

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: P332827-830

Luminaire Tested: **S124DIW-S1020D1340U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332827-830
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-S1020D1340U830-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1340 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9234.3 lumens
Efficiency: N/A
Efficacy: 132.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

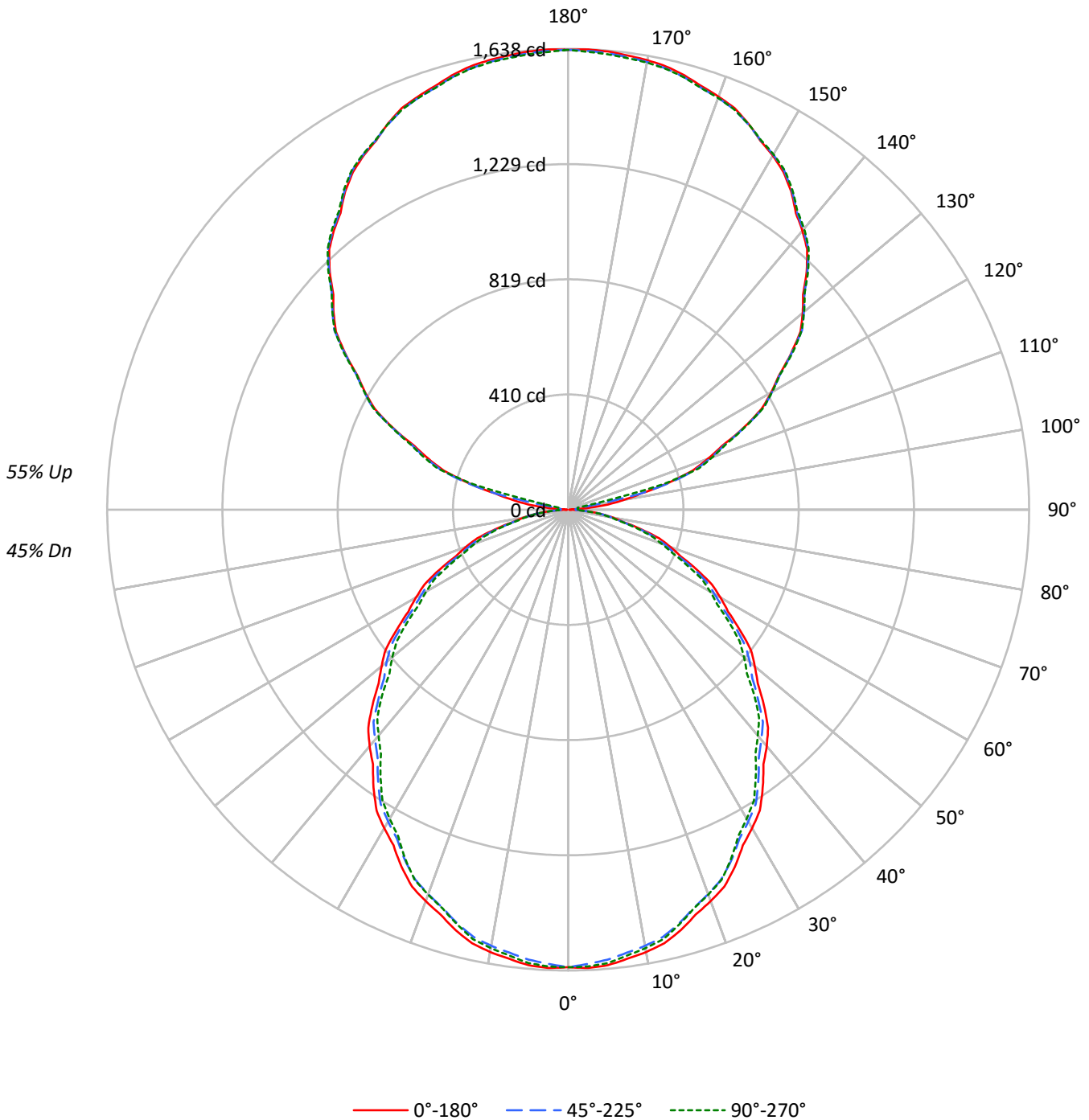
Input Watts (W): 69.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45
1	97	92	88	85	88	85	81	78	71	68	66	58	56	55	46	45	44	38
2	88	81	75	69	80	74	69	64	62	58	55	51	48	45	40	38	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	41	38	36	33	31	27
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	32	29	27	23
5	67	56	48	42	61	51	44	39	43	38	34	36	32	29	29	26	23	20
6	62	50	42	36	57	46	39	34	39	34	29	32	28	25	26	23	21	18
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	24	21	18	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14
9	49	37	30	25	45	35	28	23	30	24	21	25	21	18	20	17	15	13
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	19	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13130	13130	13130
5°	13169	13011	13105
10°	13086	12904	12969
15°	12929	12721	12754
20°	12718	12494	12506
25°	12479	12235	12200
30°	12185	11929	11820
35°	11880	11610	11456
40°	11564	11248	11041
45°	11233	10891	10683
50°	10868	10574	10246
55°	10473	10162	9831
60°	10078	9700	9405
65°	9635	9259	8886
70°	9135	8674	8337
75°	8372	7966	7764
80°	7452	7146	6969
85°	6521	6280	6150



