

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: P332140-840

Luminaire Tested: **S123DIW-S560D1320U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332140-840
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-S560D1320U840-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7721.2 lumens
Efficiency: N/A
Efficacy: 143.5 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

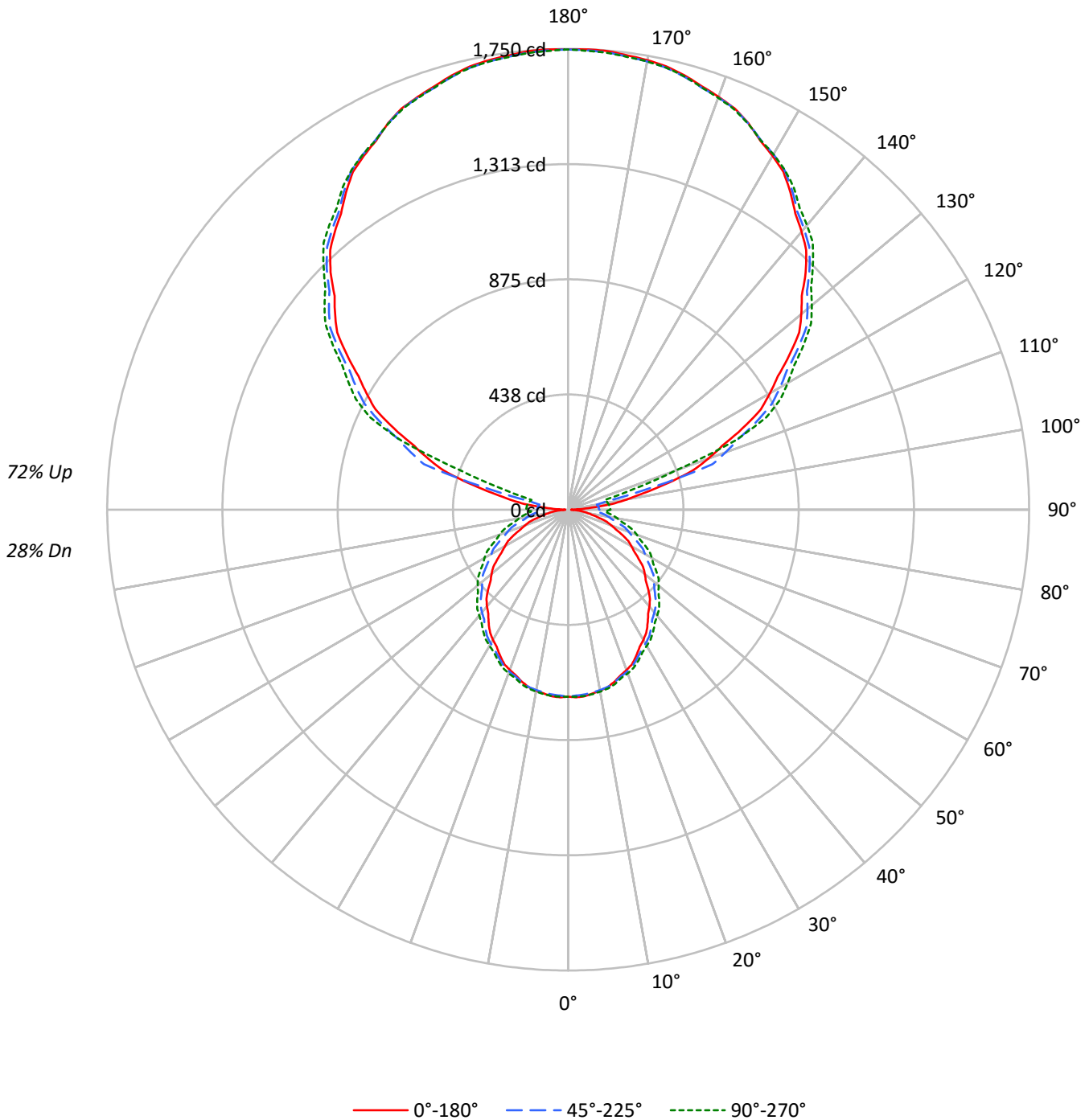
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	26	24	18
3	76	67	60	54	68	60	54	49	47	43	39	35	32	29	24	22	20	15
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13
5	64	52	44	38	57	47	40	35	37	32	28	28	24	21	19	17	15	11
6	59	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	16	13	12	9
8	50	38	30	25	45	34	28	23	27	22	19	20	17	14	14	12	10	8
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7
10	43	31	24	20	39	28	22	18	23	18	15	17	14	12	12	10	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7643	7643	7643
5°	7667	7451	7455
10°	7599	7280	7244
15°	7501	7084	7012
20°	7361	6862	6756
25°	7189	6606	6489
30°	7011	6375	6216
35°	6812	6132	6000
40°	6623	5910	5767
45°	6414	5697	5582
50°	6206	5488	5378
55°	5978	5271	5194
60°	5753	5053	5005
65°	5525	4819	4780
70°	5183	4558	4549
75°	4746	4256	4316
80°	4241	3962	4047
85°	3780	3757	3892



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.3	0.9
10°-20°	191.9	2.5
20°-30°	287.0	3.7
30°-40°	342.8	4.4
40°-50°	358.6	4.6
50°-60°	336.5	4.4
60°-70°	281.1	3.6
70°-80°	201.1	2.6
80°-90°	124.8	1.6
90°-100°	138.8	1.8
100°-110°	358.2	4.6
110°-120°	764.4	9.9
120°-130°	947.4	12.3
130°-140°	999.2	12.9
140°-150°	927.6	12.0
150°-160°	746.6	9.7
160°-170°	481.8	6.2
170°-180°	166.1	2.2
0°-30°	546.3	7.1
0°-40°	889.0	11.5
0°-60°	1584.2	20.5
0°-90°	2191.2	28.4
90°-120°	1261.3	16.3
90°-150°	4135.6	53.6
90°-180°	5530.0	71.6
0°-180°	7721.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	710	710	710	710	710	
5°	711	709	705	710	710	67
15°	677	679	678	686	685	191
25°	611	619	621	631	631	282
35°	526	538	548	560	563	329
45°	430	449	468	482	489	332
55°	328	354	381	401	408	294
65°	227	257	291	313	322	224
75°	123	160	198	223	233	131
85°	38	77	118	143	152	40
90°	11	63	119	149	160	11
95°	88	69	117	148	158	105
105°	393	420	342	146	144	417
115°	730	748	786	817	829	720
125°	1026	1037	1064	1082	1090	916
135°	1275	1283	1296	1313	1314	981
145°	1471	1479	1482	1490	1494	920
155°	1619	1617	1618	1624	1617	746
165°	1708	1704	1702	1712	1704	482
