

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: P332149-940

Luminaire Tested: **S123DIW-S560D1535U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332149-940
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-S560D1535U940-4F0-1E-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: 6814.8 lumens
Efficiency: N/A
Efficacy: 112.5 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

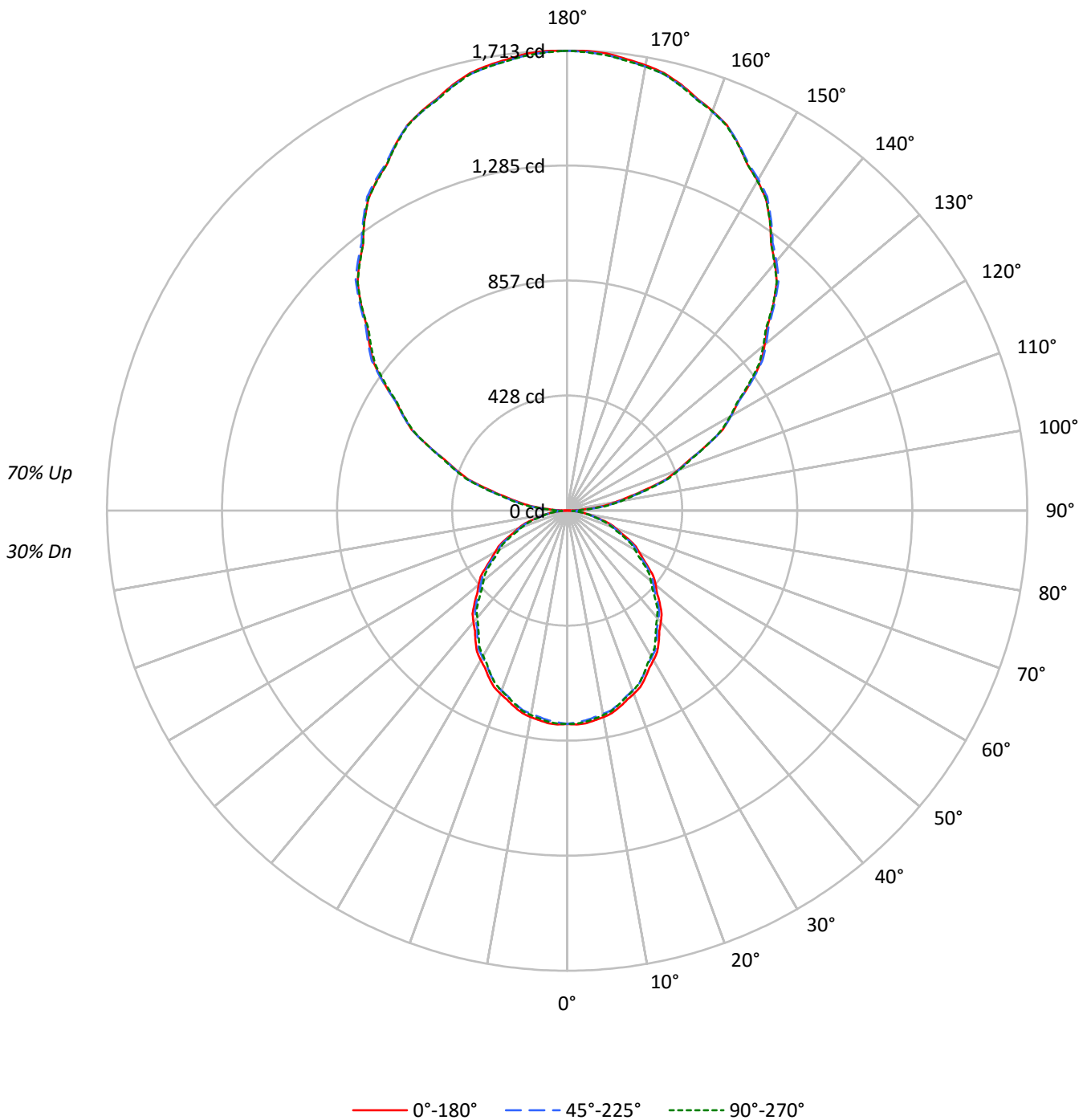
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	8551	8551	8551
5°	8590	8473	8532
10°	8534	8400	8451
15°	8433	8304	8320
20°	8317	8168	8176
25°	8162	8007	7991
30°	7988	7828	7768
35°	7808	7638	7540
40°	7620	7429	7314
45°	7415	7237	7060
50°	7206	7000	6805
55°	6934	6756	6549
60°	6661	6469	6265
65°	6421	6159	5968
70°	6061	5803	5545
75°	5540	5340	5115
80°	4996	4785	4742
85°	4384	4224	4051



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.8	1.1
10°-20°	211.3	3.1
20°-30°	312.1	4.6
30°-40°	364.6	5.3
40°-50°	366.5	5.4
50°-60°	322.0	4.7
60°-70°	239.9	3.5
70°-80°	136.7	2.0
80°-90°	44.3	0.6
90°-100°	111.5	1.6
100°-110°	333.8	4.9
110°-120°	567.7	8.3
120°-130°	746.7	11.0
130°-140°	839.3	12.3
140°-150°	825.0	12.1
150°-160°	694.5	10.2
160°-170°	462.3	6.8
170°-180°	161.9	2.4
0°-30°	598.2	8.8
0°-40°	962.8	14.1
0°-60°	1651.3	24.2
0°-90°	2072.2	30.4
90°-120°	1013.0	14.9
90°-150°	3423.9	50.2
90°-180°	4743.0	69.6
0°-180°	6814.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	794	794	794	794	794	
5°	795	791	784	791	790	75
15°	757	754	745	750	747	213
25°	687	683	674	675	673	316
35°	594	590	581	577	574	372
45°	487	484	475	467	464	376
55°	370	368	360	353	349	331
65°	252	248	242	236	234	249
75°	133	131	128	125	123	142
85°	36	34	34	33	33	39
90°	1	15	32	38	40	7
95°	79	89	100	105	105	89
105°	303	306	317	318	320	324
115°	572	575	573	574	573	565
125°	836	840	838	832	827	746
135°	1085	1093	1092	1087	1084	836
145°	1316	1319	1323	1322	1316	822
155°	1507	1507	1509	1513	1505	694
165°	1642	1638	1638	1645	1636	463
175°	1708	1703	1702	1709	1701	162
180°	1712	1712	1712	1712	1712	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4
2.5°	797.1	796.7	796.2	795.7	795.2	794.2	792.9	791.6	790.3	789.0	790.1
5°	795.0	794.3	793.5	792.8	792.0	790.9	789.2	787.5	785.9	784.2	785.7
7.5°	787.3	786.6	785.8	785.1	784.3	783.0	781.3	779.5	777.8	776.1	777.5