TEST NUMBER: P332827-830

CATALOG NUMBER: S124DIW-S1020D1340U830-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.2	1.7
10°-20°	431.5	4.7
20°-30°	635.2	6.9
30°-40°	738.4	8.0
40°-50°	738.4	8.0
50°-60°	645.9	7.0
60°-70°	479.7	5.2
70°-80°	272.5	3.0
80°-90°	83.4	0.9
90°-100°	55.9	0.6
100°-110°	356.4	3.9
110°-120°	681.9	7.4
120°-130°	865.6	9.4
130°-140°	926.1	10.0
140°-150°	866.0	9.4
150°-160°	698.4	7.6
160°-170°	450.5	4.9
170°-180°	155.3	1.7
0°-30°	1219.8	13.2
0°-40°	1958.2	21.2
0°-60°	3342.6	36.2
0°-90°	4178.2	45.2
90°-120°	1094.2	11.8
90°-150°	3752.0	40.6
90°-180°	5056.0	54.8
0°-180°	9234.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1626	1626	1626	1626	1626	
5°	1625	1619	1606	1619	1617	154
15°	1547	1541	1522	1529	1526	436
25°	1401	1391	1374	1374	1370	644
35°	1205	1196	1178	1169	1162	753
45°	984	974	954	940	936	758
55°	744	739	722	707	698	666
65°	504	497	485	472	465	499
75°	268	262	255	250	249	285
85°	70	70	68	68	66	78
90°	4	17	27	34	37	7
95°	67	28	27	34	35	86
105°	368	375	381	389	348	385
115°	687	690	690	692	692	676
125°	966	970	968	972	973	862
135°	1198	1197	1202	1204	1207	923
145°	1382	1385	1385	1386	1389	863
155°	1515	1516	1512	1517	1514	698
165°	1598	1592	1592	1600	1590	451
175°	1635	1628	1628	1638	1625	156
180°	1635	1635	1635	1635	1635	



