

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: P332828

Luminaire Tested: **S124DIW-S1020D1340U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332828
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1340U835-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9085.2 lumens
Efficiency: N/A
Efficacy: 130.2 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

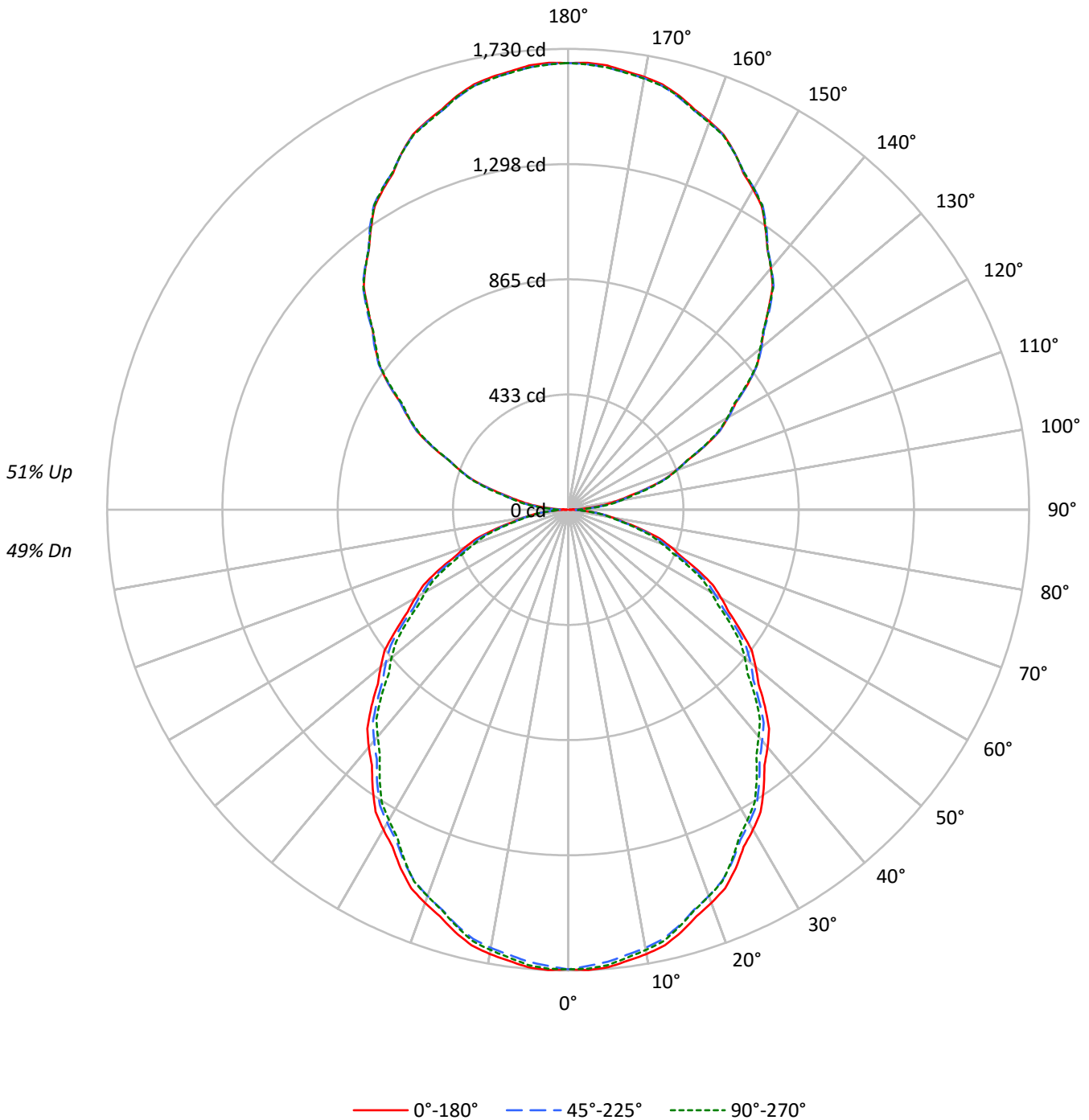
Input Watts (W): 69.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	50	30	10	0		
RCR																										
0	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55	49					49			
1	97	93	89	86	90	86	83	80	72	70	68	60	58	57	49	47	46	41					41			
2	89	81	75	70	81	75	70	65	63	59	56	53	50	47	43	41	39	34					34			
3	81	71	64	58	74	66	60	54	56	51	47	47	43	40	38	35	33	29					29			
4	74	63	55	49	68	59	52	46	50	44	40	41	38	34	34	31	29	25					25			
5	68	56	48	42	62	52	45	40	44	39	35	37	33	30	30	27	25	22					22			
6	63	51	42	37	57	47	40	34	40	34	30	34	29	26	28	24	22	19					19			
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	20	17					17			
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	17	15					15			
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16	14					14			
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14	12					12			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13930	13930	13930
5°	13972	13804	13904
10°	13884	13691	13759
15°	13717	13497	13531
20°	13493	13256	13268
25°	13239	12981	12944
30°	12928	12656	12541
35°	12604	12318	12154
40°	12269	11934	11715
45°	11918	11555	11334
50°	11531	11218	10870
55°	11112	10781	10431
60°	10693	10291	9978
65°	10222	9824	9429
70°	9692	9203	8844
75°	8883	8453	8238
80°	7908	7583	7392
85°	6919	6660	6530



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	1.8
10°-20°	457.8	5.0
20°-30°	673.9	7.4
30°-40°	783.4	8.6
40°-50°	783.4	8.6
50°-60°	685.3	7.5
60°-70°	508.9	5.6
70°-80°	289.1	3.2
80°-90°	88.5	1.0
90°-100°	110.6	1.2
100°-110°	327.6	3.6
110°-120°	556.1	6.1
120°-130°	733.3	8.1
130°-140°	823.5	9.1
140°-150°	809.2	8.9
150°-160°	680.6	7.5
160°-170°	452.8	5.0
170°-180°	158.6	1.7
0°-30°	1294.2	14.2