10°	780.8	780.0	779.3	778.5	777.8	776.3	774.4	772.4	770.4	768.5	769.8
12.5°	772.0	771.3	770.7	770.1	769.5	768.2	766.3	764.5	762.7	760.8	761.8
15°	756.8	756.3	755.6	755.0	754.4	753.1	751.2	749.2	747.2	745.2	746.5
17.5°	739.2	738.4	737.6	736.8	736.0	734.7	732.7	730.8	728.8	726.7	727.6
20°	726.1	725.2	724.2	723.4	722.5	721.0	719.1	717.1	715.1	713.1	713.7
22.5°	711.3	710.4	709.5	708.6	707.7	706.2	704.3	702.3	700.3	698.4	698.8
25°	687.2	686.3	685.4	684.5	683.5	682.1	680.1	678.1	676.2	674.2	674.3
27.5°	661.4	660.5	659.6	658.7	657.8	656.3	654.2	652.1	650.0	647.8	647.9
30°	642.7	642.0	641.2	640.5	639.7	638.3	636.1	634.0	632.0	629.8	629.8
32.5°	624.2	623.2	622.1	621.2	620.2	618.8	617.2	615.5	613.9	612.3	611.4
35°	594.2	593.3	592.5	591.6	590.7	589.2	587.2	585.2	583.3	581.3	580.4
37.5°	563.7	562.5	561.3	560.2	559.0	557.5	555.4	553.5	551.4	549.5	548.4
40°	542.3	541.4	540.6	539.7	538.7	537.2	535.0	533.0	530.8	528.7	527.4
42.5°	521.0	520.0	519.0	517.9	516.9	515.3	513.2	511.1	509.0	506.8	505.6
45°	487.1	486.4	485.8	485.2	484.6	483.3	481.3	479.4	477.4	475.4	473.6
47.5°	453.3	452.4	451.6	450.7	449.8	448.4	446.6	444.7	442.8	441.0	439.2
50°	430.3	429.5	428.8	428.0	427.3	426.0	423.9	422.0	420.0	418.0	416.3
52.5°	406.3	405.7	405.3	404.7	404.2	402.9	400.8	398.8	396.6	394.6	393.2
55°	369.5	369.3	369.3	369.1	368.9	367.8	365.9	363.9	361.9	360.0	358.3
57.5°	334.6	334.0	333.5	333.1	332.5	331.4	329.8	328.3	326.7	325.1	323.7
60°	309.4	309.2	309.2	309.0	308.8	307.8	306.0	304.2	302.4	300.5	299.2
62.5°	287.0	286.6	286.2	285.9	285.4	284.4	282.5	280.7	278.8	277.1	275.7
65°	252.1	251.3	250.6	249.8	249.1	247.9	246.4	244.9	243.3	241.8	240.6
67.5°	215.0	214.4	213.7	213.0	212.3	211.4	210.3	209.1	207.9	206.9	205.8
70°	192.6	191.7	190.8	189.9	189.0	188.1	187.2	186.3	185.3	184.4	183.3
72.5°	169.2	168.4	167.8	167.1	166.5	165.6	164.6	163.5	162.5	161.5	160.5
75°	133.2	132.6	132.0	131.3	130.8	130.3	129.7	129.3	128.9	128.4	127.7
77.5°	101.4	101.0	100.7	100.4	100.0	99.6	99.1	98.5	97.9	97.4	96.9
80°	80.6	80.2	79.7	79.3	78.7	78.4	78.1	77.8	77.5	77.2	77.0
82.5°	60.4	60.3	60.2	60.1	60.0	59.9	59.9	59.8	59.7	59.7	59.4
85°	35.5	35.2	35.0	34.6	34.3	34.2	34.2	34.2	34.2	34.2	33.9
87.5°	14.4	14.7	15.0	15.2	15.4	15.9	16.5	17.1	17.8	18.5	18.6
90°	1.3	4.4	7.3	10.3	13.3	16.8	20.6	24.5	28.4	32.3	33.4