TEST NUMBER: P332827-830

CATALOG NUMBER: S124DIW-S1020D1340U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4
2.5°	1630.5	1629.8	1629.1	1628.4	1627.8	1626.1	1623.5	1621.0	1618.4	1615.9	1618.3
5°	1625.0	1623.9	1622.8	1621.6	1620.4	1618.3	1615.0	1611.8	1608.7	1605.5	1608.7
7.5°	1610.0	1608.7	1607.6	1606.5	1605.3	1603.0	1599.4	1595.9	1592.3	1588.8	1591.4
10°	1596.4	1595.3	1594.0	1592.9	1591.8	1589.3	1585.5	1581.8	1578.0	1574.2	1576.5
12.5°	1578.7	1577.5	1576.3	1575.2	1574.0	1571.4	1567.4	1563.5	1559.4	1555.5	1558.0
15°	1546.9	1545.7	1544.5	1543.4	1542.2	1539.5	1535.1	1530.8	1526.4	1522.1	1523.8
17.5°	1508.5	1507.1	1505.6	1504.2	1502.8	1500.0	1495.8	1491.8	1487.6	1483.6	1484.6
20°	1480.4	1478.9	1477.5	1476.0	1474.6	1471.7	1467.4	1463.0	1458.7	1454.3	1455.2
22.5°	1450.2	1448.2	1446.3	1444.4	1442.6	1439.4	1435.0	1430.7	1426.3	1422.0	1423.6
25°	1400.9	1398.9	1396.8	1394.8	1392.8	1389.8	1385.7	1381.7	1377.6	1373.6	1373.9
27.5°	1344.6	1342.6	1340.4	1338.3	1336.2	1333.3	1329.6	1325.8	1322.0	1318.2	1317.6
30°	1307.1	1304.8	1302.4	1300.1	1297.8	1294.8	1291.0	1287.2	1283.5	1279.7	1278.6
32.5°	1267.4	1265.4	1263.3	1261.2	1259.1	1256.0	1252.1	1248.1	1244.1	1240.1	1238.7
35°	1205.4	1203.4	1201.4	1199.4	1197.3	1194.3	1190.2	1186.2	1182.1	1178.1	1176.0
37.5°	1140.0	1138.1	1136.3	1134.4	1132.6	1129.5	1125.1	1120.8	1116.4	1112.1	1109.9
40°	1097.3	1095.0	1092.6	1090.3	1088.0	1084.7	1080.3	1076.0	1071.7	1067.3	1064.4
42.5°	1051.4	1050.0	1048.6	1047.3	1045.8	1042.7	1037.9	1033.1	1028.3	1023.5	1020.1
45°	983.9	981.8	979.9	977.8	975.8	972.4	967.8	963.2	958.6	953.9	950.7
47.5°	913.2	911.9	910.5	909.1	907.7	904.8	900.6	896.3	892.0	887.7	884.1
50°	865.3	864.1	863.0	861.9	860.6	858.1	854.0	850.0	845.9	841.9	837.8
52.5°	818.4	817.0	815.6	814.3	812.8	810.0	805.7	801.4	797.1	792.9	789.3
55°	744.1	743.2	742.3	741.5	740.6	738.2	734.1	730.1	726.0	722.0	718.5
57.5°	673.3	672.2	671.3	670.2	669.3	666.8	662.8	658.8	654.8	650.8	647.5
60°	624.2	622.7	621.3	619.9	618.4	615.9	612.1	608.3	604.5	600.8	598.1
62.5°	576.3	575.0	573.8	572.6	571.4	568.8	564.8	560.8	556.8	552.8	550.4
65°	504.4	502.8	501.4	500.0	498.5	496.3	493.4	490.6	487.7	484.7	481.9
67.5°	431.9	430.6	429.2	427.9	426.5	424.5	421.7	419.0	416.1	413.4	410.6
70°	387.0	385.0	383.0	381.0	378.9	376.7	374.5	372.1	369.9	367.5	365.1
72.5°	339.1	337.1	335.1	333.0	331.0	329.0	327.2	325.4	323.5	321.6	319.8
75°	268.4	267.0	265.5	264.1	262.7	261.2	259.8	258.4	256.8	255.4	254.3
77.5°	201.0	200.3	199.6	199.1	198.4	197.5	196.1	194.9	193.6	192.4	192.0
80°	160.3	159.4	158.5	157.7	156.8	156.1	155.5	155.0	154.4	153.7	153.2
82.5°	120.6	120.3	119.9	119.4	119.0	118.8	118.7	118.6	118.5	118.3	118.0
85°	70.4	70.4	70.4	70.4	70.4	70.1	69.5	68.9	68.3	67.8	67.8
87.5°	27.8	28.2	28.6	28.9	29.3	29.6	29.8	30.0	30.2	30.4	30.7
90°	3.7	6.7	9.6	12.6	15.6	18.2	20.4	22.5	24.7	26.9	28.6
92.5°	15.4	15.6	15.7	15.9	16.0	17.2	19.4	21.6	23.8	25.9	27.5
95°	67.2	58.0	48.7	39.5	30.3	25.8	26.1	26.4	26.6	26.9	28.6
97.5°	142.8	148.5	154.3	160.0	165.8	153.5	123.2	92.9	62.6	32.2	32.4
100°	200.5	205.4	210.3	215.2	220.1	203.8	166.3	128.8	91.2	53.8	49.2
102.5°	265.0	268.6	272.2	275.8	279.4	278.7	273.8	269.0	264.1	259.2	209.3
105°	368.0	369.6	371.3	372.9	374.5	376.0	377.4	378.7	380.0	381.4	383.9
107.5°	463.5	464.4	465.2	466.0	466.8	468.2	470.0	471.8	473.7	475.6	476.7
110°	528.1	529.0	529.8	530.6	531.4	532.6	534.2	535.8	537.5	539.1	539.7



