

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: P332831-927

Luminaire Tested: **S124DIW-S1020D1560U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332831-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1560U927-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8279.5 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

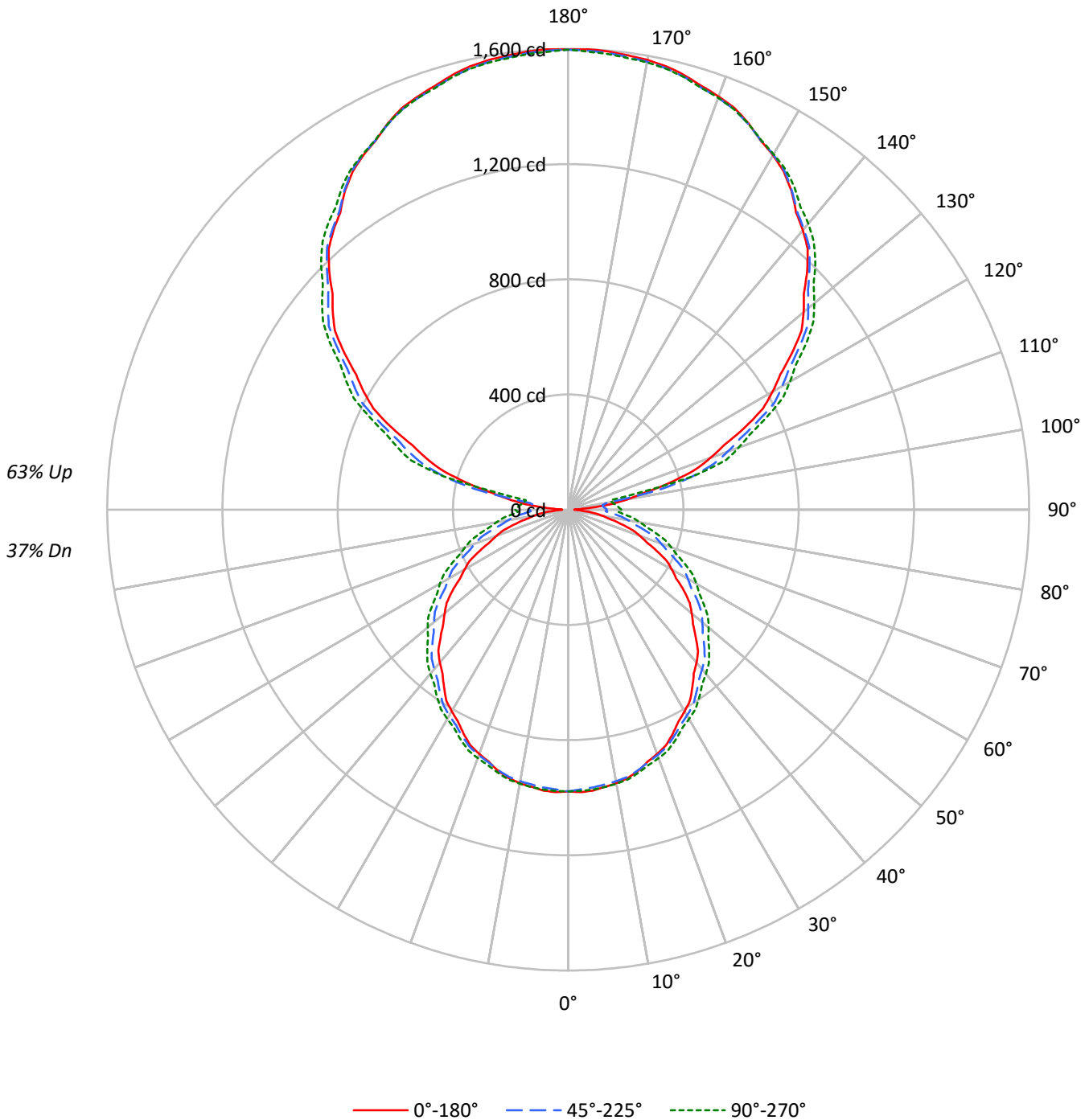
Input Watts (W): 76.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332831-927