175°	1748	1742	1743	1751	1741	166
180°	1748	1748	1748	1748	1748	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	713.3	712.9	712.5	712.0	711.6	710.8	709.7	708.6	707.5	706.4	707.5
5°	710.9	710.5	710.2	709.9	709.5	708.8	707.8	706.8	705.8	704.7	706.1
7.5°	704.0	704.0	704.1	704.2	704.3	703.8	702.8	701.8	700.7	699.7	701.5
10°	697.8	698.1	698.4	698.8	699.1	698.9	698.0	697.2	696.3	695.5	697.2
12.5°	690.3	690.8	691.4	691.8	692.3	692.3	691.7	691.1	690.4	689.8	691.5
15°	676.9	677.4	677.9	678.4	678.9	679.1	678.9	678.7	678.6	678.4	680.1
17.5°	659.8	660.9	662.0	663.0	664.0	664.5	664.4	664.3	664.3	664.2	665.7
20°	647.5	648.5	649.5	650.6	651.6	652.3	652.7	653.0	653.3	653.7	655.2
22.5°	634.5	635.5	636.5	637.6	638.6	639.3	639.9	640.4	640.9	641.3	643.3
25°	611.2	612.9	614.6	616.3	618.0	619.1	619.7	620.2	620.7	621.2	623.4
27.5°	587.6	589.6	591.6	593.5	595.4	596.9	598.0	599.2	600.3	601.4	603.3
30°	570.9	573.1	575.3	577.6	579.9	581.7	583.0	584.4	585.7	587.1	589.3
32.5°	552.3	554.8	557.3	559.9	562.4	564.5	566.3	568.0	569.9	571.7	573.9
35°	526.0	528.8	531.5	534.3	537.0	539.6	541.8	544.0	546.2	548.5	551.1
37.5°	498.2	501.3	504.3	507.5	510.6	513.5	516.2	519.0	521.7	524.5	527.5
40°	479.6	482.7	485.8	488.9	492.0	495.2	498.7	502.1	505.5	509.0	511.9
42.5°	459.2	463.0	466.8	470.5	474.3	478.0	481.6	485.1	488.8	492.3	495.5
45°	430.1	434.2	438.4	442.5	446.6	450.8	455.1	459.4	463.7	468.0	471.3
47.5°	399.6	404.3	409.0	413.6	418.3	423.1	428.1	432.9	437.9	442.8	446.5
50°	379.8	384.7	389.4	394.3	399.1	404.1	409.5	414.9	420.1	425.5	429.4
52.5°	358.8	363.9	369.0	374.1	379.1	384.7	390.5	396.4	402.2	408.2	412.2
55°	328.0	333.7	339.3	345.0	350.7	356.6	362.8	369.0	375.2	381.3	386.0
57.5°	298.0	303.9	309.8	315.7	321.6	328.0	334.8	341.5	348.3	355.1	359.7
60°	276.9	283.2	289.3	295.5	301.6	308.3	315.4	322.4	329.4	336.5	341.3
62.5°	257.1	263.5	269.8	276.1	282.5	289.3	296.8	304.3	311.7	319.2	324.0
65°	226.6	233.4	240.0	246.8	253.5	260.6	268.2	275.7	283.3	290.8	296.0
67.5°	195.7	202.9	210.0	217.0	224.2	231.6	239.3	247.0	254.7	262.4	268.0
70°	174.1	181.5	188.8	196.2	203.6	211.5	219.6	227.9	236.2	244.5	249.9
72.5°	154.2	161.7	169.1	176.4	183.8	191.8	200.3	208.8	217.3	225.9	231.6
75°	123.0	131.1	139.2	147.2	155.3	163.7	172.3	180.9	189.5	198.0	203.7
77.5°	95.7	103.9	112.1	120.2	128.4	136.7	145.4	154.1	162.8	171.5	177.4
80°	76.5	85.0	93.4	101.9	110.3	119.0	127.8	136.8	145.8	154.7	160.6