TEST NUMBER: P332827-830

CATALOG NUMBER: S124DIW-S1020D1340U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	590.7	592.2	593.7	595.1	596.6	597.7	598.5	599.3	600.0	600.8	600.7
115°	687.0	687.9	688.7	689.5	690.3	690.6	690.3	690.0	689.8	689.5	690.0
117.5°	773.8	775.0	776.0	777.1	778.2	779.0	779.7	780.2	780.8	781.5	781.4
120°	832.5	833.6	834.7	835.8	836.9	837.3	837.1	836.8	836.5	836.2	836.8
122.5°	887.3	888.0	888.6	889.3	889.9	890.4	890.8	891.2	891.6	891.9	892.3
125°	965.8	966.9	968.0	969.0	970.2	970.4	969.9	969.3	968.7	968.3	969.0
127.5°	1040.1	1040.4	1040.7	1040.9	1041.2	1042.0	1043.2	1044.4	1045.8	1047.0	1046.8
130°	1088.1	1088.4	1088.6	1088.8	1089.1	1089.7	1090.5	1091.3	1092.1	1093.0	1093.3
132.5°	1132.1	1132.6	1133.0	1133.5	1134.0	1134.8	1135.9	1136.8	1137.8	1138.9	1139.2
135°	1198.1	1197.8	1197.5	1197.3	1197.0	1197.4	1198.4	1199.6	1200.7	1201.7	1202.3
137.5°	1256.5	1256.6	1256.7	1256.9	1257.0	1257.6	1258.8	1260.0	1261.2	1262.3	1263.0
140°	1294.7	1295.2	1295.7	1296.3	1296.8	1297.4	1297.9	1298.4	1299.0	1299.6	1300.3
142.5°	1328.9	1329.8	1330.9	1331.8	1332.8	1333.4	1333.8	1334.1	1334.5	1334.7	1335.4
145°	1381.5	1382.2	1383.1	1383.9	1384.7	1385.2	1385.2	1385.2	1385.2	1385.2	1385.4
147.5°	1423.2	1424.7	1426.3	1427.9	1429.4	1430.0	1429.7	1429.5	1429.2	1428.9	1429.1
150°	1453.6	1454.7	1455.8	1456.9	1457.9	1458.3	1458.1	1457.8	1457.5	1457.3	1457.3
152.5°	1479.0	1479.9	1480.7	1481.6	1482.5	1482.7	1482.2	1481.7	1481.2	1480.7	1481.2
155°	1514.8	1514.9	1515.2	1515.5	1515.8	1515.5	1514.8	1513.9	1513.1	1512.3	1513.3
157.5°	1544.8	1544.6	1544.5	1544.3	1544.2	1543.6	1542.7	1541.7	1540.9	1539.9	1541.3
160°	1562.4	1561.6	1560.8	1559.9	1559.2	1558.6	1558.3	1558.0	1557.7	1557.6	1559.2
162.5°	1578.0	1577.0	1576.0	1575.0	1574.0	1573.3	1573.0	1572.7	1572.4	1572.2	1573.8
165°	1597.9	1596.5	1595.2	1593.7	1592.4	1591.8	1591.8	1591.8	1591.8	1591.8	1593.9
167.5°	1613.5	1612.1	1610.7	1609.3	1607.9	1607.0	1606.9	1606.8	1606.6	1606.4	1608.8
170°	1622.3	1620.7	1619.0	1617.4	1615.8	1615.1	1615.3	1615.6	1615.9	1616.2	1618.3
172.5°	1628.1	1626.5	1624.9	1623.2	1621.6	1621.0	1621.3	1621.6	1621.7	1622.0	1624.2
175°	1634.6	1632.9	1631.3	1629.7	1628.0	1627.3	1627.6	1627.9	1628.1	1628.4	1630.9
177.5°	1637.5	1636.0	1634.4	1632.9	1631.4	1630.8	1631.3	1631.7	1632.1	1632.6	1634.3
180°	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6