CATALOG NUMBER: S124DIW-S1020D1560U927-4F0-1E-UDD-D

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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	44	44	44	37
1	94	90	85	82	85	81	78	75	66	63	61	51	50	48	38	37	36	30
2	85	78	71	66	77	71	65	61	57	53	50	45	42	39	33	31	30	24
3	78	68	61	55	70	62	55	50	50	45	41	39	36	33	29	27	25	20
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	23	21	17
5	65	53	45	39	58	48	41	36	39	34	30	31	27	24	23	20	18	15
6	60	48	39	34	54	43	36	31	35	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	25	21	18	19	16	14	11
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	17	15	13	10
9	47	35	28	23	43	32	26	21	26	21	18	21	17	15	16	13	11	9
10	44	32	25	20	40	29	23	19	24	19	16	19	16	13	15	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.6	1.1
10°-20°	265.4	3.2
20°-30°	401.3	4.8
30°-40°	485.5	5.9
40°-50°	513.3	6.2
50°-60°	483.1	5.8
60°-70°	400.8	4.8
70°-80°	281.5	3.4
80°-90°	163.8	2.0
90°-100°	149.1	1.8
100°-110°	418.3	5.1
110°-120°	713.3	8.6
120°-130°	872.3	10.5
130°-140°	916.4	11.1
140°-150°	848.6	10.2
150°-160°	682.5	8.2
160°-170°	440.2	5.3
170°-180°	151.7	1.8
0°-30°	759.3	9.2
0°-40°	1244.8	15.0
0°-60°	2241.1	27.1
0°-90°	3087.1	37.3
90°-120°	1280.7	15.5
90°-150°	3918.0	47.3
90°-180°	5192.0	62.7
0°-180°	8279.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	21	78	135	172	185	15
95°	80	78	122	157	169	96
105°	370	400	445	479	449	387
115°	678	692	725	751	759	667
125°	948	953	977	1000	1009	846
135°	1173	1172	1184	1204	1213	904
145°	1351	1353	1354	1361	1368	844
155°	1480	1481	1478	1482	1479	682
165°	1561	1556	1555	1564	1554	441
175°	1597	1591	1591	1601	1588	152
180°	1597	1597	1597	1597	1597	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	33.1	43.6	54.2	64.6	75.2	86.0	97.0	108.1	119.2	130.3	137.7
90°	21.1	33.7	46.4	59.1	71.8	84.4	97.0	109.6	122.2	134.8	143.4
92.5°	31.7	40.6	49.5	58.5	67.4	78.1	90.7	103.3	115.9	128.5	137.0
95°	79.9	79.0	78.0	77.0	76.0	80.6	90.9	101.1	111.3	121.6	129.8
97.5°	152.5	165.0	177.5	190.0	202.6	199.0	179.3	159.5	139.8	120.0	126.6
100°	207.9	219.0	230.2	241.3	252.4	244.4	217.2	190.1	163.0	135.8	137.8
102.5°	271.1	280.1	289.1	298.2	307.3	314.0	318.5	323.1	327.6	332.2	289.8
105°	369.5	375.9	382.4	388.8	395.3	403.7	414.0	424.4	434.7	445.0	453.5
107.5°	462.6	467.5	472.2	477.0	481.8	489.3	499.7	510.0	520.3	530.7	537.8
110°	524.8	529.0	533.2	537.5	541.7	548.8	559.0	569.0	579.2	589.3	595.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	585.1	589.6	594.1	598.5	602.9	609.6	618.5	627.3	636.2	645.1	650.4
115°	677.9	681.0	684.0	686.9	689.9	695.1	702.7	710.2	717.7	725.2	731.1
117.5°	762.6	764.9	767.3	769.7	772.1	777.2	785.0	792.8	800.7	808.5	813.5
120°	819.0	820.9	822.6	824.4	826.2	830.5	837.3	844.1	850.9	857.7	863.1
122.5°	872.5	873.3	874.1	874.9	875.7	879.6	886.6	893.7	900.7	907.8	912.9
125°	948.2	949.0	949.7	950.6	951.4	954.6	960.1	965.7	971.3	976.8	982.2
127.5°	1020.6	1020.6	1020.6	1020.6	1020.6	1023.6	1029.5	1035.4	1041.3	1047.2	1051.4
130°	1066.5	1066.5	1066.6	1066.6	1066.6	1069.0	1073.6	1078.3	1083.1	1087.7	1092.3
132.5°	1109.5	1109.8	1110.0	1110.2	1110.5	1112.6	1116.7	1120.9	1125.0	1129.2	1133.6
135°	1172.9	1172.7	1172.4	1172.1	1171.9	1173.1	1175.9	1178.7	1181.5	1184.2	1188.6
137.5°	1230.0	1229.9	1229.8	1229.6	1229.5	1230.4	1232.4	1234.4	1236.4	1238.4	1242.5
140°	1267.3	1267.6	1267.9	1268.2	1268.4	1269.0	1269.8	1270.6	1271.3	1272.1	1276.0
142.5°	1299.9	1300.8	1301.7	1302.6	1303.5	1304.1	1304.2	1304.4	1304.6	1304.7	1308.1
145°	1351.1	1351.6	1352.2	1352.7	1353.3	1353.5	1353.5	1353.5	1353.5	1353.5	1355.3
147.5°	1391.9	1393.1	1394.4	1395.7	1396.9	1397.3	1397.1	1396.9	1396.5	1396.3	1396.7
150°	1421.5	1422.4	1423.2	1423.9	1424.8	1425.1	1424.8	1424.6	1424.3	1424.0	1424.0
152.5°	1445.5	1446.3	1447.1	1447.9	1448.7	1448.9	1448.3	1447.9	1447.4	1446.9	1447.4
155°	1480.2	1480.4	1480.7	1481.0	1481.2	1481.0	1480.2	1479.4	1478.6	1477.7	1478.8
157.5°	1509.6	1509.4	1509.3	1509.1	1508.9	1508.4	1507.4	1506.6	1505.7	1504.8	1506.2
160°	1526.8	1526.0	1525.2	1524.4	1523.6	1523.0	1522.7	1522.5	1522.3	1521.9	1523.6
162.5°	1542.1	1541.0	1540.0	1539.1	1538.0	1537.4	1537.1	1536.8	1536.6	1536.3	1537.9
165°	1561.4	1560.0	1558.8	1557.4	1556.1	1555.4	1555.4	1555.4	1555.4	1555.4	1557.5
167.5°	1576.7	1575.3	1573.9	1572.6	1571.1	1570.4	1570.3	1570.1	1569.9	1569.8	1572.1
170°	1585.3	1583.7	1582.1	1580.5	1578.9	1578.3	1578.5	1578.8	1579.1	1579.3	1581.4
172.5°	1591.0	1589.4	1587.9	1586.3	1584.7	1584.0	1584.3	1584.5	1584.8	1585.1	1587.1
175°	1597.2	1595.6	1594.0	1592.4	1590.9	1590.2	1590.5	1590.7	1591.0	1591.3	1593.6
177.5°	1600.1	1598.6	1597.1	1595.6	1594.2	1593.6	1594.0	1594.5	1594.9	1595.3	1597.0
180°	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	145.1	152.5	159.9	164.7	166.9	169.1	171.4	173.6
90°	152.0	160.7	169.3	174.9	177.4	179.8	182.3	184.8
92.5°	145.4	153.8	162.3	167.5	169.6	171.7	173.7	175.8
95°	137.9	146.1	154.2	159.5	162.0	164.5	166.9	169.4
97.5°	133.1	139.7	146.2	150.6	153.0	155.3	157.7	160.1
100°	139.9	142.0	144.0	146.1	148.1	150.0	151.9	153.9
102.5°	247.5	205.2	162.9	142.7	144.7	146.6	148.5	150.5
105°	462.0	470.5	478.9	479.3	471.7	464.1	456.5	448.9
107.5°	544.9	552.2	559.3	564.3	567.0	569.7	572.5	575.3
110°	601.5	607.7	613.8	618.2	621.0	623.7	626.5	629.2