0°-40°	2077.6	22.9
0°-60°	3546.4	39.0
0°-90°	4432.9	48.8
90°-120°	994.3	10.9
90°-150°	3360.3	37.0
90°-180°	4652.0	51.2
0°-180°	9085.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1724	1718	1703	1718	1716	163
15°	1641	1635	1615	1622	1619	462
25°	1486	1476	1457	1458	1453	684
35°	1279	1269	1250	1240	1233	799
45°	1044	1034	1012	997	993	804
55°	790	784	766	750	741	707
65°	535	528	514	501	494	530
75°	285	278	271	266	264	303
85°	75	75	72	72	70	82
90°	4	18	28	36	39	9
95°	78	89	99	102	102	87
105°	302	304	309	313	316	321
115°	565	565	563	562	560	557
125°	824	823	822	820	817	734
135°	1062	1070	1070	1067	1063	821
145°	1290	1295	1297	1295	1292	807
155°	1478	1478	1477	1482	1477	680
165°	1609	1606	1603	1610	1606	453
175°	1674	1668	1666	1675	1666	159
180°	1677	1677	1677	1677	1677	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5
2.5°	1729.9	1729.2	1728.4	1727.7	1727.0	1725.2	1722.5	1719.8	1717.1	1714.4	1716.9
5°	1724.1	1722.9	1721.7	1720.4	1719.2	1716.9	1713.5	1710.1	1706.8	1703.4	1706.8
7.5°	1708.1	1706.8	1705.6	1704.4	1703.2	1700.7	1696.9	1693.2	1689.4	1685.7	1688.4
10°	1693.7	1692.5	1691.2	1690.0	1688.8	1686.2	1682.2	1678.2	1674.2	1670.2	1672.6
12.5°	1674.9	1673.7	1672.4	1671.2	1670.0	1667.2	1663.0	1658.8	1654.5	1650.3	1653.0
15°	1641.2	1639.9	1638.7	1637.5	1636.2	1633.3	1628.7	1624.1	1619.5	1614.9	1616.7
17.5°	1600.5	1599.0	1597.4	1595.9	1594.4	1591.4	1587.0	1582.7	1578.3	1574.0	1575.1
20°	1570.6	1569.1	1567.6	1566.0	1564.5	1561.4	1556.8	1552.2	1547.6	1543.0	1543.9
22.5°	1538.6	1536.5	1534.5	1532.5	1530.5	1527.1	1522.5	1517.9	1513.3	1508.7	1510.4
25°	1486.3	1484.2	1482.0	1479.8	1477.7	1474.5	1470.2	1465.9	1461.6	1457.3	1457.6
27.5°	1426.6	1424.4	1422.1	1419.9	1417.7	1414.6	1410.6	1406.6	1402.6	1398.6	1397.9
30°	1386.8	1384.3	1381.8	1379.4	1376.9	1373.7	1369.7	1365.7	1361.7	1357.7	1356.5
32.5°	1344.7	1342.5	1340.3	1338.1	1335.9	1332.6	1328.4	1324.2	1319.9	1315.7	1314.2
35°	1278.9	1276.8	1274.6	1272.5	1270.3	1267.1	1262.8	1258.5	1254.2	1249.9	1247.7
37.5°	1209.5	1207.5	1205.6	1203.6	1201.6	1198.4	1193.7	1189.1	1184.5	1179.9	1177.6
40°	1164.2	1161.7	1159.2	1156.8	1154.3	1150.8	1146.2	1141.6	1137.0	1132.4	1129.3