TEST NUMBER: P332827-830

CATALOG NUMBER: S124DIW-S1020D1340U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4
2.5°	1620.5	1622.9	1625.2	1626.3	1626.0	1625.8	1625.5	1625.3
5°	1611.8	1615.0	1618.3	1619.6	1619.0	1618.3	1617.8	1617.2
7.5°	1593.9	1596.5	1599.0	1600.2	1599.8	1599.4	1599.0	1598.7
10°	1578.9	1581.2	1583.5	1584.3	1583.8	1583.2	1582.6	1582.1
12.5°	1560.6	1563.1	1565.7	1566.5	1565.8	1564.9	1564.1	1563.3
15°	1525.6	1527.3	1529.1	1529.5	1528.6	1527.8	1526.9	1526.0
17.5°	1485.7	1486.9	1487.9	1488.2	1487.6	1487.0	1486.5	1485.8
20°	1456.0	1457.0	1457.8	1457.9	1457.4	1456.8	1456.2	1455.7
22.5°	1425.1	1426.7	1428.2	1428.5	1427.5	1426.4	1425.4	1424.4
25°	1374.1	1374.4	1374.7	1374.2	1373.1	1372.0	1370.7	1369.6
27.5°	1316.9	1316.2	1315.5	1314.5	1313.0	1311.5	1310.0	1308.6
30°	1277.4	1276.2	1275.1	1273.8	1272.3	1270.8	1269.4	1268.0
32.5°	1237.3	1236.0	1234.5	1233.1	1231.6	1230.2	1228.8	1227.3
35°	1174.0	1172.0	1170.0	1168.2	1166.8	1165.4	1163.9	1162.4
37.5°	1107.7	1105.5	1103.3	1101.3	1099.4	1097.4	1095.5	1093.6
40°	1061.5	1058.6	1055.7	1053.6	1052.1	1050.7	1049.2	1047.7
42.5°	1016.8	1013.4	1010.0	1007.9	1006.9	1005.9	1004.9	1004.0
45°	947.5	944.3	941.1	939.1	938.3	937.5	936.5	935.7
47.5°	880.5	876.9	873.4	870.4	868.3	866.0	863.8	861.7
50°	833.8	829.7	825.7	822.7	821.0	819.3	817.6	815.8
52.5°	785.7	782.0	778.4	775.6	773.4	771.2	769.0	766.8
55°	715.0	711.5	708.0	705.5	703.7	702.0	700.2	698.5
57.5°	644.2	640.9	637.6	635.1	633.4	631.8	630.1	628.4
60°	595.6	593.0	590.3	588.3	586.8	585.4	584.0	582.5
62.5°	548.1	545.6	543.3	541.4	540.0	538.5	537.1	535.6
65°	479.0	476.1	473.2	471.0	469.6	468.2	466.7	465.2
67.5°	407.8	405.0	402.3	400.7	400.2	399.8	399.4	399.1
70°	362.9	360.5	358.3	356.7	355.8	354.9	354.0	353.2
72.5°	317.9	316.0	314.2	312.8	312.0	311.1	310.3	309.3
75°	253.1	251.9	250.8	250.1	249.8	249.5	249.2	248.9
77.5°	191.6	191.3	191.0	190.4	189.6	188.9	188.1	187.4
80°	152.6	152.0	151.5	151.0	150.7	150.4	150.1	149.9
82.5°	117.6	117.3	117.0	116.6	116.3	116.0	115.7	115.5
85°	67.8	67.8	67.8	67.6	67.3	67.0	66.7	66.4
87.5°	31.0	31.4	31.7	32.0	32.0	32.1	32.2	32.3
90°	30.2	31.8	33.5	34.5	35.1	35.6	36.1	36.7
92.5°	29.2	30.8	32.4	33.3	33.5	33.6	33.6	33.7
95°	30.2	31.8	33.5	34.4	34.6	34.9	35.2	35.4
97.5°	32.6	32.8	32.9	33.2	33.5	33.6	33.9	34.2
100°	44.6	40.0	35.3	33.2	33.5	33.6	33.9	34.2
102.5°	159.6	109.7	59.9	35.0	35.1	35.1	35.2	35.3
105°	386.3	388.8	391.2	387.6	377.8	368.0	358.2	348.5
107.5°	478.0	479.2	480.3	481.5	482.5	483.5	484.6	485.6
110°	540.3	540.7	541.3	542.0	542.8	543.7	544.4	545.3