TEST NUMBER: P332831-927

CATALOG NUMBER: S124DIW-S1020D1560U927-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	655.7	661.0	666.3	670.4	673.4	676.3	679.3	682.2
115°	737.0	742.9	748.8	752.6	754.3	756.0	757.7	759.4
117.5°	818.4	823.4	828.4	831.7	833.6	835.4	837.3	839.1
120°	868.5	873.9	879.2	882.6	884.1	885.5	886.9	888.4
122.5°	918.1	923.3	928.5	931.7	933.0	934.1	935.3	936.6
125°	987.7	993.1	998.5	1002.1	1003.8	1005.5	1007.3	1009.0
127.5°	1055.7	1059.9	1064.1	1066.9	1068.3	1069.8	1071.3	1072.7
130°	1097.0	1101.7	1106.3	1109.4	1110.8	1112.3	1113.7	1115.2
132.5°	1138.0	1142.5	1146.9	1149.8	1151.0	1152.3	1153.6	1154.8
135°	1193.0	1197.5	1201.9	1205.1	1207.1	1209.1	1211.1	1213.1
137.5°	1246.7	1250.9	1255.0	1257.6	1258.6	1259.6	1260.8	1261.8
140°	1280.0	1284.0	1287.9	1290.6	1292.1	1293.6	1295.1	1296.6
142.5°	1311.5	1314.9	1318.2	1320.4	1321.4	1322.5	1323.7	1324.7
145°	1357.0	1358.7	1360.4	1362.1	1363.6	1365.1	1366.6	1368.1
147.5°	1397.1	1397.5	1398.0	1398.7	1399.7	1400.7	1401.8	1402.8
150°	1424.0	1424.0	1424.0	1424.2	1424.4	1424.7	1425.0	1425.2
152.5°	1447.8	1448.2	1448.7	1448.7	1448.6	1448.4	1448.3	1448.1
155°	1479.9	1481.0	1482.0	1482.2	1481.4	1480.6	1479.8	1479.0
157.5°	1507.5	1508.9	1510.3	1510.3	1508.9	1507.5	1506.2	1504.8
160°	1525.2	1526.8	1528.4	1528.4	1526.8	1525.2	1523.6	1521.9
162.5°	1539.5	1541.1	1542.7	1542.5	1540.8	1539.0	1537.2	1535.3
165°	1559.6	1561.8	1563.9	1563.8	1561.4	1559.0	1556.6	1554.3
167.5°	1574.5	1576.8	1579.1	1579.0	1576.3	1573.7	1571.0	1568.4
170°	1583.6	1585.7	1587.9	1587.5	1584.9	1582.2	1579.6	1576.9
172.5°	1589.3	1591.4	1593.6	1593.2	1590.3	1587.5	1584.6	1581.7
175°	1596.0	1598.5	1600.8	1600.4	1597.2	1594.0	1590.9	1587.7
177.5°	1598.7	1600.4	1602.1	1601.7	1599.2	1596.6	1594.0	1591.5
180°	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2	1597.2

(END OF REPORT)