92.5°	32.5	34.6	36.6	38.6	40.7	42.8	45.0	47.2	49.4	51.6	52.6
95°	79.4	81.4	83.6	85.6	87.7	90.0	92.3	94.7	97.1	99.5	100.7
97.5°	140.9	142.5	144.0	145.6	147.1	148.7	150.5	152.2	154.0	155.7	157.1
100°	182.9	184.7	186.5	188.2	190.0	191.7	193.1	194.7	196.2	197.7	198.6
102.5°	231.3	232.4	233.4	234.5	235.6	237.1	239.1	241.0	243.0	245.0	245.9
105°	302.6	303.2	303.7	304.3	305.0	306.6	309.2	311.9	314.7	317.4	317.4
107.5°	385.4	385.8	386.1	386.5	386.8	387.5	388.6	389.7	390.7	391.8	392.8
110°	437.0	437.7	438.2	438.8	439.4	440.0	440.6	441.2	441.8	442.4	443.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	490.8	491.2	491.5	491.9	492.2	492.5	492.6	492.7	492.8	492.9	494.4
115°	571.5	572.4	573.3	574.2	575.1	575.2	574.6	574.0	573.5	572.8	573.1
117.5°	652.7	653.3	653.9	654.5	655.1	655.0	654.2	653.4	652.6	651.9	651.8
120°	703.3	705.1	706.9	708.6	710.4	710.6	709.1	707.6	706.1	704.6	704.3
122.5°	756.0	757.2	758.6	759.9	761.3	761.5	760.7	759.9	759.2	758.4	757.6
125°	836.3	837.2	838.2	839.1	840.0	840.1	839.5	838.9	838.3	837.8	836.5
127.5°	910.6	912.5	914.4	916.3	918.3	918.9	918.2	917.6	916.9	916.2	914.5
130°	960.1	962.5	964.8	967.2	969.6	970.4	969.5	968.6	967.7	966.8	965.6
132.5°	1009.6	1011.9	1014.3	1016.7	1019.1	1020.0	1019.3	1018.7	1018.0	1017.4	1015.9
135°	1085.1	1086.9	1088.7	1090.5	1092.3	1093.1	1092.8	1092.4	1092.2	1091.9	1090.7
137.5°	1155.0	1156.5	1158.1	1159.6	1161.0	1162.2	1163.0	1163.7	1164.5	1165.3	1164.0
140°	1203.5	1205.0	1206.5	1207.9	1209.4	1210.3	1210.7	1210.9	1211.2	1211.6	1211.2
142.5°	1247.6	1249.0	1250.5	1252.1	1253.6	1254.5	1255.1	1255.6	1256.2	1256.7	1256.4
145°	1316.4	1317.1	1317.6	1318.2	1318.8	1319.6	1320.4	1321.3	1322.2	1323.1	1322.9
147.5°	1376.6	1377.7	1378.8	1379.9	1381.0	1381.9	1382.8	1383.6	1384.4	1385.3	1385.3
150°	1418.6	1419.2	1419.8	1420.4	1421.0	1421.6	1422.2	1422.8	1423.3	1424.0	1424.0
152.5°	1453.0	1453.8	1454.7	1455.5	1456.3	1457.0	1457.3	1457.7	1458.0	1458.4	1458.9
155°	1507.3	1507.3	1507.3	1507.3	1507.3	1507.5	1507.8	1508.1	1508.4	1508.7	1509.9
157.5°	1553.6	1553.3	1552.9	1552.6	1552.2	1552.1	1552.4	1552.6	1552.8	1553.1	1554.3
160°	1582.7	1582.1	1581.4	1580.8	1580.3	1579.9	1579.9	1579.9	1579.9	1579.9	1581.4
162.5°	1608.5	1607.7	1606.8	1606.0	1605.2	1604.8	1605.1	1605.3	1605.5	1605.8	1607.3
165°	1641.8	1640.9	1640.0	1639.1	1638.3	1637.8	1637.8	1637.8	1637.8	1637.8	1639.6