82.5°	59.9	68.5	77.0	85.5	94.1	102.9	112.0	121.1	130.2	139.3	145.1
85°	37.9	46.5	55.1	63.7	72.3	81.1	90.3	99.4	108.5	117.5	123.4
87.5°	20.8	30.0	39.1	48.3	57.4	66.8	76.2	85.7	95.2	104.8	110.9
90°	11.3	22.6	33.9	45.2	56.6	68.5	81.0	93.5	106.0	118.6	125.6
92.5°	33.6	40.4	47.2	53.9	60.8	69.9	81.3	92.8	104.2	115.7	123.3
95°	87.8	82.6	77.5	72.3	67.3	70.5	82.0	93.6	105.2	116.8	124.2
97.5°	166.7	167.5	168.2	169.1	169.8	163.8	151.0	138.3	125.5	112.8	120.3
100°	226.4	237.7	248.9	260.2	271.5	258.6	221.5	184.4	147.2	110.2	117.4
102.5°	294.4	303.5	312.6	321.6	330.7	314.7	273.3	231.9	190.5	149.1	146.7
105°	393.1	400.4	407.8	415.1	422.3	416.7	398.1	379.5	360.9	342.3	296.1
107.5°	496.7	502.7	508.7	514.7	520.8	529.4	540.5	551.6	562.7	573.8	541.0
110°	565.6	571.0	576.4	581.8	587.2	594.9	605.0	615.0	625.1	635.1	630.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	632.1	636.7	641.4	645.9	650.6	657.7	667.5	677.3	687.1	696.9	701.4
115°	729.7	733.6	737.3	741.1	744.9	751.2	760.0	768.8	777.6	786.4	793.3
117.5°	824.9	828.3	831.7	835.2	838.5	843.8	850.9	858.1	865.3	872.3	878.8
120°	883.5	887.0	890.4	893.8	897.3	902.3	908.9	915.3	921.9	928.5	934.7
122.5°	943.7	946.3	948.9	951.5	954.0	958.6	965.1	971.6	978.1	984.6	990.0
125°	1025.5	1027.8	1030.2	1032.5	1034.8	1039.1	1045.1	1051.3	1057.4	1063.6	1067.7
127.5°	1105.5	1107.7	1109.8	1112.0	1114.1	1117.9	1123.4	1128.9	1134.5	1139.9	1144.3
130°	1155.4	1157.5	1159.6	1161.8	1164.0	1167.3	1171.9	1176.5	1181.0	1185.7	1190.1
132.5°	1202.5	1204.9	1207.1	1209.4	1211.6	1214.7	1218.3	1221.9	1225.7	1229.3	1233.7
135°	1275.4	1277.0	1278.5	1280.1	1281.6	1283.9	1287.0	1290.0	1293.0	1296.1	1300.1
137.5°	1337.6	1339.6	1341.7	1343.7	1345.7	1347.7	1349.4	1351.1	1352.7	1354.4	1358.6
140°	1378.5	1380.2	1382.0	1383.7	1385.4	1386.9	1388.4	1389.8	1391.1	1392.5	1396.2
142.5°	1416.9	1418.6	1420.1	1421.7	1423.3	1424.6	1425.5	1426.5	1427.4	1428.5	1431.7
145°	1470.7	1472.6	1474.4	1476.2	1478.0	1479.3	1479.9	1480.5	1481.1	1481.6	1483.6
147.5°	1520.6	1521.9	1523.2	1524.5	1525.9	1526.8	1527.4	1527.9	1528.5	1529.1	1530.1
150°	1551.8	1552.6	1553.5	1554.3	1555.2	1555.9	1556.5	1557.0	1557.6	1558.2	1558.8
152.5°	1579.7	1580.1	1580.5	1580.9	1581.3	1581.8	1582.2	1582.5	1582.8	1583.2	1584.2
155°	1619.2	1618.7	1618.1	1617.5	1616.9	1616.8	1617.1	1617.4	1617.7	1617.9	1619.4
157.5°	1649.9	1649.8	1649.8	1649.7	1649.6	1649.5	1649.2	1648.9	1648.6	1648.3	1650.0
160°	1668.6	1668.3	1668.0	1667.7	1667.4	1667.2	1666.9	1666.6	1666.3	1666.0	1667.7