42.5°	1115.5	1114.0	1112.5	1111.1	1109.6	1106.3	1101.2	1096.1	1091.0	1085.9	1082.3
45°	1043.9	1041.7	1039.6	1037.4	1035.3	1031.7	1026.8	1021.9	1017.0	1012.1	1008.7
47.5°	968.9	967.5	966.0	964.5	963.0	960.0	955.5	950.9	946.4	941.8	938.0
50°	918.1	916.8	915.6	914.4	913.1	910.4	906.1	901.8	897.5	893.2	888.9
52.5°	868.3	866.8	865.3	863.9	862.4	859.4	854.8	850.3	845.7	841.2	837.4
55°	789.5	788.5	787.6	786.7	785.8	783.2	778.9	774.6	770.3	766.0	762.3
57.5°	714.3	713.2	712.2	711.1	710.1	707.4	703.2	699.0	694.7	690.5	687.0
60°	662.3	660.7	659.2	657.7	656.1	653.4	649.4	645.4	641.4	637.4	634.6
62.5°	611.4	610.1	608.8	607.5	606.2	603.5	599.2	595.0	590.7	586.5	584.0
65°	535.1	533.5	532.0	530.5	528.9	526.6	523.5	520.5	517.4	514.3	511.3
67.5°	458.2	456.8	455.4	454.0	452.5	450.4	447.4	444.5	441.5	438.6	435.6
70°	410.6	408.5	406.3	404.2	402.0	399.7	397.3	394.8	392.4	389.9	387.4
72.5°	359.8	357.6	355.5	353.3	351.2	349.1	347.1	345.2	343.2	341.2	339.3
75°	284.8	283.3	281.7	280.2	278.7	277.1	275.6	274.1	272.5	271.0	269.8
77.5°	213.2	212.5	211.8	211.2	210.5	209.5	208.1	206.8	205.4	204.1	203.7
80°	170.1	169.1	168.2	167.3	166.4	165.6	165.0	164.4	163.8	163.1	162.5
82.5°	128.0	127.6	127.2	126.7	126.3	126.0	125.9	125.8	125.7	125.5	125.2
85°	74.7	74.7	74.7	74.7	74.7	74.4	73.7	73.1	72.5	71.9	71.9
87.5°	29.5	29.9	30.3	30.7	31.1	31.4	31.6	31.8	32.0	32.3	32.6
90°	3.9	7.1	10.2	13.4	16.6	19.3	21.6	23.9	26.2	28.5	30.3
92.5°	27.8	31.4	35.0	38.6	42.3	44.9	46.5	48.1	49.7	51.4	52.4
95°	77.8	80.4	83.0	85.6	88.2	90.5	92.5	94.5	96.5	98.6	99.4
97.5°	135.9	138.0	140.1	142.1	144.2	146.4	148.8	151.2	153.5	155.9	156.9
100°	181.6	182.7	183.9	185.0	186.2	188.0	190.6	193.2	195.8	198.4	199.0
102.5°	229.3	229.8	230.2	230.7	231.1	232.5	234.9	237.3	239.6	242.0	242.8
105°	302.2	302.5	302.8	303.0	303.3	304.0	305.2	306.4	307.5	308.7	309.5
107.5°	378.7	379.0	379.4	379.7	380.1	380.3	380.5	380.7	380.9	381.0	381.8
110°	430.6	431.1	431.7	432.3	432.9	433.0	432.7	432.4	432.2	431.9	431.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	484.5	484.6	484.7	484.9	485.0	484.8	484.3	483.7	483.2	482.7	482.6
