263.6	262.3	261.3	260.8	260.4	259.8	259.3
65°	231.1	230.0	228.8	228.0	227.6	227.1	226.7	226.2
67.5°	197.7	196.7	195.6	194.8	194.2	193.6	193.0	192.3
70°	176.0	175.0	174.0	173.1	172.4	171.6	170.9	170.1
72.5°	154.1	153.2	152.3	151.6	151.3	150.8	150.5	150.1
75°	122.5	121.8	121.1	120.5	120.0	119.6	119.2	118.7
77.5°	93.1	92.6	92.0	91.8	91.8	91.8	91.8	91.8
80°	74.2	74.0	74.0	73.9	73.9	73.9	73.9	73.9
82.5°	57.1	56.8	56.6	56.4	56.3	56.1	56.1	56.0
85°	32.4	32.1	31.8	31.7	31.7	31.7	31.7	31.7
87.5°	18.1	18.2	18.3	18.4	18.5	18.6	18.8	18.9
90°	33.5	34.6	35.8	36.7	37.2	37.8	38.4	38.9
92.5°	51.7	52.6	53.6	53.8	53.5	53.1	52.8	52.4
95°	98.4	99.5	100.7	101.3	101.3	101.3	101.3	101.3
97.5°	153.0	154.3	155.7	156.3	156.2	156.0	155.9	155.8
100°	192.6	193.5	194.3	195.0	195.6	196.2	196.7	197.3
102.5°	238.3	239.2	240.0	240.4	240.3	240.1	240.0	240.0
105°	306.4	306.4	306.4	306.7	307.3	307.9	308.4	309.0
107.5°	380.2	381.1	382.0	382.3	381.9	381.6	381.3	380.9
110°	429.5	430.6	431.8	432.0	431.4	430.9	430.3	429.7





TEST NUMBER: P332149-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	478.7	480.1	481.5	482.2	482.1	481.9	481.8	481.6
115°	553.7	554.0	554.2	554.2	554.0	553.7	553.4	553.1
117.5°	629.3	629.3	629.2	628.8	627.9	627.2	626.4	625.5
120°	679.8	679.5	679.2	678.7	678.2	677.6	677.0	676.4
122.5°	730.7	730.0	729.3	728.5	727.7	726.9	726.1	725.2
125°	806.6	805.4	804.3	803.1	801.9	800.8	799.6	798.5
127.5°	881.5	879.9	878.2	876.8	875.5	874.1	872.8	871.4
130°	931.2	930.1	928.9	927.3	925.3	923.3	921.3	919.2
132.5°	979.6	978.2	976.8	975.3	973.8	972.2	970.6	969.1
135°	1052.0	1050.8	1049.6	1048.8	1048.2	1047.6	1047.1	1046.5
137.5°	1122.7	1121.5	1120.3	1119.1	1118.0	1117.0	1115.9	1114.7
140°	1169.2	1169.0	1168.6	1167.5	1165.4	1163.5	1161.4	1159.4
142.5°	1212.9	1212.5	1212.3	1211.3	1209.8	1208.2	1206.7	1205.1
145°	1276.9	1276.7	1276.4	1275.7	1274.5	1273.4	1272.2	1271.1
147.5°	1337.6	1337.6	1337.6	1336.7	1335.0	1333.3	1331.5	1329.7
150°	1374.9	1374.9	1374.9	1374.1	1372.3	1370.6	1368.9	1367.2
152.5°	1409.1	1409.5	1410.1	1409.5	1408.0	1406.5	1405.0	1403.5
155°	1459.1	1460.2	1461.4	1460.9	1458.9	1456.9	1454.8	1452.9
157.5°	1502.0	1503.2	1504.4	1504.3	1502.6	1501.0	1499.3	1497.8
160°	1528.4	1529.9	1531.3	1531.5	1530.3	1529.1	1528.0	1526.8
162.5°	1553.3	1554.8	1556.3	1556.1	1554.2	1552.4	1550.5	1548.7
165°	1584.8	1586.6	1588.3	1588.2	1586.1	1584.2	1582.1	1580.1
167.5°	1610.4	1612.2	1613.9	1613.9	1612.2	1610.4	1608.6	1606.8
170°	1624.4	1626.4	1628.4	1628.4	1626.4	1624.4	1622.4	1620.3
172.5°	1635.3	1637.1	1638.9	1638.8	1636.8	1634.8	1632.7	1630.7
175°	1647.2	1648.9	1650.6	1650.5	1648.5	1646.4	1644.4	1642.4
177.5°	1652.4	1653.8	1655.2	1655.1	1653.5	1651.8	1650.3	1648.6
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8

(END OF REPORT)