162.5°	1686.3	1685.5	1684.8	1683.9	1683.2	1682.7	1682.4	1682.1	1681.8	1681.5	1683.5
165°	1707.6	1706.7	1705.8	1705.0	1704.0	1703.5	1703.2	1702.9	1702.6	1702.3	1704.7
167.5°	1724.1	1723.0	1721.8	1720.7	1719.5	1719.0	1719.0	1719.0	1719.0	1719.0	1721.3
170°	1733.5	1732.3	1731.2	1730.1	1728.9	1728.3	1728.3	1728.3	1728.3	1728.3	1730.6
172.5°	1739.8	1738.4	1737.0	1735.6	1734.2	1733.6	1733.8	1734.1	1734.3	1734.5	1736.9
175°	1747.8	1746.4	1744.9	1743.4	1742.0	1741.4	1741.7	1742.0	1742.3	1742.6	1744.6
177.5°	1749.9	1748.7	1747.6	1746.5	1745.2	1744.8	1745.0	1745.2	1745.5	1745.8	1747.6
180°	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	708.6	709.7	710.8	711.3	711.1	711.0	710.9	710.7
5°	707.5	708.8	710.2	710.8	710.6	710.4	710.3	710.1
7.5°	703.2	704.9	706.7	707.4	707.2	707.0	706.8	706.6
10°	698.9	700.6	702.4	703.0	702.7	702.4	702.0	701.7
12.5°	693.1	694.6	696.2	696.8	696.5	696.1	695.8	695.5
15°	681.9	683.6	685.3	686.1	685.9	685.7	685.6	685.4
17.5°	667.3	668.8	670.3	671.1	670.8	670.6	670.3	670.0
20°	656.8	658.3	659.8	660.8	660.9	661.1	661.3	661.4
22.5°	645.2	647.2	649.1	650.1	649.9	649.8	649.7	649.6
25°	625.6	627.9	630.2	631.3	631.3	631.3	631.3	631.3
27.5°	605.2	607.1	609.0	610.2	610.3	610.4	610.6	610.7
30°	591.3	593.3	595.4	596.4	596.4	596.4	596.4	596.4
32.5°	576.0	578.2	580.5	581.8	582.2	582.6	583.0	583.4
35°	553.6	556.2	558.8	560.4	561.1	561.8	562.5	563.2
37.5°	530.3	533.2	536.1	538.0	538.5	539.0	539.6	540.1
40°	514.8	517.8	520.7	522.5	523.2	523.9	524.5	525.2
42.5°	498.7	501.9	505.1	507.2	508.2	509.1	510.1	511.0
45°	474.5	477.8	481.1	483.4	484.7	486.1	487.6	488.9
47.5°	450.2	453.8	457.5	459.9	460.9	462.0	463.1	464.1
50°	433.3	437.4	441.3	443.8	445.0	446.3	447.5	448.7
52.5°	416.4	420.4	424.5	427.3	428.8	430.2	431.7	433.2
55°	390.6	395.3	399.9	402.9	404.3	405.7	407.1	408.5
57.5°	364.5	369.1	373.8	376.9	378.5	380.1	381.7	383.3
60°	346.2	350.9	355.8	359.1	361.0	362.8	364.8	366.7
62.5°	328.8	333.7	338.4	341.7	343.5	345.2	347.0	348.7
65°	301.1	306.3	311.5	315.0	316.7	318.4	320.1	321.8
67.5°	273.7	279.3	285.0	288.5	289.9	291.3	292.9	294.3
70°	255.5	260.9	266.5	270.0	271.8	273.5	275.2	276.9
72.5°	237.1	242.8	248.4	252.2	253.9	255.6	257.3	259.0
75°	209.3	215.1	220.8	224.6	226.6	228.7	230.8	232.9
77.5°	183.4	189.3	195.3	199.1	200.8	202.3	203.9	205.5
80°	166.4	172.3	178.1	181.9	183.6	185.3	187.0	188.7
82.5°	151.0	156.7	162.6	166.4	168.1	169.9	171.6	173.3