115°	565.4	565.4	565.4	565.4	565.4	565.2	564.6	564.0	563.4	562.8	562.6
117.5°	641.7	641.9	642.2	642.4	642.6	642.5	642.1	641.7	641.3	640.9	639.9
120°	692.5	693.7	694.8	696.0	697.1	697.3	696.4	695.6	694.7	693.8	692.4
122.5°	745.4	745.9	746.4	746.8	747.3	747.3	746.9	746.5	746.1	745.7	744.7
125°	823.5	823.5	823.5	823.5	823.5	823.4	823.1	822.8	822.5	822.2	821.6
127.5°	894.3	895.2	896.1	896.9	897.8	898.0	897.5	897.1	896.6	896.1	895.6
130°	944.1	945.0	945.9	946.7	947.6	948.0	948.0	948.0	948.0	948.0	947.4
132.5°	995.0	995.6	996.2	996.9	997.5	997.7	997.5	997.2	997.0	996.8	996.2
135°	1062.1	1063.9	1065.6	1067.3	1069.1	1069.9	1069.9	1069.9	1069.9	1069.9	1069.4
137.5°	1135.3	1136.1	1136.9	1137.7	1138.5	1139.2	1139.6	1140.1	1140.5	1141.0	1140.2
140°	1184.1	1184.6	1185.2	1185.8	1186.4	1186.6	1186.6	1186.6	1186.6	1186.6	1186.4
142.5°	1228.7	1229.2	1229.8	1230.4	1231.0	1231.1	1230.9	1230.7	1230.5	1230.2	1230.2
145°	1290.4	1291.6	1292.7	1293.9	1295.0	1295.7	1296.0	1296.3	1296.6	1296.9	1296.6
147.5°	1351.6	1353.0	1354.4	1355.8	1357.1	1357.7	1357.5	1357.3	1357.0	1356.8	1356.6
150°	1389.0	1390.1	1391.3	1392.4	1393.6	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1
152.5°	1424.2	1424.9	1425.6	1426.3	1427.0	1427.5	1427.7	1427.9	1428.2	1428.4	1429.1
155°	1478.4	1478.4	1478.4	1478.4	1478.4	1478.3	1478.0	1477.7	1477.4	1477.2	1478.3
157.5°	1524.1	1523.6	1523.1	1522.5	1522.0	1521.7	1521.7	1521.6	1521.6	1521.5	1522.4
160°	1551.1	1550.8	1550.5	1550.2	1549.9	1549.6	1549.3	1549.1	1548.8	1548.5	1549.3
162.5°	1576.0	1575.2	1574.5	1573.7	1573.0	1572.5	1572.2	1571.9	1571.6	1571.3	1572.9
165°	1609.4	1608.6	1607.7	1606.8	1606.0	1605.3	1604.7	1604.1	1603.5	1602.9	1604.7
167.5°	1635.1	1633.9	1632.7	1631.5	1630.3	1629.7	1629.8	1629.8	1629.9	1629.9	1631.7
170°	1649.6	1648.2	1646.8	1645.3	1643.9	1643.3	1643.6	1643.9	1644.2	1644.4	1646.2
172.5°	1660.0	1658.8	1657.6	1656.4	1655.2	1654.6	1654.7	1654.7	1654.8	1654.8	1656.8
175°	1674.3	1672.8	1671.4	1670.0	1668.5	1667.6	1667.4	1667.1	1666.8	1666.5	1668.5
177.5°	1678.9	1677.8	1676.6	1675.5	1674.3	1673.8	1673.8	1673.8	1673.8	1673.8	1675.4
180°	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5