TEST NUMBER: P332827-830

CATALOG NUMBER: S124DIW-S1020D1340U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	600.5	600.4	600.3	600.8	601.8	602.9	603.9	604.9
115°	690.6	691.2	691.6	691.9	691.9	691.9	691.9	691.9
117.5°	781.2	781.1	781.0	780.9	780.8	780.7	780.6	780.4
120°	837.3	837.8	838.4	838.4	837.8	837.3	836.8	836.2
122.5°	892.6	893.0	893.2	893.2	892.6	892.0	891.6	891.0
125°	969.9	970.7	971.5	972.0	972.3	972.6	972.9	973.2
127.5°	1046.7	1046.5	1046.3	1046.1	1045.9	1045.7	1045.5	1045.3
130°	1093.4	1093.7	1094.0	1094.2	1094.2	1094.2	1094.2	1094.2
132.5°	1139.4	1139.7	1140.0	1140.0	1139.8	1139.6	1139.3	1139.2
135°	1202.9	1203.3	1203.9	1204.5	1205.0	1205.5	1206.1	1206.6
137.5°	1263.6	1264.1	1264.8	1265.0	1264.8	1264.7	1264.5	1264.3
140°	1301.2	1302.0	1302.8	1303.3	1303.6	1303.9	1304.2	1304.5
142.5°	1336.0	1336.5	1337.2	1337.5	1337.6	1337.6	1337.7	1337.7
145°	1385.6	1385.9	1386.2	1386.7	1387.1	1387.7	1388.3	1388.8
147.5°	1429.4	1429.6	1429.7	1430.0	1430.3	1430.6	1430.8	1431.1
150°	1457.3	1457.3	1457.3	1457.4	1457.6	1457.9	1458.2	1458.5
152.5°	1481.6	1482.1	1482.4	1482.6	1482.4	1482.2	1482.1	1482.0
155°	1514.5	1515.5	1516.6	1516.7	1516.0	1515.1	1514.3	1513.5
157.5°	1542.8	1544.2	1545.6	1545.6	1544.2	1542.8	1541.3	1539.9
160°	1560.8	1562.4	1564.1	1564.1	1562.4	1560.8	1559.2	1557.6
162.5°	1575.5	1577.1	1578.7	1578.6	1576.8	1574.9	1573.0	1571.2
165°	1596.1	1598.3	1600.4	1600.2	1597.9	1595.4	1593.0	1590.5
167.5°	1611.2	1613.5	1616.0	1615.8	1613.1	1610.3	1607.7	1605.0
170°	1620.5	1622.7	1624.8	1624.6	1621.9	1619.2	1616.5	1613.7
172.5°	1626.4	1628.6	1630.8	1630.4	1627.4	1624.5	1621.6	1618.6
175°	1633.3	1635.8	1638.2	1637.8	1634.6	1631.3	1628.0	1624.8
177.5°	1636.1	1637.8	1639.6	1639.1	1636.4	1633.9	1631.3	1628.6
180°	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6

(END OF REPORT)