85°	129.3	135.1	141.0	144.7	146.4	148.1	149.9	151.6
87.5°	116.9	123.0	129.1	133.0	134.9	136.7	138.6	140.4
90°	132.6	139.6	146.5	151.2	153.5	155.8	158.1	160.4
92.5°	130.8	138.4	145.9	150.7	152.6	154.5	156.4	158.3
95°	131.6	138.9	146.2	150.8	152.5	154.2	155.9	157.6
97.5°	127.6	135.1	142.6	147.2	149.3	151.3	153.3	155.3
100°	124.7	132.0	139.4	144.0	146.0	147.9	150.0	152.0
102.5°	144.4	142.1	139.8	139.8	142.0	144.2	146.4	148.8
105°	249.8	203.6	157.3	135.3	137.4	139.6	141.7	143.8
107.5°	508.2	475.2	442.4	407.5	370.5	333.6	296.6	259.6
110°	625.0	620.0	614.9	592.5	552.6	512.7	472.8	432.9



TEST NUMBER: P332140-840

CATALOG NUMBER: S123DIW-S560D1320U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	705.9	710.3	714.9	713.6	706.3	699.1	692.0	684.7
115°	800.3	807.4	814.4	819.2	821.7	824.3	826.8	829.3
117.5°	885.1	891.5	898.0	901.9	903.5	905.0	906.7	908.2
120°	941.0	947.3	953.5	957.3	958.5	959.7	960.9	962.1
122.5°	995.4	1000.9	1006.3	1009.8	1011.2	1012.6	1014.0	1015.5
125°	1072.0	1076.1	1080.4	1083.3	1085.1	1086.8	1088.6	1090.5
127.5°	1148.6	1153.0	1157.3	1159.7	1160.3	1160.9	1161.4	1162.1
130°	1194.6	1198.9	1203.4	1205.8	1206.3	1206.7	1207.2	1207.6
132.5°	1237.9	1242.1	1246.5	1248.8	1249.1	1249.5	1249.9	1250.2
135°	1304.0	1308.0	1311.9	1313.9	1313.9	1313.9	1313.9	1313.9
137.5°	1362.7	1366.8	1370.9	1373.0	1373.3	1373.6	1373.9	1374.2
140°	1400.0	1403.7	1407.4	1409.5	1409.8	1410.0	1410.3	1410.6
142.5°	1434.9	1438.1	1441.4	1443.0	1443.1	1443.1	1443.2	1443.2
145°	1485.5	1487.4	1489.4	1490.8	1491.5	1492.1	1492.8	1493.5
147.5°	1531.2	1532.1	1533.1	1533.2	1532.5	1531.8	1531.1	1530.3
150°	1559.3	1559.9	1560.5	1560.5	1560.0	1559.5	1559.0	1558.4
152.5°	1585.2	1586.3	1587.3	1587.2	1585.9	1584.7	1583.4	1582.2
155°	1620.8	1622.2	1623.8	1623.6	1621.8	1620.1	1618.4	1616.7
157.5°	1651.8	1653.6	1655.3	1655.0	1652.7	1650.5	1648.2	1646.0
160°	1669.4	1671.2	1672.9	1672.7	1670.7	1668.7	1666.7	1664.7
162.5°	1685.5	1687.5	1689.4	1689.5	1687.7	1686.0	1684.2	1682.3
165°	1707.0	1709.3	1711.6	1711.7	1709.7	1707.7	1705.7	1703.6
167.5°	1723.6	1725.9	1728.2	1728.2	1725.9	1723.6	1721.3	1719.0
170°	1732.9	1735.3	1737.6	1737.6	1735.3	1732.9	1730.6	1728.3
172.5°	1739.2	1741.5	1743.8	1743.6	1741.1	1738.6	1736.1	1733.5
175°	1746.7	1748.7	1750.7	1750.5	1748.3	1746.0	1743.6	1741.3
177.5°	1749.4	1751.3	1753.1	1752.9	1750.6	1748.3	1746.0	1743.6
180°	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8

(END OF REPORT)