2.5°	1719.3	1721.8	1724.3	1725.4	1725.1	1724.9	1724.6	1724.4
5°	1710.1	1713.5	1716.9	1718.3	1717.7	1717.0	1716.4	1715.8
7.5°	1691.1	1693.8	1696.5	1697.7	1697.3	1696.9	1696.5	1696.2
10°	1675.1	1677.6	1680.0	1680.9	1680.3	1679.7	1679.1	1678.5
12.5°	1655.7	1658.4	1661.1	1662.0	1661.2	1660.3	1659.4	1658.6
15°	1618.6	1620.4	1622.3	1622.7	1621.8	1620.9	1620.0	1619.0
17.5°	1576.3	1577.5	1578.6	1578.9	1578.3	1577.7	1577.1	1576.4
20°	1544.8	1545.8	1546.7	1546.8	1546.2	1545.6	1545.0	1544.4
22.5°	1512.0	1513.7	1515.3	1515.6	1514.5	1513.4	1512.3	1511.2
25°	1457.9	1458.2	1458.5	1458.0	1456.8	1455.6	1454.3	1453.1
27.5°	1397.2	1396.4	1395.7	1394.6	1393.0	1391.5	1389.9	1388.4
30°	1355.3	1354.0	1352.8	1351.4	1349.9	1348.3	1346.8	1345.3
32.5°	1312.7	1311.3	1309.8	1308.3	1306.7	1305.2	1303.7	1302.1
35°	1245.6	1243.4	1241.3	1239.4	1237.9	1236.4	1234.8	1233.3
37.5°	1175.2	1172.9	1170.6	1168.4	1166.4	1164.3	1162.3	1160.3
40°	1126.2	1123.1	1120.1	1117.8	1116.2	1114.7	1113.2	1111.6
42.5°	1078.8	1075.2	1071.6	1069.3	1068.3	1067.2	1066.2	1065.2
45°	1005.3	1001.9	998.5	996.4	995.5	994.6	993.6	992.7
47.5°	934.2	930.4	926.6	923.5	921.2	918.8	916.5	914.2
50°	884.6	880.3	876.0	872.9	871.0	869.2	867.4	865.5
52.5°	833.6	829.7	825.9	822.9	820.5	818.2	815.9	813.5
55°	758.6	754.9	751.2	748.5	746.6	744.8	742.9	741.1
57.5°	683.5	680.0	676.5	673.8	672.0	670.3	668.5	666.7
60°	631.9	629.1	626.3	624.2	622.6	621.1	619.6	618.0
62.5°	581.5	578.9	576.4	574.4	572.9	571.3	569.8	568.3
65°	508.2	505.1	502.0	499.7	498.2	496.7	495.1	493.6
67.5°	432.7	429.7	426.8	425.1	424.6	424.2	423.8	423.4
70°	385.0	382.5	380.1	378.4	377.5	376.5	375.6	374.7
72.5°	337.3	335.3	333.4	331.9	331.0	330.1	329.2	328.2
75°	268.5	267.3	266.1	265.3	265.0	264.7	264.4	264.1
77.5°	203.3	203.0	202.6	202.0	201.2	200.4	199.6	198.8
80°	161.9	161.3	160.7	160.2	159.9	159.6	159.3	159.0
82.5°	124.8	124.4	124.1	123.7	123.4	123.1	122.8	122.5
85°	71.9	71.9	71.9	71.7	71.4	71.1	70.8	70.5
87.5°	32.9	33.3	33.6	33.9	34.0	34.1	34.2	34.3
90°	32.0	33.7	35.4	36.6	37.2	37.8	38.3	38.9
92.5°	53.4	54.5	55.5	56.2	56.5	56.9	57.2	57.6
95°	100.3	101.2	102.0	102.5	102.5	102.5	102.5	102.5