167.5°	1668.5	1667.2	1666.1	1664.8	1663.7	1663.2	1663.4	1663.7	1663.9	1664.1	1666.0
170°	1683.5	1682.3	1681.1	1679.9	1678.7	1678.1	1678.1	1678.1	1678.1	1678.1	1680.3
172.5°	1695.3	1694.2	1692.9	1691.8	1690.6	1690.0	1690.0	1690.0	1690.0	1690.0	1691.8
175°	1707.7	1706.6	1705.3	1704.1	1702.9	1702.4	1702.4	1702.4	1702.4	1702.4	1704.1
177.5°	1712.8	1711.9	1710.9	1709.9	1709.0	1708.5	1708.5	1708.5	1708.5	1708.5	1709.9
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4
2.5°	791.4	792.6	793.8	794.3	794.2	794.1	794.0	793.9
5°	787.2	788.7	790.2	790.9	790.5	790.2	790.0	789.6
7.5°	778.8	780.2	781.6	782.1	781.9	781.8	781.6	781.4
10°	771.2	772.6	773.9	774.5	774.2	773.8	773.6	773.2
12.5°	762.8	763.8	764.8	765.2	765.0	764.8	764.6	764.5
15°	747.7	748.9	750.1	750.2	749.3	748.4	747.5	746.6
17.5°	728.5	729.3	730.2	730.4	730.1	729.8	729.4	729.1
20°	714.3	715.0	715.5	715.6	715.2	714.7	714.3	713.8
22.5°	699.4	699.8	700.3	700.3	699.7	699.1	698.6	697.9
25°	674.5	674.7	674.8	674.7	674.2	673.8	673.2	672.8
27.5°	648.1	648.2	648.3	648.1	647.5	646.9	646.3	645.8
30°	629.8	629.8	629.8	629.3	628.2	627.1	626.1	625.0
32.5°	610.6	609.8	608.9	608.1	607.6	607.1	606.5	605.9
35°	579.4	578.5	577.7	576.8	576.0	575.3	574.5	573.8
37.5°	547.2	546.2	545.1	544.3	543.9	543.3	542.9	542.3
40°	526.3	525.0	523.9	522.9	522.3	521.7	521.1	520.5
42.5°	504.4	503.2	501.9	501.1	500.4	499.9	499.3	498.6
45°	471.8	469.9	468.1	466.8	466.1	465.3	464.6	463.8
47.5°	437.4	435.6	433.8	432.6	431.9	431.2	430.6	429.9
50°	414.7	413.0	411.3	410.1	409.1	408.2	407.3	406.4
52.5°	391.7	390.3	388.9	387.6	386.7	385.8	385.0	384.1
55°	356.6	355.0	353.3	352.0	351.3	350.5	349.8	349.0
57.5°	322.2	320.7	319.2	318.0	317.1	316.3	315.4	314.5
60°	297.8	296.5	295.1	294.0	293.3	292.5	291.8	291.0
62.5°	274.3	273.0	271.6	270.6	270.1	269.7	269.1	268.6
65°	239.3	238.2	236.9	236.1	235.7	235.2	234.8	234.3
67.5°	204.7	203.7	202.6	201.7	201.1	200.5	199.8	199.2
70°	182.3	181.3	180.2	179.2	178.5	177.7	177.0	176.2
72.5°	159.6	158.6	157.7	157.0	156.7	156.2	155.9	155.4
75°	126.9	126.2	125.4	124.8	124.3	123.9	123.4	123.0
77.5°	96.4	95.9	95.3	95.1	95.1	95.1	95.1	95.1
80°	76.9	76.7	76.6	76.5	76.5	76.5	76.5	76.5
82.5°	59.1	58.9	58.6	58.4	58.3	58.1	58.1	58.0
85°	33.5	33.3	32.9	32.8	32.8	32.8	32.8	32.8