97.5°	158.0	159.0	160.0	160.6	160.6	160.6	160.6	160.6
100°	199.6	200.2	200.7	201.0	201.0	201.0	201.0	201.0
102.5°	243.6	244.4	245.2	245.7	246.0	246.2	246.4	246.7
105°	310.4	311.3	312.1	313.0	313.8	314.7	315.6	316.4
107.5°	382.6	383.4	384.3	384.6	384.6	384.5	384.5	384.4
110°	430.7	430.1	429.6	429.7	430.6	431.4	432.3	433.2



TEST NUMBER: P332828

CATALOG NUMBER: S124DIW-S1020D1340U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	482.5	482.4	482.2	482.3	482.4	482.6	482.8	483.0
115°	562.3	562.0	561.7	561.4	561.1	560.8	560.5	560.3
117.5°	639.0	638.0	637.0	636.2	635.6	635.1	634.5	633.9
120°	691.0	689.5	688.1	687.6	688.2	688.8	689.4	689.9
122.5°	743.7	742.8	741.8	740.8	739.7	738.7	737.7	736.6
125°	821.1	820.5	819.9	819.3	818.8	818.2	817.6	817.0
127.5°	895.0	894.4	893.8	893.3	892.9	892.4	891.9	891.5
130°	946.9	946.3	945.7	944.9	943.7	942.5	941.4	940.2
132.5°	995.6	995.1	994.5	994.0	993.5	993.0	992.6	992.1
135°	1068.8	1068.2	1067.6	1066.9	1066.0	1065.2	1064.3	1063.4
137.5°	1139.5	1138.8	1138.0	1137.7	1137.9	1138.1	1138.2	1138.4
140°	1186.1	1185.8	1185.5	1185.2	1184.9	1184.6	1184.3	1184.1
142.5°	1230.1	1230.1	1230.0	1229.9	1229.9	1229.8	1229.8	1229.7
145°	1296.3	1296.0	1295.7	1295.2	1294.3	1293.4	1292.6	1291.7
147.5°	1356.3	1356.1	1355.9	1355.6	1355.3	1355.0	1354.8	1354.5
150°	1394.1	1394.1	1394.1	1394.0	1393.7	1393.4	1393.1	1392.9
152.5°	1429.8	1430.5	1431.2	1431.1	1430.4	1429.6	1428.9	1428.1
155°	1479.5	1480.6	1481.8	1481.8	1480.6	1479.5	1478.3	1477.2
157.5°	1523.2	1524.1	1525.0	1524.9	1523.9	1522.9	1522.0	1521.0
160°	1550.2	1551.1	1551.9	1551.6	1550.2	1548.8	1547.3	1545.9
162.5°	1574.4	1576.0	1577.5	1577.6	1576.1	1574.7	1573.3	1571.8
165°	1606.4	1608.1	1609.9	1610.2	1609.0	1607.8	1606.7	1605.5
167.5°	1633.4	1635.1	1636.8	1636.8	1635.0	1633.2	1631.5	1629.7
170°	1647.9	1649.6	1651.4	1651.2	1649.2	1647.2	1645.2	1643.2
172.5°	1658.7	1660.7	1662.7	1662.6	1660.6	1658.6	1656.6	1654.6
175°	1670.5	1672.5	1674.6	1674.6	1672.5	1670.5	1668.5	1666.5
177.5°	1677.0	1678.6	1680.2	1680.1	1678.3	1676.4	1674.6	1672.7
180°	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9	1676.9

(END OF REPORT)