87.5°	18.7	18.8	18.9	19.1	19.2	19.3	19.4	19.5
90°	34.7	35.8	37.1	38.0	38.5	39.1	39.8	40.3
92.5°	53.5	54.5	55.5	55.7	55.4	55.0	54.7	54.3
95°	101.9	103.1	104.2	104.9	104.9	104.9	104.9	104.9
97.5°	158.5	159.8	161.2	161.8	161.8	161.6	161.5	161.4
100°	199.5	200.4	201.3	202.0	202.6	203.2	203.8	204.4
102.5°	246.8	247.7	248.6	249.0	248.9	248.7	248.6	248.5
105°	317.4	317.4	317.4	317.6	318.3	318.9	319.4	320.0
107.5°	393.8	394.7	395.7	395.9	395.6	395.2	394.8	394.5
110°	444.8	445.9	447.2	447.5	446.8	446.3	445.7	445.1



TEST NUMBER: P332149-940

CATALOG NUMBER: S123DIW-S560D1535U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	495.8	497.2	498.6	499.4	499.3	499.1	499.0	498.8
115°	573.5	573.7	574.0	574.0	573.7	573.5	573.1	572.8
117.5°	651.8	651.8	651.7	651.2	650.3	649.5	648.7	647.8
120°	704.0	703.7	703.4	702.9	702.4	701.8	701.2	700.5
122.5°	756.8	756.1	755.3	754.5	753.7	752.8	752.0	751.1
125°	835.4	834.1	832.9	831.7	830.5	829.4	828.1	827.0
127.5°	912.9	911.2	909.5	908.0	906.7	905.3	903.9	902.5
130°	964.4	963.2	962.1	960.4	958.3	956.2	954.1	952.0
132.5°	1014.5	1013.1	1011.6	1010.1	1008.5	1006.9	1005.2	1003.6
135°	1089.5	1088.2	1087.1	1086.2	1085.6	1084.9	1084.4	1083.8
137.5°	1162.8	1161.5	1160.3	1159.0	1157.9	1156.8	1155.7	1154.5
140°	1210.9	1210.7	1210.3	1209.2	1207.0	1205.0	1202.8	1200.8
142.5°	1256.2	1255.8	1255.5	1254.5	1252.9	1251.3	1249.7	1248.1
145°	1322.5	1322.2	1322.0	1321.2	1320.0	1318.8	1317.6	1316.4
147.5°	1385.3	1385.3	1385.3	1384.4	1382.6	1380.8	1378.9	1377.2
150°	1424.0	1424.0	1424.0	1423.1	1421.3	1419.5	1417.7	1415.9
152.5°	1459.4	1459.8	1460.4	1459.8	1458.2	1456.7	1455.1	1453.6
155°	1511.1	1512.3	1513.5	1513.1	1510.9	1508.9	1506.7	1504.7
157.5°	1555.6	1556.8	1558.1	1557.9	1556.2	1554.5	1552.8	1551.2
160°	1583.0	1584.5	1585.9	1586.1	1584.9	1583.7	1582.5	1581.3
162.5°	1608.7	1610.3	1611.8	1611.6	1609.6	1607.8	1605.8	1603.9
165°	1641.4	1643.2	1644.9	1644.8	1642.7	1640.7	1638.5	1636.5
167.5°	1667.9	1669.7	1671.5	1671.5	1669.7	1667.9	1666.0	1664.1
170°	1682.3	1684.4	1686.5	1686.5	1684.4	1682.3	1680.3	1678.1
172.5°	1693.6	1695.5	1697.4	1697.3	1695.1	1693.1	1691.0	1688.9
175°	1705.9	1707.7	1709.5	1709.3	1707.3	1705.1	1703.1	1701.0
177.5°	1711.4	1712.8	1714.2	1714.1	1712.4	1710.7	1709.1	1707.4
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7

(END OF REPORT)